Appendix G
LID Plan

Conceptual Low Impact Development Plan (Conceptual LID Plan)

Project Name:

1400 Montefino Avenue

1400 Montefino Avenue
City of Diamond Bar, California 91765
(APNs: 8293-044-015 & 8293-044-016)

Prepared for:

Intracorp SoCal 1, LLC
895 Dove Street, Suite 400
Newport Beach, California 92660
(949) 757-8467

Prepared by:

Huitt-Zollars, Inc.
2603 Main Street, Suite 600
Irvine, CA 92614
(949) 988-5815



Date Prepared: 11/20/2025

Project Owner's Certification

I certify under penalty of law that this document and all attachments were prepared under my jurisdiction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathered the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner's Name:	Sarah Klaustermeier		
Owner's Title:	Senior Director - Development		
Company:	Intracorp SoCal 1, LLC		
Address:	895 Dove Street, Suite 400, Newport Beach, California 92660		
Email:	sklaustermeier@intracorphomes.com		
Telephone No:	(949) 757-8467		
Signature:	Sarah Klaustermeier Digitally signed by Sarah Klaustermeier DN: C=US, E=sklaustermeier@intracorphomes.com, CN=Sarah Klaustermeier Reason: I am approving this document Date: 2025.11.19 11:36:32-08'00'	Date:	11/19/2025

Preparer (Engineer) Certification

Engineer's Name:	Jeffrey Okamoto		
Engineer's Title:	Vice President		
Company:	Huitt-Zollars Inc.		
Address:	2603 Main Street, Suite 600, Irvine, CA 92614		
Email:	okamoto@huitt-zollars.com		
Telephone No:	(949) 988-5815		
I hereby certify that this Low Impact Development Plan is in compliance with, and meets the requirements set forth in, Order No. R4-2021-0105 (NPDES NO. CAS004004), of the Los Angeles Regional Water Quality Control Board.			
Engineer's Signature		Date	11/20/2025
Place Stamp Here			

Table of Contents

1. Project Description....1
1.1. Project Category....1
1.2. Project Description....2
1.3. Hydromodification Analysis....5
1.4. Property Ownership/Management....7
2. Best Management Practices (BMPs)....8
2.1. Site Design....8
2.2. BMP Selection....10
2.2.1. Infiltration BMPs....10
2.2.2. Rainwater Harvest and Use BMPs....11
2.2.3. Alternative Compliance BMPs....12
2.2.4. Treatment Control BMPs....14
2.2.5. Hydromodification Control BMPs....15
2.2.6. Non-structural Source Control BMPs....16
2.2.7. Structural Source Control BMPs....17

Attachments

Attachment A....Calculations
Attachment B....Geotechnical Investigation
Attachment C....Master Covenant and Agreement (MCA)
Attachment D....Operations and Maintenance (O&M) Plan
Attachment E....Construction Plans

1. PROJECT DESCRIPTION

1.1. PROJECT CATEGORY (BASED ON 2021 LA COUNTY MS4 PERMIT)

Category	YES	NO
1. Development [a] of a new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area [b] (collectively over the entire project site)	☐	☐
2. Development [a] of a new industrial park with 10,000 square feet or more of surface area [c]	☐	☐
3. Development [a] of a new commercial mall with 10,000 square feet or more surface area [c]	☐	☐
4. Redevelopment [e] of 5,000 square feet or more of impervious surface area [c] from an existing site of 10,000 square feet or more of impervious surface area	☒	☐
5. Redevelopment [e] of 5,000 square feet or more of impervious surface area [c] from an industrial park of 10,000 square feet or more of impervious surface area	☐	☐
6. Redevelopment [e] of 5,000 square feet or more of impervious surface area [c] from a commercial mall of 10,000 square feet or more of impervious surface area	☐	☐
7. Development [a] of a new restaurant (SIC 5812) with 5,000 square feet or more of impervious surface area [c]	☐	☐
8. Development [a] of a new parking lot with either 5,000 ft^2 or more of impervious area [b]	☐	☐
9. Development [a] of a new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area [c]	☐	☐
10. Development [a] of a new retail gasoline outlet with 5,000 square feet or more of surface area [c]	☐	☐
11. Projects located in or directly adjacent to, or discharging directly to an Area of Special Biological Significance, Significant Ecological Area (SEA), [d] where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create/replace 2,500 square feet or more of impervious area [b]	☐	☐
12. Street and Road construction of 10,000 square feet or more of impervious area [f]	☐	☐

a Development includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance.

b Surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc.

c The surface area is the total footprint of an area. Not to include the cumulative area above or below the ground surface.

d An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

e Land-disturbing activities that result in the creation, addition, or replacement of a certain amount of impervious surface area on an already developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of facility, nor does it include modifications to existing single family structures, or emergency construction activities required to immediately protect public health and safety.

f Follow U.S. EPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets (December 2008 EPA-833-F-08-009) to the maximum extent practicable. Street and road construction applies to standalone streets, roads, highways, and freeway projects. Temporary access roads are notsubject to this requirement. Projects under this category are exempt from the Priority Development Structural BMP Performance Requirements in Part VIII.F.4 of this Order.

1.2. PROJECT DESCRIPTION

Total Project Area (ft^2): 171,626

Total Project Area (Ac): 3.94

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	60,069	35
Impervious Area:	111,557	65

PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	44,623	26
Impervious Area:	127,003	74

SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS [Include a detailed description of existing and proposed drainage patterns. Describe the areas and sub-areas (to include square footage), treatment locations, direction of flow through each area, discharge point(s), ultimate termination point, etc.]	Existing: Stormwater drains via surface flow towards the discharge points. And, the site has four discharge points: two points towards the Montefino Avenue in the north, one via the slope ditch in the south, and one towards the Diamond Bar Boulevard in the south. Then, the flow in the streets is captured by public storm drain system along Montefino Avenue and Diamond Bar Boulevard.
	Proposed: Stormwater is collected by onsite drainage system, and the site has four drainage areas with discharge points at 33J, 24R, 29H and 31I. Similar to the existing conditions, discharge points 33J and 24R flow out onto Montefino Avenue in the north. Discharge point 29H flows south via the slope ditch. And 31I flows south out via existing ditch towards the Diamond Bar Boulevard. Then, the flow in the streets is captured by public storm drain system along Montefino Avenue and Diamond Bar Boulevard.
NARRATIVE PROJECT DESCRIPTION: [Include a detailed description of project areas, type of facilities, activities conducted onsite, materials and products received and stored on site, SIC Code (if applicable), land uses, land cover,	The 1400 Montefino project is in support of the high-density residential development in the City of Diamond Bar, California (Appendix A-1: Vicinity Map). The site is bounded by Montefino Avenue to the north, a strip mall to the east, and residential developments to the south and west. The Pomona Freeway (CA-60) is 0.5 miles to the West and the San Bernardino Freeway (Interstate 10) is ~1.1 miles to the west. The project

design elements, drainage management areas (DMAs), etc.]	is within the San Gabriel River Watershed in the Los Angeles County Flood Control District. The Project proposes to develop 3.94 acres of land with a high-density residential project, including open space, parking areas and landscape area, which will be privately maintained.

OFFSITE RUNON [Describe any offsite runon anticipated and how the runon will be either accounted for in LID BMP sizing or directed around the site.]	There is no offsite run-on for this project.
UTILITY AND INFRASTRUCTURE INFORMATION [Include a description of the existing and proposed onsite utility and infrastructure. Evaluate the potential impacts of stormwater infiltration on subsurface utilities, establish necessary setbacks, and if the utilities need to be relocated. Retention-based stormwater quality control measures should not be located near utility lines where an increased volume of water could damage utilities.]	Based on the April 2025 Geotechnical Investigation and Percolation Testing report prepared by Leighton (Project No. 036.0000030477), the site is underlain by compacted fill materials over young alluvial fan deposits and Monterey Formation bedrock (Appendix B-3). The fill encountered in borings range in thickness from approximately 5.5 to 15.5 feet below ground surface at the explored locations. These soils are characterized as olive brown, yellowish brown, dark brown, and gray, moist, medium dense to dense sand, silty sand, and very stiff to hard sandy clay. Next, the Geotech report indicates that the results of the percolation tests are 0.00 to 0.01 in/hr. Based on the percolation test results and requirements of LADPW (2021) stormwater infiltration is not considered feasible for the site.
SIGNIFICANT ECOLOGICAL AREAS (SEAS) [Identify any known Significant Ecological Area (SEA) which the project is located in or directly adjacent to, or discharging directly to.]	There is no Significant Ecological Area (SEA) located in or directly adjacent to, or discharging directly. See Appendix A-3 – SEA Map.

1.3. HYDROMODIFICATION ANALYSIS

DOES THE PROPOSED PROJECT FALL INTO ONE OF THE FOLLOWING CATEGORIES? CHECK YES/NO.	YES	NO
1. *Project is a redevelopment that decreases the effective impervious area compared to the pre-project conditions.*	☐	☒
Describe:		
2. *Project is a redevelopment that increases the infiltration capacity of pervious areas compared to the pre-project conditions.*	☒	☐
Describe:		
3. *Project discharges directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q_{100}) of 25,000 cfs or more.*	☐	☒
Describe:		
4. *Project discharges directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts.*	☐	☒
Describe:		

[Check "Yes" or "No," as applicable.

If one or more of the above criteria are checked "Yes," the project is exempt from Hydromodification Control Measures. State as such.

If none of the above criteria are checked "Yes," the project will require Hydromodification control measures. Include detailed description of control measures to be implemented and a reference to calculations following the criteria outlined in MS4 Permit (Order R4-2012-0175) §VI.D.7.c.iv]

HYDROMODIFICATION ANALYSIS

Based on LA County LID Manual Section 8.3, hydromodification analysis is done for hydrology frequency analyses for 2-, 5-, 10, 25-, and 50-year storm events using MODRAT program in WMS (Water Modeling System), version 11.2. Hydromodification control measures are not required because proposed condition flows are less than existing condition flows for all the storm events, particularly at 24R (Table 1 below). See Attachment A for existing and proposed drainage exhibits, as well as calculations for stormwater runoff volume.

Table 1. Summary of flow volumes for hydromodification verification.

Existing Condition			Proposed Condition		
Discharge Point[1]	**Tributary Area (ac)**	**Volume (ac-ft)**	**Discharge Point[2]**	**Tributary Area (ac)**	**Volume (ac-ft)**
2-year Storm Event					
2A	0.25	0.013	33J	0.25	0.013
10B	1.69	0.251	24R	3.28	0.136
15C[3]	1.61	0.246	29H	0.38	0.006
20D	0.39	0.006	31I[4]	0.03	0.002
Total	3.94	0.516	-	3.94	0.16
5-year Storm Event					
2A	0.25	0.022	33J	0.25	0.022
10B	1.69	0.383	24R	3.28	0.228
15C[3]	1.61	0.374	29H	0.38	0.011
20D	0.39	0.011	31I[4]	0.03	0.003
Total	3.94	0.79	-	3.94	0.26
10-year Storm Event					
2A	0.25	0.03	33J	0.25	0.03
10B	1.69	0.471	24R	3.28	0.296
15C[3]	1.61	0.261	29H	0.38	0.02
20D	0.39	0.015	31I[4]	0.03	0.003
Total	3.94	0.775	-	3.94	0.34
25-year Storm Event					
2A	0.25	0.037	33J	0.25	0.037
10B	1.69	0.586	24R	3.28	0.393
15C[3]	1.61	0.568	29H	0.38	0.021
20D	0.39	0.021	31I[4]	0.03	0.004
Total	3.94	1.212	-	3.94	0.46
50-year Storm Event					
2A	0.25	0.045	33J	0.25	0.045
10B	1.69	0.672	24R	3.28	0.471
15C[3]	1.61	0.649	29H	0.38	0.026
20D	0.39	0.026	31I[4]	0.03	0.01
Total	3.94	1.392	-	3.94	0.55

[1]For Existing Conditions, discharge points 2A and 15C flow out onto Montefino Avenue, while 15C and 20D flow out to existing ditches.

[2]For Proposed Conditions, discharge points 33J and 24R flow out onto Montefino Avenue, while 29H and 31I flow out to existing ditches.

[3]Volume for this discharge point is assumed to be the same as the higher volume at the upstream node.

[4]Volume for subarea 31I is based on area ratio using area and volume from subarea 32J because minimum subarea of MODRAT is 0.1 acre.

1.4. PROPERTY OWNERSHIP/MANAGEMENT

[Describe ownership of all portions of project and site. Include information on if any infrastructure transfer to public agencies (City, County, Caltrans, etc.). Describe any property management company/association that will be formed. Include leasee information, as applicable.]	The project developer/owner is Intracorp SoCal 1, LLC located at 895 Dove Street, Suite 400, Newport Beach, California 92660. The owner is responsible for the operation and maintenance of BMPs until formation of Property Management.

2. BEST MANAGEMENT PRACTICES (BMPS)

2.1. SITE DESIGN

85TH PERCENTILE, 24-HOUR STORM DEPTH [Determined from the Los Angeles County 85th percentile precipitation isohyetal map. If less than 0.75 inch, state as such and use 0.75 inch throughout.]	1.0 inch
SITE DESIGN [Describe site design and drainage plan including; site design practices utilized and how BMPs are incorporated using the appropriate hierarchy.]	The primary goal of site design principles and techniques is to reduce land development impacts on water quality and downstream hydrologic conditions. Benefits of site design include reductions in the size of downstream BMPs, conveyance systems, pollutant loading and hydromodification impacts. The following site design BMPs have been incorporated to the Maximum Extent Practicable (MEP) into this project. *Minimize Impervious Area* Impervious area is based on the high-density development to meet State housing requirements. *Maximize Natural Infiltration Capacity* Infiltration has been identified as not feasible by geotechnical investigations. *Preserve Existing Drainage Patterns and Time of Concentration* The existing drainage patterns will generally remain the same in the proposed condition. And, the time of concentration will be mitigated with the underground chambers. *Disconnect Impervious Areas* Where feasible, runoff from the pads is drained towards pervious areas. *Protect Existing Vegetation and Sensitive Areas, and Revegetate Disturbed Areas* All pervious areas will be revegetated with native and/or tolerant landscaping, consistent with the preliminary Site Plan. *Xeriscape Landscaping* Native and/or tolerant landscaping will be incorporated into the site design consistent with the preliminary Site Plan. Proprietary biofiltration BMPs from Contech (or approved equivalent) are designed to treat the runoff volume from the water quality design storm (e.g., the 85th percentile 24-hour event) within a duration time set by local vector control regulations. Per the Los Angeles County LID Manual, the water quality design storm volume shall be equivalent to the calculated stormwater quality captured volume (SQWDv). Per the MS4 permit, the biofiltration chambers will be designed to meet the maximized stormwater capture volume for the area, from the formula recommended in the

	Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998). The water quality pool is designed to drain in 48 hours. Consistent with the MS4 Permit, the LID BMPs for onsite proprietary biofiltration BMPs from Contech (or approved equivalent) are incorporated into this project. Exhibit A-2 shows the BMPs for this project.

BMP LIST

DMA	ACREAGE (AC)	STORM WATER QUALITY DESIGN VOLUME (SWQDV, CF)	STORM WATER QUALITY DESIGN FLOWRATE (SWQDQ, CFS)	1.5* SWQDV (CF)	BMP TYPE	BMP SIZE PROVIDED	TREATED FLOW (CFS)	GPS COORDINATES
Entire Site	3.94	9,815	0.794	14,722.5	WM-11-25-V	11’ by 25’	14,723	N: 6618117.32988 E: 1821740.19524

2.2. BMP SELECTION

2.2.1. INFILTRATION BMPS

There is no infiltration BMP proposed for the site because infiltration is not feasible according to the site-specific Geotechnical Report.

NAME	INCLUDED [Check all that apply.]
Bioretention without underdrains	☐
Infiltration Trench	☐
Infiltration Basin	☐
Drywell	☐
Proprietary Subsurface Infiltration Gallery	☐
Permeable Pavement (concrete, asphalt, pavers)	☐
Other:	☐
Other:	☐

DESCRIPTION [Describe Infiltration BMPs. Include descriptions on selection, sizing, and feasibility, as applicable. If infiltration is infeasible, provide brief explanation, including reference to the geotechnical report.]	
CALCULATIONS [Show calculations to demonstrate that the Storm Water Quality Design volume can be met with Infiltration BMPs.]	

2.2.2. RAINWATER HARVEST AND USE BMPS

There is no rainwater harvest and use BMP proposed for the site because the BMP is determined to be infeasible due to the issues of standing water in the proposed Harvest and Reuse infrastructure. The health department, under a special permit, requires that the harvested water in a tank be cycled/used within 72 hours of capture. But, following an extended period of rain when the most significant capture is likely to occur, it is unlikely that the need to irrigate will occur within the next 72 hours. Therefore, captured water without an immediate need for irrigation may become septic and not suitable for irrigation when it is needed.

2.2.3. ALTERNATIVE COMPLIANCE BMPS

BIOFILTRATION BMPS

(If Infiltration BMPs and Rainwater Harvest and Use BMPs are Infeasible)

NAME	INCLUDED [Check all that apply.]
Bioretention with underdrains (i.e. planter box, rain garden, etc.)	☒
Constructed Wetland	☐
Vegetated Swale	☐
Vegetated Filter Strip	☐
Tree-Well Filter	☐
Other:	☐
Other:	☐

DESCRIPTION [If the full Design Storm Capture Volume cannot be met with Infiltration BMPs, and/or Rainwater Harvest and Use BMPs, describe Biofiltration BMPs. Include descriptions on selection, suitability, sizing, and infeasibility, as applicable.]	One proprietary biofiltration BMP from Contech (or approved equivalent) is designed to treat the stormwater quality flowrates from the proposed project.
CALCULATIONS [Show calculations to demonstrate how 1.5 times the Storm Water Quality Design volume and/or flowrate can be met with Biotreatment BMPs.]	Tributary Area = 3.94 ac Flow Path Length = 483 ft Flow Path Slope (ft/ft) = 0.02934 85th percentile Rainfall Depth = 1 inch Percent Impervious = 0.74 Soil Type = 16 Stormwater Quality Design Volume, SWQDv = 9,815 cu-ft Stormwater Quality Design Flowrate, $SWQD_Q$ = 0.794 cfs 1.5*SWQDv = 14722.5 cf Treated Flowrate = 14,723 cf

OFFSITE BMPS

There is no offsite BMP proposed for the site because there is no offsite run-on to the project.

NAME	INCLUDED [Check all that apply.]
Offsite Infiltration	☐
Ground Water Replenishment Projects	☐
Offsite Project - Retrofit Existing Development	☐
Regional Storm Water Mitigation Program	☐
Other:	☐
Other:	☐

DESCRIPTION [If the full Design Storm Capture Volume cannot be met with Infiltration BMPs, Rainwater Harvest and Use BMPs, or Biofiltration BMPs, describe proposed Alternative Compliance BMPs. Include descriptions on selection, suitability, sizing, and infeasibility, as applicable.]	
CALCULATIONS [Show calculations to demonstrate how the conditions required by the MS4 Permit will be met with Alternative Compliance BMPs.]	

2.2.4. TREATMENT CONTROL BMPS

Filter inserts are placed at the storm drain inlets for pre-treatment of the biofiltration BMPs.

Treatment control BMPs can only be used as pre-treatment to LID BMPs.

NAME	INCLUDED [Check all that apply.]
Media Filter	☐
Filter Insert	☒
CDS Unit	☐
Other:	☐
Other:	☐

DESCRIPTION [Include descriptions on selection, suitability, sizing, and infeasibility, as applicable.]	Filter inserts are placed at the storm drain inlets for pre-treatment of the proprietary biofiltration BMPs.

2.2.5. HYDROMODIFICATION CONTROL BMPS

There is no hydromodification control BMP proposed for the site.

NAME	INCLUDED [Check all that apply.]
Infiltration System	☐
Above-ground Cistern	☐
Above-ground Basin	☐
Underground Detention	☐
Other:	☐
Other:	☐

DESCRIPTION [If the site is susceptible to hydromodification, include descriptions on selection and sizing of Hydromodification Control Measures.]	
CALCULATIONS [If the site is susceptible to hydromodification, show calculations to demonstrate how the volume, flowrate, and duration conditions can be met with Hydromodification Control Measures BMPs.]	

2.2.6. NON-STRUCTURAL SOURCE CONTROL BMPS

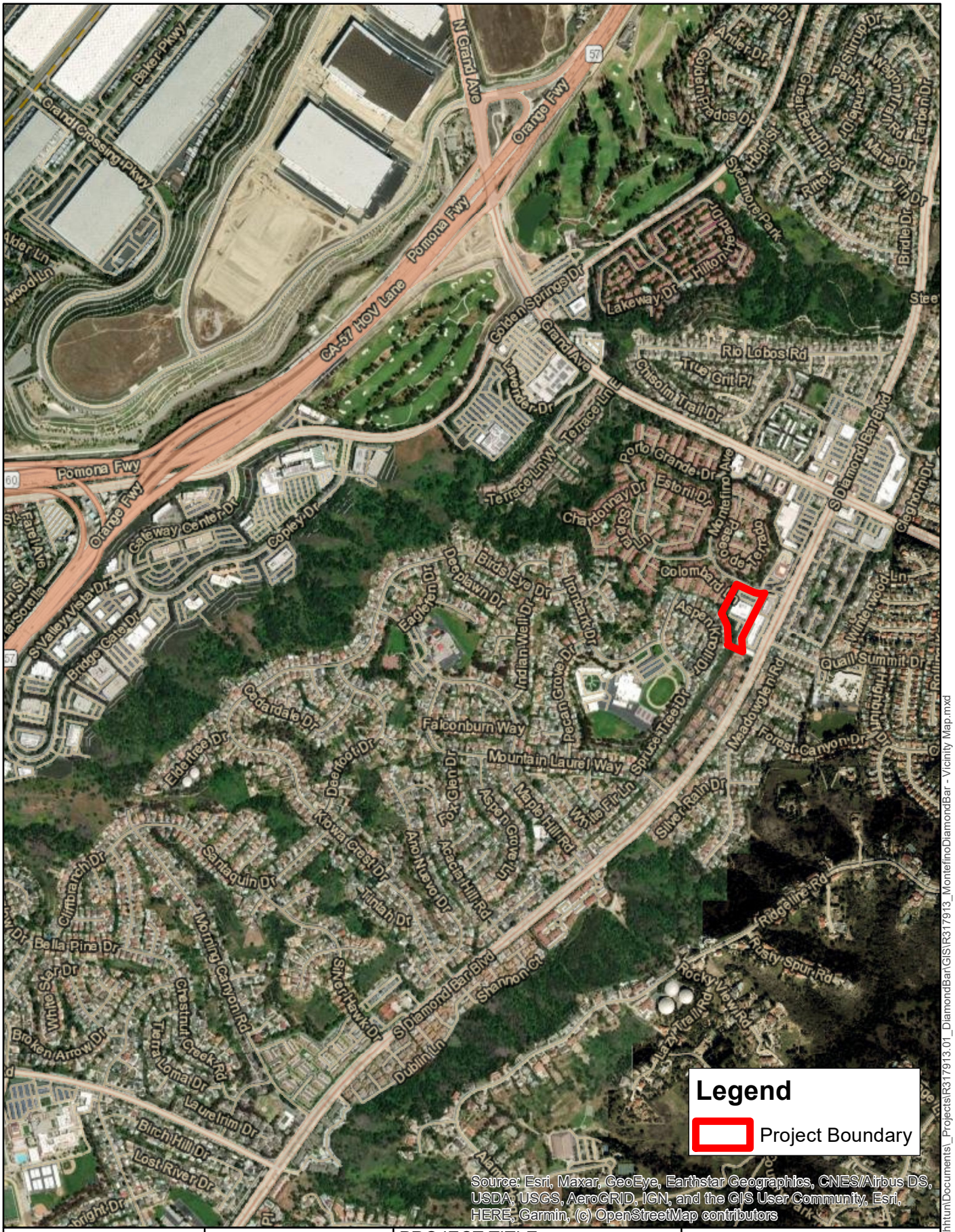
NAME	CHECK ONE	
	Included	**Not Applicable**
Education for Property Owners, Tenants and Occupants	☒	☐
Activity Restrictions	☒	☐
Common Area Landscape Management	☒	☐
Common Area Litter Control	☒	☐
Housekeeping of Loading Docks	☐	☒
Common Area Catch Basin Inspection	☒	☐
Street Sweeping Private Streets and Parking Lots	☒	☐

2.2.7. STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Provide storm drain system stenciling and signage (S-1)	☒	☐
Design and construct outdoor material storage areas to reduce pollution introduction (S-2)	☐	☒
Design and construct trash and waste storage areas to reduce pollution introduction (S-3)	☐	☒
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (S-8)	☒	☐
Protect slopes and channels and provide energy dissipation (S-8)	☒	☐
Loading docks (S-4)	☐	☒
Maintenance bays (S-5)	☐	☒
Vehicle wash areas (S-6)	☐	☒
Outdoor processing areas (S-2)	☐	☒
Equipment wash areas/racks (S-6)	☐	☒
Fueling areas (S-7)	☐	☒
Hillside landscaping (S-8)	☒	☐

Attachment A

Calculations



HUITT ZOLLARS

Date: 7/15/2025

N

0 800 1,600 Feet

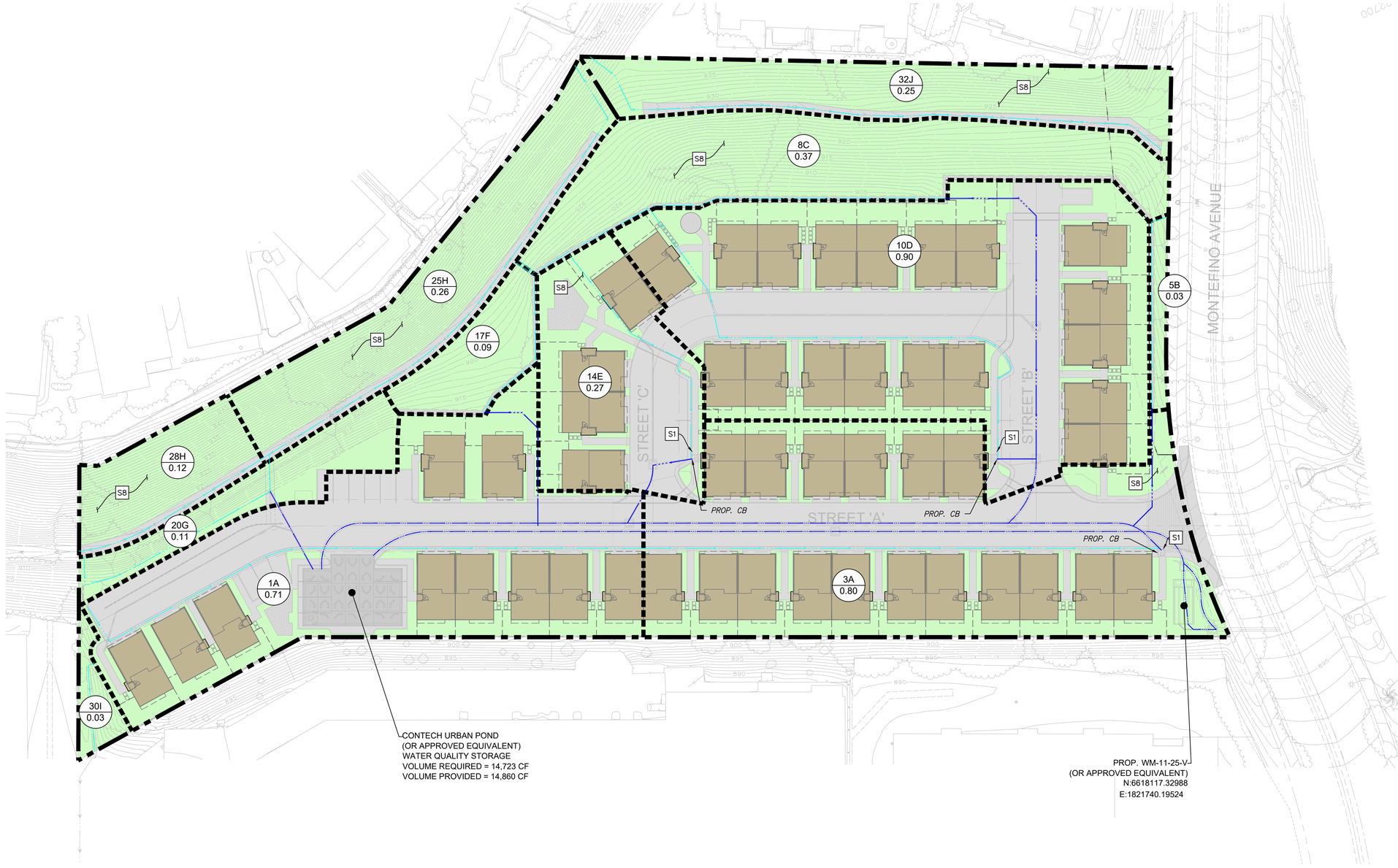
PROJECT TITLE:

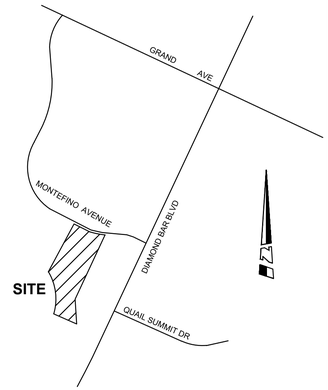
1400 MONTEFINO AVENUE, DIAMOND BAR, CALIFORNIA

FIGURE TITLE:

VICINITY MAP

Document Path: C:\Users\thtum\Documents_Projects\R317913.01_DiamondBar\GIS\R317913_MontefinoDiamondBar - Vicinity Map.mxd





VICINITY MAP
NOT TO SCALE

STRUCTURAL SOURCE CONTROL BMPS

S1	PROVIDE STORM DRAIN SYSTEM STENCELLING AND SIGNAGE
S8	USE EFFECIENT IRRIGATION SYSTEMS AND LANDSCAPE DESIGN, WATER CONSERVATION, SMART CONTROLLERS, AND SOURCE CONTROL. PROTECT SLOPES AND CHANNELS AND PROVIDE ENERGY DISSIPATION

ACREAGE SUMMARY

IMPERVIOUS AREA = 2.92 AC APPROX.
PERVIOUS AREA = 1.02 AC APPROX.

LEGEND

- PERVIOUS AREA (LANDSCAPE, OPEN SPACE, SLOPE)
- PAVED AREA (DRIVEWAY, SIDEWALK, PARKING AREA)
- HIGH-DENSITY RESIDENTIAL

SUBAREA DESTINATION – DA X
SUBAREA ACREAGE – XX.XX

- HYDROLOGIC SUBAREA BOUNDARY
- PROPOSED TRACT BOUNDARY
- OVERLAND FLOW
- PIPE FLOW

30 0 15 30 60
SCALE 1"= 30'

UTILITY NOTE

DIGALERT
DIAL BEFORE YOU DIG
TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

BENCHMARK

LA COUNTY BENCHMARK NO. 4243

ELEVATION 880.012' (NAVD88)

OTTERBEIN QUAD 2013

RDBM TAG IN EAST CATCH BASIN DIAMOND BAR BLVD 2 FEET S/O BCR @ SE CORNER QUAIL SUMMIT DR.

ISSUE DRAWING LOG:

MARK	DATE	DESCRIPTION
1	7/30/2025	PRELIMINARY DESIGN 1ST SUBMITTAL
2	10/6/2025	PRELIMINARY DESIGN 2ND SUBMITTAL
3	11/21/2025	PRELIMINARY DESIGN 3RD SUBMITTAL

INTRACORP SW, LLC
895 DOVE STREET, SUITE 400
NEWPORT BEACH, CA 92660

HUITT ZOLLARS
2603 Main Street, Suite 600
Irvine, California 92614-4250
949.988.5815
www.huitt-zollars.com

1400 MONTEFINO AVENUE

CITY OF DIAMOND BAR
COUNTY OF LOS ANGELES

LOW IMPACT DEVELOPMENT PLAN EXHIBIT

HZ PROJECT NO.: R317913.01
DRAWN BY:
REVIEWED BY:
APPROVED BY:

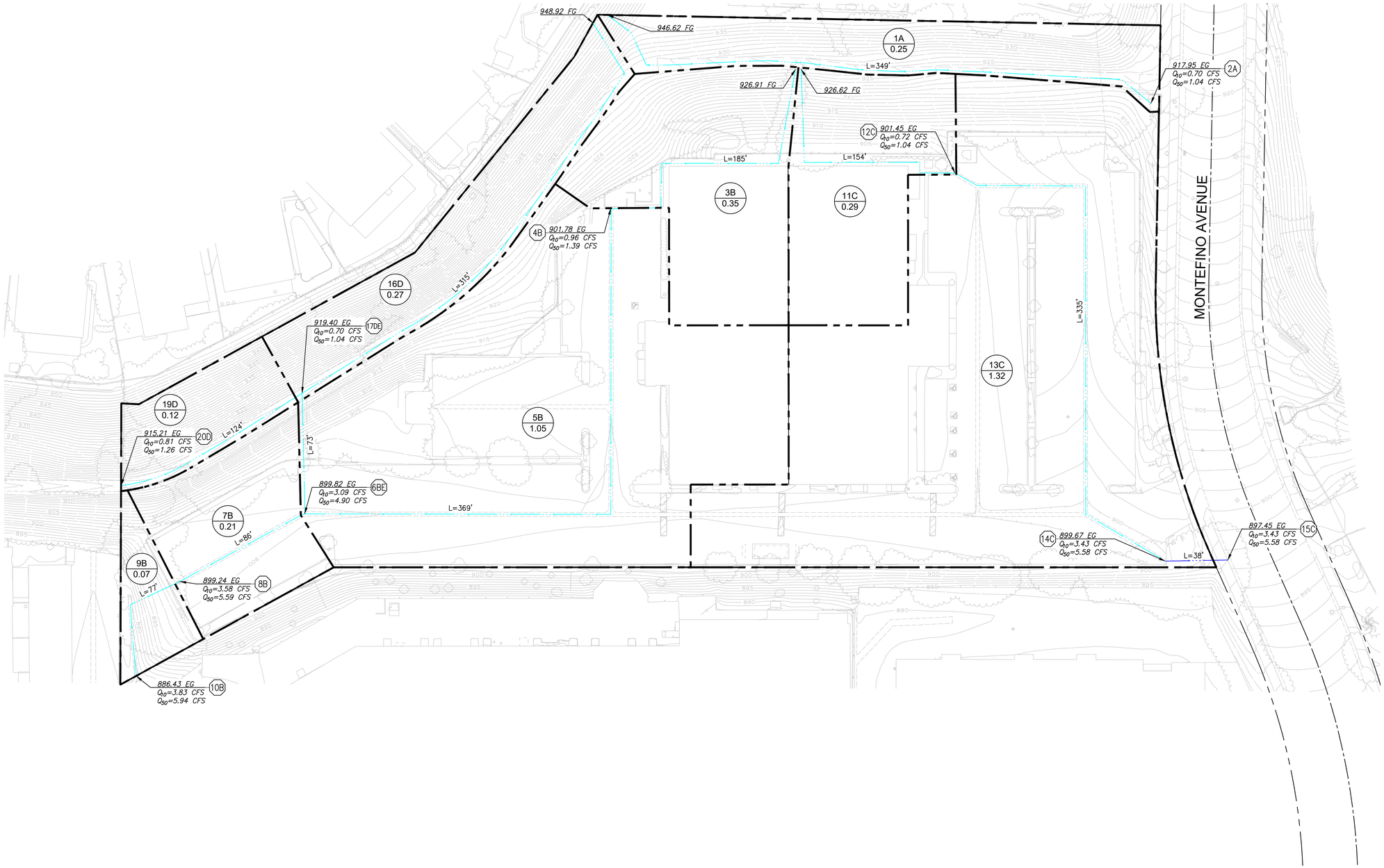
1 OF 1

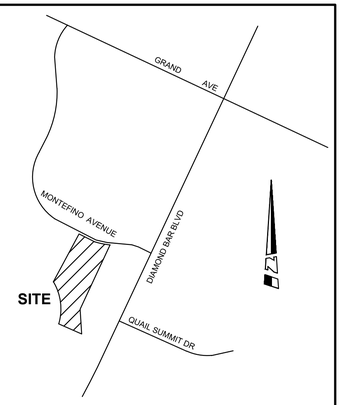
ASCHRADER 11/20/2025 9:24AM O:\R317913.01 - INTRACORP 1400 MONTEFINO DIAMOND BAR\10 CADD & BIM\10.1 AUTOCAD\10.1.1 CIVIL\EXHIBITS\HW\OIR317913\01-EX203 - LID EXHIBIT.DWG



HUITT ZOLLARS Date: 7/23/2025	N 0 2,500 5,000 Feet	PROJECT TITLE: **1400 MONTEFINO AVENUE, DIAMOND BAR, CALIFORNIA**	FIGURE TITLE: **Significant Ecological Areas Map**

Document Path: C:\Users\thtun\Documents_Projects\R317913.01_Montefino_DiamondBar\GIS\R317913_MontefinoDiamondBar_ESA.mxd





VICINITY MAP
NOT TO SCALE

LEGEND:

- DRAINAGE AREA BOUNDARY
- OVERLAND FLOW
- PIPE FLOW
- XXXX.XX FG / Q_{10}=X.XX CFS / Q_{100}=X.XX CFS (105) — SUBAREA & ACREAGE
- E-1 / X.XX — HYDROLOGIC NODE & ELEVATION

30 0 15 30 60
SCALE 1"= 30'

UTILITY NOTE

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

BENCHMARK

LA COUNTY BENCHMARK NO. 4243

ELEVATION 880.012' (NAVD88)

OTTERBEIN QUAD 2013

RDBM TAG IN EAST CATCH BASIN DIAMOND BAR BLVD 2 FEET S/O BCR @ SE CORNER QUAIL SUMMIT DR.

ISSUE DRAWING LOG:

MARK	DATE	DESCRIPTION
1	7/25/2025	PRELIMINARY DESIGN 1ST SUBMITTAL
2	10/6/2025	PRELIMINARY DESIGN 2ND SUBMITTAL
3	11/21/2025	PRELIMINARY DESIGN 3RD SUBMITTAL

INTRACORP SW, LLC
895 DOVE STREET, SUITE 400
NEWPORT BEACH, CA 92660

HUITT ZOLLARS
2603 Main Street, Suite 600
Irvine, California 92614-4250
949.988.5815
www.huitt-zollars.com

1400 MONTEFINO AVENUE
CITY OF DIAMOND BAR
COUNTY OF LOS ANGELES

EXISTING DRAINAGE EXHIBIT

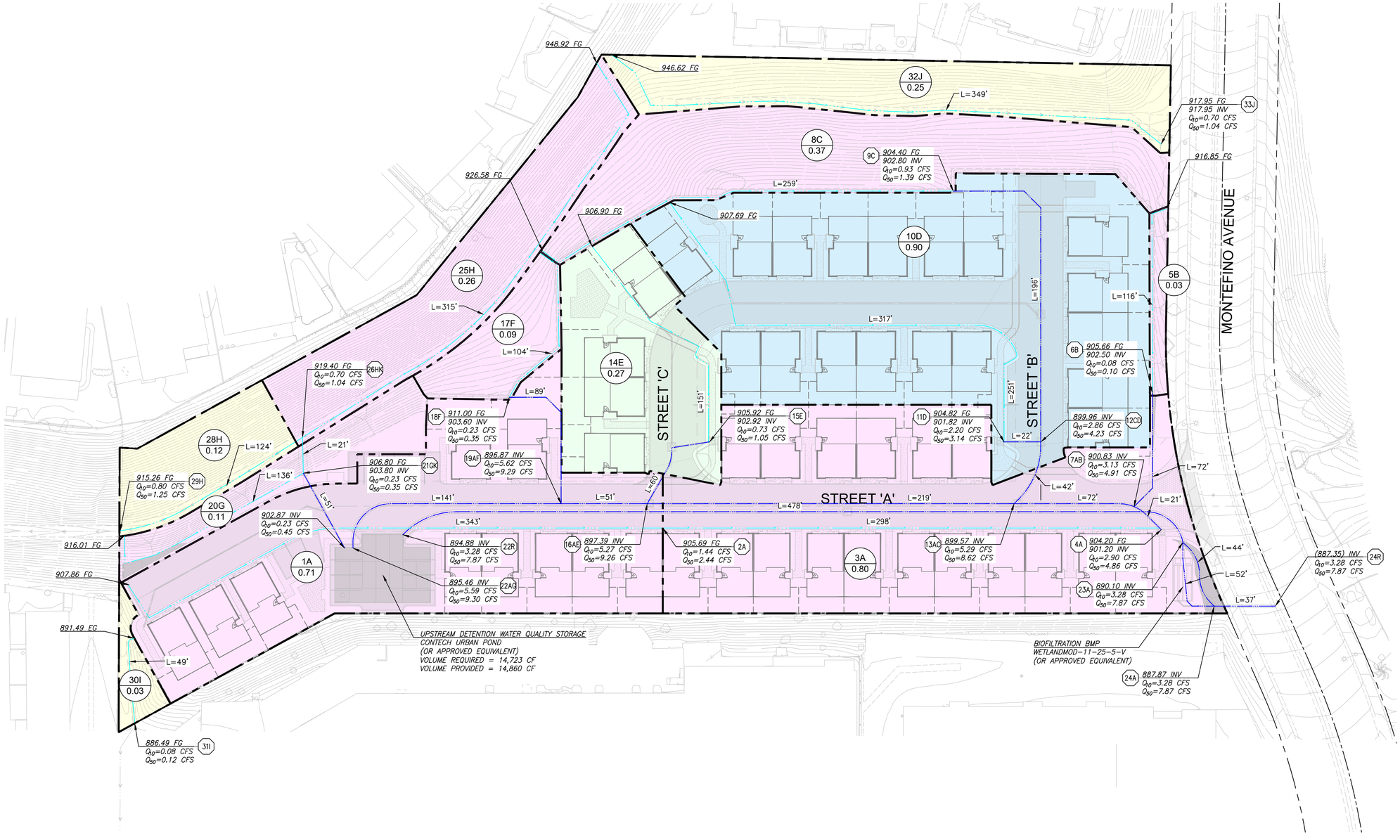
HZ PROJECT NO.: R317913.01
DRAWN BY:
REVIEWED BY:
APPROVED BY:

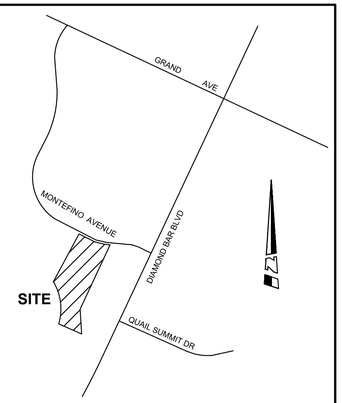
1 OF 1

ASCHRADER 11/20/2025 9:25AM O:\R317913.01 - INTRACORP 1400 MONTEFINO DIAMOND BAR\10 CADD & BIM\10.1 AUTOCAD\10.1.1 CIVIL\EXHIBITS\HHWQR317913.01-EX201 - EXISTING HYDROLOGY EXHIBIT.DWG

IMPERVIOUS AREA = 2.92 AC APPROX.
PERVIOUS AREA = 0.39 AC APPROX.
SLOPE AREA = 0.63 AC APPROX.

NOTE: NO RUNON TO SITE FROM OFFSITE AREAS





VICINITY MAP
NOT TO SCALE

LEGEND:

- DRAINAGE AREA BOUNDARY
- OVERLAND FLOW
- PIPE FLOW
- BASIN SLOPES
- DRAINAGE AREA 'A'
- DRAINAGE AREA 'B'
- DRAINAGE AREA 'C'
- DRAINAGE AREA 'OFF'
- E-1 X.XX — SUBAREA & ACREAGE
- XXXX.XX FG / Q10=X.XX CFS / Q100=X.XX CFS (105) — HYDROLOGIC NODE & ELEVATION FLOWRATES

30 0 15 30 60
SCALE 1"= 30'

UTILITY NOTE

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

BENCHMARK

LA COUNTY BENCHMARK NO. 4243

ELEVATION 880.012' (NAVD88)

OTTERBEIN QUAD 2013

RDBM TAG IN EAST CATCH BASIN DIAMOND BAR BLVD 2 FEET S/O BCR @ SE CORNER QUAIL SUMMIT DR.

ISSUE DRAWING LOG:

MARK	DATE	DESCRIPTION
1	7/25/2025	PRELIMINARY DESIGN 1ST SUBMITTAL
2	10/3/2025	PRELIMINARY DESIGN 2ND SUBMITTAL
3	11/21/2025	PRELIMINARY DESIGN 3RD SUBMITTAL

INTRACORP SW, LLC
895 DOVE STREET, SUITE 400
NEWPORT BEACH, CA 92660

HUITT ZOLLARS
2603 Main Street, Suite 600
Irvine, California 92614-4250
949.988.5815
www.huitt-zollars.com

1400 MONTEFINO AVENUE
CITY OF DIAMOND BAR
COUNTY OF LOS ANGELES

PROPOSED DRAINAGE EXHIBIT

HZ PROJECT NO.: R317913.01
DRAWN BY:
REVIEWED BY:
APPROVED BY:

1 OF 1

ASCHRADER 11/20/2025 9:52AM Q:\R317913.01 - INTRACORP 1400 MONTEFINO DIAMOND BAR\10 CADD & BIM\10.1 AUTOCAD\10.1.1 CIVIL\EXHIBITS\HW\OR317913-01-EX202 - 1301-EX202 - PROPOSED HYDROLOGY EXHIBIT.DWG

Peak Flow Hydrologic Analysis

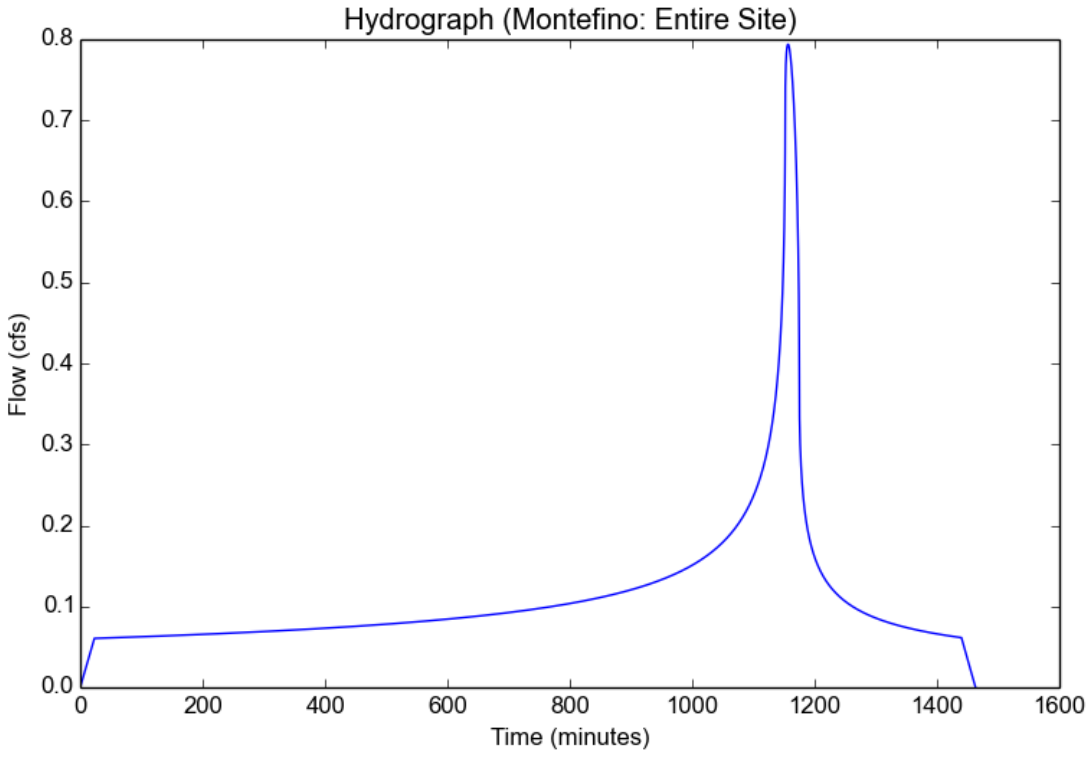
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/03 Water Quality/Montefino - Water Quality.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino
Subarea ID	Entire Site
Area (ac)	3.94
Flow Path Length (ft)	483.0
Flow Path Slope (vft/hft)	0.02934
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2912
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.692
Time of Concentration (min)	23.0
Clear Peak Flow Rate (cfs)	0.794
Burned Peak Flow Rate (cfs)	0.794
24-Hr Clear Runoff Volume (ac-ft)	0.2253
24-Hr Clear Runoff Volume (cu-ft)	9815.3939



Low Impact Development BMP for Water Quality Treatment											
Tributary Area (ac)	**Flow Path Length (ft)**	**Flow Path Slope (ft/ft)**	**85th percentile Rainfall Depth (in)**	**Percent Impervious**	**Soil Type**	**Stormwater Quality Design Volume, SWQDv (cu-ft)**	**Stormwater Quality Design Flowrate, $SWQD_Q$ (cfs)**	**1.5*SWQ Dv (cfs)**	**BMP Design**	**Count**	**Treated Flow (cfs)**
3.94	483	0.02934	1	0.74	16	9,815	0.794	14722.5	WM-11-25-V	1	14,723
										Total	**14,723**
SWQDv and $SWQD_Q$ are calculated using HydroCalc.											

WetlandMOD - 24" Media Thickness, Volume Based

Project ID:		Blue = User Input
Project Name:	1400 Montefino	Gray = Formula
City, State, ZIP:	Diamond Bar, CA	Green = Proceed
Date:	29-Sep	Red = Redo

	WetlandMOD Size	**WM-11-25-V**	
	User Input Data		
LA County 24"; Bay Area 18"	Media Thickness (in)	24	
Volume By EOR	Treatment Volume (CF)	14723	
Drain Down Time in hours	Drain Down Time (hrs)	48	
LA 5-12in/hr; Bay Area 5-12in/hr	Infiltration Rate (in/hr)	12	
Add Row(s) to change footprint	Number of Row(s)	2.0	For half row, use 0.5
RIM/FG to Outlet pipe	WM Vault Depth (ft)	5.0	Single Max depth 7ft, Double Max depth 5ft
Includes 1" grout above pipe	Overflow/Return Pipe (in)	3	Includes 1" spacing above return pipe
	Overflow/Return below Top Slab (ft)	-1.17	
If using pump upstream	Operating head (ft)	3.83	Standard operating head = RIM - 9.5"
	Treatment Data		
Treatment volume x 448.8 =	Treatment Flow (gpm)	38.24	
in/hr / 100 =	Media Loading Rate (gpm/sf)	0.12	
Treatment flow / Loading rate =	Requried Media Surface Area (sf)	318.66	
	Cage, HGL Height		
Provding 3" Multch on top	Cage Height (ft)	4.75	
Reduced by 4" from FS	HGL Height (ft)	3.83	
Length of cage in each row	Cage Length/ Row (ft)	21.0	
	Final Checks		
Based on HGL head build up	Provided Media Surface Area (sf)	322.00	
Unit discharge rate	Discharge Rate (cfs)	0.086	
Orifice Diameter in inches	Orifice Diameter per Row (in)	0.91	

Provided >= Required surface area, unit dimensions in good standing.

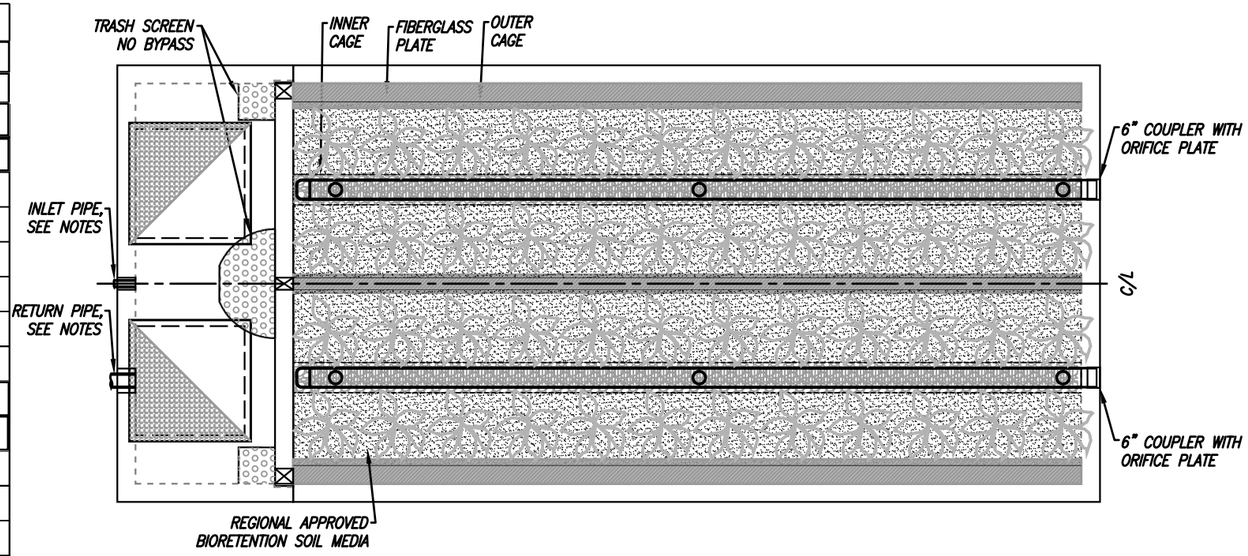
	Unit Dimensions		
Length of Media row + Baffle wall	Length Media chamber (ft)	21.0	
Pre-treatment + Filtration chm.	Total Length of Unit (ft)	25.0	4"/6" baffle wall part of Pre-treatment chamber
Total width of unit	Width of Unit (ft)	11.0	
	Media, Gravel Volume		
	WM Media Volume (cy)	29.56	
	Gravel Layer Volume (cy)	6.16	

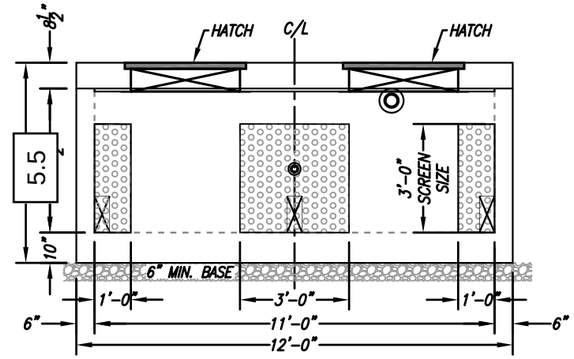
Feel free to fax or email proposed sizing calculations to BioClean, for assistance with sizing, compliance, and design.
Phone: 760.433.7640 |Fax: 760.433.3176
Email: Info@modularwetlands.com

CONTECH® ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

SITE SPECIFIC DATA			
PROJECT ID	873311		
PROJECT NAME	1400 Montefino		
PROJECT LOCATION	Diamond Bar, CA		
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
14,723.00		---	
TREATMENT HGL AVAILABLE (FT)			---
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE			
RETURN PIPE			
OUTLET PIPE	899.00	PVC–SDR35	6"
	PRETREATMENT	BIOFILTRATION	N/A
RIM ELEVATION	904.00	904.00	N/A
SURFACE LOAD	PEDESTRIAN	OPEN PLANTER	N/A
FRAME & COVER	(2) 36"X36"	N/A	N/A
LA COUNTY MEDIA MIX VOLUME (CY)			---
GRAVEL LAYER WITHIN MEDIA CHAMBER (CY)			---
ORIFICE DIAMETER (IN)			---

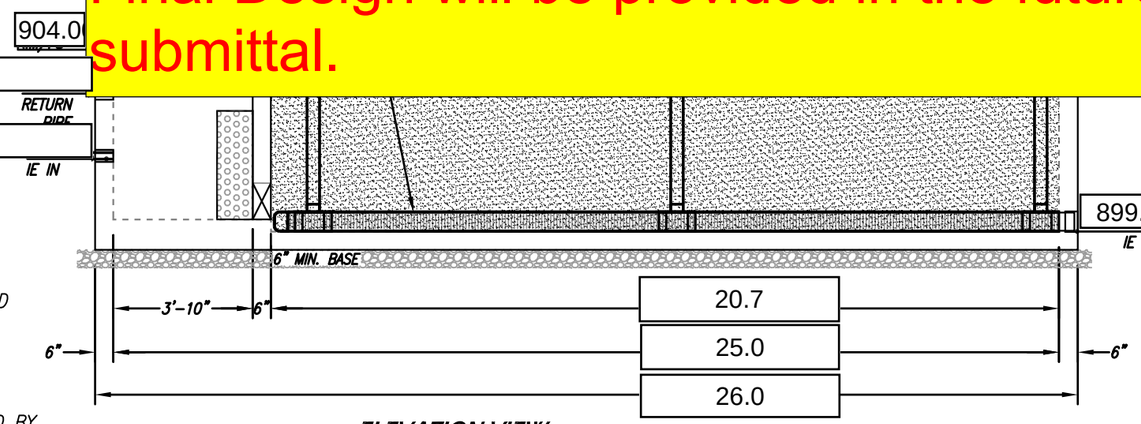
NOTES: PRELIMINARY, NOT FOR CONSTRUCTION.



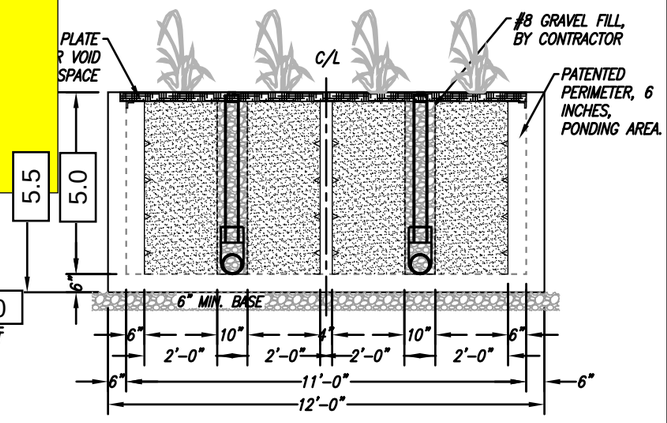


INLET VIEW

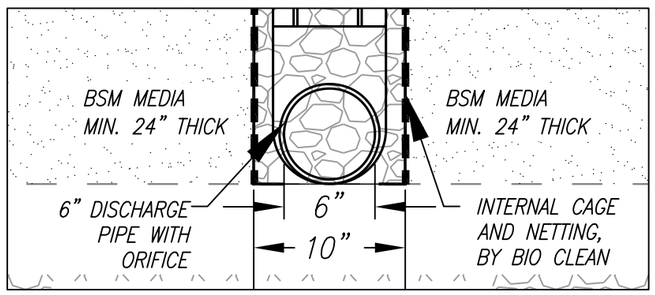
Sample Biofiltration BMP Design Only.
Final Design will be provided in the future submittal.



ELEVATION VIEW



OUTLET VIEW



INTERNAL CAGE DETAILS

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON–SHRINK GROUT PER MANUFACTURER'S STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

REQUIRED HORIZ. MEDIA THICKNESS (INCHES)	24
TREATMENT VOLUME (CF)	14,723.00
TARGETED DRAINDOWN DURATION (HR)	96.0
WETLANDMEDIA INFILTRATION RATE (IN/HR)	12.0
WETLANDMEDIA LOADING RATE (GPM/SF)	0.12
DISCHARGE RATE (CFS)	0.04
REQUIRED TOTAL MEDIA SURFACE AREA (SF)	159.33
PROVIDED TOTAL MEDIA SURFACE AREA (SF)	TBD
NUMBER OF ROW(S)	2

THE PRODUCT DESCRIBED MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

PROPRIETARY AND CONFIDENTIAL:

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MODULAR WETLANDS SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MODULAR WETLANDS SYSTEMS IS PROHIBITED.

Bio Clean
A Forterra Company

WetlandMOD- 11-25.0-5.0-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

6/8/21SSINGH

Peak Flow Hydrologic Analysis

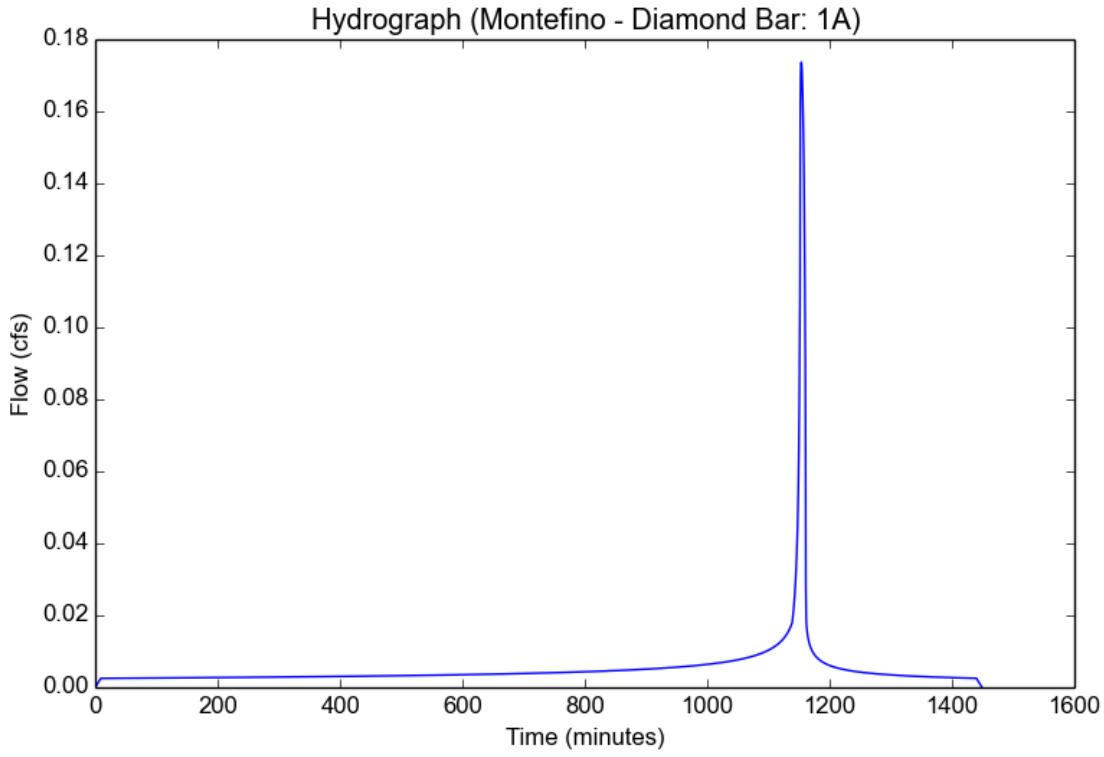
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.1385
Undeveloped Runoff Coefficient (Cu)	0.5779
Developed Runoff Coefficient (Cd)	0.6101
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	0.1737
Burned Peak Flow Rate (cfs)	0.1737
24-Hr Clear Runoff Volume (ac-ft)	0.0109
24-Hr Clear Runoff Volume (cu-ft)	476.8425



Peak Flow Hydrologic Analysis

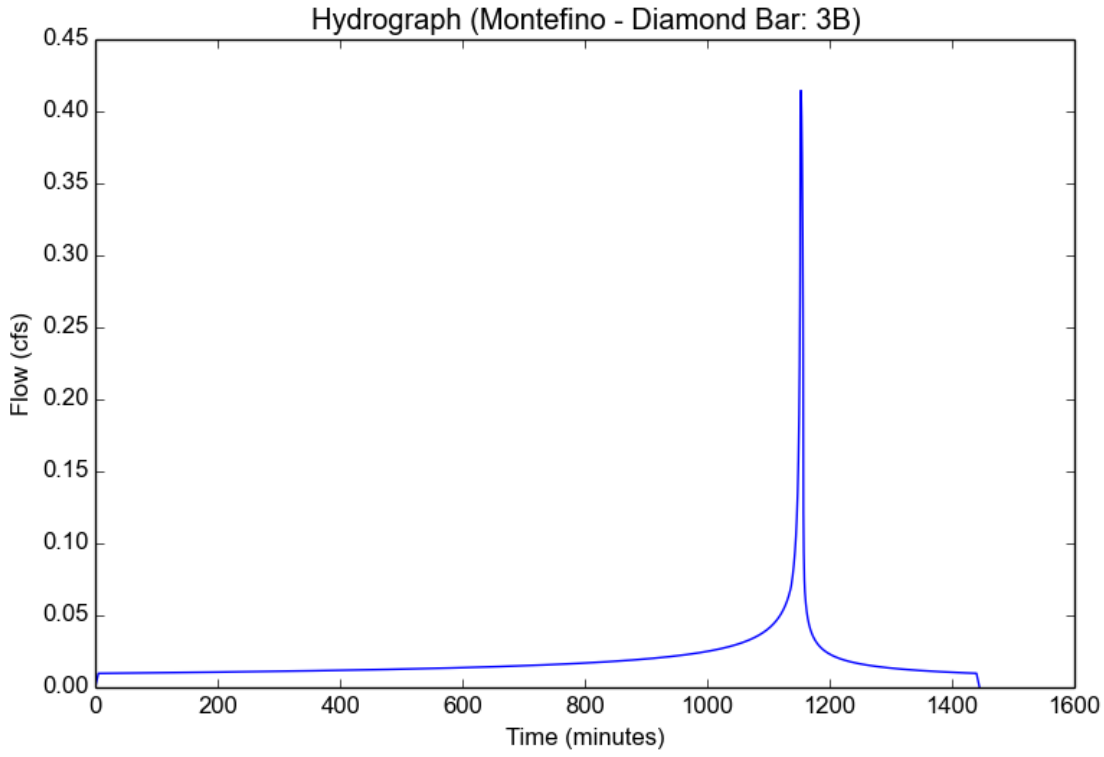
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3B
Area (ac)	0.35
Flow Path Length (ft)	185.0
Flow Path Slope (vft/hft)	0.13584
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.789
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4144
Burned Peak Flow Rate (cfs)	0.4144
24-Hr Clear Runoff Volume (ac-ft)	0.0377
24-Hr Clear Runoff Volume (cu-ft)	1641.2811



Peak Flow Hydrologic Analysis

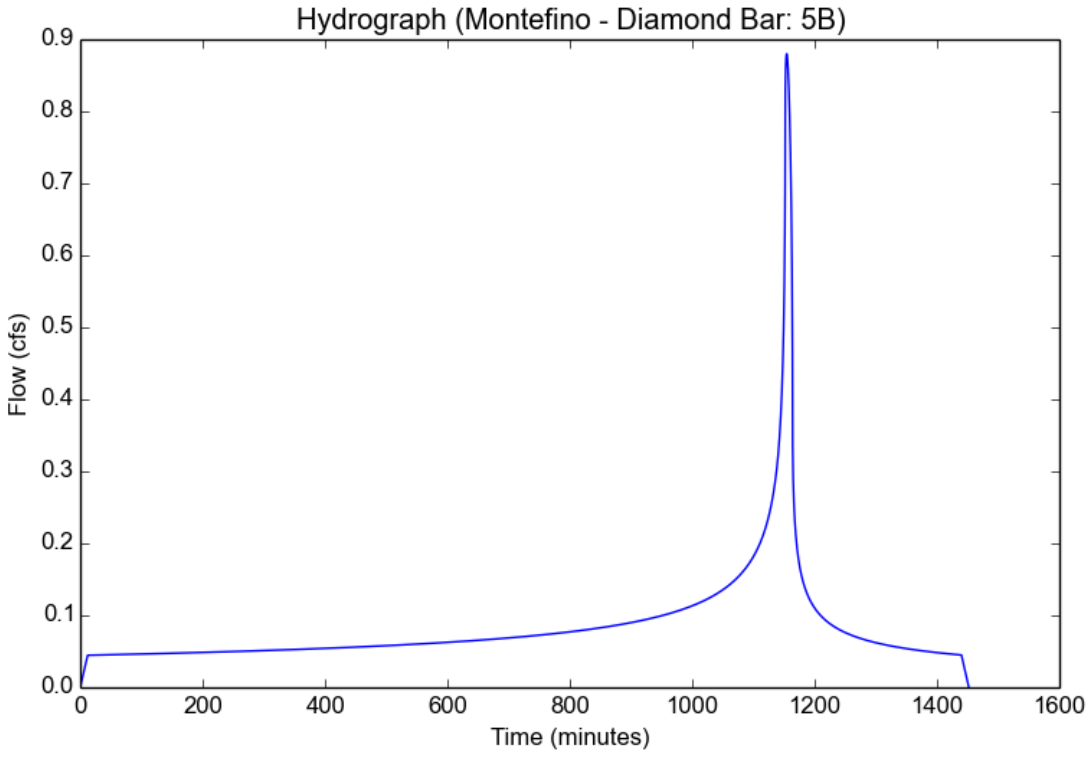
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	1.06
Flow Path Length (ft)	369.0
Flow Path Slope (vft/hft)	0.00531
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.82
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	0.9946
Undeveloped Runoff Coefficient (Cu)	0.5369
Developed Runoff Coefficient (Cd)	0.8346
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	0.8799
Burned Peak Flow Rate (cfs)	0.8799
24-Hr Clear Runoff Volume (ac-ft)	0.1679
24-Hr Clear Runoff Volume (cu-ft)	7313.7564



Peak Flow Hydrologic Analysis

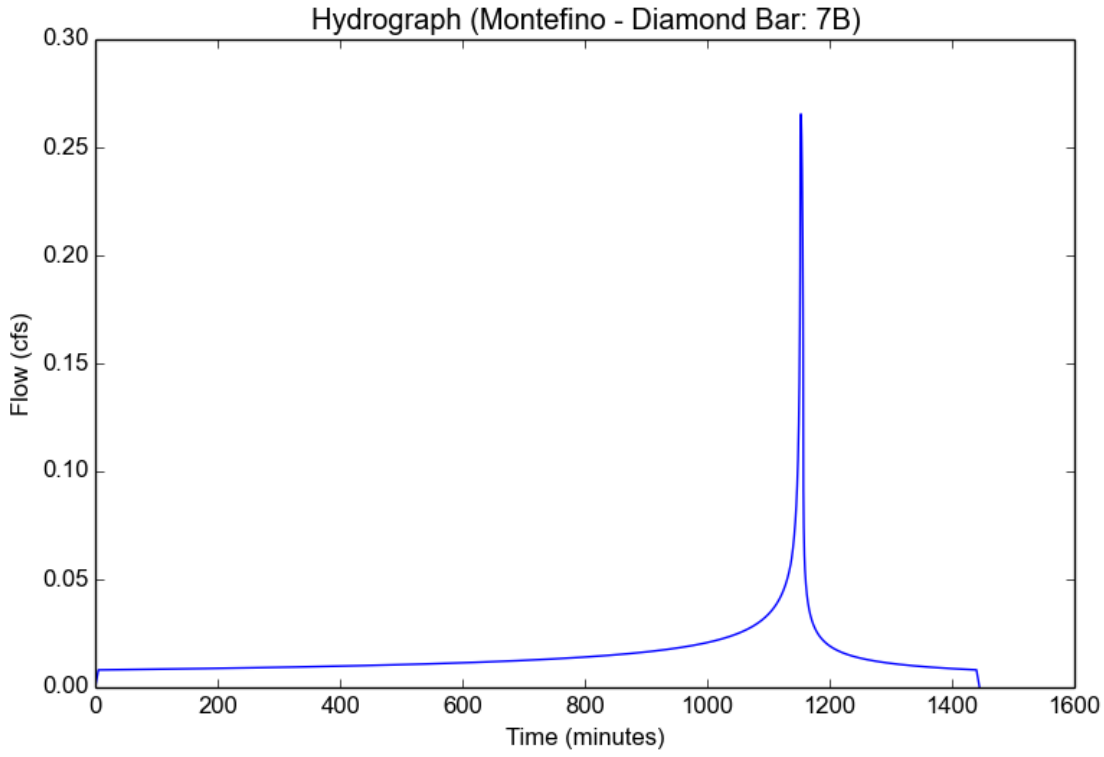
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	7B
Area (ac)	0.21
Flow Path Length (ft)	86.0
Flow Path Slope (vft/hft)	0.00674
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.8423
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2655
Burned Peak Flow Rate (cfs)	0.2655
24-Hr Clear Runoff Volume (ac-ft)	0.0306
24-Hr Clear Runoff Volume (cu-ft)	1333.6222



Peak Flow Hydrologic Analysis

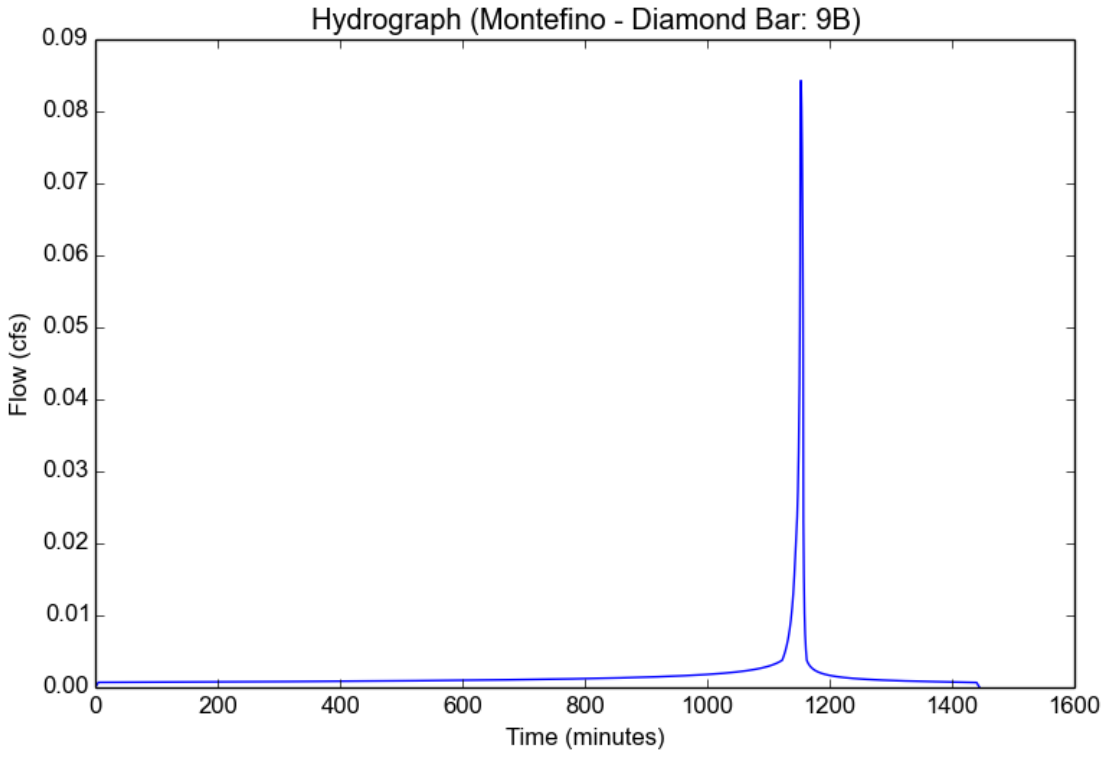
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	9B
Area (ac)	0.07
Flow Path Length (ft)	77.0
Flow Path Slope (vft/hft)	0.16636
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.7913
Developed Runoff Coefficient (Cd)	0.8021
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0843
Burned Peak Flow Rate (cfs)	0.0843
24-Hr Clear Runoff Volume (ac-ft)	0.0034
24-Hr Clear Runoff Volume (cu-ft)	147.6247



Peak Flow Hydrologic Analysis

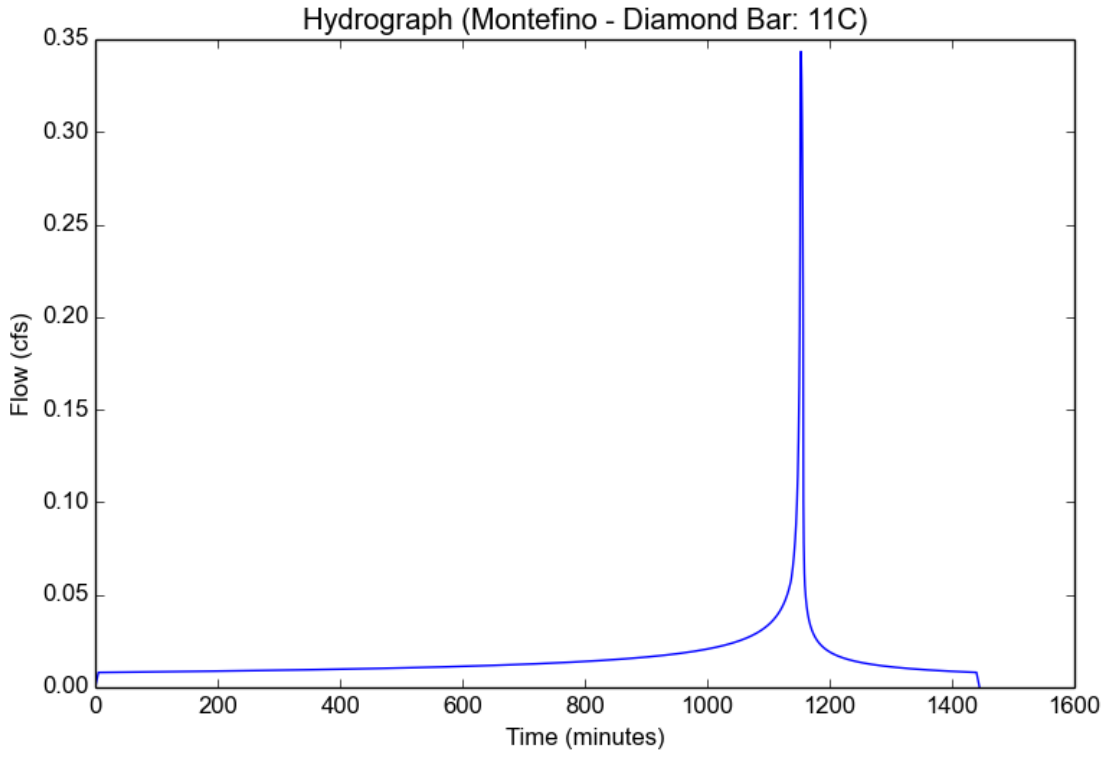
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	11C
Area (ac)	0.29
Flow Path Length (ft)	154.0
Flow Path Slope (vft/hft)	0.16344
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.789
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3434
Burned Peak Flow Rate (cfs)	0.3434
24-Hr Clear Runoff Volume (ac-ft)	0.0312
24-Hr Clear Runoff Volume (cu-ft)	1359.9187



Peak Flow Hydrologic Analysis

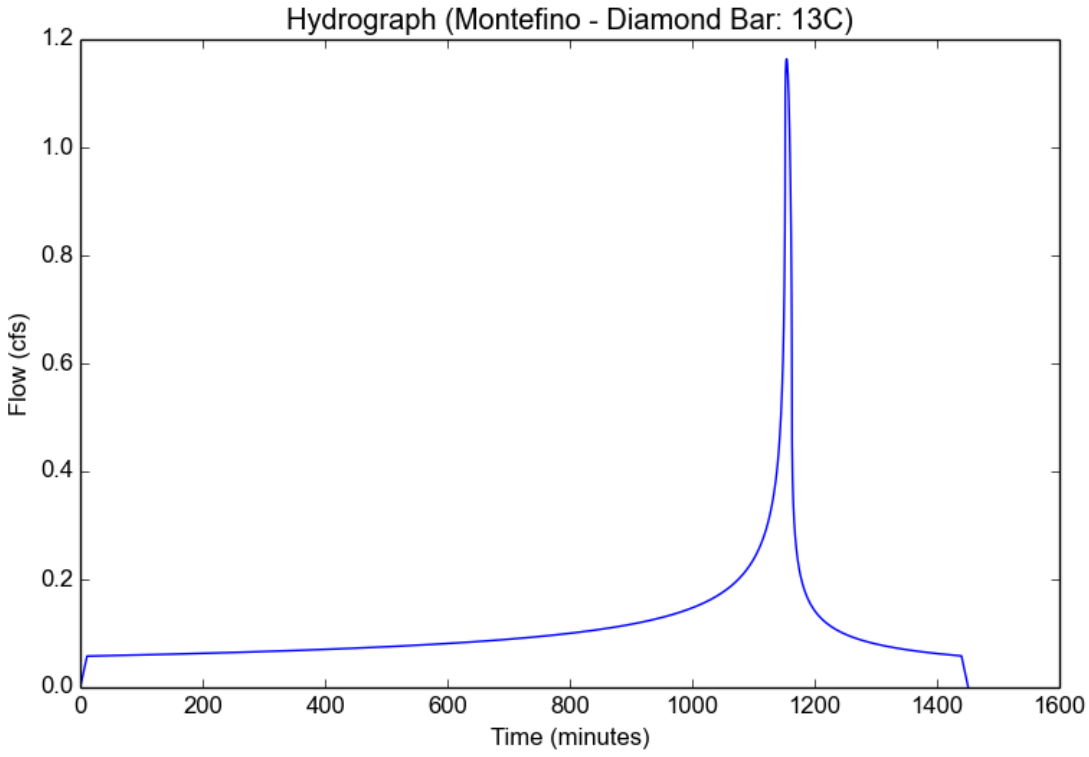
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	13C
Area (ac)	1.32
Flow Path Length (ft)	373.0
Flow Path Slope (vft/hft)	0.01072
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.86
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.0361
Undeveloped Runoff Coefficient (Cu)	0.5495
Developed Runoff Coefficient (Cd)	0.8509
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	1.1637
Burned Peak Flow Rate (cfs)	1.1637
24-Hr Clear Runoff Volume (ac-ft)	0.2175
24-Hr Clear Runoff Volume (cu-ft)	9475.3072



Peak Flow Hydrologic Analysis

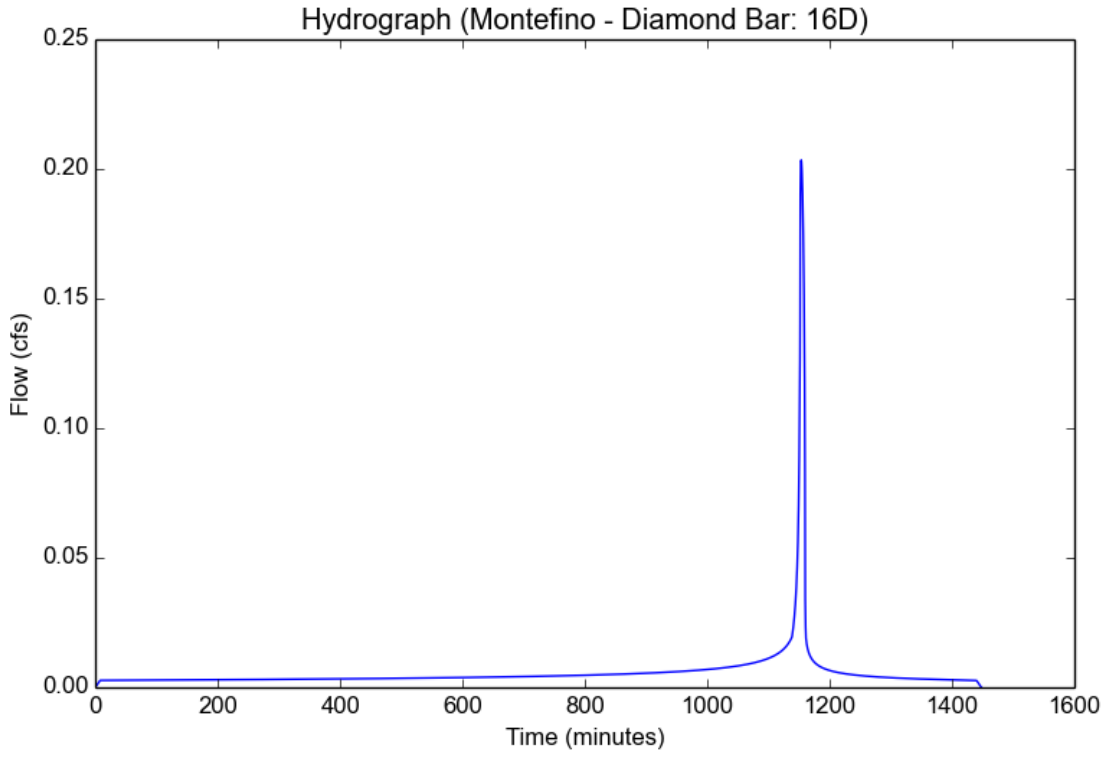
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	16D
Area (ac)	0.27
Flow Path Length (ft)	319.0
Flow Path Slope (vft/hft)	0.09276
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.2033
Undeveloped Runoff Coefficient (Cu)	0.5958
Developed Runoff Coefficient (Cd)	0.6262
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.2035
Burned Peak Flow Rate (cfs)	0.2035
24-Hr Clear Runoff Volume (ac-ft)	0.0118
24-Hr Clear Runoff Volume (cu-ft)	515.6941



Peak Flow Hydrologic Analysis

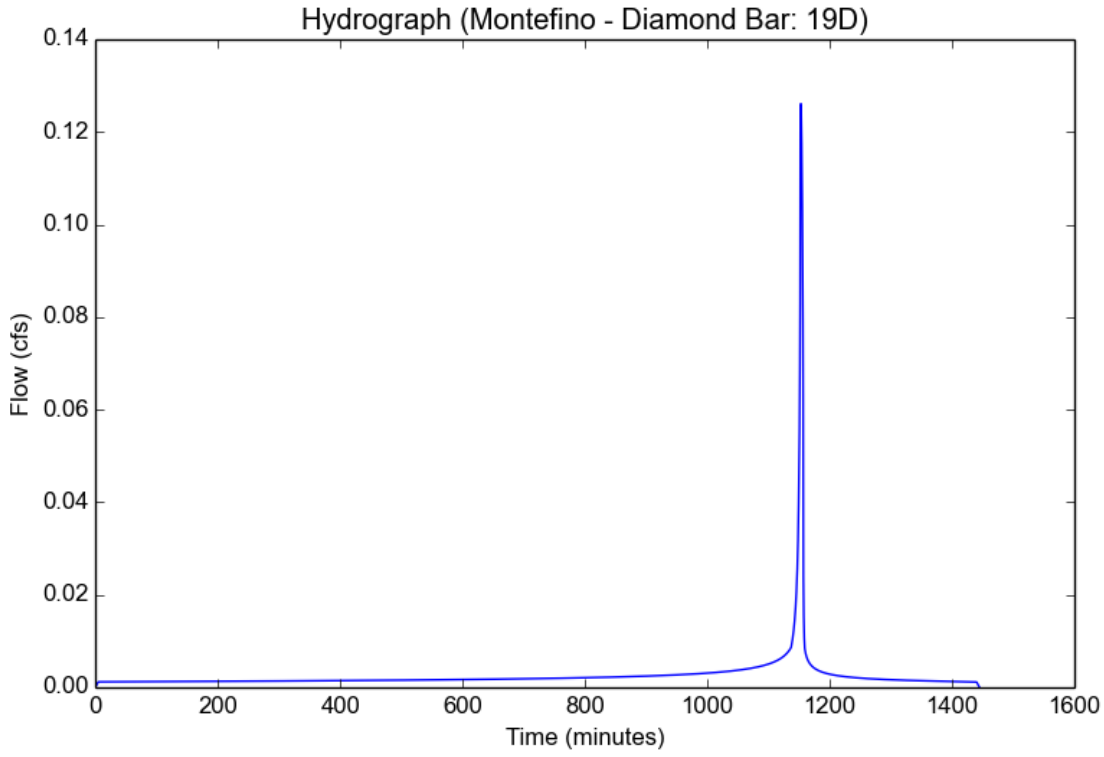
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	19D
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03363
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.7001
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1261
Burned Peak Flow Rate (cfs)	0.1261
24-Hr Clear Runoff Volume (ac-ft)	0.0053
24-Hr Clear Runoff Volume (cu-ft)	230.4836



Peak Flow Hydrologic Analysis

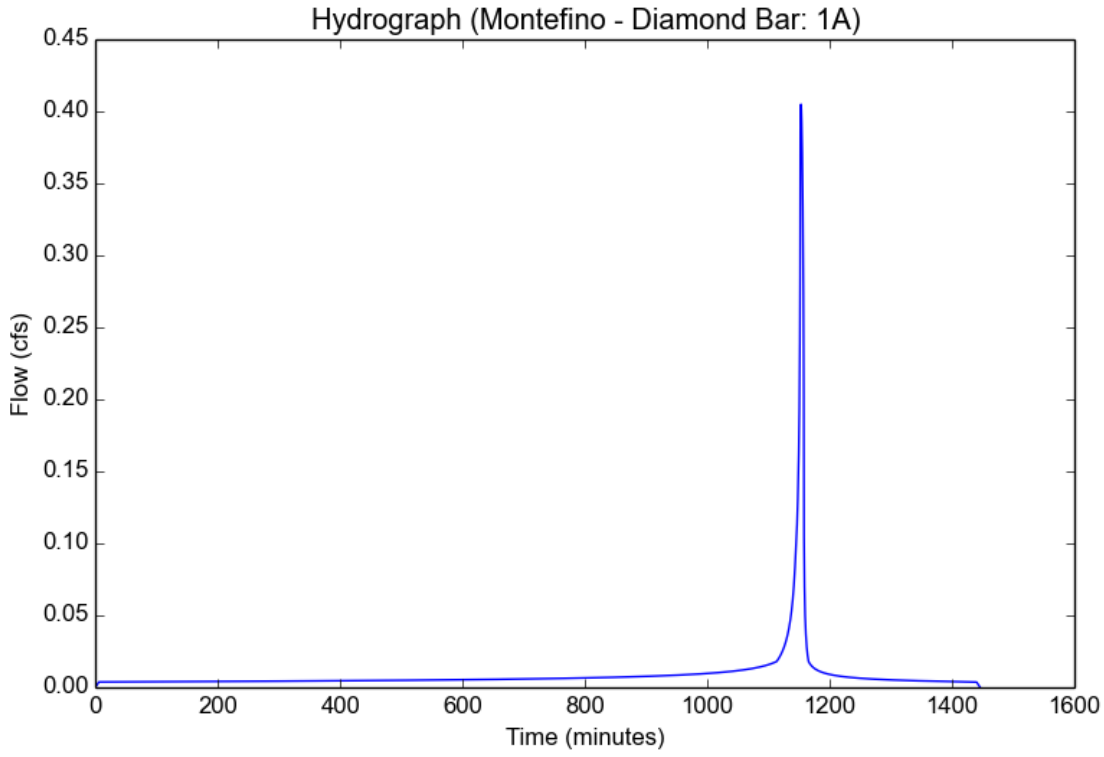
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.0788
Undeveloped Runoff Coefficient (Cu)	0.7658
Developed Runoff Coefficient (Cd)	0.7792
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.4049
Burned Peak Flow Rate (cfs)	0.4049
24-Hr Clear Runoff Volume (ac-ft)	0.0182
24-Hr Clear Runoff Volume (cu-ft)	793.8702



Peak Flow Hydrologic Analysis

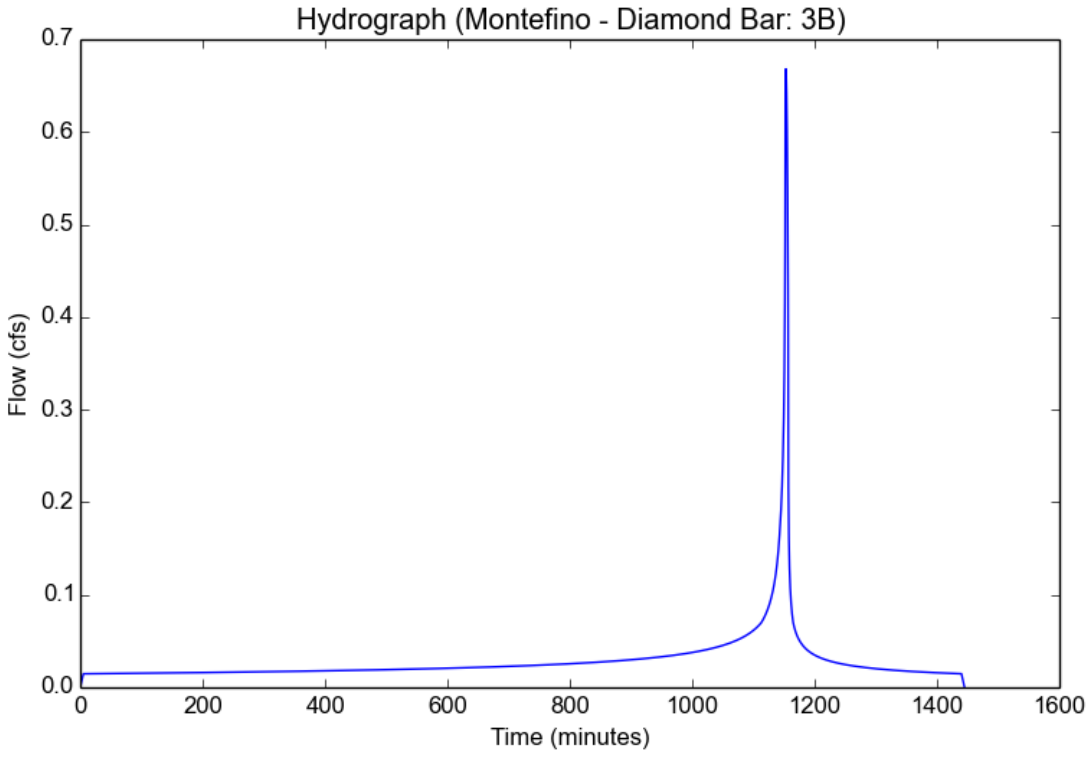
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3B
Area (ac)	0.35
Flow Path Length (ft)	185.0
Flow Path Slope (vft/hft)	0.13584
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.8428
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6681
Burned Peak Flow Rate (cfs)	0.6681
24-Hr Clear Runoff Volume (ac-ft)	0.0581
24-Hr Clear Runoff Volume (cu-ft)	2531.1551



Peak Flow Hydrologic Analysis

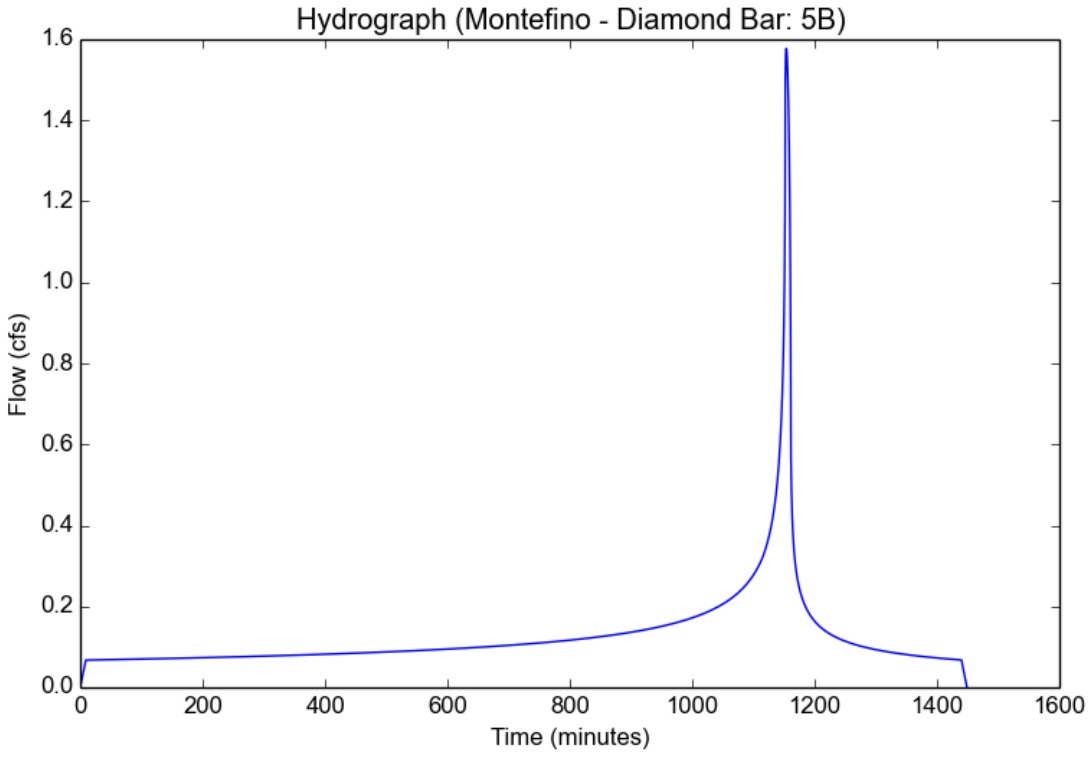
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	1.06
Flow Path Length (ft)	369.0
Flow Path Slope (vft/hft)	0.00531
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.82
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	1.7181
Undeveloped Runoff Coefficient (Cu)	0.7125
Developed Runoff Coefficient (Cd)	0.8662
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	1.5776
Burned Peak Flow Rate (cfs)	1.5776
24-Hr Clear Runoff Volume (ac-ft)	0.2548
24-Hr Clear Runoff Volume (cu-ft)	11100.7168



Peak Flow Hydrologic Analysis

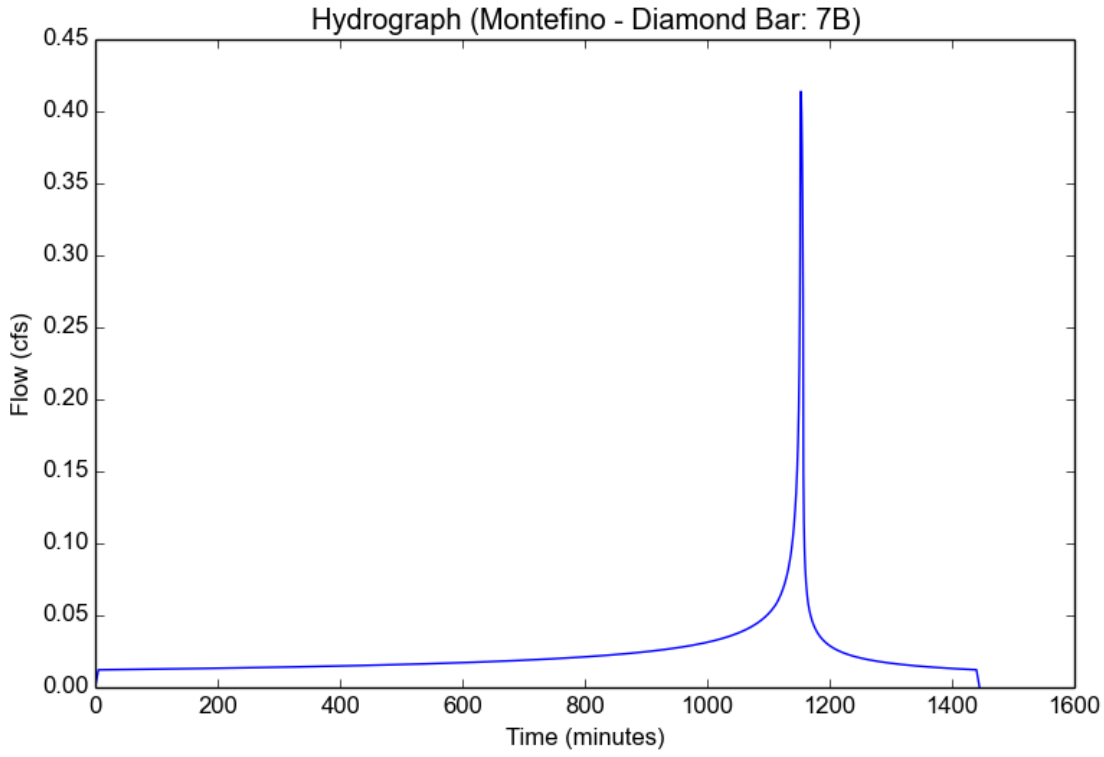
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	7B
Area (ac)	0.21
Flow Path Length (ft)	86.0
Flow Path Slope (vft/hft)	0.00674
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.8703
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4139
Burned Peak Flow Rate (cfs)	0.4139
24-Hr Clear Runoff Volume (ac-ft)	0.0466
24-Hr Clear Runoff Volume (cu-ft)	2029.464



Peak Flow Hydrologic Analysis

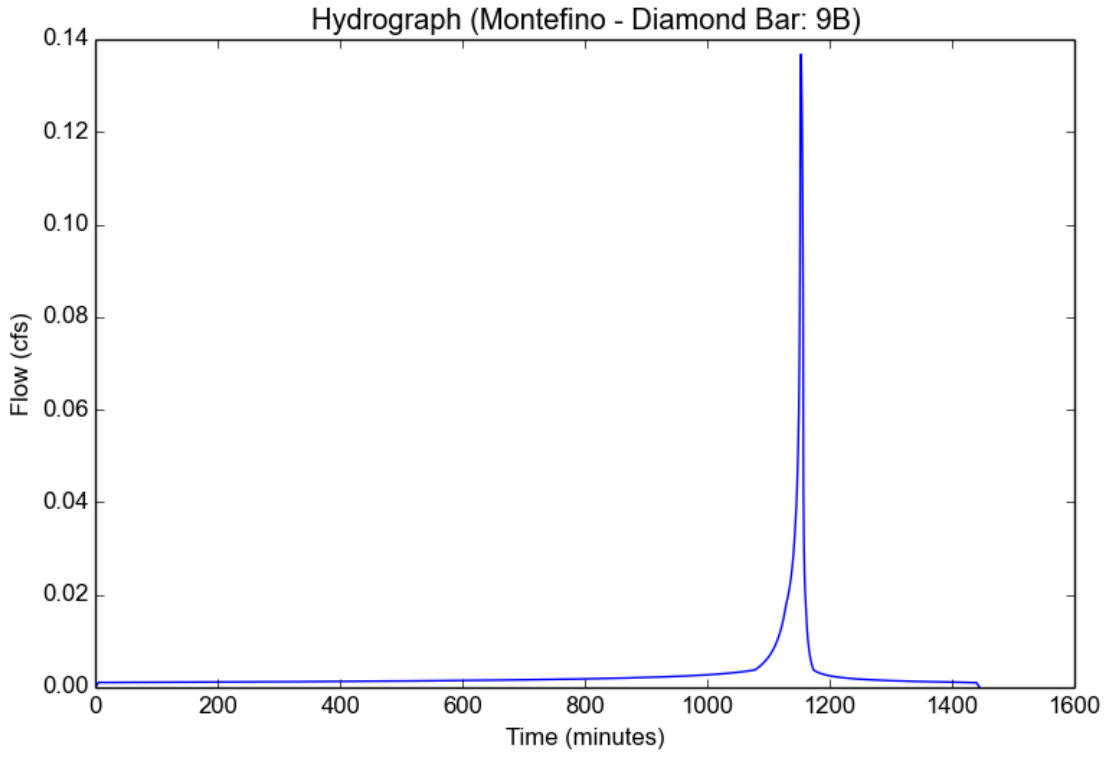
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	9B
Area (ac)	0.07
Flow Path Length (ft)	77.0
Flow Path Slope (vft/hft)	0.16636
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.8584
Developed Runoff Coefficient (Cd)	0.8625
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1367
Burned Peak Flow Rate (cfs)	0.1367
24-Hr Clear Runoff Volume (ac-ft)	0.0058
24-Hr Clear Runoff Volume (cu-ft)	253.1826



Peak Flow Hydrologic Analysis

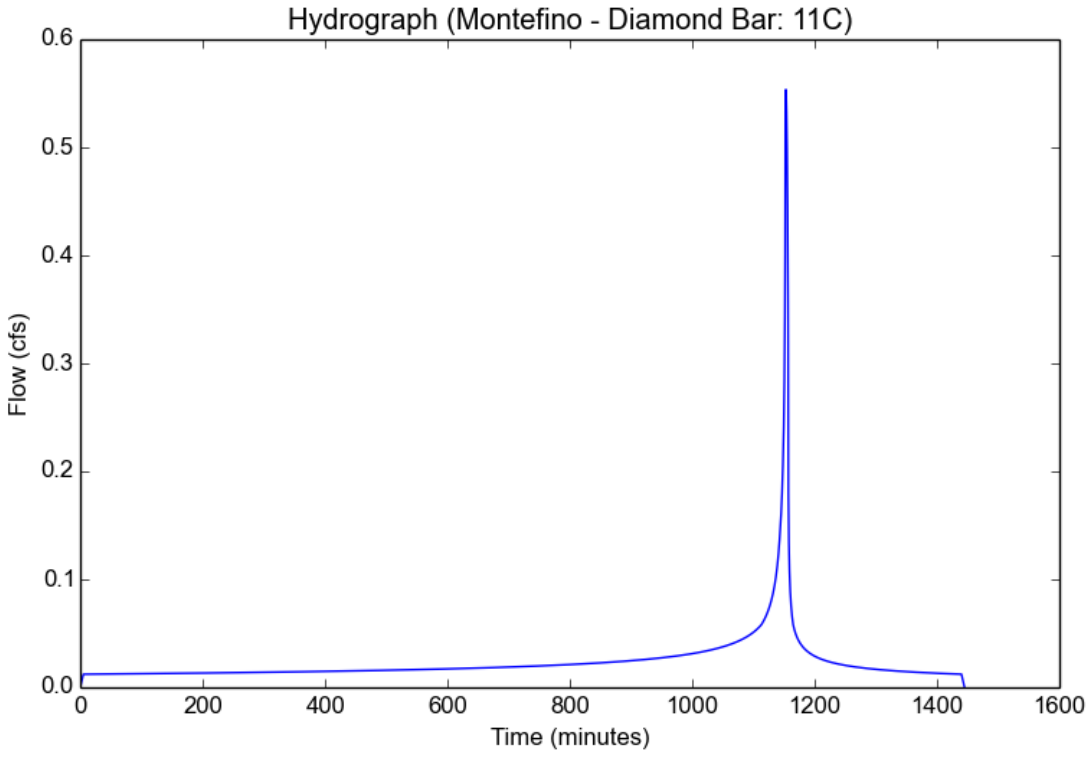
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	11C
Area (ac)	0.29
Flow Path Length (ft)	154.0
Flow Path Slope (vft/hft)	0.16344
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.8428
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5536
Burned Peak Flow Rate (cfs)	0.5536
24-Hr Clear Runoff Volume (ac-ft)	0.0481
24-Hr Clear Runoff Volume (cu-ft)	2097.2428



Peak Flow Hydrologic Analysis

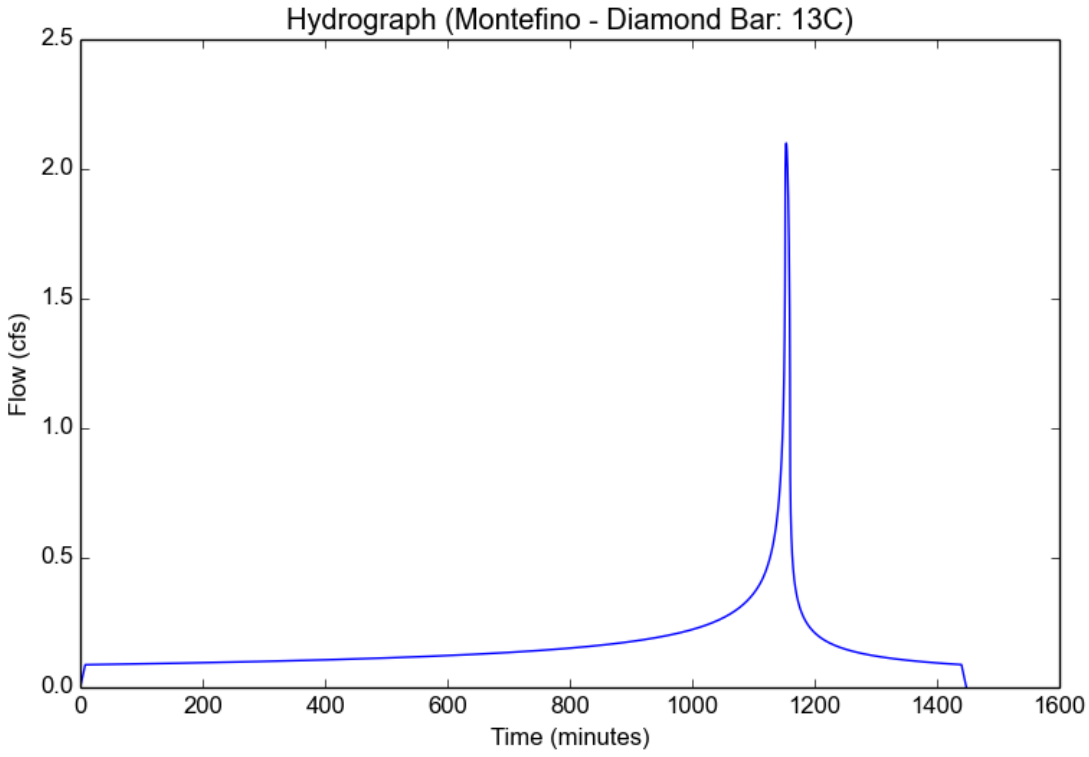
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	13C
Area (ac)	1.32
Flow Path Length (ft)	373.0
Flow Path Slope (vft/hft)	0.01072
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.86
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	1.8159
Undeveloped Runoff Coefficient (Cu)	0.728
Developed Runoff Coefficient (Cd)	0.8759
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	2.0996
Burned Peak Flow Rate (cfs)	2.0996
24-Hr Clear Runoff Volume (ac-ft)	0.3297
24-Hr Clear Runoff Volume (cu-ft)	14359.9198



Peak Flow Hydrologic Analysis

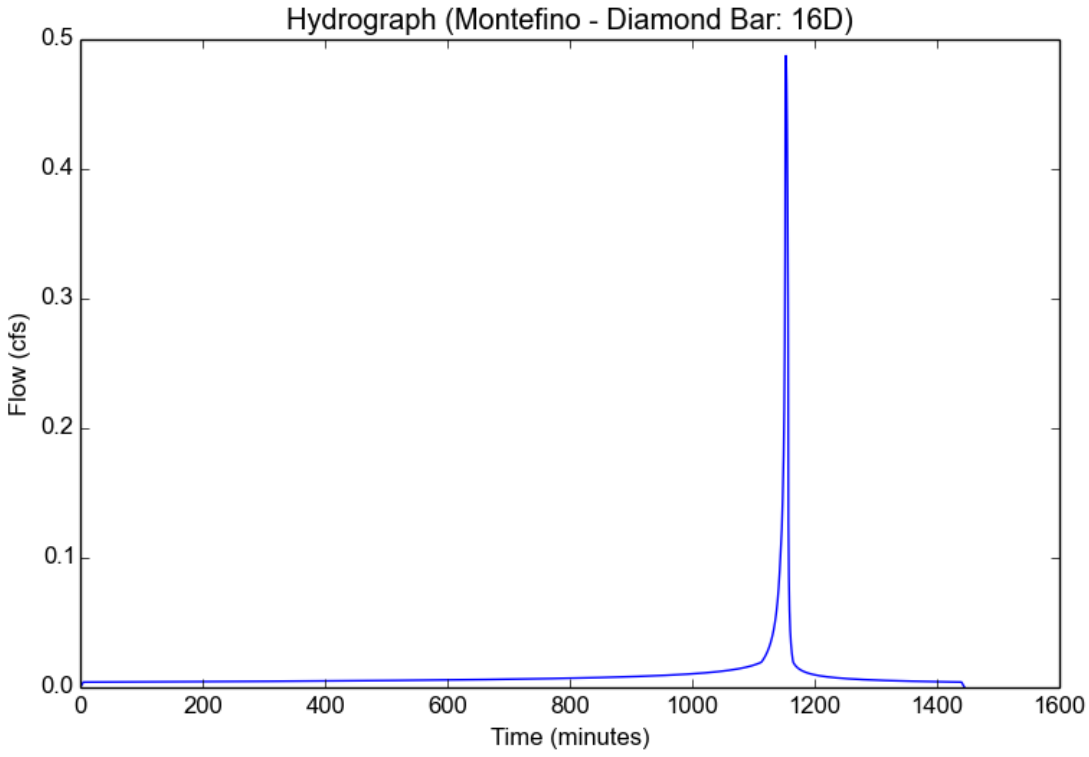
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	16D
Area (ac)	0.27
Flow Path Length (ft)	319.0
Flow Path Slope (vft/hft)	0.09276
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4874
Burned Peak Flow Rate (cfs)	0.4874
24-Hr Clear Runoff Volume (ac-ft)	0.0197
24-Hr Clear Runoff Volume (cu-ft)	858.0962



Peak Flow Hydrologic Analysis

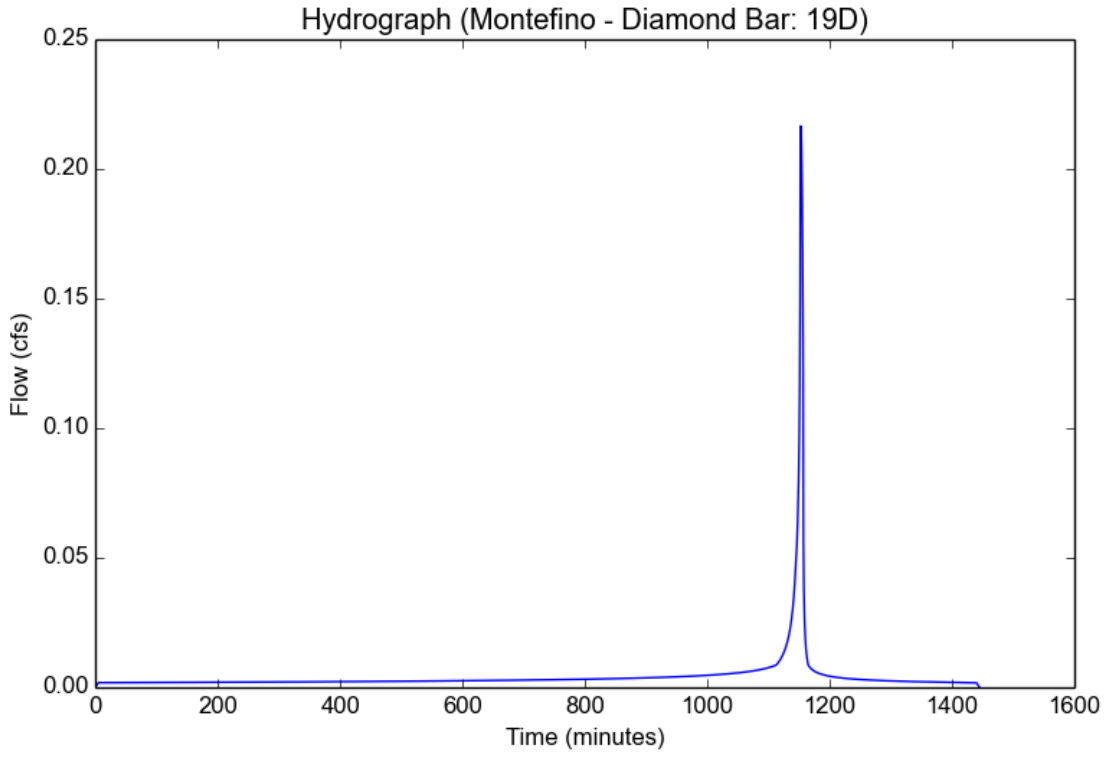
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	19D
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03363
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2166
Burned Peak Flow Rate (cfs)	0.2166
24-Hr Clear Runoff Volume (ac-ft)	0.0088
24-Hr Clear Runoff Volume (cu-ft)	381.3761



Peak Flow Hydrologic Analysis

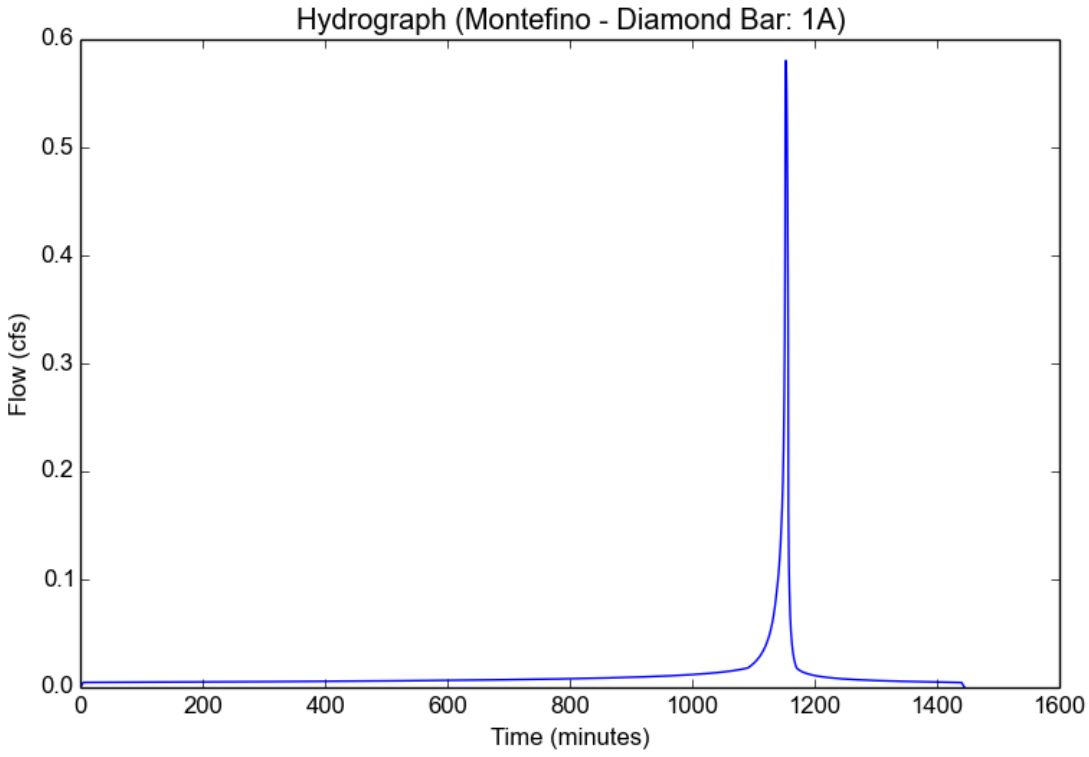
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.25
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft)	0.08456
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5804
Burned Peak Flow Rate (cfs)	0.5804
24-Hr Clear Runoff Volume (ac-ft)	0.0236
24-Hr Clear Runoff Volume (cu-ft)	1029.3317



Peak Flow Hydrologic Analysis

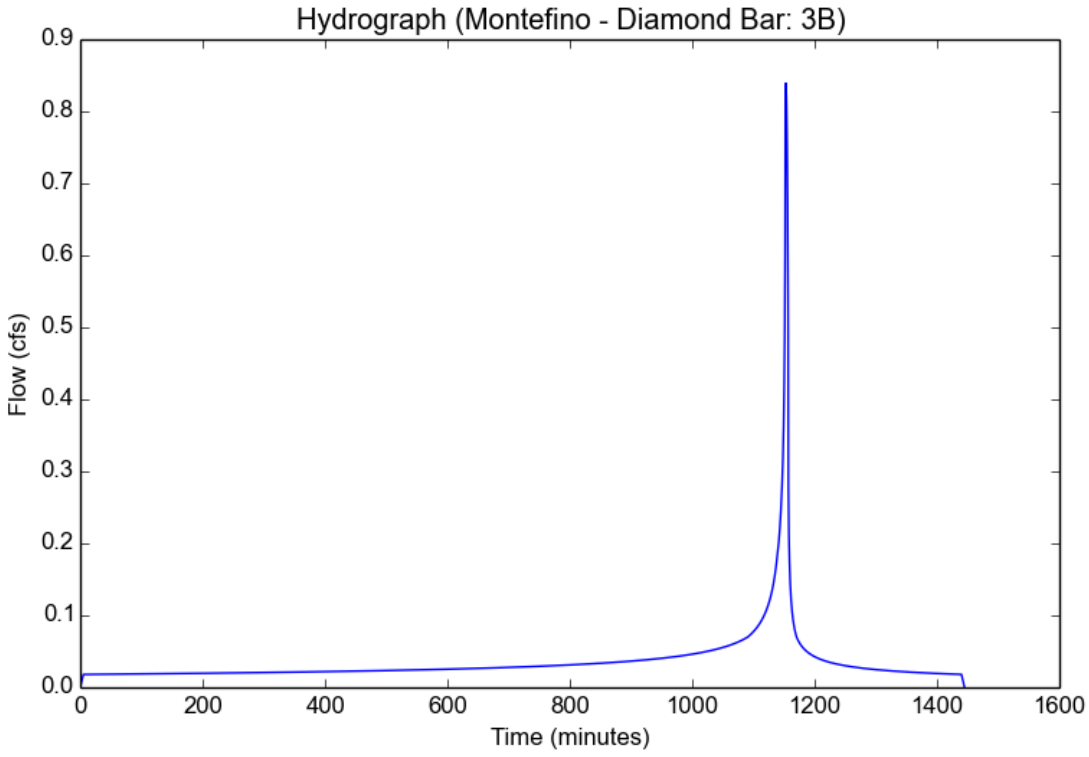
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3B
Area (ac)	0.35
Flow Path Length (ft)	185.0
Flow Path Slope (vft/hft)	0.13584
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8658
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.839
Burned Peak Flow Rate (cfs)	0.839
24-Hr Clear Runoff Volume (ac-ft)	0.0721
24-Hr Clear Runoff Volume (cu-ft)	3139.6561



Peak Flow Hydrologic Analysis

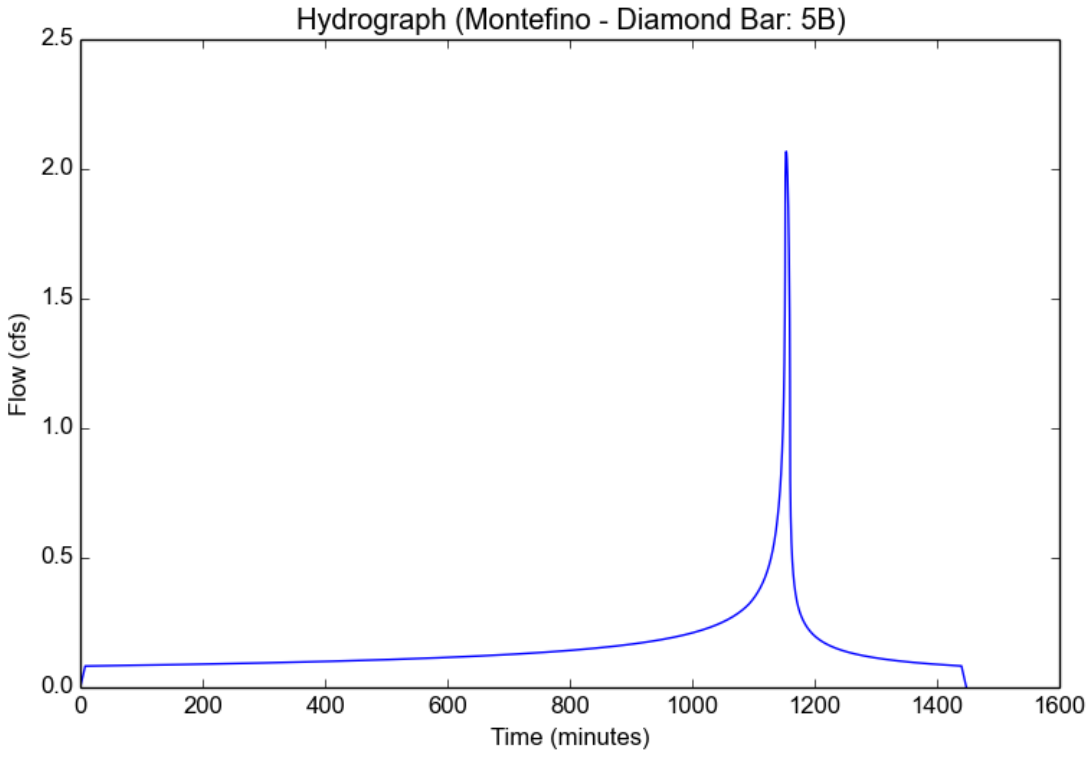
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	1.06
Flow Path Length (ft)	369.0
Flow Path Slope (vft/hft)	0.00534
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.82
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.2201
Undeveloped Runoff Coefficient (Cu)	0.7809
Developed Runoff Coefficient (Cd)	0.8786
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	2.0675
Burned Peak Flow Rate (cfs)	2.0675
24-Hr Clear Runoff Volume (ac-ft)	0.3127
24-Hr Clear Runoff Volume (cu-ft)	13622.157



Peak Flow Hydrologic Analysis

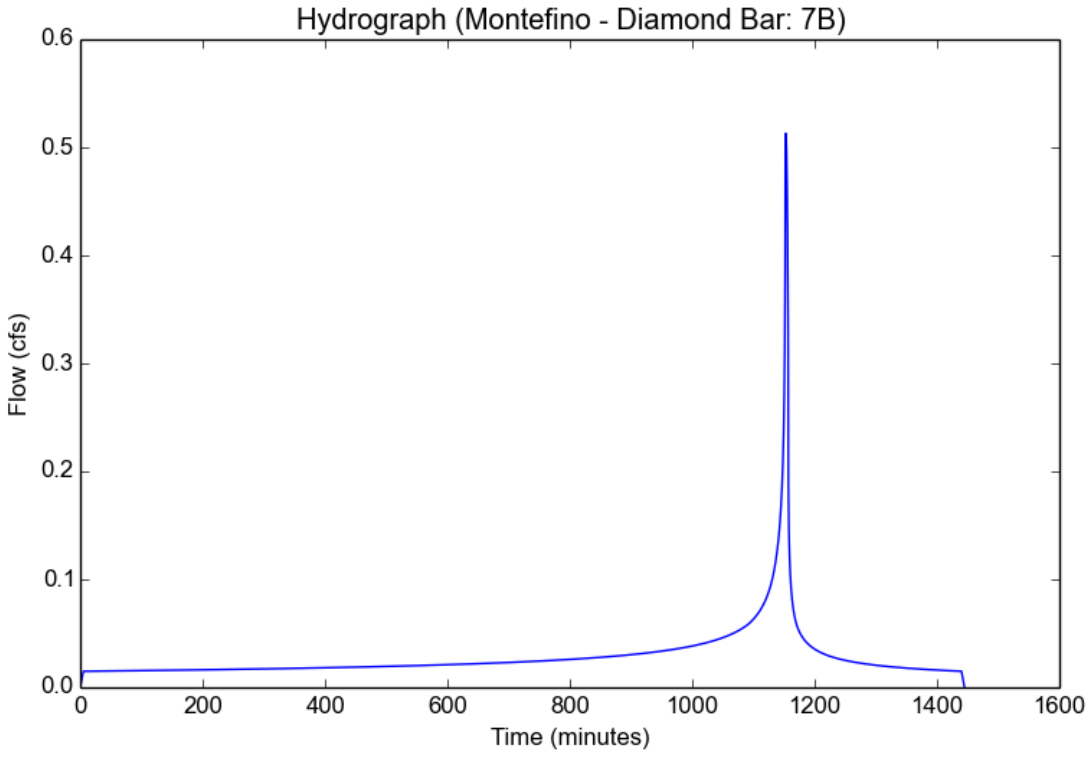
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	7B
Area (ac)	0.21
Flow Path Length (ft)	86.0
Flow Path Slope (vft/hft)	0.00663
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8822
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.513
Burned Peak Flow Rate (cfs)	0.513
24-Hr Clear Runoff Volume (ac-ft)	0.0573
24-Hr Clear Runoff Volume (cu-ft)	2495.2866



Peak Flow Hydrologic Analysis

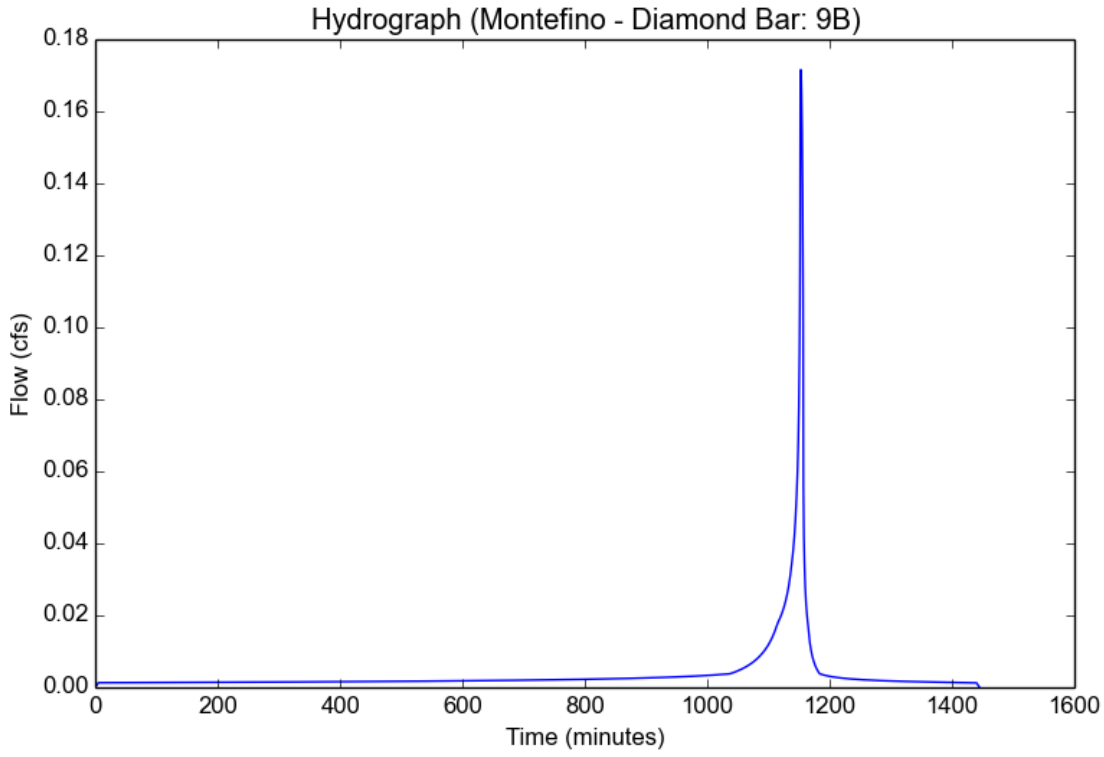
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	9B
Area (ac)	0.07
Flow Path Length (ft)	77.0
Flow Path Slope (vft/hft)	0.16636
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8837
Developed Runoff Coefficient (Cd)	0.8853
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1716
Burned Peak Flow Rate (cfs)	0.1716
24-Hr Clear Runoff Volume (ac-ft)	0.0077
24-Hr Clear Runoff Volume (cu-ft)	334.9048



Peak Flow Hydrologic Analysis

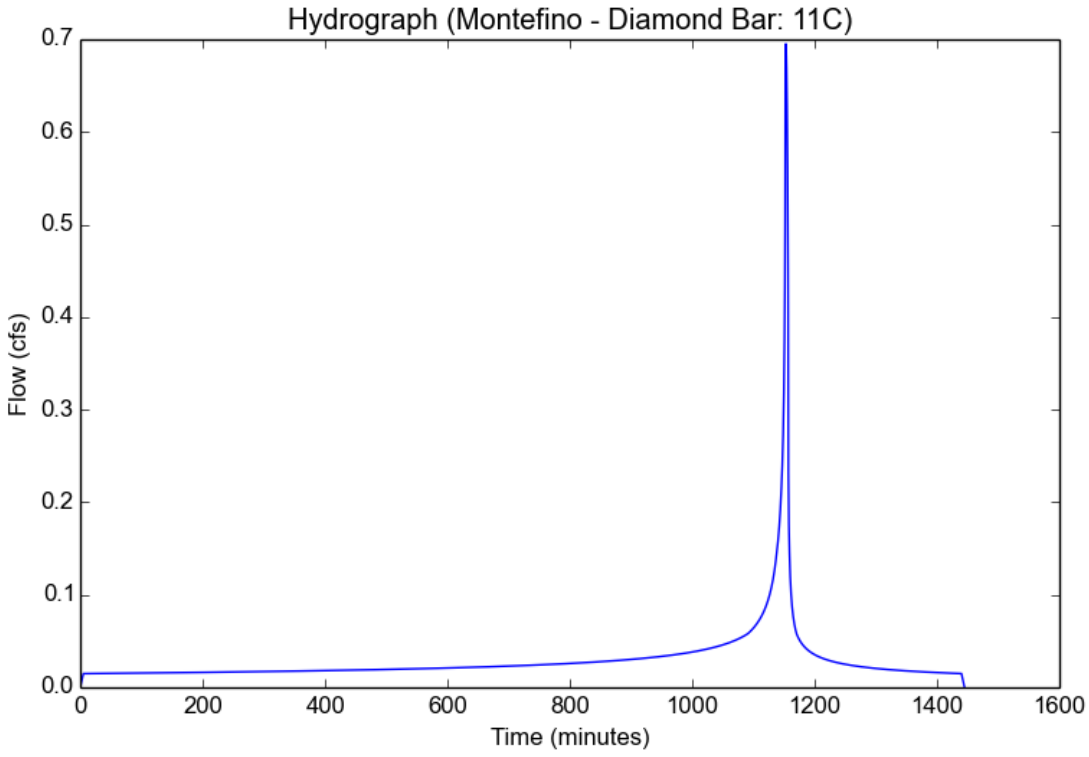
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	11C
Area (ac)	0.29
Flow Path Length (ft)	154.0
Flow Path Slope (vft/hft)	0.16344
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8658
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6952
Burned Peak Flow Rate (cfs)	0.6952
24-Hr Clear Runoff Volume (ac-ft)	0.0597
24-Hr Clear Runoff Volume (cu-ft)	2601.4293



Peak Flow Hydrologic Analysis

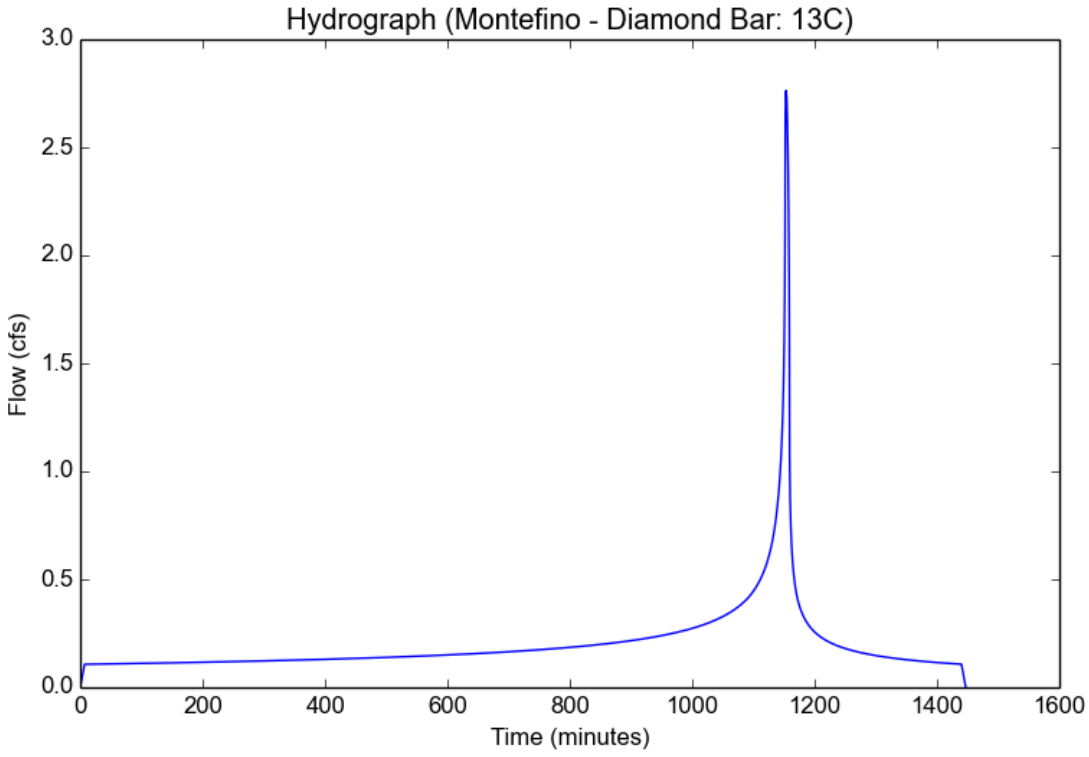
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	13C
Area (ac)	1.32
Flow Path Length (ft)	373.0
Flow Path Slope (vft/hft)	0.01072
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.86
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.3639
Undeveloped Runoff Coefficient (Cu)	0.7962
Developed Runoff Coefficient (Cd)	0.8855
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.763
Burned Peak Flow Rate (cfs)	2.763
24-Hr Clear Runoff Volume (ac-ft)	0.4042
24-Hr Clear Runoff Volume (cu-ft)	17605.1888



Peak Flow Hydrologic Analysis

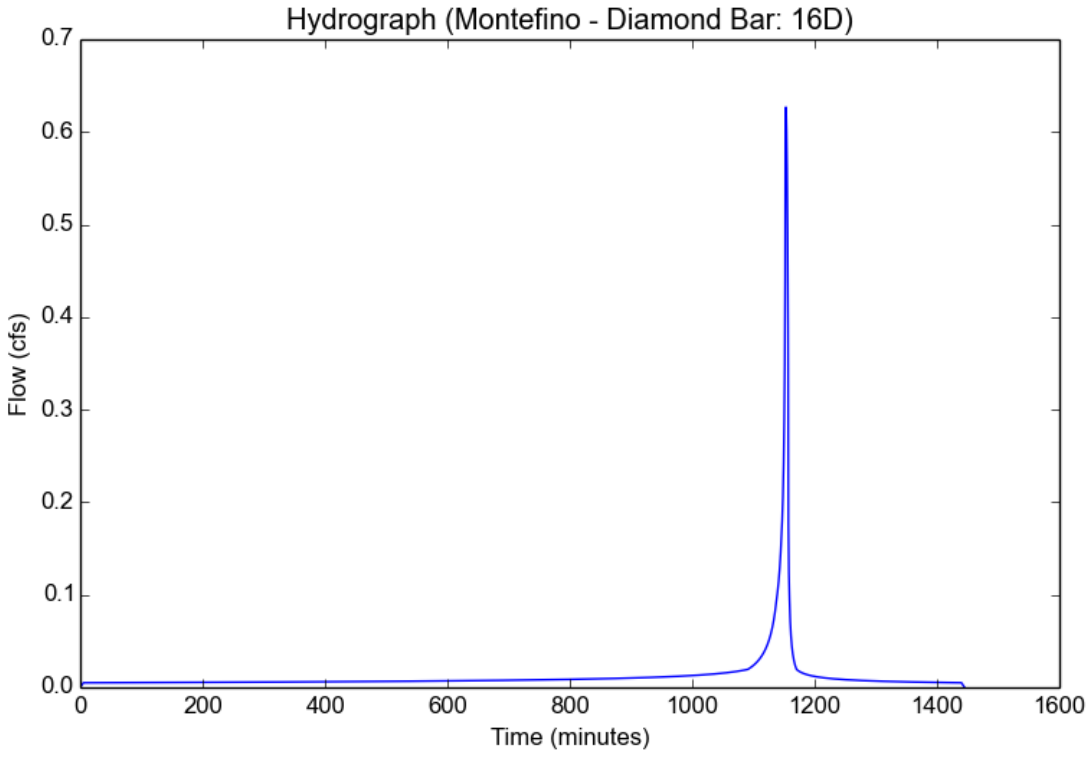
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	16D
Area (ac)	0.27
Flow Path Length (ft)	319.0
Flow Path Slope (vft/hft)	0.09276
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6268
Burned Peak Flow Rate (cfs)	0.6268
24-Hr Clear Runoff Volume (ac-ft)	0.0255
24-Hr Clear Runoff Volume (cu-ft)	1111.6783



Peak Flow Hydrologic Analysis

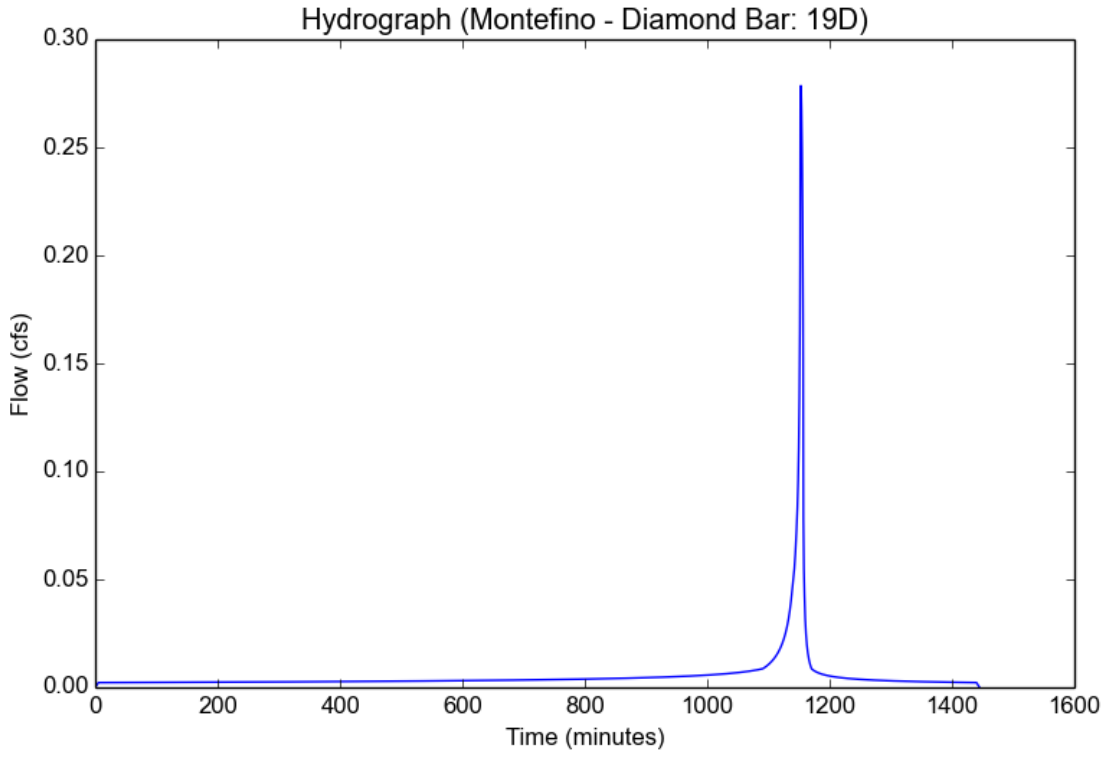
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	19D
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03363
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2786
Burned Peak Flow Rate (cfs)	0.2786
24-Hr Clear Runoff Volume (ac-ft)	0.0113
24-Hr Clear Runoff Volume (cu-ft)	494.0792



Peak Flow Hydrologic Analysis

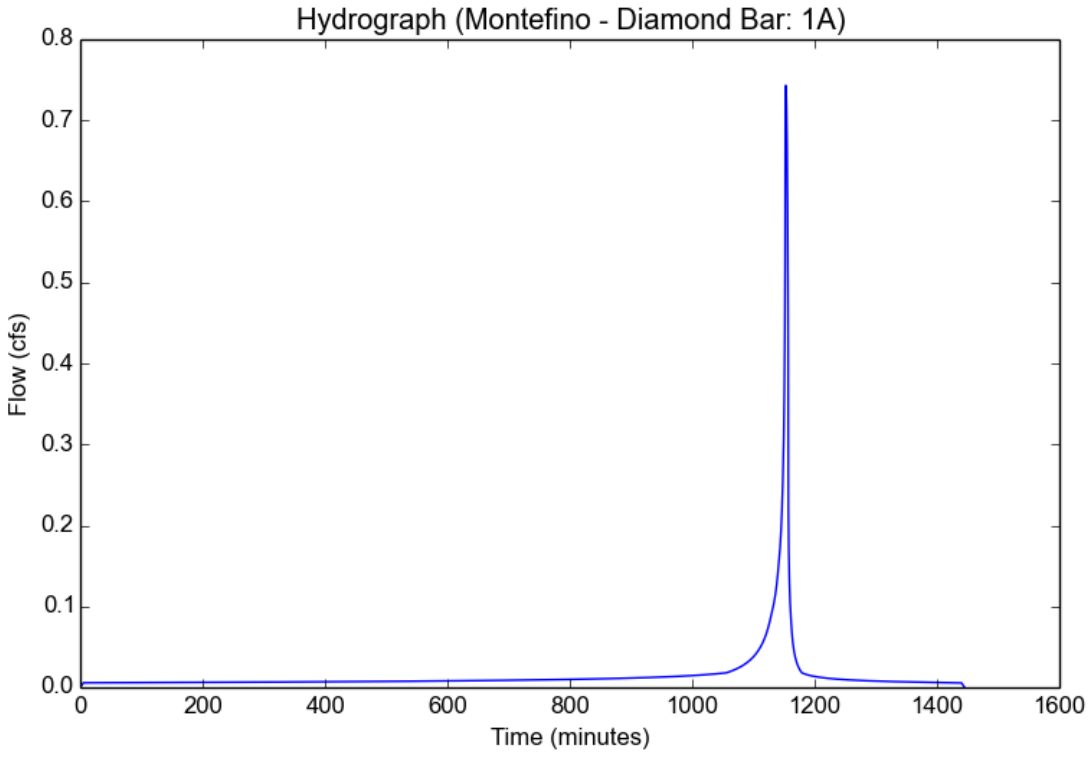
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.25
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft)	0.08456
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7433
Burned Peak Flow Rate (cfs)	0.7433
24-Hr Clear Runoff Volume (ac-ft)	0.0312
24-Hr Clear Runoff Volume (cu-ft)	1357.2308



Peak Flow Hydrologic Analysis

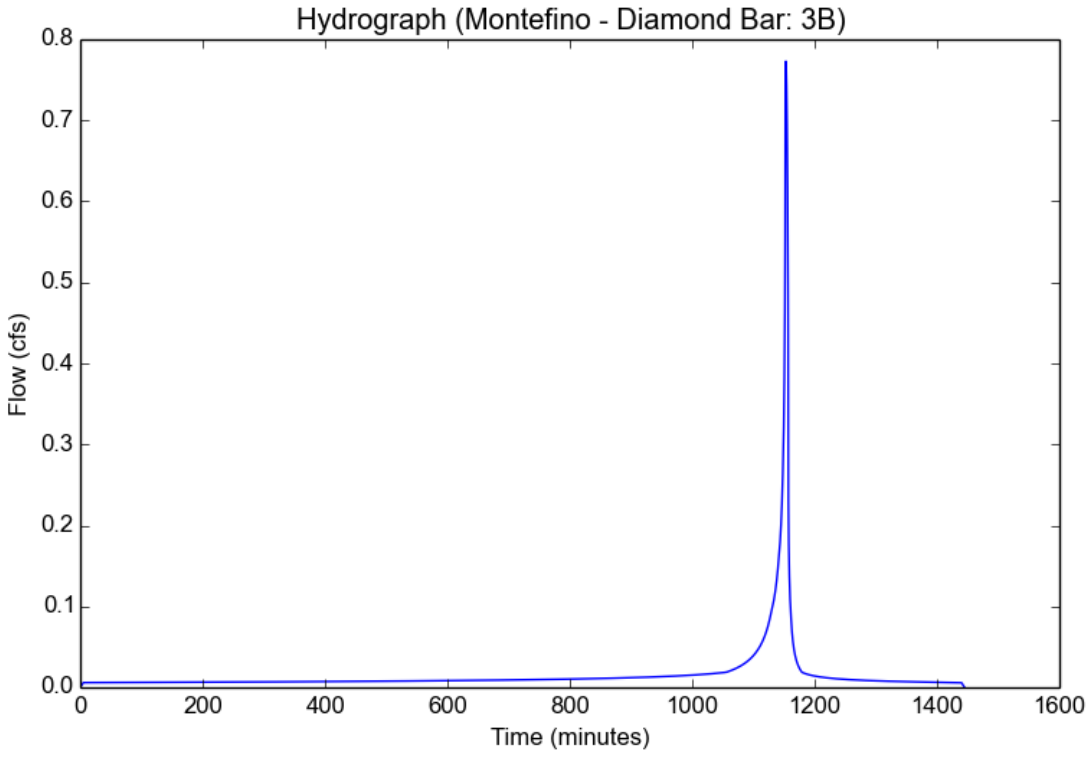
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3B
Area (ac)	0.26
Flow Path Length (ft)	319.0
Flow Path Slope (vft/hft)	0.09276
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.773
Burned Peak Flow Rate (cfs)	0.773
24-Hr Clear Runoff Volume (ac-ft)	0.0324
24-Hr Clear Runoff Volume (cu-ft)	1411.52



Peak Flow Hydrologic Analysis

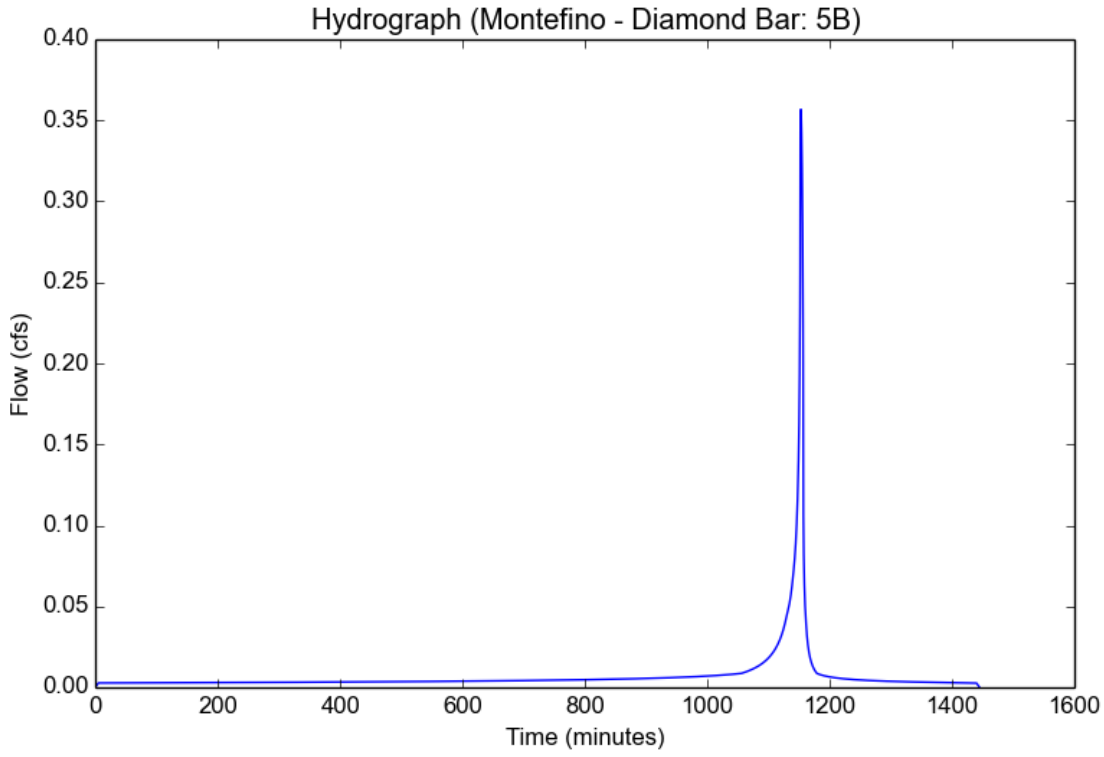
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03363
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3568
Burned Peak Flow Rate (cfs)	0.3568
24-Hr Clear Runoff Volume (ac-ft)	0.015
24-Hr Clear Runoff Volume (cu-ft)	651.4708



Peak Flow Hydrologic Analysis

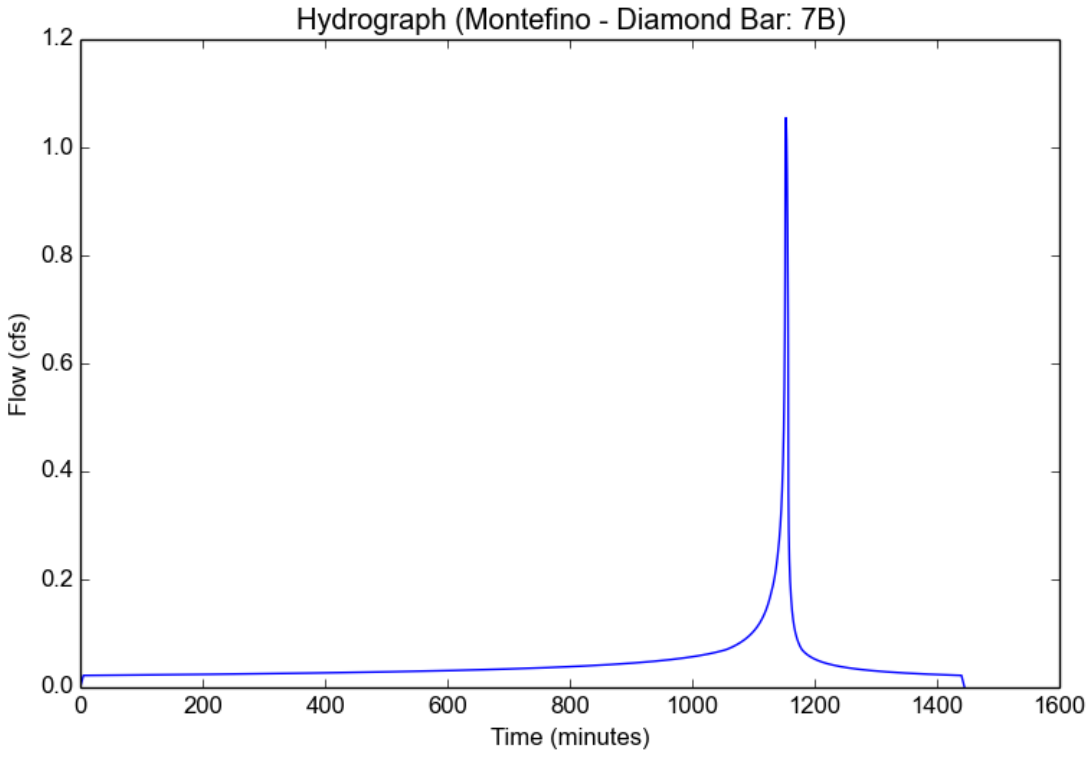
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	7B
Area (ac)	0.35
Flow Path Length (ft)	185.0
Flow Path Slope (vft/hft)	0.13584
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8851
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0548
Burned Peak Flow Rate (cfs)	1.0548
24-Hr Clear Runoff Volume (ac-ft)	0.0903
24-Hr Clear Runoff Volume (cu-ft)	3931.9528



Peak Flow Hydrologic Analysis

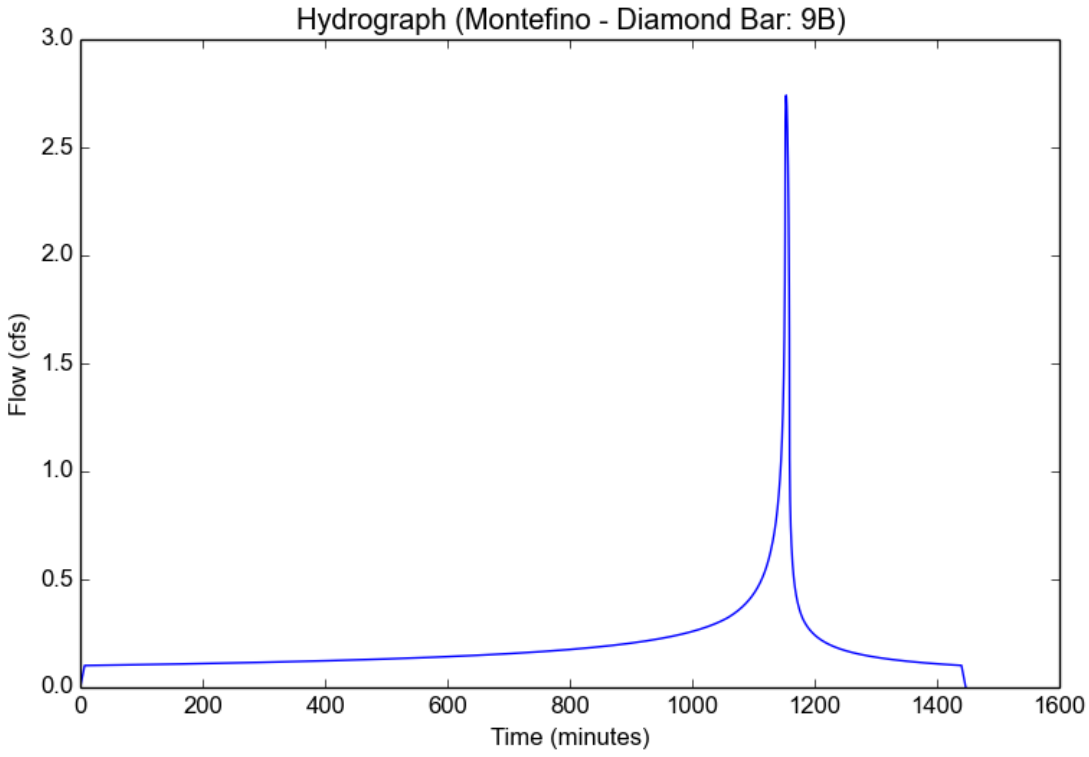
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	9B
Area (ac)	1.06
Flow Path Length (ft)	369.0
Flow Path Slope (vft/hft)	0.00534
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.82
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	2.9069
Undeveloped Runoff Coefficient (Cu)	0.8422
Developed Runoff Coefficient (Cd)	0.8896
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.7411
Burned Peak Flow Rate (cfs)	2.7411
24-Hr Clear Runoff Volume (ac-ft)	0.3864
24-Hr Clear Runoff Volume (cu-ft)	16829.9631



Peak Flow Hydrologic Analysis

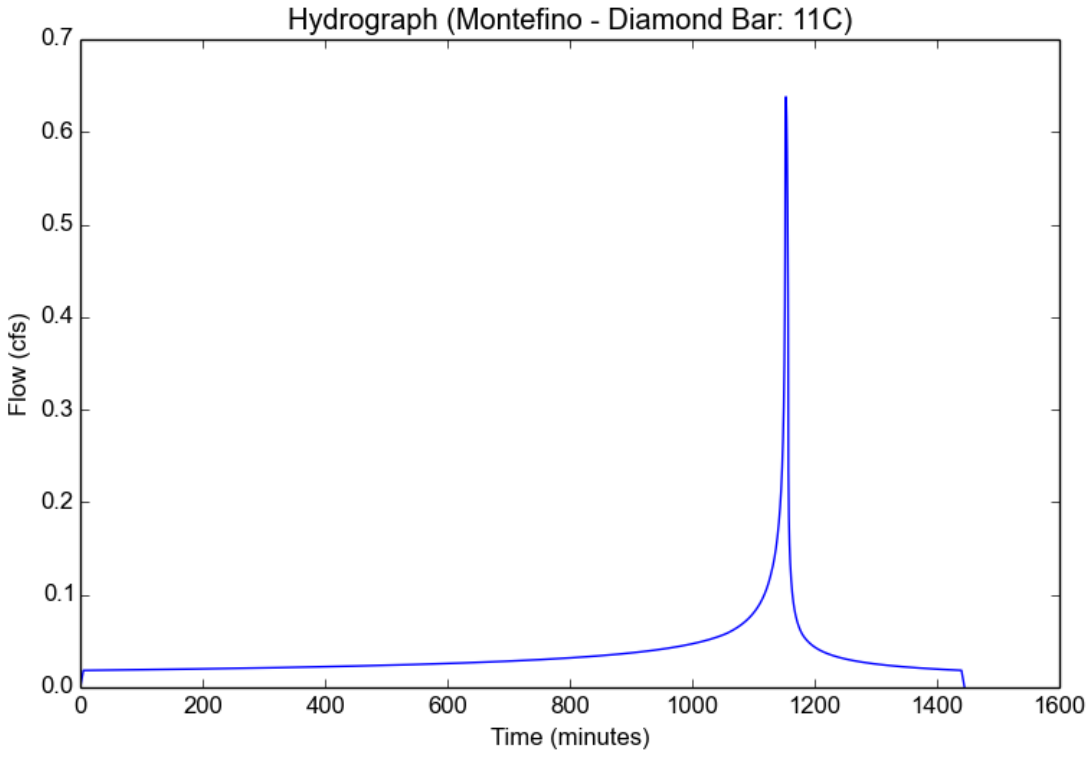
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	11C
Area (ac)	0.21
Flow Path Length (ft)	86.0
Flow Path Slope (vft/hft)	0.00663
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8922
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.638
Burned Peak Flow Rate (cfs)	0.638
24-Hr Clear Runoff Volume (ac-ft)	0.071
24-Hr Clear Runoff Volume (cu-ft)	3090.6304



Peak Flow Hydrologic Analysis

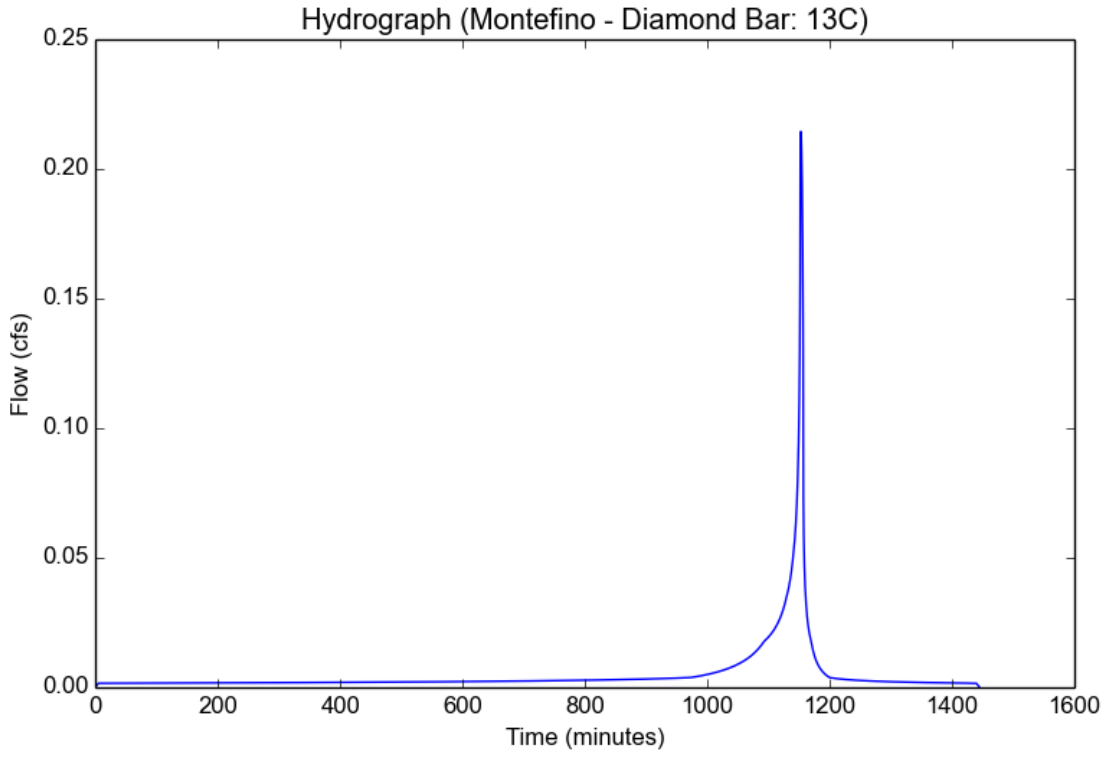
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	13C
Area (ac)	0.07
Flow Path Length (ft)	77.0
Flow Path Slope (vft/hft)	0.16636
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2145
Burned Peak Flow Rate (cfs)	0.2145
24-Hr Clear Runoff Volume (ac-ft)	0.0104
24-Hr Clear Runoff Volume (cu-ft)	451.9884



Peak Flow Hydrologic Analysis

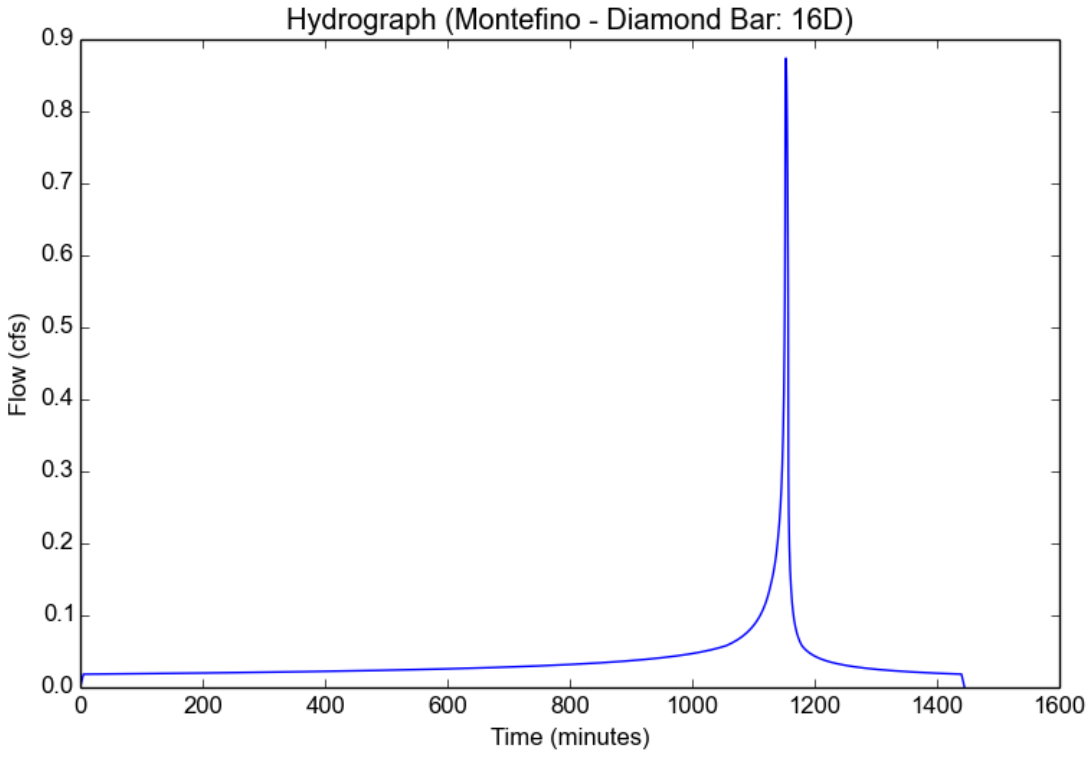
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	16D
Area (ac)	0.29
Flow Path Length (ft)	154.0
Flow Path Slope (vft/hft)	0.16344
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8851
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.874
Burned Peak Flow Rate (cfs)	0.874
24-Hr Clear Runoff Volume (ac-ft)	0.0748
24-Hr Clear Runoff Volume (cu-ft)	3257.9038



Peak Flow Hydrologic Analysis

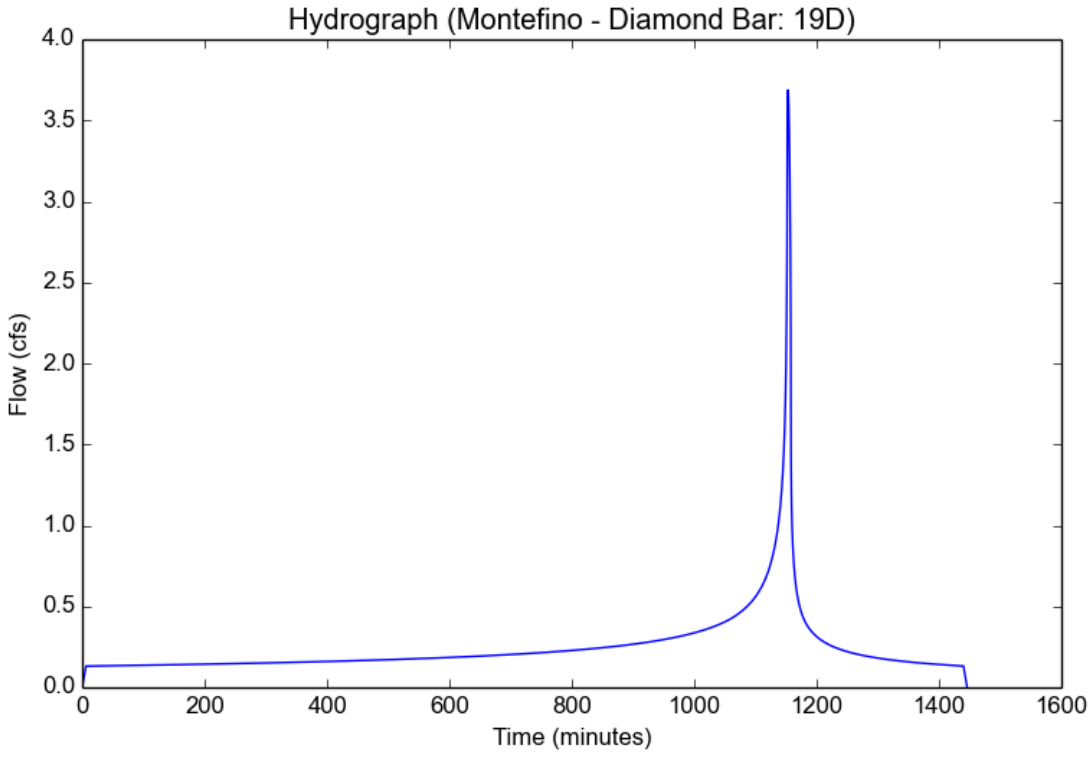
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	19D
Area (ac)	1.32
Flow Path Length (ft)	373.0
Flow Path Slope (vft/hft)	0.01072
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.86
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.1253
Undeveloped Runoff Coefficient (Cu)	0.8558
Developed Runoff Coefficient (Cd)	0.8938
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	3.6874
Burned Peak Flow Rate (cfs)	3.6874
24-Hr Clear Runoff Volume (ac-ft)	0.4987
24-Hr Clear Runoff Volume (cu-ft)	21725.2889



Peak Flow Hydrologic Analysis

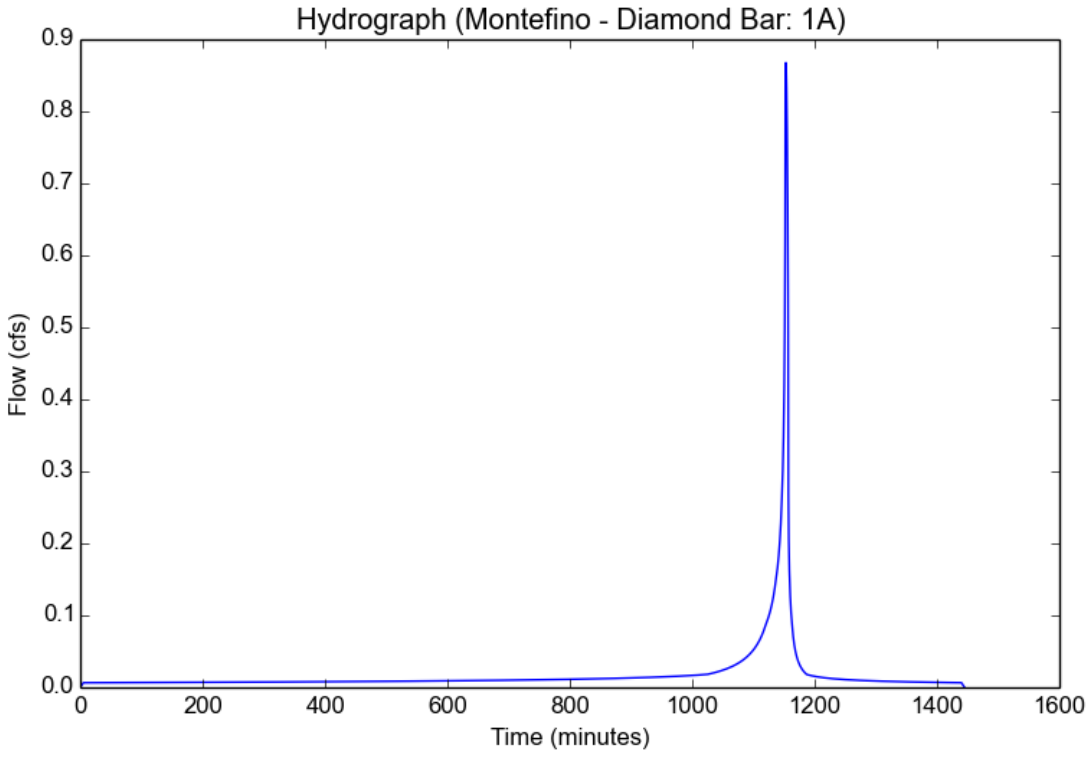
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.25
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft)	0.08456
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8677
Burned Peak Flow Rate (cfs)	0.8677
24-Hr Clear Runoff Volume (ac-ft)	0.0373
24-Hr Clear Runoff Volume (cu-ft)	1624.8962



Peak Flow Hydrologic Analysis

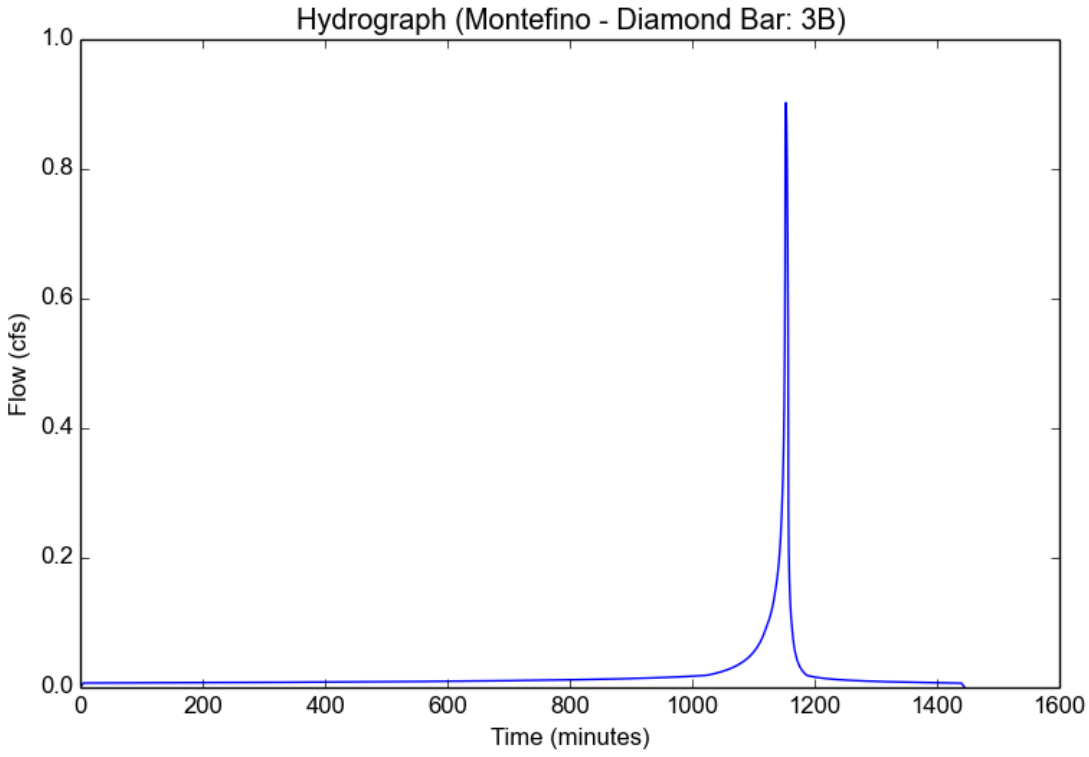
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3B
Area (ac)	0.26
Flow Path Length (ft)	319.0
Flow Path Slope (vft/hft)	0.09276
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.9024
Burned Peak Flow Rate (cfs)	0.9024
24-Hr Clear Runoff Volume (ac-ft)	0.0388
24-Hr Clear Runoff Volume (cu-ft)	1689.892



Peak Flow Hydrologic Analysis

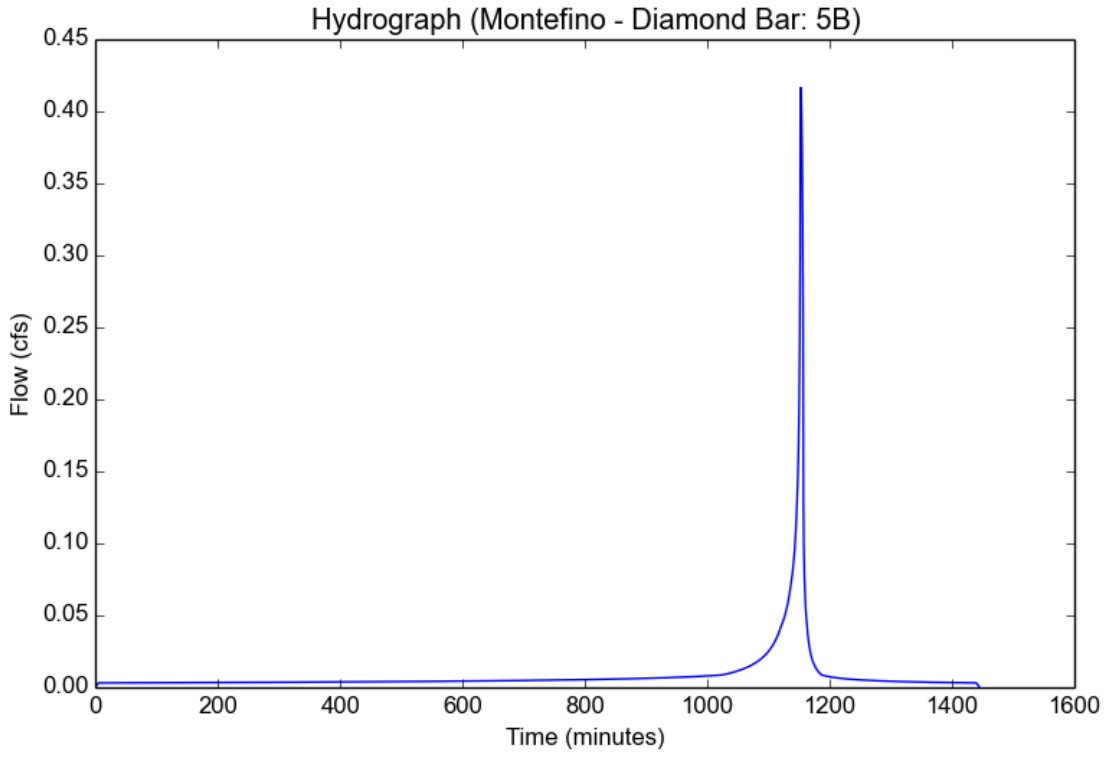
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03363
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4165
Burned Peak Flow Rate (cfs)	0.4165
24-Hr Clear Runoff Volume (ac-ft)	0.0179
24-Hr Clear Runoff Volume (cu-ft)	779.9502



Peak Flow Hydrologic Analysis

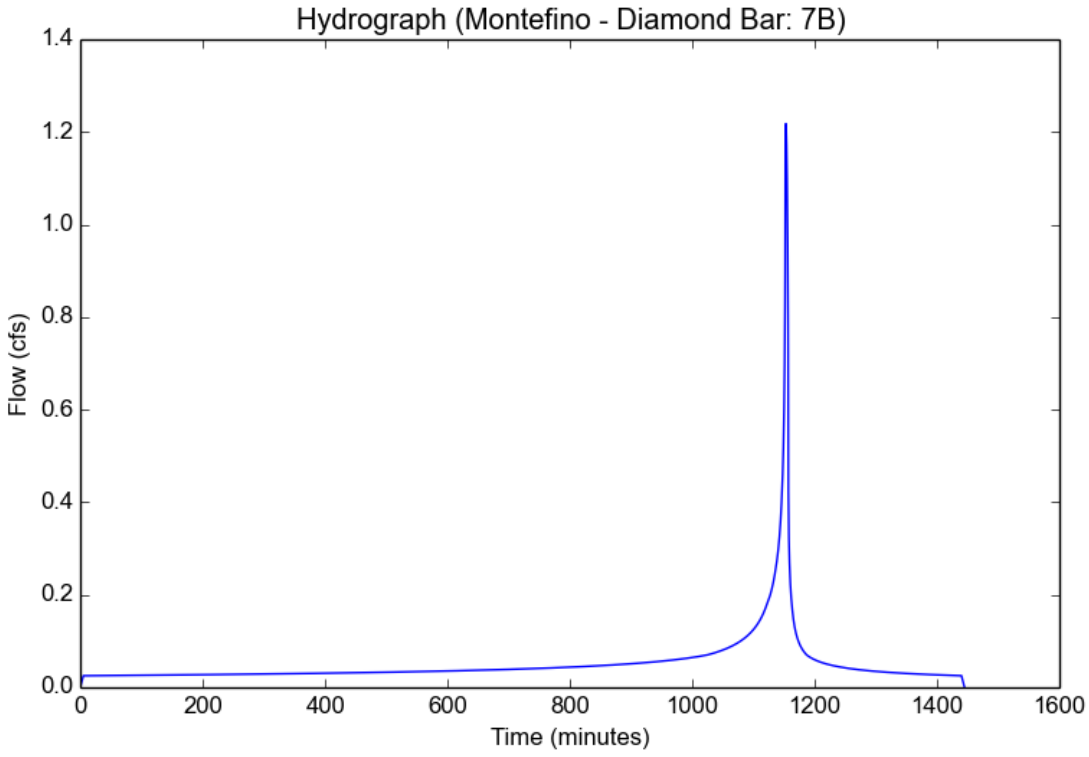
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	7B
Area (ac)	0.35
Flow Path Length (ft)	185.0
Flow Path Slope (vft/hft)	0.13584
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.8972
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2178
Burned Peak Flow Rate (cfs)	1.2178
24-Hr Clear Runoff Volume (ac-ft)	0.1042
24-Hr Clear Runoff Volume (cu-ft)	4539.8091



Peak Flow Hydrologic Analysis

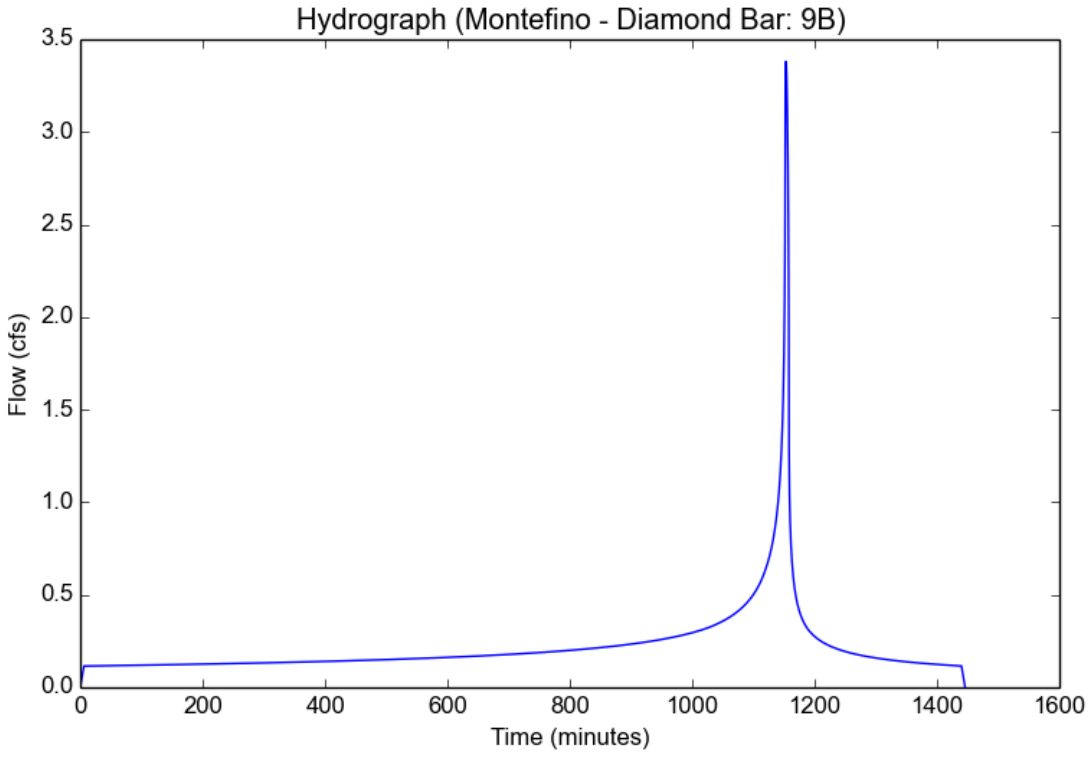
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	9B
Area (ac)	1.06
Flow Path Length (ft)	369.0
Flow Path Slope (vft/hft)	0.00534
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.82
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.5596
Undeveloped Runoff Coefficient (Cu)	0.8781
Developed Runoff Coefficient (Cd)	0.8961
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	3.381
Burned Peak Flow Rate (cfs)	3.381
24-Hr Clear Runoff Volume (ac-ft)	0.4416
24-Hr Clear Runoff Volume (cu-ft)	19236.0761



Peak Flow Hydrologic Analysis

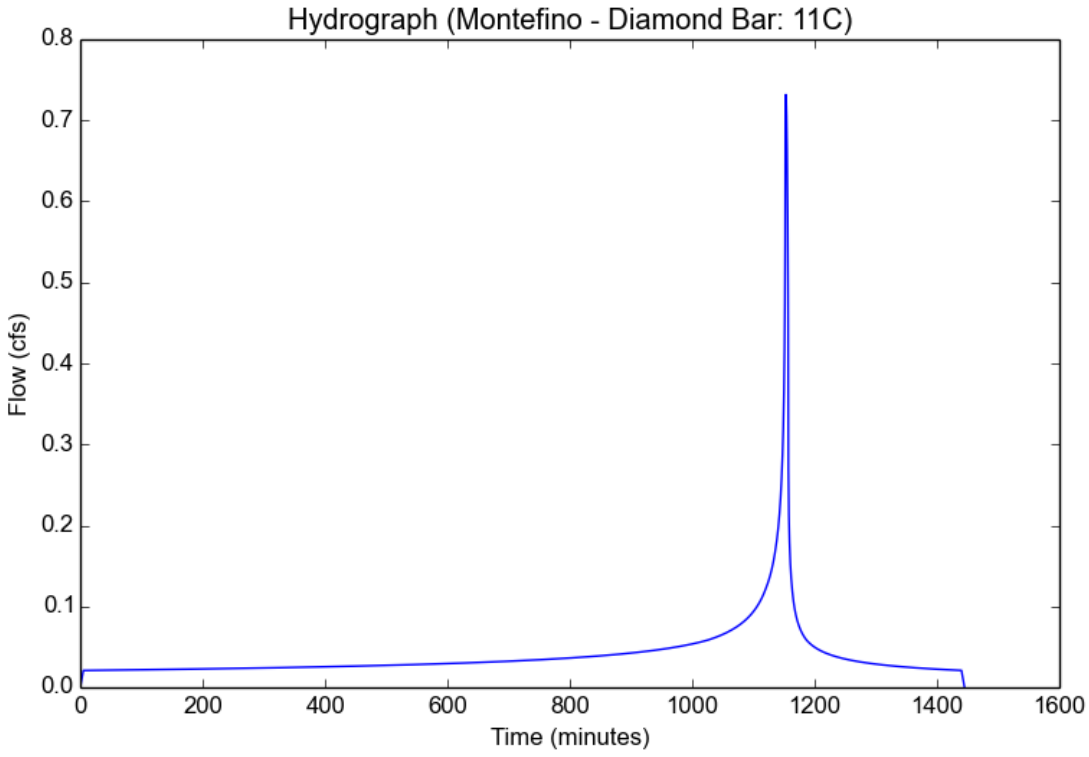
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	11C
Area (ac)	0.21
Flow Path Length (ft)	86.0
Flow Path Slope (vft/hft)	0.00663
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.8985
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7318
Burned Peak Flow Rate (cfs)	0.7318
24-Hr Clear Runoff Volume (ac-ft)	0.0813
24-Hr Clear Runoff Volume (cu-ft)	3539.2691



Peak Flow Hydrologic Analysis

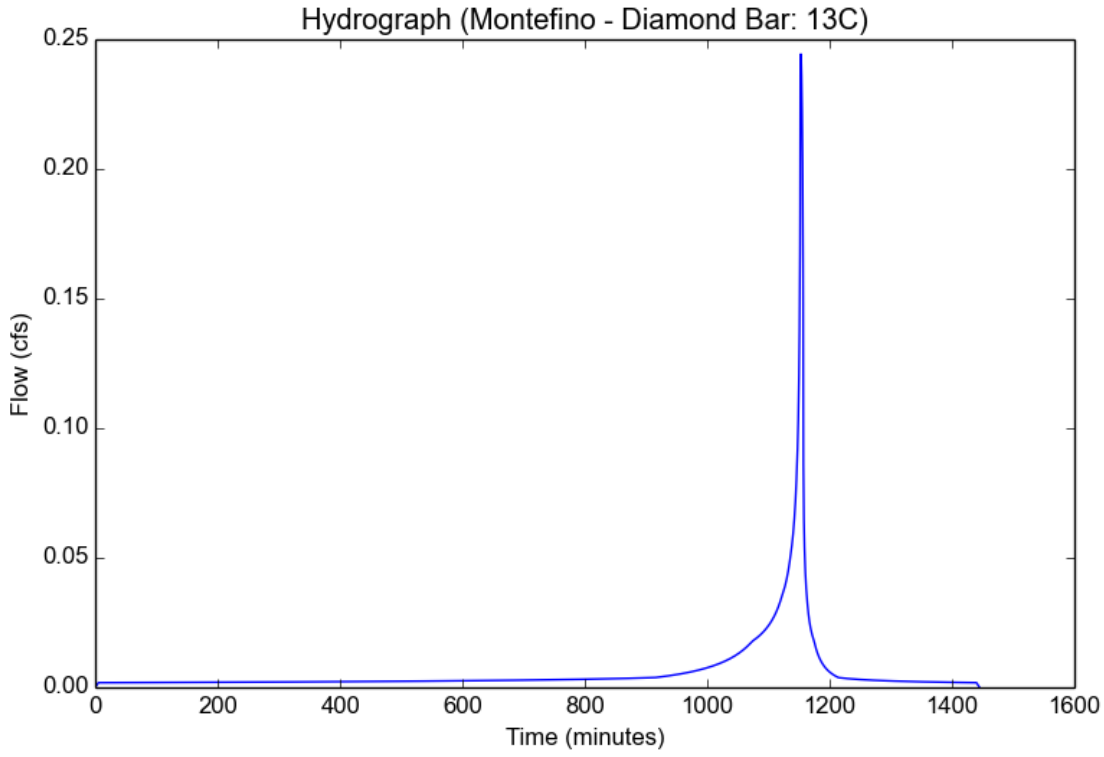
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	13C
Area (ac)	0.07
Flow Path Length (ft)	77.0
Flow Path Slope (vft/hft)	0.16636
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2443
Burned Peak Flow Rate (cfs)	0.2443
24-Hr Clear Runoff Volume (ac-ft)	0.0126
24-Hr Clear Runoff Volume (cu-ft)	549.0748



Peak Flow Hydrologic Analysis

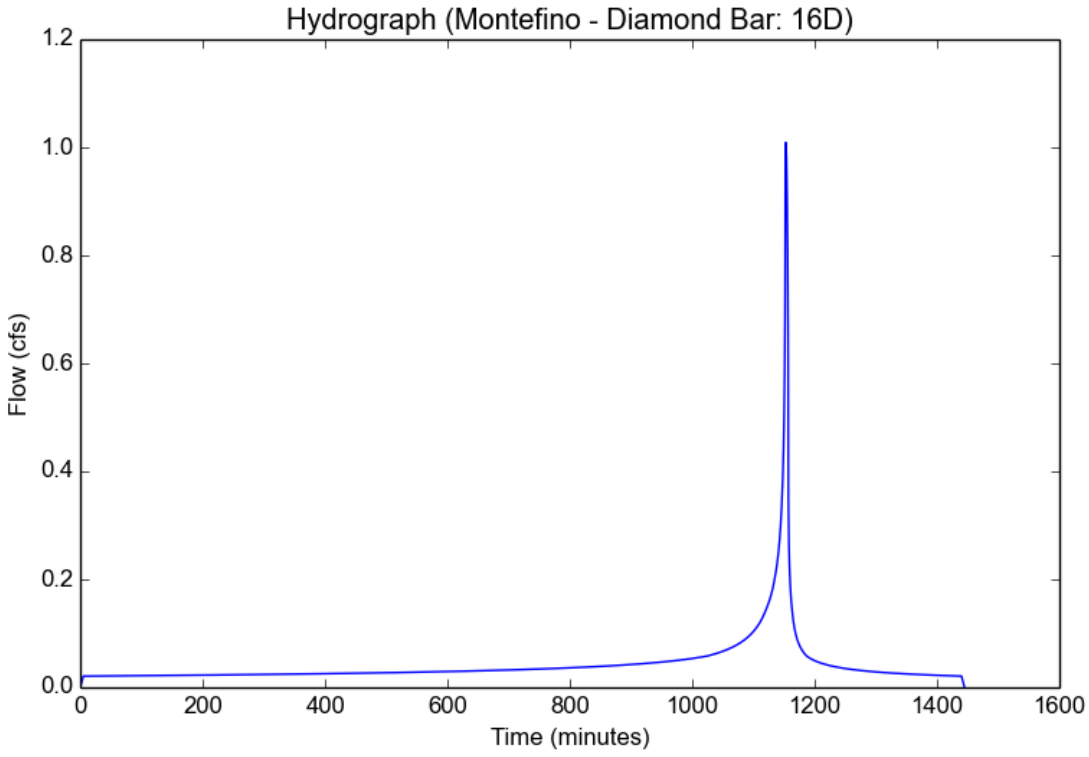
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	16D
Area (ac)	0.29
Flow Path Length (ft)	154.0
Flow Path Slope (vft/hft)	0.16344
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.5
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.8972
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.009
Burned Peak Flow Rate (cfs)	1.009
24-Hr Clear Runoff Volume (ac-ft)	0.0864
24-Hr Clear Runoff Volume (cu-ft)	3761.5562



Peak Flow Hydrologic Analysis

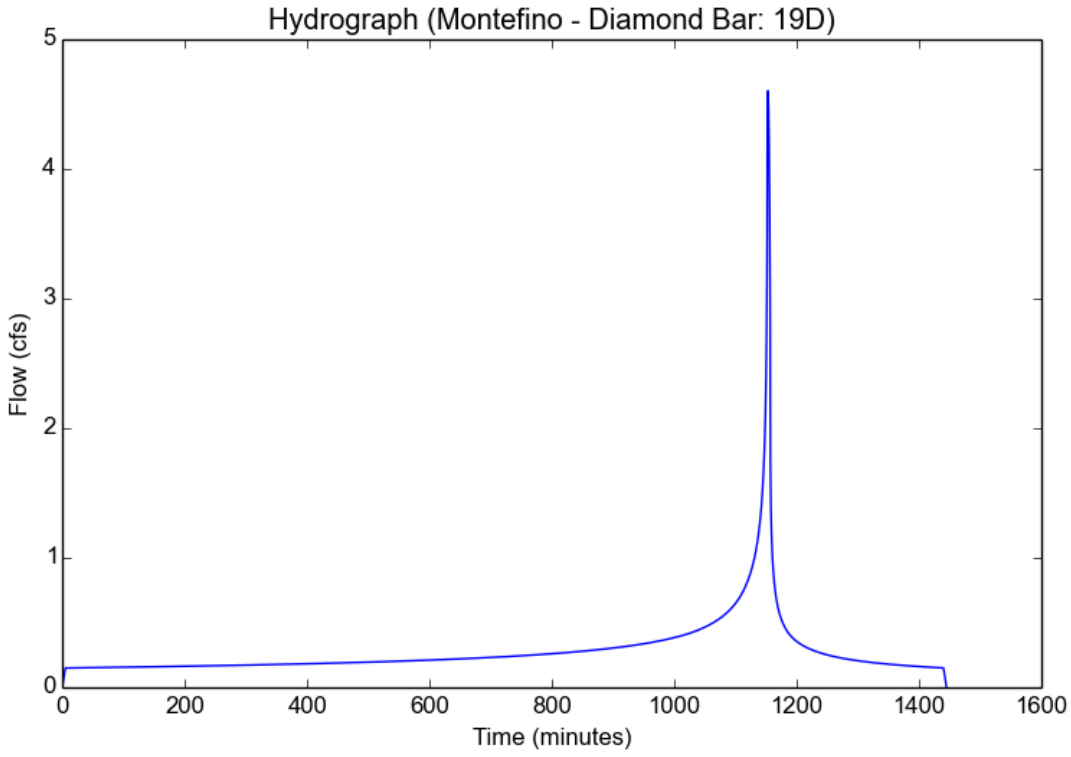
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Existing TC - HydroCa
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	19D
Area (ac)	1.32
Flow Path Length (ft)	373.0
Flow Path Slope (vft/hft)	0.01072
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.86
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.8992
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	4.6032
Burned Peak Flow Rate (cfs)	4.6032
24-Hr Clear Runoff Volume (ac-ft)	0.5695
24-Hr Clear Runoff Volume (cu-ft)	24809.4687



File name: Exsit2yrMontefino.lac Run date: Mon Jul 28 14:13:03 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 2

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.3	0.21	0.3	0.21	0.013	0	0	0.00000	0.00	0.00	0	16	9	2.52	0.10
1	2A	0.0	0.00	0.3	0.21	0.013	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00
1	3B	0.4	0.47	0.4	0.47	0.043	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.50
1	4B	0.0	0.00	0.4	0.47	0.043	0	369	0.13584	0.00	0.00	0	16	0	2.52	0.00
1	5B	1.1	0.91	1.5	1.38	0.217	0	0	0.00000	0.00	0.00	0	16	12	2.52	0.82
1	6BE	0.0	0.00	1.5	1.38	0.217	0	86	0.00534	0.00	0.00	0	16	0	2.52	0.00
1	7B	0.2	0.25	1.7	1.63	0.246	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.74
1	8B	0.0	0.00	1.7	1.63	0.246	0	77	0.00663	0.00	0.00	0	16	0	2.52	0.00
1	9B	0.1	0.12	1.8	1.75	0.251	0	0	0.00000	0.00	0.00	0	17	5	2.52	0.10
1	10B	0.0	0.00	1.8	1.75	0.251	0	0	0.00000	0.00	0.00	0	17	0	2.52	0.00
1	11C	0.3	0.36	0.3	0.36	0.032	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.50
1	12C	0.0	0.00	0.3	0.36	0.032	0	335	0.16344	0.00	0.00	0	16	0	2.52	0.00
1	13C	1.3	1.15	1.6	1.49	0.246	0	0	0.00000	0.00	0.00	0	16	11	2.52	0.86
1	14C	0.0	0.00	1.6	1.49	0.246	0	38	0.01072	0.00	0.00	0	16	0	2.52	0.00
1	15C	0.0	0.00	1.6	1.49	0.246	4	0	0.00000	0.83	0.00	0	16	0	2.52	0.00
1	16D	0.3	0.23	0.3	0.23	0.013	0	0	0.00000	0.00	0.00	0	16	8	2.52	0.10
1	17DE	0.0	0.00	0.3	0.23	0.013	6	124	0.03379	0.25	0.00	5	16	0	2.52	0.00
1	18E	0.0	0.00	0.0	0.00	0.000	6	73	0.26822	2.00	1.00	0	16	0	2.52	0.00
1	19D	0.1	0.11	0.4	0.22	0.006	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	20D	0.0	0.00	0.4	0.22	0.006	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00

Normal End of MODRAT

File name: Exsit5yrMontefino.lac Run date: Mon Jul 28 14:11:10 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 5

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.3	0.49	0.3	0.49	0.022	0	0	0.00000	0.00	0.00	0	16	6	3.80	0.10
1	2A	0.0	0.00	0.3	0.49	0.022	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00
1	3B	0.4	0.76	0.4	0.76	0.066	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.50
1	4B	0.0	0.00	0.4	0.76	0.066	0	369	0.13584	0.00	0.00	0	16	0	3.80	0.00
1	5B	1.1	1.64	1.5	2.39	0.330	0	0	0.00000	0.00	0.00	0	16	9	3.80	0.82
1	6BE	0.0	0.00	1.5	2.39	0.330	0	86	0.00534	0.00	0.00	0	16	0	3.80	0.00
1	7B	0.2	0.39	1.7	2.78	0.375	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.74
1	8B	0.0	0.00	1.7	2.78	0.375	0	77	0.00663	0.00	0.00	0	16	0	3.80	0.00
1	9B	0.1	0.20	1.8	2.98	0.383	0	0	0.00000	0.00	0.00	0	17	5	3.80	0.10
1	10B	0.0	0.00	1.8	2.98	0.383	0	0	0.00000	0.00	0.00	0	17	0	3.80	0.00
1	11C	0.3	0.57	0.3	0.57	0.050	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.50
1	12C	0.0	0.00	0.3	0.57	0.050	0	335	0.16344	0.00	0.00	0	16	0	3.80	0.00
1	13C	1.3	2.07	1.6	2.63	0.374	0	0	0.00000	0.00	0.00	0	16	8	3.80	0.86
1	14C	0.0	0.00	1.6	2.63	0.374	0	38	0.01072	0.00	0.00	0	16	0	3.80	0.00
1	15C	0.0	0.00	1.6	2.63	0.374	4	0	0.00000	0.83	0.00	0	16	0	3.80	0.00
1	16D	0.3	0.54	0.3	0.54	0.022	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	17DE	0.0	0.00	0.3	0.54	0.022	6	124	0.03379	0.25	0.00	5	16	0	3.80	0.00
1	18E	0.0	0.00	0.0	0.00	0.000	6	73	0.26822	2.00	1.00	0	16	0	3.80	0.00
1	19D	0.1	0.18	0.4	0.60	0.011	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	20D	0.0	0.00	0.4	0.60	0.011	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00

Normal End of MODRAT

File name: Exist10yrMontefino.lac Run date: Fri Jul 25 16:14:00 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 10

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.3	0.70	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	2A	0.0	0.00	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00
1	3B	0.4	0.96	0.4	0.96	0.082	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.50
1	4B	0.0	0.00	0.4	0.96	0.082	0	369	0.00531	0.00	0.00	0	16	0	4.64	0.00
1	5B	1.1	2.14	1.5	3.09	0.406	0	0	0.00000	0.00	0.00	0	16	8	4.64	0.82
1	6BE	0.0	0.00	1.5	3.09	0.406	0	86	0.00674	0.00	0.00	0	16	0	4.64	0.00
1	7B	0.2	0.49	1.7	3.58	0.460	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.74
1	8B	0.0	0.00	1.7	3.58	0.460	0	77	0.16636	0.00	0.00	0	16	0	4.64	0.00
1	9B	0.1	0.25	1.8	3.83	0.471	0	0	0.00000	0.00	0.00	0	17	5	4.64	0.10
1	10B	0.0	0.00	1.8	3.83	0.471	0	0	0.00000	0.00	0.00	0	17	0	4.64	0.00
1	11C	0.3	0.72	0.3	0.72	0.062	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.50
1	12C	0.0	0.00	0.3	0.72	0.062	0	335	0.00531	0.00	0.00	0	16	0	4.64	0.00
1	13C	1.3	2.71	1.6	3.43	0.459	0	0	0.00000	0.00	0.00	0	16	7	4.64	0.86
1	14C	0.0	0.00	1.6	3.43	0.459	4	38	0.05842	0.83	0.00	0	16	0	4.64	0.00
1	15C	0.0	0.00	1.6	3.31	0.261	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00
1	16D	0.3	0.70	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	17DE	0.0	0.00	0.3	0.70	0.028	6	124	0.03379	0.25	0.00	5	16	0	4.64	0.00
1	18E	0.0	0.00	0.0	0.00	0.000	6	73	0.26822	2.00	1.00	0	16	0	4.64	0.00
1	19D	0.1	0.23	0.4	0.81	0.015	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	20D	0.0	0.00	0.4	0.81	0.015	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00

Normal End of MODRAT

File name: Exist25yrMontefino.lac Run date: Fri Jul 25 16:17:21 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 25

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.3	0.89	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	2A	0.0	0.00	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00
1	3B	0.4	1.21	0.4	1.21	0.103	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.50
1	4B	0.0	0.00	0.4	1.21	0.103	0	369	0.00531	0.00	0.00	0	16	0	5.71	0.00
1	5B	1.1	3.35	1.5	4.56	0.504	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.82
1	6BE	0.0	0.00	1.5	4.56	0.504	0	86	0.00674	0.00	0.00	0	16	0	5.71	0.00
1	7B	0.2	0.61	1.7	5.17	0.571	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.74
1	8B	0.0	0.00	1.7	5.17	0.571	0	77	0.16636	0.00	0.00	0	16	0	5.71	0.00
1	9B	0.1	0.26	1.8	5.42	0.586	0	0	0.00000	0.00	0.00	0	17	7	5.71	0.10
1	10B	0.0	0.00	1.8	5.42	0.586	0	0	0.00000	0.00	0.00	0	17	0	5.71	0.00
1	11C	0.3	0.90	0.3	0.90	0.077	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.50
1	12C	0.0	0.00	0.3	0.90	0.077	0	335	0.00531	0.00	0.00	0	16	0	5.71	0.00
1	13C	1.3	3.36	1.6	4.27	0.568	0	0	0.00000	0.00	0.00	0	16	7	5.71	0.86
1	14C	0.0	0.00	1.6	4.27	0.568	4	38	0.05842	0.83	0.00	0	16	0	5.71	0.00
1	15C	0.0	0.00	1.6	4.15	0.370	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00
1	16D	0.3	0.89	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	17DE	0.0	0.00	0.3	0.89	0.037	6	124	0.03379	0.25	0.00	5	16	0	5.71	0.00
1	18E	0.0	0.00	0.0	0.00	0.000	6	73	0.26822	2.00	1.00	0	16	0	5.71	0.00
1	19D	0.1	0.27	0.4	1.04	0.021	0	0	0.00000	0.00	0.00	0	16	6	5.71	0.10
1	20D	0.0	0.00	0.4	1.04	0.021	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00

Normal End of MODRAT

File name: Exsit50yrMontefino.lac Run date: Fri Jul 25 16:23:25 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 50

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.3	1.04	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	2A	0.0	0.00	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00
1	3B	0.4	1.39	0.4	1.39	0.119	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.50
1	4B	0.0	0.00	0.4	1.39	0.119	0	369	0.13584	0.00	0.00	0	16	0	6.50	0.00
1	5B	1.1	3.51	1.5	4.90	0.576	0	0	0.00000	0.00	0.00	0	16	6	6.50	0.82
1	6BE	0.0	0.00	1.5	4.90	0.576	0	86	0.00534	0.00	0.00	0	16	0	6.50	0.00
1	7B	0.2	0.70	1.7	5.59	0.654	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.74
1	8B	0.0	0.00	1.7	5.59	0.654	0	77	0.00663	0.00	0.00	0	16	0	6.50	0.00
1	9B	0.1	0.35	1.8	5.94	0.672	0	0	0.00000	0.00	0.00	0	17	5	6.50	0.10
1	10B	0.0	0.00	1.8	5.94	0.672	0	0	0.00000	0.00	0.00	0	17	0	6.50	0.00
1	11C	0.3	1.04	0.3	1.04	0.089	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.50
1	12C	0.0	0.00	0.3	1.04	0.089	0	335	0.16344	0.00	0.00	0	16	0	6.50	0.00
1	13C	1.3	4.53	1.6	5.58	0.649	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.86
1	14C	0.0	0.00	1.6	5.58	0.649	0	38	0.01072	0.00	0.00	0	16	0	6.50	0.00
1	15C	0.0	0.00	1.6	5.58	0.649	4	0	0.00000	0.83	0.00	0	16	0	6.50	0.00
1	16D	0.3	1.04	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	17DE	0.0	0.00	0.3	1.04	0.045	6	124	0.03379	0.25	0.00	5	16	0	6.50	0.00
1	18E	0.0	0.00	0.0	0.00	0.000	6	73	0.26822	2.00	1.00	0	16	0	6.50	0.00
1	19D	0.1	0.35	0.4	1.26	0.026	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	20D	0.0	0.00	0.4	1.26	0.026	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00

Normal End of MODRAT

Peak Flow Hydrologic Analysis

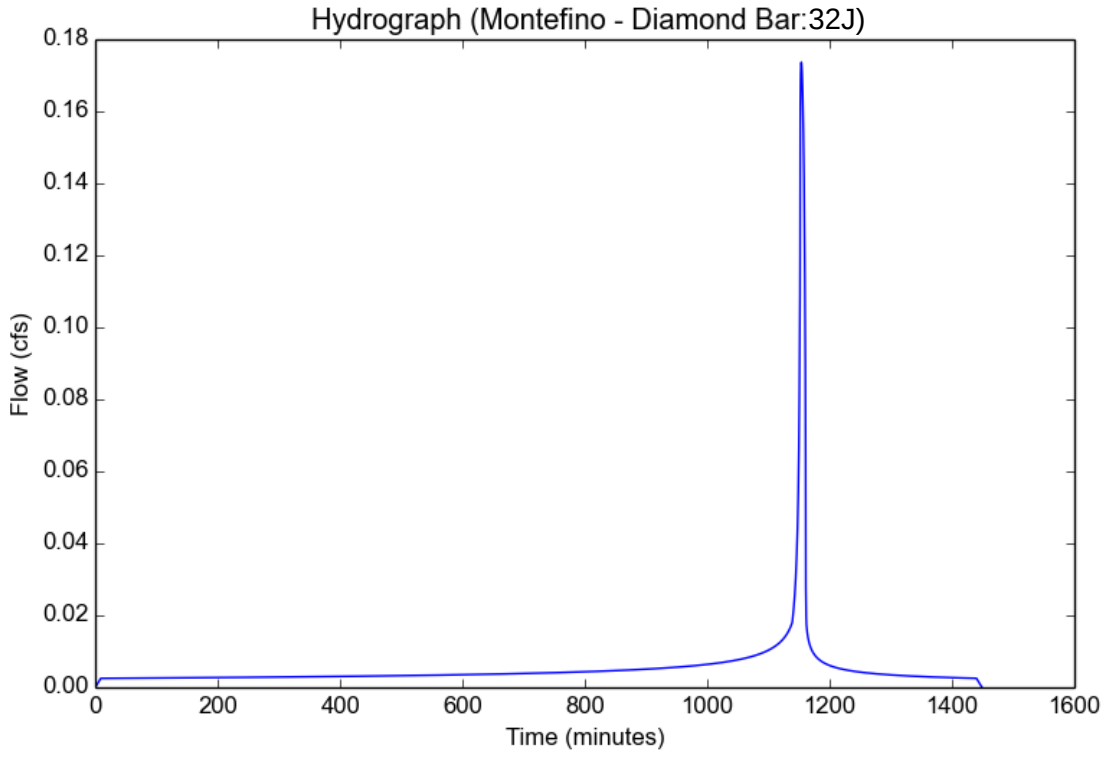
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	32J
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.1385
Undeveloped Runoff Coefficient (Cu)	0.5779
Developed Runoff Coefficient (Cd)	0.6101
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	0.1737
Burned Peak Flow Rate (cfs)	0.1737
24-Hr Clear Runoff Volume (ac-ft)	0.0109
24-Hr Clear Runoff Volume (cu-ft)	476.8425



Peak Flow Hydrologic Analysis

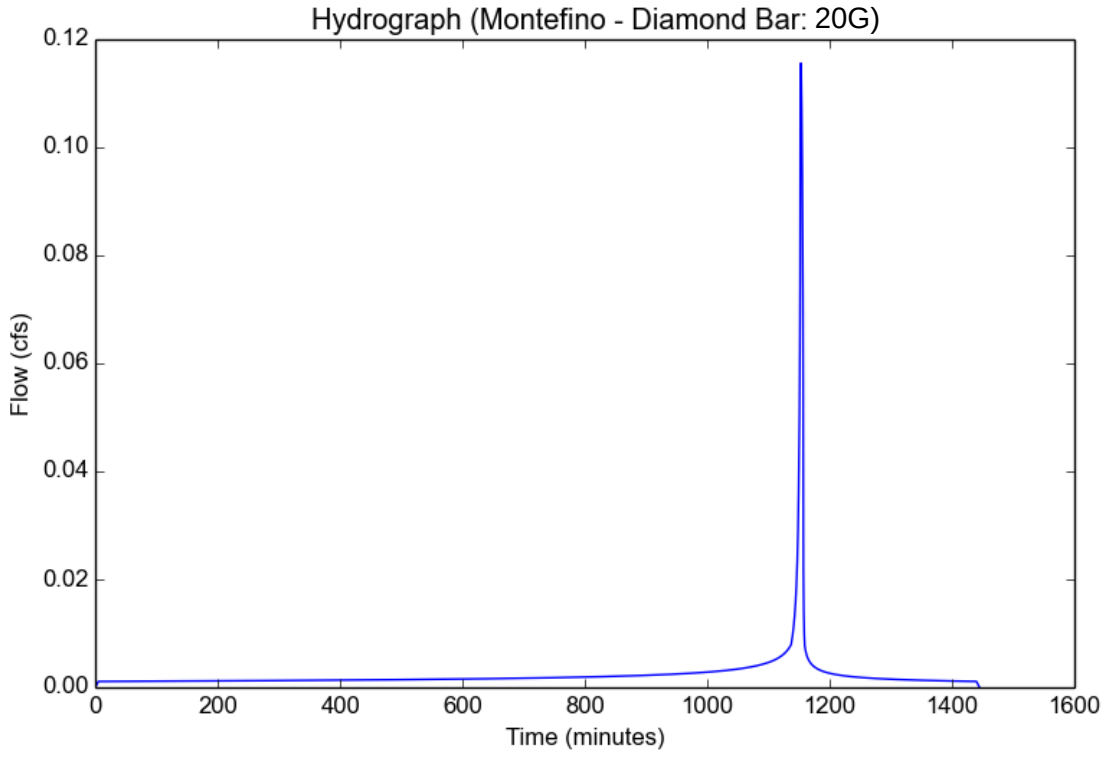
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	20G
Area (ac)	0.11
Flow Path Length (ft)	136.0
Flow Path Slope (vft/hft)	0.05831
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.7001
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1156
Burned Peak Flow Rate (cfs)	0.1156
24-Hr Clear Runoff Volume (ac-ft)	0.0049
24-Hr Clear Runoff Volume (cu-ft)	211.2766



Peak Flow Hydrologic Analysis

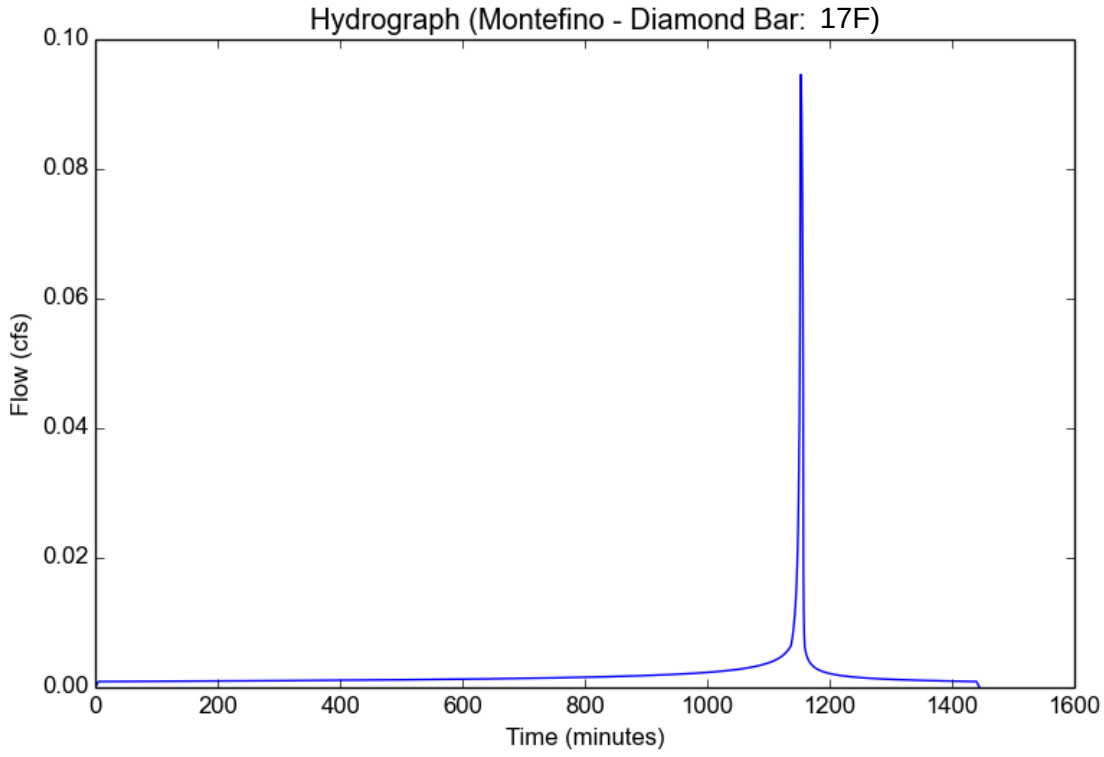
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	17F
Area (ac)	0.09
Flow Path Length (ft)	104.0
Flow Path Slope (vft/hft)	0.19048
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.7001
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0946
Burned Peak Flow Rate (cfs)	0.0946
24-Hr Clear Runoff Volume (ac-ft)	0.004
24-Hr Clear Runoff Volume (cu-ft)	172.8627



Peak Flow Hydrologic Analysis

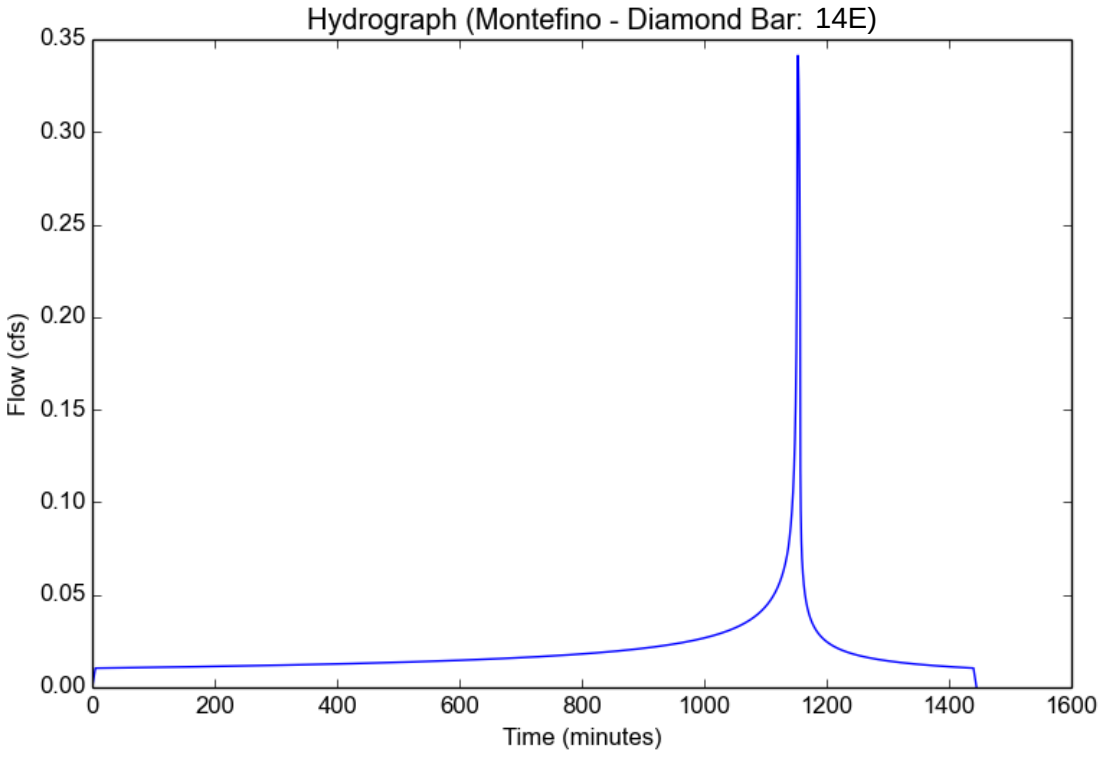
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	14E
Area (ac)	0.27
Flow Path Length (ft)	149.0
Flow Path Slope (vft/hft)	0.04322
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.8423
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3413
Burned Peak Flow Rate (cfs)	0.3413
24-Hr Clear Runoff Volume (ac-ft)	0.0394
24-Hr Clear Runoff Volume (cu-ft)	1714.6571



Peak Flow Hydrologic Analysis

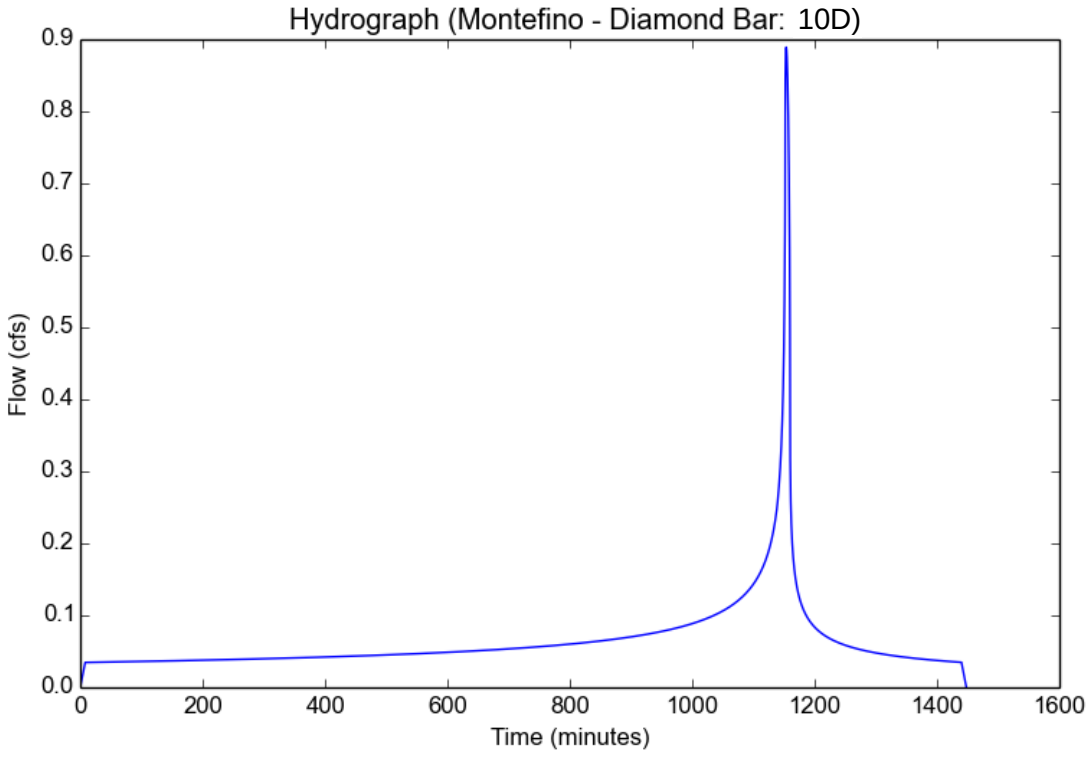
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	10D
Area (ac)	0.9
Flow Path Length (ft)	316.0
Flow Path Slope (vft/hft)	0.03114
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.2033
Undeveloped Runoff Coefficient (Cu)	0.5958
Developed Runoff Coefficient (Cd)	0.8209
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.889
Burned Peak Flow Rate (cfs)	0.889
24-Hr Clear Runoff Volume (ac-ft)	0.1311
24-Hr Clear Runoff Volume (cu-ft)	5712.7393



Peak Flow Hydrologic Analysis

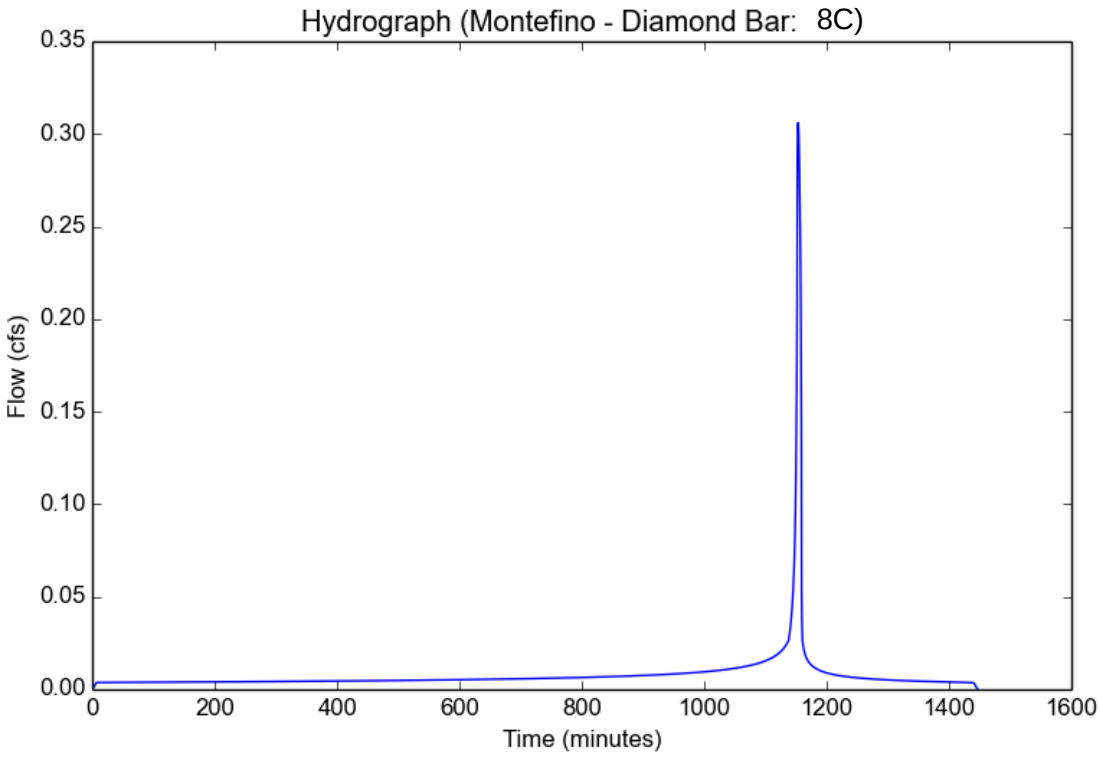
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	8C
Area (ac)	0.37
Flow Path Length (ft)	259.0
Flow Path Slope (vft/hft)	0.08263
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.2813
Undeveloped Runoff Coefficient (Cu)	0.6173
Developed Runoff Coefficient (Cd)	0.6456
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	0.3061
Burned Peak Flow Rate (cfs)	0.3061
24-Hr Clear Runoff Volume (ac-ft)	0.0162
24-Hr Clear Runoff Volume (cu-ft)	707.7695



Peak Flow Hydrologic Analysis

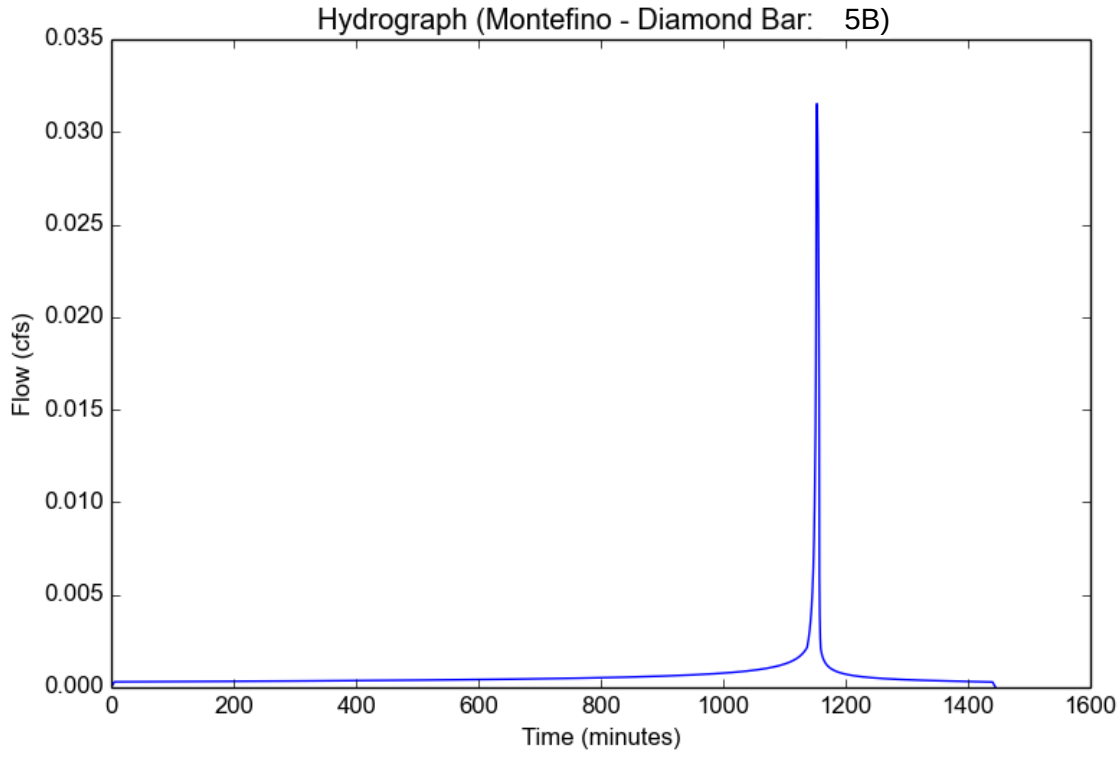
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.03
Flow Path Length (ft)	116.0
Flow Path Slope (vft/hft)	0.09741
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.7001
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0315
Burned Peak Flow Rate (cfs)	0.0315
24-Hr Clear Runoff Volume (ac-ft)	0.0013
24-Hr Clear Runoff Volume (cu-ft)	57.6209



Peak Flow Hydrologic Analysis

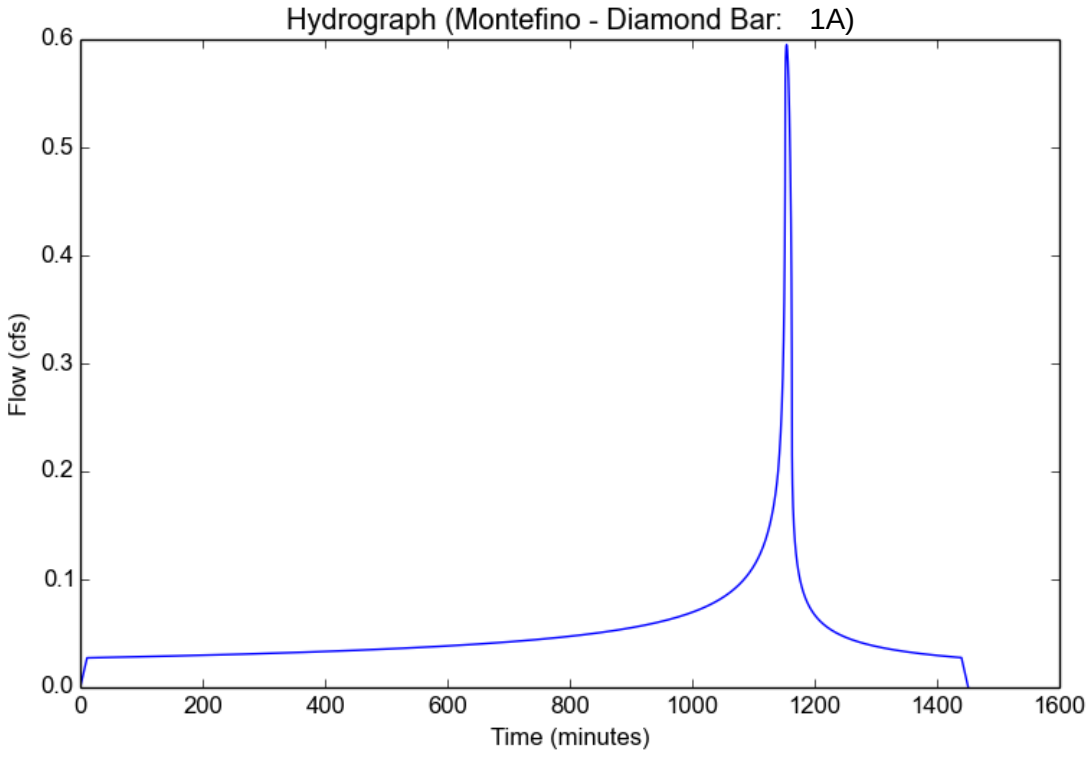
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.71
Flow Path Length (ft)	343.0
Flow Path Slope (vft/hft)	0.00633
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.0361
Undeveloped Runoff Coefficient (Cu)	0.5495
Developed Runoff Coefficient (Cd)	0.8089
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	0.595
Burned Peak Flow Rate (cfs)	0.595
24-Hr Clear Runoff Volume (ac-ft)	0.1034
24-Hr Clear Runoff Volume (cu-ft)	4505.0539



Peak Flow Hydrologic Analysis

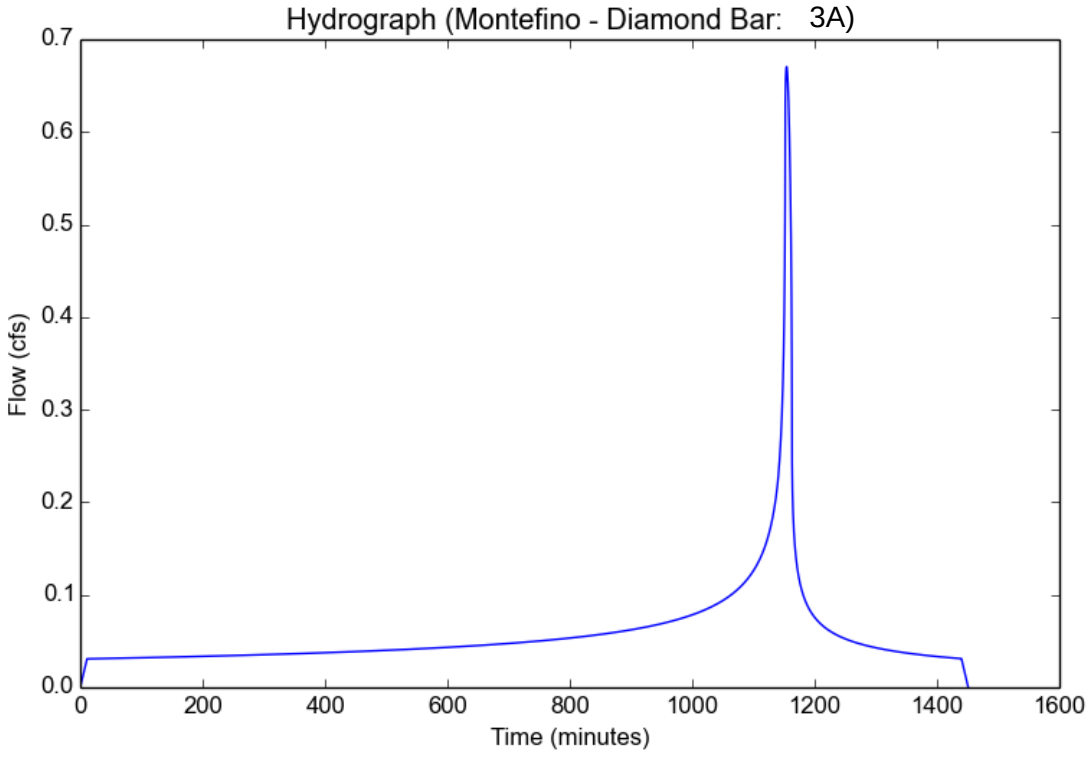
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3A
Area (ac)	0.8
Flow Path Length (ft)	296.0
Flow Path Slope (vft/hft)	0.0052
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.0361
Undeveloped Runoff Coefficient (Cu)	0.5495
Developed Runoff Coefficient (Cd)	0.8089
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	0.6704
Burned Peak Flow Rate (cfs)	0.6704
24-Hr Clear Runoff Volume (ac-ft)	0.1165
24-Hr Clear Runoff Volume (cu-ft)	5076.1171



Peak Flow Hydrologic Analysis

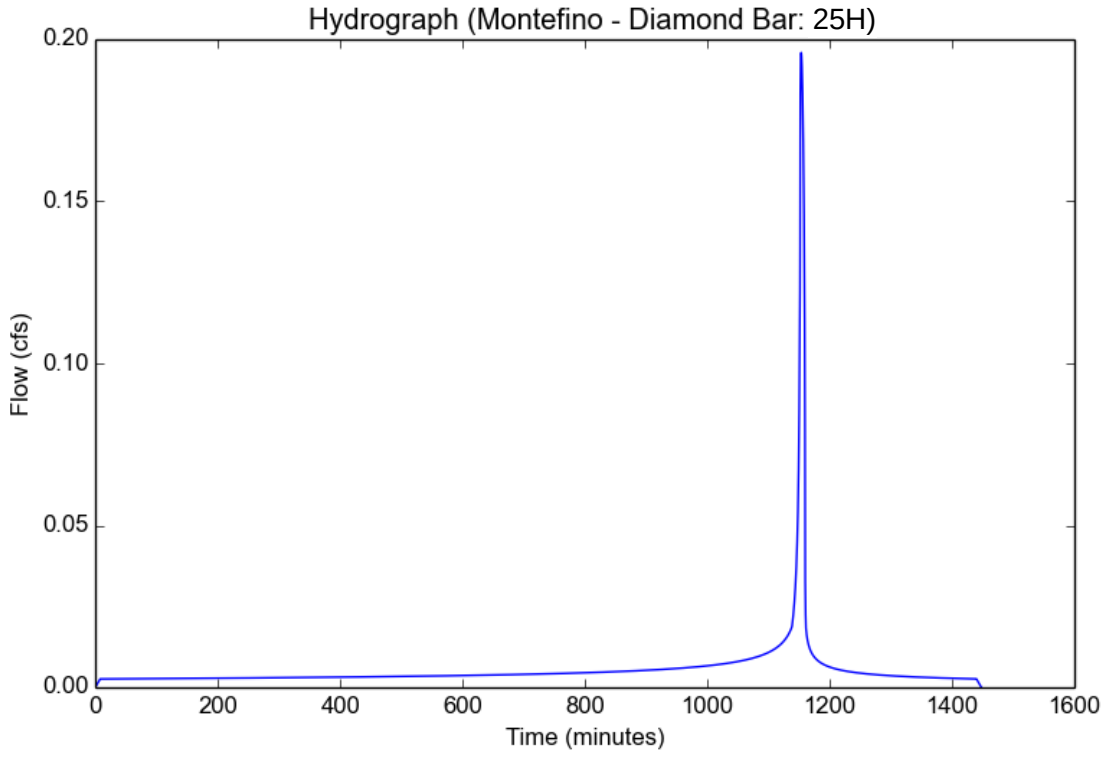
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	25H
Area (ac)	0.26
Flow Path Length (ft)	315.0
Flow Path Slope (vft/hft)	0.09371
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.2033
Undeveloped Runoff Coefficient (Cu)	0.5958
Developed Runoff Coefficient (Cd)	0.6262
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.1959
Burned Peak Flow Rate (cfs)	0.1959
24-Hr Clear Runoff Volume (ac-ft)	0.0114
24-Hr Clear Runoff Volume (cu-ft)	496.5943



Peak Flow Hydrologic Analysis

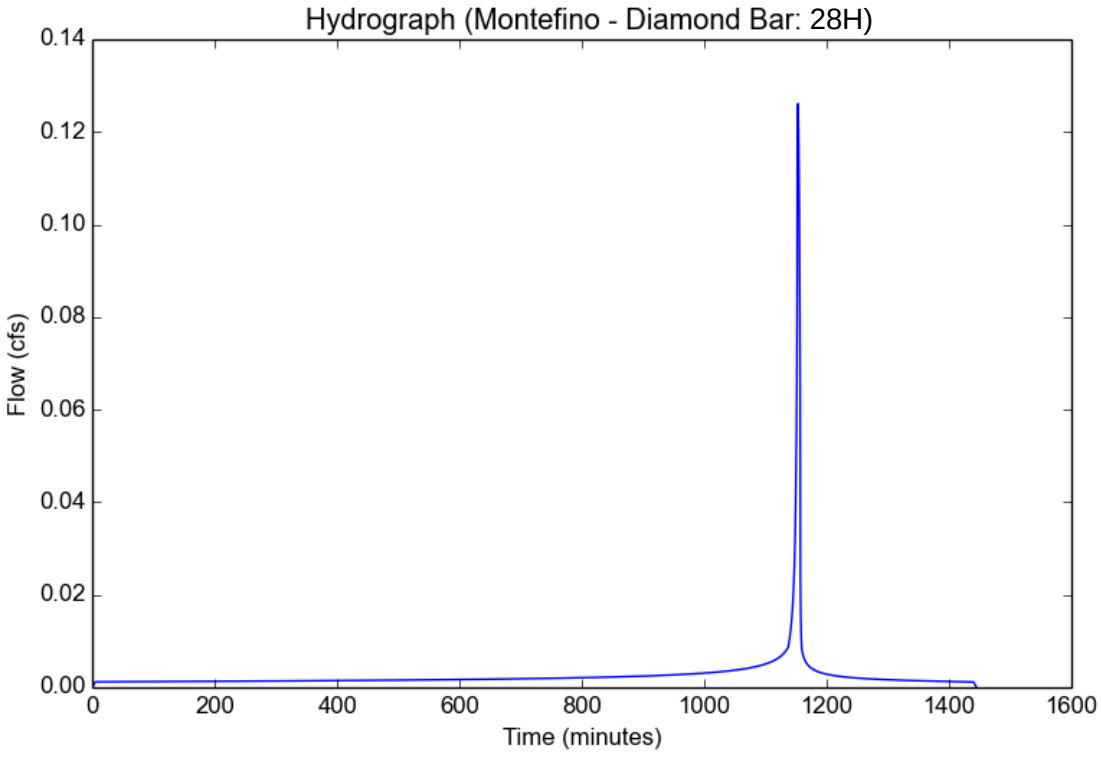
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	28H
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03339
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.6779
Developed Runoff Coefficient (Cd)	0.7001
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1261
Burned Peak Flow Rate (cfs)	0.1261
24-Hr Clear Runoff Volume (ac-ft)	0.0053
24-Hr Clear Runoff Volume (cu-ft)	230.4836



Peak Flow Hydrologic Analysis

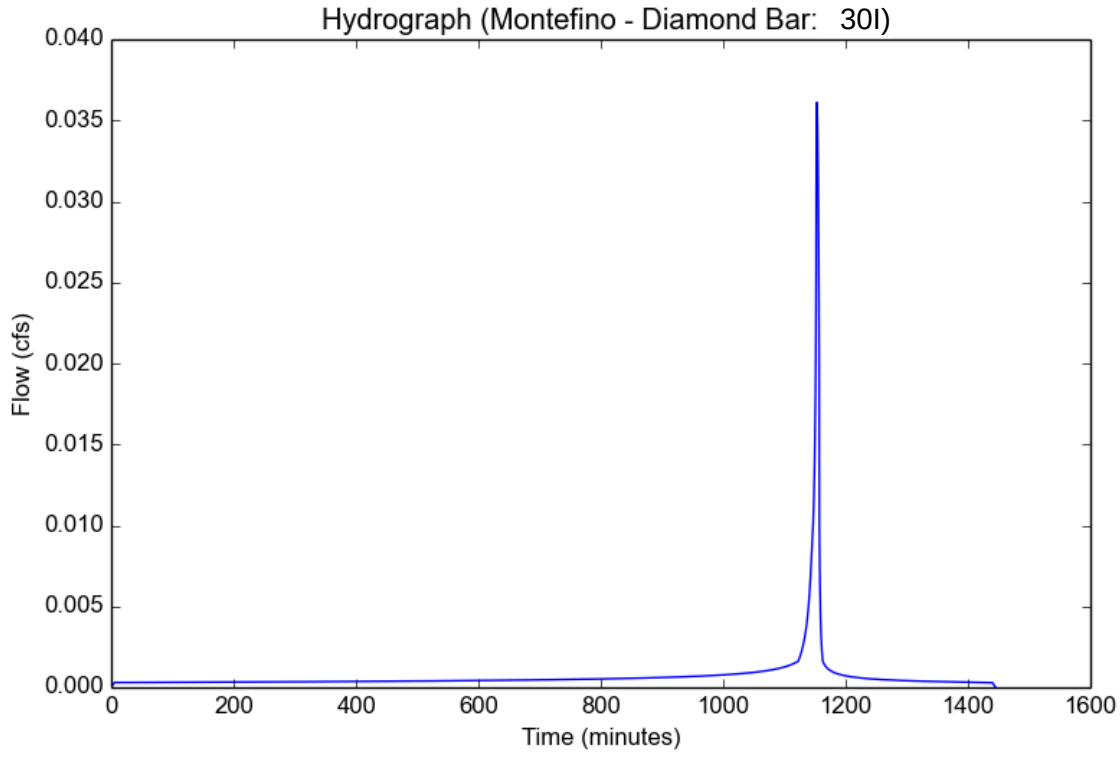
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	30I
Area (ac)	0.03
Flow Path Length (ft)	49.0
Flow Path Slope (vft/hft)	0.10204
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.5155
Peak Intensity (in/hr)	1.5008
Undeveloped Runoff Coefficient (Cu)	0.7913
Developed Runoff Coefficient (Cd)	0.8021
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0361
Burned Peak Flow Rate (cfs)	0.0361
24-Hr Clear Runoff Volume (ac-ft)	0.0015
24-Hr Clear Runoff Volume (cu-ft)	63.2677



Peak Flow Hydrologic Analysis

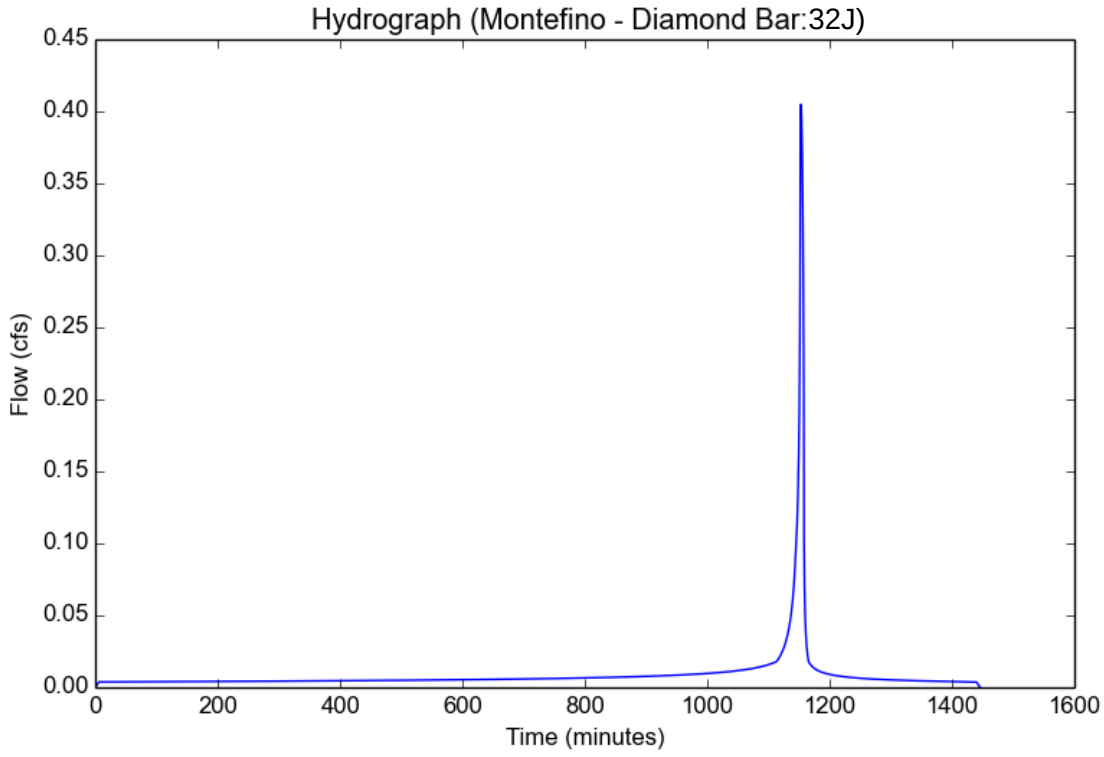
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	32J
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.0788
Undeveloped Runoff Coefficient (Cu)	0.7658
Developed Runoff Coefficient (Cd)	0.7792
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.4049
Burned Peak Flow Rate (cfs)	0.4049
24-Hr Clear Runoff Volume (ac-ft)	0.0182
24-Hr Clear Runoff Volume (cu-ft)	793.8702



Peak Flow Hydrologic Analysis

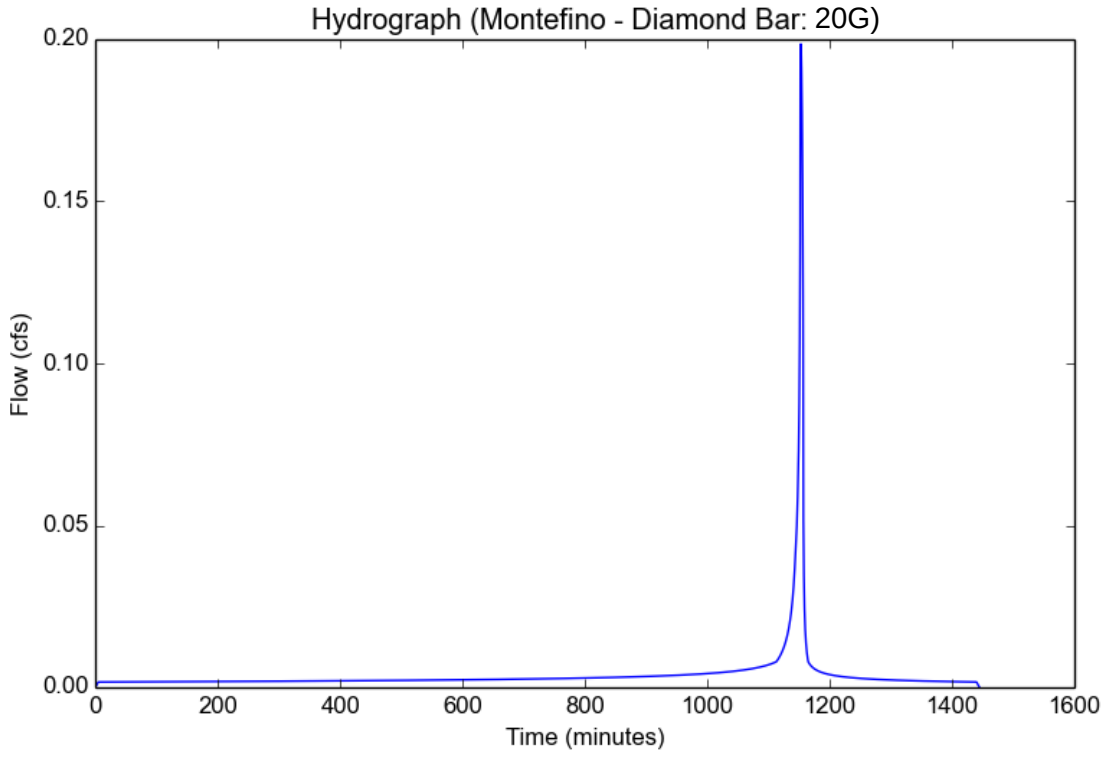
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	20G
Area (ac)	0.11
Flow Path Length (ft)	136.0
Flow Path Slope (vft/hft)	0.05831
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1986
Burned Peak Flow Rate (cfs)	0.1986
24-Hr Clear Runoff Volume (ac-ft)	0.008
24-Hr Clear Runoff Volume (cu-ft)	349.5947



Peak Flow Hydrologic Analysis

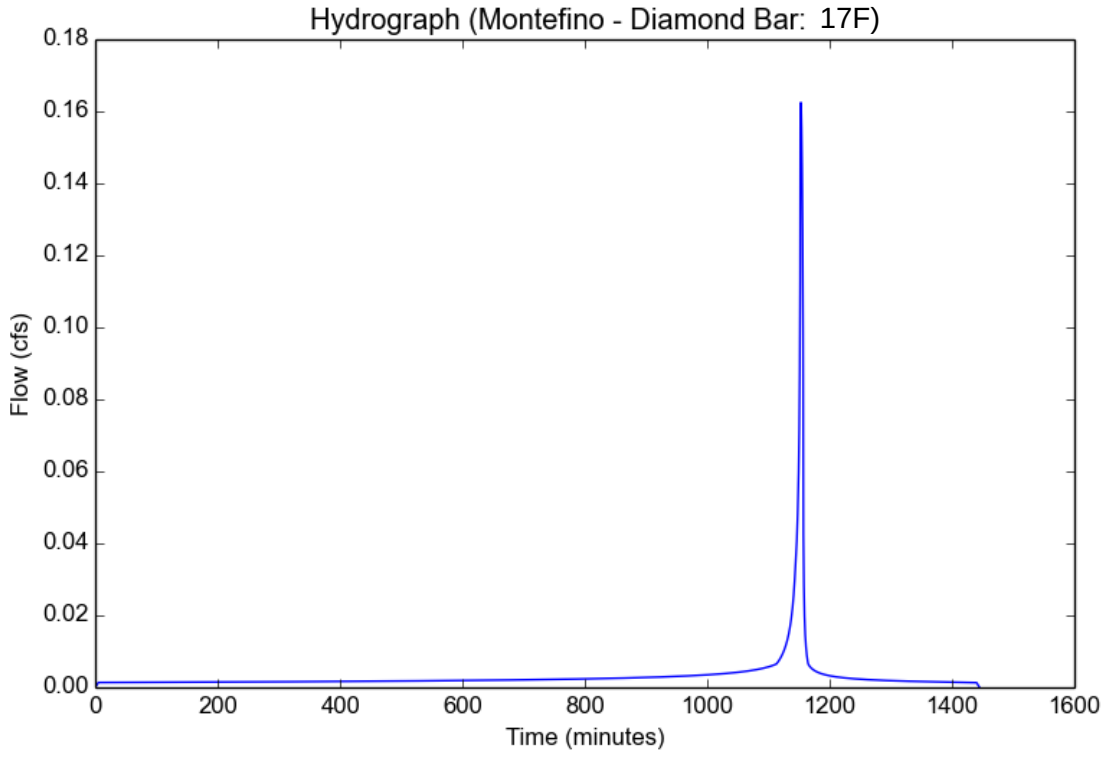
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	17F
Area (ac)	0.09
Flow Path Length (ft)	104.0
Flow Path Slope (vft/hft)	0.19048
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1625
Burned Peak Flow Rate (cfs)	0.1625
24-Hr Clear Runoff Volume (ac-ft)	0.0066
24-Hr Clear Runoff Volume (cu-ft)	286.0321



Peak Flow Hydrologic Analysis

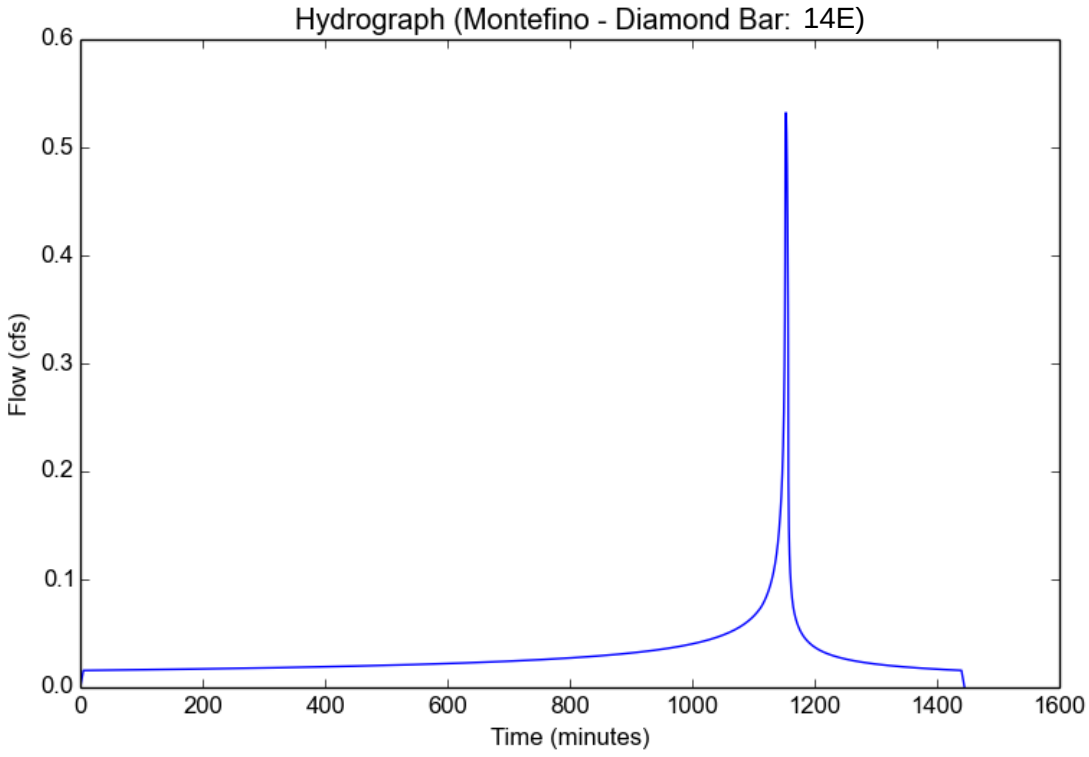
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	14E
Area (ac)	0.27
Flow Path Length (ft)	149.0
Flow Path Slope (vft/hft)	0.04322
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.8703
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5322
Burned Peak Flow Rate (cfs)	0.5322
24-Hr Clear Runoff Volume (ac-ft)	0.0599
24-Hr Clear Runoff Volume (cu-ft)	2609.3109



Peak Flow Hydrologic Analysis

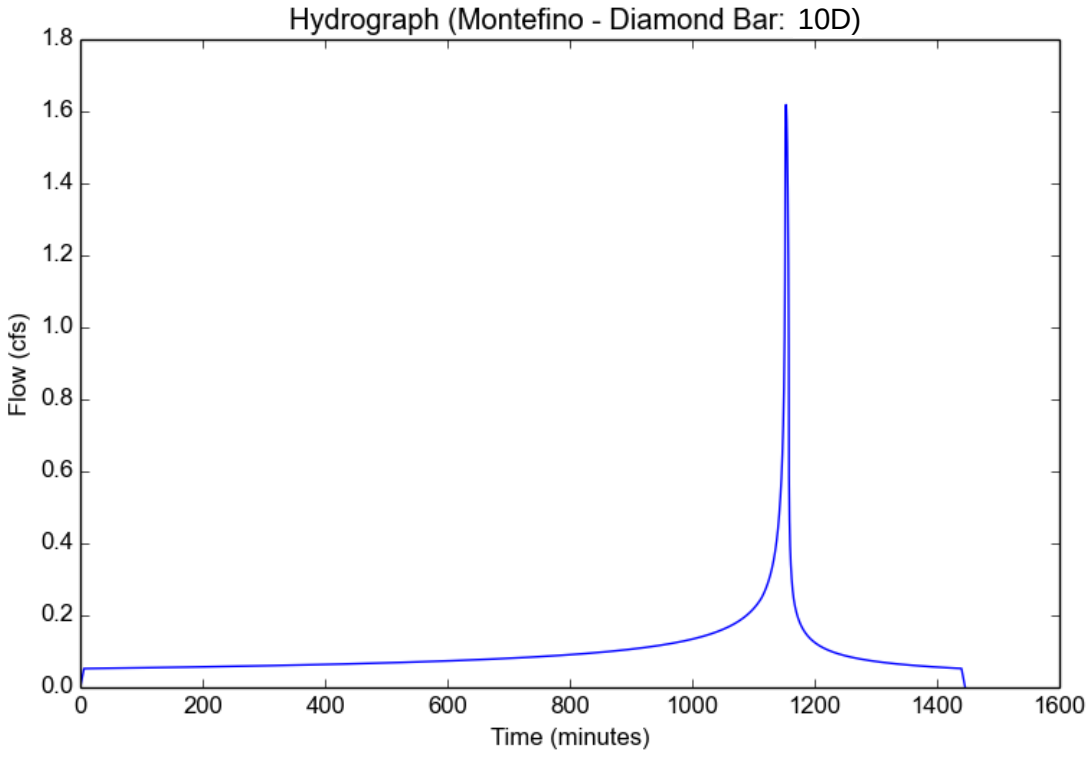
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	10D
Area (ac)	0.9
Flow Path Length (ft)	316.0
Flow Path Slope (vft/hft)	0.03114
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.0788
Undeveloped Runoff Coefficient (Cu)	0.7658
Developed Runoff Coefficient (Cd)	0.8651
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.6185
Burned Peak Flow Rate (cfs)	1.6185
24-Hr Clear Runoff Volume (ac-ft)	0.1997
24-Hr Clear Runoff Volume (cu-ft)	8697.0142



Peak Flow Hydrologic Analysis

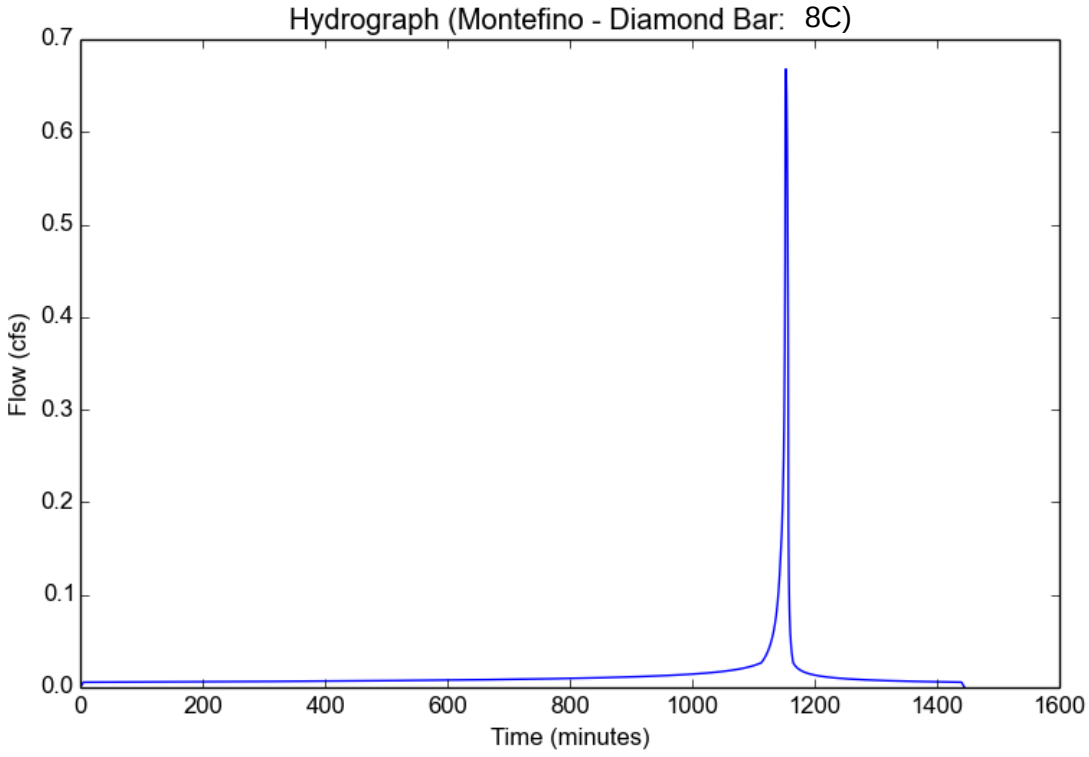
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	8C
Area (ac)	0.37
Flow Path Length (ft)	259.0
Flow Path Slope (vft/hft)	0.08263
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6679
Burned Peak Flow Rate (cfs)	0.6679
24-Hr Clear Runoff Volume (ac-ft)	0.027
24-Hr Clear Runoff Volume (cu-ft)	1175.9096



Peak Flow Hydrologic Analysis

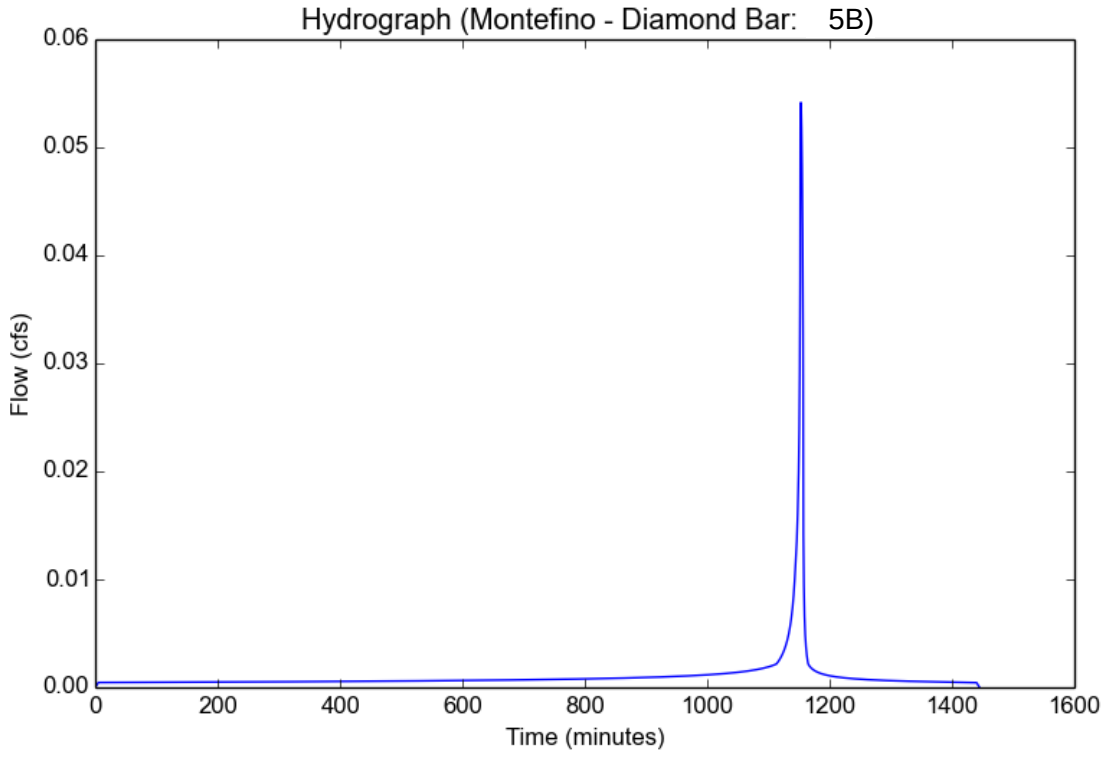
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.03
Flow Path Length (ft)	116.0
Flow Path Slope (vft/hft)	0.09741
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0542
Burned Peak Flow Rate (cfs)	0.0542
24-Hr Clear Runoff Volume (ac-ft)	0.0022
24-Hr Clear Runoff Volume (cu-ft)	95.344



Peak Flow Hydrologic Analysis

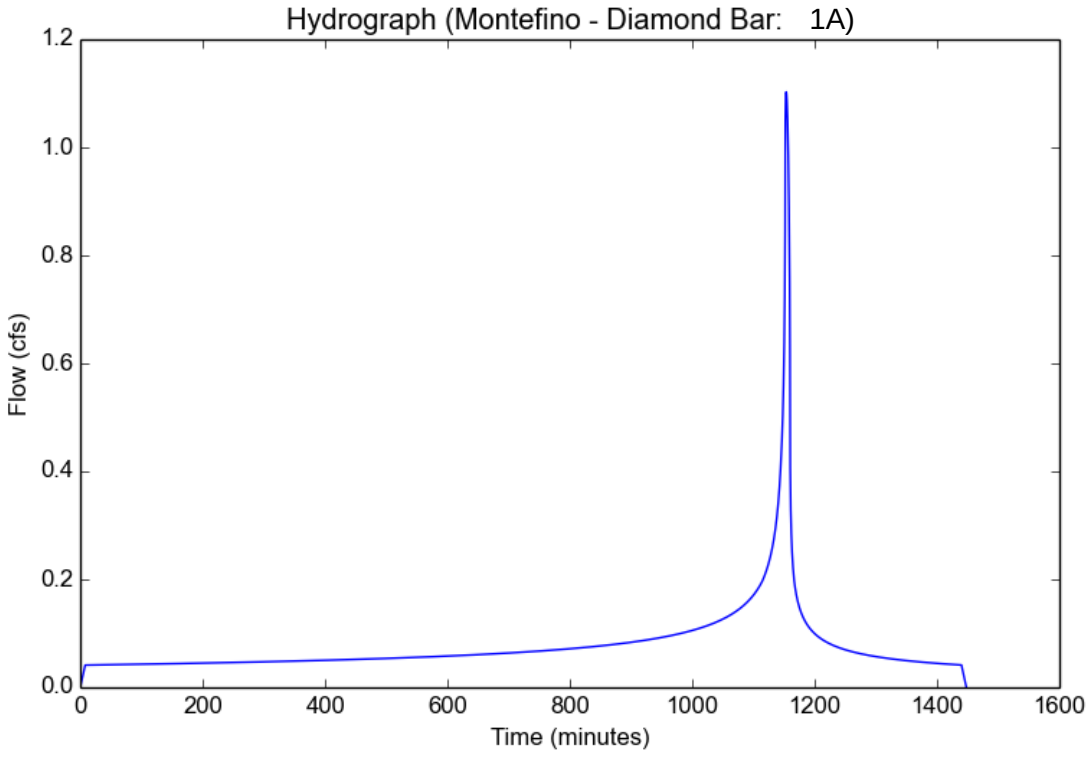
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.71
Flow Path Length (ft)	343.0
Flow Path Slope (vft/hft)	0.00633
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	1.8159
Undeveloped Runoff Coefficient (Cu)	0.728
Developed Runoff Coefficient (Cd)	0.8553
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	1.1027
Burned Peak Flow Rate (cfs)	1.1027
24-Hr Clear Runoff Volume (ac-ft)	0.1575
24-Hr Clear Runoff Volume (cu-ft)	6859.5284



Peak Flow Hydrologic Analysis

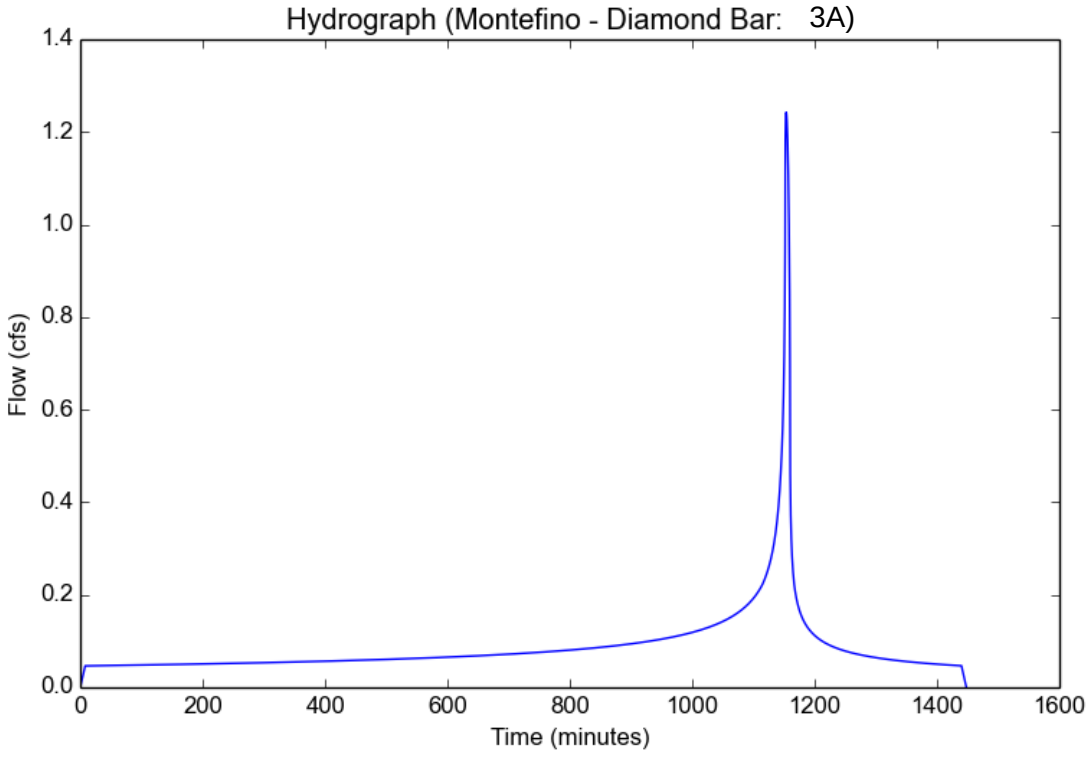
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3A
Area (ac)	0.8
Flow Path Length (ft)	296.0
Flow Path Slope (vft/hft)	0.0052
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	1.8159
Undeveloped Runoff Coefficient (Cu)	0.728
Developed Runoff Coefficient (Cd)	0.8553
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	1.2425
Burned Peak Flow Rate (cfs)	1.2425
24-Hr Clear Runoff Volume (ac-ft)	0.1774
24-Hr Clear Runoff Volume (cu-ft)	7729.0461



Peak Flow Hydrologic Analysis

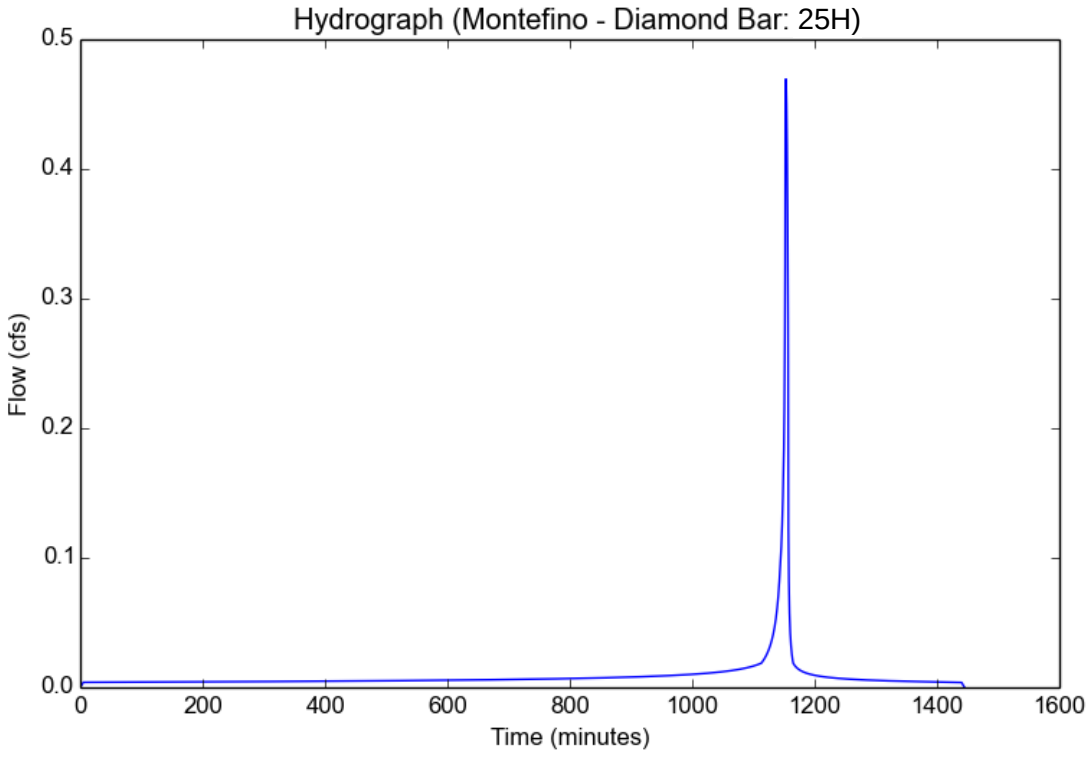
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	25H
Area (ac)	0.26
Flow Path Length (ft)	315.0
Flow Path Slope (vft/hft)	0.09371
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4693
Burned Peak Flow Rate (cfs)	0.4693
24-Hr Clear Runoff Volume (ac-ft)	0.019
24-Hr Clear Runoff Volume (cu-ft)	826.3149



Peak Flow Hydrologic Analysis

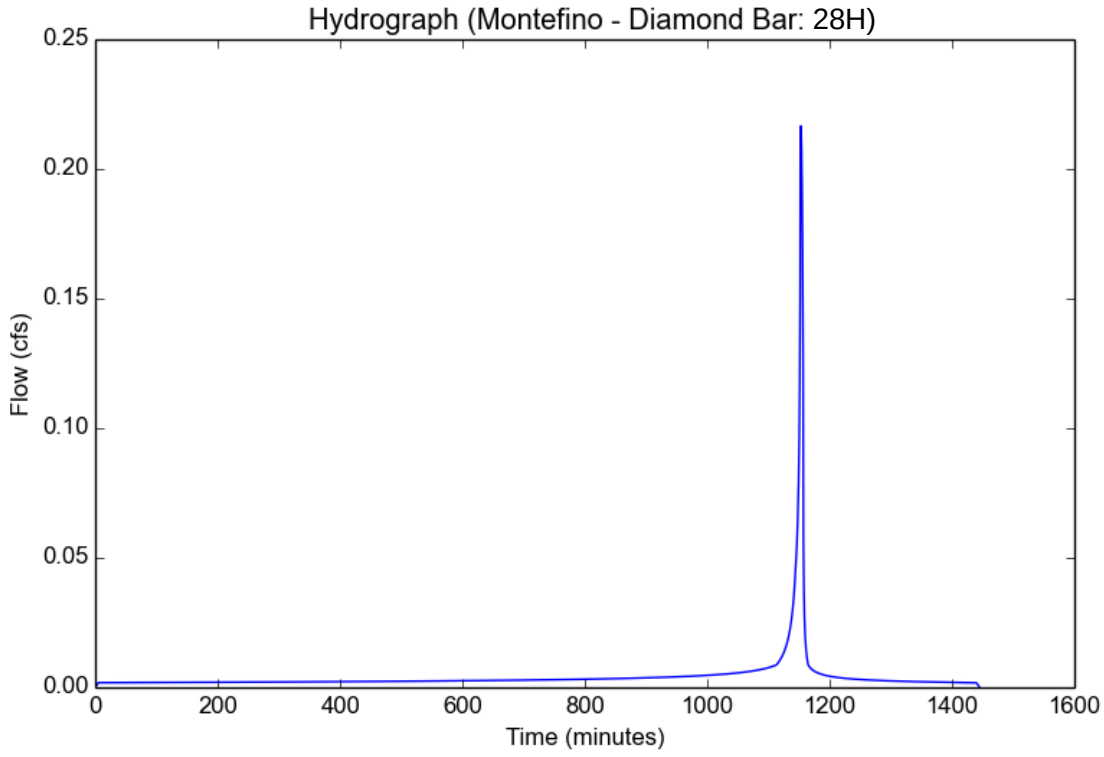
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	28H
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03339
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.7856
Developed Runoff Coefficient (Cd)	0.7971
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2166
Burned Peak Flow Rate (cfs)	0.2166
24-Hr Clear Runoff Volume (ac-ft)	0.0088
24-Hr Clear Runoff Volume (cu-ft)	381.3761



Peak Flow Hydrologic Analysis

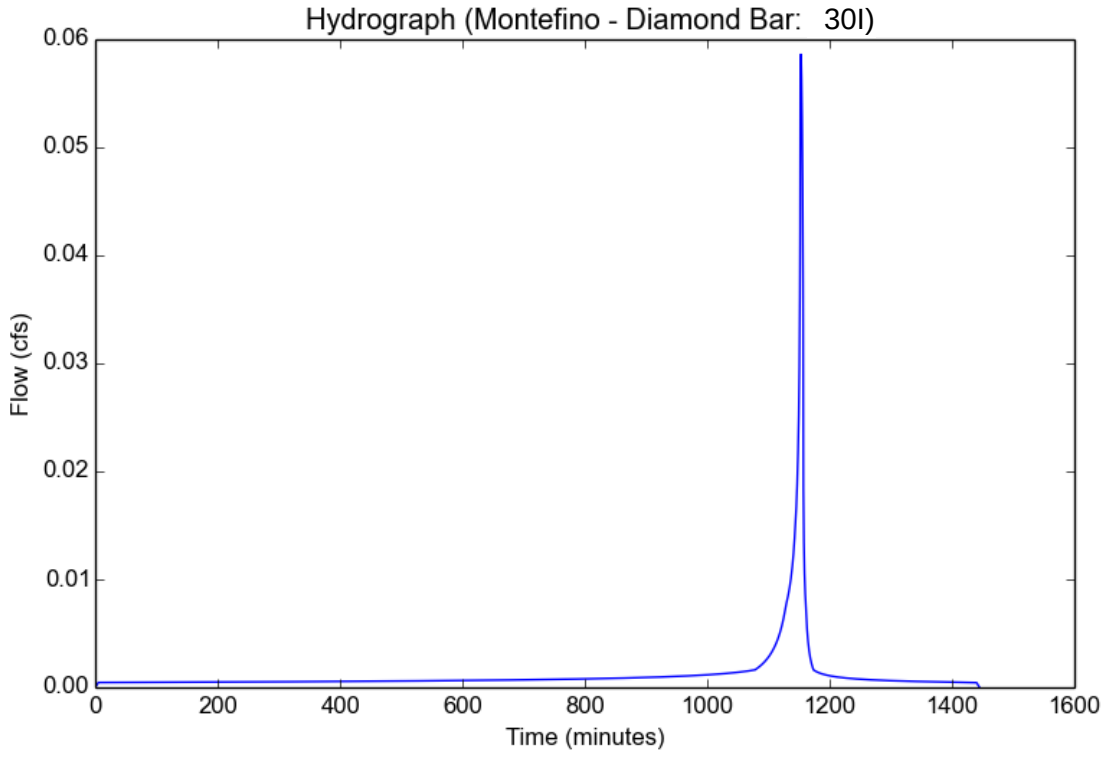
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	30I
Area (ac)	0.03
Flow Path Length (ft)	49.0
Flow Path Slope (vft/hft)	0.10204
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.796
Peak Intensity (in/hr)	2.2648
Undeveloped Runoff Coefficient (Cu)	0.8584
Developed Runoff Coefficient (Cd)	0.8625
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0586
Burned Peak Flow Rate (cfs)	0.0586
24-Hr Clear Runoff Volume (ac-ft)	0.0025
24-Hr Clear Runoff Volume (cu-ft)	108.5068



Peak Flow Hydrologic Analysis

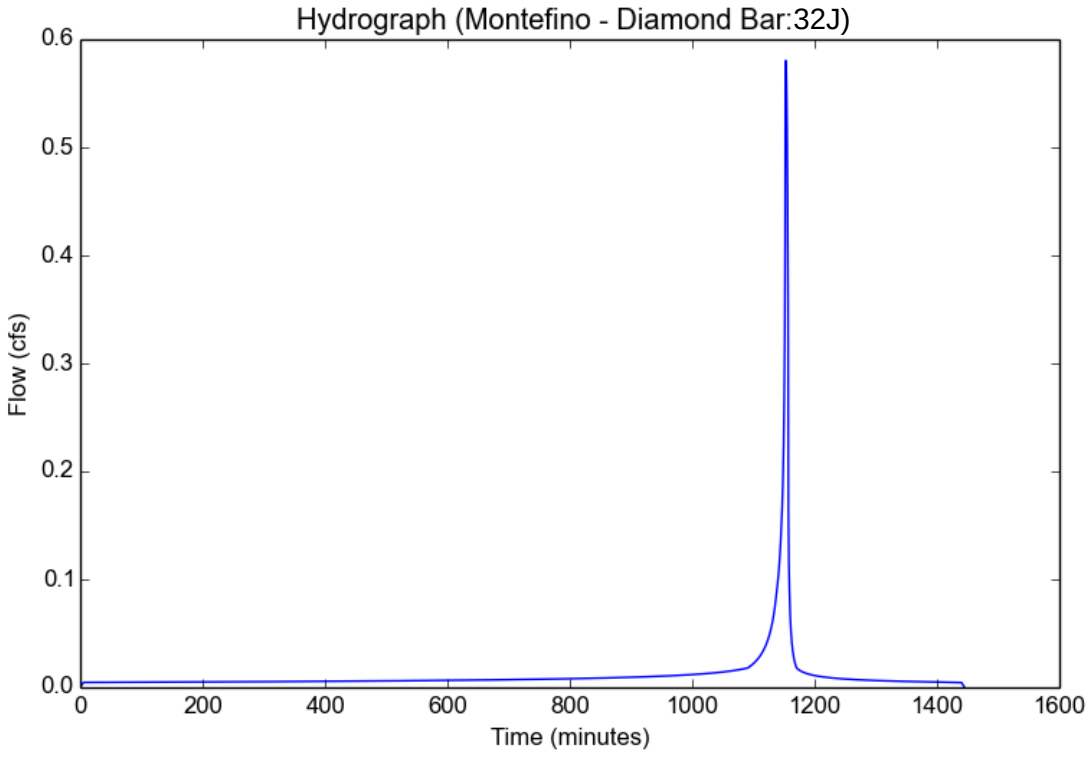
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	32J
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5804
Burned Peak Flow Rate (cfs)	0.5804
24-Hr Clear Runoff Volume (ac-ft)	0.0236
24-Hr Clear Runoff Volume (cu-ft)	1029.3317



Peak Flow Hydrologic Analysis

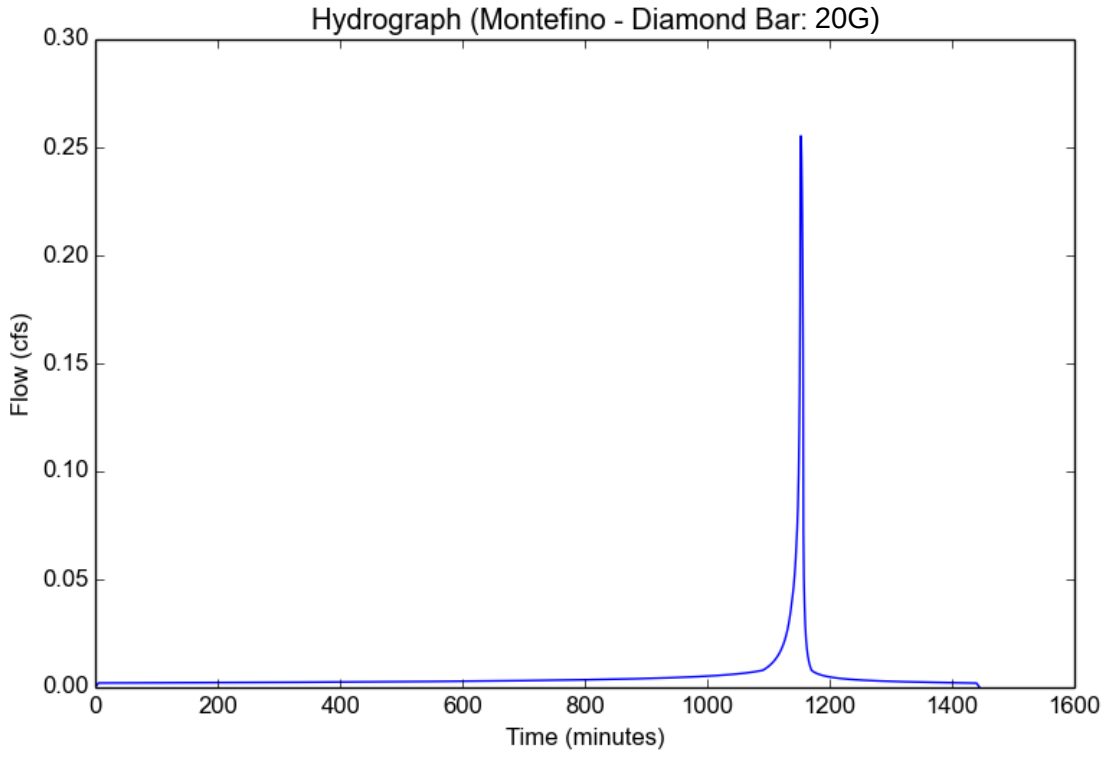
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	20G
Area (ac)	0.11
Flow Path Length (ft)	136.0
Flow Path Slope (vft/hft)	0.05831
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2554
Burned Peak Flow Rate (cfs)	0.2554
24-Hr Clear Runoff Volume (ac-ft)	0.0104
24-Hr Clear Runoff Volume (cu-ft)	452.906



Peak Flow Hydrologic Analysis

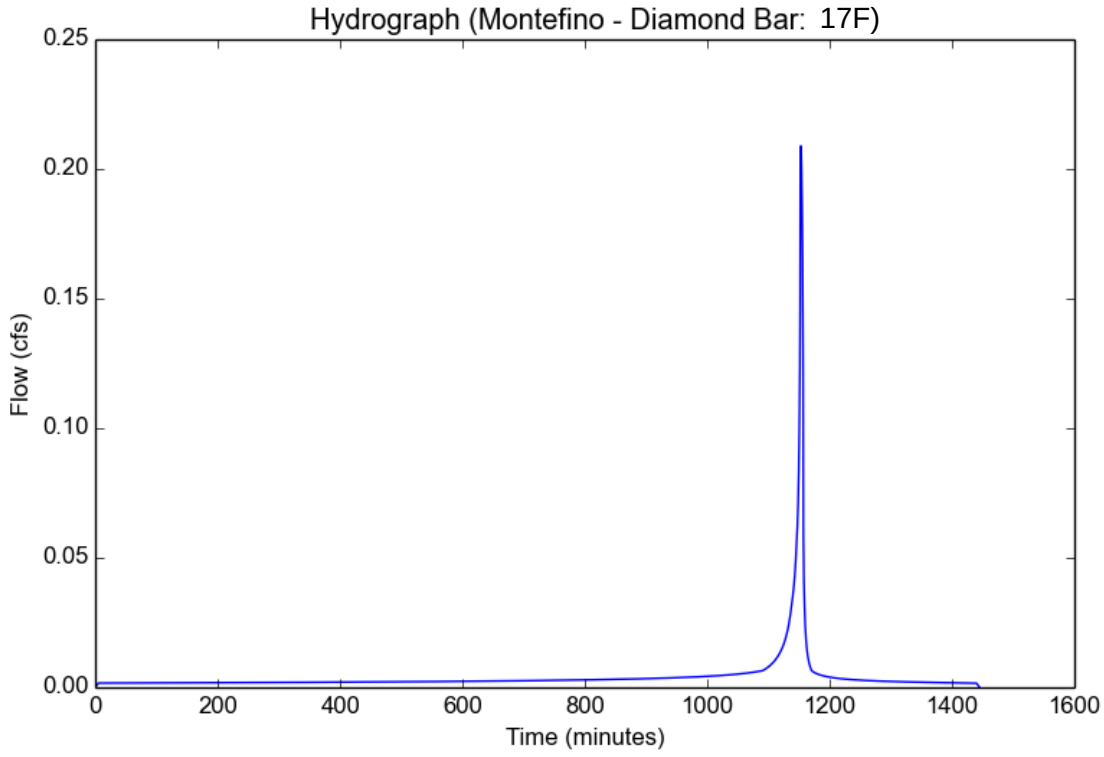
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	17F
Area (ac)	0.09
Flow Path Length (ft)	104.0
Flow Path Slope (vft/hft)	0.19048
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2089
Burned Peak Flow Rate (cfs)	0.2089
24-Hr Clear Runoff Volume (ac-ft)	0.0085
24-Hr Clear Runoff Volume (cu-ft)	370.5594



Peak Flow Hydrologic Analysis

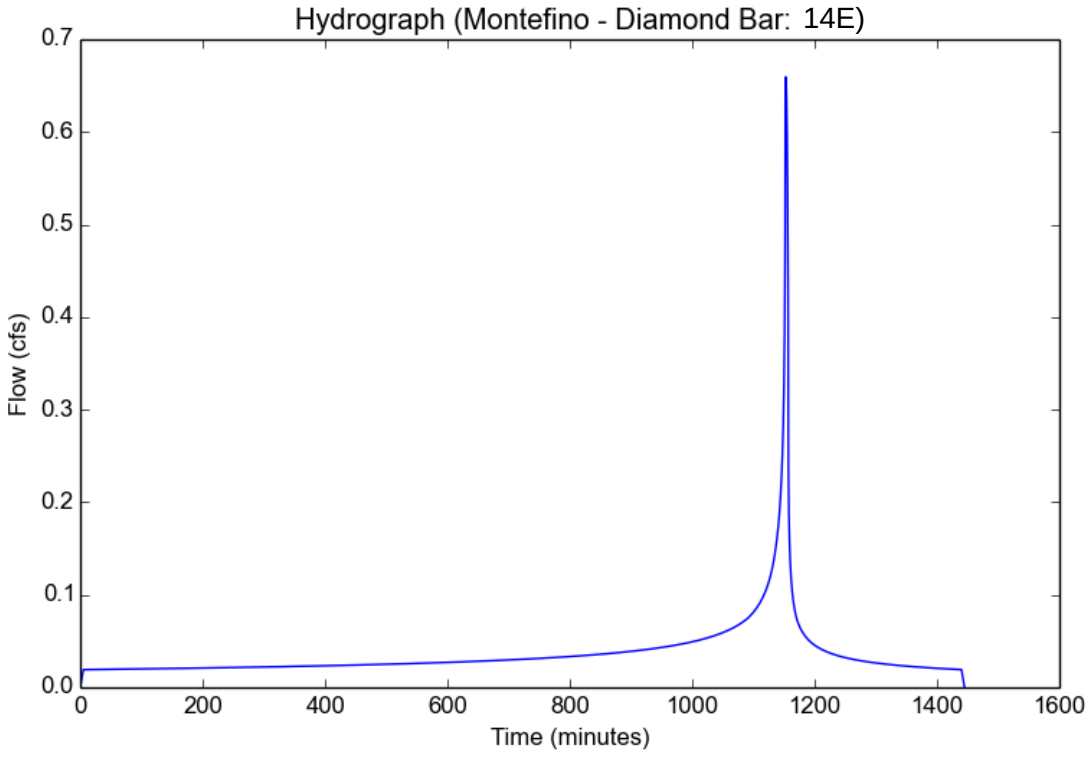
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	14E
Area (ac)	0.27
Flow Path Length (ft)	149.0
Flow Path Slope (vft/hft)	0.04322
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8822
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6595
Burned Peak Flow Rate (cfs)	0.6595
24-Hr Clear Runoff Volume (ac-ft)	0.0737
24-Hr Clear Runoff Volume (cu-ft)	3208.2257



Peak Flow Hydrologic Analysis

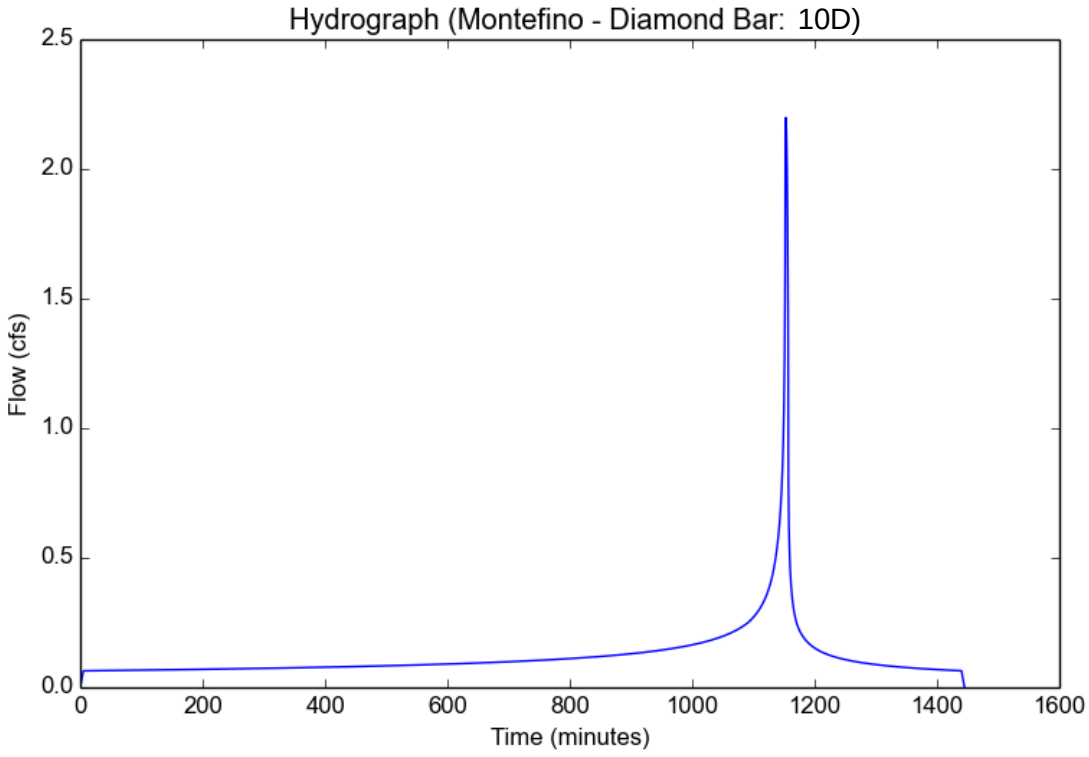
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	10D
Area (ac)	0.9
Flow Path Length (ft)	316.0
Flow Path Slope (vft/hft)	0.03114
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8822
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.1985
Burned Peak Flow Rate (cfs)	2.1985
24-Hr Clear Runoff Volume (ac-ft)	0.2455
24-Hr Clear Runoff Volume (cu-ft)	10694.0856



Peak Flow Hydrologic Analysis

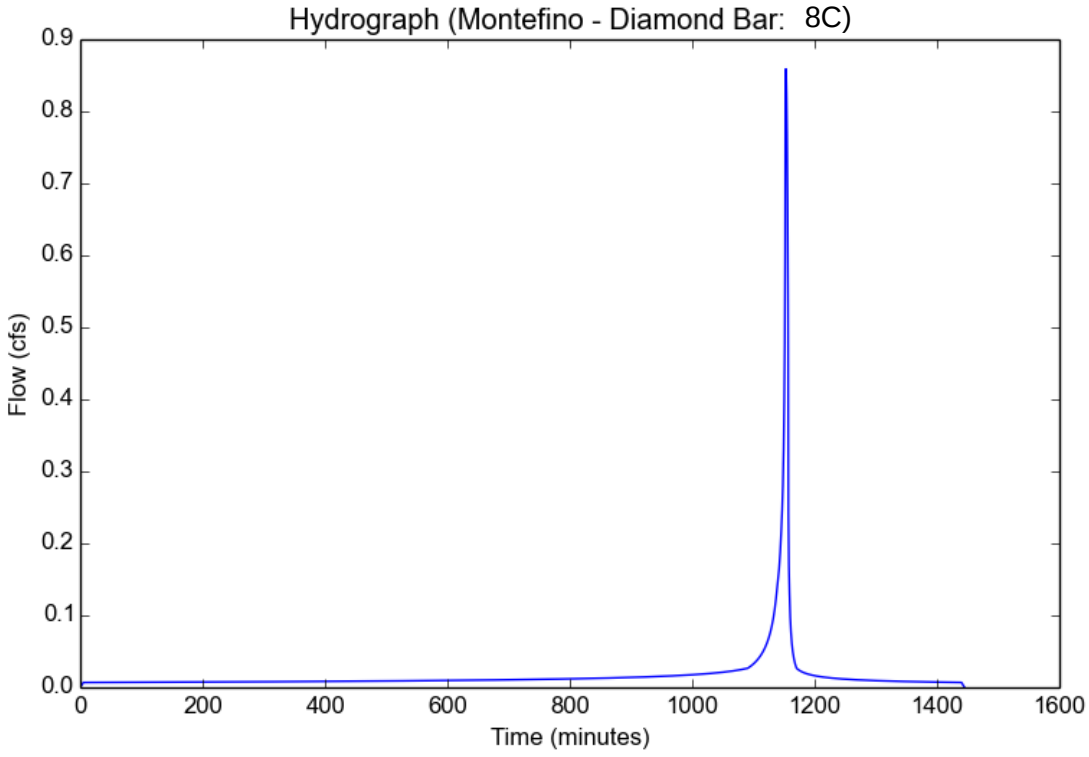
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	8C
Area (ac)	0.37
Flow Path Length (ft)	259.0
Flow Path Slope (vft/hft)	0.08263
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8589
Burned Peak Flow Rate (cfs)	0.8589
24-Hr Clear Runoff Volume (ac-ft)	0.035
24-Hr Clear Runoff Volume (cu-ft)	1523.411



Peak Flow Hydrologic Analysis

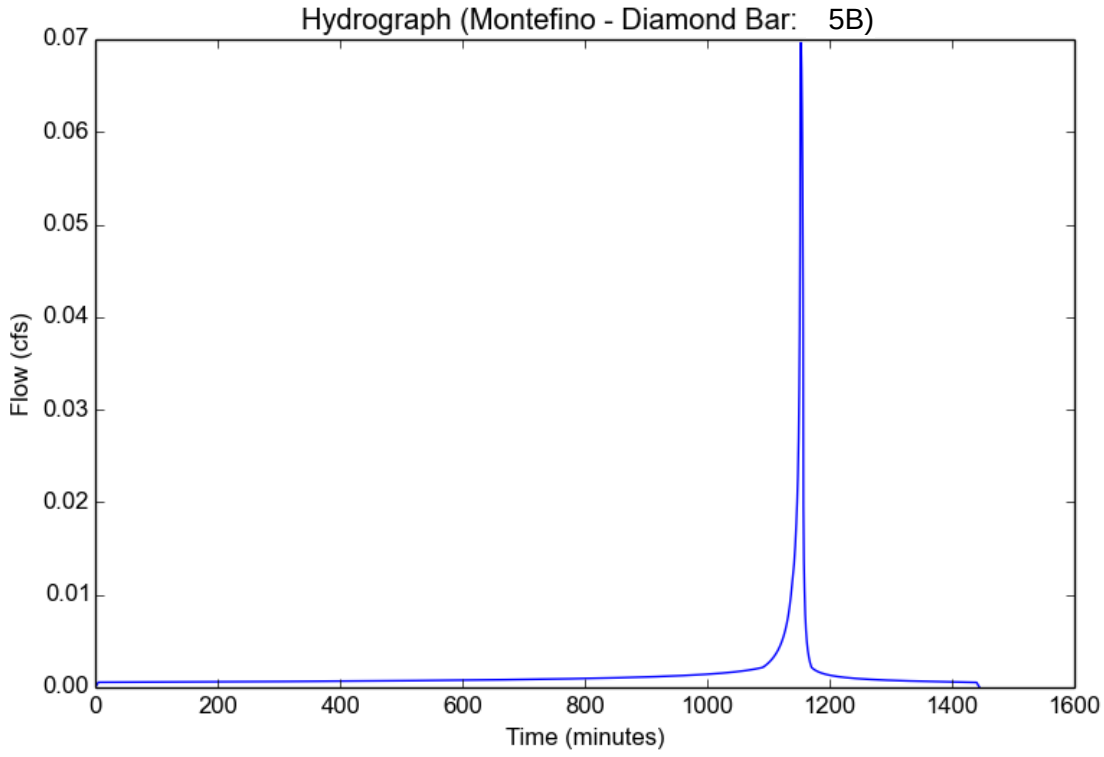
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.03
Flow Path Length (ft)	116.0
Flow Path Slope (vft/hft)	0.09741
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0696
Burned Peak Flow Rate (cfs)	0.0696
24-Hr Clear Runoff Volume (ac-ft)	0.0028
24-Hr Clear Runoff Volume (cu-ft)	123.5198



Peak Flow Hydrologic Analysis

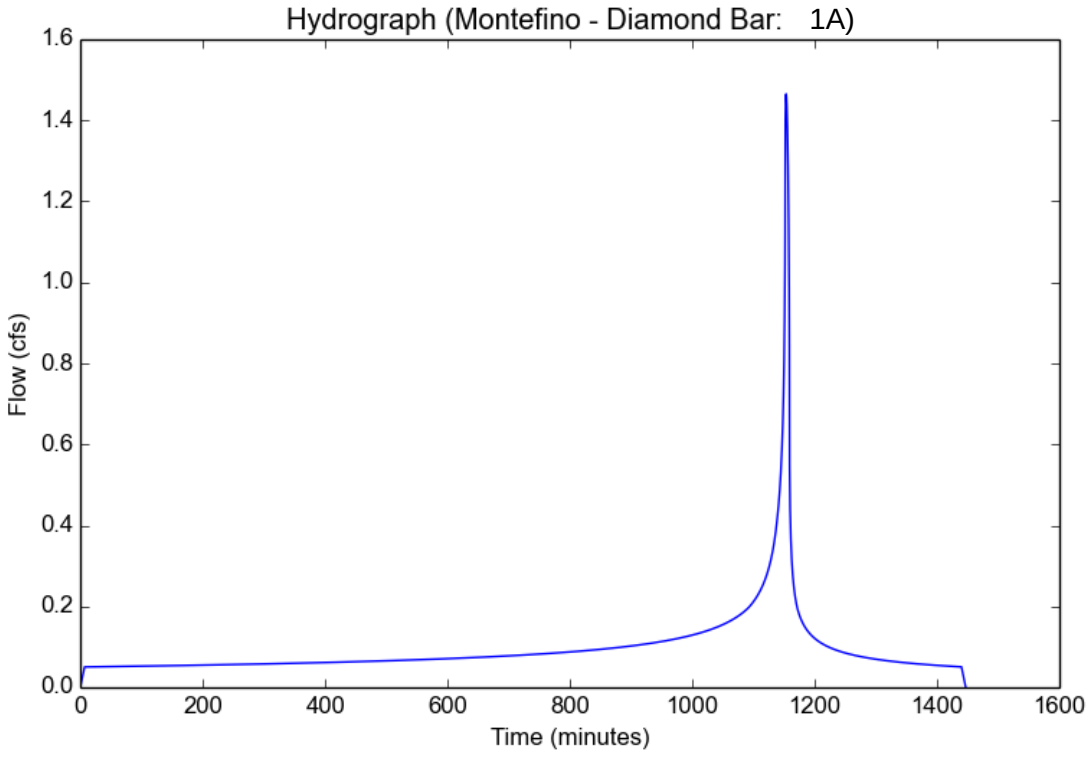
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.71
Flow Path Length (ft)	343.0
Flow Path Slope (vft/hft)	0.00633
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.3639
Undeveloped Runoff Coefficient (Cu)	0.7962
Developed Runoff Coefficient (Cd)	0.873
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.4653
Burned Peak Flow Rate (cfs)	1.4653
24-Hr Clear Runoff Volume (ac-ft)	0.1936
24-Hr Clear Runoff Volume (cu-ft)	8435.1388



Peak Flow Hydrologic Analysis

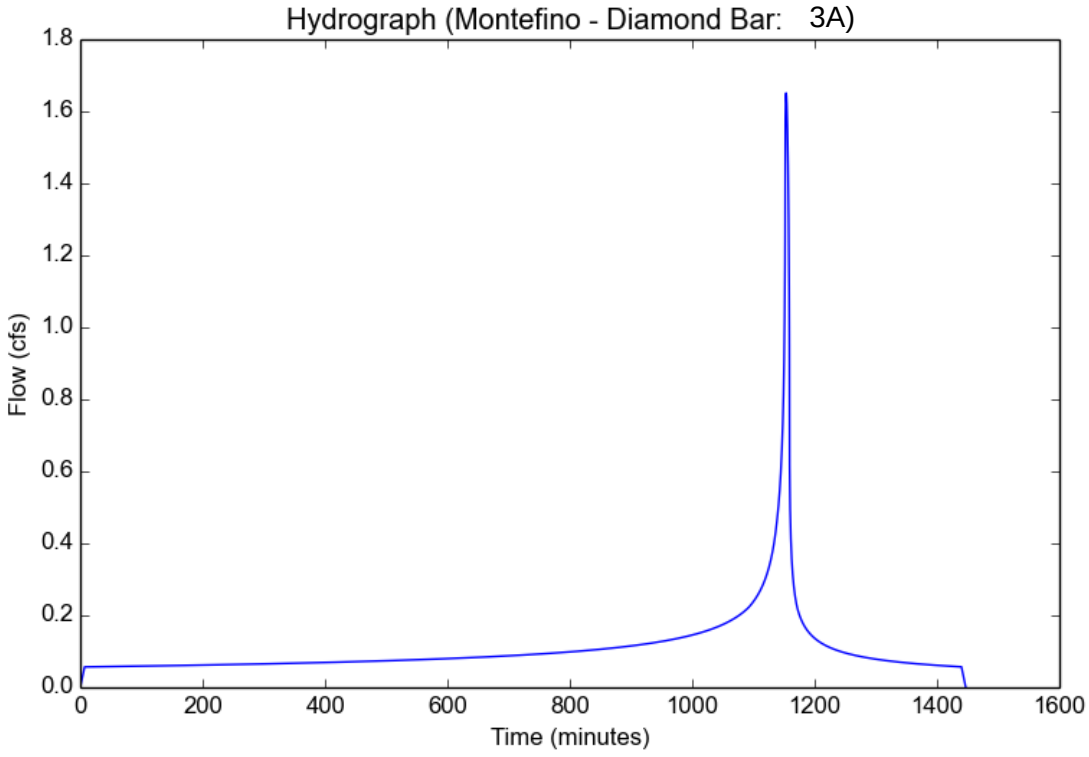
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3A
Area (ac)	0.8
Flow Path Length (ft)	296.0
Flow Path Slope (vft/hft)	0.0052
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.3639
Undeveloped Runoff Coefficient (Cu)	0.7962
Developed Runoff Coefficient (Cd)	0.873
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.651
Burned Peak Flow Rate (cfs)	1.651
24-Hr Clear Runoff Volume (ac-ft)	0.2182
24-Hr Clear Runoff Volume (cu-ft)	9504.3817



Peak Flow Hydrologic Analysis

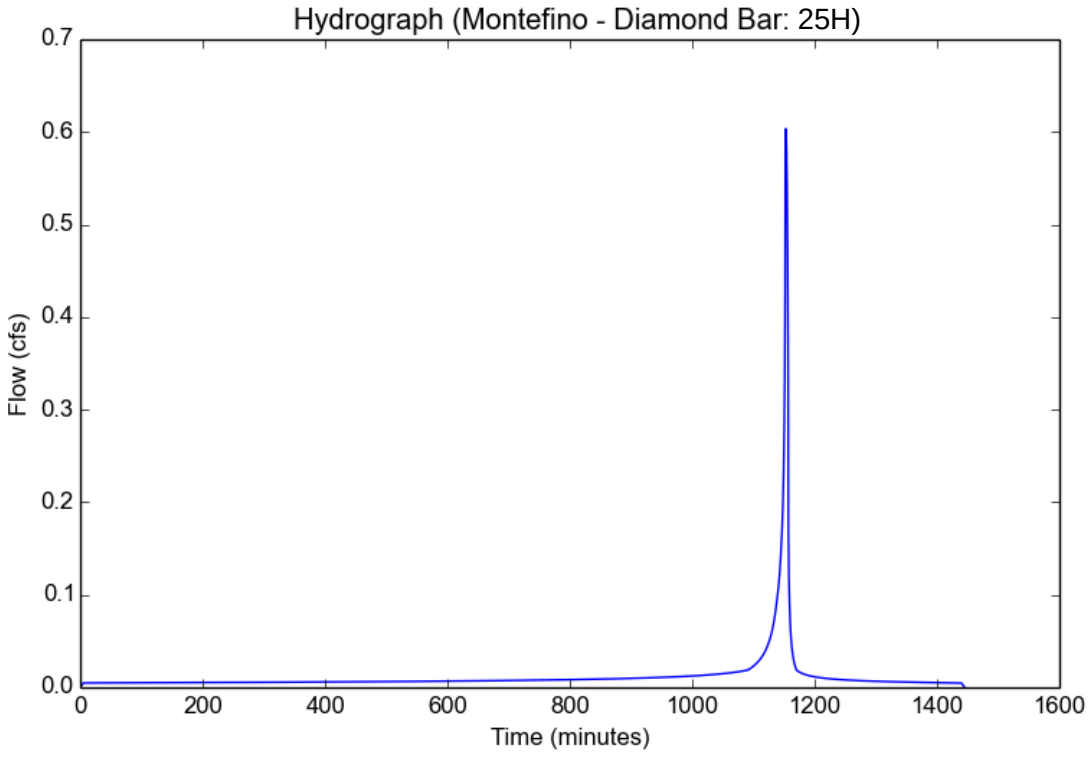
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	25H
Area (ac)	0.26
Flow Path Length (ft)	315.0
Flow Path Slope (vft/hft)	0.09371
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6036
Burned Peak Flow Rate (cfs)	0.6036
24-Hr Clear Runoff Volume (ac-ft)	0.0246
24-Hr Clear Runoff Volume (cu-ft)	1070.505



Peak Flow Hydrologic Analysis

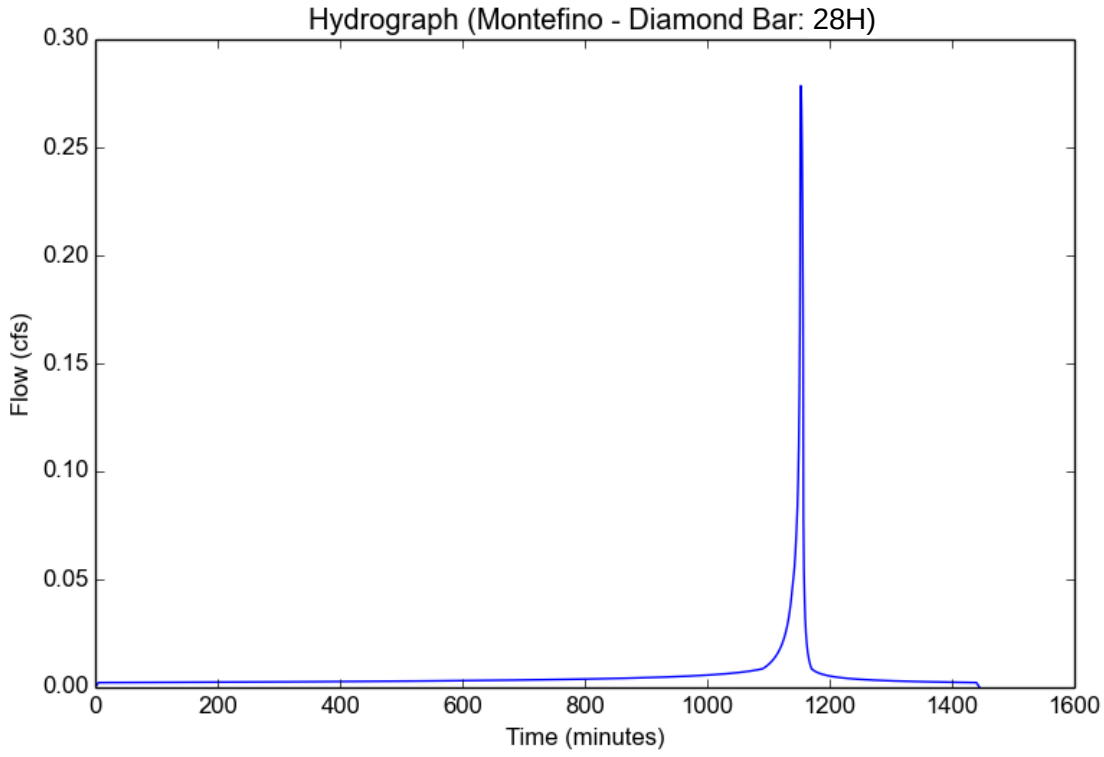
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	28H
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03339
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8384
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2786
Burned Peak Flow Rate (cfs)	0.2786
24-Hr Clear Runoff Volume (ac-ft)	0.0113
24-Hr Clear Runoff Volume (cu-ft)	494.0792



Peak Flow Hydrologic Analysis

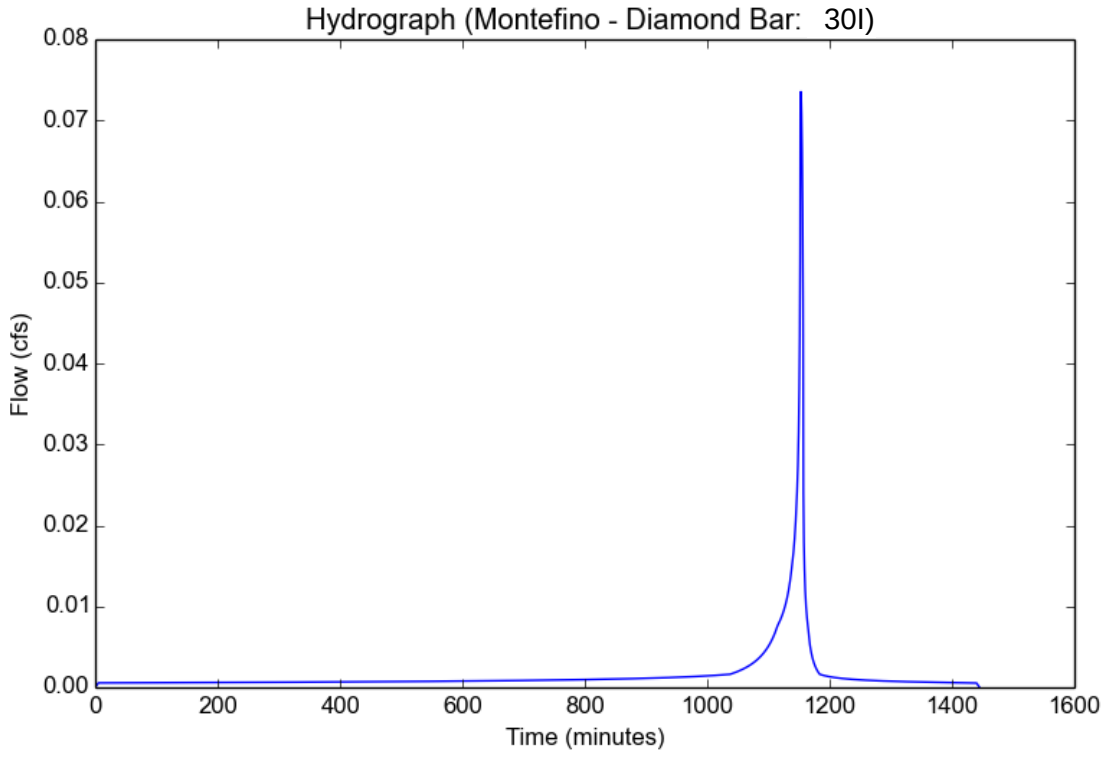
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	30I
Area (ac)	0.03
Flow Path Length (ft)	49.0
Flow Path Slope (vft/hft)	0.10204
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.641
Peak Intensity (in/hr)	2.7689
Undeveloped Runoff Coefficient (Cu)	0.8837
Developed Runoff Coefficient (Cd)	0.8853
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0735
Burned Peak Flow Rate (cfs)	0.0735
24-Hr Clear Runoff Volume (ac-ft)	0.0033
24-Hr Clear Runoff Volume (cu-ft)	143.5306



Peak Flow Hydrologic Analysis

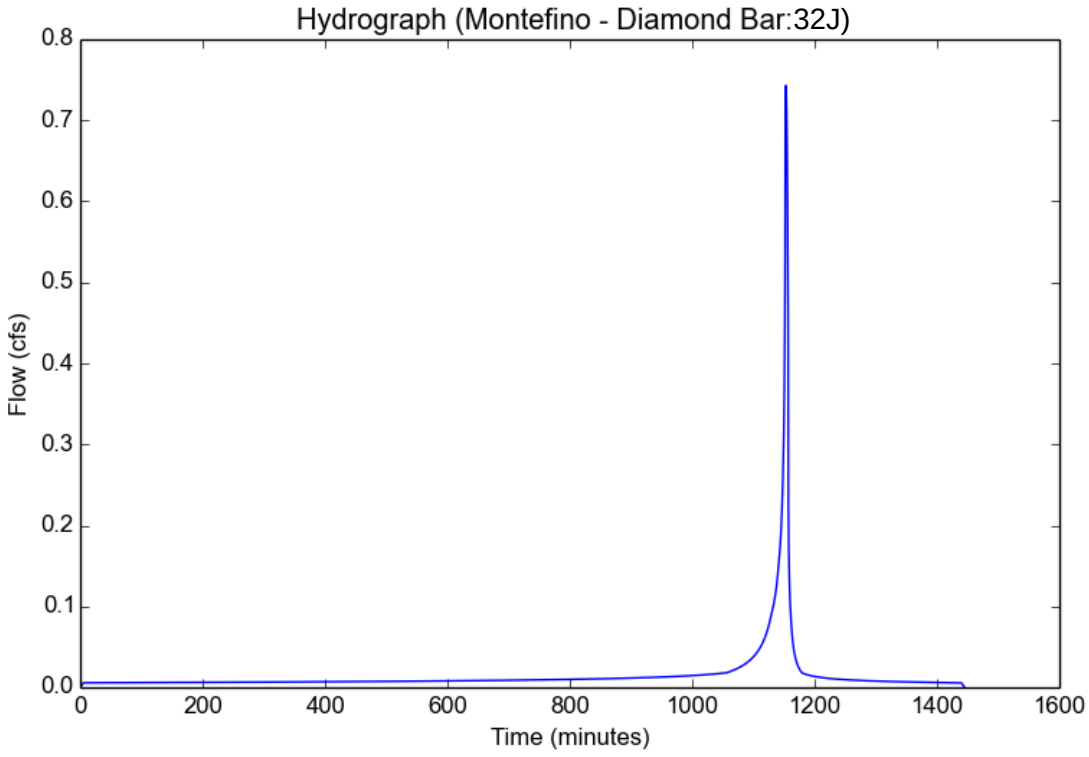
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	32J
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7433
Burned Peak Flow Rate (cfs)	0.7433
24-Hr Clear Runoff Volume (ac-ft)	0.0312
24-Hr Clear Runoff Volume (cu-ft)	1357.2308



Peak Flow Hydrologic Analysis

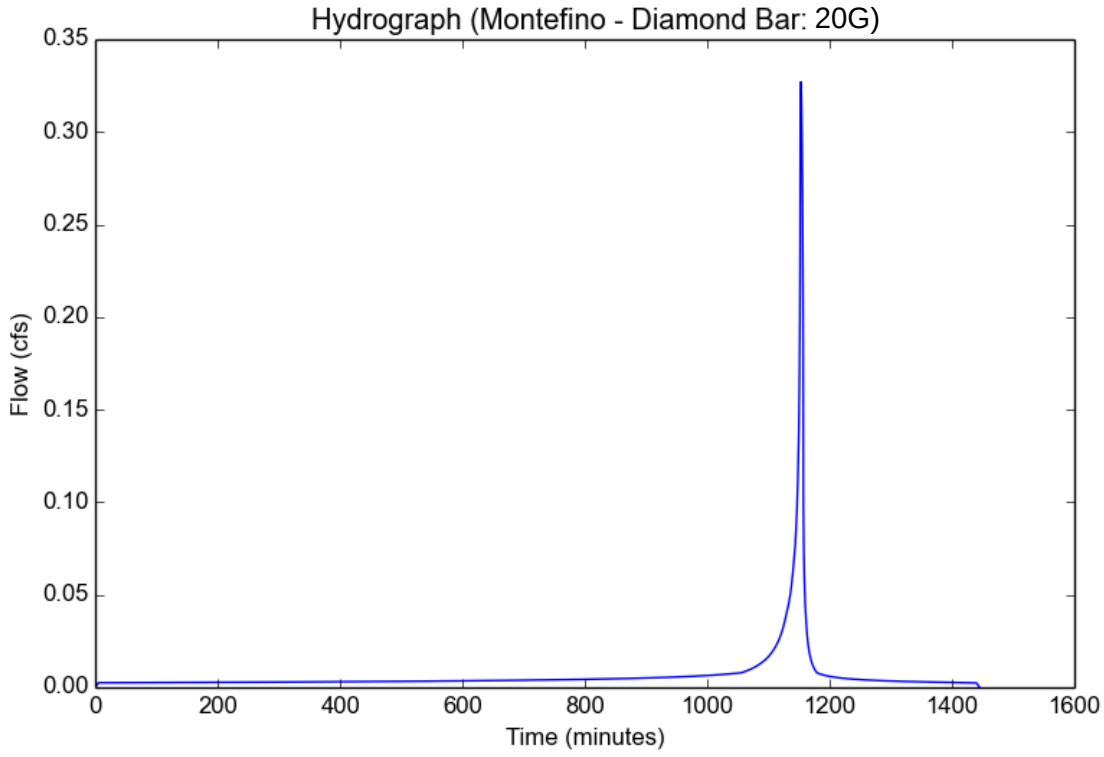
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	20G
Area (ac)	0.11
Flow Path Length (ft)	136.0
Flow Path Slope (vft/hft)	0.05831
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.327
Burned Peak Flow Rate (cfs)	0.327
24-Hr Clear Runoff Volume (ac-ft)	0.0137
24-Hr Clear Runoff Volume (cu-ft)	597.1815



Peak Flow Hydrologic Analysis

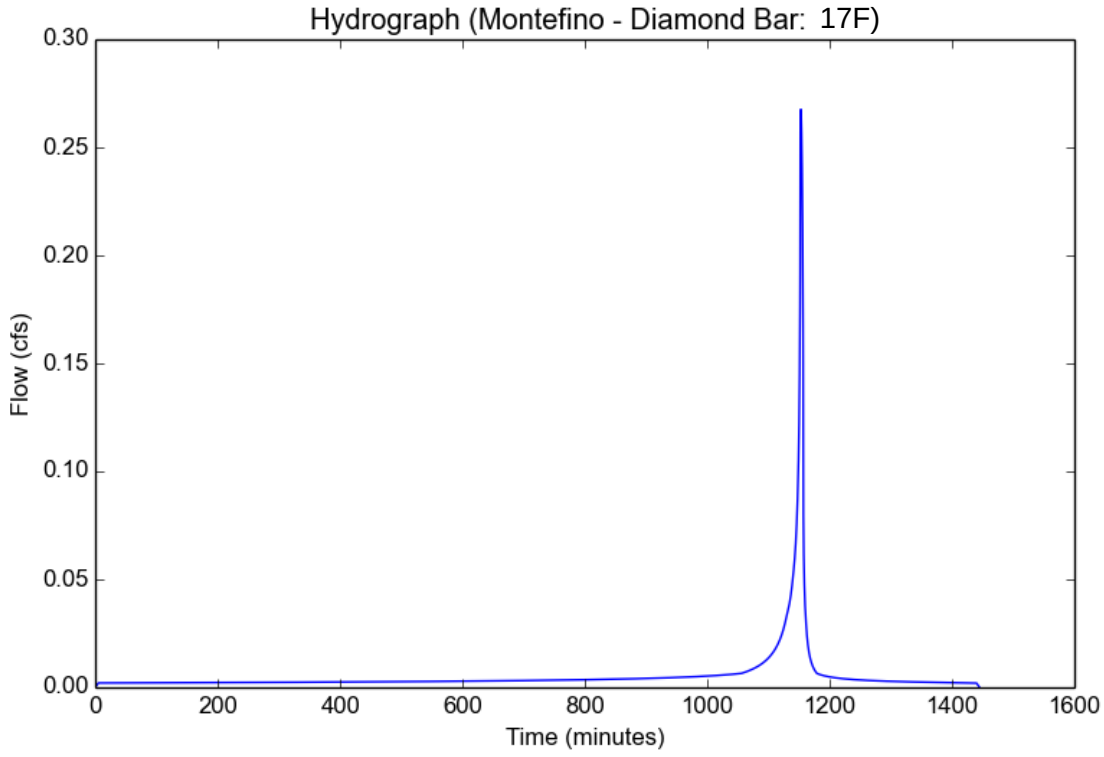
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	17F
Area (ac)	0.09
Flow Path Length (ft)	104.0
Flow Path Slope (vft/hft)	0.19048
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2676
Burned Peak Flow Rate (cfs)	0.2676
24-Hr Clear Runoff Volume (ac-ft)	0.0112
24-Hr Clear Runoff Volume (cu-ft)	488.6031



Peak Flow Hydrologic Analysis

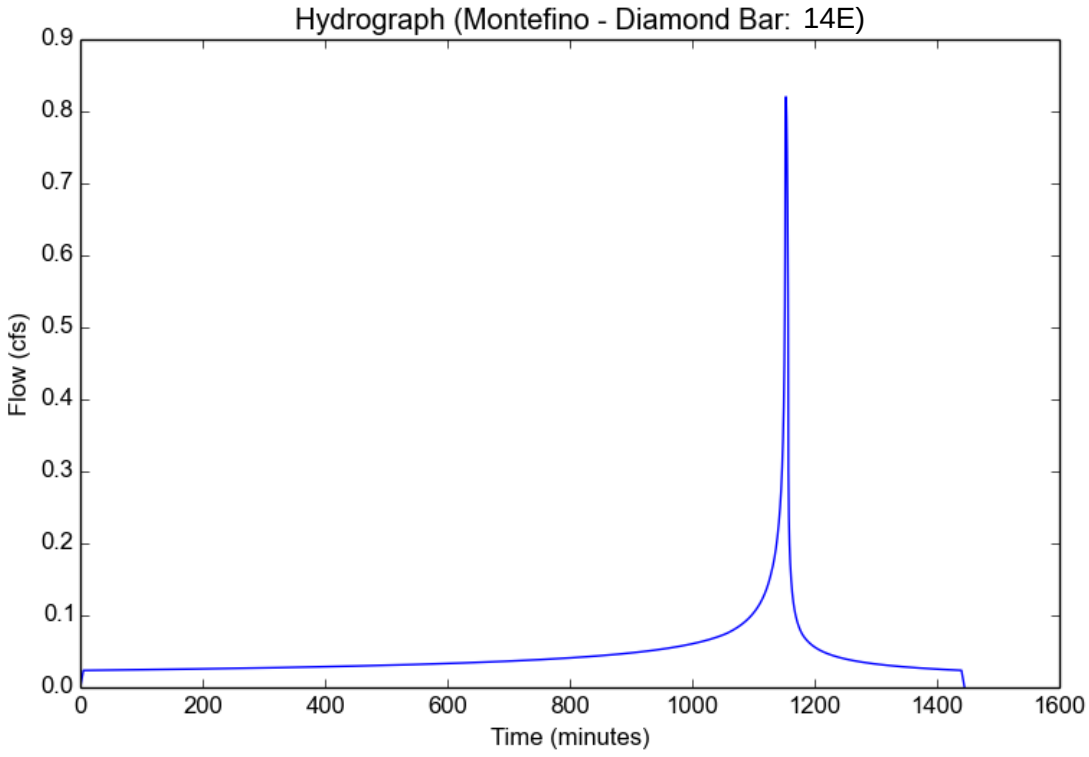
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	14E
Area (ac)	0.27
Flow Path Length (ft)	149.0
Flow Path Slope (vft/hft)	0.04322
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8922
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8203
Burned Peak Flow Rate (cfs)	0.8203
24-Hr Clear Runoff Volume (ac-ft)	0.0912
24-Hr Clear Runoff Volume (cu-ft)	3973.6677



Peak Flow Hydrologic Analysis

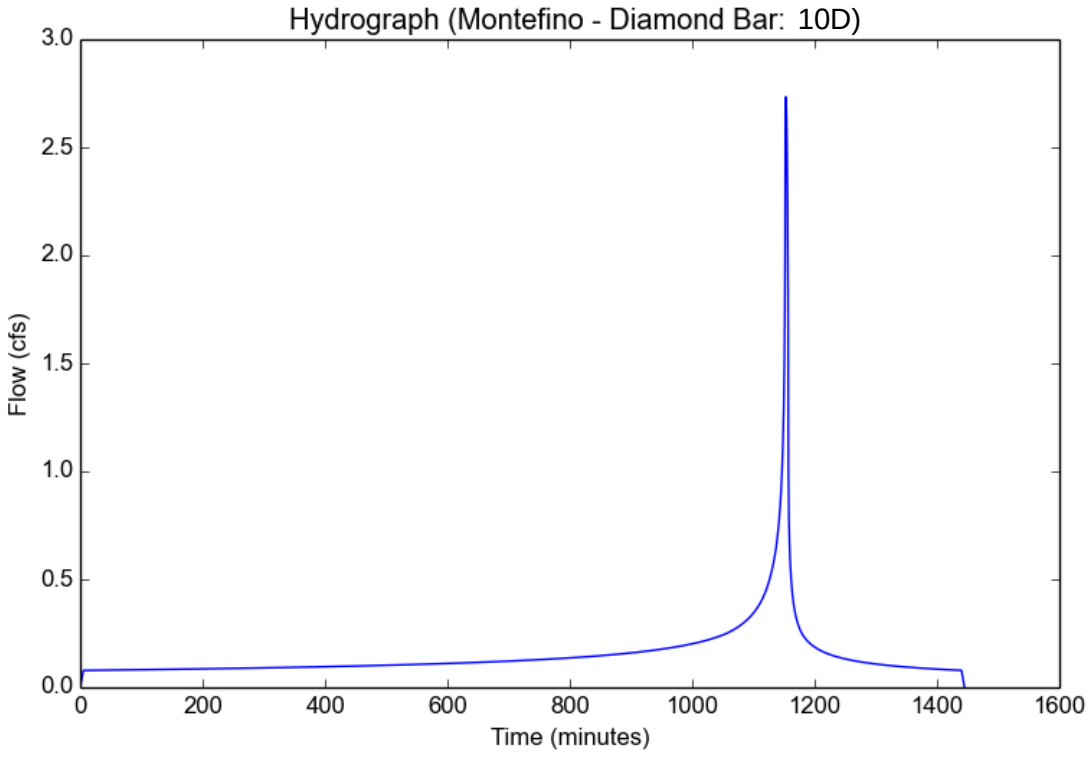
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	10D
Area (ac)	0.9
Flow Path Length (ft)	316.0
Flow Path Slope (vft/hft)	0.03114
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8922
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.7342
Burned Peak Flow Rate (cfs)	2.7342
24-Hr Clear Runoff Volume (ac-ft)	0.3041
24-Hr Clear Runoff Volume (cu-ft)	13245.5589



Peak Flow Hydrologic Analysis

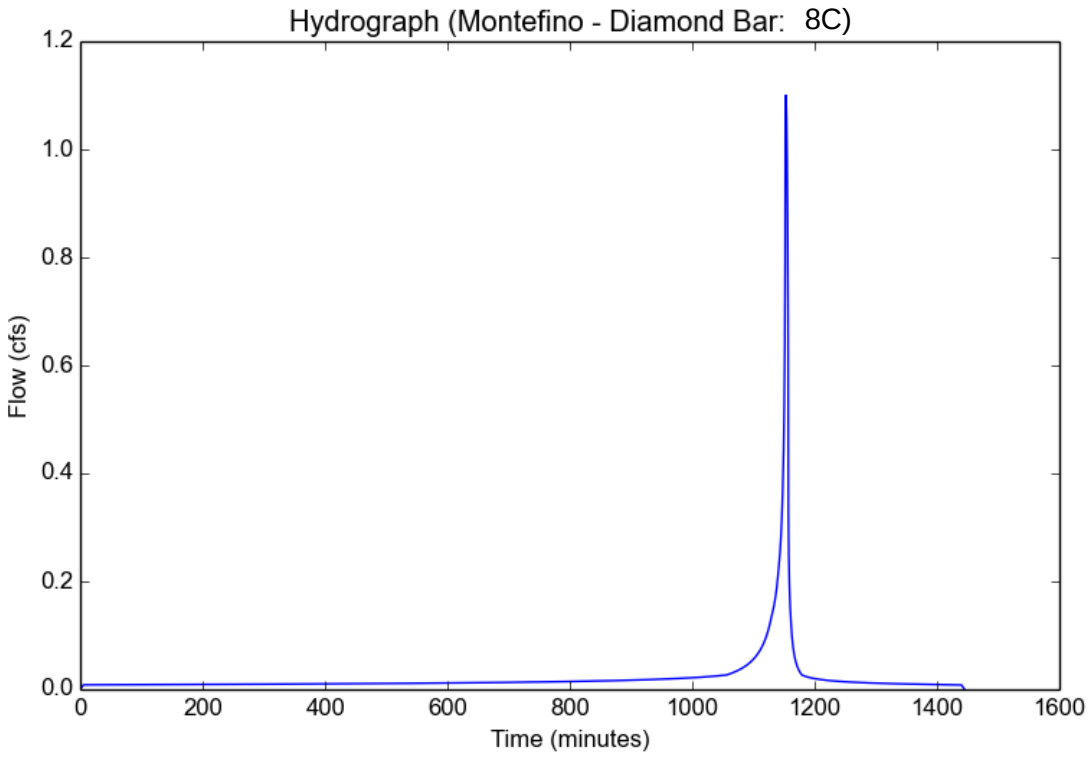
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	8C
Area (ac)	0.37
Flow Path Length (ft)	259.0
Flow Path Slope (vft/hft)	0.08263
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.1
Burned Peak Flow Rate (cfs)	1.1
24-Hr Clear Runoff Volume (ac-ft)	0.0461
24-Hr Clear Runoff Volume (cu-ft)	2008.7015



Peak Flow Hydrologic Analysis

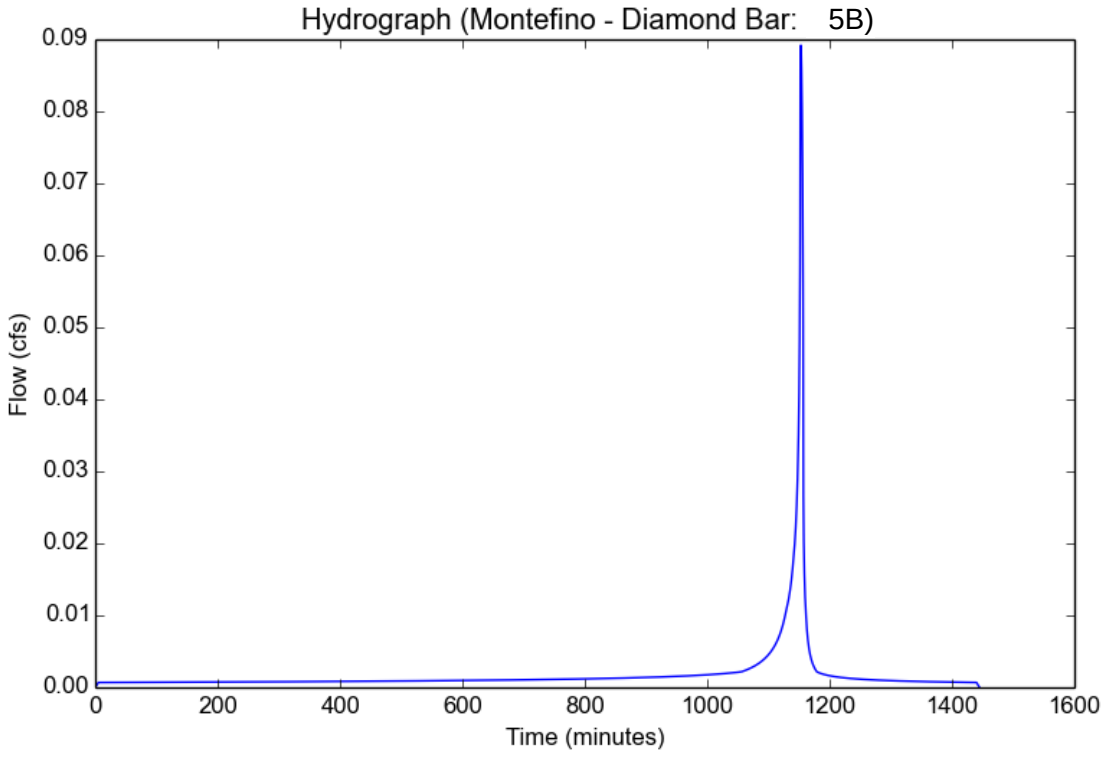
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.03
Flow Path Length (ft)	116.0
Flow Path Slope (vft/hft)	0.09741
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0892
Burned Peak Flow Rate (cfs)	0.0892
24-Hr Clear Runoff Volume (ac-ft)	0.0037
24-Hr Clear Runoff Volume (cu-ft)	162.8677



Peak Flow Hydrologic Analysis

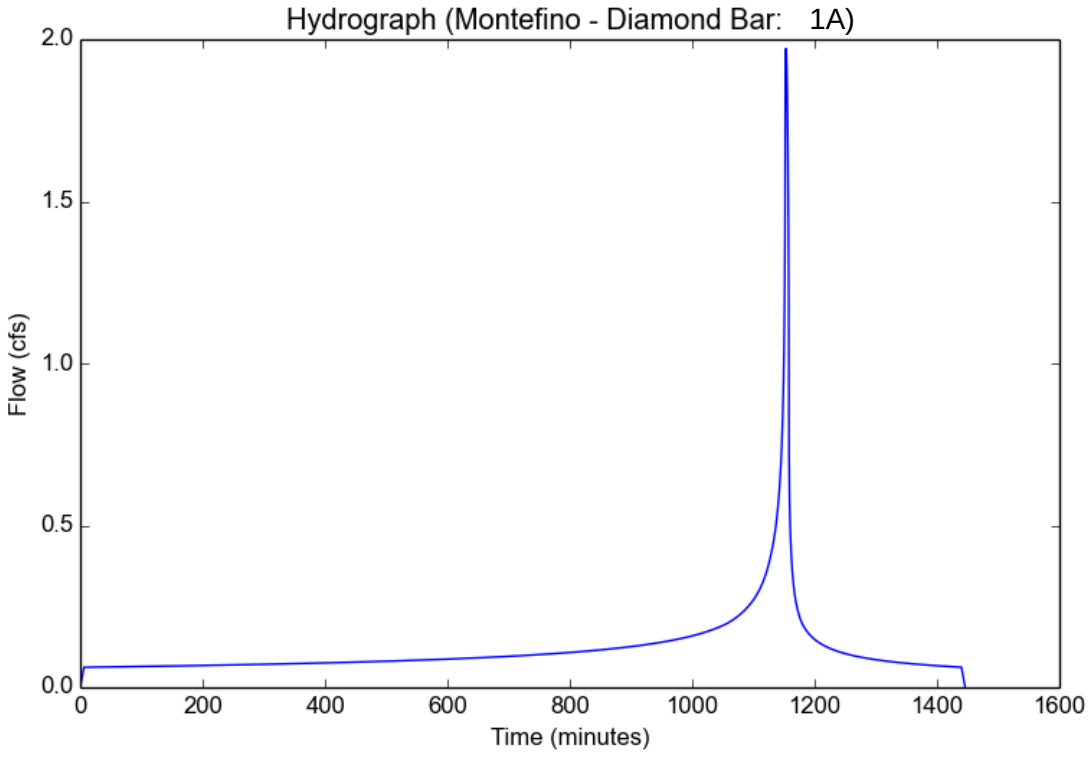
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.71
Flow Path Length (ft)	343.0
Flow Path Slope (vft/hft)	0.00633
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.1253
Undeveloped Runoff Coefficient (Cu)	0.8558
Developed Runoff Coefficient (Cd)	0.8885
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.9716
Burned Peak Flow Rate (cfs)	1.9716
24-Hr Clear Runoff Volume (ac-ft)	0.2399
24-Hr Clear Runoff Volume (cu-ft)	10448.8721



Peak Flow Hydrologic Analysis

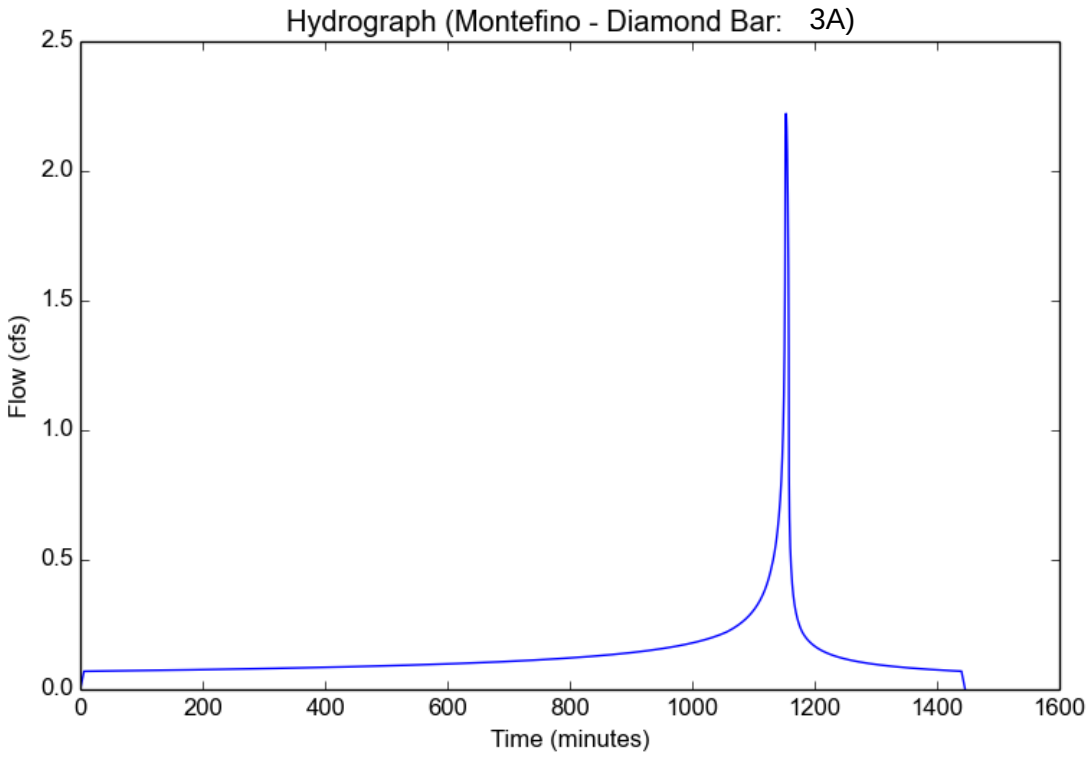
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3A
Area (ac)	0.8
Flow Path Length (ft)	296.0
Flow Path Slope (vft/hft)	0.0052
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.1253
Undeveloped Runoff Coefficient (Cu)	0.8558
Developed Runoff Coefficient (Cd)	0.8885
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.2215
Burned Peak Flow Rate (cfs)	2.2215
24-Hr Clear Runoff Volume (ac-ft)	0.2703
24-Hr Clear Runoff Volume (cu-ft)	11773.377



Peak Flow Hydrologic Analysis

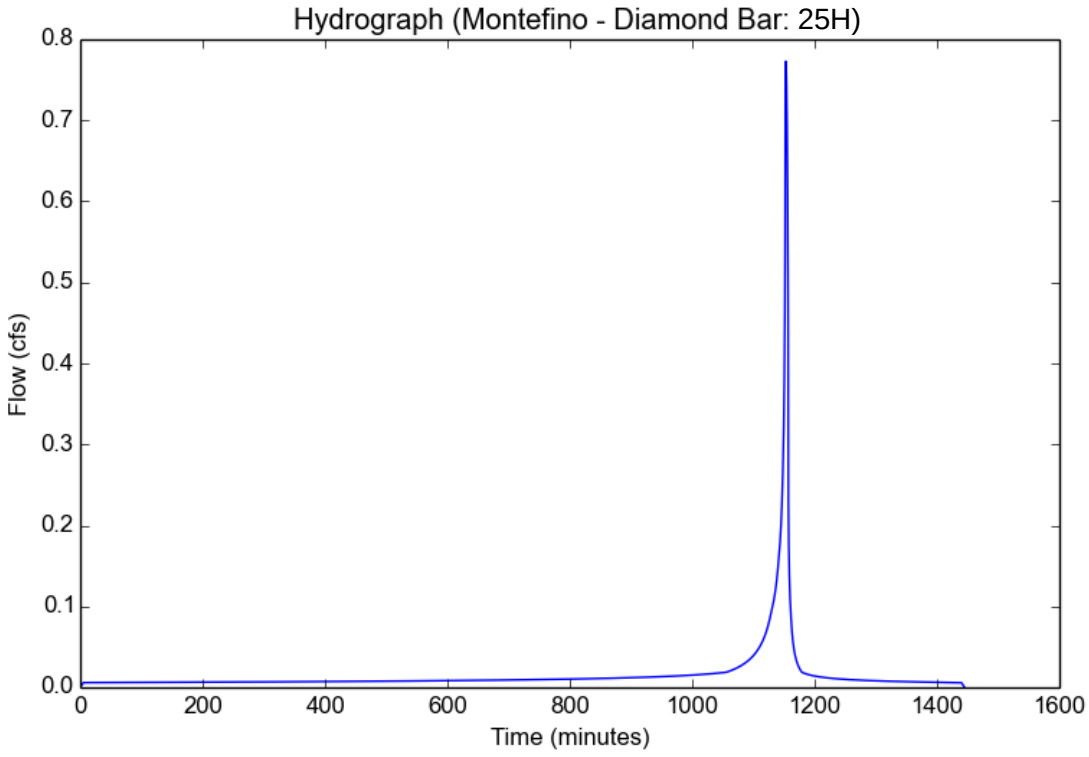
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	25H
Area (ac)	0.26
Flow Path Length (ft)	315.0
Flow Path Slope (vft/hft)	0.09371
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.773
Burned Peak Flow Rate (cfs)	0.773
24-Hr Clear Runoff Volume (ac-ft)	0.0324
24-Hr Clear Runoff Volume (cu-ft)	1411.52



Peak Flow Hydrologic Analysis

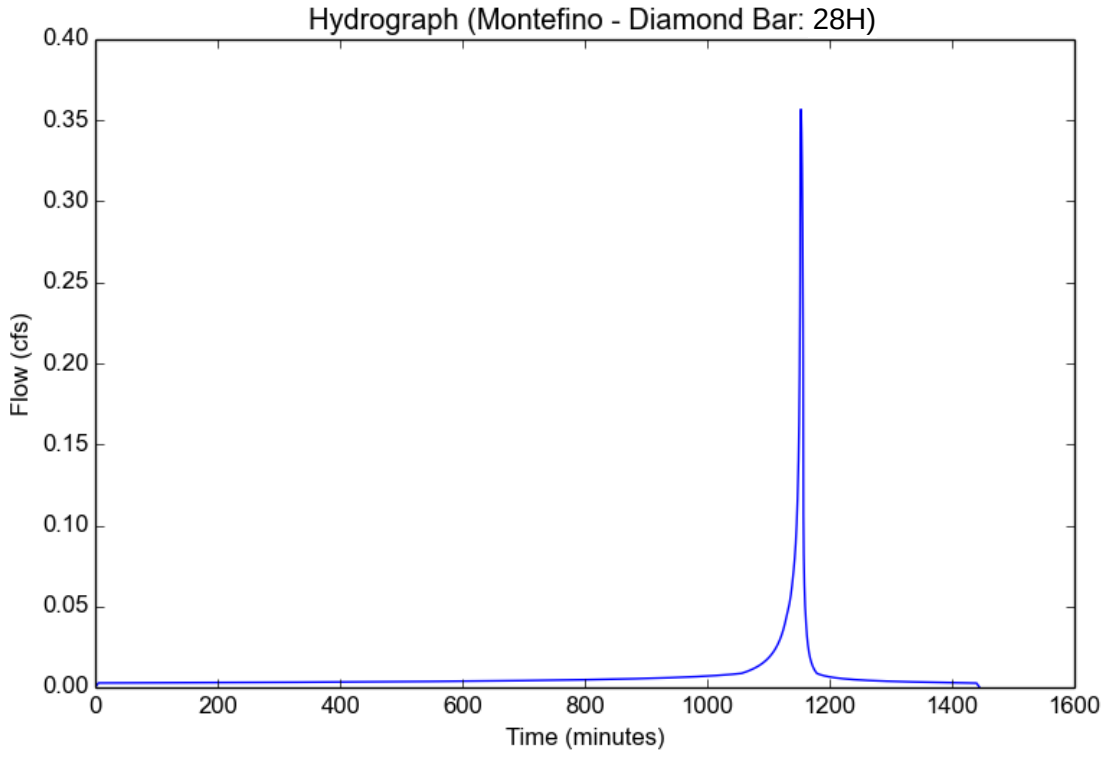
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	28H
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03339
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.8702
Developed Runoff Coefficient (Cd)	0.8731
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3568
Burned Peak Flow Rate (cfs)	0.3568
24-Hr Clear Runoff Volume (ac-ft)	0.015
24-Hr Clear Runoff Volume (cu-ft)	651.4708



Peak Flow Hydrologic Analysis

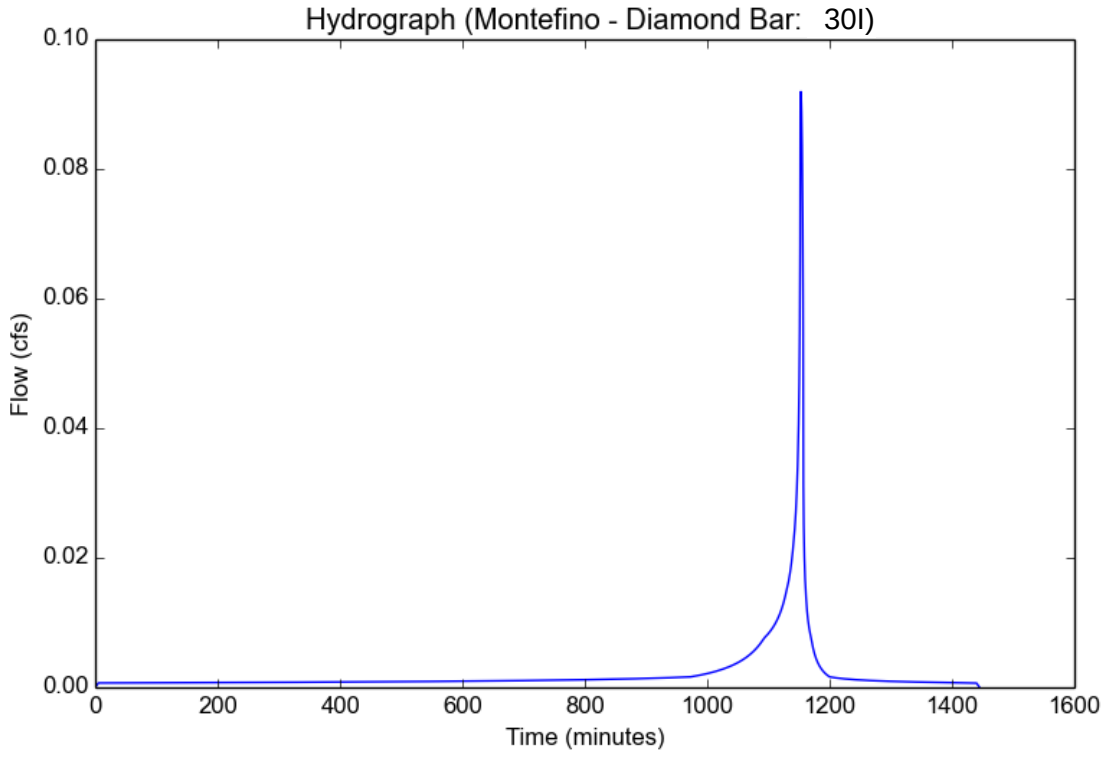
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	30I
Area (ac)	0.03
Flow Path Length (ft)	49.0
Flow Path Slope (vft/hft)	0.10204
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.707
Peak Intensity (in/hr)	3.405
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.0919
Burned Peak Flow Rate (cfs)	0.0919
24-Hr Clear Runoff Volume (ac-ft)	0.0044
24-Hr Clear Runoff Volume (cu-ft)	193.7093



Peak Flow Hydrologic Analysis

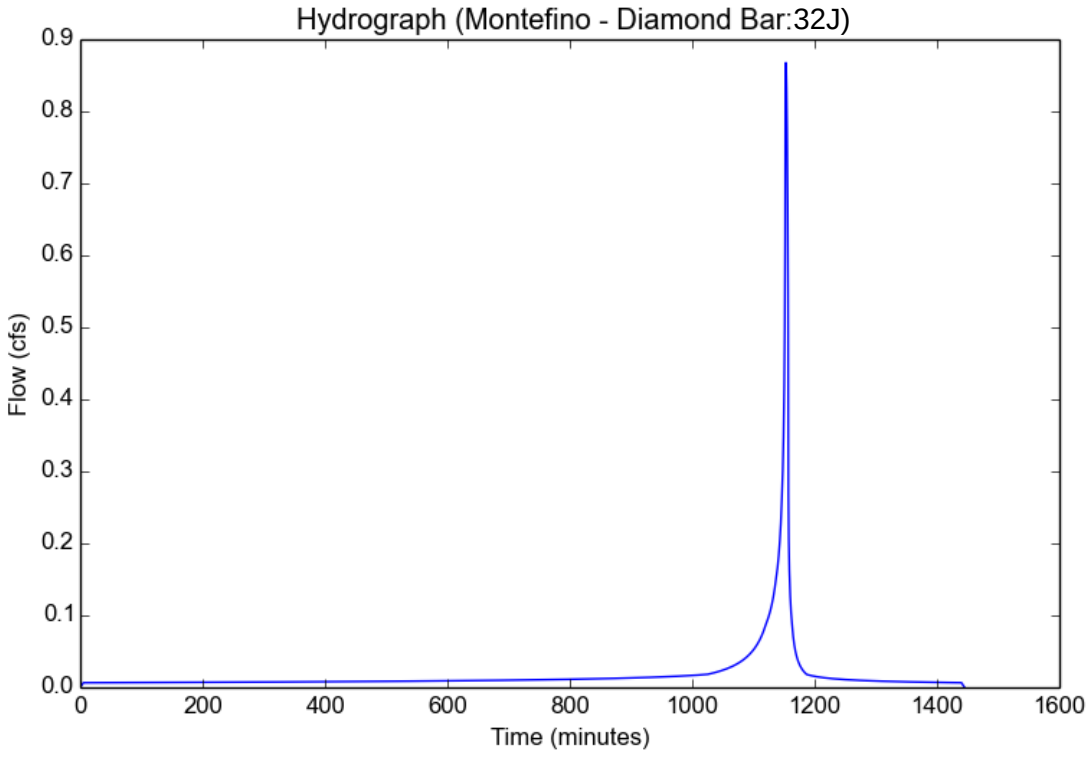
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	32J
Area (ac)	0.25
Flow Path Length (ft)	349.0
Flow Path Slope (vft/hft)	0.08215
50-yr Rainfall Depth (in)	6.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.5
Peak Intensity (in/hr)	3.8781
Undeveloped Runoff Coefficient (Cu)	0.8944
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8677
Burned Peak Flow Rate (cfs)	0.8677
24-Hr Clear Runoff Volume (ac-ft)	0.0373
24-Hr Clear Runoff Volume (cu-ft)	1624.8962



Peak Flow Hydrologic Analysis

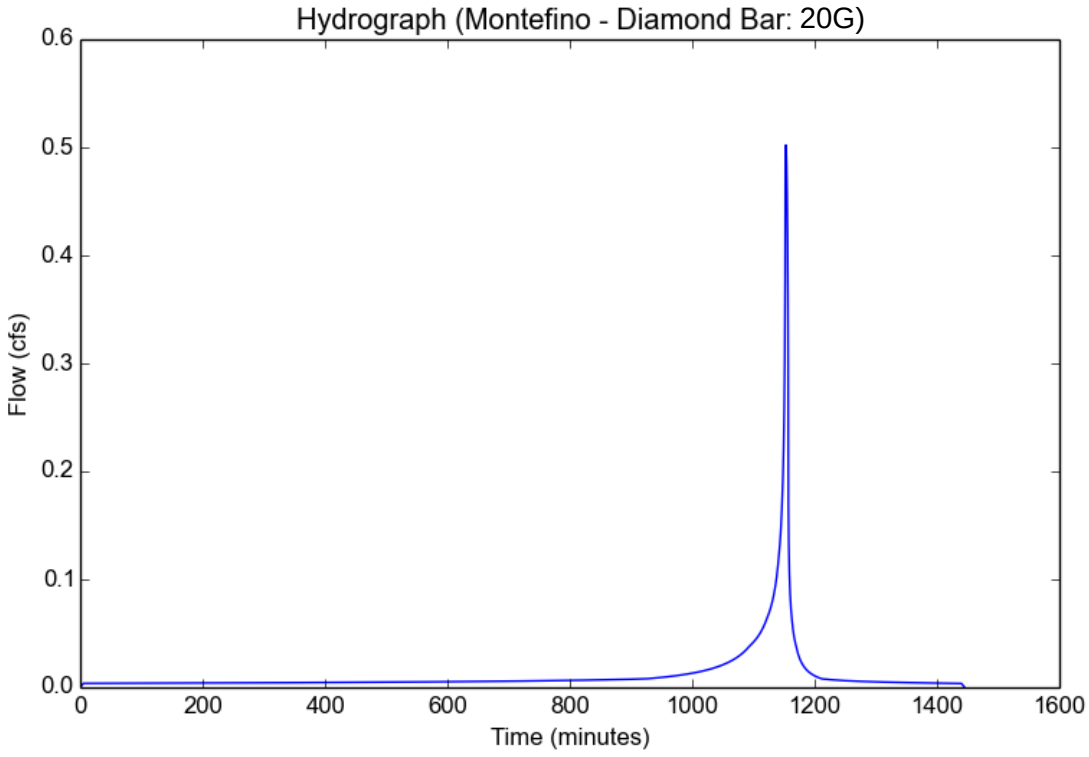
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	20G
Area (ac)	0.11
Flow Path Length (ft)	136.0
Flow Path Slope (vft/hft)	0.05831
50-yr Rainfall Depth (in)	8.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	8.5
Peak Intensity (in/hr)	5.0713
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5021
Burned Peak Flow Rate (cfs)	0.5021
24-Hr Clear Runoff Volume (ac-ft)	0.0241
24-Hr Clear Runoff Volume (cu-ft)	1049.3868



Peak Flow Hydrologic Analysis

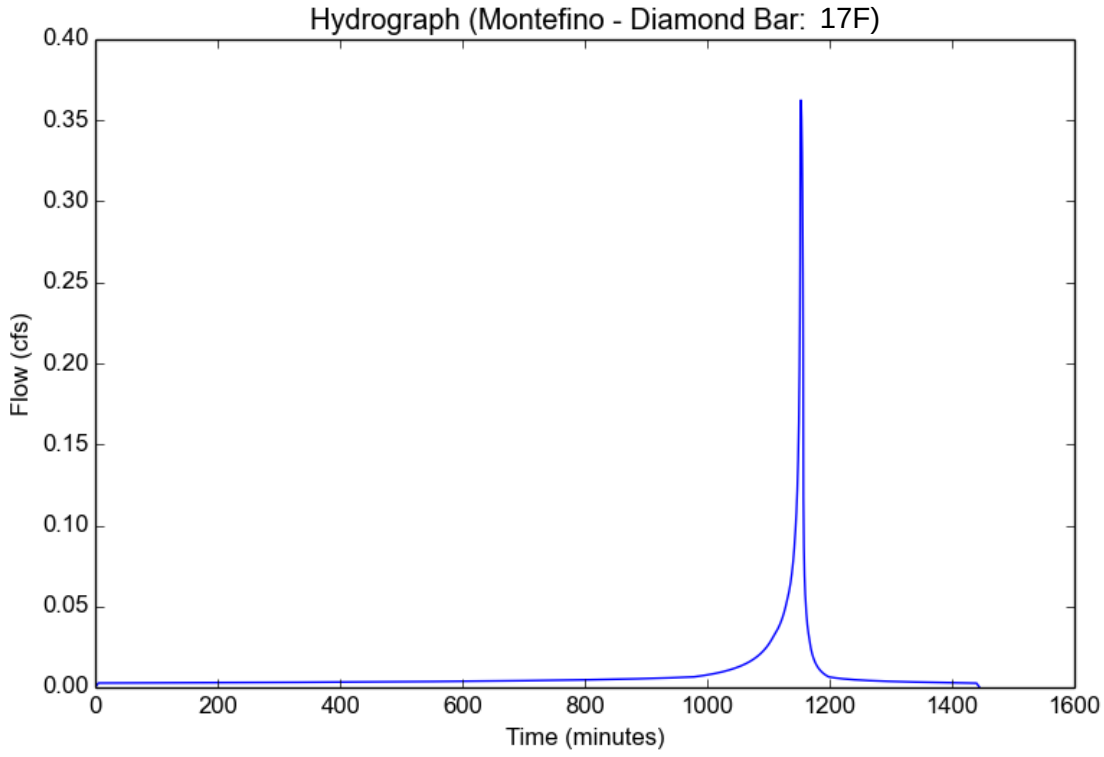
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	17F
Area (ac)	0.09
Flow Path Length (ft)	104.0
Flow Path Slope (vft/hft)	0.19048
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3625
Burned Peak Flow Rate (cfs)	0.3625
24-Hr Clear Runoff Volume (ac-ft)	0.0164
24-Hr Clear Runoff Volume (cu-ft)	716.2661



Peak Flow Hydrologic Analysis

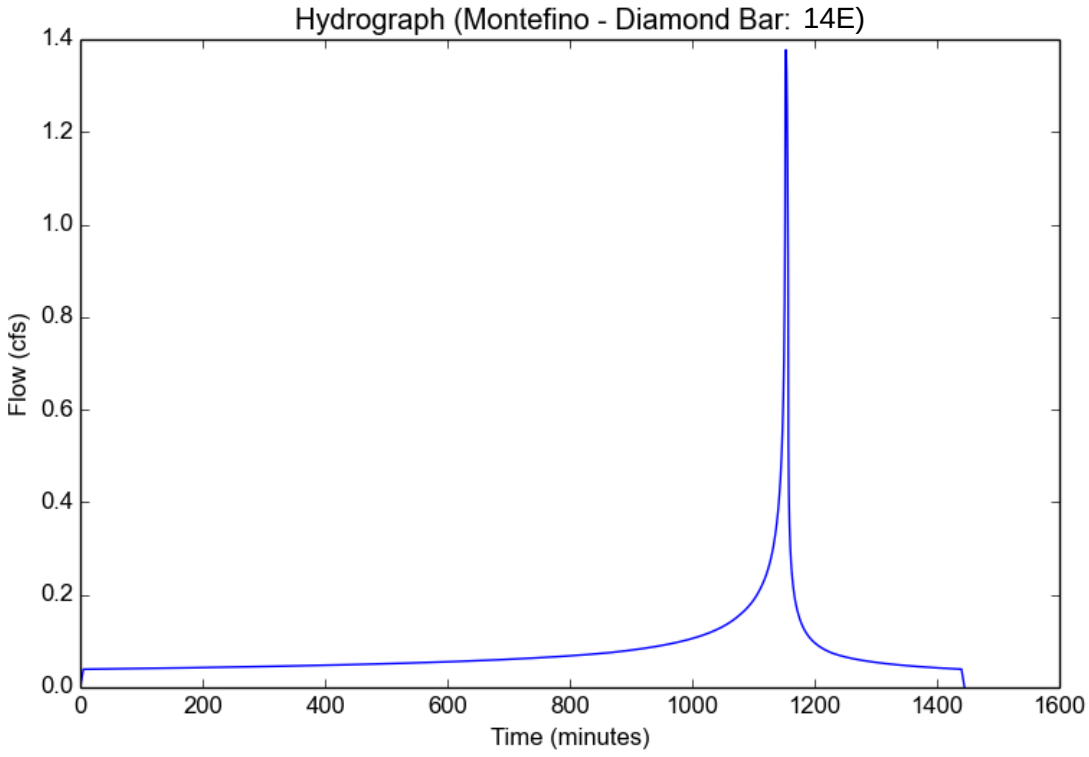
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	14E
Area (ac)	0.27
Flow Path Length (ft)	149.0
Flow Path Slope (vft/hft)	0.04322
50-yr Rainfall Depth (in)	9.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	9.5
Peak Intensity (in/hr)	5.668
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.3773
Burned Peak Flow Rate (cfs)	1.3773
24-Hr Clear Runoff Volume (ac-ft)	0.1558
24-Hr Clear Runoff Volume (cu-ft)	6787.4824



Peak Flow Hydrologic Analysis

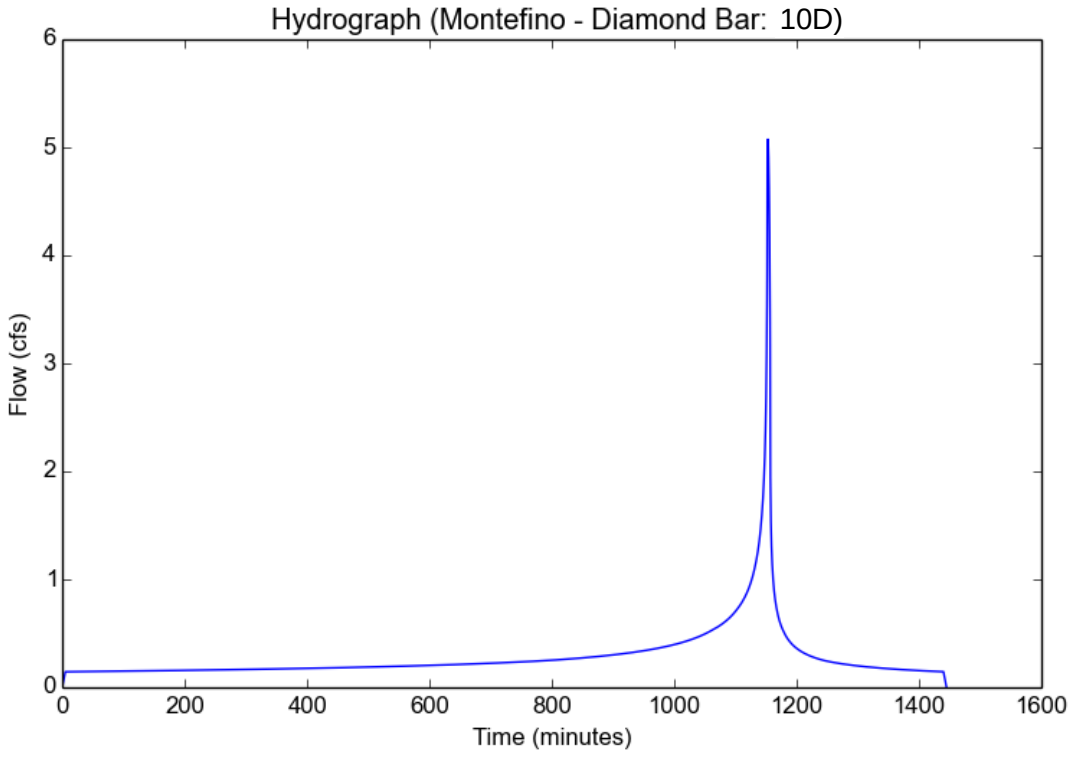
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	10D
Area (ac)	0.9
Flow Path Length (ft)	316.0
Flow Path Slope (vft/hft)	0.03114
50-yr Rainfall Depth (in)	10.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.5
Peak Intensity (in/hr)	6.2646
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.0743
Burned Peak Flow Rate (cfs)	5.0743
24-Hr Clear Runoff Volume (ac-ft)	0.578
24-Hr Clear Runoff Volume (cu-ft)	25178.8323



Peak Flow Hydrologic Analysis

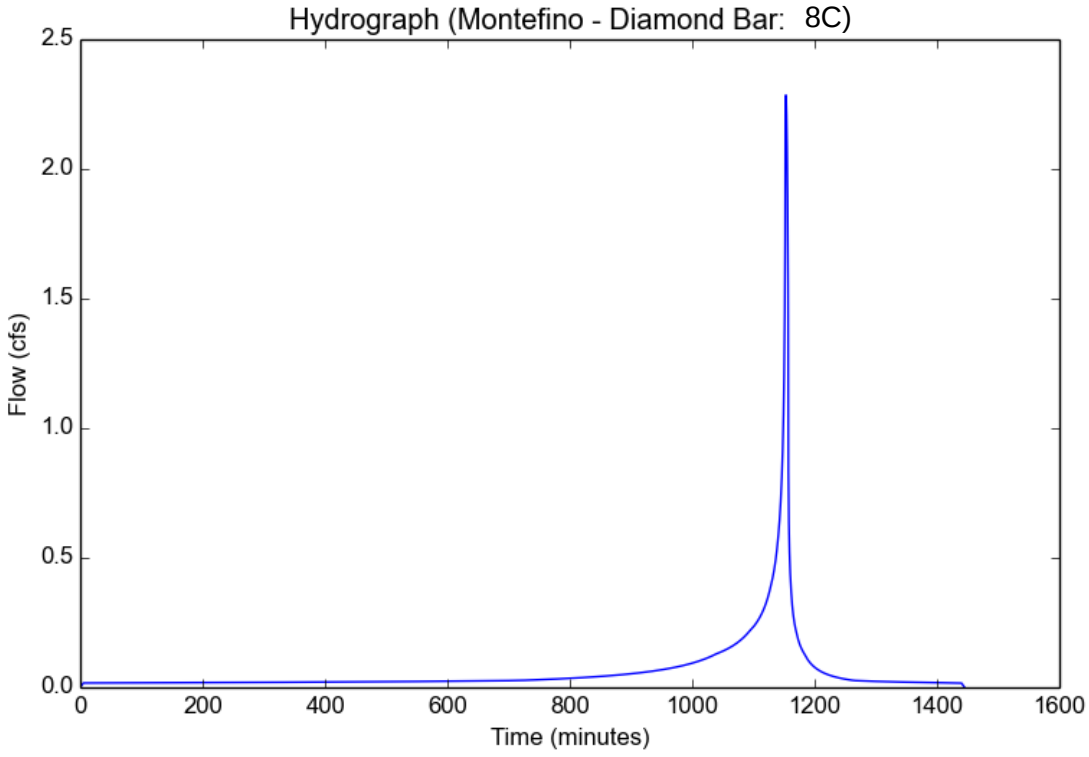
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	8C
Area (ac)	0.37
Flow Path Length (ft)	259.0
Flow Path Slope (vft/hft)	0.08263
50-yr Rainfall Depth (in)	11.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	11.5
Peak Intensity (in/hr)	6.8612
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.2848
Burned Peak Flow Rate (cfs)	2.2848
24-Hr Clear Runoff Volume (ac-ft)	0.1281
24-Hr Clear Runoff Volume (cu-ft)	5580.9294



Peak Flow Hydrologic Analysis

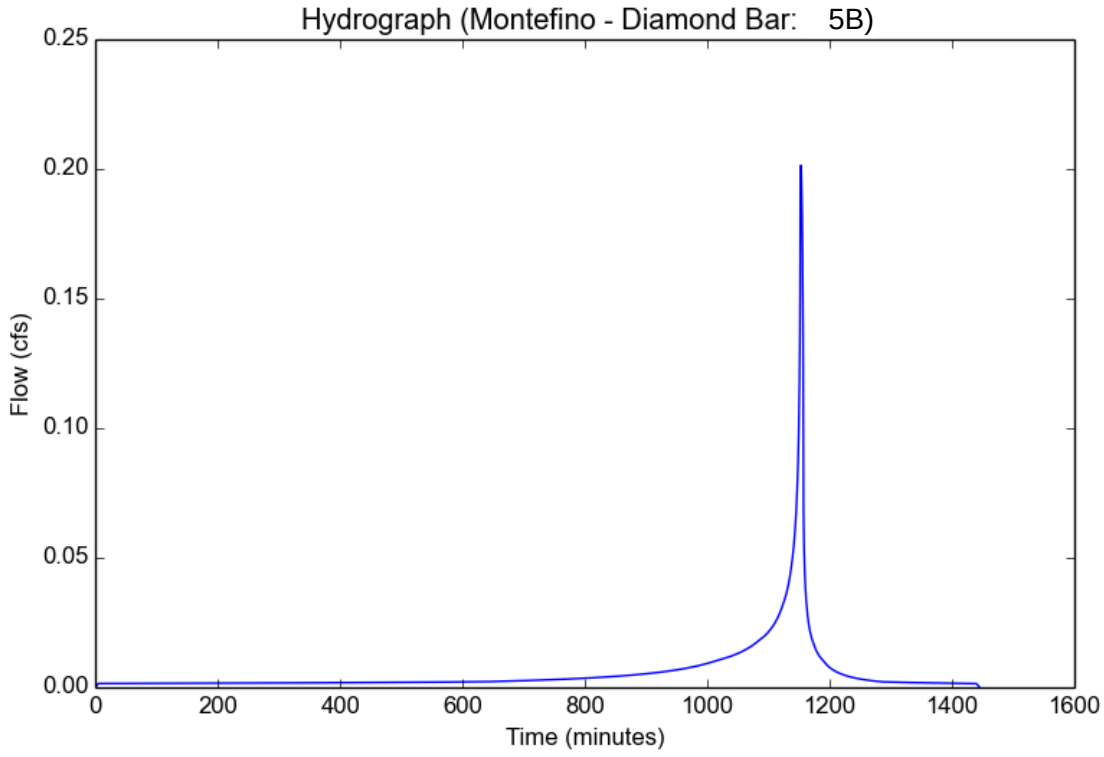
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	5B
Area (ac)	0.03
Flow Path Length (ft)	116.0
Flow Path Slope (vft/hft)	0.09741
50-yr Rainfall Depth (in)	12.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	12.5
Peak Intensity (in/hr)	7.4578
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2014
Burned Peak Flow Rate (cfs)	0.2014
24-Hr Clear Runoff Volume (ac-ft)	0.0118
24-Hr Clear Runoff Volume (cu-ft)	516.168



Peak Flow Hydrologic Analysis

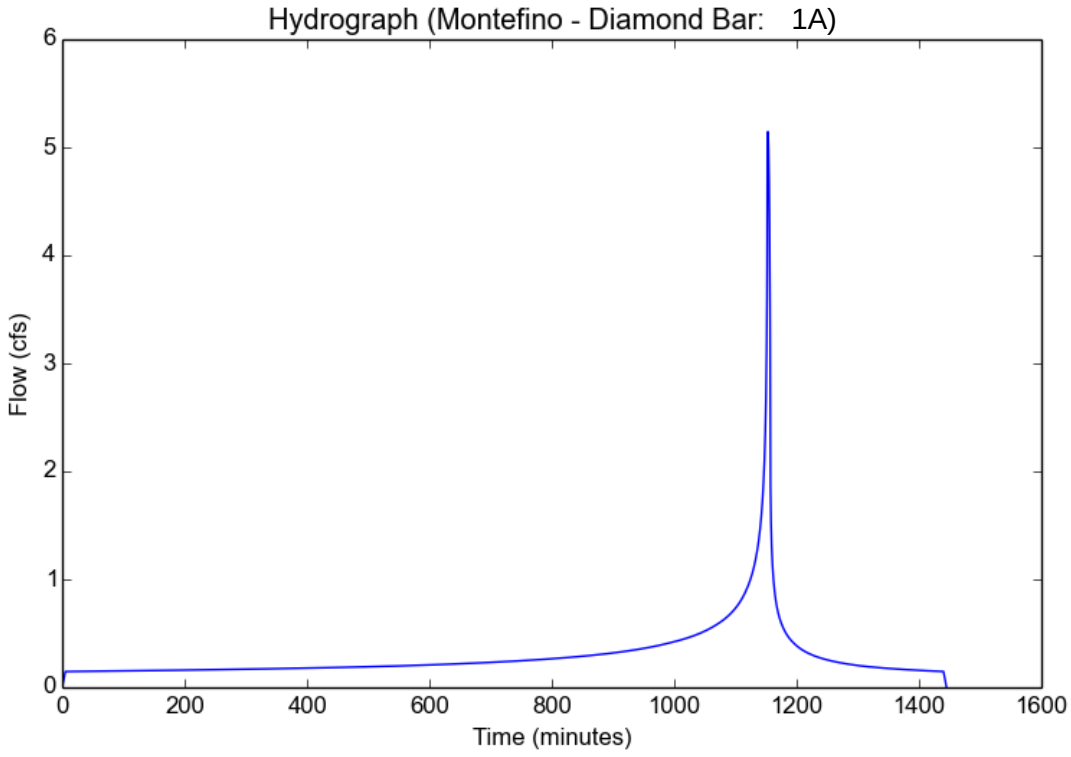
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	1A
Area (ac)	0.71
Flow Path Length (ft)	343.0
Flow Path Slope (vft/hft)	0.00633
50-yr Rainfall Depth (in)	13.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	13.5
Peak Intensity (in/hr)	8.0545
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.1468
Burned Peak Flow Rate (cfs)	5.1468
24-Hr Clear Runoff Volume (ac-ft)	0.5986
24-Hr Clear Runoff Volume (cu-ft)	26076.8834



Peak Flow Hydrologic Analysis

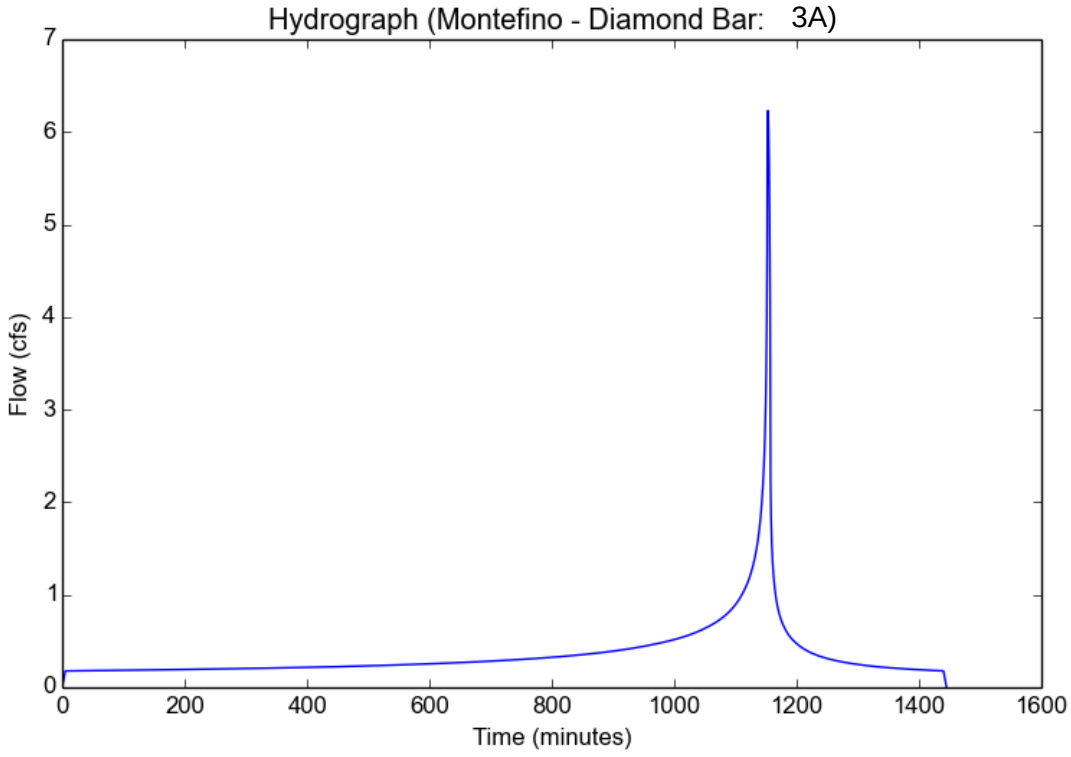
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	3A
Area (ac)	0.8
Flow Path Length (ft)	296.0
Flow Path Slope (vft/hft)	0.0052
50-yr Rainfall Depth (in)	14.5
Percent Impervious	0.74
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	14.5
Peak Intensity (in/hr)	8.6511
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.2288
Burned Peak Flow Rate (cfs)	6.2288
24-Hr Clear Runoff Volume (ac-ft)	0.7296
24-Hr Clear Runoff Volume (cu-ft)	31781.0573



Peak Flow Hydrologic Analysis

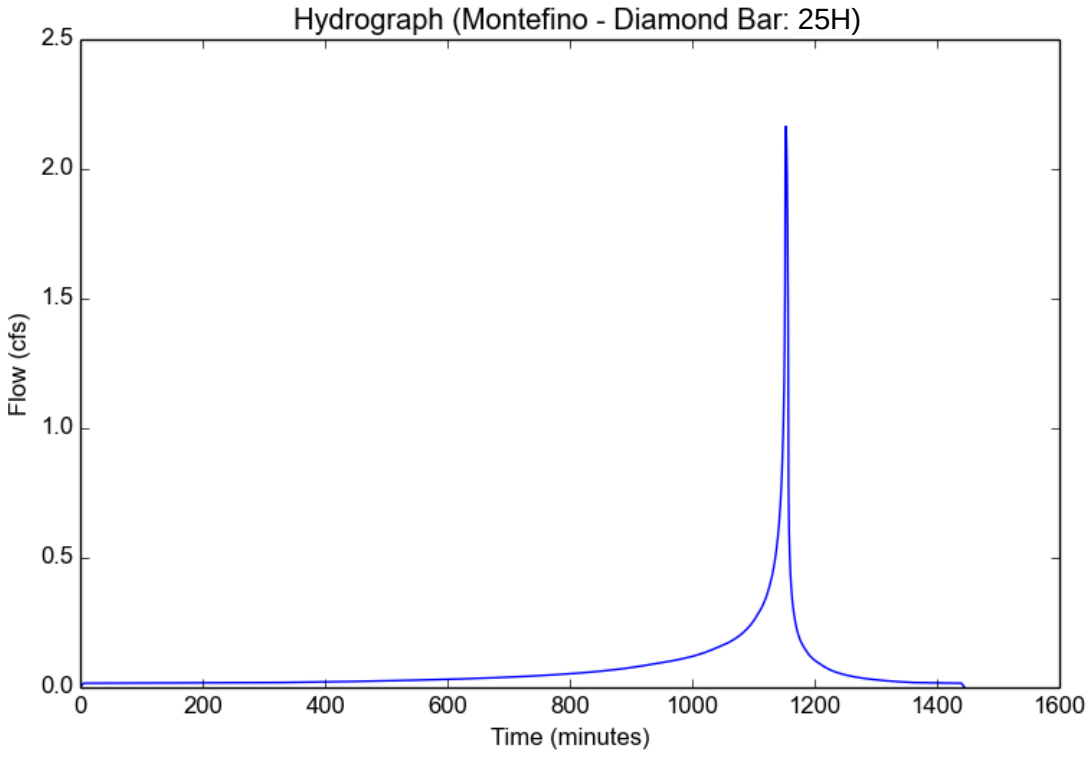
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	25H
Area (ac)	0.26
Flow Path Length (ft)	315.0
Flow Path Slope (vft/hft)	0.09371
50-yr Rainfall Depth (in)	15.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	15.5
Peak Intensity (in/hr)	9.2477
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.164
Burned Peak Flow Rate (cfs)	2.164
24-Hr Clear Runoff Volume (ac-ft)	0.1457
24-Hr Clear Runoff Volume (cu-ft)	6348.3405



Peak Flow Hydrologic Analysis

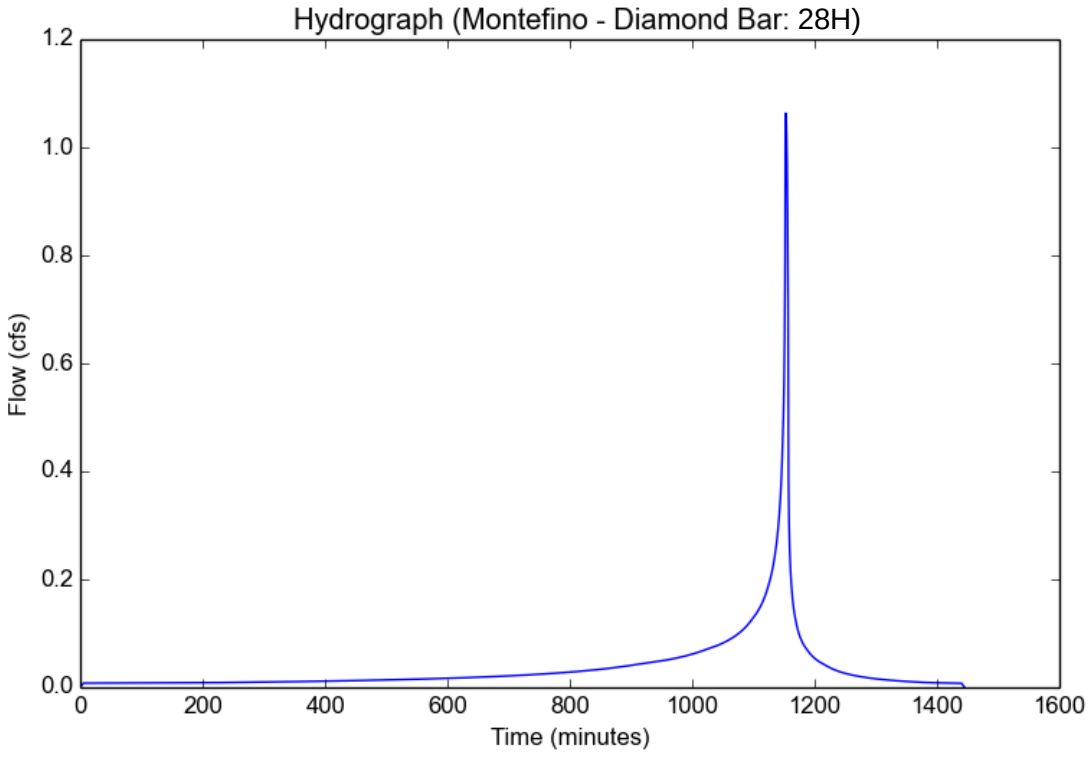
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	28H
Area (ac)	0.12
Flow Path Length (ft)	124.0
Flow Path Slope (vft/hft)	0.03339
50-yr Rainfall Depth (in)	16.5
Percent Impervious	0.1
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	16.5
Peak Intensity (in/hr)	9.8444
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0632
Burned Peak Flow Rate (cfs)	1.0632
24-Hr Clear Runoff Volume (ac-ft)	0.0747
24-Hr Clear Runoff Volume (cu-ft)	3252.7552



Peak Flow Hydrologic Analysis

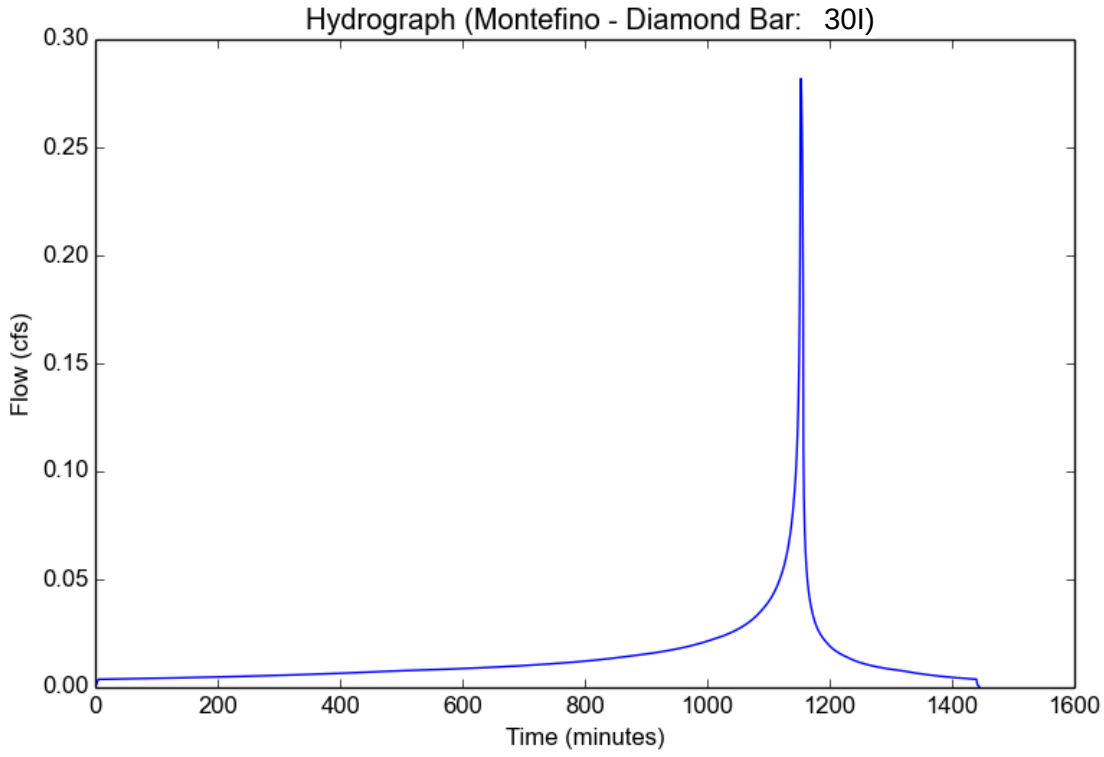
File location: Q:/R317913.01 - Intracorp 1400 Montefino Diamond Bar/05 Design/05.3 Calcs/05.3.1 H&H/01 Hydrology/Hydrocalcs/Proposed TC - HydroC
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Montefino - Diamond Bar
Subarea ID	30I
Area (ac)	0.03
Flow Path Length (ft)	49.0
Flow Path Slope (vft/hft)	0.10204
50-yr Rainfall Depth (in)	17.5
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	17.5
Peak Intensity (in/hr)	10.441
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2819
Burned Peak Flow Rate (cfs)	0.2819
24-Hr Clear Runoff Volume (ac-ft)	0.0274
24-Hr Clear Runoff Volume (cu-ft)	1191.3904



File name: Prop2yrMontefinoNewLayout.lac Run date: Thu Nov 20 10:01:12 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 2

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.7	0.59	0.7	0.59	0.102	0	0	0.00000	0.00	0.00	0	16	11	2.52	0.74
1	2A	0.0	0.00	0.7	0.59	0.102	6	298	0.03909	0.08	0.10	0	16	0	2.52	0.00
1	3A	0.8	0.67	1.5	1.14	0.128	0	0	0.00000	0.00	0.00	0	16	11	2.52	0.74
1	4A	0.0	0.00	1.5	1.14	0.128	4	72	0.02310	1.50	0.00	0	16	0	2.52	0.00
1	5B	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	6B	0.0	0.00	0.0	0.00	0.000	4	76	0.05171	1.00	0.00	0	16	0	2.52	0.00
1	7AB	0.0	0.00	1.5	1.03	0.028	4	72	0.01750	1.50	0.00	0	16	0	2.52	0.00
1	8C	0.4	0.42	0.4	0.42	0.018	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	9C	0.0	0.00	0.4	0.42	0.018	4	195	0.03815	1.00	0.00	0	16	0	2.52	0.00
1	10D	0.9	0.89	0.9	0.89	0.131	0	0	0.00000	0.00	0.00	0	16	8	2.52	0.74
1	11D	0.0	0.00	0.9	0.89	0.131	4	21	0.00524	1.00	0.00	0	16	0	2.52	0.00
1	12CD	0.9	0.00	1.3	1.08	0.022	4	46	0.07413	1.00	0.00	0	16	0	2.52	0.00
1	13AC	1.3	0.00	2.8	1.87	0.031	4	219	0.00990	1.50	0.00	0	16	0	2.52	0.00
1	14E	0.3	0.38	0.3	0.38	0.044	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.74
1	15E	0.0	0.00	0.3	0.38	0.044	4	60	0.00500	1.00	0.00	0	16	0	2.52	0.00
1	16AE	0.3	0.00	3.1	1.95	0.028	4	51	0.01000	2.00	0.00	0	16	0	2.52	0.00
1	17F	0.1	0.11	0.1	0.11	0.004	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	18F	0.0	0.00	0.1	0.11	0.004	4	91	0.07088	1.00	0.00	0	16	0	2.52	0.00
1	19AF	0.1	0.00	3.2	1.83	0.024	4	141	0.01000	2.00	0.00	0	16	0	2.52	0.00
1	20G	0.1	0.11	0.1	0.11	0.004	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	21GK	0.0	0.00	0.1	0.11	0.004	4	51	0.01820	1.00	0.00	0	16	0	2.52	0.00
1	22AG	0.1	0.00	3.3	1.70	0.021	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00
1	23A	0.0	0.00	3.3	0.45	0.021	4	487	0.01000	2.00	0.00	0	16	0	2.52	0.00
1	24A	0.0	0.00	3.3	0.32	0.010	4	44	0.06250	2.00	0.00	0	16	0	2.52	0.00
1	25H	0.3	0.23	0.3	0.23	0.013	0	0	0.00000	0.00	0.00	0	16	8	2.52	0.10
1	26HK	0.0	0.00	0.3	0.23	0.013	6	124	0.02734	0.25	0.00	5	16	0	2.52	0.00
1	27K	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00
1	28H	0.1	0.11	0.4	0.22	0.006	0	0	0.00000	0.00	0.00	0	16	5	2.52	0.10
1	29H	0.0	0.00	0.4	0.22	0.006	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00
1	30I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	5	2.52	0.10
1	31I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	0	2.52	0.00
1	32J	0.3	0.21	0.3	0.21	0.013	0	0	0.00000	0.00	0.00	0	16	9	2.52	0.10
1	33J	0.0	0.00	0.3	0.21	0.013	0	0	0.00000	0.00	0.00	0	16	0	2.52	0.00

Normal End of MODRAT

File name: Prop5yrMontefinoNewLayout.lac Run date: Thu Nov 20 09:55:24 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 5

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.7	1.09	0.7	1.09	0.155	0	0	0.00000	0.00	0.00	0	16	8	3.80	0.74
1	2A	0.0	0.00	0.7	1.09	0.155	6	298	0.03909	0.08	0.10	0	16	0	3.80	0.00
1	3A	0.8	1.24	1.5	2.17	0.206	0	0	0.00000	0.00	0.00	0	16	8	3.80	0.74
1	4A	0.0	0.00	1.5	2.17	0.206	4	72	0.02310	1.50	0.00	0	16	0	3.80	0.00
1	5B	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	6B	0.0	0.00	0.0	0.00	0.000	4	76	0.05171	1.00	0.00	0	16	0	3.80	0.00
1	7AB	0.0	0.00	1.5	2.06	0.067	4	72	0.01750	1.50	0.00	0	16	0	3.80	0.00
1	8C	0.4	0.72	0.4	0.72	0.029	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	9C	0.0	0.00	0.4	0.72	0.029	4	195	0.03815	1.00	0.00	0	16	0	3.80	0.00
1	10D	0.9	1.62	0.9	1.62	0.199	0	0	0.00000	0.00	0.00	0	16	6	3.80	0.74
1	11D	0.0	0.00	0.9	1.62	0.199	4	21	0.00524	1.00	0.00	0	16	0	3.80	0.00
1	12CD	0.9	0.00	1.3	2.11	0.054	4	46	0.07413	1.00	0.00	0	16	0	3.80	0.00
1	13AC	1.3	0.00	2.8	3.87	0.075	4	219	0.00990	1.50	0.00	0	16	0	3.80	0.00
1	14E	0.3	0.59	0.3	0.59	0.067	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.74
1	15E	0.0	0.00	0.3	0.59	0.067	4	60	0.00500	1.00	0.00	0	16	0	3.80	0.00
1	16AE	0.3	0.00	3.1	4.12	0.070	4	51	0.01000	2.00	0.00	0	16	0	3.80	0.00
1	17F	0.1	0.18	0.1	0.18	0.007	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	18F	0.0	0.00	0.1	0.18	0.007	4	91	0.07088	1.00	0.00	0	16	0	3.80	0.00
1	19AF	0.1	0.00	3.2	4.07	0.062	4	141	0.01000	2.00	0.00	0	16	0	3.80	0.00
1	20G	0.1	0.18	0.1	0.18	0.007	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	21GK	0.0	0.00	0.1	0.18	0.007	4	51	0.01820	1.00	0.00	0	16	0	3.80	0.00
1	22AG	0.1	0.08	3.3	3.93	0.057	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00
1	23A	0.0	0.00	3.3	1.96	0.056	4	487	0.01000	2.00	0.00	0	16	0	3.80	0.00
1	24A	0.0	0.00	3.3	1.77	0.043	4	44	0.06250	2.00	0.00	0	16	0	3.80	0.00
1	25H	0.3	0.54	0.3	0.54	0.022	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	26HK	0.0	0.00	0.3	0.54	0.022	6	124	0.02734	0.25	0.00	5	16	0	3.80	0.00
1	27K	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00
1	28H	0.1	0.18	0.4	0.60	0.011	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	29H	0.0	0.00	0.4	0.60	0.011	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00
1	30I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	5	3.80	0.10
1	31I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	0	3.80	0.00
1	32J	0.3	0.54	0.3	0.54	0.022	0	0	0.00000	0.00	0.00	0	16	5	3.80	0.10
1	33J	0.0	0.00	0.3	0.54	0.022	0	0	0.00000	0.00	0.00	0	16	0	3.80	0.00

Normal End of MODRAT

File name: Prop10yrMontefinoNewLayout.lac Run date: Thu Nov 20 06:29:34 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 10

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.7	1.44	0.7	1.44	0.190	0	0	0.00000	0.00	0.00	0	16	7	4.64	0.74
1	2A	0.0	0.00	0.7	1.44	0.190	6	298	0.03909	0.08	0.10	0	16	0	4.64	0.00
1	3A	0.8	1.65	1.5	2.90	0.262	0	0	0.00000	0.00	0.00	0	16	7	4.64	0.74
1	4A	0.0	0.00	1.5	2.90	0.262	4	72	0.02310	1.50	0.00	0	16	0	4.64	0.00
1	5B	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	6B	0.0	0.00	0.0	0.00	0.000	4	76	0.05171	1.00	0.00	0	16	0	4.64	0.00
1	7AB	0.0	0.00	1.5	2.79	0.103	4	72	0.01750	1.50	0.00	0	16	0	4.64	0.00
1	8C	0.4	0.93	0.4	0.93	0.038	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	9C	0.0	0.00	0.4	0.93	0.038	4	195	0.03815	1.00	0.00	0	16	0	4.64	0.00
1	10D	0.9	2.20	0.9	2.20	0.245	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.74
1	11D	0.0	0.00	0.9	2.20	0.245	4	21	0.00524	1.00	0.00	0	16	0	4.64	0.00
1	12CD	0.9	0.00	1.3	2.86	0.083	4	46	0.07413	1.00	0.00	0	16	0	4.64	0.00
1	13AC	1.3	0.00	2.8	5.29	0.115	4	219	0.00990	1.50	0.00	0	16	0	4.64	0.00
1	14E	0.3	0.73	0.3	0.73	0.082	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.74
1	15E	0.0	0.00	0.3	0.73	0.082	4	60	0.00500	1.00	0.00	0	16	0	4.64	0.00
1	16AE	0.3	0.00	3.1	5.67	0.107	4	51	0.01000	2.00	0.00	0	16	0	4.64	0.00
1	17F	0.1	0.23	0.1	0.23	0.009	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	18F	0.0	0.00	0.1	0.23	0.009	4	91	0.07088	1.00	0.00	0	16	0	4.64	0.00
1	19AF	0.1	0.00	3.2	5.62	0.096	4	141	0.01000	2.00	0.00	0	16	0	4.64	0.00
1	20G	0.1	0.23	0.1	0.23	0.009	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	21GK	0.0	0.00	0.1	0.23	0.009	4	51	0.01820	1.00	0.00	0	16	0	4.64	0.00
1	22AG	0.1	0.13	3.3	5.59	0.088	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00
1	23A	0.0	0.00	3.3	3.28	0.088	4	487	0.01000	2.00	0.00	0	16	0	4.64	0.00
1	24A	0.0	0.00	3.3	3.06	0.072	4	44	0.06250	2.00	0.00	0	16	0	4.64	0.00
1	25H	0.3	0.70	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	26HK	0.0	0.00	0.3	0.70	0.028	6	124	0.02734	0.25	0.00	5	16	0	4.64	0.00
1	27K	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00
1	28H	0.1	0.23	0.4	0.80	0.015	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	29H	0.0	0.00	0.4	0.80	0.015	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00
1	30I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	5	4.64	0.10
1	31I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	0	4.64	0.00
1	32J	0.3	0.70	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	5	4.64	0.10
1	33J	0.0	0.00	0.3	0.70	0.028	0	0	0.00000	0.00	0.00	0	16	0	4.64	0.00

Normal End of MODRAT

File name: Prop25yrMontefinoNewLayout.lac Run date: Thu Nov 20 09:50:22 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 25

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.7	1.94	0.7	1.94	0.236	0	0	0.00000	0.00	0.00	0	16	6	5.71	0.74
1	2A	0.0	0.00	0.7	1.94	0.236	6	298	0.03909	0.08	0.10	0	16	0	5.71	0.00
1	3A	0.8	2.22	1.5	3.89	0.339	0	0	0.00000	0.00	0.00	0	16	6	5.71	0.74
1	4A	0.0	0.00	1.5	3.89	0.339	4	72	0.02310	1.50	0.00	0	16	0	5.71	0.00
1	5B	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	6B	0.0	0.00	0.0	0.00	0.000	4	76	0.05171	1.00	0.00	0	16	0	5.71	0.00
1	7AB	0.0	0.00	1.5	3.79	0.161	4	72	0.01750	1.50	0.00	0	16	0	5.71	0.00
1	8C	0.4	1.19	0.4	1.19	0.050	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	9C	0.0	0.00	0.4	1.19	0.050	4	195	0.03815	1.00	0.00	0	16	0	5.71	0.00
1	10D	0.9	2.74	0.9	2.74	0.304	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.74
1	11D	0.0	0.00	0.9	2.74	0.304	4	21	0.00524	1.00	0.00	0	16	0	5.71	0.00
1	12CD	0.9	0.00	1.3	3.65	0.129	4	46	0.07413	1.00	0.00	0	16	0	5.71	0.00
1	13AC	1.3	0.00	2.8	7.06	0.179	4	219	0.00990	1.50	0.00	0	16	0	5.71	0.00
1	14E	0.3	0.91	0.3	0.91	0.101	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.74
1	15E	0.0	0.00	0.3	0.91	0.101	4	60	0.00500	1.00	0.00	0	16	0	5.71	0.00
1	16AE	0.3	0.00	3.1	7.62	0.167	4	51	0.01000	2.00	0.00	0	16	0	5.71	0.00
1	17F	0.1	0.30	0.1	0.30	0.012	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	18F	0.0	0.00	0.1	0.30	0.012	4	91	0.07088	1.00	0.00	0	16	0	5.71	0.00
1	19AF	0.1	0.00	3.2	7.61	0.150	4	141	0.01000	2.00	0.00	0	16	0	5.71	0.00
1	20G	0.1	0.30	0.1	0.30	0.012	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	21GK	0.0	0.00	0.1	0.30	0.012	4	51	0.01820	1.00	0.00	0	16	0	5.71	0.00
1	22AG	0.1	0.19	3.3	7.63	0.138	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00
1	23A	0.0	0.00	3.3	5.26	0.137	4	487	0.01000	2.00	0.00	0	16	0	5.71	0.00
1	24A	0.0	0.00	3.3	5.00	0.119	4	44	0.06250	2.00	0.00	0	16	0	5.71	0.00
1	25H	0.3	0.89	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	26HK	0.0	0.00	0.3	0.89	0.037	6	124	0.02734	0.25	0.00	5	16	0	5.71	0.00
1	27K	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00
1	28H	0.1	0.30	0.4	1.06	0.021	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	29H	0.0	0.00	0.4	1.06	0.021	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00
1	30I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	5	5.71	0.10
1	31I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	0	5.71	0.00
1	32J	0.3	0.89	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	5	5.71	0.10
1	33J	0.0	0.00	0.3	0.89	0.037	0	0	0.00000	0.00	0.00	0	16	0	5.71	0.00

Normal End of MODRAT

File name: Prop50yrMontefinoNewLayout.lac Run date: Thu Nov 20 06:41:27 2025

Los Angeles County Flood Control District
Modified Rational Method Hydrology

Storm Day 1 Storm Frequency 50

LOCATION		SUBAREA AREA (ACRES)	SUBAREA Q (CFS)	TOTAL AREA (ACRES)	TOTAL Q (CFS)	TOTAL VOLUME (AC-FT)	CONV TYPE	CONV LNGTH (FT)	CONV SLOPE (FT/FT)	CONV SIZE	CONV Z	CONTROL Q (CFS)	SOIL NAME	TC (MIN)	RAIN (IN)	PCT IMPV
1	1A	0.7	2.44	0.7	2.44	0.270	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.74
1	2A	0.0	0.00	0.7	2.44	0.270	6	298	0.03909	0.08	0.10	0	16	0	6.50	0.00
1	3A	0.8	2.79	1.5	4.86	0.401	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.74
1	4A	0.0	0.00	1.5	4.86	0.401	4	72	0.02310	1.50	0.00	0	16	0	6.50	0.00
1	5B	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	6B	0.0	0.00	0.0	0.00	0.000	4	76	0.05171	1.00	0.00	0	16	0	6.50	0.00
1	7AB	0.0	0.00	1.5	4.72	0.212	4	72	0.01750	1.50	0.00	0	16	0	6.50	0.00
1	8C	0.4	1.39	0.4	1.39	0.060	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	9C	0.0	0.00	0.4	1.39	0.060	4	195	0.03815	1.00	0.00	0	16	0	6.50	0.00
1	10D	0.9	3.14	0.9	3.14	0.348	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.74
1	11D	0.0	0.00	0.9	3.14	0.348	4	21	0.00524	1.00	0.00	0	16	0	6.50	0.00
1	12CD	0.9	0.00	1.3	4.23	0.170	4	46	0.07413	1.00	0.00	0	16	0	6.50	0.00
1	13AC	1.3	0.00	2.8	8.62	0.236	4	219	0.00990	1.50	0.00	0	16	0	6.50	0.00
1	14E	0.3	1.05	0.3	1.05	0.116	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.74
1	15E	0.0	0.00	0.3	1.05	0.116	4	60	0.00500	1.00	0.00	0	16	0	6.50	0.00
1	16AE	0.3	0.00	3.1	9.26	0.220	4	51	0.01000	2.00	0.00	0	16	0	6.50	0.00
1	17F	0.1	0.35	0.1	0.35	0.015	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	18F	0.0	0.00	0.1	0.35	0.015	4	91	0.07088	1.00	0.00	0	16	0	6.50	0.00
1	19AF	0.1	0.00	3.2	9.29	0.198	4	141	0.01000	2.00	0.00	0	16	0	6.50	0.00
1	20G	0.1	0.35	0.1	0.35	0.015	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	21GK	0.0	0.00	0.1	0.35	0.015	4	51	0.01820	1.00	0.00	0	16	0	6.50	0.00
1	22AG	0.1	0.24	3.3	9.30	0.182	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00
1	23A	0.0	0.00	3.3	7.87	0.182	4	487	0.01000	2.00	0.00	0	16	0	6.50	0.00
1	24A	0.0	0.00	3.3	7.14	0.160	4	44	0.06250	2.00	0.00	0	16	0	6.50	0.00
1	25H	0.3	1.04	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	26HK	0.0	0.00	0.3	1.04	0.045	6	124	0.02734	0.25	0.00	5	16	0	6.50	0.00
1	27K	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00
1	28H	0.1	0.35	0.4	1.25	0.026	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	29H	0.0	0.00	0.4	1.25	0.026	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00
1	30I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	5	6.50	0.10
1	31I	0.0	0.00	0.0	0.00	0.000	0	0	0.00000	0.00	0.00	0	17	0	6.50	0.00
1	32J	0.3	1.04	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	5	6.50	0.10
1	33J	0.0	0.00	0.3	1.04	0.045	0	0	0.00000	0.00	0.00	0	16	0	6.50	0.00

Normal End of MODRAT

Attachment B

Geotechnical Investigation

LIMITED GEOTECHNICAL DILIGENCE EXPLORATION REPORT PROPOSED MULTIFAMILY RESIDENTIAL DEVELOPMENT 1400 MONTEFINO AVENUE (PARCEL 14894) DIAMOND BAR, COUNTY OF LOS ANGELES, CALIFORNIA

CLIENT DRAFT

Prepared for

INTRACORP SOCAL 1, LLC
895 DOVE STREET, SUITE 400
NEWPORT BEACH, CALIFORNIA 92660

Prepared by

LEIGHTON AND ASSOCIATES, INC.
2600 MICHELSON DRIVE, SUITE 400
IRVINE, CALIFORNIA 92612

Project Number 036.0000030477

April 1, 2025

Leighton
a verdantas company

Leighton and Associates, Inc.

April 1, 2025

Project No. 036.0000030477

Intracorp SoCal 1, LLC
895 Dove Street, Suite 400
Newport Beach, California 92660

Attention: Ms. Sarah Klaustermeier, Senior Director of Development

Subject: Limited Geotechnical Diligence Exploration Report
Proposed Multifamily Residential Development
1400 Montefino Avenue (Parcel 14894)
Diamond Bar, County of Los Angeles, California

Per our November 11, 2024 proposal, authorized on February 14, 2025, Leighton and Associates, Inc. (Leighton) has completed diligence-level geotechnical exploration for the subject project. Leighton reviewed the *Schematic Design, Site Plan Scheme 1B - 11-14-24, 1480 Montefino, Diamond Bar, California*, prepared by SDK Atelier Design Group (SDK), dated November 14th, 2024. Alternatively, we have been provided with the plan *Site Setbacks (Per California Building Code),* prepared by Huitt Zollars, dated March 4, 2025 suggesting 50 Multifamily townhome units is an alternative to the above mentioned concept. Based on our review, we understand this approximately 3.9-acre site will be developed with approximately fifty (50) three-story row townhomes or detached homes with residential access from the alleys. Ancillary improvements expected to consist of utility infrastructure, pavers and/or decorative concrete with landscaping. The site is currently developed with a 2-story concrete tilt up commercial building surrounded by paved access and parking areas.

The project is considered feasible from a geotechnical standpoint. This report presents the findings from our explorations along with our conclusions and preliminary recommendations for foundation design and earthwork construction.

We appreciate the opportunity to be of service to you on this project. If you have any questions or if we can be of further service, please contact us at ***(866) LEIGHTON***; or specifically at the phone extensions or e-mail addresses listed below.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

Joe A. Roe, PG, CEG 2456
Senior Principal Geologist
Ext 4263, jroe@leightongroup.com

Christian Delgadillo, PE, GE 3144
Associate Engineer
cdelgadillo@leightongroup.com

Distribution: (1) Addressee

CLIENT DRAFT

TABLE OF CONTENTS

Section			Page
1.0	**INTRODUCTION**		**1**
	1.1	Site Description and Proposed Development	1
	1.2	Site Background	1
	1.3	Purpose and Scope	2
2.0	**GEOTECHNICAL FINDINGS**		**5**
	2.1	Regional Geologic Setting	5
		2.1.1 Geologic Structure	5
	2.2	Subsurface Conditions	6
		2.2.1 Expansive Soil Characteristics	7
		2.2.2 Corrosion	7
		2.2.3 Soil Compressibility	9
		2.2.4 Shear Strength	9
		2.2.5 Excavation Characteristics	10
	2.3	Groundwater Conditions	10
	2.4	Infiltration	11
3.0	**GEOLOGIC/SEISMIC HAZARDS**		**13**
	3.1	Surface Fault Rupture	13
	3.2	Strong Ground Shaking	13
	3.3	Liquefaction Potential	14
	3.4	Seismically-Induced Settlement	15
	3.5	Lateral Spreading	15
	3.6	Earthquake-Induced Landsliding	15
	3.7	Flooding	16
4.0	**GEOTECHNICAL DESIGN RECOMMENDATIONS**		**17**
	4.1	Site Grading	17
		4.1.1 Site Preparation	17
		4.1.2 Overexcavation and Recompaction	17
		4.1.3 Excavation Bottom Preparation	18
		4.1.4 Fill Materials	18
		4.1.5 Fill Placement and Compaction	18
		4.1.6 Reuse of Concrete and Asphalt in Fill	19
	4.2	Foundation Design	19
		4.2.1 Post-Tensioned Slab Design	19
		4.2.2 Spread Footings	20
		4.2.3 Estimated Settlement	21
		4.2.4 Slab-on-Grade	21
		4.2.5 Corrosion	22

CLIENT DRAFT

4.3 Retaining Walls 23
4.3.1 Drainage 24
4.4 Pavements 24
4.4.1 Asphalt Concrete 25
4.4.2 Portland Cement Concrete Paving 25
4.4.3 Paving Materials 26
4.5 Temporary Excavations 26
4.6 Trench Backfill 27
4.7 Drainage and Landscaping 28
4.8 Additional Geotechnical Services 28
5.0 LIMITATIONS 29
6.0 REFERENCES 30

Tables

Table 1 – Soil Corrosivity as a Function of Resistivity 8
Table 2 – Sulfate Concentration and Exposure 8
Table 3 – Corrosivity Test Results 9
Table 4 – Summary of Geotechnical Properties 10
Table 5 – Measured (Unfactored) and Design Infiltration Rate 12
Table 6 – 2022 CBC Based Ground Motion Parameters (Mapped Values) 14
Table 7 – Results of Corrosivity Testing 22
Table 8 – Retaining Wall Design Earth Pressures 23
Table 9 – Asphalt Concrete Pavement Sections 25

Attachments

Important Information About Your Geotechnical Engineering Report Rear of Text

Figure 1 – Site Location Map Rear of Text
Figure 2A – Exploration Location Map Rear of Text
Figure 2B – Site Plan from MWA (1985) Rear of Text
Figure 3 – Regional Geology Map Rear of Text
Figure 4 – Regional Fault and Historic Seismicity Map Rear of Text
Figure 5 – Seismic Hazard Map Rear of Text
Figure 6 – Flood Hazard Map Rear of Text
Figure 7 – Dam Inundation Map Rear of Text

Appendix A – Exploration Logs
Appendix B – Percolation Test Data
Appendix C – Laboratory Test Results
Appendix D – Liquefaction Analysis
Appendix E – Western Laboratories, 1984
Appendix F – Medall, Worswick and Associates, Inc., 1985
Appendix G – Earthwork and Grading Guide Specifications

CLIENT DRAFT

1.0 INTRODUCTION

1.1 Site Description and Proposed Development

The project site is bounded by residential developments to the west and southwest, by a strip mall and S Diamond Bar Boulevard to the east/southeast, and by Montefino Avenue to the north. The central site location (latitude 33.99768°, longitude -117.81448°) and immediate vicinity are shown on Figure 1, *Site Location Map.* Review of Google Aerial Terrain imagery suggest site elevations (El.) range from approximately El. 901 ft. to El. 896ft ±.

The approximately 3.9-acre site is currently occupied with a two (2)-story tilt-up commercial building and ancillary parking lots. Based on review of the *Schematic Design, Site Plan Scheme 1B - 11-14-24, 1480[sic] Montefino, Diamond Bar, California*, prepared by SDK Atelier Design Group (SDK), dated November 14th, 2024, we understand the existing building will be demolished and developed with fifty (50) three-story row duplex or detached product with residential access from Montefino Avenue. Ancillary improvements expected to consist of utility infrastructure, pavers and/or decorative concrete with landscaping.

1.2 Site Background

Based on review of historical aerial photographs and topographic maps (NETR, 2025), until at least 1966 the project site and much of the surrounding area was undeveloped and occupied by a series of rolling hills and valleys. By 1972, the existing residential development located to the southwest of the subject site was constructed, including the manufactured slopes that descend from the residences down to the site along the northwestern boundary. Original site grading occurred between 1981 and 1982.

Mass grading for the subject site and surrounding lots was performed under the observation of Medal, Aragon, Worswick and Associates, Inc; we are aware of this activity via references within later reports (see below), and efforts are currently underway to obtain a copy of the As-Graded report (MAWA, circa 1982).

In 1984, Western Laboratories performed a site exploration consisting of eight (8) test pit excavations in order to evaluate subsurface site conditions to develop preliminary recommendations for a proposed commercial development at the time (Western Laboratories, 1984; Appendix E). Subsurface information and laboratory data from this investigation has been used to supplement the findings of our current exploration.

CLIENT DRAFT

In 1985, Medal, Worswick and Associates, Inc. provided a report for Revised Retaining Wall Design Parameters for the subject lot (MWA, 1985; Appendix F). The report identifies the slope to be retained (located on the north, northwest, and west sides of the subject lot) as a fill slope, with the northern and northwestern area constructed during mass grading for the subject lot, and the western portion constructed by others prior to mass grading for this site. The report notes that portions of the wall may retain bedrock below the fill, and that locally adverse bedding conditions may be present. A portion of the slope was constructed as stabilization fill to mitigate unfavorable bedding conditions identified during site grading; the wall as planned at the time of the report was expected to encroach into the stabilization fill, and to damage the existing subdrainage system in that area. It was the opinion of the authors that a properly constructed subdrainage system for the newly proposed wall would provide adequate drainage for the remaining stabilization fill. Figure 2B, *Site Plan from MWA, 1985,* shows the approximate limits of fill, approximate limits of the constructed stabilization fill, subdrain locations, and wall types as proposed at the time of the report. We have included photos and annotations with respect to what may be the wall drain connections and outlets based on our observations. Efforts are currently underway to obtain a copy of the As-Built report for construction of the retaining walls at the site should that be available through the City of Dimano0nd Bar search requests.

1.3 Purpose and Scope

The purpose of our geotechnical exploration was to evaluate subsurface conditions relative to the proposed improvements and provide preliminary geotechnical recommendations for design and construction. The following scope of work was performed:

- **Pre-Field Exploration Activities** – Reconnaissance of the site was performed by a certified engineering geologist to mark the proposed exploration locations. Underground Service Alert (USA) was notified to locate and mark existing underground utilities prior to our subsurface exploration. Underground utility plans were not provided for our review.
- **Field Exploration**:
  - **Cone Penetrometer Test (CPT) Soundings:** We advanced three (3) cone penetrometer test (CPT) soundings to target depths ranging from 50 to 70 feet bgs. Shear wave velocity measurements were performed in one of the CPT soundings to develop seismic design parameters and determine seismic site class. In addition, pore pressure dissipation tests were

CLIENT DRAFT

performed in two (2) of the CPT soundings to evaluate the current groundwater conditions across the site near the transition zone from bedrock to canyon alluvium. Upon completion, each CPT was backfilled with bentonite, and the surface patched to match existing conditions.

- **Soil Borings and Percolation Testing** – Drilling, logging, and sampling of three (3) hollow-stem auger borings (designated LB-1, LP-1 and LP-2) was conducted on March 11, 2025. Borings were drilled to depths ranging from 36.5 to 41 feet below ground surface (bgs). Borings LP-1 and LP-2 were converted into percolation test wells for infiltration testing.

  During drilling of the hollow-stem auger borings, bulk and drive samples were obtained from the borings for geotechnical laboratory testing. Driven Standard Penetration Tests (SPTs) were performed within the borings in accordance with ASTM Test Method D 1586. Samples were collected at 2½ and 5-foot intervals throughout the depth of exploration. In both test methods, the sampler is driven below the bottom of the borehole by a 140-pound weight (hammer) free-falling 30 inches. The drilling rig was equipped with an automatic hammer to provide greater consistency in the drop height and striking frequency. The number of blows to drive the sampler the final 12-inches of the 18-inch drive interval is termed the "blowcount" or SPT N-value. N-values provide a measure of relative density in granular (non-cohesive) soils and comparative consistency in cohesive soils. Number of blows per 6 inches of penetration was recorded on the boring logs included in Appendix A, *Exploration Logs*.

  The borings were logged in the field by a geologist from our firm under supervision of a certified engineering geologist. Each soil sample collected was reviewed and described in accordance with the Unified Soil Classification System (USCS). The samples were sealed and packaged for transportation to our laboratory for testing. After completion of drilling, the borings were backfilled to the ground surface with soil cuttings.

  Approximate soil boring locations are shown on Figure 2A, Exploration Location Map. Boring logs are presented in Appendix A, Exploration Logs.

- **Percolation Testing** – Borings LP-1 and LP-2 (see *Figure 2A*) were converted to temporary percolation test wells upon completion of drilling and sampling. Test wells LP-1 and LP-2 consisted of 2-inch slotted (0.020-inch slots) PVC well casing screened between depths of 7- to 12 and 10- to 20 feet bgs, respectively. The annulus of the screened well zone was then backfilled with sand filter pack to approximately 2 feet above the screen zone. The full results of the percolation testing are presented in Appendix B, *Percolation Test Data*. Upon completion of the percolation testing, the well casing was removed the boring and the boring was backfilled with soil cuttings to existing ground surface

CLIENT DRAFT

- **Laboratory Testing** – Selected relatively undisturbed and bulk soil samples obtained from our current hollow-stem-auger borings were tested at our in-house Irvine geotechnical laboratory. This laboratory testing program was designed to evaluate physical geotechnical characteristics of site soils including corrosion potential. Geotechnical test results are presented in Appendix C, *Geotechnical Laboratory Testing*. Tests performed during the current investigation include:
  - Particle Size Analysis (ASTM D 7928 & 6913);
  - Corrosivity Suite – pH, Sulfate, Chloride, and Resistivity (California Test Methods 417, 422, and 532/643).
- **Engineering Analysis** – Data obtained from past and current explorations and geotechnical laboratory testing was evaluated and analyzed to develop preliminary geotechnical conclusions and recommendations for the proposed development described in Section 1.1 of this report.
- **Report Preparation** – This report presents our findings, conclusions, and preliminary recommendations for the proposed development.

CLIENT DRAFT

2.0 GEOTECHNICAL FINDINGS

2.1 Regional Geologic Setting

The project site is located in the Peninsular Ranges geomorphic province of California within the northwestern Puente Hills in the city of Diamond Bar. The Los Angeles Basin began to form about seven million years ago, in the late Miocene time, as the San Andreas Fault shifted eastward to its present position. For the next five million years the basin rapidly subsided along the major faults and was rapidly filled with sediments eroded from the highlands to the north, northeast and east. During the Pleistocene epoch (the last two million years) the region was warped gently upward until the present shoreline and topography formed (Yerkes and others, 1965 and Wright, 1991).

The Peninsular Ranges geomorphic province is characterized by the northwest trend of prominent topographic features. Prominent geologic structures such as San Andreas, Whittier and Newport-Inglewood faults are also aligned along a northwest trend. The Puente Hills are oriented in this northwesterly direction which were formed along the Whittier and Chino segments of the Elsinore Fault Zone (EFZ).

The site is located adjacent west of northeast-to-southwest sloping South Diamond Bar Boulevard, which drains to the southwest. Prior to 1972, the site was underlain by young alluvial fan deposits and bedrock of the Monterey Formation, Soquel Member at depth (Figure 3, *Regional Geology Map;* Dibblee and Ehrenspeck, 2001). The site is currently underlain by compacted fill materials over young alluvial fan deposits and Monterey Formation bedrock.

2.1.1 Geologic Structure

The EFZ is northwest-trending, right–lateral, strike-slip zone disrupting early Holocene to Late Pleistocene-age and older deposits. The fault has 7 sections, from north to south: Whittier, Chino, Glen Ivy, Temecula, Julian, Coyote Mountain and Laguna Salada sections (Treiman, 1998). The Chino fault separates from the Elsinore fault south of Corona and extends northward through the Chino Hills. Absence of thickness variations within the Miocene-age Puente formation indicates that the Chino fault is post-Miocene. The Whittier fault is a right-lateral strike-slip fault that runs along the eastern Chino Hills range region, from the Elsinore fault to the East Montebello fault at Whittier Narrows (Herzog, 1998). The Chino-Central

CLIENT DRAFT

Avenue fault is mapped approximately 1.9 miles east of the site, the Whittier fault is mapped approximately 8.2 miles west of the site (Figure 4, *Regional Fault and Seismicity Map*). The estimated maximum magnitude earthquake is 6.7 Mw for the Chino fault and 6.8 Mw for the Whittier fault.

The site is located in an area geologically mapped to be underlain by both Quaternary age young alluvial deposits and Tertiary age bedrock of the Monterey Formation striking east-west and dipping to the north at a relatively shallow angle (3 to 5 degrees). The current project site footprint is located along a former east-facing, descending bedrock slope. The elevation difference is expected to be manifested in a transition cut below grade between bedrock and alluvial canyon fill. Artificial fill associated with site improvements is present across the site.

2.2 Subsurface Conditions

Presented below are brief descriptions of the geologic units encountered in the exploratory borings completed at the site by Leighton. Detailed descriptions of the geologic units encountered are presented on the boring logs in Appendix A. Geotechnical conditions described on the logs represent the conditions at the actual exploratory excavation locations. Other variations may occur beyond and/or between the excavations. Lines of demarcation between the geologic units and the various earth materials on the logs represent approximated boundaries, and (unless otherwise noted) actual transitions may be gradual. The locations of the subsurface explorations are shown on Figure 2A and subsurface profiles based on data obtained and interpreted from the subsurface data collected are shown on our boring logs and CPT data included in Appendix A.

Artificial Fill (Af): The existing artificial fill soils encountered in our exploratory borings were reportedly placed during grading of the site under the supervision of Medal, Aragon, Worswick and Associates, Inc. (MAWA, 1982). The artificial fill materials encountered in our borings range in thickness from approximately 5.5 to 15.5 feet bgs at the explored locations. These soils are characterized as olive brown, yellowish brown, dark brown, and gray, moist, medium dense to dense sand, silty sand, and very stiff to hard sandy clay. The thickness of fill material may be locally thinner or thicker at locations not explored in this study.

Quaternary Age Young Alluvial Fan Deposits (Qyf): The alluvial deposits encountered beneath the fill materials to a depth of approximately 35 feet

CLIENT DRAFT

consisted of alternating beds of dark brown to reddish-brown, moist to wet, medium stiff to very stiff sandy clay and very loose to medium dense clayey sand.

Monterey Formation – Soquel Member (Tm): The bedrock unit encountered beneath the alluvial soils consisted of interbedded yellowish brown sandstone and olive gray siltstone and claystone, which were heavily to moderately weathered and friable.

The stratigraphy of the subsurface soils encountered in each soil boring is presented on the boring logs (Appendix A).

2.2.1 Expansive Soil Characteristics

Expansive soils contain significant amounts of clay particles that swell considerably when wetted and which shrink when dried. Foundations constructed on these soils are subject to uplifting forces caused by the swelling. Without proper mitigation measures, heaving and cracking of both building foundations and slabs-on-grade could result.

Six (6) samples were tested for expansion potential during site investigation by Western Laboratories (Western Laboratories, 1985). Expansion Index ranges from 29 to 56, or low to medium expansion potential. Test results are presented in Appendix E, *Western Laboratories Soils Investigation Report*.

Based on our exploration, the near-surface soils consisted mainly of granular materials (i.e. sand and silty sand) and are considered to have low expansion potential. Additional testing should be performed during future investigation and upon completion of site grading and excavation to confirm the expansion potential presented in this report.

2.2.2 Corrosion

In general, soil resistivity, which is a measure of how easily electrical current flows through soils, is the most influential factor for ferrous corrosivity. Based on findings of studies presented in the American Society for Testing and Materials (ASTM) STP 1013 titled “Effects of Soil Characteristics on Corrosion” (February, 1989), an approximate relationship between soil resistivity and soil corrosiveness was developed as shown in the table below.

CLIENT DRAFT

Table 1 – Soil Corrosivity as a Function of Resistivity

Soil Resistivity (ohm-cm)	Classification of Soil Corrosiveness
0 to 900	Very severe corrosion
900 to 2,300	Severely corrosive
2,300 to 5,000	Moderately corrosive
5,000 to 10,000	Mildly corrosive
10,000 to >100,000	Very mildly corrosive

Sulfate Exposure: Sulfate ions in the soil can lower the soil resistivity and can be highly aggressive to Portland cement concrete by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. This reaction is accompanied by expansion and eventual disruption of the concrete matrix. A potentially high sulfate content could also cause corrosion of reinforcing steel in concrete. Section 1904A of the 2022 California Building Code (CBC) defers to the American Concrete Institute's (ACI's) ACI 318-14 for concrete durability requirements. Table 19.3.1.1 of ACI 318-14 lists "*Exposure categories and classes*," including sulfate exposure as follows:

Table 2 – Sulfate Concentration and Exposure

Water-Soluble Sulfate (SO_4) in soil (percentage by dry weight)	ACI 318-14 Sulfate Class
0.00 - 0.10	S0 (negligible)
0.10 - 0.20	S1 (moderate)
0.20 - 2.00	S2 (severe)
>2.00	S3 (very severe)

One composite, near-surface (0-5 feet) bulk soil sample was tested to evaluate corrosion potential. The chemical analysis test results for the onsite soil from our geotechnical explorations are included in Appendix C of this report and are summarized below.

CLIENT DRAFT

Table 3 – Corrosivity Test Results

Test Parameter	Test Results	General Classification of Hazard
	LP-1	
Water-Soluble Sulfate-SO_4 in Soil (ppm)	136	Negligible (S0) sulfate exposure to buried concrete
Percent by Weight SO_4	0.0136	
Water-Soluble Chloride in Soil (ppm)	240	Non-corrosive to buried concrete (per Caltrans Specifications)
Percent by Weight (Cl^-)	0.024	
pH	7.25	Mildly alkaline to neutral
Minimum Resistivity (saturated, ohm-cm)	1,850	Severely corrosive to buried ferrous pipes

Additional corrosion testing should be performed upon completion of grading to confirm the findings and conclusions presented above.

2.2.3 Soil Compressibility

Two (2) samples collected during site investigation by Western Laboratories (Western Laboratories, 1985) were subjected to consolidation testing to evaluate the compressibility of the materials under assumed loads representative of anticipated structural bearing stresses for the now-constructed commercial building at the site. The results of testing indicate the tested soil exhibit low to moderate compressibility potential. Test results are presented in Appendix E, *Western Laboratories Soils Investigation Report*.

2.2.4 Shear Strength

Six (6) samples collected during site investigation by Western Laboratories (Western Laboratories, 1985) were remolded to approximate field density and subjected to direct shear testing. Test results are presented in Appendix E, *Western Laboratories Soils Investigation Report*.

Based on the current plan concept and the findings from our borings, the shear strength is adequate to provide structural support provided grading and design recommendations presented herein and in supplemental reports are implemented.

Based on subsurface exploration and geotechnical laboratory testing performed on selected soil samples collected from the site, or performed by others, a summary of geotechnical properties of the site soils is shown below.

CLIENT DRAFT

Table 4 – Summary of Geotechnical Properties

Parameters	General Soil Properties
In-situ Moisture	Moist to wet
In-situ Density	Very loose very dense, medium stiff to hard
Swell/Expansion Potential	Swell/expansion potential is considered **low to moderate**.
Collapse Potential	Not susceptible to collapse when wetted
Strength	Adequate to provide structural support provided grading recommendations presented herein and in supplemental reports are implemented.
Corrosivity	Negligible sulfate attack of concrete and severely corrosive to ferrous metals.

2.2.5 Excavation Characteristics

Based on our subsurface explorations performed at the site and our experience from grading jobs in the vicinity of the site, we anticipate the onsite artificial fill and native earth materials can generally be excavated using conventional excavation equipment in good operating condition.

2.3 Groundwater Conditions

Groundwater was encountered during our subsurface investigation at depths ranging from 22.0 to 31.7 feet bgs (Appendix A). Based on review of the *Seismic Hazard Zone Report for the Yorba Linda Quadrangle* (CGS, 2005), the historically shallowest groundwater depth at the site is reported as being between approximately 0 and 30 feet below existing ground surface (bgs). According to CGS, the 0 to 30 foot contour denotes areas with present or anticipated shallow groundwater, which is defined as shallower than 40 feet bgs. Based on the presence of subdrains installed at the site during mass grading, and the significant drop (approximately 10 feet) in groundwater elevation at the southern end of the site, it is our opinion that subsurface water is being effectively drained away from the site by natural and engineered means, and that it is unlikely that groundwater will reach shallower than 20 feet below ground surface in the future. Accordingly, we have assumed a design groundwater depth of 20 feet in our analysis.

Based on these findings, groundwater is not expected to pose a constraint during or after construction. Fluctuations of the groundwater level, localized zones of perched water, and an increase in soil moisture, should be anticipated during and following the rainy seasons or periods of locally intense rainfall or storm water runoff, or from stormwater infiltration.

CLIENT DRAFT

2.4 Infiltration

Percolation testing was performed within temporary percolation wells LP-1 and LP-2 to evaluate the infiltration characteristics of subsurface soils within a screened interval of 7 to 12 feet bgs and 10 to 20 feet bgs, respectively. The percolation tests were conducted in general accordance with County of Los Angeles Department of Public Works guidelines (LADPW, 2021). The full results of percolation testing are presented in Appendix B. The test locations are shown on Figure 2A.

A boring percolation test is useful for field measurements of the infiltration rate of soils, and is suited for testing when the design depth of the infiltration device is deeper than current existing grades, especially in areas where it is difficult to dig test pits, or where the depths of these test pits would be considerably deep.

Percolation tests for wells LP-1 and LP-2 were performed using a falling-head method, which records the average drop in water height from the top of the screened portion of the well over a set time interval during the testing period. The infiltration rate was calculated by dividing the rate of discharge by the infiltration surface area, or flow area. The volume of discharge was calculated by adding the total volume of water that dropped within the PVC pipe and within the annulus, and incorporating a porosity reduction factor to account for the porosity of the annulus material. The flow area was based on the average water height within the test well.

Per County of Los Angeles Guidelines (LADPW, 2021), the design infiltration rate incorporates a reduction factor for the test procedure, site variability, number of tests, thoroughness of subsurface investigation and long-term siltation, plugging and maintenance, with a minimum reduction factor of 3. As such, we have applied a minimum reduction factor to the small-scale infiltration rates measured at the test wells for use in design of the system(s) according to County of Los Angeles Guidelines (LADPW, 2021).

Detailed results of the field-testing data and measured infiltration rate for the test wells are presented in Appendix B. The test results are summarized below:

CLIENT DRAFT

Table 5 – Measured (Unfactored) and Design Infiltration Rate

Test Well Designation	Approximate Depth of Test Zone (feet bgs)	Measured Infiltration Rate (inch per hour)	Design Infiltration Rate (inch per hour)
LP-1	7 to 12	0.02	0.01*
LP-2	10 to 20	0.00	0.00*

* Includes Reduction Factor of 3

The results of the percolation tests in wells LP-1 and LP-2 indicate unfavorable infiltration rates at the specific locations and depths tested. Based on the requirements of LADPW (2021), **stormwater infiltration is not considered feasible** at the depths and locations tested for wells LP-1 and LP-2.

CLIENT DRAFT

3.0 GEOLOGIC/SEISMIC HAZARDS

Geologic and seismic hazards include surface fault rupture, seismic shaking, liquefaction, seismically-induced settlement, lateral spreading, seismically-induced landslides, flooding, seismically-induced flooding, seiches and tsunamis. The following sections discuss these hazards and their potential impact at the project site.

3.1 Surface Fault Rupture

Our review of available literature (geologic maps, aerial photos) indicates that no known active faults have been mapped across the site, and the site is **not** located within a currently established *Alquist-Priolo Earthquake Fault Zone* (CGS, 2018). Therefore, the potential for surface fault rupture at the site is expected to be low and a surface fault rupture hazard evaluation is not mandated for this site.

The location of the closest active faults to the site was evaluated using the United States Geological Survey (USGS) Earthquake Hazards Program National Seismic Hazard Maps (USGS, 2008). The closest active faults to the site with the potential for surface fault rupture are the San Jose Fault, Chino, alt 1 Fault, and Chino, alt 2 Fault, located approximately 4.41, 4.55, and 4.59 miles from the site, respectively. The San Andreas fault, which is the largest active fault in California, is approximately 40 miles northeast of the site. Major regional faults with surface expression in proximity to the site are shown on Figure 4, *Regional Fault and Historic Seismicity Map*.

3.2 Strong Ground Shaking

The principal seismic hazard to the site is ground shaking resulting from an earthquake occurring along any of several major active and potentially active faults in southern California (Figure 4). The intensity of ground shaking at a given location depends primarily upon the earthquake magnitude, the distance from the source, and the site response characteristics.

Accordingly, design of the project should be performed in accordance with all applicable current codes and standards utilizing the appropriate seismic design parameters to reduce seismic risk as defined by California Geological Survey (CGS) Chapter 2 of Special Publication 117A (CGS, 2008). The 2022 edition of the California Building Code (CBC) is the current edition of the code. Through compliance with these regulatory requirements and the utilization of appropriate seismic design parameters selected by the design professionals, potential effects relating to seismic shaking can be reduced.

CLIENT DRAFT

The following code-based seismic parameters should be considered for design under the 2022 CBC:

Table 6 – 2022 CBC Based Ground Motion Parameters (Mapped Values)

Categorization Coefficient	Code-Based
Site Latitude	33.99768°
Site Longitude	-117.81448°
Site Class	C
Mapped Spectral Response Acceleration at Short Period (0.2 sec), S_S	1.845
Mapped Spectral Response Acceleration at Long Period (1 sec), S_1	0.64
Short Period (0.2 sec) Site Coefficient, F_a	1.2
Long Period (1 sec) Site Coefficient, F_v	1.4[1]
Adjusted Spectral Response Acceleration at Short Period (0.2 sec), S_{MS}	2.214
Adjusted Spectral Response Acceleration at Long Period (1 sec), S_{M1}	0.896[1]
Design Spectral Response Acceleration at Short Period (0.2 sec), S_{DS}	1.476
Design Spectral Response Acceleration at Long Period (1 sec), S_{D1}	0.598[1]
Site-adjusted geometric mean Peak Ground Acceleration, PGA_M	0.949

[1] *See Section 11.4.8 of ASCE 7-16. A site-specific ground motion hazard analysis in accordance with Section 21.2 of ASCE 7-16 is required for this site. Per Supplement 3 to ASCE 7-16, a site-specific ground motion hazard analysis is not required where the value of the parameters S_{M1} and S_{D1} in the table are increased by 50%.*

3.3 Liquefaction Potential

The term liquefaction is generally referenced to loss of strength and stiffness in soils due to build-up of pore water pressure when subject to cyclic or monotonic loading. Both sandy and clayey soils are susceptible to loss of strength and stiffness. Because of the difference in strength characteristic and methods for evaluating strength loss potential for granular and clayey soils, the term liquefaction is used for granular soils while cyclic softening is used for fine-grained soils (i.e., clays and plastic silts).

In general, adverse effects of liquefaction or cyclic softening include excessive ground settlement, loss of bearing support for structural foundations, and seismically-induced lateral ground deformations such as lateral spreading. Depending upon the relative thickness of the liquefied strata with respect to overlying non-liquefiable soils, other potentially adverse effects such as ground oscillation and ground fissuring may occur.

CLIENT DRAFT

As shown on the *Earthquake Zones of Required Investigation* map for the Yorba Linda Quadrangle (CGS, 2018), the project site **is** located within an area that has been identified by the State of California as being potentially susceptible to liquefaction (Figure 5, *Seismic Hazard Map*). We have performed liquefaction analysis of the soil profiles from the borings and CPTs. The liquefaction evaluation was conducted using a peak horizontal ground acceleration of 0.95g, a Moment Magnitude (Mw) of 6.1, and a design groundwater of 20 feet bgs. Our analysis, presented in Appendix D, *Liquefaction Analysis*, identifies layers of potentially liquefiable soils in CPT-1 mainly at depths between approximately 20 to 26 feet below the existing grade. No significant layers of potentially liquefiable soils were identified in CPT-2 and CPT-3. Based on our evaluation, the liquefaction potential at the site is considered low.

3.4 Seismically-Induced Settlement

Seismically-induced settlement consists of dynamic settlement of unsaturated soil (above groundwater) and liquefaction-induced settlement (below groundwater). These settlements occur primarily within low density sandy soil due to reduction in volume during and shortly after an earthquake event.

The settlements of these strata were estimated to result in a cumulative settlement on the order of 1¼ inches. The seismically-induced differential settlement was estimated to be on the order of ¾ inch over 30 feet.

3.5 Lateral Spreading

With groundwater at a depth of 22 to 32 feet below grade and relatively medium dense to dense sands below the site the potential for liquefaction and lateral spreading to affect the site is considered low.

3.6 Earthquake-Induced Landsliding

As shown on Figure 5, the sloped areas of the site **are** mapped within a seismically-induced landslide hazard zone identified by the State of California (CGS, 2018). However, due to the slopes being constructed of fill materials placed under engineering controls, we consider the potential for seismically-induced landslide hazard at the site to be low.

CLIENT DRAFT

3.7 Flooding

As shown on Figure 6, *Flood Hazard Zone Map*, and the site is located outside of areas recognized by the Federal Emergency Management Agency (FEMA) to within 0.2% annual flood potential (FEMA, 2008). Earthquake-induced flooding can be caused by failure of dams or other water-retaining structures as a result of an earthquake. As shown on Figure 7, the site is located outside of a dam inundation area due to the absence of such structures near the site, therefore the potential for earthquake-induced flooding at the site is considered low.

CLIENT DRAFT

4.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

Based on this study, we conclude that the proposed development concept as described in Section 1.1 of this report is considered feasible from a geotechnical standpoint, provided that the recommendations presented in this report are properly incorporated in design and construction.

The following, preliminary recommendations have been developed based on the exhibited engineering properties of the onsite soils and their anticipated behavior during and after construction. Preliminary recommendations are specifically provided for design of foundations, seismic design considerations, floor slabs, retaining structures, paving, and grading. The proposed structures may be supported on a post-tensioned slab foundation established on engineered fill. Ancillary structures may be supported on spread-type shallow footing foundation systems established on engineered fill. Leighton should review the grading plan, foundation plans, and specifications when they are available to verify that the recommendations presented in this report have been properly interpreted and incorporated.

4.1 Site Grading

Earthwork guide specifications are presented in Appendix G, *Earthwork and Grading Guide Specifications*. Earthwork is expected to consist of overexcavation to remove undocumented fill materials and near-surface, compressible native soils, foundation excavation, and other site improvement work. Recommendations for site earthwork are provided in the following sections.

4.1.1 Site Preparation

Vegetation, debris, and other deleterious materials should be removed and disposed of offsite prior to the commencement of grading operations. Existing underground improvements, including utility lines, should be identified prior to the start of grading and abandoned or relocated as necessary. Trenches resulted from removal of existing improvements should be excavated to competent materials and properly backfilled under the observation and testing of the geotechnical engineer.

4.1.2 Overexcavation and Recompaction

The foundation for the proposed structures should be underlain by compacted fill to provide a uniform support and reduce potential for differential settlement. The compacted fill should extend a minimum 3 feet below bottom of the foundation and a minimum 5 feet beyond outside edges of the foundation, where feasible. In general, you may consider a five foot

CLIENT DRAFT

overexcavation and recompaction to recondition the existing fill deposits onsite. Pavement areas, driveway, and concrete flatwork should be underlain by a minimum 1 foot of compacted fill. Local conditions may be encountered that could require additional overexcavation beyond the above noted minimum to obtain an acceptable subgrade. The actual depths and lateral extents of remedial grading will be determined by Leighton, based on subsurface conditions encountered during grading.

It is essential that excavation not undermine foundations of the existing improvements that will remain in place along the boundaries of the project. Additional recommendations may be necessary once project improvement plans become available and footprints of proposed structures are finalized. Additional investigation onsite and in the descending slopes may be warranted to provide specific recommendations based analyses of the proposed design and any new retaining walls that may be considered.

4.1.3 Excavation Bottom Preparation

Resulting removal excavation bottom-surfaces should be observed by Leighton prior to placement of engineered fill materials. After the over-excavations are completed and prior to engineered fill placement, the exposed surfaces should be scarified to a minimum depth of 6 inches, moisture-conditioned to 2 to 4 percent above optimum moisture content, and recompacted to a minimum 90 percent relative compaction as determined by ASTM D1557 Test Method.

4.1.4 Fill Materials

On-site soil that is free of construction debris, organics, or rock larger than 4 inches in largest dimension is suitable to be used as fill for support of structures. Any imported fill soil should be approved by the geotechnical engineer prior to import or use onsite. Import soils should be uncontaminated from an environmental perspective, granular in nature, free of organic material (loss on ignition less than 2 percent), have a very low expansion potential (with an EI less than 21) and have a low corrosion potential with respect to the proposed improvements.

4.1.5 Fill Placement and Compaction

Onsite soils free of organics, debris and oversized material (greater-than 4 inches in largest dimension) are suitable for use as engineered fill. However, any soil to be placed as fill, whether onsite or imported material, should be first viewed by Leighton and then tested if and as necessary, prior to approval for use as engineered fill. All engineered fill must be free of hazardous materials.

CLIENT DRAFT

All fill soil should be placed in thin, loose lifts, moisture-conditioned, as necessary, to within 2 percent of optimum moisture content, and compacted to a minimum 90% relative compaction as determined by ASTM D 1557 standard test method (modified Proctor compaction curve) within building footprints. Aggregate base for pavement sections should be compacted to a minimum of 95% relative compaction. At least the upper 12 inches of the exposed soils in roadways and access drives, parking and (concrete –paver) flatwork areas, should be compacted to at least 95 percent relative compaction based on ASTM Test Method D 1557.

4.1.6 Reuse of Concrete and Asphalt in Fill

Pulverized demolition concrete free of rebar and other materials and demolished asphalt pavement can be pulverized to particles no-larger-than (≤) 3-inches and mixed with site soils for use in compacted fill. Blended pulverized concrete and asphalt should be mixed with at least 25% soils by weight. Such materials must be free of and segregated from any hazardous materials and/or organic material of any kind.

4.2 Foundation Design

The proposed structures may be supported on a post-tensioned slab foundation established on engineered fill. Ancillary structures may be supported on spread-type shallow footing foundation systems established on engineered fill. Foundation recommendations are provided in the following sections.

4.2.1 Post-Tensioned Slab Design

The following post-tensioned slab-on-grade parameters were derived based on the PTI method, 3rd Edition (2008) for soils with low expansion potential (EI<50).

Average Edge Moisture Variation Distance, e_m:	
Center Lift	9.0 feet
Edge Lift	5.3 feet
Anticipated Swell, y_m:	
Center Lift	0.11 inch
Edge Lift	0.24 inch
Minimum Depth of Perimeter Footing Embedment, inches	12

CLIENT DRAFT

Post-Tensioned slabs established on engineered fill may be designed using an allowable bearing pressure of 2,000 pounds per square foot (psf) based on the minimum embedment depth. The allowable bearing pressure value may be increased by one third when considering loads of short duration, such as those imposed by wind and seismic forces. The structural engineer should also design the post-tensioned slabs with adequate stiffness to minimize potential cracking in the slabs.

Prior to placing concrete, the subgrade should be moisture-conditioned to slightly above the optimum moisture and compacted per our recommendations presented in Section 4.1 of this report.

A post-tensioned foundation system designed and constructed in accordance with the recommendations provided in this report is expected to be structurally adequate for the support of the proposed buildings planned at the subject site, provided the recommendations for surface drainage and landscaping in this report are carried out and maintained through the design life of the development. Positive drainage away from the foundation should be implemented and maintained. The post-tensioned slabs are recommended to be underlain by a synthetic sheeting to serve as a retarder to moisture vapor transmission in areas where moisture-sensitive floor covering (such as vinyl, tile, or carpet) or equipment is planned as discussed in Section 4.2.4 of this report.

4.2.2 Spread Footings

Ancillary structures supported on spread footings established on engineered fill should have a minimum embedment depth of 18 inches below exterior grade with a minimum width of 24 inches. A net allowable soil bearing capacity of 2,000 pounds per square foot (psf) may be used for design of the footings based on the minimum width and embedment depth. The allowable bearing value may be increased by 250 psf per foot increase in depth or width to a maximum allowable bearing pressure of 3,000 psf.

A one-third increase in the bearing value for short duration loading, such as wind or seismic forces may be used.

Soil resistance available to withstand lateral loads on a shallow foundation is a function of the frictional resistance along the base of the footing and the passive resistance that may develop as the face of the structure tends to move into the soil. The frictional resistance between the base of the foundation and the subgrade soil may be computed using a coefficient of friction of 0.30. The passive resistance may be computed using an equivalent fluid pressure of 200 pounds-per-cubic-foot (pcf), assuming there is constant contact between the footing and undisturbed soil.

CLIENT DRAFT

The passive resistance can be increased by one-third when considering short-duration wind or seismic loads. The friction resistance and the passive resistance of the soils can be combined without reduction in determining the total lateral resistance.

4.2.3 Estimated Settlement

Differential settlement due to static loading is generally estimated at one inch over a horizontal distance of 40 feet.

Once plans are developed, we should review total dead and sustained live loads for the proposed structures, to evaluate if differential settlements between dissimilarly loaded columns will be tolerable. If excessive differential settlement is anticipated, then methods to lessen may need to be implemented. Such methods include: reduced bearing pressures; deeper footing embedment; modified overexcavation schemes; or possibly other methods.

4.2.4 Slab-on-Grade

Slab-on-grade floors should be placed on properly prepared subgrade soils as described in Section 3.1. These slabs are recommended to be a minimum of 4 inches in thickness and include No. 3 rebar placed at center of the slab at 18 inches on-center in each direction based on geotechnical considerations. Increase in the slab thickness and/or reinforcing may be necessary due to structural engineering considerations as determined by the structural engineer.

Slab-on-grade floors are recommended to be underlain by a synthetic sheeting to serve as a retarder to moisture vapor transmission in areas where a moisture-sensitive floor covering (such as vinyl, tile, or carpet) or equipment is planned. On a preliminary basis, the sheeting is recommended to be a minimum 15-mil thick and consist of polyethylene or similar material that meets or exceeds specifications for ASTM E1745 Class A vapor retarders. Vapor retarder seams should be overlapped a minimum of 6 inches and taped or otherwise sealed. A two-inch thick sand layer may be provided below the vapor barrier to prevent punctures.

Specifications regarding the synthetic sheeting should be determined by others qualified in evaluating and mitigating moisture vapor transmission through concrete slabs. Our firm does not practice in the field of moisture vapor transmission evaluation, since this is not specifically a geotechnical issue. Therefore, we recommend that a qualified person, such as the flooring subcontractor and/or structural engineer, be consulted with to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction with respect to the storage facility and retail area

CLIENT DRAFT

and uses of the finished interior spaces. That person should provide recommendations for mitigation of the potential adverse effects of moisture vapor transmission on various components of the structures as deemed appropriate.

As a minimum, exterior concrete slabs should be at least 4 inches thick, and driveways or ramps should have the edges thickened to at least 6 inches. Construction or weakened plane joints should be spaced at intervals of 8 to 10 feet or less for ramps, sidewalks, patio slabs, pool decks, curbs, and gutters. Joints should be laid out to form approximately square panels.

Minor cracking of concrete after curing due to drying and shrinkage is normal and should be expected; however, concrete is often aggravated by a high water/cement ration, high concrete temperature at the time of placement, small nominal aggregate size, and rapid moisture loss due to hot, dry, and/or windy weather conditions during placement and curing. Cracking due to temperature and moisture fluctuations can also be expected. The use of low-slump concrete or low water/cement ratios can reduce the potential for shrinkage cracking. Additionally, our experience indicates that the use of reinforcement in slabs and foundations can generally reduce the potential for concrete cracking.

To reduce the potential for excessive cracking, concrete slabs-on-grade should be provided with construction or weakened plane joints at frequent intervals.

4.2.5 Corrosion

To evaluate corrosion potential of near surface soils sampled from this site, we tested soil samples for soluble sulfate content, soluble chloride content, pH and resistivity. Results of these tests are summarized below:

Table 7 – Results of Corrosivity Testing

Boring Number	Sample Depth (feet)	Sulfate (mg/kg)	Chloride (mg/kg)	pH	Minimum Resistivity (ohm-cm)
LP-1	0-5	136	240	7.25	1,850

Note: mg/kg = milligrams per kilogram, or parts-per-million (ppm)

CLIENT DRAFT

These results are discussed as follows:

- Sulfate Exposure: Based on test results and Table 19.3.2.1 of ACI 318-14, in our opinion, sulfate exposure should be considered "negligible" with an Exposure Class S0.
- Ferrous Corrosivity: As shown above, minimum soil resistivity of 1,850 ohm-centimeters was measured in our laboratory test. Based on the resistivity correlation per ASTM STP 1013 presented in Table 1 Section 2.2.2, it appears for site soils that corrosion potential to buried steel may be characterized as "severely corrosive" at the site.

As standard design concepts, ferrous pipe buried in moist to wet site earth materials should be avoided by using high-density polyethylene (HDPE) or other non-ferrous pipe when possible. Or ferrous pipe can be protected by polyethylene bags, tape or coatings, di-electric fittings or other means to separate the pipe from on-site earth materials. *Additional testing of subgrade materials recommended upon completion of grading to confirm these reported values once rough grade mixing of onsite fill soils is complete.*

4.3 Retaining Walls

Recommended lateral earth pressures are provided as equivalent fluid unit weights, in psf/ft. or pcf. These values do not contain an appreciable factor of safety, so the structural engineer should apply the applicable factors of safety and/or load factors during design.

On-site soils with Low (or Very Low) expansion potential may be used as retaining wall backfill. Prior to use as backfill behind basement retaining walls, the soils should be tested to verify the EI is less than 20. Recommended lateral earth pressures for retaining walls backfilled with Low expansion potential soils and with drained conditions are as follows:

Table 8 – Retaining Wall Design Earth Pressures

Retaining Wall Condition (Level Backfill)	Equivalent Fluid Pressure (pounds-per-cubic-foot)*
Active (cantilever)	40
At-Rest (braced)	60
Seismic Increment (add to active pressure for walls over 6 feet in height)	34

CLIENT DRAFT

Walls that are free to rotate or deflect may be designed using active earth pressure. For basement walls or walls that are fixed against rotation, the at-rest pressure should be used. For the seismic condition, the pressure should be distributed as a triangular distribution and the dynamic thrust should be applied at a height of 1/3H above the base of the wall.

Total depth of retained earth for design of walls and for uplift resistance, should be measured as the vertical height of the stem below the ground surface at the wall face for stem design, or measured at the heel of the footing for overturning and sliding. A soil unit weight of 120 pcf may be assumed for calculating the actual weight of the soil over the wall footing, if drained, or 60 pcf if submerged, for properly compacted backfill.

4.3.1 Drainage

Adequate drainage may be provided by a subdrain system positioned behind any earth retaining walls. Typically, this system consists of a 4-inch minimum diameter perforated pipe placed near the base of the wall (perforations placed downward). The pipe should be bedded and backfilled with pervious backfill material described in Section 300-3.5.2 of the *Standard Specifications for Public Works Construction* (Green Book), current edition. This pervious backfill should extend at least 2 feet out from the wall and to within 2 feet of the outside finished grade. This pervious backfill and pipe should be wrapped in filter fabric, such as Mirafi 140N or equivalent, placed as described in Section 300-8.1 of the *Standard Specifications for Public Works Construction* (Green Book), current edition. The subdrain outlet should be connected to a free-draining outlet or sump.

4.4 Pavements

To provide support for paving, pavers, concrete etc., the subgrade soils should be prepared as recommended in the Section 3.1. Compaction of the subgrade, including trench backfills, to at least 90 percent of the maximum dry density as determined by ASTM Test Method D1557, and achieving a firm, hard, and unyielding surface will be important for paving support. The preparation of the paving area subgrade should be performed immediately prior to placement of the base course.

Adequate drainage (both surface and subsurface) should be provided such that the subgrade soils and aggregate base materials are not allowed to become wet. Cut-off walls achieved by deepening curb sections or grade beams around planters

CLIENT DRAFT

or other comparable barriers are also recommended to minimize lateral flow of irrigation water beneath the adjacent subgrade soils.

Excessive over-irrigation will have an adverse impact on adjacent pavements. Irrigation adjacent to pavements, without a deep curb or other cutoff to separate landscaping from paving, will result in premature pavement failure.

4.4.1 Asphalt Concrete

The following pavement sections are presented for planning purposes. The required asphalt paving and base thicknesses will depend on the expected wheel loads and volume of traffic (Traffic Index or TI) and the support characteristics (R-Value) of the subgrade soils. No R-Value testing was performed as part of the current work scope.

Assuming that the paving subgrade will consist of the onsite or comparable soils with an R-value of at least 20 compacted to at least 90 percent relative compaction based on ASTM Test Method D 1557, the minimum recommended paving thicknesses are presented in the following table.

Table 9 – Asphalt Concrete Pavement Sections

Area	Design Traffic Index (TI)	Asphalt Concrete (inches)	Base Course (inches)
Car Parking	4	4	4
Light Truck	5	4	5
Heavy Truck	6	5	7
Main Drives	7	6	8

Final pavement structural sections should be based on R-value testing of subgrade soils performed at the conclusion of grading and Traffic Indices provide by the design Civil Engineer.

4.4.2 Portland Cement Concrete Paving

For light axle loads and average daily truck traffic (ADT) less than (<) 500, fire lanes subject to outrigger loads, trash corral aprons, or other areas where point loads are possible, should be paved with Portland Cement Concrete (PCC) with a minimum thickness of 6 inches over properly compacted fill. However, for medium/heavy axle loads and an ADT of (≥) 500 or more over properly compacted fill subgrades, a minimum PCC thickness of 7 inches should be used. All PCC pavements should have a minimum 28-day concrete compressive strength of 4,000 pounds-per-square-inch (psi) and have appropriate joints and saw cuts in accordance with either Portland Cement Association (PCA) or American Concrete Institute (ACI) guidelines. PCC

CLIENT DRAFT

subgrades supporting axle loads are recommended to be compacted to 95 percent relative compaction in the upper 12 inches.

A 4-inch layer of Class 2 aggregate may be used beneath areas of PCC pavement to improve performance. Additional details should be added to plans indicating pavement thickness transitions, pavement joint dowels, expansion joints and saw cut joints. Use of concrete cutoff or edge barriers should be considered at the perimeter of common parking or driveway areas when abutting either open (unfinished) or landscaped areas.

4.4.3 Paving Materials

Recommended structural pavement materials should conform to the specified provisions in the *Standard Specifications for Public Works Construction* (Green Book) indicated below:

- Asphalt concrete (hot mixed asphalt) for pavement should conform to Section 203-6 of the *Standard Specifications for Public Works Construction* (Green Book), current edition.
- Crushed aggregate base or crushed miscellaneous base should conform to Sections 200-2.2 and 200-2.4 of the *Standard Specifications for Public Works Construction* (Green Book), current edition.
- PCC pavement materials should conform to Section 90 of the *Standard Specifications for Public Works Construction* (Green Book), current edition.

4.5 Temporary Excavations

All temporary excavations, including utility trenches, retaining wall excavations, and foundation excavations should be performed in accordance with project plans, specifications, and all OSHA requirements. Excavations 4 feet or deeper should be laid back or shored in accordance with OSHA requirements before personnel are allowed to enter.

No surcharge loads should be permitted within a horizontal distance equal to the height of cut or 5 feet, whichever is greater from the top of the cut, unless the cut is shored appropriately. Excavations that extend below an imaginary plane inclined at 45 degrees below the edge of any adjacent existing site foundation should be properly shored to maintain support of the adjacent structure.

Temporary excavations should be treated in accordance with the State of California version of OSHA excavation regulations, Construction Safety Orders for Excavation General Requirements, Article 6, Section 1541, effective October 1,

CLIENT DRAFT

1995. The sides of excavations should be shored or sloped in accordance with OSHA regulations. OSHA allows the sides of unbraced excavations, up to a maximum height of 20 feet, to be cut to a ¾H:1V (horizontal:vertical) slope for Type A soils, 1H:1V for Type B soils, and 1½H:1V for Type C soils. Near-surface onsite soils are to be considered Type B soils.

During construction, the soil conditions should be regularly evaluated to verify that conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination between the competent person and the geotechnical engineer should be maintained to facilitate construction while providing safe excavations.

4.6 Trench Backfill

Utility trenches should be backfilled with compacted fill in accordance with Sections 306-1 and 306-6 of the Standard Specifications for Public Works Construction, ("Greenbook"), current edition. Utility trenches can be backfilled with onsite sandy material free of rubble, debris, organic and oversized material up to (≤) 3 inches in largest dimension. Prior to backfilling trenches, pipes should be bedded in and covered with either:

(1) Sand: A uniform, sand material that has a Sand Equivalent (SE) greater-than-or-equal-to (≥) 30, passing the No. 4 U.S. Standard Sieve (or as specified by the pipe manufacturer), water densified in place, or

(2) CLSM: Controlled Low Strength Material (CLSM) conforming to Section 201-6 of the *Standard Specifications for Public Works Construction,* ("Greenbook"), current Edition. CLSM should not be jetted.

Pipe bedding should extend at least 4 inches below the pipeline invert and at least 12 inches over the top of the pipeline. Native and clean fill soils can be used as backfill over the pipe bedding zone, and should be placed in thin lifts, moisture conditioned above optimum, and mechanically compacted to at least 90 percent relative compaction, relative to the ASTM D 1557 laboratory maximum density. The upper 12-inches in roadway or parking should be compacted to 95% relative compaction per ASTM 1557.

Utility trenches excavated into site clays should not have sand bedding placed within 3 feet of the trench as it exits from under the slabs to prevent water migration along bedding sand into and under the foundation. A bentonite plug or clayey soil can be placed to interrupt bedding sand and prevent water migration.

CLIENT DRAFT

4.7 Drainage and Landscaping

Surface drainage should be designed to direct water away from foundations and toward approved drainage devices. Irrigation of landscaping should be controlled to maintain, as much as possible, consistent moisture content sufficient to provide healthy plant growth without overwatering.

4.8 Additional Geotechnical Services

Our preliminary geotechnical recommendations provided in this report are based on information available at the time the report was prepared and may change as plans are developed. Additional geotechnical exploration, testing and/or analysis is recommended as the project progresses. Leighton should review site grading, foundation, retaining wall and shoring plans when available, as necessary, to comment further on geotechnical aspects of this project and check to see general conformance of final project plans to recommendations presented in this report.

Our geotechnical recommendations are contingent upon Leighton providing geotechnical observation and testing services during earthwork and foundation construction. There is a potential for encountering deeper fill, underground obstructions or otherwise unacceptable existing soils between or beyond our boring locations. Therefore, inconsistent existing fill materials may be encountered during construction, possibly requiring revised geotechnical recommendations.

Leighton should be retained to provide geotechnical observation and testing during excavation and all phases of earthwork. Our conclusions and recommendations should be reviewed and verified by us during construction and revised accordingly if geotechnical conditions encountered vary from our findings and interpretations.

Geotechnical observation and testing should be provided for the following elements:

- Grading and excavation of the site;
- Subgrade preparation;
- Compaction of fill materials;
- Utility trench backfilling and compaction;
- Footing excavation and slab-on-grade preparation;
- Pavement subgrade and base preparation;
- Placement of asphalt concrete, pavers and/or concrete; and
- When any unusual conditions are encountered.

CLIENT DRAFT

5.0 LIMITATIONS

This geotechnical exploration does not address the potential for encountering hazardous soil at this site. In addition, this report was necessarily based in part upon data obtained from a limited number of observances, site visits, soil samples, tests, analyses, histories of occurrences, spaced subsurface explorations and limited information on historical events and observations. Such information is, by necessity, incomplete. Please also refer GBA's *Important Information About Your Geotechnical Report* (included at the rear of the text), presenting additional information and limitations regarding geotechnical engineering studies and reports. The nature of many sites is such that differing soil or geologic conditions can be present within small distances and under varying climatic conditions. Changes in subsurface conditions can and do occur over time. Therefore, the findings, conclusions, and recommendations presented in this report are only valid if Leighton and Associates, Inc. has the opportunity to observe subsurface conditions during grading and construction, to confirm that our data are representative for the site. Leighton and Associates, Inc. should also review the construction plans and project specifications, when available, to comment on the geotechnical aspects.

This report was prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing at this time in Los Angeles County. We do not make any warranty, either expressed or implied.

CLIENT DRAFT

6.0 REFERENCES

American Concrete Institute (ACI), 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, an ACI Standard, reported by ACI Committee 318.

American Society of Civil Engineers (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16, with Supplement 1, Effective December 12, 2018.

Blake, T.F, 2015, EQSEARCH, A computer program for the estimate of Peak Horizontal Acceleration from California Historical Earthquake Catalogs, with Earthquake Catalog Data through January 29, 2015.

Bryant, W.A., 1988, Recently Active Traces of the Newport-Inglewood Fault Zone, Los Angeles and Orange Counties, California: California Division of Mines and Geology Open-File Report 88-14, 15 p.

Bryant, W.A. and Hart, E.W., Interim Revision 2007, Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps: California Geological Survey, Special Publications 42, 42p.

California Building Standards Commission, 2022, 2022 California Building Code (CBC), California Code of Regulations, Title 24, Part 2, Volume 2 of 2, Based on 2021 International Building Code, Effective January 1, 2023.

California Department of Water Resources (DWR), 2022, Interactive Website, Water Data Library, https://wdl.water.ca.gov/

California Department of Conservation, Geologic Energy Management Division (CalGEM), 2022, Interactive Wellfinder Website, https://maps.conservation.ca.gov/doggr/wellfinder/

California Geological Survey (CGS; formally California Division of Mines and Geology), 2005, Seismic Hazard Zone Report for the Yorba Linda 7.5-Minute Quadrangle, Los Angeles, Orange and San Bernardino Counties, California, Seismic Hazard Zone Report No. 010.

_____, 2000, CD-ROM containing digital images of Official Maps of Alquist-Priolo Earthquake Fault Zones that affect the Southern Region, DMG CD 2000-003 2000.

_____, 2002, Note 49, Guidelines for Evaluating the Hazard of Surface Fault Rupture, dated May 2002.

_____, 2008, Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California; originally adopted March 13, 1997 by the State Mining and Geology Board in Accordance with the Seismic Hazards Mapping Act of 1990, Revised and Re-Adopted September 11, 2008.

_____, 2010, Fault Activity Map of California, 2010.

CLIENT DRAFT

_____, 2015, Earthquake Zones of Required Investigation, Yorba Linda Quadrangle, map scale 1:24,000, released August 11, 2005, revised December 4, 2015.

_____, 2018, Earthquake Fault Zones, A Guide for Government Agencies, Property Owners / Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California, Special Publication 42.

California State Water Resources Control Board (CSWRCB), GeoTracker, http://geotracker.waterboards.ca.gov/.

Campbell, K.W., and Bozorgnia, Y., 2014, NGA-West2 Ground Motion Model for the Average Horizontal Components of PGA, PGV, and 5% Damped Linear Acceleration Response Spectra, Earthquake Spectra 30, pp. 1087-1115.

Chiou, B.S.-J., and Youngs, R.R., 2014, Update of the Chiou and Youngs NGA Model for the Average Horizontal Component of Peak Ground Motion and Response Spectra, Earthquake Spectra 30, pp. 1117-1153.

Dibblee, T.W. and Ehrenspeck, H.E., 2001, Geologic map of the Yorba Linda and Prado Dam quadrangles (eastern Puente Hills), Los Angeles, Orange, San Bernardino and Riverside Counties, California, Dibblee Geological Foundation, Dibblee Foundation Map DF-75, 1:24,000.

Durham, D. L. and R. F. Yerkes, 1964, Geology and Oil Resources of the Eastern Puente Hills Area, Southern California: U.S. Geological Survey Professional Paper 420-B, pp. 62.

Federal Emergency Management Agency (FEMA), 2021, Map Number 06037C1880F, Effective Date September 26, 2008, Scale 1" = 1000' web site (https://msc.fema.gov/portal/home).

Jennings, C. W., 1994, Fault Activity Map of California and Adjacent Areas: California Department of Conservation Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, 1:750,000 scale.

Nationwide Environmental Title Research, LLC (NETR), 2025, Historic Aerials by NETR Online, website: http://www.historicaerials.com/.

Risk Engineering, Inc., 2010, EZ-FRISK, Software for Earthquake Ground Motion Estimation, Version 7.43, 2010.

Southern California Earthquake Center (SCEC), 1999, Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Liquefaction Hazards in California, dated March 1999.

Structural Engineers Association of California (SEAOC) and California's Office of Statewide Health Planning and Development (OSHPD), 2025, Seismic Design Maps, https://www.seismicmaps.org/

CLIENT DRAFT

Terzaghi, K., Peck, R., and Mesri, G., 1996, Soil Mechanics in Engineering Practice, Third Edition, John Wiley & Sons, Inc., Publishers, New York, Chichester, Brisbane, Toronto, Singapore.

United States Geological Survey (USGS), Topographic Map, 1981, Yorba Linda 7.5-Minute Quadrangle, dated 1964, Photo revised 1981.

_____,2008, National Seismic Hazard Maps – Fault Parameters, https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/query_main.cfm

_____, 2025, Interactive Geologic Map, http://ngmdb.usgs.gov/maps/MapView/

CLIENT DRAFT

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific imes

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependen

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mol

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

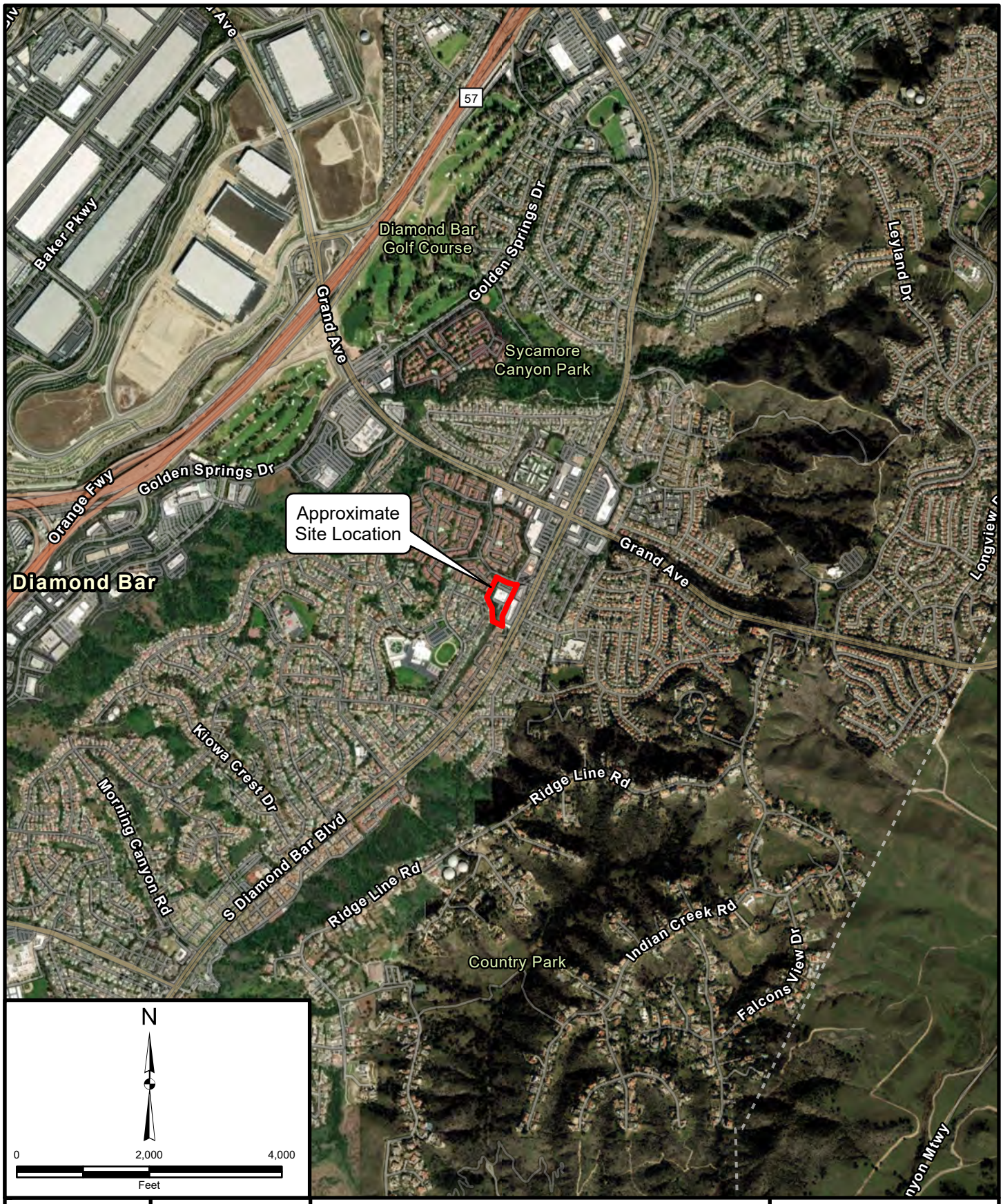
GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Copyright 2019 by Geoprofessional Business Association (GBA). Duplication, reproduction, or copying of this document, in whole or in part, by any means whatsoever, is strictly prohibited, except with GBA's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of GBA, and only for purposes of scholarly research or book review. Only members of GBA may use this document or its wording as a complement to or as an element of a report of any kind. Any other firm, individual, or other entity that so uses this document without being a GBA member could be committing negligent or intentional (fraudulent) misrepresentation.

FIGURES

CLIENT DRAFT



Project: 30477	Eng/Geol: CD/KD
Scale: 1"=2000'	Date: March 2025

Sources: Aerial Imagery: Esri Imagery Web Service dated 2021.

Author: (btran)

SITE LOCATION MAP

Proposed Residential Development
1400 Montefino Avenue
Diamond Bar, California

FIGURE 1

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 1:53 PM

Legend

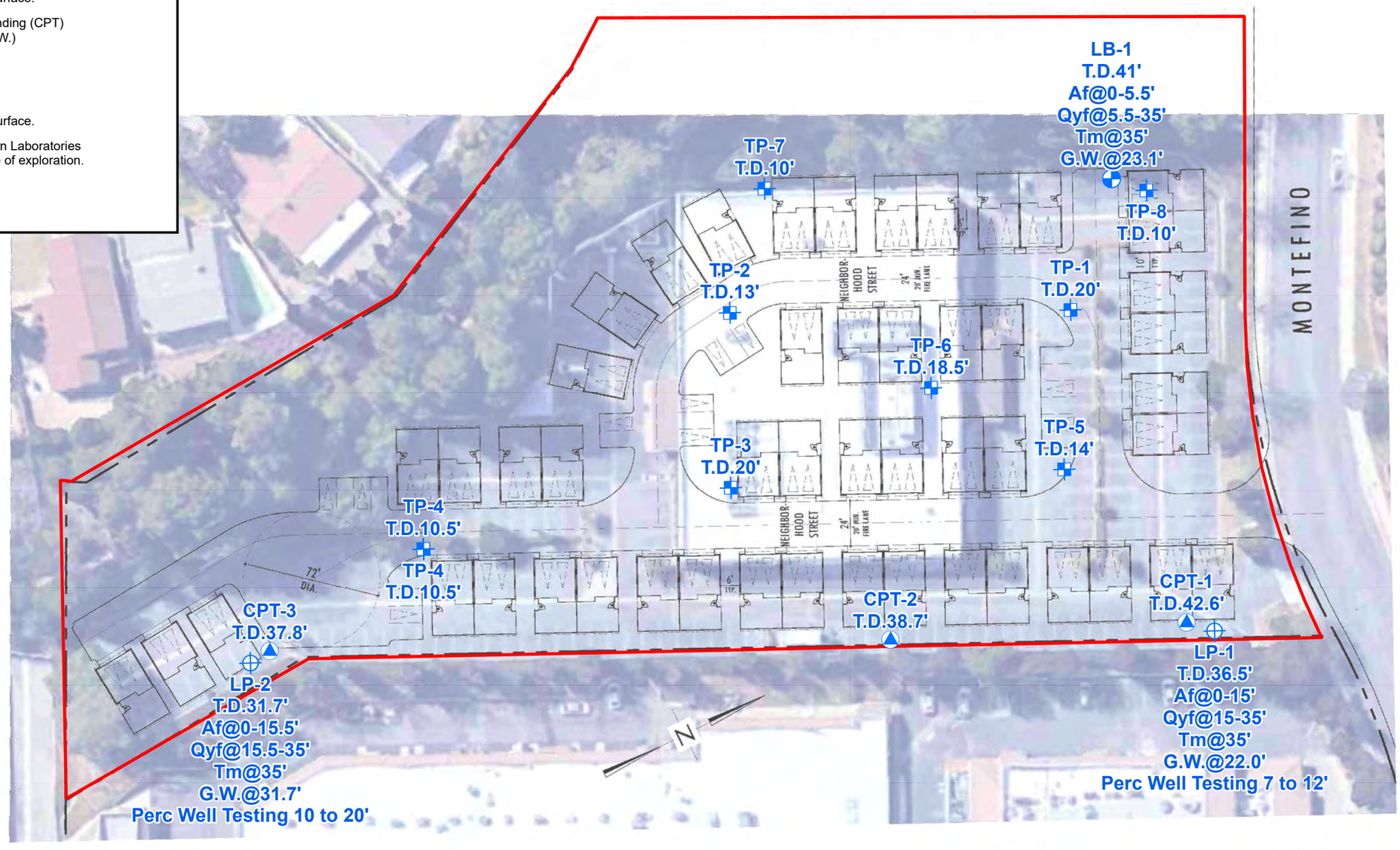
LB-1 Approximate location of hollow-stem auger boring showing total depth (T.D.), depth to earth units and depth to groundwater (G.W.) in feet below existing surface.

CPT-3 Approximate location of cone penetrometer test sounding (CPT) showing total depth (T.D.), depth to groundwater (G.W.) where measured in depth below existing surface.

LP-2 Approximate location of hollow-stem auger boring converted to percolation test well showing total depth (T.D.), depth to earth units and depth to groundwater (G.W.) in feet below existing surface.

TP-8 Approximate location of test pit performed by Western Laboratories showing total depth (T.D.) in feet below grade at time of exploration. (Western Laboratories, 1984)

Approximate Site Boundary



N

0 60 120

Feet

Project: 30477	Eng/Geol: CD/KD
Scale: 1"=60'	Date: March 2025
Base Map: Schematic Design Site Plan, Dated: 11/14/2024 by SDK/ATELIER	
Author: (btran)	

EXPLORATION LOCATION MAP

Proposed Residential Development
1400 Montefino Avenue
Diamond Bar, California

FIGURE 2A

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/27/2025 1:41 PM

EXPLANATION

afc — MAN MADE FILL (REPORTED COMPACTED BY MAWA 2-26-82).

Oafc — OLDER MAN MADE FILL (REPORTED COMPACTED BY OTHERS).

APPROXIMATE LIMITS OF FILL (AS REPORTED BY MAWA, 2-26-82)

ATTITUDE OF BEDDING BENEATH COMPACTED FILL.

APPROXIMATE DEPTH OF COMPACTED FILL (IN FEET).

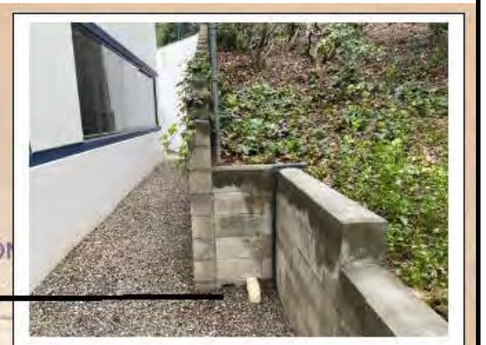
REFERENCE:
BASE PLAN TAKEN FROM UNDATED GRADING PLAN PREPARED BY J.J. MULLEN AND ASSOCIATES.



Curb Penetration-is this wall drain?



Is this large diameter steel pipe afc connected to wall drain or roof gutter



This may be the connection to prior canyon subdrain and wall drains?

How Deep is this subdrain-if encountered during grading reestablish connections-review RG report if available.

Drain Outlets-presuming wall drainage accommodates connection to subdrain in stabilization fill look for subdrain/wall drain outlets at end of walls. Large diameter curb penetrations and steel pipe may be connected to wall drains. Short walls may not have drains (3 masonry blocks tall from existing grade)

Project: 30477	Eng/Geol: CD/KD
Scale: As Shown	Date: March 2025
Base Map: Schematic Design Site Plan, Dated: 11/14/2024 by SDK/ATELIER	
Author: (btran)	

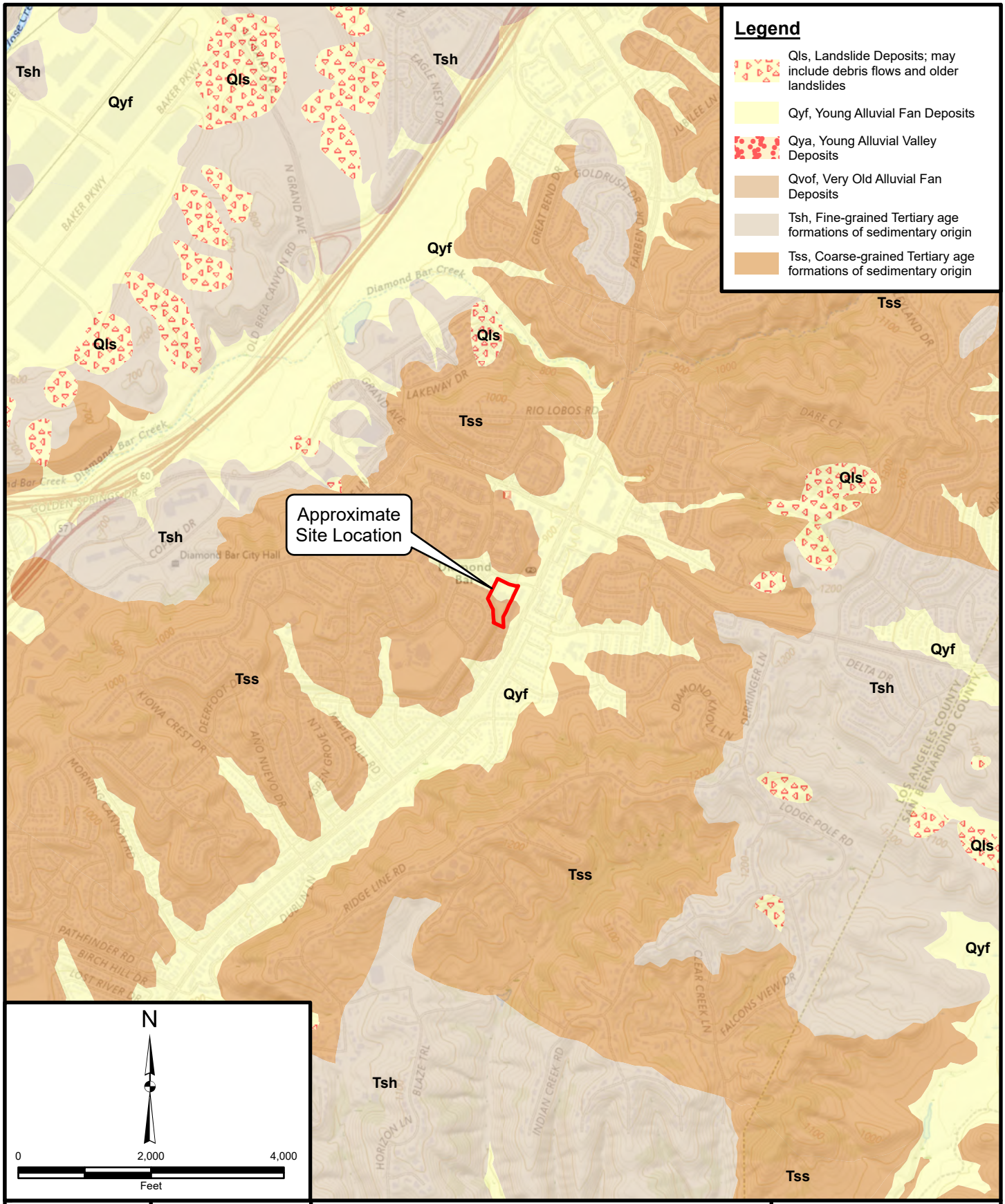
ANNOTATED SITE PLAN FROM MWA, 1985

Proposed Residential Development
1400 Montefino Avenue
Diamond Bar, California

FIGURE 2B

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/27/2025 1:41 PM



Project: 30477	Eng/Geol: CD/KD
Scale: 1:24,000	Date: March 2025

Basemap: USGS Topo Map Service from Esri, 2021
Reference: USGS Geologic Map of the Southern California GIS Compilation by CGS

Author: (btran)

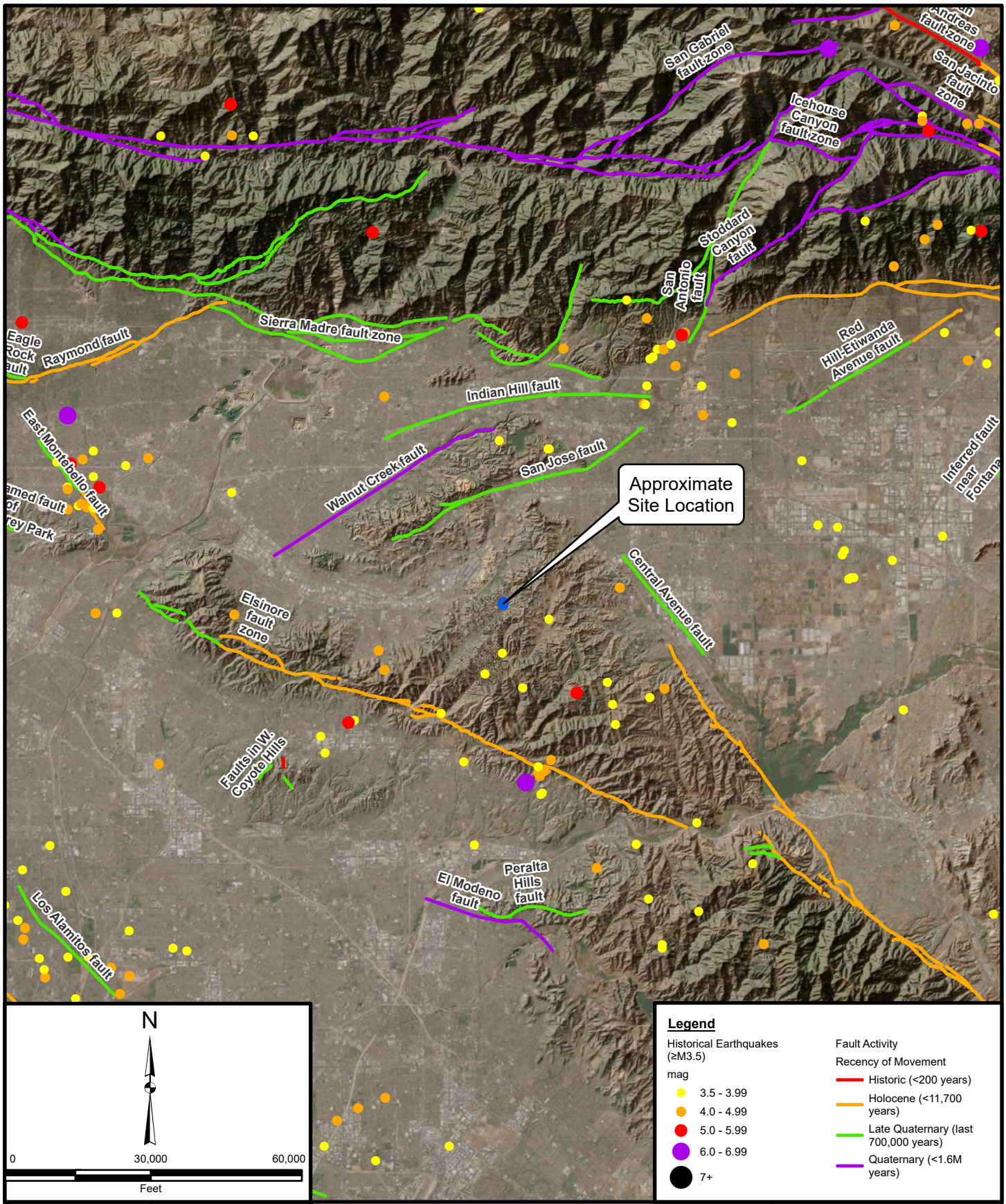
REGIONAL GEOLOGY MAP

Proposed Residential Development
1400 Montefino Avenue
Diamond Bar, California

FIGURE 3

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 1:53 PM



Project: 30477	Eng/Geol: CD/KD
Scale: 1"=2000'	Date: March 2025

Basemap: USGS Topo Map Service from Esri, 2021
Reference: maps.conservation.ca.gov

Author: (btran)

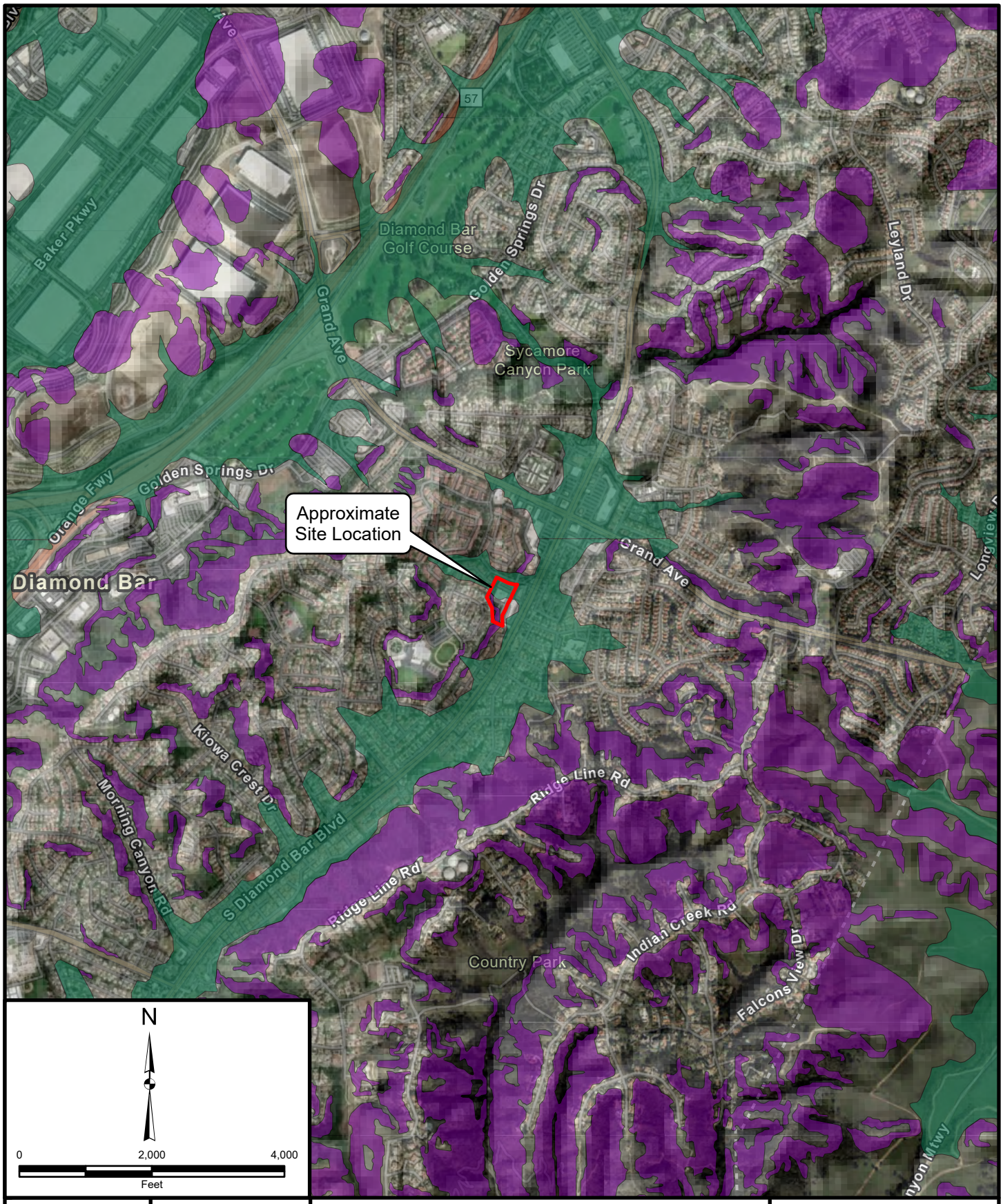
HISTORICAL SEISMIC AND FAULT LOCATION MAP

1400 Montefino Avenue
Diamond Bar, California

FIGURE 4

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 2:06 PM



Project: 30477	Eng/Geol: CD/KD
Scale: 1"=2000'	Date: March 2025

Basemap: USGS Topo Map Service from Esri, 2021
Reference: maps.conservation.ca.gov

Author: (btran)

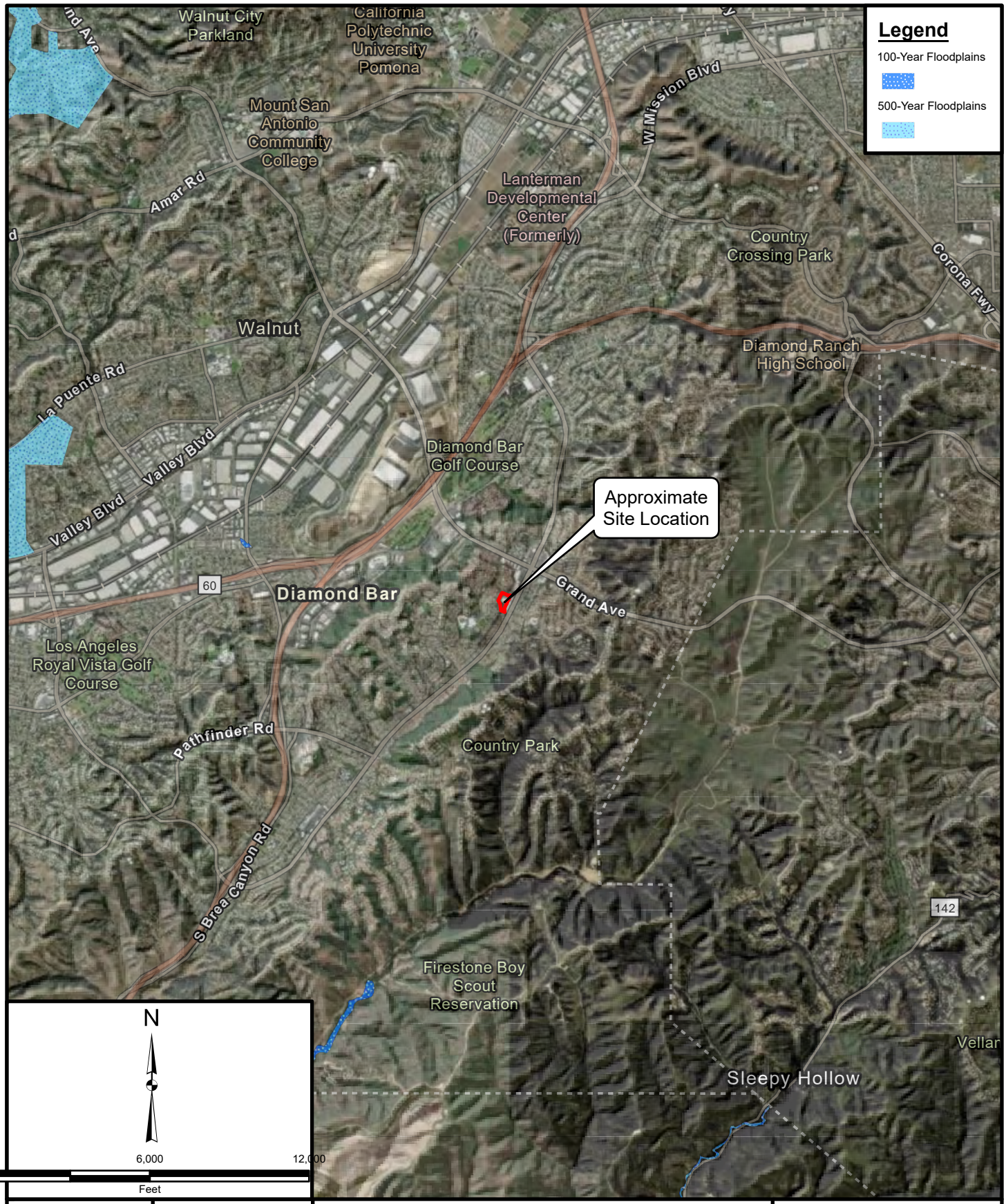
SEISMIC HAZARD MAP

1400 Montefino Avenue
Diamond Bar, California

FIGURE 5

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 1:53 PM



Project: 30477	Eng/Geol: CD/KD
Scale: 1:60,000	Date: March 2025

Basemap: USGS Topo Map Service from Esri, 2021
Reference: FEMA, California Department of Water Resources

Author: (btran)

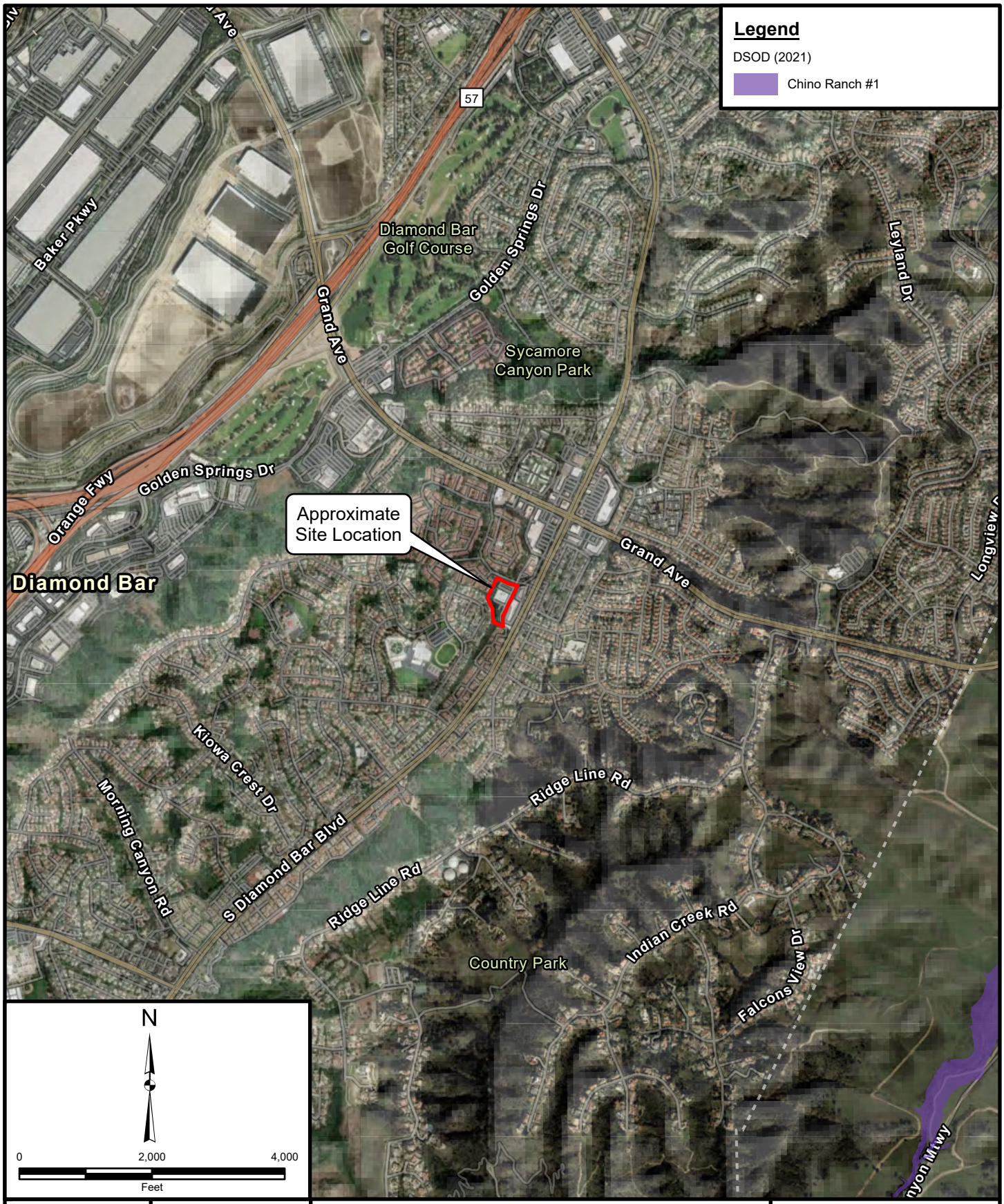
FLOOD HAZARD ZONE MAP

1400 Montefino Avenue
Diamond Bar, California

FIGURE 6

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 1:53 PM



Project: 30477	Eng/Geol: CD/KD
Scale: 1"=2000'	Date: March 2025

Basemap: USGS Topo Map Service from Esri, 2021
Reference: Office of Emergency Services (2007), Dept of Safety of Dams (2021), National Inventory of Dams, Army Corps of Engrs (2021)

Author: (btran)

DAM INUNDATION MAP

1400 Montefino Avenue
Diamond Bar, California

FIGURE 7

Leighton

Map Saved as C:\Users\btran\OneDrive - Verdantas\Files\Project Files\IA-JZ\INTRACORPSW\30477\GIS\Mapping.aprx on 3/14/2025 1:53 PM

APPENDIX A

EXPLORATION LOGS

CLIENT DRAFT

SUMMARY

OF

CONE PENETRATION TEST DATA

Project:

Intracorp – Montefino Geo DD
1400 Montefino Avenue
Diamond Bar, CA
March 1, 2025

Prepared for:

Ms. Kalie Duccini
Leighton & Associates, Inc.
2600 Michelson Drive, Ste 400
Irvine, CA 92612
Office (800) 253-4567 / Fax (949) 250-1114

Prepared by:



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

TABLE OF CONTENTS

1. **INTRODUCTION**
2. **SUMMARY OF FIELD WORK**
3. **FIELD EQUIPMENT & PROCEDURES**
4. **CONE PENETRATION TEST DATA & INTERPRETATION**

APPENDIX

- CPT Plots
- CPT Classification/Soil Behavior Chart
- Summary of Shear Wave Velocities
- Pore Pressure Dissipation Graphs
- CPT Data Files (sent via email)

SUMMARY
OF
CONE PENETRATION TEST DATA

1. INTRODUCTION

This report presents the results of a Cone Penetration Test (CPT) program carried out for the Intracorp – Montefino Geo DD project located at 1400 Montefino Avenue in Diamond Bar, California. The work was performed by Kehoe Testing & Engineering (KTE) on March 1, 2025. The scope of work was performed as directed by Leighton & Associates, Inc. personnel.

2. SUMMARY OF FIELD WORK

The fieldwork consisted of performing CPT soundings at three locations to determine the soil lithology. A summary is provided in **TABLE 2.1**.

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-1	42	Refusal
CPT-2	38	Refusal
CPT-3	37	Refusal

TABLE 2.1 - Summary of CPT Soundings

3. FIELD EQUIPMENT & PROCEDURES

The CPT soundings were carried out by **KTE** using an integrated electronic cone system manufactured by Vertek. The CPT soundings were performed in accordance with ASTM standards (D5778). The cone penetrometers were pushed using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone with a cone net area ratio of 0.83. The following parameters were recorded at approximately 2.5 cm depth intervals:

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

At location CPT-1, shear wave measurements were obtained at various depths. The shear wave is generated using an air-actuated hammer, which is located inside the front jack of the CPT rig. The cone has a triaxial geophone, which recorded the shear wave signal generated by the air hammer.

The above parameters were recorded and viewed in real time using a laptop computer. Data is stored at the KTE office for up to 2 years for future analysis and reference. A complete set of baseline readings was taken prior to each sounding to determine temperature shifts and any zero load offsets. Monitoring base line readings ensures that the cone electronics are operating properly.

4. CONE PENETRATION TEST DATA & INTERPRETATION

The Cone Penetration Test data is presented in graphical form in the attached Appendix. These plots were generated using the CPeT-IT program. Penetration depths are referenced to ground surface. The soil behavior type on the CPT plots is derived from the attached CPT SBT plot (Robertson, "Interpretation of Cone Penetration Test…", 2009) and presents major soil lithologic changes. The stratigraphic interpretation is based on relationships between cone resistance (qc), sleeve friction (fs), and penetration pore pressure (u). The friction ratio (Rf), which is sleeve friction divided by cone resistance, is a calculated parameter that is used along with cone resistance to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone resistance and generate excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little (or negative) excess pore water pressures.

The CPT data files have also been provided. These files can be imported in CPeT-IT (software by GeoLogismiki) and other programs to calculate various geotechnical parameters.

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

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

Sincerely,

KEHOE TESTING & ENGINEERING



Steven P. Kehoe
President

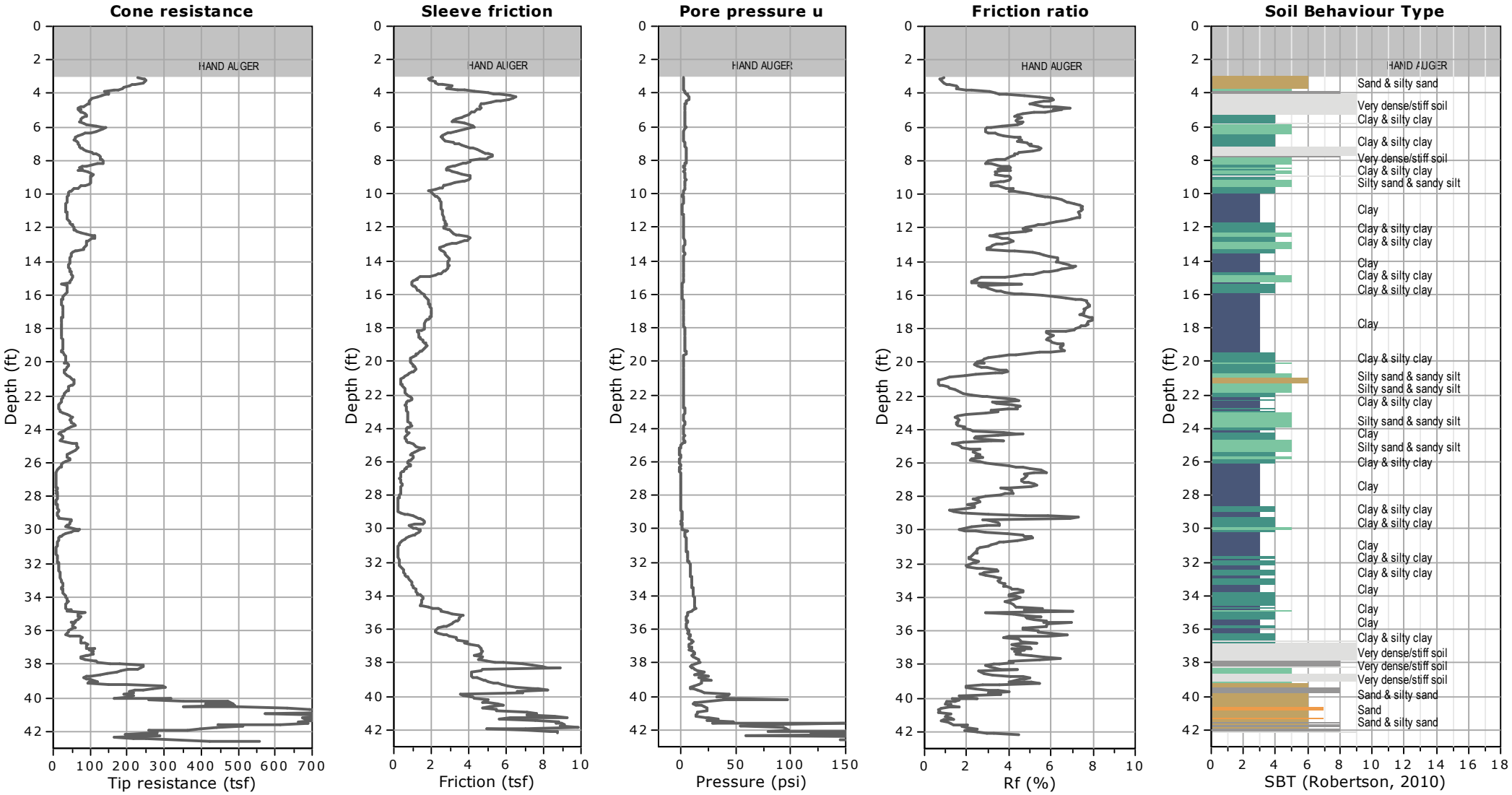
03/06/25-eb-7059

APPENDIX

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

Project: **Leighton & Associates / Intercorp - Montefino Geo DD**
Location: **1400 Montefino Ave, Diamond Bar, CA**

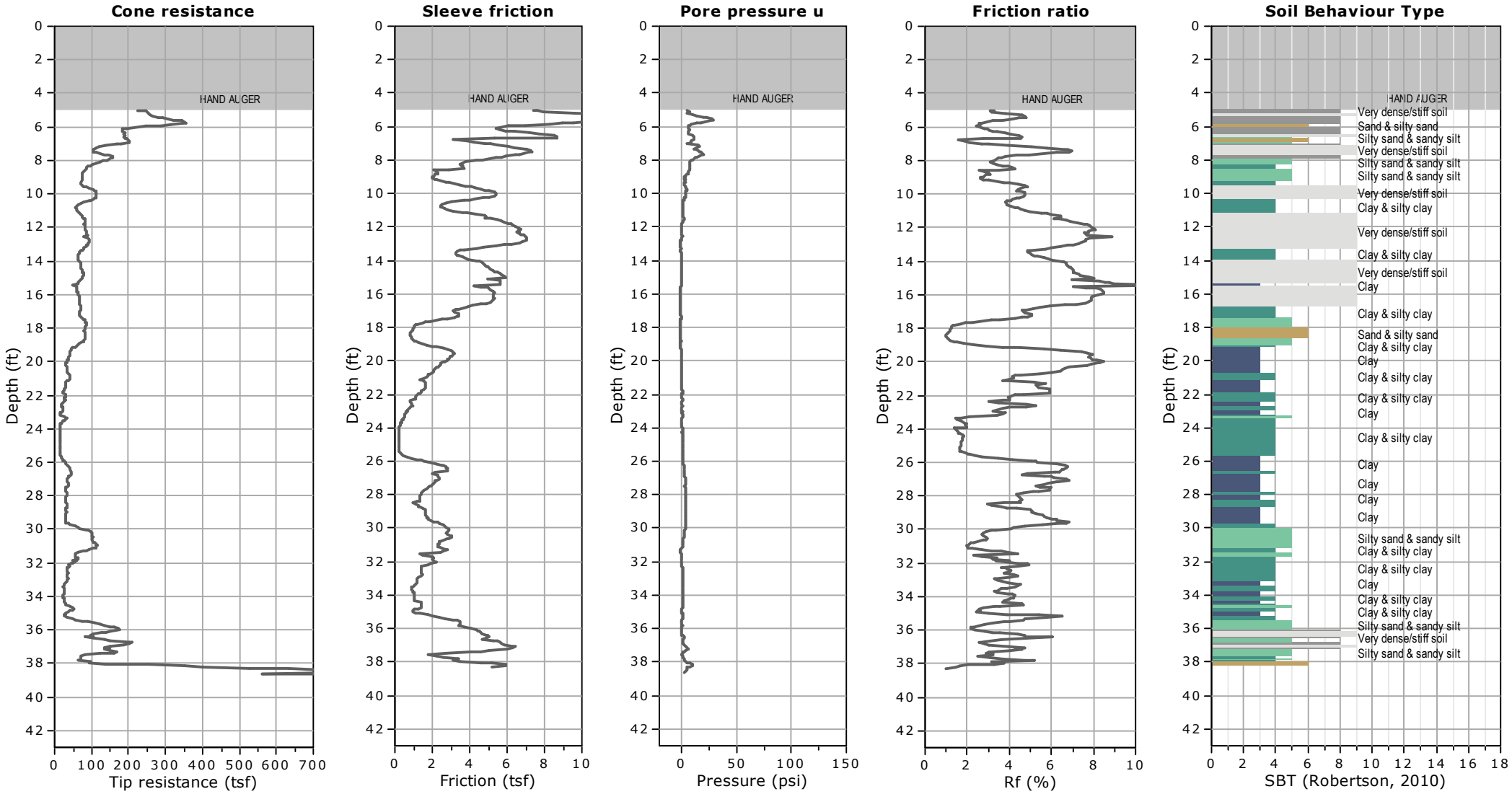
CPT-1
Total depth: 42.60 ft, Date: 3/1/2025



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

Project: **Leighton & Associates / Intercorp - Montefino Geo DD**
Location: **1400 Montefino Ave, Diamond Bar, CA**

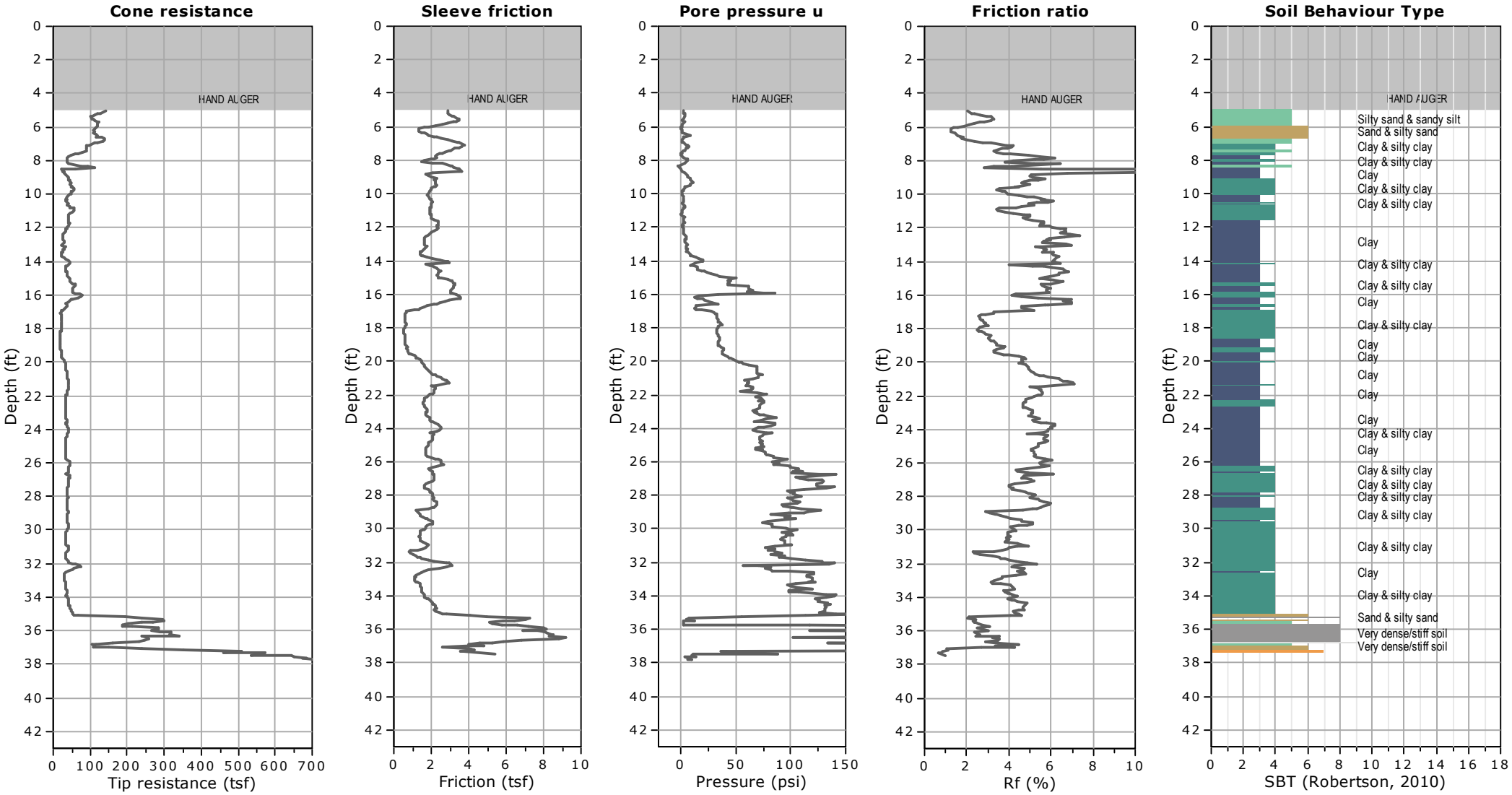
CPT-2
Total depth: 38.66 ft, Date: 3/1/2025



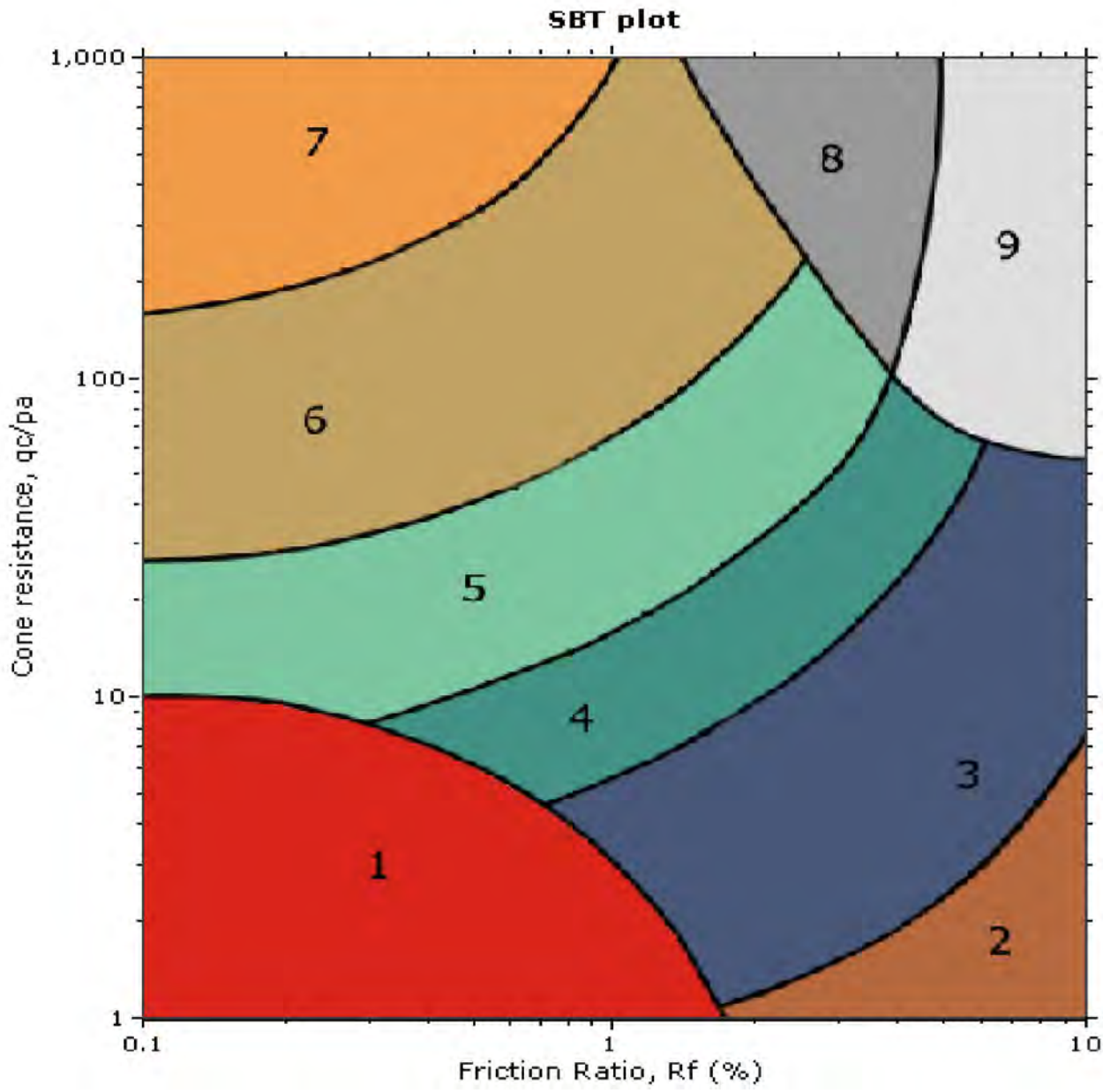
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Leighton & Associates / Intercorp - Montefino Geo DD**
Location: **1400 Montefino Ave, Diamond Bar, CA**

CPT-3
Total depth: 37.81 ft, Date: 3/1/2025



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



SBT legend

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

Leighton & Associates
Intercorp - Montefino Geo DD
Diamond Bar, CA

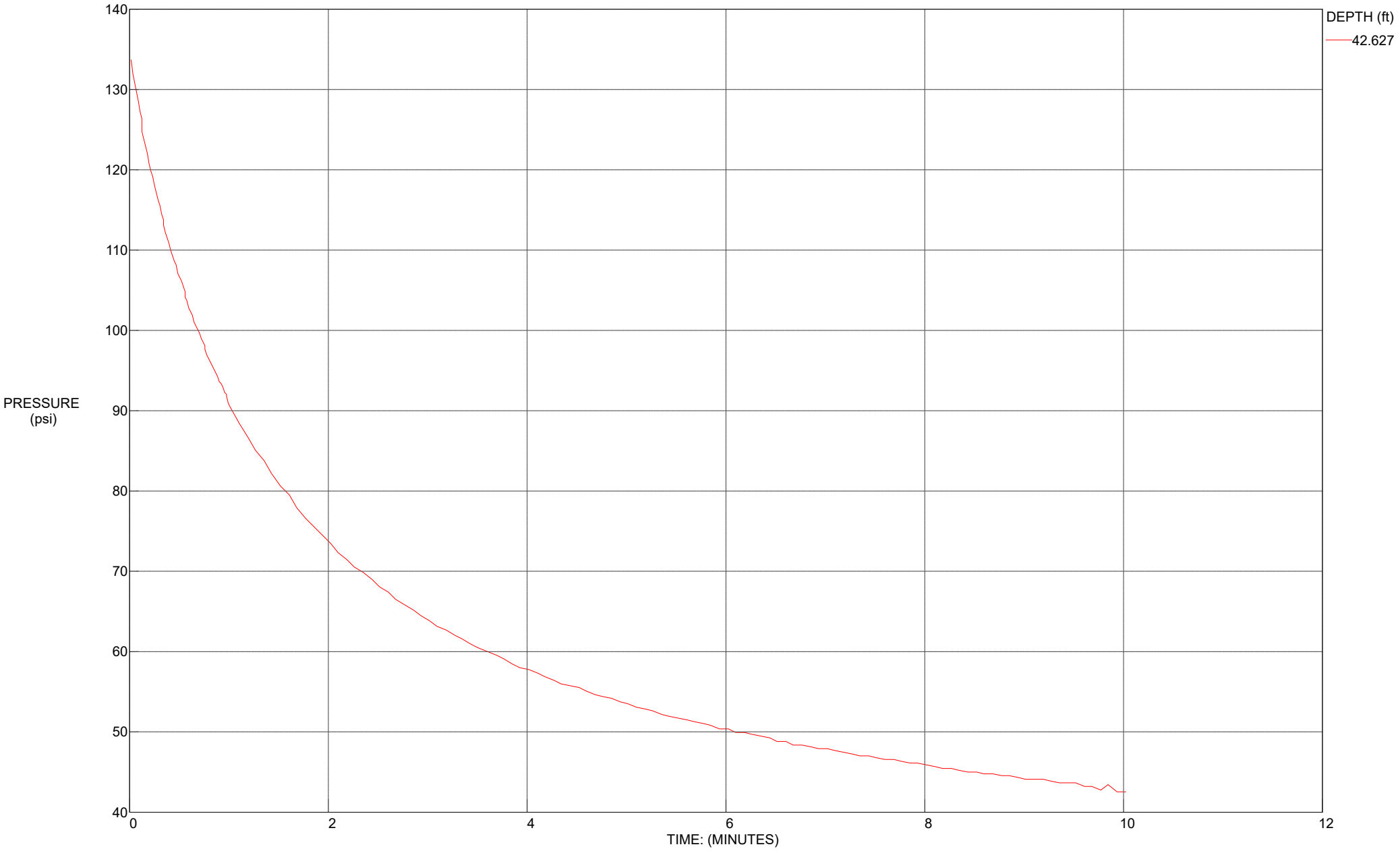
CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	10.04	9.04	9.26	8.32	1113	
	20.01	19.01	19.11	18.72	1021	948
	30.05	29.05	29.12	32.76	889	713
	40.03	39.03	39.08	43.06	908	967
	42.62	41.62	41.67	44.72	932	1558

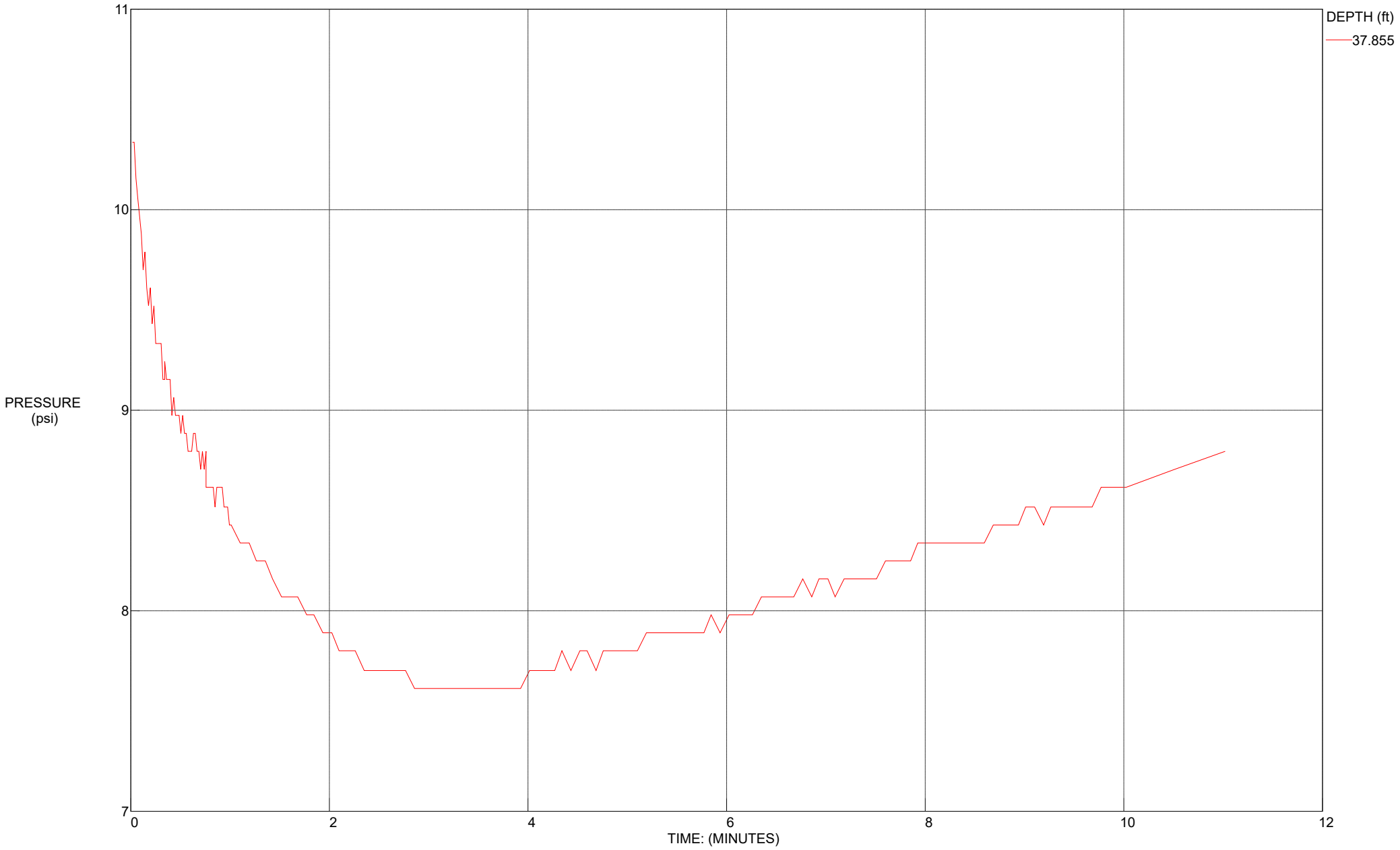
Shear Wave Source Offset - 2 ft

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

TEST ID: CPT-1


DEPTH (ft)
42.627
PRESSURE
(psi)
140
130
120
110
100
90
80
70
60
50
40
0
2
4
6
8
10
12
TIME: (MINUTES)

TEST ID: CPT-3


DEPTH (ft)
37.855
PRESSURE
(psi)
11
10
9
8
7
0
2
4
6
8
10
12
TIME: (MINUTES)

GEOTECHNICAL BORING LOG LB-1

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	904'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0	N S							@0': 5-inches Asphalt Concrete over 5-inches Aggregate Base	
				BB-1				SPg	**Artificial Fill (Af):** @0.83: Poorly-graded SAND with gravel, light yellow brown to light reddish brown to light gray, moist, fine to medium sand	
900	5			S-1	1 3 6			CL	@4': Sandy Lean CLAY, dark blackish brown, mottled with rust red, moist, fine sand	
								SC	**Quaternary Young Alluvial Fan Deposits (Qyf):** @5.5': Clayey SAND, dark reddish brown, moist, medium dense, few coarse sand	
895	10			S-2	3 4 5			SCg	@10': With fine to coarse gravel-sized sandstone and siltstone clasts	
890	15			S-3	3 3 4				@15': Clayey SAND, dark blackish brown, moist, loose to medium dense, moderately well bedded, beds ~3 to 5 inches thick, predominantly very fine to medium sand, some mechanically broken rock clasts, some coarse grained sand members with basal erosion surface	
885	20			S-4	1 2 2			SCg	@20': Clayey SAND, loose, with silstone and sandstone gravels	
880		▽							@23.10': Groundwater encountered during drilling	
	25			S-5	3 3 2			SP/CL	@25': Interlaminated SAND and Silty CLAY, dark red and medium gray, wet, loose/medium stiff, abundant FeO staining	
875	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

verdantas

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LB-1

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	904'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30			S-6	Push Push 2			SC	@30': Clayey SAND, medium gray to rust reddish brown, wet, very loose, fine to coarse grained sand, interbedded with sandy lean clay, no structure	
870										
	35			S-7	8 21 28			Tm	**Tertiary Monterey Fm. (Tm):** @35': SANDSTONE, yellowish brown, oxidized, with SILTSTONE interbeds, well-sorted, fine to medium grained, FeO banding, 2-inch thick siltstone layer @36'	
865										
	40			S-8	24 50/6"				@40': SANDSTONE, yellowish brown, medium to coarse sand, massive with one diffused member contact @41.1', saturated, friable, FeO mineralization, fines upwards	
									Total Depth: 41 feet bgs **Groundwater encountered at 23.10 feet during drilling.** **Boring backfilled with soil cuttings, tamped, and patched with cold mix asphalt concrete upon completion.**	
860										
	45									
855										
	50									
850										
	55									
845										
	60									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

verdantas

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LP-1

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	900'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
		N S							*This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	
900	0								@0': 5-inches Asphalt Concrete over 6-inches Aggregate Base	
				BB-1				SMg	**Artificial Fill (Af):** @0.92': Silty SAND, yellowish brown, slightly moist, predominantly fine sand, trace coarse sand, trace fine gravel @1': Abundant siltstone and sandstone rock clasts, intensely weathered @3': Rootlets	CR
895	5			S-1	7 12 13			MLc	@5': Sandy SILT, mottled olive brown to yellowish brown, moist, hard, few clay, massive, fine to medium sand, abundant light gray rock clasts @5.8' to 6'	
890	10			S-2-1	4			SC	@10': Clayey SAND, olive brown, medium dense, fine to medium sand	-200
				S-2-2	7 8			SC	@10.75': Clayey SAND, dark brown, with rusty reddish brown staining, moist, medium dense, rootlets, plastic	-200
885	15			S-3	6 6 6			SCg	**Quaternary Young Alluvial Fan Deposits (Qyf):** @15': Clayey SAND, light reddish brown, moist, medium dense, few coarse gravels, trace to few pinhole pores, very consistent sample	
880	20			S-4	2 3 3				@20': Loose, with fine siltstone and sandstone clasts, fine to medium grained, abundant pinhole porosity @22.28': Groundwater encountered during drilling; rose to 22.01' after 30 minutes	
875	25			S-5	1 3 4				@25': Dark reddish brown, wet, loose to medium dense	
870	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

verdantas

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

GEOTECHNICAL BORING LOG LP-1

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	900'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
870	30			S-6	Push 2 2			SC	@30': Clayey SAND, light reddish brown to medium gray, wet, loose, fine to medium grained	
865	35			S-7	3 5 7			Tm	**Tertiary Age Monterey Fm. (Tm):** @35': Interbedded CLAYSTONE and SANDSTONE, yellow brown to pale yellow brown to olive gray, very moist, medum dense, intensely weathered @35' to 36', less weathered @36' to 36.5'	
860	40								**Total Depth: 36.5 feet bgs** **Groundwater initially encountered at 22.28 feet, rose to 22.01 feet after 30 minutes.** **Step-over 4.3 feet south, redrilled to 12 feet bgs and installed Percolation Test Boring LP-1:** **0.020-inch slotted screen 2-inch diameter PVC pipe installed from 7 to 12 feet; Solid PVC riser pipe from 7 feet to ground surface; Annular space filled with sand filter pack to 6 feet bgs.** **Upon Completion of testing, the boring was backfilled with soil cuttings, tamped, and patched with cold mix asphalt concrete.**	
855	45									
850	50									
845	55									
840	60									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

verdantas

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LP-2

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	900'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
900	0								@0': 5-inches Asphalt Concrete over 5-inches Aggregate Base	
				BB-1				SPg	**Artificial Fill (Af):** @0.83': Poorly-graded SAND with gravel, light yellow brown to light reddish brown, moist, fine to medium sand	
895	5			S-1	9 12 8			SM	@5': Medium dense to dense, with some yellow orange brown sandstone and siltstone rock clasts @6': Silty SAND, medium gray, moist, medium dense to dense, fine sand	
890	10			S-2	3 5 7			SC	@10': Clayey SAND with gravel, olive brown, moist, medium dense, with fine gravel sized siltstone and sandstone clasts	-200
885	15			S-3	1 3 8			CLs	**Quaternary Young Alluvial Fan Deposits (Qyf):** @15.5': Sandy Lean CLAY, dark gray to black, moist, very stiff, faint organic odor	
880	20			S-4	2 2 4			SCg	@20': Clayey SAND with gravel, reddish brown to dark reddish brown, mottled, moist, loose, with fine siltstone and sandstone rock clasts	-200
875	25			S-5	3 6 10				@25': Mottled reddish brown and medium gray, medium dense, MnO staining, FeO staining	
870	30									

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

verdantas

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LP-2

Project No.	30477	**Date Drilled**	3-11-25
Project	Intracorp Diamond Bar Montefino	**Logged By**	JWJ/MDK
Drilling Co.	Martini Drilling Corporation	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	900'
Location	See Figure 2: Exploration Location Map	**Sampled By**	JWJ/MDK

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
870	30			S-6	3 6 10			SC	@30': Clayey SAND, dark reddish brown, wet, medium dense, fine to medium sand, some silt @33.10': Groundwater encountered during drilling, rose to 31.65' in 15 minutes	
865	35			S-7	3 6 11			Tm	**Tertiary age Monterey Fm. (Tm):** @35': Interbedded CLAYSTONE and SANDSTONE, olive gray to light yellow brown, very moist, very stiff, moderate to high plasticity, intensely weathered	
860	40								**Total Depth: 36.5 feet bgs** **Groundwater initially encountered at 33.10 feet, rose to 31.65 feet after 15 minutes.** **Boring backfilled with bentonite chips and hydrated from 36.5 feet to 20 feet and installed Percolation Test Boring LP-2: 0.020-inch slotted screen 2-inch diameter PVC pipe installed from 10 to 20 feet; Solid PVC riser pipe from 10 feet to ground surface; Annular space filled with sand filter pack to 8 feet bgs. Upon Completion of testing, the boring was backfilled with soil cuttings, tamped, and patched with cold mix asphalt concrete.**	
855	45									
850	50									
845	55									
840	60									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

verdantas

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

APPENDIX B

PERCOLATION TEST RESULTS

CLIENT DRAFT

Boring Percolation Test Data Sheet

Project Number:	30477	**Test Hole Number:**	LP-1
Project Name:	Intracorp Montefino	**Date Excavated:**	3/11/2024
Earth Description:	CL	**Date Tested:**	3/12/2025
Liquid Description:	Tap water	**Depth of boring (ft):**	12
Tested By:	JK	**Radius of boring (in):**	4
Time Interval Standard		**Radius of casing (in):**	1
Start Time for Pre-Soak:	3/11/25 11:15 AM	**Length of slotted of casing (ft):**	5
Start Time for Standard:	3/12/25 7:43 AM	**Depth to Initial Water Depth (ft):**	7
Standard Time Interval		**Porosity of Annulus Material, *n* :**	0.35
Between Readings, mins:	30	**Bentonite Plug at Bottom:**	no

Percolation Data

Reading	Time	Time Interval, Δt (min.)	Initial/Final Depth to Water (ft.)	Initial/Final Water Height, H_0/H_f (in.)	Total Water Drop, Δd (in.)	Infiltration Rate (in./hr.)
1	7:43	30	7.09	58.9	0.7	0.02
	8:13		7.15	58.2		
2	8:13	30	7.15	58.2	1.2	0.03
	8:43		7.25	57.0		
3	8:43	30	7.25	57.0	0.5	0.01
	9:13		7.29	56.5		
4	9:13	30	7.29	56.5	1.1	0.03
	9:43		7.38	55.4		
5	9:45	30	7.38	55.4	0.1	0.00
	10:15		7.39	55.3		
6	10:15	30	7.39	55.3	0.6	0.02
	10:45		7.44	54.7		
7	10:45	30	6.44	66.7	1.0	0.02
	11:15		6.52	65.8		
8	11:15	30	6.52	65.8	1.1	0.03
	11:45		6.61	64.7		

Infiltration Rate (I) = Discharge Volume/Surface Area of Test Section/Time Interval

Measured Infiltration Rate, I (Average of Last 3 ReadingsLast Readings) = **0.02** **in./hr.**

Design Infiltration Rate

Reduction Factor from Test Procedure, RF_t = 1

Reduction Factor for Site Variability, # of Tests and Investigation, RF_v = 1

Reduction Factor for Long Term Siltation, Plugging and Maintenance, RF_t = 1

Reduction Factor, $RF = RF_t \times RF_v \times RF_s$ = 3

Design Infiltration Rate = Measured Infiltration Rate / Reduction Factor (RF) = **0.01** **in./hr.**

Boring Percolation Test Data Sheet

Project Number:	30477	**Test Hole Number:**	LP-2
Project Name:	Intracorp Montefino	**Date Excavated:**	3/11/2025
Earth Description:	CL	**Date Tested:**	3/12/2025
Liquid Description:	Tap water	**Depth of boring (ft):**	20
Tested By:	JK	**Radius of boring (in):**	4
Time Interval Standard		**Radius of casing (in):**	1
Start Time for Pre-Soak:	3/11/25 11:00 AM	**Length of slotted of casing (ft):**	10
Start Time for Standard:	3/12/25 7:35 AM	**Depth to Initial Water Depth (ft):**	10
Standard Time Interval		**Porosity of Annulus Material, *n* :**	0.35
Between Readings, mins:	30	**Bentonite Plug at Bottom:**	yes

Percolation Data

Reading	Time	Time Interval, Δt (min.)	Initial/Final Depth to Water (ft.)	Initial/Final Water Height, H_0/H_f (in.)	Total Water Drop, Δd (in.)	Infiltration Rate (in./hr.)
1	7:35	30	10.01	119.9	0.1	0.00
	8:05		10.02	119.8		
2	8:05	30	10.02	119.8	0.1	0.00
	8:35		10.03	119.6		
3	8:35	30	10.03	119.6	0.1	0.00
	9:05		10.04	119.5		
4	9:05	30	10.04	119.5	0.1	0.00
	9:35		10.05	119.4		
5	9:35	30	10.05	119.4	0.1	0.00
	10:05		10.06	119.3		
6	10:05	30	10.06	119.3	0.1	0.00
	10:35		10.07	119.2		
7	10:35	30	10.07	119.2	0.1	0.00
	11:05		10.08	119.0		
8	11:05	30	10.08	119.0	0.1	0.00
	11:35		10.09	118.9		

Infiltration Rate (I) = Discharge Volume/Surface Area of Test Section/Time Interval

Measured Infiltration Rate, I (Average of Last 3 ReadingsLast Readings) = **0.00** **in./hr.**

Design Infiltration Rate

Reduction Factor from Test Procedure, RF_t = 1

Reduction Factor for Site Variability, # of Tests and Investigation, RF_v = 1

Reduction Factor for Long Term Siltation, Plugging and Maintenance, RF_t = 1

Reduction Factor, $RF = RF_t \times RF_v \times RF_s$ = 3

Design Infiltration Rate = Measured Infiltration Rate / Reduction Factor (RF) = **0.00** **in./hr.**

APPENDIX C

LABORATORY TEST RESULTS

CLIENT DRAFT

verdantas

TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: 1400 Montefino Diamond Bar Tested By : G. Berdy Date: 03/19/25

Project No. : 036.0000030477 Checked By: A. Santos Date: 03/25/25

Boring No.	LP-1			
Sample No.	BB-1			
Sample Depth (ft)	0-5			
Soil Identification:	Olive (SC)g			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.64			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	3			
Crucible No.	302			
Furnace Temperature (°C)	860			
Time In / Time Out	7:00/7:45			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	62.7808			
Wt. of Crucible (g)	62.7775			
Wt. of Residue (g) (A)	0.0033			
PPM of Sulfate (A) x 41150	135.79			
PPM of Sulfate, Dry Weight Basis	**136**			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	5			
ml of AgNO3 Soln. Used in Titration (C)	0.6			
PPM of Chloride (C -0.2) * 100 * 30 / B	240			
PPM of Chloride, Dry Wt. Basis	**240**			

pH TEST, DOT California Test 643

pH Value	**7.25**			
Temperature °C	19.1			

verdantas

SOIL RESISTIVITY TEST

DOT CA TEST 643

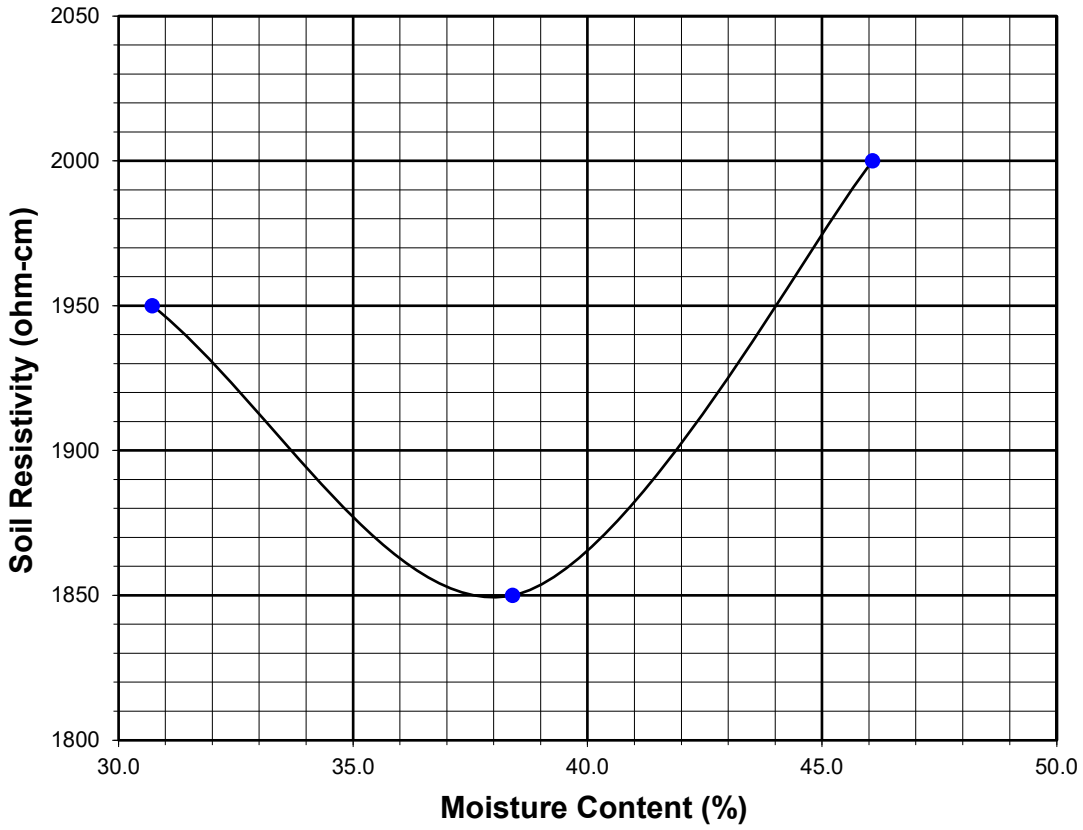
Project Name:	1400 Montefino Diamond Bar		Tested By :	G. Berdy	Date: 03/20/25
Project No. :	036.0000030477		Checked By:	A. Santos	Date: 03/25/25
Boring No.:	LP-1		Depth (ft.) :	0-5	
Sample No. :	BB-1				
Soil Identification:*	Olive (SC)g				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	40	30.72	1950	1950
2	50	38.40	1850	1850
3	60	46.08	2000	2000
4				
5				

Moisture Content (%) (MCi)	0.00
Wet Wt. of Soil + Cont. (g)	0.00
Dry Wt. of Soil + Cont. (g)	0.00
Wt. of Container (g)	1.00
Container No.	
Initial Soil Wt. (g) (Wt)	130.21
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1850	**38.2**	**136**	**240**	**7.25**	**19.1**



Boring No.	LP-1	LP-1	LP-2	LP-2				
Sample No.	S-2-1	S-2-2	S-2	S-4				
Depth (ft.)	10.0	10.8	10.0	20				
Sample Type	SPT	SPT	SPT	SPT				
Soil Identification	Olive brown clayey sand (SC)	Dark brown clayey sand (SC)	Olive brown clayey sand (SC)	Brown clayey sand (SC)				
Moisture Correction								
Wet Weight of Soil + Container (g)	0.00	0.00	0.00	0.00				
Dry Weight of Soil + Container (g)	0.00	0.00	0.00	0.00				
Weight of Container (g)	1.00	1.00	1.00	1.00				
Moisture Content (%)	0.00	0.00	0.00	0.00				
Sample Dry Weight Determination								
Weight of Sample + Container (g)	416.67	402.19	649.00	622.86				
Weight of Container (g)	82.47	72.30	77.89	75.38				
Weight of Dry Sample (g)	334.20	329.89	571.11	547.48				
Container No.:								
After Wash								
Method (A or B)	B	A	B	B				
Dry Weight of Sample + Cont. (g)	345.88	251.39	460.92	368.15				
Weight of Container (g)	82.47	72.30	77.89	75.38				
Dry Weight of Sample (g)	263.41	179.09	383.03	292.77				
% Passing No. 200 Sieve	**21.2**	**45.7**	**32.9**	**46.5**				
% Retained No. 200 Sieve	78.8	54.3	67.1	53.5				

verdantas

PERCENT PASSING
No. 200 SIEVE
ASTM D 1140

Project Name: 1400 Montefino Diamond Bar

Project No.: 036.0000030477

Tested By: J. Domingo Date: 03/18/25

APPENDIX D

LIQUEFACTION ANALYSIS

CLIENT DRAFT

Verdantas Inc.
2600 Michelson Drive, Suite 400
Irvine, California 92612
http://www.geologismiki.gr

Project title : Intracorp Diamond Bar Montefino

Location : 1400 Montefino Avenue, Diamond Bar, CA

Overall vertical settlements report

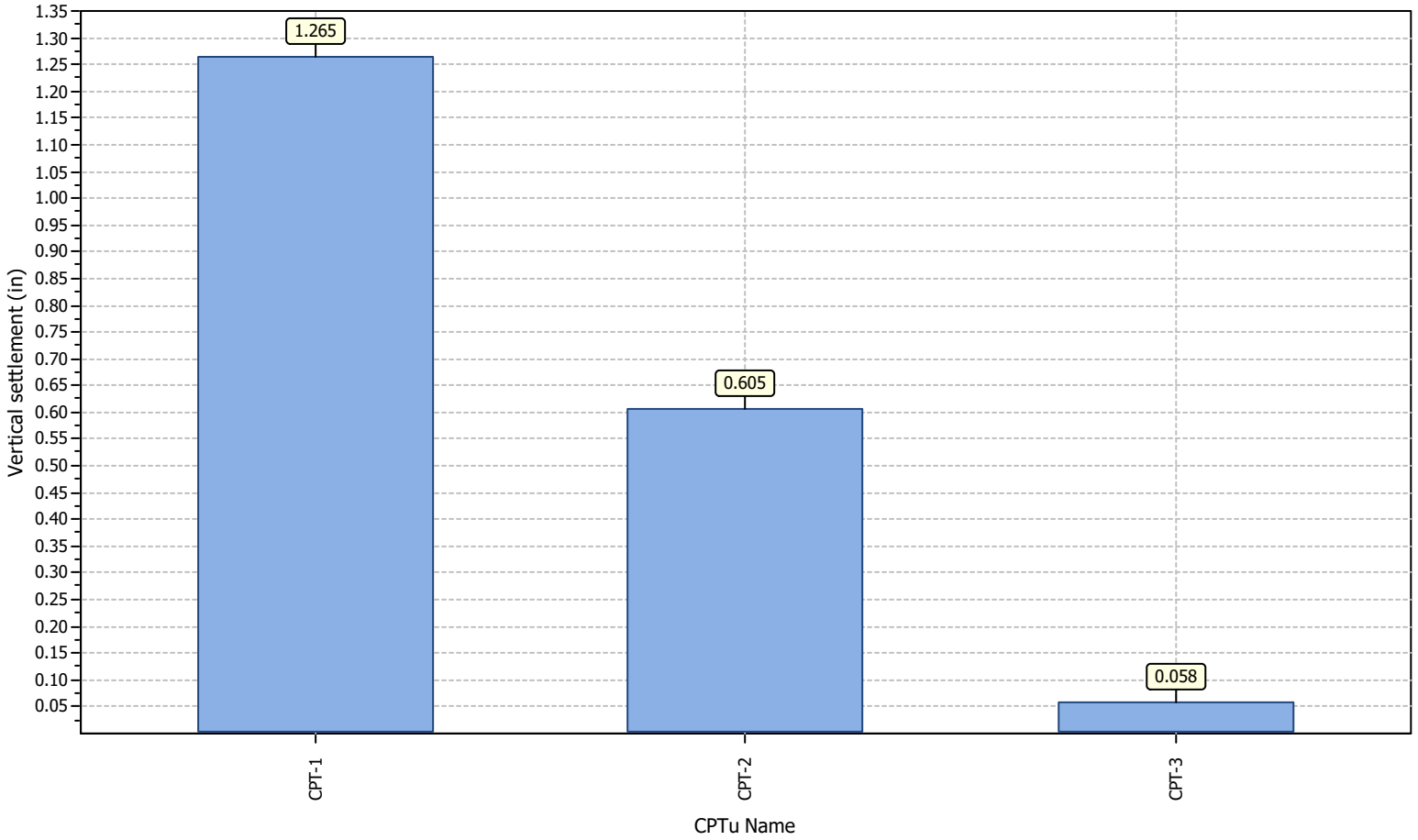


TABLE OF CONTENTS

CPT-1 results

Summary data report	1
Input field data	8
Cyclic stress resistance results	22
Cyclic resistance ratio results	36
Liquefaction potential index data	50
Vertical settlements summary report	57
Vertical settlements data report	58
Strength loss data report	69

CPT-2 results

Summary data report	85
Input field data	92
Cyclic stress resistance results	105
Cyclic resistance ratio results	118
Liquefaction potential index data	131
Vertical settlements summary report	138
Vertical settlements data report	139
Strength loss data report	149

CPT-3 results

Summary data report	164
Input field data	171
Cyclic stress resistance results	184
Cyclic resistance ratio results	197
Liquefaction potential index data	210
Vertical settlements summary report	217
Vertical settlements data report	218
Strength loss data report	228

Verdantas Inc.
2600 Michelson Drive, Suite 400
Irvine, California 92612
http://www.geologismiki.gr

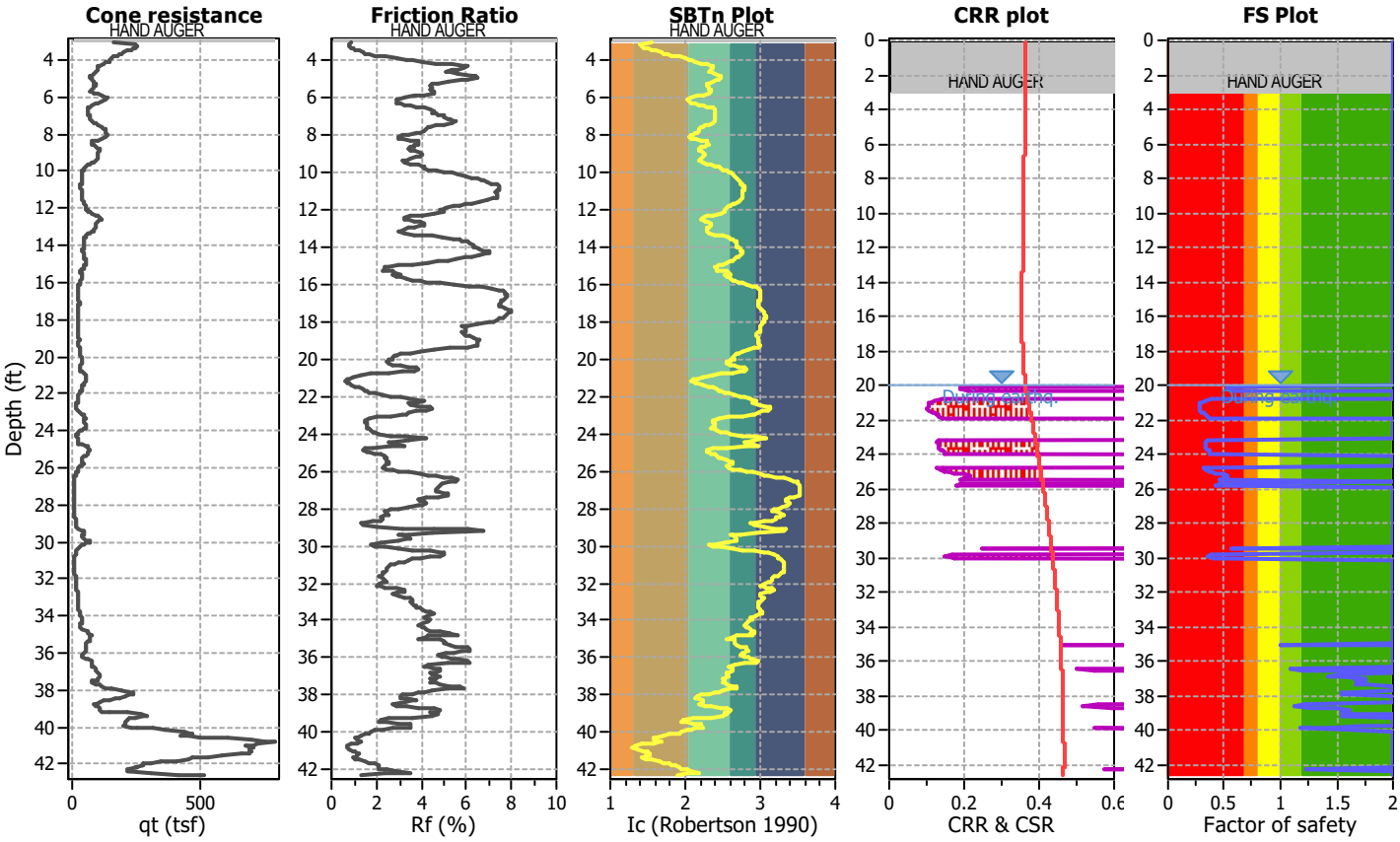
LIQUEFACTION ANALYSIS REPORT

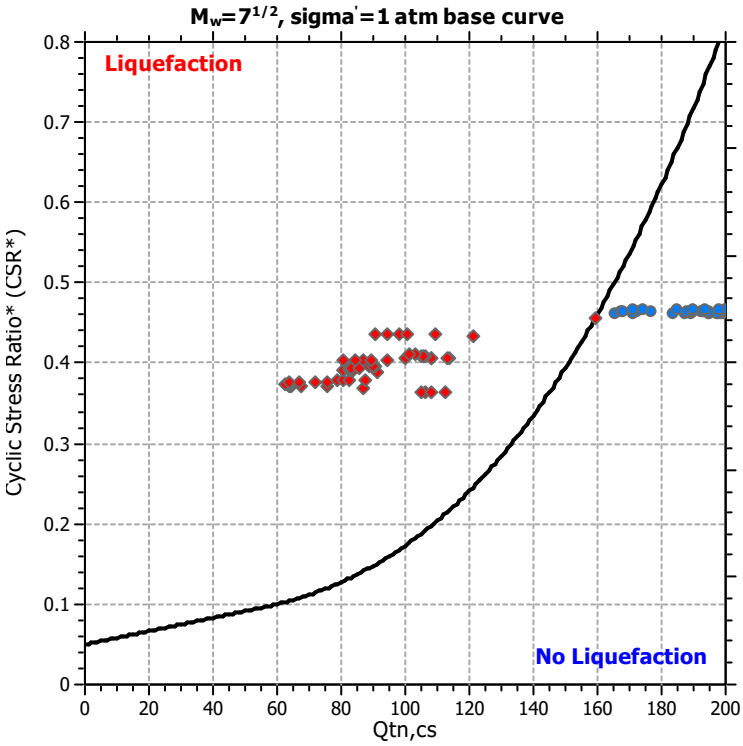
Project title : Intracorp Diamond Bar Montefino **Location : 1400 Montefino Avenue, Diamond Bar, CA**

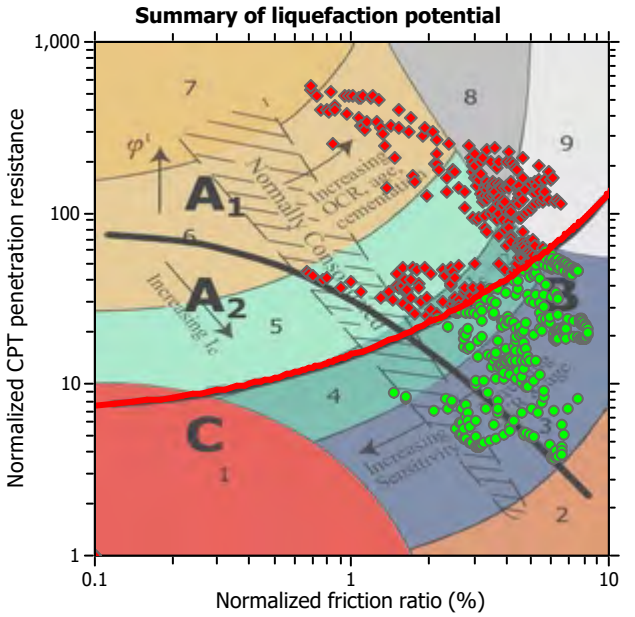
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	22.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	45.00 ft
Earthquake magnitude M_w:	6.11	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.95	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

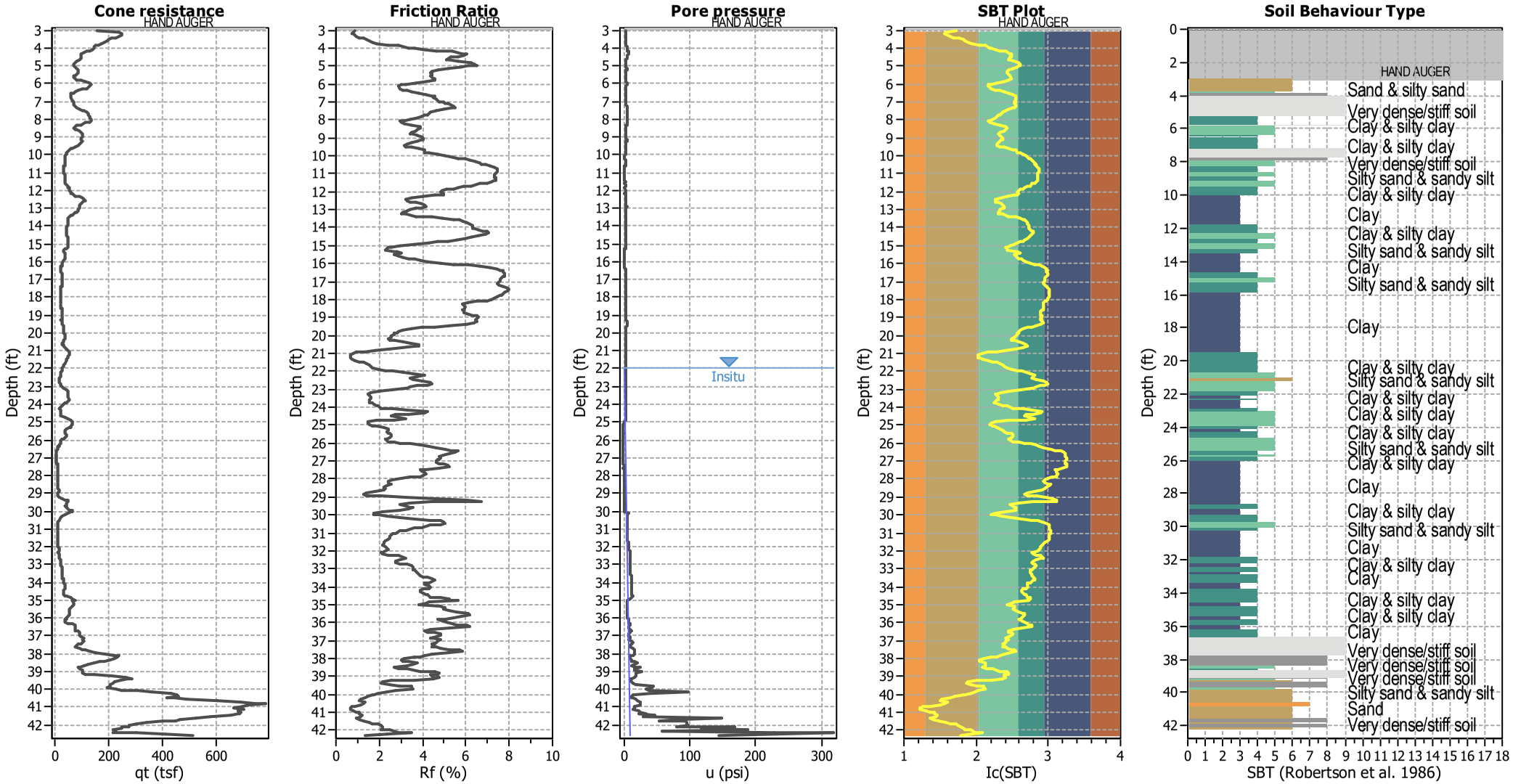






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



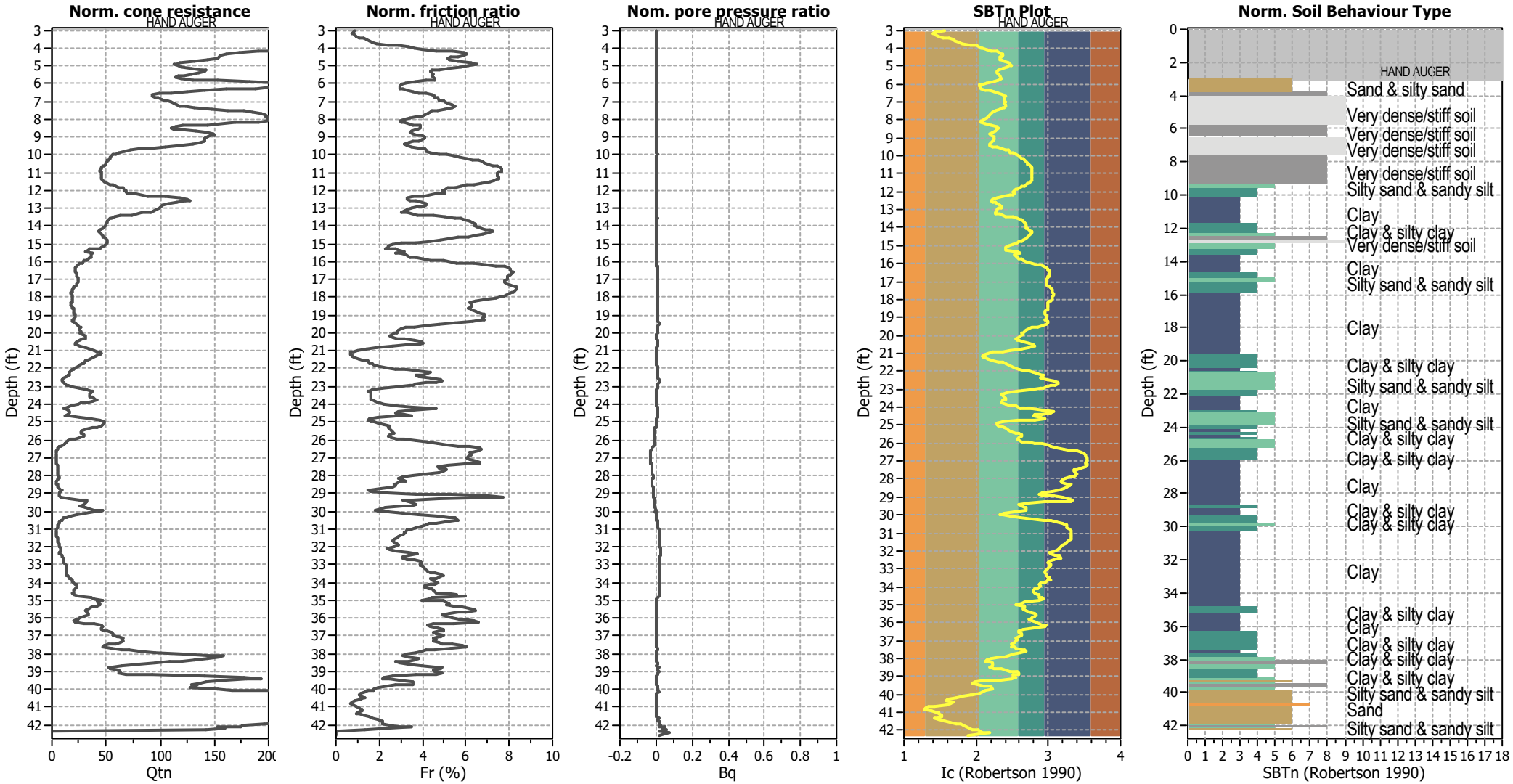
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBT legend

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

CPT basic interpretation plots (normalized)



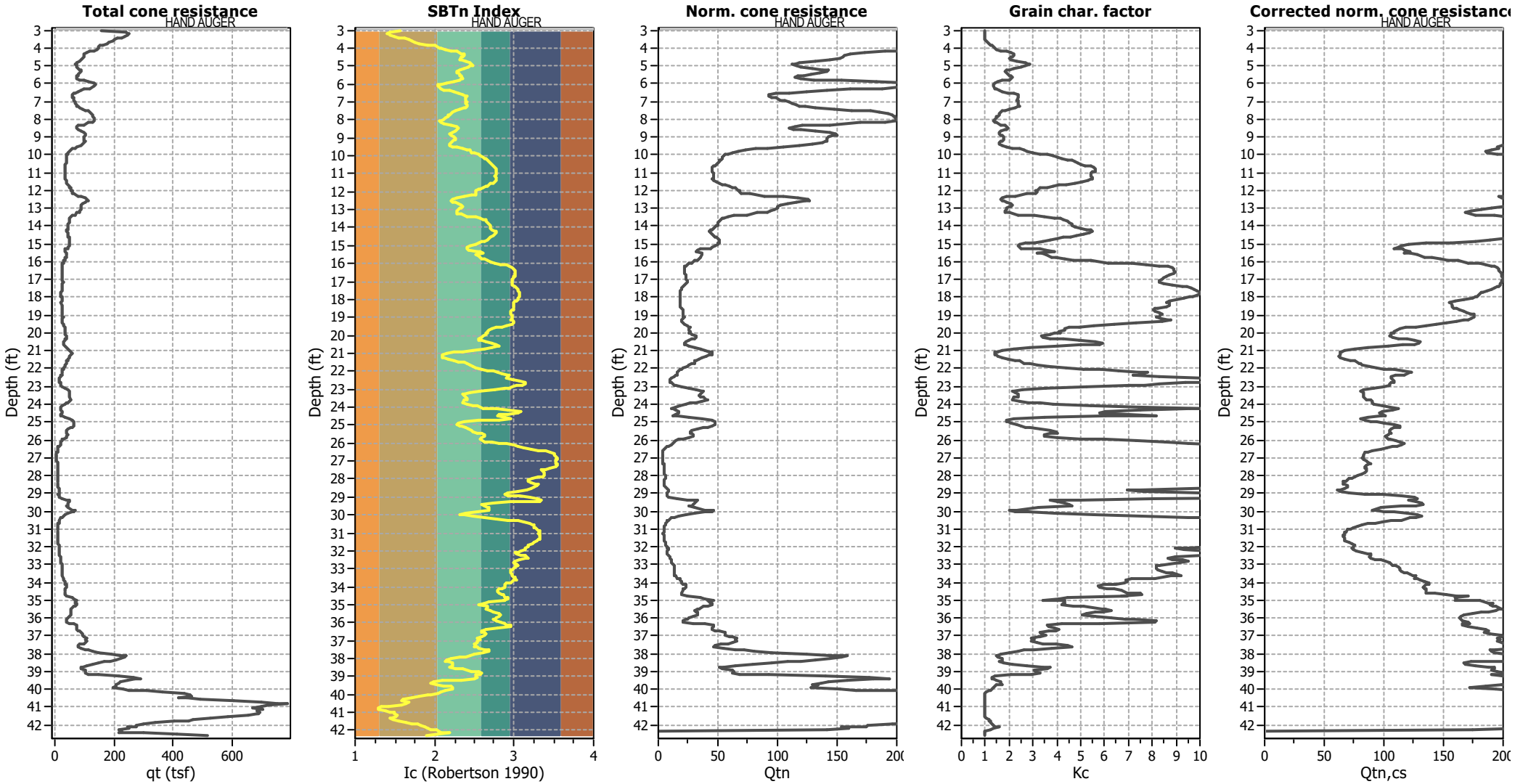
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBTn legend

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

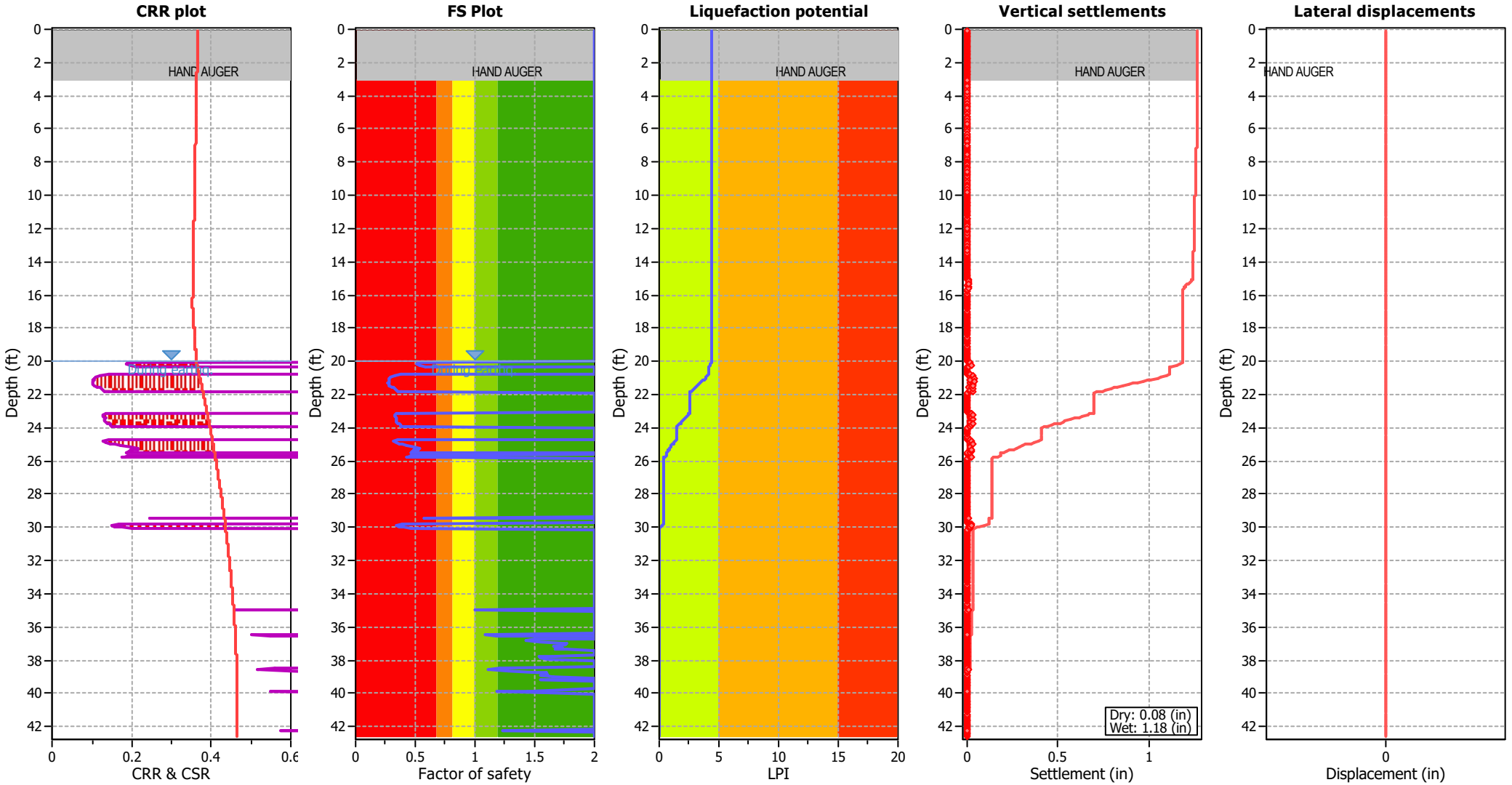
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

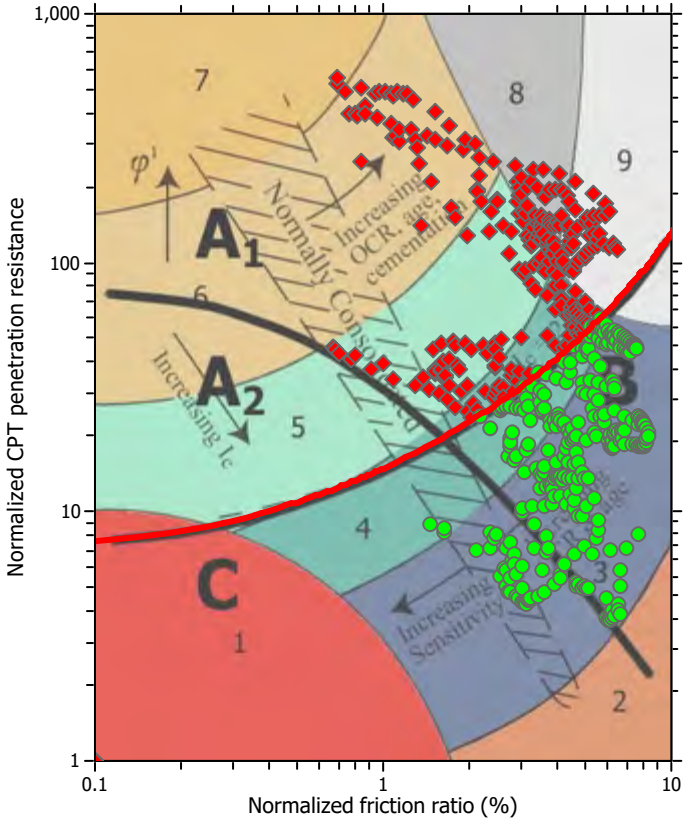
F.S. color scheme

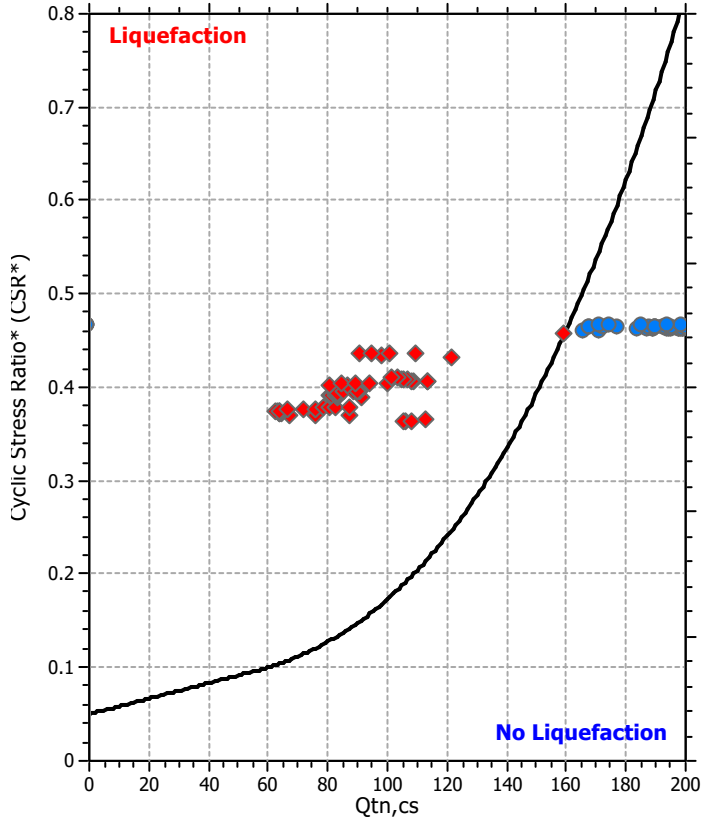
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

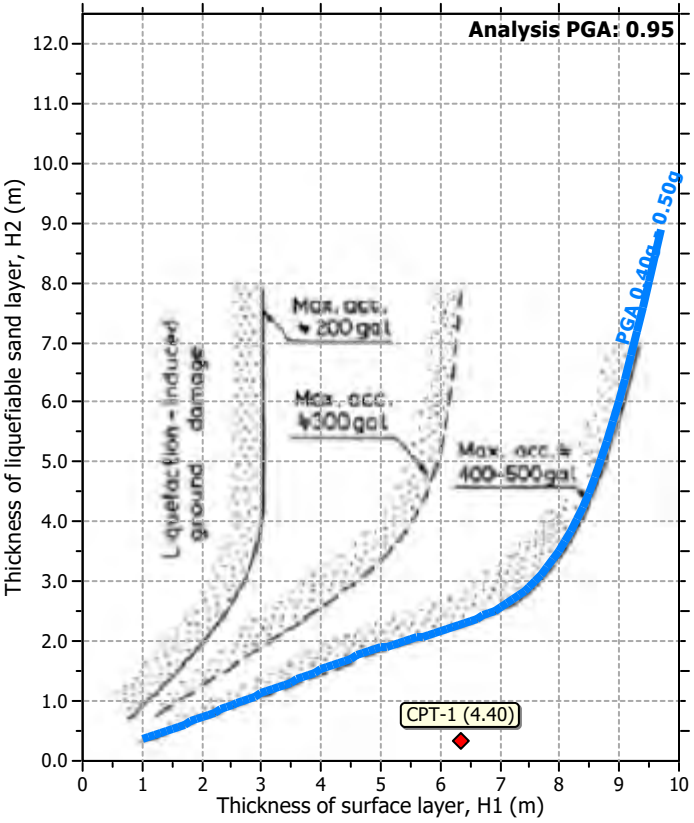
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



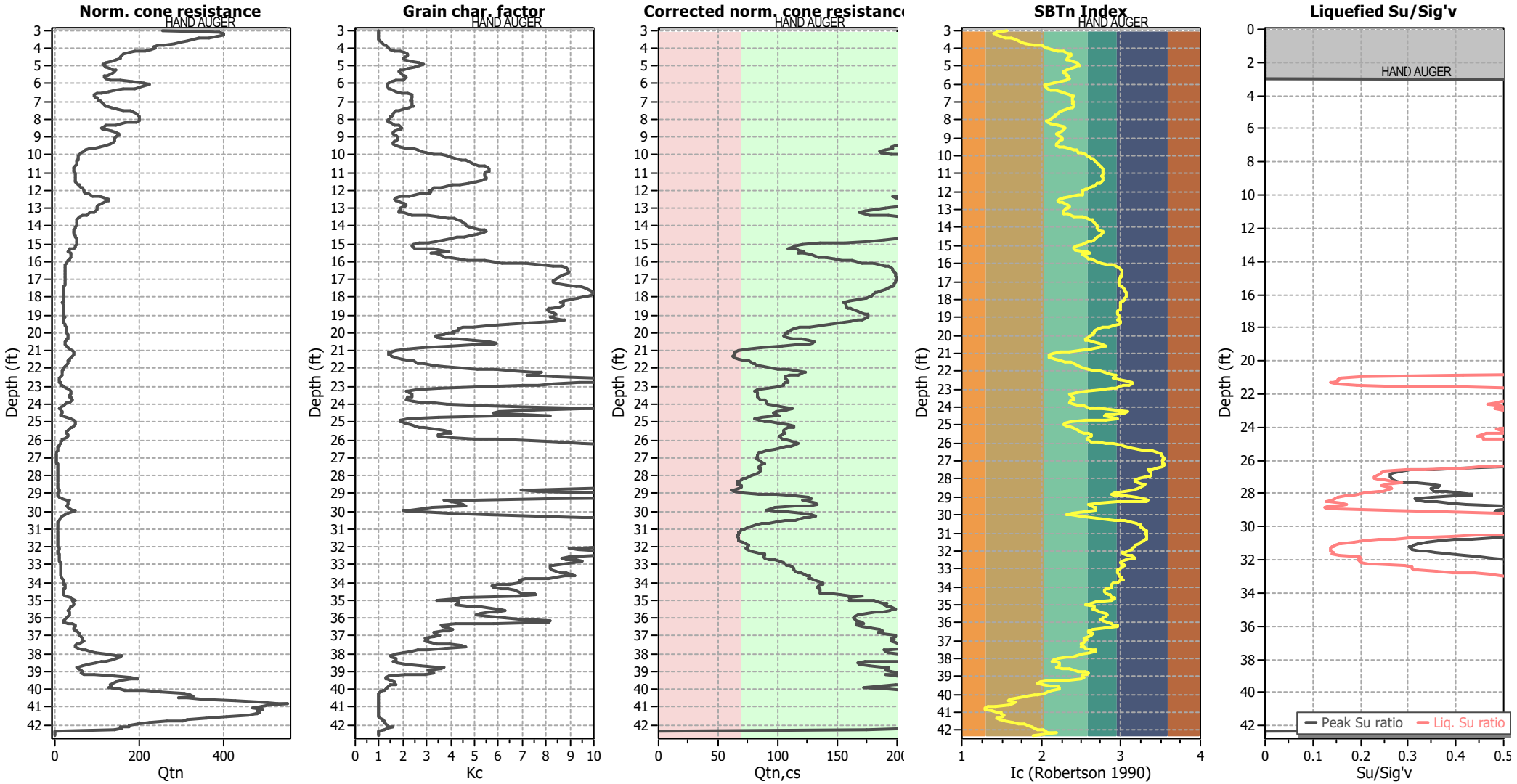




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	22.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.09	-9999.00	-9999.00	-9999.00	N/A	120.90
2	0.14	-9999.00	-9999.00	-9999.00	N/A	120.90
3	0.22	-9999.00	-9999.00	-9999.00	N/A	120.90
4	0.27	-9999.00	-9999.00	-9999.00	N/A	120.90
5	0.37	-9999.00	-9999.00	-9999.00	N/A	120.90
6	0.41	-9999.00	-9999.00	-9999.00	N/A	120.90
7	0.46	-9999.00	-9999.00	-9999.00	N/A	120.90
8	0.55	-9999.00	-9999.00	-9999.00	N/A	120.90
9	0.60	-9999.00	-9999.00	-9999.00	N/A	120.90
10	0.69	-9999.00	-9999.00	-9999.00	N/A	120.90
11	0.73	-9999.00	-9999.00	-9999.00	N/A	120.90
12	0.83	-9999.00	-9999.00	-9999.00	N/A	120.90
13	0.87	-9999.00	-9999.00	-9999.00	N/A	120.90
14	0.92	-9999.00	-9999.00	-9999.00	N/A	120.90
15	1.01	-9999.00	-9999.00	-9999.00	N/A	120.90
16	1.05	-9999.00	-9999.00	-9999.00	N/A	120.90
17	1.15	-9999.00	-9999.00	-9999.00	N/A	120.90
18	1.20	-9999.00	-9999.00	-9999.00	N/A	120.90
19	1.29	-9999.00	-9999.00	-9999.00	N/A	120.90
20	1.33	-9999.00	-9999.00	-9999.00	N/A	120.90
21	1.38	-9999.00	-9999.00	-9999.00	N/A	120.90
22	1.46	-9999.00	-9999.00	-9999.00	N/A	120.90
23	1.52	-9999.00	-9999.00	-9999.00	N/A	120.90
24	1.60	-9999.00	-9999.00	-9999.00	N/A	120.90
25	1.66	-9999.00	-9999.00	-9999.00	N/A	120.90
26	1.74	-9999.00	-9999.00	-9999.00	N/A	120.90
27	1.79	-9999.00	-9999.00	-9999.00	N/A	120.90
28	1.84	-9999.00	-9999.00	-9999.00	N/A	120.90
29	1.92	-9999.00	-9999.00	-9999.00	N/A	120.90
30	1.98	-9999.00	-9999.00	-9999.00	N/A	120.90
31	2.04	-9999.00	-9999.00	-9999.00	N/A	120.90
32	2.11	-9999.00	-9999.00	-9999.00	N/A	120.90
33	2.20	-9999.00	-9999.00	-9999.00	N/A	120.90
34	2.25	-9999.00	-9999.00	-9999.00	N/A	120.90
35	2.30	-9999.00	-9999.00	-9999.00	N/A	120.90
36	2.39	-9999.00	-9999.00	-9999.00	N/A	120.90
37	2.44	-9999.00	-9999.00	-9999.00	N/A	120.90
38	2.53	-9999.00	-9999.00	-9999.00	N/A	120.90
39	2.57	-9999.00	-9999.00	-9999.00	N/A	120.90
40	2.66	-9999.00	-9999.00	-9999.00	N/A	120.90
41	2.71	-9999.00	-9999.00	-9999.00	N/A	120.90
42	2.76	-9999.00	-9999.00	-9999.00	N/A	120.90
43	2.85	-9999.00	-9999.00	-9999.00	N/A	120.90
44	2.90	-9999.00	-9999.00	-9999.00	N/A	120.90
45	2.98	-9999.00	-9999.00	-9999.00	N/A	120.90
46	3.04	229.36	2.11	2.90	3.79	124.70
47	3.12	244.83	1.88	2.54	1.91	128.51
48	3.17	248.75	1.84	2.54	1.58	128.38

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.22	250.24	1.95	2.63	1.78	128.80
50	3.31	248.47	2.21	2.45	2.11	129.28
51	3.35	245.11	2.26	2.45	2.74	129.64
52	3.44	220.97	2.37	2.45	3.47	129.89
53	3.48	211.75	2.57	2.36	4.66	130.53
54	3.54	205.32	3.07	2.54	5.66	130.97
55	3.62	190.22	3.01	2.99	6.29	131.07
56	3.68	187.52	2.80	2.90	7.21	131.23
57	3.77	174.93	3.44	2.90	8.34	131.69
58	3.82	166.45	3.76	3.08	10.83	132.47
59	3.88	139.33	4.28	4.08	12.88	133.31
60	3.97	150.14	5.05	4.45	14.66	134.04
61	4.01	149.96	5.33	4.72	15.43	134.71
62	4.07	143.90	5.63	5.90	17.05	135.13
63	4.15	130.94	6.23	6.17	19.30	135.43
64	4.20	119.67	6.51	7.99	22.02	135.46
65	4.30	104.57	6.37	7.53	24.00	135.20
66	4.34	99.63	6.12	7.44	25.13	134.68
67	4.43	96.09	5.67	5.54	25.06	134.23
68	4.47	96.04	5.45	5.54	24.40	133.79
69	4.53	97.67	5.16	5.54	23.65	133.39
70	4.62	95.99	4.81	5.54	23.28	133.00
71	4.66	92.08	4.70	3.72	24.13	132.55
72	4.76	80.90	4.58	3.90	25.95	132.23
73	4.80	74.00	4.59	3.81	28.56	131.95
74	4.88	67.29	4.65	4.08	29.32	131.87
75	4.94	74.37	4.56	4.04	29.83	131.73
76	4.99	68.59	4.45	4.04	28.48	131.61
77	5.08	74.75	4.27	3.99	27.40	131.44
78	5.12	79.68	4.15	4.54	24.97	131.42
79	5.22	87.42	4.07	4.36	23.16	131.41
80	5.26	90.78	3.99	4.26	22.00	131.27
81	5.36	88.63	3.79	3.81	21.84	131.05
82	5.40	85.09	3.74	3.81	22.39	130.73
83	5.45	80.06	3.66	3.36	23.02	130.31
84	5.54	75.86	3.34	3.36	23.46	129.77
85	5.58	73.07	3.16	3.36	23.77	129.26
86	5.67	69.99	3.11	3.36	24.21	129.20
87	5.71	71.67	3.33	3.36	24.11	129.75
88	5.78	81.74	3.77	3.36	23.18	130.57
89	5.84	90.50	4.00	3.54	20.53	131.54
90	5.91	115.47	4.22	3.90	17.56	132.30
91	6.00	135.98	4.33	4.81	15.14	132.77
92	6.05	142.31	4.22	5.63	14.02	132.74
93	6.14	136.07	3.95	3.99	14.04	131.98
94	6.27	114.91	3.30	3.27	14.92	130.91
95	6.32	99.82	3.04	3.08	16.57	129.77
96	6.37	87.14	2.92	2.90	18.41	129.00

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.45	78.19	2.75	2.81	20.34	128.32
98	6.51	69.15	2.59	2.90	22.59	127.64
99	6.57	58.62	2.52	2.81	24.78	127.28
100	6.64	58.30	2.63	2.90	26.27	127.14
101	6.70	58.30	2.60	2.81	26.65	127.28
102	6.78	57.97	2.69	2.54	26.35	127.44
103	6.83	61.88	2.75	3.08	26.34	128.05
104	6.97	65.52	3.19	3.54	26.20	128.60
105	6.98	65.52	3.23	3.54	26.48	129.22
106	7.06	67.85	3.46	3.72	26.25	129.62
107	7.11	72.42	3.62	3.54	26.37	130.09
108	7.18	71.20	3.82	3.99	26.52	130.54
109	7.25	73.07	4.06	4.81	26.73	130.98
110	7.29	77.26	4.24	4.99	26.32	131.47
111	7.36	81.74	4.46	4.90	25.30	131.92
112	7.43	88.63	4.56	4.90	23.24	132.45
113	7.52	105.78	4.73	5.08	21.45	132.89
114	7.56	109.97	4.86	4.90	19.93	133.34
115	7.61	117.24	5.01	4.90	19.37	133.72
116	7.70	122.93	5.25	4.90	18.79	134.02
117	7.76	127.40	5.24	4.90	18.32	134.10
118	7.84	127.87	5.05	4.90	17.86	133.99
119	7.89	128.61	4.93	4.90	17.14	133.69
120	7.96	132.71	4.57	5.35	16.16	133.23
121	8.03	134.21	4.08	5.63	15.18	132.79
122	8.08	136.35	4.06	5.26	14.63	132.37
123	8.16	132.99	3.86	4.90	15.04	132.05
124	8.21	118.55	3.73	4.54	16.52	131.25
125	8.30	91.33	3.28	4.45	19.08	130.34
126	8.34	78.75	3.15	3.08	21.82	129.24
127	8.43	70.09	2.87	2.99	22.30	128.72
128	8.47	79.59	2.78	3.45	22.79	128.32
129	8.56	69.06	2.81	3.45	21.98	128.50
130	8.61	80.43	2.95	3.45	21.31	128.93
131	8.67	92.73	3.13	3.27	19.72	129.71
132	8.75	99.44	3.43	3.72	18.69	130.45
133	8.79	107.27	3.63	3.90	18.86	131.15
134	8.89	104.94	4.00	3.90	19.40	131.58
135	8.94	101.96	4.07	3.99	20.37	131.80
136	9.02	99.63	4.09	4.17	20.82	131.78
137	9.07	99.58	4.04	4.26	20.94	131.71
138	9.13	99.54	3.98	4.63	20.57	131.54
139	9.21	101.31	3.79	4.45	20.13	131.32
140	9.25	101.40	3.67	4.26	19.26	130.84
141	9.34	101.40	3.23	3.99	18.78	130.28
142	9.39	97.11	3.04	3.72	18.78	129.41
143	9.48	85.46	2.72	3.63	19.93	128.69
144	9.53	76.42	2.65	3.54	22.00	127.95

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.62	65.70	2.57	3.45	24.57	127.34
146	9.67	57.04	2.42	3.36	26.71	126.62
147	9.71	53.87	2.22	3.36	28.17	125.62
148	9.80	47.16	1.88	3.27	29.24	124.84
149	9.85	44.83	1.92	3.27	30.90	124.36
150	9.93	42.41	1.99	3.27	32.79	124.47
151	9.99	40.63	2.07	3.18	34.45	124.62
152	10.04	39.94	2.12	1.81	35.86	124.85
153	10.13	39.24	2.24	2.09	36.88	125.06
154	10.18	39.05	2.29	1.91	38.02	125.33
155	10.27	38.30	2.41	2.18	39.02	125.51
156	10.32	37.65	2.44	2.18	39.96	125.66
157	10.40	37.37	2.47	2.18	40.69	125.71
158	10.45	36.72	2.49	2.18	41.19	125.75
159	10.50	36.63	2.51	2.18	41.97	125.75
160	10.59	35.32	2.52	2.18	42.90	125.74
161	10.64	34.30	2.53	2.00	43.94	125.69
162	10.70	33.74	2.53	2.00	44.49	125.66
163	10.78	33.92	2.53	2.00	44.74	125.66
164	10.87	33.92	2.54	2.00	44.80	125.69
165	10.92	34.02	2.55	2.00	44.78	125.73
166	10.96	34.39	2.56	2.00	44.41	125.81
167	11.05	35.51	2.58	2.00	44.11	125.90
168	11.10	35.70	2.60	2.00	43.89	126.00
169	11.19	35.74	2.63	2.00	44.02	126.04
170	11.24	35.74	2.63	2.09	44.16	126.09
171	11.37	35.79	2.65	2.09	44.27	126.12
172	11.39	36.07	2.65	2.09	44.03	126.17
173	11.42	36.81	2.66	2.09	43.37	126.25
174	11.49	38.21	2.67	2.18	42.33	126.36
175	11.56	40.08	2.68	2.09	40.67	126.55
176	11.65	43.52	2.71	2.27	38.93	126.75
177	11.70	45.95	2.73	2.27	37.21	126.94
178	11.79	48.18	2.74	2.27	35.73	127.15
179	11.84	51.54	2.79	2.09	34.35	127.34
180	11.88	53.96	2.80	2.09	32.84	127.44
181	11.97	56.39	2.70	2.18	31.76	127.43
182	12.02	57.32	2.69	2.18	31.48	127.57
183	12.12	57.04	2.90	2.27	31.72	127.82
184	12.16	58.16	2.96	2.09	31.54	128.15
185	12.21	62.07	3.00	2.36	29.06	128.55
186	12.30	76.61	3.08	2.45	25.48	129.08
187	12.35	91.52	3.15	2.63	22.09	129.74
188	12.43	103.92	3.33	2.81	19.95	130.38
189	12.48	113.42	3.52	3.08	19.43	131.09
190	12.57	113.24	3.93	3.08	19.83	131.63
191	12.61	110.53	4.07	3.18	21.03	131.92
192	12.67	103.92	4.10	3.18	22.45	131.76

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.76	92.92	3.92	3.45	23.77	131.43
194	12.80	90.12	3.80	3.54	24.48	130.95
195	12.89	88.45	3.56	3.99	24.05	130.55
196	12.94	90.78	3.35	4.36	23.22	130.08
197	12.99	90.68	3.13	4.08	22.34	129.53
198	13.08	88.26	2.84	3.36	21.95	128.94
199	13.13	85.46	2.68	3.08	21.66	128.27
200	13.22	83.04	2.44	2.81	21.70	127.82
201	13.27	81.36	2.43	2.72	23.61	127.40
202	13.36	62.54	2.50	2.72	26.53	127.22
203	13.39	58.90	2.54	2.72	31.11	127.03
204	13.49	51.45	2.64	2.72	33.80	127.05
205	13.54	49.58	2.71	3.36	36.19	127.11
206	13.59	49.02	2.77	3.63	37.37	127.20
207	13.68	47.53	2.81	3.18	38.08	127.25
208	13.72	47.62	2.82	2.99	39.05	127.33
209	13.82	46.13	2.92	2.63	39.60	127.43
210	13.87	46.69	2.95	2.63	40.10	127.52
211	13.95	46.69	2.94	2.63	40.10	127.51
212	14.00	46.32	2.90	2.63	40.22	127.44
213	14.05	45.85	2.89	2.63	40.83	127.35
214	14.14	43.90	2.89	2.45	41.89	127.27
215	14.19	42.31	2.89	2.54	43.09	127.19
216	14.24	41.47	2.90	2.45	44.06	127.17
217	14.31	40.82	2.93	2.45	44.40	127.18
218	14.37	41.57	2.92	2.45	43.70	127.19
219	14.46	43.90	2.85	2.45	42.54	127.18
220	14.51	44.74	2.83	2.45	41.00	127.12
221	14.59	46.41	2.75	2.45	39.87	127.02
222	14.65	47.35	2.67	2.45	38.26	126.82
223	14.73	49.30	2.52	2.27	36.72	126.53
224	14.79	50.23	2.38	2.27	35.05	126.16
225	14.84	51.17	2.23	2.27	33.56	125.57
226	14.91	50.70	1.95	2.27	31.13	124.37
227	14.97	50.89	1.38	2.27	28.66	122.80
228	15.06	49.49	1.17	2.27	26.89	121.51
229	15.11	48.93	1.24	2.27	26.64	120.75
230	15.20	46.13	1.05	2.27	27.11	120.28
231	15.25	43.80	0.99	2.18	27.20	119.51
232	15.30	43.06	0.96	2.09	32.65	118.74
233	15.36	20.60	0.95	1.72	34.06	118.61
234	15.44	38.77	0.98	1.72	36.06	118.64
235	15.49	37.75	1.02	1.81	31.88	119.37
236	15.55	37.75	1.09	1.72	32.88	119.74
237	15.63	37.75	1.15	1.72	34.06	120.26
238	15.73	37.28	1.27	1.72	35.37	120.76
239	15.78	36.81	1.34	1.72	36.65	121.17
240	15.82	36.44	1.39	1.81	38.36	121.43

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.91	33.92	1.46	1.63	40.35	121.62
242	15.96	32.62	1.51	1.63	43.89	121.80
243	16.05	28.71	1.61	1.63	47.51	121.91
244	16.10	26.84	1.66	1.72	51.59	122.02
245	16.16	25.44	1.71	1.81	54.33	122.11
246	16.24	24.60	1.76	1.63	56.46	122.20
247	16.28	23.95	1.79	1.91	57.95	122.32
248	16.36	23.77	1.83	2.09	58.69	122.43
249	16.42	24.14	1.86	2.18	58.96	122.54
250	16.51	24.14	1.87	2.18	58.94	122.63
251	16.55	24.32	1.88	2.27	59.10	122.69
252	16.61	24.23	1.90	2.45	59.14	122.77
253	16.68	24.51	1.92	2.45	58.91	122.88
254	16.74	25.26	1.95	2.54	58.18	123.04
255	16.83	26.10	1.98	2.54	57.63	123.16
256	16.87	26.10	1.99	2.54	57.17	123.30
257	16.97	26.65	2.02	2.54	57.09	123.39
258	17.06	26.84	2.03	2.54	56.59	123.47
259	17.16	27.49	2.02	2.54	56.52	123.47
260	17.20	26.93	2.01	2.45	57.21	123.35
261	17.29	25.26	1.97	2.36	58.77	123.14
262	17.36	24.32	1.93	2.36	60.28	122.91
263	17.39	23.86	1.91	2.36	61.11	122.68
264	17.47	23.21	1.85	2.36	61.78	122.46
265	17.52	22.65	1.80	2.36	62.25	122.16
266	17.62	22.18	1.73	2.54	62.76	121.84
267	17.71	21.53	1.66	2.72	63.16	121.58
268	17.74	21.34	1.65	2.81	63.31	121.41
269	17.80	21.44	1.63	2.99	63.12	121.34
270	17.86	21.62	1.61	2.99	62.71	121.29
271	17.94	21.72	1.60	3.27	62.12	121.28
272	17.98	22.27	1.61	3.45	61.48	121.29
273	18.05	22.55	1.60	3.36	60.74	121.12
274	18.13	22.18	1.48	3.45	59.49	120.59
275	18.18	22.09	1.28	3.36	58.34	120.02
276	18.26	22.09	1.28	3.45	57.64	119.67
277	18.31	22.00	1.30	3.45	58.29	119.68
278	18.45	21.34	1.30	3.90	58.19	119.85
279	18.55	23.02	1.35	3.90	57.73	120.04
280	18.59	23.49	1.38	3.90	56.37	120.38
281	18.64	24.60	1.43	3.99	55.86	120.76
282	18.74	25.35	1.52	3.90	55.48	121.12
283	18.78	25.72	1.55	3.81	55.77	121.48
284	18.87	25.72	1.63	3.45	56.40	121.72
285	18.92	25.54	1.67	3.45	57.02	121.95
286	18.96	25.82	1.71	3.63	56.84	122.21
287	19.08	27.21	1.78	4.26	56.39	122.39
288	19.10	27.21	1.76	4.26	56.02	122.42

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	19.16	26.65	1.72	4.26	56.72	122.15
290	19.24	24.98	1.64	4.26	58.02	121.79
291	19.29	23.77	1.58	4.08	58.40	121.33
292	19.37	24.32	1.47	4.36	57.11	120.96
293	19.43	25.54	1.40	5.44	52.54	120.58
294	19.52	28.98	1.27	5.81	48.51	120.32
295	19.57	30.48	1.22	5.35	44.45	120.03
296	19.66	32.62	1.15	3.27	41.66	119.59
297	19.71	33.37	1.00	2.99	39.53	118.96
298	19.79	32.62	0.92	2.99	38.61	118.35
299	19.84	31.97	0.91	2.99	38.37	118.06
300	19.89	32.62	0.90	2.99	37.36	118.02
301	19.98	35.14	0.88	2.90	37.64	117.93
302	20.02	30.94	0.89	2.81	36.13	118.08
303	20.09	37.65	0.91	2.45	35.12	118.33
304	20.16	39.61	0.93	2.45	33.16	118.84
305	20.25	40.35	1.00	2.36	33.56	119.21
306	20.30	38.77	1.05	2.45	35.10	119.52
307	20.34	36.53	1.09	2.36	38.13	119.70
308	20.43	32.34	1.16	2.45	41.69	119.73
309	20.48	29.73	1.16	2.63	44.97	119.59
310	20.57	28.43	1.12	2.63	46.21	119.24
311	20.62	28.33	1.05	2.63	45.68	118.78
312	20.67	28.80	0.97	2.63	41.89	118.20
313	20.75	33.83	0.82	2.81	36.73	117.60
314	20.81	38.30	0.74	2.72	29.74	116.69
315	20.90	46.04	0.56	2.63	24.85	115.73
316	20.94	48.37	0.49	2.54	20.23	114.39
317	21.03	53.96	0.39	2.45	17.69	113.50
318	21.08	56.39	0.37	2.45	15.93	112.88
319	21.13	57.13	0.37	2.45	15.57	112.86
320	21.22	56.85	0.38	2.45	15.83	112.88
321	21.27	54.71	0.37	2.36	16.54	112.83
322	21.34	51.35	0.37	2.36	17.85	112.91
323	21.41	48.18	0.41	2.36	20.18	113.30
324	21.50	42.96	0.47	2.27	22.66	113.89
325	21.53	41.94	0.51	2.27	25.25	114.62
326	21.59	40.54	0.58	2.27	26.93	115.23
327	21.68	39.61	0.62	2.27	28.34	115.50
328	21.73	38.12	0.59	2.27	29.79	115.46
329	21.82	35.14	0.60	2.36	31.76	115.16
330	21.86	31.69	0.59	2.36	34.84	115.27
331	21.94	29.73	0.67	2.45	38.90	115.43
332	22.01	25.91	0.71	2.45	42.55	115.85
333	22.06	25.82	0.76	2.54	45.95	116.54
334	22.15	26.10	0.92	2.63	49.33	117.18
335	22.20	22.65	0.96	2.63	53.11	117.57
336	22.25	21.44	0.96	2.63	54.53	117.28

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.34	23.11	0.85	2.90	52.86	116.69
338	22.38	23.02	0.75	2.81	52.06	115.69
339	22.47	19.29	0.66	2.81	56.49	114.70
340	22.52	15.38	0.64	2.81	63.50	113.79
341	22.59	13.51	0.62	2.90	67.85	113.57
342	22.66	15.19	0.66	3.08	68.56	113.64
343	22.75	15.00	0.67	3.27	65.62	113.94
344	22.78	16.59	0.66	3.36	60.76	114.13
345	22.84	20.13	0.64	3.36	56.44	114.36
346	22.94	20.32	0.67	3.36	53.98	114.58
347	22.97	19.39	0.68	3.36	51.43	115.05
348	23.05	24.88	0.72	3.36	43.26	115.80
349	23.12	36.35	0.72	3.63	34.29	116.53
350	23.17	44.36	0.71	3.18	28.00	117.00
351	23.26	49.86	0.71	2.81	25.17	117.29
352	23.30	51.45	0.73	2.54	24.66	117.57
353	23.36	49.12	0.77	2.54	25.50	117.68
354	23.44	46.41	0.76	2.72	26.37	117.63
355	23.53	46.88	0.74	2.99	26.60	117.45
356	23.57	46.88	0.72	3.36	26.40	117.44
357	23.63	47.35	0.75	3.72	25.19	118.04
358	23.72	57.32	0.87	3.54	24.23	118.81
359	23.76	58.34	0.92	3.36	24.66	119.38
360	23.85	49.67	0.94	2.81	26.84	118.97
361	23.91	42.50	0.80	2.63	29.63	118.10
362	23.95	39.70	0.73	2.63	32.65	117.00
363	24.04	31.87	0.70	2.63	35.91	116.21
364	24.09	28.61	0.67	2.72	44.12	115.43
365	24.18	17.89	0.68	3.08	52.95	114.99
366	24.23	16.68	0.73	3.27	63.80	114.97
367	24.29	17.15	0.80	3.27	61.45	115.31
368	24.36	21.16	0.74	3.27	53.25	115.39
369	24.41	25.82	0.64	3.54	46.76	115.03
370	24.50	25.54	0.61	2.90	45.70	114.59
371	24.56	21.44	0.62	2.72	50.93	114.25
372	24.64	16.87	0.63	2.99	55.91	114.10
373	24.69	19.85	0.63	3.27	46.92	114.67
374	24.75	34.48	0.64	3.90	33.63	116.03
375	24.82	52.10	0.73	3.63	25.03	117.61
376	24.87	63.93	0.85	2.99	22.19	119.29
377	24.96	65.24	1.04	1.81	22.03	120.43
378	25.01	64.21	1.11	0.73	22.85	121.21
379	25.07	66.08	1.17	0.54	24.07	121.97
380	25.14	64.77	1.41	-0.27	25.89	122.93
381	25.20	62.26	1.64	-0.64	27.55	123.23
382	25.30	59.09	1.40	-0.54	28.78	122.79
383	25.34	53.59	1.24	-0.91	29.94	121.55
384	25.42	45.39	1.10	-0.82	32.63	120.36

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.48	38.30	1.00	-1.18	35.03	119.31
386	25.55	37.93	0.91	-0.64	36.48	118.83
387	25.62	37.93	0.97	-0.36	36.88	118.91
388	25.67	37.56	1.03	0.00	35.27	119.35
389	25.75	45.67	1.02	-0.18	33.69	119.47
390	25.80	44.27	0.97	-0.73	33.80	119.07
391	25.90	34.67	0.89	-0.73	36.71	118.31
392	25.94	31.87	0.84	-0.73	41.83	117.26
393	25.99	25.82	0.75	-0.73	46.61	116.43
394	26.06	21.62	0.74	-0.73	52.37	116.18
395	26.13	21.81	0.87	-0.36	57.61	116.46
396	26.22	20.78	0.91	-0.27	61.28	116.47
397	26.27	17.24	0.80	-0.27	66.71	115.60
398	26.34	13.89	0.69	-0.54	74.52	114.26
399	26.40	11.56	0.64	-0.36	81.64	113.12
400	26.45	10.81	0.60	-0.54	89.25	111.89
401	26.54	8.39	0.48	-0.54	94.06	110.62
402	26.59	8.11	0.42	-0.54	98.64	109.05
403	26.68	7.64	0.36	-0.36	100.00	108.14
404	26.73	7.27	0.35	-0.27	100.00	107.52
405	26.82	7.18	0.35	-0.27	100.00	107.33
406	26.88	7.18	0.34	-0.27	100.00	107.22
407	26.91	7.18	0.34	-0.36	100.00	107.12
408	27.00	7.18	0.33	-0.18	100.00	107.08
409	27.05	7.27	0.33	-0.18	100.00	107.18
410	27.14	7.36	0.35	-0.27	100.00	107.42
411	27.19	7.36	0.36	-0.09	100.00	107.78
412	27.23	7.36	0.38	-0.09	100.00	108.28
413	27.32	7.83	0.42	-0.09	100.00	108.65
414	27.38	8.11	0.41	-0.09	94.89	108.78
415	27.46	9.32	0.37	0.00	88.69	108.58
416	27.51	9.79	0.36	0.00	85.03	108.46
417	27.57	9.41	0.38	-0.09	85.64	108.49
418	27.63	9.13	0.38	0.09	87.17	108.67
419	27.69	9.41	0.39	0.09	88.50	108.60
420	27.78	8.85	0.37	0.09	87.54	108.50
421	27.85	9.41	0.36	0.09	86.18	108.27
422	27.90	9.69	0.35	0.36	81.01	107.94
423	27.99	10.62	0.30	0.45	76.19	107.54
424	28.04	11.18	0.29	0.45	71.87	106.96
425	28.13	11.18	0.26	0.64	70.58	106.48
426	28.17	10.72	0.25	0.45	73.36	105.70
427	28.26	8.76	0.23	0.64	77.94	104.96
428	28.31	8.29	0.22	0.45	82.14	104.28
429	28.36	8.39	0.21	0.64	80.12	103.86
430	28.45	9.13	0.19	0.64	77.09	103.76
431	28.49	9.41	0.20	0.73	74.69	104.27
432	28.56	9.97	0.24	0.64	73.39	105.14

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.63	10.72	0.25	0.73	69.80	105.66
434	28.73	11.93	0.23	0.64	61.69	105.62
435	28.78	15.00	0.20	0.73	53.26	105.20
436	28.82	15.94	0.19	0.73	50.82	104.77
437	28.91	13.42	0.19	0.64	53.83	104.96
438	28.96	12.68	0.22	0.82	62.95	106.77
439	29.05	12.49	0.38	0.82	71.97	109.54
440	29.09	11.84	0.57	0.91	79.57	112.13
441	29.15	12.40	0.73	0.91	84.38	114.59
442	29.23	13.98	1.02	0.91	82.55	116.53
443	29.28	16.68	1.16	0.91	55.86	119.42
444	29.37	48.56	1.34	1.09	42.00	121.15
445	29.42	49.67	1.43	0.91	35.32	122.38
446	29.46	47.16	1.53	0.91	36.85	122.76
447	29.56	45.67	1.60	0.54	38.47	122.94
448	29.60	45.29	1.60	0.91	39.60	122.85
449	29.67	42.68	1.52	0.73	40.02	121.91
450	29.74	37.93	1.12	0.91	39.70	120.16
451	29.83	35.23	0.79	1.18	32.28	119.46
452	29.92	63.19	1.04	1.45	26.11	120.12
453	29.96	72.04	1.16	1.45	23.48	121.68
454	30.02	66.92	1.30	1.45	25.34	122.27
455	30.07	56.66	1.38	1.27	29.65	122.38
456	30.12	48.09	1.40	6.62	36.30	121.97
457	30.21	34.48	1.35	4.45	44.49	121.04
458	30.31	25.82	1.20	4.45	53.60	119.95
459	30.34	23.95	1.14	4.45	61.22	118.76
460	30.40	19.76	1.01	4.45	66.45	117.41
461	30.49	15.38	0.79	4.54	72.42	115.70
462	30.54	13.98	0.68	4.81	76.09	114.06
463	30.58	13.51	0.60	4.81	76.67	112.61
464	30.68	12.30	0.46	4.99	76.83	111.28
465	30.73	11.65	0.42	5.08	78.08	109.85
466	30.80	10.62	0.37	5.08	80.01	108.72
467	30.86	9.79	0.31	5.17	81.87	107.61
468	30.91	9.41	0.29	5.17	82.36	106.48
469	31.02	9.13	0.24	5.44	82.34	105.75
470	31.05	9.04	0.24	5.44	82.06	105.10
471	31.14	8.85	0.22	5.54	82.57	104.81
472	31.18	8.67	0.22	5.54	82.40	104.55
473	31.24	8.85	0.22	5.63	83.03	104.39
474	31.32	8.48	0.21	5.81	82.39	104.31
475	31.36	8.85	0.21	5.90	81.57	104.28
476	31.44	9.13	0.21	6.08	79.48	104.37
477	31.51	9.41	0.21	6.17	77.16	104.58
478	31.59	10.07	0.22	6.35	75.14	104.75
479	31.65	10.25	0.22	6.35	71.91	105.22
480	31.73	11.56	0.24	6.62	70.64	106.27

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.83	12.12	0.31	6.80	69.01	107.29
482	31.92	12.68	0.31	6.99	67.96	107.94
483	31.97	13.23	0.31	7.26	64.96	108.09
484	32.06	14.45	0.31	8.17	61.34	108.30
485	32.10	15.84	0.32	8.53	59.24	108.49
486	32.15	15.38	0.32	8.62	60.56	108.65
487	32.24	13.61	0.34	8.80	64.36	108.84
488	32.29	13.14	0.36	8.80	69.12	109.69
489	32.38	13.42	0.46	8.89	70.98	110.57
490	32.43	13.89	0.49	8.89	68.05	111.44
491	32.52	16.87	0.49	8.98	63.59	111.84
492	32.57	17.99	0.49	9.07	59.17	112.19
493	32.62	19.01	0.51	9.07	57.93	112.73
494	32.70	19.57	0.57	9.07	58.74	113.35
495	32.75	18.73	0.63	9.26	60.34	114.13
496	32.81	19.29	0.70	9.53	61.24	114.83
497	32.89	20.50	0.75	9.71	59.92	115.53
498	32.98	22.27	0.79	9.89	58.13	116.09
499	33.03	23.30	0.82	10.16	56.63	116.55
500	33.07	24.05	0.86	10.25	56.04	117.05
501	33.17	24.88	0.93	10.43	55.94	117.44
502	33.21	24.88	0.95	10.43	55.98	117.68
503	33.31	24.88	0.94	10.53	56.31	117.75
504	33.35	24.70	0.96	10.53	57.00	117.87
505	33.44	24.32	1.00	10.71	57.67	118.07
506	33.49	24.70	1.03	10.62	58.79	118.28
507	33.53	23.86	1.06	10.89	59.49	118.66
508	33.63	24.70	1.16	11.07	60.13	119.02
509	33.67	25.16	1.18	11.25	58.49	119.48
510	33.77	28.05	1.21	11.52	55.74	119.78
511	33.81	30.48	1.22	11.61	51.79	120.15
512	33.88	31.87	1.28	11.61	50.76	120.69
513	33.95	32.62	1.43	11.71	50.98	121.21
514	33.99	32.71	1.48	11.89	50.49	121.79
515	34.09	35.88	1.56	12.34	48.87	122.11
516	34.14	38.02	1.55	12.52	46.50	122.28
517	34.22	39.42	1.50	12.61	45.35	122.23
518	34.27	38.58	1.49	12.43	45.75	122.10
519	34.32	36.25	1.49	12.43	47.14	121.98
520	34.40	35.32	1.48	12.88	48.59	121.85
521	34.46	34.48	1.46	12.79	49.74	121.65
522	34.58	32.62	1.42	12.79	50.88	121.55
523	34.59	32.53	1.47	12.79	53.19	122.11
524	34.69	32.71	1.84	13.07	53.61	123.21
525	34.73	37.65	2.09	13.43	49.92	124.72
526	34.78	50.14	2.37	13.61	50.88	125.57
527	34.85	36.07	2.55	11.89	39.26	126.85
528	34.92	87.14	2.55	9.80	37.12	127.54

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	35.01	67.29	2.85	6.44	33.37	128.43
530	35.05	67.43	3.15	6.08	38.46	129.16
531	35.14	67.57	3.73	6.08	38.48	129.83
532	35.19	75.40	3.65	6.08	38.30	130.17
533	35.24	72.79	3.56	5.26	37.96	130.03
534	35.33	67.66	3.52	4.63	40.27	129.74
535	35.38	60.11	3.49	5.17	42.38	129.47
536	35.47	59.93	3.40	5.08	46.21	129.09
537	35.50	48.28	3.36	6.08	46.92	128.80
538	35.59	54.80	3.20	5.90	47.89	128.48
539	35.64	53.68	3.09	4.90	46.35	128.22
540	35.70	51.35	2.96	4.72	44.77	127.94
541	35.78	58.06	2.80	5.17	43.20	127.61
542	35.83	56.66	2.65	5.26	42.15	127.06
543	35.92	50.33	2.37	5.26	44.77	126.31
544	35.97	42.03	2.28	6.44	48.02	125.56
545	36.06	40.73	2.20	7.35	50.63	125.19
546	36.10	40.73	2.20	6.90	52.31	125.03
547	36.16	36.81	2.22	7.08	56.07	125.15
548	36.24	35.42	2.41	6.62	55.68	125.70
549	36.30	45.20	2.65	8.17	45.77	126.88
550	36.35	70.09	2.81	9.07	37.80	128.03
551	36.43	79.22	3.00	8.98	34.51	128.95
552	36.52	74.28	3.34	7.17	34.89	129.42
553	36.57	74.09	3.36	7.71	36.30	129.66
554	36.62	74.09	3.40	9.89	37.29	130.08
555	36.70	74.09	3.94	11.52	36.47	130.60
556	36.75	85.93	3.95	9.80	34.66	131.03
557	36.84	91.99	3.80	10.62	32.76	131.25
558	36.89	91.24	4.04	8.08	32.96	131.67
559	36.96	91.24	4.55	7.99	34.15	132.11
560	37.03	90.50	4.60	7.89	32.74	132.59
561	37.07	110.44	4.62	9.98	32.17	132.73
562	37.17	98.42	4.69	9.71	30.52	132.92
563	37.22	108.86	4.68	7.80	31.28	132.94
564	37.31	104.01	4.76	11.89	30.44	132.99
565	37.35	107.27	4.66	13.25	32.04	132.86
566	37.44	92.08	4.69	11.79	33.31	132.65
567	37.49	89.94	4.57	12.43	36.57	132.16
568	37.54	75.49	4.28	10.53	39.15	132.03
569	37.63	73.91	4.77	10.89	40.00	132.05
570	37.68	85.46	4.70	13.88	35.51	132.55
571	37.76	111.84	4.55	16.15	31.03	132.79
572	37.81	114.35	4.59	16.20	28.43	133.18
573	37.91	118.46	4.97	16.20	26.30	133.87
574	37.95	151.63	5.39	16.24	23.45	134.84
575	38.00	178.94	5.87	17.42	19.27	136.26
576	38.09	241.48	6.92	13.70	17.41	137.28

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	38.14	243.06	7.44	10.43	16.83	137.28
578	38.20	236.63	7.91	8.98	17.92	137.28
579	38.26	226.57	8.23	9.62	19.94	137.28
580	38.32	202.05	8.88	11.16	20.08	137.28
581	38.41	184.07	4.77	13.07	20.01	136.24
582	38.46	170.46	4.63	15.33	18.76	133.79
583	38.55	146.69	4.14	21.32	20.87	133.15
584	38.59	128.06	4.14	16.88	24.43	132.47
585	38.69	102.15	4.14	12.97	28.97	132.06
586	38.74	88.45	4.14	19.42	33.56	131.68
587	38.78	82.57	4.14	25.22	35.16	131.64
588	38.88	89.94	4.25	16.60	34.42	131.89
589	38.91	97.86	4.43	16.15	31.29	132.55
590	39.01	119.20	4.78	28.22	31.35	132.96
591	39.06	97.02	4.90	19.60	32.55	133.24
592	39.15	92.64	5.06	19.46	30.36	133.75
593	39.20	149.86	5.36	19.46	23.82	134.70
594	39.24	200.10	5.57	19.33	15.93	135.93
595	39.32	296.09	5.75	16.24	12.47	136.74
596	39.38	302.15	6.04	12.52	11.58	137.28
597	39.44	269.34	6.53	9.44	13.49	137.28
598	39.52	245.02	7.46	9.53	16.34	137.28
599	39.57	219.76	7.72	11.07	19.13	137.28
600	39.63	204.94	8.23	15.06	19.56	137.28
601	39.71	218.27	6.60	19.42	20.16	137.28
602	39.78	190.13	6.92	21.41	16.91	136.04
603	39.84	216.78	3.58	44.82	15.37	134.62
604	39.91	204.10	3.71	43.10	14.00	132.93
605	40.01	164.68	4.14	33.39	11.67	133.73
606	40.04	319.97	4.23	39.38	10.84	134.28
607	40.09	259.74	4.32	39.61	8.04	135.32
608	40.19	352.38	5.03	97.45	6.49	136.11
609	40.23	471.21	5.04	39.83	4.52	136.77
610	40.32	485.19	4.71	15.15	4.10	136.88
611	40.37	412.40	5.05	12.97	4.14	137.17
612	40.46	491.72	5.55	12.07	5.66	137.28
613	40.51	351.45	5.84	13.43	5.20	137.28
614	40.56	498.24	5.81	19.05	4.04	137.28
615	40.63	631.33	5.14	21.23	1.89	137.28
616	40.69	691.35	4.71	24.59	0.81	137.28
617	40.79	767.58	5.47	24.14	0.41	137.28
618	40.84	794.80	5.48	24.68	0.30	137.28
619	40.88	798.15	5.47	24.41	1.23	137.28
620	40.97	572.43	7.08	15.88	1.97	137.28
621	41.02	727.51	7.64	15.52	2.70	137.28
622	41.09	708.78	7.11	13.70	2.64	137.28
623	41.15	672.99	8.58	13.70	3.18	137.28
624	41.24	683.15	9.29	22.96	3.03	137.28

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.29	699.08	6.22	25.50	2.24	137.28
626	41.35	702.16	5.60	34.66	1.90	137.28
627	41.41	664.41	7.52	23.68	2.55	137.28
628	41.48	688.08	8.83	48.27	3.63	137.28
629	41.58	615.58	8.65	28.94	5.14	137.28
630	41.62	443.72	8.98	148.17	6.44	137.28
631	41.67	511.47	9.14	79.67	8.00	137.28
632	41.76	441.85	8.92	54.90	8.74	137.28
633	41.80	396.84	9.85	92.72	9.75	137.28
634	41.89	362.17	7.04	95.79	10.78	137.28
635	41.94	258.44	4.96	95.79	11.47	137.28
636	42.00	281.09	7.07	98.87	13.75	137.28
637	42.09	280.71	8.37	79.94	15.44	137.28
638	42.13	262.63	8.74	167.95	18.45	137.28
639	42.19	194.69	8.77	118.05	13.93	136.65
640	42.28	286.52	0.00	186.95	10.13	131.25
641	42.34	166.08	0.00	59.25	N/A	87.36
642	42.42	218.27	0.00	226.66	N/A	87.36
643	42.46	252.38	0.00	317.75	N/A	87.36
644	42.55	424.05	0.00	230.56	N/A	87.36
645	42.60	556.02	0.00	144.63	N/A	87.36

Abbreviations

Depth:	Depth from free surface, at which CPT was performed (ft)
q_c:	Measured cone resistance (tsf)
f_s:	Sleeve friction resistance (tsf)
u:	Pore pressure (tsf)
Fines content:	Percentage of fines in soil (%)
Unit weight:	Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.09	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
2	0.14	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
3	0.22	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
4	0.27	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
5	0.37	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
6	0.41	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
7	0.46	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
8	0.55	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
9	0.60	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
10	0.69	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
11	0.73	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
12	0.83	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
13	0.87	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
14	0.92	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
15	1.01	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
16	1.05	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
17	1.15	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
18	1.20	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
19	1.29	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
20	1.33	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
21	1.38	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
22	1.46	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
23	1.52	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
24	1.60	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
25	1.66	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
26	1.74	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
27	1.79	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
28	1.84	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
29	1.92	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
30	1.98	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
31	2.04	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
32	2.11	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
33	2.20	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
34	2.25	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
35	2.30	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
36	2.39	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
37	2.44	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
38	2.53	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
39	2.57	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
40	2.66	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
41	2.71	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
42	2.76	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
43	2.85	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
44	2.90	0.18	0.00	0.18	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
45	2.98	0.18	0.00	0.18	1.00	0.614	1.69	0.364	1.00	1.00	2.000	No
46	3.04	0.18	0.00	0.18	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
47	3.12	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
48	3.17	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.22	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
50	3.31	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
51	3.35	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
52	3.44	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
53	3.48	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
54	3.54	0.22	0.00	0.22	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
55	3.62	0.22	0.00	0.22	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
56	3.68	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
57	3.77	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
58	3.82	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
59	3.88	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
60	3.97	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
61	4.01	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
62	4.07	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
63	4.15	0.26	0.00	0.26	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
64	4.20	0.26	0.00	0.26	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
65	4.30	0.27	0.00	0.27	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
66	4.34	0.27	0.00	0.27	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
67	4.43	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
68	4.47	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
69	4.53	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
70	4.62	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
71	4.66	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
72	4.76	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
73	4.80	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
74	4.88	0.31	0.00	0.31	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
75	4.94	0.31	0.00	0.31	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
76	4.99	0.31	0.00	0.31	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
77	5.08	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
78	5.12	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
79	5.22	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
80	5.26	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
81	5.36	0.34	0.00	0.34	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
82	5.40	0.34	0.00	0.34	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
83	5.45	0.34	0.00	0.34	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
84	5.54	0.35	0.00	0.35	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
85	5.58	0.35	0.00	0.35	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
86	5.67	0.36	0.00	0.36	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
87	5.71	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
88	5.78	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
89	5.84	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
90	5.91	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
91	6.00	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
92	6.05	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
93	6.14	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
94	6.27	0.40	0.00	0.40	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
95	6.32	0.40	0.00	0.40	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
96	6.37	0.40	0.00	0.40	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.45	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
98	6.51	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
99	6.57	0.42	0.00	0.42	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
100	6.64	0.42	0.00	0.42	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
101	6.70	0.42	0.00	0.42	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
102	6.78	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
103	6.83	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
104	6.97	0.44	0.00	0.44	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
105	6.98	0.44	0.00	0.44	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
106	7.06	0.45	0.00	0.45	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
107	7.11	0.45	0.00	0.45	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
108	7.18	0.45	0.00	0.45	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
109	7.25	0.46	0.00	0.46	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
110	7.29	0.46	0.00	0.46	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
111	7.36	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
112	7.43	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
113	7.52	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
114	7.56	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
115	7.61	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
116	7.70	0.49	0.00	0.49	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
117	7.76	0.49	0.00	0.49	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
118	7.84	0.50	0.00	0.50	0.98	0.607	1.69	0.360	1.00	1.00	2.000	No
119	7.89	0.50	0.00	0.50	0.98	0.607	1.69	0.360	1.00	1.00	2.000	No
120	7.96	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
121	8.03	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
122	8.08	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
123	8.16	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
124	8.21	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
125	8.30	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
126	8.34	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
127	8.43	0.54	0.00	0.54	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
128	8.47	0.54	0.00	0.54	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
129	8.56	0.55	0.00	0.55	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
130	8.61	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
131	8.67	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
132	8.75	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
133	8.79	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
134	8.89	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
135	8.94	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
136	9.02	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
137	9.07	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
138	9.13	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
139	9.21	0.59	0.00	0.59	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
140	9.25	0.59	0.00	0.59	0.98	0.606	1.69	0.358	1.00	1.00	2.000	No
141	9.34	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
142	9.39	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
143	9.48	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
144	9.53	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.62	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
146	9.67	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
147	9.71	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
148	9.80	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
149	9.85	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
150	9.93	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
151	9.99	0.64	0.00	0.64	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
152	10.04	0.64	0.00	0.64	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
153	10.13	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
154	10.18	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
155	10.27	0.66	0.00	0.66	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
156	10.32	0.66	0.00	0.66	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
157	10.40	0.66	0.00	0.66	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
158	10.45	0.67	0.00	0.67	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
159	10.50	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
160	10.59	0.68	0.00	0.68	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
161	10.64	0.68	0.00	0.68	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
162	10.70	0.68	0.00	0.68	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
163	10.78	0.69	0.00	0.69	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
164	10.87	0.69	0.00	0.69	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
165	10.92	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
166	10.96	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
167	11.05	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
168	11.10	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
169	11.19	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
170	11.24	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
171	11.37	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
172	11.39	0.73	0.00	0.73	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
173	11.42	0.73	0.00	0.73	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
174	11.49	0.73	0.00	0.73	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
175	11.56	0.74	0.00	0.74	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
176	11.65	0.74	0.00	0.74	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
177	11.70	0.75	0.00	0.75	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
178	11.79	0.75	0.00	0.75	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
179	11.84	0.75	0.00	0.75	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
180	11.88	0.76	0.00	0.76	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
181	11.97	0.76	0.00	0.76	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
182	12.02	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
183	12.12	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
184	12.16	0.78	0.00	0.78	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
185	12.21	0.78	0.00	0.78	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
186	12.30	0.78	0.00	0.78	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
187	12.35	0.79	0.00	0.79	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
188	12.43	0.79	0.00	0.79	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
189	12.48	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
190	12.57	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
191	12.61	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
192	12.67	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.76	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
194	12.80	0.82	0.00	0.82	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
195	12.89	0.82	0.00	0.82	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
196	12.94	0.83	0.00	0.83	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
197	12.99	0.83	0.00	0.83	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
198	13.08	0.84	0.00	0.84	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
199	13.13	0.84	0.00	0.84	0.97	0.601	1.69	0.355	1.00	1.00	2.000	No
200	13.22	0.84	0.00	0.84	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
201	13.27	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
202	13.36	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
203	13.39	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
204	13.49	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
205	13.54	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
206	13.59	0.87	0.00	0.87	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
207	13.68	0.87	0.00	0.87	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
208	13.72	0.88	0.00	0.88	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
209	13.82	0.88	0.00	0.88	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
210	13.87	0.89	0.00	0.89	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
211	13.95	0.89	0.00	0.89	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
212	14.00	0.89	0.00	0.89	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
213	14.05	0.90	0.00	0.90	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
214	14.14	0.90	0.00	0.90	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
215	14.19	0.91	0.00	0.91	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
216	14.24	0.91	0.00	0.91	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
217	14.31	0.91	0.00	0.91	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
218	14.37	0.92	0.00	0.92	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
219	14.46	0.92	0.00	0.92	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
220	14.51	0.93	0.00	0.93	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
221	14.59	0.93	0.00	0.93	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
222	14.65	0.94	0.00	0.94	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
223	14.73	0.94	0.00	0.94	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
224	14.79	0.94	0.00	0.94	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
225	14.84	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
226	14.91	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
227	14.97	0.96	0.00	0.96	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
228	15.06	0.96	0.00	0.96	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
229	15.11	0.96	0.00	0.96	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
230	15.20	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
231	15.25	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
232	15.30	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
233	15.36	0.98	0.00	0.98	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
234	15.44	0.98	0.00	0.98	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
235	15.49	0.99	0.00	0.99	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
236	15.55	0.99	0.00	0.99	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
237	15.63	0.99	0.00	0.99	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
238	15.73	1.00	0.00	1.00	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
239	15.78	1.00	0.00	1.00	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
240	15.82	1.01	0.00	1.01	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.91	1.01	0.00	1.01	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
242	15.96	1.01	0.00	1.01	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
243	16.05	1.02	0.00	1.02	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
244	16.10	1.02	0.00	1.02	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
245	16.16	1.03	0.00	1.03	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
246	16.24	1.03	0.00	1.03	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
247	16.28	1.03	0.00	1.03	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
248	16.36	1.04	0.00	1.04	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
249	16.42	1.04	0.00	1.04	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
250	16.51	1.05	0.00	1.05	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
251	16.55	1.05	0.00	1.05	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
252	16.61	1.05	0.00	1.05	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
253	16.68	1.06	0.00	1.06	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
254	16.74	1.06	0.00	1.06	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
255	16.83	1.07	0.00	1.07	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
256	16.87	1.07	0.00	1.07	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
257	16.97	1.08	0.00	1.08	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
258	17.06	1.08	0.00	1.08	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
259	17.16	1.09	0.00	1.09	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
260	17.20	1.09	0.00	1.09	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
261	17.29	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
262	17.36	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
263	17.39	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
264	17.47	1.11	0.00	1.11	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
265	17.52	1.11	0.00	1.11	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
266	17.62	1.12	0.00	1.12	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
267	17.71	1.12	0.00	1.12	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
268	17.74	1.12	0.00	1.12	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
269	17.80	1.13	0.00	1.13	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
270	17.86	1.13	0.00	1.13	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
271	17.94	1.14	0.00	1.14	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
272	17.98	1.14	0.00	1.14	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
273	18.05	1.14	0.00	1.14	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
274	18.13	1.15	0.00	1.15	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
275	18.18	1.15	0.00	1.15	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
276	18.26	1.16	0.00	1.16	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
277	18.31	1.16	0.00	1.16	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
278	18.45	1.17	0.00	1.17	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
279	18.55	1.17	0.00	1.17	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
280	18.59	1.18	0.00	1.18	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
281	18.64	1.18	0.00	1.18	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
282	18.74	1.18	0.00	1.18	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
283	18.78	1.19	0.00	1.19	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
284	18.87	1.19	0.00	1.19	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
285	18.92	1.20	0.00	1.20	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
286	18.96	1.20	0.00	1.20	0.96	0.592	1.69	0.351	0.98	1.00	2.000	No
287	19.08	1.20	0.00	1.20	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
288	19.10	1.21	0.00	1.21	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	19.16	1.21	0.00	1.21	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
290	19.24	1.21	0.00	1.21	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
291	19.29	1.22	0.00	1.22	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
292	19.37	1.22	0.00	1.22	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
293	19.43	1.23	0.00	1.23	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
294	19.52	1.23	0.00	1.23	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
295	19.57	1.23	0.00	1.23	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
296	19.66	1.24	0.00	1.24	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
297	19.71	1.24	0.00	1.24	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
298	19.79	1.25	0.00	1.25	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
299	19.84	1.25	0.00	1.25	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
300	19.89	1.25	0.00	1.25	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
301	19.98	1.26	0.00	1.26	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
302	20.02	1.26	0.00	1.26	0.96	0.591	1.69	0.350	0.97	1.00	0.362	No
303	20.09	1.27	0.00	1.26	0.96	0.592	1.69	0.350	0.97	1.00	0.363	No
304	20.16	1.27	0.00	1.26	0.96	0.593	1.69	0.351	0.96	1.00	0.364	No
305	20.25	1.28	0.01	1.27	0.96	0.594	1.69	0.352	0.96	1.00	0.365	No
306	20.30	1.28	0.01	1.27	0.96	0.595	1.69	0.352	0.96	1.00	0.365	No
307	20.34	1.28	0.01	1.27	0.96	0.595	1.69	0.352	0.96	1.00	0.365	No
308	20.43	1.29	0.01	1.27	0.96	0.596	1.69	0.353	0.96	1.00	0.366	No
309	20.48	1.29	0.02	1.27	0.96	0.597	1.69	0.353	0.96	1.00	0.367	No
310	20.57	1.29	0.02	1.28	0.96	0.598	1.69	0.354	0.96	1.00	0.368	No
311	20.62	1.30	0.02	1.28	0.96	0.599	1.69	0.354	0.96	1.00	0.368	No
312	20.67	1.30	0.02	1.28	0.96	0.599	1.69	0.355	0.96	1.00	0.369	No
313	20.75	1.30	0.02	1.28	0.95	0.600	1.69	0.355	0.96	1.00	0.369	No
314	20.81	1.31	0.03	1.28	0.95	0.601	1.69	0.356	0.96	1.00	0.370	No
315	20.90	1.31	0.03	1.29	0.95	0.602	1.69	0.357	0.96	1.00	0.371	No
316	20.94	1.32	0.03	1.29	0.95	0.603	1.69	0.357	0.96	1.00	0.371	No
317	21.03	1.32	0.03	1.29	0.95	0.604	1.69	0.357	0.96	1.00	0.372	No
318	21.08	1.32	0.03	1.29	0.95	0.605	1.69	0.358	0.96	1.00	0.372	No
319	21.13	1.33	0.04	1.29	0.95	0.605	1.69	0.358	0.96	1.00	0.373	No
320	21.22	1.33	0.04	1.29	0.95	0.606	1.69	0.359	0.96	1.00	0.374	No
321	21.27	1.33	0.04	1.29	0.95	0.607	1.69	0.359	0.96	1.00	0.374	No
322	21.34	1.34	0.04	1.30	0.95	0.608	1.69	0.360	0.96	1.00	0.375	No
323	21.41	1.34	0.04	1.30	0.95	0.608	1.69	0.360	0.96	1.00	0.375	No
324	21.50	1.35	0.05	1.30	0.95	0.610	1.69	0.361	0.96	1.00	0.376	No
325	21.53	1.35	0.05	1.30	0.95	0.610	1.69	0.361	0.96	1.00	0.376	No
326	21.59	1.35	0.05	1.30	0.95	0.611	1.69	0.361	0.96	1.00	0.377	No
327	21.68	1.36	0.05	1.31	0.95	0.612	1.69	0.362	0.96	1.00	0.378	No
328	21.73	1.36	0.05	1.31	0.95	0.612	1.69	0.362	0.96	1.00	0.378	No
329	21.82	1.37	0.06	1.31	0.95	0.613	1.69	0.363	0.96	1.00	0.379	No
330	21.86	1.37	0.06	1.31	0.95	0.614	1.69	0.363	0.96	1.00	0.379	No
331	21.94	1.37	0.06	1.31	0.95	0.615	1.69	0.364	0.96	1.00	0.380	No
332	22.01	1.38	0.06	1.31	0.95	0.616	1.69	0.364	0.96	1.00	0.381	No
333	22.06	1.38	0.06	1.32	0.95	0.616	1.69	0.365	0.96	1.00	0.381	No
334	22.15	1.38	0.07	1.32	0.95	0.617	1.69	0.365	0.96	1.00	0.382	No
335	22.20	1.39	0.07	1.32	0.95	0.618	1.69	0.366	0.96	1.00	0.382	No
336	22.25	1.39	0.07	1.32	0.95	0.618	1.69	0.366	0.96	1.00	0.383	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.34	1.40	0.07	1.32	0.95	0.619	1.69	0.367	0.96	1.00	0.383	No
338	22.38	1.40	0.07	1.32	0.95	0.620	1.69	0.367	0.96	1.00	0.384	No
339	22.47	1.40	0.08	1.33	0.95	0.621	1.69	0.367	0.96	1.00	0.384	No
340	22.52	1.41	0.08	1.33	0.95	0.621	1.69	0.368	0.96	1.00	0.385	No
341	22.59	1.41	0.08	1.33	0.95	0.622	1.69	0.368	0.96	1.00	0.385	No
342	22.66	1.41	0.08	1.33	0.95	0.623	1.69	0.369	0.96	1.00	0.386	No
343	22.75	1.42	0.09	1.33	0.95	0.624	1.69	0.369	0.95	1.00	0.387	No
344	22.78	1.42	0.09	1.33	0.95	0.624	1.69	0.369	0.95	1.00	0.387	No
345	22.84	1.42	0.09	1.34	0.95	0.625	1.69	0.370	0.95	1.00	0.388	No
346	22.94	1.43	0.09	1.34	0.95	0.626	1.69	0.370	0.95	1.00	0.388	No
347	22.97	1.43	0.09	1.34	0.95	0.626	1.69	0.371	0.95	1.00	0.389	No
348	23.05	1.44	0.10	1.34	0.95	0.627	1.69	0.371	0.95	1.00	0.389	No
349	23.12	1.44	0.10	1.34	0.95	0.628	1.69	0.372	0.95	1.00	0.390	No
350	23.17	1.44	0.10	1.34	0.95	0.628	1.69	0.372	0.95	1.00	0.390	No
351	23.26	1.45	0.10	1.35	0.95	0.629	1.69	0.373	0.95	1.00	0.391	No
352	23.30	1.45	0.10	1.35	0.95	0.630	1.69	0.373	0.95	1.00	0.391	No
353	23.36	1.46	0.10	1.35	0.95	0.630	1.69	0.373	0.95	1.00	0.392	No
354	23.44	1.46	0.11	1.35	0.95	0.631	1.69	0.374	0.95	1.00	0.392	No
355	23.53	1.46	0.11	1.35	0.95	0.632	1.69	0.374	0.95	1.00	0.393	No
356	23.57	1.47	0.11	1.36	0.95	0.633	1.69	0.374	0.95	1.00	0.394	No
357	23.63	1.47	0.11	1.36	0.95	0.633	1.69	0.375	0.95	1.00	0.394	No
358	23.72	1.48	0.12	1.36	0.95	0.634	1.69	0.375	0.95	1.00	0.395	No
359	23.76	1.48	0.12	1.36	0.95	0.635	1.69	0.376	0.95	1.00	0.395	No
360	23.85	1.48	0.12	1.36	0.95	0.635	1.69	0.376	0.95	1.00	0.396	No
361	23.91	1.49	0.12	1.37	0.95	0.636	1.69	0.376	0.95	1.00	0.396	No
362	23.95	1.49	0.12	1.37	0.95	0.636	1.69	0.377	0.95	1.00	0.397	No
363	24.04	1.49	0.13	1.37	0.95	0.637	1.69	0.377	0.95	1.00	0.397	No
364	24.09	1.50	0.13	1.37	0.94	0.638	1.69	0.378	0.95	1.00	0.398	No
365	24.18	1.50	0.13	1.37	0.94	0.639	1.69	0.378	0.95	1.00	0.398	No
366	24.23	1.51	0.13	1.37	0.94	0.639	1.69	0.378	0.95	1.00	0.399	No
367	24.29	1.51	0.13	1.38	0.94	0.640	1.69	0.379	0.95	1.00	0.399	No
368	24.36	1.51	0.14	1.38	0.94	0.641	1.69	0.379	0.95	1.00	0.400	No
369	24.41	1.52	0.14	1.38	0.94	0.641	1.69	0.379	0.95	1.00	0.400	No
370	24.50	1.52	0.14	1.38	0.94	0.642	1.69	0.380	0.95	1.00	0.401	No
371	24.56	1.52	0.14	1.38	0.94	0.642	1.69	0.380	0.95	1.00	0.401	No
372	24.64	1.53	0.14	1.38	0.94	0.643	1.69	0.381	0.95	1.00	0.402	No
373	24.69	1.53	0.15	1.39	0.94	0.644	1.69	0.381	0.95	1.00	0.402	No
374	24.75	1.54	0.15	1.39	0.94	0.644	1.69	0.381	0.95	1.00	0.403	No
375	24.82	1.54	0.15	1.39	0.94	0.645	1.69	0.382	0.95	1.00	0.403	No
376	24.87	1.54	0.15	1.39	0.94	0.645	1.69	0.382	0.95	1.00	0.404	No
377	24.96	1.55	0.15	1.39	0.94	0.646	1.69	0.383	0.95	1.00	0.404	No
378	25.01	1.55	0.16	1.40	0.94	0.647	1.69	0.383	0.95	1.00	0.405	No
379	25.07	1.55	0.16	1.40	0.94	0.647	1.69	0.383	0.95	1.00	0.405	No
380	25.14	1.56	0.16	1.40	0.94	0.648	1.69	0.384	0.95	1.00	0.406	No
381	25.20	1.56	0.16	1.40	0.94	0.648	1.69	0.384	0.95	1.00	0.406	No
382	25.30	1.57	0.17	1.40	0.94	0.649	1.69	0.384	0.95	1.00	0.407	No
383	25.34	1.57	0.17	1.41	0.94	0.650	1.69	0.385	0.94	1.00	0.407	No
384	25.42	1.58	0.17	1.41	0.94	0.650	1.69	0.385	0.94	1.00	0.408	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.48	1.58	0.17	1.41	0.94	0.651	1.69	0.385	0.94	1.00	0.408	No
386	25.55	1.58	0.17	1.41	0.94	0.652	1.69	0.386	0.94	1.00	0.409	No
387	25.62	1.59	0.18	1.41	0.94	0.652	1.69	0.386	0.94	1.00	0.409	No
388	25.67	1.59	0.18	1.41	0.94	0.653	1.69	0.386	0.94	1.00	0.409	No
389	25.75	1.60	0.18	1.42	0.94	0.653	1.69	0.387	0.94	1.00	0.410	No
390	25.80	1.60	0.18	1.42	0.94	0.654	1.69	0.387	0.94	1.00	0.410	No
391	25.90	1.60	0.18	1.42	0.94	0.655	1.69	0.387	0.94	1.00	0.411	No
392	25.94	1.61	0.19	1.42	0.94	0.655	1.69	0.388	0.94	1.00	0.411	No
393	25.99	1.61	0.19	1.42	0.94	0.655	1.69	0.388	0.94	1.00	0.412	No
394	26.06	1.61	0.19	1.43	0.94	0.656	1.69	0.388	0.94	1.00	0.412	No
395	26.13	1.62	0.19	1.43	0.94	0.657	1.69	0.389	0.94	1.00	0.413	No
396	26.22	1.62	0.19	1.43	0.94	0.657	1.69	0.389	0.94	1.00	0.413	No
397	26.27	1.63	0.20	1.43	0.94	0.658	1.69	0.389	0.94	1.00	0.414	No
398	26.34	1.63	0.20	1.43	0.94	0.658	1.69	0.390	0.94	1.00	0.414	No
399	26.40	1.63	0.20	1.43	0.94	0.659	1.69	0.390	0.94	1.00	0.414	No
400	26.45	1.64	0.20	1.44	0.94	0.659	1.69	0.390	0.94	1.00	0.415	No
401	26.54	1.64	0.20	1.44	0.94	0.660	1.69	0.391	0.94	1.00	0.415	No
402	26.59	1.64	0.21	1.44	0.94	0.660	1.69	0.391	0.94	1.00	0.416	No
403	26.68	1.65	0.21	1.44	0.94	0.661	1.69	0.391	0.94	1.00	0.416	No
404	26.73	1.65	0.21	1.44	0.94	0.662	1.69	0.392	0.94	1.00	0.417	No
405	26.82	1.66	0.21	1.44	0.93	0.662	1.69	0.392	0.94	1.00	0.417	No
406	26.88	1.66	0.21	1.45	0.93	0.663	1.69	0.392	0.94	1.00	0.418	No
407	26.91	1.66	0.22	1.45	0.93	0.663	1.69	0.393	0.94	1.00	0.418	No
408	27.00	1.67	0.22	1.45	0.93	0.664	1.69	0.393	0.94	1.00	0.418	No
409	27.05	1.67	0.22	1.45	0.93	0.664	1.69	0.393	0.94	1.00	0.419	No
410	27.14	1.67	0.22	1.45	0.93	0.665	1.69	0.394	0.94	1.00	0.419	No
411	27.19	1.68	0.22	1.45	0.93	0.665	1.69	0.394	0.94	1.00	0.420	No
412	27.23	1.68	0.23	1.45	0.93	0.666	1.69	0.394	0.94	1.00	0.420	No
413	27.32	1.68	0.23	1.46	0.93	0.666	1.69	0.395	0.94	1.00	0.420	No
414	27.38	1.69	0.23	1.46	0.93	0.667	1.69	0.395	0.94	1.00	0.421	No
415	27.46	1.69	0.23	1.46	0.93	0.668	1.69	0.395	0.94	1.00	0.421	No
416	27.51	1.69	0.23	1.46	0.93	0.668	1.69	0.395	0.94	1.00	0.422	No
417	27.57	1.70	0.24	1.46	0.93	0.668	1.69	0.396	0.94	1.00	0.422	No
418	27.63	1.70	0.24	1.46	0.93	0.669	1.69	0.396	0.94	1.00	0.422	No
419	27.69	1.70	0.24	1.46	0.93	0.669	1.69	0.396	0.94	1.00	0.423	No
420	27.78	1.71	0.24	1.47	0.93	0.670	1.69	0.397	0.94	1.00	0.423	No
421	27.85	1.71	0.24	1.47	0.93	0.671	1.69	0.397	0.94	1.00	0.424	No
422	27.90	1.71	0.25	1.47	0.93	0.671	1.69	0.397	0.94	1.00	0.424	No
423	27.99	1.72	0.25	1.47	0.93	0.672	1.69	0.398	0.94	1.00	0.425	No
424	28.04	1.72	0.25	1.47	0.93	0.672	1.69	0.398	0.94	1.00	0.425	No
425	28.13	1.73	0.25	1.47	0.93	0.673	1.69	0.398	0.94	1.00	0.425	No
426	28.17	1.73	0.25	1.47	0.93	0.673	1.69	0.398	0.94	1.00	0.426	No
427	28.26	1.73	0.26	1.48	0.93	0.674	1.69	0.399	0.94	1.00	0.426	No
428	28.31	1.74	0.26	1.48	0.93	0.674	1.69	0.399	0.94	1.00	0.427	No
429	28.36	1.74	0.26	1.48	0.93	0.674	1.69	0.399	0.94	1.00	0.427	No
430	28.45	1.74	0.26	1.48	0.93	0.675	1.69	0.400	0.94	1.00	0.427	No
431	28.49	1.75	0.26	1.48	0.93	0.675	1.69	0.400	0.93	1.00	0.428	No
432	28.56	1.75	0.27	1.48	0.93	0.676	1.69	0.400	0.93	1.00	0.428	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.63	1.75	0.27	1.48	0.93	0.676	1.69	0.400	0.93	1.00	0.428	No
434	28.73	1.76	0.27	1.49	0.93	0.677	1.69	0.401	0.93	1.00	0.429	No
435	28.78	1.76	0.27	1.49	0.93	0.677	1.69	0.401	0.93	1.00	0.429	No
436	28.82	1.76	0.28	1.49	0.93	0.678	1.69	0.401	0.93	1.00	0.429	No
437	28.91	1.77	0.28	1.49	0.93	0.678	1.69	0.402	0.93	1.00	0.430	No
438	28.96	1.77	0.28	1.49	0.93	0.679	1.69	0.402	0.93	1.00	0.430	No
439	29.05	1.78	0.28	1.49	0.93	0.679	1.69	0.402	0.93	1.00	0.431	No
440	29.09	1.78	0.28	1.49	0.93	0.680	1.69	0.402	0.93	1.00	0.431	No
441	29.15	1.78	0.29	1.50	0.92	0.680	1.69	0.402	0.93	1.00	0.431	No
442	29.23	1.79	0.29	1.50	0.92	0.681	1.69	0.403	0.93	1.00	0.432	No
443	29.28	1.79	0.29	1.50	0.92	0.681	1.69	0.403	0.93	1.00	0.432	No
444	29.37	1.79	0.29	1.50	0.92	0.681	1.69	0.403	0.93	1.00	0.433	No
445	29.42	1.80	0.29	1.50	0.92	0.682	1.69	0.403	0.93	1.00	0.433	No
446	29.46	1.80	0.30	1.51	0.92	0.682	1.69	0.404	0.93	1.00	0.433	No
447	29.56	1.81	0.30	1.51	0.92	0.682	1.69	0.404	0.93	1.00	0.434	No
448	29.60	1.81	0.30	1.51	0.92	0.683	1.69	0.404	0.93	1.00	0.434	No
449	29.67	1.81	0.30	1.51	0.92	0.683	1.69	0.404	0.93	1.00	0.434	No
450	29.74	1.82	0.30	1.51	0.92	0.684	1.69	0.405	0.93	1.00	0.435	No
451	29.83	1.82	0.31	1.52	0.92	0.684	1.69	0.405	0.93	1.00	0.435	No
452	29.92	1.83	0.31	1.52	0.92	0.685	1.69	0.405	0.93	1.00	0.436	No
453	29.96	1.83	0.31	1.52	0.92	0.685	1.69	0.405	0.93	1.00	0.436	No
454	30.02	1.83	0.31	1.52	0.92	0.685	1.69	0.406	0.93	1.00	0.436	No
455	30.07	1.84	0.31	1.52	0.92	0.685	1.69	0.406	0.93	1.00	0.436	No
456	30.12	1.84	0.32	1.52	0.92	0.686	1.69	0.406	0.93	1.00	0.437	No
457	30.21	1.85	0.32	1.53	0.92	0.686	1.69	0.406	0.93	1.00	0.437	No
458	30.31	1.85	0.32	1.53	0.92	0.687	1.69	0.407	0.93	1.00	0.438	No
459	30.34	1.85	0.32	1.53	0.92	0.687	1.69	0.407	0.93	1.00	0.438	No
460	30.40	1.86	0.32	1.53	0.92	0.687	1.69	0.407	0.93	1.00	0.438	No
461	30.49	1.86	0.33	1.53	0.92	0.688	1.69	0.407	0.93	1.00	0.439	No
462	30.54	1.87	0.33	1.54	0.92	0.688	1.69	0.407	0.93	1.00	0.439	No
463	30.58	1.87	0.33	1.54	0.92	0.688	1.69	0.407	0.93	1.00	0.439	No
464	30.68	1.87	0.33	1.54	0.92	0.689	1.69	0.408	0.93	1.00	0.439	No
465	30.73	1.88	0.33	1.54	0.92	0.689	1.69	0.408	0.93	1.00	0.440	No
466	30.80	1.88	0.34	1.54	0.92	0.690	1.69	0.408	0.93	1.00	0.440	No
467	30.86	1.88	0.34	1.54	0.92	0.690	1.69	0.408	0.93	1.00	0.440	No
468	30.91	1.89	0.34	1.54	0.92	0.690	1.69	0.409	0.93	1.00	0.441	No
469	31.02	1.89	0.34	1.55	0.92	0.691	1.69	0.409	0.93	1.00	0.441	No
470	31.05	1.89	0.34	1.55	0.92	0.691	1.69	0.409	0.93	1.00	0.441	No
471	31.14	1.90	0.35	1.55	0.91	0.691	1.69	0.409	0.93	1.00	0.442	No
472	31.18	1.90	0.35	1.55	0.91	0.692	1.69	0.409	0.93	1.00	0.442	No
473	31.24	1.90	0.35	1.55	0.91	0.692	1.69	0.410	0.93	1.00	0.442	No
474	31.32	1.91	0.35	1.55	0.91	0.692	1.69	0.410	0.93	1.00	0.443	No
475	31.36	1.91	0.35	1.55	0.91	0.693	1.69	0.410	0.93	1.00	0.443	No
476	31.44	1.91	0.36	1.56	0.91	0.693	1.69	0.410	0.93	1.00	0.443	No
477	31.51	1.92	0.36	1.56	0.91	0.693	1.69	0.410	0.93	1.00	0.443	No
478	31.59	1.92	0.36	1.56	0.91	0.694	1.69	0.411	0.93	1.00	0.444	No
479	31.65	1.92	0.36	1.56	0.91	0.694	1.69	0.411	0.93	1.00	0.444	No
480	31.73	1.93	0.37	1.56	0.91	0.695	1.69	0.411	0.93	1.00	0.444	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.83	1.93	0.37	1.56	0.91	0.695	1.69	0.411	0.92	1.00	0.445	No
482	31.92	1.94	0.37	1.57	0.91	0.695	1.69	0.412	0.92	1.00	0.445	No
483	31.97	1.94	0.37	1.57	0.91	0.696	1.69	0.412	0.92	1.00	0.446	No
484	32.06	1.95	0.38	1.57	0.91	0.696	1.69	0.412	0.92	1.00	0.446	No
485	32.10	1.95	0.38	1.57	0.91	0.696	1.69	0.412	0.92	1.00	0.446	No
486	32.15	1.95	0.38	1.57	0.91	0.697	1.69	0.412	0.92	1.00	0.446	No
487	32.24	1.96	0.38	1.57	0.91	0.697	1.69	0.413	0.92	1.00	0.447	No
488	32.29	1.96	0.38	1.58	0.91	0.697	1.69	0.413	0.92	1.00	0.447	No
489	32.38	1.96	0.39	1.58	0.91	0.698	1.69	0.413	0.92	1.00	0.447	No
490	32.43	1.97	0.39	1.58	0.91	0.698	1.69	0.413	0.92	1.00	0.447	No
491	32.52	1.97	0.39	1.58	0.91	0.698	1.69	0.413	0.92	1.00	0.448	No
492	32.57	1.97	0.39	1.58	0.91	0.698	1.69	0.413	0.92	1.00	0.448	No
493	32.62	1.98	0.39	1.58	0.91	0.699	1.69	0.414	0.92	1.00	0.448	No
494	32.70	1.98	0.40	1.59	0.91	0.699	1.69	0.414	0.92	1.00	0.449	No
495	32.75	1.98	0.40	1.59	0.91	0.699	1.69	0.414	0.92	1.00	0.449	No
496	32.81	1.99	0.40	1.59	0.90	0.699	1.69	0.414	0.92	1.00	0.449	No
497	32.89	1.99	0.40	1.59	0.90	0.700	1.69	0.414	0.92	1.00	0.449	No
498	32.98	2.00	0.41	1.59	0.90	0.700	1.69	0.414	0.92	1.00	0.450	No
499	33.03	2.00	0.41	1.59	0.90	0.700	1.69	0.414	0.92	1.00	0.450	No
500	33.07	2.00	0.41	1.60	0.90	0.700	1.69	0.415	0.92	1.00	0.450	No
501	33.17	2.01	0.41	1.60	0.90	0.701	1.69	0.415	0.92	1.00	0.450	No
502	33.21	2.01	0.41	1.60	0.90	0.701	1.69	0.415	0.92	1.00	0.451	No
503	33.31	2.02	0.42	1.60	0.90	0.701	1.69	0.415	0.92	1.00	0.451	No
504	33.35	2.02	0.42	1.60	0.90	0.701	1.69	0.415	0.92	1.00	0.451	No
505	33.44	2.02	0.42	1.61	0.90	0.702	1.69	0.415	0.92	1.00	0.451	No
506	33.49	2.03	0.42	1.61	0.90	0.702	1.69	0.415	0.92	1.00	0.452	No
507	33.53	2.03	0.42	1.61	0.90	0.702	1.69	0.416	0.92	1.00	0.452	No
508	33.63	2.04	0.43	1.61	0.90	0.702	1.69	0.416	0.92	1.00	0.452	No
509	33.67	2.04	0.43	1.61	0.90	0.702	1.69	0.416	0.92	1.00	0.452	No
510	33.77	2.04	0.43	1.61	0.90	0.703	1.69	0.416	0.92	1.00	0.453	No
511	33.81	2.05	0.43	1.62	0.90	0.703	1.69	0.416	0.92	1.00	0.453	No
512	33.88	2.05	0.43	1.62	0.90	0.703	1.69	0.416	0.92	1.00	0.453	No
513	33.95	2.06	0.44	1.62	0.90	0.703	1.69	0.416	0.92	1.00	0.453	No
514	33.99	2.06	0.44	1.62	0.90	0.703	1.69	0.416	0.92	1.00	0.453	No
515	34.09	2.06	0.44	1.62	0.90	0.704	1.69	0.416	0.92	1.00	0.454	No
516	34.14	2.07	0.44	1.63	0.90	0.704	1.69	0.417	0.92	1.00	0.454	No
517	34.22	2.07	0.44	1.63	0.90	0.704	1.69	0.417	0.92	1.00	0.454	No
518	34.27	2.08	0.45	1.63	0.90	0.704	1.69	0.417	0.92	1.00	0.454	No
519	34.32	2.08	0.45	1.63	0.90	0.704	1.69	0.417	0.92	1.00	0.455	No
520	34.40	2.08	0.45	1.63	0.89	0.704	1.69	0.417	0.92	1.00	0.455	No
521	34.46	2.09	0.45	1.64	0.89	0.705	1.69	0.417	0.92	1.00	0.455	No
522	34.58	2.09	0.45	1.64	0.89	0.705	1.69	0.417	0.92	1.00	0.455	No
523	34.59	2.09	0.46	1.64	0.89	0.705	1.69	0.417	0.92	1.00	0.455	No
524	34.69	2.10	0.46	1.64	0.89	0.705	1.69	0.417	0.92	1.00	0.456	No
525	34.73	2.10	0.46	1.64	0.89	0.705	1.69	0.417	0.92	1.00	0.456	No
526	34.78	2.11	0.46	1.65	0.89	0.705	1.69	0.418	0.92	1.00	0.456	No
527	34.85	2.11	0.46	1.65	0.89	0.705	1.69	0.418	0.92	1.00	0.456	No
528	34.92	2.11	0.47	1.65	0.89	0.706	1.69	0.418	0.92	1.00	0.456	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	35.01	2.12	0.47	1.65	0.89	0.706	1.69	0.418	0.91	1.00	0.457	No
530	35.05	2.12	0.47	1.65	0.89	0.706	1.69	0.418	0.91	1.00	0.457	No
531	35.14	2.13	0.47	1.66	0.89	0.706	1.69	0.418	0.91	1.00	0.457	No
532	35.19	2.13	0.47	1.66	0.89	0.706	1.69	0.418	0.91	1.00	0.457	No
533	35.24	2.14	0.48	1.66	0.89	0.706	1.69	0.418	0.91	1.00	0.457	No
534	35.33	2.14	0.48	1.66	0.89	0.706	1.69	0.418	0.91	1.00	0.458	No
535	35.38	2.14	0.48	1.66	0.89	0.706	1.69	0.418	0.91	1.00	0.458	No
536	35.47	2.15	0.48	1.67	0.89	0.706	1.69	0.418	0.91	1.00	0.458	No
537	35.50	2.15	0.48	1.67	0.89	0.707	1.69	0.418	0.91	1.00	0.458	No
538	35.59	2.16	0.49	1.67	0.89	0.707	1.69	0.418	0.91	1.00	0.458	No
539	35.64	2.16	0.49	1.67	0.89	0.707	1.69	0.418	0.91	1.00	0.458	No
540	35.70	2.17	0.49	1.68	0.89	0.707	1.69	0.418	0.91	1.00	0.459	No
541	35.78	2.17	0.49	1.68	0.89	0.707	1.69	0.418	0.91	1.00	0.459	No
542	35.83	2.17	0.49	1.68	0.88	0.707	1.69	0.418	0.91	1.00	0.459	No
543	35.92	2.18	0.50	1.68	0.88	0.707	1.69	0.419	0.91	1.00	0.459	No
544	35.97	2.18	0.50	1.68	0.88	0.707	1.69	0.419	0.91	1.00	0.459	No
545	36.06	2.19	0.50	1.69	0.88	0.707	1.69	0.419	0.91	1.00	0.460	No
546	36.10	2.19	0.50	1.69	0.88	0.707	1.69	0.419	0.91	1.00	0.460	No
547	36.16	2.19	0.50	1.69	0.88	0.707	1.69	0.419	0.91	1.00	0.460	No
548	36.24	2.20	0.51	1.69	0.88	0.707	1.69	0.419	0.91	1.00	0.460	No
549	36.30	2.20	0.51	1.69	0.88	0.707	1.69	0.419	0.91	1.00	0.460	No
550	36.35	2.21	0.51	1.70	0.88	0.708	1.69	0.419	0.91	1.00	0.460	No
551	36.43	2.21	0.51	1.70	0.88	0.708	1.69	0.419	0.91	1.00	0.460	No
552	36.52	2.22	0.52	1.70	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
553	36.57	2.22	0.52	1.70	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
554	36.62	2.22	0.52	1.71	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
555	36.70	2.23	0.52	1.71	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
556	36.75	2.23	0.52	1.71	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
557	36.84	2.24	0.53	1.71	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
558	36.89	2.24	0.53	1.71	0.88	0.708	1.69	0.419	0.91	1.00	0.461	No
559	36.96	2.25	0.53	1.72	0.88	0.708	1.69	0.419	0.91	1.00	0.462	No
560	37.03	2.25	0.53	1.72	0.88	0.708	1.69	0.419	0.91	1.00	0.462	No
561	37.07	2.25	0.53	1.72	0.88	0.708	1.69	0.419	0.91	1.00	0.462	No
562	37.17	2.26	0.54	1.72	0.87	0.708	1.69	0.419	0.91	1.00	0.462	No
563	37.22	2.26	0.54	1.73	0.87	0.708	1.69	0.419	0.91	1.00	0.462	No
564	37.31	2.27	0.54	1.73	0.87	0.708	1.69	0.419	0.91	1.00	0.462	No
565	37.35	2.27	0.54	1.73	0.87	0.708	1.69	0.419	0.91	1.00	0.462	No
566	37.44	2.28	0.54	1.73	0.87	0.708	1.69	0.419	0.91	1.00	0.462	No
567	37.49	2.28	0.55	1.74	0.87	0.708	1.69	0.419	0.91	1.00	0.463	No
568	37.54	2.28	0.55	1.74	0.87	0.708	1.69	0.419	0.91	1.00	0.463	No
569	37.63	2.29	0.55	1.74	0.87	0.708	1.69	0.419	0.91	1.00	0.463	No
570	37.68	2.29	0.55	1.74	0.87	0.708	1.69	0.419	0.91	1.00	0.463	No
571	37.76	2.30	0.55	1.75	0.87	0.708	1.69	0.419	0.90	1.00	0.463	No
572	37.81	2.30	0.56	1.75	0.87	0.708	1.69	0.419	0.90	1.00	0.463	No
573	37.91	2.31	0.56	1.75	0.87	0.708	1.69	0.419	0.90	1.00	0.463	No
574	37.95	2.31	0.56	1.75	0.87	0.708	1.69	0.419	0.90	1.00	0.463	No
575	38.00	2.32	0.56	1.75	0.87	0.708	1.69	0.419	0.90	1.00	0.463	No
576	38.09	2.32	0.56	1.76	0.87	0.708	1.69	0.419	0.90	1.00	0.464	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	38.14	2.32	0.57	1.76	0.87	0.707	1.69	0.419	0.90	1.00	0.464	No
578	38.20	2.33	0.57	1.76	0.87	0.707	1.69	0.419	0.90	1.00	0.464	No
579	38.26	2.33	0.57	1.76	0.87	0.707	1.69	0.419	0.90	1.00	0.464	No
580	38.32	2.34	0.57	1.77	0.87	0.707	1.69	0.419	0.90	1.00	0.464	No
581	38.41	2.34	0.57	1.77	0.86	0.707	1.69	0.419	0.90	1.00	0.464	No
582	38.46	2.35	0.58	1.77	0.86	0.707	1.69	0.419	0.90	1.00	0.464	No
583	38.55	2.35	0.58	1.77	0.86	0.707	1.69	0.419	0.90	1.00	0.464	No
584	38.59	2.36	0.58	1.78	0.86	0.707	1.69	0.419	0.90	1.00	0.464	No
585	38.69	2.36	0.58	1.78	0.86	0.707	1.69	0.418	0.90	1.00	0.464	No
586	38.74	2.37	0.58	1.78	0.86	0.707	1.69	0.418	0.90	1.00	0.464	No
587	38.78	2.37	0.59	1.78	0.86	0.707	1.69	0.418	0.90	1.00	0.464	No
588	38.88	2.37	0.59	1.79	0.86	0.707	1.69	0.418	0.90	1.00	0.465	No
589	38.91	2.38	0.59	1.79	0.86	0.707	1.69	0.418	0.90	1.00	0.465	No
590	39.01	2.38	0.59	1.79	0.86	0.707	1.69	0.418	0.90	1.00	0.465	No
591	39.06	2.39	0.59	1.79	0.86	0.707	1.69	0.418	0.90	1.00	0.465	No
592	39.15	2.39	0.60	1.80	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
593	39.20	2.40	0.60	1.80	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
594	39.24	2.40	0.60	1.80	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
595	39.32	2.40	0.60	1.80	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
596	39.38	2.41	0.60	1.80	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
597	39.44	2.41	0.61	1.81	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
598	39.52	2.42	0.61	1.81	0.86	0.706	1.69	0.418	0.90	1.00	0.465	No
599	39.57	2.42	0.61	1.81	0.85	0.706	1.69	0.418	0.90	1.00	0.465	No
600	39.63	2.43	0.61	1.81	0.85	0.706	1.69	0.418	0.90	1.00	0.465	No
601	39.71	2.43	0.61	1.82	0.85	0.706	1.69	0.418	0.90	1.00	0.465	No
602	39.78	2.44	0.62	1.82	0.85	0.705	1.69	0.418	0.90	1.00	0.465	No
603	39.84	2.44	0.62	1.82	0.85	0.705	1.69	0.418	0.90	1.00	0.465	No
604	39.91	2.44	0.62	1.82	0.85	0.705	1.69	0.417	0.90	1.00	0.465	No
605	40.01	2.45	0.62	1.83	0.85	0.705	1.69	0.417	0.90	1.00	0.465	No
606	40.04	2.45	0.63	1.83	0.85	0.705	1.69	0.417	0.90	1.00	0.466	No
607	40.09	2.46	0.63	1.83	0.85	0.705	1.69	0.417	0.90	1.00	0.466	No
608	40.19	2.46	0.63	1.83	0.85	0.705	1.69	0.417	0.90	1.00	0.466	No
609	40.23	2.47	0.63	1.83	0.85	0.705	1.69	0.417	0.90	1.00	0.466	No
610	40.32	2.47	0.63	1.84	0.85	0.704	1.69	0.417	0.90	1.00	0.466	No
611	40.37	2.48	0.64	1.84	0.85	0.704	1.69	0.417	0.90	1.00	0.466	No
612	40.46	2.48	0.64	1.84	0.85	0.704	1.69	0.417	0.89	1.00	0.466	No
613	40.51	2.49	0.64	1.85	0.85	0.704	1.69	0.417	0.89	1.00	0.466	No
614	40.56	2.49	0.64	1.85	0.85	0.704	1.69	0.417	0.89	1.00	0.466	No
615	40.63	2.49	0.64	1.85	0.85	0.704	1.69	0.417	0.89	1.00	0.466	No
616	40.69	2.50	0.65	1.85	0.84	0.704	1.69	0.416	0.89	1.00	0.466	No
617	40.79	2.50	0.65	1.86	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
618	40.84	2.51	0.65	1.86	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
619	40.88	2.51	0.65	1.86	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
620	40.97	2.52	0.65	1.86	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
621	41.02	2.52	0.66	1.86	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
622	41.09	2.53	0.66	1.87	0.84	0.703	1.69	0.416	0.89	1.00	0.466	No
623	41.15	2.53	0.66	1.87	0.84	0.702	1.69	0.416	0.89	1.00	0.466	No
624	41.24	2.54	0.66	1.87	0.84	0.702	1.69	0.416	0.89	1.00	0.466	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.29	2.54	0.66	1.87	0.84	0.702	1.69	0.416	0.89	1.00	0.466	No
626	41.35	2.54	0.67	1.88	0.84	0.702	1.69	0.415	0.89	1.00	0.466	No
627	41.41	2.55	0.67	1.88	0.84	0.702	1.69	0.415	0.89	1.00	0.466	No
628	41.48	2.55	0.67	1.88	0.84	0.701	1.69	0.415	0.89	1.00	0.466	No
629	41.58	2.56	0.67	1.89	0.84	0.701	1.69	0.415	0.89	1.00	0.466	No
630	41.62	2.56	0.67	1.89	0.84	0.701	1.69	0.415	0.89	1.00	0.466	No
631	41.67	2.56	0.68	1.89	0.84	0.701	1.69	0.415	0.89	1.00	0.466	No
632	41.76	2.57	0.68	1.89	0.84	0.701	1.69	0.415	0.89	1.00	0.466	No
633	41.80	2.57	0.68	1.89	0.83	0.701	1.69	0.415	0.89	1.00	0.466	No
634	41.89	2.58	0.68	1.90	0.83	0.700	1.69	0.415	0.89	1.00	0.466	No
635	41.94	2.58	0.68	1.90	0.83	0.700	1.69	0.414	0.89	1.00	0.466	No
636	42.00	2.59	0.69	1.90	0.83	0.700	1.69	0.414	0.89	1.00	0.466	No
637	42.09	2.59	0.69	1.90	0.83	0.700	1.69	0.414	0.89	1.00	0.466	No
638	42.13	2.60	0.69	1.91	0.83	0.700	1.69	0.414	0.89	1.00	0.466	No
639	42.19	2.60	0.69	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
640	42.28	2.61	0.70	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
641	42.34	2.61	0.70	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
642	42.42	2.61	0.70	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
643	42.46	2.61	0.70	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
644	42.55	2.62	0.70	1.91	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No
645	42.60	2.62	0.71	1.92	0.83	0.699	1.69	0.414	0.89	1.00	0.466	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.09	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
2	0.14	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
3	0.22	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
4	0.27	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
5	0.37	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
6	0.41	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
7	0.46	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
8	0.55	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
9	0.60	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
10	0.69	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
11	0.73	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
12	0.83	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
13	0.87	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
14	0.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
15	1.01	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
16	1.05	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
17	1.15	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
18	1.20	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
19	1.29	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
20	1.33	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
21	1.38	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
22	1.46	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
23	1.52	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
24	1.60	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
25	1.66	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
26	1.74	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
27	1.79	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
28	1.84	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
29	1.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
30	1.98	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
31	2.04	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
32	2.11	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
33	2.20	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
34	2.25	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
35	2.30	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
36	2.39	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
37	2.44	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
38	2.53	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
39	2.57	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
40	2.66	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
41	2.71	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
42	2.76	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
43	2.85	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
44	2.90	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
45	2.98	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
46	3.04	158.09	1.56	0.84	0.50	253.70	1.00	253.70	4.000	No	No	2.00
47	3.12	241.02	1.43	0.81	0.50	386.93	1.00	386.93	4.000	No	No	2.00
48	3.17	247.98	1.40	0.76	0.50	398.10	1.00	398.10	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.22	249.19	1.42	0.80	0.50	400.04	1.00	400.04	4.000	No	No	2.00
50	3.31	247.98	1.45	0.86	0.50	398.09	1.00	398.09	4.000	No	No	2.00
51	3.35	238.22	1.49	0.96	0.50	382.40	1.00	382.40	4.000	No	No	2.00
52	3.44	225.98	1.54	1.06	0.50	362.73	1.00	362.73	4.000	No	No	2.00
53	3.48	212.72	1.62	1.26	0.50	341.42	1.00	341.42	4.000	No	No	2.00
54	3.54	202.47	1.68	1.43	0.51	324.95	1.00	324.95	4.000	No	No	2.00
55	3.62	194.39	1.71	1.52	0.52	311.96	1.01	313.94	4.000	No	No	2.00
56	3.68	184.27	1.76	1.68	0.53	295.69	1.09	323.53	4.000	No	No	2.00
57	3.77	176.34	1.81	1.89	0.55	282.95	1.16	329.42	4.000	No	No	2.00
58	3.82	160.29	1.92	2.39	0.58	257.14	1.25	321.12	4.000	No	No	2.00
59	3.88	152.03	2.00	2.87	0.61	243.87	1.31	318.31	4.000	No	No	2.00
60	3.97	146.54	2.06	3.34	0.63	235.04	1.37	321.45	4.000	No	No	2.00
61	4.01	148.07	2.09	3.61	0.63	237.50	1.40	332.72	4.000	No	No	2.00
62	4.07	141.68	2.14	4.05	0.65	227.23	1.49	337.48	4.000	No	No	2.00
63	4.15	131.60	2.21	4.66	0.67	211.02	1.64	345.42	4.000	No	No	2.00
64	4.20	118.50	2.29	5.39	0.69	189.96	1.87	356.02	4.000	No	No	2.00
65	4.30	108.07	2.34	5.87	0.71	173.20	2.08	360.82	4.000	No	No	2.00
66	4.34	100.20	2.37	6.06	0.72	160.54	2.21	355.43	4.000	No	No	2.00
67	4.43	97.34	2.37	5.92	0.72	155.95	2.21	344.02	4.000	No	No	2.00
68	4.47	96.68	2.35	5.63	0.71	154.88	2.13	329.64	4.000	No	No	2.00
69	4.53	96.65	2.33	5.33	0.71	154.82	2.04	316.43	4.000	No	No	2.00
70	4.62	95.32	2.32	5.14	0.70	152.68	2.00	305.98	4.000	No	No	2.00
71	4.66	89.72	2.34	5.25	0.71	143.68	2.10	301.30	4.000	No	No	2.00
72	4.76	82.38	2.39	5.63	0.72	131.88	2.31	305.27	4.000	No	No	2.00
73	4.80	74.12	2.45	6.24	0.74	118.60	2.66	316.01	4.000	No	No	2.00
74	4.88	71.94	2.47	6.42	0.75	115.10	2.77	319.35	4.000	No	No	2.00
75	4.94	70.14	2.48	6.52	0.75	112.19	2.85	319.76	4.000	No	No	2.00
76	4.99	72.63	2.45	6.12	0.74	116.18	2.65	308.35	4.000	No	No	2.00
77	5.08	74.40	2.42	5.79	0.74	119.02	2.50	298.05	4.000	No	No	2.00
78	5.12	80.68	2.36	5.18	0.72	129.10	2.20	283.46	4.000	No	No	2.00
79	5.22	86.02	2.32	4.75	0.70	137.68	1.99	274.15	4.000	No	No	2.00
80	5.26	89.00	2.29	4.46	0.69	142.46	1.87	266.83	4.000	No	No	2.00
81	5.36	88.22	2.28	4.37	0.69	141.20	1.86	262.17	4.000	No	No	2.00
82	5.40	84.65	2.30	4.43	0.70	135.45	1.91	258.85	4.000	No	No	2.00
83	5.45	80.39	2.31	4.47	0.70	128.60	1.98	254.11	4.000	No	No	2.00
84	5.54	76.38	2.33	4.46	0.71	122.15	2.02	247.16	4.000	No	No	2.00
85	5.58	73.02	2.33	4.41	0.71	116.75	2.06	240.14	4.000	No	No	2.00
86	5.67	71.63	2.34	4.49	0.71	114.50	2.11	241.20	4.000	No	No	2.00
87	5.71	74.52	2.34	4.59	0.71	119.14	2.10	249.63	4.000	No	No	2.00
88	5.78	81.35	2.32	4.57	0.70	130.12	1.99	259.36	4.000	No	No	2.00
89	5.84	95.96	2.24	4.18	0.68	153.57	1.74	266.75	4.000	No	No	2.00
90	5.91	114.04	2.16	3.68	0.65	182.63	1.52	276.91	4.000	No	No	2.00
91	6.00	131.32	2.08	3.25	0.63	210.38	1.39	291.96	4.000	No	No	2.00
92	6.05	138.19	2.04	3.02	0.62	221.41	1.34	297.37	4.000	No	No	2.00
93	6.14	131.16	2.04	2.92	0.62	210.10	1.34	282.30	4.000	No	No	2.00
94	6.27	116.98	2.07	2.94	0.63	187.31	1.38	258.21	4.000	No	No	2.00
95	6.32	100.67	2.12	3.08	0.65	161.09	1.46	234.88	4.000	No	No	2.00
96	6.37	88.43	2.18	3.30	0.66	141.42	1.57	222.36	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.45	78.20	2.24	3.54	0.68	124.99	1.72	215.12	4.000	No	No	2.00
98	6.51	68.69	2.30	3.84	0.70	109.71	1.93	211.92	4.000	No	No	2.00
99	6.57	62.06	2.36	4.19	0.72	99.05	2.17	215.19	4.000	No	No	2.00
100	6.64	58.45	2.40	4.45	0.73	93.23	2.36	219.63	4.000	No	No	2.00
101	6.70	58.23	2.41	4.56	0.73	92.87	2.40	223.35	4.000	No	No	2.00
102	6.78	59.42	2.40	4.54	0.73	94.78	2.37	224.29	4.000	No	No	2.00
103	6.83	61.83	2.40	4.68	0.73	98.65	2.36	233.21	4.000	No	No	2.00
104	6.97	64.36	2.39	4.78	0.73	102.69	2.35	240.94	4.000	No	No	2.00
105	6.98	66.35	2.40	4.99	0.73	105.89	2.38	252.34	4.000	No	No	2.00
106	7.06	68.65	2.40	5.04	0.73	109.58	2.35	257.78	4.000	No	No	2.00
107	7.11	70.54	2.40	5.18	0.73	112.62	2.37	266.67	4.000	No	No	2.00
108	7.18	72.29	2.40	5.34	0.73	115.41	2.39	275.65	4.000	No	No	2.00
109	7.25	73.91	2.41	5.50	0.73	118.01	2.42	285.04	4.000	No	No	2.00
110	7.29	77.43	2.40	5.53	0.73	123.65	2.36	292.10	4.000	No	No	2.00
111	7.36	82.61	2.37	5.38	0.72	131.98	2.23	294.89	4.000	No	No	2.00
112	7.43	92.12	2.32	5.00	0.70	147.25	2.00	294.47	4.000	No	No	2.00
113	7.52	101.53	2.27	4.67	0.69	162.36	1.82	295.46	4.000	No	No	2.00
114	7.56	111.07	2.23	4.40	0.68	177.68	1.69	299.74	4.000	No	No	2.00
115	7.61	116.78	2.21	4.33	0.67	185.87	1.64	305.33	4.000	No	No	2.00
116	7.70	122.59	2.19	4.23	0.67	192.78	1.60	308.30	4.000	No	No	2.00
117	7.76	126.14	2.18	4.12	0.66	196.71	1.57	308.04	4.000	No	No	2.00
118	7.84	128.03	2.17	3.98	0.66	197.53	1.54	303.24	4.000	No	No	2.00
119	7.89	129.80	2.14	3.75	0.65	198.49	1.49	295.82	4.000	No	No	2.00
120	7.96	131.92	2.11	3.44	0.64	199.10	1.44	285.95	4.000	No	No	2.00
121	8.03	134.50	2.08	3.16	0.63	200.45	1.39	278.54	4.000	No	No	2.00
122	8.08	134.59	2.06	2.98	0.63	198.98	1.37	271.85	4.000	No	No	2.00
123	8.16	129.37	2.07	3.01	0.63	190.51	1.38	263.59	4.000	No	No	2.00
124	8.21	114.36	2.12	3.18	0.65	169.41	1.46	246.56	4.000	No	No	2.00
125	8.30	96.27	2.20	3.54	0.67	143.75	1.62	232.89	4.000	No	No	2.00
126	8.34	80.11	2.28	3.90	0.69	121.09	1.85	224.60	4.000	No	No	2.00
127	8.43	76.19	2.29	3.88	0.70	114.59	1.90	217.92	4.000	No	No	2.00
128	8.47	72.96	2.31	3.90	0.70	109.58	1.95	213.97	4.000	No	No	2.00
129	8.56	76.41	2.29	3.75	0.69	113.42	1.87	212.20	4.000	No	No	2.00
130	8.61	80.79	2.27	3.69	0.69	119.08	1.81	215.18	4.000	No	No	2.00
131	8.67	90.92	2.22	3.51	0.67	132.23	1.67	220.80	4.000	No	No	2.00
132	8.75	99.87	2.19	3.42	0.67	143.65	1.59	228.69	4.000	No	No	2.00
133	8.79	103.94	2.20	3.57	0.67	149.14	1.60	239.27	4.000	No	No	2.00
134	8.89	104.78	2.21	3.75	0.67	149.68	1.64	246.20	4.000	No	No	2.00
135	8.94	102.23	2.24	3.99	0.68	146.18	1.72	251.98	4.000	No	No	2.00
136	9.02	100.45	2.25	4.07	0.68	143.05	1.76	252.21	4.000	No	No	2.00
137	9.07	99.65	2.26	4.08	0.69	141.40	1.77	250.70	4.000	No	No	2.00
138	9.13	100.21	2.25	3.96	0.68	141.36	1.74	246.03	4.000	No	No	2.00
139	9.21	100.81	2.23	3.81	0.68	140.99	1.70	240.13	4.000	No	No	2.00
140	9.25	101.43	2.21	3.54	0.67	140.72	1.63	229.98	4.000	No	No	2.00
141	9.34	100.03	2.19	3.34	0.67	137.57	1.60	219.85	4.000	No	No	2.00
142	9.39	94.71	2.19	3.19	0.67	129.71	1.60	207.28	4.000	No	No	2.00
143	9.48	86.38	2.23	3.27	0.68	118.11	1.69	199.22	4.000	No	No	2.00
144	9.53	75.91	2.29	3.51	0.69	104.37	1.87	195.43	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.62	66.44	2.35	3.87	0.71	91.63	2.15	196.77	4.000	No	No	2.00
146	9.67	58.92	2.41	4.12	0.73	81.57	2.41	196.74	4.000	No	No	2.00
147	9.71	52.74	2.44	4.17	0.74	73.10	2.61	190.80	4.000	No	No	2.00
148	9.80	48.67	2.47	4.18	0.75	67.17	2.76	185.57	4.000	No	No	2.00
149	9.85	44.85	2.50	4.36	0.76	61.98	3.01	186.69	4.000	No	No	2.00
150	9.93	42.67	2.55	4.74	0.77	58.94	3.31	195.31	4.000	No	No	2.00
151	9.99	41.03	2.58	5.10	0.78	56.70	3.59	203.75	4.000	No	No	2.00
152	10.04	39.97	2.61	5.45	0.79	55.23	3.84	212.13	4.000	No	Yes	2.00
153	10.13	39.44	2.63	5.72	0.80	54.25	4.03	218.43	4.000	No	Yes	2.00
154	10.18	38.89	2.65	6.04	0.80	53.46	4.24	226.52	4.000	No	Yes	2.00
155	10.27	38.36	2.67	6.31	0.81	52.50	4.43	232.47	4.000	No	Yes	2.00
156	10.32	37.80	2.69	6.57	0.82	51.64	4.61	238.05	4.000	No	Yes	2.00
157	10.40	37.28	2.70	6.75	0.82	50.69	4.75	240.97	4.000	No	Yes	2.00
158	10.45	36.94	2.71	6.87	0.82	50.08	4.85	243.06	4.000	No	Yes	2.00
159	10.50	36.25	2.73	7.05	0.83	49.04	5.01	245.66	4.000	No	Yes	2.00
160	10.59	35.45	2.75	7.25	0.83	47.72	5.20	248.13	4.000	No	Yes	2.00
161	10.64	34.48	2.76	7.48	0.84	46.31	5.42	250.81	4.000	No	Yes	2.00
162	10.70	34.02	2.77	7.59	0.84	45.52	5.53	251.77	4.000	No	Yes	2.00
163	10.78	33.89	2.78	7.63	0.84	45.09	5.58	251.76	4.000	No	Yes	2.00
164	10.87	33.98	2.78	7.62	0.84	44.89	5.60	251.28	4.000	No	Yes	2.00
165	10.92	34.14	2.78	7.62	0.84	44.93	5.59	251.26	4.000	No	Yes	2.00
166	10.96	34.67	2.77	7.55	0.84	45.46	5.51	250.67	4.000	No	Yes	2.00
167	11.05	35.23	2.77	7.48	0.84	45.85	5.45	249.89	4.000	No	Yes	2.00
168	11.10	35.68	2.76	7.45	0.84	46.27	5.41	250.08	4.000	No	Yes	2.00
169	11.19	35.76	2.77	7.48	0.84	46.08	5.43	250.34	4.000	No	Yes	2.00
170	11.24	35.79	2.77	7.51	0.84	45.94	5.46	250.94	4.000	No	Yes	2.00
171	11.37	35.90	2.77	7.52	0.84	45.65	5.48	250.37	4.000	No	Yes	2.00
172	11.39	36.25	2.77	7.47	0.84	46.02	5.43	250.04	4.000	No	Yes	2.00
173	11.42	37.06	2.75	7.33	0.83	46.89	5.30	248.37	4.000	No	Yes	2.00
174	11.49	38.40	2.73	7.09	0.83	48.26	5.08	245.31	4.000	No	Yes	2.00
175	11.56	40.63	2.70	6.74	0.82	50.70	4.75	240.82	4.000	No	Yes	2.00
176	11.65	43.22	2.67	6.37	0.81	53.43	4.41	235.62	4.000	No	Yes	2.00
177	11.70	45.92	2.64	6.04	0.80	56.44	4.09	230.69	4.000	No	Yes	2.00
178	11.79	48.59	2.61	5.75	0.79	59.25	3.82	226.27	4.000	No	Yes	2.00
179	11.84	51.26	2.58	5.50	0.78	62.15	3.58	222.35	4.000	No	No	2.00
180	11.88	53.99	2.55	5.19	0.77	65.12	3.32	216.34	4.000	No	No	2.00
181	11.97	55.92	2.52	4.95	0.77	66.92	3.15	210.63	4.000	No	No	2.00
182	12.02	56.95	2.52	4.92	0.76	67.91	3.10	210.68	4.000	No	No	2.00
183	12.12	57.54	2.52	5.02	0.77	68.25	3.14	214.41	4.000	No	No	2.00
184	12.16	59.12	2.52	5.06	0.76	69.92	3.11	217.64	4.000	No	No	2.00
185	12.21	65.65	2.46	4.64	0.75	77.09	2.74	210.90	4.000	No	No	2.00
186	12.30	76.77	2.38	4.05	0.72	89.12	2.26	201.10	4.000	No	No	2.00
187	12.35	90.72	2.29	3.54	0.69	104.38	1.88	196.39	4.000	No	No	2.00
188	12.43	102.99	2.23	3.26	0.68	117.45	1.69	198.30	4.000	No	No	2.00
189	12.48	110.24	2.21	3.28	0.67	125.24	1.65	206.23	4.000	No	No	2.00
190	12.57	112.44	2.22	3.44	0.68	127.22	1.68	213.57	4.000	No	No	2.00
191	12.61	109.28	2.26	3.72	0.69	123.68	1.78	220.37	4.000	No	No	2.00
192	12.67	102.50	2.30	3.96	0.70	115.96	1.92	222.36	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.76	95.70	2.33	4.15	0.71	107.94	2.06	222.04	4.000	No	No	2.00
194	12.80	90.55	2.35	4.19	0.71	101.97	2.14	217.99	4.000	No	No	2.00
195	12.89	89.84	2.34	4.01	0.71	100.58	2.09	210.01	4.000	No	No	2.00
196	12.94	90.03	2.32	3.75	0.70	100.31	2.00	200.32	4.000	No	No	2.00
197	12.99	89.96	2.30	3.48	0.70	99.79	1.91	190.26	4.000	No	No	2.00
198	13.08	88.18	2.28	3.30	0.69	97.26	1.87	181.65	4.000	No	No	2.00
199	13.13	85.63	2.28	3.13	0.69	94.11	1.84	173.11	4.000	No	No	2.00
200	13.22	83.33	2.28	3.05	0.69	91.14	1.84	168.00	4.000	No	No	2.00
201	13.27	75.69	2.33	3.28	0.71	82.77	2.04	168.78	4.000	No	No	2.00
202	13.36	67.64	2.40	3.73	0.73	73.85	2.39	176.43	4.000	No	No	2.00
203	13.39	57.67	2.51	4.50	0.76	63.15	3.05	192.28	4.000	No	No	2.00
204	13.49	53.35	2.57	5.01	0.78	58.23	3.48	202.79	4.000	No	No	2.00
205	13.54	50.06	2.62	5.51	0.79	54.57	3.90	212.91	4.000	No	Yes	2.00
206	13.59	48.76	2.64	5.78	0.80	53.06	4.12	218.45	4.000	No	Yes	2.00
207	13.68	48.10	2.65	5.93	0.80	52.09	4.25	221.34	4.000	No	Yes	2.00
208	13.72	47.14	2.67	6.16	0.81	50.94	4.43	225.88	4.000	No	Yes	2.00
209	13.82	46.85	2.68	6.30	0.81	50.36	4.54	228.63	4.000	No	Yes	2.00
210	13.87	46.54	2.69	6.43	0.82	49.91	4.64	231.41	4.000	No	Yes	2.00
211	13.95	46.60	2.69	6.41	0.82	49.71	4.64	230.48	4.000	No	Yes	2.00
212	14.00	46.32	2.70	6.41	0.82	49.27	4.66	229.65	4.000	No	Yes	2.00
213	14.05	45.39	2.71	6.50	0.82	48.16	4.78	230.24	4.000	No	Yes	2.00
214	14.14	44.06	2.73	6.70	0.83	46.49	4.99	232.18	4.000	No	Yes	2.00
215	14.19	42.60	2.75	6.94	0.83	44.83	5.24	234.93	4.000	No	Yes	2.00
216	14.24	41.57	2.77	7.14	0.84	43.64	5.44	237.41	4.000	No	Yes	2.00
217	14.31	41.32	2.77	7.22	0.84	43.20	5.51	238.16	4.000	No	Yes	2.00
218	14.37	42.13	2.76	7.04	0.84	43.88	5.37	235.46	4.000	No	Yes	2.00
219	14.46	43.44	2.74	6.75	0.83	44.98	5.13	230.56	4.000	No	Yes	2.00
220	14.51	45.05	2.71	6.37	0.82	46.53	4.82	224.07	4.000	No	Yes	2.00
221	14.59	46.20	2.69	6.07	0.81	47.48	4.59	218.02	4.000	No	Yes	2.00
222	14.65	47.72	2.66	5.66	0.81	48.84	4.28	209.18	4.000	No	Yes	2.00
223	14.73	48.99	2.63	5.25	0.80	49.88	4.00	199.41	4.000	No	Yes	2.00
224	14.79	50.27	2.59	4.82	0.79	50.99	3.70	188.58	4.000	No	No	2.00
225	14.84	50.73	2.56	4.39	0.78	51.29	3.44	176.54	4.000	No	No	2.00
226	14.91	50.95	2.51	3.71	0.76	51.24	3.05	156.14	4.000	No	No	2.00
227	14.97	50.39	2.45	3.03	0.74	50.41	2.68	135.05	4.000	No	No	2.00
228	15.06	49.80	2.41	2.59	0.73	49.53	2.44	120.66	4.000	No	No	2.00
229	15.11	48.22	2.41	2.44	0.73	47.82	2.40	114.93	4.000	No	No	2.00
230	15.20	46.32	2.42	2.41	0.73	45.71	2.47	112.70	4.000	No	No	2.00
231	15.25	44.36	2.42	2.30	0.73	43.64	2.48	108.10	4.000	No	No	2.00
232	15.30	35.85	2.54	2.77	0.77	35.11	3.29	115.52	4.000	No	No	2.00
233	15.36	34.17	2.57	2.90	0.78	33.35	3.53	117.64	4.000	No	No	2.00
234	15.44	32.40	2.61	3.13	0.79	31.46	3.88	122.00	4.000	No	Yes	2.00
235	15.49	38.12	2.53	2.78	0.77	37.02	3.17	117.24	4.000	No	No	2.00
236	15.55	37.78	2.55	2.95	0.77	36.60	3.33	121.80	4.000	No	No	2.00
237	15.63	37.62	2.57	3.19	0.78	36.32	3.53	128.08	4.000	No	No	2.00
238	15.73	37.30	2.60	3.46	0.79	35.86	3.75	134.61	4.000	No	Yes	2.00
239	15.78	36.87	2.63	3.72	0.80	35.35	3.98	140.84	4.000	No	Yes	2.00
240	15.82	35.75	2.66	4.02	0.81	34.19	4.30	147.10	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.91	34.35	2.70	4.35	0.82	32.68	4.69	153.15	4.000	No	Yes	2.00
242	15.96	31.77	2.76	4.96	0.84	30.11	5.40	162.75	4.000	No	Yes	2.00
243	16.05	29.41	2.83	5.60	0.86	27.68	6.18	171.18	4.000	No	Yes	2.00
244	16.10	27.02	2.89	6.38	0.88	25.31	7.11	179.91	4.000	No	Yes	2.00
245	16.16	25.65	2.94	6.95	0.89	23.90	7.76	185.47	4.000	No	Yes	2.00
246	16.24	24.69	2.97	7.42	1.00	22.93	8.28	189.87	4.000	No	Yes	2.00
247	16.28	24.13	2.99	7.77	1.00	22.34	8.65	193.22	4.000	No	Yes	2.00
248	16.36	23.98	3.00	7.96	1.00	22.07	8.84	195.07	4.000	No	Yes	2.00
249	16.42	24.05	3.01	8.06	1.00	22.06	8.90	196.44	4.000	No	Yes	2.00
250	16.51	24.23	3.01	8.07	1.00	22.12	8.90	196.78	4.000	No	Yes	2.00
251	16.55	24.26	3.01	8.12	1.00	22.09	8.94	197.43	4.000	No	Yes	2.00
252	16.61	24.39	3.01	8.15	1.00	22.13	8.95	198.09	4.000	No	Yes	2.00
253	16.68	24.70	3.01	8.13	1.00	22.33	8.89	198.51	4.000	No	Yes	2.00
254	16.74	25.33	3.00	8.03	1.00	22.83	8.71	198.82	4.000	No	Yes	2.00
255	16.83	25.86	2.99	7.95	1.00	23.20	8.57	198.85	4.000	No	Yes	2.00
256	16.87	26.32	2.98	7.90	1.00	23.59	8.46	199.47	4.000	No	Yes	2.00
257	16.97	26.57	2.98	7.90	1.00	23.67	8.44	199.69	4.000	No	Yes	2.00
258	17.06	27.03	2.97	7.80	1.00	23.97	8.31	199.21	4.000	No	Yes	2.00
259	17.16	27.12	2.97	7.76	1.00	23.93	8.29	198.44	4.000	No	Yes	2.00
260	17.20	26.60	2.98	7.84	1.00	23.38	8.46	197.91	4.000	No	Yes	2.00
261	17.29	25.54	3.00	8.07	1.00	22.29	8.86	197.35	4.000	No	Yes	2.00
262	17.36	24.51	3.03	8.27	1.00	21.27	9.24	196.56	4.000	No	Yes	2.00
263	17.39	23.83	3.04	8.34	1.00	20.62	9.45	194.91	4.000	No	Yes	2.00
264	17.47	23.27	3.05	8.35	1.00	20.02	9.63	192.76	4.000	No	Yes	2.00
265	17.52	22.71	3.05	8.30	1.00	19.45	9.75	189.70	4.000	No	Yes	2.00
266	17.62	22.16	3.06	8.23	1.00	18.85	9.89	186.35	4.000	No	Yes	2.00
267	17.71	21.72	3.07	8.16	1.00	18.36	9.99	183.49	4.000	No	Yes	2.00
268	17.74	21.48	3.07	8.10	1.00	18.11	10.03	181.72	4.000	No	Yes	2.00
269	17.80	21.51	3.07	8.01	1.00	18.07	9.98	180.43	4.000	No	Yes	2.00
270	17.86	21.64	3.06	7.88	1.00	18.13	9.87	179.04	4.000	No	Yes	2.00
271	17.94	21.92	3.05	7.74	1.00	18.29	9.72	177.79	4.000	No	Yes	2.00
272	17.98	22.23	3.04	7.60	1.00	18.52	9.55	176.90	4.000	No	Yes	2.00
273	18.05	22.38	3.03	7.36	1.00	18.58	9.36	173.92	4.000	No	Yes	2.00
274	18.13	22.32	3.01	6.87	1.00	18.46	9.04	166.83	4.000	No	Yes	2.00
275	18.18	22.17	3.00	6.42	1.00	18.27	8.75	159.80	4.000	No	Yes	2.00
276	18.26	22.11	2.99	6.14	1.00	18.14	8.57	155.45	4.000	No	Yes	2.00
277	18.31	21.86	3.00	6.25	1.00	17.88	8.74	156.15	4.000	No	Yes	2.00
278	18.45	22.17	3.00	6.27	1.00	18.01	8.71	156.84	4.000	No	Yes	2.00
279	18.55	22.67	2.99	6.25	1.00	18.33	8.60	157.56	4.000	No	Yes	2.00
280	18.59	23.76	2.97	6.13	1.00	19.22	8.26	158.68	4.000	No	Yes	2.00
281	18.64	24.54	2.96	6.18	1.00	19.82	8.13	161.18	4.000	No	Yes	2.00
282	18.74	25.28	2.95	6.23	1.00	20.35	8.04	163.61	4.000	No	Yes	2.00
283	18.78	25.65	2.96	6.41	1.00	20.62	8.11	167.20	4.000	No	Yes	2.00
284	18.87	25.71	2.97	6.61	1.00	20.56	8.26	169.96	4.000	No	Yes	2.00
285	18.92	25.74	2.98	6.81	1.00	20.54	8.42	172.90	4.000	No	Yes	2.00
286	18.96	26.24	2.98	6.87	1.00	20.91	8.37	175.06	4.000	No	Yes	2.00
287	19.08	26.81	2.97	6.83	1.00	21.25	8.26	175.59	4.000	No	Yes	2.00
288	19.10	27.08	2.96	6.77	1.00	21.45	8.17	175.24	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	19.16	26.34	2.97	6.78	1.00	20.77	8.34	173.26	4.000	No	Yes	2.00
290	19.24	25.19	2.99	6.86	1.00	19.74	8.67	171.08	4.000	No	Yes	2.00
291	19.29	24.42	3.00	6.74	1.00	19.05	8.76	166.92	4.000	No	Yes	2.00
292	19.37	24.61	2.98	6.34	1.00	19.13	8.44	161.42	4.000	No	Yes	2.00
293	19.43	26.35	2.91	5.47	0.88	20.86	7.33	152.98	4.000	No	Yes	2.00
294	19.52	28.41	2.84	4.76	0.86	22.54	6.41	144.42	4.000	No	Yes	2.00
295	19.57	30.76	2.77	4.10	0.84	24.52	5.52	135.39	4.000	No	Yes	2.00
296	19.66	32.21	2.72	3.63	0.82	25.69	4.95	127.05	4.000	No	Yes	2.00
297	19.71	32.91	2.68	3.23	0.81	26.26	4.53	118.83	4.000	No	Yes	2.00
298	19.79	32.70	2.66	3.00	0.81	26.01	4.35	113.15	4.000	No	Yes	2.00
299	19.84	32.45	2.66	2.91	0.81	25.76	4.30	110.89	4.000	No	Yes	2.00
300	19.89	33.29	2.64	2.80	0.80	26.43	4.11	108.77	4.000	No	Yes	2.00
301	19.98	32.94	2.65	2.80	0.80	26.05	4.17	108.54	4.000	No	Yes	2.00
302	20.02	34.62	2.62	2.67	0.79	27.42	3.89	106.68	3.600	No	Yes	2.00
303	20.09	36.10	2.60	2.61	0.79	28.60	3.71	106.13	0.191	No	No	0.53
304	20.16	39.24	2.55	2.50	0.77	31.17	3.38	105.20	0.188	No	No	0.52
305	20.25	39.61	2.56	2.60	0.78	31.34	3.44	107.91	0.197	No	No	0.54
306	20.30	38.58	2.59	2.81	0.79	30.39	3.71	112.67	0.213	No	No	0.58
307	20.34	35.91	2.66	3.17	0.80	28.07	4.26	119.55	3.600	No	Yes	2.00
308	20.43	32.90	2.72	3.60	0.82	25.45	4.95	126.05	3.600	No	Yes	2.00
309	20.48	30.20	2.78	3.97	0.84	23.14	5.63	130.35	3.600	No	Yes	2.00
310	20.57	28.87	2.80	4.03	0.85	21.96	5.90	129.58	3.600	No	Yes	2.00
311	20.62	28.56	2.79	3.84	0.85	21.68	5.78	125.42	3.600	No	Yes	2.00
312	20.67	30.36	2.73	3.26	0.83	23.17	4.99	115.67	3.600	No	Yes	2.00
313	20.75	33.68	2.63	2.60	0.80	25.89	4.00	103.53	3.600	No	Yes	2.00
314	20.81	39.43	2.48	1.85	0.75	30.72	2.84	87.12	0.142	No	No	0.38
315	20.90	44.27	2.36	1.39	0.72	34.78	2.18	75.86	0.121	No	No	0.33
316	20.94	49.49	2.24	0.99	0.68	39.27	1.71	67.20	0.108	No	No	0.29
317	21.03	52.94	2.16	0.80	0.66	42.17	1.52	64.30	0.105	No	No	0.28
318	21.08	55.86	2.10	0.69	0.64	44.67	1.42	63.65	0.104	No	No	0.28
319	21.13	56.83	2.09	0.67	0.64	45.43	1.41	63.93	0.104	No	No	0.28
320	21.22	56.26	2.10	0.68	0.64	44.83	1.42	63.64	0.104	No	No	0.28
321	21.27	54.34	2.12	0.71	0.65	43.13	1.46	62.82	0.103	No	No	0.28
322	21.34	51.45	2.17	0.77	0.66	40.58	1.53	62.29	0.102	No	No	0.27
323	21.41	47.53	2.23	0.90	0.68	37.15	1.71	63.44	0.104	No	No	0.28
324	21.50	44.39	2.30	1.08	0.70	34.36	1.94	66.62	0.108	No	No	0.29
325	21.53	41.85	2.37	1.29	0.72	32.14	2.23	71.63	0.114	No	No	0.30
326	21.59	40.73	2.41	1.45	0.73	31.09	2.44	75.92	0.121	No	No	0.32
327	21.68	39.46	2.45	1.58	0.74	29.92	2.63	78.81	0.126	No	No	0.33
328	21.73	37.66	2.48	1.67	0.75	28.39	2.84	80.74	0.129	No	No	0.34
329	21.82	35.02	2.52	1.77	0.77	26.16	3.15	82.31	0.132	No	No	0.35
330	21.86	32.22	2.59	2.02	0.78	23.83	3.66	87.27	0.142	No	No	0.37
331	21.94	29.14	2.67	2.37	0.81	21.26	4.41	93.67	3.600	No	Yes	2.00
332	22.01	27.19	2.74	2.76	0.83	19.61	5.13	100.56	3.600	No	Yes	2.00
333	22.06	25.98	2.80	3.23	0.85	18.59	5.84	108.61	3.600	No	Yes	2.00
334	22.15	24.89	2.86	3.75	0.87	17.65	6.59	116.35	3.600	No	Yes	2.00
335	22.20	23.43	2.92	4.30	0.88	16.46	7.47	122.93	3.600	No	Yes	2.00
336	22.25	22.44	2.94	4.39	0.89	15.67	7.81	122.38	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.34	22.56	2.91	4.02	0.88	15.77	7.41	116.85	3.600	No	Yes	2.00
338	22.38	21.85	2.90	3.67	0.88	15.24	7.22	110.03	3.600	No	Yes	2.00
339	22.47	19.27	2.97	3.82	1.00	12.86	8.29	106.57	3.600	No	Yes	2.00
340	22.52	16.10	3.07	4.36	1.00	10.57	10.08	106.59	3.600	No	Yes	2.00
341	22.59	14.74	3.13	4.81	1.00	9.57	11.26	107.85	3.600	No	Yes	2.00
342	22.66	14.61	3.14	4.91	1.00	9.47	11.46	108.55	3.600	No	Yes	2.00
343	22.75	15.64	3.10	4.64	1.00	10.19	10.65	108.50	3.600	No	Yes	2.00
344	22.78	17.29	3.03	4.13	1.00	11.36	9.37	106.39	3.600	No	Yes	2.00
345	22.84	19.06	2.97	3.71	1.00	12.61	8.27	104.33	3.600	No	Yes	2.00
346	22.94	20.00	2.93	3.58	0.89	13.68	7.68	104.97	3.600	No	Yes	2.00
347	22.97	21.58	2.89	3.43	0.88	14.88	7.07	105.28	3.600	No	Yes	2.00
348	23.05	26.92	2.75	2.79	0.83	19.03	5.27	100.35	3.600	No	Yes	2.00
349	23.12	35.25	2.58	2.12	0.78	25.59	3.57	91.23	0.151	No	No	0.39
350	23.17	43.57	2.44	1.69	0.74	32.24	2.59	83.40	0.134	No	No	0.34
351	23.26	48.60	2.37	1.52	0.72	36.26	2.22	80.45	0.128	No	No	0.33
352	23.30	50.18	2.36	1.51	0.72	37.49	2.16	80.90	0.129	No	No	0.33
353	23.36	49.03	2.38	1.58	0.72	36.50	2.26	82.46	0.132	No	No	0.34
354	23.44	47.51	2.40	1.64	0.73	35.23	2.37	83.45	0.134	No	No	0.34
355	23.53	46.77	2.40	1.63	0.73	34.59	2.40	82.98	0.133	No	No	0.34
356	23.57	47.09	2.40	1.62	0.73	34.83	2.37	82.63	0.132	No	No	0.34
357	23.63	50.57	2.37	1.59	0.72	37.56	2.22	83.43	0.134	No	No	0.34
358	23.72	54.39	2.35	1.60	0.71	40.51	2.11	85.42	0.138	No	No	0.35
359	23.76	55.16	2.36	1.70	0.72	41.03	2.16	88.56	0.145	No	No	0.37
360	23.85	50.21	2.41	1.83	0.73	37.02	2.43	89.95	0.148	No	No	0.37
361	23.91	44.00	2.48	1.94	0.75	32.08	2.82	90.44	0.149	No	No	0.38
362	23.95	38.06	2.54	2.04	0.77	27.42	3.29	90.22	0.148	No	No	0.37
363	24.04	33.43	2.61	2.19	0.79	23.76	3.85	91.52	3.600	No	Yes	2.00
364	24.09	26.16	2.77	2.76	0.84	18.08	5.45	98.61	3.600	No	Yes	2.00
365	24.18	21.10	2.92	3.52	0.88	14.16	7.43	105.19	3.600	No	Yes	2.00
366	24.23	17.29	3.08	4.66	1.00	10.99	10.16	111.67	3.600	No	Yes	2.00
367	24.29	18.38	3.04	4.47	1.00	11.73	9.54	111.97	3.600	No	Yes	2.00
368	24.36	21.43	2.92	3.64	0.88	14.33	7.50	107.50	3.600	No	Yes	2.00
369	24.41	24.22	2.81	2.92	0.85	16.49	6.02	99.25	3.600	No	Yes	2.00
370	24.50	24.31	2.79	2.73	0.85	16.56	5.79	95.85	3.600	No	Yes	2.00
371	24.56	21.32	2.88	3.14	0.87	14.26	6.96	99.17	3.600	No	Yes	2.00
372	24.64	19.43	2.96	3.51	1.00	12.37	8.14	100.74	3.600	No	Yes	2.00
373	24.69	23.78	2.82	2.85	0.85	16.09	6.05	97.40	3.600	No	Yes	2.00
374	24.75	35.53	2.56	1.97	0.78	25.15	3.45	86.85	0.141	No	No	0.35
375	24.82	50.22	2.37	1.52	0.72	36.66	2.20	80.72	0.129	No	No	0.32
376	24.87	60.46	2.29	1.48	0.70	44.65	1.89	84.46	0.136	No	No	0.34
377	24.96	64.49	2.29	1.59	0.69	47.66	1.88	89.39	0.146	No	No	0.36
378	25.01	65.19	2.31	1.74	0.70	48.05	1.96	94.12	0.158	No	No	0.39
379	25.07	65.02	2.34	1.94	0.71	47.74	2.09	99.82	0.173	No	No	0.43
380	25.14	64.37	2.39	2.24	0.72	46.98	2.31	108.43	0.199	No	No	0.49
381	25.20	62.03	2.43	2.45	0.74	45.01	2.52	113.59	0.216	No	No	0.53
382	25.30	58.30	2.46	2.51	0.75	42.05	2.70	113.36	0.215	No	No	0.53
383	25.34	52.68	2.48	2.44	0.75	37.76	2.87	108.20	0.198	No	No	0.49
384	25.42	45.75	2.54	2.51	0.77	32.40	3.29	106.52	0.192	No	No	0.47

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.48	40.53	2.59	2.57	0.79	28.40	3.69	104.93	0.187	No	No	0.46
386	25.55	38.04	2.62	2.63	0.80	26.48	3.95	104.70	3.600	No	Yes	2.00
387	25.62	37.80	2.63	2.68	0.80	26.26	4.03	105.73	3.600	No	Yes	2.00
388	25.67	40.38	2.60	2.60	0.79	28.20	3.74	105.39	0.189	No	No	0.46
389	25.75	42.50	2.57	2.46	0.78	29.79	3.46	103.19	0.182	No	No	0.44
390	25.80	41.53	2.57	2.41	0.78	29.05	3.48	101.18	0.176	No	No	0.43
391	25.90	36.93	2.63	2.55	0.80	25.51	4.00	101.94	3.600	No	Yes	2.00
392	25.94	30.78	2.73	2.84	0.83	20.84	4.98	103.85	3.600	No	Yes	2.00
393	25.99	26.43	2.81	3.14	0.85	17.57	5.99	105.19	3.600	No	Yes	2.00
394	26.06	23.07	2.91	3.67	0.88	15.03	7.29	109.60	3.600	No	Yes	2.00
395	26.13	21.40	2.99	4.24	1.00	13.28	8.56	113.72	3.600	No	Yes	2.00
396	26.22	19.94	3.04	4.70	1.00	12.28	9.50	116.64	3.600	No	Yes	2.00
397	26.27	17.30	3.12	5.11	1.00	10.50	10.95	114.96	3.600	No	Yes	2.00
398	26.34	14.22	3.22	5.65	1.00	8.42	13.18	111.03	3.600	No	Yes	2.00
399	26.40	12.08	3.31	6.16	1.00	6.98	15.37	107.26	3.600	No	Yes	2.00
400	26.45	10.25	3.39	6.67	1.00	5.75	17.88	102.78	3.600	No	Yes	2.00
401	26.54	9.10	3.45	6.74	1.00	4.97	19.56	97.23	3.600	No	Yes	2.00
402	26.59	8.04	3.50	6.60	1.00	4.26	21.24	90.52	3.600	No	Yes	2.00
403	26.68	7.67	3.51	6.29	1.00	4.00	21.60	86.50	3.600	No	Yes	2.00
404	26.73	7.36	3.52	6.18	1.00	3.79	22.14	84.01	3.600	No	Yes	2.00
405	26.82	7.21	3.53	6.25	1.00	3.68	22.63	83.36	3.600	No	Yes	2.00
406	26.88	7.18	3.54	6.19	1.00	3.66	22.64	82.84	3.600	No	Yes	2.00
407	26.91	7.18	3.53	6.11	1.00	3.66	22.53	82.38	3.600	No	Yes	2.00
408	27.00	7.21	3.53	6.04	1.00	3.67	22.38	82.11	3.600	No	Yes	2.00
409	27.05	7.27	3.52	6.04	1.00	3.70	22.25	82.41	3.600	No	Yes	2.00
410	27.14	7.33	3.53	6.17	1.00	3.74	22.33	83.40	3.600	No	Yes	2.00
411	27.19	7.36	3.54	6.44	1.00	3.75	22.67	85.03	3.600	No	Yes	2.00
412	27.23	7.52	3.54	6.66	1.00	3.85	22.64	87.19	3.600	No	Yes	2.00
413	27.32	7.77	3.52	6.65	1.00	4.01	22.10	88.54	3.600	No	Yes	2.00
414	27.38	8.42	3.46	5.96	1.00	4.43	19.86	88.04	3.600	No	Yes	2.00
415	27.46	9.07	3.39	5.15	1.00	4.85	17.69	85.84	3.600	No	Yes	2.00
416	27.51	9.51	3.35	4.71	1.00	5.13	16.46	84.50	3.600	No	Yes	2.00
417	27.57	9.44	3.35	4.79	1.00	5.08	16.67	84.74	3.600	No	Yes	2.00
418	27.63	9.32	3.37	5.01	1.00	5.00	17.17	85.79	3.600	No	Yes	2.00
419	27.69	9.13	3.39	5.13	1.00	4.87	17.62	85.77	3.600	No	Yes	2.00
420	27.78	9.22	3.38	4.98	1.00	4.92	17.30	85.06	3.600	No	Yes	2.00
421	27.85	9.32	3.36	4.75	1.00	4.97	16.84	83.76	3.600	No	Yes	2.00
422	27.90	9.91	3.30	4.13	1.00	5.35	15.17	81.21	3.600	No	Yes	2.00
423	27.99	10.50	3.24	3.58	1.00	5.73	13.68	78.37	3.600	No	Yes	2.00
424	28.04	11.00	3.19	3.08	1.00	6.05	12.41	75.03	3.600	No	Yes	2.00
425	28.13	11.03	3.17	2.87	1.00	6.06	12.03	72.92	3.600	No	Yes	2.00
426	28.17	10.23	3.20	2.90	1.00	5.53	12.84	70.99	3.600	No	Yes	2.00
427	28.26	9.26	3.26	3.06	1.00	4.89	14.21	69.53	3.600	No	Yes	2.00
428	28.31	8.49	3.31	3.20	1.00	4.38	15.53	68.07	3.600	No	Yes	2.00
429	28.36	8.61	3.29	2.96	1.00	4.46	14.89	66.40	3.600	No	Yes	2.00
430	28.45	8.99	3.25	2.73	1.00	4.69	13.95	65.50	3.600	No	Yes	2.00
431	28.49	9.51	3.22	2.68	1.00	5.03	13.23	66.57	3.600	No	Yes	2.00
432	28.56	10.04	3.21	2.77	1.00	5.37	12.85	68.97	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.63	10.88	3.16	2.63	1.00	5.90	11.81	69.72	3.600	No	Yes	2.00
434	28.73	12.56	3.05	2.11	1.00	6.97	9.61	67.00	3.600	No	Yes	2.00
435	28.78	14.30	2.92	1.64	0.88	8.46	7.50	63.45	3.600	No	Yes	2.00
436	28.82	14.80	2.88	1.47	0.87	8.82	6.93	61.17	3.600	No	Yes	2.00
437	28.91	14.02	2.93	1.64	0.89	8.24	7.64	62.97	3.600	No	Yes	2.00
438	28.96	12.87	3.06	2.38	1.00	7.15	9.94	71.01	3.600	No	Yes	2.00
439	29.05	12.35	3.19	3.70	1.00	6.80	12.43	84.50	3.600	No	Yes	2.00
440	29.09	12.26	3.28	5.33	1.00	6.73	14.72	99.02	3.600	No	Yes	2.00
441	29.15	12.75	3.34	7.04	1.00	7.04	16.25	114.42	3.600	No	Yes	2.00
442	29.23	14.37	3.32	7.69	1.00	8.06	15.66	126.21	3.600	No	Yes	2.00
443	29.28	26.42	2.96	4.76	1.00	15.77	8.13	128.22	3.600	No	Yes	2.00
444	29.37	38.32	2.73	3.59	0.83	24.98	5.02	125.29	3.600	No	Yes	2.00
445	29.42	48.48	2.60	3.07	0.79	32.39	3.75	121.32	0.246	No	No	0.57
446	29.46	47.51	2.63	3.33	0.80	31.58	4.02	126.98	3.600	No	Yes	2.00
447	29.56	46.05	2.66	3.56	0.81	30.41	4.32	131.46	3.600	No	Yes	2.00
448	29.60	44.56	2.68	3.68	0.81	29.28	4.54	132.94	3.600	No	Yes	2.00
449	29.67	41.98	2.69	3.52	0.82	27.46	4.62	126.87	3.600	No	Yes	2.00
450	29.74	38.63	2.69	3.10	0.81	25.16	4.56	114.67	3.600	No	Yes	2.00
451	29.83	45.47	2.54	2.25	0.77	30.33	3.23	97.97	0.167	No	No	0.38
452	29.92	56.84	2.39	1.82	0.73	38.85	2.34	90.71	0.149	No	No	0.34
453	29.96	67.40	2.33	1.78	0.71	46.65	2.02	94.47	0.158	No	No	0.36
454	30.02	65.23	2.37	2.02	0.72	44.81	2.24	100.38	0.174	No	No	0.40
455	30.07	57.27	2.48	2.45	0.75	38.66	2.82	109.12	0.201	No	No	0.46
456	30.12	46.47	2.62	3.08	0.79	30.57	3.92	119.86	3.600	No	Yes	2.00
457	30.21	36.20	2.77	3.84	0.84	23.07	5.53	127.59	3.600	No	Yes	2.00
458	30.31	28.15	2.93	4.69	0.89	17.30	7.58	131.22	3.600	No	Yes	2.00
459	30.34	23.24	3.04	5.23	1.00	13.42	9.48	127.32	3.600	No	Yes	2.00
460	30.40	19.76	3.11	5.48	1.00	11.23	10.88	122.13	3.600	No	Yes	2.00
461	30.49	16.44	3.19	5.67	1.00	9.13	12.57	114.67	3.600	No	Yes	2.00
462	30.54	14.36	3.24	5.52	1.00	7.82	13.65	106.67	3.600	No	Yes	2.00
463	30.58	13.33	3.25	5.06	1.00	7.17	13.82	99.09	3.600	No	Yes	2.00
464	30.68	12.56	3.25	4.62	1.00	6.67	13.87	92.55	3.600	No	Yes	2.00
465	30.73	11.60	3.26	4.29	1.00	6.06	14.26	86.44	3.600	No	Yes	2.00
466	30.80	10.76	3.29	4.13	1.00	5.53	14.85	82.19	3.600	No	Yes	2.00
467	30.86	10.01	3.31	3.96	1.00	5.06	15.44	78.18	3.600	No	Yes	2.00
468	30.91	9.52	3.32	3.68	1.00	4.75	15.60	74.08	3.600	No	Yes	2.00
469	31.02	9.27	3.32	3.48	1.00	4.58	15.59	71.47	3.600	No	Yes	2.00
470	31.05	9.09	3.31	3.29	1.00	4.47	15.50	69.24	3.600	No	Yes	2.00
471	31.14	8.93	3.32	3.25	1.00	4.36	15.66	68.35	3.600	No	Yes	2.00
472	31.18	8.87	3.32	3.17	1.00	4.32	15.61	67.46	3.600	No	Yes	2.00
473	31.24	8.75	3.32	3.17	1.00	4.24	15.81	67.05	3.600	No	Yes	2.00
474	31.32	8.81	3.32	3.11	1.00	4.27	15.61	66.66	3.600	No	Yes	2.00
475	31.36	8.91	3.31	3.04	1.00	4.33	15.35	66.40	3.600	No	Yes	2.00
476	31.44	9.22	3.28	2.91	1.00	4.51	14.69	66.29	3.600	No	Yes	2.00
477	31.51	9.63	3.25	2.80	1.00	4.76	13.97	66.51	3.600	No	Yes	2.00
478	31.59	10.00	3.23	2.70	1.00	4.98	13.37	66.58	3.600	No	Yes	2.00
479	31.65	10.72	3.19	2.58	1.00	5.42	12.42	67.29	3.600	No	Yes	2.00
480	31.73	11.40	3.17	2.71	1.00	5.83	12.05	70.30	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.83	12.22	3.15	2.81	1.00	6.32	11.59	73.26	3.600	No	Yes	2.00
482	31.92	12.78	3.13	2.87	1.00	6.65	11.30	75.16	3.600	No	Yes	2.00
483	31.97	13.56	3.09	2.68	1.00	7.13	10.47	74.65	3.600	No	Yes	2.00
484	32.06	14.62	3.04	2.46	1.00	7.77	9.51	73.89	3.600	No	Yes	2.00
485	32.10	15.34	3.01	2.35	1.00	8.20	8.98	73.62	3.600	No	Yes	2.00
486	32.15	15.07	3.03	2.47	1.00	8.03	9.31	74.75	3.600	No	Yes	2.00
487	32.24	14.17	3.08	2.78	1.00	7.46	10.31	76.97	3.600	No	Yes	2.00
488	32.29	13.52	3.15	3.35	1.00	7.06	11.62	82.03	3.600	No	Yes	2.00
489	32.38	13.61	3.17	3.75	1.00	7.10	12.15	86.30	3.600	No	Yes	2.00
490	32.43	14.86	3.13	3.70	1.00	7.85	11.32	88.92	3.600	No	Yes	2.00
491	32.52	16.38	3.07	3.39	1.00	8.77	10.11	88.63	3.600	No	Yes	2.00
492	32.57	18.09	3.01	3.07	1.00	9.80	8.96	87.78	3.600	No	Yes	2.00
493	32.62	18.99	2.99	3.08	1.00	10.34	8.64	89.35	3.600	No	Yes	2.00
494	32.70	19.23	3.00	3.29	1.00	10.47	8.85	92.64	3.600	No	Yes	2.00
495	32.75	19.33	3.03	3.64	1.00	10.52	9.26	97.37	3.600	No	Yes	2.00
496	32.81	19.64	3.04	3.92	1.00	10.70	9.49	101.51	3.600	No	Yes	2.00
497	32.89	20.83	3.02	3.96	1.00	11.40	9.15	104.27	3.600	No	Yes	2.00
498	32.98	22.17	2.99	3.91	1.00	12.18	8.69	105.95	3.600	No	Yes	2.00
499	33.03	23.35	2.97	3.86	1.00	12.89	8.32	107.25	3.600	No	Yes	2.00
500	33.07	24.22	2.96	3.93	1.00	13.40	8.17	109.57	3.600	No	Yes	2.00
501	33.17	24.75	2.96	4.02	1.00	13.70	8.15	111.65	3.600	No	Yes	2.00
502	33.21	25.03	2.96	4.09	1.00	13.86	8.16	113.08	3.600	No	Yes	2.00
503	33.31	24.97	2.97	4.14	1.00	13.79	8.24	113.67	3.600	No	Yes	2.00
504	33.35	24.79	2.98	4.26	1.00	13.67	8.41	115.01	3.600	No	Yes	2.00
505	33.44	24.73	2.99	4.39	1.00	13.61	8.58	116.76	3.600	No	Yes	2.00
506	33.49	24.45	3.00	4.59	1.00	13.43	8.86	119.00	3.600	No	Yes	2.00
507	33.53	24.58	3.01	4.80	1.00	13.50	9.04	122.00	3.600	No	Yes	2.00
508	33.63	24.73	3.02	5.00	1.00	13.56	9.20	124.83	3.600	No	Yes	2.00
509	33.67	26.13	3.00	4.92	1.00	14.39	8.79	126.44	3.600	No	Yes	2.00
510	33.77	28.06	2.96	4.64	1.00	15.51	8.10	125.70	3.600	No	Yes	2.00
511	33.81	30.30	2.90	4.38	0.88	17.81	7.16	127.48	3.600	No	Yes	2.00
512	33.88	31.82	2.88	4.40	0.87	18.80	6.92	130.03	3.600	No	Yes	2.00
513	33.95	32.57	2.88	4.58	0.87	19.23	6.97	134.03	3.600	No	Yes	2.00
514	33.99	33.91	2.88	4.68	0.87	20.08	6.86	137.71	3.600	No	Yes	2.00
515	34.09	35.71	2.85	4.55	0.86	21.27	6.49	137.97	3.600	No	Yes	2.00
516	34.14	37.95	2.81	4.28	0.85	22.79	5.96	135.90	3.600	No	Yes	2.00
517	34.22	38.85	2.79	4.11	0.84	23.40	5.72	133.71	3.600	No	Yes	2.00
518	34.27	38.26	2.80	4.13	0.85	22.98	5.80	133.27	3.600	No	Yes	2.00
519	34.32	36.90	2.82	4.28	0.85	22.02	6.10	134.39	3.600	No	Yes	2.00
520	34.40	35.53	2.84	4.42	0.86	21.06	6.42	135.26	3.600	No	Yes	2.00
521	34.46	34.32	2.86	4.52	0.87	20.22	6.68	135.17	3.600	No	Yes	2.00
522	34.58	33.39	2.88	4.64	0.87	19.54	6.95	135.74	3.600	No	Yes	2.00
523	34.59	32.81	2.92	5.13	0.88	19.07	7.49	142.79	3.600	No	Yes	2.00
524	34.69	34.49	2.93	5.56	0.89	20.06	7.59	152.23	3.600	No	Yes	2.00
525	34.73	40.36	2.87	5.49	0.87	23.88	6.73	160.62	3.600	No	Yes	2.00
526	34.78	41.47	2.88	5.94	0.87	24.50	6.94	170.16	3.600	No	Yes	2.00
527	34.85	57.95	2.68	4.46	0.81	35.76	4.47	159.97	3.600	No	Yes	2.00
528	34.92	63.64	2.64	4.31	0.80	39.58	4.07	161.10	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	35.01	74.06	2.56	3.96	0.78	46.74	3.41	159.38	0.457	No	No	1.00
530	35.05	67.52	2.66	4.96	0.81	41.84	4.32	180.81	3.600	No	Yes	2.00
531	35.14	70.22	2.66	5.15	0.81	43.49	4.32	188.09	3.600	No	Yes	2.00
532	35.19	72.00	2.66	5.22	0.81	44.62	4.29	191.40	3.600	No	Yes	2.00
533	35.24	72.03	2.65	5.12	0.80	44.64	4.23	188.69	3.600	No	Yes	2.00
534	35.33	66.93	2.70	5.44	0.82	41.05	4.67	191.69	3.600	No	Yes	2.00
535	35.38	62.64	2.74	5.74	0.83	38.08	5.09	193.99	3.600	No	Yes	2.00
536	35.47	56.19	2.80	6.33	0.85	33.63	5.90	198.41	3.600	No	Yes	2.00
537	35.50	54.42	2.82	6.36	0.85	32.45	6.05	196.49	3.600	No	Yes	2.00
538	35.59	52.33	2.83	6.41	0.86	31.03	6.27	194.50	3.600	No	Yes	2.00
539	35.64	53.35	2.81	6.03	0.85	31.76	5.93	188.35	3.600	No	Yes	2.00
540	35.70	54.43	2.78	5.65	0.84	32.53	5.59	181.89	3.600	No	Yes	2.00
541	35.78	55.43	2.75	5.27	0.83	33.24	5.26	174.88	3.600	No	Yes	2.00
542	35.83	55.09	2.73	4.93	0.83	33.10	5.05	167.00	3.600	No	Yes	2.00
543	35.92	49.75	2.78	5.11	0.84	29.50	5.59	164.96	3.600	No	Yes	2.00
544	35.97	44.45	2.83	5.40	0.86	25.98	6.30	163.59	3.600	No	Yes	2.00
545	36.06	41.26	2.88	5.69	0.87	23.82	6.89	164.11	3.600	No	Yes	2.00
546	36.10	39.53	2.90	5.91	0.88	22.65	7.28	164.88	3.600	No	Yes	2.00
547	36.16	37.75	2.96	6.40	1.00	20.29	8.18	166.02	3.600	No	Yes	2.00
548	36.24	39.25	2.96	6.54	1.00	21.11	8.09	170.71	3.600	No	Yes	2.00
549	36.30	50.35	2.80	5.44	0.85	29.61	5.81	171.91	3.600	No	Yes	2.00
550	36.35	64.96	2.65	4.49	0.80	39.44	4.20	165.51	3.600	No	Yes	2.00
551	36.43	74.65	2.58	4.21	0.78	45.93	3.60	165.52	0.502	No	No	1.09
552	36.52	75.98	2.59	4.38	0.79	46.65	3.67	171.24	0.547	No	No	1.19
553	36.57	74.27	2.62	4.67	0.79	45.33	3.92	177.74	3.600	No	Yes	2.00
554	36.62	74.23	2.64	4.96	0.80	45.14	4.10	185.11	3.600	No	Yes	2.00
555	36.70	78.19	2.62	4.95	0.80	47.67	3.95	188.35	3.600	No	Yes	2.00
556	36.75	84.16	2.59	4.75	0.78	51.67	3.63	187.55	0.694	No	No	1.50
557	36.84	89.86	2.55	4.48	0.77	55.55	3.31	183.84	0.658	No	No	1.43
558	36.89	91.62	2.55	4.62	0.77	56.56	3.34	189.07	0.709	No	No	1.54
559	36.96	91.11	2.58	4.95	0.78	55.96	3.54	198.25	0.805	No	No	1.74
560	37.03	97.52	2.55	4.82	0.77	60.21	3.31	199.07	0.814	No	No	1.76
561	37.07	99.92	2.53	4.75	0.77	61.82	3.21	198.66	0.809	No	No	1.75
562	37.17	106.04	2.50	4.50	0.76	65.97	2.95	194.86	0.768	No	No	1.66
563	37.22	103.90	2.51	4.64	0.76	64.39	3.07	197.79	0.800	No	No	1.73
564	37.31	106.87	2.49	4.49	0.76	66.37	2.94	195.25	0.772	No	No	1.67
565	37.35	101.30	2.53	4.75	0.77	62.44	3.19	199.36	0.817	No	No	1.77
566	37.44	96.61	2.56	4.92	0.78	59.13	3.40	201.06	4.000	No	No	2.00
567	37.49	86.00	2.62	5.39	0.80	51.88	3.97	205.99	3.600	No	Yes	2.00
568	37.54	79.94	2.68	5.85	0.81	47.71	4.45	212.44	3.600	No	Yes	2.00
569	37.63	78.46	2.69	6.02	0.82	46.60	4.62	215.16	3.600	No	Yes	2.00
570	37.68	90.60	2.60	5.29	0.79	54.76	3.78	206.99	3.600	No	Yes	2.00
571	37.76	104.11	2.51	4.53	0.76	64.03	3.03	194.16	0.761	No	No	1.64
572	37.81	115.12	2.45	4.17	0.74	71.58	2.65	189.42	0.712	No	No	1.54
573	37.91	128.38	2.40	3.95	0.73	80.55	2.36	190.08	0.719	No	No	1.55
574	37.95	149.92	2.32	3.66	0.71	95.36	2.02	192.84	0.747	No	No	1.61
575	38.00	190.91	2.21	3.21	0.67	124.07	1.63	202.85	4.000	No	No	2.00
576	38.09	221.36	2.15	3.08	0.65	145.26	1.51	218.84	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	38.14	240.55	2.13	3.12	0.65	158.36	1.47	233.15	4.000	No	No	2.00
578	38.20	235.56	2.17	3.37	0.66	154.04	1.54	237.13	4.000	No	No	2.00
579	38.26	221.89	2.23	3.80	0.68	143.47	1.69	242.11	4.000	No	No	2.00
580	38.32	204.39	2.23	3.61	0.68	131.83	1.70	224.05	4.000	No	No	2.00
581	38.41	185.72	2.23	3.32	0.68	119.53	1.69	202.46	4.000	No	No	2.00
582	38.46	167.31	2.19	2.74	0.67	108.12	1.60	172.66	0.559	No	No	1.20
583	38.55	148.66	2.25	2.94	0.68	94.81	1.77	167.50	0.517	No	No	1.11
584	38.59	125.88	2.35	3.35	0.71	78.75	2.13	167.87	0.520	No	No	1.12
585	38.69	106.46	2.46	3.98	0.75	65.06	2.72	177.18	0.597	No	No	1.29
586	38.74	91.33	2.56	4.66	0.78	54.64	3.44	188.07	0.699	No	No	1.50
587	38.78	87.28	2.60	4.92	0.79	51.82	3.72	192.62	0.745	No	No	1.60
588	38.88	90.40	2.58	4.86	0.78	53.79	3.59	193.05	0.749	No	No	1.61
589	38.91	102.63	2.51	4.48	0.76	61.92	3.07	190.24	0.720	No	No	1.55
590	39.01	105.00	2.51	4.59	0.76	63.28	3.08	195.07	0.770	No	No	1.66
591	39.06	103.28	2.54	4.87	0.77	61.89	3.27	202.68	4.000	No	No	2.00
592	39.15	113.45	2.49	4.60	0.76	68.59	2.93	200.97	4.000	No	No	2.00
593	39.20	147.81	2.33	3.67	0.71	92.19	2.06	190.17	0.720	No	No	1.55
594	39.24	215.61	2.10	2.61	0.64	140.46	1.42	200.13	4.000	No	No	2.00
595	39.32	266.34	1.98	2.19	0.60	177.35	1.29	229.30	4.000	No	No	2.00
596	39.38	289.38	1.95	2.13	0.59	193.78	1.27	245.85	4.000	No	No	2.00
597	39.44	272.32	2.02	2.47	0.61	179.94	1.32	238.30	4.000	No	No	2.00
598	39.52	244.85	2.12	2.98	0.64	158.78	1.45	229.55	4.000	No	No	2.00
599	39.57	223.41	2.20	3.53	0.67	142.51	1.62	231.47	4.000	No	No	2.00
600	39.63	214.54	2.22	3.54	0.67	136.37	1.66	226.01	4.000	No	No	2.00
601	39.71	204.71	2.23	3.59	0.68	129.53	1.71	221.00	4.000	No	No	2.00
602	39.78	208.80	2.14	2.76	0.65	134.29	1.48	198.33	0.806	No	No	1.73
603	39.84	204.19	2.09	2.35	0.63	132.33	1.40	184.99	0.669	No	No	1.44
604	39.91	195.77	2.04	1.97	0.62	127.75	1.34	171.45	0.549	No	No	1.18
605	40.01	230.14	1.95	1.77	0.59	152.54	1.27	193.90	0.758	No	No	1.63
606	40.04	248.67	1.92	1.72	0.58	165.85	1.25	207.16	4.000	No	No	2.00
607	40.09	311.54	1.80	1.46	0.55	212.57	1.15	244.09	4.000	No	No	2.00
608	40.19	361.96	1.72	1.33	0.52	250.31	1.03	257.53	4.000	No	No	2.00
609	40.23	436.99	1.61	1.13	0.50	306.68	1.00	306.68	4.000	No	No	2.00
610	40.32	456.59	1.58	1.09	0.50	320.23	1.00	320.23	4.000	No	No	2.00
611	40.37	463.30	1.59	1.11	0.50	324.79	1.00	324.79	4.000	No	No	2.00
612	40.46	418.71	1.68	1.32	0.51	291.30	1.00	291.30	4.000	No	No	2.00
613	40.51	447.35	1.65	1.29	0.50	312.59	1.00	312.59	4.000	No	No	2.00
614	40.56	493.93	1.58	1.14	0.50	345.74	1.00	345.74	4.000	No	No	2.00
615	40.63	607.28	1.43	0.86	0.50	425.19	1.00	425.19	4.000	No	No	2.00
616	40.69	697.09	1.34	0.74	0.50	488.05	1.00	488.05	4.000	No	No	2.00
617	40.79	751.60	1.30	0.70	0.50	525.82	1.00	525.82	4.000	No	No	2.00
618	40.84	787.19	1.29	0.70	0.50	550.54	1.00	550.54	4.000	No	No	2.00
619	40.88	722.11	1.38	0.83	0.50	504.65	1.00	504.65	4.000	No	No	2.00
620	40.97	699.63	1.44	0.97	0.50	488.48	1.00	488.48	4.000	No	No	2.00
621	41.02	669.79	1.49	1.09	0.50	467.35	1.00	467.35	4.000	No	No	2.00
622	41.09	703.30	1.49	1.11	0.50	490.44	1.00	490.44	4.000	No	No	2.00
623	41.15	688.55	1.52	1.21	0.50	479.88	1.00	479.88	4.000	No	No	2.00
624	41.24	685.37	1.51	1.18	0.50	477.20	1.00	477.20	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.29	695.20	1.46	1.02	0.50	483.85	1.00	483.85	4.000	No	No	2.00
626	41.35	688.95	1.43	0.94	0.50	479.20	1.00	479.20	4.000	No	No	2.00
627	41.41	685.40	1.48	1.07	0.50	476.42	1.00	476.42	4.000	No	No	2.00
628	41.48	656.51	1.55	1.27	0.50	455.98	1.00	455.98	4.000	No	No	2.00
629	41.58	583.54	1.65	1.52	0.50	404.26	1.00	404.26	4.000	No	No	2.00
630	41.62	524.82	1.72	1.71	0.52	358.56	1.02	366.84	4.000	No	No	2.00
631	41.67	467.04	1.79	1.94	0.55	314.22	1.15	360.27	4.000	No	No	2.00
632	41.76	451.14	1.83	2.07	0.56	301.29	1.18	356.16	4.000	No	No	2.00
633	41.80	401.46	1.87	2.16	0.57	265.60	1.22	323.54	4.000	No	No	2.00
634	41.89	340.51	1.92	2.15	0.58	223.01	1.25	278.20	4.000	No	No	2.00
635	41.94	301.96	1.94	2.12	0.59	196.47	1.27	248.65	4.000	No	No	2.00
636	42.00	274.73	2.03	2.50	0.62	175.65	1.33	234.23	4.000	No	No	2.00
637	42.09	276.47	2.09	2.94	0.63	174.68	1.40	244.82	4.000	No	No	2.00
638	42.13	247.77	2.18	3.52	0.66	153.53	1.57	241.79	4.000	No	No	2.00
639	42.19	250.22	2.04	2.36	0.62	159.27	1.34	213.37	4.000	No	No	2.00
640	42.28	217.51	1.89	1.36	0.57	141.93	1.23	174.52	0.574	No	No	1.23
641	42.34	225.89	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
642	42.42	215.14	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
643	42.46	301.95	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
644	42.55	414.14	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
645	42.60	514.53	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.09	2.00	0.00	0.00	0.00	0.00	0.14	2.00	0.00	0.00	0.00	0.00
0.22	2.00	0.00	0.00	0.00	0.00	0.27	2.00	0.00	0.00	0.00	0.00
0.37	2.00	0.00	0.00	0.00	0.00	0.41	2.00	0.00	0.00	0.00	0.00
0.46	2.00	0.00	0.00	0.00	0.00	0.55	2.00	0.00	0.00	0.00	0.00
0.60	2.00	0.00	0.00	0.00	0.00	0.69	2.00	0.00	0.00	0.00	0.00
0.73	2.00	0.00	0.00	0.00	0.00	0.83	2.00	0.00	0.00	0.00	0.00
0.87	2.00	0.00	0.00	0.00	0.00	0.92	2.00	0.00	0.00	0.00	0.00
1.01	2.00	0.00	0.00	0.00	0.00	1.05	2.00	0.00	0.00	0.00	0.00
1.15	2.00	0.00	0.00	0.00	0.00	1.20	2.00	0.00	0.00	0.00	0.00
1.29	2.00	0.00	0.00	0.00	0.00	1.33	2.00	0.00	0.00	0.00	0.00
1.38	2.00	0.00	0.00	0.00	0.00	1.46	2.00	0.00	0.00	0.00	0.00
1.52	2.00	0.00	0.00	0.00	0.00	1.60	2.00	0.00	0.00	0.00	0.00
1.66	2.00	0.00	0.00	0.00	0.00	1.74	2.00	0.00	0.00	0.00	0.00
1.79	2.00	0.00	0.00	0.00	0.00	1.84	2.00	0.00	0.00	0.00	0.00
1.92	2.00	0.00	0.00	0.00	0.00	1.98	2.00	0.00	0.00	0.00	0.00
2.04	2.00	0.00	0.00	0.00	0.00	2.11	2.00	0.00	0.00	0.00	0.00
2.20	2.00	0.00	0.00	0.00	0.00	2.25	2.00	0.00	0.00	0.00	0.00
2.30	2.00	0.00	0.00	0.00	0.00	2.39	2.00	0.00	0.00	0.00	0.00
2.44	2.00	0.00	0.00	0.00	0.00	2.53	2.00	0.00	0.00	0.00	0.00
2.57	2.00	0.00	0.00	0.00	0.00	2.66	2.00	0.00	0.00	0.00	0.00
2.71	2.00	0.00	0.00	0.00	0.00	2.76	2.00	0.00	0.00	0.00	0.00
2.85	2.00	0.00	0.00	0.00	0.00	2.90	2.00	0.00	0.00	0.00	0.00
2.98	2.00	0.00	0.00	0.00	0.00	3.04	2.00	0.00	0.00	0.06	0.00
3.12	2.00	0.00	0.00	0.08	0.00	3.17	2.00	0.00	0.00	0.05	0.00
3.22	2.00	0.00	0.00	0.05	0.00	3.31	2.00	0.00	0.00	0.09	0.00
3.35	2.00	0.00	0.00	0.04	0.00	3.44	2.00	0.00	0.00	0.09	0.00
3.48	2.00	0.00	0.00	0.04	0.00	3.54	2.00	0.00	0.00	0.06	0.00
3.62	2.00	0.00	0.00	0.08	0.00	3.68	2.00	0.00	0.00	0.06	0.00
3.77	2.00	0.00	0.00	0.09	0.00	3.82	2.00	0.00	0.00	0.05	0.00
3.88	2.00	0.00	0.00	0.06	0.00	3.97	2.00	0.00	0.00	0.09	0.00
4.01	2.00	0.00	0.00	0.04	0.00	4.07	2.00	0.00	0.00	0.06	0.00
4.15	2.00	0.00	0.00	0.08	0.00	4.20	2.00	0.00	0.00	0.05	0.00
4.30	2.00	0.00	0.00	0.10	0.00	4.34	2.00	0.00	0.00	0.05	0.00
4.43	2.00	0.00	0.00	0.09	0.00	4.47	2.00	0.00	0.00	0.04	0.00
4.53	2.00	0.00	0.00	0.06	0.00	4.62	2.00	0.00	0.00	0.08	0.00
4.66	2.00	0.00	0.00	0.05	0.00	4.76	2.00	0.00	0.00	0.10	0.00
4.80	2.00	0.00	0.00	0.04	0.00	4.88	2.00	0.00	0.00	0.08	0.00
4.94	2.00	0.00	0.00	0.06	0.00	4.99	2.00	0.00	0.00	0.05	0.00
5.08	2.00	0.00	0.00	0.09	0.00	5.12	2.00	0.00	0.00	0.05	0.00
5.22	2.00	0.00	0.00	0.09	0.00	5.26	2.00	0.00	0.00	0.05	0.00
5.36	2.00	0.00	0.00	0.09	0.00	5.40	2.00	0.00	0.00	0.04	0.00
5.45	2.00	0.00	0.00	0.05	0.00	5.54	2.00	0.00	0.00	0.09	0.00
5.58	2.00	0.00	0.00	0.05	0.00	5.67	2.00	0.00	0.00	0.09	0.00
5.71	2.00	0.00	0.00	0.04	0.00	5.78	2.00	0.00	0.00	0.07	0.00
5.84	2.00	0.00	0.00	0.06	0.00	5.91	2.00	0.00	0.00	0.07	0.00
6.00	2.00	0.00	0.00	0.09	0.00	6.05	2.00	0.00	0.00	0.05	0.00
6.14	2.00	0.00	0.00	0.09	0.00	6.27	2.00	0.00	0.00	0.14	0.00
6.32	2.00	0.00	0.00	0.05	0.00	6.37	2.00	0.00	0.00	0.04	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.45	2.00	0.00	0.00	0.08	0.00	6.51	2.00	0.00	0.00	0.06	0.00
6.57	2.00	0.00	0.00	0.06	0.00	6.64	2.00	0.00	0.00	0.07	0.00
6.70	2.00	0.00	0.00	0.05	0.00	6.78	2.00	0.00	0.00	0.09	0.00
6.83	2.00	0.00	0.00	0.04	0.00	6.97	2.00	0.00	0.00	0.14	0.00
6.98	2.00	0.00	0.00	0.01	0.00	7.06	2.00	0.00	0.00	0.08	0.00
7.11	2.00	0.00	0.00	0.05	0.00	7.18	2.00	0.00	0.00	0.07	0.00
7.25	2.00	0.00	0.00	0.07	0.00	7.29	2.00	0.00	0.00	0.05	0.00
7.36	2.00	0.00	0.00	0.07	0.00	7.43	2.00	0.00	0.00	0.07	0.00
7.52	2.00	0.00	0.00	0.09	0.00	7.56	2.00	0.00	0.00	0.04	0.00
7.61	2.00	0.00	0.00	0.06	0.00	7.70	2.00	0.00	0.00	0.09	0.00
7.76	2.00	0.00	0.00	0.06	0.00	7.84	2.00	0.00	0.00	0.09	0.00
7.89	2.00	0.00	0.00	0.04	0.00	7.96	2.00	0.00	0.00	0.07	0.00
8.03	2.00	0.00	0.00	0.07	0.00	8.08	2.00	0.00	0.00	0.05	0.00
8.16	2.00	0.00	0.00	0.08	0.00	8.21	2.00	0.00	0.00	0.05	0.00
8.30	2.00	0.00	0.00	0.10	0.00	8.34	2.00	0.00	0.00	0.03	0.00
8.43	2.00	0.00	0.00	0.09	0.00	8.47	2.00	0.00	0.00	0.04	0.00
8.56	2.00	0.00	0.00	0.09	0.00	8.61	2.00	0.00	0.00	0.05	0.00
8.67	2.00	0.00	0.00	0.06	0.00	8.75	2.00	0.00	0.00	0.07	0.00
8.79	2.00	0.00	0.00	0.05	0.00	8.89	2.00	0.00	0.00	0.10	0.00
8.94	2.00	0.00	0.00	0.05	0.00	9.02	2.00	0.00	0.00	0.08	0.00
9.07	2.00	0.00	0.00	0.05	0.00	9.13	2.00	0.00	0.00	0.05	0.00
9.21	2.00	0.00	0.00	0.08	0.00	9.25	2.00	0.00	0.00	0.05	0.00
9.34	2.00	0.00	0.00	0.08	0.00	9.39	2.00	0.00	0.00	0.05	0.00
9.48	2.00	0.00	0.00	0.09	0.00	9.53	2.00	0.00	0.00	0.04	0.00
9.62	2.00	0.00	0.00	0.09	0.00	9.67	2.00	0.00	0.00	0.05	0.00
9.71	2.00	0.00	0.00	0.04	0.00	9.80	2.00	0.00	0.00	0.09	0.00
9.85	2.00	0.00	0.00	0.05	0.00	9.93	2.00	0.00	0.00	0.08	0.00
9.99	2.00	0.00	0.00	0.06	0.00	10.04	2.00	0.00	0.00	0.05	0.00
10.13	2.00	0.00	0.00	0.09	0.00	10.18	2.00	0.00	0.00	0.05	0.00
10.27	2.00	0.00	0.00	0.09	0.00	10.32	2.00	0.00	0.00	0.05	0.00
10.40	2.00	0.00	0.00	0.08	0.00	10.45	2.00	0.00	0.00	0.05	0.00
10.50	2.00	0.00	0.00	0.05	0.00	10.59	2.00	0.00	0.00	0.08	0.00
10.64	2.00	0.00	0.00	0.06	0.00	10.70	2.00	0.00	0.00	0.06	0.00
10.78	2.00	0.00	0.00	0.08	0.00	10.87	2.00	0.00	0.00	0.09	0.00
10.92	2.00	0.00	0.00	0.05	0.00	10.96	2.00	0.00	0.00	0.04	0.00
11.05	2.00	0.00	0.00	0.09	0.00	11.10	2.00	0.00	0.00	0.04	0.00
11.19	2.00	0.00	0.00	0.09	0.00	11.24	2.00	0.00	0.00	0.05	0.00
11.37	2.00	0.00	0.00	0.13	0.00	11.39	2.00	0.00	0.00	0.02	0.00
11.42	2.00	0.00	0.00	0.03	0.00	11.49	2.00	0.00	0.00	0.07	0.00
11.56	2.00	0.00	0.00	0.07	0.00	11.65	2.00	0.00	0.00	0.09	0.00
11.70	2.00	0.00	0.00	0.05	0.00	11.79	2.00	0.00	0.00	0.09	0.00
11.84	2.00	0.00	0.00	0.05	0.00	11.88	2.00	0.00	0.00	0.04	0.00
11.97	2.00	0.00	0.00	0.09	0.00	12.02	2.00	0.00	0.00	0.05	0.00
12.12	2.00	0.00	0.00	0.09	0.00	12.16	2.00	0.00	0.00	0.05	0.00
12.21	2.00	0.00	0.00	0.05	0.00	12.30	2.00	0.00	0.00	0.09	0.00
12.35	2.00	0.00	0.00	0.04	0.00	12.43	2.00	0.00	0.00	0.08	0.00
12.48	2.00	0.00	0.00	0.05	0.00	12.57	2.00	0.00	0.00	0.09	0.00
12.61	2.00	0.00	0.00	0.04	0.00	12.67	2.00	0.00	0.00	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.76	2.00	0.00	0.00	0.09	0.00	12.80	2.00	0.00	0.00	0.04	0.00
12.89	2.00	0.00	0.00	0.09	0.00	12.94	2.00	0.00	0.00	0.06	0.00
12.99	2.00	0.00	0.00	0.05	0.00	13.08	2.00	0.00	0.00	0.09	0.00
13.13	2.00	0.00	0.00	0.05	0.00	13.22	2.00	0.00	0.00	0.09	0.00
13.27	2.00	0.00	0.00	0.05	0.00	13.36	2.00	0.00	0.00	0.09	0.00
13.39	2.00	0.00	0.00	0.03	0.00	13.49	2.00	0.00	0.00	0.10	0.00
13.54	2.00	0.00	0.00	0.05	0.00	13.59	2.00	0.00	0.00	0.04	0.00
13.68	2.00	0.00	0.00	0.09	0.00	13.72	2.00	0.00	0.00	0.04	0.00
13.82	2.00	0.00	0.00	0.10	0.00	13.87	2.00	0.00	0.00	0.04	0.00
13.95	2.00	0.00	0.00	0.09	0.00	14.00	2.00	0.00	0.00	0.05	0.00
14.05	2.00	0.00	0.00	0.05	0.00	14.14	2.00	0.00	0.00	0.09	0.00
14.19	2.00	0.00	0.00	0.05	0.00	14.24	2.00	0.00	0.00	0.05	0.00
14.31	2.00	0.00	0.00	0.07	0.00	14.37	2.00	0.00	0.00	0.06	0.00
14.46	2.00	0.00	0.00	0.09	0.00	14.51	2.00	0.00	0.00	0.04	0.00
14.59	2.00	0.00	0.00	0.08	0.00	14.65	2.00	0.00	0.00	0.06	0.00
14.73	2.00	0.00	0.00	0.09	0.00	14.79	2.00	0.00	0.00	0.05	0.00
14.84	2.00	0.00	0.00	0.05	0.00	14.91	2.00	0.00	0.00	0.07	0.00
14.97	2.00	0.00	0.00	0.07	0.00	15.06	2.00	0.00	0.00	0.09	0.00
15.11	2.00	0.00	0.00	0.04	0.00	15.20	2.00	0.00	0.00	0.09	0.00
15.25	2.00	0.00	0.00	0.05	0.00	15.30	2.00	0.00	0.00	0.05	0.00
15.36	2.00	0.00	0.00	0.06	0.00	15.44	2.00	0.00	0.00	0.09	0.00
15.49	2.00	0.00	0.00	0.05	0.00	15.55	2.00	0.00	0.00	0.06	0.00
15.63	2.00	0.00	0.00	0.08	0.00	15.73	2.00	0.00	0.00	0.10	0.00
15.78	2.00	0.00	0.00	0.05	0.00	15.82	2.00	0.00	0.00	0.04	0.00
15.91	2.00	0.00	0.00	0.09	0.00	15.96	2.00	0.00	0.00	0.04	0.00
16.05	2.00	0.00	0.00	0.10	0.00	16.10	2.00	0.00	0.00	0.05	0.00
16.16	2.00	0.00	0.00	0.06	0.00	16.24	2.00	0.00	0.00	0.08	0.00
16.28	2.00	0.00	0.00	0.04	0.00	16.36	2.00	0.00	0.00	0.09	0.00
16.42	2.00	0.00	0.00	0.05	0.00	16.51	2.00	0.00	0.00	0.09	0.00
16.55	2.00	0.00	0.00	0.05	0.00	16.61	2.00	0.00	0.00	0.05	0.00
16.68	2.00	0.00	0.00	0.08	0.00	16.74	2.00	0.00	0.00	0.06	0.00
16.83	2.00	0.00	0.00	0.09	0.00	16.87	2.00	0.00	0.00	0.03	0.00
16.97	2.00	0.00	0.00	0.10	0.00	17.06	2.00	0.00	0.00	0.09	0.00
17.16	2.00	0.00	0.00	0.09	0.00	17.20	2.00	0.00	0.00	0.04	0.00
17.29	2.00	0.00	0.00	0.09	0.00	17.36	2.00	0.00	0.00	0.07	0.00
17.39	2.00	0.00	0.00	0.03	0.00	17.47	2.00	0.00	0.00	0.08	0.00
17.52	2.00	0.00	0.00	0.05	0.00	17.62	2.00	0.00	0.00	0.09	0.00
17.71	2.00	0.00	0.00	0.09	0.00	17.74	2.00	0.00	0.00	0.03	0.00
17.80	2.00	0.00	0.00	0.07	0.00	17.86	2.00	0.00	0.00	0.06	0.00
17.94	2.00	0.00	0.00	0.08	0.00	17.98	2.00	0.00	0.00	0.05	0.00
18.05	2.00	0.00	0.00	0.07	0.00	18.13	2.00	0.00	0.00	0.07	0.00
18.18	2.00	0.00	0.00	0.06	0.00	18.26	2.00	0.00	0.00	0.08	0.00
18.31	2.00	0.00	0.00	0.05	0.00	18.45	2.00	0.00	0.00	0.14	0.00
18.55	2.00	0.00	0.00	0.11	0.00	18.59	2.00	0.00	0.00	0.04	0.00
18.64	2.00	0.00	0.00	0.05	0.00	18.74	2.00	0.00	0.00	0.09	0.00
18.78	2.00	0.00	0.00	0.04	0.00	18.87	2.00	0.00	0.00	0.10	0.00
18.92	2.00	0.00	0.00	0.05	0.00	18.96	2.00	0.00	0.00	0.04	0.00
19.08	2.00	0.00	0.00	0.11	0.00	19.10	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
19.16	2.00	0.00	0.00	0.06	0.00	19.24	2.00	0.00	0.00	0.08	0.00
19.29	2.00	0.00	0.00	0.05	0.00	19.37	2.00	0.00	0.00	0.08	0.00
19.43	2.00	0.00	0.00	0.06	0.00	19.52	2.00	0.00	0.00	0.09	0.00
19.57	2.00	0.00	0.00	0.05	0.00	19.66	2.00	0.00	0.00	0.09	0.00
19.71	2.00	0.00	0.00	0.05	0.00	19.79	2.00	0.00	0.00	0.08	0.00
19.84	2.00	0.00	0.00	0.05	0.00	19.89	2.00	0.00	0.00	0.04	0.00
19.98	2.00	0.00	0.00	0.09	0.00	20.02	2.00	0.00	0.00	0.05	0.00
20.09	0.53	0.00	0.00	0.07	0.07	20.16	0.52	0.00	0.00	0.06	0.06
20.25	0.54	0.00	0.00	0.10	0.09	20.30	0.58	0.00	0.00	0.05	0.04
20.34	2.00	0.00	0.00	0.04	0.00	20.43	2.00	0.00	0.00	0.08	0.00
20.48	2.00	0.00	0.00	0.06	0.00	20.57	2.00	0.00	0.00	0.09	0.00
20.62	2.00	0.00	0.00	0.05	0.00	20.67	2.00	0.00	0.00	0.05	0.00
20.75	2.00	0.00	0.00	0.08	0.00	20.81	0.38	0.62	0.37	0.05	0.07
20.90	0.33	0.67	0.34	0.09	0.13	20.94	0.29	0.71	0.32	0.04	0.06
21.03	0.28	0.72	0.31	0.09	0.13	21.08	0.28	0.72	0.31	0.05	0.07
21.13	0.28	0.72	0.31	0.05	0.07	21.22	0.28	0.72	0.31	0.09	0.13
21.27	0.28	0.72	0.31	0.04	0.07	21.34	0.27	0.73	0.31	0.07	0.10
21.41	0.28	0.72	0.31	0.07	0.11	21.50	0.29	0.71	0.32	0.09	0.13
21.53	0.30	0.70	0.32	0.03	0.04	21.59	0.32	0.68	0.33	0.06	0.09
21.68	0.33	0.67	0.34	0.10	0.13	21.73	0.34	0.66	0.35	0.05	0.06
21.82	0.35	0.65	0.35	0.09	0.12	21.86	0.37	0.63	0.37	0.04	0.05
21.94	2.00	0.00	0.00	0.07	0.00	22.01	2.00	0.00	0.00	0.08	0.00
22.06	2.00	0.00	0.00	0.05	0.00	22.15	2.00	0.00	0.00	0.09	0.00
22.20	2.00	0.00	0.00	0.05	0.00	22.25	2.00	0.00	0.00	0.05	0.00
22.34	2.00	0.00	0.00	0.09	0.00	22.38	2.00	0.00	0.00	0.05	0.00
22.47	2.00	0.00	0.00	0.09	0.00	22.52	2.00	0.00	0.00	0.05	0.00
22.59	2.00	0.00	0.00	0.07	0.00	22.66	2.00	0.00	0.00	0.08	0.00
22.75	2.00	0.00	0.00	0.09	0.00	22.78	2.00	0.00	0.00	0.02	0.00
22.84	2.00	0.00	0.00	0.07	0.00	22.94	2.00	0.00	0.00	0.09	0.00
22.97	2.00	0.00	0.00	0.04	0.00	23.05	2.00	0.00	0.00	0.07	0.00
23.12	0.39	0.61	0.38	0.07	0.09	23.17	0.34	0.66	0.35	0.05	0.06
23.26	0.33	0.67	0.34	0.09	0.12	23.30	0.33	0.67	0.34	0.05	0.06
23.36	0.34	0.66	0.34	0.06	0.08	23.44	0.34	0.66	0.35	0.08	0.10
23.53	0.34	0.66	0.34	0.09	0.12	23.57	0.34	0.66	0.34	0.04	0.06
23.63	0.34	0.66	0.35	0.05	0.07	23.72	0.35	0.65	0.35	0.09	0.12
23.76	0.37	0.63	0.36	0.05	0.06	23.85	0.37	0.63	0.37	0.09	0.11
23.91	0.38	0.62	0.37	0.05	0.06	23.95	0.37	0.63	0.37	0.05	0.05
24.04	2.00	0.00	0.00	0.09	0.00	24.09	2.00	0.00	0.00	0.05	0.00
24.18	2.00	0.00	0.00	0.10	0.00	24.23	2.00	0.00	0.00	0.04	0.00
24.29	2.00	0.00	0.00	0.06	0.00	24.36	2.00	0.00	0.00	0.08	0.00
24.41	2.00	0.00	0.00	0.05	0.00	24.50	2.00	0.00	0.00	0.09	0.00
24.56	2.00	0.00	0.00	0.05	0.00	24.64	2.00	0.00	0.00	0.08	0.00
24.69	2.00	0.00	0.00	0.05	0.00	24.75	0.35	0.65	0.35	0.06	0.08
24.82	0.32	0.68	0.33	0.08	0.10	24.87	0.34	0.66	0.34	0.05	0.06
24.96	0.36	0.64	0.36	0.09	0.11	25.01	0.39	0.61	0.38	0.05	0.06
25.07	0.43	0.57	0.41	0.06	0.06	25.14	0.49	0.51	0.47	0.07	0.07
25.20	0.53	0.00	0.00	0.07	0.06	25.30	0.53	0.00	0.00	0.09	0.08
25.34	0.49	0.51	0.46	0.05	0.04	25.42	0.47	0.53	0.45	0.08	0.08

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.48	0.46	0.54	0.44	0.06	0.06	25.55	2.00	0.00	0.00	0.07	0.00
25.62	2.00	0.00	0.00	0.07	0.00	25.67	0.46	0.54	0.44	0.05	0.05
25.75	0.44	0.56	0.42	0.09	0.09	25.80	0.43	0.57	0.41	0.05	0.06
25.90	2.00	0.00	0.00	0.09	0.00	25.94	2.00	0.00	0.00	0.04	0.00
25.99	2.00	0.00	0.00	0.05	0.00	26.06	2.00	0.00	0.00	0.07	0.00
26.13	2.00	0.00	0.00	0.07	0.00	26.22	2.00	0.00	0.00	0.09	0.00
26.27	2.00	0.00	0.00	0.05	0.00	26.34	2.00	0.00	0.00	0.08	0.00
26.40	2.00	0.00	0.00	0.06	0.00	26.45	2.00	0.00	0.00	0.04	0.00
26.54	2.00	0.00	0.00	0.09	0.00	26.59	2.00	0.00	0.00	0.05	0.00
26.68	2.00	0.00	0.00	0.09	0.00	26.73	2.00	0.00	0.00	0.05	0.00
26.82	2.00	0.00	0.00	0.09	0.00	26.88	2.00	0.00	0.00	0.06	0.00
26.91	2.00	0.00	0.00	0.03	0.00	27.00	2.00	0.00	0.00	0.09	0.00
27.05	2.00	0.00	0.00	0.05	0.00	27.14	2.00	0.00	0.00	0.09	0.00
27.19	2.00	0.00	0.00	0.05	0.00	27.23	2.00	0.00	0.00	0.05	0.00
27.32	2.00	0.00	0.00	0.09	0.00	27.38	2.00	0.00	0.00	0.05	0.00
27.46	2.00	0.00	0.00	0.09	0.00	27.51	2.00	0.00	0.00	0.05	0.00
27.57	2.00	0.00	0.00	0.06	0.00	27.63	2.00	0.00	0.00	0.06	0.00
27.69	2.00	0.00	0.00	0.06	0.00	27.78	2.00	0.00	0.00	0.09	0.00
27.85	2.00	0.00	0.00	0.06	0.00	27.90	2.00	0.00	0.00	0.05	0.00
27.99	2.00	0.00	0.00	0.09	0.00	28.04	2.00	0.00	0.00	0.05	0.00
28.13	2.00	0.00	0.00	0.09	0.00	28.17	2.00	0.00	0.00	0.05	0.00
28.26	2.00	0.00	0.00	0.09	0.00	28.31	2.00	0.00	0.00	0.05	0.00
28.36	2.00	0.00	0.00	0.05	0.00	28.45	2.00	0.00	0.00	0.09	0.00
28.49	2.00	0.00	0.00	0.04	0.00	28.56	2.00	0.00	0.00	0.07	0.00
28.63	2.00	0.00	0.00	0.08	0.00	28.73	2.00	0.00	0.00	0.09	0.00
28.78	2.00	0.00	0.00	0.06	0.00	28.82	2.00	0.00	0.00	0.04	0.00
28.91	2.00	0.00	0.00	0.10	0.00	28.96	2.00	0.00	0.00	0.04	0.00
29.05	2.00	0.00	0.00	0.09	0.00	29.09	2.00	0.00	0.00	0.05	0.00
29.15	2.00	0.00	0.00	0.05	0.00	29.23	2.00	0.00	0.00	0.09	0.00
29.28	2.00	0.00	0.00	0.05	0.00	29.37	2.00	0.00	0.00	0.10	0.00
29.42	0.57	0.00	0.00	0.05	0.03	29.46	2.00	0.00	0.00	0.04	0.00
29.56	2.00	0.00	0.00	0.09	0.00	29.60	2.00	0.00	0.00	0.04	0.00
29.67	2.00	0.00	0.00	0.07	0.00	29.74	2.00	0.00	0.00	0.07	0.00
29.83	0.38	0.62	0.37	0.09	0.09	29.92	0.34	0.66	0.35	0.09	0.10
29.96	0.36	0.64	0.36	0.04	0.04	30.02	0.40	0.60	0.38	0.05	0.05
30.07	0.46	0.54	0.44	0.05	0.05	30.12	2.00	0.00	0.00	0.06	0.00
30.21	2.00	0.00	0.00	0.09	0.00	30.31	2.00	0.00	0.00	0.10	0.00
30.34	2.00	0.00	0.00	0.03	0.00	30.40	2.00	0.00	0.00	0.07	0.00
30.49	2.00	0.00	0.00	0.09	0.00	30.54	2.00	0.00	0.00	0.05	0.00
30.58	2.00	0.00	0.00	0.04	0.00	30.68	2.00	0.00	0.00	0.09	0.00
30.73	2.00	0.00	0.00	0.05	0.00	30.80	2.00	0.00	0.00	0.07	0.00
30.86	2.00	0.00	0.00	0.06	0.00	30.91	2.00	0.00	0.00	0.05	0.00
31.02	2.00	0.00	0.00	0.11	0.00	31.05	2.00	0.00	0.00	0.03	0.00
31.14	2.00	0.00	0.00	0.09	0.00	31.18	2.00	0.00	0.00	0.04	0.00
31.24	2.00	0.00	0.00	0.06	0.00	31.32	2.00	0.00	0.00	0.08	0.00
31.36	2.00	0.00	0.00	0.04	0.00	31.44	2.00	0.00	0.00	0.07	0.00
31.51	2.00	0.00	0.00	0.07	0.00	31.59	2.00	0.00	0.00	0.09	0.00
31.65	2.00	0.00	0.00	0.05	0.00	31.73	2.00	0.00	0.00	0.08	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.83	2.00	0.00	0.00	0.10	0.00	31.92	2.00	0.00	0.00	0.09	0.00
31.97	2.00	0.00	0.00	0.05	0.00	32.06	2.00	0.00	0.00	0.09	0.00
32.10	2.00	0.00	0.00	0.05	0.00	32.15	2.00	0.00	0.00	0.05	0.00
32.24	2.00	0.00	0.00	0.09	0.00	32.29	2.00	0.00	0.00	0.04	0.00
32.38	2.00	0.00	0.00	0.09	0.00	32.43	2.00	0.00	0.00	0.05	0.00
32.52	2.00	0.00	0.00	0.09	0.00	32.57	2.00	0.00	0.00	0.05	0.00
32.62	2.00	0.00	0.00	0.05	0.00	32.70	2.00	0.00	0.00	0.08	0.00
32.75	2.00	0.00	0.00	0.05	0.00	32.81	2.00	0.00	0.00	0.06	0.00
32.89	2.00	0.00	0.00	0.07	0.00	32.98	2.00	0.00	0.00	0.09	0.00
33.03	2.00	0.00	0.00	0.05	0.00	33.07	2.00	0.00	0.00	0.05	0.00
33.17	2.00	0.00	0.00	0.09	0.00	33.21	2.00	0.00	0.00	0.04	0.00
33.31	2.00	0.00	0.00	0.10	0.00	33.35	2.00	0.00	0.00	0.04	0.00
33.44	2.00	0.00	0.00	0.09	0.00	33.49	2.00	0.00	0.00	0.04	0.00
33.53	2.00	0.00	0.00	0.05	0.00	33.63	2.00	0.00	0.00	0.09	0.00
33.67	2.00	0.00	0.00	0.04	0.00	33.77	2.00	0.00	0.00	0.10	0.00
33.81	2.00	0.00	0.00	0.04	0.00	33.88	2.00	0.00	0.00	0.07	0.00
33.95	2.00	0.00	0.00	0.07	0.00	33.99	2.00	0.00	0.00	0.04	0.00
34.09	2.00	0.00	0.00	0.09	0.00	34.14	2.00	0.00	0.00	0.05	0.00
34.22	2.00	0.00	0.00	0.08	0.00	34.27	2.00	0.00	0.00	0.05	0.00
34.32	2.00	0.00	0.00	0.05	0.00	34.40	2.00	0.00	0.00	0.08	0.00
34.46	2.00	0.00	0.00	0.06	0.00	34.58	2.00	0.00	0.00	0.12	0.00
34.59	2.00	0.00	0.00	0.01	0.00	34.69	2.00	0.00	0.00	0.09	0.00
34.73	2.00	0.00	0.00	0.05	0.00	34.78	2.00	0.00	0.00	0.05	0.00
34.85	2.00	0.00	0.00	0.06	0.00	34.92	2.00	0.00	0.00	0.07	0.00
35.01	1.00	0.00	0.00	0.09	0.00	35.05	2.00	0.00	0.00	0.04	0.00
35.14	2.00	0.00	0.00	0.10	0.00	35.19	2.00	0.00	0.00	0.05	0.00
35.24	2.00	0.00	0.00	0.05	0.00	35.33	2.00	0.00	0.00	0.09	0.00
35.38	2.00	0.00	0.00	0.05	0.00	35.47	2.00	0.00	0.00	0.09	0.00
35.50	2.00	0.00	0.00	0.03	0.00	35.59	2.00	0.00	0.00	0.09	0.00
35.64	2.00	0.00	0.00	0.05	0.00	35.70	2.00	0.00	0.00	0.06	0.00
35.78	2.00	0.00	0.00	0.09	0.00	35.83	2.00	0.00	0.00	0.05	0.00
35.92	2.00	0.00	0.00	0.09	0.00	35.97	2.00	0.00	0.00	0.04	0.00
36.06	2.00	0.00	0.00	0.09	0.00	36.10	2.00	0.00	0.00	0.04	0.00
36.16	2.00	0.00	0.00	0.05	0.00	36.24	2.00	0.00	0.00	0.09	0.00
36.30	2.00	0.00	0.00	0.05	0.00	36.35	2.00	0.00	0.00	0.06	0.00
36.43	1.09	0.00	0.00	0.08	0.00	36.52	1.19	0.00	0.00	0.09	0.00
36.57	2.00	0.00	0.00	0.05	0.00	36.62	2.00	0.00	0.00	0.05	0.00
36.70	2.00	0.00	0.00	0.09	0.00	36.75	1.50	0.00	0.00	0.05	0.00
36.84	1.43	0.00	0.00	0.09	0.00	36.89	1.54	0.00	0.00	0.06	0.00
36.96	1.74	0.00	0.00	0.06	0.00	37.03	1.76	0.00	0.00	0.07	0.00
37.07	1.75	0.00	0.00	0.04	0.00	37.17	1.66	0.00	0.00	0.09	0.00
37.22	1.73	0.00	0.00	0.05	0.00	37.31	1.67	0.00	0.00	0.09	0.00
37.35	1.77	0.00	0.00	0.05	0.00	37.44	2.00	0.00	0.00	0.09	0.00
37.49	2.00	0.00	0.00	0.05	0.00	37.54	2.00	0.00	0.00	0.05	0.00
37.63	2.00	0.00	0.00	0.09	0.00	37.68	2.00	0.00	0.00	0.05	0.00
37.76	1.64	0.00	0.00	0.08	0.00	37.81	1.54	0.00	0.00	0.05	0.00
37.91	1.55	0.00	0.00	0.09	0.00	37.95	1.61	0.00	0.00	0.04	0.00
38.00	2.00	0.00	0.00	0.05	0.00	38.09	2.00	0.00	0.00	0.09	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
38.14	2.00	0.00	0.00	0.05	0.00	38.20	2.00	0.00	0.00	0.06	0.00
38.26	2.00	0.00	0.00	0.06	0.00	38.32	2.00	0.00	0.00	0.06	0.00
38.41	2.00	0.00	0.00	0.09	0.00	38.46	1.20	0.00	0.00	0.05	0.00
38.55	1.11	0.00	0.00	0.09	0.00	38.59	1.12	0.00	0.00	0.04	0.00
38.69	1.29	0.00	0.00	0.11	0.00	38.74	1.50	0.00	0.00	0.04	0.00
38.78	1.60	0.00	0.00	0.05	0.00	38.88	1.61	0.00	0.00	0.09	0.00
38.91	1.55	0.00	0.00	0.04	0.00	39.01	1.66	0.00	0.00	0.10	0.00
39.06	2.00	0.00	0.00	0.05	0.00	39.15	2.00	0.00	0.00	0.09	0.00
39.20	1.55	0.00	0.00	0.05	0.00	39.24	2.00	0.00	0.00	0.04	0.00
39.32	2.00	0.00	0.00	0.08	0.00	39.38	2.00	0.00	0.00	0.07	0.00
39.44	2.00	0.00	0.00	0.05	0.00	39.52	2.00	0.00	0.00	0.08	0.00
39.57	2.00	0.00	0.00	0.05	0.00	39.63	2.00	0.00	0.00	0.07	0.00
39.71	2.00	0.00	0.00	0.08	0.00	39.78	1.73	0.00	0.00	0.07	0.00
39.84	1.44	0.00	0.00	0.06	0.00	39.91	1.18	0.00	0.00	0.06	0.00
40.01	1.63	0.00	0.00	0.11	0.00	40.04	2.00	0.00	0.00	0.03	0.00
40.09	2.00	0.00	0.00	0.05	0.00	40.19	2.00	0.00	0.00	0.09	0.00
40.23	2.00	0.00	0.00	0.04	0.00	40.32	2.00	0.00	0.00	0.09	0.00
40.37	2.00	0.00	0.00	0.05	0.00	40.46	2.00	0.00	0.00	0.09	0.00
40.51	2.00	0.00	0.00	0.05	0.00	40.56	2.00	0.00	0.00	0.05	0.00
40.63	2.00	0.00	0.00	0.07	0.00	40.69	2.00	0.00	0.00	0.06	0.00
40.79	2.00	0.00	0.00	0.10	0.00	40.84	2.00	0.00	0.00	0.05	0.00
40.88	2.00	0.00	0.00	0.04	0.00	40.97	2.00	0.00	0.00	0.09	0.00
41.02	2.00	0.00	0.00	0.05	0.00	41.09	2.00	0.00	0.00	0.08	0.00
41.15	2.00	0.00	0.00	0.05	0.00	41.24	2.00	0.00	0.00	0.10	0.00
41.29	2.00	0.00	0.00	0.05	0.00	41.35	2.00	0.00	0.00	0.06	0.00
41.41	2.00	0.00	0.00	0.07	0.00	41.48	2.00	0.00	0.00	0.06	0.00
41.58	2.00	0.00	0.00	0.10	0.00	41.62	2.00	0.00	0.00	0.04	0.00
41.67	2.00	0.00	0.00	0.05	0.00	41.76	2.00	0.00	0.00	0.09	0.00
41.80	2.00	0.00	0.00	0.05	0.00	41.89	2.00	0.00	0.00	0.09	0.00
41.94	2.00	0.00	0.00	0.04	0.00	42.00	2.00	0.00	0.00	0.06	0.00
42.09	2.00	0.00	0.00	0.09	0.00	42.13	2.00	0.00	0.00	0.04	0.00
42.19	2.00	0.00	0.00	0.07	0.00	42.28	1.23	0.00	0.00	0.09	0.00
42.34	2.00	0.00	0.00	0.05	0.00	42.42	2.00	0.00	0.00	0.08	0.00
42.46	2.00	0.00	0.00	0.04	0.00	42.55	2.00	0.00	0.00	0.09	0.00
42.60	2.00	0.00	0.00	0.05	0.00						

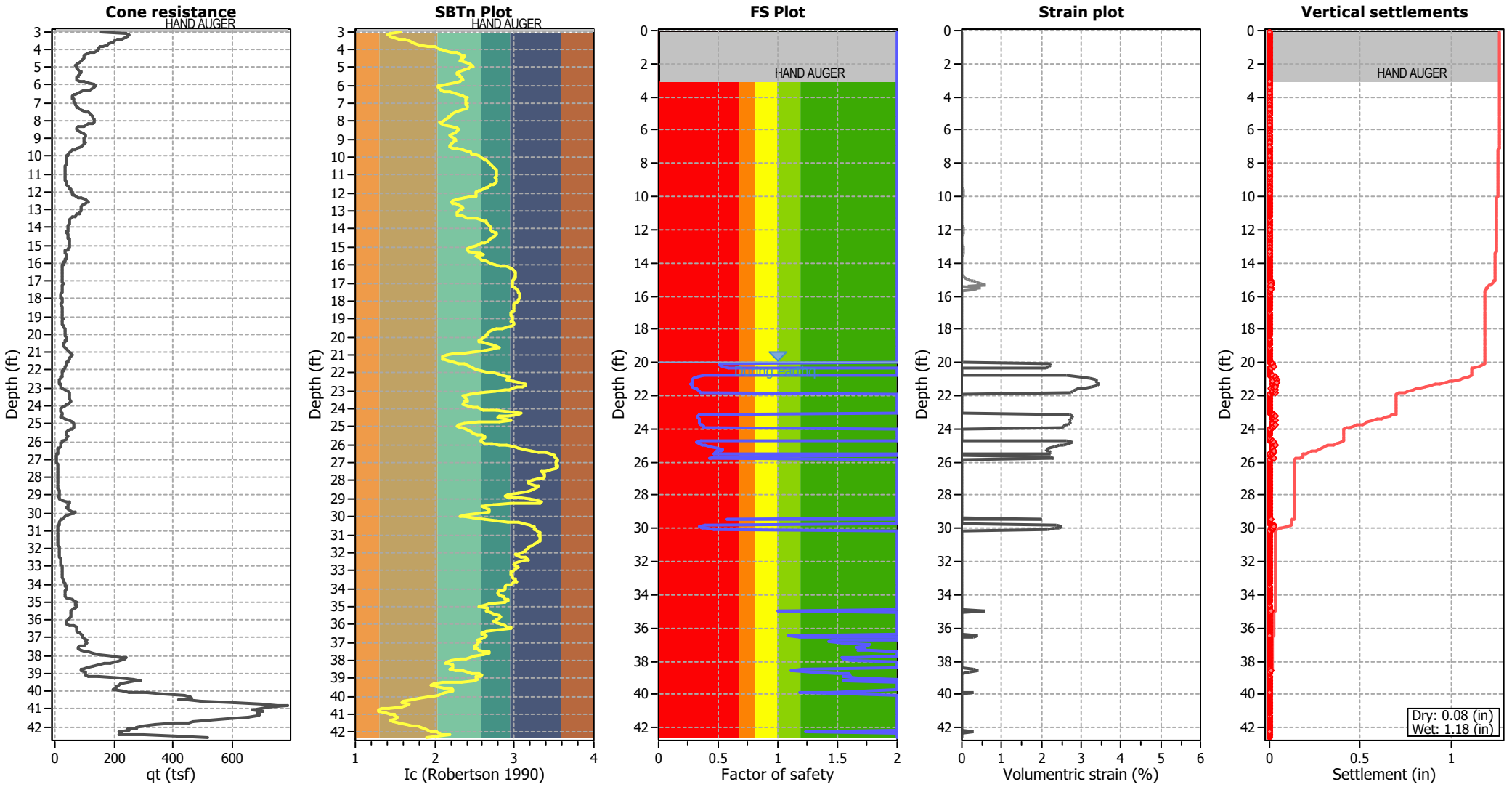
Overall liquefaction potential: 4.40

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.09	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.14	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.22	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.27	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.37	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.41	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.46	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.55	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.60	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.69	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.73	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.83	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.87	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.92	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.01	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.05	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.15	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.20	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.29	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.33	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.38	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.46	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.52	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.60	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.66	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.74	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.79	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.84	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.92	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.98	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.04	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.11	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.20	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.25	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.30	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.39	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.44	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.53	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.57	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.66	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.71	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.76	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.85	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.90	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.98	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.04	1.56	253.70	1.00	253.70	45	1030	0.36	0.019	0.01	5.05	0.00	0.000
3.12	1.43	386.93	1.00	386.93	66	1327	0.36	0.013	0.00	5.05	0.00	0.000
3.17	1.40	398.10	1.00	398.10	67	1320	0.36	0.013	0.00	5.05	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.22	1.42	400.04	1.00	400.04	68	1354	0.36	0.013	0.00	5.05	0.00	0.000
3.31	1.45	398.09	1.00	398.09	68	1393	0.36	0.013	0.00	5.05	0.00	0.000
3.35	1.49	382.40	1.00	382.40	67	1419	0.36	0.012	0.00	5.05	0.00	0.000
3.44	1.54	362.73	1.00	362.73	64	1434	0.36	0.013	0.00	5.05	0.00	0.000
3.48	1.62	341.42	1.00	341.42	62	1484	0.36	0.012	0.00	5.05	0.00	0.000
3.54	1.68	324.95	1.00	324.95	60	1519	0.36	0.012	0.00	5.05	0.00	0.000
3.62	1.71	311.96	1.01	313.94	59	1522	0.36	0.012	0.00	5.05	0.00	0.000
3.68	1.76	295.69	1.09	323.53	62	1531	0.36	0.013	0.00	5.05	0.00	0.000
3.77	1.81	282.95	1.16	329.42	64	1569	0.36	0.012	0.00	5.05	0.00	0.000
3.82	1.92	257.14	1.25	321.12	65	1634	0.36	0.012	0.00	5.05	0.00	0.000
3.88	2.00	243.87	1.31	318.31	66	1714	0.36	0.011	0.00	5.05	0.00	0.000
3.97	2.06	235.04	1.37	321.45	69	1791	0.36	0.011	0.00	5.05	0.00	0.000
4.01	2.09	237.50	1.40	332.72	72	1871	0.36	0.010	0.00	5.05	0.00	0.000
4.07	2.14	227.23	1.49	337.48	74	1913	0.36	0.010	0.00	5.05	0.00	0.000
4.15	2.21	211.02	1.64	345.42	78	1939	0.36	0.010	0.00	5.05	0.00	0.000
4.20	2.29	189.96	1.87	356.02	83	1925	0.36	0.011	0.00	5.05	0.00	0.000
4.30	2.34	173.20	2.08	360.82	86	1877	0.36	0.011	0.00	5.05	0.00	0.000
4.34	2.37	160.54	2.21	355.43	86	1804	0.36	0.012	0.00	5.05	0.00	0.000
4.43	2.37	155.95	2.21	344.02	83	1749	0.36	0.013	0.00	5.05	0.00	0.000
4.47	2.35	154.88	2.13	329.64	79	1700	0.36	0.014	0.00	5.05	0.00	0.000
4.53	2.33	154.82	2.04	316.43	75	1658	0.36	0.015	0.00	5.05	0.00	0.000
4.62	2.32	152.68	2.00	305.98	73	1615	0.36	0.016	0.00	5.05	0.00	0.000
4.66	2.34	143.68	2.10	301.30	72	1563	0.36	0.017	0.00	5.05	0.00	0.000
4.76	2.39	131.88	2.31	305.27	75	1521	0.36	0.018	0.00	5.05	0.00	0.000
4.80	2.45	118.60	2.66	316.01	80	1481	0.36	0.019	0.00	5.05	0.00	0.000
4.88	2.47	115.10	2.77	319.35	81	1470	0.36	0.020	0.00	5.05	0.00	0.000
4.94	2.48	112.19	2.85	319.76	82	1454	0.36	0.020	0.00	5.05	0.00	0.000
4.99	2.45	116.18	2.65	308.35	78	1448	0.36	0.021	0.00	5.05	0.00	0.000
5.08	2.42	119.02	2.50	298.05	74	1436	0.36	0.022	0.00	5.05	0.00	0.000
5.12	2.36	129.10	2.20	283.46	69	1444	0.36	0.022	0.00	5.05	0.00	0.000
5.22	2.32	137.68	1.99	274.15	65	1451	0.36	0.022	0.01	5.05	0.00	0.000
5.26	2.29	142.46	1.87	266.83	62	1443	0.36	0.023	0.01	5.05	0.00	0.000
5.36	2.28	141.20	1.86	262.17	61	1422	0.36	0.024	0.01	5.05	0.00	0.000
5.40	2.30	135.45	1.91	258.85	61	1390	0.36	0.025	0.01	5.05	0.00	0.000
5.45	2.31	128.60	1.98	254.11	60	1348	0.36	0.027	0.01	5.05	0.00	0.000
5.54	2.33	122.15	2.02	247.16	59	1300	0.36	0.030	0.01	5.05	0.00	0.000
5.58	2.33	116.75	2.06	240.14	57	1255	0.36	0.032	0.01	5.05	0.01	0.000
5.67	2.34	114.50	2.11	241.20	58	1249	0.36	0.033	0.01	5.05	0.01	0.000
5.71	2.34	119.14	2.10	249.63	60	1295	0.36	0.031	0.01	5.05	0.01	0.000
5.78	2.32	130.12	1.99	259.36	61	1372	0.36	0.028	0.01	5.05	0.00	0.000
5.84	2.24	153.57	1.74	266.75	61	1476	0.36	0.025	0.01	5.05	0.00	0.000
5.91	2.16	182.63	1.52	276.91	61	1570	0.36	0.023	0.01	5.05	0.00	0.000
6.00	2.08	210.38	1.39	291.96	63	1636	0.36	0.022	0.01	5.05	0.00	0.000
6.05	2.04	221.41	1.34	297.37	63	1640	0.36	0.022	0.01	5.05	0.00	0.000
6.14	2.04	210.10	1.34	282.30	60	1557	0.36	0.024	0.01	5.05	0.00	0.000
6.27	2.07	187.31	1.38	258.21	55	1443	0.36	0.029	0.01	5.05	0.01	0.000
6.32	2.12	161.09	1.46	234.88	51	1330	0.36	0.034	0.01	5.05	0.01	0.000
6.37	2.18	141.42	1.57	222.36	50	1256	0.36	0.039	0.01	5.05	0.01	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.45	2.24	124.99	1.72	215.12	49	1193	0.36	0.045	0.02	5.05	0.01	0.000
6.51	2.30	109.71	1.93	211.92	50	1134	0.36	0.052	0.02	5.05	0.01	0.000
6.57	2.36	99.05	2.17	215.19	52	1101	0.36	0.057	0.02	5.05	0.01	0.000
6.64	2.40	93.23	2.36	219.63	54	1086	0.36	0.061	0.02	5.05	0.01	0.000
6.70	2.41	92.87	2.40	223.35	55	1095	0.36	0.060	0.02	5.05	0.01	0.000
6.78	2.40	94.78	2.37	224.29	55	1107	0.36	0.060	0.02	5.05	0.01	0.000
6.83	2.40	98.65	2.36	233.21	57	1152	0.36	0.054	0.02	5.05	0.01	0.000
6.97	2.39	102.69	2.35	240.94	59	1194	0.36	0.051	0.01	5.05	0.01	0.000
6.98	2.40	105.89	2.38	252.34	62	1242	0.36	0.047	0.01	5.05	0.01	0.000
7.06	2.40	109.58	2.35	257.78	63	1276	0.36	0.045	0.01	5.05	0.01	0.000
7.11	2.40	112.62	2.37	266.67	66	1316	0.36	0.042	0.01	5.05	0.01	0.000
7.18	2.40	115.41	2.39	275.65	68	1355	0.36	0.040	0.01	5.05	0.01	0.000
7.25	2.41	118.01	2.42	285.04	70	1395	0.36	0.038	0.01	5.05	0.01	0.000
7.29	2.40	123.65	2.36	292.10	72	1443	0.36	0.036	0.01	5.05	0.00	0.000
7.36	2.37	131.98	2.23	294.89	72	1491	0.36	0.034	0.01	5.05	0.00	0.000
7.43	2.32	147.25	2.00	294.47	70	1556	0.36	0.032	0.01	5.05	0.00	0.000
7.52	2.27	162.36	1.82	295.46	69	1613	0.36	0.030	0.01	5.05	0.00	0.000
7.56	2.23	177.68	1.69	299.74	68	1671	0.36	0.028	0.01	5.05	0.00	0.000
7.61	2.21	185.87	1.64	305.33	69	1722	0.36	0.027	0.01	5.05	0.00	0.000
7.70	2.19	192.78	1.60	308.30	69	1768	0.36	0.026	0.01	5.05	0.00	0.000
7.76	2.18	196.71	1.57	308.04	69	1787	0.36	0.026	0.01	5.05	0.00	0.000
7.84	2.17	197.53	1.54	303.24	67	1782	0.36	0.027	0.01	5.05	0.00	0.000
7.89	2.14	198.49	1.49	295.82	65	1755	0.36	0.028	0.01	5.05	0.00	0.000
7.96	2.11	199.10	1.44	285.95	62	1714	0.36	0.029	0.01	5.05	0.00	0.000
8.03	2.08	200.45	1.39	278.54	60	1677	0.36	0.031	0.01	5.05	0.01	0.000
8.08	2.06	198.98	1.37	271.85	58	1639	0.36	0.032	0.01	5.05	0.01	0.000
8.16	2.07	190.51	1.38	263.59	56	1604	0.36	0.034	0.01	5.05	0.01	0.000
8.21	2.12	169.41	1.46	246.56	54	1507	0.36	0.039	0.01	5.05	0.01	0.000
8.30	2.20	143.75	1.62	232.89	53	1402	0.36	0.047	0.01	5.05	0.01	0.000
8.34	2.28	121.09	1.85	224.60	52	1286	0.36	0.058	0.02	5.05	0.01	0.000
8.43	2.29	114.59	1.90	217.92	51	1243	0.36	0.064	0.02	5.05	0.01	0.000
8.47	2.31	109.58	1.95	213.97	51	1211	0.36	0.069	0.02	5.05	0.01	0.000
8.56	2.29	113.42	1.87	212.20	50	1234	0.36	0.067	0.02	5.05	0.01	0.000
8.61	2.27	119.08	1.81	215.18	50	1274	0.36	0.062	0.02	5.05	0.01	0.000
8.67	2.22	132.23	1.67	220.80	50	1355	0.36	0.054	0.02	5.05	0.01	0.000
8.75	2.19	143.65	1.59	228.69	51	1433	0.36	0.048	0.02	5.05	0.01	0.000
8.79	2.20	149.14	1.60	239.27	54	1501	0.36	0.044	0.01	5.05	0.01	0.000
8.89	2.21	149.68	1.64	246.20	56	1544	0.36	0.042	0.01	5.05	0.01	0.000
8.94	2.24	146.18	1.72	251.98	58	1561	0.36	0.041	0.01	5.05	0.01	0.000
9.02	2.25	143.05	1.76	252.21	58	1559	0.36	0.042	0.01	5.05	0.01	0.000
9.07	2.26	141.40	1.77	250.70	58	1553	0.36	0.043	0.01	5.05	0.01	0.000
9.13	2.25	141.36	1.74	246.03	57	1541	0.36	0.044	0.01	5.05	0.01	0.000
9.21	2.23	140.99	1.70	240.13	55	1526	0.36	0.045	0.01	5.05	0.01	0.000
9.25	2.21	140.72	1.63	229.98	52	1487	0.36	0.048	0.02	5.05	0.01	0.000
9.34	2.19	137.57	1.60	219.85	49	1439	0.36	0.053	0.02	5.05	0.01	0.000
9.39	2.19	129.71	1.60	207.28	47	1362	0.36	0.061	0.02	5.05	0.01	0.000
9.48	2.23	118.11	1.69	199.22	45	1296	0.36	0.070	0.03	5.05	0.02	0.000
9.53	2.29	104.37	1.87	195.43	46	1225	0.36	0.082	0.03	5.05	0.02	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.62	2.35	91.63	2.15	196.77	47	1167	0.36	0.097	0.03	5.05	0.02	0.000
9.67	2.41	81.57	2.41	196.74	49	1106	0.36	0.115	0.04	5.05	0.02	0.000
9.71	2.44	73.10	2.61	190.80	48	1034	0.36	0.146	0.05	5.05	0.03	0.000
9.80	2.47	67.17	2.76	185.57	47	983	0.36	0.178	0.06	5.05	0.04	0.001
9.85	2.50	61.98	3.01	186.69	48	949	0.36	0.206	0.07	5.05	0.04	0.000
9.93	2.55	58.94	3.31	195.31	51	951	0.36	0.209	0.07	5.05	0.04	0.001
9.99	2.58	56.70	3.59	203.75	55	955	0.36	0.207	0.06	5.05	0.04	0.001
10.04	2.61	55.23	3.84	212.13	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.13	2.63	54.25	4.03	218.43	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.18	2.65	53.46	4.24	226.52	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.27	2.67	52.50	4.43	232.47	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.32	2.69	51.64	4.61	238.05	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.40	2.70	50.69	4.75	240.97	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.45	2.71	50.08	4.85	243.06	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.50	2.73	49.04	5.01	245.66	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.59	2.75	47.72	5.20	248.13	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.64	2.76	46.31	5.42	250.81	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.70	2.77	45.52	5.53	251.77	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.78	2.78	45.09	5.58	251.76	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.87	2.78	44.89	5.60	251.28	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.92	2.78	44.93	5.59	251.26	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.96	2.77	45.46	5.51	250.67	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.05	2.77	45.85	5.45	249.89	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.10	2.76	46.27	5.41	250.08	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.19	2.77	46.08	5.43	250.34	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.24	2.77	45.94	5.46	250.94	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.37	2.77	45.65	5.48	250.37	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.39	2.77	46.02	5.43	250.04	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.42	2.75	46.89	5.30	248.37	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.49	2.73	48.26	5.08	245.31	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.56	2.70	50.70	4.75	240.82	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.65	2.67	53.43	4.41	235.62	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.70	2.64	56.44	4.09	230.69	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.79	2.61	59.25	3.82	226.27	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.84	2.58	62.15	3.58	222.35	60	1191	0.36	0.133	0.04	5.05	0.02	0.000
11.88	2.55	65.12	3.32	216.34	57	1206	0.36	0.129	0.04	5.05	0.02	0.000
11.97	2.52	66.92	3.15	210.63	55	1213	0.36	0.128	0.04	5.05	0.02	0.001
12.02	2.52	67.91	3.10	210.68	55	1226	0.36	0.125	0.04	5.05	0.02	0.000
12.12	2.52	68.25	3.14	214.41	56	1247	0.36	0.120	0.04	5.05	0.02	0.000
12.16	2.52	69.92	3.11	217.64	57	1275	0.36	0.113	0.03	5.05	0.02	0.000
12.21	2.46	77.09	2.74	210.90	53	1321	0.36	0.103	0.03	5.05	0.02	0.000
12.30	2.38	89.12	2.26	201.10	49	1387	0.36	0.091	0.03	5.05	0.02	0.000
12.35	2.29	104.38	1.88	196.39	46	1468	0.36	0.078	0.03	5.05	0.02	0.000
12.43	2.23	117.45	1.69	198.30	45	1545	0.36	0.070	0.03	5.05	0.02	0.000
12.48	2.21	125.24	1.65	206.23	47	1623	0.36	0.062	0.02	5.05	0.01	0.000
12.57	2.22	127.22	1.68	213.57	49	1681	0.36	0.058	0.02	5.05	0.01	0.000
12.61	2.26	123.68	1.78	220.37	51	1706	0.36	0.057	0.02	5.05	0.01	0.000
12.67	2.30	115.96	1.92	222.36	52	1680	0.36	0.059	0.02	5.05	0.01	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.76	2.33	107.94	2.06	222.04	53	1639	0.36	0.063	0.02	5.05	0.01	0.000
12.80	2.35	101.97	2.14	217.99	52	1587	0.36	0.069	0.02	5.05	0.01	0.000
12.89	2.34	100.58	2.09	210.01	50	1552	0.36	0.073	0.02	5.05	0.01	0.000
12.94	2.32	100.31	2.00	200.32	48	1513	0.36	0.079	0.03	5.05	0.02	0.000
12.99	2.30	99.79	1.91	190.26	45	1467	0.36	0.086	0.03	5.05	0.02	0.000
13.08	2.28	97.26	1.87	181.65	42	1419	0.36	0.095	0.04	5.05	0.02	0.000
13.13	2.28	94.11	1.84	173.11	40	1363	0.36	0.107	0.05	5.05	0.03	0.000
13.22	2.28	91.14	1.84	168.00	39	1328	0.36	0.117	0.05	5.05	0.03	0.001
13.27	2.33	82.77	2.04	168.78	40	1286	0.36	0.130	0.06	5.05	0.03	0.000
13.36	2.40	73.85	2.39	176.43	43	1260	0.36	0.141	0.06	5.05	0.03	0.001
13.39	2.51	63.15	3.05	192.28	50	1227	0.36	0.154	0.05	5.05	0.03	0.000
13.49	2.57	58.23	3.48	202.79	54	1220	0.36	0.159	0.05	5.05	0.03	0.001
13.54	2.62	54.57	3.90	212.91	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.59	2.64	53.06	4.12	218.45	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.68	2.65	52.09	4.25	221.34	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.72	2.67	50.94	4.43	225.88	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.82	2.68	50.36	4.54	228.63	0	0	0.35	0.000	0.00	0.00	0.00	0.000
13.87	2.69	49.91	4.64	231.41	0	0	0.35	0.000	0.00	0.00	0.00	0.000
13.95	2.69	49.71	4.64	230.48	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.00	2.70	49.27	4.66	229.65	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.05	2.71	48.16	4.78	230.24	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.14	2.73	46.49	4.99	232.18	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.19	2.75	44.83	5.24	234.93	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.24	2.77	43.64	5.44	237.41	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.31	2.77	43.20	5.51	238.16	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.37	2.76	43.88	5.37	235.46	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.46	2.74	44.98	5.13	230.56	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.51	2.71	46.53	4.82	224.07	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.59	2.69	47.48	4.59	218.02	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.65	2.66	48.84	4.28	209.18	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.73	2.63	49.88	4.00	199.41	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.79	2.59	50.99	3.70	188.58	51	1185	0.35	0.212	0.07	5.05	0.04	0.001
14.84	2.56	51.29	3.44	176.54	47	1150	0.35	0.239	0.09	5.05	0.05	0.001
14.91	2.51	51.24	3.05	156.14	40	1080	0.35	0.308	0.13	5.05	0.08	0.001
14.97	2.45	50.41	2.68	135.05	34	995	0.35	0.442	0.23	5.05	0.14	0.002
15.06	2.41	49.53	2.44	120.66	30	932	0.35	0.608	0.38	5.05	0.23	0.005
15.11	2.41	47.82	2.40	114.93	28	895	0.35	0.748	0.49	5.05	0.30	0.003
15.20	2.42	45.71	2.47	112.70	28	871	0.35	0.870	0.58	5.05	0.36	0.008
15.25	2.42	43.64	2.48	108.10	27	836	0.35	1.094	0.77	5.05	0.47	0.006
15.30	2.54	35.11	3.29	115.52	30	786	0.35	1.557	0.94	5.05	0.58	0.007
15.36	2.57	33.35	3.53	117.64	31	777	0.35	1.680	0.98	5.05	0.60	0.008
15.44	2.61	31.46	3.88	122.00	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.49	2.53	37.02	3.17	117.24	31	819	0.35	1.271	0.76	5.05	0.47	0.006
15.55	2.55	36.60	3.33	121.80	32	834	0.35	1.163	0.66	5.05	0.40	0.006
15.63	2.57	36.32	3.53	128.08	34	857	0.35	1.017	0.53	5.05	0.33	0.006
15.73	2.60	35.86	3.75	134.61	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.78	2.63	35.35	3.98	140.84	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.82	2.66	34.19	4.30	147.10	0	0	0.35	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.91	2.70	32.68	4.69	153.15	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.96	2.76	30.11	5.40	162.75	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.05	2.83	27.68	6.18	171.18	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.10	2.89	25.31	7.11	179.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.16	2.94	23.90	7.76	185.47	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.24	2.97	22.93	8.28	189.87	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.28	2.99	22.34	8.65	193.22	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.36	3.00	22.07	8.84	195.07	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.42	3.01	22.06	8.90	196.44	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.51	3.01	22.12	8.90	196.78	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.55	3.01	22.09	8.94	197.43	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.61	3.01	22.13	8.95	198.09	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.68	3.01	22.33	8.89	198.51	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.74	3.00	22.83	8.71	198.82	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.83	2.99	23.20	8.57	198.85	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.87	2.98	23.59	8.46	199.47	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.97	2.98	23.67	8.44	199.69	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.06	2.97	23.97	8.31	199.21	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.16	2.97	23.93	8.29	198.44	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.20	2.98	23.38	8.46	197.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.29	3.00	22.29	8.86	197.35	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.36	3.03	21.27	9.24	196.56	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.39	3.04	20.62	9.45	194.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.47	3.05	20.02	9.63	192.76	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.52	3.05	19.45	9.75	189.70	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.62	3.06	18.85	9.89	186.35	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.71	3.07	18.36	9.99	183.49	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.74	3.07	18.11	10.03	181.72	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.80	3.07	18.07	9.98	180.43	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.86	3.06	18.13	9.87	179.04	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.94	3.05	18.29	9.72	177.79	0	0	0.36	0.000	0.00	0.00	0.00	0.000
17.98	3.04	18.52	9.55	176.90	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.05	3.03	18.58	9.36	173.92	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.13	3.01	18.46	9.04	166.83	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.18	3.00	18.27	8.75	159.80	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.26	2.99	18.14	8.57	155.45	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.31	3.00	17.88	8.74	156.15	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.45	3.00	18.01	8.71	156.84	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.55	2.99	18.33	8.60	157.56	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.59	2.97	19.22	8.26	158.68	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.64	2.96	19.82	8.13	161.18	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.74	2.95	20.35	8.04	163.61	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.78	2.96	20.62	8.11	167.20	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.87	2.97	20.56	8.26	169.96	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.92	2.98	20.54	8.42	172.90	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.96	2.98	20.91	8.37	175.06	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.08	2.97	21.25	8.26	175.59	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.10	2.96	21.45	8.17	175.24	0	0	0.36	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
19.16	2.97	20.77	8.34	173.26	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.24	2.99	19.74	8.67	171.08	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.29	3.00	19.05	8.76	166.92	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.37	2.98	19.13	8.44	161.42	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.43	2.91	20.86	7.33	152.98	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.52	2.84	22.54	6.41	144.42	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.57	2.77	24.52	5.52	135.39	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.66	2.72	25.69	4.95	127.05	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.71	2.68	26.26	4.53	118.83	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.79	2.66	26.01	4.35	113.15	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.84	2.66	25.76	4.30	110.89	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.89	2.64	26.43	4.11	108.77	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.98	2.65	26.05	4.17	108.54	0	0	0.36	0.000	0.00	0.00	0.00	0.000

Total estimated settlement: 0.08

Abbreviations

Q_{tn}: Equivalent clean sand normalized cone resistance
K_c: Fines correction factor
$Q_{tn,cs}$: Post-liquefaction volumentric strain
G_{max}: Small strain shear modulus
CSR: Soil cyclic stress ratio
γ: Cyclic shear strain
$e_{vol(15)}$: Volumetric strain after 15 cycles
N_c: Equivalent number of cycles
e_v: Volumetric strain
Settle.: Calculated settlement

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.02	106.68	2.00	0.00	1.00	0.00	20.09	106.13	0.53	2.23	1.00	0.02
20.16	105.20	0.52	2.24	1.00	0.02	20.25	107.91	0.54	2.20	1.00	0.03
20.30	112.67	0.58	2.12	1.00	0.01	20.34	119.55	2.00	0.00	1.00	0.00
20.43	126.05	2.00	0.00	1.00	0.00	20.48	130.35	2.00	0.00	1.00	0.00
20.57	129.58	2.00	0.00	1.00	0.00	20.62	125.42	2.00	0.00	1.00	0.00
20.67	115.67	2.00	0.00	1.00	0.00	20.75	103.53	2.00	0.00	1.00	0.00
20.81	87.12	0.38	2.62	1.00	0.02	20.90	75.86	0.33	2.93	1.00	0.03
20.94	67.20	0.29	3.24	1.00	0.02	21.03	64.30	0.28	3.36	1.00	0.04
21.08	63.65	0.28	3.38	1.00	0.02	21.13	63.93	0.28	3.37	1.00	0.02
21.22	63.64	0.28	3.38	1.00	0.04	21.27	62.82	0.28	3.42	1.00	0.02
21.34	62.29	0.27	3.44	1.00	0.03	21.41	63.44	0.28	3.39	1.00	0.03
21.50	66.62	0.29	3.26	1.00	0.04	21.53	71.63	0.30	3.07	1.00	0.01
21.59	75.92	0.32	2.93	1.00	0.02	21.68	78.81	0.33	2.84	1.00	0.03
21.73	80.74	0.34	2.78	1.00	0.02	21.82	82.31	0.35	2.74	1.00	0.03
21.86	87.27	0.37	2.61	1.00	0.01	21.94	93.67	2.00	0.00	1.00	0.00
22.01	100.56	2.00	0.00	1.00	0.00	22.06	108.61	2.00	0.00	1.00	0.00
22.15	116.35	2.00	0.00	1.00	0.00	22.20	122.93	2.00	0.00	1.00	0.00
22.25	122.38	2.00	0.00	1.00	0.00	22.34	116.85	2.00	0.00	1.00	0.00
22.38	110.03	2.00	0.00	1.00	0.00	22.47	106.57	2.00	0.00	1.00	0.00
22.52	106.59	2.00	0.00	1.00	0.00	22.59	107.85	2.00	0.00	1.00	0.00
22.66	108.55	2.00	0.00	1.00	0.00	22.75	108.50	2.00	0.00	1.00	0.00
22.78	106.39	2.00	0.00	1.00	0.00	22.84	104.33	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
22.94	104.97	2.00	0.00	1.00	0.00	22.97	105.28	2.00	0.00	1.00	0.00
23.05	100.35	2.00	0.00	1.00	0.00	23.12	91.23	0.39	2.52	1.00	0.02
23.17	83.40	0.34	2.71	1.00	0.01	23.26	80.45	0.33	2.79	1.00	0.03
23.30	80.90	0.33	2.78	1.00	0.02	23.36	82.46	0.34	2.74	1.00	0.02
23.44	83.45	0.34	2.71	1.00	0.03	23.53	82.98	0.34	2.72	1.00	0.03
23.57	82.63	0.34	2.73	1.00	0.01	23.63	83.43	0.34	2.71	1.00	0.02
23.72	85.42	0.35	2.66	1.00	0.03	23.76	88.56	0.37	2.58	1.00	0.01
23.85	89.95	0.37	2.55	1.00	0.03	23.91	90.44	0.38	2.54	1.00	0.02
23.95	90.22	0.37	2.54	1.00	0.01	24.04	91.52	2.00	0.00	1.00	0.00
24.09	98.61	2.00	0.00	1.00	0.00	24.18	105.19	2.00	0.00	1.00	0.00
24.23	111.67	2.00	0.00	1.00	0.00	24.29	111.97	2.00	0.00	1.00	0.00
24.36	107.50	2.00	0.00	1.00	0.00	24.41	99.25	2.00	0.00	1.00	0.00
24.50	95.85	2.00	0.00	1.00	0.00	24.56	99.17	2.00	0.00	1.00	0.00
24.64	100.74	2.00	0.00	1.00	0.00	24.69	97.40	2.00	0.00	1.00	0.00
24.75	86.85	0.35	2.62	1.00	0.02	24.82	80.72	0.32	2.79	1.00	0.03
24.87	84.46	0.34	2.68	1.00	0.02	24.96	89.39	0.36	2.56	1.00	0.03
25.01	94.12	0.39	2.46	1.00	0.01	25.07	99.82	0.43	2.34	1.00	0.02
25.14	108.43	0.49	2.19	1.00	0.02	25.20	113.59	0.53	2.10	1.00	0.02
25.30	113.36	0.53	2.11	1.00	0.02	25.34	108.20	0.49	2.19	1.00	0.01
25.42	106.52	0.47	2.22	1.00	0.02	25.48	104.93	0.46	2.25	1.00	0.02
25.55	104.70	2.00	0.00	1.00	0.00	25.62	105.73	2.00	0.00	1.00	0.00
25.67	105.39	0.46	2.24	1.00	0.01	25.75	103.19	0.44	2.28	1.00	0.02
25.80	101.18	0.43	2.31	1.00	0.01	25.90	101.94	2.00	0.00	1.00	0.00
25.94	103.85	2.00	0.00	1.00	0.00	25.99	105.19	2.00	0.00	1.00	0.00
26.06	109.60	2.00	0.00	1.00	0.00	26.13	113.72	2.00	0.00	1.00	0.00
26.22	116.64	2.00	0.00	1.00	0.00	26.27	114.96	2.00	0.00	1.00	0.00
26.34	111.03	2.00	0.00	1.00	0.00	26.40	107.26	2.00	0.00	1.00	0.00
26.45	102.78	2.00	0.00	1.00	0.00	26.54	97.23	2.00	0.00	1.00	0.00
26.59	90.52	2.00	0.00	1.00	0.00	26.68	86.50	2.00	0.00	1.00	0.00
26.73	84.01	2.00	0.00	1.00	0.00	26.82	83.36	2.00	0.00	1.00	0.00
26.88	82.84	2.00	0.00	1.00	0.00	26.91	82.38	2.00	0.00	1.00	0.00
27.00	82.11	2.00	0.00	1.00	0.00	27.05	82.41	2.00	0.00	1.00	0.00
27.14	83.40	2.00	0.00	1.00	0.00	27.19	85.03	2.00	0.00	1.00	0.00
27.23	87.19	2.00	0.00	1.00	0.00	27.32	88.54	2.00	0.00	1.00	0.00
27.38	88.04	2.00	0.00	1.00	0.00	27.46	85.84	2.00	0.00	1.00	0.00
27.51	84.50	2.00	0.00	1.00	0.00	27.57	84.74	2.00	0.00	1.00	0.00
27.63	85.79	2.00	0.00	1.00	0.00	27.69	85.77	2.00	0.00	1.00	0.00
27.78	85.06	2.00	0.00	1.00	0.00	27.85	83.76	2.00	0.00	1.00	0.00
27.90	81.21	2.00	0.00	1.00	0.00	27.99	78.37	2.00	0.00	1.00	0.00
28.04	75.03	2.00	0.00	1.00	0.00	28.13	72.92	2.00	0.00	1.00	0.00
28.17	70.99	2.00	0.00	1.00	0.00	28.26	69.53	2.00	0.00	1.00	0.00
28.31	68.07	2.00	0.00	1.00	0.00	28.36	66.40	2.00	0.00	1.00	0.00
28.45	65.50	2.00	0.00	1.00	0.00	28.49	66.57	2.00	0.00	1.00	0.00
28.56	68.97	2.00	0.00	1.00	0.00	28.63	69.72	2.00	0.00	1.00	0.00
28.73	67.00	2.00	0.00	1.00	0.00	28.78	63.45	2.00	0.00	1.00	0.00
28.82	61.17	2.00	0.00	1.00	0.00	28.91	62.97	2.00	0.00	1.00	0.00
28.96	71.01	2.00	0.00	1.00	0.00	29.05	84.50	2.00	0.00	1.00	0.00
29.09	99.02	2.00	0.00	1.00	0.00	29.15	114.42	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
29.23	126.21	2.00	0.00	1.00	0.00	29.28	128.22	2.00	0.00	1.00	0.00
29.37	125.29	2.00	0.00	1.00	0.00	29.42	121.32	0.57	1.99	1.00	0.01
29.46	126.98	2.00	0.00	1.00	0.00	29.56	131.46	2.00	0.00	1.00	0.00
29.60	132.94	2.00	0.00	1.00	0.00	29.67	126.87	2.00	0.00	1.00	0.00
29.74	114.67	2.00	0.00	1.00	0.00	29.83	97.97	0.38	2.38	1.00	0.03
29.92	90.71	0.34	2.53	1.00	0.03	29.96	94.47	0.36	2.45	1.00	0.01
30.02	100.38	0.40	2.33	1.00	0.01	30.07	109.12	0.46	2.18	1.00	0.01
30.12	119.86	2.00	0.00	1.00	0.00	30.21	127.59	2.00	0.00	1.00	0.00
30.31	131.22	2.00	0.00	1.00	0.00	30.34	127.32	2.00	0.00	1.00	0.00
30.40	122.13	2.00	0.00	1.00	0.00	30.49	114.67	2.00	0.00	1.00	0.00
30.54	106.67	2.00	0.00	1.00	0.00	30.58	99.09	2.00	0.00	1.00	0.00
30.68	92.55	2.00	0.00	1.00	0.00	30.73	86.44	2.00	0.00	1.00	0.00
30.80	82.19	2.00	0.00	1.00	0.00	30.86	78.18	2.00	0.00	1.00	0.00
30.91	74.08	2.00	0.00	1.00	0.00	31.02	71.47	2.00	0.00	1.00	0.00
31.05	69.24	2.00	0.00	1.00	0.00	31.14	68.35	2.00	0.00	1.00	0.00
31.18	67.46	2.00	0.00	1.00	0.00	31.24	67.05	2.00	0.00	1.00	0.00
31.32	66.66	2.00	0.00	1.00	0.00	31.36	66.40	2.00	0.00	1.00	0.00
31.44	66.29	2.00	0.00	1.00	0.00	31.51	66.51	2.00	0.00	1.00	0.00
31.59	66.58	2.00	0.00	1.00	0.00	31.65	67.29	2.00	0.00	1.00	0.00
31.73	70.30	2.00	0.00	1.00	0.00	31.83	73.26	2.00	0.00	1.00	0.00
31.92	75.16	2.00	0.00	1.00	0.00	31.97	74.65	2.00	0.00	1.00	0.00
32.06	73.89	2.00	0.00	1.00	0.00	32.10	73.62	2.00	0.00	1.00	0.00
32.15	74.75	2.00	0.00	1.00	0.00	32.24	76.97	2.00	0.00	1.00	0.00
32.29	82.03	2.00	0.00	1.00	0.00	32.38	86.30	2.00	0.00	1.00	0.00
32.43	88.92	2.00	0.00	1.00	0.00	32.52	88.63	2.00	0.00	1.00	0.00
32.57	87.78	2.00	0.00	1.00	0.00	32.62	89.35	2.00	0.00	1.00	0.00
32.70	92.64	2.00	0.00	1.00	0.00	32.75	97.37	2.00	0.00	1.00	0.00
32.81	101.51	2.00	0.00	1.00	0.00	32.89	104.27	2.00	0.00	1.00	0.00
32.98	105.95	2.00	0.00	1.00	0.00	33.03	107.25	2.00	0.00	1.00	0.00
33.07	109.57	2.00	0.00	1.00	0.00	33.17	111.65	2.00	0.00	1.00	0.00
33.21	113.08	2.00	0.00	1.00	0.00	33.31	113.67	2.00	0.00	1.00	0.00
33.35	115.01	2.00	0.00	1.00	0.00	33.44	116.76	2.00	0.00	1.00	0.00
33.49	119.00	2.00	0.00	1.00	0.00	33.53	122.00	2.00	0.00	1.00	0.00
33.63	124.83	2.00	0.00	1.00	0.00	33.67	126.44	2.00	0.00	1.00	0.00
33.77	125.70	2.00	0.00	1.00	0.00	33.81	127.48	2.00	0.00	1.00	0.00
33.88	130.03	2.00	0.00	1.00	0.00	33.95	134.03	2.00	0.00	1.00	0.00
33.99	137.71	2.00	0.00	1.00	0.00	34.09	137.97	2.00	0.00	1.00	0.00
34.14	135.90	2.00	0.00	1.00	0.00	34.22	133.71	2.00	0.00	1.00	0.00
34.27	133.27	2.00	0.00	1.00	0.00	34.32	134.39	2.00	0.00	1.00	0.00
34.40	135.26	2.00	0.00	1.00	0.00	34.46	135.17	2.00	0.00	1.00	0.00
34.58	135.74	2.00	0.00	1.00	0.00	34.59	142.79	2.00	0.00	1.00	0.00
34.69	152.23	2.00	0.00	1.00	0.00	34.73	160.62	2.00	0.00	1.00	0.00
34.78	170.16	2.00	0.00	1.00	0.00	34.85	159.97	2.00	0.00	1.00	0.00
34.92	161.10	2.00	0.00	1.00	0.00	35.01	159.38	1.00	0.57	1.00	0.01
35.05	180.81	2.00	0.00	1.00	0.00	35.14	188.09	2.00	0.00	1.00	0.00
35.19	191.40	2.00	0.00	1.00	0.00	35.24	188.69	2.00	0.00	1.00	0.00
35.33	191.69	2.00	0.00	1.00	0.00	35.38	193.99	2.00	0.00	1.00	0.00
35.47	198.41	2.00	0.00	1.00	0.00	35.50	196.49	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
35.59	194.50	2.00	0.00	1.00	0.00	35.64	188.35	2.00	0.00	1.00	0.00
35.70	181.89	2.00	0.00	1.00	0.00	35.78	174.88	2.00	0.00	1.00	0.00
35.83	167.00	2.00	0.00	1.00	0.00	35.92	164.96	2.00	0.00	1.00	0.00
35.97	163.59	2.00	0.00	1.00	0.00	36.06	164.11	2.00	0.00	1.00	0.00
36.10	164.88	2.00	0.00	1.00	0.00	36.16	166.02	2.00	0.00	1.00	0.00
36.24	170.71	2.00	0.00	1.00	0.00	36.30	171.91	2.00	0.00	1.00	0.00
36.35	165.51	2.00	0.00	1.00	0.00	36.43	165.52	1.09	0.40	1.00	0.00
36.52	171.24	1.19	0.28	1.00	0.00	36.57	177.74	2.00	0.00	1.00	0.00
36.62	185.11	2.00	0.00	1.00	0.00	36.70	188.35	2.00	0.00	1.00	0.00
36.75	187.55	1.50	0.00	1.00	0.00	36.84	183.84	1.43	0.00	1.00	0.00
36.89	189.07	1.54	0.00	1.00	0.00	36.96	198.25	1.74	0.00	1.00	0.00
37.03	199.07	1.76	0.00	1.00	0.00	37.07	198.66	1.75	0.00	1.00	0.00
37.17	194.86	1.66	0.00	1.00	0.00	37.22	197.79	1.73	0.00	1.00	0.00
37.31	195.25	1.67	0.00	1.00	0.00	37.35	199.36	1.77	0.00	1.00	0.00
37.44	201.06	2.00	0.00	1.00	0.00	37.49	205.99	2.00	0.00	1.00	0.00
37.54	212.44	2.00	0.00	1.00	0.00	37.63	215.16	2.00	0.00	1.00	0.00
37.68	206.99	2.00	0.00	1.00	0.00	37.76	194.16	1.64	0.00	1.00	0.00
37.81	189.42	1.54	0.00	1.00	0.00	37.91	190.08	1.55	0.00	1.00	0.00
37.95	192.84	1.61	0.00	1.00	0.00	38.00	202.85	2.00	0.00	1.00	0.00
38.09	218.84	2.00	0.00	1.00	0.00	38.14	233.15	2.00	0.00	1.00	0.00
38.20	237.13	2.00	0.00	1.00	0.00	38.26	242.11	2.00	0.00	1.00	0.00
38.32	224.05	2.00	0.00	1.00	0.00	38.41	202.46	2.00	0.00	1.00	0.00
38.46	172.66	1.20	0.28	1.00	0.00	38.55	167.50	1.11	0.39	1.00	0.00
38.59	167.87	1.12	0.39	1.00	0.00	38.69	177.18	1.29	0.19	1.00	0.00
38.74	188.07	1.50	0.00	1.00	0.00	38.78	192.62	1.60	0.00	1.00	0.00
38.88	193.05	1.61	0.00	1.00	0.00	38.91	190.24	1.55	0.00	1.00	0.00
39.01	195.07	1.66	0.00	1.00	0.00	39.06	202.68	2.00	0.00	1.00	0.00
39.15	200.97	2.00	0.00	1.00	0.00	39.20	190.17	1.55	0.00	1.00	0.00
39.24	200.13	2.00	0.00	1.00	0.00	39.32	229.30	2.00	0.00	1.00	0.00
39.38	245.85	2.00	0.00	1.00	0.00	39.44	238.30	2.00	0.00	1.00	0.00
39.52	229.55	2.00	0.00	1.00	0.00	39.57	231.47	2.00	0.00	1.00	0.00
39.63	226.01	2.00	0.00	1.00	0.00	39.71	221.00	2.00	0.00	1.00	0.00
39.78	198.33	1.73	0.00	1.00	0.00	39.84	184.99	1.44	0.00	1.00	0.00
39.91	171.45	1.18	0.28	1.00	0.00	40.01	193.90	1.63	0.00	1.00	0.00
40.04	207.16	2.00	0.00	1.00	0.00	40.09	244.09	2.00	0.00	1.00	0.00
40.19	257.53	2.00	0.00	1.00	0.00	40.23	306.68	2.00	0.00	1.00	0.00
40.32	320.23	2.00	0.00	1.00	0.00	40.37	324.79	2.00	0.00	1.00	0.00
40.46	291.30	2.00	0.00	1.00	0.00	40.51	312.59	2.00	0.00	1.00	0.00
40.56	345.74	2.00	0.00	1.00	0.00	40.63	425.19	2.00	0.00	1.00	0.00
40.69	488.05	2.00	0.00	1.00	0.00	40.79	525.82	2.00	0.00	1.00	0.00
40.84	550.54	2.00	0.00	1.00	0.00	40.88	504.65	2.00	0.00	1.00	0.00
40.97	488.48	2.00	0.00	1.00	0.00	41.02	467.35	2.00	0.00	1.00	0.00
41.09	490.44	2.00	0.00	1.00	0.00	41.15	479.88	2.00	0.00	1.00	0.00
41.24	477.20	2.00	0.00	1.00	0.00	41.29	483.85	2.00	0.00	1.00	0.00
41.35	479.20	2.00	0.00	1.00	0.00	41.41	476.42	2.00	0.00	1.00	0.00
41.48	455.98	2.00	0.00	1.00	0.00	41.58	404.26	2.00	0.00	1.00	0.00
41.62	366.84	2.00	0.00	1.00	0.00	41.67	360.27	2.00	0.00	1.00	0.00
41.76	356.16	2.00	0.00	1.00	0.00	41.80	323.54	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
41.89	278.20	2.00	0.00	1.00	0.00	41.94	248.65	2.00	0.00	1.00	0.00
42.00	234.23	2.00	0.00	1.00	0.00	42.09	244.82	2.00	0.00	1.00	0.00
42.13	241.79	2.00	0.00	1.00	0.00	42.19	213.37	2.00	0.00	1.00	0.00
42.28	174.52	1.23	0.28	1.00	0.00	42.34	-1.00	2.00	0.00	1.00	0.00
42.42	-1.00	2.00	0.00	1.00	0.00	42.46	-1.00	2.00	0.00	1.00	0.00
42.55	-1.00	2.00	0.00	1.00	0.00	42.60	-1.00	2.00	0.00	1.00	0.00

Total estimated settlement: 1.18

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.09	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.14	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.22	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.27	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.37	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.41	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.46	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.55	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.60	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.69	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.73	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.83	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.87	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.01	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.05	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.15	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.20	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.29	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.33	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.38	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.46	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.52	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.60	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.66	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.74	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.79	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.84	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.98	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.04	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.11	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.20	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.25	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.30	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.39	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.44	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.53	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.57	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.66	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.71	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.76	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.85	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.90	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.98	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.04	158.09	253.70	1.00	253.70	1.56	0.94	0.94
3.12	241.02	386.93	1.00	386.93	1.43	1.04	1.04
3.17	247.98	398.10	1.00	398.10	1.40	1.05	1.05

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.22	249.19	400.04	1.00	400.04	1.42	1.05	1.05
3.31	247.98	398.09	1.00	398.09	1.45	1.05	1.05
3.35	238.22	382.40	1.00	382.40	1.49	1.04	1.04
3.44	225.98	362.73	1.00	362.73	1.54	1.02	1.02
3.48	212.72	341.42	1.00	341.42	1.62	1.01	1.01
3.54	202.47	324.95	1.00	324.95	1.68	1.00	1.00
3.62	194.39	311.96	1.01	313.94	1.71	0.99	0.99
3.68	184.27	295.69	1.09	323.53	1.76	1.00	1.00
3.77	176.34	282.95	1.16	329.42	1.81	1.00	1.00
3.82	160.29	257.14	1.25	321.12	1.92	0.99	0.99
3.88	152.03	243.87	1.31	318.31	2.00	0.99	0.99
3.97	146.54	235.04	1.37	321.45	2.06	0.99	0.99
4.01	148.07	237.50	1.40	332.72	2.09	1.00	1.00
4.07	141.68	227.23	1.49	337.48	2.14	1.01	1.01
4.15	131.60	211.02	1.64	345.42	2.21	1.01	1.01
4.20	118.50	189.96	1.87	356.02	2.29	1.02	1.02
4.30	108.07	173.20	2.08	360.82	2.34	1.02	1.02
4.34	100.20	160.54	2.21	355.43	2.37	1.02	1.02
4.43	97.34	155.95	2.21	344.02	2.37	1.01	1.01
4.47	96.68	154.88	2.13	329.64	2.35	1.00	1.00
4.53	96.65	154.82	2.04	316.43	2.33	0.99	0.99
4.62	95.32	152.68	2.00	305.98	2.32	0.98	0.98
4.66	89.72	143.68	2.10	301.30	2.34	0.98	0.98
4.76	82.38	131.88	2.31	305.27	2.39	0.98	0.98
4.80	74.12	118.60	2.66	316.01	2.45	0.99	0.99
4.88	71.94	115.10	2.77	319.35	2.47	0.99	0.99
4.94	70.14	112.19	2.85	319.76	2.48	0.99	0.99
4.99	72.63	116.18	2.65	308.35	2.45	0.98	0.98
5.08	74.40	119.02	2.50	298.05	2.42	0.98	0.98
5.12	80.68	129.10	2.20	283.46	2.36	0.96	0.96
5.22	86.02	137.68	1.99	274.15	2.32	0.96	0.96
5.26	89.00	142.46	1.87	266.83	2.29	0.95	0.95
5.36	88.22	141.20	1.86	262.17	2.28	0.95	0.95
5.40	84.65	135.45	1.91	258.85	2.30	0.94	0.94
5.45	80.39	128.60	1.98	254.11	2.31	0.94	0.94
5.54	76.38	122.15	2.02	247.16	2.33	0.93	0.93
5.58	73.02	116.75	2.06	240.14	2.33	0.93	0.93
5.67	71.63	114.50	2.11	241.20	2.34	0.93	0.93
5.71	74.52	119.14	2.10	249.63	2.34	0.94	0.94
5.78	81.35	130.12	1.99	259.36	2.32	0.94	0.94
5.84	95.96	153.57	1.74	266.75	2.24	0.95	0.95
5.91	114.04	182.63	1.52	276.91	2.16	0.96	0.96
6.00	131.32	210.38	1.39	291.96	2.08	0.97	0.97
6.05	138.19	221.41	1.34	297.37	2.04	0.98	0.98
6.14	131.16	210.10	1.34	282.30	2.04	0.96	0.96
6.27	116.98	187.31	1.38	258.21	2.07	0.94	0.94
6.32	100.67	161.09	1.46	234.88	2.12	0.92	0.92
6.37	88.43	141.42	1.57	222.36	2.18	0.91	0.91

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.45	78.20	124.99	1.72	215.12	2.24	0.90	0.90
6.51	68.69	109.71	1.93	211.92	2.30	0.90	0.90
6.57	62.06	99.05	2.17	215.19	2.36	0.90	0.90
6.64	58.45	93.23	2.36	219.63	2.40	0.91	0.91
6.70	58.23	92.87	2.40	223.35	2.41	0.91	0.91
6.78	59.42	94.78	2.37	224.29	2.40	0.91	0.91
6.83	61.83	98.65	2.36	233.21	2.40	0.92	0.92
6.97	64.36	102.69	2.35	240.94	2.39	0.93	0.93
6.98	66.35	105.89	2.38	252.34	2.40	0.94	0.94
7.06	68.65	109.58	2.35	257.78	2.40	0.94	0.94
7.11	70.54	112.62	2.37	266.67	2.40	0.95	0.95
7.18	72.29	115.41	2.39	275.65	2.40	0.96	0.96
7.25	73.91	118.01	2.42	285.04	2.41	0.97	0.97
7.29	77.43	123.65	2.36	292.10	2.40	0.97	0.97
7.36	82.61	131.98	2.23	294.89	2.37	0.97	0.97
7.43	92.12	147.25	2.00	294.47	2.32	0.97	0.97
7.52	101.53	162.36	1.82	295.46	2.27	0.97	0.97
7.56	111.07	177.68	1.69	299.74	2.23	0.98	0.98
7.61	116.78	185.87	1.64	305.33	2.21	0.98	0.98
7.70	122.59	192.78	1.60	308.30	2.19	0.98	0.98
7.76	126.14	196.71	1.57	308.04	2.18	0.98	0.98
7.84	128.03	197.53	1.54	303.24	2.17	0.98	0.98
7.89	129.80	198.49	1.49	295.82	2.14	0.97	0.97
7.96	131.92	199.10	1.44	285.95	2.11	0.97	0.97
8.03	134.50	200.45	1.39	278.54	2.08	0.96	0.96
8.08	134.59	198.98	1.37	271.85	2.06	0.95	0.95
8.16	129.37	190.51	1.38	263.59	2.07	0.95	0.95
8.21	114.36	169.41	1.46	246.56	2.12	0.93	0.93
8.30	96.27	143.75	1.62	232.89	2.20	0.92	0.92
8.34	80.11	121.09	1.85	224.60	2.28	0.91	0.91
8.43	76.19	114.59	1.90	217.92	2.29	0.91	0.91
8.47	72.96	109.58	1.95	213.97	2.31	0.90	0.90
8.56	76.41	113.42	1.87	212.20	2.29	0.90	0.90
8.61	80.79	119.08	1.81	215.18	2.27	0.90	0.90
8.67	90.92	132.23	1.67	220.80	2.22	0.91	0.91
8.75	99.87	143.65	1.59	228.69	2.19	0.92	0.92
8.79	103.94	149.14	1.60	239.27	2.20	0.93	0.93
8.89	104.78	149.68	1.64	246.20	2.21	0.93	0.93
8.94	102.23	146.18	1.72	251.98	2.24	0.94	0.94
9.02	100.45	143.05	1.76	252.21	2.25	0.94	0.94
9.07	99.65	141.40	1.77	250.70	2.26	0.94	0.94
9.13	100.21	141.36	1.74	246.03	2.25	0.93	0.93
9.21	100.81	140.99	1.70	240.13	2.23	0.93	0.93
9.25	101.43	140.72	1.63	229.98	2.21	0.92	0.92
9.34	100.03	137.57	1.60	219.85	2.19	0.91	0.91
9.39	94.71	129.71	1.60	207.28	2.19	0.89	0.89
9.48	86.38	118.11	1.69	199.22	2.23	0.89	0.89
9.53	75.91	104.37	1.87	195.43	2.29	0.88	0.88

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.62	66.44	91.63	2.15	196.77	2.35	0.88	0.88
9.67	58.92	81.57	2.41	196.74	2.41	0.88	0.88
9.71	52.74	73.10	2.61	190.80	2.44	0.88	0.88
9.80	48.67	67.17	2.76	185.57	2.47	0.87	0.87
9.85	44.85	61.98	3.01	186.69	2.50	0.87	0.87
9.93	42.67	58.94	3.31	195.31	2.55	0.88	0.88
9.99	41.03	56.70	3.59	203.75	2.58	0.89	0.89
10.04	39.97	55.23	3.84	212.13	2.61	3.31	4.38
10.13	39.44	54.25	4.03	218.43	2.63	3.45	4.28
10.18	38.89	53.46	4.24	226.52	2.65	3.53	4.20
10.27	38.36	52.50	4.43	232.47	2.67	3.67	4.11
10.32	37.80	51.64	4.61	238.05	2.69	3.71	4.03
10.40	37.28	50.69	4.75	240.97	2.70	3.73	3.94
10.45	36.94	50.08	4.85	243.06	2.71	3.73	3.88
10.50	36.25	49.04	5.01	245.66	2.73	3.74	3.79
10.59	35.45	47.72	5.20	248.13	2.75	3.73	3.68
10.64	34.48	46.31	5.42	250.81	2.76	3.72	3.56
10.70	34.02	45.52	5.53	251.77	2.77	3.71	3.49
10.78	33.89	45.09	5.58	251.76	2.78	3.67	3.45
10.87	33.98	44.89	5.60	251.28	2.78	3.66	3.43
10.92	34.14	44.93	5.59	251.26	2.78	3.66	3.43
10.96	34.67	45.46	5.51	250.67	2.77	3.66	3.47
11.05	35.23	45.85	5.45	249.89	2.77	3.66	3.50
11.10	35.68	46.27	5.41	250.08	2.76	3.68	3.53
11.19	35.76	46.08	5.43	250.34	2.77	3.68	3.51
11.24	35.79	45.94	5.46	250.94	2.77	3.67	3.49
11.37	35.90	45.65	5.48	250.37	2.77	3.65	3.47
11.39	36.25	46.02	5.43	250.04	2.77	3.65	3.49
11.42	37.06	46.89	5.30	248.37	2.75	3.65	3.56
11.49	38.40	48.26	5.08	245.31	2.73	3.65	3.67
11.56	40.63	50.70	4.75	240.82	2.70	3.64	3.87
11.65	43.22	53.43	4.41	235.62	2.67	3.65	4.08
11.70	45.92	56.44	4.09	230.69	2.64	3.65	4.32
11.79	48.59	59.25	3.82	226.27	2.61	3.64	4.55
11.84	51.26	62.15	3.58	222.35	2.58	0.91	0.91
11.88	53.99	65.12	3.32	216.34	2.55	0.90	0.90
11.97	55.92	66.92	3.15	210.63	2.52	0.90	0.90
12.02	56.95	67.91	3.10	210.68	2.52	0.90	0.90
12.12	57.54	68.25	3.14	214.41	2.52	0.90	0.90
12.16	59.12	69.92	3.11	217.64	2.52	0.91	0.91
12.21	65.65	77.09	2.74	210.90	2.46	0.90	0.90
12.30	76.77	89.12	2.26	201.10	2.38	0.89	0.89
12.35	90.72	104.38	1.88	196.39	2.29	0.88	0.88
12.43	102.99	117.45	1.69	198.30	2.23	0.89	0.89
12.48	110.24	125.24	1.65	206.23	2.21	0.89	0.89
12.57	112.44	127.22	1.68	213.57	2.22	0.90	0.90
12.61	109.28	123.68	1.78	220.37	2.26	0.91	0.91
12.67	102.50	115.96	1.92	222.36	2.30	0.91	0.91

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.76	95.70	107.94	2.06	222.04	2.33	0.91	0.91
12.80	90.55	101.97	2.14	217.99	2.35	0.91	0.91
12.89	89.84	100.58	2.09	210.01	2.34	0.90	0.90
12.94	90.03	100.31	2.00	200.32	2.32	0.89	0.89
12.99	89.96	99.79	1.91	190.26	2.30	0.88	0.88
13.08	88.18	97.26	1.87	181.65	2.28	0.87	0.87
13.13	85.63	94.11	1.84	173.11	2.28	0.86	0.86
13.22	83.33	91.14	1.84	168.00	2.28	0.85	0.85
13.27	75.69	82.77	2.04	168.78	2.33	0.85	0.85
13.36	67.64	73.85	2.39	176.43	2.40	0.86	0.86
13.39	57.67	63.15	3.05	192.28	2.51	0.88	0.88
13.49	53.35	58.23	3.48	202.79	2.57	0.89	0.89
13.54	50.06	54.57	3.90	212.91	2.62	3.14	4.06
13.59	48.76	53.06	4.12	218.45	2.64	3.20	3.94
13.68	48.10	52.09	4.25	221.34	2.65	3.22	3.86
13.72	47.14	50.94	4.43	225.88	2.67	3.22	3.77
13.82	46.85	50.36	4.54	228.63	2.68	3.31	3.72
13.87	46.54	49.91	4.64	231.41	2.69	3.33	3.68
13.95	46.60	49.71	4.64	230.48	2.69	3.30	3.67
14.00	46.32	49.27	4.66	229.65	2.70	3.25	3.63
14.05	45.39	48.16	4.78	230.24	2.71	3.22	3.54
14.14	44.06	46.49	4.99	232.18	2.73	3.20	3.41
14.19	42.60	44.83	5.24	234.93	2.75	3.19	3.29
14.24	41.57	43.64	5.44	237.41	2.77	3.19	3.19
14.31	41.32	43.20	5.51	238.16	2.77	3.20	3.16
14.37	42.13	43.88	5.37	235.46	2.76	3.19	3.21
14.46	43.44	44.98	5.13	230.56	2.74	3.09	3.29
14.51	45.05	46.53	4.82	224.07	2.71	3.05	3.40
14.59	46.20	47.48	4.59	218.02	2.69	2.96	3.47
14.65	47.72	48.84	4.28	209.18	2.66	2.85	3.57
14.73	48.99	49.88	4.00	199.41	2.63	2.68	3.65
14.79	50.27	50.99	3.70	188.58	2.59	0.87	0.87
14.84	50.73	51.29	3.44	176.54	2.56	0.86	0.86
14.91	50.95	51.24	3.05	156.14	2.51	0.84	0.84
14.97	50.39	50.41	2.68	135.05	2.45	0.81	0.81
15.06	49.80	49.53	2.44	120.66	2.41	0.78	0.78
15.11	48.22	47.82	2.40	114.93	2.41	0.77	0.77
15.20	46.32	45.71	2.47	112.70	2.42	0.77	0.77
15.25	44.36	43.64	2.48	108.10	2.42	0.76	0.76
15.30	35.85	35.11	3.29	115.52	2.54	0.78	0.78
15.36	34.17	33.35	3.53	117.64	2.57	0.78	0.78
15.44	32.40	31.46	3.88	122.00	2.61	1.00	2.28
15.49	38.12	37.02	3.17	117.24	2.53	0.78	0.78
15.55	37.78	36.60	3.33	121.80	2.55	0.79	0.79
15.63	37.62	36.32	3.53	128.08	2.57	0.80	0.80
15.73	37.30	35.86	3.75	134.61	2.60	1.27	2.59
15.78	36.87	35.35	3.98	140.84	2.63	1.34	2.55
15.82	35.75	34.19	4.30	147.10	2.66	1.38	2.47

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.91	34.35	32.68	4.69	153.15	2.70	1.44	2.35
15.96	31.77	30.11	5.40	162.75	2.76	1.48	2.17
16.05	29.41	27.68	6.18	171.18	2.83	1.58	1.99
16.10	27.02	25.31	7.11	179.91	2.89	1.62	1.82
16.16	25.65	23.90	7.76	185.47	2.94	1.67	1.71
16.24	24.69	22.93	8.28	189.87	2.97	1.71	1.64
16.28	24.13	22.34	8.65	193.22	2.99	1.73	1.60
16.36	23.98	22.07	8.84	195.07	3.00	1.76	1.58
16.42	24.05	22.06	8.90	196.44	3.01	1.78	1.58
16.51	24.23	22.12	8.90	196.78	3.01	1.78	1.58
16.55	24.26	22.09	8.94	197.43	3.01	1.79	1.58
16.61	24.39	22.13	8.95	198.09	3.01	1.80	1.58
16.68	24.70	22.33	8.89	198.51	3.01	1.82	1.59
16.74	25.33	22.83	8.71	198.82	3.00	1.83	1.63
16.83	25.86	23.20	8.57	198.85	2.99	1.85	1.66
16.87	26.32	23.59	8.46	199.47	2.98	1.86	1.69
16.97	26.57	23.67	8.44	199.69	2.98	1.88	1.69
17.06	27.03	23.97	8.31	199.21	2.97	1.88	1.71
17.16	27.12	23.93	8.29	198.44	2.97	1.86	1.71
17.20	26.60	23.38	8.46	197.91	2.98	1.84	1.67
17.29	25.54	22.29	8.86	197.35	3.00	1.80	1.59
17.36	24.51	21.27	9.24	196.56	3.03	1.76	1.52
17.39	23.83	20.62	9.45	194.91	3.04	1.73	1.47
17.47	23.27	20.02	9.63	192.76	3.05	1.67	1.43
17.52	22.71	19.45	9.75	189.70	3.05	1.62	1.39
17.62	22.16	18.85	9.89	186.35	3.06	1.55	1.35
17.71	21.72	18.36	9.99	183.49	3.07	1.48	1.31
17.74	21.48	18.11	10.03	181.72	3.07	1.47	1.29
17.80	21.51	18.07	9.98	180.43	3.07	1.45	1.29
17.86	21.64	18.13	9.87	179.04	3.06	1.43	1.30
17.94	21.92	18.29	9.72	177.79	3.05	1.41	1.31
17.98	22.23	18.52	9.55	176.90	3.04	1.41	1.32
18.05	22.38	18.58	9.36	173.92	3.03	1.40	1.33
18.13	22.32	18.46	9.04	166.83	3.01	1.29	1.32
18.18	22.17	18.27	8.75	159.80	3.00	1.11	1.30
18.26	22.11	18.14	8.57	155.45	2.99	1.11	1.30
18.31	21.86	17.88	8.74	156.15	3.00	1.12	1.28
18.45	22.17	18.01	8.71	156.84	3.00	1.12	1.29
18.55	22.67	18.33	8.60	157.56	2.99	1.15	1.31
18.59	23.76	19.22	8.26	158.68	2.97	1.17	1.37
18.64	24.54	19.82	8.13	161.18	2.96	1.21	1.42
18.74	25.28	20.35	8.04	163.61	2.95	1.29	1.45
18.78	25.65	20.62	8.11	167.20	2.96	1.31	1.47
18.87	25.71	20.56	8.26	169.96	2.97	1.37	1.47
18.92	25.74	20.54	8.42	172.90	2.98	1.40	1.47
18.96	26.24	20.91	8.37	175.06	2.98	1.43	1.49
19.08	26.81	21.25	8.26	175.59	2.97	1.48	1.52
19.10	27.08	21.45	8.17	175.24	2.96	1.46	1.53

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
19.16	26.34	20.77	8.34	173.26	2.97	1.42	1.48
19.24	25.19	19.74	8.67	171.08	2.99	1.35	1.41
19.29	24.42	19.05	8.76	166.92	3.00	1.30	1.36
19.37	24.61	19.13	8.44	161.42	2.98	1.20	1.37
19.43	26.35	20.86	7.33	152.98	2.91	1.14	1.46
19.52	28.41	22.54	6.41	144.42	2.84	1.03	1.58
19.57	30.76	24.52	5.52	135.39	2.77	0.99	1.71
19.66	32.21	25.69	4.95	127.05	2.72	0.93	1.78
19.71	32.91	26.26	4.53	118.83	2.68	0.80	1.82
19.79	32.70	26.01	4.35	113.15	2.66	0.74	1.80
19.84	32.45	25.76	4.30	110.89	2.66	0.73	1.78
19.89	33.29	26.43	4.11	108.77	2.64	0.72	1.83
19.98	32.94	26.05	4.17	108.54	2.65	0.70	1.80
20.02	34.62	27.42	3.89	106.68	2.62	0.70	1.89
20.09	36.10	28.60	3.71	106.13	2.60	0.76	0.76
20.16	39.24	31.17	3.38	105.20	2.55	0.76	0.76
20.25	39.61	31.34	3.44	107.91	2.56	0.76	0.76
20.30	38.58	30.39	3.71	112.67	2.59	0.77	0.77
20.34	35.91	28.07	4.26	119.55	2.66	0.86	1.93
20.43	32.90	25.45	4.95	126.05	2.72	0.91	1.76
20.48	30.20	23.14	5.63	130.35	2.78	0.91	1.60
20.57	28.87	21.96	5.90	129.58	2.80	0.88	1.52
20.62	28.56	21.68	5.78	125.42	2.79	0.82	1.50
20.67	30.36	23.17	4.99	115.67	2.73	0.76	1.60
20.75	33.68	25.89	4.00	103.53	2.63	0.64	1.77
20.81	39.43	30.72	2.84	87.12	2.48	0.72	0.72
20.90	44.27	34.78	2.18	75.86	2.36	0.41	0.70
20.94	49.49	39.27	1.71	67.20	2.24	0.20	0.68
21.03	52.94	42.17	1.52	64.30	2.16	0.16	0.67
21.08	55.86	44.67	1.42	63.65	2.10	0.15	0.67
21.13	56.83	45.43	1.41	63.93	2.09	0.16	0.67
21.22	56.26	44.83	1.42	63.64	2.10	0.15	0.67
21.27	54.34	43.13	1.46	62.82	2.12	0.14	0.66
21.34	51.45	40.58	1.53	62.29	2.17	0.14	0.66
21.41	47.53	37.15	1.71	63.44	2.23	0.15	0.67
21.50	44.39	34.36	1.94	66.62	2.30	0.19	0.67
21.53	41.85	32.14	2.23	71.63	2.37	0.29	0.69
21.59	40.73	31.09	2.44	75.92	2.41	0.42	0.70
21.68	39.46	29.92	2.63	78.81	2.45	0.53	0.70
21.73	37.66	28.39	2.84	80.74	2.48	0.62	0.71
21.82	35.02	26.16	3.15	82.31	2.52	0.71	0.71
21.86	32.22	23.83	3.66	87.27	2.59	0.72	0.72
21.94	29.14	21.26	4.41	93.67	2.67	0.51	1.45
22.01	27.19	19.61	5.13	100.56	2.74	0.54	1.34
22.06	25.98	18.59	5.84	108.61	2.80	0.58	1.28
22.15	24.89	17.65	6.59	116.35	2.86	0.70	1.22
22.20	23.43	16.46	7.47	122.93	2.92	0.73	1.14
22.25	22.44	15.67	7.81	122.38	2.94	0.73	1.09

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.34	22.56	15.77	7.41	116.85	2.91	0.64	1.09
22.38	21.85	15.24	7.22	110.03	2.90	0.56	1.05
22.47	19.27	12.86	8.29	106.57	2.97	0.50	0.92
22.52	16.10	10.57	10.08	106.59	3.07	0.48	0.76
22.59	14.74	9.57	11.26	107.85	3.13	0.47	0.68
22.66	14.61	9.47	11.46	108.55	3.14	0.49	0.68
22.75	15.64	10.19	10.65	108.50	3.10	0.50	0.73
22.78	17.29	11.36	9.37	106.39	3.03	0.49	0.81
22.84	19.06	12.61	8.27	104.33	2.97	0.48	0.90
22.94	20.00	13.68	7.68	104.97	2.93	0.50	0.95
22.97	21.58	14.88	7.07	105.28	2.89	0.51	1.03
23.05	26.92	19.03	5.27	100.35	2.75	0.54	1.30
23.12	35.25	25.59	3.57	91.23	2.58	0.73	0.73
23.17	43.57	32.24	2.59	83.40	2.44	0.71	0.71
23.26	48.60	36.26	2.22	80.45	2.37	0.61	0.71
23.30	50.18	37.49	2.16	80.90	2.36	0.63	0.71
23.36	49.03	36.50	2.26	82.46	2.38	0.71	0.71
23.44	47.51	35.23	2.37	83.45	2.40	0.71	0.71
23.53	46.77	34.59	2.40	82.98	2.40	0.71	0.71
23.57	47.09	34.83	2.37	82.63	2.40	0.71	0.71
23.63	50.57	37.56	2.22	83.43	2.37	0.71	0.71
23.72	54.39	40.51	2.11	85.42	2.35	0.72	0.72
23.76	55.16	41.03	2.16	88.56	2.36	0.73	0.73
23.85	50.21	37.02	2.43	89.95	2.41	0.73	0.73
23.91	44.00	32.08	2.82	90.44	2.48	0.73	0.73
23.95	38.06	27.42	3.29	90.22	2.54	0.73	0.73
24.04	33.43	23.76	3.85	91.52	2.61	0.51	1.59
24.09	26.16	18.08	5.45	98.61	2.77	0.49	1.23
24.18	21.10	14.16	7.43	105.19	2.92	0.49	0.98
24.23	17.29	10.99	10.16	111.67	3.08	0.53	0.78
24.29	18.38	11.73	9.54	111.97	3.04	0.58	0.84
24.36	21.43	14.33	7.50	107.50	2.92	0.53	0.99
24.41	24.22	16.49	6.02	99.25	2.81	0.46	1.13
24.50	24.31	16.56	5.79	95.85	2.79	0.44	1.13
24.56	21.32	14.26	6.96	99.17	2.88	0.45	0.98
24.64	19.43	12.37	8.14	100.74	2.96	0.46	0.88
24.69	23.78	16.09	6.05	97.40	2.82	0.46	1.10
24.75	35.53	25.15	3.45	86.85	2.56	0.72	0.72
24.82	50.22	36.66	2.20	80.72	2.37	0.62	0.71
24.87	60.46	44.65	1.89	84.46	2.29	0.72	0.72
24.96	64.49	47.66	1.88	89.39	2.29	0.73	0.73
25.01	65.19	48.05	1.96	94.12	2.31	0.74	0.74
25.07	65.02	47.74	2.09	99.82	2.34	0.75	0.75
25.14	64.37	46.98	2.31	108.43	2.39	0.76	0.76
25.20	62.03	45.01	2.52	113.59	2.43	0.77	0.77
25.30	58.30	42.05	2.70	113.36	2.46	0.77	0.77
25.34	52.68	37.76	2.87	108.20	2.48	0.76	0.76
25.42	45.75	32.40	3.29	106.52	2.54	0.76	0.76

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.48	40.53	28.40	3.69	104.93	2.59	0.76	0.76
25.55	38.04	26.48	3.95	104.70	2.62	0.65	1.77
25.62	37.80	26.26	4.03	105.73	2.63	0.68	1.75
25.67	40.38	28.20	3.74	105.39	2.60	0.76	0.76
25.75	42.50	29.79	3.46	103.19	2.57	0.75	0.75
25.80	41.53	29.05	3.48	101.18	2.57	0.75	0.75
25.90	36.93	25.51	4.00	101.94	2.63	0.63	1.70
25.94	30.78	20.84	4.98	103.85	2.73	0.59	1.40
25.99	26.43	17.57	5.99	105.19	2.81	0.53	1.19
26.06	23.07	15.03	7.29	109.60	2.91	0.52	1.03
26.13	21.40	13.28	8.56	113.72	2.99	0.61	0.95
26.22	19.94	12.28	9.50	116.64	3.04	0.63	0.88
26.27	17.30	10.50	10.95	114.96	3.12	0.56	0.75
26.34	14.22	8.42	13.18	111.03	3.22	0.48	0.60
26.40	12.08	6.98	15.37	107.26	3.31	0.45	0.50
26.45	10.25	5.75	17.88	102.78	3.39	0.42	0.41
26.54	9.10	4.97	19.56	97.23	3.45	0.34	0.35
26.59	8.04	4.26	21.24	90.52	3.50	0.29	0.30
26.68	7.67	4.00	21.60	86.50	3.51	0.25	0.29
26.73	7.36	3.79	22.14	84.01	3.52	0.25	0.27
26.82	7.21	3.68	22.63	83.36	3.53	0.24	0.26
26.88	7.18	3.66	22.64	82.84	3.54	0.24	0.26
26.91	7.18	3.66	22.53	82.38	3.53	0.23	0.26
27.00	7.21	3.67	22.38	82.11	3.53	0.23	0.26
27.05	7.27	3.70	22.25	82.41	3.52	0.23	0.26
27.14	7.33	3.74	22.33	83.40	3.53	0.24	0.27
27.19	7.36	3.75	22.67	85.03	3.54	0.25	0.27
27.23	7.52	3.85	22.64	87.19	3.54	0.26	0.28
27.32	7.77	4.01	22.10	88.54	3.52	0.29	0.29
27.38	8.42	4.43	19.86	88.04	3.46	0.28	0.32
27.46	9.07	4.85	17.69	85.84	3.39	0.26	0.35
27.51	9.51	5.13	16.46	84.50	3.35	0.24	0.37
27.57	9.44	5.08	16.67	84.74	3.35	0.26	0.36
27.63	9.32	5.00	17.17	85.79	3.37	0.26	0.36
27.69	9.13	4.87	17.62	85.77	3.39	0.27	0.35
27.78	9.22	4.92	17.30	85.06	3.38	0.25	0.35
27.85	9.32	4.97	16.84	83.76	3.36	0.25	0.36
27.90	9.91	5.35	15.17	81.21	3.30	0.24	0.38
27.99	10.50	5.73	13.68	78.37	3.24	0.21	0.41
28.04	11.00	6.05	12.41	75.03	3.19	0.20	0.43
28.13	11.03	6.06	12.03	72.92	3.17	0.18	0.43
28.17	10.23	5.53	12.84	70.99	3.20	0.17	0.39
28.26	9.26	4.89	14.21	69.53	3.26	0.15	0.35
28.31	8.49	4.38	15.53	68.07	3.31	0.15	0.31
28.36	8.61	4.46	14.89	66.40	3.29	0.14	0.32
28.45	8.99	4.69	13.95	65.50	3.25	0.13	0.34
28.49	9.51	5.03	13.23	66.57	3.22	0.13	0.36
28.56	10.04	5.37	12.85	68.97	3.21	0.16	0.38

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.63	10.88	5.90	11.81	69.72	3.16	0.17	0.42
28.73	12.56	6.97	9.61	67.00	3.05	0.16	0.50
28.78	14.30	8.46	7.50	63.45	2.92	0.13	0.58
28.82	14.80	8.82	6.93	61.17	2.88	0.13	0.60
28.91	14.02	8.24	7.64	62.97	2.93	0.13	0.56
28.96	12.87	7.15	9.94	71.01	3.06	0.15	0.51
29.05	12.35	6.80	12.43	84.50	3.19	0.25	0.49
29.09	12.26	6.73	14.72	99.02	3.28	0.38	0.48
29.15	12.75	7.04	16.25	114.42	3.34	0.49	0.50
29.23	14.37	8.06	15.66	126.21	3.32	0.68	0.58
29.28	26.42	15.77	8.13	128.22	2.96	0.77	1.13
29.37	38.32	24.98	5.02	125.29	2.73	0.89	1.67
29.42	48.48	32.39	3.75	121.32	2.60	0.78	0.78
29.46	47.51	31.58	4.02	126.98	2.63	1.01	2.08
29.56	46.05	30.41	4.32	131.46	2.66	1.06	2.01
29.60	44.56	29.28	4.54	132.94	2.68	1.06	1.94
29.67	41.98	27.46	4.62	126.87	2.69	1.01	1.82
29.74	38.63	25.16	4.56	114.67	2.69	0.74	1.67
29.83	45.47	30.33	3.23	97.97	2.54	0.74	0.74
29.92	56.84	38.85	2.34	90.71	2.39	0.73	0.73
29.96	67.40	46.65	2.02	94.47	2.33	0.74	0.74
30.02	65.23	44.81	2.24	100.38	2.37	0.75	0.75
30.07	57.27	38.66	2.82	109.12	2.48	0.76	0.76
30.12	46.47	30.57	3.92	119.86	2.62	0.92	2.01
30.21	36.20	23.07	5.53	127.59	2.77	0.89	1.54
30.31	28.15	17.30	7.58	131.22	2.93	0.79	1.18
30.34	23.24	13.42	9.48	127.32	3.04	0.75	0.96
30.40	19.76	11.23	10.88	122.13	3.11	0.66	0.80
30.49	16.44	9.13	12.57	114.67	3.19	0.52	0.65
30.54	14.36	7.82	13.65	106.67	3.24	0.44	0.56
30.58	13.33	7.17	13.82	99.09	3.25	0.39	0.51
30.68	12.56	6.67	13.87	92.55	3.25	0.30	0.48
30.73	11.60	6.06	14.26	86.44	3.26	0.27	0.43
30.80	10.76	5.53	14.85	82.19	3.29	0.24	0.40
30.86	10.01	5.06	15.44	78.18	3.31	0.20	0.36
30.91	9.52	4.75	15.60	74.08	3.32	0.18	0.34
31.02	9.27	4.58	15.59	71.47	3.32	0.16	0.33
31.05	9.09	4.47	15.50	69.24	3.31	0.16	0.32
31.14	8.93	4.36	15.66	68.35	3.32	0.15	0.31
31.18	8.87	4.32	15.61	67.46	3.32	0.14	0.31
31.24	8.75	4.24	15.81	67.05	3.32	0.14	0.30
31.32	8.81	4.27	15.61	66.66	3.32	0.14	0.31
31.36	8.91	4.33	15.35	66.40	3.31	0.14	0.31
31.44	9.22	4.51	14.69	66.29	3.28	0.14	0.32
31.51	9.63	4.76	13.97	66.51	3.25	0.14	0.34
31.59	10.00	4.98	13.37	66.58	3.23	0.14	0.36
31.65	10.72	5.42	12.42	67.29	3.19	0.14	0.39
31.73	11.40	5.83	12.05	70.30	3.17	0.15	0.42

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.83	12.22	6.32	11.59	73.26	3.15	0.20	0.45
31.92	12.78	6.65	11.30	75.16	3.13	0.20	0.48
31.97	13.56	7.13	10.47	74.65	3.09	0.20	0.51
32.06	14.62	7.77	9.51	73.89	3.04	0.20	0.55
32.10	15.34	8.20	8.98	73.62	3.01	0.20	0.59
32.15	15.07	8.03	9.31	74.75	3.03	0.20	0.57
32.24	14.17	7.46	10.31	76.97	3.08	0.22	0.53
32.29	13.52	7.06	11.62	82.03	3.15	0.23	0.50
32.38	13.61	7.10	12.15	86.30	3.17	0.29	0.51
32.43	14.86	7.85	11.32	88.92	3.13	0.31	0.56
32.52	16.38	8.77	10.11	88.63	3.07	0.31	0.63
32.57	18.09	9.80	8.96	87.78	3.01	0.31	0.70
32.62	18.99	10.34	8.64	89.35	2.99	0.32	0.74
32.70	19.23	10.47	8.85	92.64	3.00	0.36	0.75
32.75	19.33	10.52	9.26	97.37	3.03	0.39	0.75
32.81	19.64	10.70	9.49	101.51	3.04	0.44	0.76
32.89	20.83	11.40	9.15	104.27	3.02	0.47	0.81
32.98	22.17	12.18	8.69	105.95	2.99	0.50	0.87
33.03	23.35	12.89	8.32	107.25	2.97	0.52	0.92
33.07	24.22	13.40	8.17	109.57	2.96	0.54	0.96
33.17	24.75	13.70	8.15	111.65	2.96	0.58	0.98
33.21	25.03	13.86	8.16	113.08	2.96	0.59	0.99
33.31	24.97	13.79	8.24	113.67	2.97	0.59	0.99
33.35	24.79	13.67	8.41	115.01	2.98	0.60	0.98
33.44	24.73	13.61	8.58	116.76	2.99	0.62	0.97
33.49	24.45	13.43	8.86	119.00	3.00	0.64	0.96
33.53	24.58	13.50	9.04	122.00	3.01	0.66	0.96
33.63	24.73	13.56	9.20	124.83	3.02	0.72	0.97
33.67	26.13	14.39	8.79	126.44	3.00	0.73	1.03
33.77	28.06	15.51	8.10	125.70	2.96	0.75	1.11
33.81	30.30	17.81	7.16	127.48	2.90	0.76	1.20
33.88	31.82	18.80	6.92	130.03	2.88	0.79	1.27
33.95	32.57	19.23	6.97	134.03	2.88	0.88	1.30
33.99	33.91	20.08	6.86	137.71	2.88	0.92	1.35
34.09	35.71	21.27	6.49	137.97	2.85	0.96	1.43
34.14	37.95	22.79	5.96	135.90	2.81	0.95	1.52
34.22	38.85	23.40	5.72	133.71	2.79	0.92	1.55
34.27	38.26	22.98	5.80	133.27	2.80	0.91	1.53
34.32	36.90	22.02	6.10	134.39	2.82	0.92	1.47
34.40	35.53	21.06	6.42	135.26	2.84	0.91	1.41
34.46	34.32	20.22	6.68	135.17	2.86	0.89	1.36
34.58	33.39	19.54	6.95	135.74	2.88	0.87	1.31
34.59	32.81	19.07	7.49	142.79	2.92	0.90	1.29
34.69	34.49	20.06	7.59	152.23	2.93	1.12	1.36
34.73	40.36	23.88	6.73	160.62	2.87	1.27	1.60
34.78	41.47	24.50	6.94	170.16	2.88	1.44	1.65
34.85	57.95	35.76	4.47	159.97	2.68	1.55	2.33
34.92	63.64	39.58	4.07	161.10	2.64	1.55	2.57

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
35.01	74.06	46.74	3.41	159.38	2.56	0.84	0.84
35.05	67.52	41.84	4.32	180.81	2.66	1.90	2.72
35.14	70.22	43.49	4.32	188.09	2.66	2.25	2.83
35.19	72.00	44.62	4.29	191.40	2.66	2.20	2.90
35.24	72.03	44.64	4.23	188.69	2.65	2.15	2.90
35.33	66.93	41.05	4.67	191.69	2.70	2.11	2.68
35.38	62.64	38.08	5.09	193.99	2.74	2.10	2.50
35.47	56.19	33.63	5.90	198.41	2.80	2.04	2.23
35.50	54.42	32.45	6.05	196.49	2.82	2.01	2.16
35.59	52.33	31.03	6.27	194.50	2.83	1.92	2.07
35.64	53.35	31.76	5.93	188.35	2.81	1.85	2.11
35.70	54.43	32.53	5.59	181.89	2.78	1.77	2.15
35.78	55.43	33.24	5.26	174.88	2.75	1.67	2.19
35.83	55.09	33.10	5.05	167.00	2.73	1.58	2.17
35.92	49.75	29.50	5.59	164.96	2.78	1.41	1.95
35.97	44.45	25.98	6.30	163.59	2.83	1.35	1.73
36.06	41.26	23.82	6.89	164.11	2.88	1.30	1.60
36.10	39.53	22.65	7.28	164.88	2.90	1.30	1.52
36.16	37.75	20.29	8.18	166.02	2.96	1.31	1.45
36.24	39.25	21.11	8.09	170.71	2.96	1.42	1.51
36.30	50.35	29.61	5.81	171.91	2.80	1.56	1.96
36.35	64.96	39.44	4.20	165.51	2.65	1.65	2.55
36.43	74.65	45.93	3.60	165.52	2.58	0.85	0.85
36.52	75.98	46.65	3.67	171.24	2.59	0.85	0.85
36.57	74.27	45.33	3.92	177.74	2.62	1.97	2.91
36.62	74.23	45.14	4.10	185.11	2.64	2.00	2.91
36.70	78.19	47.67	3.95	188.35	2.62	2.31	3.06
36.75	84.16	51.67	3.63	187.55	2.59	0.87	0.87
36.84	89.86	55.55	3.31	183.84	2.55	0.87	0.87
36.89	91.62	56.56	3.34	189.07	2.55	0.87	0.87
36.96	91.11	55.96	3.54	198.25	2.58	0.88	0.88
37.03	97.52	60.21	3.31	199.07	2.55	0.89	0.89
37.07	99.92	61.82	3.21	198.66	2.53	0.89	0.89
37.17	106.04	65.97	2.95	194.86	2.50	0.88	0.88
37.22	103.90	64.39	3.07	197.79	2.51	0.88	0.88
37.31	106.87	66.37	2.94	195.25	2.49	0.88	0.88
37.35	101.30	62.44	3.19	199.36	2.53	0.89	0.89
37.44	96.61	59.13	3.40	201.06	2.56	0.89	0.89
37.49	86.00	51.88	3.97	205.99	2.62	2.64	3.33
37.54	79.94	47.71	4.45	212.44	2.68	2.46	3.08
37.63	78.46	46.60	4.62	215.16	2.69	2.74	3.02
37.68	90.60	54.76	3.78	206.99	2.60	2.70	3.50
37.76	104.11	64.03	3.03	194.16	2.51	0.88	0.88
37.81	115.12	71.58	2.65	189.42	2.45	0.88	0.88
37.91	128.38	80.55	2.36	190.08	2.40	0.88	0.88
37.95	149.92	95.36	2.02	192.84	2.32	0.88	0.88
38.00	190.91	124.07	1.63	202.85	2.21	0.89	0.89
38.09	221.36	145.26	1.51	218.84	2.15	0.91	0.91

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
38.14	240.55	158.36	1.47	233.15	2.13	0.92	0.92
38.20	235.56	154.04	1.54	237.13	2.17	0.92	0.92
38.26	221.89	143.47	1.69	242.11	2.23	0.93	0.93
38.32	204.39	131.83	1.70	224.05	2.23	0.91	0.91
38.41	185.72	119.53	1.69	202.46	2.23	0.89	0.89
38.46	167.31	108.12	1.60	172.66	2.19	0.86	0.86
38.55	148.66	94.81	1.77	167.50	2.25	0.85	0.85
38.59	125.88	78.75	2.13	167.87	2.35	0.85	0.85
38.69	106.46	65.06	2.72	177.18	2.46	0.86	0.86
38.74	91.33	54.64	3.44	188.07	2.56	0.87	0.87
38.78	87.28	51.82	3.72	192.62	2.60	0.88	0.88
38.88	90.40	53.79	3.59	193.05	2.58	0.88	0.88
38.91	102.63	61.92	3.07	190.24	2.51	0.88	0.88
39.01	105.00	63.28	3.08	195.07	2.51	0.88	0.88
39.06	103.28	61.89	3.27	202.68	2.54	0.89	0.89
39.15	113.45	68.59	2.93	200.97	2.49	0.89	0.89
39.20	147.81	92.19	2.06	190.17	2.33	0.88	0.88
39.24	215.61	140.46	1.42	200.13	2.10	0.89	0.89
39.32	266.34	177.35	1.29	229.30	1.98	0.92	0.92
39.38	289.38	193.78	1.27	245.85	1.95	0.93	0.93
39.44	272.32	179.94	1.32	238.30	2.02	0.93	0.93
39.52	244.85	158.78	1.45	229.55	2.12	0.92	0.92
39.57	223.41	142.51	1.62	231.47	2.20	0.92	0.92
39.63	214.54	136.37	1.66	226.01	2.22	0.91	0.91
39.71	204.71	129.53	1.71	221.00	2.23	0.91	0.91
39.78	208.80	134.29	1.48	198.33	2.14	0.89	0.89
39.84	204.19	132.33	1.40	184.99	2.09	0.87	0.87
39.91	195.77	127.75	1.34	171.45	2.04	0.85	0.85
40.01	230.14	152.54	1.27	193.90	1.95	0.88	0.88
40.04	248.67	165.85	1.25	207.16	1.92	0.89	0.89
40.09	311.54	212.57	1.15	244.09	1.80	0.93	0.93
40.19	361.96	250.31	1.03	257.53	1.72	0.94	0.94
40.23	436.99	306.68	1.00	306.68	1.61	0.98	0.98
40.32	456.59	320.23	1.00	320.23	1.58	0.99	0.99
40.37	463.30	324.79	1.00	324.79	1.59	1.00	1.00
40.46	418.71	291.30	1.00	291.30	1.68	0.97	0.97
40.51	447.35	312.59	1.00	312.59	1.65	0.99	0.99
40.56	493.93	345.74	1.00	345.74	1.58	1.01	1.01
40.63	607.28	425.19	1.00	425.19	1.43	1.06	1.06
40.69	697.09	488.05	1.00	488.05	1.34	1.10	1.10
40.79	751.60	525.82	1.00	525.82	1.30	1.12	1.12
40.84	787.19	550.54	1.00	550.54	1.29	1.13	1.13
40.88	722.11	504.65	1.00	504.65	1.38	1.11	1.11
40.97	699.63	488.48	1.00	488.48	1.44	1.10	1.10
41.02	669.79	467.35	1.00	467.35	1.49	1.09	1.09
41.09	703.30	490.44	1.00	490.44	1.49	1.10	1.10
41.15	688.55	479.88	1.00	479.88	1.52	1.09	1.09
41.24	685.37	477.20	1.00	477.20	1.51	1.09	1.09

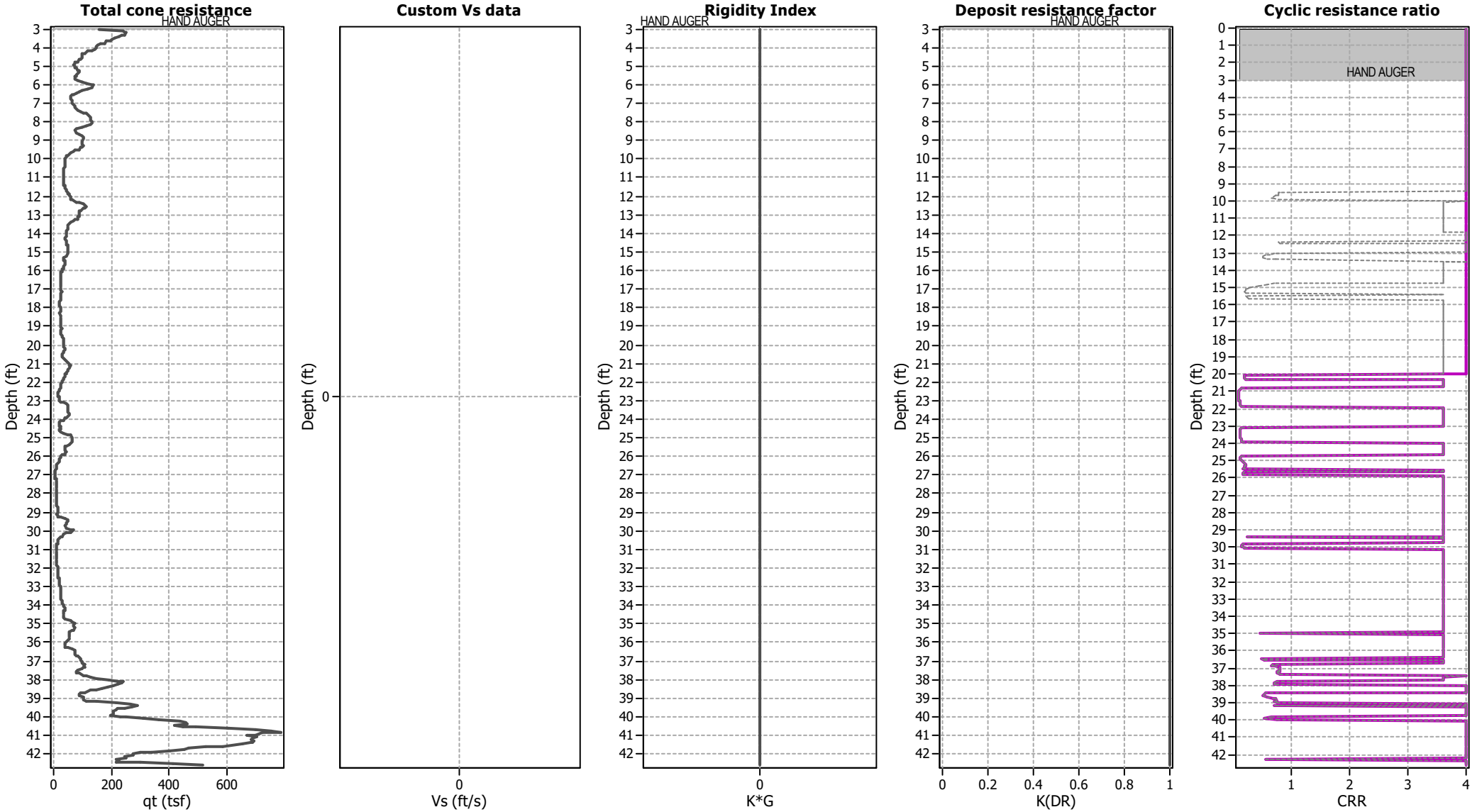
:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.29	695.20	483.85	1.00	483.85	1.46	1.10	1.10
41.35	688.95	479.20	1.00	479.20	1.43	1.09	1.09
41.41	685.40	476.42	1.00	476.42	1.48	1.09	1.09
41.48	656.51	455.98	1.00	455.98	1.55	1.08	1.08
41.58	583.54	404.26	1.00	404.26	1.65	1.05	1.05
41.62	524.82	358.56	1.02	366.84	1.72	1.03	1.03
41.67	467.04	314.22	1.15	360.27	1.79	1.02	1.02
41.76	451.14	301.29	1.18	356.16	1.83	1.02	1.02
41.80	401.46	265.60	1.22	323.54	1.87	1.00	1.00
41.89	340.51	223.01	1.25	278.20	1.92	0.96	0.96
41.94	301.96	196.47	1.27	248.65	1.94	0.93	0.93
42.00	274.73	175.65	1.33	234.23	2.03	0.92	0.92
42.09	276.47	174.68	1.40	244.82	2.09	0.93	0.93
42.13	247.77	153.53	1.57	241.79	2.18	0.93	0.93
42.19	250.22	159.27	1.34	213.37	2.04	0.90	0.90
42.28	217.51	141.93	1.23	174.52	1.89	0.86	0.86
42.34	225.89	-1.00	1.00	-1.00	-1.00	0.00	0.00
42.42	215.14	-1.00	1.00	-1.00	-1.00	0.00	0.00
42.46	301.95	-1.00	1.00	-1.00	-1.00	0.00	0.00
42.55	414.14	-1.00	1.00	-1.00	-1.00	0.00	0.00
42.60	514.53	-1.00	1.00	-1.00	-1.00	0.00	0.00

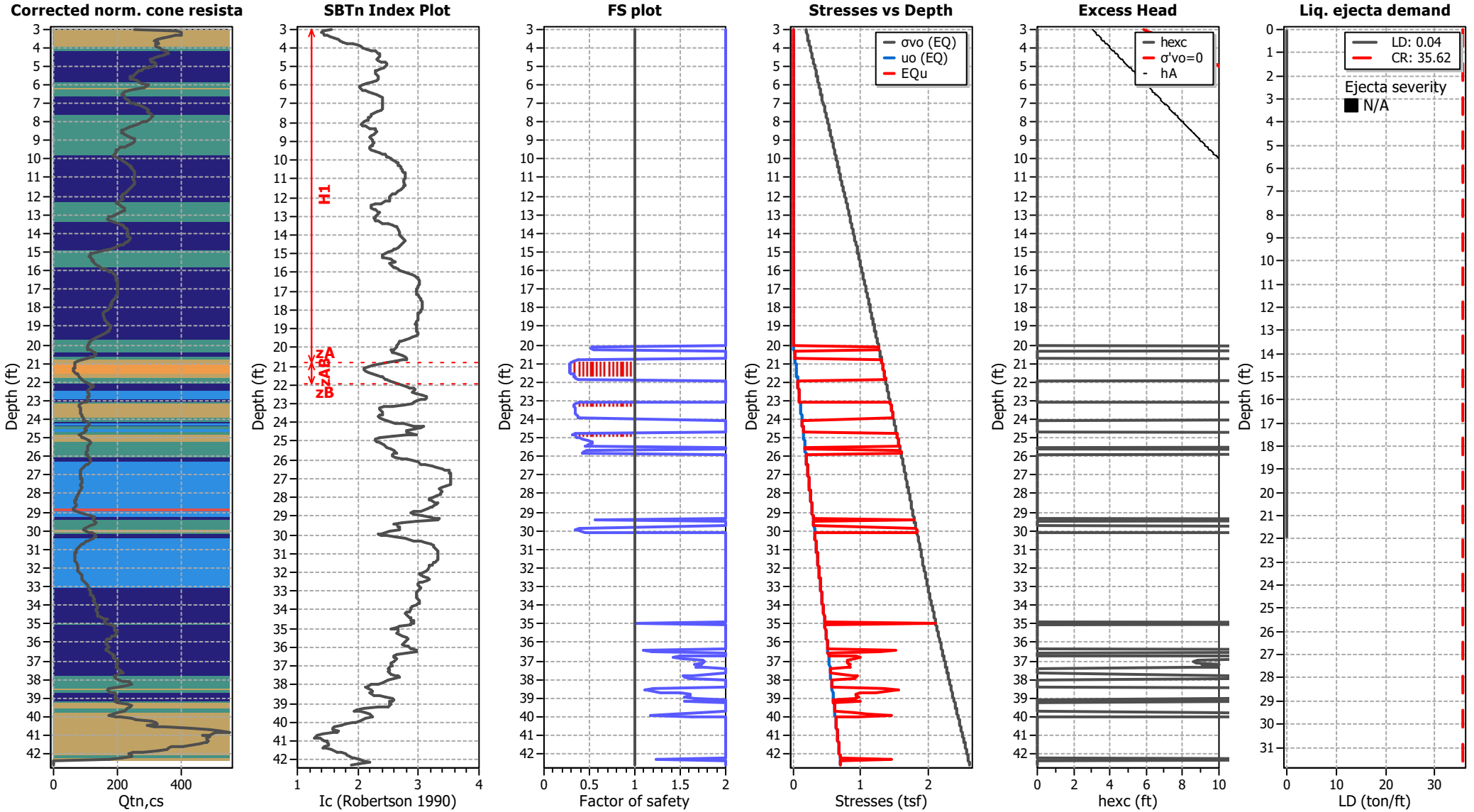
Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

Aging Calculation Estimation



Ejecta Severity Estimation



Verdantas Inc.
2600 Michelson Drive, Suite 400
Irvine, California 92612
http://www.geologismiki.gr

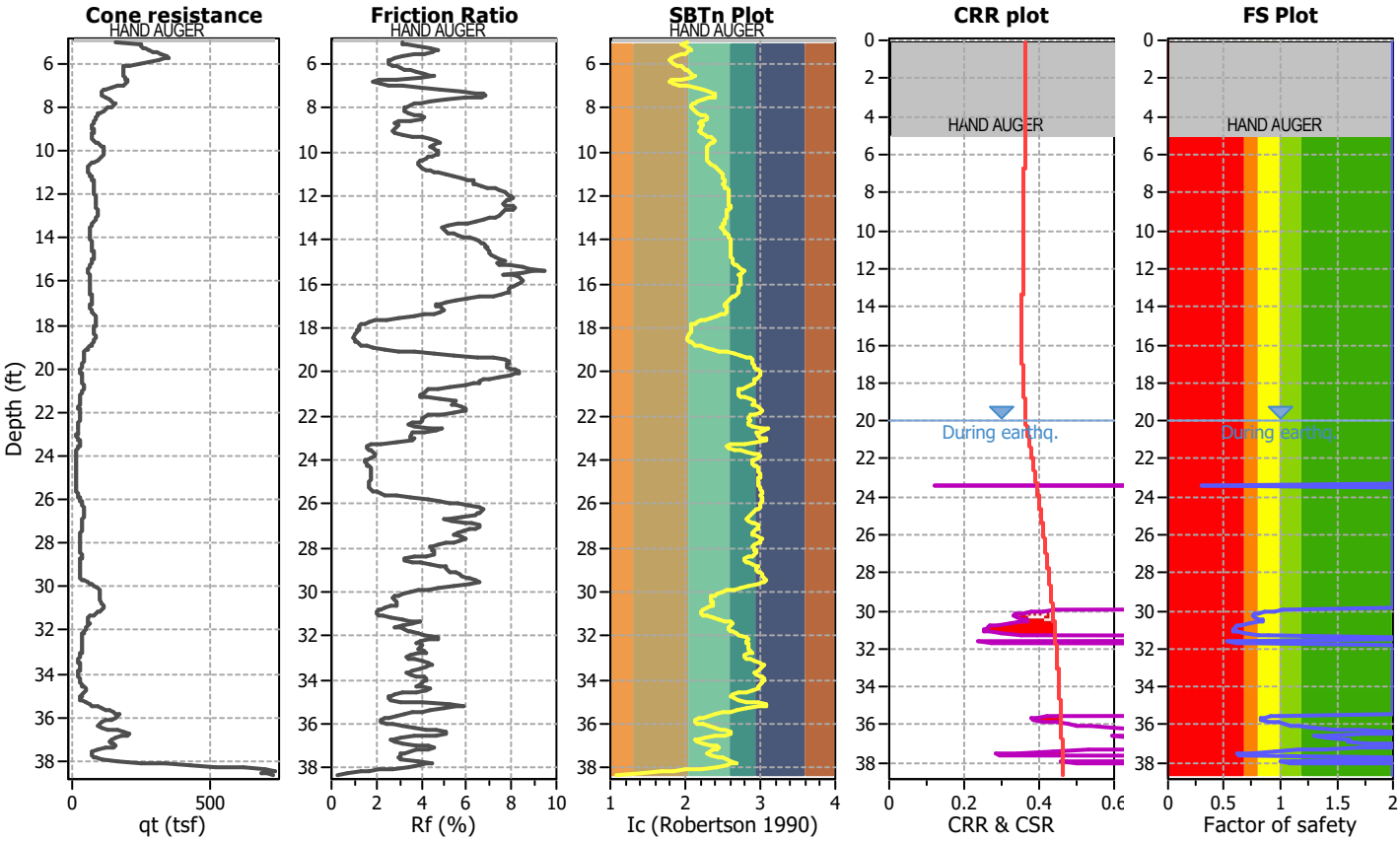
LIQUEFACTION ANALYSIS REPORT

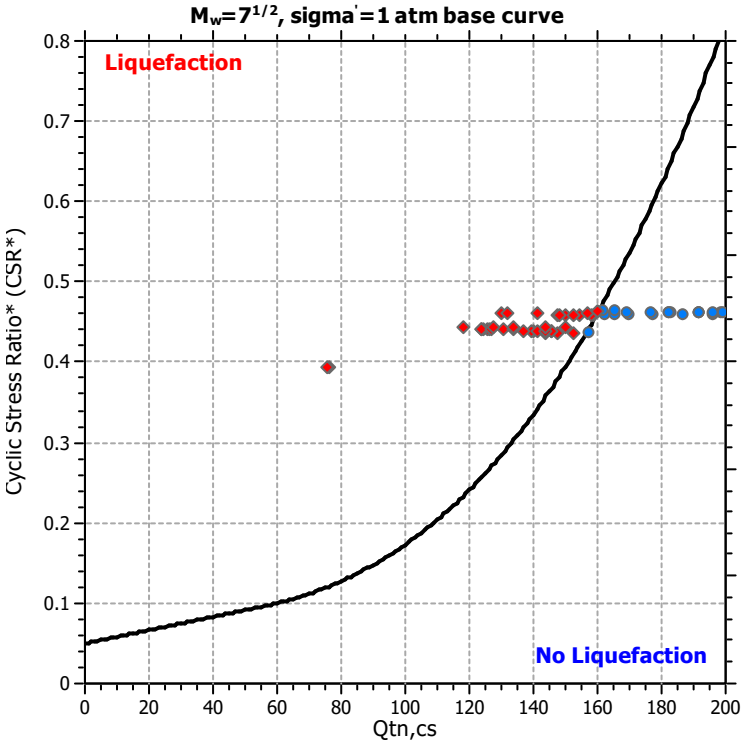
Project title : Intracorp Diamond Bar Montefino **Location : 1400 Montefino Avenue, Diamond Bar, CA**

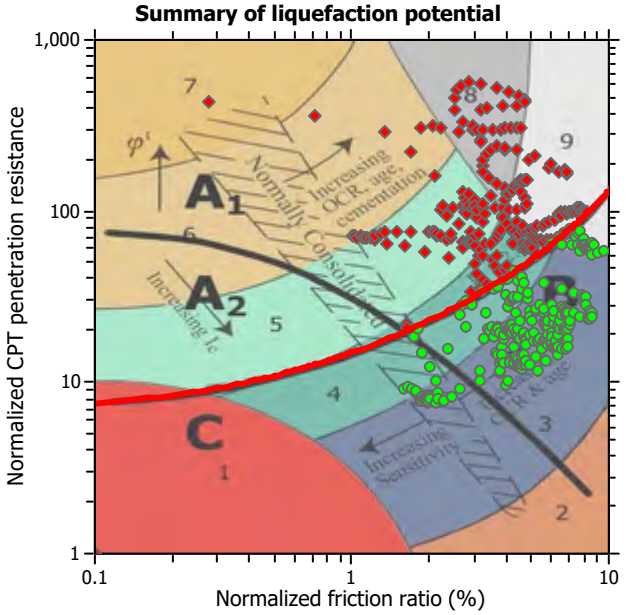
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	25.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	45.00 ft
Earthquake magnitude M_w:	6.11	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.95	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

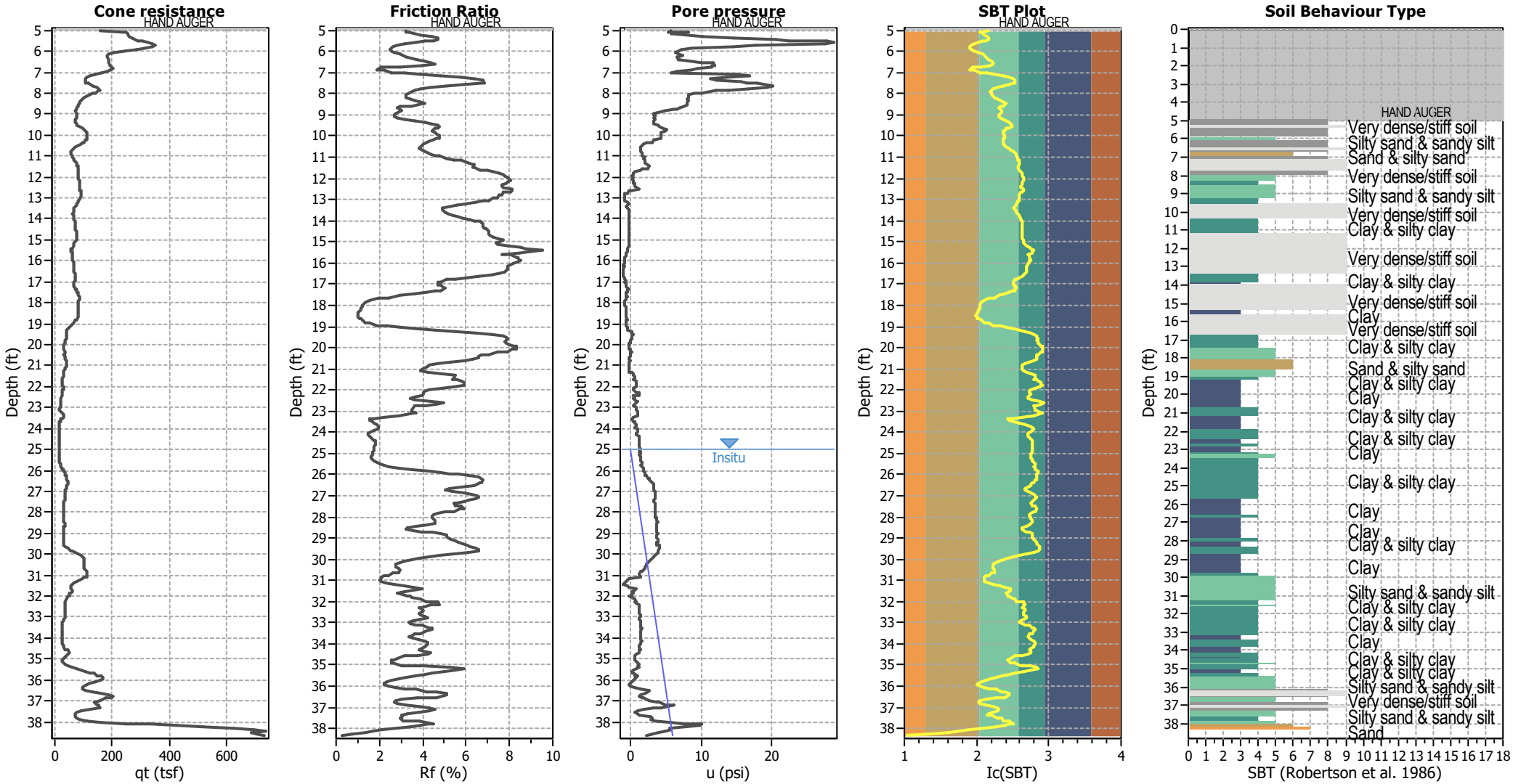






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



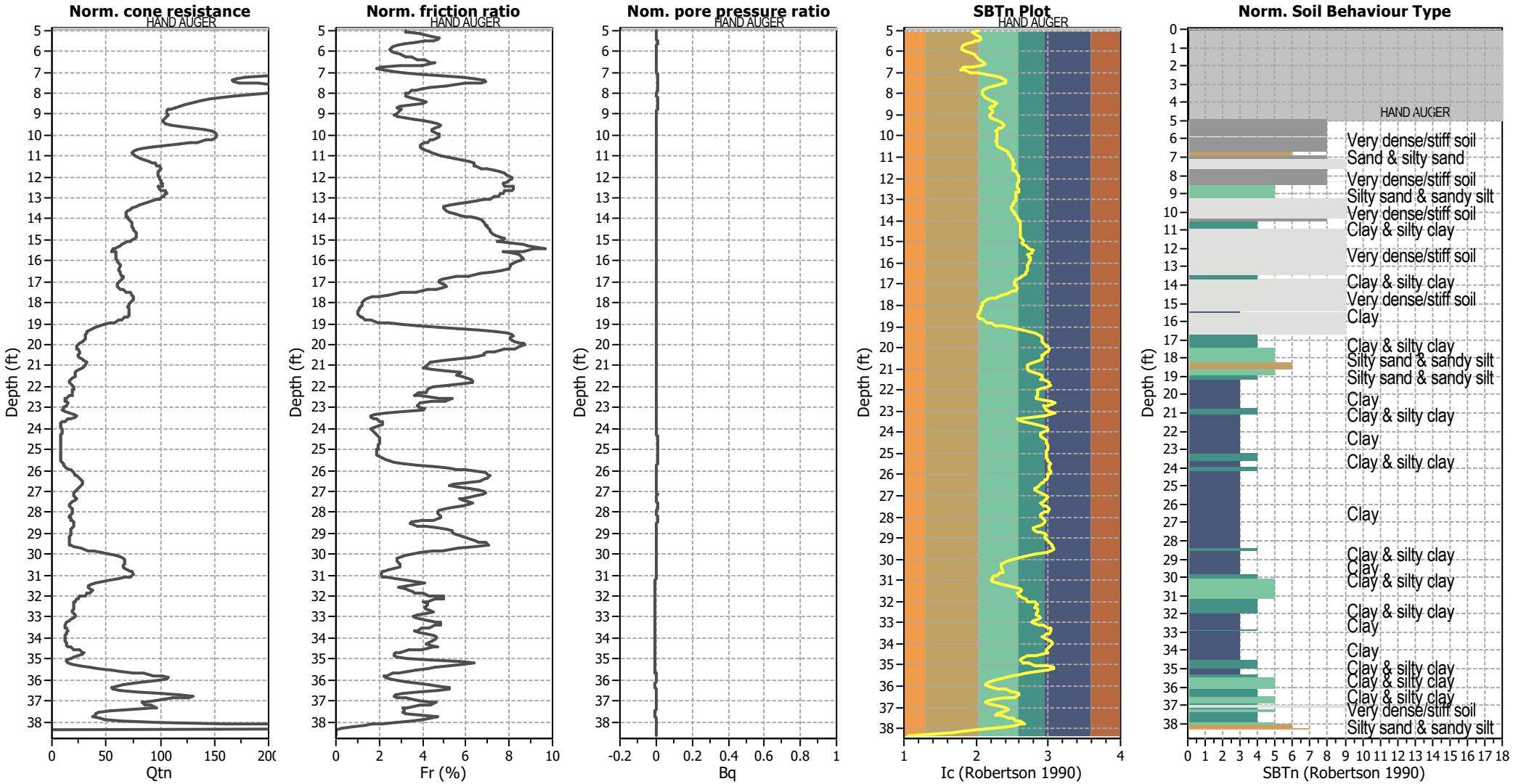
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBT legend

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

CPT basic interpretation plots (normalized)



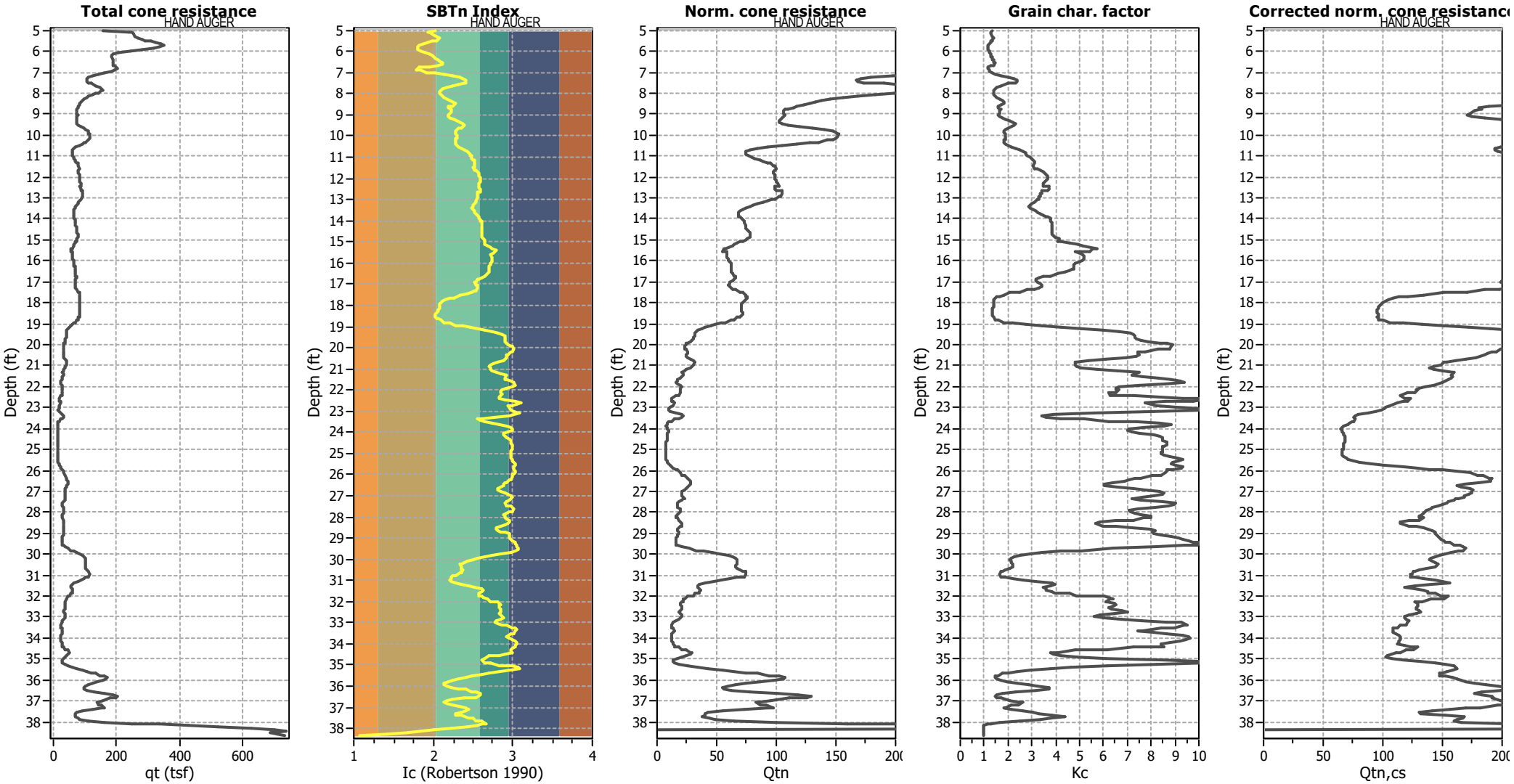
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBTn legend

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

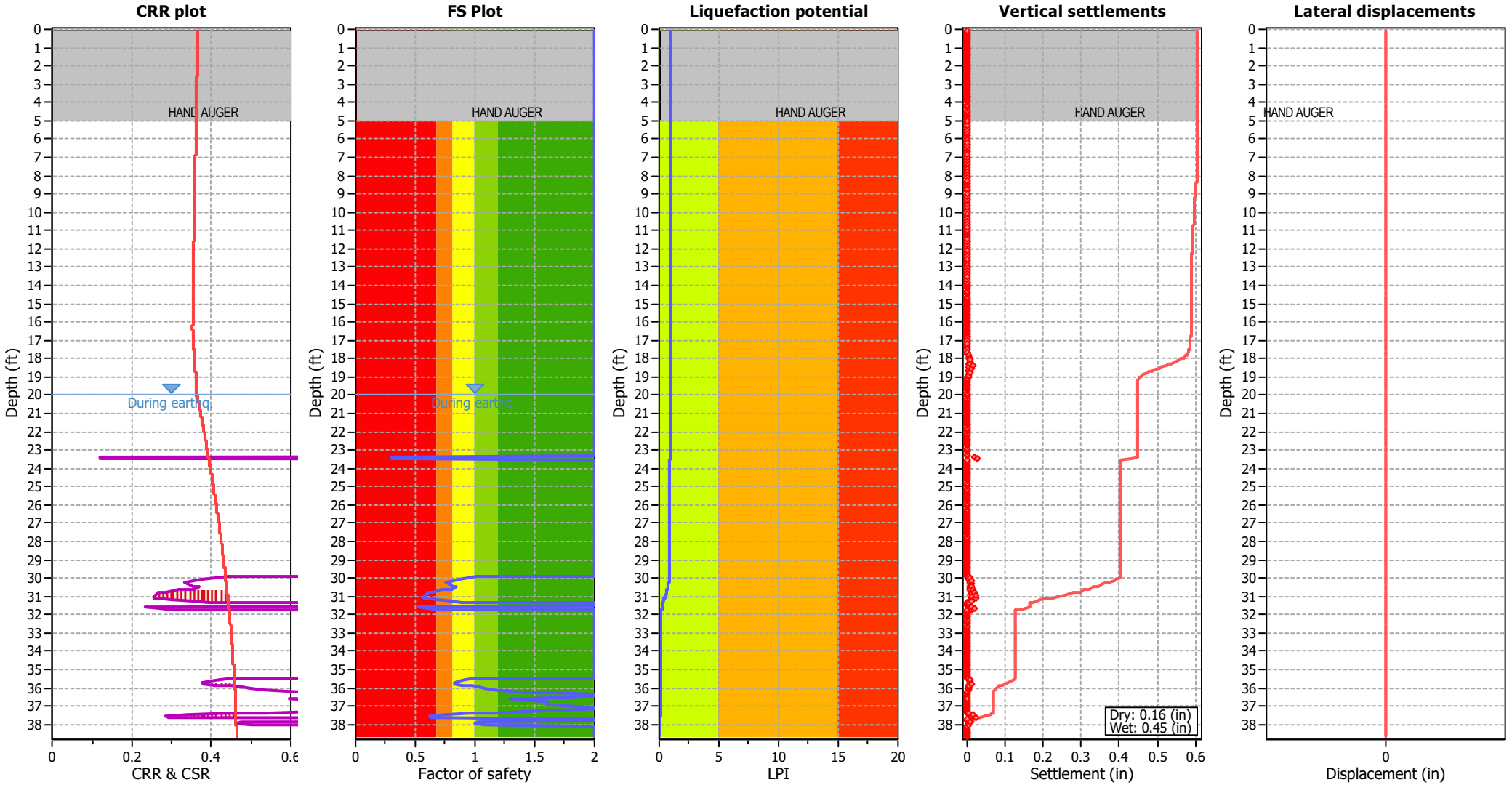
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

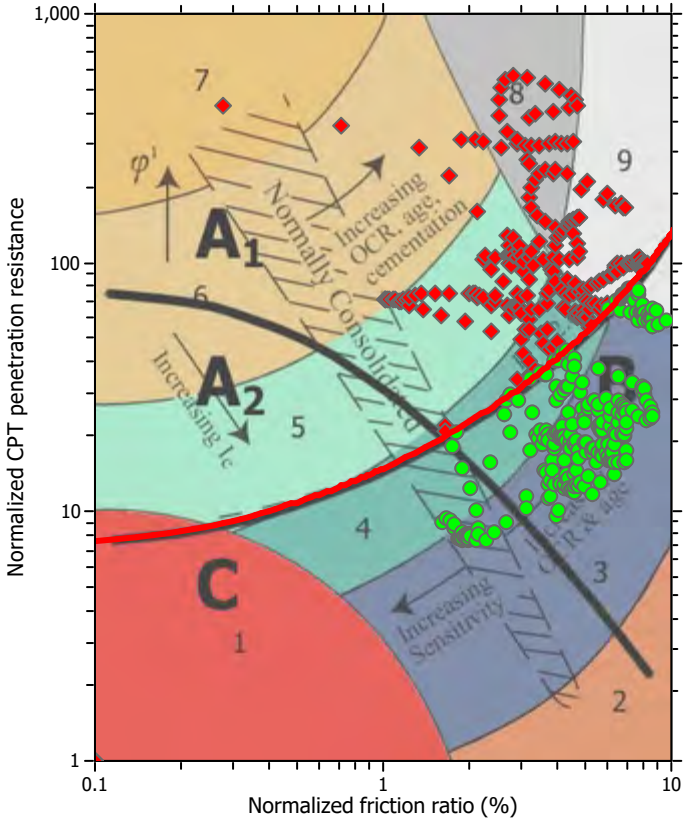
F.S. color scheme

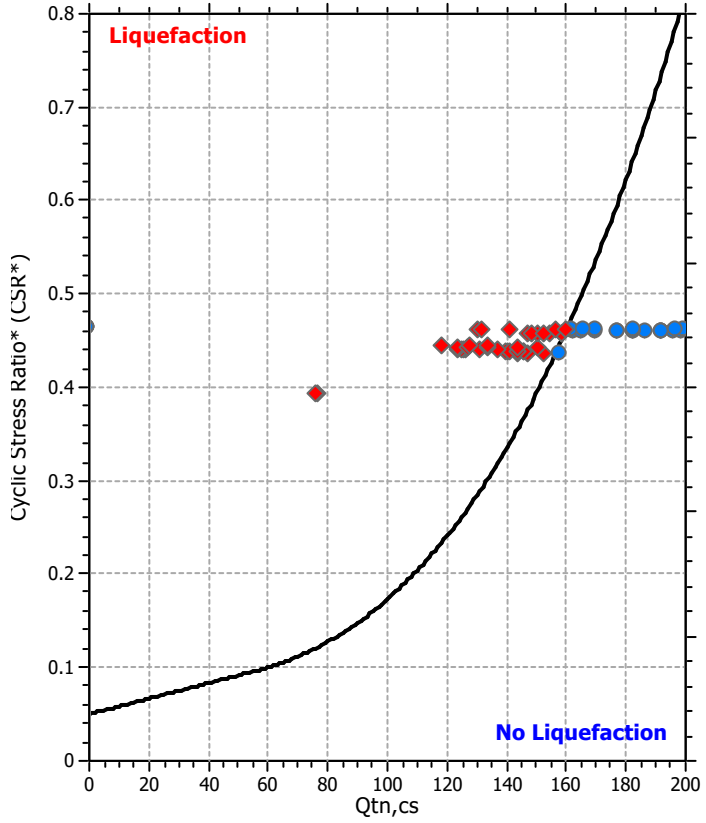
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

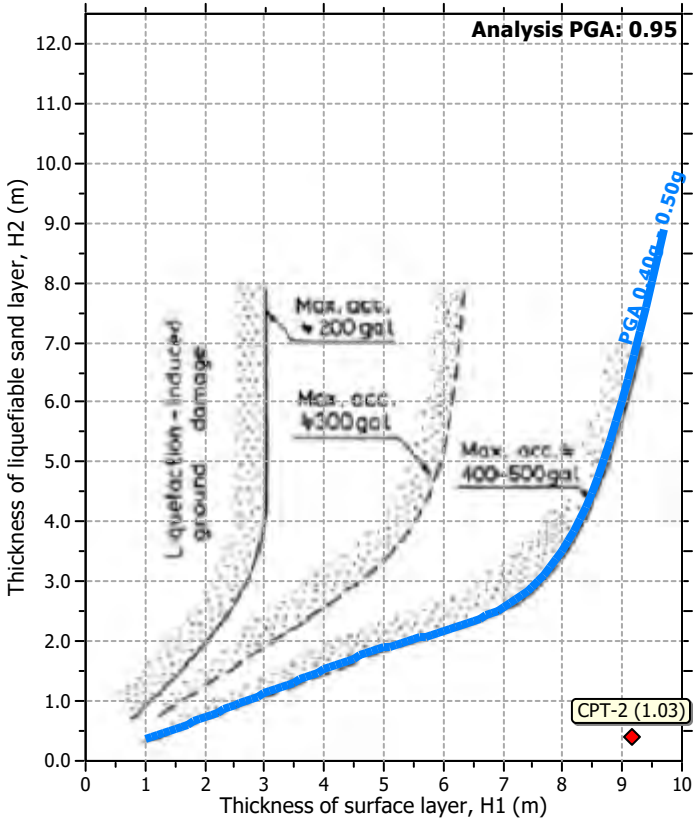
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



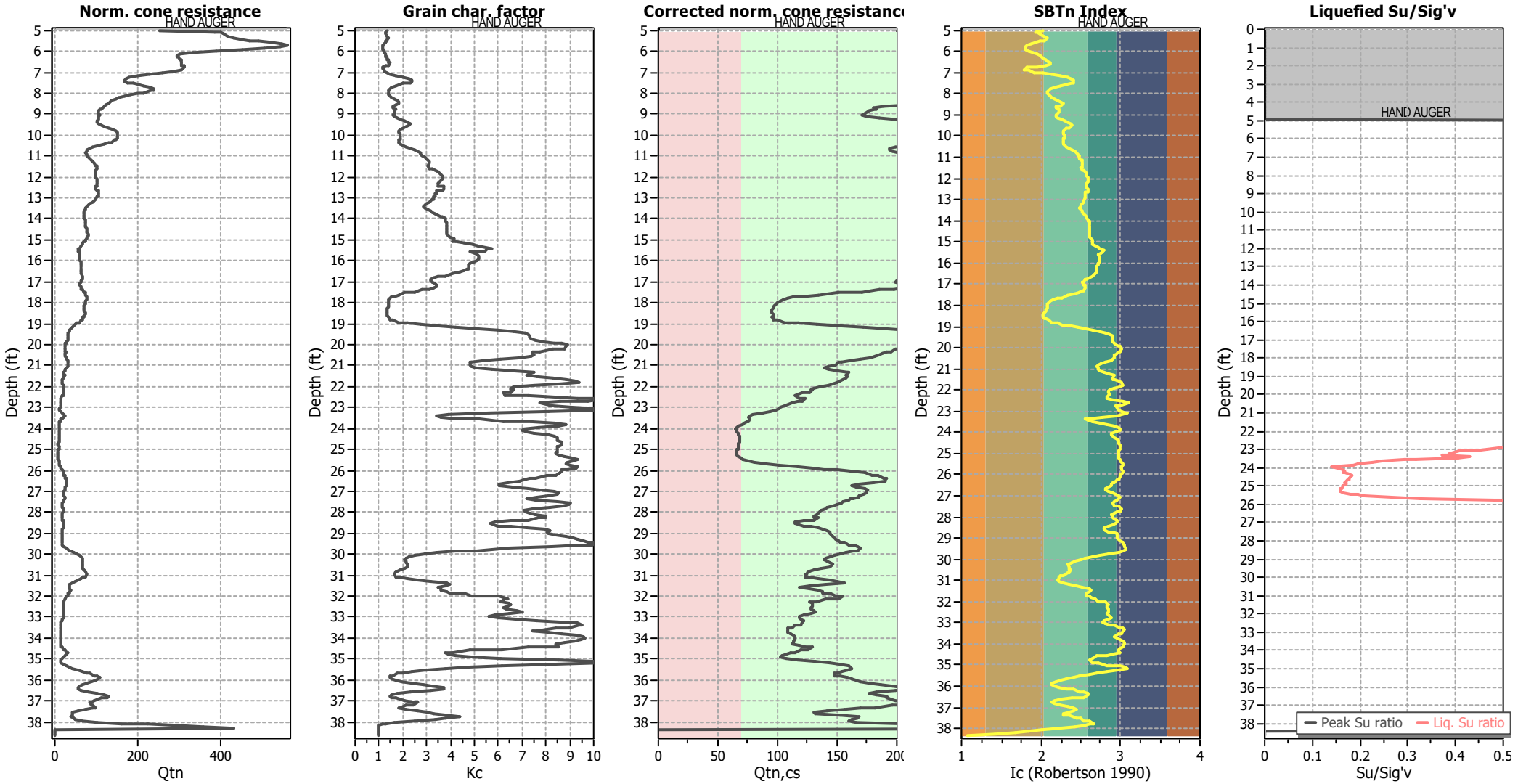




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.00 ft	Fill height:	N/A	Limit depth:	45.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.08	-9999.00	-9999.00	-9999.00	N/A	120.90
2	0.13	-9999.00	-9999.00	-9999.00	N/A	120.90
3	0.22	-9999.00	-9999.00	-9999.00	N/A	120.90
4	0.27	-9999.00	-9999.00	-9999.00	N/A	120.90
5	0.34	-9999.00	-9999.00	-9999.00	N/A	120.90
6	0.41	-9999.00	-9999.00	-9999.00	N/A	120.90
7	0.51	-9999.00	-9999.00	-9999.00	N/A	120.90
8	0.55	-9999.00	-9999.00	-9999.00	N/A	120.90
9	0.60	-9999.00	-9999.00	-9999.00	N/A	120.90
10	0.68	-9999.00	-9999.00	-9999.00	N/A	120.90
11	0.74	-9999.00	-9999.00	-9999.00	N/A	120.90
12	0.83	-9999.00	-9999.00	-9999.00	N/A	120.90
13	0.87	-9999.00	-9999.00	-9999.00	N/A	120.90
14	0.92	-9999.00	-9999.00	-9999.00	N/A	120.90
15	1.01	-9999.00	-9999.00	-9999.00	N/A	120.90
16	1.06	-9999.00	-9999.00	-9999.00	N/A	120.90
17	1.15	-9999.00	-9999.00	-9999.00	N/A	120.90
18	1.18	-9999.00	-9999.00	-9999.00	N/A	120.90
19	1.25	-9999.00	-9999.00	-9999.00	N/A	120.90
20	1.34	-9999.00	-9999.00	-9999.00	N/A	120.90
21	1.38	-9999.00	-9999.00	-9999.00	N/A	120.90
22	1.47	-9999.00	-9999.00	-9999.00	N/A	120.90
23	1.52	-9999.00	-9999.00	-9999.00	N/A	120.90
24	1.60	-9999.00	-9999.00	-9999.00	N/A	120.90
25	1.66	-9999.00	-9999.00	-9999.00	N/A	120.90
26	1.75	-9999.00	-9999.00	-9999.00	N/A	120.90
27	1.79	-9999.00	-9999.00	-9999.00	N/A	120.90
28	1.84	-9999.00	-9999.00	-9999.00	N/A	120.90
29	1.92	-9999.00	-9999.00	-9999.00	N/A	120.90
30	1.99	-9999.00	-9999.00	-9999.00	N/A	120.90
31	2.07	-9999.00	-9999.00	-9999.00	N/A	120.90
32	2.12	-9999.00	-9999.00	-9999.00	N/A	120.90
33	2.17	-9999.00	-9999.00	-9999.00	N/A	120.90
34	2.23	-9999.00	-9999.00	-9999.00	N/A	120.90
35	2.31	-9999.00	-9999.00	-9999.00	N/A	120.90
36	2.40	-9999.00	-9999.00	-9999.00	N/A	120.90
37	2.45	-9999.00	-9999.00	-9999.00	N/A	120.90
38	2.50	-9999.00	-9999.00	-9999.00	N/A	120.90
39	2.58	-9999.00	-9999.00	-9999.00	N/A	120.90
40	2.63	-9999.00	-9999.00	-9999.00	N/A	120.90
41	2.73	-9999.00	-9999.00	-9999.00	N/A	120.90
42	2.77	-9999.00	-9999.00	-9999.00	N/A	120.90
43	2.86	-9999.00	-9999.00	-9999.00	N/A	120.90
44	2.91	-9999.00	-9999.00	-9999.00	N/A	120.90
45	2.96	-9999.00	-9999.00	-9999.00	N/A	120.90
46	3.05	-9999.00	-9999.00	-9999.00	N/A	120.90
47	3.09	-9999.00	-9999.00	-9999.00	N/A	120.90
48	3.18	-9999.00	-9999.00	-9999.00	N/A	120.90

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.23	-9999.00	-9999.00	-9999.00	N/A	120.90
50	3.30	-9999.00	-9999.00	-9999.00	N/A	120.90
51	3.36	-9999.00	-9999.00	-9999.00	N/A	120.90
52	3.42	-9999.00	-9999.00	-9999.00	N/A	120.90
53	3.51	-9999.00	-9999.00	-9999.00	N/A	120.90
54	3.55	-9999.00	-9999.00	-9999.00	N/A	120.90
55	3.65	-9999.00	-9999.00	-9999.00	N/A	120.90
56	3.69	-9999.00	-9999.00	-9999.00	N/A	120.90
57	3.74	-9999.00	-9999.00	-9999.00	N/A	120.90
58	3.83	-9999.00	-9999.00	-9999.00	N/A	120.90
59	3.88	-9999.00	-9999.00	-9999.00	N/A	120.90
60	3.97	-9999.00	-9999.00	-9999.00	N/A	120.90
61	4.01	-9999.00	-9999.00	-9999.00	N/A	120.90
62	4.11	-9999.00	-9999.00	-9999.00	N/A	120.90
63	4.15	-9999.00	-9999.00	-9999.00	N/A	120.90
64	4.20	-9999.00	-9999.00	-9999.00	N/A	120.90
65	4.29	-9999.00	-9999.00	-9999.00	N/A	120.90
66	4.33	-9999.00	-9999.00	-9999.00	N/A	120.90
67	4.42	-9999.00	-9999.00	-9999.00	N/A	120.90
68	4.47	-9999.00	-9999.00	-9999.00	N/A	120.90
69	4.53	-9999.00	-9999.00	-9999.00	N/A	120.90
70	4.61	-9999.00	-9999.00	-9999.00	N/A	120.90
71	4.70	-9999.00	-9999.00	-9999.00	N/A	120.90
72	4.75	-9999.00	-9999.00	-9999.00	N/A	120.90
73	4.80	-9999.00	-9999.00	-9999.00	N/A	120.90
74	4.89	-9999.00	-9999.00	-9999.00	N/A	120.90
75	4.93	-9999.00	-9999.00	-9999.00	N/A	120.90
76	5.02	225.45	7.44	5.63	13.76	134.40
77	5.07	245.39	7.60	5.26	11.33	137.28
78	5.12	249.35	7.96	8.26	11.67	137.28
79	5.19	253.31	9.65	5.81	13.06	137.28
80	5.29	258.25	11.97	10.25	14.33	137.28
81	5.34	266.27	12.70	14.61	14.97	137.28
82	5.41	279.04	13.38	20.51	14.62	137.28
83	5.47	291.62	13.07	22.50	13.88	137.28
84	5.52	305.41	12.72	27.86	12.71	137.28
85	5.59	322.47	11.93	28.85	11.30	137.28
86	5.64	346.05	11.09	27.67	9.71	137.28
87	5.74	356.39	9.59	17.69	8.55	137.28
88	5.79	347.07	9.00	14.52	8.10	137.28
89	5.85	313.05	8.29	8.71	8.10	137.28
90	5.92	287.42	6.95	7.08	8.40	137.28
91	5.98	248.00	6.07	6.80	9.14	136.96
92	6.07	193.57	5.43	6.35	10.51	135.96
93	6.11	183.60	5.43	6.76	11.86	135.49
94	6.21	183.65	5.60	7.35	12.44	135.67
95	6.25	183.65	5.96	6.71	12.96	136.06
96	6.30	183.69	6.34	6.62	13.68	136.71

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.38	189.57	7.21	6.80	14.45	137.28
98	6.44	188.63	7.70	6.99	15.34	137.28
99	6.53	189.94	8.50	10.16	16.05	137.28
100	6.58	188.73	8.66	11.80	16.47	137.28
101	6.67	189.47	8.66	11.89	14.86	137.28
102	6.71	193.95	5.36	11.43	11.65	135.86
103	6.76	198.89	3.09	11.52	8.56	133.51
104	6.85	202.80	3.87	9.35	7.76	132.86
105	6.90	201.68	4.26	8.62	9.23	133.84
106	6.99	180.90	4.83	6.53	10.87	134.35
107	7.03	166.73	5.09	5.81	13.44	134.68
108	7.09	140.36	5.51	14.97	16.65	134.93
109	7.18	119.48	6.10	16.79	20.34	135.14
110	7.23	110.81	6.41	13.52	23.60	135.45
111	7.32	104.38	6.94	11.25	25.40	135.69
112	7.37	104.29	7.07	12.16	26.53	135.95
113	7.46	104.20	7.28	15.61	26.62	136.09
114	7.49	106.43	7.30	16.42	25.93	136.19
115	7.55	114.17	7.17	17.88	23.37	136.22
116	7.65	135.60	6.69	20.14	20.46	136.18
117	7.69	147.16	6.44	19.42	17.83	135.98
118	7.78	155.92	5.96	16.61	16.41	135.69
119	7.83	157.13	5.67	13.88	15.58	135.29
120	7.88	153.31	5.40	12.16	15.25	134.65
121	7.97	143.43	4.68	10.16	15.39	133.88
122	8.01	131.78	4.37	9.07	15.50	132.82
123	8.10	121.72	3.77	8.26	16.05	131.99
124	8.15	112.96	3.62	8.17	16.78	131.21
125	8.24	101.96	3.48	8.26	18.03	130.85
126	8.29	96.37	3.52	8.08	19.44	130.65
127	8.38	91.15	3.59	8.26	20.72	130.63
128	8.43	87.14	3.63	8.08	21.75	130.64
129	8.47	85.74	3.68	7.99	21.71	130.05
130	8.56	81.83	2.87	7.89	20.36	128.80
131	8.61	81.27	2.10	7.53	18.93	127.36
132	8.67	78.57	2.21	6.99	18.54	126.68
133	8.75	76.05	2.28	6.53	19.55	126.78
134	8.80	73.16	2.27	6.17	19.93	126.66
135	8.87	73.67	2.15	4.99	19.75	126.37
136	8.96	74.19	2.04	3.27	19.15	126.13
137	9.01	76.24	2.03	3.36	18.75	126.00
138	9.07	76.24	2.03	3.27	18.78	126.12
139	9.14	75.86	2.12	3.36	19.31	126.36
140	9.19	75.02	2.25	3.27	20.84	127.10
141	9.29	72.51	2.74	3.36	22.47	127.82
142	9.33	72.04	2.90	3.27	24.14	128.63
143	9.42	72.69	3.21	3.18	25.13	129.22
144	9.47	73.44	3.47	3.27	25.75	129.93

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.55	77.45	3.78	3.81	25.56	130.63
146	9.61	85.28	4.05	4.08	24.51	131.34
147	9.66	94.69	4.28	4.45	23.15	132.04
148	9.74	104.10	4.57	5.17	22.09	132.67
149	9.79	110.35	4.81	4.81	21.67	133.18
150	9.85	111.09	5.01	4.36	21.81	133.60
151	9.93	112.21	5.31	4.36	22.13	133.91
152	9.98	113.89	5.42	4.36	22.33	134.11
153	10.11	113.33	5.40	4.36	22.33	134.13
154	10.13	113.80	5.33	4.36	22.11	133.94
155	10.21	112.68	5.01	3.54	21.88	133.61
156	10.25	109.41	4.77	3.18	21.67	133.00
157	10.34	103.54	4.27	2.99	21.80	132.32
158	10.39	97.39	3.97	2.18	21.83	131.56
159	10.44	94.32	3.68	1.72	22.37	130.56
160	10.52	79.50	3.05	1.54	23.21	129.38
161	10.57	70.37	2.71	1.36	24.61	128.08
162	10.65	64.03	2.50	1.45	25.95	127.30
163	10.71	60.11	2.44	1.45	27.24	126.88
164	10.81	57.41	2.46	1.45	28.26	126.82
165	10.84	57.69	2.52	1.54	28.91	126.99
166	10.90	58.25	2.64	1.54	29.27	127.35
167	10.96	59.46	2.81	1.63	29.66	127.93
168	11.04	62.16	3.11	2.00	30.25	128.85
169	11.13	65.80	3.65	1.72	30.80	129.70
170	11.17	66.92	3.86	2.00	31.15	130.61
171	11.25	71.76	4.32	1.91	31.50	131.40
172	11.32	74.65	4.82	2.00	31.63	132.05
173	11.36	75.58	4.88	1.91	31.40	132.38
174	11.45	78.47	4.82	2.54	31.10	132.59
175	11.50	80.52	5.12	2.54	31.06	132.95
176	11.59	81.83	5.49	2.36	31.59	133.38
177	11.64	81.92	5.67	1.63	32.28	133.69
178	11.69	80.66	5.82	1.36	33.10	133.90
179	11.77	79.50	6.04	0.55	33.79	134.10
180	11.83	80.62	6.19	0.27	34.26	134.30
181	11.90	80.99	6.32	0.27	34.43	134.49
182	11.97	81.74	6.47	0.09	34.67	134.65
183	12.02	82.01	6.58	0.27	34.82	134.83
184	12.10	83.13	6.73	0.09	34.82	134.94
185	12.15	84.07	6.72	0.27	34.51	134.97
186	12.22	85.00	6.57	0.45	34.21	134.96
187	12.29	85.56	6.63	0.45	33.84	134.91
188	12.34	86.39	6.52	0.64	33.77	134.99
189	12.42	87.33	6.74	0.64	33.75	135.10
190	12.48	87.98	6.86	0.64	35.06	135.18
191	12.58	78.38	6.98	1.09	35.08	135.30
192	12.62	89.84	7.01	0.09	34.81	135.40

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.67	91.89	7.03	-0.18	33.42	135.55
194	12.76	92.45	7.06	-0.45	33.24	135.59
195	12.81	92.45	7.03	-0.82	33.08	135.52
196	12.90	92.27	6.83	-0.82	32.99	135.36
197	12.95	90.78	6.65	-0.82	32.78	135.04
198	13.03	88.54	6.23	-0.82	32.67	134.60
199	13.08	85.93	5.85	-0.91	32.32	134.05
200	13.13	84.34	5.44	-0.91	31.93	133.33
201	13.22	79.68	4.76	-0.54	31.53	132.54
202	13.27	76.89	4.39	-0.36	30.83	131.52
203	13.36	74.09	3.72	-0.54	30.30	130.65
204	13.41	71.30	3.46	-0.64	29.99	129.86
205	13.45	68.41	3.34	-0.54	30.46	129.44
206	13.55	65.80	3.27	-0.27	31.10	129.25
207	13.59	65.24	3.29	-0.18	31.72	129.16
208	13.68	63.75	3.30	-0.18	32.31	129.21
209	13.73	63.37	3.39	-0.18	33.08	129.43
210	13.82	63.65	3.62	-0.18	33.79	129.76
211	13.87	64.03	3.76	-0.18	34.35	130.14
212	13.92	65.05	3.93	-0.18	34.95	130.62
213	14.00	66.45	4.34	-0.18	35.36	131.11
214	14.05	68.13	4.50	-0.18	35.69	131.57
215	14.12	69.34	4.67	-0.18	35.67	131.82
216	14.18	70.09	4.72	-0.18	35.69	132.03
217	14.28	71.11	4.84	-0.18	35.75	132.16
218	14.33	71.30	4.89	-0.18	35.84	132.29
219	14.37	71.39	4.93	-0.27	35.94	132.42
220	14.46	72.51	5.07	-0.18	36.02	132.56
221	14.51	73.25	5.14	-0.27	35.97	132.76
222	14.60	74.74	5.27	-0.18	35.85	132.94
223	14.65	76.24	5.36	-0.27	35.74	133.15
224	14.70	77.17	5.50	-0.27	35.81	133.33
225	14.78	77.35	5.63	-0.27	36.09	133.50
226	14.84	77.26	5.71	-0.27	36.68	133.64
227	14.93	75.77	5.86	-0.27	37.48	133.73
228	14.99	74.09	5.93	-0.27	37.57	133.41
229	15.06	72.32	5.08	-0.27	37.34	132.97
230	15.11	71.30	4.99	-0.27	37.97	132.75
231	15.18	67.57	5.61	-0.27	39.67	132.91
232	15.25	65.43	5.62	-0.18	41.53	133.11
233	15.30	64.49	5.62	-0.36	42.39	133.06
234	15.39	62.91	5.62	-0.41	45.35	132.84
235	15.43	49.86	5.59	-0.45	44.59	132.16
236	15.53	60.21	4.25	-0.45	43.92	131.63
237	15.57	60.30	4.61	-0.54	41.02	131.45
238	15.62	60.77	4.95	-0.73	41.97	131.88
239	15.71	60.95	5.07	-0.64	42.53	132.15
240	15.75	61.23	5.14	-0.77	42.75	132.30

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.85	61.70	5.24	-0.82	42.87	132.42
242	15.88	62.12	5.29	-0.82	42.84	132.51
243	15.96	62.54	5.30	-0.82	42.47	132.57
244	16.01	64.49	5.29	-0.82	41.79	132.62
245	16.11	66.26	5.29	-0.82	41.12	132.68
246	16.15	66.82	5.29	-1.00	40.75	132.70
247	16.24	66.92	5.29	-1.00	40.72	132.72
248	16.29	66.92	5.30	-0.91	40.74	132.72
249	16.38	66.92	5.29	-1.00	40.71	132.68
250	16.43	66.92	5.21	-1.00	40.51	132.59
251	16.47	67.10	5.12	-1.00	39.89	132.41
252	16.56	67.94	4.87	-1.00	38.90	132.13
253	16.61	68.87	4.59	-1.00	37.24	131.68
254	16.71	70.64	4.17	-1.00	35.55	131.20
255	16.75	71.76	3.93	-1.09	33.93	130.70
256	16.80	72.14	3.69	-0.91	32.82	130.23
257	16.89	71.39	3.41	-0.82	32.09	129.73
258	16.94	70.18	3.24	-0.73	31.91	129.28
259	17.03	67.66	3.14	-0.82	32.22	129.06
260	17.06	67.01	3.18	-0.64	32.94	129.12
261	17.16	66.82	3.38	-0.64	33.50	129.33
262	17.21	67.29	3.42	-0.64	33.48	129.51
263	17.30	69.62	3.40	-0.45	32.70	129.52
264	17.35	71.95	3.31	-0.36	31.50	129.40
265	17.40	73.35	3.15	-0.45	29.48	129.04
266	17.49	78.66	2.80	-0.45	27.24	128.51
267	17.53	81.36	2.54	-0.64	24.08	127.44
268	17.63	83.97	1.89	-0.73	21.44	126.18
269	17.68	84.72	1.61	-0.54	19.03	124.77
270	17.72	85.18	1.46	-0.73	17.47	123.70
271	17.81	85.56	1.21	-0.73	16.39	122.84
272	17.86	85.18	1.13	-0.73	15.50	121.98
273	17.95	83.79	1.05	-0.82	15.28	121.53
274	18.00	82.57	1.02	-0.82	15.13	121.10
275	18.08	81.36	0.96	-0.82	15.13	120.79
276	18.14	80.15	0.93	-0.91	14.96	120.52
277	18.20	81.32	0.92	-0.73	14.80	120.31
278	18.27	80.80	0.89	-0.73	14.47	120.07
279	18.31	81.27	0.84	-0.73	14.09	119.75
280	18.41	82.01	0.80	-0.73	13.78	119.57
281	18.45	82.67	0.82	-0.73	13.70	119.62
282	18.55	83.23	0.85	-0.64	13.86	119.84
283	18.59	83.13	0.87	-0.67	14.25	120.07
284	18.66	80.99	0.91	-0.67	14.83	120.25
285	18.70	78.85	0.94	-0.67	15.82	120.63
286	18.80	76.89	1.04	-0.45	17.08	121.06
287	18.84	73.44	1.11	-0.73	18.98	121.75
288	18.93	69.06	1.29	-0.73	21.59	122.45

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.98	63.47	1.47	-0.64	24.99	123.34
290	19.04	58.81	1.72	-0.64	28.95	124.22
291	19.12	54.33	2.00	-0.73	33.23	125.03
292	19.16	49.67	2.24	-0.54	37.91	125.82
293	19.24	45.85	2.58	-0.54	42.37	126.42
294	19.31	43.24	2.78	-0.45	46.62	126.97
295	19.39	40.63	3.02	0.09	49.53	127.30
296	19.44	40.17	3.10	0.18	51.59	127.53
297	19.53	39.52	3.15	0.27	52.29	127.60
298	19.58	39.52	3.14	0.09	52.48	127.60
299	19.63	39.80	3.10	0.09	52.41	127.48
300	19.71	38.96	3.02	0.09	52.70	127.29
301	19.77	37.75	2.95	0.00	53.50	127.03
302	19.86	36.25	2.88	-0.09	54.74	126.80
303	19.90	34.76	2.84	-0.09	56.71	126.55
304	19.95	32.90	2.80	-0.18	57.98	126.27
305	20.03	32.06	2.66	-0.18	58.86	125.96
306	20.08	31.50	2.59	-0.18	58.77	125.62
307	20.18	31.31	2.48	-0.18	58.43	125.40
308	20.22	31.69	2.44	-0.09	56.61	125.21
309	20.32	34.11	2.34	-0.09	54.34	125.10
310	20.36	34.58	2.29	0.09	53.05	124.93
311	20.43	33.46	2.23	0.00	53.06	124.68
312	20.50	32.81	2.14	0.00	53.37	124.42
313	20.55	32.62	2.10	0.00	52.64	124.23
314	20.63	34.02	2.05	-0.18	50.82	124.14
315	20.69	36.35	1.99	-0.18	47.01	124.03
316	20.78	41.10	1.86	-0.09	43.71	123.89
317	20.82	42.13	1.80	-0.18	41.31	123.69
318	20.87	42.22	1.75	-0.18	40.91	123.52
319	20.95	41.29	1.73	-0.27	41.02	123.16
320	21.01	39.52	1.59	-0.27	41.43	122.46
321	21.10	36.44	1.35	-0.27	42.14	121.80
322	21.14	35.42	1.41	-0.27	45.36	121.52
323	21.24	29.82	1.55	-0.27	49.32	121.76
324	21.29	29.17	1.61	-0.27	53.35	121.95
325	21.33	28.61	1.64	0.12	53.12	122.14
326	21.41	31.22	1.65	0.27	52.57	122.21
327	21.48	30.66	1.63	0.45	51.96	122.21
328	21.53	29.92	1.62	0.55	53.72	122.05
329	21.61	27.21	1.62	0.55	56.40	121.78
330	21.67	25.91	1.54	0.45	58.80	121.27
331	21.76	23.95	1.41	0.82	60.07	120.80
332	21.81	23.58	1.40	0.82	60.81	120.49
333	21.86	23.77	1.40	0.82	57.73	120.50
334	21.95	28.52	1.33	0.82	53.27	120.43
335	21.99	29.54	1.26	0.73	49.61	120.05
336	22.09	28.71	1.13	0.27	49.02	119.60

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.13	27.77	1.12	0.27	49.14	119.29
338	22.18	28.01	1.13	0.27	49.61	119.24
339	22.27	27.68	1.12	0.82	49.08	119.09
340	22.32	28.24	1.05	1.27	47.72	118.40
341	22.40	27.59	0.84	1.09	47.87	117.56
342	22.45	24.05	0.83	0.36	52.20	116.77
343	22.55	18.36	0.88	0.55	60.52	116.56
344	22.59	17.15	0.90	0.45	65.09	116.65
345	22.69	19.39	0.94	0.82	62.16	116.80
346	22.73	21.99	0.88	1.00	57.80	116.78
347	22.78	22.37	0.82	0.73	54.21	116.07
348	22.91	20.88	0.67	0.36	56.28	115.13
349	23.00	17.61	0.64	0.73	59.36	114.09
350	23.05	16.03	0.61	0.82	63.33	113.38
351	23.10	15.28	0.56	0.73	64.40	112.83
352	23.20	15.47	0.53	0.91	55.80	112.91
353	23.29	24.88	0.53	0.91	44.74	113.28
354	23.33	30.38	0.51	0.91	36.11	113.73
355	23.38	34.58	0.51	0.91	33.54	113.66
356	23.46	31.31	0.48	0.45	34.55	113.15
357	23.52	25.63	0.44	0.18	37.94	112.30
358	23.56	23.39	0.40	0.18	42.96	111.06
359	23.65	17.99	0.34	0.36	47.54	109.86
360	23.70	15.84	0.31	0.55	52.82	108.45
361	23.78	14.26	0.27	0.64	56.85	107.51
362	23.83	13.33	0.26	0.73	58.62	106.85
363	23.89	13.23	0.26	0.73	57.52	106.11
364	23.97	13.98	0.20	0.64	54.05	105.70
365	24.02	14.82	0.21	0.91	51.54	105.52
366	24.11	15.19	0.23	0.91	51.28	106.02
367	24.16	15.19	0.24	0.91	52.05	106.19
368	24.25	14.45	0.23	0.82	53.18	106.18
369	24.29	14.21	0.23	0.73	55.82	106.25
370	24.37	13.89	0.25	1.09	56.88	106.47
371	24.41	13.98	0.26	1.09	57.20	106.64
372	24.50	14.26	0.25	1.09	57.21	106.66
373	24.56	13.98	0.25	1.27	57.31	106.57
374	24.62	13.79	0.25	1.27	57.93	106.46
375	24.69	13.61	0.24	1.27	58.11	106.29
376	24.79	13.61	0.24	1.27	57.93	106.22
377	24.84	13.89	0.24	1.27	57.54	106.22
378	24.88	13.98	0.24	1.27	57.20	106.25
379	24.97	13.98	0.24	1.36	57.26	106.17
380	25.01	13.79	0.23	1.27	57.29	106.00
381	25.11	13.70	0.23	1.36	57.24	105.90
382	25.16	13.89	0.23	1.27	57.02	105.83
383	25.20	13.89	0.23	1.36	57.09	105.80
384	25.30	13.61	0.23	1.27	57.61	105.87

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.34	13.61	0.23	1.36	58.56	106.16
386	25.42	13.61	0.26	1.45	59.70	106.70
387	25.48	13.61	0.28	1.45	60.55	107.31
388	25.53	13.98	0.30	1.45	60.02	108.47
389	25.61	16.12	0.38	1.54	58.95	110.00
390	25.66	17.61	0.47	1.54	58.75	112.43
391	25.75	19.67	0.69	1.45	59.51	114.67
392	25.80	21.16	0.87	1.63	60.60	117.18
393	25.89	23.77	1.21	1.72	60.44	119.07
394	25.94	26.37	1.39	1.72	58.91	120.71
395	25.98	29.82	1.58	1.72	58.10	122.15
396	26.06	31.50	1.96	1.72	57.92	123.43
397	26.12	32.99	2.20	1.91	57.86	124.68
398	26.21	36.63	2.49	2.09	57.06	125.47
399	26.25	37.84	2.58	2.18	55.65	126.15
400	26.35	40.45	2.73	2.45	53.51	126.52
401	26.40	42.03	2.76	2.72	52.43	126.80
402	26.45	42.59	2.79	2.72	51.51	126.94
403	26.54	43.90	2.81	2.90	50.64	127.01
404	26.58	45.02	2.78	2.99	48.57	126.47
405	26.68	44.46	2.15	3.18	46.71	125.64
406	26.72	43.24	1.99	3.18	46.85	124.99
407	26.82	39.98	2.27	3.18	49.24	125.03
408	26.86	38.30	2.29	3.27	52.11	125.25
409	26.90	37.56	2.30	3.27	54.15	125.24
410	27.00	35.23	2.36	3.36	56.86	125.21
411	27.04	34.30	2.35	3.36	57.56	125.07
412	27.13	35.32	2.22	3.45	57.16	124.88
413	27.18	35.04	2.18	3.45	55.71	124.70
414	27.27	36.44	2.14	3.45	53.76	124.55
415	27.32	36.63	2.06	3.45	52.09	124.37
416	27.37	37.75	1.98	3.45	51.91	124.06
417	27.45	35.04	1.91	3.27	53.50	123.68
418	27.50	31.04	1.86	3.27	57.21	123.20
419	27.59	29.73	1.76	3.36	59.46	122.75
420	27.64	28.71	1.70	3.36	59.24	122.30
421	27.73	29.36	1.58	3.45	58.25	122.01
422	27.76	30.20	1.55	3.36	55.95	121.79
423	27.82	31.87	1.50	3.54	52.86	121.60
424	27.92	32.34	1.41	3.36	51.48	121.40
425	27.96	31.97	1.41	3.36	51.64	121.10
426	28.05	30.10	1.35	3.36	52.54	120.84
427	28.10	29.45	1.31	3.36	53.59	120.59
428	28.16	28.89	1.31	3.45	55.28	120.51
429	28.24	28.71	1.33	3.54	55.26	120.55
430	28.29	29.73	1.33	3.72	53.90	120.66
431	28.38	29.92	1.36	3.72	52.17	120.39
432	28.43	30.66	1.15	3.72	49.17	119.69

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.49	32.25	0.95	3.81	46.06	119.17
434	28.56	33.92	1.08	3.72	45.23	119.40
435	28.65	33.74	1.22	3.72	46.67	120.15
436	28.70	32.90	1.29	3.72	49.08	120.64
437	28.75	31.22	1.36	3.72	52.06	121.03
438	28.82	29.73	1.49	3.72	55.25	121.52
439	28.89	31.41	1.60	3.72	56.07	121.99
440	28.95	31.97	1.64	3.72	55.46	122.32
441	29.00	32.62	1.66	3.90	55.77	122.37
442	29.08	31.13	1.64	3.72	57.00	122.29
443	29.14	29.26	1.63	3.72	58.68	122.16
444	29.23	28.98	1.64	3.72	59.99	122.15
445	29.27	28.89	1.68	3.81	60.70	122.29
446	29.34	28.71	1.73	3.81	61.60	122.44
447	29.42	28.24	1.76	3.81	62.35	122.55
448	29.47	28.24	1.77	3.72	63.32	122.85
449	29.54	28.52	1.95	3.72	63.00	123.35
450	29.60	31.13	2.09	3.99	60.97	124.14
451	29.66	35.70	2.26	4.08	56.27	124.96
452	29.73	42.68	2.38	4.17	48.41	125.99
453	29.83	55.08	2.61	3.90	42.15	126.89
454	29.88	64.12	2.70	3.90	37.84	127.60
455	29.93	68.31	2.77	3.90	33.47	128.20
456	30.01	85.65	2.87	3.63	30.29	128.68
457	30.06	91.52	2.91	3.36	27.23	129.02
458	30.15	97.86	2.85	3.18	25.69	129.09
459	30.20	100.84	2.79	3.08	24.53	129.01
460	30.26	101.68	2.73	2.90	24.11	129.04
461	30.34	102.70	2.84	2.72	24.26	129.21
462	30.43	102.61	2.97	2.45	24.57	129.46
463	30.48	103.08	3.01	2.27	24.87	129.61
464	30.52	102.43	3.03	2.18	24.94	129.56
465	30.62	100.93	2.92	2.00	24.83	129.38
466	30.65	101.21	2.81	1.91	23.67	128.90
467	30.75	106.06	2.44	1.81	22.10	128.46
468	30.80	110.35	2.36	1.54	20.67	128.13
469	30.84	112.02	2.39	1.45	19.97	128.09
470	30.94	114.35	2.35	1.27	19.62	128.02
471	30.98	113.61	2.27	1.27	19.48	127.89
472	31.07	111.47	2.27	1.36	20.08	127.86
473	31.12	106.25	2.38	1.36	22.01	127.99
474	31.17	93.29	2.55	-0.27	24.78	128.24
475	31.26	87.23	2.73	-0.54	28.42	128.38
476	31.31	77.08	2.81	-0.73	31.84	128.11
477	31.37	65.05	2.56	-0.91	36.01	127.50
478	31.45	55.64	2.45	-1.09	36.47	125.65
479	31.53	55.64	1.30	-0.45	35.49	124.16
480	31.58	55.64	1.50	-0.27	33.85	123.34

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.66	55.64	1.89	0.73	34.45	124.48
482	31.71	63.47	2.01	0.55	34.49	125.35
483	31.77	63.93	2.08	0.18	35.76	125.44
484	31.82	50.51	2.02	0.41	36.39	125.39
485	31.89	60.21	2.01	0.11	39.63	125.31
486	31.98	49.49	2.18	0.11	41.39	125.41
487	32.03	44.83	2.19	-0.18	46.78	124.96
488	32.12	38.96	1.93	0.55	48.54	124.26
489	32.16	39.80	1.75	0.64	47.98	123.11
490	32.26	38.86	1.42	0.73	47.22	122.20
491	32.31	35.42	1.38	0.64	47.33	121.46
492	32.35	35.28	1.37	0.82	48.78	121.42
493	32.44	35.28	1.44	1.18	49.09	121.48
494	32.49	35.14	1.42	1.27	48.51	121.55
495	32.58	37.00	1.39	1.18	47.74	121.49
496	32.62	36.81	1.39	1.18	48.35	121.45
497	32.71	33.55	1.42	1.18	50.23	121.49
498	32.75	33.09	1.46	1.18	51.22	121.44
499	32.81	34.48	1.39	1.18	48.66	121.33
500	32.91	38.58	1.29	1.45	45.89	121.06
501	32.95	38.21	1.25	1.45	44.94	120.73
502	33.04	34.95	1.21	1.18	46.84	120.36
503	33.09	32.06	1.18	1.27	50.07	119.96
504	33.14	29.26	1.16	1.36	53.65	119.73
505	33.22	27.21	1.20	1.36	58.10	119.56
506	33.28	26.00	1.18	1.36	60.32	119.28
507	33.35	24.70	1.09	1.36	61.28	118.85
508	33.41	24.23	1.04	1.36	60.83	118.27
509	33.50	24.60	0.95	1.45	59.28	117.90
510	33.55	25.63	0.93	1.54	56.97	117.66
511	33.63	26.84	0.91	1.36	53.78	117.64
512	33.69	27.49	0.91	1.36	52.94	117.69
513	33.73	27.21	0.93	1.36	55.71	117.86
514	33.83	25.26	0.99	1.36	58.08	118.02
515	33.87	24.42	1.01	1.36	60.62	118.13
516	33.93	23.95	1.02	1.45	61.56	118.15
517	34.01	24.05	1.02	1.45	61.72	118.17
518	34.05	24.32	1.02	1.45	61.09	118.21
519	34.13	24.98	1.02	1.63	60.06	118.28
520	34.20	25.82	1.02	1.45	58.48	118.38
521	34.29	27.12	1.03	1.36	57.06	118.49
522	34.33	27.68	1.03	1.27	56.97	119.38
523	34.43	29.64	1.37	1.27	57.46	120.20
524	34.46	29.82	1.39	1.27	52.28	121.17
525	34.55	39.42	1.39	1.36	47.49	121.50
526	34.59	41.94	1.39	1.18	40.94	121.91
527	34.68	50.51	1.39	1.18	37.32	122.15
528	34.73	53.59	1.38	1.18	35.47	122.07

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.80	48.56	1.29	0.73	36.13	121.30
530	34.87	42.13	1.05	0.55	38.02	120.14
531	34.91	38.96	0.95	0.55	41.71	118.94
532	35.01	30.57	0.93	0.55	47.18	118.72
533	35.06	28.15	1.10	0.64	57.56	119.22
534	35.11	24.60	1.33	0.82	63.69	120.74
535	35.19	27.21	1.77	1.00	63.99	122.32
536	35.24	34.39	1.98	1.09	56.19	124.29
537	35.33	49.58	2.36	1.00	47.49	125.85
538	35.38	56.94	2.65	1.18	40.20	127.57
539	35.46	76.61	3.09	0.73	35.46	128.84
540	35.51	88.45	3.31	0.45	30.27	130.02
541	35.59	109.32	3.50	0.18	26.52	130.68
542	35.65	121.90	3.48	0.09	23.31	131.10
543	35.70	133.18	3.45	0.36	20.67	131.28
544	35.78	149.58	3.40	0.91	18.58	131.51
545	35.83	161.51	3.48	0.55	17.12	131.90
546	35.90	171.30	3.72	0.73	16.74	132.47
547	35.97	174.47	4.08	0.55	17.85	133.01
548	36.04	155.27	4.39	0.27	19.98	133.29
549	36.11	139.61	4.47	0.09	22.90	133.27
550	36.16	127.12	4.51	0.00	26.41	133.08
551	36.25	104.76	4.62	-0.18	29.90	132.92
552	36.29	99.07	4.70	-0.09	32.47	132.96
553	36.36	104.43	4.92	0.64	35.31	132.94
554	36.43	81.55	4.94	1.45	35.10	133.13
555	36.52	104.10	5.01	2.63	31.94	133.37
556	36.58	135.32	4.90	2.36	26.08	133.72
557	36.62	151.45	4.67	2.00	20.74	134.40
558	36.70	202.80	5.28	1.45	18.01	135.03
559	36.75	211.19	5.47	1.27	16.93	135.68
560	36.83	201.68	5.64	1.54	17.75	135.81
561	36.89	187.61	5.71	1.72	20.42	135.72
562	36.97	149.40	5.87	2.63	24.16	135.65
563	37.03	133.18	6.27	3.63	26.93	135.74
564	37.08	149.68	6.45	4.08	28.13	135.83
565	37.17	135.98	6.29	4.99	26.84	135.81
566	37.21	149.96	5.98	6.08	24.65	135.36
567	37.31	168.69	5.07	4.26	22.04	134.74
568	37.35	160.30	4.63	3.27	21.66	133.66
569	37.41	125.26	4.06	1.72	24.40	131.77
570	37.49	83.60	2.71	0.91	28.07	128.97
571	37.54	70.37	1.76	0.55	31.00	126.66
572	37.63	71.06	2.21	1.00	32.59	126.42
573	37.68	71.06	2.62	1.27	35.77	128.06
574	37.77	71.76	3.40	2.90	38.98	128.91
575	37.80	64.12	3.32	3.08	35.66	129.58
576	37.89	98.04	3.10	2.90	33.07	129.86

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.94	92.73	3.49	3.36	27.25	131.39
578	38.02	139.43	4.62	5.81	19.66	133.58
579	38.07	255.92	5.17	7.62	12.90	135.85
580	38.13	353.60	5.92	9.98	8.83	137.15
581	38.19	400.75	5.89	9.80	5.74	137.28
582	38.27	527.22	5.17	7.62	1.67	135.07
583	38.34	631.42	0.00	5.54	0.00	129.96
584	38.41	720.33	0.00	5.63	N/A	87.36
585	38.46	745.59	0.00	4.81	N/A	87.36
586	38.52	748.01	0.00	3.81	N/A	87.36
587	38.59	563.29	0.00	2.99	N/A	87.36
588	38.66	815.86	0.00	2.27	N/A	87.36

Abbreviations

Depth:	Depth from free surface, at which CPT was performed (ft)
q_c:	Measured cone resistance (tsf)
f_s:	Sleeve friction resistance (tsf)
u:	Pore pressure (tsf)
Fines content:	Percentage of fines in soil (%)
Unit weight:	Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.08	0.00	0.00	0.00	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
2	0.13	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
3	0.22	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
4	0.27	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
5	0.34	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
6	0.41	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
7	0.51	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
8	0.55	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
9	0.60	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
10	0.68	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
11	0.74	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
12	0.83	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
13	0.87	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
14	0.92	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
15	1.01	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
16	1.06	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
17	1.15	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
18	1.18	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
19	1.25	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
20	1.34	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
21	1.38	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
22	1.47	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
23	1.52	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
24	1.60	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
25	1.66	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
26	1.75	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
27	1.79	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
28	1.84	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
29	1.92	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
30	1.99	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
31	2.07	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
32	2.12	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
33	2.17	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
34	2.23	0.14	0.00	0.14	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
35	2.31	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
36	2.40	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
37	2.45	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
38	2.50	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
39	2.58	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
40	2.63	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
41	2.73	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
42	2.77	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
43	2.86	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
44	2.91	0.18	0.00	0.18	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
45	2.96	0.18	0.00	0.18	1.00	0.614	1.69	0.364	1.00	1.00	2.000	No
46	3.05	0.18	0.00	0.18	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
47	3.09	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
48	3.18	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.23	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
50	3.30	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
51	3.36	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
52	3.42	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
53	3.51	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
54	3.55	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
55	3.65	0.22	0.00	0.22	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
56	3.69	0.22	0.00	0.22	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
57	3.74	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
58	3.83	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
59	3.88	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
60	3.97	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
61	4.01	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
62	4.11	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
63	4.15	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
64	4.20	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
65	4.29	0.26	0.00	0.26	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
66	4.33	0.26	0.00	0.26	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
67	4.42	0.27	0.00	0.27	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
68	4.47	0.27	0.00	0.27	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
69	4.53	0.27	0.00	0.27	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
70	4.61	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
71	4.70	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
72	4.75	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
73	4.80	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
74	4.89	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
75	4.93	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
76	5.02	0.30	0.00	0.30	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
77	5.07	0.31	0.00	0.31	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
78	5.12	0.31	0.00	0.31	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
79	5.19	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
80	5.29	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
81	5.34	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
82	5.41	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
83	5.47	0.34	0.00	0.34	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
84	5.52	0.34	0.00	0.34	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
85	5.59	0.34	0.00	0.34	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
86	5.64	0.35	0.00	0.35	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
87	5.74	0.35	0.00	0.35	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
88	5.79	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
89	5.85	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
90	5.92	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
91	5.98	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
92	6.07	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
93	6.11	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
94	6.21	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
95	6.25	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
96	6.30	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.38	0.40	0.00	0.40	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
98	6.44	0.40	0.00	0.40	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
99	6.53	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
100	6.58	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
101	6.67	0.42	0.00	0.42	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
102	6.71	0.42	0.00	0.42	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
103	6.76	0.42	0.00	0.42	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
104	6.85	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
105	6.90	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
106	6.99	0.44	0.00	0.44	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
107	7.03	0.44	0.00	0.44	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
108	7.09	0.45	0.00	0.45	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
109	7.18	0.45	0.00	0.45	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
110	7.23	0.45	0.00	0.45	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
111	7.32	0.46	0.00	0.46	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
112	7.37	0.46	0.00	0.46	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
113	7.46	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
114	7.49	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
115	7.55	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
116	7.65	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
117	7.69	0.49	0.00	0.49	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
118	7.78	0.49	0.00	0.49	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
119	7.83	0.50	0.00	0.50	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
120	7.88	0.50	0.00	0.50	0.98	0.607	1.69	0.360	1.00	1.00	2.000	No
121	7.97	0.50	0.00	0.50	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
122	8.01	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
123	8.10	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
124	8.15	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
125	8.24	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
126	8.29	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
127	8.38	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
128	8.43	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
129	8.47	0.54	0.00	0.54	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
130	8.56	0.54	0.00	0.54	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
131	8.61	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
132	8.67	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
133	8.75	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
134	8.80	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
135	8.87	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
136	8.96	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
137	9.01	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
138	9.07	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
139	9.14	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
140	9.19	0.58	0.00	0.58	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
141	9.29	0.59	0.00	0.59	0.98	0.606	1.69	0.358	1.00	1.00	2.000	No
142	9.33	0.59	0.00	0.59	0.98	0.606	1.69	0.358	1.00	1.00	2.000	No
143	9.42	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
144	9.47	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.55	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
146	9.61	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
147	9.66	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
148	9.74	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
149	9.79	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
150	9.85	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
151	9.93	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
152	9.98	0.63	0.00	0.63	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
153	10.11	0.64	0.00	0.64	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
154	10.13	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
155	10.21	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
156	10.25	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
157	10.34	0.66	0.00	0.66	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
158	10.39	0.66	0.00	0.66	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
159	10.44	0.67	0.00	0.67	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
160	10.52	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
161	10.57	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
162	10.65	0.68	0.00	0.68	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
163	10.71	0.68	0.00	0.68	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
164	10.81	0.69	0.00	0.69	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
165	10.84	0.69	0.00	0.69	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
166	10.90	0.69	0.00	0.69	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
167	10.96	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
168	11.04	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
169	11.13	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
170	11.17	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
171	11.25	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
172	11.32	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
173	11.36	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
174	11.45	0.73	0.00	0.73	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
175	11.50	0.73	0.00	0.73	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
176	11.59	0.74	0.00	0.74	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
177	11.64	0.74	0.00	0.74	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
178	11.69	0.75	0.00	0.75	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
179	11.77	0.75	0.00	0.75	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
180	11.83	0.76	0.00	0.76	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
181	11.90	0.76	0.00	0.76	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
182	11.97	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
183	12.02	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
184	12.10	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
185	12.15	0.78	0.00	0.78	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
186	12.22	0.78	0.00	0.78	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
187	12.29	0.79	0.00	0.79	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
188	12.34	0.79	0.00	0.79	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
189	12.42	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
190	12.48	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
191	12.58	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
192	12.62	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.67	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
194	12.76	0.82	0.00	0.82	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
195	12.81	0.82	0.00	0.82	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
196	12.90	0.83	0.00	0.83	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
197	12.95	0.83	0.00	0.83	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
198	13.03	0.84	0.00	0.84	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
199	13.08	0.84	0.00	0.84	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
200	13.13	0.84	0.00	0.84	0.97	0.601	1.69	0.355	1.00	1.00	2.000	No
201	13.22	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
202	13.27	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
203	13.36	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
204	13.41	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
205	13.45	0.87	0.00	0.87	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
206	13.55	0.87	0.00	0.87	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
207	13.59	0.87	0.00	0.87	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
208	13.68	0.88	0.00	0.88	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
209	13.73	0.88	0.00	0.88	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
210	13.82	0.89	0.00	0.89	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
211	13.87	0.89	0.00	0.89	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
212	13.92	0.90	0.00	0.90	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
213	14.00	0.90	0.00	0.90	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
214	14.05	0.90	0.00	0.90	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
215	14.12	0.91	0.00	0.91	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
216	14.18	0.91	0.00	0.91	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
217	14.28	0.92	0.00	0.92	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
218	14.33	0.92	0.00	0.92	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
219	14.37	0.93	0.00	0.93	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
220	14.46	0.93	0.00	0.93	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
221	14.51	0.93	0.00	0.93	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
222	14.60	0.94	0.00	0.94	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
223	14.65	0.94	0.00	0.94	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
224	14.70	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
225	14.78	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
226	14.84	0.96	0.00	0.96	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
227	14.93	0.96	0.00	0.96	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
228	14.99	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
229	15.06	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
230	15.11	0.97	0.00	0.97	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
231	15.18	0.98	0.00	0.98	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
232	15.25	0.98	0.00	0.98	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
233	15.30	0.99	0.00	0.99	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
234	15.39	0.99	0.00	0.99	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
235	15.43	1.00	0.00	1.00	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
236	15.53	1.00	0.00	1.00	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
237	15.57	1.00	0.00	1.00	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
238	15.62	1.01	0.00	1.01	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
239	15.71	1.01	0.00	1.01	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
240	15.75	1.02	0.00	1.02	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.85	1.02	0.00	1.02	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
242	15.88	1.03	0.00	1.03	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
243	15.96	1.03	0.00	1.03	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
244	16.01	1.03	0.00	1.03	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
245	16.11	1.04	0.00	1.04	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
246	16.15	1.04	0.00	1.04	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
247	16.24	1.05	0.00	1.05	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
248	16.29	1.05	0.00	1.05	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
249	16.38	1.06	0.00	1.06	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
250	16.43	1.06	0.00	1.06	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
251	16.47	1.06	0.00	1.06	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
252	16.56	1.07	0.00	1.07	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
253	16.61	1.07	0.00	1.07	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
254	16.71	1.08	0.00	1.08	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
255	16.75	1.08	0.00	1.08	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
256	16.80	1.09	0.00	1.09	0.96	0.596	1.69	0.353	0.99	1.00	2.000	No
257	16.89	1.09	0.00	1.09	0.96	0.596	1.69	0.352	0.99	1.00	2.000	No
258	16.94	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
259	17.03	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
260	17.06	1.10	0.00	1.10	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
261	17.16	1.11	0.00	1.11	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
262	17.21	1.11	0.00	1.11	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
263	17.30	1.12	0.00	1.12	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
264	17.35	1.12	0.00	1.12	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
265	17.40	1.12	0.00	1.12	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
266	17.49	1.13	0.00	1.13	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
267	17.53	1.13	0.00	1.13	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
268	17.63	1.14	0.00	1.14	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
269	17.68	1.14	0.00	1.14	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
270	17.72	1.15	0.00	1.15	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
271	17.81	1.15	0.00	1.15	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
272	17.86	1.15	0.00	1.15	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
273	17.95	1.16	0.00	1.16	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
274	18.00	1.16	0.00	1.16	0.96	0.594	1.69	0.352	0.98	1.00	2.000	No
275	18.08	1.17	0.00	1.17	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
276	18.14	1.17	0.00	1.17	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
277	18.20	1.17	0.00	1.17	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
278	18.27	1.18	0.00	1.18	0.96	0.594	1.69	0.351	0.98	1.00	2.000	No
279	18.31	1.18	0.00	1.18	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
280	18.41	1.19	0.00	1.19	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
281	18.45	1.19	0.00	1.19	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
282	18.55	1.20	0.00	1.20	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
283	18.59	1.20	0.00	1.20	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
284	18.66	1.20	0.00	1.20	0.96	0.593	1.69	0.351	0.97	1.00	2.000	No
285	18.70	1.20	0.00	1.20	0.96	0.593	1.69	0.351	0.97	1.00	2.000	No
286	18.80	1.21	0.00	1.21	0.96	0.593	1.69	0.351	0.97	1.00	2.000	No
287	18.84	1.21	0.00	1.21	0.96	0.593	1.69	0.351	0.97	1.00	2.000	No
288	18.93	1.22	0.00	1.22	0.96	0.593	1.69	0.351	0.97	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.98	1.22	0.00	1.22	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
290	19.04	1.23	0.00	1.23	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
291	19.12	1.23	0.00	1.23	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
292	19.16	1.23	0.00	1.23	0.96	0.592	1.69	0.351	0.97	1.00	2.000	No
293	19.24	1.24	0.00	1.24	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
294	19.31	1.24	0.00	1.24	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
295	19.39	1.25	0.00	1.25	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
296	19.44	1.25	0.00	1.25	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
297	19.53	1.26	0.00	1.26	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
298	19.58	1.26	0.00	1.26	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
299	19.63	1.26	0.00	1.26	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
300	19.71	1.27	0.00	1.27	0.96	0.591	1.69	0.350	0.96	1.00	2.000	No
301	19.77	1.27	0.00	1.27	0.96	0.591	1.69	0.350	0.96	1.00	2.000	No
302	19.86	1.28	0.00	1.28	0.96	0.591	1.69	0.350	0.96	1.00	2.000	No
303	19.90	1.28	0.00	1.28	0.96	0.591	1.69	0.350	0.96	1.00	2.000	No
304	19.95	1.28	0.00	1.28	0.96	0.591	1.69	0.350	0.96	1.00	2.000	No
305	20.03	1.29	0.00	1.29	0.96	0.591	1.69	0.350	0.96	1.00	0.364	No
306	20.08	1.29	0.00	1.29	0.96	0.592	1.69	0.350	0.96	1.00	0.364	No
307	20.18	1.30	0.01	1.29	0.96	0.593	1.69	0.351	0.96	1.00	0.365	No
308	20.22	1.30	0.01	1.29	0.96	0.594	1.69	0.351	0.96	1.00	0.366	No
309	20.32	1.31	0.01	1.30	0.96	0.595	1.69	0.352	0.96	1.00	0.367	No
310	20.36	1.31	0.01	1.30	0.96	0.595	1.69	0.352	0.96	1.00	0.367	No
311	20.43	1.31	0.01	1.30	0.96	0.596	1.69	0.353	0.96	1.00	0.368	No
312	20.50	1.32	0.02	1.30	0.96	0.597	1.69	0.353	0.96	1.00	0.368	No
313	20.55	1.32	0.02	1.30	0.96	0.598	1.69	0.354	0.96	1.00	0.369	No
314	20.63	1.33	0.02	1.31	0.96	0.599	1.69	0.354	0.96	1.00	0.370	No
315	20.69	1.33	0.02	1.31	0.96	0.599	1.69	0.355	0.96	1.00	0.370	No
316	20.78	1.33	0.02	1.31	0.95	0.601	1.69	0.355	0.96	1.00	0.371	No
317	20.82	1.34	0.03	1.31	0.95	0.601	1.69	0.356	0.96	1.00	0.371	No
318	20.87	1.34	0.03	1.31	0.95	0.602	1.69	0.356	0.96	1.00	0.372	No
319	20.95	1.35	0.03	1.32	0.95	0.603	1.69	0.357	0.96	1.00	0.373	No
320	21.01	1.35	0.03	1.32	0.95	0.603	1.69	0.357	0.96	1.00	0.373	No
321	21.10	1.35	0.03	1.32	0.95	0.604	1.69	0.358	0.96	1.00	0.374	No
322	21.14	1.36	0.04	1.32	0.95	0.605	1.69	0.358	0.96	1.00	0.374	No
323	21.24	1.36	0.04	1.32	0.95	0.606	1.69	0.359	0.96	1.00	0.375	No
324	21.29	1.37	0.04	1.33	0.95	0.607	1.69	0.359	0.96	1.00	0.376	No
325	21.33	1.37	0.04	1.33	0.95	0.607	1.69	0.359	0.96	1.00	0.376	No
326	21.41	1.37	0.04	1.33	0.95	0.608	1.69	0.360	0.96	1.00	0.377	No
327	21.48	1.38	0.05	1.33	0.95	0.609	1.69	0.360	0.96	1.00	0.377	No
328	21.53	1.38	0.05	1.33	0.95	0.609	1.69	0.361	0.95	1.00	0.378	No
329	21.61	1.39	0.05	1.34	0.95	0.610	1.69	0.361	0.95	1.00	0.378	No
330	21.67	1.39	0.05	1.34	0.95	0.611	1.69	0.362	0.95	1.00	0.379	No
331	21.76	1.39	0.06	1.34	0.95	0.612	1.69	0.362	0.95	1.00	0.380	No
332	21.81	1.40	0.06	1.34	0.95	0.613	1.69	0.363	0.95	1.00	0.380	No
333	21.86	1.40	0.06	1.34	0.95	0.613	1.69	0.363	0.95	1.00	0.381	No
334	21.95	1.41	0.06	1.35	0.95	0.614	1.69	0.364	0.95	1.00	0.381	No
335	21.99	1.41	0.06	1.35	0.95	0.615	1.69	0.364	0.95	1.00	0.382	No
336	22.09	1.41	0.07	1.35	0.95	0.616	1.69	0.364	0.95	1.00	0.383	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.13	1.42	0.07	1.35	0.95	0.616	1.69	0.365	0.95	1.00	0.383	No
338	22.18	1.42	0.07	1.35	0.95	0.617	1.69	0.365	0.95	1.00	0.383	No
339	22.27	1.43	0.07	1.35	0.95	0.618	1.69	0.366	0.95	1.00	0.384	No
340	22.32	1.43	0.07	1.36	0.95	0.618	1.69	0.366	0.95	1.00	0.385	No
341	22.40	1.43	0.07	1.36	0.95	0.619	1.69	0.366	0.95	1.00	0.385	No
342	22.45	1.44	0.08	1.36	0.95	0.620	1.69	0.367	0.95	1.00	0.386	No
343	22.55	1.44	0.08	1.36	0.95	0.621	1.69	0.367	0.95	1.00	0.386	No
344	22.59	1.44	0.08	1.36	0.95	0.621	1.69	0.368	0.95	1.00	0.387	No
345	22.69	1.45	0.08	1.37	0.95	0.622	1.69	0.368	0.95	1.00	0.388	No
346	22.73	1.45	0.09	1.37	0.95	0.623	1.69	0.369	0.95	1.00	0.388	No
347	22.78	1.45	0.09	1.37	0.95	0.623	1.69	0.369	0.95	1.00	0.388	No
348	22.91	1.46	0.09	1.37	0.95	0.625	1.69	0.370	0.95	1.00	0.389	No
349	23.00	1.47	0.09	1.37	0.95	0.626	1.69	0.370	0.95	1.00	0.390	No
350	23.05	1.47	0.10	1.38	0.95	0.626	1.69	0.371	0.95	1.00	0.391	No
351	23.10	1.47	0.10	1.38	0.95	0.627	1.69	0.371	0.95	1.00	0.391	No
352	23.20	1.48	0.10	1.38	0.95	0.628	1.69	0.371	0.95	1.00	0.392	No
353	23.29	1.48	0.10	1.38	0.95	0.629	1.69	0.372	0.95	1.00	0.392	No
354	23.33	1.49	0.10	1.38	0.95	0.629	1.69	0.372	0.95	1.00	0.393	No
355	23.38	1.49	0.11	1.38	0.95	0.630	1.69	0.373	0.95	1.00	0.393	No
356	23.46	1.49	0.11	1.39	0.95	0.630	1.69	0.373	0.95	1.00	0.394	No
357	23.52	1.50	0.11	1.39	0.95	0.631	1.69	0.373	0.95	1.00	0.394	No
358	23.56	1.50	0.11	1.39	0.95	0.631	1.69	0.374	0.95	1.00	0.395	No
359	23.65	1.50	0.11	1.39	0.95	0.632	1.69	0.374	0.95	1.00	0.395	No
360	23.70	1.51	0.12	1.39	0.95	0.633	1.69	0.375	0.95	1.00	0.396	No
361	23.78	1.51	0.12	1.39	0.95	0.634	1.69	0.375	0.95	1.00	0.396	No
362	23.83	1.51	0.12	1.39	0.95	0.634	1.69	0.375	0.95	1.00	0.397	No
363	23.89	1.52	0.12	1.40	0.95	0.635	1.69	0.376	0.95	1.00	0.397	No
364	23.97	1.52	0.12	1.40	0.95	0.635	1.69	0.376	0.95	1.00	0.398	No
365	24.02	1.52	0.13	1.40	0.95	0.636	1.69	0.376	0.95	1.00	0.398	No
366	24.11	1.53	0.13	1.40	0.94	0.637	1.69	0.377	0.95	1.00	0.399	No
367	24.16	1.53	0.13	1.40	0.94	0.637	1.69	0.377	0.95	1.00	0.399	No
368	24.25	1.54	0.13	1.40	0.94	0.638	1.69	0.378	0.95	1.00	0.400	No
369	24.29	1.54	0.13	1.40	0.94	0.639	1.69	0.378	0.94	1.00	0.400	No
370	24.37	1.54	0.14	1.41	0.94	0.639	1.69	0.379	0.94	1.00	0.401	No
371	24.41	1.54	0.14	1.41	0.94	0.640	1.69	0.379	0.94	1.00	0.401	No
372	24.50	1.55	0.14	1.41	0.94	0.641	1.69	0.379	0.94	1.00	0.402	No
373	24.56	1.55	0.14	1.41	0.94	0.641	1.69	0.380	0.94	1.00	0.402	No
374	24.62	1.56	0.14	1.41	0.94	0.642	1.69	0.380	0.94	1.00	0.403	No
375	24.69	1.56	0.15	1.41	0.94	0.643	1.69	0.380	0.94	1.00	0.403	No
376	24.79	1.56	0.15	1.42	0.94	0.643	1.69	0.381	0.94	1.00	0.404	No
377	24.84	1.57	0.15	1.42	0.94	0.644	1.69	0.381	0.94	1.00	0.404	No
378	24.88	1.57	0.15	1.42	0.94	0.644	1.69	0.381	0.94	1.00	0.404	No
379	24.97	1.57	0.16	1.42	0.94	0.645	1.69	0.382	0.94	1.00	0.405	No
380	25.01	1.58	0.16	1.42	0.94	0.646	1.69	0.382	0.94	1.00	0.405	No
381	25.11	1.58	0.16	1.42	0.94	0.646	1.69	0.383	0.94	1.00	0.406	No
382	25.16	1.58	0.16	1.42	0.94	0.647	1.69	0.383	0.94	1.00	0.406	No
383	25.20	1.59	0.16	1.42	0.94	0.647	1.69	0.383	0.94	1.00	0.407	No
384	25.30	1.59	0.17	1.43	0.94	0.648	1.69	0.384	0.94	1.00	0.407	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.34	1.59	0.17	1.43	0.94	0.649	1.69	0.384	0.94	1.00	0.408	No
386	25.42	1.60	0.17	1.43	0.94	0.649	1.69	0.384	0.94	1.00	0.408	No
387	25.48	1.60	0.17	1.43	0.94	0.650	1.69	0.385	0.94	1.00	0.409	No
388	25.53	1.60	0.17	1.43	0.94	0.650	1.69	0.385	0.94	1.00	0.409	No
389	25.61	1.61	0.18	1.43	0.94	0.651	1.69	0.385	0.94	1.00	0.410	No
390	25.66	1.61	0.18	1.43	0.94	0.652	1.69	0.386	0.94	1.00	0.410	No
391	25.75	1.62	0.18	1.44	0.94	0.652	1.69	0.386	0.94	1.00	0.411	No
392	25.80	1.62	0.18	1.44	0.94	0.653	1.69	0.386	0.94	1.00	0.411	No
393	25.89	1.63	0.18	1.44	0.94	0.654	1.69	0.387	0.94	1.00	0.411	No
394	25.94	1.63	0.19	1.44	0.94	0.654	1.69	0.387	0.94	1.00	0.412	No
395	25.98	1.63	0.19	1.44	0.94	0.654	1.69	0.387	0.94	1.00	0.412	No
396	26.06	1.64	0.19	1.45	0.94	0.655	1.69	0.388	0.94	1.00	0.413	No
397	26.12	1.64	0.19	1.45	0.94	0.655	1.69	0.388	0.94	1.00	0.413	No
398	26.21	1.64	0.19	1.45	0.94	0.656	1.69	0.388	0.94	1.00	0.414	No
399	26.25	1.65	0.19	1.45	0.94	0.656	1.69	0.389	0.94	1.00	0.414	No
400	26.35	1.65	0.20	1.46	0.94	0.657	1.69	0.389	0.94	1.00	0.415	No
401	26.40	1.66	0.20	1.46	0.94	0.658	1.69	0.389	0.94	1.00	0.415	No
402	26.45	1.66	0.20	1.46	0.94	0.658	1.69	0.389	0.94	1.00	0.415	No
403	26.54	1.67	0.20	1.46	0.94	0.659	1.69	0.390	0.94	1.00	0.416	No
404	26.58	1.67	0.21	1.46	0.94	0.659	1.69	0.390	0.94	1.00	0.416	No
405	26.68	1.67	0.21	1.47	0.94	0.660	1.69	0.391	0.94	1.00	0.417	No
406	26.72	1.68	0.21	1.47	0.94	0.660	1.69	0.391	0.94	1.00	0.417	No
407	26.82	1.68	0.21	1.47	0.93	0.661	1.69	0.391	0.94	1.00	0.418	No
408	26.86	1.69	0.21	1.47	0.93	0.661	1.69	0.391	0.94	1.00	0.418	No
409	26.90	1.69	0.22	1.47	0.93	0.662	1.69	0.392	0.94	1.00	0.418	No
410	27.00	1.69	0.22	1.48	0.93	0.662	1.69	0.392	0.94	1.00	0.419	No
411	27.04	1.70	0.22	1.48	0.93	0.663	1.69	0.392	0.94	1.00	0.419	No
412	27.13	1.70	0.22	1.48	0.93	0.663	1.69	0.393	0.94	1.00	0.420	No
413	27.18	1.71	0.22	1.48	0.93	0.664	1.69	0.393	0.93	1.00	0.420	No
414	27.27	1.71	0.23	1.48	0.93	0.664	1.69	0.393	0.93	1.00	0.421	No
415	27.32	1.71	0.23	1.49	0.93	0.665	1.69	0.393	0.93	1.00	0.421	No
416	27.37	1.72	0.23	1.49	0.93	0.665	1.69	0.394	0.93	1.00	0.421	No
417	27.45	1.72	0.23	1.49	0.93	0.666	1.69	0.394	0.93	1.00	0.422	No
418	27.50	1.73	0.23	1.49	0.93	0.666	1.69	0.394	0.93	1.00	0.422	No
419	27.59	1.73	0.24	1.49	0.93	0.667	1.69	0.395	0.93	1.00	0.423	No
420	27.64	1.73	0.24	1.50	0.93	0.667	1.69	0.395	0.93	1.00	0.423	No
421	27.73	1.74	0.24	1.50	0.93	0.668	1.69	0.395	0.93	1.00	0.424	No
422	27.76	1.74	0.24	1.50	0.93	0.668	1.69	0.395	0.93	1.00	0.424	No
423	27.82	1.75	0.24	1.50	0.93	0.668	1.69	0.396	0.93	1.00	0.424	No
424	27.92	1.75	0.25	1.50	0.93	0.669	1.69	0.396	0.93	1.00	0.425	No
425	27.96	1.75	0.25	1.51	0.93	0.669	1.69	0.396	0.93	1.00	0.425	No
426	28.05	1.76	0.25	1.51	0.93	0.670	1.69	0.396	0.93	1.00	0.426	No
427	28.10	1.76	0.25	1.51	0.93	0.670	1.69	0.397	0.93	1.00	0.426	No
428	28.16	1.77	0.25	1.51	0.93	0.671	1.69	0.397	0.93	1.00	0.426	No
429	28.24	1.77	0.26	1.51	0.93	0.671	1.69	0.397	0.93	1.00	0.427	No
430	28.29	1.77	0.26	1.51	0.93	0.671	1.69	0.397	0.93	1.00	0.427	No
431	28.38	1.78	0.26	1.52	0.93	0.672	1.69	0.398	0.93	1.00	0.427	No
432	28.43	1.78	0.26	1.52	0.93	0.672	1.69	0.398	0.93	1.00	0.428	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.49	1.79	0.26	1.52	0.93	0.673	1.69	0.398	0.93	1.00	0.428	No
434	28.56	1.79	0.27	1.52	0.93	0.673	1.69	0.398	0.93	1.00	0.429	No
435	28.65	1.80	0.27	1.53	0.93	0.674	1.69	0.399	0.93	1.00	0.429	No
436	28.70	1.80	0.27	1.53	0.93	0.674	1.69	0.399	0.93	1.00	0.429	No
437	28.75	1.80	0.27	1.53	0.93	0.674	1.69	0.399	0.93	1.00	0.430	No
438	28.82	1.81	0.28	1.53	0.93	0.675	1.69	0.399	0.93	1.00	0.430	No
439	28.89	1.81	0.28	1.53	0.93	0.675	1.69	0.400	0.93	1.00	0.430	No
440	28.95	1.81	0.28	1.53	0.93	0.676	1.69	0.400	0.93	1.00	0.431	No
441	29.00	1.82	0.28	1.54	0.93	0.676	1.69	0.400	0.93	1.00	0.431	No
442	29.08	1.82	0.28	1.54	0.93	0.676	1.69	0.400	0.93	1.00	0.432	No
443	29.14	1.82	0.29	1.54	0.92	0.677	1.69	0.401	0.93	1.00	0.432	No
444	29.23	1.83	0.29	1.54	0.92	0.677	1.69	0.401	0.93	1.00	0.432	No
445	29.27	1.83	0.29	1.54	0.92	0.678	1.69	0.401	0.93	1.00	0.433	No
446	29.34	1.84	0.29	1.55	0.92	0.678	1.69	0.401	0.93	1.00	0.433	No
447	29.42	1.84	0.29	1.55	0.92	0.678	1.69	0.402	0.93	1.00	0.433	No
448	29.47	1.84	0.30	1.55	0.92	0.679	1.69	0.402	0.93	1.00	0.434	No
449	29.54	1.85	0.30	1.55	0.92	0.679	1.69	0.402	0.93	1.00	0.434	No
450	29.60	1.85	0.30	1.55	0.92	0.680	1.69	0.402	0.93	1.00	0.434	No
451	29.66	1.86	0.30	1.56	0.92	0.680	1.69	0.402	0.93	1.00	0.435	No
452	29.73	1.86	0.30	1.56	0.92	0.680	1.69	0.403	0.93	1.00	0.435	No
453	29.83	1.87	0.31	1.56	0.92	0.681	1.69	0.403	0.93	1.00	0.436	No
454	29.88	1.87	0.31	1.56	0.92	0.681	1.69	0.403	0.93	1.00	0.436	No
455	29.93	1.87	0.31	1.56	0.92	0.681	1.69	0.403	0.92	1.00	0.436	No
456	30.01	1.88	0.31	1.57	0.92	0.682	1.69	0.404	0.92	1.00	0.437	No
457	30.06	1.88	0.31	1.57	0.92	0.682	1.69	0.404	0.92	1.00	0.437	No
458	30.15	1.89	0.32	1.57	0.92	0.682	1.69	0.404	0.92	1.00	0.437	No
459	30.20	1.89	0.32	1.57	0.92	0.683	1.69	0.404	0.92	1.00	0.437	No
460	30.26	1.89	0.32	1.57	0.92	0.683	1.69	0.404	0.92	1.00	0.438	No
461	30.34	1.90	0.32	1.58	0.92	0.683	1.69	0.405	0.92	1.00	0.438	No
462	30.43	1.91	0.33	1.58	0.92	0.684	1.69	0.405	0.92	1.00	0.439	No
463	30.48	1.91	0.33	1.58	0.92	0.684	1.69	0.405	0.92	1.00	0.439	No
464	30.52	1.91	0.33	1.58	0.92	0.684	1.69	0.405	0.92	1.00	0.439	No
465	30.62	1.92	0.33	1.59	0.92	0.685	1.69	0.405	0.92	1.00	0.440	No
466	30.65	1.92	0.33	1.59	0.92	0.685	1.69	0.405	0.92	1.00	0.440	No
467	30.75	1.93	0.34	1.59	0.92	0.685	1.69	0.406	0.92	1.00	0.440	No
468	30.80	1.93	0.34	1.59	0.92	0.686	1.69	0.406	0.92	1.00	0.440	No
469	30.84	1.93	0.34	1.59	0.92	0.686	1.69	0.406	0.92	1.00	0.441	No
470	30.94	1.94	0.34	1.60	0.92	0.686	1.69	0.406	0.92	1.00	0.441	No
471	30.98	1.94	0.34	1.60	0.92	0.686	1.69	0.406	0.92	1.00	0.441	No
472	31.07	1.95	0.35	1.60	0.91	0.687	1.69	0.407	0.92	1.00	0.442	No
473	31.12	1.95	0.35	1.60	0.91	0.687	1.69	0.407	0.92	1.00	0.442	No
474	31.17	1.95	0.35	1.61	0.91	0.687	1.69	0.407	0.92	1.00	0.442	No
475	31.26	1.96	0.35	1.61	0.91	0.688	1.69	0.407	0.92	1.00	0.443	No
476	31.31	1.96	0.35	1.61	0.91	0.688	1.69	0.407	0.92	1.00	0.443	No
477	31.37	1.97	0.35	1.61	0.91	0.688	1.69	0.407	0.92	1.00	0.443	No
478	31.45	1.97	0.36	1.61	0.91	0.688	1.69	0.407	0.92	1.00	0.443	No
479	31.53	1.98	0.36	1.62	0.91	0.689	1.69	0.408	0.92	1.00	0.444	No
480	31.58	1.98	0.36	1.62	0.91	0.689	1.69	0.408	0.92	1.00	0.444	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.66	1.98	0.36	1.62	0.91	0.689	1.69	0.408	0.92	1.00	0.444	No
482	31.71	1.99	0.37	1.62	0.91	0.690	1.69	0.408	0.92	1.00	0.445	No
483	31.77	1.99	0.37	1.62	0.91	0.690	1.69	0.408	0.92	1.00	0.445	No
484	31.82	1.99	0.37	1.63	0.91	0.690	1.69	0.408	0.92	1.00	0.445	No
485	31.89	2.00	0.37	1.63	0.91	0.690	1.69	0.409	0.92	1.00	0.445	No
486	31.98	2.00	0.37	1.63	0.91	0.691	1.69	0.409	0.92	1.00	0.446	No
487	32.03	2.01	0.38	1.63	0.91	0.691	1.69	0.409	0.92	1.00	0.446	No
488	32.12	2.01	0.38	1.64	0.91	0.691	1.69	0.409	0.92	1.00	0.446	No
489	32.16	2.02	0.38	1.64	0.91	0.691	1.69	0.409	0.92	1.00	0.447	No
490	32.26	2.02	0.38	1.64	0.91	0.692	1.69	0.409	0.92	1.00	0.447	No
491	32.31	2.02	0.38	1.64	0.91	0.692	1.69	0.410	0.92	1.00	0.447	No
492	32.35	2.03	0.39	1.64	0.91	0.692	1.69	0.410	0.92	1.00	0.447	No
493	32.44	2.03	0.39	1.64	0.91	0.692	1.69	0.410	0.92	1.00	0.448	No
494	32.49	2.04	0.39	1.65	0.91	0.693	1.69	0.410	0.92	1.00	0.448	No
495	32.58	2.04	0.39	1.65	0.91	0.693	1.69	0.410	0.92	1.00	0.448	No
496	32.62	2.04	0.39	1.65	0.91	0.693	1.69	0.410	0.91	1.00	0.448	No
497	32.71	2.05	0.40	1.65	0.91	0.693	1.69	0.410	0.91	1.00	0.449	No
498	32.75	2.05	0.40	1.65	0.91	0.693	1.69	0.410	0.91	1.00	0.449	No
499	32.81	2.06	0.40	1.66	0.90	0.694	1.69	0.411	0.91	1.00	0.449	No
500	32.91	2.06	0.40	1.66	0.90	0.694	1.69	0.411	0.91	1.00	0.449	No
501	32.95	2.06	0.40	1.66	0.90	0.694	1.69	0.411	0.91	1.00	0.450	No
502	33.04	2.07	0.41	1.66	0.90	0.694	1.69	0.411	0.91	1.00	0.450	No
503	33.09	2.07	0.41	1.66	0.90	0.695	1.69	0.411	0.91	1.00	0.450	No
504	33.14	2.08	0.41	1.67	0.90	0.695	1.69	0.411	0.91	1.00	0.450	No
505	33.22	2.08	0.41	1.67	0.90	0.695	1.69	0.411	0.91	1.00	0.451	No
506	33.28	2.08	0.41	1.67	0.90	0.695	1.69	0.412	0.91	1.00	0.451	No
507	33.35	2.09	0.42	1.67	0.90	0.695	1.69	0.412	0.91	1.00	0.451	No
508	33.41	2.09	0.42	1.67	0.90	0.696	1.69	0.412	0.91	1.00	0.451	No
509	33.50	2.10	0.42	1.68	0.90	0.696	1.69	0.412	0.91	1.00	0.452	No
510	33.55	2.10	0.42	1.68	0.90	0.696	1.69	0.412	0.91	1.00	0.452	No
511	33.63	2.10	0.43	1.68	0.90	0.696	1.69	0.412	0.91	1.00	0.452	No
512	33.69	2.11	0.43	1.68	0.90	0.697	1.69	0.412	0.91	1.00	0.452	No
513	33.73	2.11	0.43	1.68	0.90	0.697	1.69	0.412	0.91	1.00	0.452	No
514	33.83	2.12	0.43	1.68	0.90	0.697	1.69	0.413	0.91	1.00	0.453	No
515	33.87	2.12	0.43	1.69	0.90	0.697	1.69	0.413	0.91	1.00	0.453	No
516	33.93	2.12	0.43	1.69	0.90	0.697	1.69	0.413	0.91	1.00	0.453	No
517	34.01	2.13	0.44	1.69	0.90	0.697	1.69	0.413	0.91	1.00	0.453	No
518	34.05	2.13	0.44	1.69	0.90	0.698	1.69	0.413	0.91	1.00	0.453	No
519	34.13	2.13	0.44	1.69	0.90	0.698	1.69	0.413	0.91	1.00	0.454	No
520	34.20	2.14	0.44	1.69	0.90	0.698	1.69	0.413	0.91	1.00	0.454	No
521	34.29	2.14	0.45	1.70	0.90	0.698	1.69	0.413	0.91	1.00	0.454	No
522	34.33	2.15	0.45	1.70	0.90	0.698	1.69	0.413	0.91	1.00	0.454	No
523	34.43	2.15	0.45	1.70	0.89	0.699	1.69	0.413	0.91	1.00	0.455	No
524	34.46	2.15	0.45	1.70	0.89	0.699	1.69	0.414	0.91	1.00	0.455	No
525	34.55	2.16	0.45	1.70	0.89	0.699	1.69	0.414	0.91	1.00	0.455	No
526	34.59	2.16	0.46	1.71	0.89	0.699	1.69	0.414	0.91	1.00	0.455	No
527	34.68	2.17	0.46	1.71	0.89	0.699	1.69	0.414	0.91	1.00	0.455	No
528	34.73	2.17	0.46	1.71	0.89	0.699	1.69	0.414	0.91	1.00	0.456	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.80	2.17	0.46	1.71	0.89	0.699	1.69	0.414	0.91	1.00	0.456	No
530	34.87	2.18	0.46	1.71	0.89	0.699	1.69	0.414	0.91	1.00	0.456	No
531	34.91	2.18	0.47	1.72	0.89	0.700	1.69	0.414	0.91	1.00	0.456	No
532	35.01	2.19	0.47	1.72	0.89	0.700	1.69	0.414	0.91	1.00	0.456	No
533	35.06	2.19	0.47	1.72	0.89	0.700	1.69	0.414	0.91	1.00	0.457	No
534	35.11	2.19	0.47	1.72	0.89	0.700	1.69	0.414	0.91	1.00	0.457	No
535	35.19	2.20	0.47	1.72	0.89	0.700	1.69	0.414	0.91	1.00	0.457	No
536	35.24	2.20	0.48	1.73	0.89	0.700	1.69	0.414	0.91	1.00	0.457	No
537	35.33	2.21	0.48	1.73	0.89	0.700	1.69	0.415	0.91	1.00	0.457	No
538	35.38	2.21	0.48	1.73	0.89	0.700	1.69	0.415	0.91	1.00	0.457	No
539	35.46	2.21	0.48	1.73	0.89	0.701	1.69	0.415	0.91	1.00	0.458	No
540	35.51	2.22	0.48	1.73	0.89	0.701	1.69	0.415	0.91	1.00	0.458	No
541	35.59	2.22	0.49	1.74	0.89	0.701	1.69	0.415	0.91	1.00	0.458	No
542	35.65	2.23	0.49	1.74	0.89	0.701	1.69	0.415	0.91	1.00	0.458	No
543	35.70	2.23	0.49	1.74	0.89	0.701	1.69	0.415	0.91	1.00	0.458	No
544	35.78	2.24	0.49	1.74	0.89	0.701	1.69	0.415	0.90	1.00	0.458	No
545	35.83	2.24	0.49	1.75	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
546	35.90	2.24	0.50	1.75	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
547	35.97	2.25	0.50	1.75	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
548	36.04	2.25	0.50	1.75	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
549	36.11	2.26	0.50	1.75	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
550	36.16	2.26	0.50	1.76	0.88	0.701	1.69	0.415	0.90	1.00	0.459	No
551	36.25	2.27	0.51	1.76	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
552	36.29	2.27	0.51	1.76	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
553	36.36	2.27	0.51	1.76	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
554	36.43	2.28	0.51	1.77	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
555	36.52	2.28	0.52	1.77	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
556	36.58	2.29	0.52	1.77	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
557	36.62	2.29	0.52	1.77	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
558	36.70	2.30	0.52	1.78	0.88	0.701	1.69	0.415	0.90	1.00	0.460	No
559	36.75	2.30	0.52	1.78	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
560	36.83	2.31	0.53	1.78	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
561	36.89	2.31	0.53	1.78	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
562	36.97	2.32	0.53	1.79	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
563	37.03	2.32	0.53	1.79	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
564	37.08	2.32	0.53	1.79	0.88	0.701	1.69	0.415	0.90	1.00	0.461	No
565	37.17	2.33	0.54	1.79	0.87	0.701	1.69	0.415	0.90	1.00	0.461	No
566	37.21	2.33	0.54	1.79	0.87	0.701	1.69	0.415	0.90	1.00	0.461	No
567	37.31	2.34	0.54	1.80	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
568	37.35	2.34	0.54	1.80	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
569	37.41	2.34	0.54	1.80	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
570	37.49	2.35	0.55	1.80	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
571	37.54	2.35	0.55	1.81	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
572	37.63	2.36	0.55	1.81	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
573	37.68	2.36	0.55	1.81	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
574	37.77	2.37	0.55	1.81	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
575	37.80	2.37	0.56	1.81	0.87	0.701	1.69	0.415	0.90	1.00	0.462	No
576	37.89	2.38	0.56	1.82	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.94	2.38	0.56	1.82	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
578	38.02	2.38	0.56	1.82	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
579	38.07	2.39	0.56	1.82	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
580	38.13	2.39	0.57	1.83	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
581	38.19	2.40	0.57	1.83	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
582	38.27	2.40	0.57	1.83	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
583	38.34	2.41	0.57	1.83	0.87	0.701	1.69	0.415	0.90	1.00	0.463	No
584	38.41	2.41	0.57	1.83	0.86	0.701	1.69	0.415	0.90	1.00	0.463	No
585	38.46	2.41	0.58	1.84	0.86	0.701	1.69	0.415	0.90	1.00	0.463	No
586	38.52	2.41	0.58	1.84	0.86	0.701	1.69	0.415	0.90	1.00	0.463	No
587	38.59	2.42	0.58	1.84	0.86	0.701	1.69	0.415	0.90	1.00	0.464	No
588	38.66	2.42	0.58	1.84	0.86	0.701	1.69	0.415	0.90	1.00	0.464	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.08	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
2	0.13	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
3	0.22	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
4	0.27	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
5	0.34	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
6	0.41	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
7	0.51	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
8	0.55	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
9	0.60	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
10	0.68	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
11	0.74	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
12	0.83	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
13	0.87	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
14	0.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
15	1.01	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
16	1.06	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
17	1.15	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
18	1.18	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
19	1.25	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
20	1.34	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
21	1.38	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
22	1.47	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
23	1.52	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
24	1.60	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
25	1.66	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
26	1.75	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
27	1.79	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
28	1.84	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
29	1.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
30	1.99	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
31	2.07	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
32	2.12	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
33	2.17	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
34	2.23	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
35	2.31	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
36	2.40	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
37	2.45	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
38	2.50	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
39	2.58	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
40	2.63	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
41	2.73	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
42	2.77	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
43	2.86	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
44	2.91	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
45	2.96	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
46	3.05	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
47	3.09	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
48	3.18	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.23	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
50	3.30	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
51	3.36	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
52	3.42	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
53	3.51	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
54	3.55	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
55	3.65	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
56	3.69	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
57	3.74	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
58	3.83	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
59	3.88	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
60	3.97	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
61	4.01	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
62	4.11	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
63	4.15	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
64	4.20	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
65	4.29	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
66	4.33	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
67	4.42	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
68	4.47	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
69	4.53	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
70	4.61	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
71	4.70	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
72	4.75	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
73	4.80	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
74	4.89	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
75	4.93	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
76	5.02	157.00	2.03	3.20	0.62	251.75	1.33	335.77	4.000	No	No	2.00
77	5.07	240.16	1.94	3.20	0.59	385.35	1.26	486.31	4.000	No	No	2.00
78	5.12	249.44	1.95	3.37	0.59	400.27	1.27	508.73	4.000	No	No	2.00
79	5.19	253.75	2.00	3.89	0.61	407.18	1.31	533.62	4.000	No	No	2.00
80	5.29	259.42	2.05	4.42	0.62	416.28	1.35	563.94	4.000	No	No	2.00
81	5.34	268.07	2.07	4.74	0.63	430.17	1.38	593.86	4.000	No	No	2.00
82	5.41	279.25	2.06	4.68	0.63	448.13	1.37	612.13	4.000	No	No	2.00
83	5.47	292.36	2.03	4.47	0.62	469.18	1.34	627.75	4.000	No	No	2.00
84	5.52	306.88	1.99	4.10	0.61	492.50	1.30	640.25	4.000	No	No	2.00
85	5.59	325.05	1.94	3.67	0.59	521.68	1.26	657.91	4.000	No	No	2.00
86	5.64	341.99	1.87	3.18	0.57	548.90	1.22	667.90	4.000	No	No	2.00
87	5.74	350.12	1.82	2.83	0.55	561.96	1.17	659.73	4.000	No	No	2.00
88	5.79	339.03	1.80	2.64	0.55	544.13	1.15	626.79	4.000	No	No	2.00
89	5.85	315.99	1.80	2.56	0.55	507.11	1.15	584.02	4.000	No	No	2.00
90	5.92	282.93	1.81	2.51	0.55	453.98	1.17	529.71	4.000	No	No	2.00
91	5.98	243.09	1.85	2.53	0.56	389.97	1.20	467.11	4.000	No	No	2.00
92	6.07	208.49	1.90	2.71	0.58	334.36	1.24	414.66	4.000	No	No	2.00
93	6.11	187.04	1.96	2.94	0.60	299.90	1.28	382.69	4.000	No	No	2.00
94	6.21	183.73	1.98	3.09	0.60	294.57	1.29	380.66	4.000	No	No	2.00
95	6.25	183.76	2.00	3.25	0.61	294.62	1.31	385.27	4.000	No	No	2.00
96	6.30	185.73	2.03	3.51	0.62	297.78	1.33	396.36	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.38	187.39	2.05	3.79	0.62	300.44	1.36	408.38	4.000	No	No	2.00
98	6.44	189.49	2.08	4.13	0.63	303.81	1.40	424.28	4.000	No	No	2.00
99	6.53	189.24	2.11	4.39	0.64	303.38	1.43	434.09	4.000	No	No	2.00
100	6.58	189.54	2.12	4.55	0.64	303.87	1.45	441.47	4.000	No	No	2.00
101	6.67	190.89	2.07	3.97	0.63	306.01	1.38	420.97	4.000	No	No	2.00
102	6.71	194.27	1.95	2.94	0.59	311.45	1.27	395.70	4.000	No	No	2.00
103	6.76	198.70	1.82	2.07	0.55	311.34	1.17	365.61	4.000	No	No	2.00
104	6.85	201.26	1.78	1.86	0.54	309.79	1.13	350.72	4.000	No	No	2.00
105	6.90	195.24	1.85	2.22	0.56	304.76	1.20	366.02	4.000	No	No	2.00
106	6.99	183.20	1.92	2.59	0.58	288.85	1.25	361.01	4.000	No	No	2.00
107	7.03	162.79	2.02	3.17	0.61	260.84	1.32	345.05	4.000	No	No	2.00
108	7.09	142.37	2.13	3.92	0.65	228.02	1.46	333.49	4.000	No	No	2.00
109	7.18	123.77	2.24	4.87	0.68	198.12	1.72	341.00	4.000	No	No	2.00
110	7.23	111.76	2.33	5.82	0.71	178.82	2.04	364.61	4.000	No	No	2.00
111	7.32	106.67	2.37	6.41	0.72	170.64	2.25	383.40	4.000	No	No	2.00
112	7.37	104.48	2.40	6.82	0.73	167.11	2.39	399.14	4.000	No	No	2.00
113	7.46	105.19	2.41	6.89	0.73	168.24	2.40	403.84	4.000	No	No	2.00
114	7.49	108.51	2.39	6.71	0.72	173.57	2.31	401.32	4.000	No	No	2.00
115	7.55	118.99	2.32	5.95	0.70	190.42	2.01	383.48	4.000	No	No	2.00
116	7.65	132.59	2.24	5.12	0.68	212.24	1.73	367.43	4.000	No	No	2.00
117	7.69	146.50	2.16	4.36	0.66	230.08	1.53	352.76	4.000	No	No	2.00
118	7.78	153.64	2.12	3.93	0.64	236.92	1.45	343.44	4.000	No	No	2.00
119	7.83	155.66	2.09	3.66	0.64	237.51	1.41	334.32	4.000	No	No	2.00
120	7.88	151.46	2.08	3.48	0.63	229.57	1.39	319.74	4.000	No	No	2.00
121	7.97	142.99	2.09	3.38	0.63	215.29	1.40	301.18	4.000	No	No	2.00
122	8.01	132.44	2.09	3.24	0.64	198.77	1.40	279.11	4.000	No	No	2.00
123	8.10	122.28	2.11	3.22	0.64	182.92	1.43	261.71	4.000	No	No	2.00
124	8.15	112.33	2.13	3.24	0.65	168.10	1.47	247.04	4.000	No	No	2.00
125	8.24	103.88	2.17	3.43	0.66	155.52	1.55	240.52	4.000	No	No	2.00
126	8.29	96.61	2.21	3.68	0.67	145.23	1.65	239.35	4.000	No	No	2.00
127	8.38	91.67	2.25	3.93	0.68	137.89	1.75	241.83	4.000	No	No	2.00
128	8.43	88.13	2.28	4.15	0.69	132.72	1.85	245.36	4.000	No	No	2.00
129	8.47	85.02	2.28	4.02	0.69	127.52	1.84	235.26	4.000	No	No	2.00
130	8.56	83.06	2.24	3.49	0.68	122.68	1.72	211.34	4.000	No	No	2.00
131	8.61	80.66	2.20	2.99	0.67	117.66	1.61	189.34	4.000	No	No	2.00
132	8.67	78.73	2.19	2.81	0.66	114.08	1.58	180.41	4.000	No	No	2.00
133	8.75	76.02	2.22	2.98	0.67	110.08	1.66	182.36	4.000	No	No	2.00
134	8.80	74.38	2.23	3.03	0.68	107.49	1.69	181.35	4.000	No	No	2.00
135	8.87	73.74	2.22	2.94	0.68	105.91	1.67	177.15	4.000	No	No	2.00
136	8.96	74.76	2.20	2.79	0.67	106.22	1.63	172.70	4.000	No	No	2.00
137	9.01	75.60	2.19	2.71	0.67	106.81	1.60	170.49	4.000	No	No	2.00
138	9.07	76.16	2.19	2.72	0.67	107.14	1.60	171.26	4.000	No	No	2.00
139	9.14	75.75	2.21	2.84	0.67	106.29	1.64	174.09	4.000	No	No	2.00
140	9.19	74.51	2.25	3.21	0.68	104.97	1.76	185.18	4.000	No	No	2.00
141	9.29	73.24	2.30	3.62	0.70	103.26	1.92	198.22	4.000	No	No	2.00
142	9.33	72.46	2.34	4.10	0.71	102.66	2.10	215.40	4.000	No	No	2.00
143	9.42	72.77	2.37	4.42	0.72	102.76	2.21	227.52	4.000	No	No	2.00
144	9.47	74.58	2.38	4.72	0.72	105.21	2.29	240.96	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.55	78.78	2.38	4.82	0.72	110.34	2.27	250.04	4.000	No	No	2.00
146	9.61	85.87	2.35	4.74	0.71	119.33	2.14	255.49	4.000	No	No	2.00
147	9.66	94.76	2.32	4.57	0.70	130.50	1.99	259.68	4.000	No	No	2.00
148	9.74	103.12	2.29	4.44	0.69	140.55	1.88	264.39	4.000	No	No	2.00
149	9.79	108.58	2.28	4.44	0.69	147.19	1.84	270.93	4.000	No	No	2.00
150	9.85	111.28	2.28	4.56	0.69	150.34	1.85	278.69	4.000	No	No	2.00
151	9.93	112.46	2.29	4.69	0.69	151.23	1.89	285.12	4.000	No	No	2.00
152	9.98	113.21	2.29	4.78	0.70	151.83	1.91	289.35	4.000	No	No	2.00
153	10.11	113.74	2.29	4.76	0.70	151.08	1.91	287.89	4.000	No	No	2.00
154	10.13	113.33	2.29	4.66	0.69	150.11	1.88	282.67	4.000	No	No	2.00
155	10.21	112.02	2.28	4.52	0.69	147.48	1.86	274.51	4.000	No	No	2.00
156	10.25	108.59	2.28	4.34	0.69	142.36	1.84	262.02	4.000	No	No	2.00
157	10.34	103.49	2.28	4.22	0.69	134.82	1.85	249.90	4.000	No	No	2.00
158	10.39	98.45	2.28	4.06	0.69	127.81	1.86	237.17	4.000	No	No	2.00
159	10.44	90.43	2.30	3.97	0.70	117.20	1.91	223.80	4.000	No	No	2.00
160	10.52	81.42	2.32	3.89	0.70	105.15	2.00	209.88	4.000	No	No	2.00
161	10.57	71.32	2.35	3.89	0.71	92.11	2.15	198.23	4.000	No	No	2.00
162	10.65	64.86	2.39	3.98	0.72	83.62	2.31	193.57	4.000	No	No	2.00
163	10.71	60.54	2.42	4.12	0.73	77.99	2.48	193.60	4.000	No	No	2.00
164	10.81	58.42	2.44	4.29	0.74	74.98	2.62	196.57	4.000	No	No	2.00
165	10.84	57.81	2.46	4.45	0.75	74.14	2.71	201.22	4.000	No	No	2.00
166	10.90	58.49	2.47	4.60	0.75	74.84	2.77	207.08	4.000	No	No	2.00
167	10.96	59.98	2.48	4.81	0.75	76.51	2.82	216.11	4.000	No	No	2.00
168	11.04	62.50	2.49	5.16	0.76	79.46	2.91	231.37	4.000	No	No	2.00
169	11.13	64.99	2.50	5.51	0.76	82.24	3.00	246.50	4.000	No	No	2.00
170	11.17	68.19	2.51	5.84	0.76	86.19	3.05	262.91	4.000	No	No	2.00
171	11.25	71.14	2.52	6.15	0.76	89.52	3.11	277.97	4.000	No	No	2.00
172	11.32	74.02	2.52	6.37	0.76	92.78	3.13	290.10	4.000	No	No	2.00
173	11.36	76.26	2.52	6.40	0.76	95.29	3.09	294.42	4.000	No	No	2.00
174	11.45	78.22	2.51	6.37	0.76	97.05	3.04	295.39	4.000	No	No	2.00
175	11.50	80.31	2.51	6.46	0.76	99.32	3.04	301.62	4.000	No	No	2.00
176	11.59	81.45	2.52	6.72	0.76	100.25	3.12	312.73	4.000	No	No	2.00
177	11.64	81.50	2.54	7.01	0.77	100.09	3.23	323.43	4.000	No	No	2.00
178	11.69	80.71	2.55	7.31	0.77	98.94	3.37	332.98	4.000	No	No	2.00
179	11.77	80.27	2.57	7.57	0.78	97.98	3.48	341.17	4.000	No	No	2.00
180	11.83	80.38	2.58	7.76	0.78	97.80	3.56	348.23	4.000	No	No	2.00
181	11.90	81.12	2.58	7.87	0.78	98.28	3.59	352.95	4.000	No	No	2.00
182	11.97	81.58	2.59	7.99	0.78	98.41	3.63	357.44	4.000	No	No	2.00
183	12.02	82.30	2.59	8.09	0.78	98.93	3.66	361.85	4.000	No	No	2.00
184	12.10	83.07	2.59	8.11	0.78	99.35	3.66	363.39	4.000	No	No	2.00
185	12.15	84.07	2.58	8.01	0.78	100.12	3.61	360.93	4.000	No	No	2.00
186	12.22	84.88	2.58	7.90	0.78	100.59	3.55	357.38	4.000	No	No	2.00
187	12.29	85.66	2.57	7.75	0.78	100.98	3.49	352.41	4.000	No	No	2.00
188	12.34	86.43	2.57	7.74	0.78	101.55	3.48	353.08	4.000	No	No	2.00
189	12.42	87.24	2.57	7.76	0.78	101.91	3.48	354.17	4.000	No	No	2.00
190	12.48	84.57	2.59	8.19	0.79	98.64	3.70	365.02	4.000	No	No	2.00
191	12.58	85.41	2.59	8.21	0.79	98.96	3.70	366.45	4.000	No	No	2.00
192	12.62	86.71	2.59	8.15	0.78	100.15	3.66	366.22	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.67	91.39	2.56	7.76	0.78	104.99	3.42	358.89	4.000	No	No	2.00
194	12.76	92.26	2.56	7.70	0.77	105.37	3.39	357.00	4.000	No	No	2.00
195	12.81	92.38	2.55	7.62	0.77	105.15	3.36	353.52	4.000	No	No	2.00
196	12.90	91.82	2.55	7.51	0.77	103.88	3.35	347.79	4.000	No	No	2.00
197	12.95	90.52	2.55	7.33	0.77	102.05	3.31	338.05	4.000	No	No	2.00
198	13.03	88.40	2.54	7.13	0.77	99.09	3.29	326.46	4.000	No	No	2.00
199	13.08	86.26	2.54	6.84	0.77	96.33	3.24	311.81	4.000	No	No	2.00
200	13.13	83.31	2.53	6.49	0.77	92.67	3.17	294.16	4.000	No	No	2.00
201	13.22	80.29	2.52	6.12	0.76	88.76	3.11	276.07	4.000	No	No	2.00
202	13.27	76.88	2.50	5.64	0.76	84.59	3.00	253.93	4.000	No	No	2.00
203	13.36	74.09	2.49	5.27	0.76	81.01	2.92	236.63	4.000	No	No	2.00
204	13.41	71.26	2.48	4.98	0.75	77.62	2.87	223.05	4.000	No	No	2.00
205	13.45	68.50	2.50	4.97	0.76	74.42	2.95	219.19	4.000	No	No	2.00
206	13.55	66.48	2.51	5.03	0.76	71.87	3.04	218.72	4.000	No	No	2.00
207	13.59	64.93	2.52	5.13	0.76	70.06	3.14	220.04	4.000	No	No	2.00
208	13.68	64.12	2.54	5.26	0.77	68.85	3.24	222.82	4.000	No	No	2.00
209	13.73	63.59	2.55	5.48	0.77	68.16	3.36	229.13	4.000	No	No	2.00
210	13.82	63.68	2.57	5.72	0.78	67.94	3.48	236.55	4.000	No	No	2.00
211	13.87	64.24	2.58	5.95	0.78	68.41	3.58	244.71	4.000	No	No	2.00
212	13.92	65.17	2.59	6.24	0.79	69.25	3.68	254.93	4.000	No	No	2.00
213	14.00	66.54	2.60	6.49	0.79	70.42	3.75	264.35	4.000	No	Yes	2.00
214	14.05	67.97	2.61	6.71	0.79	71.76	3.81	273.46	4.000	No	Yes	2.00
215	14.12	69.18	2.61	6.78	0.79	72.78	3.81	277.16	4.000	No	Yes	2.00
216	14.18	70.18	2.61	6.85	0.79	73.56	3.81	280.38	4.000	No	Yes	2.00
217	14.28	70.83	2.61	6.89	0.79	73.84	3.82	282.20	4.000	No	Yes	2.00
218	14.33	71.26	2.61	6.95	0.79	74.09	3.84	284.45	4.000	No	Yes	2.00
219	14.37	71.73	2.61	7.01	0.79	74.42	3.86	286.96	4.000	No	Yes	2.00
220	14.46	72.38	2.61	7.06	0.79	74.71	3.87	289.13	4.000	No	Yes	2.00
221	14.51	73.50	2.61	7.11	0.79	75.66	3.86	292.12	4.000	No	Yes	2.00
222	14.60	74.74	2.61	7.13	0.79	76.55	3.84	293.91	4.000	No	Yes	2.00
223	14.65	76.05	2.61	7.16	0.79	77.69	3.82	296.81	4.000	No	Yes	2.00
224	14.70	76.92	2.61	7.24	0.79	78.37	3.83	300.31	4.000	No	Yes	2.00
225	14.78	77.26	2.61	7.36	0.79	78.36	3.88	304.33	4.000	No	Yes	2.00
226	14.84	76.79	2.63	7.56	0.80	77.68	3.99	309.87	4.000	No	Yes	2.00
227	14.93	75.70	2.64	7.80	0.80	76.21	4.14	315.27	4.000	No	Yes	2.00
228	14.99	74.06	2.64	7.69	0.80	74.26	4.15	308.43	4.000	No	Yes	2.00
229	15.06	72.57	2.64	7.45	0.80	72.45	4.11	297.86	4.000	No	Yes	2.00
230	15.11	70.39	2.65	7.53	0.80	70.11	4.23	296.41	4.000	No	Yes	2.00
231	15.18	68.10	2.69	8.05	0.81	67.58	4.55	307.70	4.000	No	Yes	2.00
232	15.25	65.83	2.72	8.66	0.82	65.08	4.92	320.29	4.000	No	Yes	2.00
233	15.30	64.27	2.74	8.88	0.83	63.36	5.10	322.84	4.000	No	Yes	2.00
234	15.39	59.08	2.79	9.66	0.84	57.92	5.71	330.91	4.000	No	Yes	2.00
235	15.43	57.65	2.78	9.10	0.84	56.36	5.55	312.97	4.000	No	Yes	2.00
236	15.53	56.78	2.76	8.64	0.84	55.17	5.41	298.57	4.000	No	Yes	2.00
237	15.57	60.42	2.71	7.75	0.82	58.58	4.82	282.23	4.000	No	Yes	2.00
238	15.62	60.66	2.73	8.18	0.83	58.68	5.01	293.97	4.000	No	Yes	2.00
239	15.71	60.97	2.74	8.43	0.83	58.70	5.12	300.79	4.000	No	Yes	2.00
240	15.75	61.28	2.74	8.55	0.83	58.86	5.17	304.23	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.85	61.67	2.74	8.61	0.83	58.94	5.19	306.06	4.000	No	Yes	2.00
242	15.88	62.11	2.74	8.64	0.83	59.25	5.19	307.39	4.000	No	Yes	2.00
243	15.96	63.04	2.74	8.53	0.83	59.87	5.11	306.04	4.000	No	Yes	2.00
244	16.01	64.42	2.72	8.35	0.83	61.04	4.97	303.48	4.000	No	Yes	2.00
245	16.11	65.84	2.71	8.17	0.82	62.10	4.84	300.49	4.000	No	Yes	2.00
246	16.15	66.65	2.71	8.06	0.82	62.72	4.77	298.85	4.000	No	Yes	2.00
247	16.24	66.87	2.71	8.04	0.82	62.62	4.76	298.06	4.000	No	Yes	2.00
248	16.29	66.91	2.71	8.04	0.82	62.50	4.76	297.69	4.000	No	Yes	2.00
249	16.38	66.91	2.70	8.00	0.82	62.20	4.76	295.91	4.000	No	Yes	2.00
250	16.43	66.97	2.70	7.90	0.82	62.10	4.72	292.96	4.000	No	Yes	2.00
251	16.47	67.31	2.69	7.65	0.81	62.29	4.60	286.22	4.000	No	Yes	2.00
252	16.56	67.96	2.67	7.27	0.81	62.63	4.41	275.88	4.000	No	Yes	2.00
253	16.61	69.14	2.64	6.68	0.80	63.56	4.09	260.05	4.000	No	Yes	2.00
254	16.71	70.41	2.60	6.10	0.79	64.46	3.79	244.03	4.000	No	Yes	2.00
255	16.75	71.50	2.57	5.58	0.78	65.35	3.50	229.01	4.000	No	No	2.00
256	16.80	71.75	2.55	5.21	0.77	65.45	3.32	217.23	4.000	No	No	2.00
257	16.89	71.22	2.53	4.91	0.77	64.70	3.20	207.05	4.000	No	No	2.00
258	16.94	69.73	2.53	4.76	0.77	63.18	3.17	200.41	4.000	No	No	2.00
259	17.03	68.27	2.53	4.75	0.77	61.58	3.22	198.34	4.000	No	No	2.00
260	17.06	67.15	2.55	4.90	0.77	60.44	3.34	201.86	4.000	No	No	2.00
261	17.16	67.03	2.56	5.05	0.78	60.04	3.43	206.08	4.000	No	No	2.00
262	17.21	67.90	2.56	5.09	0.78	60.69	3.43	208.10	4.000	No	No	2.00
263	17.30	69.61	2.54	4.93	0.77	62.02	3.30	204.61	4.000	No	No	2.00
264	17.35	71.63	2.52	4.66	0.76	63.73	3.11	197.92	4.000	No	No	2.00
265	17.40	74.65	2.47	4.20	0.75	66.37	2.80	185.62	4.000	No	No	2.00
266	17.49	77.78	2.42	3.70	0.73	69.00	2.48	171.27	4.000	No	No	2.00
267	17.53	81.32	2.34	3.01	0.71	72.16	2.09	150.95	4.000	No	No	2.00
268	17.63	83.34	2.27	2.45	0.69	73.82	1.82	134.27	4.000	No	No	2.00
269	17.68	84.61	2.20	1.98	0.67	74.93	1.62	121.15	4.000	No	No	2.00
270	17.72	85.14	2.15	1.70	0.65	75.37	1.51	113.87	4.000	No	No	2.00
271	17.81	85.30	2.12	1.50	0.64	75.34	1.45	109.12	4.000	No	No	2.00
272	17.86	84.83	2.09	1.35	0.63	74.86	1.40	105.11	4.000	No	No	2.00
273	17.95	83.84	2.08	1.29	0.63	73.75	1.39	102.79	4.000	No	No	2.00
274	18.00	82.56	2.08	1.24	0.63	72.51	1.39	100.60	4.000	No	No	2.00
275	18.08	81.35	2.08	1.21	0.63	71.23	1.39	98.82	4.000	No	No	2.00
276	18.14	80.93	2.07	1.18	0.63	70.74	1.38	97.61	4.000	No	No	2.00
277	18.20	80.75	2.07	1.15	0.63	70.43	1.37	96.72	4.000	No	No	2.00
278	18.27	81.12	2.05	1.10	0.62	70.62	1.36	96.04	4.000	No	No	2.00
279	18.31	81.35	2.04	1.05	0.62	70.76	1.35	95.21	4.000	No	No	2.00
280	18.41	81.97	2.03	1.01	0.62	71.12	1.33	94.91	4.000	No	No	2.00
281	18.45	82.63	2.03	1.01	0.62	71.61	1.33	95.34	4.000	No	No	2.00
282	18.55	83.00	2.03	1.04	0.62	71.69	1.34	95.86	4.000	No	No	2.00
283	18.59	82.44	2.05	1.08	0.62	71.07	1.35	96.04	4.000	No	No	2.00
284	18.66	80.98	2.07	1.13	0.63	69.60	1.37	95.68	4.000	No	No	2.00
285	18.70	78.90	2.10	1.24	0.64	67.60	1.42	95.95	4.000	No	No	2.00
286	18.80	76.38	2.14	1.37	0.65	65.10	1.49	96.79	4.000	No	No	2.00
287	18.84	73.12	2.20	1.60	0.67	62.03	1.61	100.06	4.000	No	No	2.00
288	18.93	68.65	2.27	1.91	0.69	57.81	1.83	105.95	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.98	63.77	2.36	2.39	0.72	53.32	2.20	117.20	4.000	No	No	2.00
290	19.04	58.86	2.46	3.00	0.75	48.83	2.72	132.82	4.000	No	No	2.00
291	19.12	54.26	2.56	3.74	0.77	44.60	3.39	151.07	4.000	No	No	2.00
292	19.16	49.94	2.65	4.67	0.80	40.71	4.22	171.68	4.000	No	Yes	2.00
293	19.24	46.25	2.74	5.63	0.83	37.35	5.09	190.14	4.000	No	Yes	2.00
294	19.31	43.24	2.81	6.65	0.85	34.63	5.99	207.33	4.000	No	Yes	2.00
295	19.39	41.35	2.86	7.39	0.87	32.86	6.64	218.05	4.000	No	Yes	2.00
296	19.44	40.11	2.89	7.95	0.88	31.72	7.11	225.51	4.000	No	Yes	2.00
297	19.53	39.74	2.90	8.13	0.88	31.28	7.27	227.51	4.000	No	Yes	2.00
298	19.58	39.62	2.91	8.16	0.88	31.10	7.32	227.60	4.000	No	Yes	2.00
299	19.63	39.43	2.91	8.08	0.88	30.88	7.30	225.50	4.000	No	Yes	2.00
300	19.71	38.84	2.91	8.05	0.88	30.27	7.37	223.12	4.000	No	Yes	2.00
301	19.77	37.65	2.92	8.11	0.89	29.23	7.56	220.96	4.000	No	Yes	2.00
302	19.86	36.25	2.94	8.27	0.89	27.96	7.86	219.71	4.000	No	Yes	2.00
303	19.90	34.63	2.97	8.51	1.00	26.07	8.34	217.43	4.000	No	Yes	2.00
304	19.95	33.24	2.99	8.66	1.00	24.91	8.66	215.67	4.000	No	Yes	2.00
305	20.03	32.15	3.01	8.70	1.00	23.96	8.88	212.69	3.600	No	Yes	2.00
306	20.08	31.62	3.00	8.50	1.00	23.49	8.86	208.02	3.600	No	Yes	2.00
307	20.18	31.50	3.00	8.29	1.00	23.28	8.77	204.18	3.600	No	Yes	2.00
308	20.22	32.37	2.97	7.78	1.00	23.90	8.31	198.75	3.600	No	Yes	2.00
309	20.32	33.46	2.94	7.33	0.89	25.20	7.76	195.62	3.600	No	Yes	2.00
310	20.36	34.05	2.92	6.98	0.88	25.65	7.45	191.19	3.600	No	Yes	2.00
311	20.43	33.62	2.92	6.87	0.88	25.24	7.46	188.16	3.600	No	Yes	2.00
312	20.50	32.96	2.92	6.82	0.88	24.64	7.53	185.53	3.600	No	Yes	2.00
313	20.55	33.15	2.91	6.59	0.88	24.75	7.36	182.07	3.600	No	Yes	2.00
314	20.63	34.33	2.88	6.20	0.87	25.63	6.93	177.61	3.600	No	Yes	2.00
315	20.69	37.15	2.82	5.49	0.85	27.87	6.07	169.33	3.600	No	Yes	2.00
316	20.78	39.86	2.76	4.89	0.84	29.98	5.37	160.95	3.600	No	Yes	2.00
317	20.82	41.81	2.72	4.45	0.82	31.55	4.88	153.84	3.600	No	Yes	2.00
318	20.87	41.88	2.71	4.34	0.82	31.56	4.80	151.36	3.600	No	Yes	2.00
319	20.95	41.01	2.71	4.26	0.82	30.77	4.82	148.28	3.600	No	Yes	2.00
320	21.01	39.08	2.72	4.13	0.82	29.20	4.90	143.12	3.600	No	Yes	2.00
321	21.10	37.12	2.73	4.05	0.83	27.56	5.04	139.01	3.600	No	Yes	2.00
322	21.14	33.89	2.79	4.42	0.84	24.92	5.72	142.45	3.600	No	Yes	2.00
323	21.24	31.47	2.86	5.06	0.86	22.85	6.59	150.57	3.600	No	Yes	2.00
324	21.29	29.20	2.92	5.76	0.88	20.99	7.53	157.96	3.600	No	Yes	2.00
325	21.33	29.67	2.92	5.78	0.88	21.31	7.47	159.18	3.600	No	Yes	2.00
326	21.41	30.17	2.91	5.70	0.88	21.63	7.34	158.75	3.600	No	Yes	2.00
327	21.48	30.61	2.90	5.59	0.88	21.91	7.20	157.65	3.600	No	Yes	2.00
328	21.53	29.27	2.93	5.82	0.89	20.82	7.61	158.53	3.600	No	Yes	2.00
329	21.61	27.69	2.97	6.06	1.00	18.99	8.26	156.88	3.600	No	Yes	2.00
330	21.67	25.70	3.00	6.27	1.00	17.50	8.86	155.12	3.600	No	Yes	2.00
331	21.76	24.49	3.02	6.29	1.00	16.56	9.19	152.13	3.600	No	Yes	2.00
332	21.81	23.78	3.03	6.28	1.00	16.01	9.38	150.17	3.600	No	Yes	2.00
333	21.86	25.30	2.99	5.77	1.00	17.07	8.59	146.68	3.600	No	Yes	2.00
334	21.95	27.29	2.92	5.14	0.88	19.03	7.51	142.82	3.600	No	Yes	2.00
335	21.99	28.93	2.86	4.50	0.87	20.30	6.65	135.11	3.600	No	Yes	2.00
336	22.09	28.68	2.85	4.29	0.86	20.06	6.52	130.78	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.13	28.17	2.85	4.21	0.86	19.65	6.55	128.62	3.600	No	Yes	2.00
338	22.18	27.83	2.86	4.26	0.87	19.34	6.66	128.73	3.600	No	Yes	2.00
339	22.27	27.99	2.85	4.14	0.86	19.41	6.53	126.82	3.600	No	Yes	2.00
340	22.32	27.85	2.83	3.79	0.86	19.31	6.23	120.34	3.600	No	Yes	2.00
341	22.40	26.64	2.83	3.60	0.86	18.37	6.26	115.04	3.600	No	Yes	2.00
342	22.45	23.34	2.90	3.88	0.88	15.83	7.25	114.82	3.600	No	Yes	2.00
343	22.55	19.86	3.03	4.74	1.00	12.78	9.30	118.85	3.600	No	Yes	2.00
344	22.59	18.31	3.09	5.38	1.00	11.68	10.51	122.76	3.600	No	Yes	2.00
345	22.69	19.52	3.05	5.01	1.00	12.47	9.73	121.30	3.600	No	Yes	2.00
346	22.73	21.26	2.99	4.44	1.00	13.64	8.61	117.47	3.600	No	Yes	2.00
347	22.78	21.76	2.93	3.90	0.89	14.46	7.73	111.78	3.600	No	Yes	2.00
348	22.91	20.30	2.97	3.78	1.00	12.88	8.23	106.02	3.600	No	Yes	2.00
349	23.00	18.18	3.01	3.83	1.00	11.39	9.00	102.55	3.600	No	Yes	2.00
350	23.05	16.32	3.07	4.06	1.00	10.10	10.04	101.34	3.600	No	Yes	2.00
351	23.10	15.61	3.09	4.02	1.00	9.59	10.32	99.04	3.600	No	Yes	2.00
352	23.20	18.56	2.96	3.17	1.00	11.55	8.12	93.74	3.600	No	Yes	2.00
353	23.29	23.59	2.78	2.38	0.84	15.72	5.58	87.77	3.600	No	Yes	2.00
354	23.33	29.96	2.62	1.81	0.79	20.56	3.89	79.88	3.600	No	Yes	2.00
355	23.38	32.10	2.56	1.63	0.78	22.19	3.44	76.28	0.121	No	No	0.31
356	23.46	30.51	2.58	1.64	0.78	20.94	3.61	75.61	0.120	No	No	0.31
357	23.52	26.78	2.65	1.74	0.80	18.08	4.22	76.37	3.600	No	Yes	2.00
358	23.56	22.34	2.75	1.90	0.83	14.74	5.21	76.81	3.600	No	Yes	2.00
359	23.65	19.08	2.83	2.01	0.86	12.29	6.19	76.09	3.600	No	Yes	2.00
360	23.70	16.04	2.91	2.13	0.88	10.05	7.40	74.38	3.600	No	Yes	2.00
361	23.78	14.49	2.98	2.17	1.00	8.59	8.38	71.91	3.600	No	Yes	2.00
362	23.83	13.62	3.00	2.17	1.00	7.99	8.82	70.49	3.600	No	Yes	2.00
363	23.89	13.52	2.99	1.98	1.00	7.91	8.54	67.59	3.600	No	Yes	2.00
364	23.97	14.02	2.93	1.78	0.89	8.56	7.69	65.83	3.600	No	Yes	2.00
365	24.02	14.68	2.89	1.62	0.88	9.03	7.10	64.09	3.600	No	Yes	2.00
366	24.11	15.08	2.89	1.67	0.87	9.28	7.04	65.33	3.600	No	Yes	2.00
367	24.16	14.96	2.90	1.73	0.88	9.17	7.22	66.20	3.600	No	Yes	2.00
368	24.25	14.63	2.92	1.79	0.88	8.90	7.48	66.61	3.600	No	Yes	2.00
369	24.29	14.20	2.96	1.88	1.00	8.23	8.12	66.83	3.600	No	Yes	2.00
370	24.37	14.04	2.98	1.97	1.00	8.10	8.38	67.92	3.600	No	Yes	2.00
371	24.41	14.06	2.98	2.02	1.00	8.10	8.46	68.54	3.600	No	Yes	2.00
372	24.50	14.09	2.98	2.01	1.00	8.09	8.47	68.51	3.600	No	Yes	2.00
373	24.56	14.03	2.98	2.00	1.00	8.04	8.49	68.22	3.600	No	Yes	2.00
374	24.62	13.81	2.99	2.02	1.00	7.88	8.65	68.10	3.600	No	Yes	2.00
375	24.69	13.69	2.99	2.00	1.00	7.78	8.69	67.57	3.600	No	Yes	2.00
376	24.79	13.72	2.99	1.97	1.00	7.77	8.64	67.16	3.600	No	Yes	2.00
377	24.84	13.84	2.99	1.95	1.00	7.83	8.55	66.96	3.600	No	Yes	2.00
378	24.88	13.97	2.98	1.93	1.00	7.90	8.46	66.85	3.600	No	Yes	2.00
379	24.97	13.94	2.98	1.92	1.00	7.85	8.48	66.54	3.600	No	Yes	2.00
380	25.01	13.84	2.98	1.89	1.00	7.78	8.49	66.03	3.600	No	Yes	2.00
381	25.11	13.81	2.98	1.87	1.00	7.75	8.47	65.66	3.600	No	Yes	2.00
382	25.16	13.85	2.98	1.85	1.00	7.76	8.42	65.35	3.600	No	Yes	2.00
383	25.20	13.82	2.98	1.85	1.00	7.74	8.43	65.26	3.600	No	Yes	2.00
384	25.30	13.72	2.99	1.89	1.00	7.67	8.56	65.65	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.34	13.63	3.00	1.98	1.00	7.60	8.80	66.91	3.600	No	Yes	2.00
386	25.42	13.63	3.02	2.14	1.00	7.59	9.09	69.02	3.600	No	Yes	2.00
387	25.48	13.75	3.03	2.29	1.00	7.66	9.31	71.33	3.600	No	Yes	2.00
388	25.53	14.59	3.02	2.46	1.00	8.18	9.17	75.05	3.600	No	Yes	2.00
389	25.61	15.93	3.01	2.68	1.00	9.01	8.90	80.17	3.600	No	Yes	2.00
390	25.66	17.82	3.00	3.17	1.00	10.19	8.85	90.20	3.600	No	Yes	2.00
391	25.75	19.50	3.02	3.79	1.00	11.23	9.04	101.52	3.600	No	Yes	2.00
392	25.80	21.56	3.03	4.63	1.00	12.50	9.32	116.58	3.600	No	Yes	2.00
393	25.89	23.79	3.03	5.22	1.00	13.88	9.28	128.83	3.600	No	Yes	2.00
394	25.94	26.68	3.01	5.57	1.00	15.67	8.89	139.36	3.600	No	Yes	2.00
395	25.98	29.25	2.99	5.96	1.00	17.27	8.69	149.98	3.600	No	Yes	2.00
396	26.06	31.46	2.99	6.41	1.00	18.62	8.64	160.90	3.600	No	Yes	2.00
397	26.12	33.73	2.99	6.91	1.00	20.01	8.63	172.61	3.600	No	Yes	2.00
398	26.21	35.85	2.98	7.08	1.00	21.29	8.43	179.39	3.600	No	Yes	2.00
399	26.25	38.34	2.96	7.08	1.00	22.82	8.08	184.34	3.600	No	Yes	2.00
400	26.35	40.14	2.92	6.99	0.89	25.07	7.56	189.59	3.600	No	Yes	2.00
401	26.40	41.73	2.91	6.89	0.88	26.13	7.31	190.94	3.600	No	Yes	2.00
402	26.45	42.88	2.89	6.76	0.88	26.91	7.09	190.84	3.600	No	Yes	2.00
403	26.54	43.88	2.88	6.62	0.87	27.56	6.89	189.93	3.600	No	Yes	2.00
404	26.58	44.50	2.84	6.03	0.86	28.07	6.42	180.20	3.600	No	Yes	2.00
405	26.68	44.28	2.81	5.42	0.85	27.99	6.01	168.20	3.600	No	Yes	2.00
406	26.72	42.61	2.81	5.23	0.85	26.86	6.04	162.16	3.600	No	Yes	2.00
407	26.82	40.55	2.85	5.63	0.86	25.33	6.57	166.45	3.600	No	Yes	2.00
408	26.86	38.66	2.90	6.19	0.88	23.94	7.23	173.09	3.600	No	Yes	2.00
409	26.90	37.08	2.93	6.56	0.89	22.80	7.72	175.94	3.600	No	Yes	2.00
410	27.00	35.74	2.98	6.87	1.00	20.87	8.38	174.83	3.600	No	Yes	2.00
411	27.04	35.00	2.99	6.94	1.00	20.39	8.55	174.37	3.600	No	Yes	2.00
412	27.13	34.94	2.98	6.77	1.00	20.31	8.45	171.68	3.600	No	Yes	2.00
413	27.18	35.65	2.96	6.43	1.00	20.73	8.09	167.78	3.600	No	Yes	2.00
414	27.27	36.09	2.93	6.19	0.89	22.02	7.62	167.87	3.600	No	Yes	2.00
415	27.32	36.99	2.90	5.84	0.88	22.66	7.23	163.76	3.600	No	Yes	2.00
416	27.37	36.52	2.90	5.70	0.88	22.35	7.18	160.58	3.600	No	Yes	2.00
417	27.45	34.66	2.92	5.82	0.89	21.05	7.56	159.16	3.600	No	Yes	2.00
418	27.50	31.98	2.98	6.10	1.00	18.37	8.47	155.48	3.600	No	Yes	2.00
419	27.59	29.87	3.01	6.30	1.00	17.06	9.03	154.05	3.600	No	Yes	2.00
420	27.64	29.32	3.01	6.09	1.00	16.70	8.98	149.90	3.600	No	Yes	2.00
421	27.73	29.47	3.00	5.81	1.00	16.76	8.73	146.26	3.600	No	Yes	2.00
422	27.76	30.53	2.96	5.36	1.00	17.39	8.15	141.78	3.600	No	Yes	2.00
423	27.82	31.52	2.91	5.00	0.88	18.94	7.41	140.34	3.600	No	Yes	2.00
424	27.92	32.11	2.89	4.74	0.88	19.34	7.08	137.03	3.600	No	Yes	2.00
425	27.96	31.52	2.89	4.67	0.88	18.95	7.12	134.92	3.600	No	Yes	2.00
426	28.05	30.56	2.91	4.71	0.88	18.27	7.33	133.93	3.600	No	Yes	2.00
427	28.10	29.53	2.93	4.77	0.89	17.56	7.58	133.15	3.600	No	Yes	2.00
428	28.16	29.07	2.95	4.83	1.00	16.38	7.99	130.85	3.600	No	Yes	2.00
429	28.24	29.16	2.95	4.83	1.00	16.41	7.98	131.01	3.600	No	Yes	2.00
430	28.29	29.51	2.93	4.83	0.89	17.48	7.66	133.81	3.600	No	Yes	2.00
431	28.38	30.16	2.90	4.51	0.88	17.93	7.25	129.92	3.600	No	Yes	2.00
432	28.43	31.00	2.85	3.95	0.86	18.57	6.55	121.68	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.49	32.33	2.80	3.47	0.85	19.54	5.87	114.60	3.600	No	Yes	2.00
434	28.56	33.36	2.79	3.43	0.84	20.21	5.69	114.94	3.600	No	Yes	2.00
435	28.65	33.57	2.81	3.76	0.85	20.25	6.00	121.46	3.600	No	Yes	2.00
436	28.70	32.67	2.85	4.18	0.86	19.55	6.54	127.74	3.600	No	Yes	2.00
437	28.75	31.34	2.90	4.67	0.88	18.56	7.22	134.00	3.600	No	Yes	2.00
438	28.82	30.84	2.95	5.11	1.00	17.22	7.98	137.47	3.600	No	Yes	2.00
439	28.89	31.09	2.96	5.39	1.00	17.35	8.18	141.96	3.600	No	Yes	2.00
440	28.95	32.05	2.95	5.40	1.00	17.90	8.03	143.76	3.600	No	Yes	2.00
441	29.00	31.96	2.96	5.46	1.00	17.82	8.11	144.50	3.600	No	Yes	2.00
442	29.08	31.06	2.98	5.62	1.00	17.26	8.41	145.20	3.600	No	Yes	2.00
443	29.14	29.84	3.00	5.84	1.00	16.52	8.83	145.96	3.600	No	Yes	2.00
444	29.23	29.10	3.02	6.05	1.00	16.06	9.17	147.18	3.600	No	Yes	2.00
445	29.27	28.91	3.03	6.22	1.00	15.94	9.35	149.01	3.600	No	Yes	2.00
446	29.34	28.67	3.05	6.42	1.00	15.77	9.58	151.10	3.600	No	Yes	2.00
447	29.42	28.45	3.06	6.60	1.00	15.62	9.78	152.73	3.600	No	Yes	2.00
448	29.47	28.39	3.07	6.89	1.00	15.56	10.04	156.19	3.600	No	Yes	2.00
449	29.54	29.35	3.07	7.04	1.00	16.11	9.95	160.28	3.600	No	Yes	2.00
450	29.60	31.84	3.04	7.00	1.00	17.54	9.42	165.23	3.600	No	Yes	2.00
451	29.66	36.56	2.97	6.46	1.00	20.28	8.23	166.93	3.600	No	Yes	2.00
452	29.73	44.55	2.84	5.66	0.86	26.64	6.38	170.06	3.600	No	Yes	2.00
453	29.83	54.02	2.73	4.91	0.83	33.02	5.05	166.59	3.600	No	Yes	2.00
454	29.88	62.56	2.65	4.43	0.80	38.85	4.20	163.34	3.600	No	Yes	2.00
455	29.93	72.75	2.56	3.92	0.78	45.93	3.43	157.39	0.443	No	No	1.01
456	30.01	81.88	2.49	3.56	0.76	52.32	2.92	152.68	0.411	No	No	0.94
457	30.06	91.73	2.42	3.20	0.73	59.33	2.48	147.22	0.377	No	No	0.86
458	30.15	96.79	2.38	3.00	0.72	62.94	2.28	143.66	0.356	No	No	0.81
459	30.20	100.17	2.35	2.84	0.71	65.42	2.14	140.23	0.336	No	No	0.77
460	30.26	101.78	2.34	2.79	0.71	66.54	2.10	139.45	0.332	No	No	0.76
461	30.34	102.37	2.35	2.83	0.71	66.81	2.11	141.09	0.341	No	No	0.78
462	30.43	102.83	2.35	2.91	0.71	66.95	2.15	143.82	0.357	No	No	0.81
463	30.48	102.74	2.36	2.98	0.72	66.77	2.18	145.77	0.368	No	No	0.84
464	30.52	102.18	2.36	2.98	0.72	66.34	2.19	145.42	0.366	No	No	0.83
465	30.62	101.55	2.36	2.93	0.72	65.86	2.18	143.50	0.355	No	No	0.81
466	30.65	102.76	2.33	2.70	0.71	66.93	2.05	136.94	0.319	No	No	0.73
467	30.75	105.90	2.29	2.44	0.69	69.35	1.88	130.56	0.287	No	No	0.65
468	30.80	109.50	2.25	2.23	0.68	72.13	1.75	126.22	0.267	No	No	0.61
469	30.84	112.26	2.23	2.15	0.68	74.17	1.69	125.37	0.263	No	No	0.60
470	30.94	113.35	2.22	2.10	0.67	74.92	1.66	124.53	0.260	No	No	0.59
471	30.98	113.16	2.21	2.06	0.67	74.80	1.65	123.47	0.255	No	No	0.58
472	31.07	110.46	2.23	2.12	0.68	72.70	1.70	123.51	0.255	No	No	0.58
473	31.12	103.68	2.29	2.36	0.69	67.56	1.87	126.57	0.269	No	No	0.61
474	31.17	95.59	2.36	2.72	0.72	61.45	2.17	133.54	0.301	No	No	0.68
475	31.26	85.86	2.45	3.21	0.74	54.25	2.64	143.45	0.355	No	No	0.80
476	31.31	76.44	2.53	3.62	0.77	47.56	3.16	150.29	0.396	No	No	0.89
477	31.37	65.91	2.61	4.08	0.79	40.24	3.87	155.66	3.600	No	Yes	2.00
478	31.45	58.76	2.62	3.70	0.80	35.65	3.95	140.84	3.600	No	Yes	2.00
479	31.53	55.63	2.60	3.26	0.79	33.75	3.78	127.43	3.600	No	Yes	2.00
480	31.58	55.64	2.57	2.91	0.78	33.91	3.49	118.39	0.234	No	No	0.53

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.66	58.25	2.58	3.20	0.78	35.45	3.59	127.41	0.272	No	No	0.61
482	31.71	61.02	2.58	3.38	0.78	37.16	3.60	133.82	0.303	No	No	0.68
483	31.77	59.31	2.61	3.55	0.79	35.90	3.82	137.26	3.600	No	Yes	2.00
484	31.82	58.22	2.62	3.63	0.79	35.11	3.94	138.27	3.600	No	Yes	2.00
485	31.89	53.41	2.68	4.03	0.81	31.76	4.55	144.36	3.600	No	Yes	2.00
486	31.98	51.51	2.72	4.30	0.82	30.39	4.89	148.69	3.600	No	Yes	2.00
487	32.03	44.43	2.81	4.95	0.85	25.63	6.02	154.38	3.600	No	Yes	2.00
488	32.12	41.20	2.84	5.00	0.86	23.53	6.41	150.90	3.600	No	Yes	2.00
489	32.16	39.22	2.83	4.57	0.86	22.36	6.29	140.61	3.600	No	Yes	2.00
490	32.26	38.04	2.82	4.21	0.85	21.66	6.12	132.55	3.600	No	Yes	2.00
491	32.31	36.53	2.82	4.03	0.86	20.73	6.14	127.38	3.600	No	Yes	2.00
492	32.35	35.34	2.85	4.20	0.86	19.93	6.47	128.86	3.600	No	Yes	2.00
493	32.44	35.25	2.85	4.25	0.86	19.83	6.54	129.63	3.600	No	Yes	2.00
494	32.49	35.82	2.84	4.19	0.86	20.19	6.41	129.31	3.600	No	Yes	2.00
495	32.58	36.33	2.83	4.08	0.86	20.50	6.23	127.83	3.600	No	Yes	2.00
496	32.62	35.80	2.84	4.14	0.86	20.14	6.37	128.32	3.600	No	Yes	2.00
497	32.71	34.50	2.87	4.38	0.87	19.24	6.80	130.74	3.600	No	Yes	2.00
498	32.75	33.72	2.89	4.50	0.87	18.72	7.02	131.49	3.600	No	Yes	2.00
499	32.81	35.40	2.85	4.14	0.86	19.82	6.44	127.66	3.600	No	Yes	2.00
500	32.91	37.11	2.80	3.74	0.85	20.97	5.83	122.23	3.600	No	Yes	2.00
501	32.95	37.27	2.78	3.55	0.84	21.10	5.63	118.75	3.600	No	Yes	2.00
502	33.04	35.09	2.81	3.67	0.85	19.67	6.04	118.72	3.600	No	Yes	2.00
503	33.09	32.11	2.87	3.94	0.87	17.72	6.76	119.78	3.600	No	Yes	2.00
504	33.14	29.53	2.93	4.29	0.89	16.03	7.60	121.81	3.600	No	Yes	2.00
505	33.22	27.51	2.99	4.64	1.00	13.94	8.69	121.13	3.600	No	Yes	2.00
506	33.28	25.99	3.03	4.84	1.00	13.10	9.25	121.18	3.600	No	Yes	2.00
507	33.35	25.00	3.04	4.82	1.00	12.54	9.50	119.10	3.600	No	Yes	2.00
508	33.41	24.53	3.03	4.58	1.00	12.27	9.38	115.11	3.600	No	Yes	2.00
509	33.50	24.84	3.01	4.27	1.00	12.42	8.99	111.59	3.600	No	Yes	2.00
510	33.55	25.71	2.98	3.94	1.00	12.88	8.40	108.29	3.600	No	Yes	2.00
511	33.63	26.67	2.93	3.73	0.89	14.25	7.63	108.68	3.600	No	Yes	2.00
512	33.69	27.20	2.92	3.65	0.88	14.57	7.43	108.25	3.600	No	Yes	2.00
513	33.73	26.67	2.96	3.84	1.00	13.37	8.09	108.19	3.600	No	Yes	2.00
514	33.83	25.65	2.99	4.15	1.00	12.79	8.68	111.02	3.600	No	Yes	2.00
515	33.87	24.56	3.03	4.49	1.00	12.19	9.33	113.68	3.600	No	Yes	2.00
516	33.93	24.16	3.04	4.61	1.00	11.96	9.57	114.46	3.600	No	Yes	2.00
517	34.01	24.13	3.05	4.63	1.00	11.92	9.61	114.61	3.600	No	Yes	2.00
518	34.05	24.47	3.04	4.56	1.00	12.10	9.45	114.34	3.600	No	Yes	2.00
519	34.13	25.06	3.02	4.45	1.00	12.40	9.18	113.90	3.600	No	Yes	2.00
520	34.20	25.99	3.00	4.29	1.00	12.89	8.78	113.21	3.600	No	Yes	2.00
521	34.29	26.89	2.98	4.14	1.00	13.35	8.43	112.54	3.600	No	Yes	2.00
522	34.33	28.17	2.98	4.39	1.00	14.03	8.40	117.92	3.600	No	Yes	2.00
523	34.43	29.06	2.98	4.69	1.00	14.49	8.53	123.58	3.600	No	Yes	2.00
524	34.46	32.98	2.90	4.49	0.88	17.75	7.27	129.10	3.600	No	Yes	2.00
525	34.55	37.08	2.83	3.98	0.86	20.35	6.18	125.76	3.600	No	Yes	2.00
526	34.59	43.97	2.71	3.33	0.82	24.84	4.80	119.31	3.600	No	Yes	2.00
527	34.68	48.70	2.64	2.98	0.80	27.95	4.11	114.79	3.600	No	Yes	2.00
528	34.73	50.90	2.60	2.78	0.79	29.44	3.77	111.06	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.80	48.11	2.62	2.70	0.79	27.66	3.89	107.58	3.600	No	Yes	2.00
530	34.87	43.23	2.65	2.67	0.80	24.54	4.24	103.97	3.600	No	Yes	2.00
531	34.91	37.23	2.72	2.79	0.83	20.68	4.96	102.55	3.600	No	Yes	2.00
532	35.01	32.57	2.82	3.27	0.85	17.61	6.11	107.66	3.600	No	Yes	2.00
533	35.06	27.78	2.99	4.38	1.00	13.65	8.55	116.69	3.600	No	Yes	2.00
534	35.11	26.67	3.08	5.72	1.00	13.04	10.13	132.09	3.600	No	Yes	2.00
535	35.19	28.75	3.08	6.38	1.00	14.12	10.21	144.27	3.600	No	Yes	2.00
536	35.24	37.07	2.97	5.84	1.00	18.54	8.21	152.26	3.600	No	Yes	2.00
537	35.33	46.99	2.83	5.20	0.86	25.83	6.18	159.57	3.600	No	Yes	2.00
538	35.38	61.06	2.70	4.59	0.82	34.69	4.66	161.56	3.600	No	Yes	2.00
539	35.46	74.01	2.60	4.20	0.79	42.97	3.77	162.02	3.600	No	Yes	2.00
540	35.51	91.47	2.49	3.70	0.76	54.43	2.91	158.66	0.451	No	No	0.99
541	35.59	106.56	2.40	3.29	0.73	64.54	2.39	154.11	0.420	No	No	0.92
542	35.65	121.47	2.32	2.92	0.70	74.76	2.01	150.01	0.394	No	No	0.86
543	35.70	134.89	2.25	2.60	0.68	84.18	1.75	147.30	0.377	No	No	0.82
544	35.78	148.10	2.19	2.36	0.66	93.46	1.58	148.06	0.382	No	No	0.83
545	35.83	160.81	2.14	2.23	0.65	102.35	1.49	152.43	0.409	No	No	0.89
546	35.90	169.10	2.13	2.25	0.65	107.84	1.47	158.29	0.449	No	No	0.98
547	35.97	167.02	2.17	2.47	0.66	105.75	1.53	162.30	0.478	No	No	1.04
548	36.04	156.45	2.23	2.80	0.68	97.77	1.69	165.32	0.500	No	No	1.09
549	36.11	140.67	2.31	3.22	0.70	86.43	1.96	169.73	0.535	No	No	1.16
550	36.16	123.83	2.40	3.73	0.73	74.66	2.37	177.23	0.598	No	No	1.30
551	36.25	110.32	2.48	4.27	0.75	65.31	2.86	186.77	0.686	No	No	1.49
552	36.29	102.76	2.54	4.72	0.77	60.10	3.26	196.04	0.781	No	No	1.70
553	36.36	95.03	2.60	5.23	0.79	54.83	3.74	205.23	4.000	No	No	2.00
554	36.43	96.72	2.59	5.25	0.79	55.81	3.71	206.93	4.000	No	No	2.00
555	36.52	107.02	2.53	4.72	0.77	62.57	3.18	198.69	0.810	No	No	1.76
556	36.58	130.32	2.39	3.79	0.73	78.31	2.33	182.61	0.646	No	No	1.40
557	36.62	163.22	2.25	3.08	0.68	100.90	1.76	177.18	0.597	No	No	1.30
558	36.70	188.50	2.17	2.76	0.66	118.34	1.55	182.85	0.649	No	No	1.41
559	36.75	205.24	2.14	2.69	0.65	129.68	1.48	191.75	0.736	No	No	1.60
560	36.83	200.18	2.16	2.83	0.66	125.74	1.53	192.16	0.740	No	No	1.61
561	36.89	179.59	2.24	3.24	0.68	110.96	1.73	191.71	0.735	No	No	1.60
562	36.97	156.77	2.34	3.85	0.71	94.79	2.10	199.15	0.815	No	No	1.77
563	37.03	144.14	2.41	4.37	0.73	85.87	2.44	209.65	4.000	No	No	2.00
564	37.08	139.67	2.44	4.61	0.74	82.68	2.60	215.29	4.000	No	No	2.00
565	37.17	145.28	2.41	4.36	0.73	86.43	2.43	209.96	4.000	No	No	2.00
566	37.21	151.62	2.36	3.87	0.71	91.12	2.16	196.56	0.786	No	No	1.70
567	37.31	159.72	2.29	3.32	0.69	97.16	1.88	182.29	0.643	No	No	1.39
568	37.35	151.46	2.28	3.07	0.69	92.19	1.84	169.63	0.534	No	No	1.16
569	37.41	123.08	2.35	3.15	0.71	73.59	2.13	156.67	0.438	No	No	0.95
570	37.49	93.09	2.44	3.13	0.74	54.34	2.60	141.08	0.341	No	No	0.74
571	37.54	75.02	2.51	3.06	0.76	42.95	3.03	130.06	0.285	No	No	0.62
572	37.63	70.84	2.54	3.21	0.77	40.17	3.28	131.80	0.293	No	No	0.63
573	37.68	71.32	2.61	3.98	0.79	39.93	3.83	152.74	3.600	No	Yes	2.00
574	37.77	69.01	2.67	4.67	0.81	38.09	4.42	168.36	3.600	No	Yes	2.00
575	37.80	78.02	2.61	4.33	0.79	43.75	3.81	166.51	3.600	No	Yes	2.00
576	37.89	85.01	2.55	4.00	0.77	48.22	3.36	161.99	0.475	No	No	1.03

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.94	110.12	2.42	3.47	0.73	64.40	2.48	159.94	0.461	No	No	1.00
578	38.02	162.77	2.22	2.76	0.67	99.43	1.67	165.55	0.502	No	No	1.08
579	38.07	249.76	2.00	2.12	0.61	159.76	1.31	208.62	4.000	No	No	2.00
580	38.13	336.89	1.83	1.69	0.56	222.73	1.19	264.08	4.000	No	No	2.00
581	38.19	427.32	1.68	1.33	0.51	291.06	1.00	291.06	4.000	No	No	2.00
582	38.27	519.91	1.41	0.71	0.50	356.88	1.00	356.88	4.000	No	No	2.00
583	38.34	626.41	1.07	0.28	0.50	430.08	1.00	430.08	4.000	No	No	2.00
584	38.41	699.19	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
585	38.46	738.05	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
586	38.52	685.69	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
587	38.59	709.10	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
588	38.66	731.71	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.08	2.00	0.00	0.00	0.00	0.00	0.13	2.00	0.00	0.00	0.00	0.00
0.22	2.00	0.00	0.00	0.00	0.00	0.27	2.00	0.00	0.00	0.00	0.00
0.34	2.00	0.00	0.00	0.00	0.00	0.41	2.00	0.00	0.00	0.00	0.00
0.51	2.00	0.00	0.00	0.00	0.00	0.55	2.00	0.00	0.00	0.00	0.00
0.60	2.00	0.00	0.00	0.00	0.00	0.68	2.00	0.00	0.00	0.00	0.00
0.74	2.00	0.00	0.00	0.00	0.00	0.83	2.00	0.00	0.00	0.00	0.00
0.87	2.00	0.00	0.00	0.00	0.00	0.92	2.00	0.00	0.00	0.00	0.00
1.01	2.00	0.00	0.00	0.00	0.00	1.06	2.00	0.00	0.00	0.00	0.00
1.15	2.00	0.00	0.00	0.00	0.00	1.18	2.00	0.00	0.00	0.00	0.00
1.25	2.00	0.00	0.00	0.00	0.00	1.34	2.00	0.00	0.00	0.00	0.00
1.38	2.00	0.00	0.00	0.00	0.00	1.47	2.00	0.00	0.00	0.00	0.00
1.52	2.00	0.00	0.00	0.00	0.00	1.60	2.00	0.00	0.00	0.00	0.00
1.66	2.00	0.00	0.00	0.00	0.00	1.75	2.00	0.00	0.00	0.00	0.00
1.79	2.00	0.00	0.00	0.00	0.00	1.84	2.00	0.00	0.00	0.00	0.00
1.92	2.00	0.00	0.00	0.00	0.00	1.99	2.00	0.00	0.00	0.00	0.00
2.07	2.00	0.00	0.00	0.00	0.00	2.12	2.00	0.00	0.00	0.00	0.00
2.17	2.00	0.00	0.00	0.00	0.00	2.23	2.00	0.00	0.00	0.00	0.00
2.31	2.00	0.00	0.00	0.00	0.00	2.40	2.00	0.00	0.00	0.00	0.00
2.45	2.00	0.00	0.00	0.00	0.00	2.50	2.00	0.00	0.00	0.00	0.00
2.58	2.00	0.00	0.00	0.00	0.00	2.63	2.00	0.00	0.00	0.00	0.00
2.73	2.00	0.00	0.00	0.00	0.00	2.77	2.00	0.00	0.00	0.00	0.00
2.86	2.00	0.00	0.00	0.00	0.00	2.91	2.00	0.00	0.00	0.00	0.00
2.96	2.00	0.00	0.00	0.00	0.00	3.05	2.00	0.00	0.00	0.00	0.00
3.09	2.00	0.00	0.00	0.00	0.00	3.18	2.00	0.00	0.00	0.00	0.00
3.23	2.00	0.00	0.00	0.00	0.00	3.30	2.00	0.00	0.00	0.00	0.00
3.36	2.00	0.00	0.00	0.00	0.00	3.42	2.00	0.00	0.00	0.00	0.00
3.51	2.00	0.00	0.00	0.00	0.00	3.55	2.00	0.00	0.00	0.00	0.00
3.65	2.00	0.00	0.00	0.00	0.00	3.69	2.00	0.00	0.00	0.00	0.00
3.74	2.00	0.00	0.00	0.00	0.00	3.83	2.00	0.00	0.00	0.00	0.00
3.88	2.00	0.00	0.00	0.00	0.00	3.97	2.00	0.00	0.00	0.00	0.00
4.01	2.00	0.00	0.00	0.00	0.00	4.11	2.00	0.00	0.00	0.00	0.00
4.15	2.00	0.00	0.00	0.00	0.00	4.20	2.00	0.00	0.00	0.00	0.00
4.29	2.00	0.00	0.00	0.00	0.00	4.33	2.00	0.00	0.00	0.00	0.00
4.42	2.00	0.00	0.00	0.00	0.00	4.47	2.00	0.00	0.00	0.00	0.00
4.53	2.00	0.00	0.00	0.00	0.00	4.61	2.00	0.00	0.00	0.00	0.00
4.70	2.00	0.00	0.00	0.00	0.00	4.75	2.00	0.00	0.00	0.00	0.00
4.80	2.00	0.00	0.00	0.00	0.00	4.89	2.00	0.00	0.00	0.00	0.00
4.93	2.00	0.00	0.00	0.00	0.00	5.02	2.00	0.00	0.00	0.09	0.00
5.07	2.00	0.00	0.00	0.05	0.00	5.12	2.00	0.00	0.00	0.05	0.00
5.19	2.00	0.00	0.00	0.07	0.00	5.29	2.00	0.00	0.00	0.09	0.00
5.34	2.00	0.00	0.00	0.05	0.00	5.41	2.00	0.00	0.00	0.07	0.00
5.47	2.00	0.00	0.00	0.07	0.00	5.52	2.00	0.00	0.00	0.04	0.00
5.59	2.00	0.00	0.00	0.08	0.00	5.64	2.00	0.00	0.00	0.05	0.00
5.74	2.00	0.00	0.00	0.09	0.00	5.79	2.00	0.00	0.00	0.05	0.00
5.85	2.00	0.00	0.00	0.06	0.00	5.92	2.00	0.00	0.00	0.07	0.00
5.98	2.00	0.00	0.00	0.06	0.00	6.07	2.00	0.00	0.00	0.09	0.00
6.11	2.00	0.00	0.00	0.04	0.00	6.21	2.00	0.00	0.00	0.10	0.00
6.25	2.00	0.00	0.00	0.05	0.00	6.30	2.00	0.00	0.00	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.38	2.00	0.00	0.00	0.08	0.00	6.44	2.00	0.00	0.00	0.05	0.00
6.53	2.00	0.00	0.00	0.09	0.00	6.58	2.00	0.00	0.00	0.04	0.00
6.67	2.00	0.00	0.00	0.09	0.00	6.71	2.00	0.00	0.00	0.04	0.00
6.76	2.00	0.00	0.00	0.05	0.00	6.85	2.00	0.00	0.00	0.09	0.00
6.90	2.00	0.00	0.00	0.05	0.00	6.99	2.00	0.00	0.00	0.09	0.00
7.03	2.00	0.00	0.00	0.04	0.00	7.09	2.00	0.00	0.00	0.06	0.00
7.18	2.00	0.00	0.00	0.09	0.00	7.23	2.00	0.00	0.00	0.05	0.00
7.32	2.00	0.00	0.00	0.09	0.00	7.37	2.00	0.00	0.00	0.05	0.00
7.46	2.00	0.00	0.00	0.09	0.00	7.49	2.00	0.00	0.00	0.02	0.00
7.55	2.00	0.00	0.00	0.06	0.00	7.65	2.00	0.00	0.00	0.10	0.00
7.69	2.00	0.00	0.00	0.04	0.00	7.78	2.00	0.00	0.00	0.09	0.00
7.83	2.00	0.00	0.00	0.05	0.00	7.88	2.00	0.00	0.00	0.05	0.00
7.97	2.00	0.00	0.00	0.09	0.00	8.01	2.00	0.00	0.00	0.04	0.00
8.10	2.00	0.00	0.00	0.08	0.00	8.15	2.00	0.00	0.00	0.05	0.00
8.24	2.00	0.00	0.00	0.09	0.00	8.29	2.00	0.00	0.00	0.05	0.00
8.38	2.00	0.00	0.00	0.08	0.00	8.43	2.00	0.00	0.00	0.05	0.00
8.47	2.00	0.00	0.00	0.04	0.00	8.56	2.00	0.00	0.00	0.09	0.00
8.61	2.00	0.00	0.00	0.05	0.00	8.67	2.00	0.00	0.00	0.05	0.00
8.75	2.00	0.00	0.00	0.08	0.00	8.80	2.00	0.00	0.00	0.05	0.00
8.87	2.00	0.00	0.00	0.07	0.00	8.96	2.00	0.00	0.00	0.09	0.00
9.01	2.00	0.00	0.00	0.05	0.00	9.07	2.00	0.00	0.00	0.06	0.00
9.14	2.00	0.00	0.00	0.07	0.00	9.19	2.00	0.00	0.00	0.05	0.00
9.29	2.00	0.00	0.00	0.09	0.00	9.33	2.00	0.00	0.00	0.04	0.00
9.42	2.00	0.00	0.00	0.09	0.00	9.47	2.00	0.00	0.00	0.05	0.00
9.55	2.00	0.00	0.00	0.08	0.00	9.61	2.00	0.00	0.00	0.05	0.00
9.66	2.00	0.00	0.00	0.05	0.00	9.74	2.00	0.00	0.00	0.08	0.00
9.79	2.00	0.00	0.00	0.05	0.00	9.85	2.00	0.00	0.00	0.06	0.00
9.93	2.00	0.00	0.00	0.08	0.00	9.98	2.00	0.00	0.00	0.05	0.00
10.11	2.00	0.00	0.00	0.13	0.00	10.13	2.00	0.00	0.00	0.03	0.00
10.21	2.00	0.00	0.00	0.07	0.00	10.25	2.00	0.00	0.00	0.04	0.00
10.34	2.00	0.00	0.00	0.09	0.00	10.39	2.00	0.00	0.00	0.05	0.00
10.44	2.00	0.00	0.00	0.05	0.00	10.52	2.00	0.00	0.00	0.08	0.00
10.57	2.00	0.00	0.00	0.05	0.00	10.65	2.00	0.00	0.00	0.08	0.00
10.71	2.00	0.00	0.00	0.06	0.00	10.81	2.00	0.00	0.00	0.10	0.00
10.84	2.00	0.00	0.00	0.04	0.00	10.90	2.00	0.00	0.00	0.05	0.00
10.96	2.00	0.00	0.00	0.06	0.00	11.04	2.00	0.00	0.00	0.08	0.00
11.13	2.00	0.00	0.00	0.09	0.00	11.17	2.00	0.00	0.00	0.04	0.00
11.25	2.00	0.00	0.00	0.08	0.00	11.32	2.00	0.00	0.00	0.07	0.00
11.36	2.00	0.00	0.00	0.04	0.00	11.45	2.00	0.00	0.00	0.09	0.00
11.50	2.00	0.00	0.00	0.05	0.00	11.59	2.00	0.00	0.00	0.09	0.00
11.64	2.00	0.00	0.00	0.05	0.00	11.69	2.00	0.00	0.00	0.05	0.00
11.77	2.00	0.00	0.00	0.08	0.00	11.83	2.00	0.00	0.00	0.06	0.00
11.90	2.00	0.00	0.00	0.07	0.00	11.97	2.00	0.00	0.00	0.07	0.00
12.02	2.00	0.00	0.00	0.05	0.00	12.10	2.00	0.00	0.00	0.08	0.00
12.15	2.00	0.00	0.00	0.05	0.00	12.22	2.00	0.00	0.00	0.06	0.00
12.29	2.00	0.00	0.00	0.07	0.00	12.34	2.00	0.00	0.00	0.05	0.00
12.42	2.00	0.00	0.00	0.09	0.00	12.48	2.00	0.00	0.00	0.05	0.00
12.58	2.00	0.00	0.00	0.10	0.00	12.62	2.00	0.00	0.00	0.04	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.67	2.00	0.00	0.00	0.05	0.00	12.76	2.00	0.00	0.00	0.09	0.00
12.81	2.00	0.00	0.00	0.05	0.00	12.90	2.00	0.00	0.00	0.09	0.00
12.95	2.00	0.00	0.00	0.05	0.00	13.03	2.00	0.00	0.00	0.09	0.00
13.08	2.00	0.00	0.00	0.05	0.00	13.13	2.00	0.00	0.00	0.05	0.00
13.22	2.00	0.00	0.00	0.09	0.00	13.27	2.00	0.00	0.00	0.05	0.00
13.36	2.00	0.00	0.00	0.09	0.00	13.41	2.00	0.00	0.00	0.05	0.00
13.45	2.00	0.00	0.00	0.05	0.00	13.55	2.00	0.00	0.00	0.09	0.00
13.59	2.00	0.00	0.00	0.04	0.00	13.68	2.00	0.00	0.00	0.09	0.00
13.73	2.00	0.00	0.00	0.04	0.00	13.82	2.00	0.00	0.00	0.09	0.00
13.87	2.00	0.00	0.00	0.04	0.00	13.92	2.00	0.00	0.00	0.05	0.00
14.00	2.00	0.00	0.00	0.08	0.00	14.05	2.00	0.00	0.00	0.05	0.00
14.12	2.00	0.00	0.00	0.07	0.00	14.18	2.00	0.00	0.00	0.06	0.00
14.28	2.00	0.00	0.00	0.10	0.00	14.33	2.00	0.00	0.00	0.05	0.00
14.37	2.00	0.00	0.00	0.04	0.00	14.46	2.00	0.00	0.00	0.09	0.00
14.51	2.00	0.00	0.00	0.05	0.00	14.60	2.00	0.00	0.00	0.09	0.00
14.65	2.00	0.00	0.00	0.05	0.00	14.70	2.00	0.00	0.00	0.05	0.00
14.78	2.00	0.00	0.00	0.08	0.00	14.84	2.00	0.00	0.00	0.05	0.00
14.93	2.00	0.00	0.00	0.09	0.00	14.99	2.00	0.00	0.00	0.07	0.00
15.06	2.00	0.00	0.00	0.07	0.00	15.11	2.00	0.00	0.00	0.04	0.00
15.18	2.00	0.00	0.00	0.07	0.00	15.25	2.00	0.00	0.00	0.07	0.00
15.30	2.00	0.00	0.00	0.05	0.00	15.39	2.00	0.00	0.00	0.09	0.00
15.43	2.00	0.00	0.00	0.04	0.00	15.53	2.00	0.00	0.00	0.10	0.00
15.57	2.00	0.00	0.00	0.04	0.00	15.62	2.00	0.00	0.00	0.05	0.00
15.71	2.00	0.00	0.00	0.09	0.00	15.75	2.00	0.00	0.00	0.05	0.00
15.85	2.00	0.00	0.00	0.09	0.00	15.88	2.00	0.00	0.00	0.04	0.00
15.96	2.00	0.00	0.00	0.08	0.00	16.01	2.00	0.00	0.00	0.05	0.00
16.11	2.00	0.00	0.00	0.09	0.00	16.15	2.00	0.00	0.00	0.05	0.00
16.24	2.00	0.00	0.00	0.09	0.00	16.29	2.00	0.00	0.00	0.05	0.00
16.38	2.00	0.00	0.00	0.09	0.00	16.43	2.00	0.00	0.00	0.05	0.00
16.47	2.00	0.00	0.00	0.04	0.00	16.56	2.00	0.00	0.00	0.08	0.00
16.61	2.00	0.00	0.00	0.06	0.00	16.71	2.00	0.00	0.00	0.09	0.00
16.75	2.00	0.00	0.00	0.04	0.00	16.80	2.00	0.00	0.00	0.05	0.00
16.89	2.00	0.00	0.00	0.09	0.00	16.94	2.00	0.00	0.00	0.05	0.00
17.03	2.00	0.00	0.00	0.09	0.00	17.06	2.00	0.00	0.00	0.04	0.00
17.16	2.00	0.00	0.00	0.10	0.00	17.21	2.00	0.00	0.00	0.05	0.00
17.30	2.00	0.00	0.00	0.08	0.00	17.35	2.00	0.00	0.00	0.05	0.00
17.40	2.00	0.00	0.00	0.05	0.00	17.49	2.00	0.00	0.00	0.09	0.00
17.53	2.00	0.00	0.00	0.05	0.00	17.63	2.00	0.00	0.00	0.09	0.00
17.68	2.00	0.00	0.00	0.05	0.00	17.72	2.00	0.00	0.00	0.04	0.00
17.81	2.00	0.00	0.00	0.09	0.00	17.86	2.00	0.00	0.00	0.05	0.00
17.95	2.00	0.00	0.00	0.09	0.00	18.00	2.00	0.00	0.00	0.05	0.00
18.08	2.00	0.00	0.00	0.08	0.00	18.14	2.00	0.00	0.00	0.06	0.00
18.20	2.00	0.00	0.00	0.07	0.00	18.27	2.00	0.00	0.00	0.07	0.00
18.31	2.00	0.00	0.00	0.04	0.00	18.41	2.00	0.00	0.00	0.10	0.00
18.45	2.00	0.00	0.00	0.04	0.00	18.55	2.00	0.00	0.00	0.10	0.00
18.59	2.00	0.00	0.00	0.04	0.00	18.66	2.00	0.00	0.00	0.06	0.00
18.70	2.00	0.00	0.00	0.05	0.00	18.80	2.00	0.00	0.00	0.09	0.00
18.84	2.00	0.00	0.00	0.04	0.00	18.93	2.00	0.00	0.00	0.09	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.98	2.00	0.00	0.00	0.05	0.00	19.04	2.00	0.00	0.00	0.05	0.00
19.12	2.00	0.00	0.00	0.08	0.00	19.16	2.00	0.00	0.00	0.05	0.00
19.24	2.00	0.00	0.00	0.07	0.00	19.31	2.00	0.00	0.00	0.07	0.00
19.39	2.00	0.00	0.00	0.08	0.00	19.44	2.00	0.00	0.00	0.05	0.00
19.53	2.00	0.00	0.00	0.08	0.00	19.58	2.00	0.00	0.00	0.05	0.00
19.63	2.00	0.00	0.00	0.05	0.00	19.71	2.00	0.00	0.00	0.09	0.00
19.77	2.00	0.00	0.00	0.05	0.00	19.86	2.00	0.00	0.00	0.09	0.00
19.90	2.00	0.00	0.00	0.04	0.00	19.95	2.00	0.00	0.00	0.05	0.00
20.03	2.00	0.00	0.00	0.09	0.00	20.08	2.00	0.00	0.00	0.05	0.00
20.18	2.00	0.00	0.00	0.09	0.00	20.22	2.00	0.00	0.00	0.04	0.00
20.32	2.00	0.00	0.00	0.10	0.00	20.36	2.00	0.00	0.00	0.04	0.00
20.43	2.00	0.00	0.00	0.06	0.00	20.50	2.00	0.00	0.00	0.07	0.00
20.55	2.00	0.00	0.00	0.05	0.00	20.63	2.00	0.00	0.00	0.08	0.00
20.69	2.00	0.00	0.00	0.06	0.00	20.78	2.00	0.00	0.00	0.09	0.00
20.82	2.00	0.00	0.00	0.04	0.00	20.87	2.00	0.00	0.00	0.04	0.00
20.95	2.00	0.00	0.00	0.09	0.00	21.01	2.00	0.00	0.00	0.06	0.00
21.10	2.00	0.00	0.00	0.09	0.00	21.14	2.00	0.00	0.00	0.05	0.00
21.24	2.00	0.00	0.00	0.10	0.00	21.29	2.00	0.00	0.00	0.04	0.00
21.33	2.00	0.00	0.00	0.04	0.00	21.41	2.00	0.00	0.00	0.08	0.00
21.48	2.00	0.00	0.00	0.07	0.00	21.53	2.00	0.00	0.00	0.05	0.00
21.61	2.00	0.00	0.00	0.08	0.00	21.67	2.00	0.00	0.00	0.06	0.00
21.76	2.00	0.00	0.00	0.09	0.00	21.81	2.00	0.00	0.00	0.05	0.00
21.86	2.00	0.00	0.00	0.05	0.00	21.95	2.00	0.00	0.00	0.09	0.00
21.99	2.00	0.00	0.00	0.04	0.00	22.09	2.00	0.00	0.00	0.10	0.00
22.13	2.00	0.00	0.00	0.04	0.00	22.18	2.00	0.00	0.00	0.05	0.00
22.27	2.00	0.00	0.00	0.09	0.00	22.32	2.00	0.00	0.00	0.05	0.00
22.40	2.00	0.00	0.00	0.08	0.00	22.45	2.00	0.00	0.00	0.05	0.00
22.55	2.00	0.00	0.00	0.10	0.00	22.59	2.00	0.00	0.00	0.04	0.00
22.69	2.00	0.00	0.00	0.10	0.00	22.73	2.00	0.00	0.00	0.05	0.00
22.78	2.00	0.00	0.00	0.04	0.00	22.91	2.00	0.00	0.00	0.14	0.00
23.00	2.00	0.00	0.00	0.09	0.00	23.05	2.00	0.00	0.00	0.05	0.00
23.10	2.00	0.00	0.00	0.05	0.00	23.20	2.00	0.00	0.00	0.09	0.00
23.29	2.00	0.00	0.00	0.09	0.00	23.33	2.00	0.00	0.00	0.04	0.00
23.38	0.31	0.00	0.00	0.05	0.07	23.46	0.31	0.00	0.00	0.08	0.11
23.52	2.00	0.00	0.00	0.05	0.00	23.56	2.00	0.00	0.00	0.05	0.00
23.65	2.00	0.00	0.00	0.09	0.00	23.70	2.00	0.00	0.00	0.05	0.00
23.78	2.00	0.00	0.00	0.08	0.00	23.83	2.00	0.00	0.00	0.05	0.00
23.89	2.00	0.00	0.00	0.06	0.00	23.97	2.00	0.00	0.00	0.07	0.00
24.02	2.00	0.00	0.00	0.05	0.00	24.11	2.00	0.00	0.00	0.09	0.00
24.16	2.00	0.00	0.00	0.04	0.00	24.25	2.00	0.00	0.00	0.10	0.00
24.29	2.00	0.00	0.00	0.04	0.00	24.37	2.00	0.00	0.00	0.08	0.00
24.41	2.00	0.00	0.00	0.04	0.00	24.50	2.00	0.00	0.00	0.09	0.00
24.56	2.00	0.00	0.00	0.05	0.00	24.62	2.00	0.00	0.00	0.07	0.00
24.69	2.00	0.00	0.00	0.07	0.00	24.79	2.00	0.00	0.00	0.09	0.00
24.84	2.00	0.00	0.00	0.05	0.00	24.88	2.00	0.00	0.00	0.04	0.00
24.97	2.00	0.00	0.00	0.10	0.00	25.01	2.00	0.00	0.00	0.04	0.00
25.11	2.00	0.00	0.00	0.09	0.00	25.16	2.00	0.00	0.00	0.05	0.00
25.20	2.00	0.00	0.00	0.04	0.00	25.30	2.00	0.00	0.00	0.10	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.34	2.00	0.00	0.00	0.04	0.00	25.42	2.00	0.00	0.00	0.08	0.00
25.48	2.00	0.00	0.00	0.06	0.00	25.53	2.00	0.00	0.00	0.05	0.00
25.61	2.00	0.00	0.00	0.09	0.00	25.66	2.00	0.00	0.00	0.05	0.00
25.75	2.00	0.00	0.00	0.09	0.00	25.80	2.00	0.00	0.00	0.05	0.00
25.89	2.00	0.00	0.00	0.09	0.00	25.94	2.00	0.00	0.00	0.05	0.00
25.98	2.00	0.00	0.00	0.04	0.00	26.06	2.00	0.00	0.00	0.08	0.00
26.12	2.00	0.00	0.00	0.06	0.00	26.21	2.00	0.00	0.00	0.09	0.00
26.25	2.00	0.00	0.00	0.03	0.00	26.35	2.00	0.00	0.00	0.10	0.00
26.40	2.00	0.00	0.00	0.05	0.00	26.45	2.00	0.00	0.00	0.05	0.00
26.54	2.00	0.00	0.00	0.09	0.00	26.58	2.00	0.00	0.00	0.05	0.00
26.68	2.00	0.00	0.00	0.09	0.00	26.72	2.00	0.00	0.00	0.04	0.00
26.82	2.00	0.00	0.00	0.10	0.00	26.86	2.00	0.00	0.00	0.04	0.00
26.90	2.00	0.00	0.00	0.04	0.00	27.00	2.00	0.00	0.00	0.10	0.00
27.04	2.00	0.00	0.00	0.05	0.00	27.13	2.00	0.00	0.00	0.09	0.00
27.18	2.00	0.00	0.00	0.05	0.00	27.27	2.00	0.00	0.00	0.09	0.00
27.32	2.00	0.00	0.00	0.05	0.00	27.37	2.00	0.00	0.00	0.05	0.00
27.45	2.00	0.00	0.00	0.09	0.00	27.50	2.00	0.00	0.00	0.05	0.00
27.59	2.00	0.00	0.00	0.09	0.00	27.64	2.00	0.00	0.00	0.05	0.00
27.73	2.00	0.00	0.00	0.09	0.00	27.76	2.00	0.00	0.00	0.03	0.00
27.82	2.00	0.00	0.00	0.06	0.00	27.92	2.00	0.00	0.00	0.10	0.00
27.96	2.00	0.00	0.00	0.04	0.00	28.05	2.00	0.00	0.00	0.09	0.00
28.10	2.00	0.00	0.00	0.04	0.00	28.16	2.00	0.00	0.00	0.07	0.00
28.24	2.00	0.00	0.00	0.07	0.00	28.29	2.00	0.00	0.00	0.05	0.00
28.38	2.00	0.00	0.00	0.09	0.00	28.43	2.00	0.00	0.00	0.05	0.00
28.49	2.00	0.00	0.00	0.06	0.00	28.56	2.00	0.00	0.00	0.08	0.00
28.65	2.00	0.00	0.00	0.09	0.00	28.70	2.00	0.00	0.00	0.05	0.00
28.75	2.00	0.00	0.00	0.04	0.00	28.82	2.00	0.00	0.00	0.07	0.00
28.89	2.00	0.00	0.00	0.07	0.00	28.95	2.00	0.00	0.00	0.06	0.00
29.00	2.00	0.00	0.00	0.06	0.00	29.08	2.00	0.00	0.00	0.08	0.00
29.14	2.00	0.00	0.00	0.06	0.00	29.23	2.00	0.00	0.00	0.09	0.00
29.27	2.00	0.00	0.00	0.03	0.00	29.34	2.00	0.00	0.00	0.08	0.00
29.42	2.00	0.00	0.00	0.07	0.00	29.47	2.00	0.00	0.00	0.05	0.00
29.54	2.00	0.00	0.00	0.07	0.00	29.60	2.00	0.00	0.00	0.06	0.00
29.66	2.00	0.00	0.00	0.06	0.00	29.73	2.00	0.00	0.00	0.07	0.00
29.83	2.00	0.00	0.00	0.09	0.00	29.88	2.00	0.00	0.00	0.05	0.00
29.93	1.01	0.00	0.00	0.05	0.00	30.01	0.94	0.00	0.00	0.09	0.01
30.06	0.86	0.00	0.00	0.05	0.01	30.15	0.81	0.00	0.00	0.09	0.03
30.20	0.77	0.00	0.00	0.05	0.02	30.26	0.76	0.00	0.00	0.06	0.02
30.34	0.78	0.00	0.00	0.08	0.03	30.43	0.81	0.00	0.00	0.09	0.03
30.48	0.84	0.00	0.00	0.04	0.01	30.52	0.83	0.00	0.00	0.04	0.01
30.62	0.81	0.00	0.00	0.10	0.03	30.65	0.73	0.00	0.00	0.04	0.02
30.75	0.65	0.00	0.00	0.10	0.06	30.80	0.61	0.00	0.00	0.05	0.03
30.84	0.60	0.00	0.00	0.04	0.03	30.94	0.59	0.00	0.00	0.09	0.06
30.98	0.58	0.00	0.00	0.05	0.03	31.07	0.58	0.00	0.00	0.09	0.06
31.12	0.61	0.00	0.00	0.05	0.03	31.17	0.68	0.00	0.00	0.05	0.03
31.26	0.80	0.00	0.00	0.09	0.03	31.31	0.89	0.00	0.00	0.05	0.01
31.37	2.00	0.00	0.00	0.06	0.00	31.45	2.00	0.00	0.00	0.07	0.00
31.53	2.00	0.00	0.00	0.09	0.00	31.58	0.53	0.00	0.00	0.05	0.04

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.66	0.61	0.00	0.00	0.08	0.05	31.71	0.68	0.00	0.00	0.06	0.03
31.77	2.00	0.00	0.00	0.05	0.00	31.82	2.00	0.00	0.00	0.06	0.00
31.89	2.00	0.00	0.00	0.07	0.00	31.98	2.00	0.00	0.00	0.09	0.00
32.03	2.00	0.00	0.00	0.05	0.00	32.12	2.00	0.00	0.00	0.09	0.00
32.16	2.00	0.00	0.00	0.04	0.00	32.26	2.00	0.00	0.00	0.09	0.00
32.31	2.00	0.00	0.00	0.05	0.00	32.35	2.00	0.00	0.00	0.04	0.00
32.44	2.00	0.00	0.00	0.09	0.00	32.49	2.00	0.00	0.00	0.05	0.00
32.58	2.00	0.00	0.00	0.10	0.00	32.62	2.00	0.00	0.00	0.03	0.00
32.71	2.00	0.00	0.00	0.10	0.00	32.75	2.00	0.00	0.00	0.03	0.00
32.81	2.00	0.00	0.00	0.07	0.00	32.91	2.00	0.00	0.00	0.09	0.00
32.95	2.00	0.00	0.00	0.05	0.00	33.04	2.00	0.00	0.00	0.08	0.00
33.09	2.00	0.00	0.00	0.06	0.00	33.14	2.00	0.00	0.00	0.05	0.00
33.22	2.00	0.00	0.00	0.08	0.00	33.28	2.00	0.00	0.00	0.05	0.00
33.35	2.00	0.00	0.00	0.08	0.00	33.41	2.00	0.00	0.00	0.06	0.00
33.50	2.00	0.00	0.00	0.09	0.00	33.55	2.00	0.00	0.00	0.04	0.00
33.63	2.00	0.00	0.00	0.09	0.00	33.69	2.00	0.00	0.00	0.05	0.00
33.73	2.00	0.00	0.00	0.04	0.00	33.83	2.00	0.00	0.00	0.10	0.00
33.87	2.00	0.00	0.00	0.05	0.00	33.93	2.00	0.00	0.00	0.05	0.00
34.01	2.00	0.00	0.00	0.08	0.00	34.05	2.00	0.00	0.00	0.05	0.00
34.13	2.00	0.00	0.00	0.07	0.00	34.20	2.00	0.00	0.00	0.07	0.00
34.29	2.00	0.00	0.00	0.09	0.00	34.33	2.00	0.00	0.00	0.04	0.00
34.43	2.00	0.00	0.00	0.10	0.00	34.46	2.00	0.00	0.00	0.03	0.00
34.55	2.00	0.00	0.00	0.09	0.00	34.59	2.00	0.00	0.00	0.04	0.00
34.68	2.00	0.00	0.00	0.10	0.00	34.73	2.00	0.00	0.00	0.05	0.00
34.80	2.00	0.00	0.00	0.06	0.00	34.87	2.00	0.00	0.00	0.07	0.00
34.91	2.00	0.00	0.00	0.04	0.00	35.01	2.00	0.00	0.00	0.10	0.00
35.06	2.00	0.00	0.00	0.05	0.00	35.11	2.00	0.00	0.00	0.05	0.00
35.19	2.00	0.00	0.00	0.08	0.00	35.24	2.00	0.00	0.00	0.05	0.00
35.33	2.00	0.00	0.00	0.09	0.00	35.38	2.00	0.00	0.00	0.05	0.00
35.46	2.00	0.00	0.00	0.08	0.00	35.51	0.99	0.00	0.00	0.05	0.00
35.59	0.92	0.00	0.00	0.08	0.01	35.65	0.86	0.00	0.00	0.06	0.01
35.70	0.82	0.00	0.00	0.05	0.01	35.78	0.83	0.00	0.00	0.08	0.02
35.83	0.89	0.00	0.00	0.05	0.01	35.90	0.98	0.00	0.00	0.06	0.00
35.97	1.04	0.00	0.00	0.07	0.00	36.04	1.09	0.00	0.00	0.07	0.00
36.11	1.16	0.00	0.00	0.07	0.00	36.16	1.30	0.00	0.00	0.05	0.00
36.25	1.49	0.00	0.00	0.09	0.00	36.29	1.70	0.00	0.00	0.03	0.00
36.36	2.00	0.00	0.00	0.07	0.00	36.43	2.00	0.00	0.00	0.07	0.00
36.52	1.76	0.00	0.00	0.09	0.00	36.58	1.40	0.00	0.00	0.06	0.00
36.62	1.30	0.00	0.00	0.04	0.00	36.70	1.41	0.00	0.00	0.09	0.00
36.75	1.60	0.00	0.00	0.05	0.00	36.83	1.61	0.00	0.00	0.08	0.00
36.89	1.60	0.00	0.00	0.06	0.00	36.97	1.77	0.00	0.00	0.09	0.00
37.03	2.00	0.00	0.00	0.06	0.00	37.08	2.00	0.00	0.00	0.05	0.00
37.17	2.00	0.00	0.00	0.09	0.00	37.21	1.70	0.00	0.00	0.04	0.00
37.31	1.39	0.00	0.00	0.10	0.00	37.35	1.16	0.00	0.00	0.04	0.00
37.41	0.95	0.00	0.00	0.05	0.00	37.49	0.74	0.00	0.00	0.09	0.03
37.54	0.62	0.00	0.00	0.05	0.02	37.63	0.63	0.00	0.00	0.10	0.05
37.68	2.00	0.00	0.00	0.04	0.00	37.77	2.00	0.00	0.00	0.10	0.00
37.80	2.00	0.00	0.00	0.02	0.00	37.89	1.03	0.00	0.00	0.09	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.94	1.00	0.00	0.00	0.05	0.00	38.02	1.08	0.00	0.00	0.09	0.00
38.07	2.00	0.00	0.00	0.05	0.00	38.13	2.00	0.00	0.00	0.06	0.00
38.19	2.00	0.00	0.00	0.06	0.00	38.27	2.00	0.00	0.00	0.08	0.00
38.34	2.00	0.00	0.00	0.07	0.00	38.41	2.00	0.00	0.00	0.07	0.00
38.46	2.00	0.00	0.00	0.05	0.00	38.52	2.00	0.00	0.00	0.07	0.00
38.59	2.00	0.00	0.00	0.07	0.00	38.66	2.00	0.00	0.00	0.06	0.00

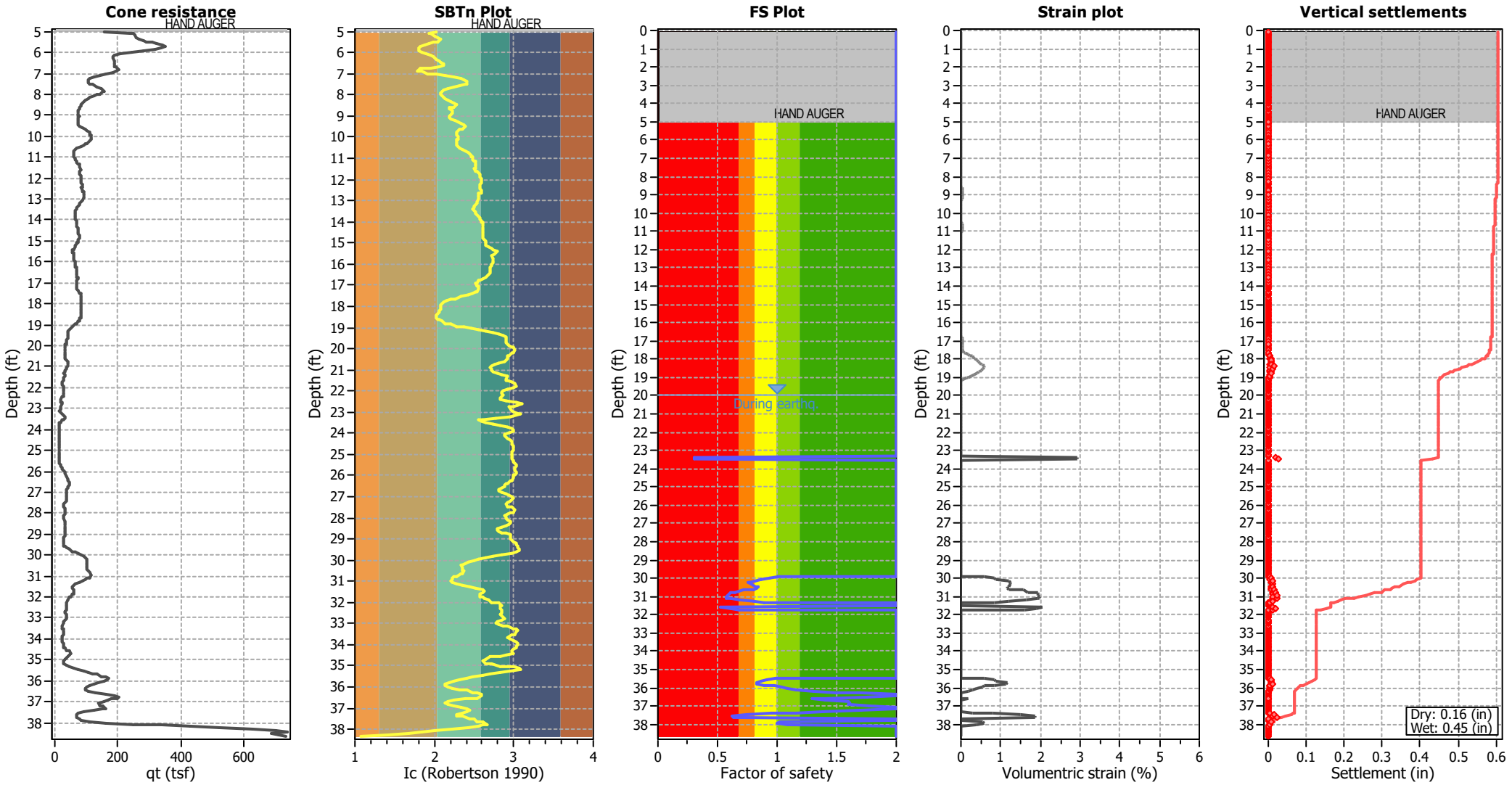
Overall liquefaction potential: 1.03

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.08	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.13	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.22	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.27	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.34	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.41	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.51	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.55	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.60	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.68	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.74	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.83	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.87	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.92	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.01	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.06	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.15	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.18	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.25	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.34	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.38	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.47	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.52	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.60	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.66	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.75	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.79	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.84	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.92	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.99	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.07	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.12	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.17	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.23	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.31	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.40	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.45	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.50	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.58	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.63	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.73	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.77	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.86	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.91	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.96	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.05	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.09	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.18	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.23	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.30	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.36	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.42	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.51	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.55	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.65	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.69	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.74	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.83	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.88	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.97	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.01	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.11	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.15	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.20	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.29	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.33	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.42	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.47	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.53	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.61	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.70	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.75	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.80	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.89	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.93	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
5.02	2.03	251.75	1.33	335.77	71	1843	0.36	0.014	0.00	5.05	0.00	0.000
5.07	1.94	385.35	1.26	486.31	99	2512	0.36	0.009	0.00	5.05	0.00	0.000
5.12	1.95	400.27	1.27	508.73	104	2654	0.36	0.009	0.00	5.05	0.00	0.000
5.19	2.00	407.18	1.31	533.62	111	2885	0.36	0.008	0.00	5.05	0.00	0.000
5.29	2.05	416.28	1.35	563.94	120	3126	0.36	0.007	0.00	5.05	0.00	0.000
5.34	2.07	430.17	1.38	593.86	127	3322	0.36	0.007	0.00	5.05	0.00	0.000
5.41	2.06	448.13	1.37	612.13	130	3408	0.36	0.007	0.00	5.05	0.00	0.000
5.47	2.03	469.18	1.34	627.75	132	3453	0.36	0.007	0.00	5.05	0.00	0.000
5.52	1.99	492.50	1.30	640.25	133	3434	0.36	0.007	0.00	5.05	0.00	0.000
5.59	1.94	521.68	1.26	657.91	134	3395	0.36	0.007	0.00	5.05	0.00	0.000
5.64	1.87	548.90	1.22	667.90	132	3287	0.36	0.007	0.00	5.05	0.00	0.000
5.74	1.82	561.96	1.17	659.73	128	3155	0.36	0.008	0.00	5.05	0.00	0.000
5.79	1.80	544.13	1.15	626.79	121	2975	0.36	0.009	0.00	5.05	0.00	0.000
5.85	1.80	507.11	1.15	584.02	113	2772	0.36	0.010	0.00	5.05	0.00	0.000
5.92	1.81	453.98	1.17	529.71	103	2526	0.36	0.011	0.00	5.05	0.00	0.000
5.98	1.85	389.97	1.20	467.11	92	2264	0.36	0.013	0.00	5.05	0.00	0.000
6.07	1.90	334.36	1.24	414.66	83	2090	0.36	0.015	0.00	5.05	0.00	0.000
6.11	1.96	299.90	1.28	382.69	78	2007	0.36	0.016	0.00	5.05	0.00	0.000
6.21	1.98	294.57	1.29	380.66	79	2028	0.36	0.016	0.00	5.05	0.00	0.000
6.25	2.00	294.62	1.31	385.27	80	2079	0.36	0.015	0.00	5.05	0.00	0.000
6.30	2.03	297.78	1.33	396.36	83	2172	0.36	0.014	0.00	5.05	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.38	2.05	300.44	1.36	408.38	87	2268	0.36	0.014	0.00	5.05	0.00	0.000
6.44	2.08	303.81	1.40	424.28	91	2383	0.36	0.013	0.00	5.05	0.00	0.000
6.53	2.11	303.38	1.43	434.09	94	2453	0.36	0.013	0.00	5.05	0.00	0.000
6.58	2.12	303.87	1.45	441.47	96	2500	0.36	0.013	0.00	5.05	0.00	0.000
6.67	2.07	306.01	1.38	420.97	90	2351	0.36	0.014	0.00	5.05	0.00	0.000
6.71	1.95	311.45	1.27	395.70	81	2063	0.36	0.017	0.00	5.05	0.00	0.000
6.76	1.82	311.34	1.17	365.61	71	1789	0.36	0.021	0.00	5.05	0.00	0.000
6.85	1.78	309.79	1.13	350.72	67	1728	0.36	0.023	0.01	5.05	0.00	0.000
6.90	1.85	304.76	1.20	366.02	72	1826	0.36	0.021	0.00	5.05	0.00	0.000
6.99	1.92	288.85	1.25	361.01	73	1870	0.36	0.021	0.00	5.05	0.00	0.000
7.03	2.02	260.84	1.32	345.05	72	1881	0.36	0.021	0.00	5.05	0.00	0.000
7.09	2.13	228.02	1.46	333.49	73	1889	0.36	0.021	0.00	5.05	0.00	0.000
7.18	2.24	198.12	1.72	341.00	78	1892	0.36	0.021	0.00	5.05	0.00	0.000
7.23	2.33	178.82	2.04	364.61	87	1912	0.36	0.021	0.00	5.05	0.00	0.000
7.32	2.37	170.64	2.25	383.40	93	1934	0.36	0.021	0.00	5.05	0.00	0.000
7.37	2.40	167.11	2.39	399.14	98	1962	0.36	0.021	0.00	5.05	0.00	0.000
7.46	2.41	168.24	2.40	403.84	100	1981	0.36	0.021	0.00	5.05	0.00	0.000
7.49	2.39	173.57	2.31	401.32	98	2001	0.36	0.020	0.00	5.05	0.00	0.000
7.55	2.32	190.42	2.01	383.48	91	2021	0.36	0.020	0.00	5.05	0.00	0.000
7.65	2.24	212.24	1.73	367.43	84	2035	0.36	0.020	0.00	5.05	0.00	0.000
7.69	2.16	230.08	1.53	352.76	78	2037	0.36	0.021	0.00	5.05	0.00	0.000
7.78	2.12	236.92	1.45	343.44	75	2019	0.36	0.021	0.00	5.05	0.00	0.000
7.83	2.09	237.51	1.41	334.32	72	1975	0.36	0.022	0.00	5.05	0.00	0.000
7.88	2.08	229.57	1.39	319.74	69	1896	0.36	0.024	0.01	5.05	0.00	0.000
7.97	2.09	215.29	1.40	301.18	65	1800	0.36	0.027	0.01	5.05	0.00	0.000
8.01	2.09	198.77	1.40	279.11	60	1675	0.36	0.030	0.01	5.05	0.00	0.000
8.10	2.11	182.92	1.43	261.71	57	1581	0.36	0.035	0.01	5.05	0.01	0.000
8.15	2.13	168.10	1.47	247.04	54	1496	0.36	0.039	0.01	5.05	0.01	0.000
8.24	2.17	155.52	1.55	240.52	54	1454	0.36	0.042	0.01	5.05	0.01	0.000
8.29	2.21	145.23	1.65	239.35	54	1426	0.36	0.044	0.01	5.05	0.01	0.000
8.38	2.25	137.89	1.75	241.83	56	1417	0.36	0.046	0.01	5.05	0.01	0.000
8.43	2.28	132.72	1.85	245.36	57	1413	0.36	0.046	0.01	5.05	0.01	0.000
8.47	2.28	127.52	1.84	235.26	55	1361	0.36	0.051	0.02	5.05	0.01	0.000
8.56	2.24	122.68	1.72	211.34	48	1267	0.36	0.062	0.02	5.05	0.01	0.000
8.61	2.20	117.66	1.61	189.34	43	1166	0.36	0.078	0.03	5.05	0.02	0.000
8.67	2.19	114.08	1.58	180.41	40	1122	0.36	0.089	0.04	5.05	0.02	0.000
8.75	2.22	110.08	1.66	182.36	41	1125	0.36	0.090	0.04	5.05	0.02	0.000
8.80	2.23	107.49	1.69	181.35	41	1116	0.36	0.093	0.04	5.05	0.02	0.000
8.87	2.22	105.91	1.67	177.15	40	1099	0.36	0.099	0.04	5.05	0.03	0.000
8.96	2.20	106.22	1.63	172.70	39	1089	0.36	0.103	0.05	5.05	0.03	0.001
9.01	2.19	106.81	1.60	170.49	38	1085	0.36	0.106	0.05	5.05	0.03	0.000
9.07	2.19	107.14	1.60	171.26	39	1094	0.36	0.104	0.05	5.05	0.03	0.000
9.14	2.21	106.29	1.64	174.09	39	1110	0.36	0.101	0.04	5.05	0.03	0.000
9.19	2.25	104.97	1.76	185.18	43	1154	0.36	0.091	0.04	5.05	0.02	0.000
9.29	2.30	103.26	1.92	198.22	47	1201	0.36	0.082	0.03	5.05	0.02	0.000
9.33	2.34	102.66	2.10	215.40	52	1257	0.36	0.073	0.02	5.05	0.01	0.000
9.42	2.37	102.76	2.21	227.52	55	1303	0.36	0.068	0.02	5.05	0.01	0.000
9.47	2.38	105.21	2.29	240.96	59	1362	0.36	0.061	0.02	5.05	0.01	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.55	2.38	110.34	2.27	250.04	61	1431	0.36	0.055	0.01	5.05	0.01	0.000
9.61	2.35	119.33	2.14	255.49	62	1509	0.36	0.049	0.01	5.05	0.01	0.000
9.66	2.32	130.50	1.99	259.68	62	1593	0.36	0.044	0.01	5.05	0.01	0.000
9.74	2.29	140.55	1.88	264.39	62	1673	0.36	0.040	0.01	5.05	0.01	0.000
9.79	2.28	147.19	1.84	270.93	63	1736	0.36	0.038	0.01	5.05	0.01	0.000
9.85	2.28	150.34	1.85	278.69	65	1788	0.36	0.036	0.01	5.05	0.01	0.000
9.93	2.29	151.23	1.89	285.12	67	1828	0.36	0.035	0.01	5.05	0.01	0.000
9.98	2.29	151.83	1.91	289.35	68	1853	0.36	0.034	0.01	5.05	0.00	0.000
10.11	2.29	151.08	1.91	287.89	68	1861	0.36	0.035	0.01	5.05	0.00	0.000
10.13	2.29	150.11	1.88	282.67	66	1840	0.36	0.035	0.01	5.05	0.01	0.000
10.21	2.28	147.48	1.86	274.51	64	1805	0.36	0.037	0.01	5.05	0.01	0.000
10.25	2.28	142.36	1.84	262.02	61	1736	0.36	0.040	0.01	5.05	0.01	0.000
10.34	2.28	134.82	1.85	249.90	58	1662	0.36	0.045	0.01	5.05	0.01	0.000
10.39	2.28	127.81	1.86	237.17	55	1581	0.36	0.050	0.01	5.05	0.01	0.000
10.44	2.30	117.20	1.91	223.80	53	1479	0.36	0.059	0.02	5.05	0.01	0.000
10.52	2.32	105.15	2.00	209.88	50	1369	0.36	0.072	0.02	5.05	0.01	0.000
10.57	2.35	92.11	2.15	198.23	48	1254	0.36	0.092	0.03	5.05	0.02	0.000
10.65	2.39	83.62	2.31	193.57	47	1189	0.36	0.110	0.04	5.05	0.02	0.000
10.71	2.42	77.99	2.48	193.60	48	1154	0.36	0.122	0.04	5.05	0.03	0.000
10.81	2.44	74.98	2.62	196.57	49	1148	0.36	0.126	0.04	5.05	0.03	0.001
10.84	2.46	74.14	2.71	201.22	51	1158	0.36	0.123	0.04	5.05	0.02	0.000
10.90	2.47	74.84	2.77	207.08	53	1184	0.36	0.116	0.04	5.05	0.02	0.000
10.96	2.48	76.51	2.82	216.11	55	1229	0.36	0.105	0.03	5.05	0.02	0.000
11.04	2.49	79.46	2.91	231.37	59	1302	0.36	0.089	0.02	5.05	0.01	0.000
11.13	2.50	82.24	3.00	246.50	64	1376	0.36	0.078	0.02	5.05	0.01	0.000
11.17	2.51	86.19	3.05	262.91	68	1459	0.36	0.068	0.02	5.05	0.01	0.000
11.25	2.52	89.52	3.11	277.97	72	1537	0.36	0.060	0.01	5.05	0.01	0.000
11.32	2.52	92.78	3.13	290.10	76	1606	0.36	0.055	0.01	5.05	0.01	0.000
11.36	2.52	95.29	3.09	294.42	76	1645	0.36	0.052	0.01	5.05	0.01	0.000
11.45	2.51	97.05	3.04	295.39	76	1673	0.36	0.051	0.01	5.05	0.01	0.000
11.50	2.51	99.32	3.04	301.62	78	1716	0.36	0.049	0.01	5.05	0.01	0.000
11.59	2.52	100.25	3.12	312.73	81	1767	0.36	0.046	0.01	5.05	0.01	0.000
11.64	2.54	100.09	3.23	323.43	85	1802	0.36	0.045	0.01	5.05	0.00	0.000
11.69	2.55	98.94	3.37	332.98	88	1824	0.36	0.044	0.01	5.05	0.00	0.000
11.77	2.57	97.98	3.48	341.17	91	1848	0.36	0.043	0.01	5.05	0.00	0.000
11.83	2.58	97.80	3.56	348.23	93	1873	0.36	0.043	0.01	5.05	0.00	0.000
11.90	2.58	98.28	3.59	352.95	95	1900	0.36	0.042	0.01	5.05	0.00	0.000
11.97	2.59	98.41	3.63	357.44	96	1922	0.36	0.041	0.01	5.05	0.00	0.000
12.02	2.59	98.93	3.66	361.85	97	1947	0.36	0.041	0.01	5.05	0.00	0.000
12.10	2.59	99.35	3.66	363.39	98	1965	0.36	0.040	0.01	5.05	0.00	0.000
12.15	2.58	100.12	3.61	360.93	97	1973	0.36	0.040	0.01	5.05	0.00	0.000
12.22	2.58	100.59	3.55	357.38	96	1977	0.36	0.040	0.01	5.05	0.00	0.000
12.29	2.57	100.98	3.49	352.41	94	1975	0.36	0.041	0.01	5.05	0.00	0.000
12.34	2.57	101.55	3.48	353.08	94	1989	0.36	0.040	0.01	5.05	0.00	0.000
12.42	2.57	101.91	3.48	354.17	94	2007	0.36	0.040	0.01	5.05	0.00	0.000
12.48	2.59	98.64	3.70	365.02	98	2013	0.36	0.040	0.01	5.05	0.00	0.000
12.58	2.59	98.96	3.70	366.45	99	2034	0.36	0.040	0.01	5.05	0.00	0.000
12.62	2.59	100.15	3.66	366.22	99	2051	0.36	0.039	0.01	5.05	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.67	2.56	104.99	3.42	358.89	95	2084	0.36	0.038	0.01	5.05	0.00	0.000
12.76	2.56	105.37	3.39	357.00	95	2094	0.36	0.039	0.01	5.05	0.00	0.000
12.81	2.55	105.15	3.36	353.52	93	2088	0.36	0.039	0.01	5.05	0.00	0.000
12.90	2.55	103.88	3.35	347.79	92	2070	0.36	0.040	0.01	5.05	0.00	0.000
12.95	2.55	102.05	3.31	338.05	89	2028	0.36	0.042	0.01	5.05	0.00	0.000
13.03	2.54	99.09	3.29	326.46	86	1975	0.36	0.044	0.01	5.05	0.00	0.000
13.08	2.54	96.33	3.24	311.81	82	1908	0.36	0.048	0.01	5.05	0.01	0.000
13.13	2.53	92.67	3.17	294.16	77	1822	0.36	0.053	0.01	5.05	0.01	0.000
13.22	2.52	88.76	3.11	276.07	72	1736	0.36	0.059	0.01	5.05	0.01	0.000
13.27	2.50	84.59	3.00	253.93	66	1629	0.36	0.069	0.02	5.05	0.01	0.000
13.36	2.49	81.01	2.92	236.63	61	1546	0.36	0.079	0.02	5.05	0.01	0.000
13.41	2.48	77.62	2.87	223.05	57	1473	0.36	0.091	0.03	5.05	0.02	0.000
13.45	2.50	74.42	2.95	219.19	56	1434	0.36	0.098	0.03	5.05	0.02	0.000
13.55	2.51	71.87	3.04	218.72	57	1416	0.36	0.103	0.03	5.05	0.02	0.000
13.59	2.52	70.06	3.14	220.04	57	1407	0.36	0.105	0.03	5.05	0.02	0.000
13.68	2.54	68.85	3.24	222.82	58	1412	0.36	0.106	0.03	5.05	0.02	0.000
13.73	2.55	68.16	3.36	229.13	61	1430	0.36	0.102	0.03	5.05	0.02	0.000
13.82	2.57	67.94	3.48	236.55	63	1459	0.35	0.098	0.02	5.05	0.02	0.000
13.87	2.58	68.41	3.58	244.71	66	1494	0.35	0.092	0.02	5.05	0.01	0.000
13.92	2.59	69.25	3.68	254.93	69	1540	0.35	0.086	0.02	5.05	0.01	0.000
14.00	2.60	70.42	3.75	264.35	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.05	2.61	71.76	3.81	273.46	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.12	2.61	72.78	3.81	277.16	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.18	2.61	73.56	3.81	280.38	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.28	2.61	73.84	3.82	282.20	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.33	2.61	74.09	3.84	284.45	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.37	2.61	74.42	3.86	286.96	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.46	2.61	74.71	3.87	289.13	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.51	2.61	75.66	3.86	292.12	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.60	2.61	76.55	3.84	293.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.65	2.61	77.69	3.82	296.81	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.70	2.61	78.37	3.83	300.31	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.78	2.61	78.36	3.88	304.33	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.84	2.63	77.68	3.99	309.87	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.93	2.64	76.21	4.14	315.27	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.99	2.64	74.26	4.15	308.43	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.06	2.64	72.45	4.11	297.86	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.11	2.65	70.11	4.23	296.41	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.18	2.69	67.58	4.55	307.70	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.25	2.72	65.08	4.92	320.29	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.30	2.74	63.36	5.10	322.84	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.39	2.79	57.92	5.71	330.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.43	2.78	56.36	5.55	312.97	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.53	2.76	55.17	5.41	298.57	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.57	2.71	58.58	4.82	282.23	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.62	2.73	58.68	5.01	293.97	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.71	2.74	58.70	5.12	300.79	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.75	2.74	58.86	5.17	304.23	0	0	0.35	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.85	2.74	58.94	5.19	306.06	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.88	2.74	59.25	5.19	307.39	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.96	2.74	59.87	5.11	306.04	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.01	2.72	61.04	4.97	303.48	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.11	2.71	62.10	4.84	300.49	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.15	2.71	62.72	4.77	298.85	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.24	2.71	62.62	4.76	298.06	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.29	2.71	62.50	4.76	297.69	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.38	2.70	62.20	4.76	295.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.43	2.70	62.10	4.72	292.96	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.47	2.69	62.29	4.60	286.22	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.56	2.67	62.63	4.41	275.88	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.61	2.64	63.56	4.09	260.05	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.71	2.60	64.46	3.79	244.03	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.75	2.57	65.35	3.50	229.01	61	1643	0.35	0.100	0.03	5.05	0.02	0.000
16.80	2.55	65.45	3.32	217.23	57	1600	0.35	0.108	0.03	5.05	0.02	0.000
16.89	2.53	64.70	3.20	207.05	54	1557	0.35	0.117	0.04	5.05	0.02	0.000
16.94	2.53	63.18	3.17	200.41	52	1516	0.35	0.127	0.04	5.05	0.02	0.000
17.03	2.53	61.58	3.22	198.34	52	1496	0.36	0.133	0.04	5.05	0.03	0.001
17.06	2.55	60.44	3.34	201.86	53	1501	0.36	0.133	0.04	5.05	0.03	0.000
17.16	2.56	60.04	3.43	206.08	55	1520	0.36	0.129	0.04	5.05	0.02	0.001
17.21	2.56	60.69	3.43	208.10	55	1539	0.36	0.125	0.04	5.05	0.02	0.000
17.30	2.54	62.02	3.30	204.61	54	1546	0.36	0.125	0.04	5.05	0.02	0.000
17.35	2.52	63.73	3.11	197.92	51	1539	0.36	0.127	0.04	5.05	0.02	0.000
17.40	2.47	66.37	2.80	185.62	47	1515	0.36	0.133	0.05	5.05	0.03	0.000
17.49	2.42	69.00	2.48	171.27	43	1478	0.36	0.145	0.06	5.05	0.04	0.001
17.53	2.34	72.16	2.09	150.95	36	1399	0.36	0.173	0.09	5.05	0.05	0.001
17.63	2.27	73.82	1.82	134.27	31	1311	0.36	0.218	0.13	5.05	0.08	0.002
17.68	2.20	74.93	1.62	121.15	27	1220	0.36	0.286	0.20	5.05	0.12	0.002
17.72	2.15	75.37	1.51	113.87	25	1156	0.36	0.356	0.27	5.05	0.17	0.002
17.81	2.12	75.34	1.45	109.12	24	1108	0.36	0.429	0.35	5.05	0.21	0.005
17.86	2.09	74.86	1.40	105.11	23	1062	0.36	0.520	0.45	5.05	0.27	0.003
17.95	2.08	73.75	1.39	102.79	22	1039	0.36	0.581	0.52	5.05	0.32	0.007
18.00	2.08	72.51	1.39	100.60	22	1017	0.36	0.647	0.59	5.05	0.36	0.004
18.08	2.08	71.23	1.39	98.82	21	1002	0.36	0.703	0.66	5.05	0.40	0.008
18.14	2.07	70.74	1.38	97.61	21	989	0.36	0.754	0.72	5.05	0.44	0.006
18.20	2.07	70.43	1.37	96.72	21	980	0.36	0.795	0.77	5.05	0.47	0.008
18.27	2.05	70.62	1.36	96.04	20	970	0.36	0.843	0.82	5.05	0.50	0.008
18.31	2.04	70.76	1.35	95.21	20	957	0.36	0.910	0.90	5.05	0.55	0.005
18.41	2.03	71.12	1.33	94.91	20	951	0.36	0.951	0.95	5.05	0.58	0.014
18.45	2.03	71.61	1.33	95.34	20	955	0.36	0.936	0.93	5.05	0.57	0.006
18.55	2.03	71.69	1.34	95.86	20	966	0.36	0.893	0.88	5.05	0.54	0.013
18.59	2.05	71.07	1.35	96.04	20	977	0.36	0.851	0.83	5.05	0.51	0.005
18.66	2.07	69.60	1.37	95.68	20	984	0.36	0.827	0.81	5.05	0.49	0.007
18.70	2.10	67.60	1.42	95.95	21	999	0.36	0.769	0.73	5.05	0.45	0.005
18.80	2.14	65.10	1.49	96.79	21	1018	0.36	0.712	0.66	5.05	0.40	0.009
18.84	2.20	62.03	1.61	100.06	23	1049	0.36	0.621	0.54	5.05	0.33	0.004
18.93	2.27	57.81	1.83	105.95	25	1081	0.36	0.546	0.43	5.05	0.26	0.006

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
18.98	2.36	53.32	2.20	117.20	28	1124	0.36	0.462	0.30	5.05	0.19	0.002
19.04	2.46	48.83	2.72	132.82	34	1170	0.36	0.393	0.21	5.05	0.13	0.002
19.12	2.56	44.60	3.39	151.07	40	1214	0.36	0.341	0.15	5.05	0.09	0.002
19.16	2.65	40.71	4.22	171.68	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.24	2.74	37.35	5.09	190.14	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.31	2.81	34.63	5.99	207.33	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.39	2.86	32.86	6.64	218.05	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.44	2.89	31.72	7.11	225.51	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.53	2.90	31.28	7.27	227.51	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.58	2.91	31.10	7.32	227.60	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.63	2.91	30.88	7.30	225.50	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.71	2.91	30.27	7.37	223.12	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.77	2.92	29.23	7.56	220.96	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.86	2.94	27.96	7.86	219.71	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.90	2.97	26.07	8.34	217.43	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.95	2.99	24.91	8.66	215.67	0	0	0.36	0.000	0.00	0.00	0.00	0.000

Total estimated settlement: 0.16

Abbreviations

Q_{tn}: Equivalent clean sand normalized cone resistance
K_c: Fines correction factor
$Q_{tn,cs}$: Post-liquefaction volumentric strain
G_{max}: Small strain shear modulus
CSR: Soil cyclic stress ratio
γ: Cyclic shear strain
$e_{vol(15)}$: Volumetric strain after 15 cycles
N_c: Equivalent number of cycles
e_v: Volumetric strain
Settle.: Calculated settlement

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.03	212.69	2.00	0.00	1.00	0.00	20.08	208.02	2.00	0.00	1.00	0.00
20.18	204.18	2.00	0.00	1.00	0.00	20.22	198.75	2.00	0.00	1.00	0.00
20.32	195.62	2.00	0.00	1.00	0.00	20.36	191.19	2.00	0.00	1.00	0.00
20.43	188.16	2.00	0.00	1.00	0.00	20.50	185.53	2.00	0.00	1.00	0.00
20.55	182.07	2.00	0.00	1.00	0.00	20.63	177.61	2.00	0.00	1.00	0.00
20.69	169.33	2.00	0.00	1.00	0.00	20.78	160.95	2.00	0.00	1.00	0.00
20.82	153.84	2.00	0.00	1.00	0.00	20.87	151.36	2.00	0.00	1.00	0.00
20.95	148.28	2.00	0.00	1.00	0.00	21.01	143.12	2.00	0.00	1.00	0.00
21.10	139.01	2.00	0.00	1.00	0.00	21.14	142.45	2.00	0.00	1.00	0.00
21.24	150.57	2.00	0.00	1.00	0.00	21.29	157.96	2.00	0.00	1.00	0.00
21.33	159.18	2.00	0.00	1.00	0.00	21.41	158.75	2.00	0.00	1.00	0.00
21.48	157.65	2.00	0.00	1.00	0.00	21.53	158.53	2.00	0.00	1.00	0.00
21.61	156.88	2.00	0.00	1.00	0.00	21.67	155.12	2.00	0.00	1.00	0.00
21.76	152.13	2.00	0.00	1.00	0.00	21.81	150.17	2.00	0.00	1.00	0.00
21.86	146.68	2.00	0.00	1.00	0.00	21.95	142.82	2.00	0.00	1.00	0.00
21.99	135.11	2.00	0.00	1.00	0.00	22.09	130.78	2.00	0.00	1.00	0.00
22.13	128.62	2.00	0.00	1.00	0.00	22.18	128.73	2.00	0.00	1.00	0.00
22.27	126.82	2.00	0.00	1.00	0.00	22.32	120.34	2.00	0.00	1.00	0.00
22.40	115.04	2.00	0.00	1.00	0.00	22.45	114.82	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
22.55	118.85	2.00	0.00	1.00	0.00	22.59	122.76	2.00	0.00	1.00	0.00
22.69	121.30	2.00	0.00	1.00	0.00	22.73	117.47	2.00	0.00	1.00	0.00
22.78	111.78	2.00	0.00	1.00	0.00	22.91	106.02	2.00	0.00	1.00	0.00
23.00	102.55	2.00	0.00	1.00	0.00	23.05	101.34	2.00	0.00	1.00	0.00
23.10	99.04	2.00	0.00	1.00	0.00	23.20	93.74	2.00	0.00	1.00	0.00
23.29	87.77	2.00	0.00	1.00	0.00	23.33	79.88	2.00	0.00	1.00	0.00
23.38	76.28	0.31	2.92	1.00	0.02	23.46	75.61	0.31	2.94	1.00	0.03
23.52	76.37	2.00	0.00	1.00	0.00	23.56	76.81	2.00	0.00	1.00	0.00
23.65	76.09	2.00	0.00	1.00	0.00	23.70	74.38	2.00	0.00	1.00	0.00
23.78	71.91	2.00	0.00	1.00	0.00	23.83	70.49	2.00	0.00	1.00	0.00
23.89	67.59	2.00	0.00	1.00	0.00	23.97	65.83	2.00	0.00	1.00	0.00
24.02	64.09	2.00	0.00	1.00	0.00	24.11	65.33	2.00	0.00	1.00	0.00
24.16	66.20	2.00	0.00	1.00	0.00	24.25	66.61	2.00	0.00	1.00	0.00
24.29	66.83	2.00	0.00	1.00	0.00	24.37	67.92	2.00	0.00	1.00	0.00
24.41	68.54	2.00	0.00	1.00	0.00	24.50	68.51	2.00	0.00	1.00	0.00
24.56	68.22	2.00	0.00	1.00	0.00	24.62	68.10	2.00	0.00	1.00	0.00
24.69	67.57	2.00	0.00	1.00	0.00	24.79	67.16	2.00	0.00	1.00	0.00
24.84	66.96	2.00	0.00	1.00	0.00	24.88	66.85	2.00	0.00	1.00	0.00
24.97	66.54	2.00	0.00	1.00	0.00	25.01	66.03	2.00	0.00	1.00	0.00
25.11	65.66	2.00	0.00	1.00	0.00	25.16	65.35	2.00	0.00	1.00	0.00
25.20	65.26	2.00	0.00	1.00	0.00	25.30	65.65	2.00	0.00	1.00	0.00
25.34	66.91	2.00	0.00	1.00	0.00	25.42	69.02	2.00	0.00	1.00	0.00
25.48	71.33	2.00	0.00	1.00	0.00	25.53	75.05	2.00	0.00	1.00	0.00
25.61	80.17	2.00	0.00	1.00	0.00	25.66	90.20	2.00	0.00	1.00	0.00
25.75	101.52	2.00	0.00	1.00	0.00	25.80	116.58	2.00	0.00	1.00	0.00
25.89	128.83	2.00	0.00	1.00	0.00	25.94	139.36	2.00	0.00	1.00	0.00
25.98	149.98	2.00	0.00	1.00	0.00	26.06	160.90	2.00	0.00	1.00	0.00
26.12	172.61	2.00	0.00	1.00	0.00	26.21	179.39	2.00	0.00	1.00	0.00
26.25	184.34	2.00	0.00	1.00	0.00	26.35	189.59	2.00	0.00	1.00	0.00
26.40	190.94	2.00	0.00	1.00	0.00	26.45	190.84	2.00	0.00	1.00	0.00
26.54	189.93	2.00	0.00	1.00	0.00	26.58	180.20	2.00	0.00	1.00	0.00
26.68	168.20	2.00	0.00	1.00	0.00	26.72	162.16	2.00	0.00	1.00	0.00
26.82	166.45	2.00	0.00	1.00	0.00	26.86	173.09	2.00	0.00	1.00	0.00
26.90	175.94	2.00	0.00	1.00	0.00	27.00	174.83	2.00	0.00	1.00	0.00
27.04	174.37	2.00	0.00	1.00	0.00	27.13	171.68	2.00	0.00	1.00	0.00
27.18	167.78	2.00	0.00	1.00	0.00	27.27	167.87	2.00	0.00	1.00	0.00
27.32	163.76	2.00	0.00	1.00	0.00	27.37	160.58	2.00	0.00	1.00	0.00
27.45	159.16	2.00	0.00	1.00	0.00	27.50	155.48	2.00	0.00	1.00	0.00
27.59	154.05	2.00	0.00	1.00	0.00	27.64	149.90	2.00	0.00	1.00	0.00
27.73	146.26	2.00	0.00	1.00	0.00	27.76	141.78	2.00	0.00	1.00	0.00
27.82	140.34	2.00	0.00	1.00	0.00	27.92	137.03	2.00	0.00	1.00	0.00
27.96	134.92	2.00	0.00	1.00	0.00	28.05	133.93	2.00	0.00	1.00	0.00
28.10	133.15	2.00	0.00	1.00	0.00	28.16	130.85	2.00	0.00	1.00	0.00
28.24	131.01	2.00	0.00	1.00	0.00	28.29	133.81	2.00	0.00	1.00	0.00
28.38	129.92	2.00	0.00	1.00	0.00	28.43	121.68	2.00	0.00	1.00	0.00
28.49	114.60	2.00	0.00	1.00	0.00	28.56	114.94	2.00	0.00	1.00	0.00
28.65	121.46	2.00	0.00	1.00	0.00	28.70	127.74	2.00	0.00	1.00	0.00
28.75	134.00	2.00	0.00	1.00	0.00	28.82	137.47	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
28.89	141.96	2.00	0.00	1.00	0.00	28.95	143.76	2.00	0.00	1.00	0.00
29.00	144.50	2.00	0.00	1.00	0.00	29.08	145.20	2.00	0.00	1.00	0.00
29.14	145.96	2.00	0.00	1.00	0.00	29.23	147.18	2.00	0.00	1.00	0.00
29.27	149.01	2.00	0.00	1.00	0.00	29.34	151.10	2.00	0.00	1.00	0.00
29.42	152.73	2.00	0.00	1.00	0.00	29.47	156.19	2.00	0.00	1.00	0.00
29.54	160.28	2.00	0.00	1.00	0.00	29.60	165.23	2.00	0.00	1.00	0.00
29.66	166.93	2.00	0.00	1.00	0.00	29.73	170.06	2.00	0.00	1.00	0.00
29.83	166.59	2.00	0.00	1.00	0.00	29.88	163.34	2.00	0.00	1.00	0.00
29.93	157.39	1.01	0.58	1.00	0.00	30.01	152.68	0.94	0.84	1.00	0.01
30.06	147.22	0.86	0.88	1.00	0.00	30.15	143.66	0.81	1.20	1.00	0.01
30.20	140.23	0.77	1.24	1.00	0.01	30.26	139.45	0.76	1.25	1.00	0.01
30.34	141.09	0.78	1.23	1.00	0.01	30.43	143.82	0.81	1.20	1.00	0.01
30.48	145.77	0.84	1.17	1.00	0.01	30.52	145.42	0.83	1.18	1.00	0.01
30.62	143.50	0.81	1.20	1.00	0.01	30.65	136.94	0.73	1.57	1.00	0.01
30.75	130.56	0.65	1.68	1.00	0.02	30.80	126.22	0.61	1.93	1.00	0.01
30.84	125.37	0.60	1.94	1.00	0.01	30.94	124.53	0.59	1.95	1.00	0.02
30.98	123.47	0.58	1.97	1.00	0.01	31.07	123.51	0.58	1.97	1.00	0.02
31.12	126.57	0.61	1.93	1.00	0.01	31.17	133.54	0.68	1.63	1.00	0.01
31.26	143.45	0.80	1.20	1.00	0.01	31.31	150.29	0.89	0.86	1.00	0.00
31.37	155.66	2.00	0.00	1.00	0.00	31.45	140.84	2.00	0.00	1.00	0.00
31.53	127.43	2.00	0.00	1.00	0.00	31.58	118.39	0.53	2.03	1.00	0.01
31.66	127.41	0.61	1.92	1.00	0.02	31.71	133.82	0.68	1.63	1.00	0.01
31.77	137.26	2.00	0.00	1.00	0.00	31.82	138.27	2.00	0.00	1.00	0.00
31.89	144.36	2.00	0.00	1.00	0.00	31.98	148.69	2.00	0.00	1.00	0.00
32.03	154.38	2.00	0.00	1.00	0.00	32.12	150.90	2.00	0.00	1.00	0.00
32.16	140.61	2.00	0.00	1.00	0.00	32.26	132.55	2.00	0.00	1.00	0.00
32.31	127.38	2.00	0.00	1.00	0.00	32.35	128.86	2.00	0.00	1.00	0.00
32.44	129.63	2.00	0.00	1.00	0.00	32.49	129.31	2.00	0.00	1.00	0.00
32.58	127.83	2.00	0.00	1.00	0.00	32.62	128.32	2.00	0.00	1.00	0.00
32.71	130.74	2.00	0.00	1.00	0.00	32.75	131.49	2.00	0.00	1.00	0.00
32.81	127.66	2.00	0.00	1.00	0.00	32.91	122.23	2.00	0.00	1.00	0.00
32.95	118.75	2.00	0.00	1.00	0.00	33.04	118.72	2.00	0.00	1.00	0.00
33.09	119.78	2.00	0.00	1.00	0.00	33.14	121.81	2.00	0.00	1.00	0.00
33.22	121.13	2.00	0.00	1.00	0.00	33.28	121.18	2.00	0.00	1.00	0.00
33.35	119.10	2.00	0.00	1.00	0.00	33.41	115.11	2.00	0.00	1.00	0.00
33.50	111.59	2.00	0.00	1.00	0.00	33.55	108.29	2.00	0.00	1.00	0.00
33.63	108.68	2.00	0.00	1.00	0.00	33.69	108.25	2.00	0.00	1.00	0.00
33.73	108.19	2.00	0.00	1.00	0.00	33.83	111.02	2.00	0.00	1.00	0.00
33.87	113.68	2.00	0.00	1.00	0.00	33.93	114.46	2.00	0.00	1.00	0.00
34.01	114.61	2.00	0.00	1.00	0.00	34.05	114.34	2.00	0.00	1.00	0.00
34.13	113.90	2.00	0.00	1.00	0.00	34.20	113.21	2.00	0.00	1.00	0.00
34.29	112.54	2.00	0.00	1.00	0.00	34.33	117.92	2.00	0.00	1.00	0.00
34.43	123.58	2.00	0.00	1.00	0.00	34.46	129.10	2.00	0.00	1.00	0.00
34.55	125.76	2.00	0.00	1.00	0.00	34.59	119.31	2.00	0.00	1.00	0.00
34.68	114.79	2.00	0.00	1.00	0.00	34.73	111.06	2.00	0.00	1.00	0.00
34.80	107.58	2.00	0.00	1.00	0.00	34.87	103.97	2.00	0.00	1.00	0.00
34.91	102.55	2.00	0.00	1.00	0.00	35.01	107.66	2.00	0.00	1.00	0.00
35.06	116.69	2.00	0.00	1.00	0.00	35.11	132.09	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
35.19	144.27	2.00	0.00	1.00	0.00	35.24	152.26	2.00	0.00	1.00	0.00
35.33	159.57	2.00	0.00	1.00	0.00	35.38	161.56	2.00	0.00	1.00	0.00
35.46	162.02	2.00	0.00	1.00	0.00	35.51	158.66	0.99	0.58	1.00	0.00
35.59	154.11	0.92	0.83	1.00	0.01	35.65	150.01	0.86	0.86	1.00	0.01
35.70	147.30	0.82	1.15	1.00	0.01	35.78	148.06	0.83	1.15	1.00	0.01
35.83	152.43	0.89	0.84	1.00	0.01	35.90	158.29	0.98	0.58	1.00	0.00
35.97	162.30	1.04	0.56	1.00	0.00	36.04	165.32	1.09	0.40	1.00	0.00
36.11	169.73	1.16	0.28	1.00	0.00	36.16	177.23	1.30	0.19	1.00	0.00
36.25	186.77	1.49	0.00	1.00	0.00	36.29	196.04	1.70	0.00	1.00	0.00
36.36	205.23	2.00	0.00	1.00	0.00	36.43	206.93	2.00	0.00	1.00	0.00
36.52	198.69	1.76	0.00	1.00	0.00	36.58	182.61	1.40	0.00	1.00	0.00
36.62	177.18	1.30	0.19	1.00	0.00	36.70	182.85	1.41	0.00	1.00	0.00
36.75	191.75	1.60	0.00	1.00	0.00	36.83	192.16	1.61	0.00	1.00	0.00
36.89	191.71	1.60	0.00	1.00	0.00	36.97	199.15	1.77	0.00	1.00	0.00
37.03	209.65	2.00	0.00	1.00	0.00	37.08	215.29	2.00	0.00	1.00	0.00
37.17	209.96	2.00	0.00	1.00	0.00	37.21	196.56	1.70	0.00	1.00	0.00
37.31	182.29	1.39	0.00	1.00	0.00	37.35	169.63	1.16	0.28	1.00	0.00
37.41	156.67	0.95	0.81	1.00	0.01	37.49	141.08	0.74	1.51	1.00	0.02
37.54	130.06	0.62	1.88	1.00	0.01	37.63	131.80	0.63	1.86	1.00	0.02
37.68	152.74	2.00	0.00	1.00	0.00	37.77	168.36	2.00	0.00	1.00	0.00
37.80	166.51	2.00	0.00	1.00	0.00	37.89	161.99	1.03	0.56	1.00	0.01
37.94	159.94	1.00	0.57	1.00	0.00	38.02	165.55	1.08	0.40	1.00	0.00
38.07	208.62	2.00	0.00	1.00	0.00	38.13	264.08	2.00	0.00	1.00	0.00
38.19	291.06	2.00	0.00	1.00	0.00	38.27	356.88	2.00	0.00	1.00	0.00
38.34	430.08	2.00	0.00	1.00	0.00	38.41	-1.00	2.00	0.00	1.00	0.00
38.46	-1.00	2.00	0.00	1.00	0.00	38.52	-1.00	2.00	0.00	1.00	0.00
38.59	-1.00	2.00	0.00	1.00	0.00	38.66	-1.00	2.00	0.00	1.00	0.00

Total estimated settlement: 0.45

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.08	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.13	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.22	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.27	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.34	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.41	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.51	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.55	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.60	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.68	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.74	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.83	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.87	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.01	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.06	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.15	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.18	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.25	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.34	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.38	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.47	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.52	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.60	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.66	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.75	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.79	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.84	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.99	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.07	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.12	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.17	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.23	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.31	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.40	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.45	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.50	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.58	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.63	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.73	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.77	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.86	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.91	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.96	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.05	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.09	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.18	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.23	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.30	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.36	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.42	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.51	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.55	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.65	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.69	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.74	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.83	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.88	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.97	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.01	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.11	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.15	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.20	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.29	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.33	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.42	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.47	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.53	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.61	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.70	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.75	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.80	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.89	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.93	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
5.02	157.00	251.75	1.33	335.77	2.03	1.00	1.00
5.07	240.16	385.35	1.26	486.31	1.94	1.10	1.10
5.12	249.44	400.27	1.27	508.73	1.95	1.11	1.11
5.19	253.75	407.18	1.31	533.62	2.00	1.12	1.12
5.29	259.42	416.28	1.35	563.94	2.05	1.14	1.14
5.34	268.07	430.17	1.38	593.86	2.07	1.15	1.15
5.41	279.25	448.13	1.37	612.13	2.06	1.16	1.16
5.47	292.36	469.18	1.34	627.75	2.03	1.17	1.17
5.52	306.88	492.50	1.30	640.25	1.99	1.17	1.17
5.59	325.05	521.68	1.26	657.91	1.94	1.18	1.18
5.64	341.99	548.90	1.22	667.90	1.87	1.19	1.19
5.74	350.12	561.96	1.17	659.73	1.82	1.18	1.18
5.79	339.03	544.13	1.15	626.79	1.80	1.17	1.17
5.85	315.99	507.11	1.15	584.02	1.80	1.15	1.15
5.92	282.93	453.98	1.17	529.71	1.81	1.12	1.12
5.98	243.09	389.97	1.20	467.11	1.85	1.09	1.09
6.07	208.49	334.36	1.24	414.66	1.90	1.06	1.06
6.11	187.04	299.90	1.28	382.69	1.96	1.04	1.04
6.21	183.73	294.57	1.29	380.66	1.98	1.04	1.04
6.25	183.76	294.62	1.31	385.27	2.00	1.04	1.04
6.30	185.73	297.78	1.33	396.36	2.03	1.05	1.05

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.38	187.39	300.44	1.36	408.38	2.05	1.05	1.05
6.44	189.49	303.81	1.40	424.28	2.08	1.06	1.06
6.53	189.24	303.38	1.43	434.09	2.11	1.07	1.07
6.58	189.54	303.87	1.45	441.47	2.12	1.07	1.07
6.67	190.89	306.01	1.38	420.97	2.07	1.06	1.06
6.71	194.27	311.45	1.27	395.70	1.95	1.05	1.05
6.76	198.70	311.34	1.17	365.61	1.82	1.03	1.03
6.85	201.26	309.79	1.13	350.72	1.78	1.02	1.02
6.90	195.24	304.76	1.20	366.02	1.85	1.03	1.03
6.99	183.20	288.85	1.25	361.01	1.92	1.02	1.02
7.03	162.79	260.84	1.32	345.05	2.02	1.01	1.01
7.09	142.37	228.02	1.46	333.49	2.13	1.00	1.00
7.18	123.77	198.12	1.72	341.00	2.24	1.01	1.01
7.23	111.76	178.82	2.04	364.61	2.33	1.02	1.02
7.32	106.67	170.64	2.25	383.40	2.37	1.04	1.04
7.37	104.48	167.11	2.39	399.14	2.40	1.05	1.05
7.46	105.19	168.24	2.40	403.84	2.41	1.05	1.05
7.49	108.51	173.57	2.31	401.32	2.39	1.05	1.05
7.55	118.99	190.42	2.01	383.48	2.32	1.04	1.04
7.65	132.59	212.24	1.73	367.43	2.24	1.03	1.03
7.69	146.50	230.08	1.53	352.76	2.16	1.02	1.02
7.78	153.64	236.92	1.45	343.44	2.12	1.01	1.01
7.83	155.66	237.51	1.41	334.32	2.09	1.00	1.00
7.88	151.46	229.57	1.39	319.74	2.08	0.99	0.99
7.97	142.99	215.29	1.40	301.18	2.09	0.98	0.98
8.01	132.44	198.77	1.40	279.11	2.09	0.96	0.96
8.10	122.28	182.92	1.43	261.71	2.11	0.95	0.95
8.15	112.33	168.10	1.47	247.04	2.13	0.93	0.93
8.24	103.88	155.52	1.55	240.52	2.17	0.93	0.93
8.29	96.61	145.23	1.65	239.35	2.21	0.93	0.93
8.38	91.67	137.89	1.75	241.83	2.25	0.93	0.93
8.43	88.13	132.72	1.85	245.36	2.28	0.93	0.93
8.47	85.02	127.52	1.84	235.26	2.28	0.92	0.92
8.56	83.06	122.68	1.72	211.34	2.24	0.90	0.90
8.61	80.66	117.66	1.61	189.34	2.20	0.88	0.88
8.67	78.73	114.08	1.58	180.41	2.19	0.86	0.86
8.75	76.02	110.08	1.66	182.36	2.22	0.87	0.87
8.80	74.38	107.49	1.69	181.35	2.23	0.87	0.87
8.87	73.74	105.91	1.67	177.15	2.22	0.86	0.86
8.96	74.76	106.22	1.63	172.70	2.20	0.86	0.86
9.01	75.60	106.81	1.60	170.49	2.19	0.85	0.85
9.07	76.16	107.14	1.60	171.26	2.19	0.85	0.85
9.14	75.75	106.29	1.64	174.09	2.21	0.86	0.86
9.19	74.51	104.97	1.76	185.18	2.25	0.87	0.87
9.29	73.24	103.26	1.92	198.22	2.30	0.88	0.88
9.33	72.46	102.66	2.10	215.40	2.34	0.90	0.90
9.42	72.77	102.76	2.21	227.52	2.37	0.91	0.91
9.47	74.58	105.21	2.29	240.96	2.38	0.93	0.93

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.55	78.78	110.34	2.27	250.04	2.38	0.94	0.94
9.61	85.87	119.33	2.14	255.49	2.35	0.94	0.94
9.66	94.76	130.50	1.99	259.68	2.32	0.94	0.94
9.74	103.12	140.55	1.88	264.39	2.29	0.95	0.95
9.79	108.58	147.19	1.84	270.93	2.28	0.95	0.95
9.85	111.28	150.34	1.85	278.69	2.28	0.96	0.96
9.93	112.46	151.23	1.89	285.12	2.29	0.97	0.97
9.98	113.21	151.83	1.91	289.35	2.29	0.97	0.97
10.11	113.74	151.08	1.91	287.89	2.29	0.97	0.97
10.13	113.33	150.11	1.88	282.67	2.29	0.96	0.96
10.21	112.02	147.48	1.86	274.51	2.28	0.96	0.96
10.25	108.59	142.36	1.84	262.02	2.28	0.95	0.95
10.34	103.49	134.82	1.85	249.90	2.28	0.94	0.94
10.39	98.45	127.81	1.86	237.17	2.28	0.92	0.92
10.44	90.43	117.20	1.91	223.80	2.30	0.91	0.91
10.52	81.42	105.15	2.00	209.88	2.32	0.90	0.90
10.57	71.32	92.11	2.15	198.23	2.35	0.88	0.88
10.65	64.86	83.62	2.31	193.57	2.39	0.88	0.88
10.71	60.54	77.99	2.48	193.60	2.42	0.88	0.88
10.81	58.42	74.98	2.62	196.57	2.44	0.88	0.88
10.84	57.81	74.14	2.71	201.22	2.46	0.89	0.89
10.90	58.49	74.84	2.77	207.08	2.47	0.89	0.89
10.96	59.98	76.51	2.82	216.11	2.48	0.90	0.90
11.04	62.50	79.46	2.91	231.37	2.49	0.92	0.92
11.13	64.99	82.24	3.00	246.50	2.50	0.93	0.93
11.17	68.19	86.19	3.05	262.91	2.51	0.95	0.95
11.25	71.14	89.52	3.11	277.97	2.52	0.96	0.96
11.32	74.02	92.78	3.13	290.10	2.52	0.97	0.97
11.36	76.26	95.29	3.09	294.42	2.52	0.97	0.97
11.45	78.22	97.05	3.04	295.39	2.51	0.97	0.97
11.50	80.31	99.32	3.04	301.62	2.51	0.98	0.98
11.59	81.45	100.25	3.12	312.73	2.52	0.99	0.99
11.64	81.50	100.09	3.23	323.43	2.54	1.00	1.00
11.69	80.71	98.94	3.37	332.98	2.55	1.00	1.00
11.77	80.27	97.98	3.48	341.17	2.57	1.01	1.01
11.83	80.38	97.80	3.56	348.23	2.58	1.01	1.01
11.90	81.12	98.28	3.59	352.95	2.58	1.02	1.02
11.97	81.58	98.41	3.63	357.44	2.59	1.02	1.02
12.02	82.30	98.93	3.66	361.85	2.59	1.02	1.02
12.10	83.07	99.35	3.66	363.39	2.59	1.02	1.02
12.15	84.07	100.12	3.61	360.93	2.58	1.02	1.02
12.22	84.88	100.59	3.55	357.38	2.58	1.02	1.02
12.29	85.66	100.98	3.49	352.41	2.57	1.02	1.02
12.34	86.43	101.55	3.48	353.08	2.57	1.02	1.02
12.42	87.24	101.91	3.48	354.17	2.57	1.02	1.02
12.48	84.57	98.64	3.70	365.02	2.59	1.02	1.02
12.58	85.41	98.96	3.70	366.45	2.59	1.03	1.03
12.62	86.71	100.15	3.66	366.22	2.59	1.03	1.03

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.67	91.39	104.99	3.42	358.89	2.56	1.02	1.02
12.76	92.26	105.37	3.39	357.00	2.56	1.02	1.02
12.81	92.38	105.15	3.36	353.52	2.55	1.02	1.02
12.90	91.82	103.88	3.35	347.79	2.55	1.01	1.01
12.95	90.52	102.05	3.31	338.05	2.55	1.01	1.01
13.03	88.40	99.09	3.29	326.46	2.54	1.00	1.00
13.08	86.26	96.33	3.24	311.81	2.54	0.99	0.99
13.13	83.31	92.67	3.17	294.16	2.53	0.97	0.97
13.22	80.29	88.76	3.11	276.07	2.52	0.96	0.96
13.27	76.88	84.59	3.00	253.93	2.50	0.94	0.94
13.36	74.09	81.01	2.92	236.63	2.49	0.92	0.92
13.41	71.26	77.62	2.87	223.05	2.48	0.91	0.91
13.45	68.50	74.42	2.95	219.19	2.50	0.91	0.91
13.55	66.48	71.87	3.04	218.72	2.51	0.91	0.91
13.59	64.93	70.06	3.14	220.04	2.52	0.91	0.91
13.68	64.12	68.85	3.24	222.82	2.54	0.91	0.91
13.73	63.59	68.16	3.36	229.13	2.55	0.92	0.92
13.82	63.68	67.94	3.48	236.55	2.57	0.92	0.92
13.87	64.24	68.41	3.58	244.71	2.58	0.93	0.93
13.92	65.17	69.25	3.68	254.93	2.59	0.94	0.94
14.00	66.54	70.42	3.75	264.35	2.60	4.82	5.20
14.05	67.97	71.76	3.81	273.46	2.61	4.98	5.30
14.12	69.18	72.78	3.81	277.16	2.61	5.14	5.37
14.18	70.18	73.56	3.81	280.38	2.61	5.17	5.42
14.28	70.83	73.84	3.82	282.20	2.61	5.26	5.43
14.33	71.26	74.09	3.84	284.45	2.61	5.30	5.45
14.37	71.73	74.42	3.86	286.96	2.61	5.33	5.47
14.46	72.38	74.71	3.87	289.13	2.61	5.44	5.48
14.51	73.50	75.66	3.86	292.12	2.61	5.50	5.55
14.60	74.74	76.55	3.84	293.91	2.61	5.61	5.60
14.65	76.05	77.69	3.82	296.81	2.61	5.68	5.68
14.70	76.92	78.37	3.83	300.31	2.61	5.81	5.73
14.78	77.26	78.36	3.88	304.33	2.61	5.91	5.72
14.84	76.79	77.68	3.99	309.87	2.63	5.98	5.66
14.93	75.70	76.21	4.14	315.27	2.64	6.09	5.55
14.99	74.06	74.26	4.15	308.43	2.64	6.13	5.40
15.06	72.57	72.45	4.11	297.86	2.64	5.23	5.26
15.11	70.39	70.11	4.23	296.41	2.65	5.13	5.09
15.18	68.10	67.58	4.55	307.70	2.69	5.73	4.90
15.25	65.83	65.08	4.92	320.29	2.72	5.71	4.71
15.30	64.27	63.36	5.10	322.84	2.74	5.70	4.58
15.39	59.08	57.92	5.71	330.91	2.79	5.66	4.18
15.43	57.65	56.36	5.55	312.97	2.78	5.62	4.06
15.53	56.78	55.17	5.41	298.57	2.76	4.24	3.98
15.57	60.42	58.58	4.82	282.23	2.71	4.59	4.22
15.62	60.66	58.68	5.01	293.97	2.73	4.91	4.23
15.71	60.97	58.70	5.12	300.79	2.74	5.00	4.22
15.75	61.28	58.86	5.17	304.23	2.74	5.05	4.23

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.85	61.67	58.94	5.19	306.06	2.74	5.12	4.23
15.88	62.11	59.25	5.19	307.39	2.74	5.15	4.25
15.96	63.04	59.87	5.11	306.04	2.74	5.14	4.30
16.01	64.42	61.04	4.97	303.48	2.72	5.12	4.38
16.11	65.84	62.10	4.84	300.49	2.71	5.08	4.45
16.15	66.65	62.72	4.77	298.85	2.71	5.07	4.49
16.24	66.87	62.62	4.76	298.06	2.71	5.04	4.48
16.29	66.91	62.50	4.76	297.69	2.71	5.03	4.47
16.38	66.91	62.20	4.76	295.91	2.70	5.00	4.44
16.43	66.97	62.10	4.72	292.96	2.70	4.90	4.43
16.47	67.31	62.29	4.60	286.22	2.69	4.81	4.44
16.56	67.96	62.63	4.41	275.88	2.67	4.55	4.46
16.61	69.14	63.56	4.09	260.05	2.64	4.27	4.53
16.71	70.41	64.46	3.79	244.03	2.60	3.86	4.58
16.75	71.50	65.35	3.50	229.01	2.57	0.92	0.92
16.80	71.75	65.45	3.32	217.23	2.55	0.90	0.90
16.89	71.22	64.70	3.20	207.05	2.53	0.89	0.89
16.94	69.73	63.18	3.17	200.41	2.53	0.89	0.89
17.03	68.27	61.58	3.22	198.34	2.53	0.89	0.89
17.06	67.15	60.44	3.34	201.86	2.55	0.89	0.89
17.16	67.03	60.04	3.43	206.08	2.56	0.89	0.89
17.21	67.90	60.69	3.43	208.10	2.56	0.90	0.90
17.30	69.61	62.02	3.30	204.61	2.54	0.89	0.89
17.35	71.63	63.73	3.11	197.92	2.52	0.88	0.88
17.40	74.65	66.37	2.80	185.62	2.47	0.87	0.87
17.49	77.78	69.00	2.48	171.27	2.42	0.85	0.85
17.53	81.32	72.16	2.09	150.95	2.34	0.83	0.83
17.63	83.34	73.82	1.82	134.27	2.27	0.80	0.80
17.68	84.61	74.93	1.62	121.15	2.20	0.78	0.78
17.72	85.14	75.37	1.51	113.87	2.15	0.77	0.77
17.81	85.30	75.34	1.45	109.12	2.12	0.76	0.76
17.86	84.83	74.86	1.40	105.11	2.09	0.76	0.76
17.95	83.84	73.75	1.39	102.79	2.08	0.75	0.75
18.00	82.56	72.51	1.39	100.60	2.08	0.75	0.75
18.08	81.35	71.23	1.39	98.82	2.08	0.75	0.75
18.14	80.93	70.74	1.38	97.61	2.07	0.74	0.74
18.20	80.75	70.43	1.37	96.72	2.07	0.74	0.74
18.27	81.12	70.62	1.36	96.04	2.05	0.74	0.74
18.31	81.35	70.76	1.35	95.21	2.04	0.74	0.74
18.41	81.97	71.12	1.33	94.91	2.03	0.74	0.74
18.45	82.63	71.61	1.33	95.34	2.03	0.74	0.74
18.55	83.00	71.69	1.34	95.86	2.03	0.74	0.74
18.59	82.44	71.07	1.35	96.04	2.05	0.74	0.74
18.66	80.98	69.60	1.37	95.68	2.07	0.74	0.74
18.70	78.90	67.60	1.42	95.95	2.10	0.74	0.74
18.80	76.38	65.10	1.49	96.79	2.14	0.74	0.74
18.84	73.12	62.03	1.61	100.06	2.20	0.75	0.75
18.93	68.65	57.81	1.83	105.95	2.27	0.76	0.76

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.98	63.77	53.32	2.20	117.20	2.36	0.78	0.78
19.04	58.86	48.83	2.72	132.82	2.46	0.80	0.80
19.12	54.26	44.60	3.39	151.07	2.56	0.83	0.83
19.16	49.94	40.71	4.22	171.68	2.65	1.81	2.82
19.24	46.25	37.35	5.09	190.14	2.74	2.08	2.60
19.31	43.24	34.63	5.99	207.33	2.81	2.24	2.41
19.39	41.35	32.86	6.64	218.05	2.86	2.42	2.30
19.44	40.11	31.72	7.11	225.51	2.89	2.47	2.22
19.53	39.74	31.28	7.27	227.51	2.90	2.51	2.19
19.58	39.62	31.10	7.32	227.60	2.91	2.49	2.18
19.63	39.43	30.88	7.30	225.50	2.91	2.46	2.16
19.71	38.84	30.27	7.37	223.12	2.91	2.38	2.12
19.77	37.65	29.23	7.56	220.96	2.92	2.32	2.04
19.86	36.25	27.96	7.86	219.71	2.94	2.25	1.96
19.90	34.63	26.07	8.34	217.43	2.97	2.22	1.86
19.95	33.24	24.91	8.66	215.67	2.99	2.18	1.78
20.03	32.15	23.96	8.88	212.69	3.01	2.07	1.71
20.08	31.62	23.49	8.86	208.02	3.00	2.01	1.68
20.18	31.50	23.28	8.77	204.18	3.00	1.92	1.66
20.22	32.37	23.90	8.31	198.75	2.97	1.89	1.71
20.32	33.46	25.20	7.76	195.62	2.94	1.80	1.76
20.36	34.05	25.65	7.45	191.19	2.92	1.77	1.79
20.43	33.62	25.24	7.46	188.16	2.92	1.72	1.76
20.50	32.96	24.64	7.53	185.53	2.92	1.64	1.72
20.55	33.15	24.75	7.36	182.07	2.91	1.61	1.72
20.63	34.33	25.63	6.93	177.61	2.88	1.57	1.78
20.69	37.15	27.87	6.07	169.33	2.82	1.52	1.93
20.78	39.86	29.98	5.37	160.95	2.76	1.42	2.06
20.82	41.81	31.55	4.88	153.84	2.72	1.37	2.16
20.87	41.88	31.56	4.80	151.36	2.71	1.33	2.16
20.95	41.01	30.77	4.82	148.28	2.71	1.32	2.11
21.01	39.08	29.20	4.90	143.12	2.72	1.21	2.00
21.10	37.12	27.56	5.04	139.01	2.73	1.03	1.89
21.14	33.89	24.92	5.72	142.45	2.79	1.06	1.71
21.24	31.47	22.85	6.59	150.57	2.86	1.17	1.58
21.29	29.20	20.99	7.53	157.96	2.92	1.22	1.46
21.33	29.67	21.31	7.47	159.18	2.92	1.24	1.48
21.41	30.17	21.63	7.34	158.75	2.91	1.24	1.50
21.48	30.61	21.91	7.20	157.65	2.90	1.22	1.52
21.53	29.27	20.82	7.61	158.53	2.93	1.22	1.44
21.61	27.69	18.99	8.26	156.88	2.97	1.21	1.36
21.67	25.70	17.50	8.86	155.12	3.00	1.15	1.25
21.76	24.49	16.56	9.19	152.13	3.02	1.06	1.18
21.81	23.78	16.01	9.38	150.17	3.03	1.04	1.14
21.86	25.30	17.07	8.59	146.68	2.99	1.05	1.22
21.95	27.29	19.03	7.51	142.82	2.92	0.99	1.31
21.99	28.93	20.30	6.65	135.11	2.86	0.93	1.40
22.09	28.68	20.06	6.52	130.78	2.85	0.84	1.38

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.13	28.17	19.65	6.55	128.62	2.85	0.83	1.35
22.18	27.83	19.34	6.66	128.73	2.86	0.84	1.33
22.27	27.99	19.41	6.53	126.82	2.85	0.83	1.33
22.32	27.85	19.31	6.23	120.34	2.83	0.77	1.32
22.40	26.64	18.37	6.26	115.04	2.83	0.62	1.26
22.45	23.34	15.83	7.25	114.82	2.90	0.61	1.09
22.55	19.86	12.78	9.30	118.85	3.03	0.65	0.91
22.59	18.31	11.68	10.51	122.76	3.09	0.66	0.83
22.69	19.52	12.47	9.73	121.30	3.05	0.69	0.89
22.73	21.26	13.64	8.61	117.47	2.99	0.64	0.97
22.78	21.76	14.46	7.73	111.78	2.93	0.60	1.00
22.91	20.30	12.88	8.23	106.02	2.97	0.49	0.92
23.00	18.18	11.39	9.00	102.55	3.01	0.47	0.81
23.05	16.32	10.10	10.04	101.34	3.07	0.44	0.72
23.10	15.61	9.59	10.32	99.04	3.09	0.41	0.69
23.20	18.56	11.55	8.12	93.74	2.96	0.39	0.82
23.29	23.59	15.72	5.58	87.77	2.78	0.38	1.06
23.33	29.96	20.56	3.89	79.88	2.62	0.37	1.37
23.38	32.10	22.19	3.44	76.28	2.56	0.43	0.70
23.46	30.51	20.94	3.61	75.61	2.58	0.41	0.70
23.52	26.78	18.08	4.22	76.37	2.65	0.32	1.21
23.56	22.34	14.74	5.21	76.81	2.75	0.29	0.99
23.65	19.08	12.29	6.19	76.09	2.83	0.25	0.83
23.70	16.04	10.05	7.40	74.38	2.91	0.23	0.69
23.78	14.49	8.59	8.38	71.91	2.98	0.19	0.61
23.83	13.62	7.99	8.82	70.49	3.00	0.19	0.57
23.89	13.52	7.91	8.54	67.59	2.99	0.18	0.57
23.97	14.02	8.56	7.69	65.83	2.93	0.14	0.59
24.02	14.68	9.03	7.10	64.09	2.89	0.15	0.62
24.11	15.08	9.28	7.04	65.33	2.89	0.16	0.63
24.16	14.96	9.17	7.22	66.20	2.90	0.17	0.63
24.25	14.63	8.90	7.48	66.61	2.92	0.16	0.61
24.29	14.20	8.23	8.12	66.83	2.96	0.17	0.59
24.37	14.04	8.10	8.38	67.92	2.98	0.18	0.58
24.41	14.06	8.10	8.46	68.54	2.98	0.18	0.58
24.50	14.09	8.09	8.47	68.51	2.98	0.18	0.58
24.56	14.03	8.04	8.49	68.22	2.98	0.18	0.57
24.62	13.81	7.88	8.65	68.10	2.99	0.18	0.56
24.69	13.69	7.78	8.69	67.57	2.99	0.17	0.56
24.79	13.72	7.77	8.64	67.16	2.99	0.17	0.55
24.84	13.84	7.83	8.55	66.96	2.99	0.17	0.56
24.88	13.97	7.90	8.46	66.85	2.98	0.17	0.56
24.97	13.94	7.85	8.48	66.54	2.98	0.17	0.56
25.01	13.84	7.78	8.49	66.03	2.98	0.16	0.56
25.11	13.81	7.75	8.47	65.66	2.98	0.16	0.55
25.16	13.85	7.76	8.42	65.35	2.98	0.16	0.55
25.20	13.82	7.74	8.43	65.26	2.98	0.16	0.55
25.30	13.72	7.67	8.56	65.65	2.99	0.16	0.55

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.34	13.63	7.60	8.80	66.91	3.00	0.16	0.54
25.42	13.63	7.59	9.09	69.02	3.02	0.18	0.54
25.48	13.75	7.66	9.31	71.33	3.03	0.20	0.55
25.53	14.59	8.18	9.17	75.05	3.02	0.21	0.58
25.61	15.93	9.01	8.90	80.17	3.01	0.27	0.64
25.66	17.82	10.19	8.85	90.20	3.00	0.33	0.73
25.75	19.50	11.23	9.04	101.52	3.02	0.48	0.80
25.80	21.56	12.50	9.32	116.58	3.03	0.61	0.89
25.89	23.79	13.88	9.28	128.83	3.03	0.84	0.99
25.94	26.68	15.67	8.89	139.36	3.01	0.97	1.12
25.98	29.25	17.27	8.69	149.98	2.99	1.09	1.23
26.06	31.46	18.62	8.64	160.90	2.99	1.36	1.33
26.12	33.73	20.01	8.63	172.61	2.99	1.52	1.43
26.21	35.85	21.29	8.43	179.39	2.98	1.72	1.52
26.25	38.34	22.82	8.08	184.34	2.96	1.77	1.63
26.35	40.14	25.07	7.56	189.59	2.92	1.88	1.71
26.40	41.73	26.13	7.31	190.94	2.91	1.90	1.77
26.45	42.88	26.91	7.09	190.84	2.89	1.91	1.82
26.54	43.88	27.56	6.89	189.93	2.88	1.92	1.86
26.58	44.50	28.07	6.42	180.20	2.84	1.90	1.89
26.68	44.28	27.99	6.01	168.20	2.81	1.47	1.88
26.72	42.61	26.86	6.04	162.16	2.81	1.36	1.80
26.82	40.55	25.33	6.57	166.45	2.85	1.55	1.71
26.86	38.66	23.94	7.23	173.09	2.90	1.56	1.62
26.90	37.08	22.80	7.72	175.94	2.93	1.56	1.55
27.00	35.74	20.87	8.38	174.83	2.98	1.60	1.49
27.04	35.00	20.39	8.55	174.37	2.99	1.59	1.46
27.13	34.94	20.31	8.45	171.68	2.98	1.50	1.45
27.18	35.65	20.73	8.09	167.78	2.96	1.47	1.48
27.27	36.09	22.02	7.62	167.87	2.93	1.44	1.50
27.32	36.99	22.66	7.23	163.76	2.90	1.39	1.53
27.37	36.52	22.35	7.18	160.58	2.90	1.33	1.51
27.45	34.66	21.05	7.56	159.16	2.92	1.28	1.43
27.50	31.98	18.37	8.47	155.48	2.98	1.25	1.31
27.59	29.87	17.06	9.03	154.05	3.01	1.18	1.22
27.64	29.32	16.70	8.98	149.90	3.01	1.13	1.19
27.73	29.47	16.76	8.73	146.26	3.00	1.05	1.20
27.76	30.53	17.39	8.15	141.78	2.96	1.04	1.24
27.82	31.52	18.94	7.41	140.34	2.91	1.00	1.28
27.92	32.11	19.34	7.08	137.03	2.89	0.94	1.31
27.96	31.52	18.95	7.12	134.92	2.89	0.93	1.28
28.05	30.56	18.27	7.33	133.93	2.91	0.90	1.24
28.10	29.53	17.56	7.58	133.15	2.93	0.87	1.19
28.16	29.07	16.38	7.99	130.85	2.95	0.87	1.17
28.24	29.16	16.41	7.98	131.01	2.95	0.88	1.17
28.29	29.51	17.48	7.66	133.81	2.93	0.88	1.19
28.38	30.16	17.93	7.25	129.92	2.90	0.90	1.21
28.43	31.00	18.57	6.55	121.68	2.85	0.76	1.25

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.49	32.33	19.54	5.87	114.60	2.80	0.62	1.30
28.56	33.36	20.21	5.69	114.94	2.79	0.71	1.34
28.65	33.57	20.25	6.00	121.46	2.81	0.80	1.35
28.70	32.67	19.55	6.54	127.74	2.85	0.84	1.31
28.75	31.34	18.56	7.22	134.00	2.90	0.89	1.25
28.82	30.84	17.22	7.98	137.47	2.95	0.98	1.23
28.89	31.09	17.35	8.18	141.96	2.96	1.04	1.24
28.95	32.05	17.90	8.03	143.76	2.95	1.07	1.28
29.00	31.96	17.82	8.11	144.50	2.96	1.08	1.27
29.08	31.06	17.26	8.41	145.20	2.98	1.07	1.23
29.14	29.84	16.52	8.83	145.96	3.00	1.06	1.18
29.23	29.10	16.06	9.17	147.18	3.02	1.06	1.15
29.27	28.91	15.94	9.35	149.01	3.03	1.09	1.14
29.34	28.67	15.77	9.58	151.10	3.05	1.12	1.13
29.42	28.45	15.62	9.78	152.73	3.06	1.14	1.12
29.47	28.39	15.56	10.04	156.19	3.07	1.14	1.11
29.54	29.35	16.11	9.95	160.28	3.07	1.26	1.15
29.60	31.84	17.54	9.42	165.23	3.04	1.34	1.25
29.66	36.56	20.28	8.23	166.93	2.97	1.45	1.45
29.73	44.55	26.64	6.38	170.06	2.84	1.53	1.78
29.83	54.02	33.02	5.05	166.59	2.73	1.67	2.17
29.88	62.56	38.85	4.20	163.34	2.65	1.73	2.52
29.93	72.75	45.93	3.43	157.39	2.56	0.84	0.84
30.01	81.88	52.32	2.92	152.68	2.49	0.83	0.83
30.06	91.73	59.33	2.48	147.22	2.42	0.82	0.82
30.15	96.79	62.94	2.28	143.66	2.38	0.82	0.82
30.20	100.17	65.42	2.14	140.23	2.35	0.81	0.81
30.26	101.78	66.54	2.10	139.45	2.34	0.81	0.81
30.34	102.37	66.81	2.11	141.09	2.35	0.81	0.81
30.43	102.83	66.95	2.15	143.82	2.35	0.82	0.82
30.48	102.74	66.77	2.18	145.77	2.36	0.82	0.82
30.52	102.18	66.34	2.19	145.42	2.36	0.82	0.82
30.62	101.55	65.86	2.18	143.50	2.36	0.82	0.82
30.65	102.76	66.93	2.05	136.94	2.33	0.81	0.81
30.75	105.90	69.35	1.88	130.56	2.29	0.80	0.80
30.80	109.50	72.13	1.75	126.22	2.25	0.79	0.79
30.84	112.26	74.17	1.69	125.37	2.23	0.79	0.79
30.94	113.35	74.92	1.66	124.53	2.22	0.79	0.79
30.98	113.16	74.80	1.65	123.47	2.21	0.79	0.79
31.07	110.46	72.70	1.70	123.51	2.23	0.79	0.79
31.12	103.68	67.56	1.87	126.57	2.29	0.79	0.79
31.17	95.59	61.45	2.17	133.54	2.36	0.80	0.80
31.26	85.86	54.25	2.64	143.45	2.45	0.82	0.82
31.31	76.44	47.56	3.16	150.29	2.53	0.83	0.83
31.37	65.91	40.24	3.87	155.66	2.61	1.59	2.58
31.45	58.76	35.65	3.95	140.84	2.62	1.52	2.29
31.53	55.63	33.75	3.78	127.43	2.60	0.80	2.16
31.58	55.64	33.91	3.49	118.39	2.57	0.78	0.78

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.66	58.25	35.45	3.59	127.41	2.58	0.79	0.79
31.71	61.02	37.16	3.60	133.82	2.58	0.80	0.80
31.77	59.31	35.90	3.82	137.26	2.61	1.28	2.30
31.82	58.22	35.11	3.94	138.27	2.62	1.24	2.25
31.89	53.41	31.76	4.55	144.36	2.68	1.24	2.06
31.98	51.51	30.39	4.89	148.69	2.72	1.34	1.98
32.03	44.43	25.63	6.02	154.38	2.81	1.34	1.69
32.12	41.20	23.53	6.41	150.90	2.84	1.18	1.56
32.16	39.22	22.36	6.29	140.61	2.83	1.07	1.48
32.26	38.04	21.66	6.12	132.55	2.82	0.87	1.43
32.31	36.53	20.73	6.14	127.38	2.82	0.84	1.37
32.35	35.34	19.93	6.47	128.86	2.85	0.84	1.32
32.44	35.25	19.83	6.54	129.63	2.85	0.88	1.32
32.49	35.82	20.19	6.41	129.31	2.84	0.86	1.34
32.58	36.33	20.50	6.23	127.83	2.83	0.84	1.36
32.62	35.80	20.14	6.37	128.32	2.84	0.84	1.34
32.71	34.50	19.24	6.80	130.74	2.87	0.86	1.28
32.75	33.72	18.72	7.02	131.49	2.89	0.88	1.25
32.81	35.40	19.82	6.44	127.66	2.85	0.84	1.31
32.91	37.11	20.97	5.83	122.23	2.80	0.78	1.38
32.95	37.27	21.10	5.63	118.75	2.78	0.75	1.38
33.04	35.09	19.67	6.04	118.72	2.81	0.73	1.30
33.09	32.11	17.72	6.76	119.78	2.87	0.71	1.18
33.14	29.53	16.03	7.60	121.81	2.93	0.70	1.08
33.22	27.51	13.94	8.69	121.13	2.99	0.72	1.00
33.28	25.99	13.10	9.25	121.18	3.03	0.71	0.94
33.35	25.00	12.54	9.50	119.10	3.04	0.65	0.90
33.41	24.53	12.27	9.38	115.11	3.03	0.62	0.88
33.50	24.84	12.42	8.99	111.59	3.01	0.57	0.89
33.55	25.71	12.88	8.40	108.29	2.98	0.55	0.92
33.63	26.67	14.25	7.63	108.68	2.93	0.54	0.96
33.69	27.20	14.57	7.43	108.25	2.92	0.54	0.98
33.73	26.67	13.37	8.09	108.19	2.96	0.55	0.95
33.83	25.65	12.79	8.68	111.02	2.99	0.59	0.91
33.87	24.56	12.19	9.33	113.68	3.03	0.60	0.87
33.93	24.16	11.96	9.57	114.46	3.04	0.60	0.85
34.01	24.13	11.92	9.61	114.61	3.05	0.60	0.85
34.05	24.47	12.10	9.45	114.34	3.04	0.60	0.86
34.13	25.06	12.40	9.18	113.90	3.02	0.60	0.89
34.20	25.99	12.89	8.78	113.21	3.00	0.60	0.92
34.29	26.89	13.35	8.43	112.54	2.98	0.60	0.95
34.33	28.17	14.03	8.40	117.92	2.98	0.61	1.00
34.43	29.06	14.49	8.53	123.58	2.98	0.81	1.04
34.46	32.98	17.75	7.27	129.10	2.90	0.82	1.18
34.55	37.08	20.35	6.18	125.76	2.83	0.81	1.34
34.59	43.97	24.84	4.80	119.31	2.71	0.82	1.60
34.68	48.70	27.95	4.11	114.79	2.64	0.81	1.78
34.73	50.90	29.44	3.77	111.06	2.60	0.81	1.86

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.80	48.11	27.66	3.89	107.58	2.62	0.75	1.76
34.87	43.23	24.54	4.24	103.97	2.65	0.61	1.57
34.91	37.23	20.68	4.96	102.55	2.72	0.55	1.34
35.01	32.57	17.61	6.11	107.66	2.82	0.54	1.16
35.06	27.78	13.65	8.55	116.69	2.99	0.64	0.97
35.11	26.67	13.04	10.13	132.09	3.08	0.77	0.93
35.19	28.75	14.12	10.21	144.27	3.08	1.03	1.01
35.24	37.07	18.54	8.21	152.26	2.97	1.15	1.32
35.33	46.99	25.83	6.18	159.57	2.83	1.37	1.70
35.38	61.06	34.69	4.66	161.56	2.70	1.53	2.23
35.46	74.01	42.97	3.77	162.02	2.60	1.78	2.72
35.51	91.47	54.43	2.91	158.66	2.49	0.84	0.84
35.59	106.56	64.54	2.39	154.11	2.40	0.83	0.83
35.65	121.47	74.76	2.01	150.01	2.32	0.83	0.83
35.70	134.89	84.18	1.75	147.30	2.25	0.82	0.82
35.78	148.10	93.46	1.58	148.06	2.19	0.82	0.82
35.83	160.81	102.35	1.49	152.43	2.14	0.83	0.83
35.90	169.10	107.84	1.47	158.29	2.13	0.84	0.84
35.97	167.02	105.75	1.53	162.30	2.17	0.84	0.84
36.04	156.45	97.77	1.69	165.32	2.23	0.85	0.85
36.11	140.67	86.43	1.96	169.73	2.31	0.85	0.85
36.16	123.83	74.66	2.37	177.23	2.40	0.86	0.86
36.25	110.32	65.31	2.86	186.77	2.48	0.87	0.87
36.29	102.76	60.10	3.26	196.04	2.54	0.88	0.88
36.36	95.03	54.83	3.74	205.23	2.60	0.89	0.89
36.43	96.72	55.81	3.71	206.93	2.59	0.89	0.89
36.52	107.02	62.57	3.18	198.69	2.53	0.89	0.89
36.58	130.32	78.31	2.33	182.61	2.39	0.87	0.87
36.62	163.22	100.90	1.76	177.18	2.25	0.86	0.86
36.70	188.50	118.34	1.55	182.85	2.17	0.87	0.87
36.75	205.24	129.68	1.48	191.75	2.14	0.88	0.88
36.83	200.18	125.74	1.53	192.16	2.16	0.88	0.88
36.89	179.59	110.96	1.73	191.71	2.24	0.88	0.88
36.97	156.77	94.79	2.10	199.15	2.34	0.89	0.89
37.03	144.14	85.87	2.44	209.65	2.41	0.90	0.90
37.08	139.67	82.68	2.60	215.29	2.44	0.90	0.90
37.17	145.28	86.43	2.43	209.96	2.41	0.90	0.90
37.21	151.62	91.12	2.16	196.56	2.36	0.88	0.88
37.31	159.72	97.16	1.88	182.29	2.29	0.87	0.87
37.35	151.46	92.19	1.84	169.63	2.28	0.85	0.85
37.41	123.08	73.59	2.13	156.67	2.35	0.84	0.84
37.49	93.09	54.34	2.60	141.08	2.44	0.81	0.81
37.54	75.02	42.95	3.03	130.06	2.51	0.80	0.80
37.63	70.84	40.17	3.28	131.80	2.54	0.80	0.80
37.68	71.32	39.93	3.83	152.74	2.61	1.45	2.50
37.77	69.01	38.09	4.42	168.36	2.67	1.88	2.42
37.80	78.02	43.75	3.81	166.51	2.61	1.83	2.74
37.89	85.01	48.22	3.36	161.99	2.55	0.84	0.84

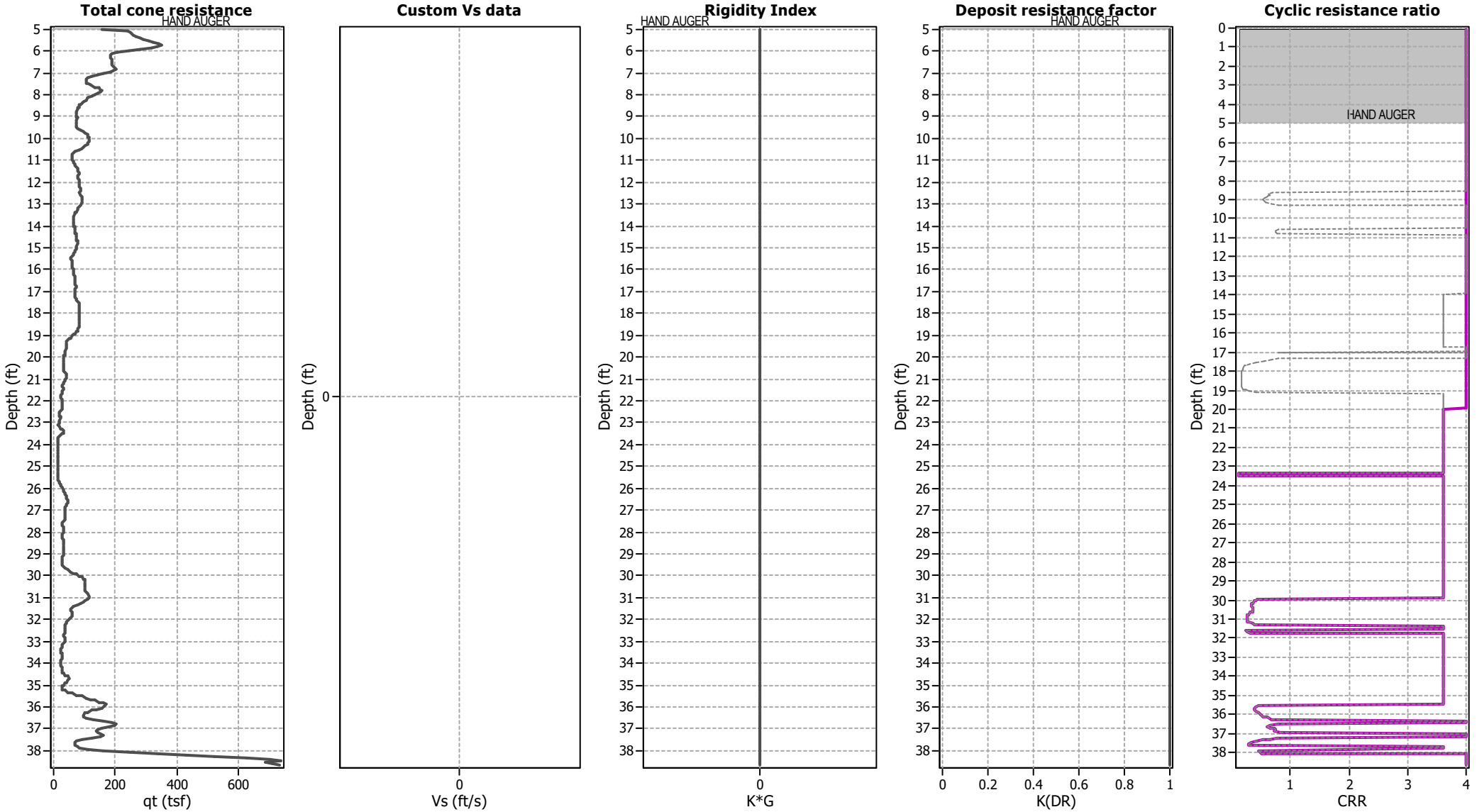
:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.94	110.12	64.40	2.48	159.94	2.42	0.84	0.84
38.02	162.77	99.43	1.67	165.55	2.22	0.85	0.85
38.07	249.76	159.76	1.31	208.62	2.00	0.90	0.90
38.13	336.89	222.73	1.19	264.08	1.83	0.95	0.95
38.19	427.32	291.06	1.00	291.06	1.68	0.97	0.97
38.27	519.91	356.88	1.00	356.88	1.41	1.02	1.02
38.34	626.41	430.08	1.00	430.08	1.07	1.07	1.07
38.41	699.19	-1.00	1.00	-1.00	-1.00	0.00	0.00
38.46	738.05	-1.00	1.00	-1.00	-1.00	0.00	0.00
38.52	685.69	-1.00	1.00	-1.00	-1.00	0.00	0.00
38.59	709.10	-1.00	1.00	-1.00	-1.00	0.00	0.00
38.66	731.71	-1.00	1.00	-1.00	-1.00	0.00	0.00

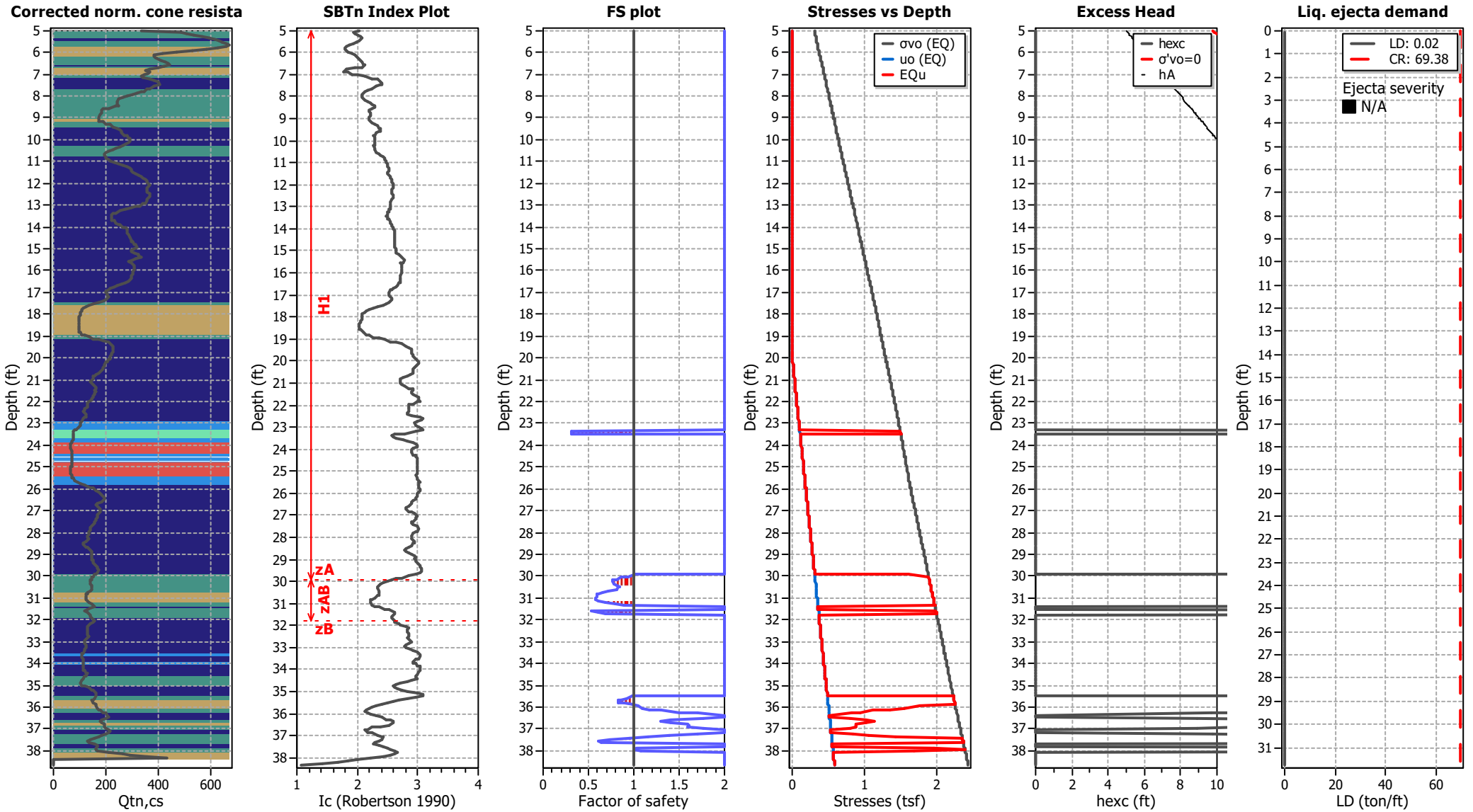
Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

Aging Calculation Estimation



Ejecta Severity Estimation



Verdantas Inc.
2600 Michelson Drive, Suite 400
Irvine, California 92612
http://www.geologismiki.gr

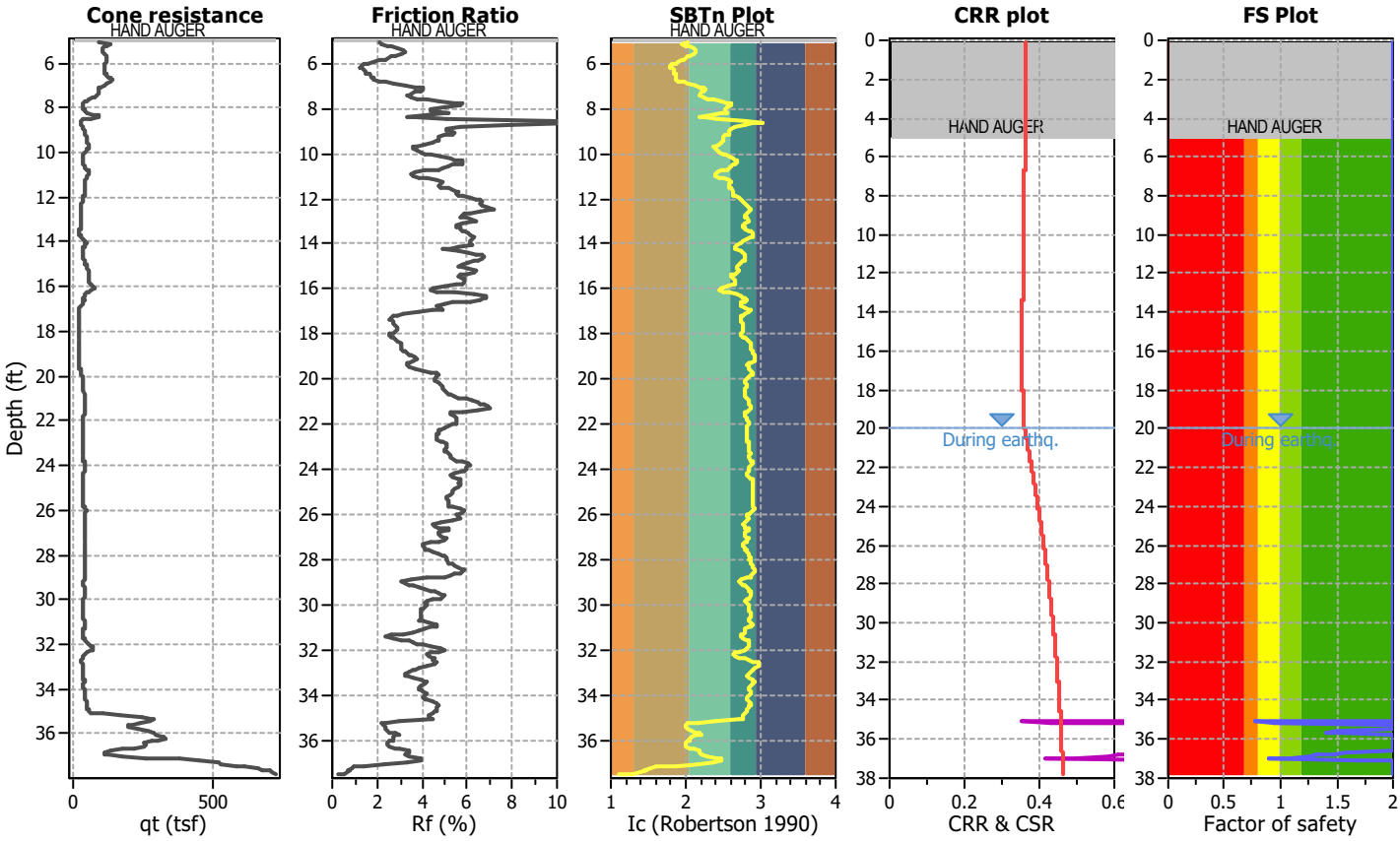
LIQUEFACTION ANALYSIS REPORT

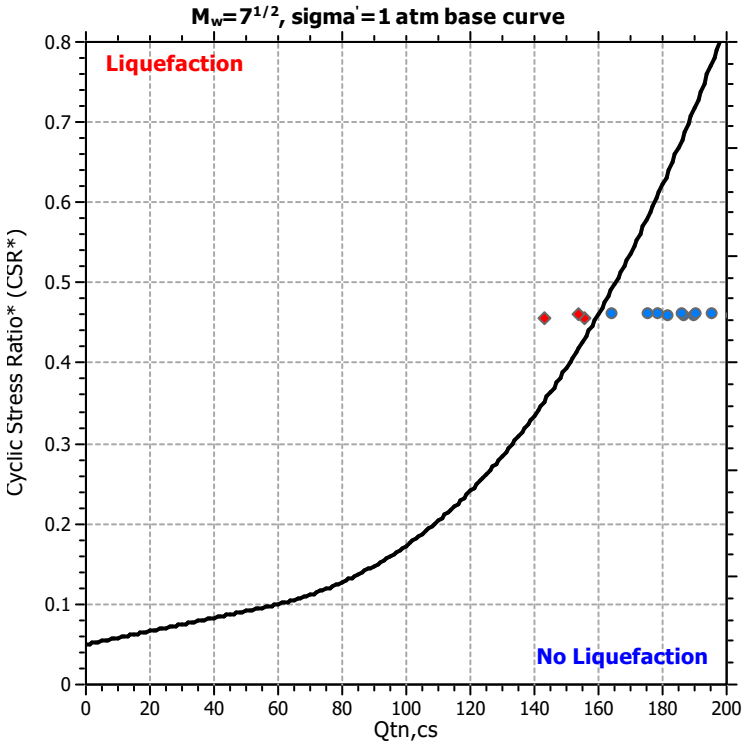
Project title : Intracorp Diamond Bar Montefino **Location : 1400 Montefino Avenue, Diamond Bar, CA**

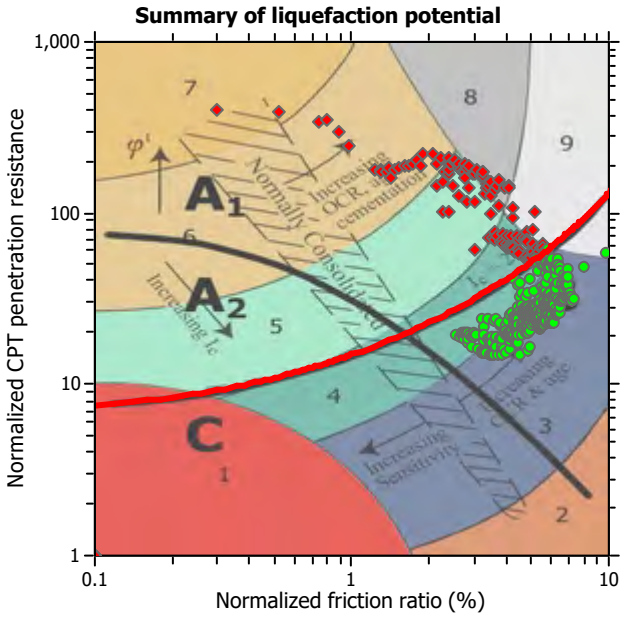
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	31.65 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	45.00 ft
Earthquake magnitude M_w:	6.11	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.95	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

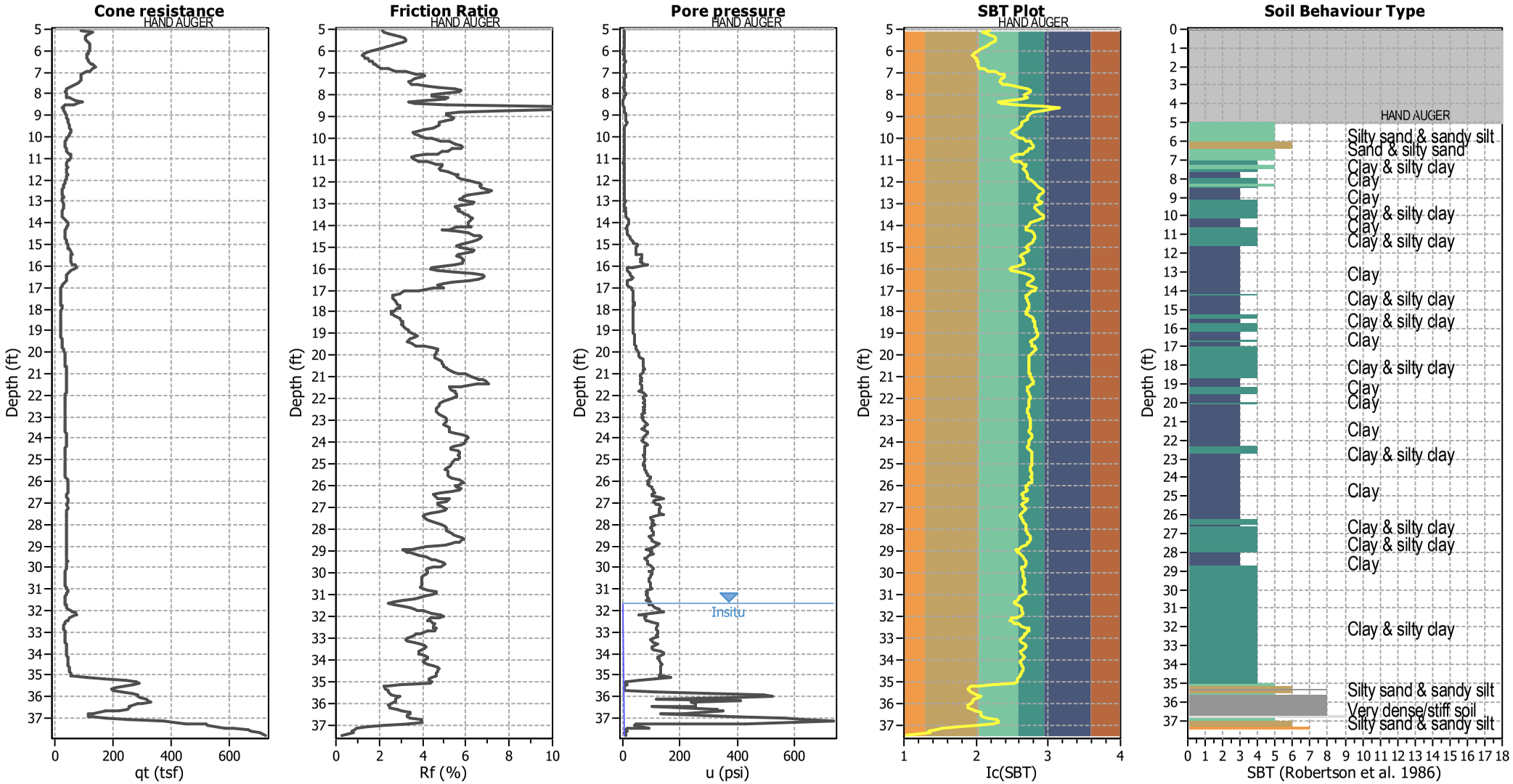






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



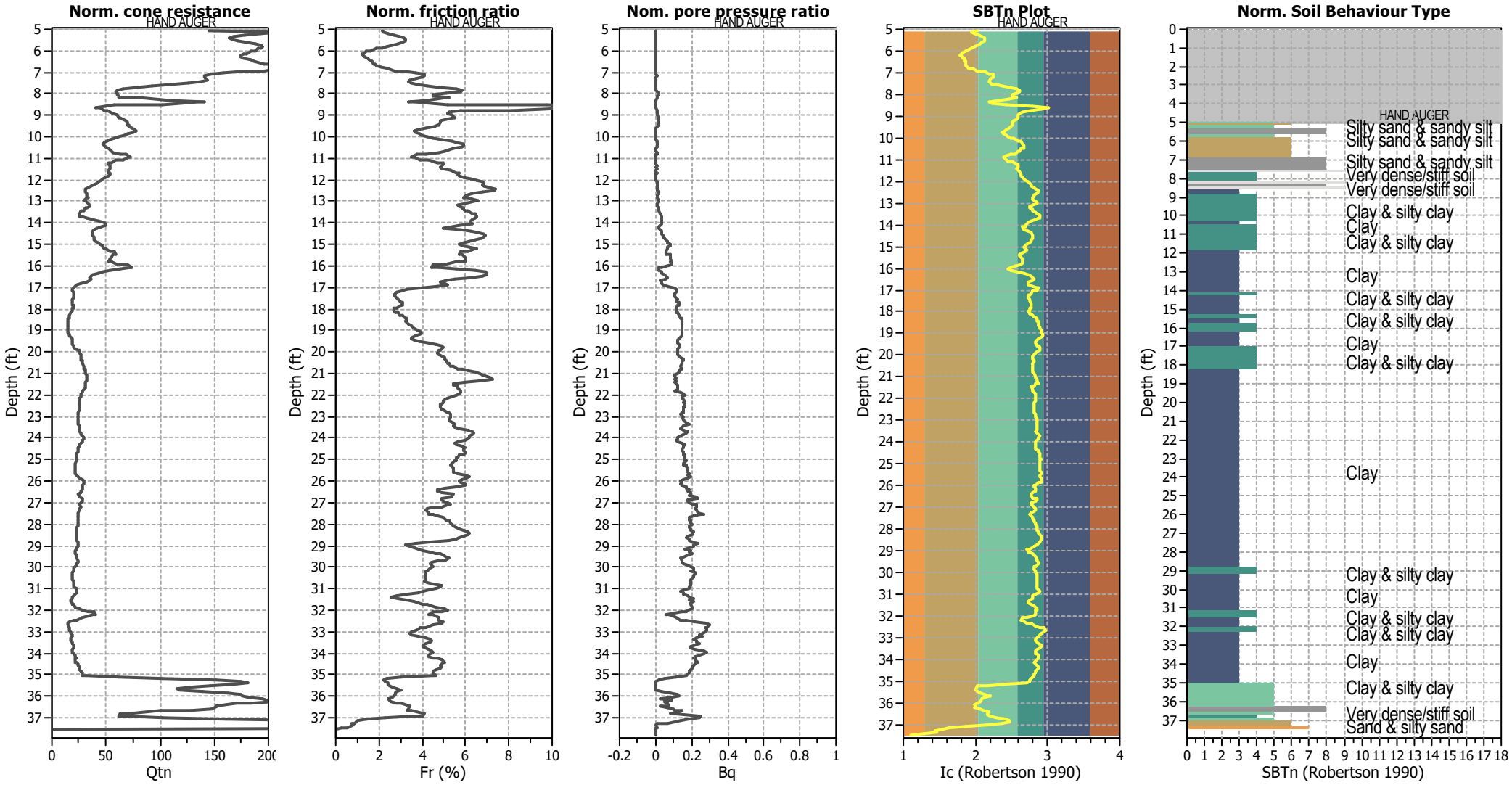
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBT legend

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

CPT basic interpretation plots (normalized)



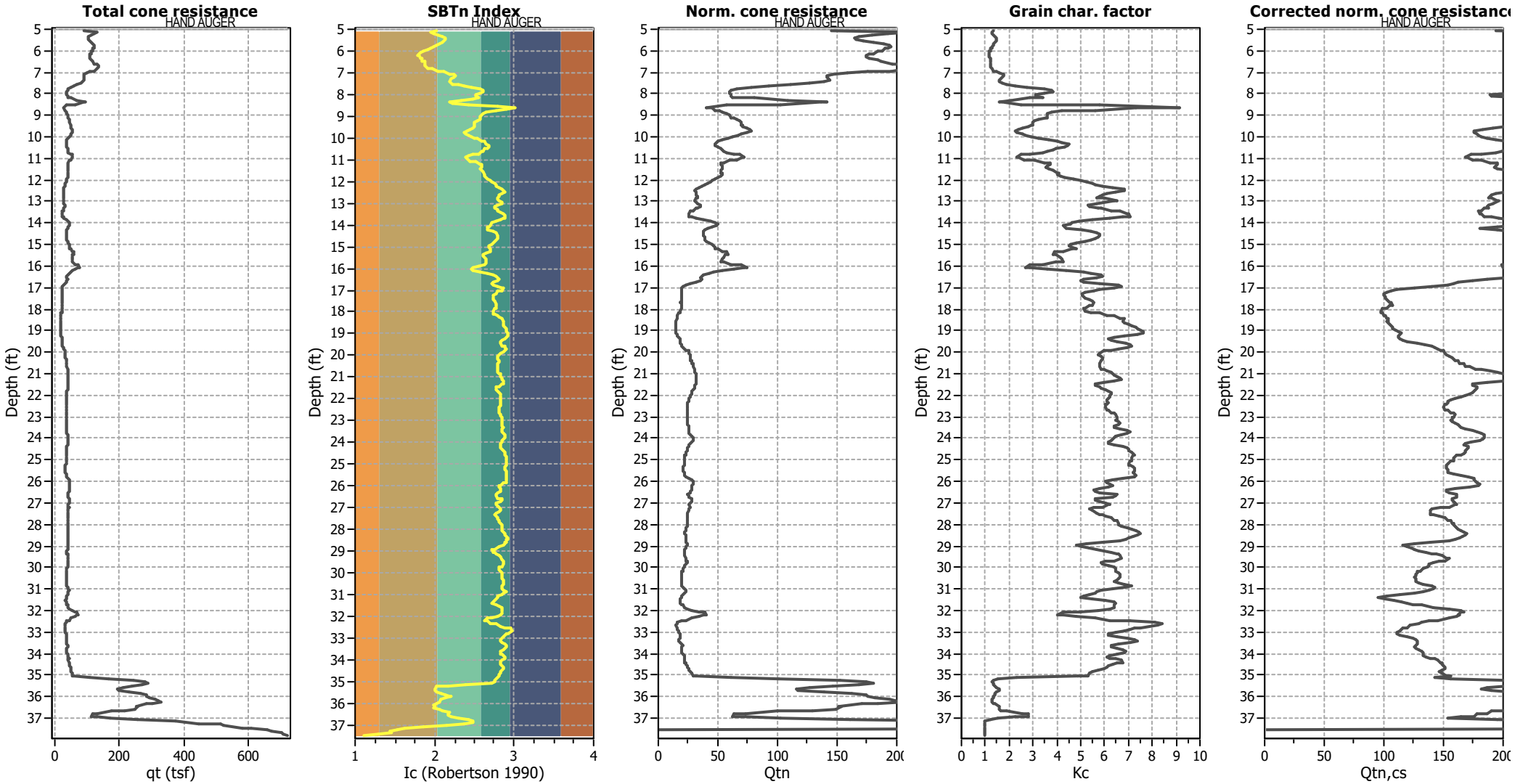
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

SBTn legend

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

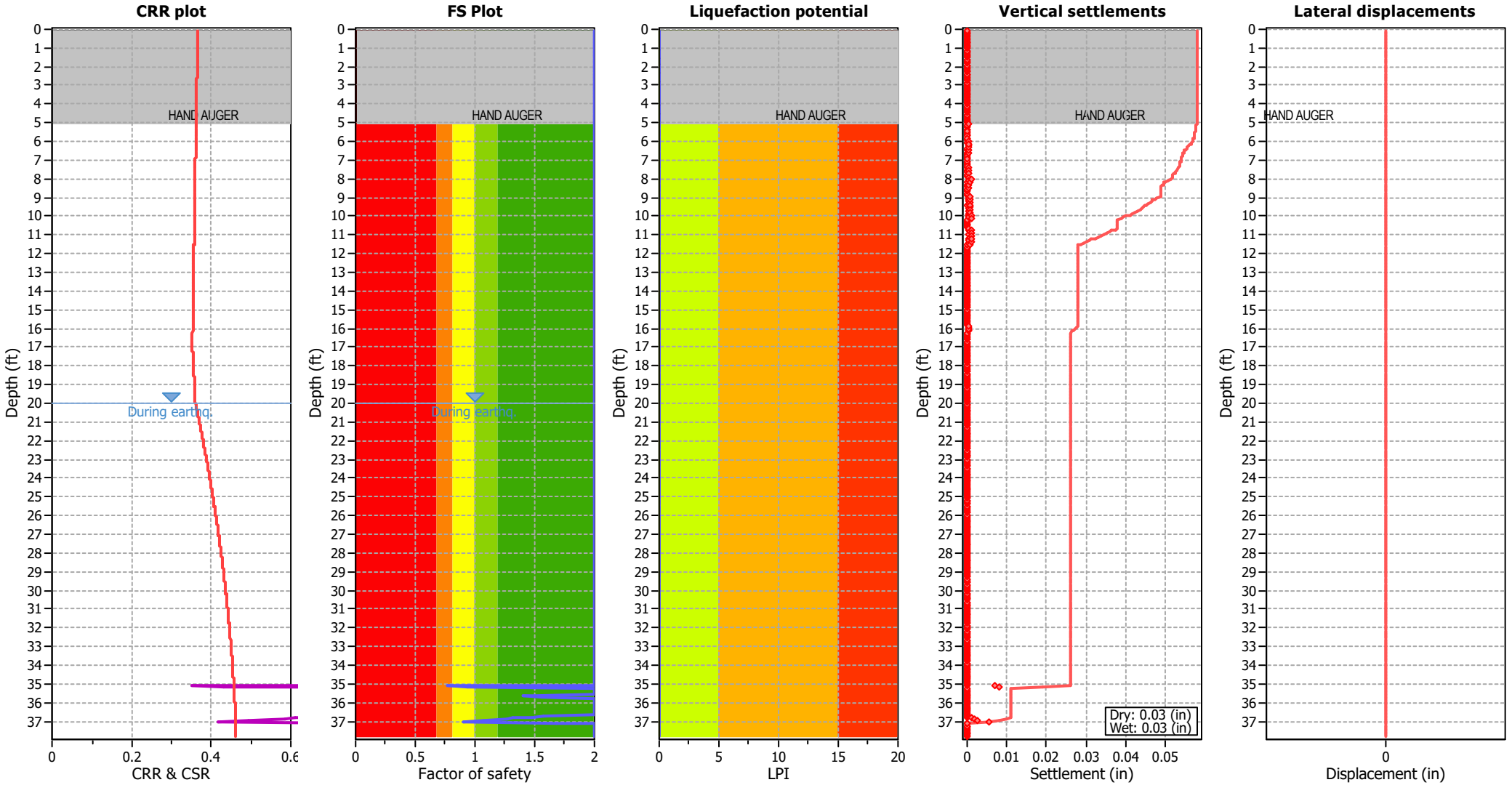
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

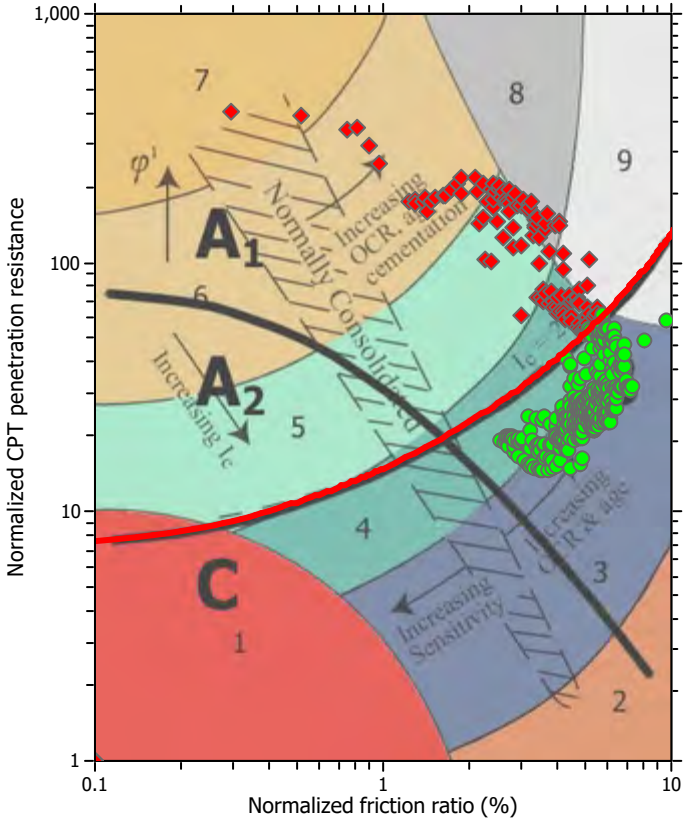
F.S. color scheme

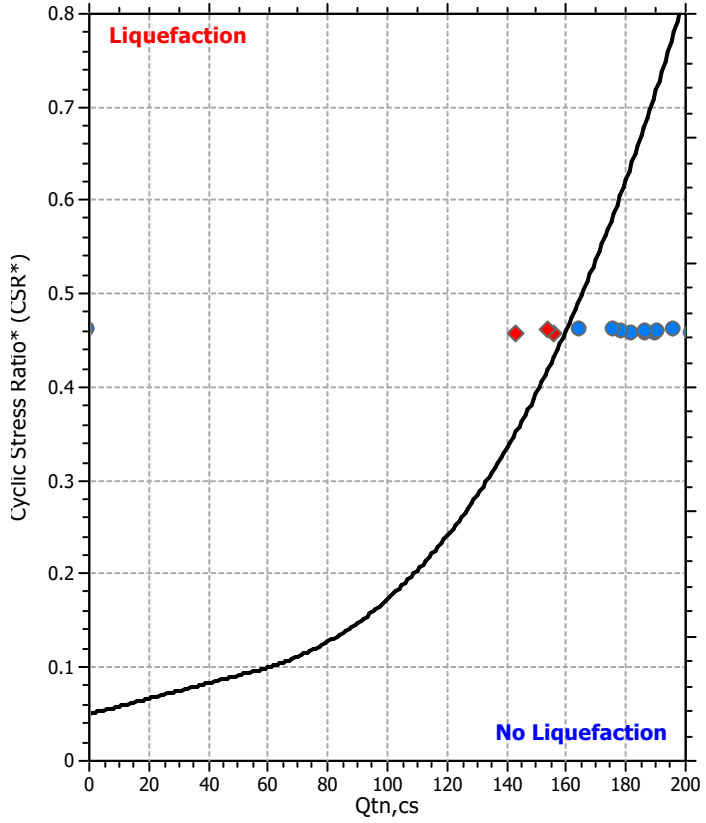
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

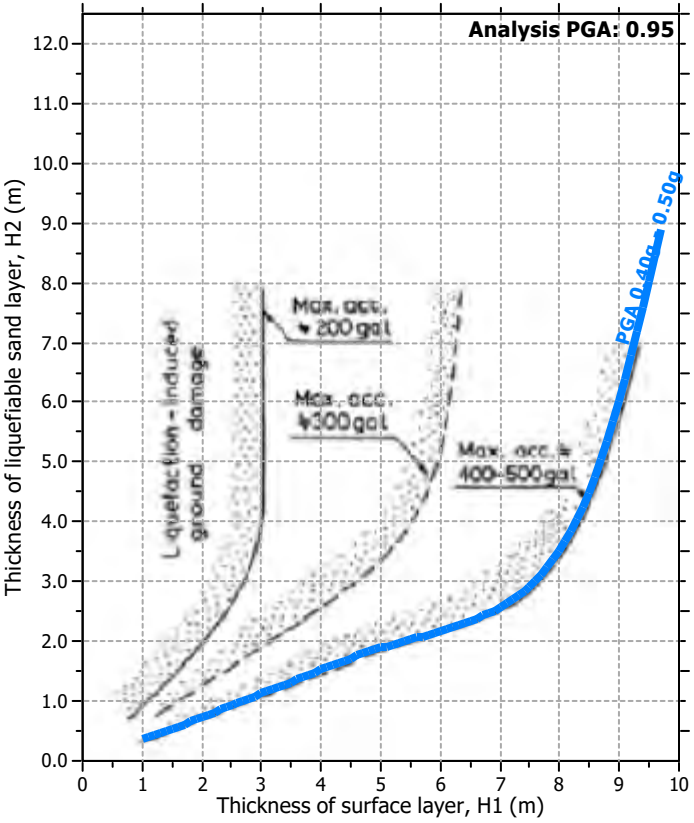
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



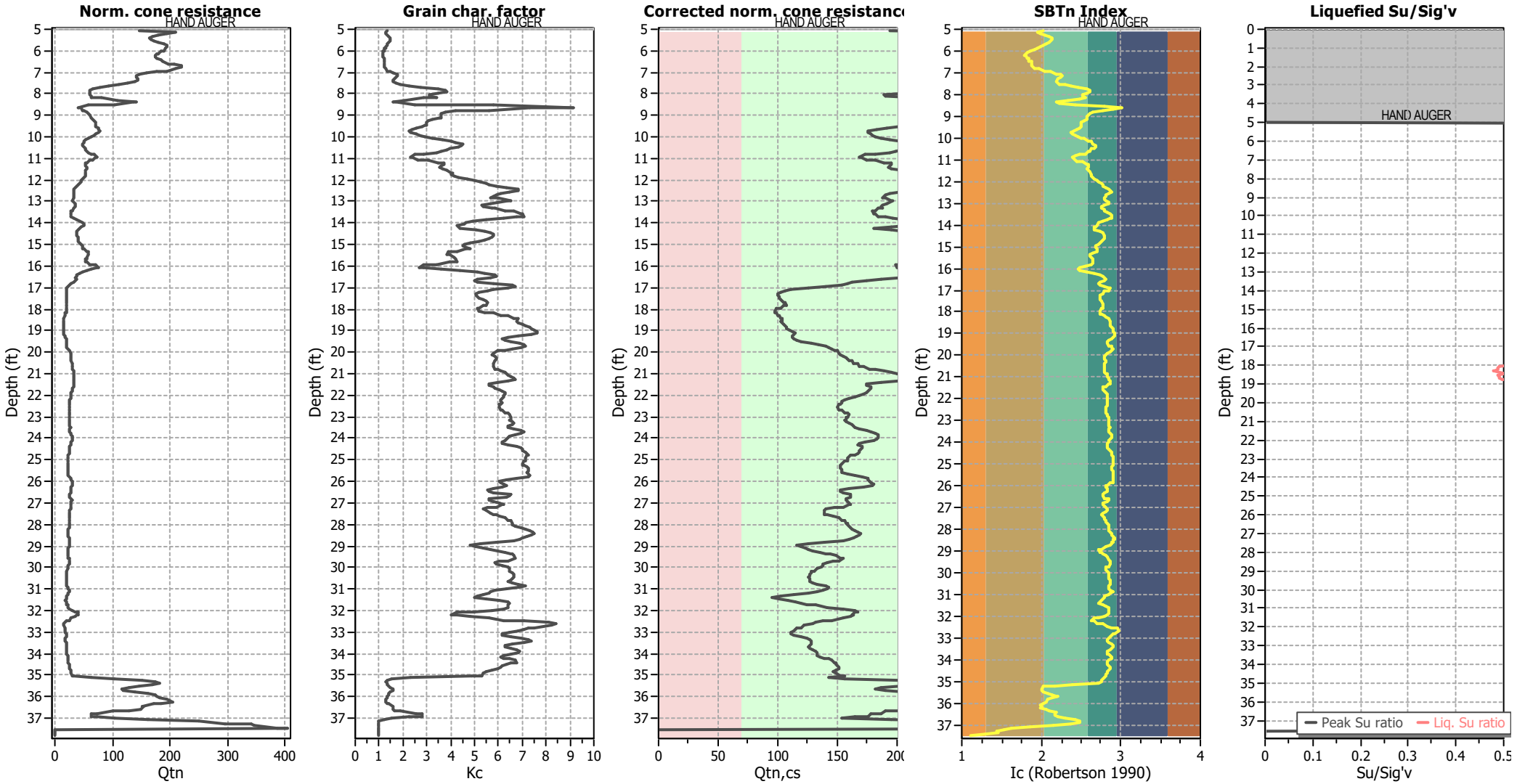




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.11	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.95	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	31.65 ft	Fill height:	N/A	Limit depth:	45.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.09	-9999.00	-9999.00	-9999.00	N/A	120.90
2	0.13	-9999.00	-9999.00	-9999.00	N/A	120.90
3	0.22	-9999.00	-9999.00	-9999.00	N/A	120.90
4	0.27	-9999.00	-9999.00	-9999.00	N/A	120.90
5	0.36	-9999.00	-9999.00	-9999.00	N/A	120.90
6	0.41	-9999.00	-9999.00	-9999.00	N/A	120.90
7	0.51	-9999.00	-9999.00	-9999.00	N/A	120.90
8	0.54	-9999.00	-9999.00	-9999.00	N/A	120.90
9	0.60	-9999.00	-9999.00	-9999.00	N/A	120.90
10	0.69	-9999.00	-9999.00	-9999.00	N/A	120.90
11	0.73	-9999.00	-9999.00	-9999.00	N/A	120.90
12	0.82	-9999.00	-9999.00	-9999.00	N/A	120.90
13	0.86	-9999.00	-9999.00	-9999.00	N/A	120.90
14	0.95	-9999.00	-9999.00	-9999.00	N/A	120.90
15	0.98	-9999.00	-9999.00	-9999.00	N/A	120.90
16	1.05	-9999.00	-9999.00	-9999.00	N/A	120.90
17	1.14	-9999.00	-9999.00	-9999.00	N/A	120.90
18	1.19	-9999.00	-9999.00	-9999.00	N/A	120.90
19	1.28	-9999.00	-9999.00	-9999.00	N/A	120.90
20	1.32	-9999.00	-9999.00	-9999.00	N/A	120.90
21	1.38	-9999.00	-9999.00	-9999.00	N/A	120.90
22	1.47	-9999.00	-9999.00	-9999.00	N/A	120.90
23	1.51	-9999.00	-9999.00	-9999.00	N/A	120.90
24	1.61	-9999.00	-9999.00	-9999.00	N/A	120.90
25	1.64	-9999.00	-9999.00	-9999.00	N/A	120.90
26	1.71	-9999.00	-9999.00	-9999.00	N/A	120.90
27	1.79	-9999.00	-9999.00	-9999.00	N/A	120.90
28	1.84	-9999.00	-9999.00	-9999.00	N/A	120.90
29	1.92	-9999.00	-9999.00	-9999.00	N/A	120.90
30	1.98	-9999.00	-9999.00	-9999.00	N/A	120.90
31	2.04	-9999.00	-9999.00	-9999.00	N/A	120.90
32	2.12	-9999.00	-9999.00	-9999.00	N/A	120.90
33	2.17	-9999.00	-9999.00	-9999.00	N/A	120.90
34	2.26	-9999.00	-9999.00	-9999.00	N/A	120.90
35	2.31	-9999.00	-9999.00	-9999.00	N/A	120.90
36	2.41	-9999.00	-9999.00	-9999.00	N/A	120.90
37	2.44	-9999.00	-9999.00	-9999.00	N/A	120.90
38	2.52	-9999.00	-9999.00	-9999.00	N/A	120.90
39	2.59	-9999.00	-9999.00	-9999.00	N/A	120.90
40	2.67	-9999.00	-9999.00	-9999.00	N/A	120.90
41	2.72	-9999.00	-9999.00	-9999.00	N/A	120.90
42	2.77	-9999.00	-9999.00	-9999.00	N/A	120.90
43	2.86	-9999.00	-9999.00	-9999.00	N/A	120.90
44	2.90	-9999.00	-9999.00	-9999.00	N/A	120.90
45	2.99	-9999.00	-9999.00	-9999.00	N/A	120.90
46	3.04	-9999.00	-9999.00	-9999.00	N/A	120.90
47	3.09	-9999.00	-9999.00	-9999.00	N/A	120.90
48	3.17	-9999.00	-9999.00	-9999.00	N/A	120.90

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.22	-9999.00	-9999.00	-9999.00	N/A	120.90
50	3.28	-9999.00	-9999.00	-9999.00	N/A	120.90
51	3.36	-9999.00	-9999.00	-9999.00	N/A	120.90
52	3.46	-9999.00	-9999.00	-9999.00	N/A	120.90
53	3.50	-9999.00	-9999.00	-9999.00	N/A	120.90
54	3.55	-9999.00	-9999.00	-9999.00	N/A	120.90
55	3.63	-9999.00	-9999.00	-9999.00	N/A	120.90
56	3.68	-9999.00	-9999.00	-9999.00	N/A	120.90
57	3.77	-9999.00	-9999.00	-9999.00	N/A	120.90
58	3.82	-9999.00	-9999.00	-9999.00	N/A	120.90
59	3.90	-9999.00	-9999.00	-9999.00	N/A	120.90
60	3.95	-9999.00	-9999.00	-9999.00	N/A	120.90
61	4.00	-9999.00	-9999.00	-9999.00	N/A	120.90
62	4.10	-9999.00	-9999.00	-9999.00	N/A	120.90
63	4.14	-9999.00	-9999.00	-9999.00	N/A	120.90
64	4.20	-9999.00	-9999.00	-9999.00	N/A	120.90
65	4.29	-9999.00	-9999.00	-9999.00	N/A	120.90
66	4.33	-9999.00	-9999.00	-9999.00	N/A	120.90
67	4.42	-9999.00	-9999.00	-9999.00	N/A	120.90
68	4.48	-9999.00	-9999.00	-9999.00	N/A	120.90
69	4.56	-9999.00	-9999.00	-9999.00	N/A	120.90
70	4.59	-9999.00	-9999.00	-9999.00	N/A	120.90
71	4.67	-9999.00	-9999.00	-9999.00	N/A	120.90
72	4.75	-9999.00	-9999.00	-9999.00	N/A	120.90
73	4.80	-9999.00	-9999.00	-9999.00	N/A	120.90
74	4.88	-9999.00	-9999.00	-9999.00	N/A	120.90
75	4.92	-9999.00	-9999.00	-9999.00	N/A	120.90
76	5.00	-9999.00	-9999.00	-9999.00	N/A	120.90
77	5.07	142.36	2.89	2.81	13.79	126.10
78	5.17	129.05	2.92	2.45	11.46	129.96
79	5.22	120.86	2.90	3.35	12.83	129.80
80	5.26	111.26	2.95	3.54	14.27	129.76
81	5.34	103.07	3.09	3.90	15.72	129.85
82	5.40	100.65	3.20	3.99	16.66	130.13
83	5.49	103.91	3.39	2.54	16.85	130.45
84	5.54	106.98	3.48	2.17	16.55	130.75
85	5.58	111.26	3.50	1.99	15.65	130.82
86	5.67	118.99	3.34	3.26	14.56	130.74
87	5.72	122.62	3.21	3.44	13.43	130.33
88	5.81	121.23	2.86	2.99	12.50	129.71
89	5.86	121.60	2.56	1.99	11.62	128.81
90	5.92	118.06	2.23	1.45	10.57	127.73
91	6.00	117.22	1.84	0.27	9.53	126.56
92	6.04	116.67	1.61	1.50	8.57	125.30
93	6.13	111.36	1.37	0.64	8.17	124.48
94	6.18	108.94	1.36	1.54	8.00	124.01
95	6.24	110.80	1.36	1.18	8.42	124.23
96	6.32	106.80	1.51	1.36	8.76	124.65

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.37	110.24	1.61	1.72	9.19	125.28
98	6.46	114.62	1.74	5.17	9.19	125.88
99	6.51	119.27	1.86	8.43	9.75	126.65
100	6.60	115.36	2.16	3.72	9.76	127.45
101	6.64	132.49	2.30	3.17	9.78	128.30
102	6.70	139.48	2.52	2.72	9.73	129.14
103	6.78	138.27	2.86	1.99	10.56	129.90
104	6.84	133.33	3.13	1.99	12.12	130.49
105	6.93	121.13	3.38	1.99	13.93	130.81
106	6.97	111.36	3.51	2.45	16.43	130.99
107	7.06	96.83	3.75	5.08	18.82	130.96
108	7.11	88.36	3.71	6.16	20.65	130.85
109	7.16	88.31	3.64	8.16	21.01	130.59
110	7.23	88.31	3.46	6.25	20.50	130.28
111	7.29	88.27	3.27	5.44	19.54	129.85
112	7.39	90.97	3.01	3.81	18.77	129.46
113	7.44	89.94	2.94	2.54	18.75	128.94
114	7.52	79.61	2.74	1.27	20.03	128.35
115	7.57	68.53	2.58	0.72	22.22	127.57
116	7.62	59.96	2.44	1.27	25.50	126.73
117	7.69	46.93	2.30	0.18	29.22	125.98
118	7.75	41.15	2.26	1.27	33.65	125.40
119	7.81	36.78	2.28	2.36	35.57	125.01
120	7.90	37.43	2.12	5.26	35.82	124.62
121	7.95	37.52	1.97	7.07	33.68	123.86
122	8.04	38.27	1.62	7.07	31.59	122.98
123	8.08	38.45	1.46	5.62	31.37	123.15
124	8.17	39.48	2.06	4.26	33.52	124.41
125	8.20	39.85	2.56	3.90	29.75	126.72
126	8.31	73.18	3.04	-1.09	23.96	128.41
127	8.36	94.69	3.11	-1.90	18.57	129.65
128	8.40	112.85	3.19	-1.72	19.86	129.81
129	8.49	61.17	3.38	-0.27	27.32	129.31
130	8.54	22.07	3.47	0.64	45.61	128.21
131	8.63	25.98	3.65	1.36	59.83	127.42
132	8.67	28.21	3.50	1.63	52.35	126.65
133	8.77	30.63	2.08	3.90	44.89	125.10
134	8.81	32.40	1.71	5.08	38.01	123.17
135	8.87	33.43	1.70	4.62	35.49	123.06
136	8.95	37.34	1.88	6.16	34.55	123.64
137	9.00	39.48	2.02	6.71	34.46	124.49
138	9.09	39.76	2.28	9.06	34.49	124.97
139	9.14	41.06	2.23	9.06	33.99	125.21
140	9.19	43.30	2.17	9.06	32.45	125.26
141	9.28	46.37	2.20	10.15	31.05	125.40
142	9.32	48.60	2.23	11.42	30.90	125.53
143	9.43	45.25	2.25	9.43	30.78	125.62
144	9.45	48.28	2.26	9.06	30.31	125.62

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.54	51.02	2.20	4.62	29.72	125.56
146	9.59	47.95	2.15	3.54	27.92	125.42
147	9.67	56.42	2.02	3.72	26.54	125.25
148	9.72	57.36	1.97	2.81	25.43	125.05
149	9.81	52.79	1.94	2.17	26.19	124.83
150	9.86	50.28	1.92	1.54	27.63	124.56
151	9.95	47.21	1.88	1.27	28.70	124.33
152	10.00	45.90	1.85	1.09	30.37	124.00
153	10.04	40.13	1.81	1.90	32.23	123.79
154	10.13	38.17	1.85	2.36	34.76	123.61
155	10.18	35.75	1.87	2.81	36.85	123.64
156	10.28	33.71	1.94	2.81	37.99	123.73
157	10.32	35.66	1.96	2.81	39.33	123.84
158	10.41	32.77	2.01	2.81	39.29	124.07
159	10.46	35.57	2.09	2.90	38.66	124.31
160	10.51	39.20	2.10	2.27	36.60	124.48
161	10.60	40.50	2.01	1.63	35.81	124.41
162	10.64	38.08	1.99	2.63	34.62	124.39
163	10.73	43.39	2.01	3.99	33.39	124.48
164	10.78	46.09	1.99	4.17	30.04	124.72
165	10.83	54.38	1.94	2.81	27.58	124.86
166	10.92	57.26	1.94	2.54	26.03	124.95
167	10.96	56.14	1.95	1.81	26.61	124.90
168	11.05	50.74	1.95	1.36	28.46	124.74
169	11.10	46.09	1.95	1.00	31.23	124.49
170	11.19	41.15	1.95	0.54	33.72	124.32
171	11.24	39.66	1.97	0.72	35.26	124.28
172	11.29	40.32	2.01	0.82	35.25	124.37
173	11.38	41.99	2.01	3.35	34.64	124.49
174	11.43	43.02	2.01	2.81	34.25	124.55
175	11.50	42.36	2.02	3.17	34.72	124.65
176	11.56	41.34	2.11	2.99	35.96	125.02
177	11.66	41.43	2.35	2.54	37.02	125.39
178	11.68	41.81	2.37	3.35	37.17	125.73
179	11.76	43.48	2.40	2.45	36.90	125.75
180	11.84	42.83	2.34	1.81	37.46	125.65
181	11.90	39.39	2.33	2.45	38.61	125.48
182	11.95	38.45	2.32	1.99	40.41	125.36
183	12.01	36.50	2.36	2.45	41.83	125.32
184	12.09	35.10	2.37	3.26	43.11	125.17
185	12.17	34.17	2.28	2.81	44.14	124.85
186	12.22	32.12	2.16	2.45	44.73	124.31
187	12.29	30.54	1.98	2.45	46.25	123.71
188	12.35	27.56	1.91	2.45	48.25	123.14
189	12.45	25.23	1.86	3.90	50.29	122.80
190	12.47	25.33	1.83	4.53	50.47	122.48
191	12.54	25.79	1.71	5.71	48.87	122.17
192	12.63	26.81	1.60	5.71	47.14	121.91

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.68	27.56	1.61	4.89	46.31	121.81
194	12.74	27.09	1.62	4.17	45.70	121.88
195	12.81	28.49	1.61	4.53	45.26	121.94
196	12.87	28.96	1.62	4.53	46.52	121.92
197	12.96	24.58	1.66	4.80	48.94	121.86
198	13.00	23.84	1.67	5.98	48.57	122.00
199	13.08	30.35	1.69	4.99	45.29	122.37
200	13.14	33.05	1.74	4.62	43.32	122.56
201	13.23	29.42	1.69	5.17	43.73	122.48
202	13.28	29.14	1.65	5.44	45.33	122.15
203	13.33	27.93	1.61	6.71	45.94	121.72
204	13.42	26.16	1.47	5.62	47.90	121.15
205	13.46	23.00	1.41	6.25	49.52	120.65
206	13.54	23.09	1.41	7.52	51.02	120.46
207	13.60	23.09	1.42	8.79	51.28	120.59
208	13.69	23.18	1.48	9.43	51.48	120.85
209	13.72	23.93	1.54	10.15	50.09	121.62
210	13.79	28.58	1.79	13.78	47.67	122.72
211	13.85	32.87	2.04	17.13	44.40	124.27
212	13.92	39.76	2.44	19.85	41.75	125.69
213	14.01	45.25	2.76	20.49	40.11	126.76
214	14.06	46.55	2.89	19.04	39.72	127.36
215	14.11	46.37	2.99	13.60	38.26	126.37
216	14.20	42.64	1.71	11.60	38.47	125.18
217	14.25	36.87	1.91	9.15	38.86	123.79
218	14.31	35.47	2.02	10.97	42.30	124.17
219	14.38	35.20	2.14	14.69	44.07	124.59
220	14.48	34.92	2.31	14.69	45.11	124.93
221	14.50	35.10	2.33	15.59	45.80	125.23
222	14.58	35.29	2.41	19.13	45.84	125.46
223	14.63	36.41	2.50	21.12	45.33	125.58
224	14.72	37.24	2.41	24.66	44.73	125.58
225	14.77	36.96	2.37	28.01	43.93	125.42
226	14.84	37.52	2.32	32.81	42.85	125.43
227	14.90	40.41	2.34	35.81	41.09	125.60
228	14.99	43.39	2.41	48.31	39.66	125.97
229	15.04	45.06	2.54	51.03	39.42	126.61
230	15.13	46.37	2.88	43.69	40.11	127.20
231	15.18	46.18	3.01	42.51	40.97	127.67
232	15.22	46.18	3.08	45.69	40.11	128.01
233	15.31	52.70	3.17	43.01	38.05	128.40
234	15.36	58.38	3.25	44.60	36.14	128.73
235	15.44	58.47	3.29	43.51	35.75	128.80
236	15.50	55.31	3.21	62.37	36.70	128.69
237	15.57	52.61	3.21	62.09	37.49	128.58
238	15.64	53.72	3.22	62.09	37.82	128.49
239	15.69	53.17	3.13	61.82	37.77	128.35
240	15.77	51.68	3.05	65.36	38.10	128.18

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.82	50.93	3.05	60.37	36.46	128.23
242	15.91	60.89	3.05	76.14	33.37	128.53
243	15.96	70.30	3.10	86.21	29.81	129.13
244	16.05	80.26	3.37	34.35	28.81	129.62
245	16.10	75.79	3.49	15.95	30.11	129.90
246	16.14	66.29	3.57	12.87	34.35	129.70
247	16.24	51.77	3.57	15.32	38.95	129.26
248	16.28	48.42	3.39	20.30	42.51	128.47
249	16.38	44.51	2.93	21.57	44.11	127.63
250	16.42	39.39	2.76	24.75	45.90	126.59
251	16.50	35.10	2.47	29.19	46.16	125.91
252	16.56	39.11	2.32	33.72	45.26	125.27
253	16.61	37.62	2.16	29.01	42.48	124.61
254	16.70	38.83	1.80	13.78	41.81	123.68
255	16.74	35.38	1.63	14.01	42.37	122.37
256	16.83	28.40	1.38	12.87	45.70	121.22
257	16.88	25.05	1.30	14.23	49.24	119.92
258	16.93	22.72	1.12	19.13	49.73	118.21
259	17.00	20.76	0.70	27.56	48.55	116.42
260	17.06	20.39	0.68	30.91	45.75	114.75
261	17.16	21.32	0.62	31.55	44.50	114.39
262	17.21	21.60	0.59	32.54	42.88	114.00
263	17.26	21.79	0.57	32.36	42.27	113.87
264	17.35	21.97	0.58	32.32	42.08	113.85
265	17.40	21.97	0.58	32.27	42.43	113.98
266	17.46	21.69	0.60	33.90	42.86	114.03
267	17.53	21.51	0.60	34.27	43.58	114.08
268	17.62	21.04	0.60	33.72	44.15	114.12
269	17.67	21.04	0.62	35.08	44.56	114.25
270	17.72	21.32	0.64	36.71	44.63	114.57
271	17.81	21.97	0.68	37.53	44.40	114.76
272	17.85	22.16	0.66	36.08	43.73	114.65
273	17.95	22.16	0.60	34.35	42.95	114.26
274	18.00	22.16	0.58	34.27	42.42	113.80
275	18.09	21.60	0.55	33.27	42.88	113.52
276	18.14	20.67	0.55	32.72	44.00	113.32
277	18.18	19.83	0.55	32.45	45.59	113.19
278	18.27	18.90	0.54	33.09	47.02	113.07
279	18.32	18.44	0.54	32.54	48.58	113.09
280	18.41	17.88	0.57	33.90	49.64	113.17
281	18.46	17.88	0.57	34.08	50.24	113.23
282	18.54	17.88	0.56	34.81	50.15	113.18
283	18.60	17.97	0.56	35.17	50.11	113.15
284	18.64	17.88	0.56	35.17	50.30	113.21
285	18.72	17.88	0.57	35.17	51.12	113.30
286	18.77	17.32	0.59	35.17	51.78	113.43
287	18.84	17.50	0.60	34.72	52.48	113.55
288	18.91	17.50	0.61	34.35	52.65	113.69

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.96	17.60	0.62	34.08	53.26	114.03
290	19.05	17.78	0.68	34.27	53.79	114.40
291	19.10	17.97	0.70	35.08	53.80	114.76
292	19.18	18.62	0.71	37.08	52.62	114.85
293	19.24	19.46	0.68	38.80	50.48	115.02
294	19.29	21.23	0.71	38.71	48.61	115.38
295	19.37	22.44	0.77	37.89	47.31	115.79
296	19.43	22.90	0.77	37.89	47.92	116.22
297	19.54	21.88	0.84	37.89	48.91	116.67
298	19.58	22.63	0.92	37.89	50.59	117.54
299	19.67	23.46	1.08	40.16	51.40	118.39
300	19.71	23.84	1.16	42.60	51.78	119.13
301	19.77	24.86	1.22	43.96	51.00	119.60
302	19.82	26.63	1.26	45.51	49.40	120.19
303	19.91	29.14	1.38	48.04	47.82	120.81
304	19.95	30.82	1.46	50.58	46.42	121.35
305	20.04	32.22	1.48	53.66	45.62	121.66
306	20.09	32.59	1.50	55.84	45.49	121.88
307	20.17	32.31	1.57	56.29	45.95	122.11
308	20.23	32.49	1.62	61.73	46.37	122.35
309	20.32	32.87	1.66	69.62	46.30	122.56
310	20.37	33.61	1.69	69.80	46.07	122.76
311	20.41	34.17	1.73	69.89	45.87	123.02
312	20.50	34.92	1.80	68.98	45.73	123.29
313	20.55	35.75	1.85	69.98	45.67	123.60
314	20.64	36.31	1.93	69.25	45.65	123.86
315	20.69	36.78	1.97	69.71	45.79	124.22
316	20.78	37.71	2.11	74.78	46.02	124.59
317	20.83	38.27	2.21	71.70	46.48	125.02
318	20.87	38.45	2.31	71.25	47.22	125.53
319	20.96	39.29	2.55	71.16	47.87	125.98
320	21.01	39.94	2.63	65.27	48.30	126.42
321	21.09	40.60	2.73	58.47	48.61	126.67
322	21.13	40.60	2.81	60.28	49.09	126.92
323	21.20	40.60	2.90	62.37	49.56	127.11
324	21.29	40.78	2.94	61.01	49.80	127.21
325	21.33	40.87	2.92	62.09	48.37	126.64
326	21.42	40.50	2.24	58.92	46.44	125.75
327	21.47	40.04	2.03	61.82	44.82	124.97
328	21.56	40.04	2.20	66.08	44.98	124.96
329	21.61	40.13	2.24	65.27	45.66	125.18
330	21.66	39.66	2.23	64.36	46.07	125.10
331	21.73	38.45	2.16	64.90	46.79	124.89
332	21.80	37.06	2.12	53.84	47.44	124.70
333	21.89	36.78	2.11	69.71	47.92	124.52
334	21.94	36.13	2.05	76.14	47.92	124.31
335	21.98	35.47	1.96	78.77	47.78	123.97
336	22.07	35.10	1.87	72.25	47.59	123.62

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.12	34.73	1.80	67.89	47.31	123.17
338	22.21	33.61	1.65	73.61	47.22	122.80
339	22.26	33.33	1.64	74.69	47.25	122.56
340	22.33	33.33	1.65	71.16	47.27	122.50
341	22.40	33.33	1.62	76.05	47.16	122.44
342	22.44	33.33	1.59	75.51	46.96	122.34
343	22.54	33.33	1.59	73.06	46.88	122.32
344	22.59	33.61	1.60	71.79	46.90	122.37
345	22.67	33.71	1.62	72.52	47.02	122.48
346	22.72	33.80	1.66	72.06	47.43	122.66
347	22.79	33.80	1.72	72.34	47.99	122.89
348	22.84	33.89	1.78	69.53	48.47	123.07
349	22.91	33.89	1.78	65.54	48.85	123.11
350	23.00	33.33	1.76	69.21	48.99	123.03
351	23.04	33.33	1.73	67.08	49.02	122.96
352	23.13	33.43	1.74	68.89	48.97	122.91
353	23.18	33.33	1.73	72.16	48.88	122.85
354	23.23	33.15	1.69	75.24	49.17	122.96
355	23.31	33.33	1.81	78.95	49.60	123.22
356	23.36	33.80	1.91	87.11	49.17	123.59
357	23.46	36.31	1.90	76.87	48.59	123.80
358	23.50	36.22	1.93	72.97	48.44	123.98
359	23.60	35.66	2.03	66.72	49.55	124.18
360	23.64	35.10	2.09	73.97	50.88	124.55
361	23.72	35.20	2.25	85.75	51.41	124.93
362	23.78	36.68	2.34	85.39	50.85	125.37
363	23.84	39.20	2.42	82.31	49.79	125.75
364	23.92	40.60	2.51	76.14	48.86	126.01
365	23.97	41.34	2.52	71.16	48.42	126.12
366	24.06	41.53	2.49	67.71	48.21	126.09
367	24.11	41.25	2.46	65.90	48.06	125.88
368	24.15	40.41	2.33	69.53	47.43	125.25
369	24.23	38.83	1.94	77.87	47.53	124.76
370	24.29	37.52	2.08	82.76	48.43	124.49
371	24.38	36.31	2.17	75.78	50.12	124.62
372	24.43	35.66	2.11	75.06	50.91	124.54
373	24.49	35.38	2.06	72.43	51.04	124.36
374	24.57	35.10	2.04	72.38	51.13	124.27
375	24.62	35.10	2.04	72.38	51.69	124.23
376	24.68	33.98	2.05	72.34	52.05	124.10
377	24.75	33.61	1.96	73.88	52.20	123.83
378	24.81	33.33	1.85	71.97	51.87	123.53
379	24.90	33.05	1.83	73.83	51.65	123.33
380	24.94	33.15	1.83	72.88	51.67	123.30
381	25.04	33.15	1.83	73.79	51.61	123.27
382	25.08	33.15	1.80	75.96	51.33	123.13
383	25.18	33.15	1.73	68.44	51.07	122.96
384	25.22	32.87	1.71	75.06	51.06	122.80

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.27	32.49	1.70	67.99	51.44	122.73
386	25.34	31.94	1.70	74.15	51.88	122.71
387	25.40	31.94	1.71	76.96	52.19	122.73
388	25.48	31.94	1.73	76.60	52.25	122.77
389	25.55	32.12	1.72	77.69	52.12	122.83
390	25.59	32.59	1.74	79.14	51.94	122.97
391	25.67	33.05	1.81	84.21	52.28	123.38
392	25.73	33.71	1.99	84.39	52.54	124.12
393	25.82	36.13	2.26	94.91	52.27	124.85
394	25.85	37.99	2.33	97.72	50.18	125.59
395	25.95	43.67	2.49	90.28	48.17	126.02
396	26.00	44.97	2.51	83.03	46.73	126.36
397	26.05	45.06	2.55	89.56	47.09	126.50
398	26.14	43.85	2.64	84.48	47.81	126.60
399	26.19	43.67	2.64	88.83	48.17	126.41
400	26.28	42.46	2.39	99.53	47.40	125.81
401	26.33	41.62	2.07	99.26	45.72	124.97
402	26.41	42.27	1.88	107.06	44.50	124.39
403	26.46	42.08	1.92	104.52	44.88	124.33
404	26.56	39.94	2.04	110.68	45.64	124.55
405	26.59	41.85	2.07	101.98	49.07	124.57
406	26.64	32.96	2.09	100.35	48.67	124.68
407	26.72	41.62	2.11	126.00	48.24	124.78
408	26.78	43.20	2.12	141.23	44.86	125.04
409	26.87	44.51	2.12	109.86	44.73	125.07
410	26.92	42.74	2.12	104.70	45.58	125.03
411	27.01	40.87	2.13	108.96	46.88	124.97
412	27.05	40.41	2.14	115.85	47.70	124.97
413	27.10	40.13	2.16	128.36	47.43	124.92
414	27.18	41.06	2.07	129.44	46.23	124.60
415	27.24	41.53	1.85	128.90	44.64	124.03
416	27.30	40.97	1.69	124.10	43.78	123.42
417	27.38	39.57	1.64	124.14	44.21	123.06
418	27.47	37.99	1.64	124.19	45.19	122.91
419	27.52	37.24	1.64	139.78	45.66	122.88
420	27.56	38.08	1.64	132.25	46.17	123.15
421	27.65	38.55	1.82	111.68	46.86	123.56
422	27.70	38.83	1.92	97.63	47.89	123.97
423	27.80	38.59	1.96	99.53	48.45	124.20
424	27.84	38.92	2.00	103.16	49.08	124.38
425	27.92	38.36	2.07	102.07	49.31	124.52
426	27.98	39.01	2.06	104.70	49.24	124.62
427	28.03	39.76	2.07	109.23	49.29	124.69
428	28.12	38.83	2.13	100.53	49.84	124.74
429	28.16	38.17	2.12	96.90	50.85	124.73
430	28.25	37.34	2.10	101.16	51.57	124.75
431	28.30	37.34	2.17	102.16	52.40	124.95
432	28.39	37.34	2.30	107.96	53.02	125.16

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.43	37.34	2.30	106.42	53.28	125.31
434	28.49	37.71	2.30	104.15	52.71	125.31
435	28.57	39.01	2.28	92.55	52.06	125.24
436	28.62	38.83	2.21	92.82	51.16	125.09
437	28.68	39.11	2.14	100.80	50.58	124.86
438	28.76	38.92	2.07	101.71	49.55	124.44
439	28.81	38.55	1.85	110.23	46.24	123.19
440	28.90	39.39	1.18	126.72	43.16	121.96
441	28.95	39.48	1.27	115.58	41.08	121.06
442	29.04	38.92	1.35	112.31	42.25	121.38
443	29.08	38.55	1.37	98.72	43.57	121.56
444	29.16	37.43	1.39	81.67	45.04	121.64
445	29.22	35.75	1.44	99.48	46.43	121.89
446	29.28	36.68	1.54	94.18	48.07	122.38
447	29.38	36.13	1.71	100.26	48.92	122.89
448	29.40	36.78	1.75	104.15	49.26	123.36
449	29.46	38.83	1.84	92.37	49.55	123.87
450	29.56	39.01	2.05	79.05	49.79	124.34
451	29.59	39.76	2.08	74.88	49.73	124.62
452	29.70	41.06	2.05	83.40	48.47	124.53
453	29.74	41.90	1.93	82.58	46.88	124.15
454	29.79	41.43	1.74	83.53	46.13	123.69
455	29.87	40.13	1.71	83.67	46.39	123.32
456	29.93	38.64	1.71	95.45	47.51	123.10
457	30.01	36.87	1.65	100.17	48.38	122.80
458	30.07	35.85	1.56	105.60	48.69	122.31
459	30.15	35.01	1.44	100.53	48.64	121.88
460	30.20	34.73	1.41	91.46	48.64	121.56
461	30.27	34.17	1.40	100.89	49.18	121.46
462	30.34	33.33	1.41	101.62	49.55	121.37
463	30.38	33.43	1.37	96.09	49.68	121.24
464	30.46	33.33	1.34	95.72	49.61	121.22
465	30.53	33.61	1.39	92.01	49.42	121.32
466	30.62	34.54	1.42	92.46	49.17	121.48
467	30.66	35.01	1.41	91.37	48.61	121.49
468	30.71	34.92	1.38	94.18	49.20	121.79
469	30.80	34.92	1.59	94.68	50.27	122.24
470	30.84	35.20	1.68	94.68	51.61	122.96
471	30.92	36.13	1.84	95.18	50.44	123.42
472	30.98	40.41	1.83	100.89	48.29	123.67
473	31.07	42.46	1.76	85.93	46.01	123.57
474	31.11	42.08	1.69	77.50	45.06	123.15
475	31.18	40.60	1.53	85.30	44.98	122.27
476	31.26	37.06	1.26	79.86	43.59	120.65
477	31.30	35.85	0.86	84.67	42.47	118.88
478	31.38	33.52	0.81	85.66	41.82	117.79
479	31.44	32.87	0.89	92.64	44.36	118.28
480	31.54	32.31	1.06	81.94	46.97	119.13

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.59	31.94	1.17	94.45	48.36	120.06
482	31.67	34.64	1.29	89.47	48.69	120.76
483	31.72	35.20	1.38	92.55	48.54	121.48
484	31.77	36.22	1.51	101.44	48.37	122.49
485	31.86	40.69	1.82	112.95	48.42	123.79
486	31.91	42.92	2.17	128.18	47.66	125.63
487	32.00	51.12	2.81	128.18	45.53	127.05
488	32.05	59.12	2.94	140.14	41.58	128.19
489	32.09	69.46	3.03	134.79	38.29	128.69
490	32.18	73.37	3.09	56.66	36.74	128.87
491	32.23	70.86	3.02	70.34	38.29	128.54
492	32.30	58.01	2.80	81.67	40.86	127.75
493	32.36	52.23	2.47	77.23	44.73	126.20
494	32.45	40.97	1.84	82.40	47.80	124.54
495	32.50	35.47	1.66	83.12	51.40	123.03
496	32.55	32.96	1.61	97.99	55.89	122.28
497	32.64	29.70	1.50	120.65	56.91	121.65
498	32.69	29.70	1.35	121.56	56.29	120.77
499	32.78	29.70	1.15	114.76	53.17	120.10
500	32.83	29.70	1.15	114.22	52.19	119.71
501	32.88	29.79	1.16	116.57	51.55	119.67
502	32.96	30.73	1.12	119.29	50.41	119.60
503	33.01	31.56	1.09	120.02	48.64	119.56
504	33.09	33.24	1.10	119.84	47.34	119.76
505	33.14	34.73	1.17	116.03	47.33	120.24
506	33.20	34.17	1.29	122.92	48.93	120.82
507	33.28	32.96	1.39	104.33	50.86	121.23
508	33.34	33.01	1.42	96.81	52.28	121.42
509	33.43	32.59	1.43	100.89	52.61	121.56
510	33.47	33.05	1.47	106.78	51.38	121.80
511	33.57	36.59	1.50	119.75	49.38	122.03
512	33.60	38.36	1.49	112.04	47.89	122.15
513	33.70	37.52	1.49	98.72	48.01	122.11
514	33.74	36.41	1.49	98.81	48.94	122.04
515	33.79	35.75	1.48	107.33	50.04	122.19
516	33.88	35.38	1.60	132.44	50.75	122.42
517	33.93	35.57	1.63	141.50	50.45	122.71
518	34.01	37.71	1.64	139.42	48.98	122.85
519	34.07	39.94	1.64	132.25	47.67	123.19
520	34.16	41.43	1.79	122.56	47.20	123.54
521	34.20	41.62	1.83	122.47	47.67	123.91
522	34.25	41.34	1.90	126.64	48.85	124.21
523	34.33	40.22	2.03	124.73	49.72	124.47
524	34.41	40.97	2.05	133.16	50.00	124.71
525	34.46	42.27	2.08	131.44	49.12	124.92
526	34.52	43.95	2.15	136.33	48.11	125.20
527	34.60	46.00	2.21	131.30	47.42	125.43
528	34.66	46.18	2.23	132.34	47.06	125.64

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.73	46.83	2.29	131.17	46.55	125.69
530	34.78	48.04	2.22	131.30	45.44	125.64
531	34.87	49.44	2.13	131.30	44.29	125.63
532	34.92	50.74	2.23	131.44	43.68	125.97
533	35.01	53.26	2.46	125.82	43.55	126.55
534	35.06	55.03	2.61	141.59	41.39	127.35
535	35.11	66.57	2.82	168.15	26.09	130.14
536	35.19	194.13	4.11	113.04	17.81	132.84
537	35.24	240.97	4.93	55.66	13.81	136.07
538	35.33	296.55	7.27	7.61	13.03	137.28
539	35.38	301.21	7.02	5.62	13.19	137.28
540	35.46	271.13	6.46	12.87	13.71	137.28
541	35.52	239.85	5.88	3.26	15.08	136.51
542	35.61	202.33	5.14	3.04	16.77	135.69
543	35.64	188.55	5.27	3.04	18.50	135.44
544	35.70	188.36	5.78	2.81	19.01	136.12
545	35.77	213.87	6.57	117.03	16.91	137.24
546	35.83	283.61	7.15	299.14	15.33	137.28
547	35.92	285.56	8.00	492.67	14.77	137.28
548	35.97	265.08	8.13	523.67	14.57	137.28
549	36.03	287.52	6.93	362.59	13.84	137.28
550	36.10	318.62	7.67	117.30	12.79	137.28
551	36.16	319.18	8.06	413.99	12.92	137.28
552	36.24	312.66	8.23	237.77	12.80	137.28
553	36.30	341.06	8.41	255.94	14.58	137.28
554	36.35	239.20	8.55	255.94	15.86	137.28
555	36.43	255.68	8.33	255.94	18.36	137.28
556	36.49	259.21	9.21	102.70	18.21	137.28
557	36.56	248.51	8.83	329.60	18.18	137.28
558	36.63	230.72	6.84	329.60	19.28	137.28
559	36.69	162.66	5.83	350.23	22.29	135.94
560	36.77	116.11	5.27	207.94	27.70	134.26
561	36.82	105.96	4.56	133.07	29.59	133.02
562	36.90	113.59	3.98	384.80	29.64	132.74
563	36.95	107.54	4.84	385.52	25.53	132.85
564	37.01	147.95	4.17	569.17	17.31	132.75
565	37.09	240.50	2.62	636.53	9.54	133.18
566	37.14	352.79	4.03	739.68	4.65	134.21
567	37.23	509.30	4.30	428.04	3.38	135.21
568	37.28	462.19	3.53	41.61	2.00	135.35
569	37.34	572.06	3.68	36.53	2.29	136.05
570	37.44	535.38	5.41	88.92	0.27	133.92
571	37.48	644.96	0.00	11.78	0.00	130.24
572	37.54	652.79	0.00	10.24	N/A	87.36
573	37.62	686.30	0.00	14.32	N/A	87.36
574	37.67	675.50	0.00	3.44	N/A	87.36
575	37.76	744.96	0.00	9.61	N/A	87.36
576	37.81	711.35	0.00	7.07	N/A	87.36

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)

Abbreviations

Depth:	Depth from free surface, at which CPT was performed (ft)
q_c:	Measured cone resistance (tsf)
f_s:	Sleeve friction resistance (tsf)
u:	Pore pressure (tsf)
Fines content:	Percentage of fines in soil (%)
Unit weight:	Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.09	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
2	0.13	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
3	0.22	0.01	0.00	0.01	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
4	0.27	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
5	0.36	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
6	0.41	0.02	0.00	0.02	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
7	0.51	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
8	0.54	0.03	0.00	0.03	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
9	0.60	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
10	0.69	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
11	0.73	0.04	0.00	0.04	1.00	0.618	1.69	0.366	1.00	1.00	2.000	No
12	0.82	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
13	0.86	0.05	0.00	0.05	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
14	0.95	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
15	0.98	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
16	1.05	0.06	0.00	0.06	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
17	1.14	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
18	1.19	0.07	0.00	0.07	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
19	1.28	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
20	1.32	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
21	1.38	0.08	0.00	0.08	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
22	1.47	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
23	1.51	0.09	0.00	0.09	1.00	0.617	1.69	0.365	1.00	1.00	2.000	No
24	1.61	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
25	1.64	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
26	1.71	0.10	0.00	0.10	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
27	1.79	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
28	1.84	0.11	0.00	0.11	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
29	1.92	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
30	1.98	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
31	2.04	0.12	0.00	0.12	1.00	0.616	1.69	0.365	1.00	1.00	2.000	No
32	2.12	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
33	2.17	0.13	0.00	0.13	1.00	0.616	1.69	0.364	1.00	1.00	2.000	No
34	2.26	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
35	2.31	0.14	0.00	0.14	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
36	2.41	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
37	2.44	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
38	2.52	0.15	0.00	0.15	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
39	2.59	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
40	2.67	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
41	2.72	0.16	0.00	0.16	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
42	2.77	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
43	2.86	0.17	0.00	0.17	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
44	2.90	0.18	0.00	0.18	1.00	0.615	1.69	0.364	1.00	1.00	2.000	No
45	2.99	0.18	0.00	0.18	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
46	3.04	0.18	0.00	0.18	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
47	3.09	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No
48	3.17	0.19	0.00	0.19	0.99	0.614	1.69	0.364	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.22	0.19	0.00	0.19	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
50	3.28	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
51	3.36	0.20	0.00	0.20	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
52	3.46	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
53	3.50	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
54	3.55	0.21	0.00	0.21	0.99	0.614	1.69	0.363	1.00	1.00	2.000	No
55	3.63	0.22	0.00	0.22	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
56	3.68	0.22	0.00	0.22	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
57	3.77	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
58	3.82	0.23	0.00	0.23	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
59	3.90	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
60	3.95	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
61	4.00	0.24	0.00	0.24	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
62	4.10	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
63	4.14	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
64	4.20	0.25	0.00	0.25	0.99	0.613	1.69	0.363	1.00	1.00	2.000	No
65	4.29	0.26	0.00	0.26	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
66	4.33	0.26	0.00	0.26	0.99	0.612	1.69	0.363	1.00	1.00	2.000	No
67	4.42	0.27	0.00	0.27	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
68	4.48	0.27	0.00	0.27	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
69	4.56	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
70	4.59	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
71	4.67	0.28	0.00	0.28	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
72	4.75	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
73	4.80	0.29	0.00	0.29	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
74	4.88	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
75	4.92	0.30	0.00	0.30	0.99	0.612	1.69	0.362	1.00	1.00	2.000	No
76	5.00	0.30	0.00	0.30	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
77	5.07	0.31	0.00	0.31	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
78	5.17	0.31	0.00	0.31	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
79	5.22	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
80	5.26	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
81	5.34	0.32	0.00	0.32	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
82	5.40	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
83	5.49	0.33	0.00	0.33	0.99	0.611	1.69	0.362	1.00	1.00	2.000	No
84	5.54	0.34	0.00	0.34	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
85	5.58	0.34	0.00	0.34	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
86	5.67	0.35	0.00	0.35	0.99	0.611	1.69	0.361	1.00	1.00	2.000	No
87	5.72	0.35	0.00	0.35	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
88	5.81	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
89	5.86	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
90	5.92	0.36	0.00	0.36	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
91	6.00	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
92	6.04	0.37	0.00	0.37	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
93	6.13	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
94	6.18	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
95	6.24	0.38	0.00	0.38	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
96	6.32	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.37	0.39	0.00	0.39	0.99	0.610	1.69	0.361	1.00	1.00	2.000	No
98	6.46	0.40	0.00	0.40	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
99	6.51	0.40	0.00	0.40	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
100	6.60	0.40	0.00	0.40	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
101	6.64	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
102	6.70	0.41	0.00	0.41	0.99	0.609	1.69	0.361	1.00	1.00	2.000	No
103	6.78	0.42	0.00	0.42	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
104	6.84	0.42	0.00	0.42	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
105	6.93	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
106	6.97	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
107	7.06	0.43	0.00	0.43	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
108	7.11	0.44	0.00	0.44	0.99	0.609	1.69	0.360	1.00	1.00	2.000	No
109	7.16	0.44	0.00	0.44	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
110	7.23	0.45	0.00	0.45	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
111	7.29	0.45	0.00	0.45	0.99	0.608	1.69	0.360	1.00	1.00	2.000	No
112	7.39	0.46	0.00	0.46	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
113	7.44	0.46	0.00	0.46	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
114	7.52	0.46	0.00	0.46	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
115	7.57	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
116	7.62	0.47	0.00	0.47	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
117	7.69	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
118	7.75	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
119	7.81	0.48	0.00	0.48	0.98	0.608	1.69	0.360	1.00	1.00	2.000	No
120	7.90	0.49	0.00	0.49	0.98	0.607	1.69	0.360	1.00	1.00	2.000	No
121	7.95	0.49	0.00	0.49	0.98	0.607	1.69	0.360	1.00	1.00	2.000	No
122	8.04	0.50	0.00	0.50	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
123	8.08	0.50	0.00	0.50	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
124	8.17	0.50	0.00	0.50	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
125	8.20	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
126	8.31	0.51	0.00	0.51	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
127	8.36	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
128	8.40	0.52	0.00	0.52	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
129	8.49	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
130	8.54	0.53	0.00	0.53	0.98	0.607	1.69	0.359	1.00	1.00	2.000	No
131	8.63	0.53	0.00	0.53	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
132	8.67	0.54	0.00	0.54	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
133	8.77	0.54	0.00	0.54	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
134	8.81	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
135	8.87	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
136	8.95	0.55	0.00	0.55	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
137	9.00	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
138	9.09	0.56	0.00	0.56	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
139	9.14	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
140	9.19	0.57	0.00	0.57	0.98	0.606	1.69	0.359	1.00	1.00	2.000	No
141	9.28	0.57	0.00	0.57	0.98	0.606	1.69	0.358	1.00	1.00	2.000	No
142	9.32	0.58	0.00	0.58	0.98	0.606	1.69	0.358	1.00	1.00	2.000	No
143	9.43	0.58	0.00	0.58	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
144	9.45	0.59	0.00	0.59	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.54	0.59	0.00	0.59	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
146	9.59	0.59	0.00	0.59	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
147	9.67	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
148	9.72	0.60	0.00	0.60	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
149	9.81	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
150	9.86	0.61	0.00	0.61	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
151	9.95	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
152	10.00	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
153	10.04	0.62	0.00	0.62	0.98	0.605	1.69	0.358	1.00	1.00	2.000	No
154	10.13	0.63	0.00	0.63	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
155	10.18	0.63	0.00	0.63	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
156	10.28	0.64	0.00	0.64	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
157	10.32	0.64	0.00	0.64	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
158	10.41	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
159	10.46	0.65	0.00	0.65	0.98	0.604	1.69	0.358	1.00	1.00	2.000	No
160	10.51	0.65	0.00	0.65	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
161	10.60	0.66	0.00	0.66	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
162	10.64	0.66	0.00	0.66	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
163	10.73	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
164	10.78	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
165	10.83	0.67	0.00	0.67	0.98	0.604	1.69	0.357	1.00	1.00	2.000	No
166	10.92	0.68	0.00	0.68	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
167	10.96	0.68	0.00	0.68	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
168	11.05	0.69	0.00	0.69	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
169	11.10	0.69	0.00	0.69	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
170	11.19	0.69	0.00	0.69	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
171	11.24	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
172	11.29	0.70	0.00	0.70	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
173	11.38	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
174	11.43	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
175	11.50	0.71	0.00	0.71	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
176	11.56	0.72	0.00	0.72	0.98	0.603	1.69	0.357	1.00	1.00	2.000	No
177	11.66	0.72	0.00	0.72	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
178	11.68	0.72	0.00	0.72	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
179	11.76	0.73	0.00	0.73	0.98	0.602	1.69	0.357	1.00	1.00	2.000	No
180	11.84	0.73	0.00	0.73	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
181	11.90	0.74	0.00	0.74	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
182	11.95	0.74	0.00	0.74	0.98	0.602	1.69	0.356	1.00	1.00	2.000	No
183	12.01	0.75	0.00	0.75	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
184	12.09	0.75	0.00	0.75	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
185	12.17	0.76	0.00	0.76	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
186	12.22	0.76	0.00	0.76	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
187	12.29	0.76	0.00	0.76	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
188	12.35	0.77	0.00	0.77	0.97	0.602	1.69	0.356	1.00	1.00	2.000	No
189	12.45	0.77	0.00	0.77	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
190	12.47	0.77	0.00	0.77	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
191	12.54	0.78	0.00	0.78	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
192	12.63	0.78	0.00	0.78	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.68	0.79	0.00	0.79	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
194	12.74	0.79	0.00	0.79	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
195	12.81	0.79	0.00	0.79	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
196	12.87	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
197	12.96	0.80	0.00	0.80	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
198	13.00	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
199	13.08	0.81	0.00	0.81	0.97	0.601	1.69	0.356	1.00	1.00	2.000	No
200	13.14	0.81	0.00	0.81	0.97	0.601	1.69	0.355	1.00	1.00	2.000	No
201	13.23	0.82	0.00	0.82	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
202	13.28	0.82	0.00	0.82	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
203	13.33	0.83	0.00	0.83	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
204	13.42	0.83	0.00	0.83	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
205	13.46	0.83	0.00	0.83	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
206	13.54	0.84	0.00	0.84	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
207	13.60	0.84	0.00	0.84	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
208	13.69	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
209	13.72	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
210	13.79	0.85	0.00	0.85	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
211	13.85	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
212	13.92	0.86	0.00	0.86	0.97	0.600	1.69	0.355	1.00	1.00	2.000	No
213	14.01	0.87	0.00	0.87	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
214	14.06	0.87	0.00	0.87	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
215	14.11	0.87	0.00	0.87	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
216	14.20	0.88	0.00	0.88	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
217	14.25	0.88	0.00	0.88	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
218	14.31	0.89	0.00	0.89	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
219	14.38	0.89	0.00	0.89	0.97	0.599	1.69	0.355	1.00	1.00	2.000	No
220	14.48	0.90	0.00	0.90	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
221	14.50	0.90	0.00	0.90	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
222	14.58	0.90	0.00	0.90	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
223	14.63	0.91	0.00	0.91	0.97	0.599	1.69	0.354	1.00	1.00	2.000	No
224	14.72	0.91	0.00	0.91	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
225	14.77	0.92	0.00	0.92	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
226	14.84	0.92	0.00	0.92	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
227	14.90	0.92	0.00	0.92	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
228	14.99	0.93	0.00	0.93	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
229	15.04	0.93	0.00	0.93	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
230	15.13	0.94	0.00	0.94	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
231	15.18	0.94	0.00	0.94	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
232	15.22	0.94	0.00	0.94	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
233	15.31	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
234	15.36	0.95	0.00	0.95	0.97	0.598	1.69	0.354	1.00	1.00	2.000	No
235	15.44	0.96	0.00	0.96	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
236	15.50	0.96	0.00	0.96	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
237	15.57	0.97	0.00	0.97	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
238	15.64	0.97	0.00	0.97	0.97	0.597	1.69	0.354	1.00	1.00	2.000	No
239	15.69	0.97	0.00	0.97	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
240	15.77	0.98	0.00	0.98	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.82	0.98	0.00	0.98	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
242	15.91	0.99	0.00	0.99	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
243	15.96	0.99	0.00	0.99	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
244	16.05	1.00	0.00	1.00	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
245	16.10	1.00	0.00	1.00	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
246	16.14	1.00	0.00	1.00	0.97	0.597	1.69	0.353	1.00	1.00	2.000	No
247	16.24	1.01	0.00	1.01	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
248	16.28	1.01	0.00	1.01	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
249	16.38	1.02	0.00	1.02	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
250	16.42	1.02	0.00	1.02	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
251	16.50	1.03	0.00	1.03	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
252	16.56	1.03	0.00	1.03	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
253	16.61	1.03	0.00	1.03	0.97	0.596	1.69	0.353	1.00	1.00	2.000	No
254	16.70	1.04	0.00	1.04	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
255	16.74	1.04	0.00	1.04	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
256	16.83	1.05	0.00	1.05	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
257	16.88	1.05	0.00	1.05	0.96	0.596	1.69	0.353	1.00	1.00	2.000	No
258	16.93	1.05	0.00	1.05	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
259	17.00	1.06	0.00	1.06	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
260	17.06	1.06	0.00	1.06	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
261	17.16	1.07	0.00	1.07	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
262	17.21	1.07	0.00	1.07	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
263	17.26	1.07	0.00	1.07	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
264	17.35	1.08	0.00	1.08	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
265	17.40	1.08	0.00	1.08	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
266	17.46	1.08	0.00	1.08	0.96	0.595	1.69	0.352	1.00	1.00	2.000	No
267	17.53	1.09	0.00	1.09	0.96	0.595	1.69	0.352	0.99	1.00	2.000	No
268	17.62	1.09	0.00	1.09	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
269	17.67	1.09	0.00	1.09	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
270	17.72	1.10	0.00	1.10	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
271	17.81	1.10	0.00	1.10	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
272	17.85	1.11	0.00	1.11	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
273	17.95	1.11	0.00	1.11	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
274	18.00	1.11	0.00	1.11	0.96	0.594	1.69	0.352	0.99	1.00	2.000	No
275	18.09	1.12	0.00	1.12	0.96	0.594	1.69	0.351	0.99	1.00	2.000	No
276	18.14	1.12	0.00	1.12	0.96	0.594	1.69	0.351	0.99	1.00	2.000	No
277	18.18	1.12	0.00	1.12	0.96	0.594	1.69	0.351	0.99	1.00	2.000	No
278	18.27	1.13	0.00	1.13	0.96	0.594	1.69	0.351	0.99	1.00	2.000	No
279	18.32	1.13	0.00	1.13	0.96	0.593	1.69	0.351	0.99	1.00	2.000	No
280	18.41	1.14	0.00	1.14	0.96	0.593	1.69	0.351	0.99	1.00	2.000	No
281	18.46	1.14	0.00	1.14	0.96	0.593	1.69	0.351	0.99	1.00	2.000	No
282	18.54	1.14	0.00	1.14	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
283	18.60	1.15	0.00	1.15	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
284	18.64	1.15	0.00	1.15	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
285	18.72	1.15	0.00	1.15	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
286	18.77	1.16	0.00	1.16	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
287	18.84	1.16	0.00	1.16	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No
288	18.91	1.17	0.00	1.17	0.96	0.593	1.69	0.351	0.98	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.96	1.17	0.00	1.17	0.96	0.592	1.69	0.351	0.98	1.00	2.000	No
290	19.05	1.17	0.00	1.17	0.96	0.592	1.69	0.351	0.98	1.00	2.000	No
291	19.10	1.18	0.00	1.18	0.96	0.592	1.69	0.351	0.98	1.00	2.000	No
292	19.18	1.18	0.00	1.18	0.96	0.592	1.69	0.351	0.98	1.00	2.000	No
293	19.24	1.18	0.00	1.18	0.96	0.592	1.69	0.350	0.98	1.00	2.000	No
294	19.29	1.19	0.00	1.19	0.96	0.592	1.69	0.350	0.98	1.00	2.000	No
295	19.37	1.19	0.00	1.19	0.96	0.592	1.69	0.350	0.98	1.00	2.000	No
296	19.43	1.19	0.00	1.19	0.96	0.592	1.69	0.350	0.98	1.00	2.000	No
297	19.54	1.20	0.00	1.20	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
298	19.58	1.20	0.00	1.20	0.96	0.592	1.69	0.350	0.97	1.00	2.000	No
299	19.67	1.21	0.00	1.21	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
300	19.71	1.21	0.00	1.21	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
301	19.77	1.22	0.00	1.22	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
302	19.82	1.22	0.00	1.22	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
303	19.91	1.22	0.00	1.22	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
304	19.95	1.23	0.00	1.23	0.96	0.591	1.69	0.350	0.97	1.00	2.000	No
305	20.04	1.23	0.00	1.23	0.96	0.591	1.69	0.350	0.97	1.00	0.361	No
306	20.09	1.23	0.00	1.23	0.96	0.592	1.69	0.350	0.97	1.00	0.361	No
307	20.17	1.24	0.01	1.23	0.96	0.593	1.69	0.351	0.97	1.00	0.362	No
308	20.23	1.24	0.01	1.24	0.96	0.594	1.69	0.352	0.97	1.00	0.363	No
309	20.32	1.25	0.01	1.24	0.96	0.595	1.69	0.352	0.97	1.00	0.364	No
310	20.37	1.25	0.01	1.24	0.96	0.596	1.69	0.353	0.97	1.00	0.364	No
311	20.41	1.25	0.01	1.24	0.96	0.596	1.69	0.353	0.97	1.00	0.364	No
312	20.50	1.26	0.02	1.24	0.96	0.598	1.69	0.354	0.97	1.00	0.365	No
313	20.55	1.26	0.02	1.25	0.96	0.598	1.69	0.354	0.97	1.00	0.366	No
314	20.64	1.27	0.02	1.25	0.96	0.599	1.69	0.355	0.97	1.00	0.367	No
315	20.69	1.27	0.02	1.25	0.96	0.600	1.69	0.355	0.97	1.00	0.367	No
316	20.78	1.28	0.02	1.25	0.95	0.601	1.69	0.356	0.97	1.00	0.368	No
317	20.83	1.28	0.03	1.25	0.95	0.602	1.69	0.356	0.97	1.00	0.368	No
318	20.87	1.28	0.03	1.26	0.95	0.602	1.69	0.356	0.97	1.00	0.369	No
319	20.96	1.29	0.03	1.26	0.95	0.603	1.69	0.357	0.97	1.00	0.370	No
320	21.01	1.29	0.03	1.26	0.95	0.604	1.69	0.357	0.97	1.00	0.370	No
321	21.09	1.30	0.03	1.26	0.95	0.605	1.69	0.358	0.97	1.00	0.371	No
322	21.13	1.30	0.04	1.26	0.95	0.606	1.69	0.358	0.97	1.00	0.371	No
323	21.20	1.30	0.04	1.27	0.95	0.606	1.69	0.359	0.96	1.00	0.372	No
324	21.29	1.31	0.04	1.27	0.95	0.607	1.69	0.360	0.96	1.00	0.373	No
325	21.33	1.31	0.04	1.27	0.95	0.608	1.69	0.360	0.96	1.00	0.373	No
326	21.42	1.32	0.04	1.27	0.95	0.609	1.69	0.360	0.96	1.00	0.374	No
327	21.47	1.32	0.05	1.27	0.95	0.610	1.69	0.361	0.96	1.00	0.375	No
328	21.56	1.33	0.05	1.28	0.95	0.611	1.69	0.361	0.96	1.00	0.375	No
329	21.61	1.33	0.05	1.28	0.95	0.611	1.69	0.362	0.96	1.00	0.376	No
330	21.66	1.33	0.05	1.28	0.95	0.612	1.69	0.362	0.96	1.00	0.376	No
331	21.73	1.34	0.05	1.28	0.95	0.613	1.69	0.363	0.96	1.00	0.377	No
332	21.80	1.34	0.06	1.29	0.95	0.614	1.69	0.363	0.96	1.00	0.378	No
333	21.89	1.35	0.06	1.29	0.95	0.615	1.69	0.364	0.96	1.00	0.378	No
334	21.94	1.35	0.06	1.29	0.95	0.615	1.69	0.364	0.96	1.00	0.379	No
335	21.98	1.35	0.06	1.29	0.95	0.616	1.69	0.364	0.96	1.00	0.379	No
336	22.07	1.36	0.06	1.29	0.95	0.617	1.69	0.365	0.96	1.00	0.380	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.12	1.36	0.07	1.29	0.95	0.617	1.69	0.365	0.96	1.00	0.380	No
338	22.21	1.37	0.07	1.30	0.95	0.618	1.69	0.366	0.96	1.00	0.381	No
339	22.26	1.37	0.07	1.30	0.95	0.619	1.69	0.366	0.96	1.00	0.382	No
340	22.33	1.37	0.07	1.30	0.95	0.620	1.69	0.367	0.96	1.00	0.382	No
341	22.40	1.38	0.07	1.30	0.95	0.620	1.69	0.367	0.96	1.00	0.383	No
342	22.44	1.38	0.08	1.30	0.95	0.621	1.69	0.368	0.96	1.00	0.383	No
343	22.54	1.39	0.08	1.31	0.95	0.622	1.69	0.368	0.96	1.00	0.384	No
344	22.59	1.39	0.08	1.31	0.95	0.623	1.69	0.369	0.96	1.00	0.385	No
345	22.67	1.39	0.08	1.31	0.95	0.623	1.69	0.369	0.96	1.00	0.385	No
346	22.72	1.40	0.08	1.31	0.95	0.624	1.69	0.369	0.96	1.00	0.386	No
347	22.79	1.40	0.09	1.32	0.95	0.625	1.69	0.370	0.96	1.00	0.386	No
348	22.84	1.41	0.09	1.32	0.95	0.625	1.69	0.370	0.96	1.00	0.387	No
349	22.91	1.41	0.09	1.32	0.95	0.626	1.69	0.371	0.96	1.00	0.387	No
350	23.00	1.42	0.09	1.32	0.95	0.627	1.69	0.371	0.96	1.00	0.388	No
351	23.04	1.42	0.09	1.32	0.95	0.628	1.69	0.372	0.96	1.00	0.388	No
352	23.13	1.42	0.10	1.33	0.95	0.629	1.69	0.372	0.96	1.00	0.389	No
353	23.18	1.43	0.10	1.33	0.95	0.629	1.69	0.372	0.96	1.00	0.390	No
354	23.23	1.43	0.10	1.33	0.95	0.630	1.69	0.373	0.96	1.00	0.390	No
355	23.31	1.43	0.10	1.33	0.95	0.630	1.69	0.373	0.96	1.00	0.391	No
356	23.36	1.44	0.10	1.33	0.95	0.631	1.69	0.374	0.95	1.00	0.391	No
357	23.46	1.44	0.11	1.34	0.95	0.632	1.69	0.374	0.95	1.00	0.392	No
358	23.50	1.45	0.11	1.34	0.95	0.632	1.69	0.374	0.95	1.00	0.392	No
359	23.60	1.45	0.11	1.34	0.95	0.633	1.69	0.375	0.95	1.00	0.393	No
360	23.64	1.45	0.11	1.34	0.95	0.634	1.69	0.375	0.95	1.00	0.393	No
361	23.72	1.46	0.12	1.34	0.95	0.635	1.69	0.376	0.95	1.00	0.394	No
362	23.78	1.46	0.12	1.35	0.95	0.635	1.69	0.376	0.95	1.00	0.395	No
363	23.84	1.47	0.12	1.35	0.95	0.636	1.69	0.376	0.95	1.00	0.395	No
364	23.92	1.47	0.12	1.35	0.95	0.637	1.69	0.377	0.95	1.00	0.396	No
365	23.97	1.48	0.12	1.35	0.95	0.637	1.69	0.377	0.95	1.00	0.396	No
366	24.06	1.48	0.13	1.35	0.95	0.638	1.69	0.378	0.95	1.00	0.397	No
367	24.11	1.48	0.13	1.36	0.94	0.639	1.69	0.378	0.95	1.00	0.397	No
368	24.15	1.49	0.13	1.36	0.94	0.639	1.69	0.378	0.95	1.00	0.398	No
369	24.23	1.49	0.13	1.36	0.94	0.640	1.69	0.379	0.95	1.00	0.398	No
370	24.29	1.50	0.13	1.36	0.94	0.640	1.69	0.379	0.95	1.00	0.399	No
371	24.38	1.50	0.14	1.36	0.94	0.641	1.69	0.380	0.95	1.00	0.399	No
372	24.43	1.50	0.14	1.37	0.94	0.642	1.69	0.380	0.95	1.00	0.400	No
373	24.49	1.51	0.14	1.37	0.94	0.642	1.69	0.380	0.95	1.00	0.400	No
374	24.57	1.51	0.14	1.37	0.94	0.643	1.69	0.381	0.95	1.00	0.401	No
375	24.62	1.52	0.14	1.37	0.94	0.644	1.69	0.381	0.95	1.00	0.401	No
376	24.68	1.52	0.15	1.37	0.94	0.644	1.69	0.381	0.95	1.00	0.402	No
377	24.75	1.52	0.15	1.38	0.94	0.645	1.69	0.382	0.95	1.00	0.402	No
378	24.81	1.53	0.15	1.38	0.94	0.645	1.69	0.382	0.95	1.00	0.403	No
379	24.90	1.53	0.15	1.38	0.94	0.646	1.69	0.383	0.95	1.00	0.403	No
380	24.94	1.54	0.15	1.38	0.94	0.647	1.69	0.383	0.95	1.00	0.404	No
381	25.04	1.54	0.16	1.38	0.94	0.648	1.69	0.383	0.95	1.00	0.404	No
382	25.08	1.54	0.16	1.39	0.94	0.648	1.69	0.384	0.95	1.00	0.405	No
383	25.18	1.55	0.16	1.39	0.94	0.649	1.69	0.384	0.95	1.00	0.405	No
384	25.22	1.55	0.16	1.39	0.94	0.649	1.69	0.384	0.95	1.00	0.406	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.27	1.56	0.16	1.39	0.94	0.650	1.69	0.385	0.95	1.00	0.406	No
386	25.34	1.56	0.17	1.39	0.94	0.650	1.69	0.385	0.95	1.00	0.407	No
387	25.40	1.56	0.17	1.40	0.94	0.651	1.69	0.385	0.95	1.00	0.407	No
388	25.48	1.57	0.17	1.40	0.94	0.652	1.69	0.386	0.95	1.00	0.408	No
389	25.55	1.57	0.17	1.40	0.94	0.652	1.69	0.386	0.95	1.00	0.408	No
390	25.59	1.58	0.17	1.40	0.94	0.652	1.69	0.386	0.95	1.00	0.409	No
391	25.67	1.58	0.18	1.40	0.94	0.653	1.69	0.387	0.95	1.00	0.409	No
392	25.73	1.58	0.18	1.41	0.94	0.654	1.69	0.387	0.94	1.00	0.410	No
393	25.82	1.59	0.18	1.41	0.94	0.654	1.69	0.387	0.94	1.00	0.410	No
394	25.85	1.59	0.18	1.41	0.94	0.655	1.69	0.388	0.94	1.00	0.410	No
395	25.95	1.60	0.19	1.41	0.94	0.656	1.69	0.388	0.94	1.00	0.411	No
396	26.00	1.60	0.19	1.41	0.94	0.656	1.69	0.388	0.94	1.00	0.412	No
397	26.05	1.60	0.19	1.42	0.94	0.656	1.69	0.389	0.94	1.00	0.412	No
398	26.14	1.61	0.19	1.42	0.94	0.657	1.69	0.389	0.94	1.00	0.412	No
399	26.19	1.61	0.19	1.42	0.94	0.658	1.69	0.389	0.94	1.00	0.413	No
400	26.28	1.62	0.20	1.42	0.94	0.658	1.69	0.390	0.94	1.00	0.413	No
401	26.33	1.62	0.20	1.42	0.94	0.659	1.69	0.390	0.94	1.00	0.414	No
402	26.41	1.63	0.20	1.43	0.94	0.659	1.69	0.390	0.94	1.00	0.414	No
403	26.46	1.63	0.20	1.43	0.94	0.660	1.69	0.391	0.94	1.00	0.415	No
404	26.56	1.64	0.20	1.43	0.94	0.661	1.69	0.391	0.94	1.00	0.415	No
405	26.59	1.64	0.21	1.43	0.94	0.661	1.69	0.391	0.94	1.00	0.416	No
406	26.64	1.64	0.21	1.43	0.94	0.661	1.69	0.391	0.94	1.00	0.416	No
407	26.72	1.65	0.21	1.44	0.94	0.662	1.69	0.392	0.94	1.00	0.416	No
408	26.78	1.65	0.21	1.44	0.94	0.662	1.69	0.392	0.94	1.00	0.417	No
409	26.87	1.66	0.21	1.44	0.93	0.663	1.69	0.392	0.94	1.00	0.418	No
410	26.92	1.66	0.22	1.44	0.93	0.663	1.69	0.393	0.94	1.00	0.418	No
411	27.01	1.66	0.22	1.45	0.93	0.664	1.69	0.393	0.94	1.00	0.418	No
412	27.05	1.67	0.22	1.45	0.93	0.664	1.69	0.393	0.94	1.00	0.419	No
413	27.10	1.67	0.22	1.45	0.93	0.665	1.69	0.394	0.94	1.00	0.419	No
414	27.18	1.68	0.22	1.45	0.93	0.665	1.69	0.394	0.94	1.00	0.420	No
415	27.24	1.68	0.23	1.45	0.93	0.666	1.69	0.394	0.94	1.00	0.420	No
416	27.30	1.68	0.23	1.45	0.93	0.666	1.69	0.394	0.94	1.00	0.420	No
417	27.38	1.69	0.23	1.46	0.93	0.667	1.69	0.395	0.94	1.00	0.421	No
418	27.47	1.69	0.23	1.46	0.93	0.668	1.69	0.395	0.94	1.00	0.421	No
419	27.52	1.70	0.23	1.46	0.93	0.668	1.69	0.395	0.94	1.00	0.422	No
420	27.56	1.70	0.24	1.46	0.93	0.668	1.69	0.396	0.94	1.00	0.422	No
421	27.65	1.70	0.24	1.47	0.93	0.669	1.69	0.396	0.94	1.00	0.423	No
422	27.70	1.71	0.24	1.47	0.93	0.669	1.69	0.396	0.94	1.00	0.423	No
423	27.80	1.71	0.24	1.47	0.93	0.670	1.69	0.397	0.94	1.00	0.424	No
424	27.84	1.72	0.24	1.47	0.93	0.670	1.69	0.397	0.94	1.00	0.424	No
425	27.92	1.72	0.25	1.47	0.93	0.671	1.69	0.397	0.94	1.00	0.424	No
426	27.98	1.72	0.25	1.48	0.93	0.671	1.69	0.397	0.94	1.00	0.425	No
427	28.03	1.73	0.25	1.48	0.93	0.672	1.69	0.398	0.94	1.00	0.425	No
428	28.12	1.73	0.25	1.48	0.93	0.672	1.69	0.398	0.94	1.00	0.425	No
429	28.16	1.74	0.25	1.48	0.93	0.672	1.69	0.398	0.93	1.00	0.426	No
430	28.25	1.74	0.26	1.48	0.93	0.673	1.69	0.398	0.93	1.00	0.426	No
431	28.30	1.74	0.26	1.49	0.93	0.673	1.69	0.399	0.93	1.00	0.427	No
432	28.39	1.75	0.26	1.49	0.93	0.674	1.69	0.399	0.93	1.00	0.427	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.43	1.75	0.26	1.49	0.93	0.674	1.69	0.399	0.93	1.00	0.427	No
434	28.49	1.76	0.26	1.49	0.93	0.675	1.69	0.399	0.93	1.00	0.428	No
435	28.57	1.76	0.27	1.49	0.93	0.675	1.69	0.400	0.93	1.00	0.428	No
436	28.62	1.76	0.27	1.50	0.93	0.676	1.69	0.400	0.93	1.00	0.429	No
437	28.68	1.77	0.27	1.50	0.93	0.676	1.69	0.400	0.93	1.00	0.429	No
438	28.76	1.77	0.27	1.50	0.93	0.676	1.69	0.400	0.93	1.00	0.429	No
439	28.81	1.78	0.27	1.50	0.93	0.677	1.69	0.401	0.93	1.00	0.430	No
440	28.90	1.78	0.28	1.50	0.93	0.677	1.69	0.401	0.93	1.00	0.430	No
441	28.95	1.78	0.28	1.51	0.93	0.678	1.69	0.401	0.93	1.00	0.430	No
442	29.04	1.79	0.28	1.51	0.93	0.678	1.69	0.401	0.93	1.00	0.431	No
443	29.08	1.79	0.28	1.51	0.93	0.678	1.69	0.402	0.93	1.00	0.431	No
444	29.16	1.80	0.29	1.51	0.92	0.679	1.69	0.402	0.93	1.00	0.432	No
445	29.22	1.80	0.29	1.51	0.92	0.679	1.69	0.402	0.93	1.00	0.432	No
446	29.28	1.81	0.29	1.52	0.92	0.680	1.69	0.402	0.93	1.00	0.432	No
447	29.38	1.81	0.29	1.52	0.92	0.680	1.69	0.403	0.93	1.00	0.433	No
448	29.40	1.81	0.29	1.52	0.92	0.680	1.69	0.403	0.93	1.00	0.433	No
449	29.46	1.82	0.30	1.52	0.92	0.681	1.69	0.403	0.93	1.00	0.433	No
450	29.56	1.82	0.30	1.52	0.92	0.681	1.69	0.403	0.93	1.00	0.434	No
451	29.59	1.82	0.30	1.53	0.92	0.682	1.69	0.403	0.93	1.00	0.434	No
452	29.70	1.83	0.30	1.53	0.92	0.682	1.69	0.404	0.93	1.00	0.435	No
453	29.74	1.83	0.30	1.53	0.92	0.682	1.69	0.404	0.93	1.00	0.435	No
454	29.79	1.84	0.31	1.53	0.92	0.683	1.69	0.404	0.93	1.00	0.435	No
455	29.87	1.84	0.31	1.53	0.92	0.683	1.69	0.404	0.93	1.00	0.435	No
456	29.93	1.84	0.31	1.54	0.92	0.683	1.69	0.405	0.93	1.00	0.436	No
457	30.01	1.85	0.31	1.54	0.92	0.684	1.69	0.405	0.93	1.00	0.436	No
458	30.07	1.85	0.31	1.54	0.92	0.684	1.69	0.405	0.93	1.00	0.437	No
459	30.15	1.86	0.32	1.54	0.92	0.685	1.69	0.405	0.93	1.00	0.437	No
460	30.20	1.86	0.32	1.54	0.92	0.685	1.69	0.405	0.93	1.00	0.437	No
461	30.27	1.87	0.32	1.55	0.92	0.685	1.69	0.406	0.93	1.00	0.438	No
462	30.34	1.87	0.32	1.55	0.92	0.686	1.69	0.406	0.93	1.00	0.438	No
463	30.38	1.87	0.32	1.55	0.92	0.686	1.69	0.406	0.93	1.00	0.438	No
464	30.46	1.88	0.33	1.55	0.92	0.686	1.69	0.406	0.93	1.00	0.439	No
465	30.53	1.88	0.33	1.55	0.92	0.687	1.69	0.406	0.93	1.00	0.439	No
466	30.62	1.89	0.33	1.56	0.92	0.687	1.69	0.407	0.93	1.00	0.439	No
467	30.66	1.89	0.33	1.56	0.92	0.687	1.69	0.407	0.93	1.00	0.439	No
468	30.71	1.89	0.33	1.56	0.92	0.688	1.69	0.407	0.93	1.00	0.440	No
469	30.80	1.90	0.34	1.56	0.92	0.688	1.69	0.407	0.93	1.00	0.440	No
470	30.84	1.90	0.34	1.56	0.92	0.688	1.69	0.407	0.92	1.00	0.440	No
471	30.92	1.91	0.34	1.56	0.92	0.689	1.69	0.408	0.92	1.00	0.441	No
472	30.98	1.91	0.34	1.57	0.92	0.689	1.69	0.408	0.92	1.00	0.441	No
473	31.07	1.91	0.35	1.57	0.91	0.689	1.69	0.408	0.92	1.00	0.441	No
474	31.11	1.92	0.35	1.57	0.91	0.690	1.69	0.408	0.92	1.00	0.442	No
475	31.18	1.92	0.35	1.57	0.91	0.690	1.69	0.408	0.92	1.00	0.442	No
476	31.26	1.93	0.35	1.58	0.91	0.690	1.69	0.409	0.92	1.00	0.442	No
477	31.30	1.93	0.35	1.58	0.91	0.690	1.69	0.409	0.92	1.00	0.443	No
478	31.38	1.93	0.36	1.58	0.91	0.691	1.69	0.409	0.92	1.00	0.443	No
479	31.44	1.94	0.36	1.58	0.91	0.691	1.69	0.409	0.92	1.00	0.443	No
480	31.54	1.94	0.36	1.58	0.91	0.692	1.69	0.409	0.92	1.00	0.444	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.59	1.95	0.36	1.58	0.91	0.692	1.69	0.409	0.92	1.00	0.444	No
482	31.67	1.95	0.36	1.59	0.91	0.692	1.69	0.410	0.92	1.00	0.444	No
483	31.72	1.95	0.37	1.59	0.91	0.692	1.69	0.410	0.92	1.00	0.444	No
484	31.77	1.96	0.37	1.59	0.91	0.693	1.69	0.410	0.92	1.00	0.445	No
485	31.86	1.96	0.37	1.59	0.91	0.693	1.69	0.410	0.92	1.00	0.445	No
486	31.91	1.97	0.37	1.59	0.91	0.693	1.69	0.410	0.92	1.00	0.445	No
487	32.00	1.97	0.37	1.60	0.91	0.693	1.69	0.410	0.92	1.00	0.446	No
488	32.05	1.97	0.38	1.60	0.91	0.694	1.69	0.411	0.92	1.00	0.446	No
489	32.09	1.98	0.38	1.60	0.91	0.694	1.69	0.411	0.92	1.00	0.446	No
490	32.18	1.98	0.38	1.60	0.91	0.694	1.69	0.411	0.92	1.00	0.446	No
491	32.23	1.99	0.38	1.60	0.91	0.694	1.69	0.411	0.92	1.00	0.447	No
492	32.30	1.99	0.38	1.61	0.91	0.695	1.69	0.411	0.92	1.00	0.447	No
493	32.36	1.99	0.39	1.61	0.91	0.695	1.69	0.411	0.92	1.00	0.447	No
494	32.45	2.00	0.39	1.61	0.91	0.695	1.69	0.411	0.92	1.00	0.448	No
495	32.50	2.00	0.39	1.61	0.91	0.695	1.69	0.412	0.92	1.00	0.448	No
496	32.55	2.01	0.39	1.61	0.91	0.696	1.69	0.412	0.92	1.00	0.448	No
497	32.64	2.01	0.39	1.62	0.91	0.696	1.69	0.412	0.92	1.00	0.448	No
498	32.69	2.01	0.40	1.62	0.91	0.696	1.69	0.412	0.92	1.00	0.449	No
499	32.78	2.02	0.40	1.62	0.91	0.696	1.69	0.412	0.92	1.00	0.449	No
500	32.83	2.02	0.40	1.62	0.90	0.697	1.69	0.412	0.92	1.00	0.449	No
501	32.88	2.03	0.40	1.62	0.90	0.697	1.69	0.412	0.92	1.00	0.449	No
502	32.96	2.03	0.40	1.63	0.90	0.697	1.69	0.413	0.92	1.00	0.450	No
503	33.01	2.03	0.41	1.63	0.90	0.697	1.69	0.413	0.92	1.00	0.450	No
504	33.09	2.04	0.41	1.63	0.90	0.697	1.69	0.413	0.92	1.00	0.450	No
505	33.14	2.04	0.41	1.63	0.90	0.698	1.69	0.413	0.92	1.00	0.450	No
506	33.20	2.05	0.41	1.63	0.90	0.698	1.69	0.413	0.92	1.00	0.451	No
507	33.28	2.05	0.41	1.64	0.90	0.698	1.69	0.413	0.92	1.00	0.451	No
508	33.34	2.05	0.42	1.64	0.90	0.698	1.69	0.413	0.92	1.00	0.451	No
509	33.43	2.06	0.42	1.64	0.90	0.699	1.69	0.413	0.92	1.00	0.451	No
510	33.47	2.06	0.42	1.64	0.90	0.699	1.69	0.414	0.92	1.00	0.452	No
511	33.57	2.07	0.42	1.64	0.90	0.699	1.69	0.414	0.92	1.00	0.452	No
512	33.60	2.07	0.42	1.65	0.90	0.699	1.69	0.414	0.92	1.00	0.452	No
513	33.70	2.08	0.43	1.65	0.90	0.699	1.69	0.414	0.92	1.00	0.452	No
514	33.74	2.08	0.43	1.65	0.90	0.699	1.69	0.414	0.92	1.00	0.452	No
515	33.79	2.08	0.43	1.65	0.90	0.700	1.69	0.414	0.91	1.00	0.453	No
516	33.88	2.09	0.43	1.65	0.90	0.700	1.69	0.414	0.91	1.00	0.453	No
517	33.93	2.09	0.43	1.66	0.90	0.700	1.69	0.414	0.91	1.00	0.453	No
518	34.01	2.09	0.44	1.66	0.90	0.700	1.69	0.414	0.91	1.00	0.453	No
519	34.07	2.10	0.44	1.66	0.90	0.700	1.69	0.415	0.91	1.00	0.454	No
520	34.16	2.10	0.44	1.66	0.90	0.701	1.69	0.415	0.91	1.00	0.454	No
521	34.20	2.11	0.44	1.66	0.90	0.701	1.69	0.415	0.91	1.00	0.454	No
522	34.25	2.11	0.44	1.67	0.90	0.701	1.69	0.415	0.91	1.00	0.454	No
523	34.33	2.11	0.45	1.67	0.90	0.701	1.69	0.415	0.91	1.00	0.454	No
524	34.41	2.12	0.45	1.67	0.89	0.701	1.69	0.415	0.91	1.00	0.455	No
525	34.46	2.12	0.45	1.67	0.89	0.701	1.69	0.415	0.91	1.00	0.455	No
526	34.52	2.13	0.45	1.67	0.89	0.701	1.69	0.415	0.91	1.00	0.455	No
527	34.60	2.13	0.46	1.68	0.89	0.702	1.69	0.415	0.91	1.00	0.455	No
528	34.66	2.13	0.46	1.68	0.89	0.702	1.69	0.415	0.91	1.00	0.455	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.73	2.14	0.46	1.68	0.89	0.702	1.69	0.415	0.91	1.00	0.456	No
530	34.78	2.14	0.46	1.68	0.89	0.702	1.69	0.416	0.91	1.00	0.456	No
531	34.87	2.15	0.46	1.68	0.89	0.702	1.69	0.416	0.91	1.00	0.456	No
532	34.92	2.15	0.47	1.69	0.89	0.702	1.69	0.416	0.91	1.00	0.456	No
533	35.01	2.16	0.47	1.69	0.89	0.702	1.69	0.416	0.91	1.00	0.457	No
534	35.06	2.16	0.47	1.69	0.89	0.702	1.69	0.416	0.91	1.00	0.457	No
535	35.11	2.16	0.47	1.69	0.89	0.703	1.69	0.416	0.91	1.00	0.457	No
536	35.19	2.17	0.47	1.70	0.89	0.703	1.69	0.416	0.91	1.00	0.457	No
537	35.24	2.17	0.48	1.70	0.89	0.703	1.69	0.416	0.91	1.00	0.457	No
538	35.33	2.18	0.48	1.70	0.89	0.703	1.69	0.416	0.91	1.00	0.457	No
539	35.38	2.18	0.48	1.70	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
540	35.46	2.19	0.48	1.71	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
541	35.52	2.19	0.48	1.71	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
542	35.61	2.20	0.49	1.71	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
543	35.64	2.20	0.49	1.71	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
544	35.70	2.20	0.49	1.71	0.89	0.703	1.69	0.416	0.91	1.00	0.458	No
545	35.77	2.21	0.49	1.72	0.89	0.703	1.69	0.416	0.91	1.00	0.459	No
546	35.83	2.21	0.49	1.72	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
547	35.92	2.22	0.50	1.72	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
548	35.97	2.22	0.50	1.72	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
549	36.03	2.23	0.50	1.73	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
550	36.10	2.23	0.50	1.73	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
551	36.16	2.24	0.50	1.73	0.88	0.703	1.69	0.416	0.91	1.00	0.459	No
552	36.24	2.24	0.51	1.73	0.88	0.704	1.69	0.416	0.91	1.00	0.460	No
553	36.30	2.25	0.51	1.74	0.88	0.704	1.69	0.416	0.91	1.00	0.460	No
554	36.35	2.25	0.51	1.74	0.88	0.704	1.69	0.416	0.91	1.00	0.460	No
555	36.43	2.25	0.51	1.74	0.88	0.704	1.69	0.416	0.91	1.00	0.460	No
556	36.49	2.26	0.51	1.74	0.88	0.704	1.69	0.416	0.90	1.00	0.460	No
557	36.56	2.26	0.52	1.75	0.88	0.704	1.69	0.416	0.90	1.00	0.460	No
558	36.63	2.27	0.52	1.75	0.88	0.704	1.69	0.416	0.90	1.00	0.461	No
559	36.69	2.27	0.52	1.75	0.88	0.704	1.69	0.416	0.90	1.00	0.461	No
560	36.77	2.28	0.52	1.75	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
561	36.82	2.28	0.52	1.76	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
562	36.90	2.29	0.53	1.76	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
563	36.95	2.29	0.53	1.76	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
564	37.01	2.29	0.53	1.76	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
565	37.09	2.30	0.53	1.77	0.88	0.704	1.69	0.417	0.90	1.00	0.461	No
566	37.14	2.30	0.53	1.77	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
567	37.23	2.31	0.54	1.77	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
568	37.28	2.31	0.54	1.77	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
569	37.34	2.32	0.54	1.77	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
570	37.44	2.32	0.54	1.78	0.87	0.704	1.69	0.416	0.90	1.00	0.462	No
571	37.48	2.32	0.55	1.78	0.87	0.704	1.69	0.416	0.90	1.00	0.462	No
572	37.54	2.33	0.55	1.78	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
573	37.62	2.33	0.55	1.78	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
574	37.67	2.33	0.55	1.78	0.87	0.704	1.69	0.417	0.90	1.00	0.462	No
575	37.76	2.34	0.55	1.78	0.87	0.704	1.69	0.417	0.90	1.00	0.463	No
576	37.81	2.34	0.56	1.78	0.87	0.704	1.69	0.417	0.90	1.00	0.463	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.09	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
2	0.13	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
3	0.22	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
4	0.27	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
5	0.36	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
6	0.41	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
7	0.51	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
8	0.54	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
9	0.60	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
10	0.69	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
11	0.73	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
12	0.82	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
13	0.86	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
14	0.95	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
15	0.98	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
16	1.05	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
17	1.14	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
18	1.19	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
19	1.28	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
20	1.32	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
21	1.38	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
22	1.47	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
23	1.51	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
24	1.61	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
25	1.64	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
26	1.71	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
27	1.79	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
28	1.84	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
29	1.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
30	1.98	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
31	2.04	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
32	2.12	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
33	2.17	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
34	2.26	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
35	2.31	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
36	2.41	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
37	2.44	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
38	2.52	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
39	2.59	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
40	2.67	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
41	2.72	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
42	2.77	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
43	2.86	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
44	2.90	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
45	2.99	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
46	3.04	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
47	3.09	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
48	3.17	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.22	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
50	3.28	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
51	3.36	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
52	3.46	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
53	3.50	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
54	3.55	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
55	3.63	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
56	3.68	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
57	3.77	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
58	3.82	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
59	3.90	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
60	3.95	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
61	4.00	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
62	4.10	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
63	4.14	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
64	4.20	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
65	4.29	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
66	4.33	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
67	4.42	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
68	4.48	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
69	4.56	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
70	4.59	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
71	4.67	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
72	4.75	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
73	4.80	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
74	4.88	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
75	4.92	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
76	5.00	0.00	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
77	5.07	90.50	2.03	2.15	0.62	144.90	1.33	193.38	4.000	No	No	2.00
78	5.17	130.80	1.94	2.23	0.59	209.64	1.27	265.29	4.000	No	No	2.00
79	5.22	120.43	2.00	2.43	0.61	192.99	1.30	251.59	4.000	No	No	2.00
80	5.26	111.78	2.05	2.67	0.62	179.08	1.35	242.19	4.000	No	No	2.00
81	5.34	105.05	2.10	2.94	0.64	168.25	1.41	237.97	4.000	No	No	2.00
82	5.40	102.59	2.13	3.15	0.65	164.30	1.46	240.37	4.000	No	No	2.00
83	5.49	103.89	2.13	3.24	0.65	166.37	1.47	245.22	4.000	No	No	2.00
84	5.54	107.42	2.12	3.23	0.65	172.04	1.46	250.65	4.000	No	No	2.00
85	5.58	112.45	2.09	3.07	0.64	180.11	1.41	254.13	4.000	No	No	2.00
86	5.67	117.67	2.06	2.85	0.63	188.49	1.36	257.01	4.000	No	No	2.00
87	5.72	120.99	2.02	2.60	0.61	193.83	1.32	256.31	4.000	No	No	2.00
88	5.81	121.86	1.98	2.37	0.60	195.21	1.29	252.55	4.000	No	No	2.00
89	5.86	120.33	1.95	2.13	0.59	192.75	1.27	244.71	4.000	No	No	2.00
90	5.92	118.98	1.91	1.86	0.58	190.57	1.24	236.64	4.000	No	No	2.00
91	6.00	117.33	1.86	1.62	0.57	187.92	1.21	227.59	4.000	No	No	2.00
92	6.04	115.09	1.82	1.40	0.55	184.32	1.17	216.51	4.000	No	No	2.00
93	6.13	112.34	1.80	1.29	0.55	179.89	1.16	207.81	4.000	No	No	2.00
94	6.18	110.38	1.79	1.24	0.55	176.74	1.15	202.57	4.000	No	No	2.00
95	6.24	108.87	1.81	1.30	0.55	174.30	1.17	203.51	4.000	No	No	2.00
96	6.32	109.30	1.83	1.37	0.56	174.99	1.18	206.97	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.37	110.59	1.85	1.47	0.56	177.06	1.20	212.41	4.000	No	No	2.00
98	6.46	114.78	1.85	1.52	0.56	183.78	1.20	220.45	4.000	No	No	2.00
99	6.51	116.50	1.87	1.65	0.57	186.53	1.22	227.23	4.000	No	No	2.00
100	6.60	122.45	1.87	1.73	0.57	196.08	1.22	238.90	4.000	No	No	2.00
101	6.64	129.16	1.87	1.81	0.57	206.85	1.22	252.18	4.000	No	No	2.00
102	6.70	136.78	1.87	1.88	0.57	219.10	1.22	266.80	4.000	No	No	2.00
103	6.78	137.06	1.91	2.08	0.58	219.54	1.24	272.56	4.000	No	No	2.00
104	6.84	130.94	1.97	2.39	0.60	209.70	1.28	269.05	4.000	No	No	2.00
105	6.93	121.97	2.04	2.75	0.62	195.28	1.34	261.59	4.000	No	No	2.00
106	6.97	109.82	2.12	3.24	0.64	175.75	1.45	254.94	4.000	No	No	2.00
107	7.06	98.92	2.19	3.71	0.67	158.22	1.60	253.35	4.000	No	No	2.00
108	7.11	91.26	2.25	4.07	0.68	145.92	1.75	254.96	4.000	No	No	2.00
109	7.16	88.43	2.26	4.10	0.69	141.36	1.78	251.51	4.000	No	No	2.00
110	7.23	88.39	2.24	3.93	0.68	141.30	1.73	245.09	4.000	No	No	2.00
111	7.29	89.26	2.22	3.66	0.67	142.68	1.66	236.23	4.000	No	No	2.00
112	7.39	89.78	2.19	3.44	0.67	143.52	1.60	229.26	4.000	No	No	2.00
113	7.44	86.88	2.19	3.35	0.67	138.84	1.60	221.64	4.000	No	No	2.00
114	7.52	79.38	2.23	3.49	0.68	126.79	1.70	214.91	4.000	No	No	2.00
115	7.57	69.38	2.29	3.75	0.70	110.72	1.89	209.78	4.000	No	No	2.00
116	7.62	58.48	2.38	4.21	0.72	93.21	2.26	210.60	4.000	No	No	2.00
117	7.69	49.36	2.47	4.77	0.75	78.54	2.76	216.78	4.000	No	No	2.00
118	7.75	41.64	2.56	5.54	0.78	66.13	3.46	228.61	4.000	No	No	2.00
119	7.81	38.50	2.60	5.84	0.79	61.07	3.79	231.47	4.000	No	Yes	2.00
120	7.90	37.31	2.61	5.77	0.79	59.17	3.83	226.89	4.000	No	Yes	2.00
121	7.95	37.83	2.57	5.11	0.78	60.00	3.46	207.77	4.000	No	No	2.00
122	8.04	38.17	2.52	4.48	0.76	60.54	3.12	188.84	4.000	No	No	2.00
123	8.08	38.81	2.52	4.48	0.76	61.56	3.09	189.95	4.000	No	No	2.00
124	8.17	39.33	2.56	5.23	0.78	62.37	3.44	214.31	4.000	No	No	2.00
125	8.20	50.87	2.48	5.07	0.75	80.92	2.84	229.65	4.000	No	No	2.00
126	8.31	69.24	2.34	4.23	0.71	108.41	2.08	225.28	4.000	No	No	2.00
127	8.36	93.55	2.19	3.35	0.66	141.51	1.58	224.06	4.000	No	No	2.00
128	8.40	89.55	2.23	3.63	0.68	136.00	1.68	228.60	4.000	No	No	2.00
129	8.49	65.36	2.42	5.16	0.73	102.45	2.49	255.41	4.000	No	No	2.00
130	8.54	36.41	2.79	9.76	0.85	57.66	5.77	332.64	4.000	No	Yes	2.00
131	8.63	25.44	3.02	14.22	1.00	40.01	9.13	365.13	4.000	No	Yes	2.00
132	8.67	28.31	2.91	11.08	0.88	44.62	7.29	325.19	4.000	No	Yes	2.00
133	8.77	30.46	2.78	8.12	0.84	48.07	5.62	270.02	4.000	No	Yes	2.00
134	8.81	32.22	2.65	5.78	0.80	50.89	4.24	215.53	4.000	No	Yes	2.00
135	8.87	34.47	2.60	5.20	0.79	53.78	3.78	203.09	4.000	No	Yes	2.00
136	8.95	36.83	2.58	5.15	0.78	56.87	3.61	205.35	4.000	No	No	2.00
137	9.00	38.97	2.58	5.36	0.78	59.94	3.60	215.50	4.000	No	No	2.00
138	9.09	40.22	2.58	5.49	0.78	61.40	3.60	221.13	4.000	No	No	2.00
139	9.14	41.50	2.57	5.43	0.78	63.01	3.52	221.49	4.000	No	No	2.00
140	9.19	43.71	2.54	5.10	0.77	65.73	3.26	214.16	4.000	No	No	2.00
141	9.28	46.24	2.51	4.82	0.76	68.65	3.03	208.33	4.000	No	No	2.00
142	9.32	46.89	2.50	4.82	0.76	69.32	3.01	208.81	4.000	No	No	2.00
143	9.43	47.52	2.50	4.79	0.76	69.62	2.99	208.36	4.000	No	No	2.00
144	9.45	48.29	2.49	4.69	0.76	70.50	2.92	205.92	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.54	49.17	2.48	4.54	0.75	71.12	2.83	201.43	4.000	No	No	2.00
146	9.59	51.85	2.44	4.15	0.74	74.22	2.57	191.10	4.000	No	No	2.00
147	9.67	53.96	2.40	3.84	0.73	76.31	2.39	182.41	4.000	No	No	2.00
148	9.72	55.57	2.38	3.60	0.72	77.93	2.25	175.44	4.000	No	No	2.00
149	9.81	53.51	2.39	3.67	0.73	74.72	2.35	175.28	4.000	No	No	2.00
150	9.86	50.12	2.43	3.86	0.74	70.10	2.54	177.76	4.000	No	No	2.00
151	9.95	47.82	2.45	3.99	0.74	66.63	2.68	178.86	4.000	No	No	2.00
152	10.00	44.43	2.49	4.21	0.76	62.02	2.93	181.79	4.000	No	No	2.00
153	10.04	41.43	2.53	4.50	0.77	57.94	3.22	186.73	4.000	No	No	2.00
154	10.13	38.05	2.59	4.92	0.78	53.24	3.65	194.19	4.000	No	No	2.00
155	10.18	35.91	2.63	5.34	0.80	50.35	4.02	202.47	4.000	No	Yes	2.00
156	10.28	35.08	2.65	5.58	0.80	48.94	4.23	207.14	4.000	No	Yes	2.00
157	10.32	34.09	2.68	5.89	0.81	47.56	4.49	213.37	4.000	No	Yes	2.00
158	10.41	34.71	2.68	5.93	0.81	48.07	4.48	215.33	4.000	No	Yes	2.00
159	10.46	35.88	2.67	5.86	0.81	49.46	4.36	215.54	4.000	No	Yes	2.00
160	10.51	38.46	2.63	5.46	0.80	52.56	3.97	208.92	4.000	No	Yes	2.00
161	10.60	39.29	2.61	5.26	0.79	53.23	3.83	203.99	4.000	No	Yes	2.00
162	10.64	40.70	2.58	5.00	0.78	54.77	3.62	198.45	4.000	No	No	2.00
163	10.73	42.57	2.56	4.77	0.78	56.75	3.41	193.73	4.000	No	No	2.00
164	10.78	48.01	2.49	4.19	0.75	63.25	2.88	182.21	4.000	No	No	2.00
165	10.83	52.62	2.43	3.77	0.74	68.61	2.53	173.44	4.000	No	No	2.00
166	10.92	55.96	2.39	3.52	0.73	72.22	2.33	167.92	4.000	No	No	2.00
167	10.96	54.74	2.40	3.60	0.73	70.54	2.40	169.29	4.000	No	No	2.00
168	11.05	51.01	2.45	3.87	0.74	65.66	2.65	174.06	4.000	No	No	2.00
169	11.10	46.01	2.51	4.30	0.76	59.42	3.06	182.07	4.000	No	No	2.00
170	11.19	42.31	2.57	4.70	0.78	54.59	3.47	189.40	4.000	No	No	2.00
171	11.24	40.39	2.60	4.98	0.79	52.11	3.73	194.62	4.000	No	No	2.00
172	11.29	40.68	2.60	5.00	0.79	52.31	3.73	195.35	4.000	No	No	2.00
173	11.38	41.81	2.59	4.89	0.78	53.35	3.63	193.52	4.000	No	No	2.00
174	11.43	42.50	2.58	4.82	0.78	54.02	3.56	192.34	4.000	No	No	2.00
175	11.50	42.28	2.59	4.93	0.78	53.52	3.64	194.86	4.000	No	No	2.00
176	11.56	41.75	2.61	5.27	0.79	52.78	3.86	203.75	4.000	No	Yes	2.00
177	11.66	41.57	2.63	5.58	0.80	52.31	4.05	211.90	4.000	No	Yes	2.00
178	11.68	42.28	2.64	5.71	0.80	53.15	4.08	216.85	4.000	No	Yes	2.00
179	11.76	42.74	2.63	5.65	0.80	53.41	4.03	215.28	4.000	No	Yes	2.00
180	11.84	41.93	2.64	5.72	0.80	52.14	4.13	215.53	4.000	No	Yes	2.00
181	11.90	40.25	2.66	5.90	0.81	49.94	4.35	217.22	4.000	No	Yes	2.00
182	11.95	38.15	2.70	6.25	0.82	47.30	4.70	222.23	4.000	No	Yes	2.00
183	12.01	36.72	2.73	6.54	0.83	45.41	4.98	226.19	4.000	No	Yes	2.00
184	12.09	35.30	2.75	6.76	0.83	43.49	5.24	228.04	4.000	No	Yes	2.00
185	12.17	33.84	2.77	6.86	0.84	41.47	5.46	226.34	4.000	No	Yes	2.00
186	12.22	32.31	2.78	6.78	0.84	39.48	5.58	220.38	4.000	No	Yes	2.00
187	12.29	30.11	2.80	6.87	0.85	36.64	5.91	216.47	4.000	No	Yes	2.00
188	12.35	27.82	2.84	7.08	0.86	33.73	6.35	214.15	4.000	No	Yes	2.00
189	12.45	26.09	2.87	7.38	0.87	31.46	6.81	214.20	4.000	No	Yes	2.00
190	12.47	25.52	2.88	7.28	0.87	30.71	6.85	210.42	4.000	No	Yes	2.00
191	12.54	26.05	2.85	6.79	0.86	31.15	6.49	202.10	4.000	No	Yes	2.00
192	12.63	26.80	2.82	6.30	0.85	31.78	6.10	193.97	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.68	27.22	2.81	6.09	0.85	32.15	5.92	190.40	4.000	No	Yes	2.00
194	12.74	27.78	2.79	5.98	0.85	32.66	5.79	189.11	4.000	No	Yes	2.00
195	12.81	28.24	2.79	5.90	0.84	33.04	5.70	188.18	4.000	No	Yes	2.00
196	12.87	27.41	2.81	6.13	0.85	31.97	5.97	190.79	4.000	No	Yes	2.00
197	12.96	25.87	2.85	6.58	0.86	30.04	6.50	195.38	4.000	No	Yes	2.00
198	13.00	26.33	2.84	6.54	0.86	30.49	6.42	195.76	4.000	No	Yes	2.00
199	13.08	29.15	2.79	5.99	0.84	33.53	5.70	191.15	4.000	No	Yes	2.00
200	13.14	31.01	2.75	5.66	0.83	35.48	5.29	187.55	4.000	No	Yes	2.00
201	13.23	30.61	2.76	5.69	0.84	34.84	5.37	187.14	4.000	No	Yes	2.00
202	13.28	28.91	2.79	5.88	0.84	32.82	5.71	187.38	4.000	No	Yes	2.00
203	13.33	27.83	2.80	5.84	0.85	31.48	5.84	183.86	4.000	No	Yes	2.00
204	13.42	25.79	2.83	6.00	0.86	29.00	6.27	181.84	4.000	No	Yes	2.00
205	13.46	24.18	2.86	6.12	0.87	27.10	6.63	179.75	4.000	No	Yes	2.00
206	13.54	23.17	2.88	6.33	0.87	25.84	6.98	180.30	4.000	No	Yes	2.00
207	13.60	23.24	2.89	6.41	0.87	25.84	7.04	181.84	4.000	No	Yes	2.00
208	13.69	23.54	2.89	6.53	0.88	26.03	7.08	184.39	4.000	No	Yes	2.00
209	13.72	25.39	2.87	6.54	0.87	28.06	6.76	189.81	4.000	No	Yes	2.00
210	13.79	28.66	2.83	6.44	0.86	31.57	6.22	196.29	4.000	No	Yes	2.00
211	13.85	33.98	2.77	6.31	0.84	37.33	5.51	205.75	4.000	No	Yes	2.00
212	13.92	39.57	2.72	6.24	0.83	43.30	4.97	215.04	4.000	No	Yes	2.00
213	14.01	44.14	2.69	6.23	0.82	48.07	4.64	222.99	4.000	No	Yes	2.00
214	14.06	46.31	2.69	6.34	0.81	50.30	4.56	229.50	4.000	No	Yes	2.00
215	14.11	45.40	2.66	5.68	0.81	49.06	4.28	210.14	4.000	No	Yes	2.00
216	14.20	42.12	2.66	5.35	0.81	45.24	4.32	195.61	4.000	No	Yes	2.00
217	14.25	38.48	2.67	5.00	0.81	41.13	4.40	180.81	4.000	No	Yes	2.00
218	14.31	36.01	2.73	5.76	0.83	38.44	5.08	195.10	4.000	No	Yes	2.00
219	14.38	35.39	2.77	6.25	0.84	37.65	5.44	204.95	4.000	No	Yes	2.00
220	14.48	35.29	2.78	6.58	0.84	37.36	5.66	211.58	4.000	No	Yes	2.00
221	14.50	35.34	2.80	6.83	0.85	37.37	5.81	217.19	4.000	No	Yes	2.00
222	14.58	35.87	2.80	6.91	0.85	37.77	5.82	219.77	4.000	No	Yes	2.00
223	14.63	36.62	2.79	6.83	0.84	38.44	5.71	219.48	4.000	No	Yes	2.00
224	14.72	37.22	2.78	6.68	0.84	38.87	5.58	216.97	4.000	No	Yes	2.00
225	14.77	37.65	2.76	6.44	0.84	39.20	5.41	212.18	4.000	No	Yes	2.00
226	14.84	38.76	2.74	6.19	0.83	40.17	5.19	208.42	4.000	No	Yes	2.00
227	14.90	41.00	2.71	5.88	0.82	42.34	4.83	204.66	4.000	No	Yes	2.00
228	14.99	43.60	2.69	5.69	0.81	44.81	4.55	203.98	4.000	No	Yes	2.00
229	15.04	45.63	2.68	5.84	0.81	46.80	4.50	210.82	4.000	No	Yes	2.00
230	15.13	46.53	2.69	6.17	0.82	47.53	4.64	220.53	4.000	No	Yes	2.00
231	15.18	46.88	2.71	6.51	0.82	47.78	4.81	229.81	4.000	No	Yes	2.00
232	15.22	48.98	2.69	6.43	0.82	49.82	4.64	231.14	4.000	No	Yes	2.00
233	15.31	53.06	2.65	6.08	0.80	53.70	4.24	227.91	4.000	No	Yes	2.00
234	15.36	57.15	2.62	5.76	0.79	57.69	3.89	224.50	4.000	No	Yes	2.00
235	15.44	58.11	2.61	5.69	0.79	58.41	3.82	223.26	4.000	No	Yes	2.00
236	15.50	56.27	2.63	5.85	0.80	56.39	3.99	225.22	4.000	No	Yes	2.00
237	15.57	54.78	2.64	5.97	0.80	54.68	4.14	226.29	4.000	No	Yes	2.00
238	15.64	54.06	2.65	6.00	0.80	53.77	4.20	225.87	4.000	No	Yes	2.00
239	15.69	53.77	2.65	5.94	0.80	53.31	4.19	223.44	4.000	No	Yes	2.00
240	15.77	52.83	2.65	5.94	0.80	52.13	4.25	221.68	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.82	55.47	2.62	5.60	0.79	54.61	3.95	215.68	4.000	No	Yes	2.00
242	15.91	61.78	2.56	5.05	0.78	60.57	3.41	206.54	4.000	No	No	2.00
243	15.96	71.43	2.48	4.50	0.75	69.91	2.85	199.00	4.000	No	No	2.00
244	16.05	76.11	2.46	4.42	0.75	74.17	2.70	200.32	4.000	No	No	2.00
245	16.10	74.42	2.49	4.73	0.75	72.37	2.89	209.21	4.000	No	No	2.00
246	16.14	64.83	2.58	5.55	0.78	62.87	3.58	224.91	4.000	No	No	2.00
247	16.24	55.73	2.67	6.41	0.81	53.71	4.41	237.07	4.000	No	Yes	2.00
248	16.28	48.51	2.74	6.94	0.83	46.56	5.12	238.38	4.000	No	Yes	2.00
249	16.38	44.43	2.77	6.98	0.84	42.36	5.45	230.89	4.000	No	Yes	2.00
250	16.42	40.03	2.80	6.97	0.85	38.00	5.83	221.64	4.000	No	Yes	2.00
251	16.50	38.29	2.80	6.75	0.85	36.13	5.89	212.77	4.000	No	Yes	2.00
252	16.56	37.72	2.79	6.32	0.84	35.48	5.70	202.06	4.000	No	Yes	2.00
253	16.61	38.89	2.74	5.54	0.83	36.50	5.11	186.61	4.000	No	Yes	2.00
254	16.70	37.55	2.73	5.11	0.83	35.04	4.98	174.40	4.000	No	Yes	2.00
255	16.74	34.40	2.74	4.82	0.83	31.95	5.09	162.66	4.000	No	Yes	2.00
256	16.83	29.81	2.79	5.00	0.85	27.44	5.79	158.86	4.000	No	Yes	2.00
257	16.88	25.61	2.86	5.16	0.86	23.37	6.57	153.58	4.000	No	Yes	2.00
258	16.93	23.14	2.86	4.71	0.87	20.97	6.68	140.11	4.000	No	Yes	2.00
259	17.00	21.66	2.84	4.03	0.86	19.49	6.42	125.06	4.000	No	Yes	2.00
260	17.06	21.26	2.80	3.30	0.85	19.05	5.80	110.52	4.000	No	Yes	2.00
261	17.16	21.56	2.77	3.08	0.84	19.26	5.53	106.56	4.000	No	Yes	2.00
262	17.21	22.03	2.74	2.83	0.83	19.65	5.19	102.09	4.000	No	Yes	2.00
263	17.26	22.25	2.73	2.74	0.83	19.81	5.07	100.44	4.000	No	Yes	2.00
264	17.35	22.38	2.73	2.72	0.83	19.85	5.03	99.87	4.000	No	Yes	2.00
265	17.40	22.35	2.74	2.77	0.83	19.78	5.10	100.94	4.000	No	Yes	2.00
266	17.46	22.21	2.74	2.82	0.83	19.58	5.19	101.65	4.000	No	Yes	2.00
267	17.53	21.90	2.76	2.89	0.84	19.24	5.34	102.72	4.000	No	Yes	2.00
268	17.62	21.69	2.77	2.95	0.84	18.96	5.46	103.48	4.000	No	Yes	2.00
269	17.67	21.64	2.77	3.01	0.84	18.87	5.55	104.62	4.000	No	Yes	2.00
270	17.72	21.97	2.78	3.08	0.84	19.13	5.56	106.35	4.000	No	Yes	2.00
271	17.81	22.35	2.77	3.09	0.84	19.39	5.51	106.91	4.000	No	Yes	2.00
272	17.85	22.61	2.76	2.99	0.84	19.60	5.37	105.26	4.000	No	Yes	2.00
273	17.95	22.66	2.75	2.83	0.83	19.56	5.21	101.90	4.000	No	Yes	2.00
274	18.00	22.46	2.74	2.69	0.83	19.34	5.10	98.66	4.000	No	Yes	2.00
275	18.09	21.96	2.74	2.67	0.83	18.80	5.20	97.69	4.000	No	Yes	2.00
276	18.14	21.17	2.77	2.74	0.84	18.05	5.43	97.99	4.000	No	Yes	2.00
277	18.18	20.27	2.79	2.86	0.85	17.20	5.77	99.16	4.000	No	Yes	2.00
278	18.27	19.53	2.82	2.96	0.85	16.45	6.08	99.98	4.000	No	Yes	2.00
279	18.32	18.88	2.84	3.11	0.86	15.84	6.42	101.69	4.000	No	Yes	2.00
280	18.41	18.55	2.86	3.23	0.87	15.46	6.66	103.03	4.000	No	Yes	2.00
281	18.46	18.37	2.87	3.29	0.87	15.27	6.80	103.82	4.000	No	Yes	2.00
282	18.54	18.41	2.87	3.27	0.87	15.24	6.78	103.30	4.000	No	Yes	2.00
283	18.60	18.41	2.87	3.25	0.87	15.21	6.77	102.94	4.000	No	Yes	2.00
284	18.64	18.42	2.87	3.28	0.87	15.18	6.81	103.39	4.000	No	Yes	2.00
285	18.72	18.20	2.89	3.37	0.87	14.93	7.00	104.49	4.000	No	Yes	2.00
286	18.77	18.07	2.90	3.47	0.88	14.77	7.16	105.71	4.000	No	Yes	2.00
287	18.84	17.94	2.91	3.57	0.88	14.61	7.32	106.94	4.000	No	Yes	2.00
288	18.91	18.03	2.91	3.61	0.88	14.64	7.36	107.72	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.96	18.12	2.92	3.76	0.88	14.68	7.50	110.11	4.000	No	Yes	2.00
290	19.05	18.28	2.93	3.90	0.89	14.75	7.63	112.57	4.000	No	Yes	2.00
291	19.10	18.63	2.93	3.99	0.89	15.02	7.63	114.62	4.000	No	Yes	2.00
292	19.18	19.22	2.91	3.87	0.88	15.47	7.35	113.77	4.000	No	Yes	2.00
293	19.24	20.32	2.88	3.66	0.87	16.40	6.85	112.37	4.000	No	Yes	2.00
294	19.29	21.60	2.84	3.54	0.86	17.47	6.43	112.29	4.000	No	Yes	2.00
295	19.37	22.74	2.82	3.48	0.85	18.39	6.14	112.95	4.000	No	Yes	2.00
296	19.43	22.95	2.83	3.65	0.86	18.52	6.27	116.23	4.000	No	Yes	2.00
297	19.54	23.02	2.85	3.86	0.86	18.47	6.50	120.01	4.000	No	Yes	2.00
298	19.58	23.21	2.88	4.30	0.87	18.59	6.88	127.86	4.000	No	Yes	2.00
299	19.67	23.89	2.89	4.64	0.88	19.07	7.07	134.75	4.000	No	Yes	2.00
300	19.71	24.66	2.90	4.92	0.88	19.67	7.15	140.76	4.000	No	Yes	2.00
301	19.77	25.74	2.88	4.94	0.87	20.54	6.97	143.25	4.000	No	Yes	2.00
302	19.82	27.54	2.86	4.88	0.87	22.02	6.61	145.47	4.000	No	Yes	2.00
303	19.91	29.56	2.83	4.82	0.86	23.64	6.25	147.82	4.000	No	Yes	2.00
304	19.95	31.46	2.81	4.76	0.85	25.20	5.95	149.84	4.000	No	Yes	2.00
305	20.04	32.65	2.79	4.72	0.85	26.11	5.77	150.70	3.600	No	Yes	2.00
306	20.09	33.17	2.79	4.76	0.85	26.49	5.74	152.16	3.600	No	Yes	2.00
307	20.17	33.30	2.80	4.89	0.85	26.50	5.84	154.81	3.600	No	Yes	2.00
308	20.23	33.46	2.81	5.02	0.85	26.55	5.93	157.52	3.600	No	Yes	2.00
309	20.32	33.96	2.81	5.06	0.85	26.85	5.92	158.94	3.600	No	Yes	2.00
310	20.37	34.55	2.80	5.08	0.85	27.29	5.87	160.16	3.600	No	Yes	2.00
311	20.41	35.23	2.80	5.12	0.85	27.80	5.83	161.96	3.600	No	Yes	2.00
312	20.50	35.95	2.80	5.17	0.85	28.28	5.80	163.88	3.600	No	Yes	2.00
313	20.55	36.66	2.79	5.25	0.85	28.80	5.78	166.52	3.600	No	Yes	2.00
314	20.64	37.28	2.79	5.32	0.85	29.20	5.78	168.70	3.600	No	Yes	2.00
315	20.69	37.96	2.80	5.46	0.85	29.67	5.81	172.38	3.600	No	Yes	2.00
316	20.78	38.62	2.80	5.61	0.85	30.09	5.86	176.29	3.600	No	Yes	2.00
317	20.83	39.19	2.81	5.83	0.85	30.47	5.96	181.53	3.600	No	Yes	2.00
318	20.87	39.70	2.82	6.14	0.85	30.80	6.12	188.51	3.600	No	Yes	2.00
319	20.96	40.22	2.83	6.42	0.86	31.07	6.26	194.62	3.600	No	Yes	2.00
320	21.01	40.88	2.84	6.66	0.86	31.52	6.36	200.47	3.600	No	Yes	2.00
321	21.09	41.26	2.84	6.81	0.86	31.71	6.43	203.80	3.600	No	Yes	2.00
322	21.13	41.47	2.85	7.00	0.86	31.79	6.54	207.82	3.600	No	Yes	2.00
323	21.20	41.54	2.86	7.17	0.87	31.74	6.64	210.87	3.600	No	Yes	2.00
324	21.29	41.64	2.86	7.25	0.87	31.69	6.70	212.23	3.600	No	Yes	2.00
325	21.33	41.59	2.84	6.71	0.86	31.64	6.38	201.70	3.600	No	Yes	2.00
326	21.42	41.35	2.81	5.99	0.85	31.39	5.95	186.78	3.600	No	Yes	2.00
327	21.47	41.09	2.78	5.43	0.84	31.18	5.60	174.68	3.600	No	Yes	2.00
328	21.56	41.00	2.78	5.44	0.84	30.99	5.64	174.65	3.600	No	Yes	2.00
329	21.61	40.88	2.79	5.63	0.85	30.81	5.78	178.14	3.600	No	Yes	2.00
330	21.66	40.35	2.80	5.67	0.85	30.32	5.87	177.99	3.600	No	Yes	2.00
331	21.73	39.27	2.81	5.72	0.85	29.38	6.03	177.02	3.600	No	Yes	2.00
332	21.80	38.33	2.82	5.76	0.86	28.54	6.17	176.06	3.600	No	Yes	2.00
333	21.89	37.62	2.83	5.77	0.86	27.86	6.28	174.84	3.600	No	Yes	2.00
334	21.94	37.20	2.83	5.69	0.86	27.50	6.28	172.56	3.600	No	Yes	2.00
335	21.98	36.66	2.83	5.55	0.86	27.03	6.24	168.74	3.600	No	Yes	2.00
336	22.07	36.15	2.83	5.39	0.86	26.55	6.20	164.65	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.12	35.51	2.82	5.19	0.85	26.02	6.14	159.75	3.600	No	Yes	2.00
338	22.21	34.93	2.82	5.05	0.85	25.49	6.12	156.02	3.600	No	Yes	2.00
339	22.26	34.48	2.82	4.98	0.85	25.09	6.13	153.74	3.600	No	Yes	2.00
340	22.33	34.40	2.82	4.96	0.85	24.97	6.13	153.09	3.600	No	Yes	2.00
341	22.40	34.40	2.82	4.91	0.85	24.90	6.11	152.07	3.600	No	Yes	2.00
342	22.44	34.41	2.82	4.85	0.85	24.87	6.06	150.80	3.600	No	Yes	2.00
343	22.54	34.48	2.82	4.82	0.85	24.84	6.04	150.13	3.600	No	Yes	2.00
344	22.59	34.59	2.82	4.83	0.85	24.87	6.05	150.44	3.600	No	Yes	2.00
345	22.67	34.75	2.82	4.87	0.85	24.90	6.08	151.33	3.600	No	Yes	2.00
346	22.72	34.81	2.82	4.98	0.86	24.88	6.17	153.44	3.600	No	Yes	2.00
347	22.79	34.86	2.83	5.13	0.86	24.83	6.29	156.20	3.600	No	Yes	2.00
348	22.84	34.86	2.84	5.26	0.86	24.76	6.40	158.44	3.600	No	Yes	2.00
349	22.91	34.68	2.85	5.32	0.86	24.55	6.48	159.16	3.600	No	Yes	2.00
350	23.00	34.49	2.85	5.31	0.86	24.32	6.51	158.38	3.600	No	Yes	2.00
351	23.04	34.35	2.85	5.29	0.86	24.17	6.52	157.64	3.600	No	Yes	2.00
352	23.13	34.36	2.85	5.26	0.86	24.10	6.51	156.90	3.600	No	Yes	2.00
353	23.18	34.34	2.85	5.21	0.86	24.04	6.49	156.01	3.600	No	Yes	2.00
354	23.23	34.36	2.85	5.29	0.86	23.99	6.56	157.29	3.600	No	Yes	2.00
355	23.31	34.58	2.86	5.44	0.87	24.07	6.65	160.13	3.600	No	Yes	2.00
356	23.36	35.65	2.85	5.48	0.86	24.81	6.55	162.60	3.600	No	Yes	2.00
357	23.46	36.58	2.84	5.45	0.86	25.41	6.43	163.28	3.600	No	Yes	2.00
358	23.50	37.10	2.84	5.48	0.86	25.76	6.39	164.63	3.600	No	Yes	2.00
359	23.60	36.69	2.86	5.72	0.87	25.32	6.64	168.13	3.600	No	Yes	2.00
360	23.64	36.41	2.88	6.07	0.87	25.02	6.95	173.80	3.600	No	Yes	2.00
361	23.72	36.84	2.89	6.30	0.88	25.23	7.07	178.31	3.600	No	Yes	2.00
362	23.78	38.24	2.88	6.36	0.87	26.19	6.94	181.77	3.600	No	Yes	2.00
363	23.84	40.00	2.86	6.29	0.87	27.43	6.70	183.65	3.600	No	Yes	2.00
364	23.92	41.48	2.85	6.20	0.86	28.44	6.49	184.43	3.600	No	Yes	2.00
365	23.97	42.19	2.84	6.16	0.86	28.91	6.39	184.62	3.600	No	Yes	2.00
366	24.06	42.36	2.84	6.09	0.86	28.94	6.34	183.47	3.600	No	Yes	2.00
367	24.11	42.04	2.84	5.99	0.86	28.67	6.31	180.77	3.600	No	Yes	2.00
368	24.15	41.19	2.82	5.65	0.86	28.05	6.17	172.92	3.600	No	Yes	2.00
369	24.23	40.02	2.83	5.49	0.86	27.14	6.19	167.90	3.600	No	Yes	2.00
370	24.29	38.69	2.84	5.55	0.86	26.10	6.39	166.72	3.600	No	Yes	2.00
371	24.38	37.62	2.87	5.87	0.87	25.19	6.77	170.54	3.600	No	Yes	2.00
372	24.43	36.86	2.88	5.97	0.87	24.58	6.95	170.88	3.600	No	Yes	2.00
373	24.49	36.44	2.88	5.93	0.87	24.23	6.98	169.19	3.600	No	Yes	2.00
374	24.57	36.24	2.89	5.90	0.87	24.01	7.00	168.15	3.600	No	Yes	2.00
375	24.62	35.77	2.90	5.97	0.88	23.62	7.13	168.45	3.600	No	Yes	2.00
376	24.68	35.28	2.90	5.98	0.88	23.21	7.22	167.55	3.600	No	Yes	2.00
377	24.75	34.69	2.90	5.90	0.88	22.74	7.25	164.90	3.600	No	Yes	2.00
378	24.81	34.38	2.90	5.73	0.88	22.50	7.17	161.41	3.600	No	Yes	2.00
379	24.90	34.23	2.89	5.62	0.88	22.32	7.13	159.06	3.600	No	Yes	2.00
380	24.94	34.18	2.89	5.60	0.88	22.25	7.13	158.62	3.600	No	Yes	2.00
381	25.04	34.22	2.89	5.57	0.88	22.21	7.11	157.97	3.600	No	Yes	2.00
382	25.08	34.20	2.89	5.47	0.87	22.16	7.05	156.23	3.600	No	Yes	2.00
383	25.18	34.11	2.89	5.36	0.87	22.04	6.99	154.07	3.600	No	Yes	2.00
384	25.22	33.85	2.88	5.30	0.87	21.83	6.99	152.53	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.27	33.48	2.89	5.33	0.88	21.52	7.08	152.30	3.600	No	Yes	2.00
386	25.34	33.17	2.90	5.39	0.88	21.25	7.18	152.54	3.600	No	Yes	2.00
387	25.40	33.03	2.90	5.44	0.88	21.10	7.25	152.96	3.600	No	Yes	2.00
388	25.48	33.11	2.90	5.45	0.88	21.08	7.27	153.15	3.600	No	Yes	2.00
389	25.55	33.34	2.90	5.44	0.88	21.19	7.23	153.27	3.600	No	Yes	2.00
390	25.59	33.74	2.90	5.46	0.88	21.43	7.19	154.15	3.600	No	Yes	2.00
391	25.67	34.31	2.90	5.64	0.88	21.73	7.27	157.98	3.600	No	Yes	2.00
392	25.73	35.56	2.91	5.94	0.88	22.50	7.33	165.00	3.600	No	Yes	2.00
393	25.82	37.27	2.90	6.15	0.88	23.57	7.27	171.34	3.600	No	Yes	2.00
394	25.85	40.62	2.87	6.05	0.87	25.86	6.78	175.42	3.600	No	Yes	2.00
395	25.95	43.51	2.84	5.84	0.86	27.79	6.33	175.92	3.600	No	Yes	2.00
396	26.00	45.83	2.81	5.69	0.85	29.36	6.01	176.53	3.600	No	Yes	2.00
397	26.05	45.86	2.82	5.80	0.85	29.31	6.09	178.54	3.600	No	Yes	2.00
398	26.14	45.46	2.83	5.95	0.86	28.91	6.25	180.67	3.600	No	Yes	2.00
399	26.19	44.64	2.84	5.95	0.86	28.30	6.33	179.18	3.600	No	Yes	2.00
400	26.28	43.96	2.82	5.60	0.86	27.82	6.16	171.34	3.600	No	Yes	2.00
401	26.33	43.58	2.80	5.05	0.85	27.62	5.79	160.02	3.600	No	Yes	2.00
402	26.41	43.48	2.77	4.68	0.84	27.55	5.53	152.44	3.600	No	Yes	2.00
403	26.46	42.98	2.78	4.71	0.84	27.15	5.61	152.42	3.600	No	Yes	2.00
404	26.56	42.81	2.79	4.89	0.85	26.91	5.78	155.45	3.600	No	Yes	2.00
405	26.59	39.75	2.85	5.43	0.86	24.69	6.53	161.33	3.600	No	Yes	2.00
406	26.64	40.39	2.85	5.39	0.86	25.08	6.44	161.54	3.600	No	Yes	2.00
407	26.72	41.02	2.84	5.35	0.86	25.45	6.35	161.51	3.600	No	Yes	2.00
408	26.78	44.92	2.78	4.89	0.84	28.12	5.61	157.78	3.600	No	Yes	2.00
409	26.87	45.19	2.78	4.87	0.84	28.22	5.58	157.57	3.600	No	Yes	2.00
410	26.92	44.26	2.79	4.99	0.85	27.52	5.76	158.64	3.600	No	Yes	2.00
411	27.01	42.92	2.82	5.16	0.85	26.49	6.04	160.15	3.600	No	Yes	2.00
412	27.05	42.17	2.83	5.29	0.86	25.92	6.23	161.39	3.600	No	Yes	2.00
413	27.10	42.33	2.82	5.22	0.86	26.00	6.17	160.31	3.600	No	Yes	2.00
414	27.18	42.76	2.80	4.93	0.85	26.28	5.90	155.18	3.600	No	Yes	2.00
415	27.24	43.02	2.78	4.53	0.84	26.50	5.56	147.45	3.600	No	Yes	2.00
416	27.30	42.50	2.76	4.24	0.84	26.17	5.38	140.81	3.600	No	Yes	2.00
417	27.38	41.30	2.77	4.19	0.84	25.31	5.47	138.50	3.600	No	Yes	2.00
418	27.47	40.13	2.79	4.28	0.84	24.43	5.68	138.75	3.600	No	Yes	2.00
419	27.52	39.67	2.79	4.33	0.85	24.07	5.78	139.16	3.600	No	Yes	2.00
420	27.56	39.80	2.80	4.47	0.85	24.09	5.89	141.91	3.600	No	Yes	2.00
421	27.65	40.13	2.81	4.67	0.85	24.19	6.04	146.10	3.600	No	Yes	2.00
422	27.70	40.14	2.83	4.94	0.86	24.09	6.27	151.03	3.600	No	Yes	2.00
423	27.80	40.22	2.84	5.09	0.86	24.04	6.39	153.67	3.600	No	Yes	2.00
424	27.84	40.09	2.85	5.24	0.86	23.88	6.54	156.06	3.600	No	Yes	2.00
425	27.92	40.25	2.86	5.31	0.87	23.90	6.59	157.43	3.600	No	Yes	2.00
426	27.98	40.56	2.86	5.33	0.86	24.06	6.57	158.07	3.600	No	Yes	2.00
427	28.03	40.71	2.86	5.35	0.87	24.11	6.58	158.67	3.600	No	Yes	2.00
428	28.12	40.39	2.86	5.45	0.87	23.81	6.71	159.68	3.600	No	Yes	2.00
429	28.16	39.55	2.88	5.60	0.87	23.20	6.94	160.96	3.600	No	Yes	2.00
430	28.25	39.06	2.89	5.72	0.88	22.79	7.11	161.95	3.600	No	Yes	2.00
431	28.30	38.83	2.91	5.92	0.88	22.57	7.30	164.76	3.600	No	Yes	2.00
432	28.39	38.86	2.92	6.09	0.88	22.49	7.45	167.42	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.43	38.99	2.92	6.18	0.88	22.52	7.51	169.08	3.600	No	Yes	2.00
434	28.49	39.48	2.91	6.08	0.88	22.80	7.37	168.13	3.600	No	Yes	2.00
435	28.57	39.91	2.90	5.93	0.88	23.03	7.22	166.30	3.600	No	Yes	2.00
436	28.62	40.36	2.89	5.73	0.87	23.32	7.01	163.49	3.600	No	Yes	2.00
437	28.68	40.37	2.88	5.55	0.87	23.32	6.88	160.32	3.600	No	Yes	2.00
438	28.76	40.36	2.86	5.24	0.87	23.32	6.64	154.83	3.600	No	Yes	2.00
439	28.81	40.58	2.80	4.39	0.85	23.61	5.91	139.45	3.600	No	Yes	2.00
440	28.90	40.83	2.75	3.67	0.83	23.91	5.25	125.57	3.600	No	Yes	2.00
441	28.95	40.97	2.71	3.24	0.82	24.10	4.83	116.38	3.600	No	Yes	2.00
442	29.04	40.55	2.73	3.43	0.83	23.70	5.07	120.06	3.600	No	Yes	2.00
443	29.08	39.70	2.76	3.62	0.84	23.06	5.34	123.10	3.600	No	Yes	2.00
444	29.16	38.59	2.78	3.80	0.84	22.24	5.65	125.59	3.600	No	Yes	2.00
445	29.22	37.94	2.81	4.03	0.85	21.72	5.95	129.19	3.600	No	Yes	2.00
446	29.28	37.60	2.84	4.37	0.86	21.38	6.31	134.85	3.600	No	Yes	2.00
447	29.38	37.96	2.85	4.62	0.86	21.49	6.50	139.65	3.600	No	Yes	2.00
448	29.40	38.67	2.86	4.80	0.86	21.87	6.58	143.78	3.600	No	Yes	2.00
449	29.46	39.53	2.86	5.00	0.87	22.32	6.64	148.23	3.600	No	Yes	2.00
450	29.56	40.38	2.86	5.17	0.87	22.74	6.70	152.27	3.600	No	Yes	2.00
451	29.59	41.08	2.86	5.25	0.87	23.13	6.68	154.58	3.600	No	Yes	2.00
452	29.70	42.06	2.84	5.02	0.86	23.71	6.40	151.71	3.600	No	Yes	2.00
453	29.74	42.66	2.82	4.67	0.85	24.14	6.05	145.95	3.600	No	Yes	2.00
454	29.79	42.35	2.80	4.43	0.85	23.97	5.88	141.01	3.600	No	Yes	2.00
455	29.87	41.33	2.81	4.36	0.85	23.30	5.94	138.36	3.600	No	Yes	2.00
456	29.93	39.89	2.83	4.44	0.86	22.34	6.18	138.13	3.600	No	Yes	2.00
457	30.01	38.57	2.84	4.47	0.86	21.45	6.38	136.83	3.600	No	Yes	2.00
458	30.07	37.38	2.85	4.37	0.86	20.71	6.45	133.48	3.600	No	Yes	2.00
459	30.15	36.63	2.84	4.23	0.86	20.22	6.43	130.08	3.600	No	Yes	2.00
460	30.20	36.04	2.85	4.14	0.86	19.85	6.44	127.75	3.600	No	Yes	2.00
461	30.27	35.49	2.85	4.18	0.86	19.46	6.56	127.55	3.600	No	Yes	2.00
462	30.34	35.08	2.86	4.19	0.87	19.16	6.64	127.24	3.600	No	Yes	2.00
463	30.38	34.77	2.86	4.17	0.87	18.95	6.67	126.40	3.600	No	Yes	2.00
464	30.46	34.82	2.86	4.15	0.87	18.94	6.66	126.05	3.600	No	Yes	2.00
465	30.53	35.17	2.86	4.15	0.87	19.11	6.61	126.36	3.600	No	Yes	2.00
466	30.62	35.71	2.85	4.16	0.86	19.38	6.55	127.05	3.600	No	Yes	2.00
467	30.66	36.16	2.84	4.09	0.86	19.65	6.43	126.34	3.600	No	Yes	2.00
468	30.71	36.30	2.85	4.24	0.86	19.66	6.56	129.04	3.600	No	Yes	2.00
469	30.80	36.37	2.87	4.49	0.87	19.60	6.81	133.35	3.600	No	Yes	2.00
470	30.84	36.78	2.89	4.88	0.88	19.73	7.11	140.35	3.600	No	Yes	2.00
471	30.92	38.64	2.87	4.86	0.87	20.80	6.85	142.39	3.600	No	Yes	2.00
472	30.98	41.02	2.84	4.63	0.86	22.24	6.36	141.39	3.600	No	Yes	2.00
473	31.07	42.92	2.80	4.29	0.85	23.43	5.86	137.20	3.600	No	Yes	2.00
474	31.11	42.91	2.78	4.05	0.84	23.46	5.65	132.57	3.600	No	Yes	2.00
475	31.18	41.08	2.78	3.82	0.84	22.38	5.63	126.10	3.600	No	Yes	2.00
476	31.26	39.04	2.76	3.28	0.84	21.25	5.34	113.56	3.600	No	Yes	2.00
477	31.30	36.68	2.74	2.81	0.83	19.95	5.11	101.99	3.600	No	Yes	2.00
478	31.38	35.34	2.73	2.55	0.83	19.19	4.98	95.56	3.600	No	Yes	2.00
479	31.44	34.15	2.77	2.86	0.84	18.32	5.50	100.82	3.600	No	Yes	2.00
480	31.54	33.66	2.82	3.28	0.85	17.84	6.06	108.21	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.59	34.24	2.84	3.63	0.86	18.07	6.37	115.14	3.600	No	Yes	2.00
482	31.67	35.25	2.85	3.84	0.86	18.58	6.45	119.77	3.600	No	Yes	2.00
483	31.72	36.71	2.84	4.00	0.86	19.39	6.41	124.33	3.600	No	Yes	2.00
484	31.77	38.84	2.84	4.25	0.86	20.57	6.38	131.15	3.600	No	Yes	2.00
485	31.86	41.59	2.84	4.62	0.86	22.07	6.39	140.92	3.600	No	Yes	2.00
486	31.91	46.68	2.83	5.06	0.86	24.94	6.22	155.10	3.600	No	Yes	2.00
487	32.00	52.96	2.79	5.17	0.85	28.60	5.75	164.50	3.600	No	Yes	2.00
488	32.05	61.83	2.72	4.89	0.82	33.99	4.93	167.61	3.600	No	Yes	2.00
489	32.09	68.91	2.66	4.51	0.81	38.44	4.29	164.86	3.600	No	Yes	2.00
490	32.18	72.49	2.63	4.32	0.80	40.67	4.00	162.74	3.600	No	Yes	2.00
491	32.23	68.41	2.66	4.47	0.81	38.08	4.29	163.30	3.600	No	Yes	2.00
492	32.30	61.47	2.71	4.64	0.82	33.74	4.79	161.50	3.600	No	Yes	2.00
493	32.36	51.56	2.78	4.78	0.84	27.73	5.58	154.78	3.600	No	Yes	2.00
494	32.45	44.06	2.83	4.73	0.86	23.27	6.25	145.42	3.600	No	Yes	2.00
495	32.50	37.73	2.89	4.77	0.88	19.54	7.07	138.05	3.600	No	Yes	2.00
496	32.55	34.16	2.96	4.94	1.00	16.25	8.14	132.29	3.600	No	Yes	2.00
497	32.64	32.42	2.98	4.88	1.00	15.35	8.39	128.81	3.600	No	Yes	2.00
498	32.69	31.41	2.97	4.53	1.00	14.83	8.24	122.16	3.600	No	Yes	2.00
499	32.78	31.38	2.92	4.14	0.88	15.91	7.48	119.06	3.600	No	Yes	2.00
500	32.83	31.39	2.90	3.92	0.88	15.95	7.25	115.67	3.600	No	Yes	2.00
501	32.88	31.75	2.89	3.84	0.88	16.17	7.10	114.82	3.600	No	Yes	2.00
502	32.96	32.40	2.87	3.69	0.87	16.56	6.84	113.23	3.600	No	Yes	2.00
503	33.01	33.57	2.85	3.50	0.86	17.28	6.44	111.20	3.600	No	Yes	2.00
504	33.09	34.88	2.82	3.41	0.86	18.05	6.15	110.97	3.600	No	Yes	2.00
505	33.14	35.77	2.82	3.52	0.86	18.53	6.14	113.83	3.600	No	Yes	2.00
506	33.20	35.60	2.85	3.83	0.86	18.32	6.50	119.12	3.600	No	Yes	2.00
507	33.28	34.94	2.88	4.16	0.87	17.83	6.94	123.78	3.600	No	Yes	2.00
508	33.34	34.30	2.90	4.38	0.88	17.40	7.27	126.52	3.600	No	Yes	2.00
509	33.43	34.34	2.91	4.46	0.88	17.38	7.35	127.73	3.600	No	Yes	2.00
510	33.47	35.65	2.89	4.37	0.88	18.14	7.06	128.10	3.600	No	Yes	2.00
511	33.57	37.63	2.86	4.19	0.87	19.30	6.60	127.45	3.600	No	Yes	2.00
512	33.60	39.08	2.83	4.04	0.86	20.17	6.27	126.44	3.600	No	Yes	2.00
513	33.70	38.92	2.83	4.04	0.86	20.05	6.29	126.20	3.600	No	Yes	2.00
514	33.74	38.02	2.85	4.13	0.86	19.49	6.50	126.79	3.600	No	Yes	2.00
515	33.79	37.47	2.87	4.30	0.87	19.11	6.75	129.06	3.600	No	Yes	2.00
516	33.88	37.40	2.88	4.45	0.87	19.01	6.91	131.42	3.600	No	Yes	2.00
517	33.93	38.20	2.88	4.50	0.87	19.44	6.85	133.14	3.600	No	Yes	2.00
518	34.01	39.72	2.85	4.35	0.86	20.33	6.51	132.41	3.600	No	Yes	2.00
519	34.07	41.59	2.83	4.27	0.86	21.41	6.22	133.18	3.600	No	Yes	2.00
520	34.16	42.81	2.82	4.30	0.85	22.08	6.12	135.04	3.600	No	Yes	2.00
521	34.20	43.25	2.83	4.47	0.86	22.27	6.22	138.51	3.600	No	Yes	2.00
522	34.25	42.85	2.85	4.71	0.86	21.96	6.48	142.34	3.600	No	Yes	2.00
523	34.33	42.69	2.86	4.91	0.87	21.78	6.68	145.51	3.600	No	Yes	2.00
524	34.41	43.02	2.87	5.02	0.87	21.92	6.74	147.77	3.600	No	Yes	2.00
525	34.46	44.32	2.85	4.96	0.86	22.66	6.54	148.28	3.600	No	Yes	2.00
526	34.52	45.99	2.84	4.89	0.86	23.61	6.32	149.16	3.600	No	Yes	2.00
527	34.60	47.30	2.82	4.86	0.86	24.34	6.16	150.06	3.600	No	Yes	2.00
528	34.66	48.23	2.82	4.87	0.85	24.86	6.08	151.25	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.73	48.91	2.81	4.81	0.85	25.24	5.97	150.78	3.600	No	Yes	2.00
530	34.78	49.99	2.79	4.63	0.85	25.90	5.73	148.52	3.600	No	Yes	2.00
531	34.87	51.30	2.77	4.47	0.84	26.68	5.49	146.47	3.600	No	Yes	2.00
532	34.92	53.01	2.76	4.47	0.84	27.65	5.36	148.23	3.600	No	Yes	2.00
533	35.01	54.92	2.76	4.61	0.84	28.67	5.33	152.93	3.600	No	Yes	2.00
534	35.06	60.38	2.72	4.52	0.82	31.87	4.89	155.90	3.600	No	Yes	2.00
535	35.11	107.27	2.39	3.03	0.73	61.35	2.33	143.13	0.353	No	No	0.77
536	35.19	168.84	2.16	2.37	0.66	101.71	1.53	155.83	0.432	No	No	0.94
537	35.24	244.73	2.03	2.24	0.62	151.92	1.34	202.87	4.000	No	No	2.00
538	35.33	279.91	2.00	2.31	0.61	174.74	1.31	228.88	4.000	No	No	2.00
539	35.38	289.76	2.01	2.40	0.61	180.64	1.31	237.48	4.000	No	No	2.00
540	35.46	270.83	2.03	2.40	0.62	167.96	1.33	223.72	4.000	No	No	2.00
541	35.52	237.86	2.08	2.47	0.63	145.83	1.39	202.02	4.000	No	No	2.00
542	35.61	210.29	2.13	2.61	0.65	127.19	1.47	186.89	0.687	No	No	1.50
543	35.64	193.12	2.19	2.83	0.66	115.39	1.58	182.13	0.642	No	No	1.40
544	35.70	197.52	2.20	3.01	0.67	117.59	1.62	189.96	0.718	No	No	1.57
545	35.77	230.62	2.14	2.85	0.65	139.24	1.48	205.71	4.000	No	No	2.00
546	35.83	265.38	2.08	2.75	0.63	161.99	1.40	226.19	4.000	No	No	2.00
547	35.92	284.40	2.07	2.75	0.63	174.20	1.37	239.03	4.000	No	No	2.00
548	35.97	286.01	2.06	2.71	0.63	175.35	1.36	239.14	4.000	No	No	2.00
549	36.03	295.22	2.03	2.59	0.62	181.87	1.34	243.05	4.000	No	No	2.00
550	36.10	312.73	1.99	2.43	0.61	194.08	1.30	252.76	4.000	No	No	2.00
551	36.16	320.51	2.00	2.51	0.61	198.62	1.31	259.48	4.000	No	No	2.00
552	36.24	328.66	1.99	2.52	0.61	203.71	1.30	265.39	4.000	No	No	2.00
553	36.30	301.24	2.06	2.81	0.63	184.04	1.36	251.06	4.000	No	No	2.00
554	36.35	282.33	2.10	3.01	0.64	170.77	1.42	242.72	4.000	No	No	2.00
555	36.43	254.31	2.18	3.45	0.66	151.07	1.57	237.00	4.000	No	No	2.00
556	36.49	257.77	2.18	3.44	0.66	153.18	1.56	238.71	4.000	No	No	2.00
557	36.56	249.80	2.18	3.35	0.66	148.29	1.56	230.80	4.000	No	No	2.00
558	36.63	218.81	2.21	3.31	0.67	128.74	1.64	210.52	4.000	No	No	2.00
559	36.69	174.09	2.29	3.48	0.70	100.28	1.90	190.62	0.724	No	No	1.57
560	36.77	131.56	2.43	4.04	0.74	73.26	2.55	186.44	0.683	No	No	1.48
561	36.82	115.37	2.48	4.07	0.75	63.45	2.81	178.58	0.610	No	No	1.32
562	36.90	113.37	2.48	4.01	0.75	62.25	2.82	175.65	0.584	No	No	1.27
563	36.95	129.46	2.38	3.40	0.72	72.70	2.26	164.53	0.494	No	No	1.07
564	37.01	172.97	2.15	2.27	0.65	102.31	1.50	153.53	0.417	No	No	0.90
565	37.09	256.42	1.86	1.42	0.57	161.55	1.21	195.71	0.777	No	No	1.68
566	37.14	376.19	1.62	0.98	0.50	249.02	1.00	249.02	4.000	No	No	2.00
567	37.23	447.23	1.54	0.89	0.50	296.10	1.00	296.10	4.000	No	No	2.00
568	37.28	516.95	1.44	0.75	0.50	342.36	1.00	342.36	4.000	No	No	2.00
569	37.34	524.01	1.46	0.81	0.50	346.88	1.00	346.88	4.000	No	No	2.00
570	37.44	584.79	1.29	0.52	0.50	386.97	1.00	386.97	4.000	No	No	2.00
571	37.48	611.58	1.11	0.30	0.50	404.63	1.00	404.63	4.000	No	No	2.00
572	37.54	661.52	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
573	37.62	671.66	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
574	37.67	702.38	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
575	37.76	710.70	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
576	37.81	722.67	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.09	2.00	0.00	0.00	0.00	0.00	0.13	2.00	0.00	0.00	0.00	0.00
0.22	2.00	0.00	0.00	0.00	0.00	0.27	2.00	0.00	0.00	0.00	0.00
0.36	2.00	0.00	0.00	0.00	0.00	0.41	2.00	0.00	0.00	0.00	0.00
0.51	2.00	0.00	0.00	0.00	0.00	0.54	2.00	0.00	0.00	0.00	0.00
0.60	2.00	0.00	0.00	0.00	0.00	0.69	2.00	0.00	0.00	0.00	0.00
0.73	2.00	0.00	0.00	0.00	0.00	0.82	2.00	0.00	0.00	0.00	0.00
0.86	2.00	0.00	0.00	0.00	0.00	0.95	2.00	0.00	0.00	0.00	0.00
0.98	2.00	0.00	0.00	0.00	0.00	1.05	2.00	0.00	0.00	0.00	0.00
1.14	2.00	0.00	0.00	0.00	0.00	1.19	2.00	0.00	0.00	0.00	0.00
1.28	2.00	0.00	0.00	0.00	0.00	1.32	2.00	0.00	0.00	0.00	0.00
1.38	2.00	0.00	0.00	0.00	0.00	1.47	2.00	0.00	0.00	0.00	0.00
1.51	2.00	0.00	0.00	0.00	0.00	1.61	2.00	0.00	0.00	0.00	0.00
1.64	2.00	0.00	0.00	0.00	0.00	1.71	2.00	0.00	0.00	0.00	0.00
1.79	2.00	0.00	0.00	0.00	0.00	1.84	2.00	0.00	0.00	0.00	0.00
1.92	2.00	0.00	0.00	0.00	0.00	1.98	2.00	0.00	0.00	0.00	0.00
2.04	2.00	0.00	0.00	0.00	0.00	2.12	2.00	0.00	0.00	0.00	0.00
2.17	2.00	0.00	0.00	0.00	0.00	2.26	2.00	0.00	0.00	0.00	0.00
2.31	2.00	0.00	0.00	0.00	0.00	2.41	2.00	0.00	0.00	0.00	0.00
2.44	2.00	0.00	0.00	0.00	0.00	2.52	2.00	0.00	0.00	0.00	0.00
2.59	2.00	0.00	0.00	0.00	0.00	2.67	2.00	0.00	0.00	0.00	0.00
2.72	2.00	0.00	0.00	0.00	0.00	2.77	2.00	0.00	0.00	0.00	0.00
2.86	2.00	0.00	0.00	0.00	0.00	2.90	2.00	0.00	0.00	0.00	0.00
2.99	2.00	0.00	0.00	0.00	0.00	3.04	2.00	0.00	0.00	0.00	0.00
3.09	2.00	0.00	0.00	0.00	0.00	3.17	2.00	0.00	0.00	0.00	0.00
3.22	2.00	0.00	0.00	0.00	0.00	3.28	2.00	0.00	0.00	0.00	0.00
3.36	2.00	0.00	0.00	0.00	0.00	3.46	2.00	0.00	0.00	0.00	0.00
3.50	2.00	0.00	0.00	0.00	0.00	3.55	2.00	0.00	0.00	0.00	0.00
3.63	2.00	0.00	0.00	0.00	0.00	3.68	2.00	0.00	0.00	0.00	0.00
3.77	2.00	0.00	0.00	0.00	0.00	3.82	2.00	0.00	0.00	0.00	0.00
3.90	2.00	0.00	0.00	0.00	0.00	3.95	2.00	0.00	0.00	0.00	0.00
4.00	2.00	0.00	0.00	0.00	0.00	4.10	2.00	0.00	0.00	0.00	0.00
4.14	2.00	0.00	0.00	0.00	0.00	4.20	2.00	0.00	0.00	0.00	0.00
4.29	2.00	0.00	0.00	0.00	0.00	4.33	2.00	0.00	0.00	0.00	0.00
4.42	2.00	0.00	0.00	0.00	0.00	4.48	2.00	0.00	0.00	0.00	0.00
4.56	2.00	0.00	0.00	0.00	0.00	4.59	2.00	0.00	0.00	0.00	0.00
4.67	2.00	0.00	0.00	0.00	0.00	4.75	2.00	0.00	0.00	0.00	0.00
4.80	2.00	0.00	0.00	0.00	0.00	4.88	2.00	0.00	0.00	0.00	0.00
4.92	2.00	0.00	0.00	0.00	0.00	5.00	2.00	0.00	0.00	0.00	0.00
5.07	2.00	0.00	0.00	0.08	0.00	5.17	2.00	0.00	0.00	0.10	0.00
5.22	2.00	0.00	0.00	0.05	0.00	5.26	2.00	0.00	0.00	0.04	0.00
5.34	2.00	0.00	0.00	0.08	0.00	5.40	2.00	0.00	0.00	0.06	0.00
5.49	2.00	0.00	0.00	0.09	0.00	5.54	2.00	0.00	0.00	0.04	0.00
5.58	2.00	0.00	0.00	0.05	0.00	5.67	2.00	0.00	0.00	0.09	0.00
5.72	2.00	0.00	0.00	0.05	0.00	5.81	2.00	0.00	0.00	0.09	0.00
5.86	2.00	0.00	0.00	0.05	0.00	5.92	2.00	0.00	0.00	0.06	0.00
6.00	2.00	0.00	0.00	0.08	0.00	6.04	2.00	0.00	0.00	0.05	0.00
6.13	2.00	0.00	0.00	0.09	0.00	6.18	2.00	0.00	0.00	0.05	0.00
6.24	2.00	0.00	0.00	0.06	0.00	6.32	2.00	0.00	0.00	0.08	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.37	2.00	0.00	0.00	0.05	0.00	6.46	2.00	0.00	0.00	0.09	0.00
6.51	2.00	0.00	0.00	0.05	0.00	6.60	2.00	0.00	0.00	0.09	0.00
6.64	2.00	0.00	0.00	0.04	0.00	6.70	2.00	0.00	0.00	0.06	0.00
6.78	2.00	0.00	0.00	0.08	0.00	6.84	2.00	0.00	0.00	0.06	0.00
6.93	2.00	0.00	0.00	0.09	0.00	6.97	2.00	0.00	0.00	0.04	0.00
7.06	2.00	0.00	0.00	0.09	0.00	7.11	2.00	0.00	0.00	0.05	0.00
7.16	2.00	0.00	0.00	0.05	0.00	7.23	2.00	0.00	0.00	0.07	0.00
7.29	2.00	0.00	0.00	0.07	0.00	7.39	2.00	0.00	0.00	0.10	0.00
7.44	2.00	0.00	0.00	0.04	0.00	7.52	2.00	0.00	0.00	0.09	0.00
7.57	2.00	0.00	0.00	0.05	0.00	7.62	2.00	0.00	0.00	0.05	0.00
7.69	2.00	0.00	0.00	0.07	0.00	7.75	2.00	0.00	0.00	0.05	0.00
7.81	2.00	0.00	0.00	0.06	0.00	7.90	2.00	0.00	0.00	0.09	0.00
7.95	2.00	0.00	0.00	0.05	0.00	8.04	2.00	0.00	0.00	0.09	0.00
8.08	2.00	0.00	0.00	0.04	0.00	8.17	2.00	0.00	0.00	0.09	0.00
8.20	2.00	0.00	0.00	0.04	0.00	8.31	2.00	0.00	0.00	0.11	0.00
8.36	2.00	0.00	0.00	0.05	0.00	8.40	2.00	0.00	0.00	0.05	0.00
8.49	2.00	0.00	0.00	0.09	0.00	8.54	2.00	0.00	0.00	0.04	0.00
8.63	2.00	0.00	0.00	0.10	0.00	8.67	2.00	0.00	0.00	0.04	0.00
8.77	2.00	0.00	0.00	0.10	0.00	8.81	2.00	0.00	0.00	0.04	0.00
8.87	2.00	0.00	0.00	0.05	0.00	8.95	2.00	0.00	0.00	0.09	0.00
9.00	2.00	0.00	0.00	0.04	0.00	9.09	2.00	0.00	0.00	0.09	0.00
9.14	2.00	0.00	0.00	0.05	0.00	9.19	2.00	0.00	0.00	0.05	0.00
9.28	2.00	0.00	0.00	0.09	0.00	9.32	2.00	0.00	0.00	0.04	0.00
9.43	2.00	0.00	0.00	0.10	0.00	9.45	2.00	0.00	0.00	0.02	0.00
9.54	2.00	0.00	0.00	0.09	0.00	9.59	2.00	0.00	0.00	0.05	0.00
9.67	2.00	0.00	0.00	0.08	0.00	9.72	2.00	0.00	0.00	0.05	0.00
9.81	2.00	0.00	0.00	0.09	0.00	9.86	2.00	0.00	0.00	0.04	0.00
9.95	2.00	0.00	0.00	0.09	0.00	10.00	2.00	0.00	0.00	0.05	0.00
10.04	2.00	0.00	0.00	0.04	0.00	10.13	2.00	0.00	0.00	0.09	0.00
10.18	2.00	0.00	0.00	0.05	0.00	10.28	2.00	0.00	0.00	0.10	0.00
10.32	2.00	0.00	0.00	0.04	0.00	10.41	2.00	0.00	0.00	0.09	0.00
10.46	2.00	0.00	0.00	0.05	0.00	10.51	2.00	0.00	0.00	0.05	0.00
10.60	2.00	0.00	0.00	0.09	0.00	10.64	2.00	0.00	0.00	0.05	0.00
10.73	2.00	0.00	0.00	0.09	0.00	10.78	2.00	0.00	0.00	0.04	0.00
10.83	2.00	0.00	0.00	0.06	0.00	10.92	2.00	0.00	0.00	0.09	0.00
10.96	2.00	0.00	0.00	0.04	0.00	11.05	2.00	0.00	0.00	0.09	0.00
11.10	2.00	0.00	0.00	0.05	0.00	11.19	2.00	0.00	0.00	0.09	0.00
11.24	2.00	0.00	0.00	0.04	0.00	11.29	2.00	0.00	0.00	0.05	0.00
11.38	2.00	0.00	0.00	0.09	0.00	11.43	2.00	0.00	0.00	0.05	0.00
11.50	2.00	0.00	0.00	0.07	0.00	11.56	2.00	0.00	0.00	0.06	0.00
11.66	2.00	0.00	0.00	0.10	0.00	11.68	2.00	0.00	0.00	0.02	0.00
11.76	2.00	0.00	0.00	0.08	0.00	11.84	2.00	0.00	0.00	0.08	0.00
11.90	2.00	0.00	0.00	0.05	0.00	11.95	2.00	0.00	0.00	0.05	0.00
12.01	2.00	0.00	0.00	0.06	0.00	12.09	2.00	0.00	0.00	0.08	0.00
12.17	2.00	0.00	0.00	0.09	0.00	12.22	2.00	0.00	0.00	0.04	0.00
12.29	2.00	0.00	0.00	0.07	0.00	12.35	2.00	0.00	0.00	0.07	0.00
12.45	2.00	0.00	0.00	0.10	0.00	12.47	2.00	0.00	0.00	0.02	0.00
12.54	2.00	0.00	0.00	0.07	0.00	12.63	2.00	0.00	0.00	0.09	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.68	2.00	0.00	0.00	0.05	0.00	12.74	2.00	0.00	0.00	0.06	0.00
12.81	2.00	0.00	0.00	0.07	0.00	12.87	2.00	0.00	0.00	0.06	0.00
12.96	2.00	0.00	0.00	0.09	0.00	13.00	2.00	0.00	0.00	0.04	0.00
13.08	2.00	0.00	0.00	0.08	0.00	13.14	2.00	0.00	0.00	0.06	0.00
13.23	2.00	0.00	0.00	0.09	0.00	13.28	2.00	0.00	0.00	0.05	0.00
13.33	2.00	0.00	0.00	0.05	0.00	13.42	2.00	0.00	0.00	0.09	0.00
13.46	2.00	0.00	0.00	0.05	0.00	13.54	2.00	0.00	0.00	0.08	0.00
13.60	2.00	0.00	0.00	0.05	0.00	13.69	2.00	0.00	0.00	0.09	0.00
13.72	2.00	0.00	0.00	0.02	0.00	13.79	2.00	0.00	0.00	0.07	0.00
13.85	2.00	0.00	0.00	0.06	0.00	13.92	2.00	0.00	0.00	0.07	0.00
14.01	2.00	0.00	0.00	0.09	0.00	14.06	2.00	0.00	0.00	0.05	0.00
14.11	2.00	0.00	0.00	0.05	0.00	14.20	2.00	0.00	0.00	0.08	0.00
14.25	2.00	0.00	0.00	0.06	0.00	14.31	2.00	0.00	0.00	0.06	0.00
14.38	2.00	0.00	0.00	0.07	0.00	14.48	2.00	0.00	0.00	0.10	0.00
14.50	2.00	0.00	0.00	0.03	0.00	14.58	2.00	0.00	0.00	0.08	0.00
14.63	2.00	0.00	0.00	0.05	0.00	14.72	2.00	0.00	0.00	0.08	0.00
14.77	2.00	0.00	0.00	0.05	0.00	14.84	2.00	0.00	0.00	0.08	0.00
14.90	2.00	0.00	0.00	0.06	0.00	14.99	2.00	0.00	0.00	0.09	0.00
15.04	2.00	0.00	0.00	0.05	0.00	15.13	2.00	0.00	0.00	0.09	0.00
15.18	2.00	0.00	0.00	0.05	0.00	15.22	2.00	0.00	0.00	0.05	0.00
15.31	2.00	0.00	0.00	0.09	0.00	15.36	2.00	0.00	0.00	0.05	0.00
15.44	2.00	0.00	0.00	0.08	0.00	15.50	2.00	0.00	0.00	0.05	0.00
15.57	2.00	0.00	0.00	0.07	0.00	15.64	2.00	0.00	0.00	0.07	0.00
15.69	2.00	0.00	0.00	0.05	0.00	15.77	2.00	0.00	0.00	0.08	0.00
15.82	2.00	0.00	0.00	0.05	0.00	15.91	2.00	0.00	0.00	0.09	0.00
15.96	2.00	0.00	0.00	0.05	0.00	16.05	2.00	0.00	0.00	0.09	0.00
16.10	2.00	0.00	0.00	0.05	0.00	16.14	2.00	0.00	0.00	0.04	0.00
16.24	2.00	0.00	0.00	0.10	0.00	16.28	2.00	0.00	0.00	0.04	0.00
16.38	2.00	0.00	0.00	0.09	0.00	16.42	2.00	0.00	0.00	0.04	0.00
16.50	2.00	0.00	0.00	0.09	0.00	16.56	2.00	0.00	0.00	0.05	0.00
16.61	2.00	0.00	0.00	0.05	0.00	16.70	2.00	0.00	0.00	0.09	0.00
16.74	2.00	0.00	0.00	0.04	0.00	16.83	2.00	0.00	0.00	0.08	0.00
16.88	2.00	0.00	0.00	0.06	0.00	16.93	2.00	0.00	0.00	0.05	0.00
17.00	2.00	0.00	0.00	0.08	0.00	17.06	2.00	0.00	0.00	0.06	0.00
17.16	2.00	0.00	0.00	0.09	0.00	17.21	2.00	0.00	0.00	0.05	0.00
17.26	2.00	0.00	0.00	0.05	0.00	17.35	2.00	0.00	0.00	0.09	0.00
17.40	2.00	0.00	0.00	0.05	0.00	17.46	2.00	0.00	0.00	0.07	0.00
17.53	2.00	0.00	0.00	0.07	0.00	17.62	2.00	0.00	0.00	0.09	0.00
17.67	2.00	0.00	0.00	0.05	0.00	17.72	2.00	0.00	0.00	0.04	0.00
17.81	2.00	0.00	0.00	0.09	0.00	17.85	2.00	0.00	0.00	0.05	0.00
17.95	2.00	0.00	0.00	0.10	0.00	18.00	2.00	0.00	0.00	0.04	0.00
18.09	2.00	0.00	0.00	0.09	0.00	18.14	2.00	0.00	0.00	0.05	0.00
18.18	2.00	0.00	0.00	0.04	0.00	18.27	2.00	0.00	0.00	0.09	0.00
18.32	2.00	0.00	0.00	0.05	0.00	18.41	2.00	0.00	0.00	0.09	0.00
18.46	2.00	0.00	0.00	0.05	0.00	18.54	2.00	0.00	0.00	0.08	0.00
18.60	2.00	0.00	0.00	0.06	0.00	18.64	2.00	0.00	0.00	0.04	0.00
18.72	2.00	0.00	0.00	0.08	0.00	18.77	2.00	0.00	0.00	0.05	0.00
18.84	2.00	0.00	0.00	0.06	0.00	18.91	2.00	0.00	0.00	0.08	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.96	2.00	0.00	0.00	0.05	0.00	19.05	2.00	0.00	0.00	0.09	0.00
19.10	2.00	0.00	0.00	0.05	0.00	19.18	2.00	0.00	0.00	0.08	0.00
19.24	2.00	0.00	0.00	0.06	0.00	19.29	2.00	0.00	0.00	0.05	0.00
19.37	2.00	0.00	0.00	0.08	0.00	19.43	2.00	0.00	0.00	0.05	0.00
19.54	2.00	0.00	0.00	0.12	0.00	19.58	2.00	0.00	0.00	0.04	0.00
19.67	2.00	0.00	0.00	0.09	0.00	19.71	2.00	0.00	0.00	0.05	0.00
19.77	2.00	0.00	0.00	0.05	0.00	19.82	2.00	0.00	0.00	0.05	0.00
19.91	2.00	0.00	0.00	0.09	0.00	19.95	2.00	0.00	0.00	0.05	0.00
20.04	2.00	0.00	0.00	0.09	0.00	20.09	2.00	0.00	0.00	0.05	0.00
20.17	2.00	0.00	0.00	0.07	0.00	20.23	2.00	0.00	0.00	0.06	0.00
20.32	2.00	0.00	0.00	0.09	0.00	20.37	2.00	0.00	0.00	0.05	0.00
20.41	2.00	0.00	0.00	0.04	0.00	20.50	2.00	0.00	0.00	0.09	0.00
20.55	2.00	0.00	0.00	0.05	0.00	20.64	2.00	0.00	0.00	0.08	0.00
20.69	2.00	0.00	0.00	0.05	0.00	20.78	2.00	0.00	0.00	0.09	0.00
20.83	2.00	0.00	0.00	0.05	0.00	20.87	2.00	0.00	0.00	0.04	0.00
20.96	2.00	0.00	0.00	0.09	0.00	21.01	2.00	0.00	0.00	0.05	0.00
21.09	2.00	0.00	0.00	0.08	0.00	21.13	2.00	0.00	0.00	0.05	0.00
21.20	2.00	0.00	0.00	0.06	0.00	21.29	2.00	0.00	0.00	0.09	0.00
21.33	2.00	0.00	0.00	0.04	0.00	21.42	2.00	0.00	0.00	0.09	0.00
21.47	2.00	0.00	0.00	0.05	0.00	21.56	2.00	0.00	0.00	0.09	0.00
21.61	2.00	0.00	0.00	0.05	0.00	21.66	2.00	0.00	0.00	0.05	0.00
21.73	2.00	0.00	0.00	0.07	0.00	21.80	2.00	0.00	0.00	0.07	0.00
21.89	2.00	0.00	0.00	0.09	0.00	21.94	2.00	0.00	0.00	0.05	0.00
21.98	2.00	0.00	0.00	0.05	0.00	22.07	2.00	0.00	0.00	0.09	0.00
22.12	2.00	0.00	0.00	0.04	0.00	22.21	2.00	0.00	0.00	0.09	0.00
22.26	2.00	0.00	0.00	0.05	0.00	22.33	2.00	0.00	0.00	0.06	0.00
22.40	2.00	0.00	0.00	0.07	0.00	22.44	2.00	0.00	0.00	0.04	0.00
22.54	2.00	0.00	0.00	0.10	0.00	22.59	2.00	0.00	0.00	0.05	0.00
22.67	2.00	0.00	0.00	0.08	0.00	22.72	2.00	0.00	0.00	0.05	0.00
22.79	2.00	0.00	0.00	0.07	0.00	22.84	2.00	0.00	0.00	0.05	0.00
22.91	2.00	0.00	0.00	0.07	0.00	23.00	2.00	0.00	0.00	0.09	0.00
23.04	2.00	0.00	0.00	0.05	0.00	23.13	2.00	0.00	0.00	0.09	0.00
23.18	2.00	0.00	0.00	0.05	0.00	23.23	2.00	0.00	0.00	0.05	0.00
23.31	2.00	0.00	0.00	0.08	0.00	23.36	2.00	0.00	0.00	0.05	0.00
23.46	2.00	0.00	0.00	0.10	0.00	23.50	2.00	0.00	0.00	0.04	0.00
23.60	2.00	0.00	0.00	0.10	0.00	23.64	2.00	0.00	0.00	0.04	0.00
23.72	2.00	0.00	0.00	0.08	0.00	23.78	2.00	0.00	0.00	0.06	0.00
23.84	2.00	0.00	0.00	0.06	0.00	23.92	2.00	0.00	0.00	0.08	0.00
23.97	2.00	0.00	0.00	0.05	0.00	24.06	2.00	0.00	0.00	0.09	0.00
24.11	2.00	0.00	0.00	0.05	0.00	24.15	2.00	0.00	0.00	0.04	0.00
24.23	2.00	0.00	0.00	0.09	0.00	24.29	2.00	0.00	0.00	0.05	0.00
24.38	2.00	0.00	0.00	0.09	0.00	24.43	2.00	0.00	0.00	0.05	0.00
24.49	2.00	0.00	0.00	0.06	0.00	24.57	2.00	0.00	0.00	0.09	0.00
24.62	2.00	0.00	0.00	0.05	0.00	24.68	2.00	0.00	0.00	0.06	0.00
24.75	2.00	0.00	0.00	0.07	0.00	24.81	2.00	0.00	0.00	0.05	0.00
24.90	2.00	0.00	0.00	0.09	0.00	24.94	2.00	0.00	0.00	0.05	0.00
25.04	2.00	0.00	0.00	0.09	0.00	25.08	2.00	0.00	0.00	0.05	0.00
25.18	2.00	0.00	0.00	0.09	0.00	25.22	2.00	0.00	0.00	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.27	2.00	0.00	0.00	0.04	0.00	25.34	2.00	0.00	0.00	0.07	0.00
25.40	2.00	0.00	0.00	0.06	0.00	25.48	2.00	0.00	0.00	0.09	0.00
25.55	2.00	0.00	0.00	0.06	0.00	25.59	2.00	0.00	0.00	0.04	0.00
25.67	2.00	0.00	0.00	0.08	0.00	25.73	2.00	0.00	0.00	0.06	0.00
25.82	2.00	0.00	0.00	0.09	0.00	25.85	2.00	0.00	0.00	0.03	0.00
25.95	2.00	0.00	0.00	0.10	0.00	26.00	2.00	0.00	0.00	0.05	0.00
26.05	2.00	0.00	0.00	0.05	0.00	26.14	2.00	0.00	0.00	0.09	0.00
26.19	2.00	0.00	0.00	0.05	0.00	26.28	2.00	0.00	0.00	0.09	0.00
26.33	2.00	0.00	0.00	0.05	0.00	26.41	2.00	0.00	0.00	0.09	0.00
26.46	2.00	0.00	0.00	0.05	0.00	26.56	2.00	0.00	0.00	0.10	0.00
26.59	2.00	0.00	0.00	0.03	0.00	26.64	2.00	0.00	0.00	0.06	0.00
26.72	2.00	0.00	0.00	0.07	0.00	26.78	2.00	0.00	0.00	0.07	0.00
26.87	2.00	0.00	0.00	0.09	0.00	26.92	2.00	0.00	0.00	0.05	0.00
27.01	2.00	0.00	0.00	0.09	0.00	27.05	2.00	0.00	0.00	0.04	0.00
27.10	2.00	0.00	0.00	0.05	0.00	27.18	2.00	0.00	0.00	0.08	0.00
27.24	2.00	0.00	0.00	0.06	0.00	27.30	2.00	0.00	0.00	0.06	0.00
27.38	2.00	0.00	0.00	0.08	0.00	27.47	2.00	0.00	0.00	0.09	0.00
27.52	2.00	0.00	0.00	0.05	0.00	27.56	2.00	0.00	0.00	0.05	0.00
27.65	2.00	0.00	0.00	0.08	0.00	27.70	2.00	0.00	0.00	0.05	0.00
27.80	2.00	0.00	0.00	0.10	0.00	27.84	2.00	0.00	0.00	0.05	0.00
27.92	2.00	0.00	0.00	0.08	0.00	27.98	2.00	0.00	0.00	0.05	0.00
28.03	2.00	0.00	0.00	0.05	0.00	28.12	2.00	0.00	0.00	0.09	0.00
28.16	2.00	0.00	0.00	0.04	0.00	28.25	2.00	0.00	0.00	0.09	0.00
28.30	2.00	0.00	0.00	0.05	0.00	28.39	2.00	0.00	0.00	0.09	0.00
28.43	2.00	0.00	0.00	0.04	0.00	28.49	2.00	0.00	0.00	0.05	0.00
28.57	2.00	0.00	0.00	0.09	0.00	28.62	2.00	0.00	0.00	0.05	0.00
28.68	2.00	0.00	0.00	0.06	0.00	28.76	2.00	0.00	0.00	0.08	0.00
28.81	2.00	0.00	0.00	0.05	0.00	28.90	2.00	0.00	0.00	0.09	0.00
28.95	2.00	0.00	0.00	0.05	0.00	29.04	2.00	0.00	0.00	0.09	0.00
29.08	2.00	0.00	0.00	0.05	0.00	29.16	2.00	0.00	0.00	0.07	0.00
29.22	2.00	0.00	0.00	0.06	0.00	29.28	2.00	0.00	0.00	0.06	0.00
29.38	2.00	0.00	0.00	0.09	0.00	29.40	2.00	0.00	0.00	0.03	0.00
29.46	2.00	0.00	0.00	0.06	0.00	29.56	2.00	0.00	0.00	0.09	0.00
29.59	2.00	0.00	0.00	0.04	0.00	29.70	2.00	0.00	0.00	0.10	0.00
29.74	2.00	0.00	0.00	0.04	0.00	29.79	2.00	0.00	0.00	0.05	0.00
29.87	2.00	0.00	0.00	0.07	0.00	29.93	2.00	0.00	0.00	0.06	0.00
30.01	2.00	0.00	0.00	0.08	0.00	30.07	2.00	0.00	0.00	0.06	0.00
30.15	2.00	0.00	0.00	0.09	0.00	30.20	2.00	0.00	0.00	0.05	0.00
30.27	2.00	0.00	0.00	0.07	0.00	30.34	2.00	0.00	0.00	0.07	0.00
30.38	2.00	0.00	0.00	0.04	0.00	30.46	2.00	0.00	0.00	0.07	0.00
30.53	2.00	0.00	0.00	0.07	0.00	30.62	2.00	0.00	0.00	0.09	0.00
30.66	2.00	0.00	0.00	0.04	0.00	30.71	2.00	0.00	0.00	0.05	0.00
30.80	2.00	0.00	0.00	0.09	0.00	30.84	2.00	0.00	0.00	0.04	0.00
30.92	2.00	0.00	0.00	0.07	0.00	30.98	2.00	0.00	0.00	0.07	0.00
31.07	2.00	0.00	0.00	0.08	0.00	31.11	2.00	0.00	0.00	0.05	0.00
31.18	2.00	0.00	0.00	0.06	0.00	31.26	2.00	0.00	0.00	0.08	0.00
31.30	2.00	0.00	0.00	0.05	0.00	31.38	2.00	0.00	0.00	0.08	0.00
31.44	2.00	0.00	0.00	0.06	0.00	31.54	2.00	0.00	0.00	0.10	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.59	2.00	0.00	0.00	0.04	0.00	31.67	2.00	0.00	0.00	0.09	0.00
31.72	2.00	0.00	0.00	0.05	0.00	31.77	2.00	0.00	0.00	0.05	0.00
31.86	2.00	0.00	0.00	0.09	0.00	31.91	2.00	0.00	0.00	0.05	0.00
32.00	2.00	0.00	0.00	0.09	0.00	32.05	2.00	0.00	0.00	0.05	0.00
32.09	2.00	0.00	0.00	0.04	0.00	32.18	2.00	0.00	0.00	0.09	0.00
32.23	2.00	0.00	0.00	0.05	0.00	32.30	2.00	0.00	0.00	0.08	0.00
32.36	2.00	0.00	0.00	0.05	0.00	32.45	2.00	0.00	0.00	0.09	0.00
32.50	2.00	0.00	0.00	0.06	0.00	32.55	2.00	0.00	0.00	0.05	0.00
32.64	2.00	0.00	0.00	0.09	0.00	32.69	2.00	0.00	0.00	0.05	0.00
32.78	2.00	0.00	0.00	0.09	0.00	32.83	2.00	0.00	0.00	0.05	0.00
32.88	2.00	0.00	0.00	0.05	0.00	32.96	2.00	0.00	0.00	0.09	0.00
33.01	2.00	0.00	0.00	0.05	0.00	33.09	2.00	0.00	0.00	0.08	0.00
33.14	2.00	0.00	0.00	0.05	0.00	33.20	2.00	0.00	0.00	0.06	0.00
33.28	2.00	0.00	0.00	0.08	0.00	33.34	2.00	0.00	0.00	0.06	0.00
33.43	2.00	0.00	0.00	0.09	0.00	33.47	2.00	0.00	0.00	0.04	0.00
33.57	2.00	0.00	0.00	0.10	0.00	33.60	2.00	0.00	0.00	0.04	0.00
33.70	2.00	0.00	0.00	0.10	0.00	33.74	2.00	0.00	0.00	0.04	0.00
33.79	2.00	0.00	0.00	0.05	0.00	33.88	2.00	0.00	0.00	0.09	0.00
33.93	2.00	0.00	0.00	0.05	0.00	34.01	2.00	0.00	0.00	0.08	0.00
34.07	2.00	0.00	0.00	0.06	0.00	34.16	2.00	0.00	0.00	0.09	0.00
34.20	2.00	0.00	0.00	0.04	0.00	34.25	2.00	0.00	0.00	0.05	0.00
34.33	2.00	0.00	0.00	0.07	0.00	34.41	2.00	0.00	0.00	0.08	0.00
34.46	2.00	0.00	0.00	0.05	0.00	34.52	2.00	0.00	0.00	0.05	0.00
34.60	2.00	0.00	0.00	0.08	0.00	34.66	2.00	0.00	0.00	0.05	0.00
34.73	2.00	0.00	0.00	0.08	0.00	34.78	2.00	0.00	0.00	0.05	0.00
34.87	2.00	0.00	0.00	0.08	0.00	34.92	2.00	0.00	0.00	0.05	0.00
35.01	2.00	0.00	0.00	0.09	0.00	35.06	2.00	0.00	0.00	0.05	0.00
35.11	0.77	0.23	1.36	0.05	0.02	35.19	0.94	0.06	34.00	0.08	0.01
35.24	2.00	0.00	0.00	0.05	0.00	35.33	2.00	0.00	0.00	0.09	0.00
35.38	2.00	0.00	0.00	0.05	0.00	35.46	2.00	0.00	0.00	0.08	0.00
35.52	2.00	0.00	0.00	0.06	0.00	35.61	1.50	0.00	0.00	0.09	0.00
35.64	1.40	0.00	0.00	0.03	0.00	35.70	1.57	0.00	0.00	0.06	0.00
35.77	2.00	0.00	0.00	0.06	0.00	35.83	2.00	0.00	0.00	0.07	0.00
35.92	2.00	0.00	0.00	0.09	0.00	35.97	2.00	0.00	0.00	0.05	0.00
36.03	2.00	0.00	0.00	0.06	0.00	36.10	2.00	0.00	0.00	0.08	0.00
36.16	2.00	0.00	0.00	0.06	0.00	36.24	2.00	0.00	0.00	0.08	0.00
36.30	2.00	0.00	0.00	0.07	0.00	36.35	2.00	0.00	0.00	0.05	0.00
36.43	2.00	0.00	0.00	0.07	0.00	36.49	2.00	0.00	0.00	0.06	0.00
36.56	2.00	0.00	0.00	0.08	0.00	36.63	2.00	0.00	0.00	0.06	0.00
36.69	1.57	0.00	0.00	0.06	0.00	36.77	1.48	0.00	0.00	0.08	0.00
36.82	1.32	0.00	0.00	0.05	0.00	36.90	1.27	0.00	0.00	0.08	0.00
36.95	1.07	0.00	0.00	0.06	0.00	37.01	0.90	0.10	6.53	0.05	0.01
37.09	1.68	0.00	0.00	0.08	0.00	37.14	2.00	0.00	0.00	0.05	0.00
37.23	2.00	0.00	0.00	0.09	0.00	37.28	2.00	0.00	0.00	0.05	0.00
37.34	2.00	0.00	0.00	0.06	0.00	37.44	2.00	0.00	0.00	0.10	0.00
37.48	2.00	0.00	0.00	0.04	0.00	37.54	2.00	0.00	0.00	0.06	0.00
37.62	2.00	0.00	0.00	0.09	0.00	37.67	2.00	0.00	0.00	0.05	0.00
37.76	2.00	0.00	0.00	0.09	0.00	37.81	2.00	0.00	0.00	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI

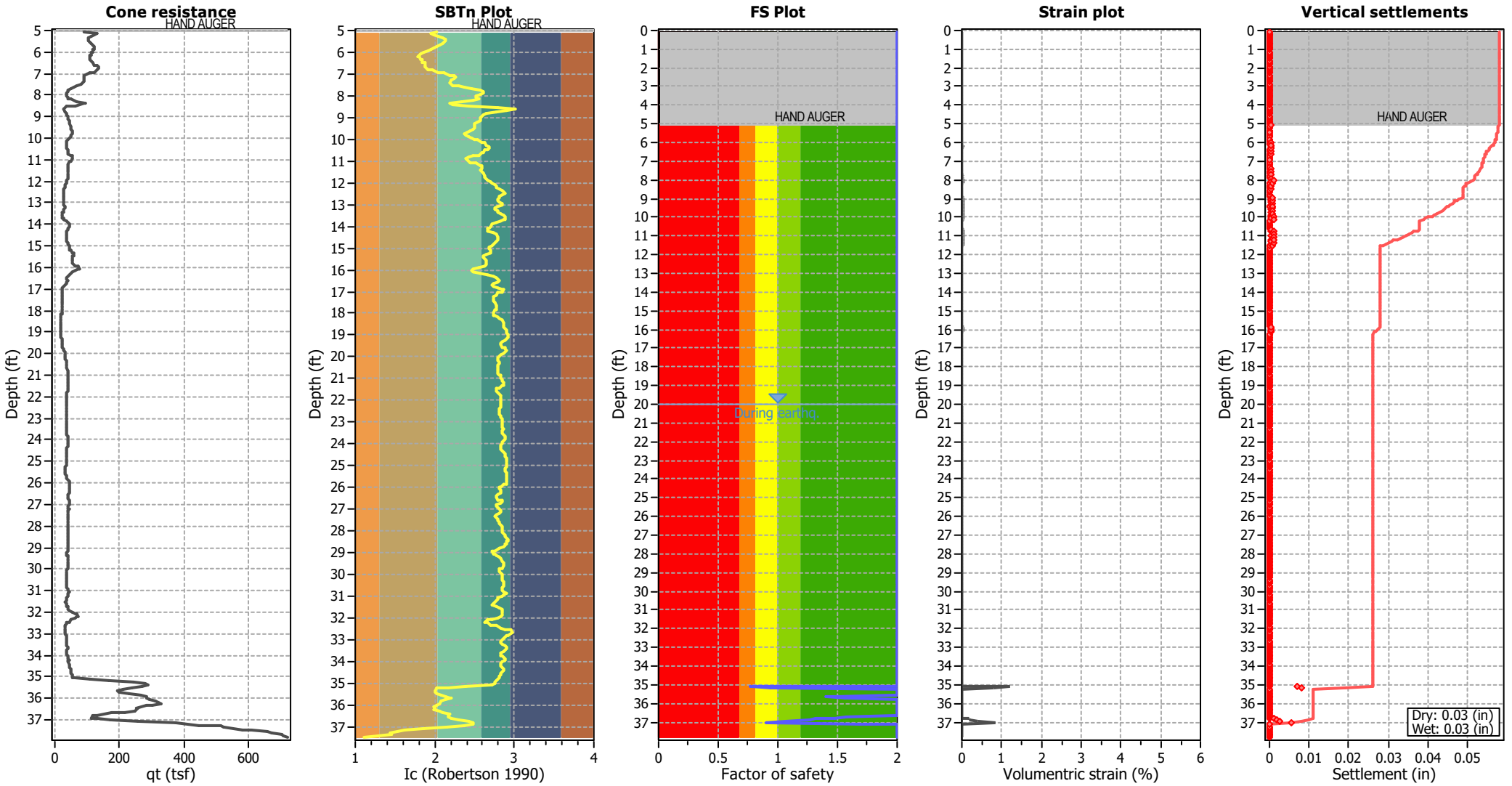
Overall liquefaction potential: 0.03

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.09	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.13	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.22	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.27	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.36	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.41	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.51	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.54	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.60	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.69	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.73	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.82	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.86	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.95	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
0.98	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.05	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.14	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.19	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.28	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.32	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.38	-1.00	-1.00	1.00	-1.00	0	0	0.37	0.000	0.00	0.00	0.00	0.000
1.47	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.51	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.61	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.64	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.71	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.79	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.84	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.92	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
1.98	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.04	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.12	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.17	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.26	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.31	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.41	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.44	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.52	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.59	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.67	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.72	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.77	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.86	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.90	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
2.99	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.04	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.09	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.17	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.22	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.28	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.36	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.46	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.50	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.55	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.63	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.68	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.77	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.82	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.90	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
3.95	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.00	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.10	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.14	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.20	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.29	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.33	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.42	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.48	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.56	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.59	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.67	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.75	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.80	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.88	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
4.92	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
5.00	-1.00	-1.00	1.00	-1.00	0	0	0.36	0.000	0.00	0.00	0.00	0.000
5.07	2.03	144.90	1.33	193.38	41	1062	0.36	0.038	0.02	5.05	0.01	0.000
5.17	1.94	209.64	1.27	265.29	54	1376	0.36	0.023	0.01	5.05	0.00	0.000
5.22	2.00	192.99	1.30	251.59	52	1353	0.36	0.024	0.01	5.05	0.00	0.000
5.26	2.05	179.08	1.35	242.19	51	1341	0.36	0.025	0.01	5.05	0.00	0.000
5.34	2.10	168.25	1.41	237.97	51	1341	0.36	0.025	0.01	5.05	0.00	0.000
5.40	2.13	164.30	1.46	240.37	53	1362	0.36	0.025	0.01	5.05	0.00	0.000
5.49	2.13	166.37	1.47	245.22	54	1390	0.36	0.024	0.01	5.05	0.00	0.000
5.54	2.12	172.04	1.46	250.65	55	1420	0.36	0.024	0.01	5.05	0.00	0.000
5.58	2.09	180.11	1.41	254.13	55	1432	0.36	0.024	0.01	5.05	0.00	0.000
5.67	2.06	188.49	1.36	257.01	55	1430	0.36	0.024	0.01	5.05	0.00	0.000
5.72	2.02	193.83	1.32	256.31	54	1397	0.36	0.026	0.01	5.05	0.00	0.000
5.81	1.98	195.21	1.29	252.55	52	1347	0.36	0.028	0.01	5.05	0.01	0.000
5.86	1.95	192.75	1.27	244.71	50	1275	0.36	0.032	0.01	5.05	0.01	0.000
5.92	1.91	190.57	1.24	236.64	48	1195	0.36	0.037	0.01	5.05	0.01	0.000
6.00	1.86	187.92	1.21	227.59	45	1114	0.36	0.045	0.02	5.05	0.01	0.000
6.04	1.82	184.32	1.17	216.51	42	1036	0.36	0.055	0.02	5.05	0.01	0.000
6.13	1.80	179.89	1.16	207.81	40	987	0.36	0.065	0.03	5.05	0.02	0.000
6.18	1.79	176.74	1.15	202.57	39	960	0.36	0.072	0.03	5.05	0.02	0.000
6.24	1.81	174.30	1.17	203.51	40	971	0.36	0.070	0.03	5.05	0.02	0.000
6.32	1.83	174.99	1.18	206.97	40	994	0.36	0.067	0.03	5.05	0.02	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.37	1.85	177.06	1.20	212.41	42	1031	0.36	0.061	0.03	5.05	0.02	0.000
6.46	1.85	183.78	1.20	220.45	43	1070	0.36	0.057	0.02	5.05	0.01	0.000
6.51	1.87	186.53	1.22	227.23	45	1120	0.36	0.051	0.02	5.05	0.01	0.000
6.60	1.87	196.08	1.22	238.90	47	1177	0.36	0.046	0.02	5.05	0.01	0.000
6.64	1.87	206.85	1.22	252.18	50	1244	0.36	0.041	0.01	5.05	0.01	0.000
6.70	1.87	219.10	1.22	266.80	53	1314	0.36	0.037	0.01	5.05	0.01	0.000
6.78	1.91	219.54	1.24	272.56	55	1376	0.36	0.034	0.01	5.05	0.01	0.000
6.84	1.97	209.70	1.28	269.05	55	1421	0.36	0.032	0.01	5.05	0.01	0.000
6.93	2.04	195.28	1.34	261.59	55	1440	0.36	0.032	0.01	5.05	0.01	0.000
6.97	2.12	175.75	1.45	254.94	56	1443	0.36	0.032	0.01	5.05	0.01	0.000
7.06	2.19	158.22	1.60	253.35	57	1428	0.36	0.033	0.01	5.05	0.01	0.000
7.11	2.25	145.92	1.75	254.96	59	1409	0.36	0.035	0.01	5.05	0.01	0.000
7.16	2.26	141.36	1.78	251.51	58	1382	0.36	0.036	0.01	5.05	0.01	0.000
7.23	2.24	141.30	1.73	245.09	56	1357	0.36	0.039	0.01	5.05	0.01	0.000
7.29	2.22	142.68	1.66	236.23	54	1323	0.36	0.041	0.01	5.05	0.01	0.000
7.39	2.19	143.52	1.60	229.26	52	1292	0.36	0.045	0.01	5.05	0.01	0.000
7.44	2.19	138.84	1.60	221.64	50	1250	0.36	0.049	0.02	5.05	0.01	0.000
7.52	2.23	126.79	1.70	214.91	49	1197	0.36	0.055	0.02	5.05	0.01	0.000
7.57	2.29	110.72	1.89	209.78	49	1130	0.36	0.065	0.02	5.05	0.01	0.000
7.62	2.38	93.21	2.26	210.60	51	1060	0.36	0.079	0.03	5.05	0.02	0.000
7.69	2.47	78.54	2.76	216.78	55	1000	0.36	0.096	0.03	5.05	0.02	0.000
7.75	2.56	66.13	3.46	228.61	61	953	0.36	0.115	0.03	5.05	0.02	0.000
7.81	2.60	61.07	3.79	231.47	0	0	0.36	0.000	0.00	0.00	0.00	0.000
7.90	2.61	59.17	3.83	226.89	0	0	0.36	0.000	0.00	0.00	0.00	0.000
7.95	2.57	60.00	3.46	207.77	55	865	0.36	0.172	0.05	5.05	0.03	0.000
8.04	2.52	60.54	3.12	188.84	49	825	0.36	0.214	0.07	5.05	0.04	0.001
8.08	2.52	61.56	3.09	189.95	49	834	0.36	0.207	0.07	5.05	0.04	0.000
8.17	2.56	62.37	3.44	214.31	57	896	0.36	0.160	0.05	5.05	0.03	0.001
8.20	2.48	80.92	2.84	229.65	59	1047	0.36	0.094	0.03	5.05	0.02	0.000
8.31	2.34	108.41	2.08	225.28	54	1195	0.36	0.066	0.02	5.05	0.01	0.000
8.36	2.19	141.51	1.58	224.06	50	1336	0.36	0.050	0.02	5.05	0.01	0.000
8.40	2.23	136.00	1.68	228.60	52	1342	0.36	0.050	0.02	5.05	0.01	0.000
8.49	2.42	102.45	2.49	255.41	63	1253	0.36	0.060	0.02	5.05	0.01	0.000
8.54	2.79	57.66	5.77	332.64	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.63	3.02	40.01	9.13	365.13	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.67	2.91	44.62	7.29	325.19	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.77	2.78	48.07	5.62	270.02	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.81	2.65	50.89	4.24	215.53	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.87	2.60	53.78	3.78	203.09	0	0	0.36	0.000	0.00	0.00	0.00	0.000
8.95	2.58	56.87	3.61	205.35	55	860	0.36	0.230	0.07	5.05	0.04	0.001
9.00	2.58	59.94	3.60	215.50	58	909	0.36	0.187	0.05	5.05	0.03	0.000
9.09	2.58	61.40	3.60	221.13	59	939	0.36	0.169	0.05	5.05	0.03	0.001
9.14	2.57	63.01	3.52	221.49	59	957	0.36	0.159	0.04	5.05	0.03	0.000
9.19	2.54	65.73	3.26	214.16	56	967	0.36	0.155	0.04	5.05	0.03	0.000
9.28	2.51	68.65	3.03	208.33	54	984	0.36	0.148	0.05	5.05	0.03	0.001
9.32	2.50	69.32	3.01	208.81	54	994	0.36	0.144	0.04	5.05	0.03	0.000
9.43	2.50	69.62	2.99	208.36	54	1004	0.36	0.143	0.04	5.05	0.03	0.001
9.45	2.49	70.50	2.92	205.92	53	1007	0.36	0.142	0.04	5.05	0.03	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.54	2.48	71.12	2.83	201.43	51	1008	0.36	0.144	0.05	5.05	0.03	0.001
9.59	2.44	74.22	2.57	191.10	48	1009	0.36	0.145	0.05	5.05	0.03	0.000
9.67	2.40	76.31	2.39	182.41	45	1007	0.36	0.149	0.06	5.05	0.03	0.001
9.72	2.38	77.93	2.25	175.44	43	1002	0.36	0.153	0.06	5.05	0.04	0.000
9.81	2.39	74.72	2.35	175.28	43	988	0.36	0.165	0.07	5.05	0.04	0.001
9.86	2.43	70.10	2.54	177.76	44	966	0.36	0.180	0.07	5.05	0.04	0.000
9.95	2.45	66.63	2.68	178.86	45	951	0.36	0.196	0.07	5.05	0.05	0.001
10.00	2.49	62.02	2.93	181.79	47	927	0.36	0.219	0.08	5.05	0.05	0.001
10.04	2.53	57.94	3.22	186.73	49	909	0.36	0.239	0.08	5.05	0.05	0.001
10.13	2.59	53.24	3.65	194.19	52	892	0.36	0.263	0.08	5.05	0.05	0.001
10.18	2.63	50.35	4.02	202.47	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.28	2.65	48.94	4.23	207.14	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.32	2.68	47.56	4.49	213.37	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.41	2.68	48.07	4.48	215.33	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.46	2.67	49.46	4.36	215.54	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.51	2.63	52.56	3.97	208.92	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.60	2.61	53.23	3.83	203.99	0	0	0.36	0.000	0.00	0.00	0.00	0.000
10.64	2.58	54.77	3.62	198.45	53	951	0.36	0.227	0.07	5.05	0.04	0.000
10.73	2.56	56.75	3.41	193.73	51	964	0.36	0.219	0.07	5.05	0.04	0.001
10.78	2.49	63.25	2.88	182.21	47	992	0.36	0.198	0.07	5.05	0.04	0.000
10.83	2.43	68.61	2.53	173.44	43	1012	0.36	0.185	0.07	5.05	0.05	0.001
10.92	2.39	72.22	2.33	167.92	41	1027	0.36	0.178	0.08	5.05	0.05	0.001
10.96	2.40	70.54	2.40	169.29	42	1023	0.36	0.183	0.08	5.05	0.05	0.001
11.05	2.45	65.66	2.65	174.06	44	1007	0.36	0.197	0.08	5.05	0.05	0.001
11.10	2.51	59.42	3.06	182.07	47	982	0.36	0.219	0.08	5.05	0.05	0.001
11.19	2.57	54.59	3.47	189.40	50	965	0.36	0.239	0.08	5.05	0.05	0.001
11.24	2.60	52.11	3.73	194.62	53	959	0.36	0.248	0.08	5.05	0.05	0.001
11.29	2.60	52.31	3.73	195.35	53	966	0.36	0.243	0.08	5.05	0.05	0.001
11.38	2.59	53.35	3.63	193.52	52	977	0.36	0.236	0.08	5.05	0.05	0.001
11.43	2.58	54.02	3.56	192.34	51	983	0.36	0.232	0.07	5.05	0.05	0.001
11.50	2.59	53.52	3.64	194.86	52	990	0.36	0.229	0.07	5.05	0.04	0.001
11.56	2.61	52.78	3.86	203.75	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.66	2.63	52.31	4.05	211.90	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.68	2.64	53.15	4.08	216.85	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.76	2.63	53.41	4.03	215.28	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.84	2.64	52.14	4.13	215.53	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.90	2.66	49.94	4.35	217.22	0	0	0.36	0.000	0.00	0.00	0.00	0.000
11.95	2.70	47.30	4.70	222.23	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.01	2.73	45.41	4.98	226.19	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.09	2.75	43.49	5.24	228.04	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.17	2.77	41.47	5.46	226.34	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.22	2.78	39.48	5.58	220.38	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.29	2.80	36.64	5.91	216.47	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.35	2.84	33.73	6.35	214.15	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.45	2.87	31.46	6.81	214.20	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.47	2.88	30.71	6.85	210.42	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.54	2.85	31.15	6.49	202.10	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.63	2.82	31.78	6.10	193.97	0	0	0.36	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.68	2.81	32.15	5.92	190.40	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.74	2.79	32.66	5.79	189.11	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.81	2.79	33.04	5.70	188.18	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.87	2.81	31.97	5.97	190.79	0	0	0.36	0.000	0.00	0.00	0.00	0.000
12.96	2.85	30.04	6.50	195.38	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.00	2.84	30.49	6.42	195.76	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.08	2.79	33.53	5.70	191.15	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.14	2.75	35.48	5.29	187.55	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.23	2.76	34.84	5.37	187.14	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.28	2.79	32.82	5.71	187.38	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.33	2.80	31.48	5.84	183.86	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.42	2.83	29.00	6.27	181.84	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.46	2.86	27.10	6.63	179.75	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.54	2.88	25.84	6.98	180.30	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.60	2.89	25.84	7.04	181.84	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.69	2.89	26.03	7.08	184.39	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.72	2.87	28.06	6.76	189.81	0	0	0.36	0.000	0.00	0.00	0.00	0.000
13.79	2.83	31.57	6.22	196.29	0	0	0.35	0.000	0.00	0.00	0.00	0.000
13.85	2.77	37.33	5.51	205.75	0	0	0.35	0.000	0.00	0.00	0.00	0.000
13.92	2.72	43.30	4.97	215.04	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.01	2.69	48.07	4.64	222.99	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.06	2.69	50.30	4.56	229.50	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.11	2.66	49.06	4.28	210.14	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.20	2.66	45.24	4.32	195.61	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.25	2.67	41.13	4.40	180.81	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.31	2.73	38.44	5.08	195.10	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.38	2.77	37.65	5.44	204.95	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.48	2.78	37.36	5.66	211.58	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.50	2.80	37.37	5.81	217.19	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.58	2.80	37.77	5.82	219.77	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.63	2.79	38.44	5.71	219.48	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.72	2.78	38.87	5.58	216.97	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.77	2.76	39.20	5.41	212.18	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.84	2.74	40.17	5.19	208.42	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.90	2.71	42.34	4.83	204.66	0	0	0.35	0.000	0.00	0.00	0.00	0.000
14.99	2.69	44.81	4.55	203.98	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.04	2.68	46.80	4.50	210.82	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.13	2.69	47.53	4.64	220.53	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.18	2.71	47.78	4.81	229.81	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.22	2.69	49.82	4.64	231.14	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.31	2.65	53.70	4.24	227.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.36	2.62	57.69	3.89	224.50	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.44	2.61	58.41	3.82	223.26	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.50	2.63	56.39	3.99	225.22	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.57	2.64	54.68	4.14	226.29	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.64	2.65	53.77	4.20	225.87	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.69	2.65	53.31	4.19	223.44	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.77	2.65	52.13	4.25	221.68	0	0	0.35	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.82	2.62	54.61	3.95	215.68	0	0	0.35	0.000	0.00	0.00	0.00	0.000
15.91	2.56	60.57	3.41	206.54	55	1397	0.35	0.134	0.04	5.05	0.02	0.001
15.96	2.48	69.91	2.85	199.00	51	1466	0.35	0.117	0.04	5.05	0.02	0.000
16.05	2.46	74.17	2.70	200.32	51	1518	0.35	0.107	0.04	5.05	0.02	0.000
16.10	2.49	72.37	2.89	209.21	54	1541	0.35	0.103	0.03	5.05	0.02	0.000
16.14	2.58	62.87	3.58	224.91	60	1506	0.35	0.110	0.03	5.05	0.02	0.000
16.24	2.67	53.71	4.41	237.07	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.28	2.74	46.56	5.12	238.38	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.38	2.77	42.36	5.45	230.89	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.42	2.80	38.00	5.83	221.64	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.50	2.80	36.13	5.89	212.77	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.56	2.79	35.48	5.70	202.06	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.61	2.74	36.50	5.11	186.61	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.70	2.73	35.04	4.98	174.40	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.74	2.74	31.95	5.09	162.66	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.83	2.79	27.44	5.79	158.86	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.88	2.86	23.37	6.57	153.58	0	0	0.35	0.000	0.00	0.00	0.00	0.000
16.93	2.86	20.97	6.68	140.11	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.00	2.84	19.49	6.42	125.06	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.06	2.80	19.05	5.80	110.52	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.16	2.77	19.26	5.53	106.56	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.21	2.74	19.65	5.19	102.09	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.26	2.73	19.81	5.07	100.44	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.35	2.73	19.85	5.03	99.87	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.40	2.74	19.78	5.10	100.94	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.46	2.74	19.58	5.19	101.65	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.53	2.76	19.24	5.34	102.72	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.62	2.77	18.96	5.46	103.48	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.67	2.77	18.87	5.55	104.62	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.72	2.78	19.13	5.56	106.35	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.81	2.77	19.39	5.51	106.91	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.85	2.76	19.60	5.37	105.26	0	0	0.35	0.000	0.00	0.00	0.00	0.000
17.95	2.75	19.56	5.21	101.90	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.00	2.74	19.34	5.10	98.66	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.09	2.74	18.80	5.20	97.69	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.14	2.77	18.05	5.43	97.99	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.18	2.79	17.20	5.77	99.16	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.27	2.82	16.45	6.08	99.98	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.32	2.84	15.84	6.42	101.69	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.41	2.86	15.46	6.66	103.03	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.46	2.87	15.27	6.80	103.82	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.54	2.87	15.24	6.78	103.30	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.60	2.87	15.21	6.77	102.94	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.64	2.87	15.18	6.81	103.39	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.72	2.89	14.93	7.00	104.49	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.77	2.90	14.77	7.16	105.71	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.84	2.91	14.61	7.32	106.94	0	0	0.36	0.000	0.00	0.00	0.00	0.000
18.91	2.91	14.64	7.36	107.72	0	0	0.36	0.000	0.00	0.00	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
18.96	2.92	14.68	7.50	110.11	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.05	2.93	14.75	7.63	112.57	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.10	2.93	15.02	7.63	114.62	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.18	2.91	15.47	7.35	113.77	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.24	2.88	16.40	6.85	112.37	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.29	2.84	17.47	6.43	112.29	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.37	2.82	18.39	6.14	112.95	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.43	2.83	18.52	6.27	116.23	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.54	2.85	18.47	6.50	120.01	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.58	2.88	18.59	6.88	127.86	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.67	2.89	19.07	7.07	134.75	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.71	2.90	19.67	7.15	140.76	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.77	2.88	20.54	6.97	143.25	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.82	2.86	22.02	6.61	145.47	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.91	2.83	23.64	6.25	147.82	0	0	0.36	0.000	0.00	0.00	0.00	0.000
19.95	2.81	25.20	5.95	149.84	0	0	0.36	0.000	0.00	0.00	0.00	0.000

Total estimated settlement: 0.03

Abbreviations

Q_{tn}: Equivalent clean sand normalized cone resistance
K_c: Fines correction factor
$Q_{tn,cs}$: Post-liquefaction volumentric strain
G_{max}: Small strain shear modulus
CSR: Soil cyclic stress ratio
γ: Cyclic shear strain
$e_{vol(15)}$: Volumetric strain after 15 cycles
N_c: Equivalent number of cycles
e_v: Volumetric strain
Settle.: Calculated settlement

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.04	150.70	2.00	0.00	1.00	0.00	20.09	152.16	2.00	0.00	1.00	0.00
20.17	154.81	2.00	0.00	1.00	0.00	20.23	157.52	2.00	0.00	1.00	0.00
20.32	158.94	2.00	0.00	1.00	0.00	20.37	160.16	2.00	0.00	1.00	0.00
20.41	161.96	2.00	0.00	1.00	0.00	20.50	163.88	2.00	0.00	1.00	0.00
20.55	166.52	2.00	0.00	1.00	0.00	20.64	168.70	2.00	0.00	1.00	0.00
20.69	172.38	2.00	0.00	1.00	0.00	20.78	176.29	2.00	0.00	1.00	0.00
20.83	181.53	2.00	0.00	1.00	0.00	20.87	188.51	2.00	0.00	1.00	0.00
20.96	194.62	2.00	0.00	1.00	0.00	21.01	200.47	2.00	0.00	1.00	0.00
21.09	203.80	2.00	0.00	1.00	0.00	21.13	207.82	2.00	0.00	1.00	0.00
21.20	210.87	2.00	0.00	1.00	0.00	21.29	212.23	2.00	0.00	1.00	0.00
21.33	201.70	2.00	0.00	1.00	0.00	21.42	186.78	2.00	0.00	1.00	0.00
21.47	174.68	2.00	0.00	1.00	0.00	21.56	174.65	2.00	0.00	1.00	0.00
21.61	178.14	2.00	0.00	1.00	0.00	21.66	177.99	2.00	0.00	1.00	0.00
21.73	177.02	2.00	0.00	1.00	0.00	21.80	176.06	2.00	0.00	1.00	0.00
21.89	174.84	2.00	0.00	1.00	0.00	21.94	172.56	2.00	0.00	1.00	0.00
21.98	168.74	2.00	0.00	1.00	0.00	22.07	164.65	2.00	0.00	1.00	0.00
22.12	159.75	2.00	0.00	1.00	0.00	22.21	156.02	2.00	0.00	1.00	0.00
22.26	153.74	2.00	0.00	1.00	0.00	22.33	153.09	2.00	0.00	1.00	0.00
22.40	152.07	2.00	0.00	1.00	0.00	22.44	150.80	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
22.54	150.13	2.00	0.00	1.00	0.00	22.59	150.44	2.00	0.00	1.00	0.00
22.67	151.33	2.00	0.00	1.00	0.00	22.72	153.44	2.00	0.00	1.00	0.00
22.79	156.20	2.00	0.00	1.00	0.00	22.84	158.44	2.00	0.00	1.00	0.00
22.91	159.16	2.00	0.00	1.00	0.00	23.00	158.38	2.00	0.00	1.00	0.00
23.04	157.64	2.00	0.00	1.00	0.00	23.13	156.90	2.00	0.00	1.00	0.00
23.18	156.01	2.00	0.00	1.00	0.00	23.23	157.29	2.00	0.00	1.00	0.00
23.31	160.13	2.00	0.00	1.00	0.00	23.36	162.60	2.00	0.00	1.00	0.00
23.46	163.28	2.00	0.00	1.00	0.00	23.50	164.63	2.00	0.00	1.00	0.00
23.60	168.13	2.00	0.00	1.00	0.00	23.64	173.80	2.00	0.00	1.00	0.00
23.72	178.31	2.00	0.00	1.00	0.00	23.78	181.77	2.00	0.00	1.00	0.00
23.84	183.65	2.00	0.00	1.00	0.00	23.92	184.43	2.00	0.00	1.00	0.00
23.97	184.62	2.00	0.00	1.00	0.00	24.06	183.47	2.00	0.00	1.00	0.00
24.11	180.77	2.00	0.00	1.00	0.00	24.15	172.92	2.00	0.00	1.00	0.00
24.23	167.90	2.00	0.00	1.00	0.00	24.29	166.72	2.00	0.00	1.00	0.00
24.38	170.54	2.00	0.00	1.00	0.00	24.43	170.88	2.00	0.00	1.00	0.00
24.49	169.19	2.00	0.00	1.00	0.00	24.57	168.15	2.00	0.00	1.00	0.00
24.62	168.45	2.00	0.00	1.00	0.00	24.68	167.55	2.00	0.00	1.00	0.00
24.75	164.90	2.00	0.00	1.00	0.00	24.81	161.41	2.00	0.00	1.00	0.00
24.90	159.06	2.00	0.00	1.00	0.00	24.94	158.62	2.00	0.00	1.00	0.00
25.04	157.97	2.00	0.00	1.00	0.00	25.08	156.23	2.00	0.00	1.00	0.00
25.18	154.07	2.00	0.00	1.00	0.00	25.22	152.53	2.00	0.00	1.00	0.00
25.27	152.30	2.00	0.00	1.00	0.00	25.34	152.54	2.00	0.00	1.00	0.00
25.40	152.96	2.00	0.00	1.00	0.00	25.48	153.15	2.00	0.00	1.00	0.00
25.55	153.27	2.00	0.00	1.00	0.00	25.59	154.15	2.00	0.00	1.00	0.00
25.67	157.98	2.00	0.00	1.00	0.00	25.73	165.00	2.00	0.00	1.00	0.00
25.82	171.34	2.00	0.00	1.00	0.00	25.85	175.42	2.00	0.00	1.00	0.00
25.95	175.92	2.00	0.00	1.00	0.00	26.00	176.53	2.00	0.00	1.00	0.00
26.05	178.54	2.00	0.00	1.00	0.00	26.14	180.67	2.00	0.00	1.00	0.00
26.19	179.18	2.00	0.00	1.00	0.00	26.28	171.34	2.00	0.00	1.00	0.00
26.33	160.02	2.00	0.00	1.00	0.00	26.41	152.44	2.00	0.00	1.00	0.00
26.46	152.42	2.00	0.00	1.00	0.00	26.56	155.45	2.00	0.00	1.00	0.00
26.59	161.33	2.00	0.00	1.00	0.00	26.64	161.54	2.00	0.00	1.00	0.00
26.72	161.51	2.00	0.00	1.00	0.00	26.78	157.78	2.00	0.00	1.00	0.00
26.87	157.57	2.00	0.00	1.00	0.00	26.92	158.64	2.00	0.00	1.00	0.00
27.01	160.15	2.00	0.00	1.00	0.00	27.05	161.39	2.00	0.00	1.00	0.00
27.10	160.31	2.00	0.00	1.00	0.00	27.18	155.18	2.00	0.00	1.00	0.00
27.24	147.45	2.00	0.00	1.00	0.00	27.30	140.81	2.00	0.00	1.00	0.00
27.38	138.50	2.00	0.00	1.00	0.00	27.47	138.75	2.00	0.00	1.00	0.00
27.52	139.16	2.00	0.00	1.00	0.00	27.56	141.91	2.00	0.00	1.00	0.00
27.65	146.10	2.00	0.00	1.00	0.00	27.70	151.03	2.00	0.00	1.00	0.00
27.80	153.67	2.00	0.00	1.00	0.00	27.84	156.06	2.00	0.00	1.00	0.00
27.92	157.43	2.00	0.00	1.00	0.00	27.98	158.07	2.00	0.00	1.00	0.00
28.03	158.67	2.00	0.00	1.00	0.00	28.12	159.68	2.00	0.00	1.00	0.00
28.16	160.96	2.00	0.00	1.00	0.00	28.25	161.95	2.00	0.00	1.00	0.00
28.30	164.76	2.00	0.00	1.00	0.00	28.39	167.42	2.00	0.00	1.00	0.00
28.43	169.08	2.00	0.00	1.00	0.00	28.49	168.13	2.00	0.00	1.00	0.00
28.57	166.30	2.00	0.00	1.00	0.00	28.62	163.49	2.00	0.00	1.00	0.00
28.68	160.32	2.00	0.00	1.00	0.00	28.76	154.83	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
28.81	139.45	2.00	0.00	1.00	0.00	28.90	125.57	2.00	0.00	1.00	0.00
28.95	116.38	2.00	0.00	1.00	0.00	29.04	120.06	2.00	0.00	1.00	0.00
29.08	123.10	2.00	0.00	1.00	0.00	29.16	125.59	2.00	0.00	1.00	0.00
29.22	129.19	2.00	0.00	1.00	0.00	29.28	134.85	2.00	0.00	1.00	0.00
29.38	139.65	2.00	0.00	1.00	0.00	29.40	143.78	2.00	0.00	1.00	0.00
29.46	148.23	2.00	0.00	1.00	0.00	29.56	152.27	2.00	0.00	1.00	0.00
29.59	154.58	2.00	0.00	1.00	0.00	29.70	151.71	2.00	0.00	1.00	0.00
29.74	145.95	2.00	0.00	1.00	0.00	29.79	141.01	2.00	0.00	1.00	0.00
29.87	138.36	2.00	0.00	1.00	0.00	29.93	138.13	2.00	0.00	1.00	0.00
30.01	136.83	2.00	0.00	1.00	0.00	30.07	133.48	2.00	0.00	1.00	0.00
30.15	130.08	2.00	0.00	1.00	0.00	30.20	127.75	2.00	0.00	1.00	0.00
30.27	127.55	2.00	0.00	1.00	0.00	30.34	127.24	2.00	0.00	1.00	0.00
30.38	126.40	2.00	0.00	1.00	0.00	30.46	126.05	2.00	0.00	1.00	0.00
30.53	126.36	2.00	0.00	1.00	0.00	30.62	127.05	2.00	0.00	1.00	0.00
30.66	126.34	2.00	0.00	1.00	0.00	30.71	129.04	2.00	0.00	1.00	0.00
30.80	133.35	2.00	0.00	1.00	0.00	30.84	140.35	2.00	0.00	1.00	0.00
30.92	142.39	2.00	0.00	1.00	0.00	30.98	141.39	2.00	0.00	1.00	0.00
31.07	137.20	2.00	0.00	1.00	0.00	31.11	132.57	2.00	0.00	1.00	0.00
31.18	126.10	2.00	0.00	1.00	0.00	31.26	113.56	2.00	0.00	1.00	0.00
31.30	101.99	2.00	0.00	1.00	0.00	31.38	95.56	2.00	0.00	1.00	0.00
31.44	100.82	2.00	0.00	1.00	0.00	31.54	108.21	2.00	0.00	1.00	0.00
31.59	115.14	2.00	0.00	1.00	0.00	31.67	119.77	2.00	0.00	1.00	0.00
31.72	124.33	2.00	0.00	1.00	0.00	31.77	131.15	2.00	0.00	1.00	0.00
31.86	140.92	2.00	0.00	1.00	0.00	31.91	155.10	2.00	0.00	1.00	0.00
32.00	164.50	2.00	0.00	1.00	0.00	32.05	167.61	2.00	0.00	1.00	0.00
32.09	164.86	2.00	0.00	1.00	0.00	32.18	162.74	2.00	0.00	1.00	0.00
32.23	163.30	2.00	0.00	1.00	0.00	32.30	161.50	2.00	0.00	1.00	0.00
32.36	154.78	2.00	0.00	1.00	0.00	32.45	145.42	2.00	0.00	1.00	0.00
32.50	138.05	2.00	0.00	1.00	0.00	32.55	132.29	2.00	0.00	1.00	0.00
32.64	128.81	2.00	0.00	1.00	0.00	32.69	122.16	2.00	0.00	1.00	0.00
32.78	119.06	2.00	0.00	1.00	0.00	32.83	115.67	2.00	0.00	1.00	0.00
32.88	114.82	2.00	0.00	1.00	0.00	32.96	113.23	2.00	0.00	1.00	0.00
33.01	111.20	2.00	0.00	1.00	0.00	33.09	110.97	2.00	0.00	1.00	0.00
33.14	113.83	2.00	0.00	1.00	0.00	33.20	119.12	2.00	0.00	1.00	0.00
33.28	123.78	2.00	0.00	1.00	0.00	33.34	126.52	2.00	0.00	1.00	0.00
33.43	127.73	2.00	0.00	1.00	0.00	33.47	128.10	2.00	0.00	1.00	0.00
33.57	127.45	2.00	0.00	1.00	0.00	33.60	126.44	2.00	0.00	1.00	0.00
33.70	126.20	2.00	0.00	1.00	0.00	33.74	126.79	2.00	0.00	1.00	0.00
33.79	129.06	2.00	0.00	1.00	0.00	33.88	131.42	2.00	0.00	1.00	0.00
33.93	133.14	2.00	0.00	1.00	0.00	34.01	132.41	2.00	0.00	1.00	0.00
34.07	133.18	2.00	0.00	1.00	0.00	34.16	135.04	2.00	0.00	1.00	0.00
34.20	138.51	2.00	0.00	1.00	0.00	34.25	142.34	2.00	0.00	1.00	0.00
34.33	145.51	2.00	0.00	1.00	0.00	34.41	147.77	2.00	0.00	1.00	0.00
34.46	148.28	2.00	0.00	1.00	0.00	34.52	149.16	2.00	0.00	1.00	0.00
34.60	150.06	2.00	0.00	1.00	0.00	34.66	151.25	2.00	0.00	1.00	0.00
34.73	150.78	2.00	0.00	1.00	0.00	34.78	148.52	2.00	0.00	1.00	0.00
34.87	146.47	2.00	0.00	1.00	0.00	34.92	148.23	2.00	0.00	1.00	0.00
35.01	152.93	2.00	0.00	1.00	0.00	35.06	155.90	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
35.11	143.13	0.77	1.20	1.00	0.01	35.19	155.83	0.94	0.81	1.00	0.01
35.24	202.87	2.00	0.00	1.00	0.00	35.33	228.88	2.00	0.00	1.00	0.00
35.38	237.48	2.00	0.00	1.00	0.00	35.46	223.72	2.00	0.00	1.00	0.00
35.52	202.02	2.00	0.00	1.00	0.00	35.61	186.89	1.50	0.00	1.00	0.00
35.64	182.13	1.40	0.00	1.00	0.00	35.70	189.96	1.57	0.00	1.00	0.00
35.77	205.71	2.00	0.00	1.00	0.00	35.83	226.19	2.00	0.00	1.00	0.00
35.92	239.03	2.00	0.00	1.00	0.00	35.97	239.14	2.00	0.00	1.00	0.00
36.03	243.05	2.00	0.00	1.00	0.00	36.10	252.76	2.00	0.00	1.00	0.00
36.16	259.48	2.00	0.00	1.00	0.00	36.24	265.39	2.00	0.00	1.00	0.00
36.30	251.06	2.00	0.00	1.00	0.00	36.35	242.72	2.00	0.00	1.00	0.00
36.43	237.00	2.00	0.00	1.00	0.00	36.49	238.71	2.00	0.00	1.00	0.00
36.56	230.80	2.00	0.00	1.00	0.00	36.63	210.52	2.00	0.00	1.00	0.00
36.69	190.62	1.57	0.00	1.00	0.00	36.77	186.44	1.48	0.00	1.00	0.00
36.82	178.58	1.32	0.19	1.00	0.00	36.90	175.65	1.27	0.19	1.00	0.00
36.95	164.53	1.07	0.40	1.00	0.00	37.01	153.53	0.90	0.83	1.00	0.01
37.09	195.71	1.68	0.00	1.00	0.00	37.14	249.02	2.00	0.00	1.00	0.00
37.23	296.10	2.00	0.00	1.00	0.00	37.28	342.36	2.00	0.00	1.00	0.00
37.34	346.88	2.00	0.00	1.00	0.00	37.44	386.97	2.00	0.00	1.00	0.00
37.48	404.63	2.00	0.00	1.00	0.00	37.54	-1.00	2.00	0.00	1.00	0.00
37.62	-1.00	2.00	0.00	1.00	0.00	37.67	-1.00	2.00	0.00	1.00	0.00
37.76	-1.00	2.00	0.00	1.00	0.00	37.81	-1.00	2.00	0.00	1.00	0.00

Total estimated settlement: 0.03

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.09	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.13	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.22	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.27	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.36	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.41	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.51	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.54	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.60	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.69	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.73	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.82	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.86	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.95	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
0.98	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.05	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.14	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.19	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.28	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.32	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.38	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.47	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.51	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.61	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.64	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.71	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.79	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.84	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
1.98	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.04	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.12	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.17	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.26	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.31	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.41	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.44	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.52	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.59	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.67	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.72	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.77	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.86	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.90	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
2.99	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.04	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.09	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.17	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.22	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.28	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.36	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.46	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.50	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.55	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.63	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.68	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.77	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.82	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.90	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
3.95	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.00	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.10	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.14	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.20	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.29	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.33	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.42	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.48	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.56	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.59	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.67	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.75	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.80	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.88	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
4.92	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
5.00	0.00	-1.00	1.00	-1.00	-1.00	0.00	0.00
5.07	90.50	144.90	1.33	193.38	2.03	0.88	0.88
5.17	130.80	209.64	1.27	265.29	1.94	0.95	0.95
5.22	120.43	192.99	1.30	251.59	2.00	0.94	0.94
5.26	111.78	179.08	1.35	242.19	2.05	0.93	0.93
5.34	105.05	168.25	1.41	237.97	2.10	0.92	0.92
5.40	102.59	164.30	1.46	240.37	2.13	0.93	0.93
5.49	103.89	166.37	1.47	245.22	2.13	0.93	0.93
5.54	107.42	172.04	1.46	250.65	2.12	0.94	0.94
5.58	112.45	180.11	1.41	254.13	2.09	0.94	0.94
5.67	117.67	188.49	1.36	257.01	2.06	0.94	0.94
5.72	120.99	193.83	1.32	256.31	2.02	0.94	0.94
5.81	121.86	195.21	1.29	252.55	1.98	0.94	0.94
5.86	120.33	192.75	1.27	244.71	1.95	0.93	0.93
5.92	118.98	190.57	1.24	236.64	1.91	0.92	0.92
6.00	117.33	187.92	1.21	227.59	1.86	0.91	0.91
6.04	115.09	184.32	1.17	216.51	1.82	0.90	0.90
6.13	112.34	179.89	1.16	207.81	1.80	0.90	0.90
6.18	110.38	176.74	1.15	202.57	1.79	0.89	0.89
6.24	108.87	174.30	1.17	203.51	1.81	0.89	0.89
6.32	109.30	174.99	1.18	206.97	1.83	0.89	0.89

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.37	110.59	177.06	1.20	212.41	1.85	0.90	0.90
6.46	114.78	183.78	1.20	220.45	1.85	0.91	0.91
6.51	116.50	186.53	1.22	227.23	1.87	0.91	0.91
6.60	122.45	196.08	1.22	238.90	1.87	0.93	0.93
6.64	129.16	206.85	1.22	252.18	1.87	0.94	0.94
6.70	136.78	219.10	1.22	266.80	1.87	0.95	0.95
6.78	137.06	219.54	1.24	272.56	1.91	0.96	0.96
6.84	130.94	209.70	1.28	269.05	1.97	0.95	0.95
6.93	121.97	195.28	1.34	261.59	2.04	0.95	0.95
6.97	109.82	175.75	1.45	254.94	2.12	0.94	0.94
7.06	98.92	158.22	1.60	253.35	2.19	0.94	0.94
7.11	91.26	145.92	1.75	254.96	2.25	0.94	0.94
7.16	88.43	141.36	1.78	251.51	2.26	0.94	0.94
7.23	88.39	141.30	1.73	245.09	2.24	0.93	0.93
7.29	89.26	142.68	1.66	236.23	2.22	0.92	0.92
7.39	89.78	143.52	1.60	229.26	2.19	0.92	0.92
7.44	86.88	138.84	1.60	221.64	2.19	0.91	0.91
7.52	79.38	126.79	1.70	214.91	2.23	0.90	0.90
7.57	69.38	110.72	1.89	209.78	2.29	0.90	0.90
7.62	58.48	93.21	2.26	210.60	2.38	0.90	0.90
7.69	49.36	78.54	2.76	216.78	2.47	0.90	0.90
7.75	41.64	66.13	3.46	228.61	2.56	0.92	0.92
7.81	38.50	61.07	3.79	231.47	2.60	4.73	5.63
7.90	37.31	59.17	3.83	226.89	2.61	4.35	5.39
7.95	37.83	60.00	3.46	207.77	2.57	0.90	0.90
8.04	38.17	60.54	3.12	188.84	2.52	0.87	0.87
8.08	38.81	61.56	3.09	189.95	2.52	0.88	0.88
8.17	39.33	62.37	3.44	214.31	2.56	0.90	0.90
8.20	50.87	80.92	2.84	229.65	2.48	0.92	0.92
8.31	69.24	108.41	2.08	225.28	2.34	0.91	0.91
8.36	93.55	141.51	1.58	224.06	2.19	0.91	0.91
8.40	89.55	136.00	1.68	228.60	2.23	0.92	0.92
8.49	65.36	102.45	2.49	255.41	2.42	0.94	0.94
8.54	36.41	57.66	5.77	332.64	2.79	6.57	4.85
8.63	25.44	40.01	9.13	365.13	3.02	6.84	3.33
8.67	28.31	44.62	7.29	325.19	2.91	6.51	3.69
8.77	30.46	48.07	5.62	270.02	2.78	3.83	3.93
8.81	32.22	50.89	4.24	215.53	2.65	3.14	4.14
8.87	34.47	53.78	3.78	203.09	2.60	3.10	4.41
8.95	36.83	56.87	3.61	205.35	2.58	0.89	0.89
9.00	38.97	59.94	3.60	215.50	2.58	0.90	0.90
9.09	40.22	61.40	3.60	221.13	2.58	0.91	0.91
9.14	41.50	63.01	3.52	221.49	2.57	0.91	0.91
9.19	43.71	65.73	3.26	214.16	2.54	0.90	0.90
9.28	46.24	68.65	3.03	208.33	2.51	0.90	0.90
9.32	46.89	69.32	3.01	208.81	2.50	0.90	0.90
9.43	47.52	69.62	2.99	208.36	2.50	0.90	0.90
9.45	48.29	70.50	2.92	205.92	2.49	0.89	0.89

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.54	49.17	71.12	2.83	201.43	2.48	0.89	0.89
9.59	51.85	74.22	2.57	191.10	2.44	0.88	0.88
9.67	53.96	76.31	2.39	182.41	2.40	0.87	0.87
9.72	55.57	77.93	2.25	175.44	2.38	0.86	0.86
9.81	53.51	74.72	2.35	175.28	2.39	0.86	0.86
9.86	50.12	70.10	2.54	177.76	2.43	0.86	0.86
9.95	47.82	66.63	2.68	178.86	2.45	0.86	0.86
10.00	44.43	62.02	2.93	181.79	2.49	0.87	0.87
10.04	41.43	57.94	3.22	186.73	2.53	0.87	0.87
10.13	38.05	53.24	3.65	194.19	2.59	0.88	0.88
10.18	35.91	50.35	4.02	202.47	2.63	2.96	3.99
10.28	35.08	48.94	4.23	207.14	2.65	3.04	3.86
10.32	34.09	47.56	4.49	213.37	2.68	3.07	3.73
10.41	34.71	48.07	4.48	215.33	2.68	3.11	3.77
10.46	35.88	49.46	4.36	215.54	2.67	3.22	3.88
10.51	38.46	52.56	3.97	208.92	2.63	3.22	4.15
10.60	39.29	53.23	3.83	203.99	2.61	3.06	4.20
10.64	40.70	54.77	3.62	198.45	2.58	0.89	0.89
10.73	42.57	56.75	3.41	193.73	2.56	0.88	0.88
10.78	48.01	63.25	2.88	182.21	2.49	0.87	0.87
10.83	52.62	68.61	2.53	173.44	2.43	0.86	0.86
10.92	55.96	72.22	2.33	167.92	2.39	0.85	0.85
10.96	54.74	70.54	2.40	169.29	2.40	0.85	0.85
11.05	51.01	65.66	2.65	174.06	2.45	0.86	0.86
11.10	46.01	59.42	3.06	182.07	2.51	0.87	0.87
11.19	42.31	54.59	3.47	189.40	2.57	0.88	0.88
11.24	40.39	52.11	3.73	194.62	2.60	0.88	0.88
11.29	40.68	52.31	3.73	195.35	2.60	0.88	0.88
11.38	41.81	53.35	3.63	193.52	2.59	0.88	0.88
11.43	42.50	54.02	3.56	192.34	2.58	0.88	0.88
11.50	42.28	53.52	3.64	194.86	2.59	0.88	0.88
11.56	41.75	52.78	3.86	203.75	2.61	2.95	4.09
11.66	41.57	52.31	4.05	211.90	2.63	3.25	4.03
11.68	42.28	53.15	4.08	216.85	2.64	3.28	4.10
11.76	42.74	53.41	4.03	215.28	2.63	3.29	4.11
11.84	41.93	52.14	4.13	215.53	2.64	3.19	4.00
11.90	40.25	49.94	4.35	217.22	2.66	3.15	3.82
11.95	38.15	47.30	4.70	222.23	2.70	3.13	3.60
12.01	36.72	45.41	4.98	226.19	2.73	3.17	3.45
12.09	35.30	43.49	5.24	228.04	2.75	3.16	3.29
12.17	33.84	41.47	5.46	226.34	2.77	3.01	3.13
12.22	32.31	39.48	5.58	220.38	2.78	2.85	2.97
12.29	30.11	36.64	5.91	216.47	2.80	2.59	2.75
12.35	27.82	33.73	6.35	214.15	2.84	2.50	2.52
12.45	26.09	31.46	6.81	214.20	2.87	2.41	2.34
12.47	25.52	30.71	6.85	210.42	2.88	2.37	2.28
12.54	26.05	31.15	6.49	202.10	2.85	2.20	2.32
12.63	26.80	31.78	6.10	193.97	2.82	2.04	2.37

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.68	27.22	32.15	5.92	190.40	2.81	2.04	2.40
12.74	27.78	32.66	5.79	189.11	2.79	2.06	2.44
12.81	28.24	33.04	5.70	188.18	2.79	2.03	2.47
12.87	27.41	31.97	5.97	190.79	2.81	2.03	2.38
12.96	25.87	30.04	6.50	195.38	2.85	2.07	2.23
13.00	26.33	30.49	6.42	195.76	2.84	2.07	2.26
13.08	29.15	33.53	5.70	191.15	2.79	2.08	2.50
13.14	31.01	35.48	5.29	187.55	2.75	2.14	2.65
13.23	30.61	34.84	5.37	187.14	2.76	2.07	2.59
13.28	28.91	32.82	5.71	187.38	2.79	2.00	2.44
13.33	27.83	31.48	5.84	183.86	2.80	1.95	2.33
13.42	25.79	29.00	6.27	181.84	2.83	1.77	2.14
13.46	24.18	27.10	6.63	179.75	2.86	1.69	2.00
13.54	23.17	25.84	6.98	180.30	2.88	1.68	1.90
13.60	23.24	25.84	7.04	181.84	2.89	1.69	1.90
13.69	23.54	26.03	7.08	184.39	2.89	1.75	1.91
13.72	25.39	28.06	6.76	189.81	2.87	1.81	2.06
13.79	28.66	31.57	6.22	196.29	2.83	2.10	2.33
13.85	33.98	37.33	5.51	205.75	2.77	2.38	2.76
13.92	39.57	43.30	4.97	215.04	2.72	2.83	3.21
14.01	44.14	48.07	4.64	222.99	2.69	3.18	3.56
14.06	46.31	50.30	4.56	229.50	2.69	3.31	3.73
14.11	45.40	49.06	4.28	210.14	2.66	3.42	3.64
14.20	42.12	45.24	4.32	195.61	2.66	1.95	3.35
14.25	38.48	41.13	4.40	180.81	2.67	2.16	3.04
14.31	36.01	38.44	5.08	195.10	2.73	2.28	2.83
14.38	35.39	37.65	5.44	204.95	2.77	2.40	2.77
14.48	35.29	37.36	5.66	211.58	2.78	2.57	2.74
14.50	35.34	37.37	5.81	217.19	2.80	2.60	2.74
14.58	35.87	37.77	5.82	219.77	2.80	2.67	2.76
14.63	36.62	38.44	5.71	219.48	2.79	2.76	2.81
14.72	37.22	38.87	5.58	216.97	2.78	2.64	2.84
14.77	37.65	39.20	5.41	212.18	2.76	2.59	2.87
14.84	38.76	40.17	5.19	208.42	2.74	2.52	2.94
14.90	41.00	42.34	4.83	204.66	2.71	2.54	3.10
14.99	43.60	44.81	4.55	203.98	2.69	2.59	3.28
15.04	45.63	46.80	4.50	210.82	2.68	2.72	3.42
15.13	46.53	47.53	4.64	220.53	2.69	3.07	3.47
15.18	46.88	47.78	4.81	229.81	2.71	3.20	3.49
15.22	48.98	49.82	4.64	231.14	2.69	3.26	3.63
15.31	53.06	53.70	4.24	227.91	2.65	3.34	3.92
15.36	57.15	57.69	3.89	224.50	2.62	3.41	4.21
15.44	58.11	58.41	3.82	223.26	2.61	3.43	4.26
15.50	56.27	56.39	3.99	225.22	2.63	3.34	4.11
15.57	54.78	54.68	4.14	226.29	2.64	3.32	3.98
15.64	54.06	53.77	4.20	225.87	2.65	3.32	3.91
15.69	53.77	53.31	4.19	223.44	2.65	3.22	3.87
15.77	52.83	52.13	4.25	221.68	2.65	3.12	3.78

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.82	55.47	54.61	3.95	215.68	2.62	3.11	3.96
15.91	61.78	60.57	3.41	206.54	2.56	0.89	0.89
15.96	71.43	69.91	2.85	199.00	2.48	0.89	0.89
16.05	76.11	74.17	2.70	200.32	2.46	0.89	0.89
16.10	74.42	72.37	2.89	209.21	2.49	0.90	0.90
16.14	64.83	62.87	3.58	224.91	2.58	0.91	0.91
16.24	55.73	53.71	4.41	237.07	2.67	3.53	3.87
16.28	48.51	46.56	5.12	238.38	2.74	3.35	3.35
16.38	44.43	42.36	5.45	230.89	2.77	2.88	3.04
16.42	40.03	38.00	5.83	221.64	2.80	2.70	2.73
16.50	38.29	36.13	5.89	212.77	2.80	2.40	2.59
16.56	37.72	35.48	5.70	202.06	2.79	2.25	2.54
16.61	38.89	36.50	5.11	186.61	2.74	2.10	2.62
16.70	37.55	35.04	4.98	174.40	2.73	1.74	2.51
16.74	34.40	31.95	5.09	162.66	2.74	1.57	2.29
16.83	29.81	27.44	5.79	158.86	2.79	1.32	1.96
16.88	25.61	23.37	6.57	153.58	2.86	1.24	1.67
16.93	23.14	20.97	6.68	140.11	2.86	1.06	1.50
17.00	21.66	19.49	6.42	125.06	2.84	0.66	1.39
17.06	21.26	19.05	5.80	110.52	2.80	0.64	1.36
17.16	21.56	19.26	5.53	106.56	2.77	0.58	1.37
17.21	22.03	19.65	5.19	102.09	2.74	0.55	1.40
17.26	22.25	19.81	5.07	100.44	2.73	0.53	1.41
17.35	22.38	19.85	5.03	99.87	2.73	0.54	1.41
17.40	22.35	19.78	5.10	100.94	2.74	0.54	1.41
17.46	22.21	19.58	5.19	101.65	2.74	0.55	1.39
17.53	21.90	19.24	5.34	102.72	2.76	0.55	1.37
17.62	21.69	18.96	5.46	103.48	2.77	0.55	1.35
17.67	21.64	18.87	5.55	104.62	2.77	0.56	1.34
17.72	21.97	19.13	5.56	106.35	2.78	0.58	1.36
17.81	22.35	19.39	5.51	106.91	2.77	0.61	1.38
17.85	22.61	19.60	5.37	105.26	2.76	0.59	1.39
17.95	22.66	19.56	5.21	101.90	2.75	0.54	1.39
18.00	22.46	19.34	5.10	98.66	2.74	0.52	1.37
18.09	21.96	18.80	5.20	97.69	2.74	0.49	1.33
18.14	21.17	18.05	5.43	97.99	2.77	0.49	1.28
18.18	20.27	17.20	5.77	99.16	2.79	0.49	1.22
18.27	19.53	16.45	6.08	99.98	2.82	0.48	1.16
18.32	18.88	15.84	6.42	101.69	2.84	0.48	1.12
18.41	18.55	15.46	6.66	103.03	2.86	0.50	1.09
18.46	18.37	15.27	6.80	103.82	2.87	0.50	1.08
18.54	18.41	15.24	6.78	103.30	2.87	0.49	1.08
18.60	18.41	15.21	6.77	102.94	2.87	0.49	1.07
18.64	18.42	15.18	6.81	103.39	2.87	0.49	1.07
18.72	18.20	14.93	7.00	104.49	2.89	0.50	1.05
18.77	18.07	14.77	7.16	105.71	2.90	0.51	1.04
18.84	17.94	14.61	7.32	106.94	2.91	0.51	1.03
18.91	18.03	14.64	7.36	107.72	2.91	0.52	1.03

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.96	18.12	14.68	7.50	110.11	2.92	0.53	1.04
19.05	18.28	14.75	7.63	112.57	2.93	0.58	1.04
19.10	18.63	15.02	7.63	114.62	2.93	0.60	1.06
19.18	19.22	15.47	7.35	113.77	2.91	0.60	1.09
19.24	20.32	16.40	6.85	112.37	2.88	0.58	1.15
19.29	21.60	17.47	6.43	112.29	2.84	0.60	1.23
19.37	22.74	18.39	6.14	112.95	2.82	0.65	1.29
19.43	22.95	18.52	6.27	116.23	2.83	0.64	1.30
19.54	23.02	18.47	6.50	120.01	2.85	0.70	1.30
19.58	23.21	18.59	6.88	127.86	2.88	0.76	1.31
19.67	23.89	19.07	7.07	134.75	2.89	0.89	1.34
19.71	24.66	19.67	7.15	140.76	2.90	0.96	1.38
19.77	25.74	20.54	6.97	143.25	2.88	1.00	1.44
19.82	27.54	22.02	6.61	145.47	2.86	1.03	1.54
19.91	29.56	23.64	6.25	147.82	2.83	1.12	1.65
19.95	31.46	25.20	5.95	149.84	2.81	1.19	1.76
20.04	32.65	26.11	5.77	150.70	2.79	1.20	1.82
20.09	33.17	26.49	5.74	152.16	2.79	1.22	1.85
20.17	33.30	26.50	5.84	154.81	2.80	1.28	1.85
20.23	33.46	26.55	5.93	157.52	2.81	1.31	1.85
20.32	33.96	26.85	5.92	158.94	2.81	1.34	1.87
20.37	34.55	27.29	5.87	160.16	2.80	1.36	1.90
20.41	35.23	27.80	5.83	161.96	2.80	1.40	1.94
20.50	35.95	28.28	5.80	163.88	2.80	1.45	1.97
20.55	36.66	28.80	5.78	166.52	2.79	1.49	2.00
20.64	37.28	29.20	5.78	168.70	2.79	1.55	2.03
20.69	37.96	29.67	5.81	172.38	2.80	1.58	2.06
20.78	38.62	30.09	5.86	176.29	2.80	1.68	2.09
20.83	39.19	30.47	5.96	181.53	2.81	1.76	2.12
20.87	39.70	30.80	6.12	188.51	2.82	1.84	2.14
20.96	40.22	31.07	6.26	194.62	2.83	2.03	2.16
21.01	40.88	31.52	6.36	200.47	2.84	2.08	2.19
21.09	41.26	31.71	6.43	203.80	2.84	2.16	2.20
21.13	41.47	31.79	6.54	207.82	2.85	2.22	2.21
21.20	41.54	31.74	6.64	210.87	2.86	2.29	2.21
21.29	41.64	31.69	6.70	212.23	2.86	2.32	2.20
21.33	41.59	31.64	6.38	201.70	2.84	2.30	2.19
21.42	41.35	31.39	5.95	186.78	2.81	1.76	2.17
21.47	41.09	31.18	5.60	174.68	2.78	1.59	2.15
21.56	41.00	30.99	5.64	174.65	2.78	1.72	2.14
21.61	40.88	30.81	5.78	178.14	2.79	1.75	2.13
21.66	40.35	30.32	5.87	177.99	2.80	1.74	2.09
21.73	39.27	29.38	6.03	177.02	2.81	1.68	2.03
21.80	38.33	28.54	6.17	176.06	2.82	1.65	1.97
21.89	37.62	27.86	6.28	174.84	2.83	1.64	1.92
21.94	37.20	27.50	6.28	172.56	2.83	1.59	1.90
21.98	36.66	27.03	6.24	168.74	2.83	1.52	1.86
22.07	36.15	26.55	6.20	164.65	2.83	1.44	1.83

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.12	35.51	26.02	6.14	159.75	2.82	1.39	1.79
22.21	34.93	25.49	6.12	156.02	2.82	1.27	1.75
22.26	34.48	25.09	6.13	153.74	2.82	1.26	1.73
22.33	34.40	24.97	6.13	153.09	2.82	1.27	1.72
22.40	34.40	24.90	6.11	152.07	2.82	1.24	1.71
22.44	34.41	24.87	6.06	150.80	2.82	1.22	1.71
22.54	34.48	24.84	6.04	150.13	2.82	1.22	1.70
22.59	34.59	24.87	6.05	150.44	2.82	1.22	1.71
22.67	34.75	24.90	6.08	151.33	2.82	1.23	1.71
22.72	34.81	24.88	6.17	153.44	2.82	1.26	1.71
22.79	34.86	24.83	6.29	156.20	2.83	1.31	1.70
22.84	34.86	24.76	6.40	158.44	2.84	1.35	1.70
22.91	34.68	24.55	6.48	159.16	2.85	1.35	1.69
23.00	34.49	24.32	6.51	158.38	2.85	1.33	1.67
23.04	34.35	24.17	6.52	157.64	2.85	1.31	1.66
23.13	34.36	24.10	6.51	156.90	2.85	1.31	1.65
23.18	34.34	24.04	6.49	156.01	2.85	1.30	1.65
23.23	34.36	23.99	6.56	157.29	2.85	1.27	1.65
23.31	34.58	24.07	6.65	160.13	2.86	1.36	1.65
23.36	35.65	24.81	6.55	162.60	2.85	1.43	1.70
23.46	36.58	25.41	6.43	163.28	2.84	1.43	1.74
23.50	37.10	25.76	6.39	164.63	2.84	1.44	1.76
23.60	36.69	25.32	6.64	168.13	2.86	1.51	1.73
23.64	36.41	25.02	6.95	173.80	2.88	1.56	1.72
23.72	36.84	25.23	7.07	178.31	2.89	1.68	1.73
23.78	38.24	26.19	6.94	181.77	2.88	1.74	1.80
23.84	40.00	27.43	6.70	183.65	2.86	1.79	1.88
23.92	41.48	28.44	6.49	184.43	2.85	1.86	1.94
23.97	42.19	28.91	6.39	184.62	2.84	1.86	1.97
24.06	42.36	28.94	6.34	183.47	2.84	1.84	1.97
24.11	42.04	28.67	6.31	180.77	2.84	1.82	1.95
24.15	41.19	28.05	6.17	172.92	2.82	1.72	1.91
24.23	40.02	27.14	6.19	167.90	2.83	1.43	1.84
24.29	38.69	26.10	6.39	166.72	2.84	1.53	1.78
24.38	37.62	25.19	6.77	170.54	2.87	1.59	1.72
24.43	36.86	24.58	6.95	170.88	2.88	1.54	1.68
24.49	36.44	24.23	6.98	169.19	2.88	1.50	1.65
24.57	36.24	24.01	7.00	168.15	2.89	1.49	1.64
24.62	35.77	23.62	7.13	168.45	2.90	1.49	1.61
24.68	35.28	23.21	7.22	167.55	2.90	1.49	1.59
24.75	34.69	22.74	7.25	164.90	2.90	1.43	1.55
24.81	34.38	22.50	7.17	161.41	2.90	1.35	1.54
24.90	34.23	22.32	7.13	159.06	2.89	1.32	1.52
24.94	34.18	22.25	7.13	158.62	2.89	1.32	1.52
25.04	34.22	22.21	7.11	157.97	2.89	1.32	1.51
25.08	34.20	22.16	7.05	156.23	2.89	1.30	1.51
25.18	34.11	22.04	6.99	154.07	2.89	1.24	1.50
25.22	33.85	21.83	6.99	152.53	2.88	1.23	1.49

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.27	33.48	21.52	7.08	152.30	2.89	1.22	1.47
25.34	33.17	21.25	7.18	152.54	2.90	1.22	1.45
25.40	33.03	21.10	7.25	152.96	2.90	1.23	1.44
25.48	33.11	21.08	7.27	153.15	2.90	1.23	1.44
25.55	33.34	21.19	7.23	153.27	2.90	1.23	1.44
25.59	33.74	21.43	7.19	154.15	2.90	1.24	1.46
25.67	34.31	21.73	7.27	157.98	2.90	1.29	1.48
25.73	35.56	22.50	7.33	165.00	2.91	1.42	1.53
25.82	37.27	23.57	7.27	171.34	2.90	1.60	1.60
25.85	40.62	25.86	6.78	175.42	2.87	1.66	1.75
25.95	43.51	27.79	6.33	175.92	2.84	1.77	1.87
26.00	45.83	29.36	6.01	176.53	2.81	1.77	1.97
26.05	45.86	29.31	6.09	178.54	2.82	1.80	1.97
26.14	45.46	28.91	6.25	180.67	2.83	1.86	1.94
26.19	44.64	28.30	6.33	179.18	2.84	1.86	1.91
26.28	43.96	27.82	6.16	171.34	2.82	1.68	1.87
26.33	43.58	27.62	5.79	160.02	2.80	1.46	1.85
26.41	43.48	27.55	5.53	152.44	2.77	1.32	1.84
26.46	42.98	27.15	5.61	152.42	2.78	1.35	1.81
26.56	42.81	26.91	5.78	155.45	2.79	1.43	1.80
26.59	39.75	24.69	6.53	161.33	2.85	1.44	1.66
26.64	40.39	25.08	6.44	161.54	2.85	1.46	1.69
26.72	41.02	25.45	6.35	161.51	2.84	1.47	1.71
26.78	44.92	28.12	5.61	157.78	2.78	1.47	1.87
26.87	45.19	28.22	5.58	157.57	2.78	1.47	1.88
26.92	44.26	27.52	5.76	158.64	2.79	1.47	1.83
27.01	42.92	26.49	6.04	160.15	2.82	1.47	1.77
27.05	42.17	25.92	6.23	161.39	2.83	1.48	1.73
27.10	42.33	26.00	6.17	160.31	2.82	1.49	1.74
27.18	42.76	26.28	5.90	155.18	2.80	1.43	1.75
27.24	43.02	26.50	5.56	147.45	2.78	1.27	1.76
27.30	42.50	26.17	5.38	140.81	2.76	1.16	1.73
27.38	41.30	25.31	5.47	138.50	2.77	1.13	1.68
27.47	40.13	24.43	5.68	138.75	2.79	1.13	1.62
27.52	39.67	24.07	5.78	139.16	2.79	1.12	1.60
27.56	39.80	24.09	5.89	141.91	2.80	1.12	1.60
27.65	40.13	24.19	6.04	146.10	2.81	1.24	1.61
27.70	40.14	24.09	6.27	151.03	2.83	1.31	1.61
27.80	40.22	24.04	6.39	153.67	2.84	1.33	1.61
27.84	40.09	23.88	6.54	156.06	2.85	1.36	1.60
27.92	40.25	23.90	6.59	157.43	2.86	1.41	1.60
27.98	40.56	24.06	6.57	158.07	2.86	1.40	1.61
28.03	40.71	24.11	6.58	158.67	2.86	1.40	1.61
28.12	40.39	23.81	6.71	159.68	2.86	1.44	1.59
28.16	39.55	23.20	6.94	160.96	2.88	1.43	1.56
28.25	39.06	22.79	7.11	161.95	2.89	1.42	1.53
28.30	38.83	22.57	7.30	164.76	2.91	1.46	1.52
28.39	38.86	22.49	7.45	167.42	2.92	1.55	1.51

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.43	38.99	22.52	7.51	169.08	2.92	1.54	1.52
28.49	39.48	22.80	7.37	168.13	2.91	1.54	1.53
28.57	39.91	23.03	7.22	166.30	2.90	1.52	1.55
28.62	40.36	23.32	7.01	163.49	2.89	1.48	1.56
28.68	40.37	23.32	6.88	160.32	2.88	1.43	1.56
28.76	40.36	23.32	6.64	154.83	2.86	1.38	1.55
28.81	40.58	23.61	5.91	139.45	2.80	1.23	1.56
28.90	40.83	23.91	5.25	125.57	2.75	0.79	1.57
28.95	40.97	24.10	4.83	116.38	2.71	0.84	1.57
29.04	40.55	23.70	5.07	120.06	2.73	0.90	1.55
29.08	39.70	23.06	5.34	123.10	2.76	0.91	1.51
29.16	38.59	22.24	5.65	125.59	2.78	0.92	1.46
29.22	37.94	21.72	5.95	129.19	2.81	0.95	1.43
29.28	37.60	21.38	6.31	134.85	2.84	1.02	1.42
29.38	37.96	21.49	6.50	139.65	2.85	1.13	1.43
29.40	38.67	21.87	6.58	143.78	2.86	1.15	1.45
29.46	39.53	22.32	6.64	148.23	2.86	1.21	1.48
29.56	40.38	22.74	6.70	152.27	2.86	1.35	1.51
29.59	41.08	23.13	6.68	154.58	2.86	1.37	1.54
29.70	42.06	23.71	6.40	151.71	2.84	1.34	1.57
29.74	42.66	24.14	6.05	145.95	2.82	1.26	1.59
29.79	42.35	23.97	5.88	141.01	2.80	1.14	1.58
29.87	41.33	23.30	5.94	138.36	2.81	1.12	1.53
29.93	39.89	22.34	6.18	138.13	2.83	1.11	1.47
30.01	38.57	21.45	6.38	136.83	2.84	1.07	1.42
30.07	37.38	20.71	6.45	133.48	2.85	1.01	1.37
30.15	36.63	20.22	6.43	130.08	2.84	0.94	1.34
30.20	36.04	19.85	6.44	127.75	2.85	0.91	1.31
30.27	35.49	19.46	6.56	127.55	2.85	0.90	1.29
30.34	35.08	19.16	6.64	127.24	2.86	0.91	1.27
30.38	34.77	18.95	6.67	126.40	2.86	0.89	1.25
30.46	34.82	18.94	6.66	126.05	2.86	0.86	1.25
30.53	35.17	19.11	6.61	126.36	2.86	0.90	1.26
30.62	35.71	19.38	6.55	127.05	2.85	0.91	1.28
30.66	36.16	19.65	6.43	126.34	2.84	0.91	1.30
30.71	36.30	19.66	6.56	129.04	2.85	0.88	1.30
30.80	36.37	19.60	6.81	133.35	2.87	1.02	1.30
30.84	36.78	19.73	7.11	140.35	2.89	1.08	1.31
30.92	38.64	20.80	6.85	142.39	2.87	1.18	1.38
30.98	41.02	22.24	6.36	141.39	2.84	1.17	1.46
31.07	42.92	23.43	5.86	137.20	2.80	1.12	1.53
31.11	42.91	23.46	5.65	132.57	2.78	1.07	1.53
31.18	41.08	22.38	5.63	126.10	2.78	0.98	1.46
31.26	39.04	21.25	5.34	113.56	2.76	0.80	1.38
31.30	36.68	19.95	5.11	101.99	2.74	0.54	1.29
31.38	35.34	19.19	4.98	95.56	2.73	0.51	1.23
31.44	34.15	18.32	5.50	100.82	2.77	0.56	1.19
31.54	33.66	17.84	6.06	108.21	2.82	0.67	1.17

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.59	34.24	18.07	6.37	115.14	2.84	0.74	1.19
31.67	35.25	18.58	6.45	119.77	2.85	0.81	1.22
31.72	36.71	19.39	6.41	124.33	2.84	0.87	1.27
31.77	38.84	20.57	6.38	131.15	2.84	0.95	1.35
31.86	41.59	22.07	6.39	140.92	2.84	1.14	1.45
31.91	46.68	24.94	6.22	155.10	2.83	1.36	1.63
32.00	52.96	28.60	5.75	164.50	2.79	1.76	1.86
32.05	61.83	33.99	4.93	167.61	2.72	1.84	2.18
32.09	68.91	38.44	4.29	164.86	2.66	1.90	2.43
32.18	72.49	40.67	4.00	162.74	2.63	1.93	2.56
32.23	68.41	38.08	4.29	163.30	2.66	1.88	2.41
32.30	61.47	33.74	4.79	161.50	2.71	1.74	2.16
32.36	51.56	27.73	5.58	154.78	2.78	1.53	1.80
32.45	44.06	23.27	6.25	145.42	2.83	1.14	1.52
32.50	37.73	19.54	7.07	138.05	2.89	1.03	1.29
32.55	34.16	16.25	8.14	132.29	2.96	1.00	1.16
32.64	32.42	15.35	8.39	128.81	2.98	0.92	1.10
32.69	31.41	14.83	8.24	122.16	2.97	0.83	1.06
32.78	31.38	15.91	7.48	119.06	2.92	0.71	1.06
32.83	31.39	15.95	7.25	115.67	2.90	0.71	1.06
32.88	31.75	16.17	7.10	114.82	2.89	0.71	1.07
32.96	32.40	16.56	6.84	113.23	2.87	0.69	1.09
33.01	33.57	17.28	6.44	111.20	2.85	0.67	1.13
33.09	34.88	18.05	6.15	110.97	2.82	0.67	1.18
33.14	35.77	18.53	6.14	113.83	2.82	0.72	1.21
33.20	35.60	18.32	6.50	119.12	2.85	0.79	1.20
33.28	34.94	17.83	6.94	123.78	2.88	0.85	1.17
33.34	34.30	17.40	7.27	126.52	2.90	0.87	1.15
33.43	34.34	17.38	7.35	127.73	2.91	0.87	1.15
33.47	35.65	18.14	7.06	128.10	2.89	0.90	1.20
33.57	37.63	19.30	6.60	127.45	2.86	0.92	1.27
33.60	39.08	20.17	6.27	126.44	2.83	0.91	1.32
33.70	38.92	20.05	6.29	126.20	2.83	0.90	1.31
33.74	38.02	19.49	6.50	126.79	2.85	0.90	1.28
33.79	37.47	19.11	6.75	129.06	2.87	0.90	1.25
33.88	37.40	19.01	6.91	131.42	2.88	0.97	1.25
33.93	38.20	19.44	6.85	133.14	2.88	0.99	1.28
34.01	39.72	20.33	6.51	132.41	2.85	0.99	1.33
34.07	41.59	21.41	6.22	133.18	2.83	0.99	1.39
34.16	42.81	22.08	6.12	135.04	2.82	1.08	1.44
34.20	43.25	22.27	6.22	138.51	2.83	1.10	1.45
34.25	42.85	21.96	6.48	142.34	2.85	1.14	1.43
34.33	42.69	21.78	6.68	145.51	2.86	1.22	1.43
34.41	43.02	21.92	6.74	147.77	2.87	1.23	1.44
34.46	44.32	22.66	6.54	148.28	2.85	1.25	1.48
34.52	45.99	23.61	6.32	149.16	2.84	1.28	1.54
34.60	47.30	24.34	6.16	150.06	2.82	1.32	1.58
34.66	48.23	24.86	6.08	151.25	2.82	1.33	1.61

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.73	48.91	25.24	5.97	150.78	2.81	1.37	1.63
34.78	49.99	25.90	5.73	148.52	2.79	1.32	1.67
34.87	51.30	26.68	5.49	146.47	2.77	1.27	1.71
34.92	53.01	27.65	5.36	148.23	2.76	1.32	1.77
35.01	54.92	28.67	5.33	152.93	2.76	1.46	1.84
35.06	60.38	31.87	4.89	155.90	2.72	1.55	2.02
35.11	107.27	61.35	2.33	143.13	2.39	0.82	0.82
35.19	168.84	101.71	1.53	155.83	2.16	0.83	0.83
35.24	244.73	151.92	1.34	202.87	2.03	0.89	0.89
35.33	279.91	174.74	1.31	228.88	2.00	0.92	0.92
35.38	289.76	180.64	1.31	237.48	2.01	0.92	0.92
35.46	270.83	167.96	1.33	223.72	2.03	0.91	0.91
35.52	237.86	145.83	1.39	202.02	2.08	0.89	0.89
35.61	210.29	127.19	1.47	186.89	2.13	0.87	0.87
35.64	193.12	115.39	1.58	182.13	2.19	0.87	0.87
35.70	197.52	117.59	1.62	189.96	2.20	0.88	0.88
35.77	230.62	139.24	1.48	205.71	2.14	0.89	0.89
35.83	265.38	161.99	1.40	226.19	2.08	0.91	0.91
35.92	284.40	174.20	1.37	239.03	2.07	0.93	0.93
35.97	286.01	175.35	1.36	239.14	2.06	0.93	0.93
36.03	295.22	181.87	1.34	243.05	2.03	0.93	0.93
36.10	312.73	194.08	1.30	252.76	1.99	0.94	0.94
36.16	320.51	198.62	1.31	259.48	2.00	0.94	0.94
36.24	328.66	203.71	1.30	265.39	1.99	0.95	0.95
36.30	301.24	184.04	1.36	251.06	2.06	0.94	0.94
36.35	282.33	170.77	1.42	242.72	2.10	0.93	0.93
36.43	254.31	151.07	1.57	237.00	2.18	0.92	0.92
36.49	257.77	153.18	1.56	238.71	2.18	0.93	0.93
36.56	249.80	148.29	1.56	230.80	2.18	0.92	0.92
36.63	218.81	128.74	1.64	210.52	2.21	0.90	0.90
36.69	174.09	100.28	1.90	190.62	2.29	0.88	0.88
36.77	131.56	73.26	2.55	186.44	2.43	0.87	0.87
36.82	115.37	63.45	2.81	178.58	2.48	0.86	0.86
36.90	113.37	62.25	2.82	175.65	2.48	0.86	0.86
36.95	129.46	72.70	2.26	164.53	2.38	0.85	0.85
37.01	172.97	102.31	1.50	153.53	2.15	0.83	0.83
37.09	256.42	161.55	1.21	195.71	1.86	0.88	0.88
37.14	376.19	249.02	1.00	249.02	1.62	0.94	0.94
37.23	447.23	296.10	1.00	296.10	1.54	0.97	0.97
37.28	516.95	342.36	1.00	342.36	1.44	1.01	1.01
37.34	524.01	346.88	1.00	346.88	1.46	1.01	1.01
37.44	584.79	386.97	1.00	386.97	1.29	1.04	1.04
37.48	611.58	404.63	1.00	404.63	1.11	1.05	1.05
37.54	661.52	-1.00	1.00	-1.00	-1.00	0.00	0.00
37.62	671.66	-1.00	1.00	-1.00	-1.00	0.00	0.00
37.67	702.38	-1.00	1.00	-1.00	-1.00	0.00	0.00
37.76	710.70	-1.00	1.00	-1.00	-1.00	0.00	0.00
37.81	722.67	-1.00	1.00	-1.00	-1.00	0.00	0.00

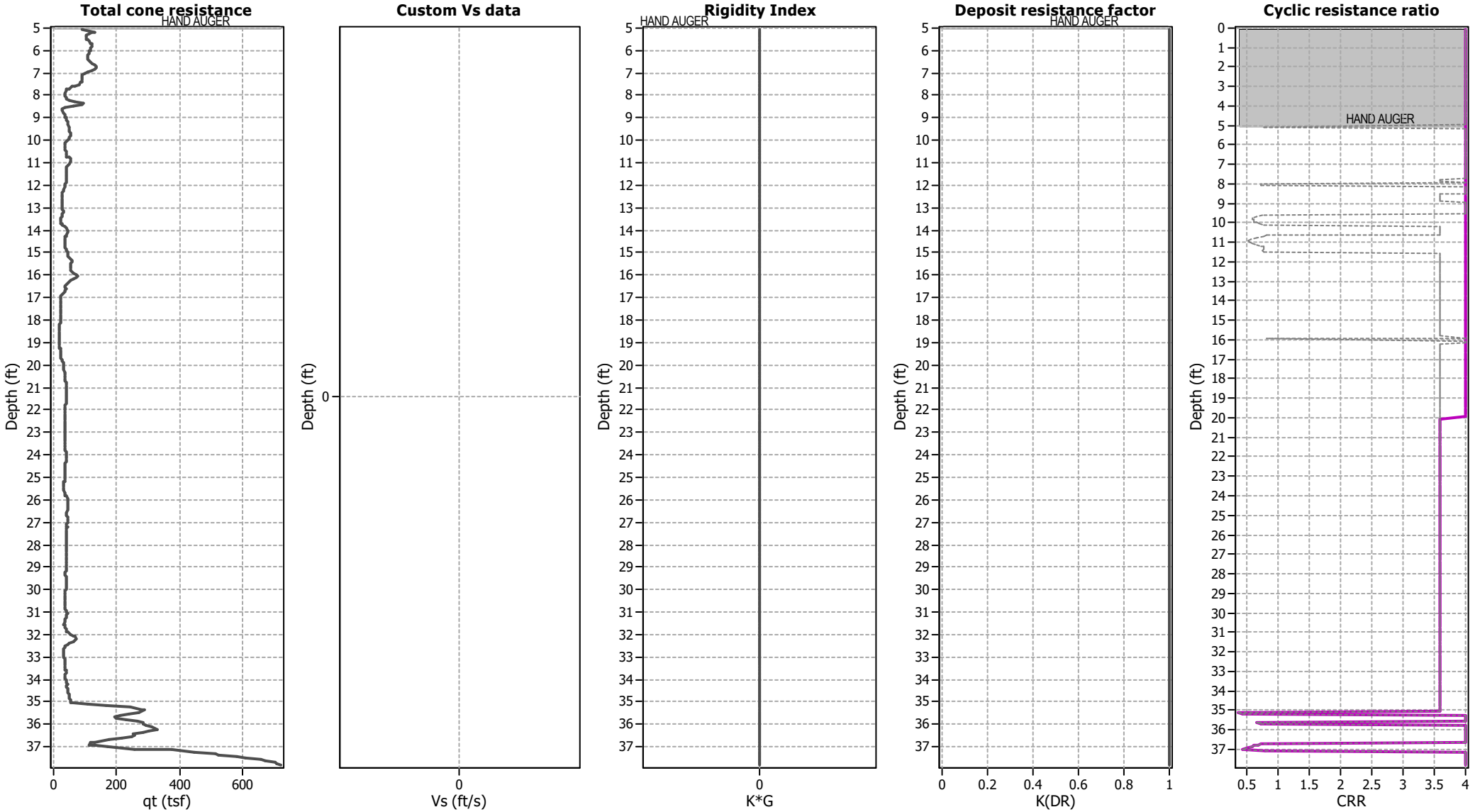
:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$

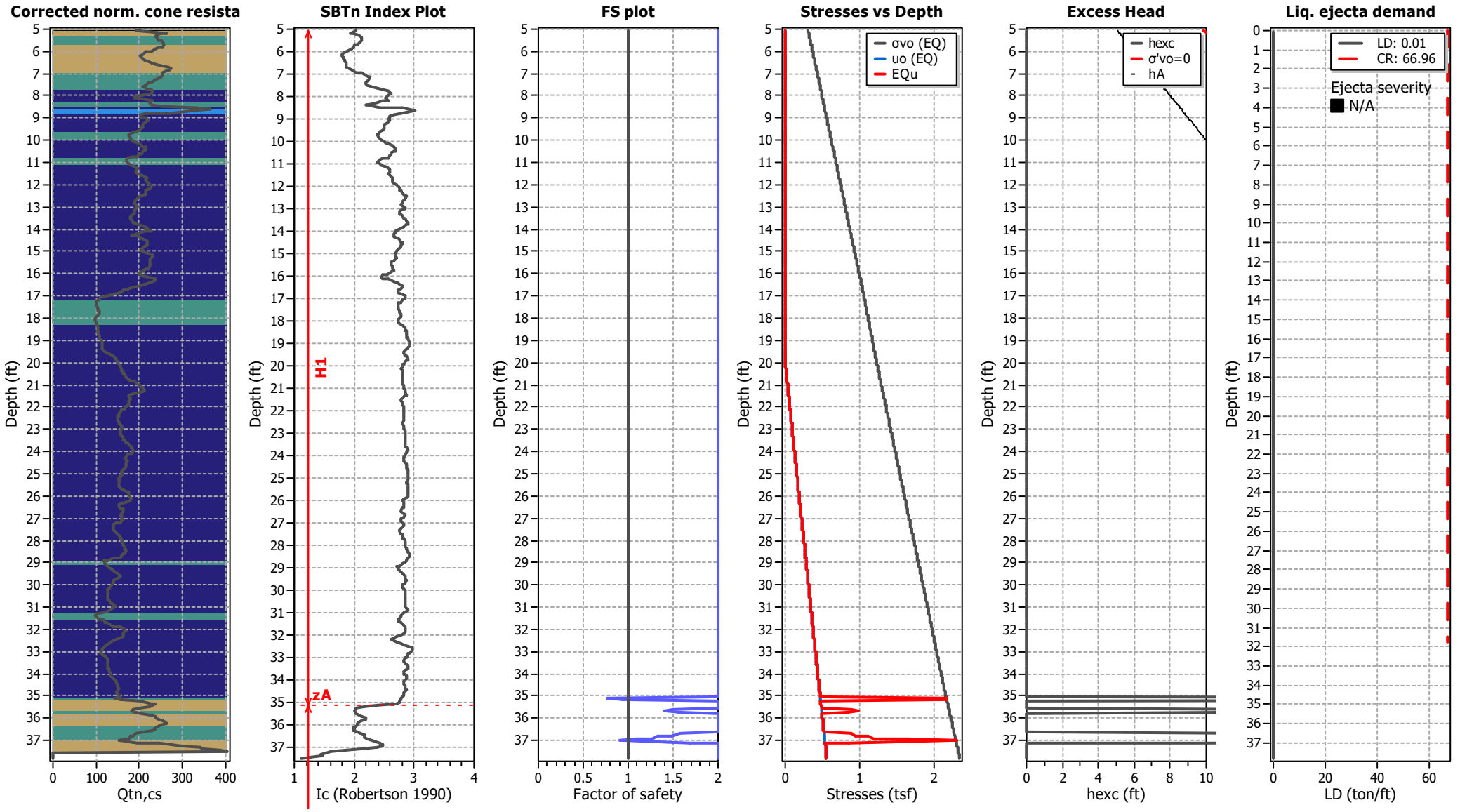
Abbreviations

q_t:	Total cone resistance
K_c:	Cone resistance correction factor due to fines
$Q_{tn,cs}$:	Adjusted and corrected cone resistance due to fines
I_c:	Soil behavior type index
$S_{u(liq)}/\sigma'_v$:	Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$:	Calculated peak undrained strength ratio

Aging Calculation Estimation

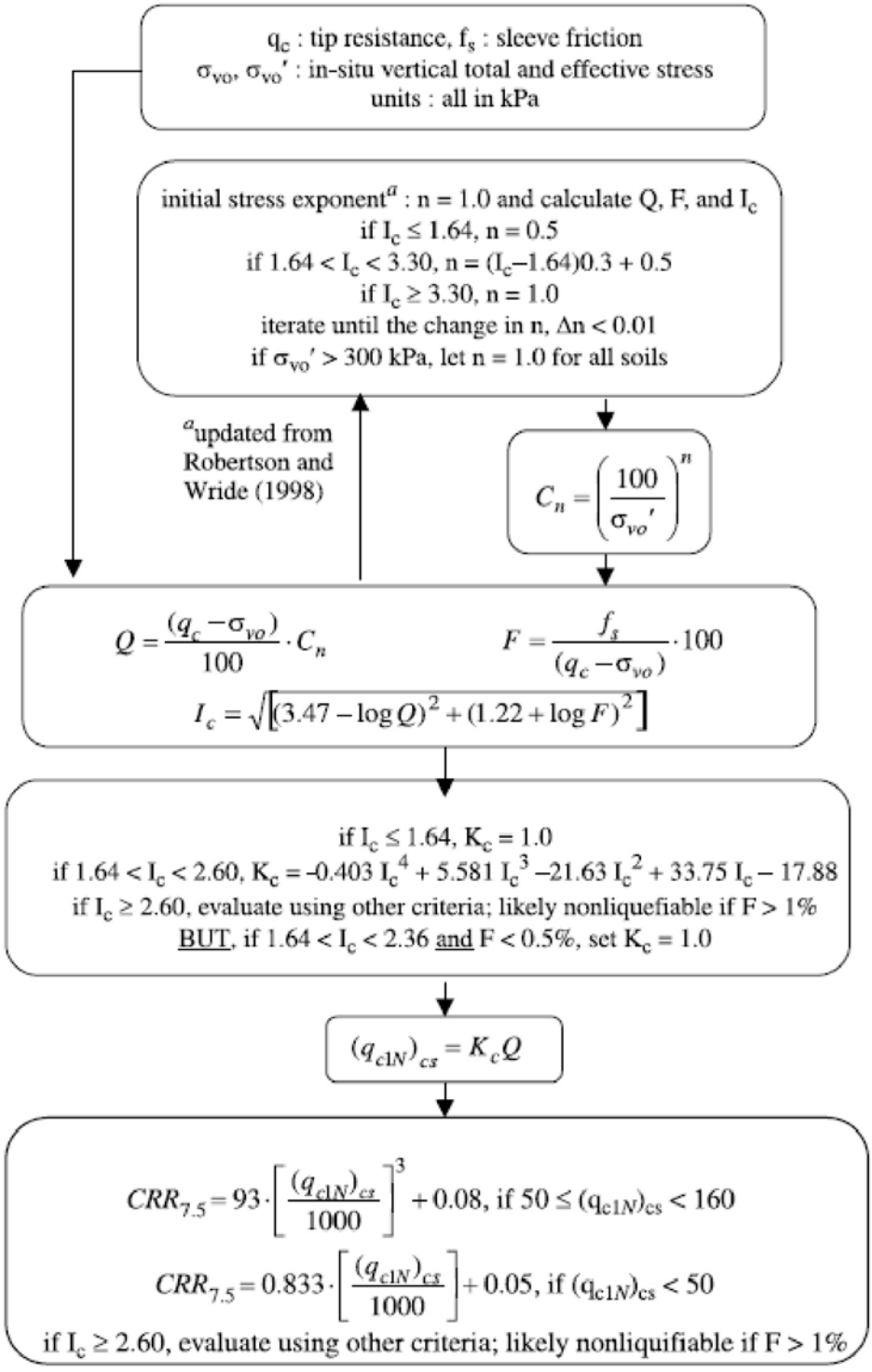


Ejecta Severity Estimation



Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

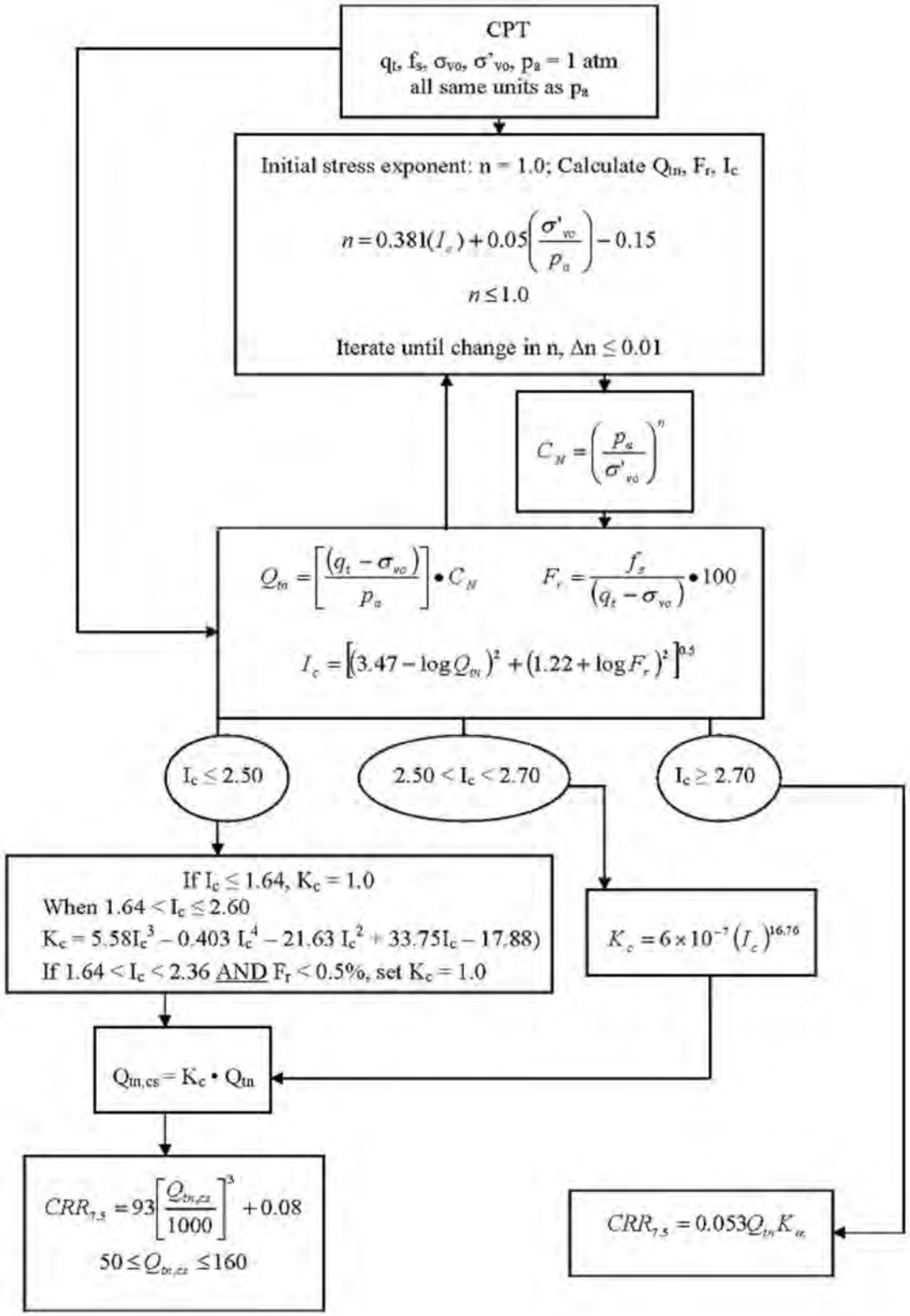
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

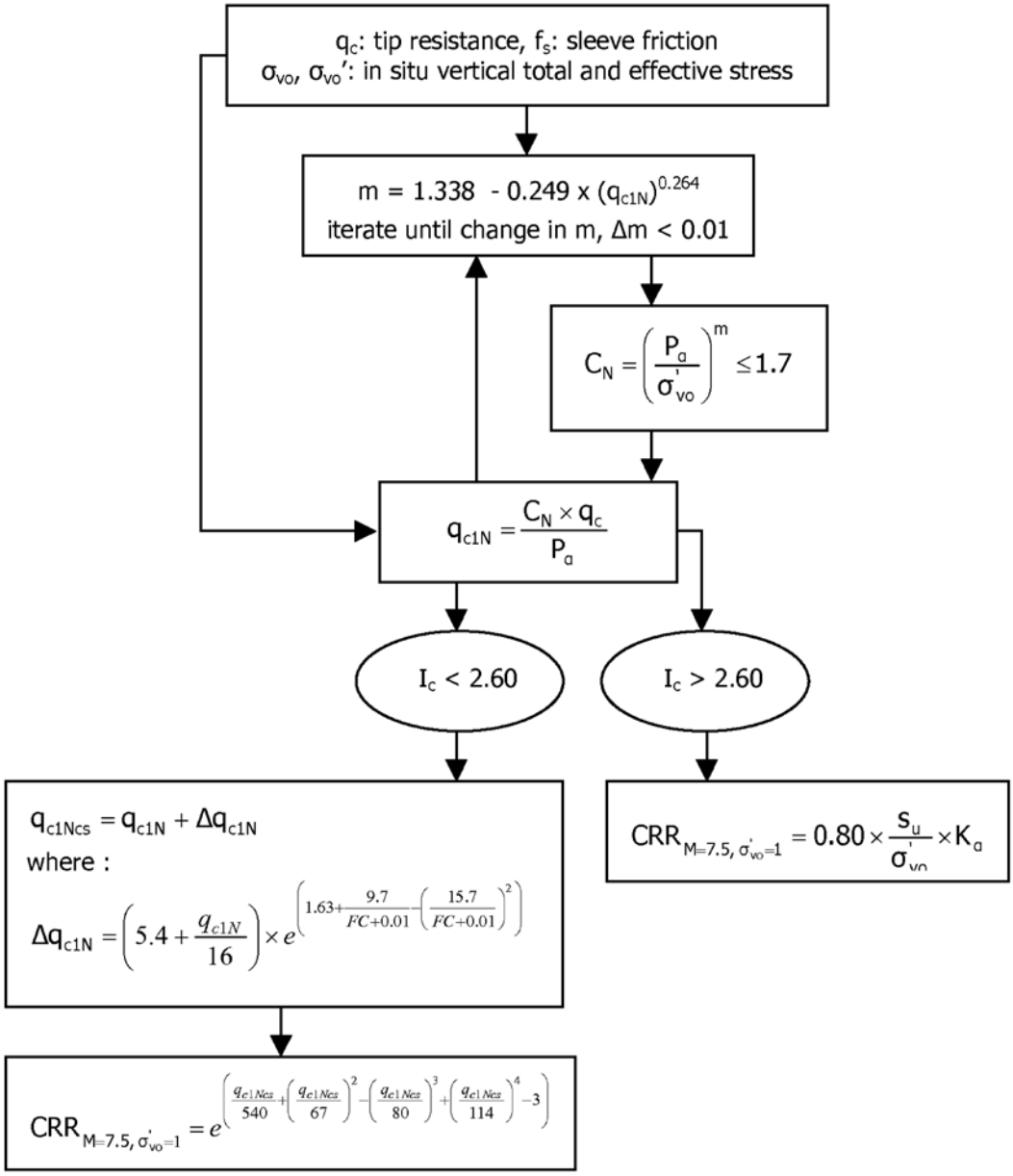
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

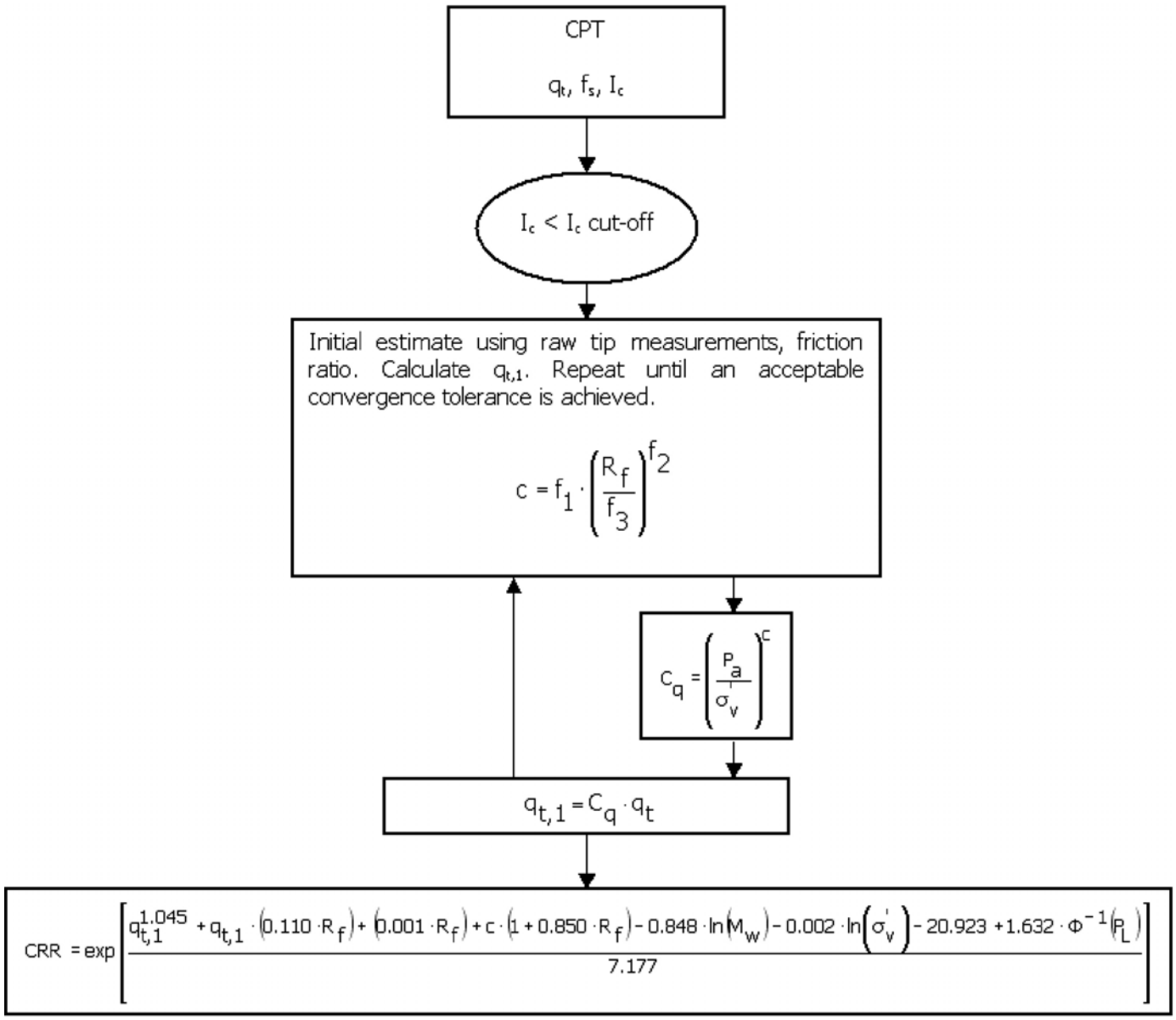


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

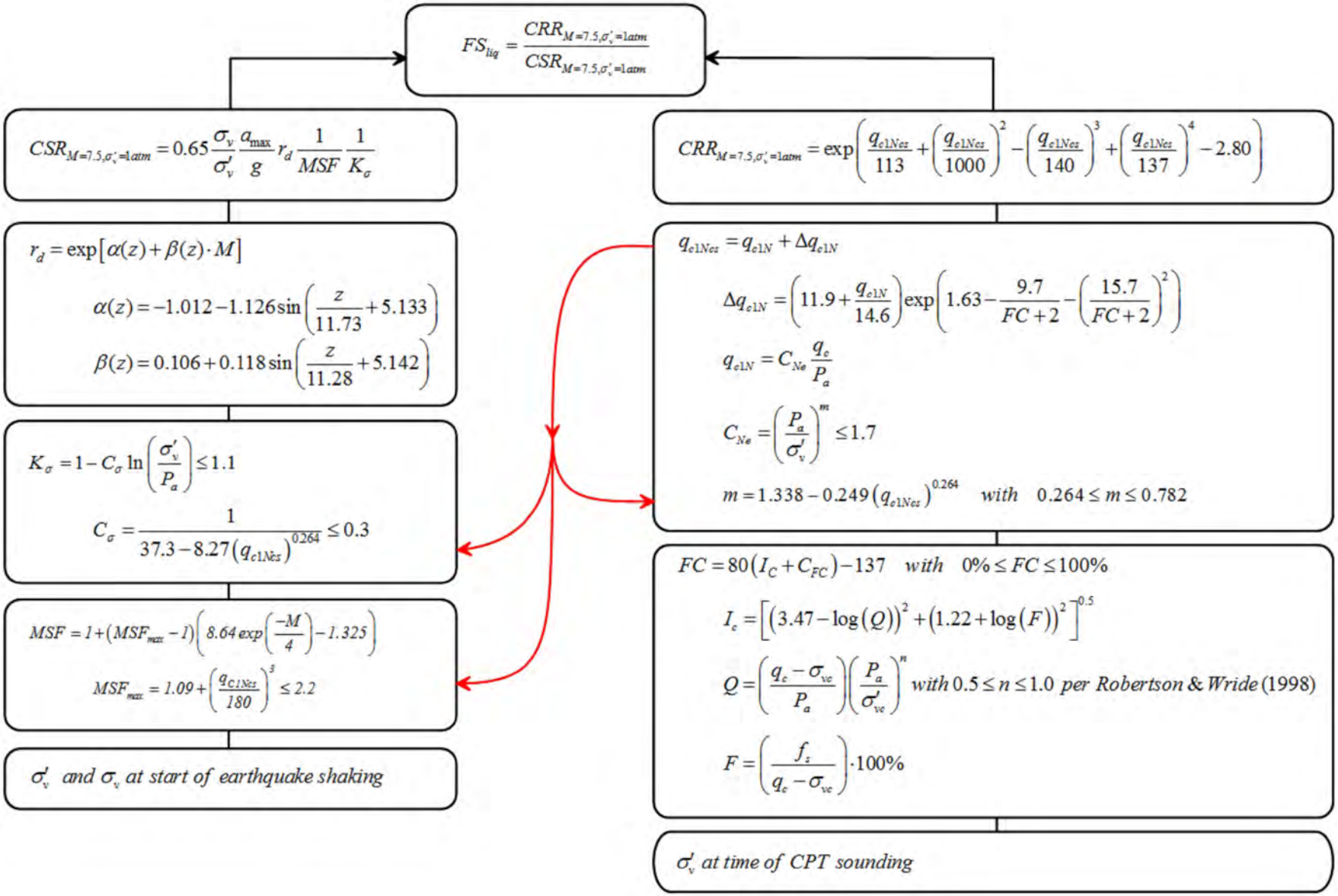
Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



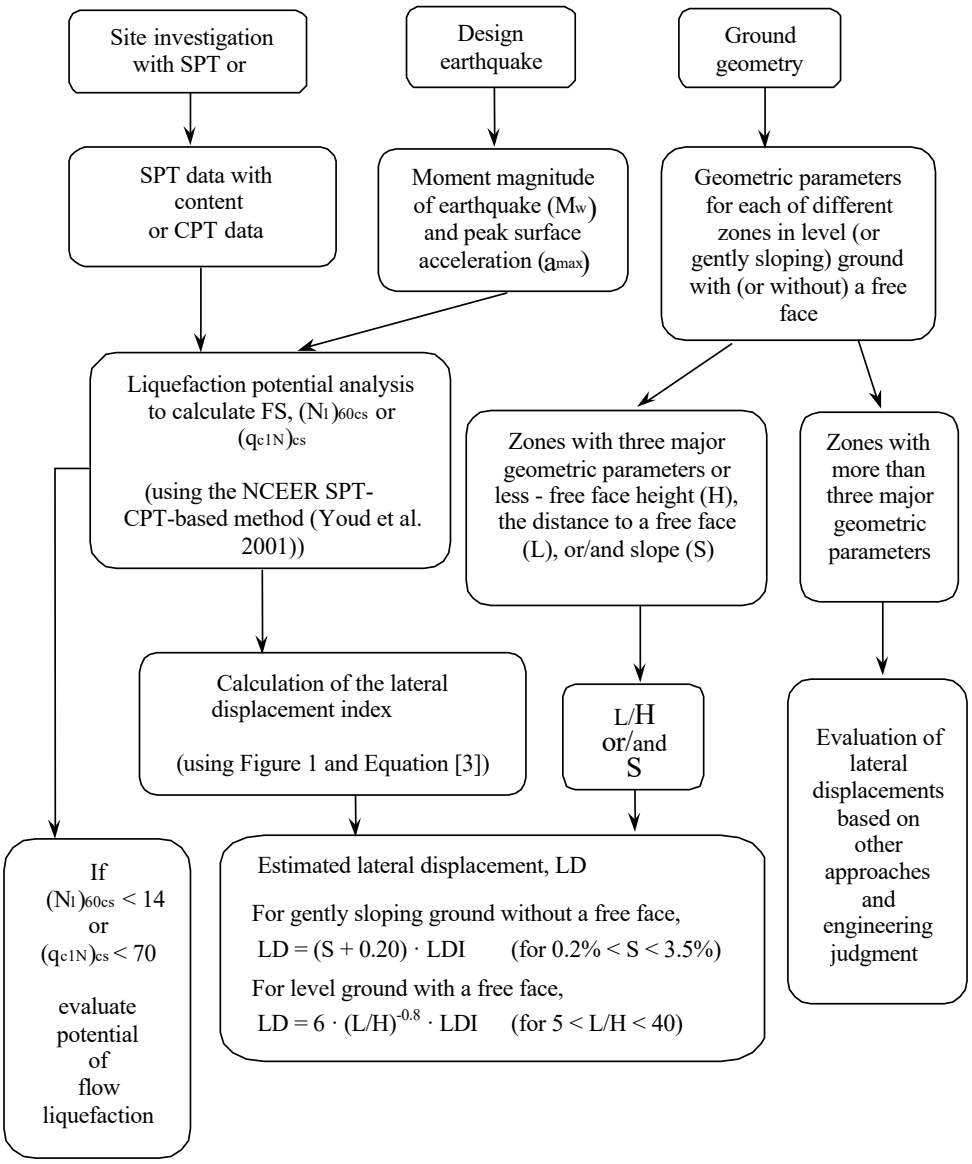
Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



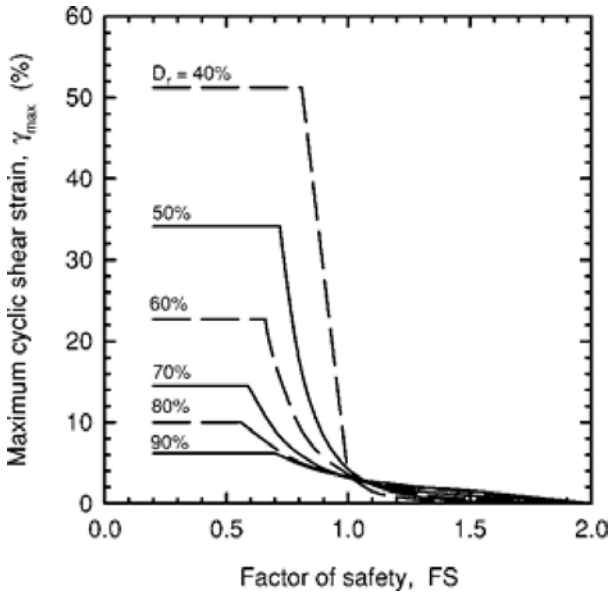
Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)



Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



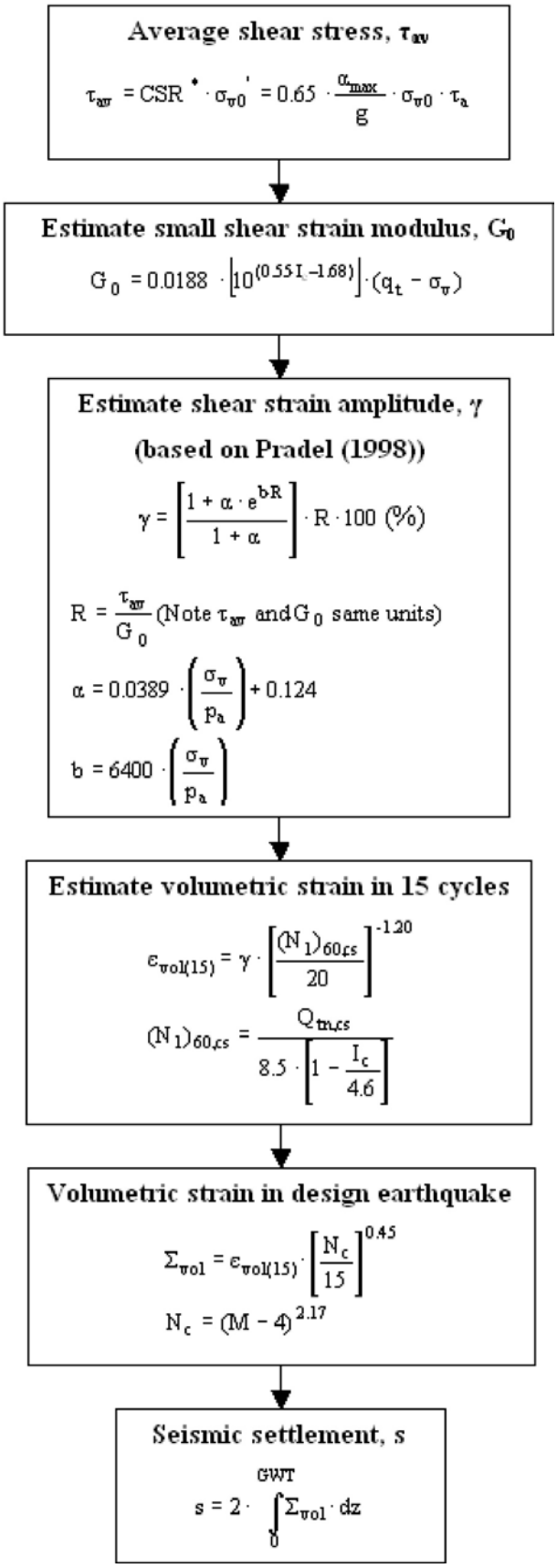
[1] Figure 1

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] Equation [3]

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

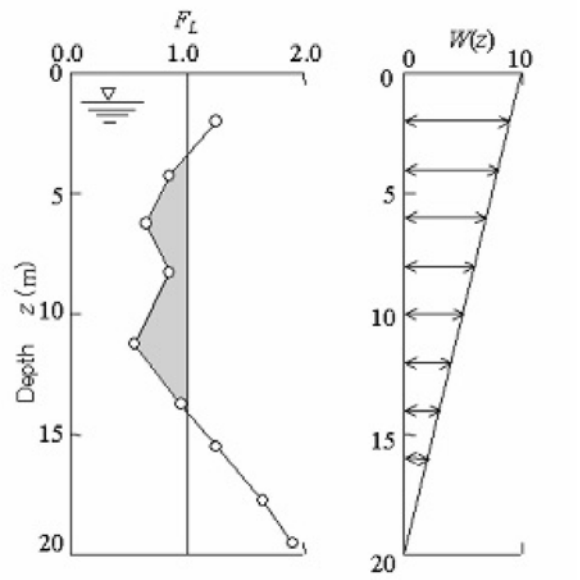
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

References

- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.
- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652
- Boulanger, R.W. and Idriss, I. M., 2014. CPT AND SPT BASED LIQUEFACTION TRIGGERING PROCEDURES. DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING COLLEGE OF ENGINEERING UNIVERSITY OF CALIFORNIA AT DAVIS
- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at http://www.geologismiki.gr/
- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.
- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.
- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833
- Zhang, G., Robertson. P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180
- Zhang, G., Robertson. P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871
- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368
- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70
- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104
- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355
- P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering - from case history to practice, IS-Tokyo, June 2009
- Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss,* SAN diego, CA
- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006
- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

APPENDIX E

WESTERN LABORATORIES, 1984

CLIENT DRAFT

P.C.# 9269

WESTERN LABORATORIES

13609 SOUTH NORMANDIE AVENUE • GARDENA, CALIFORNIA 90249
(213) 321-9900 & 538-2101

December 20, 1984 Work Order 8765

Pacific Newport Properties
4299 MacArthur Boulevard
Newport Beach, California 92660

Re: Soils Investigation - Proposed Office Building - Located South of Montefino Avenue, Westerly of Diamond Bar Boulevard - Portion of Lot 9 of Tract 36741 - Diamond Bar, in the County of Los Angeles, California

Dear Sirs:

At the request of Mr. Marshall Wilkinson, a soils investigation was performed at the above reference.

It is proposed to construct a 25,000 sq.ft. reinforced concrete tilt-up structures on the parcel which consists of ± 2.5 acres. The proposed structures will be two story with maximum anticipated column loadings on the order of 120 kips.

The property is presently vacant of any structures and contains scattered surface debris and a large commercial sign adjacent to Montefino Avenue.

The westerly property line is an upslope to the adjacent property and the east property line is a down slope which were constructed during previous grading operations.

The purpose of our investigation was to explore subsurface conditions and to develop preliminary soils engineering design data to permit evaluation of the site with respect to the proposed development.

Eight (8) 24-inch exploratory test excavations were placed at locations as shown on the attached plot plan. These excavations were logged by our Field Engineer and disturbed and undisturbed samples were obtained for laboratory testing and analysis. Logs of the excavations are shown on Table I.

The property has been rough graded and contains compacted fill soils which were certified by Medall, Aragon, Worswick & Associates, Inc., in their report dated February 25, 1982, Project S-1809.

The upper 1.0 - 1.5 feet of the existing soils were low in density which can be attributed to weathering of the upper soils. These soils were high in moisture content from the recent rains.

The fill soils and natural soils below this upper 1.0 - 1.5 feet layer were noted to be dense. No caving occured and no ground water was encountered. Natural soils as encountered classify as Clay, sandy.

Undisturbed samples for detailed testing in our laboratory were obtained where possible, by pushing or driving a sampling spoon into the material. A solid barrel-type spoon was used, having an inside diameter of 2.50 inches with a tapered cutting tip at the lower end and a ball valve at the upper end. The barrel is lined with thin brass rings, each one inch in length. The spoon penetrated into the soil below the depth of boring approximately 12 inches. The central portion of this sample was retained for testing. All samples in their natural field condition were sealed in airtight containers and transported to the laboratory.

LABORATORY TESTS

A. Shear Tests were made with a direct shear machine of the strain control type in which the rate of strain is 0.05 inch per minute. Specimens were subjected to shear under varying loads and under conditions of saturation. The results are those given on Table II.

B. Expansion Index Tests, in accordance with the requirements of the Uniform Building Code Standard No. 29-2, were performed on typical specimens of the on-site soils from 50 percent saturation to toal saturation under a total load of 12.63 pounds, after a 24 hour saturation period or until the rate of expansion becomes constant. Results of these tests are presented on Table III and indicate the upper soils to be low to moderate in expansion potential under the above standard.

C. Consolidation Tests were performed on in-situ moisture and saturated specimens of typical soils. The consolidometer, like the direct shear machine, is designed to receive the specimens in the field condition. Porous stones, placed at the top and bottom of the specimens permit the free flow of water into or from the specimens during the test. Successive load increments were applied to the top of the specimens and progressive and final settlements under each increment were recorded to an accuracy of 0.0001 inch. The final settlements so obtained are plotted to determine the curves shown on Plates A and B.

D. Resistance 'R' Value Tests were performed on typical specimens of the on-site soils. Results of these tests are shown on Table IV with the recommended pavement sections. The lowest 'R' Value obtained from these samples was 31.

FOUNDATION RECOMMENDATIONS

The existing soils are suitable in their present condition for slab, structural and pavement support once the upper 1.0 - 1.5 feet is recompacted to a minimum of 90 percent relative compaction in accordance with the attached "Specifications for Compacted Fill".

Any additional soils required to bring the proposed structure to finish grade shall be so compacted in accordance with the attached "Specifications for Compacted Fill".

The recommended safe bearing capacity for foundations founded a minimum of 18 inches into certified fill soils or competent natural ground is 2000 lbs./sq.ft. and 2500 lbs./sq.ft. for continuous and isolated footings, respectively.

Continuous foundations shall be reinforced with a minimum of one (1) #4 bar, top and bottom. Isolated foundations shall be reinforced as deemed necessary by the Structural Engineer for the project.

Slabs-on-grade shall be reinforced with a minimum reinforcement of 6X6/10X10 welded wire mesh. Care shall be taken to position the reinforcement in the center of the slab.

The welded wire mesh reinforcement requirements due to the expansive quality of the soils may be waived, provided measures are taken to prevent any addition or reduction of moisture in the soils below the slab area; and a five (5) inch thick concrete slab shall be utilized.

While reinforcement of slabs poured-on-grade will not be necessary due to soil expansion characteristics if the above requirements are accomplished, other factors may require that slabs be reinforced, such as structural, confinement and temperature changes.

In designing for lateral loads, a coefficient of friction of 0.35 may be assumed between the slabs-on-grade, the footings and the compact underlying soils. Compact soils around the footings may be assumed to develop passive earth pressures equivalent to those pressures exerted by a fluid having a density of 200 lbs./cu.ft. with a maximum of 2000 lbs./sq.ft. Where the direction of thrust is towards a slope due consideration should be given to the mass of soil immediately in front of the footing to determine the capability of developing this passive and frictional resistance.

Active earth pressures against retaining walls will be equivalent to the pressure exerted by a fluid having a density of 30 lbs./cu.ft., for granular drained soils where the slope of the retained material is level and there is no surcharge.

It should be brought to your attention that it will be necessary to deepen those foundations near property lines if perimeter over-excavation of the foundations is not accomplished due to the close proximity of the property line.

All backfill adjacent to walls should be mechanically compacted to at least 90 percent of the maximum density obtainable by the ASTM:Designation D-1557-70T method of compaction. Flooding should not be permitted in any wall or trench backfill.

Any excavation without shoring shall be cut at a one horizontal to one vertical slope and adequate safety precautions should be provided for any adjacent streets or structures.

Adequate protection shall be provided for adjacent buildings or improvements on adjoining properties during grading operations. Shoring may be required prior to excavation.

Computations for ultimate settlement based on the aforementioned recommended soils pressures and the results of consolidation-pressure curves shown on Plates A and B, indicate that all footings sized for the recommended soil pressure and founded in compacted fill soils should experience long-term ultimate settlements of less than three-quarters inch with differential settlements not in excess of one-quarter inch, if the recommendations in this report are followed.

The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the present time, Western Laboratories should be notified so that supplemental recommendations can be given.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are called to the attnetion of the Architect and Engineers for the project and incorporated into the plans and that the Contractors and Subcontractors carry out such recommendations in the field.

This report is subject to review by the controlling authorities for the project.

We appreciate this opportunity to be of service to you.

Respectfully submitted,

WESTERN LABORATORIES

Jules A. Juge, Jr.
R.C.E. 9597

TABLE I

LOG OF EXCAVATIONS

Test Excavation 1

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 6.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
6.0 - 10.0	CLAY, sandy - Brown - Natural Ground, dense
10.0 - 12.5	SAND, clayey - Brown, very dense
12.5 - 20.0	SAND, medium to coarse, clayey - Light Brown, dense

Test Excavation 2

0.0 - 1.5	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.5 - 6.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
6.0 - 9.0	CLAY, sandy - Brown - Natural Ground, dense
9.0 - 13.0	SAND, medium to coarse, clayey - Light Brown, dense

TABLE I
(Continued)

Test Excavation 3

0.0 - 1.5	FILL SOILS - Sand, clayey & Clay, sandy - low density, high moisture content
1.5 - 11.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
11.0 - 13.0	CLAY, sandy - Brown - Natural Ground, dense
13.0 - 20.0	SAND, medium to coarse, clayey - Light Brown, dense

Test Excavation 4

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 7.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
7.0 - 10.5	CLAY, sandy - Brown - Natural Ground, dense

TABLE I
(Continued)

Test Excavation 5

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 10.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
10.0 - 12.0	CLAY, sandy - Brown - Natural Ground, dense
12.0 - 14.0	SAND, clayey - Brown, very dense

Test Excavation 6

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 5.0	COMPACTED FILL SOILS - Sand, clayey, and Clay, sandy - dense to very dense, variable moisture content
5.0 - 9.5	CLAY, sandy - Brown - Natural Ground, dense
9.5 - 13.0	SAND, clayey - Brown, very dense
13.0 - 18.5	SAND, medium to coarse, clayey - Light Brown, dense

TABLE I
(Continued)

Test Excavation 7

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 2.0	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
2.0 - 6.0	CLAY, sandy - Brown - Natural Ground, dense
6.0 - 10.0	SAND, medium to coarse, clayey - Light Brown, dense

Test Excavation 8

0.0 - 1.0	FILL SOILS - Sand, clayey and Clay, sandy - low density, high moisture content
1.0 - 4.5	COMPACTED FILL SOILS - Sand, clayey and Clay, sandy - dense to very dense, variable moisture content
4.5 - 6.5	CLAY, sandy - Brown - Natural Ground, dense
6.5 - 10.0	SAND, medium to coarse, clayey - Light Brown, dense

TABLE II

DIRECT SHEAR TESTS

Sample	Classification	Angle of Internal Friction (Degrees)	Cohesion (Lbs./Sq.Ft.)
A	Clay, sandy	23	400
B	Clay, sandy	26	420
C	Sand, clayey	32	225
* D	Sand, clayey	35	340
* E	Clay, sandy	29	500
* F	Clay, sandy	26	480

* Compacted Fill Soils - portion of samples remolded to approximate field density utilizing the material passing the #10 sieve

Work Order 8765

TABLE III

EXPANSION TESTS

Sample	Classification	Expansion Index
A	Clay, sandy	49
B	Clay, sandy	43
C	Sand, clayey	29
* D	Sand, clayey	38
* E	Clay, sandy	52
* F	Clay, sandy	56

* Compacted Fill Soils - portion of samples remolded to approximate field density utilizing the material passing the #10 sieve

TABLE IV

PAVEMENT SECTIONS

Area	Traffic Index	Min. Recommended A.C. Thickness	Min. Recommended Base Thickness
Automobile Parking	4	3.0"	4.0"
Truck Areas and Driveways			

	Min. Recommended Concrete Thickness	Min. Recommended Base Thickness
Fork Lift Areas	5.0"	4.0"

TEST EXCAVATION No. 1

DEPTH

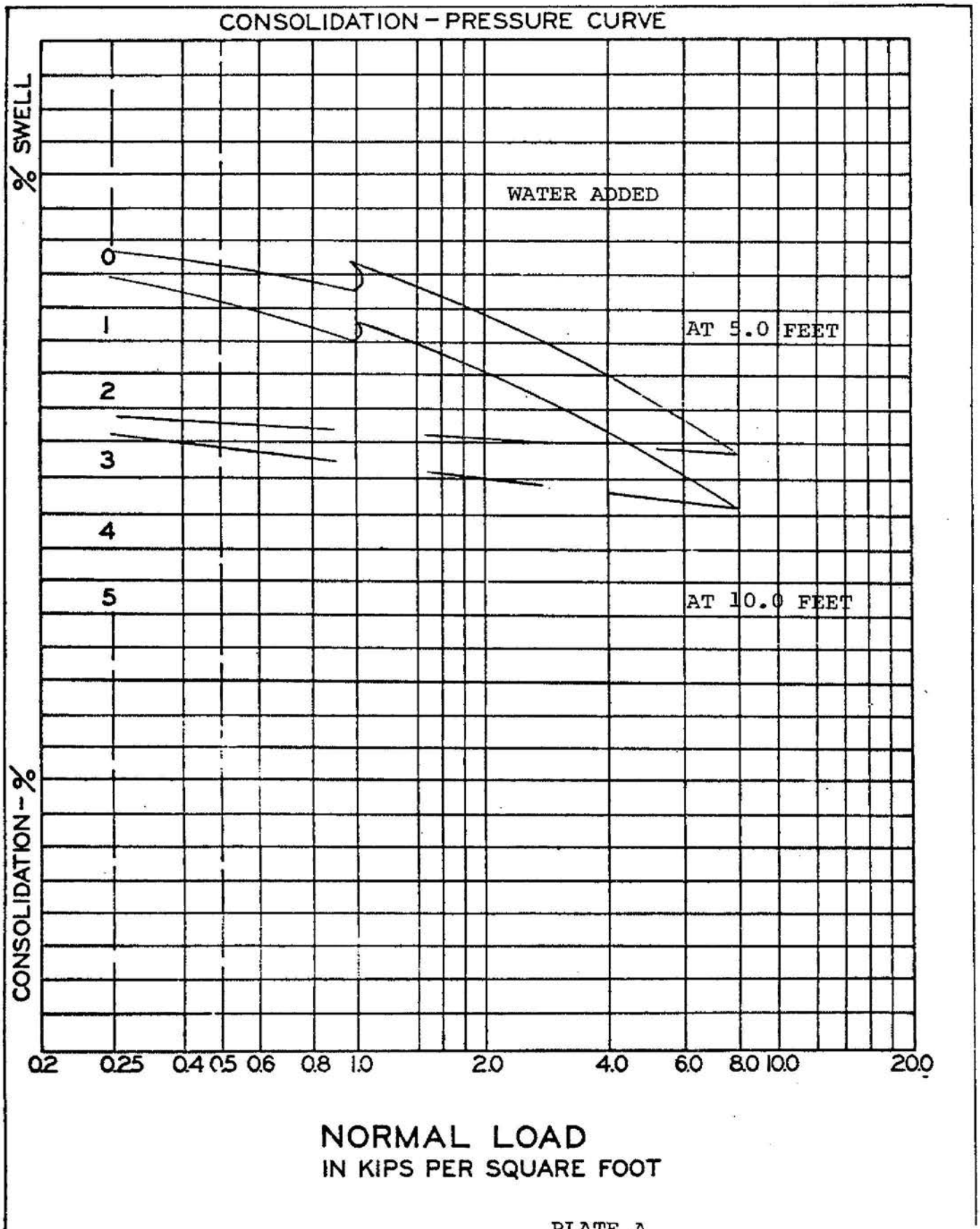


PLATE A

DATE: 12-19-84

SCALE:

WORK ORDER: 8765

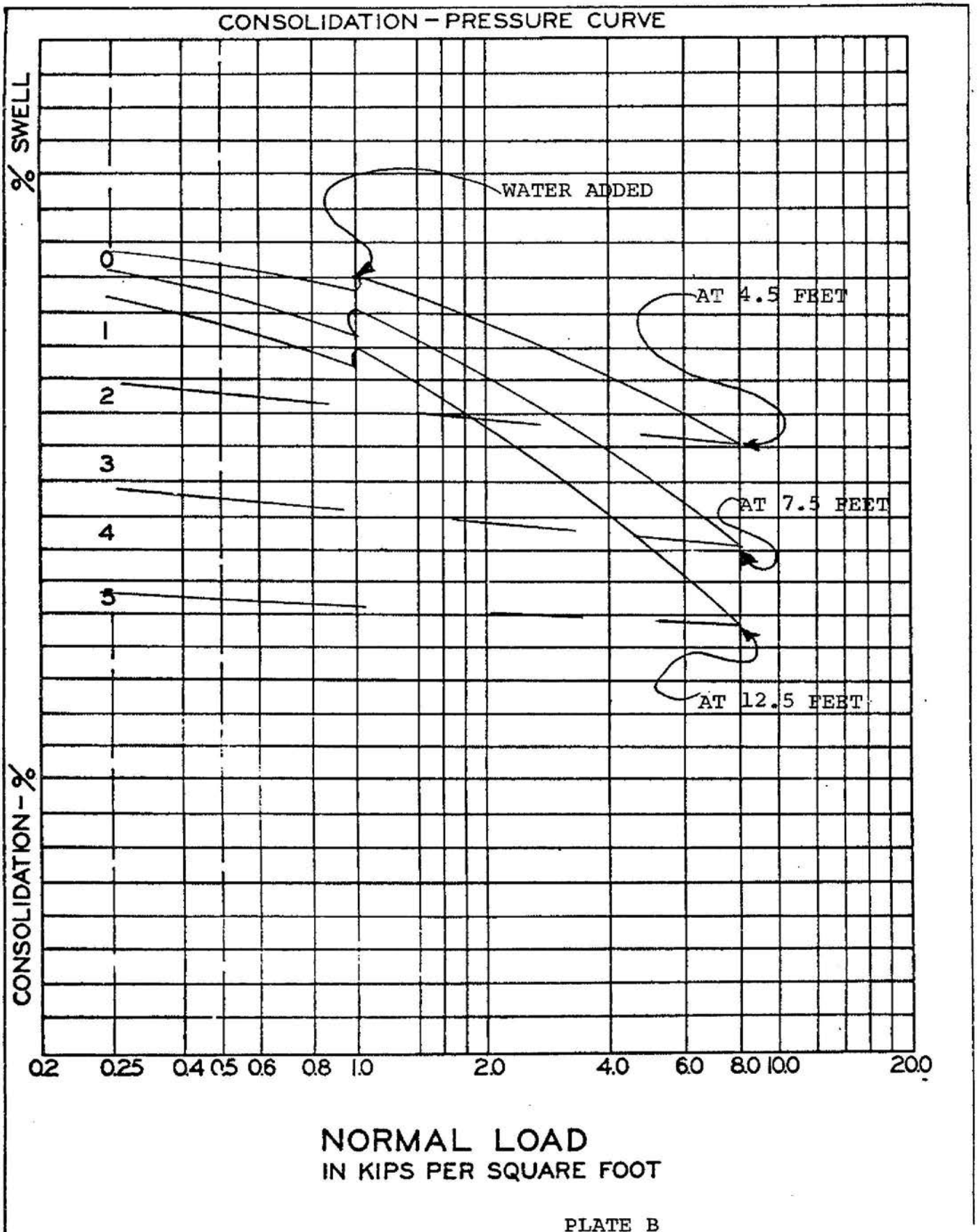
PREPARED FOR

PACIFIC NEWPORT PROPERTIES

WESTERN LABORATORIES
13626 S. NORMANDIE AVENUE
GARDENA, CALIFORNIA

TEST EXCAVATION 3

DEPTH



NORMAL LOAD
IN KIPS PER SQUARE FOOT

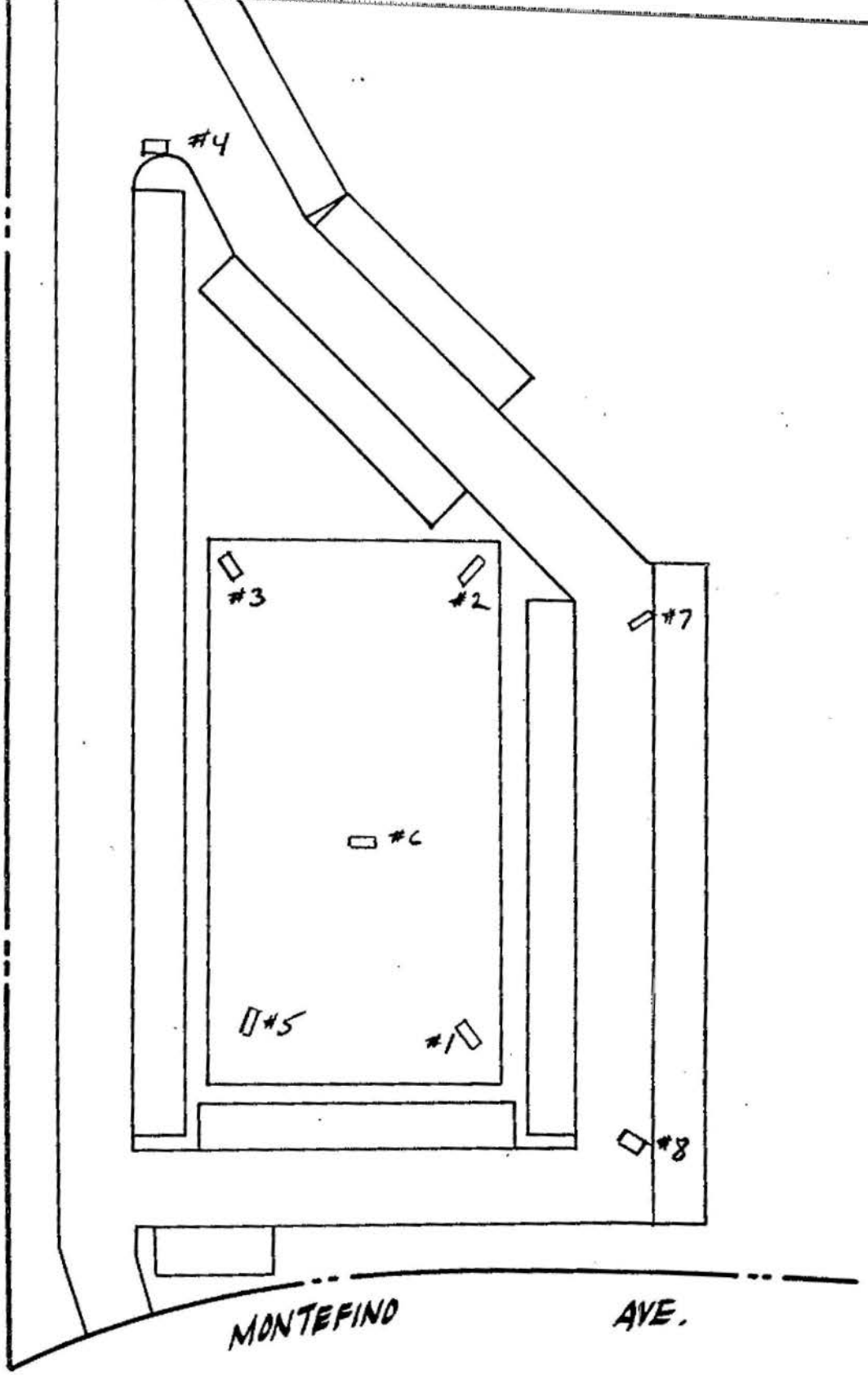
PLATE B

DATE: 12-19-84
SCALE:
WORK ORDER: 8765

PREPARED FOR

PACIFIC NEWPORT PROPERTIES

WESTERN LABORATORIES
13626 S. NORMANDIE AVENUE
GARDENA, CALIFORNIA



APPROXIMATE LOCATION OF EXPLORATORY TESTS

□ = TEST EXCAVATION

○ = BORING

DATE: 12-18-84
SCALE: 1" = 60'
WORK ORDER: 8765

PACIFIC NEWPORT PROPERTIES

WESTERN LABORATORIES
13609 S. NORMANDIE AVENUE
GARDENA, CALIFORNIA

APPENDIX F

MEDALL, WORSWICK AND ASSOCIATES, INC., 1985

CLIENT DRAFT

REVISED RETAINING WALL
DESIGN PARAMETERS
PROPOSED HARTFORD OFFICE FACILITY
LOT 9, TRACT 40972
DIAMOND BAR
LOS ANGELES COUNTY, CALIFORNIA

JUN 03 1985

FOR

PACIFIC NEWPORT PROPERTIES

PROJ. NO. S1809-9-1 MAY 10, 1985

Medall, Worswick & Associates, Inc.
Consulting Engineers & Geologists

2044 Cotner Ave. Los Angeles, CA 90025 213/477-8507
2168 South Hathaway St. Santa Ana, CA 92705 714/546-6602
11300 Sorrento Valley Rd. San Diego, CA 92121 619/452-0160

May 10, 1985
Project No. S1809-9-1

Pacific Newport Properties
17842 Mitchell North
Suite 100
Irvine, California 92714

Attention: Mr. Marshall P. Wilkinson

Subject: Revised Retaining Wall Design Parameters, Proposed Hartford Office Facility, Lot 9, Tract 40972, Diamond Bar, Los Angeles County, California.

Gentlemen:

As requested by Mr. Marshall P. Wilkinson of Pacific Newport Properties, we have evaluated newly proposed retaining walls at the subject site. To complete this evaluation, we have reviewed an untitled, undated plan prepared by John J. Mullen and Associates. In addition, we have reviewed relevant information contained in previous reports that we have prepared on the subject site (see References). The following paragraphs present our conclusions and recommendations for design of the retaining walls at the subject site.

BACKGROUND INFORMATION

Rough grading for Tract 40972 was completed in 1982. The rough grading operations and geotechnical conclusions and recommendations were summarized in a report entitled, "Rough Grade Soil and Geologic Report, Tract 36741, West Commercial Area, Tracts 42533, 42534, 42535, 42536 and Tract 40972, Lot 9, Proposed Residential

and Commercial Developments, Diamond Bar, County of Los Angeles, California," Project No. S1809, dated February 26, 1982. A review of the subject report indicates that the proposed wall alignments traverse compacted fill areas. Footing excavations may extend into, and some walls may retain, the bedrock located below the fill.

PROPOSED DEVELOPMENT

The proposed retaining walls covered under this study are part of the development of Lot 9, Tract 40972. A two-story commercial building with surrounding at-grade parking is planned. Geotechnical recommendations for the proposed building are being provided by another firm.

The maximum height of the proposed retaining walls is about 20 feet. The walls total about 680 feet in length. The majority of the walls will retain 2:1 (horizontal:vertical) fill slopes. However, some walls will retain bedrock with potentially adverse bedding attitudes.

EXISTING CONDITIONS

A review of data contained in our files and a site reconnaissance indicate that a 2:1 fill slope abuts the site to the north, east and west. Upper portions of the slope along the west are inclined at 1½:1 (horizontal:vertical). The maximum height of the fill slope is about 52 feet. A portion of this fill slope was constructed as a stabilization fill (Reference 1). Out-of-slope bedding of about 5 degrees was noted during grading in a localized area (see Site Plan, Figure 1). However, the majority of the bedrock attitudes in this area obtained during the preliminary investigation and during the grading operations indicate

that attitudes are highly variable. Most attitudes noted were favorably oriented.

RETAINING WALL RECOMMENDATIONS

General

We have estimated the likely conditions along the proposed retaining wall alignments. We have not performed any site specific field exploration for this study. Consequently, conditions other than those assumed for this evaluation may occur in the field. We strongly recommend that all excavations for retaining walls be observed and mapped by a geologist from our office. Also, we recommend that we review and approve the contractors construction scheme prior to the start of construction.

Lateral Earth Pressures

Retaining walls will be subjected to lateral earth pressure from the surround backfill and adjacent slopes. Conditions vary along the proposed wall alignments. Recommended equivalent fluid pressures (EFP) for each condition are presented in the following table. The wall section where each condition applies is presented on Figure 1, Site Plan.

RECOMMENDED EQUIVALENT FLUID PRESSURES (EFP)

WALL TYPE	MAXIMUM WALL HEIGHT (FT)	EFP (PCF)
A	±20	95
B	±15	80
C	±12	60

The equivalent fluid pressures recommended above assume that on-site, moderately expansive soils will be used as backfill behind walls. If select, non-expansive, granular import soils (i.e., 3/4-inch crushed rock or pea gravel) are used behind walls, the equivalent fluid pressures for wall types B and C may be reduced by 20 pcf. The select import should extend at least 36 inches behind the wall and should be approved prior to import. A soil cap of at least 18 inches in thickness should be placed at the top of the wall over the select import material. All backfill should be properly compacted to a minimum of 90 percent of the laboratory maximum dry density as determined in accordance with ASTM D1557-78 and tested. Care should be taken when compacting adjacent to the walls. Improper compaction techniques and/or equipment can produce excessive lateral pressures on the wall and may damage the walls.

Lateral forces may be resisted by a combination of passive soil resistance against the vertical sides of footings and frictional resistance at the base of the footings. We recommend that passive earth pressures be determined using a pressure of 200 psf per foot of depth up to the allowable bearing pressure. A frictional coefficient of 0.3 between rough concrete and approved bearing soils is recommended.

Retaining Wall Drainage System

Portions of the retaining wall construction will require excavation into the existing stabilization fill. We anticipate that the existing subdrainage system for the stabilization fill will be damaged due to construction of the proposed wall. It is our opinion that a properly constructed subdrainage system for the proposed wall will provide adequate drainage for the remaining

stabilization fill. Proper drainage should be provided to relieve the wall of hydrostatic pressure or the wall should be designed for additional hydrostatic pressure. A typical perimeter drain detail is presented as Figure 2 and guide specifications for subsurface drains are presented in Table I.

Retaining Wall Footings

Footings for retaining walls may be designed using an allowable bearing capacity of 1500 pounds per square foot (psf) at a minimum embedment of 18 inches below lowest adjacent grade. All retaining wall footings should be founded in approved competent native soils or compacted fill. If non-uniform conditions are encountered at the proposed bearing levels, we recommend that the top 18 inches of exposed soils be processed. Processing consists of removal, scarification, moisture conditioning and recompaction in lifts not exceeding eight inches, loose measurement. All earthwork operations should be performed in accordance with the applicable portions of the Los Angeles County Grading Code and with our Suggested Items to Include in Standard Grading Specifications, attached as Appendix A. Properly designed and constructed construction joints may be provided at soil transition zones in lieu of processing. A representative of our firm should identify the proper location for the construction joints in the field.

The bearing values recommended are for dead and frequently applied live loads. The recommended values may be increased by one-third when designing for transient loading conditions, such as seismic or wind loads.

The retaining wall footing excavations should be approved by a representative of our firm prior to the placement of rebar or

concrete. We also recommend that all backfill behind the proposed retaining walls be properly benched into existing competent materials. All backfill operations should be observed and tested to verify that the specified conditions are being met.

Construction Considerations

Due to the presence of local adverse bedding conditions along portions of the proposed wall, we recommend that the time the backcut for the wall is left open and unsupported be minimized. We recommend that the backcut be visually inspected by a qualified Engineering Geologist. Staggered slot cutting may be required along portions of the wall (Type A).

To be in conformance with CAL-OSHA safety requirements, it is recommended that vertical construction cuts over five feet high be braced, or that they be cut back to an inclination of 1:1 (horizontal:vertical), or flatter, if field conditions dictate.

CLOSURE

We recommend that the project structural engineer review the recommendations presented in this report to verify that the present wall designs are in compliance with these recommendations.

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering principles and practice in the fields of soil mechanics and foundation engineering. This warranty is in lieu of all other warranties, either express or implied.

We hope that this information satisfies your needs at this time. If you have any questions or require additional information, please contact the undersigned at your convenience.

Respectfully submitted,

B. Michael Yacyshyn

B. Michael Yacyshyn, R.C.E. 38976
for MEDALL, WORSWICK & ASSOCIATES, INC.

BMY:dk

Enclosures: References
Figure 1 - Site Plan
Figure 2 - Typical Perimeter Drain Detail
Table I - Guide Specifications for Perimeter Drains
Appendix A - Suggested Items to Include in Standard Grading Specifications

c: (6) Addressee

REFERENCES

1. Medall, Aragon, Worswick & Associates, Inc., 1982a, Rough Grade Soil and Geologic Report, Tract 36741, West Commercial Area, Tracts 42533, 42534, 42535, 42536 and Tract 40972, Lot 9, Proposed Residential and Commercial Developments, Diamond Bar, County of Los Angeles, California: for Presley of Southern California; consultants report, Santa Ana, Calif., (February 26, project no. S1809).

2. _____, 1982b, Revised Grading Plan, Tract 36741, Lot 9, (Tennis Court Area), Diamond Bar, County of Los Angeles, California: for Presley of Southern California; consultants report, Santa Ana, Calif., (January 6, 1982, project no. S1809).

3. Medall, Worswick & Associates, Inc., 1985, Retaining Wall Design Parameters, Proposed Office Facility, Lot 9, Tract 40972, Diamond Bar, County of Los Angeles, California: for Pacific Newport Properties; consultants report, Santa Ana, Calif., (January 24, project no. S1809-9-1).

Pacific Newport Properties
Project No. S1809-9-1

May 10, 1985

TABLE I

GUIDE SPECIFICATIONS FOR PERIMETER DRAINS

I. DESCRIPTION

Subsurface drains consisting of standard drain tile, concrete drain tile, perforated corrugated metal pipe, or equivalent plastic pipe shall be installed as shown on the plans and in accordance with these specifications, unless otherwise specified by the Engineer.

II. MANUFACTURE

Underdrains shall be manufactured in accordance with the following or equivalent requirements:

1. Concrete drain tile shall conform to AASHTO M178 or ASTM C118.
2. Perforated corrugated metal pipe (CMP) shall conform to the AASHTO M36.
3. Perforated clay pipe shall conform to AASHTO M65.
4. Perforated Polyvinyl Chloride plastic pipe (PVC) shall conform to ASTM D1785 or D3034 for Schedule 40 or SDR 35 pipe, respectively.
5. Perforated Acrylonitrile Butadiene Styrene Pipe (ABS) conforming to ASTM D2751 or D1527 for SDR 35 or Schedule 40 pipe, respectively.

III. FILTER MATERIAL

Filter material for use in backfilling trenches around and over underdrains shall consist of clean, coarse sand and gravel or crushed stone conforming to Section 68, Class 2 permeable material according to CalTrans Standard Specifications with the following grading requirements:

SIEVE SIZE	PERCENTAGE PASSING SIEVES
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25- 40
No. 8	18- 33
No. 30	5- 15
No. 50	0- 7
No. 200	0- 3

IV. LAYING

Trenches for underdrains shall be excavated to a minimum width equal to the outside diameter of the pipe plus 1 foot and to a depth of 3 inches below the top of the wall footing or as directed by the Engineer. The bottom of the trench shall then be covered full width by a layer of plastic film or building paper, and the drain pipe shall be laid. Unless otherwise specified, perforated pipe shall be laid with the perforations at the bottom and sections shall be joined with couplers. Drain tile shall be laid with a clear opening of 1/2" between sections. The pipe shall be laid on a minimum slope of 0.2 percent.

After the pipe has been placed, the trench shall be backfilled with filter material to the elevation shown on the plans, or as directed by the Engineer. The remainder of the trench shall then be backfilled with an impervious soil that shall be compacted to the requirements for engineered fills.

EXPLANATION

afc — MAN MADE FILL (REPORTED COMPACTED BY MAWA 2-26-82).

Oafc — OLDER MAN MADE FILL (REPORTED COMPACTED BY OTHERS).

APPROXIMATE LIMITS OF FILL (AS REPORTED BY MAWA, 2-26-82).

/15 — ATTITUDE OF BEDDING BENEATH COMPACTED FILL.

34 — APPROXIMATE DEPTH OF COMPACTED FILL (IN FEET).

REFERENCE:
BASE PLAN TAKEN FROM UNDATED GRADING PLAN PREPARED BY J. J. MULLEN AND ASSOCIATES.

TYPE "A" WALL

TYPE "C" WALL

TYPE "B" WALL

TYPE "C" WALL

TYPE "C" WALL

Oafc

afc

APPROXIMATE LIMITS OF CONSTRUCTED STABILIZATION

TYPE "C" WALL

APPROXIMATE LOCATION OF SUBDRAIN

afc

afc

NOTES

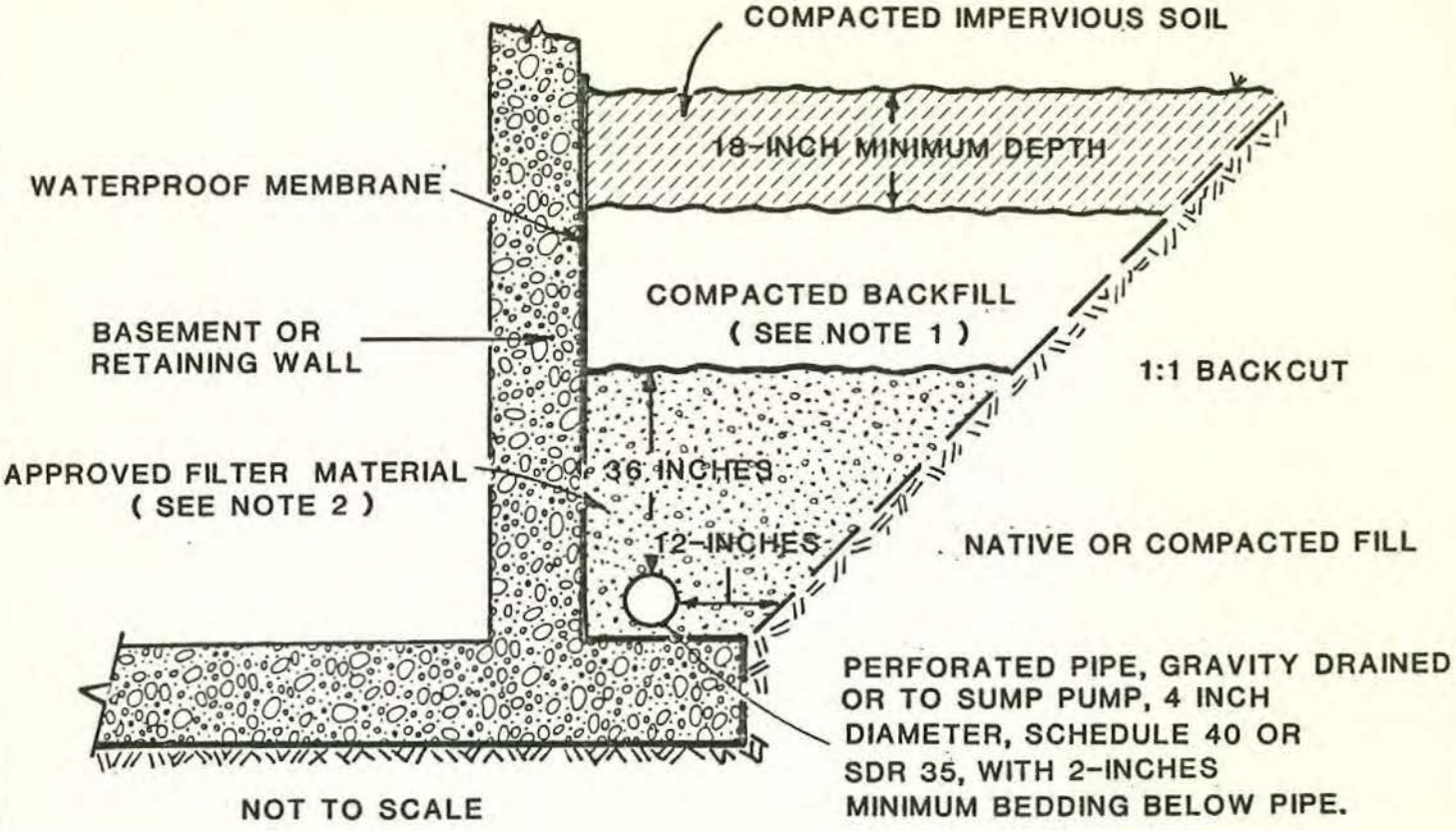
- MEDALL, WORSWICK AND ASSOCIATES, INC. HAS ADDED ONLY GEOTECHNICAL DATA TO THIS PLAN PREPARED BY OTHERS. WE HAVE NOT CHECKED ANY OTHER INFORMATION ON THIS PLAN AND GIVE NO ASSURANCE TO ITS ACCURACY.
- THIS DRAWING IS PART OF CONSULTANT REPORT *S1809-9-1* DATED *5-10-85* AND SHOULD BE READ WITH THE REPORT FOR COMPLETE EVALUATION.

SITE PLAN

Medall, Worswick & Associates, Inc.
Consulting Engineers & Geologists

DATE 5-10-85	DRAWN BY S.W.D.
SCALE 1"=40'	CHECKED BY BMW
PROJ. NO S1809-9-1	FIGURE 1

TYPICAL PERIMETER DRAIN DETAIL



NOTES:

1. COMPACTED BACKFILL MAY BE EITHER SELECT NON-EXPANSIVE SOIL OR NATIVE SOIL DEPENDING ON DESIGN WALL PRESSURES(SEE LATERAL EARTH PRESSURE SECTION IN TEXT).

2. A 3/4-INCH CRUSHED ROCK MAY BE SUBSTITUTED FOR THE APPROVED FILTER MATERIAL IF AN APPROVED, NON-WOVEN GEOTEXTILE FILTER FABRIC IS USED TO ENCAPSULATE THE 3/4-INCH CRUSHED ROCK (SUCH AS MIRAFI 140N OR SUPAC 4NP).

APPENDIX A

SUGGESTED ITEMS TO INCLUDE IN STANDARD GRADING SPECIFICATIONS

Pacific Newport Properties
Project No. S1809-9-1

May 10, 1985

APPENDIX A

SUGGESTED ITEMS TO INCLUDE IN STANDARD GRADING SPECIFICATIONS

These specifications present the usual and minimum requirements for grading operations performed under the observation and testing of Medall, Worswick & Associates, Inc.

No deviation from these specifications will be allowed, except where specifically superseded in the preliminary geotechnical report, or in other written communication signed by the Geotechnical Engineer or Engineering Geologist.

I. GENERAL

A. The Geotechnical Engineer and Engineering Geologist are the Owner's or Builder's representative on the project. For the purpose of these specifications, observation and testing by the Geotechnical Engineer includes that observation and testing performed by any person or persons employed by, and responsible to, the licensed Civil Engineer signing the soil report.

B. All clearing, site preparation or earthwork performed on the project shall be conducted by the Contractor under the observation of the Geotechnical Engineer.

C. It is the Contractor's responsibility to prepare the ground surface to receive the the fills to the satisfaction of the Geotechnical Engineer and to place, spread, mix, water and compact the fill in accordance with the specifications of the Geotechnical Engineer. The Contractor shall also remove all material considered unsatisfactory by the Geotechnical Engineer.

D. It is also the Contractor's responsibility to have suitable and sufficient compaction equipment on the jobsite to handle the amount of fill being placed. If necessary, excavation equipment will be shut down to permit completion of compaction. Sufficient watering apparatus will also be provided by the Contractor, with due consideration for the fill material, rate of placement, and time of year.

E. A final report will be issued by the Geotechnical Engi neer and Engineering Geologist attesting to the Contractor's conformance with these specifications.

II. SITE PREPARATION

A. All vegetation and deleterious material, such as rubbish, shall be disposed of offsite. This removal must be concluded prior to placing fill.

B. The Project Civil Engineer shall locate all houses, sheds, sewage disposal systems, large trees or structures on the site or on the grading plan to the best of his knowledge prior to preparing the ground surface.

C. Soil or rock materials determined by the Geotechnical Engineer to be unsuitable for placement in compacted fills shall be removed and wasted from the site. All material incorporated as a part of a compacted fill must be approved by the Geotechnical Engineer.

D. After the ground surface to receive fill has been cleared, it shall be scarified, disced or bladed by the Contractor until it is uniform and free from ruts, hollows, hummocks or other uneven features which may prevent uniform compaction.

The scarified ground surface shall then be brought to the specified moisture content, mixed as required, and compacted as specified. If the scarified zone is greater than twelve inches in depth, the excess shall be removed and placed in lifts restricted to six inches.

Prior to placing fill, the ground surface to receive fill shall be inspected, tested and approved by the Geotechnical Engineer.

E. Any underground structures such as cesspools, cisterns, minimum shafts, tunnels, septic tanks, wells, pipe lines or others not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer.

III. COMPACTED FILL

A. Any material imported or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable by the Geotechnical Engineer. Roots, tree branches and other matter missed during clearing shall be removed from the fill as directed by the Geotechnical Engineer.

B. Rock fragments less than six inches in diameter may be utilized in the fill, provided:

1. They are not placed in concentrated pockets.

2. There is a sufficient percentage of fine-grained material to completely surround the rocks.

3. The distribution of the rocks is observed by the Geotechnical Engineer.

C. Rocks greater than six inches in diameter shall be taken offsite, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal. Details for rock disposal such as location, moisture control, percentage of rock placed, etc., will be referred to in the "Conclusions and Recommendations" section of the soils report and in a later section of this appendix, when necessary.

D. Material that is spongy, subject to decay, or otherwise considered unsuitable shall not be used in the compacted fill.

E. Representative samples of materials to be utilized as compacted fill shall be analyzed in the laboratory by the Geotechnical Engineer to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material shall be conducted by the Geotechnical Engineer as soon as possible.

F. Material used in the compacting process shall be evenly spread, watered or dried, processed and compacted in thin lifts not to exceed six inches in thickness to obtain a uniformly dense layer. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

G. If the moisture content or relative compaction varies from that required by the Geotechnical Engineer, the Contractor shall rework the fill until it is approved by the Geotechnical Engineer.

H. Each layer shall be compacted to 92 percent of the maximum density in compliance with the testing method

specified by the controlling governmental agency. (In general, ASTM D1557-78 will be used).

If compaction to a lesser percentage is authorized by the controlling governmental agency because of a specific land use or expansive soil conditions, the area to receive fill compacted to less than 92 percent shall either be delineated on the grading plan or appropriate reference made to the area in the soil report.

I. All fills shall be keyed and benched through all topsoil, colluvium, alluvium or creep material, into sound bedrock or firm material where the slope receiving fill exceeds a ratio of five horizontal to one vertical, in accordance with the recommendations of the Geotechnical Engineer.

J. The key for sidehill fills shall have a minimum width of 15 feet within bedrock or firm materials, unless otherwise specified in the geotechnical report. (see Figure entitled, "General Grading Recommendations, Typical Fill Over Natural Slope").

K. Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Geotechnical Engineer and Engineering Geologist.

L. The Contractor will be required to obtain a minimum relative compaction of 92 percent out to the finish slope face of fill slopes, buttresses and stabilization fills. This may be achieved by either overbuilding the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction.

The Contractor shall prepare a written detailed description of the method or methods he will employ to obtain the required slope compaction. Such documents shall be submitted to the Geotechnical Engineer for review and comments prior to the start of grading.

If a method other than overbuilding and cutting back to the compacted core is to be employed, slope tests will be made by the Geotechnical Engineer during construction of the slopes to determine if the required compaction is being achieved. Where failing tests occur or other field

problems arise, the Contractor will be notified by the Geotechnical Engineer.

If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor shall rework or rebuild such slopes until the required degree of compaction is obtained, at no additional cost to the Owner or Geotechnical Engineer.

M. All fill slopes should be planted or protected from erosion by methods specified in the geotechnical report or by means approved by the governing authorities.

N. Fill-over-cut slopes shall be properly keyed through topsoil, colluvium or creep material into rock or firm materials; and the transition shall be stripped of all soil prior to placing fill. (see Figure entitled, "General Grading Recommendations, Typical Fill Above Cut Slope").

IV. CUT SLOPES

A. The Engineering Geologist shall inspect all cut slopes excavated in rock, lithified or formational material, at vertical intervals not exceeding ten feet.

B. If any conditions not anticipated in the preliminary report, such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes, are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer; and recommendations shall be made to treat these problems.

C. Cut slopes that face in the same direction as the prevailing drainage shall be protected from slopewash by a non-erosive interceptor swale placed at the top of the slope.

D. Unless otherwise specified in the geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

E. Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or

with the recommendations of the Geotechnical Engineer or Engineering Geologist.

V. GRADING CONTROL

A. Inspection of the fill placement shall be provided by the Geotechnical Engineer during the progress of grading.

B. In general, density tests should be performed at intervals not exceeding two feet of fill height or every 500 cubic yards of fill placed. This criteria will vary depending on soil conditions and the size of the job. In any event, an adequate number of field density tests shall be made to verify that the required compaction is being achieved.

C. Density tests should also be performed on the surface material to receive fill as required by the Geotechnical Engineer.

D. All cleanout, processed ground to receive fill, key excavations, subdrains and rock disposal must be observed and approved by the Geotechnical Engineer (and often by the governing authorities) prior to placing any fill. It is the Contractor's responsibility to notify the Geotechnical Engineer and governing authorities when such areas are ready for inspection.

VI. CONSTRUCTION CONSIDERATIONS

A. Erosion control measures, when necessary, shall be provided by the Contractor during grading and prior to the completion and construction of permanent drainage controls.

B. Upon completion of grading and termination of observations by the Geotechnical Engineer, no further filling or excavating, including that necessary for footings, foundations, large tree wells, retaining walls, or other features shall be performed without the approval of the Geotechnical Engineer or Engineering Geologist.

C. Care should be taken by the Contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.

VII. OVERSIZE MATERIAL DISPOSAL RECOMMENDATIONS

All materials having a minimum dimension of 6 inches shall be disposed of in accordance with the following recommendations:

A. All oversize material shall be properly disposed of in approved windrow trenches.

B. Individual windrow trenches shall be excavated into firm, natural ground or compacted fill to a maximum width and depth of 5 feet and 3 feet, respectively.

C. Windrow trenches shall be excavated below an approximately horizontal plane and shall be staggered over other buried windrows with a minimum 5 foot vertical clearance between windrows.

D. Windrows shall have a minimum horizontal spacing of 15 feet, edge to edge.

E. Windrows shall not be constructed within 20 feet horizontally of the finished surface of any fill slope, and, windrows shall not be constructed within 20 feet vertically of the proposed finished grades.

F. Windrows shall not be placed closer than 20 feet horizontally from a natural, cut or fill slope which is to be benched and covered with compacted fill.

G. Windrows shall not be placed in stabilization or buttress fills.

H. No single rocks larger than about 3 feet in largest dimension shall be placed in each windrow trench. Rocks larger than about 3 feet in diameter must be either broken down or removed offsite.*

*If the quantity, size and character of material precludes breaking down of material or disposing of excess offsite, special handling procedures may be considered applicable following advanced written approval by the Geotechnical Engineer.

I. Sandy material with a minimum sand equivalent value of 30 should be properly jetted under and around rocks in the windrow trench to fill all voids and assure complete coverage of individual rocks.

J. Rocks shall not be placed in rows on the surface and shall not be nested in piles, beyond the windrow trench.

APPENDIX G

EARTHWORK AND GRADING GUIDE SPECIFICATIONS

CLIENT DRAFT

LEIGHTON AND ASSOCIATES, INC.

GENERAL EARTHWORK AND GRADING SPECIFICATIONS FOR ROUGH GRADING

TABLE OF CONTENTS

Section			Page
1.0	GENERAL		1
	1.1	Intent	1
	1.2	The Geotechnical Consultant of Record	2
	1.3	The Earthwork Contractor	2
2.0	PREPARATION OF AREAS TO BE FILLED		2
	2.1	Clearing and Grubbing	2
	2.2	Processing	3
	2.3	Overexcavation	3
	2.4	Benching	4
	2.5	Evaluation/Acceptance of Fill Areas	4
3.0	FILL MATERIAL		4
	3.1	General	4
	3.2	Oversize	4
	3.3	Import	5
4.0	FILL PLACEMENT AND COMPACTION		5
	4.1	Fill Layers	5
	4.2	Fill Moisture Conditioning	5
	4.3	Compaction of Fill	5
	4.4	Compaction of Fill Slopes	5
	4.5	Compaction Testing	6
	4.6	Frequency of Compaction Testing	6
	4.7	Compaction Test Locations	6
5.0	SUBDRAIN INSTALLATION		6
6.0	EXCAVATION		7
7.0	TRENCH BACKFILLS		7
	7.1	Safety	7
	7.2	Bedding & Backfill	7
	7.3	Lift Thickness	7
	7.4	Observation and Testing	7

Standard Details

A - Keying and Benching	Rear of Text
B - Oversize Rock Disposal	Rear of Text
C - Canyon Subdrains	Rear of Text
D - Buttress or Replacement Fill Subdrains	Rear of Text
E - Transition Lot Fills and Side Hill Fills	Rear of Text
Retaining Wall	Rear of Text

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultants shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Overexcavation

In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field-tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

7.1 Safety

The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

7.2 Bedding and Backfill

All bedding and backfill of utility trenches shall be performed in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of relative compaction from 1 foot above the top of the conduit to the surface.

The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

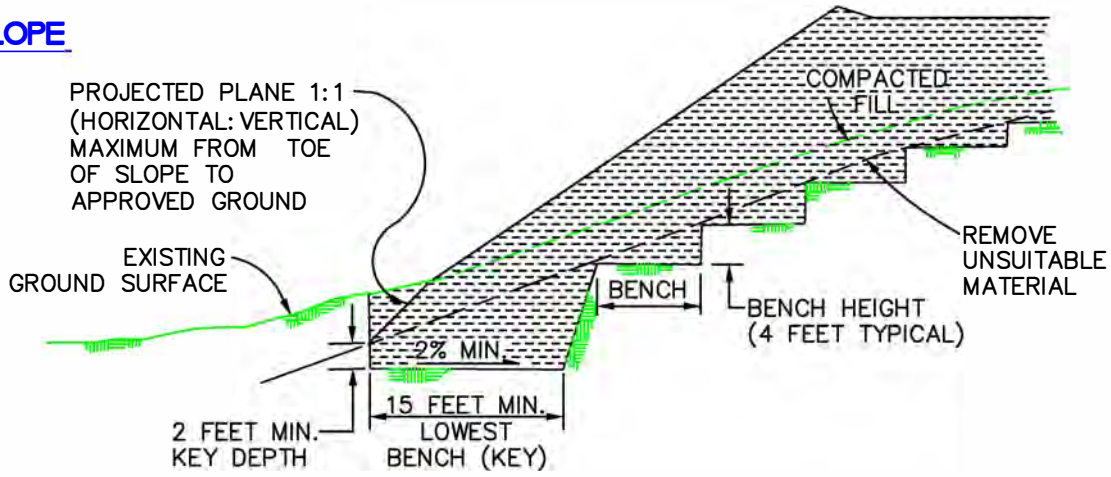
7.3 Lift Thickness

Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

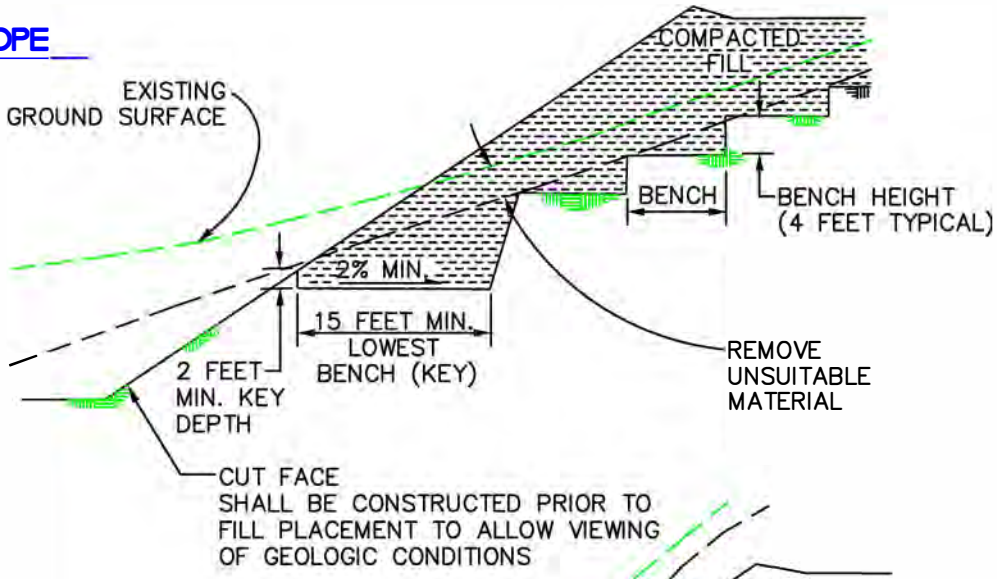
7.4 Observation and Testing

The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

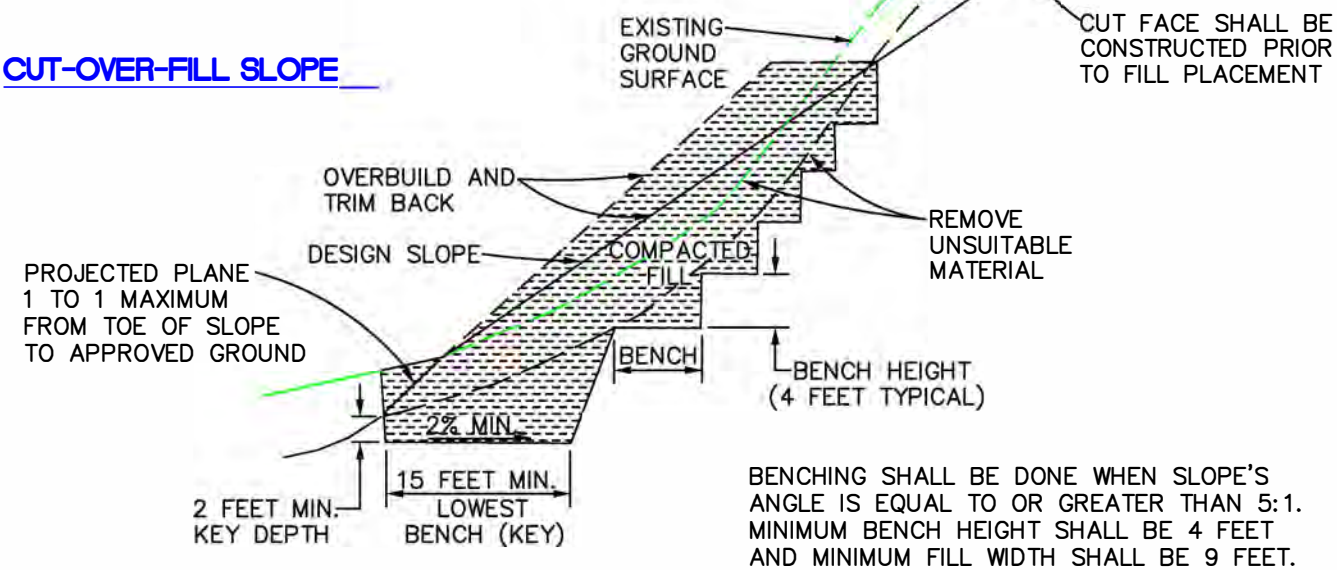
FILL SLOPE



FILL-OVER-CUT SLOPE

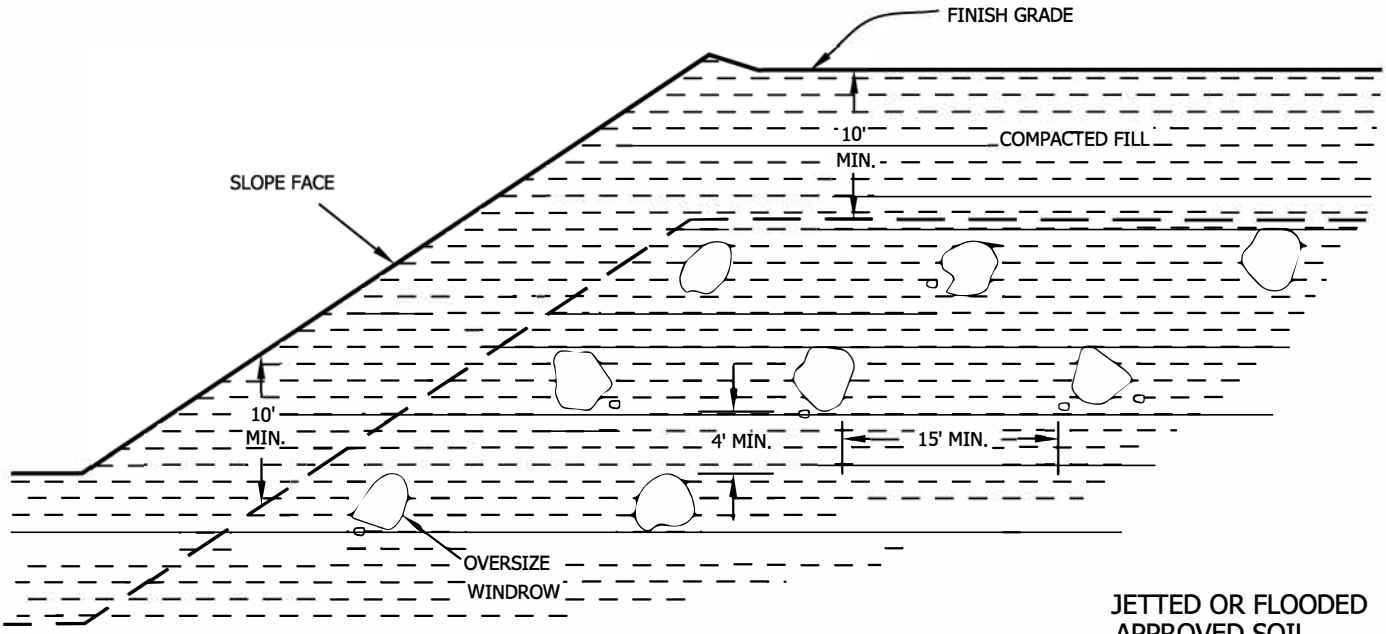


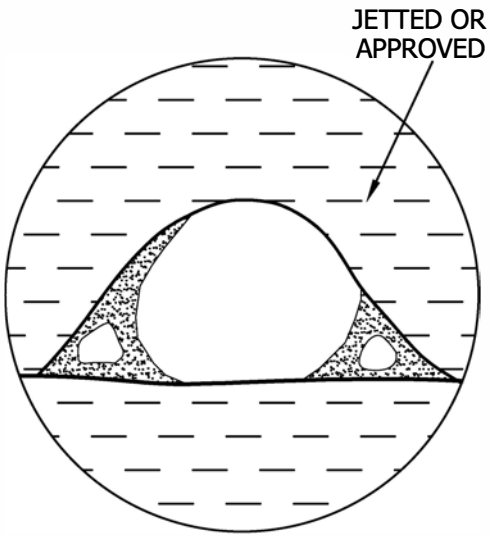
CUT-OVER-FILL SLOPE



BENCHING SHALL BE DONE WHEN SLOPE'S ANGLE IS EQUAL TO OR GREATER THAN 5:1. MINIMUM BENCH HEIGHT SHALL BE 4 FEET AND MINIMUM FILL WIDTH SHALL BE 9 FEET.

KEYING AND BENCHING	GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS A	Leighton a verdantas company

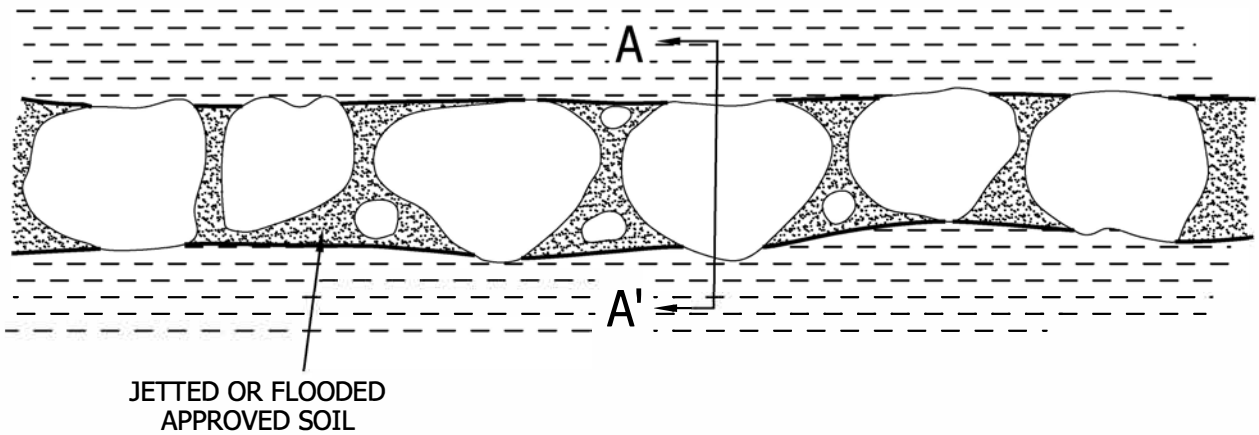




SECTION A-A'

- Oversize rock is larger than 8 inches in largest dimension.
- Backfill with approved soil jetted or flooded in place to fill all the voids.
- Do not bury rock within 10 feet of finish grade.
- Windrow of buried rock shall be parallel to the finished slope face.

PROFILE ALONG WINDROW

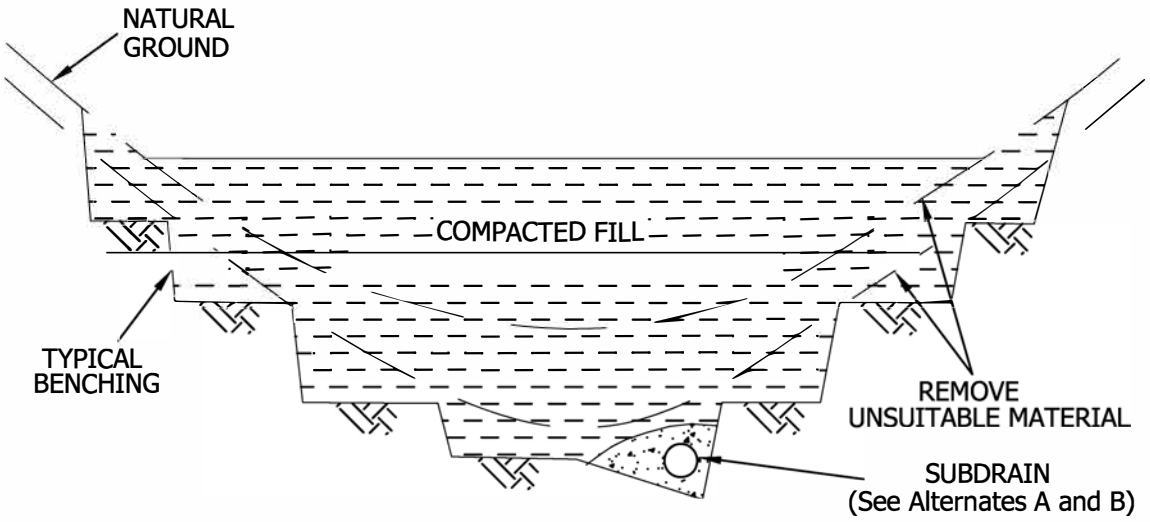


OVERSIZE ROCK DISPOSAL

GENERAL EARTHWORK AND GRADING
SPECIFICATIONS
STANDARD DETAILS B

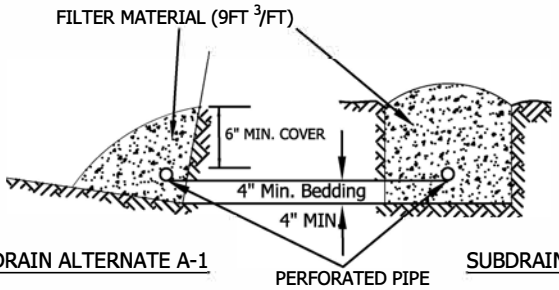
Leighton

P:Drafting\templates\details\over-rock-disp.dwg (7/00)



SUBDRAIN ALTERNATE A

PERFORATED PIPE SURROUNDED WITH FILTER MATERIAL



SUBDRAIN ALTERNATE A-1 SUBDRAIN ALTERNATE A-2

FILTER MATERIAL

FILTER MATERIAL SHALL BE CLASS 2 PERMEABLE MATERIAL PER STATE OF CALIFORNIA STANDARD SPECIFICATION, OR APPROVED ALTERNATE. CLASS 2 GRADING AS FOLLOWS:

Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

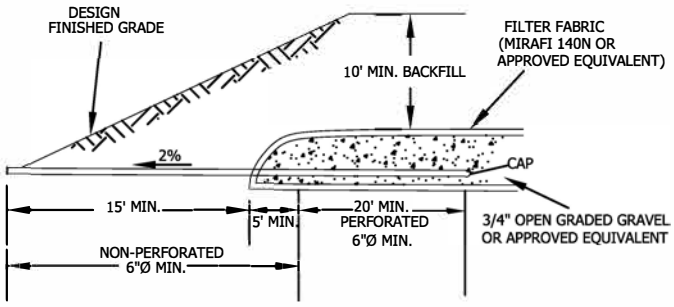
SUBDRAIN ALTERNATE B



ALTERNATE B-1 ALTERNATE B-2

○ PERFORATED PIPE IS OPTIONAL PER GOVERNING AGENCY'S REQUIREMENTS

DETAIL OF CANYON SUBDRAIN TERMINAL

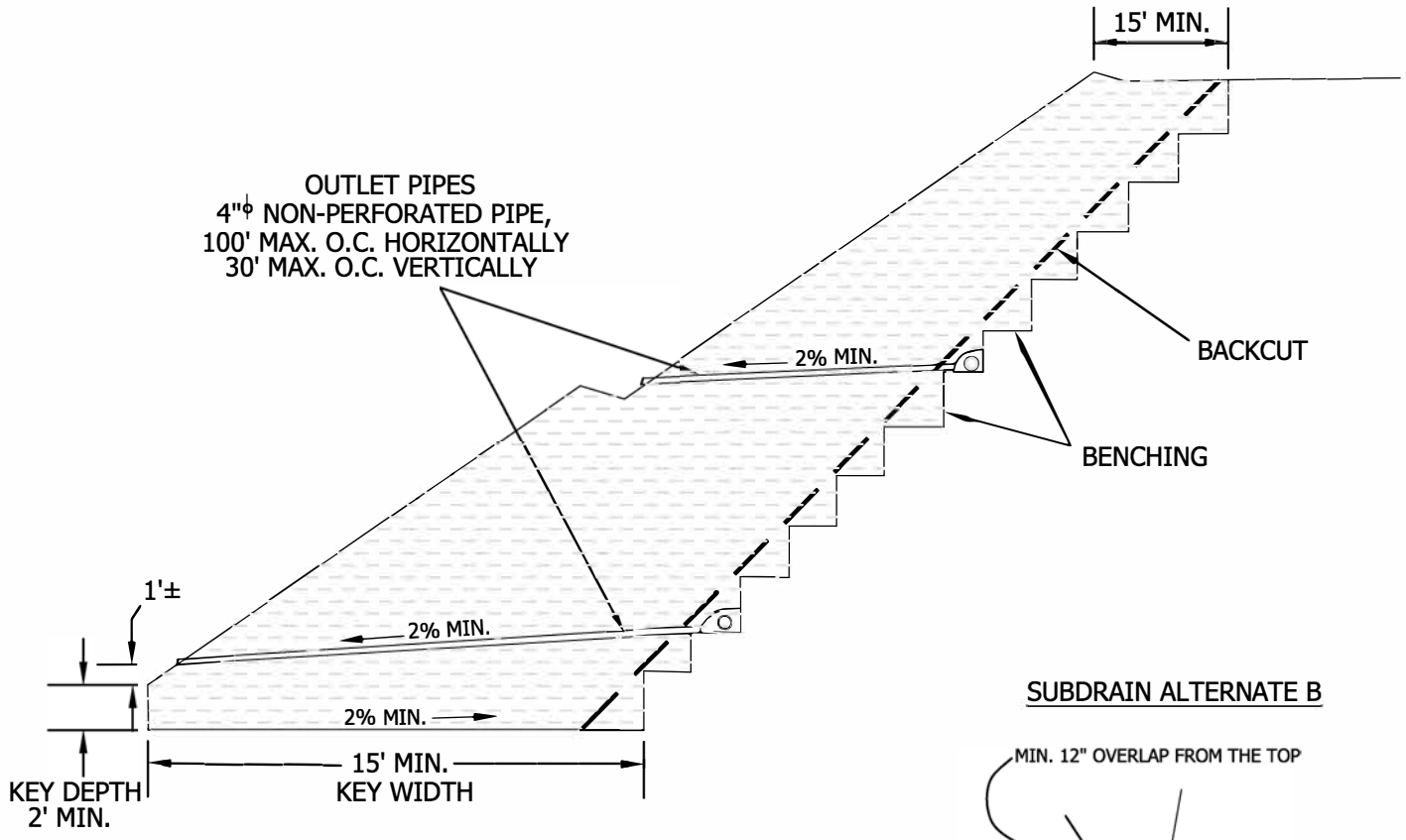


CANYON SUBDRAIN

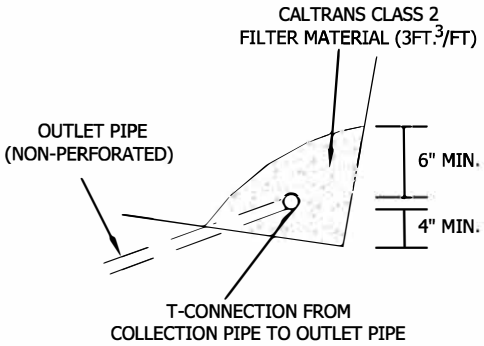
GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS C

Leighton
a verdantas company

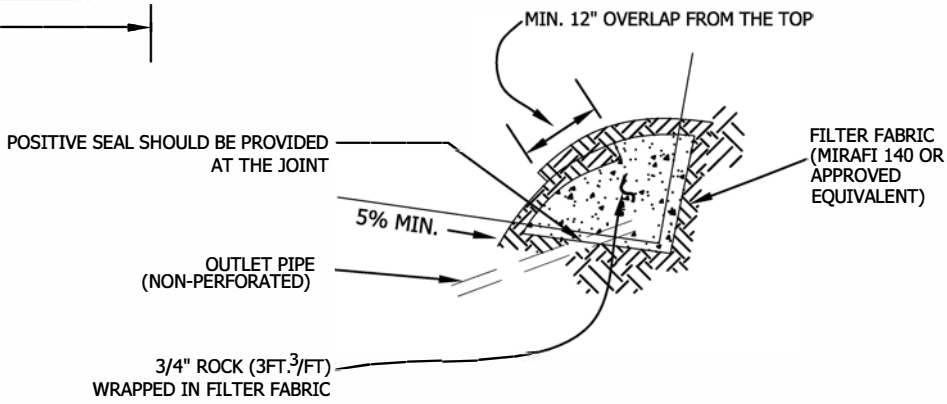
Drafting\templates\details\canyon_drains.dwg (7/00)



SUBDRAIN ALTERNATE A



SUBDRAIN ALTERNATE B

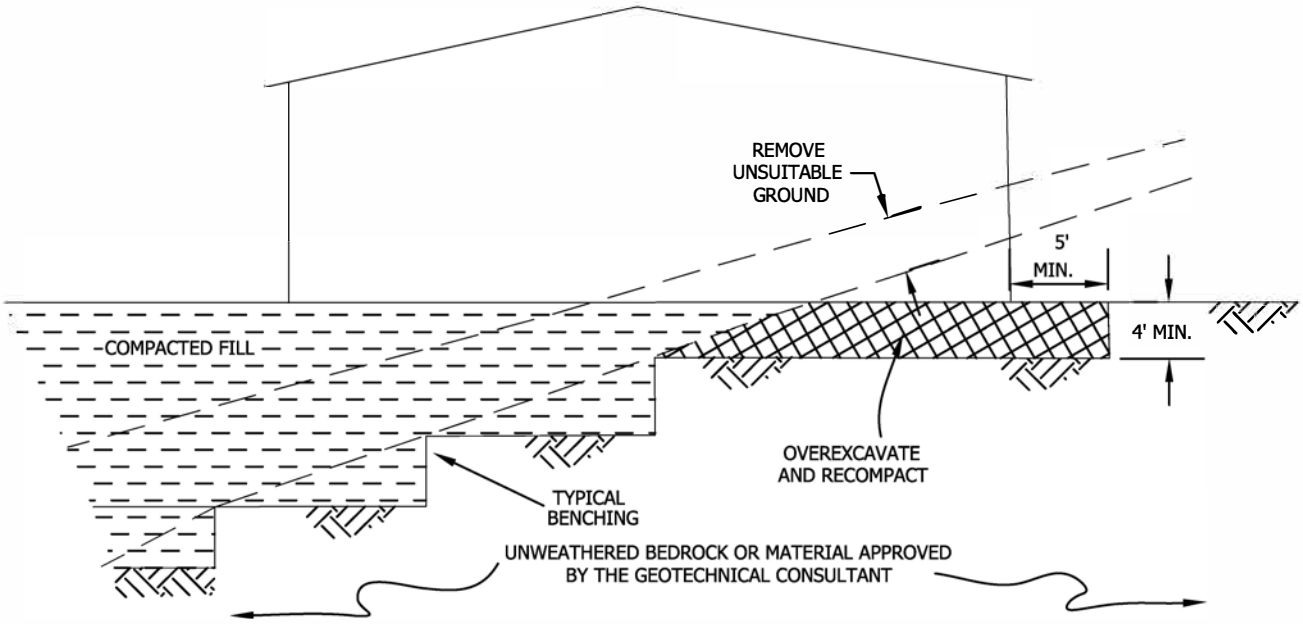


- SUBDRAIN INSTALLATION - Subdrain collector pipe shall be installed with perforations down or, unless otherwise designated by the geotechnical consultant. Outlet pipes shall be non-perforated pipe. The subdrain pipe shall have at least 8 perforations uniformly spaced per foot. Perforation shall be 1/4" to 1/2" if drilled holes are used. All subdrain pipes shall have a gradient at least 2% towards the outlet.
- SUBDRAIN PIPE - Subdrain pipe shall be ASTM D2751, ASTM D1527 (Schedule 40) or SDR 23.5 ABS pipe or ASTM D3034 (Schedule 40) or SDR 23.5 PVC pipe.
- All outlet pipe shall be placed in a trench and, after fill is placed above it, rodded to verify integrity.

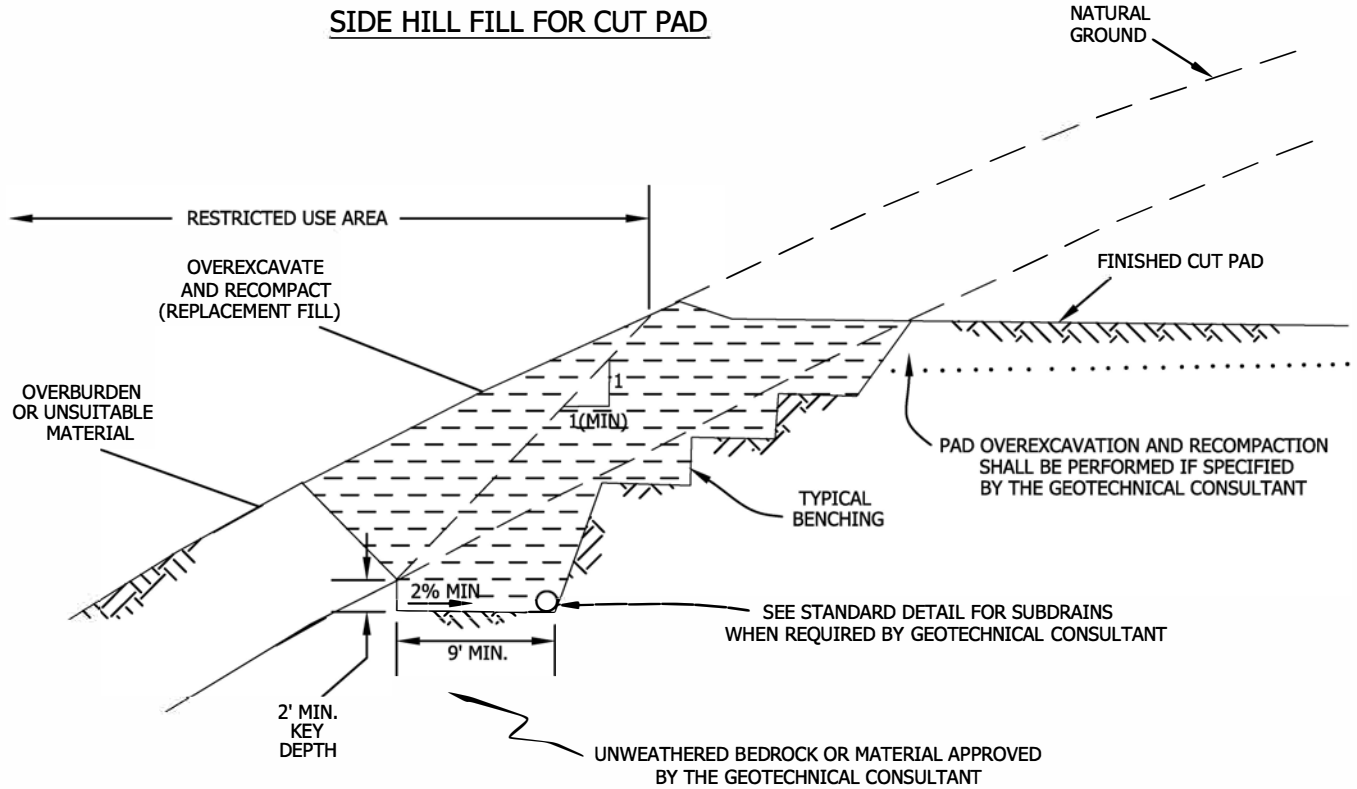
BUTTRESS OR REPLACEMENT FILL SUBDRAINS	GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS D	Leighton a verdantas company

P:Drafting\templates\details\buttress_repl_sub.dwg (7/00)

CUT-FILL TRANSITION LOT OVEREXCAVATION



SIDE HILL FILL FOR CUT PAD



TRANSITION LOT FILLS AND SIDE HILL FILLS

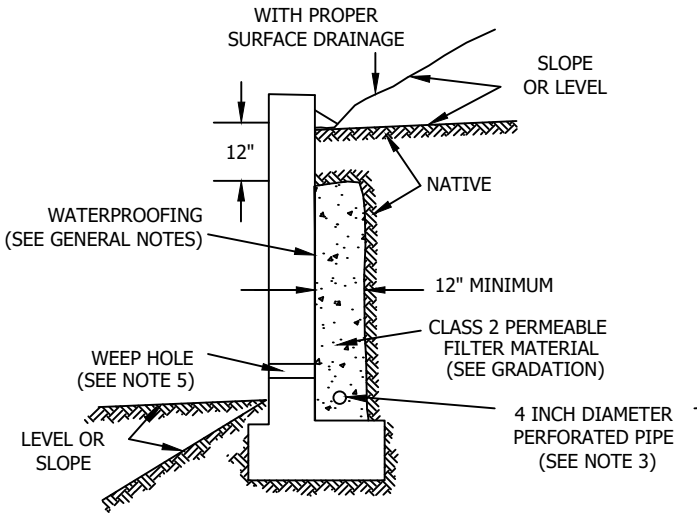
GENERAL EARTHWORK AND GRADING SPECIFICATIONS
STANDARD DETAILS E

Leighton
a verdantas company

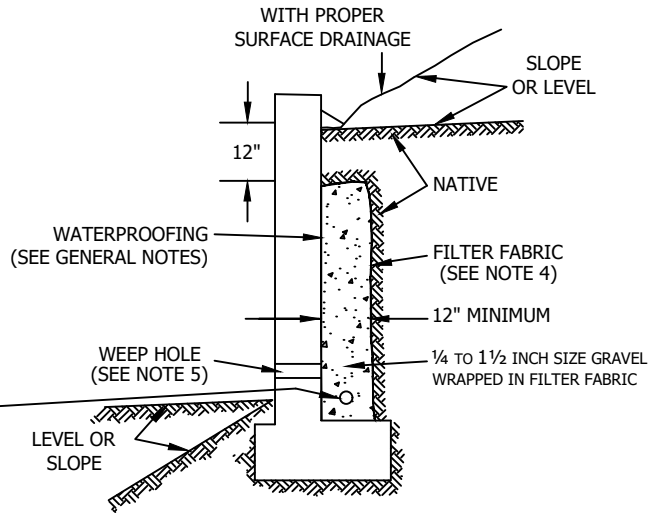
P:\Drawing\templates\details\transition_fills.dwg (7/00)

SUBDRAIN OPTIONS AND BACKFILL WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤50

OPTION 1: PIPE SURROUNDED WITH CLASS 2 PERMEABLE MATERIAL



OPTION 2: GRAVEL WRAPPED IN FILTER FABRIC



Class 2 Filter Permeable Material Gradation
Per Caltrans Specifications

Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

GENERAL NOTES:

* Waterproofing should be provided where moisture nuisance problem through the wall is undesirable.
* Water proofing of the walls is not under purview of the geotechnical engineer
* All drains should have a gradient of 1 percent minimum
*Outlet portion of the subdrain should have a 4-inch diameter solid pipe discharged into a suitable disposal area designed by the project engineer. The subdrain pipe should be accessible for maintenance (rodding)
*Other subdrain backfill options are subject to the review by the geotechnical engineer and modification of design parameters.

Notes:
1) Sand should have a sand equivalent of 30 or greater and may be densified by water jetting.
2) 1 Cu. ft. per ft. of 1/4- to 1 1/2-inch size gravel wrapped in filter fabric
3) Pipe type should be ASTM D1527 Acrylonitrile Butadiene Styrene (ABS) SDR35 or ASTM D1785 Polyvinyl Chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down. Perforations should be 3/8 inch in diameter placed at the ends of a 120-degree arc in two rows at 3-inch on center (staggered)
4) Filter fabric should be Mirafi 140NC or approved equivalent.
5) Weephole should be 3-inch minimum diameter and provided at 10-foot maximum intervals. If exposure is permitted, weepholes should be located 12 inches above finished grade. If exposure is not permitted such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk to be discharged through the curb face or equivalent should be provided. For a basement-type wall, a proper subdrain outlet system should be provided.
6) Retaining wall plans should be reviewed and approved by the geotechnical engineer.
7) Walls over six feet in height are subject to a special review by the geotechnical engineer and modifications to the above requirements.

RETAINING WALL BACKFILL AND SUBDRAIN DETAIL FOR WALLS 6 FEET OR LESS IN HEIGHT

WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤50

Leighton
a verdantas company

V:\DRAFTING\TEMPLATES\STANDARD-FIGURES\WALL-STANDARD-FIGURES.DWG (09-02-21 9:07:35AM) Plotted by bbain

Attachment C

Master Covenant Agreement (MCA)

It will be provided in the future submittal.

Attachment D

Operations and Maintenance (O&M) Plan

1400 Montefino Avenue

1400 Montefino Avenue
City of Diamond Bar, California 91765

(APNs: 8293-044-015 & 8293-044-016)

Grading Permit: TBD

REQUIRED PERMITS

This section must list any permits required for the implementation, operation, and maintenance of the BMPs. Possible examples are:

- Permits for connection to sanitary sewer
- Permits from California Department of Fish and Game
- Encroachment permits

If no permits are required, a statement to that effect should be made.

RECORDKEEPING

All records must be made available for review upon request.

RESPONSIBLE PARTY

The owner is aware of the maintenance responsibilities of the proposed BMPs. A funding mechanism is in place to maintain the BMPs at the frequency stated in the LID Plan. The contact information for the entity responsible is below:

Name:	Sarah Klaustermeier
Company:	Intracorp SoCal 1, LLC
Title:	Senior Director - Development
Address 1:	895 Dove Street, Suite 400, Newport Beach, California 92660
Address 2:	
Phone Number:	(949) 757-8467
Email:	sklaustermeier@intracorphomes.com

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Non-Structural Source Control BMPs			
Education for Property Owners, Tenants and Occupants	Prior to building occupancy and annually Property Management will provide the environmental awareness, educational awareness, and education materials to the new tenants.	Prior to building occupancy and annually	Owner until formation of Property Management.
Activity Restriction	The Owner will prescribe activity restrictions to protect surface water quality, through a Covenant, Conditions and Restrictions (CC&Rs) agreement, or other equally effective measure, for the property. shall be responsible for ensuring residents compliance.	Ongoing	Owner until formation of Property Management.
Common Area Landscape Management	Scheduled by Property Management. Maintenance shall be consistent with County requirements, plus fertilizer and/or pesticide usages shall be consistent with County guidelines for use of fertilizers and pesticides. Maintenance includes mowing, weeding, and debris removal on a monthly basis. Trimming, replanting and replacement of mulch shall be performed on an as-needed basis. Trimmings, clippings, and other waste shall be properly disposed of offsite in accordance with local regulations. Materials temporarily stockpiled during maintenance activities shall be placed away from water courses and drain inlets.	Monthly	Owner until formation of Property Management.
Common Area Litter Control	Litter patrol, violations investigations, reporting and other litter control activities shall be performed in conjunction with maintenance activities. Litter collection and removal shall be performed on a weekly basis.	Weekly	Owner until formation of Property Management.

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Catch Basin Inspection	Catch basin inlets, area drains, curb-and-gutter systems, water diversion systems, and other drainage systems shall be inspected prior to October 1st of the year and on a monthly basis	Once a month to clean debris and silt in bottom of catch basins, and water diversion manholes. Intensified around October 1st of each year prior to the "first-flush" storm.	Owner until formation of Property Management.
Street Sweeping Private Streets and Parking Lots	All private streets and alleys must be swept at a minimum, prior to the start of the rainy season (October 1st). Public street shall also be swept weekly or bi weekly.	Weekly or bi weekly	Owner until formation of Property Management.
Structural Source Control BMPs			
Provide Storm Drain System Stenciling and Signage	Storm drains shall be inspected for legibility, at a minimum, once prior to the storm season, no later than October 1st each year. Those determined to be illegible will be re-stenciled as soon as possible. Storm drain should stenciled every other year.	Inspect for re-stenciling needs and re-stencil as necessary annually. Re-stencil every other year.	Owner until formation of Property Management.
Use Efficient Irrigation Systems & Landscape Design	Once a week in conjunction with maintenance activities. Verify that runoff minimizing landscape design continues to function by checking that water sensors are functioning properly, that irrigation heads are adjusted properly to eliminate overspray in hardscape areas, and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given time of year, weather and day or night time temperatures.	Weekly	Owner until formation of Property Management.

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Protect Slopes and Channels and Provide Energy Dissipation	Verify that slopes and channels are properly functioning.	Weekly	Owner until formation of Property Management.
Hillside Landscaping	Verify that vegetation on the hillside is functioning properly for erosion control.	Weekly	Owner until formation of Property Management.
Treatment Control BMPs			
Catch basin filter inserts	Catch basin filter inserts are used pretreatment for the proprietary biofiltration BMP. Verify the functionality of the BMPs as required by the manufacturer.	Weekly	Owner until formation of Property Management.
LID BMPs			
Biofiltration BMP	Proprietary biofiltration BMPs from Contech (or approved equivalent) are used to treat the stormwater runoff from the proposed site. Verify the functionality of the BMPs as required by the manufacturer.	Weekly	Owner until formation of Property Management.

BMP OPERATION & MAINTENANCE LOG

1400 MONTEFINO

Today's Date: _____

Name of Person Performing Activity (Printed): _____

Signature: _____

BMP Name or Type (As Shown in O&M Plan)	Brief Description of Operation, Maintenance, or Inspection Activity Performed	Summary of Notable Observations or Outcomes from Activity

[add additional pages, photographs, drawings, notes as needed]

S-1: Storm Drain Message and Signage

Purpose

Waste material dumped into storm drain inlets can adversely impact surface and ground waters. In fact, any material discharged into the storm drain system has the potential to significantly impact downstream receiving waters. Storm drain messages have become a popular method of alerting and reminding the public about the effects of and the prohibitions against waste disposal into the storm drain system. The signs are typically stenciled or affixed near the storm drain inlet or catch basin. The message simply informs the public that dumping of wastes into storm drain inlets is prohibited and/or that the drain ultimately discharges into receiving waters.

General Guidance

- The signs must be placed so they are easily visible to the public.
- Be aware that signs placed on sidewalk will be worn by foot traffic.

Design Specifications

- Signs with language and/or graphical icons that prohibit illegal dumping, must be posted at designated public access points along channels and streams within the project area. Consult with Los Angeles County Department of Public Works (LACDPW) staff to determine specific signage requirements for channels and streams.
- Storm drain message markers, placards, concrete stamps, or stenciled language/icons (e.g., “No Dumping – Drains to the Ocean”) are required at all storm drain inlets and catch basins within the project area to discourage illegal or inadvertent dumping. Signs should be placed in clear sight facing anyone approaching the storm drain inlet or catch basin from either side (see Figure D-1 and Figure D-2). LACDPW staff should be contacted to determine specific requirements for types of signs and methods of application. A stencil can be purchased for a nominal fee from LACDPW Building and Safety Office by calling (626) 458-3171. All storm drain inlet and catch basin locations must be identified on the project site map.

Maintenance Requirements

Legibility and visibility of markers and signs should be maintained (e.g., signs should be repainted or replaced as necessary). If required by LACDPW, the owner/operator or homeowner’s association shall enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards and signs.

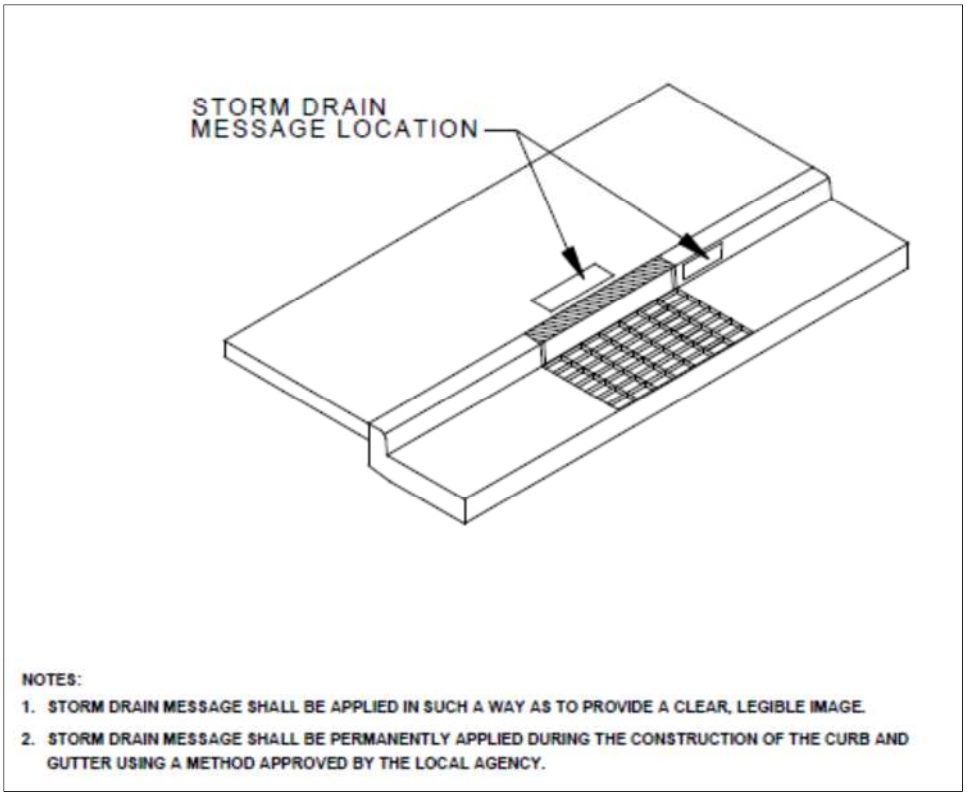


Figure D-1. Storm Drain Message Location – Curb Type Inlet

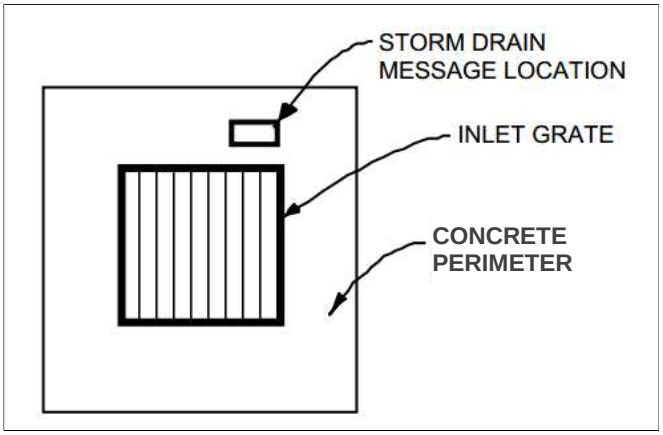


Figure D-2. Storm Drain Message Location – Catch Basin/Area Type Inlet

S-8: Landscape Irrigation Practices

Purpose

Irrigation runoff provides a pathway for pollutants (i.e., nutrients, bacteria, organics, sediment) to enter the storm drain system. By effectively irrigating, less runoff is produced resulting in less potential for pollutants to enter the storm drain system.

General Guidance

- Do not allow irrigation runoff from the landscaped area to drain directly to storm drain system.
- Minimize use of fertilizer, pesticides, and herbicides on landscaped areas.
- Plan sites with sufficient landscaped area and dispersal capacity (e.g., ability to receive irrigation water without generating runoff).
- Consult a landscape professional regarding appropriate plants, fertilizer, mulching applications, and irrigation requirements (if any) to ensure healthy vegetation growth.

Design Specifications

- Choose plants that minimize the need for fertilizer and pesticides.
- Group plants with similar water requirements and water accordingly.
- Use mulch to minimize evaporation and erosion.
- Include a vegetative boundary around project site to act as a filter.
- Design the irrigation system to only water areas that need it.
- Install an approved subsurface drip, pop-up, or other irrigation system.[1] The irrigation system should employ effective energy dissipation and uniform flow spreading methods to prevent erosion and facilitate efficient dispersion.
- Install rain sensors to shut off the irrigation system during and after storm events.
- Include pressure sensors to shut off flow-through system in case of sudden pressure drop. A sudden pressure drop may indicate a broken irrigation head or water line.
- If the hydraulic conductivity in the soil is not sufficient for the necessary water application rate, implement soil amendments to avoid potential geotechnical hazards (i.e., liquefaction, landslide, collapsible soils, and expansive soils).

[1] If alternative distribution systems (e.g., spray irrigation) are approved, the County will establish guidelines to implement these new systems.

The Ocean Begins at Your Front Door



Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in the trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste Collection Center (HHWCC).
- For a HHWCC near you call (714) 834-6752 or visit www.oclandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of it in the trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate- free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing to drain into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor your vehicles for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- When it is not raining, drain dechlorinated pool and spa water directly into the sanitary sewer.
- Some cities may have ordinances that do not allow pool water to be disposed of in the storm drain. Check with your city.

Landscape and Gardening

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Take unwanted pesticides to a HHWCC to be recycled. For locations and hours of HHWCC, call (714) 834-6752 or visit www.oclandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle.

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose of it in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a HHWCC.

Common Pollutants

Home Maintenance

- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

Lawn and Garden

- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

Automobile

- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust

The Ocean Begins at Your Front Door



Never allow pollutants to enter the street, gutter or storm drain!

Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution is sometimes called “non-point source” pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff results from rainfall. When rainstorms cause large volumes of water to rinse the urban landscape, picking up pollutants along the way.
- Urban runoff can happen any time of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets), water in storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.



The Effect on the Ocean



Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed throughout Orange County to educate and encourage the public to protect water quality, monitor runoff in the storm drain system, investigate illegal dumping and maintain storm drains.

Support from Orange County residents and businesses is needed to improve water quality and reduce urban runoff pollution. Proper use and disposal of materials will help stop pollution before it reaches the storm drain and the ocean.



For More Information

Orange County Stormwater Program

California Environmental Protection Agency
www.calepa.ca.gov

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 - Community-Specific Environmental Information 1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
(714) 433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County (714) 834-6752 or visit www.oclandfills.com for information on household hazardous waste collection centers, recycling centers and solid waste collection

O.C. Agriculture Commissioner
(714) 447-7100 or visit www.ocagcomm.com

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
(714) 708-1646 or visit www.uccemg.com

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to ocstormwaterinfo-join@list.ocwatersheds.com

Aliso Viejo	(949)	425-2535
Anaheim Public Works Operations	(714)	765-6860
Brea Engineering	(714)	990-7666
Buena Park Public Works	(714)	562-3655
Costa Mesa Public Services	(714)	754-5323
Cypress Public Works	(714)	229-6740
Dana Point Public Works	(949)	248-3584
Fountain Valley Public Works	(714)	593-4441
Fullerton Engineering Dept.	(714)	738-6853
Garden Grove Public Works	(714)	741-5956
Huntington Beach Public Works	(714)	536-5431
Irvine Public Works	(949)	724-6315
La Habra Public Services	(562)	905-9792
La Palma Public Works	(714)	690-3310
Laguna Beach Water Quality	(949)	497-0378
Laguna Hills Public Services	(949)	707-2650
Laguna Niguel Public Works	(949)	362-4337
Laguna Woods Public Works	(949)	639-0500
Lake Forest Public Works	(949)	461-3480
Los Alamitos Community Dev.	(562)	431-3538
Mission Viejo Public Works	(949)	470-3056
Newport Beach, Code & Water Quality Enforcement	(949)	644-3215
Orange Public Works	(714)	532-6480
Placentia Public Works	(714)	993-8245
Rancho Santa Margarita	(949)	635-1800
San Clemente Environmental Programs	(949)	361-6143
San Juan Capistrano Engineering	(949)	234-4413
Santa Ana Public Works	(714)	647-3380
Seal Beach Engineering	(562)	431-2527 x317
Stanton Public Works	(714)	379-9222 x204
Tustin Public Works/Engineering	(714)	573-3150
Villa Park Engineering	(714)	998-1500
Westminster Public Works/Engineering	(714)	898-3311 x446
Yorba Linda Engineering	(714)	961-7138
Orange County Stormwater Program	(877)	897-7455

Orange County 24-Hour
Water Pollution Problem Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

On-line Water Pollution Problem Reporting Form
www.ocwatersheds.com

Printed on Recycled Paper

ENVIRONMENTAL
CHALLENGE

YOUR SCORE

0 POINTS:
SPOTLESS
Congratulations, your family, friends and neighbors are doing a great job keeping your environment pollutant-free.

5-50 POINTS:
SPRINKLING OF POLLUTANTS
Your neighbors/schoolmates are working hard to keep your environment pollutant-free. Keep up the good work.

55-100 POINTS:
SEVERAL POLLUTANTS
Your environment has too many pollutants. Help keep your environment pollutant free by doing your part.

105-150 POINTS:
SCORES OF POLLUTANTS
With so many pollutants in your environment, consider teaming up with a friend or family member to educate your community about the simple ways they can keep your environment pollutant free.

155+ POINTS:
SUBMERGED IN POLLUTANTS
Your environment has a significant amount of pollutants that may enter the storm drain and flow directly to the ocean. Consider working with adults in your area to organize a school/ neighborhood clean-up event.

ENVIRONMENTAL
CHALLENGE

Are you able to spot real pollutants? Search your yard, neighborhood or schoolyard for the following pollutants. Each item has a point value. Once your search is completed, add up your points and find out how polluted your environment is.

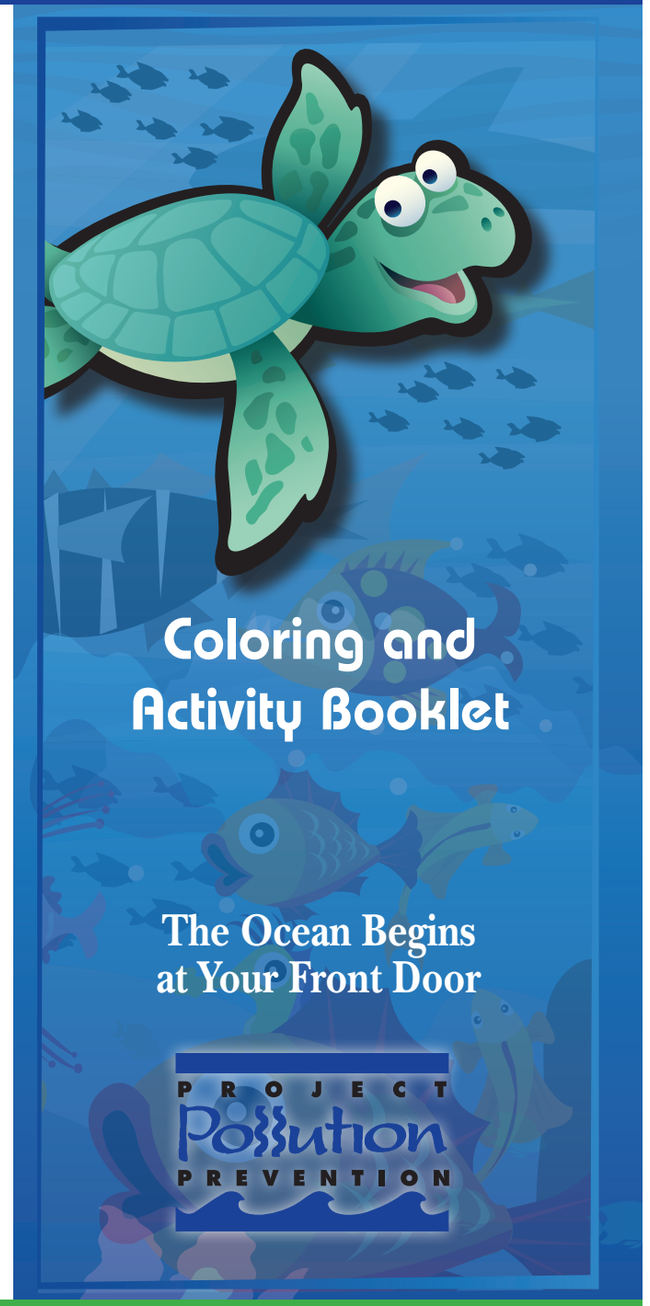
Animal waste	10 points
Bag	10 points
Candy wrapper	10 points
Cardboard	15 points
Cigarette	5 points
Cut grass	10 points
Dirt on the street	15 points
Fallen leaves	5 points
Fast food wrapper	10 points
Glass	20 points
Metal	15 points
Newspaper	10 points
Oil	15 points
Paper	5 points
Plastic bottle	10 points
Soapsuds	20 points
Soda can	5 points
Water in the gutter	10 points

YOU CAN HELP KEEP YOUR ENVIRONMENT POLLUTANT FREE BY:

- Not Littering
- Participate in a clean-up event.
- Recycling
- Picking up after your pet
- Do not overwater your lawn.
- Sweeping up trash, leaves and cut grass from your driveway, sidewalk or patio and putting it in the trash.
- Soaking up outdoor spills with towels or cat litter rather than rinsing them with water.
- Reminding your parents to check their cars for leaks.
- Never putting anything into the storm drain. Storm drains are only for rainwater.
- Teaching others how to protect the environment.

To learn more about protecting your environment from pollution visit www.ocwatersheds.com.
Pollution Prevention Hotline
1-877-89-SPILL / 1-877-897-7455

Help Prevent Ocean Pollution



Environmental Encyclopedia

STORMWATER:
Water from nature such as rain or snow melt.

URBAN RUN-OFF:
Water from a hose or sprinkler that flows into the street.

POLLUTANT:
Materials such as litter, pet waste, motor oil and yard clippings that harm the environment.

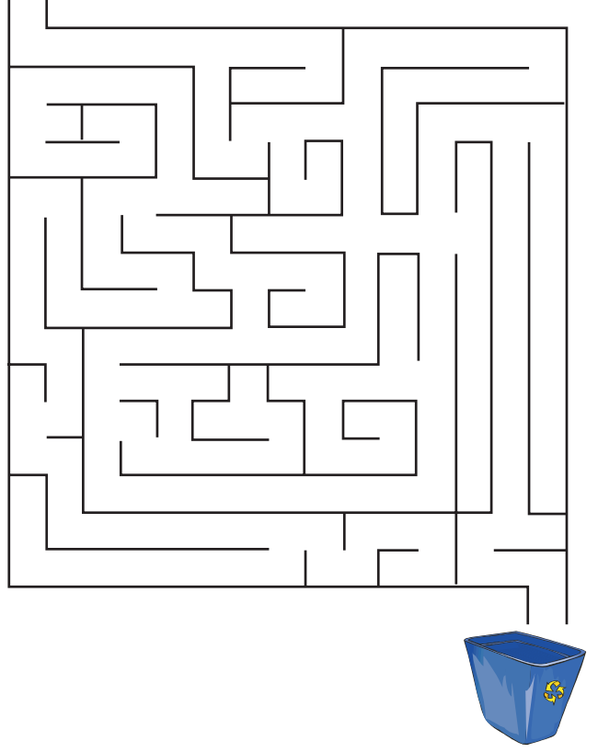
STORM DRAIN:
An opening in the street where water from rain or urban run-off flows. This water picks up pollutants on the way to the storm drain. Once in the storm drain, the water and pollutants flow untreated to the ocean.

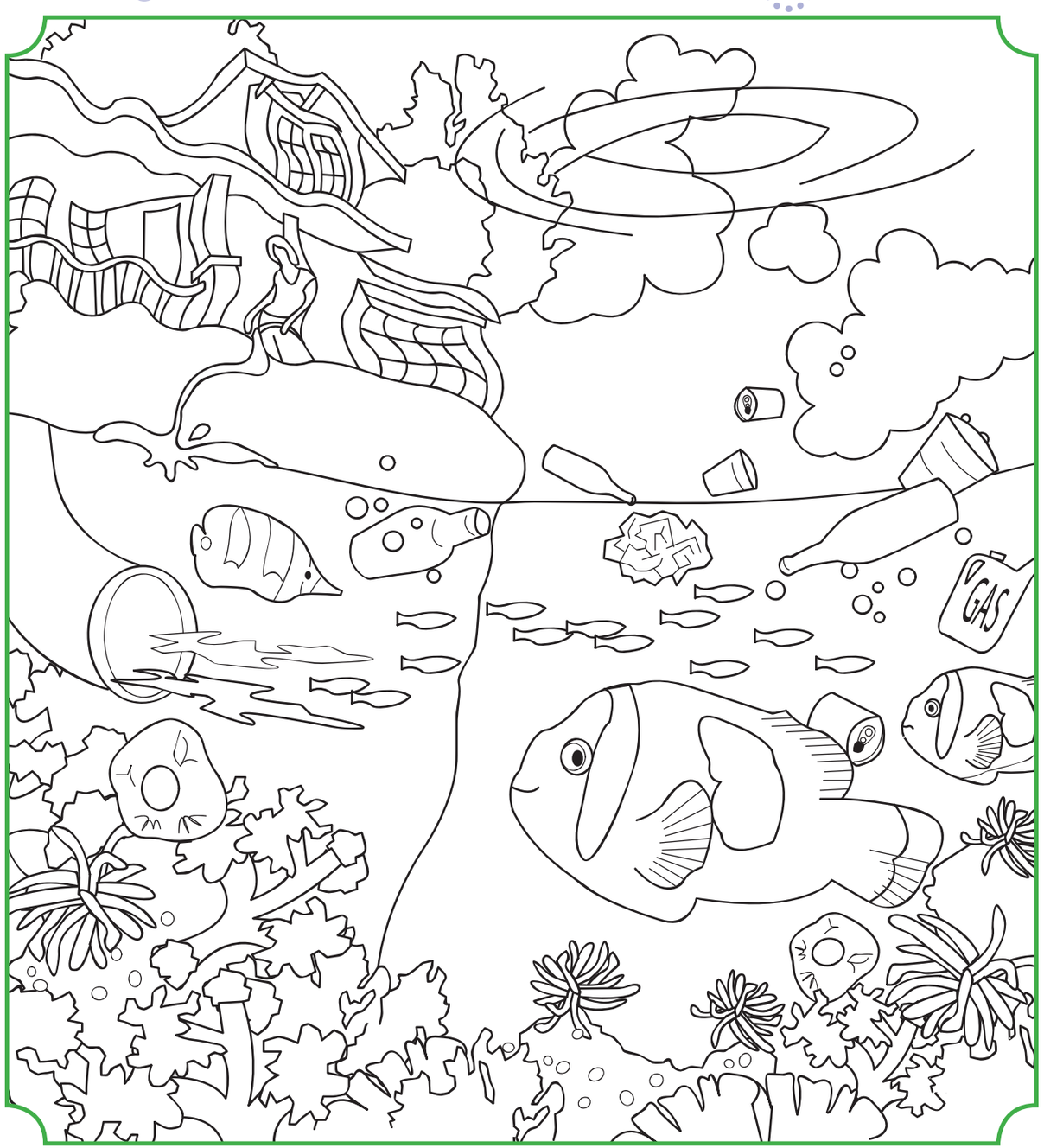
WHAT DOES NOT BELONG IN THE OCEAN?

When we throw trash on the ground, it can end up in the ocean. Put an 'X' on the things that DO NOT belong in the ocean and color the things that DO belong in the ocean.

MAZE:

Help the bottle find its way to the recycle bin!





A Fish EyeView of Pollution.



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, if we are not careful, our daily activities can lead directly to water pollution problems. Water that drains through your watershed can pick up pollutants which are then transported to our waterways and beautiful ocean.

You can prevent water pollution by taking personal action and by working with members of your watershed community to prevent urban runoff from entering your waterway.

For more information, please call the **Orange County Stormwater Program** at **1.877.89.SPILL** or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** at **1.877.89.SPILL**.

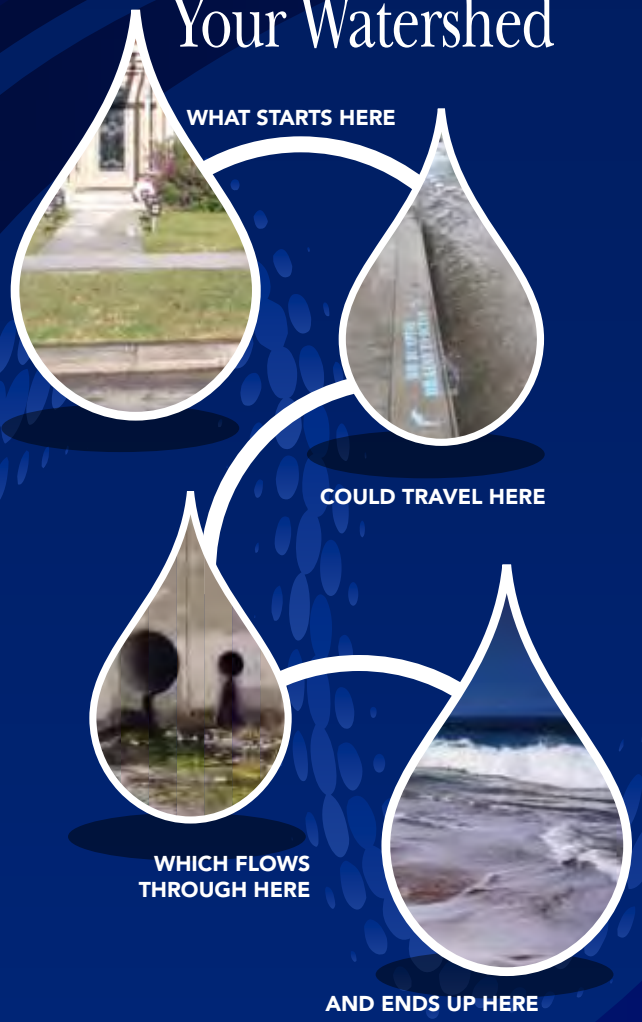
For emergencies, dial 911.

The tips contained in this brochure provide useful information to help protect your watershed. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips For Protecting Your Watershed



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Protecting Your Watershed

My Watershed. Our Ocean.

Water + shed, *noun: A region of land within which water flows down into a specified water body, such as a river, lake, sea, or ocean; a drainage basin or catchment basin.*

Orange County is comprised of 11 major watersheds into which most of our water flows, connecting all of Orange County to the Pacific Ocean.



As water from rain (stormwater) or sprinklers and hoses (urban runoff) runs down your driveway and into your neighborhood streets, sidewalks and gutters, it flows into storm drains that lead to waterways within your watershed. The waterways from other cities merge as they make their way through our watersheds until all the runoff water in Orange County meets at the Pacific Ocean. The water that reaches our ocean is not pure. As it flows through the watershed, it picks up pollutants such as litter, cigarette butts, fertilizer, pesticides, pet waste, motor oil and lawn clippings. Unlike water that enters the sewer (from sinks and toilets), water that enters the storm drain is not treated before it flows, ultimately, to the ocean.



Water quality can be improved by "Adopting Your Watershed." Through this effort, we are challenging citizens and organizations to join the Orange County Stormwater Program and others who are working to protect and restore our creeks, rivers, bays and ocean.

There are many opportunities to get involved:

- Appreciate your watershed - explore the creeks, trails and ocean and make observations about its conditions. If you see anything abnormal (such as dead fish, oil spills, leaking barrels, and other pollution) contact the Orange County 24-hour water pollution problem reporting hotline at 1.877.89.SPILL to report the problem.
- Research your watershed. Learn about what watershed you live in by visiting www.ocwatersheds.com.
- Find a watershed organization in your community and volunteer to help. If there are no active groups, consider starting your own.
- Visit EPA's Adopt Your Watershed's Catalog of Watershed Groups at www.epa.gov/adopt to locate groups in your community.
- Organize or join in a creek, river, bay or ocean cleanup event such as Coastal & Inner Coastal Cleanup Day that takes place the 3rd Saturday of every September. For more information visit www.coast4u.org.

Follow these simple tips to protect the water quality of your watershed:

- **Sweep up debris and dispose of it in the trash. Do not hose down driveways or sidewalks into the street or gutter.**
- **Use dry cleanup methods such as cat litter to absorb spills and sweep up residue.**
- **Set your irrigation systems to reflect seasonal water needs or use weather-based controllers. Inspect for runoff regularly.**
- **Cover trashcans securely.**
- **Take hazardous waste to a household hazardous waste collection center. (For example, paint, batteries and petroleum products)**
- **Pick up after your pet.**
- **Follow application and disposal directions for pesticides and fertilizers.**
- **If you wash your car at home, wash it on your lawn or divert the runoff onto a landscaped area. Consider taking your car to a commercial car wash, where the water is reclaimed or recycled.**
- **Keep your car well maintained.**
- **Never pour oil or antifreeze in the street, gutter or storm drain.**



The Pollution Solution

Several residential activities can result in water pollution. Among these activities are car washing and hosing off driveways and sidewalks. Both activities can waste water and result in excess runoff. Water conservation methods described in this pamphlet can prevent considerable amounts of runoff and conserve water. By taking your car to a commercial car wash and by sweeping driveways and sidewalks, you can further prevent the transport of pollutants to Orange County waterways. Here are some of the common pollutants for which you can be part of the solution:

1 Pesticides and Fertilizer



- **Pollution:** The same pesticides that are designed to be toxic to pests can have an equally lethal impact on our marine life. The same fertilizer that promotes plant growth in lawns and gardens can also create nuisance algae blooms, which remove oxygen from the water and clog waterways when it decomposes.

- **Solution:** Never use pesticides or fertilizer within 48 hours of an anticipated rainstorm. Use only as much as is directed on the label and keep it off driveways and sidewalks.

2 Dirt and Sediment

- **Pollution:** Dirt or sediment can impede the flow of the stormwater and negatively impact stream habitat as it travels through waterways and deposits downstream. Pollutants can attach to sediment, which can then be transported through our waterways.

- **Solution:** Protect dirt stockpiles by covering them with tarps or secure plastic sheets to prevent wind or rain from allowing dirt or sediment to enter the storm drain system.

3 Metals

- **Pollution:** Metals and other toxins present in car wash water can harm important plankton, which forms the base of the aquatic food chain.

- **Solution:** Take your car to a commercial car wash where the wash water is captured and treated at a local wastewater treatment plant.

DID YOU KNOW?

Did you know that most of the pollution found in our waterways is not from a single source, but from a "non-point" source meaning the accumulation of pollution from residents and businesses throughout the community

4 Pet Waste

- **Pollution:** Pet waste carries bacteria through our watersheds and eventually will be washed out to the ocean. This can pose a health risk to swimmers and surfers.

- **Solution:** Pick up after your pets!

5 Trash and Debris



- **Pollution:** Trash and debris can enter waterways by wind, littering and careless maintenance of trash receptacles. Street sweeping collects some of this trash; however, much of what isn't captured ends up in our storm drain system where it flows untreated out to the ocean.

- **Solution:** Don't litter and make sure trash containers are properly covered. It is far more expensive to clean up the litter and trash that ends up in our waterways than it is to prevent it in the first place. Come out to one of Orange County's many locations for Coastal and Inner-Coastal Cleanup Day, which is held in September.

6 Motor Oil / Vehicle Fluids

- **Pollution:** Oil and petroleum products from our vehicles are toxic to people, wildlife and plants.



- **Solution:** Fix any leaks from your vehicle and keep the maintenance up on your car. Use absorbent material such as cat litter on oil spills, then sweep it up and dispose of it in the trash. Recycle used motor oil at a local Household Hazardous Waste Collection Center.



A TEAM EFFORT

The Orange County Stormwater Program has teamed with the Municipal Water District of Orange County (MWDOC) and the University of California Cooperative Extension Program (UCCE) to develop this pamphlet.

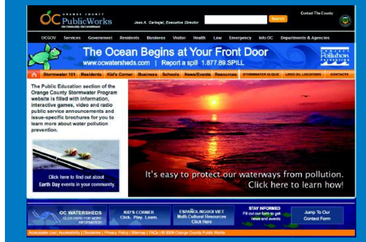
Low Impact Development (LID) and sustainable water use prevents water pollution and conserves water for drinking and reuse. Reducing your water use and the amount of water flowing from your home protects the environment and saves you money.

Thank you for making water protection a priority!

For more information, please visit www.ocwatersheds.com/publiced/

www.mwdoc.com

www.uccemg.com



To report a spill, call the Orange County 24-Hour Water Pollution Prevention Reporting Hotline at 1-877-89-SPILL \(1-877-897-7455)

Special Thanks to

The City of Los Angeles Stormwater Program for the use of its artwork

The Metropolitan Water District of Southern California for the use of the California-Friendly Plant and Native Habitat photos







Homeowners Guide for Sustainable Water Use

Low Impact Development, Water Conservation & Pollution Prevention



The Ocean Begins at Your Front Door





RUNOFF, RAINWATER AND REUSE

Where Does Water Runoff Go?

Stormwater, or water from rainfall events, and runoff from outdoor water use such as sprinklers and hoses flows from homes directly into catch basins and the storm drain system. After entering the storm drain, the water flows untreated into streams, rivers, bays and ultimately the Pacific Ocean. Runoff can come from lawns, gardens, driveways, sidewalks and roofs. As it flows over hard, impervious surfaces, it picks up pollutants. Some pollutants carried by the water runoff include trash, pet waste, pesticides, fertilizer, motor oil and more.







Water Conservation

Pollution not only impairs the water quality for habitat and recreation, it can also reduce the water available for reuse. Runoff allowed to soak into the ground is cleaned as it percolates through the soil, replenishing depleted groundwater supplies. Groundwater provides at least 50% of the total water for drinking and other indoor household activities in north and central Orange County. When land is covered with roads, parking lots, homes, etc., there is less land to take in the water and more hard surfaces over which the water can flow.

In Orange County, 60-70% of water used by residents and businesses goes to irrigation and other outdoor uses. Reusing rainwater to irrigate our lawn not only reduces the impact of water pollution from runoff, but it also is a great way to conserve our precious water resources and replenish our groundwater basin.

What is Low Impact Development (LID)?

Low Impact Development (LID) is a method of development that seeks to maintain the natural hydrologic character of an area. LID provides a more sustainable and pollution-preventative approach to water management.

New water quality regulations require implementation of LID in larger new developments and encourage implementation of LID and other sustainable practices in existing residential areas. Implementing modifications to your lawn or garden can reduce pollution in our environment, conserve water and reduce your water bill.



Permeable pavement allows water runoff to infiltrate through the soil and prevents most pollutants from reaching the storm drain system.

OPTIONS FOR RAINWATER HARVESTING AND REUSE

Rainwater harvesting is a great way to save money, prevent pollution and reduce potable water use. To harvest your rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option; these reduce runoff as well as encourage infiltration.

Downspout Disconnection/Redirection

Disconnecting downspouts from pipes running to the gutter prevents runoff from transporting pollutants to the storm drain. Once disconnected, downspouts can be redirected to rain gardens or other vegetated areas, or be connected to a rain barrel.

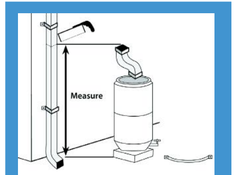
Rain Barrels

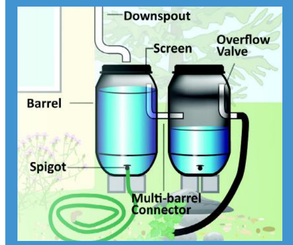
Rain barrels capture rainwater flow from roofs for reuse in landscape irrigation. Capacity of rain barrels needed for your home will depend on the amount of roof area and rainfall received. When purchasing your rain barrel, make sure it includes a screen, a spigot to siphon water for use, an overflow tube to allow for excess water to run out and a connector if you wish to connect multiple barrels to add capacity of water storage.

Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful, products are available to kill mosquito larvae, but that are harmless to animals and humans. Regular application of these products is essential. Please visit the Orange County Vector Control website for more information at www.ocvcd.org/mosquitoes3.php.

Rain Gardens

Rain gardens allow runoff to be directed from your roof downspout into a landscaped area. Vegetation and rocks in the garden will slow the flow of water to allow for infiltration into the soil. Plants and soil particles will absorb pollutants from the roof runoff. By utilizing a native plant palate, rain gardens can be maintained all year with minimal additional irrigation. These plants are adapted to the semi-arid climate of Southern California, require less water and can reduce your water bill.









Before modifying your yard to install a rain garden, please consult your local building and/or planning departments to ensure your garden plan follows pertinent building codes and ordinances. Besides codes and ordinances, some home owner associations also have guidelines for yard modifications. If your property is in hill areas or includes engineered slopes, please seek professional advice before proceeding with changes.



For information on how to disconnect a downspout or to install and maintain a rain barrel or rain garden at your home, please see the Los Angeles Rainwater Harvesting Program, A Homeowner's "How-To" Guide, November 2009 at www.larainwaterharvesting.org/

OTHER WATER CONSERVATION AND POLLUTION PREVENTION TECHNIQUES

Native Vegetation and Maintenance

"California Friendly" plants or native vegetation can significantly reduce water use. These plants often require far less fertilizers and pesticides, which are two significant pollutants found in Orange County waterways. Replacing water "thirsty" plants and grass types with water efficient natives is a great way to save water and reduce the need for potentially harmful pesticides and fertilizer.

Please see the California Friendly Garden Guide produced by the Metropolitan Water District of Southern California and associated Southern California Water Agencies for a catalog of California friendly plants and other garden resources at www.bewaterwise.com/Gardensoft.

Weed Free Yards

Weeds are water thieves. They often reproduce quickly and rob your yard of both water and nutrients. Weed your yard by hand if possible. If you use herbicides to control the weeds, use only the amount recommended on the label and never use it if rain is forecast within the next 48 hours.



Soil Amendments

Soil amendments such as green waste (e.g. grass clippings, compost, etc.) can be a significant source of nutrients and can help keep the soil near the roots of plants moist. However, they can cause algal booms if they get into our waterways, which reduces the amount of oxygen in the water and impacts most aquatic organisms. It is important to apply soil amendments more than 48 hours prior to predicted rainfall.

IRRIGATE EFFICIENTLY



Water runoff from sprinklers left on too long will carry pollutants into our waterways.

Smart Irrigation Controllers

Smart Irrigation Controllers have internal clocks as well as sensors that will turn off the sprinklers in response to environmental changes. If it is raining, too windy or too cold, the smart irrigation control sprinklers will automatically shut off.

Check with your local water agency for available rebates on irrigation controllers and smart timers.

- Aim your sprinklers at your lawn, not the sidewalk – By simply adjusting the direction of your sprinklers you can save water, prevent water pollution from runoff, keep your lawn healthy and save money.
- **Set a timer for your sprinklers** – lawns absorb the water they need to stay healthy within a few minutes of turning on the sprinklers. Time your sprinklers; when water begins running off your lawn, you can turn them off. Your timer can be set to water your lawn for this duration every time.
- **Water at Sunrise** – Watering early in the morning will reduce water loss due to evaporation. Additionally, winds tend to die down in the early morning so the water will get to the lawn as intended.
- **Water by hand** – Instead of using sprinklers, consider watering your yard by hand. Hand-watering ensures that all plants get the proper amount of water and you will prevent any water runoff, which wastes water and carries pollutants into our waterways.
- **Fix leaks** - Nationwide, households waste one trillion gallons of water a year to leaks – that is enough water to serve the entire state of Texas for a year. If your garden hose is leaking, replace the nylon or rubber hose washer and ensure a tight connection. Fix broken sprinklers immediately.

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, not properly disposing of used oil is illegal and can lead to fines. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain.

Help prevent water pollution by taking your used oil and oil filters to a used oil collection center. Most major automotive maintenance centers will accept up to five gallons of used motor oil at no cost. For a list of locations, please visit www.cleanup.org.



For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL (1-877-897-7455)** or visit **www.ocwatersheds.com.**

For information about the proper disposal of household hazardous waste, call the **Household Waste Hotline** at **1-877-89-SPILL (1-877-897-7455)** or visit **www.oclandfills.com.**

For additional information about the nearest oil recycling center, call the **Used Oil Program** at **1-800-CLEANUP** or visit **www.cleanup.org.**

RECYCLE USED OIL

emc/rev9/08

Help Prevent Ocean Pollution:

Tips for the Home Mechanic



PROJECT Pollution PREVENTION

The Ocean Begins at Your Front Door



Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Washwater, oil and residue from car washing should not flow into the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump soap, oil or dirty water into the ocean, so don't let it enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL**
(1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
at **1-877-89-SPILL**
(1-877-897-7455)

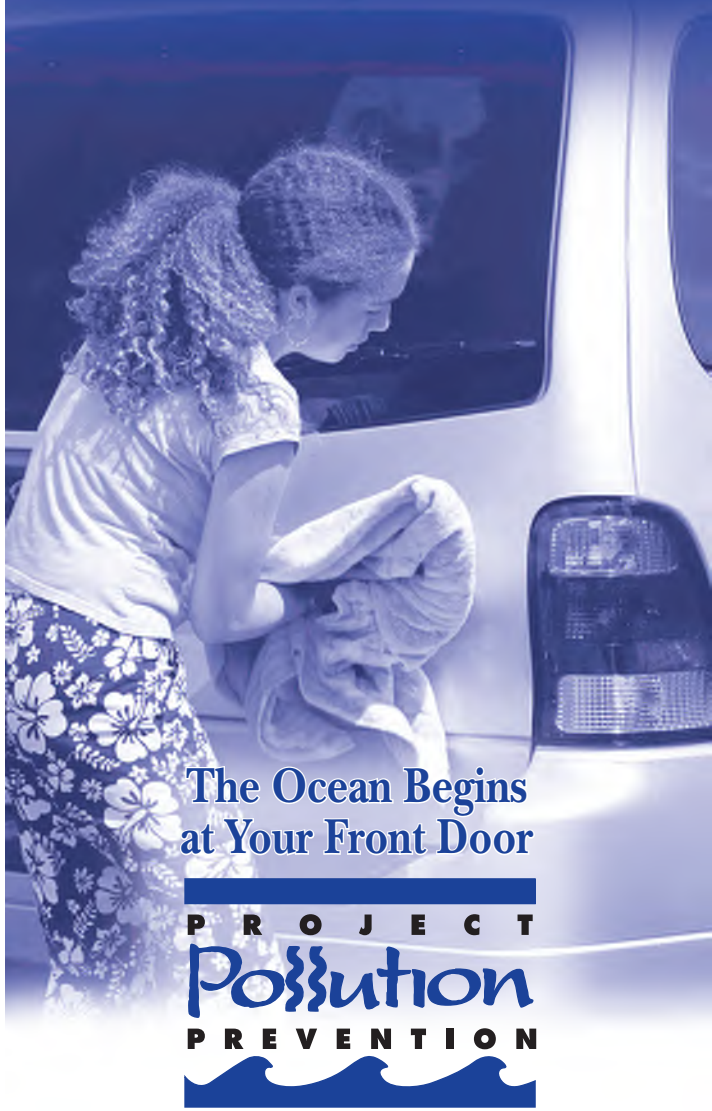
For emergencies, dial 911.

The tips contained in this brochure provide useful information about how you can keep soap, oil and washwater from car wash activities from entering the storm drain system. If you have other suggestions, please contact your city's stormwater representative or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Car Wash Fund-Raisers



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Car Wash Fund-Raisers

Before beginning your car wash fund-raiser

- Partner with a professional car wash and avoid the pollution that parking lot car washes can produce.



- Hold a meeting with all participants to explain the proper procedures that should be followed when washing cars.
- Remove all trash and debris from the car washing area.
- Select only soaps, cleaners or detergents labeled "non-toxic," "phosphate-free," or "biodegradable." The safest products for the environment are vegetable-based or citrus-based soaps. However, even these soaps can be toxic for the environment, so never let any products enter the street, gutter or storm drain.
- Do not use acid based wheel cleaners or engine degreasers.
- Select a site where the washwater can soak into grass, gravel, or be diverted to nearby landscaping. This will allow the washwater to filter through the vegetation and/or soil instead of flowing directly into a storm drain.
- Divert the washwater to an area where the water can pool and evaporate throughout the day, or arrange to dispose of the washwater down a sanitary sewer drain. For details, refer to Factsheet *IC24 Wastewater Disposal Guidelines located* at **www.ocwatersheds.com/StormWater/documents_bmp_existing_development.asp#res**
- If there is a storm drain on-site, block it with sandbags. At the end of the day, dispose of the sandbags by dumping the contents in an authorized landscaped area.



During the fund-raiser

- Never let any trash or washwater enter the street, gutter or storm drain.
- Shake car mats in a trash can or vacuum them. Do not shake dirt from car mats directly onto the ground.
- Use a bucket of soapy water to re-soap rags or sponges throughout the day rather than adding soap directly to them.
- Wring sponges and washrags into buckets, not the ground.
- Conserve water by using a spray nozzle with an automatic shut-off. Turn off the water or kink the hose when not in use.
- Always empty buckets into the sanitary sewer system (e.g. sinks or toilets) or a landscaped area rather than pouring the water on concrete or asphalt.

After the fund-raiser

- Remember to clean up. Have a volunteer walk the perimeter of the site to pick up trash and debris and dispose of it properly.

PROJECT Pollution PREVENTION



Did you know that just one quart of oil can pollute 250,000 gallons of water?

A clean ocean and healthy creeks, rivers, bays and beaches are important to Orange County. However, not properly disposing of used oil can lead to water pollution. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering the ocean. Help prevent water pollution by taking your used oil to a used oil collection center.

Included in this brochure is a list of locations that will accept up to five gallons of used motor oil at no cost. Many also accept used oil filters. Please contact the facility before delivering your used oil. This listing of companies is for your reference and does not constitute a recommendation or endorsement of the company.

Please note that used oil filters may not be disposed of with regular household trash. They must be taken to a household hazardous waste collection or recycling center in Anaheim, Huntington Beach, Irvine or San Juan Capistrano. For information about these centers, visit www.oclandfills.com.

Please do not mix your oil with other substances!

For more information, please call the Orange County Stormwater Program at 1-877-89-SPILL (1-877-897-7455) or visit www.watersheds.com.

For information about the proper disposal of household hazardous waste, call the Household Waste Hotline at (714) 834-6752 or visit www.oclandfills.com.

RECYCLE USED OIL

For additional information about the nearest oil recycling center, call the Used Oil Program at 1-800-CLEANUP or visit www.cleanup.org.

DTP113 Rev 8/03
printed on recycled paper

Help Prevent Ocean Pollution:

Recycle at Your Local Used Oil Collection Center



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

NORTH COUNTY

Used Oil Collection Centers

Anaheim

All Seasons Tire and Auto Center, Inc.
817 S Brookhurst St., Anaheim, CA 92804
(714)772-6090( )
CIWMB#: 30-C-03177

AutoZone #3317
423 N Anaheim Blvd., Anaheim, CA 92805
(714)776-0787( )
CIWMB#: 30-C-05263

AutoZone #5226
2145 W Lincoln Ave., Anaheim, CA 92801
(714)533-6599( )
CIWMB#: 30-C-04604

Bedard Automotive
3601 E Miraloma Ave., Anaheim, CA 92806
(714)528-1380( )
CIWMB#: 30-C-02205

Classic Chevrolet
1001 Weir Canyon Rd., Anaheim, CA 92807
(714)283-5400( )
CIWMB#: 30-C-05223

Econo Lube N' Tune #4
3201 W Lincoln Ave., Anaheim, CA 92801
(714)821-0128( )
CIWMB#: 30-C-01485

EZ Lube Inc - Savi Ranch #43
985 N Weir Canyon Rd., Anaheim, CA 92807
(714)556-1312( )
CIWMB#: 30-C-06011

Firestone Store #71C7
1200 S Magnolia Ave., Anaheim, CA 92804
(949)598-5520( )
CIWMB#: 30-C-05743

Great Western Lube Express
125 N Brookhurst St., Anaheim, CA 92801
(714)254-1300( )
CIWMB#: 30-C-05542

HR Pro Auto Service Center
3180 W Lincoln Ave., Anaheim, CA 92801
(714)761-4343( )
CIWMB#: 30-C-05927

Ira Newman Automotive Services
1507 N State College Blvd., Anaheim, CA 92806
(714)635-2392( )
CIWMB#: 30-C-01482

Jiffy Lube #1028
2400 W Ball Rd., Anaheim, CA 92804
(714)761-5211( )
CIWMB#: 30-C-00870

Jiffy Lube #1903
2505 E Lincoln Ave., Anaheim, CA 92806
(714)772-4000( )
CIWMB#: 30-C-05511

Jiffy Lube #2340
2181 W Lincoln Ave., Anaheim, CA 92801
(714)533-1000( )
CIWMB#: 30-C-04647

Kragen Auto Parts #1303
1088 N State College Blvd., Anaheim, CA 92806
(714)956-7351( )
CIWMB#: 30-C-03438

Kragen Auto Parts #1399
2245 W Ball Rd., Anaheim, CA 92804
(714)490-1274( )
CIWMB#: 30-C-04094

Kragen Auto Parts #1565
2072 Lincoln Ave., Anaheim, CA 92806
(714)502-6992( )
CIWMB#: 30-C-04078

Kragen Auto Parts #1582
3420 W Lincoln Ave., Anaheim, CA 92801
(714)828-7977( )
CIWMB#: 30-C-04103

Pep Boys #613
10912 Katella Ave., Anaheim, CA 92804
(714)638-0863( )
CIWMB#: 30-C-01756

Pep Boys #663
3030 W Lincoln Anaheim, CA 92801
(714)826-4810( )
CIWMB#: 30-C-03417

Pep Boys #809
8205 E Santa Ana Cyn Rd., Anaheim, CA 92808
(714)974-0105( )
CIWMB#: 30-C-03443

Pick Your Part
1235 S Beach Blvd., Anaheim, CA 92804
(714)527-1645( )
CIWMB#: 30-C-03744

PK Auto Performance
3106 W. Lincoln Ave., Anaheim, CA 92801
(714)826-2141( )
CIWMB#: 30-C-05628

Quick Change Lube and Oil
2731 W Lincoln Ave., Anaheim, CA 92801
(714)821-4464( )
CIWMB#: 30-C-04363

Saturn of Anaheim
1380 S Auto Center Dr., Anaheim, CA 92806
(714)648-2444( )
CIWMB#: 30-C-06332

Sun Tech Auto Service
105 S State College Blvd., Anaheim, CA 92806
(714)956-1389( )
CIWMB#: 30-C-06455

Vonic Truck Services
515 S Rose St., Anaheim, CA 92805
(714)533-3333( )
CIWMB#: 30-C-01142

Anaheim Hills

Anaheim Hills Car Wash & Lube
5810 E La Palma Ave., Anaheim Hills, CA 92807
(714)777-6605( )
CIWMB#: 30-C-01387

Brea

Firestone Store #27A9
891 E Imperial Hwy., Brea, CA 92821
(714)529-8404( )
CIWMB#: 30-C-01221

Oil Can Henry's
230 N Brea Blvd., Brea, CA 92821
(714)990-1900( )
CIWMB#: 30-C-04273

Buena Park

Firestone Store #71F7
6011 Orangethorpe Buena Park, CA 90620
(714)670-7912( )
CIWMB#: 30-C-01218

Firestone Store #71T8
8600 Beach Blvd., Buena Park, CA 90620
(714)827-5300( )
CIWMB#: 30-C-02121

Kragen Auto Parts #1204
5303 Beach Blvd., Buena Park, CA 90621
(714)994-1320( )
CIWMB#: 30-C-02623

Cypress

AutoZone #5521
5471 Lincoln Ave., Cypress, CA 90630
(714)995-4644( )
CIWMB#: 30-C-00836

Big O Tires
6052 Cerritos Ave., Cypress, CA 90630
(714)826-6334( )
CIWMB#: 30-C-04245

Econo Lube N' Tune #213
5497 Cerritos Ave., Cypress, CA 90630
(714)761-0456( )
CIWMB#: 30-C-06240

Jiffy Lube #851
4942 Lincoln Ave., Cypress, CA 90630
(626)965-9689( )
CIWMB#: 30-C-06182

M & N Coastline Auto & Tire Service
4005 Ball Rd., Cypress, CA 90630
(714)826-1001( )
CIWMB#: 30-C-04387

Masterlube #103
5904 Lincoln Cypress, CA 90630
(714)826-2323( )
CIWMB#: 30-C-01071

Masterlube #104
5971 Ball Rd., Cypress, CA 90630
(714)220-1555( )
CIWMB#: 30-C-04682

Metric Motors of Cypress
6042 Cerritos Ave., Cypress, CA 90630
(714)821-4702( )
CIWMB#: 30-C-05157

Fullerton

AutoZone #2898
146 N. Raymond Ave., Fullerton, CA 92831
(714)870-9772( )
CIWMB#: 30-C-04488

AutoZone #5522
1801 Orangethorpe W. Fullerton, CA 92833
(714)870-8286( )
CIWMB#: 30-C-06062

AutoZone #5523
102 N Euclid Fullerton, CA 92832
(714)870-8286( )
CIWMB#: 30-C-04755

EZ Lube #17
4002 N Harbor Blvd., Fullerton, CA 92835
(714)871-9980( )
CIWMB#: 30-C-03741

Firestone Store #27EH
1933 N Placentia Ave., Fullerton, CA 92831
(714)993-7100( )
CIWMB#: 30-C-02122

Fox Service Center
1018 W Orangethorpe Fullerton, CA 92833
(714)879-1430( )
CIWMB#: 30-C-02318

Fullerton College Automotive Technology
321 E Chapman Ave., Fullerton, CA 92832
(714)992-7275( )
CIWMB#: 30-C-03165

Kragen Auto Parts #0731
2978 Yorba Linda Fullerton, CA 92831
(714)996-4780( )
CIWMB#: 30-C-02628

Kragen Auto Parts #4133
904 W Orangethorpe Ave., Fullerton, CA 92832
(714)526-3570( )
CIWMB#: 30-C-06256

Pep Boys #642
1530 S Harbor Blvd., Fullerton, CA 92832
(714)870-0700( )
CIWMB#: 30-C-01755

Sunnyside 76 Car Care Center
2701 N Brea Blvd., Fullerton, CA 92835
(714)256-0773( )
CIWMB#: 30-C-01381

Garden Grove

76 Pro Lube Plus
9001 Trask Ave., Garden Grove, CA 92844
(714)393-0590( )
CIWMB#: 30-C-05276

AutoZone #5527
13190 Harbor Blvd., Garden Grove, CA 92843
(714)636-5665( )
CIWMB#: 30-C-04760

David Murray Shell
12571 Vly View St., Garden Grove, CA 92845
(714)898-0170( )
CIWMB#: 30-C-00547

Express Lube & Wash
8100 Lampson Ave., Garden Grove, CA 92841
(909)316-8261( )
CIWMB#: 30-C-06544

Firestone Store #7180
10081 Chapman Ave., Garden Grove, CA 92840
(714)530-4630( )
CIWMB#: 30-C-01224

Firestone Store #71W3
13961 Brookhurst St., Garden Grove, CA 92843
(714)590-2741( )
CIWMB#: 30-C-03690

Jiffy Lube #1991
13970 Harbor Blvd., Garden Grove, CA 92843
(714)554-0610( )
CIWMB#: 30-C-05400

Kragen Auto Parts #1251
13933 N Harbor Blvd., Garden Grove, CA 92843
(714)554-3780( )
CIWMB#: 30-C-02663

Kragen Auto Parts #1555
9851 Chapman Ave., Garden Grove, CA 92841
(714)741-8030( )
CIWMB#: 30-C-04079

Nissan of Grarden Grove
9670 Trask Ave., Garden Grove, CA 92884
(714)537-0900( )
CIWMB#: 30-C-06553

Toyota of Garden Grove
9444 Trask Ave., Garden Grove, CA 92844
(714)895-5595( )
CIWMB#: 30-C-06555

La Habra

AutoZone #5532
1200 W Imperial Hwy., La Habra, CA 90631
(562)694-5337( )
CIWMB#: 30-C-04784

Burch Ford
201 N Harbor Blvd., La Habra, CA 90631
(562)691-3225( )
CIWMB#: 30-C-05179

Firestone Store #2736
1071 S Beach Blvd., La Habra, CA 90631
(562)691-1731( )
CIWMB#: 30-C-01169

Kragen Auto Parts #1569
1621 W Whittier Blvd., La Habra, CA 90631
(562)905-2538( )
CIWMB#: 30-C-04076

Pep Boys #997
125 W Imperial Hwy., La Habra, CA 90631
(714)447-0601( )
CIWMB#: 30-C-04026

SpeeDee Oil Change & Tune-Up
1580 W Imperial Hwy., La Habra, CA 90631
(562)697-3513( )

Los Alamitos

Jiffy Lube #1740
3311 Katella Ave., Los Alamitos, CA 90720
(562)596-1827( )
CIWMB#: 30-C-03529

Midway City

Bolsa Transmission
8331 Bolsa Ave., Midway City, CA 92655
(714)799-6158( )
CIWMB#: 30-C-05768

Placentia

Advanced Auto & Diesel
144 S Bradford Placentia, CA 92870
(714)996-8222( )
CIWMB#: 30-C-06242

Castner's Auto Service
214 S. Bradford Ave., Placentia, CA 92870
(714)528-1311( )
CIWMB#: 30-C-06452

Econo Lube N' Tune
100 W Chapman Ave., Placentia, CA 92870
(714)524-0424( )
CIWMB#: 30-C-06454

Fairway Ford
1350 E Yorba Linda Blvd., Placentia, CA 92870
(714)524-1200( )
CIWMB#: 30-C-01863

Seal Beach

M & N Coastline Auto & Tire Service
12239 Seal Beach Blvd., Seal Beach, CA 90740
(714)826-1001( )
CIWMB#: 30-C-04433

Seal Beach Chevron
12541 Seal Beach Blvd., Seal Beach, CA 90740
(949)495-0774(14)
CIWMB#: 30-C-06425

Stanton

AutoZone #2806
11320 Beach Blvd., Stanton, CA 90680
(714)895-7665( )
CIWMB#: 30-C-04563

Joe's Auto Clinic
11763 Beach Blvd., Stanton, CA 90680
(714)891-7715( )
CIWMB#: 30-C-03253

Kragen Auto Parts #1742
11951 Beach Blvd., Stanton, CA 90680
(714)799-7574( )
CIWMB#: 30-C-05231

Scher Tire #20
7000 Katella Ave., Stanton, CA 90680
(714)892-9924( )
CIWMB#: 30-C-05907

USA 10 Minute Oil Change
8100 Lampson Ave., Stanton, CA 92841
(714)373-4432( )
CIWMB#: 30-C-05909

Westminster

AutoZone #5543
6611 Westminster Blvd., Westminster, CA 92683
(714)898-2898( )
CIWMB#: 30-C-04964

AutoZone #5544
8481 Westminster Blvd., Westminster, CA 92683
(714)891-3511( )
CIWMB#: 30-C-04966

City of Westminster Corporate Yard
14381 Olive St., Westminster, CA 92683
(714)895-2876(292)
CIWMB#: 30-C-02008

Honda World
13600 Beach Blvd., Westminster, CA 92683
(714)890-8900( )
CIWMB#: 30-C-03639

Jiffy Lube #1579
6011 Westminster Blvd., Westminster, CA 92683
(714)899-2727( )
CIWMB#: 30-C-02745

John's Brake & Auto Repair
13050 Hoover St., Westminster, CA 92683
(714)379-2088( )
CIWMB#: 30-C-05617

Kragen Auto Parts #0762
6562 Westminster Blvd., Westminster, CA 92683
(714)898-0810( )
CIWMB#: 30-C-02590

Midway City Sanitary District
14451 Cedarwood St., Westminster, CA 92683
(714)893-3553( )
CIWMB#: 30-C-01626

Pep Boys #653
15221 Beach Blvd., Westminster, CA 92683
(714)893-8544( )
CIWMB#: 30-C-03415

Yorba Linda

AutoZone #5545
18528 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)970-8933( )
CIWMB#: 30-C-04971

Econo Lube N' Tune
22270 La Palma Ave., Yorba Linda, CA 92887
(714)692-8394( )
CIWMB#: 30-C-06513

EZ Lube Inc. #41
17511 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)556-1312( )
CIWMB#: 30-C-05739

Firestone Store #27T3
18500 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)779-1966( )
CIWMB#: 30-C-01222

Jiffy Lube #1532
16751 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)528-2800( )
CIWMB#: 30-C-03777

Mike Schultz Import Service
4832 Eureka Ave., Yorba Linda, CA 92886
(714)528-4411( )
CIWMB#: 30-C-04313

This information was provided by the County of Orange Integrated Waste Management Department and the California Integrated Waste Management Board (CIWMB).



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as pest control can lead to water pollution if you're not careful. Pesticide treatments must be planned and applied properly to ensure that pesticides do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump pesticides into the ocean, so don't let it enter the storm drains. Pesticides can cause significant damage to our environment if used improperly. If you are thinking of using a pesticide to control a pest, there are some important things to consider.

For more information,
please call
University of California Cooperative
Extension Master Gardeners at
(714) 708-1646
or visit these Web sites:
www.uccemg.org
www.ipm.ucdavis.edu

For instructions on collecting a specimen sample visit the Orange County Agriculture Commissioner's website at:
http://www.ocagcomm.com/ser_lab.asp

To report a spill, call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
at 1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

Information From:
Cheryl Wilen, Area IPM Advisor; Darren Haver, Watershed Management Advisor; Mary Louise Flint, IPM Education and Publication Director; Pamela M. Geisel, Environmental Horticulture Advisor; Carolyn L. Unruh, University of California Cooperative Extension staff writer. Photos courtesy of the UC Statewide IPM Program and Darren Haver.

Funding for this brochure has been provided in full or in part through an agreement with the State Water Resources Control Board (SWRCB) pursuant to the Costa-Machado Water Act of 2000 (Prop. 13).

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Responsible Pest Control



Tips for Pest Control

Key Steps to Follow:

Step 1: **Correctly identify the pest (insect, weed, rodent, or disease) and verify that it is actually causing the problem.**



Three life stages of the common lady beetle, a beneficial insect.

This is important because beneficial insects are often mistaken for pests and sprayed with pesticides needlessly.

Consult with a Certified Nursery Professional at a local nursery or garden center or send a sample of the pest to the Orange County Agricultural Commissioner's Office.

Determine if the pest is still present – even though you see damage, the pest may have left.

Step 2: **Determine how many pests are present and causing damage.**



Small pest populations may be controlled more safely using non-pesticide techniques. These include removing food sources, washing off leaves with a strong stream of water, blocking entry into the home using caulking and replacing problem plants with ones less susceptible to pests.

Integrated Pest Management (IPM) usually combines several least toxic pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment.

UC CE University of California Cooperative Extension

Step 3: **If a pesticide must be used, choose the least toxic chemical.**

Obtain information on the least toxic pesticides that are effective at controlling the target pest from the UC Statewide Integrated Pest Management (IPM) Program's Web site at www.ipm.ucdavis.edu.

Seek out the assistance of a Certified Nursery Professional at a local nursery or garden center when selecting a pesticide. Purchase the smallest amount of pesticide available.

Apply the pesticide to the pest during its most vulnerable life stage. This information can be found on the pesticide label.

Step 4: **Wear appropriate protective clothing.**

Follow pesticide labels regarding specific types of protective equipment you should wear. Protective clothing should always be washed separately from other clothing.

Step 5: **Continuously monitor external conditions when applying pesticides such as weather, irrigation, and the presence of children and animals.**

Never apply pesticides when rain is predicted within the next 48 hours. Also, do not water after applying pesticides unless the directions say it is necessary.

Apply pesticides when the air is still; breezy conditions may cause the spray or dust to drift away from your targeted area.

In case of an emergency call 911 and/or the regional poison control number at (714) 634-5988 or (800) 544-4404 (CA only).

For general questions you may also visit www.calpoison.org.

Step 6: **In the event of accidental spills, sweep up or use an absorbent agent to remove any excess pesticides. Avoid the use of water.**

Be prepared. Have a broom, dust pan, or dry absorbent material, such as cat litter, newspapers or paper towels, ready to assist in cleaning up spills.

Contain and clean up the spill right away. Place contaminated materials in a doubled plastic bag. All materials used to clean up the spill should be properly disposed of according to your local Household Hazardous Waste Disposal site.

Step 7: **Properly store and dispose of unused pesticides.**



Purchase Ready-To-Use (RTU) products to avoid storing large concentrated quantities of pesticides.

Store unused chemicals in a locked cabinet.

Unused pesticide chemicals may be disposed of at a Household Hazardous Waste Collection Center.

Empty pesticide containers should be triple rinsed prior to disposing of them in the trash.

Household Hazardous Waste Collection Center
(714) 834-6752
www.oclandfills.com

PROJECT Pollution PREVENTION

Sewage Spill Regulatory Requirements

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts.

Here are the pertinent codes, fines, and agency contact information that apply.

Orange County Stormwater Program
24 Hour Water Pollution Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

- County and city water quality ordinances prohibit discharges containing pollutants.

Orange County Health Care Agency Environmental Health
(714) 433-6419

California Health and Safety Code, Sections 5410-5416

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - must immediately notify the local health agency of the discharge.
  - shall reimburse the local health agency for services that protect the public's health and safety (water-contact receiving waters).
  - who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

Regional Water Quality Control Board
Santa Ana Region (951) 782-4130
San Diego Region (858) 467-2952

- Requires the prevention, mitigation, response to and reporting of sewage spills.

California Office of Emergency Services
(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271
California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters **shall immediately notify the Office of Emergency Services.**
- Any person who fails to provide the notice required by this section is **guilty of a misdemeanor** and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

DTP113 Rev 4/06
printed on recycled paper

Sewage Spill
Reference Guide

Your Responsibilities as a Private Property Owner

Residences
Businesses
Homeowner/Condominium Associations
Federal and State Complexes
Military Facilities



Orange County Sanitation District

Health Care Agency
Environmental Health

PROJECT Pollution PREVENTION
www.ocwatersheds.com

This brochure was designed courtesy of the Orange County Sanitation District (OCSD). For additional information, call (714) 962-2411, or visit their website at www.ocsd.com

What is a Sewage Spill?

Sewage spills occur when the wastewater being transported via underground pipes overflows through a manhole, cleanout or broken pipe. Sewage spills can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways and beaches.

Common Causes of Sewage Spills

Grease builds up inside and eventually blocks sewer pipes. Grease gets into the sewer from food establishments, household drains, as well as from poorly maintained commercial grease traps and interceptors.

Structure problems caused by tree roots in the lines, broken/cracked pipes, missing or broken cleanout caps or undersized sewers can cause blockages.

Infiltration and inflow (I/I) impacts pipe capacity and is caused when groundwater or rainwater enters the sewer system through pipe defects and illegal connections.

You Are Responsible for a Sewage Spill Caused by a Blockage or Break in Your Sewer Lines!

Time is of the essence in dealing with sewage spills. You are required to **immediately**:

Control and minimize the spill. Keep spills contained on private property and out of gutters, storm drains and public waterways by shutting off or not using the water.

Use sandbags, dirt and/or plastic sheeting to prevent sewage from entering the storm drain system.

Clear the sewer blockage. Always wear gloves and wash your hands. It is recommended that a plumbing professional be called for clearing blockages and making necessary repairs.

Always notify your city sewer/public works department or public sewer district of sewage spills. If the spill enters the storm drains also notify the Health Care Agency. In addition, if it exceeds 1,000 gallons notify the Office of Emergency Services. Refer to the numbers listed in this brochure.



Overflowing cleanout pipe located on private property

You Could Be Liable

Allowing sewage from your home, business or property to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up and enforcement efforts. See Regulatory Codes & Fines section for pertinent codes and fines that apply.

What to Look For

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas.

Look for:

- Drain backups inside the building.
- Wet ground and water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains.
- Unusual odorous wet areas: sidewalks, external walls or ground/landscape around a building.

Caution

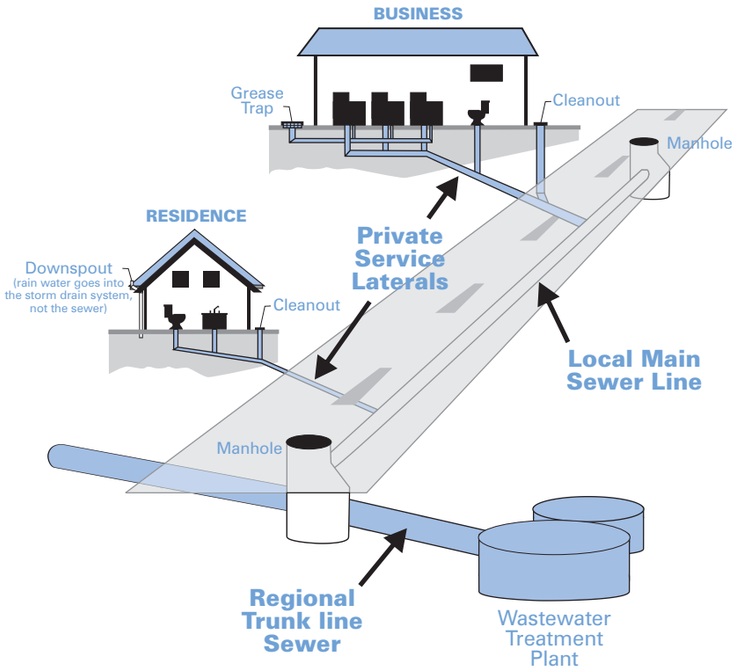
Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

If You See a Sewage Spill Occurring, Notify Your City Sewer/Public Works Department or Public Sewer District IMMEDIATELY!

How a Sewer System Works

A property owner's sewer pipes are called service laterals and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer (including the area under the street). These laterals are the responsibility of the property owner and must be maintained by the property owner. Many city agencies have adopted ordinances requiring maintenance of service laterals. Check with your city sewer/local public works department for more information.

Operation and maintenance of **local and regional sewer lines** are the responsibility of the city sewer/public works departments and public sewer districts.



How You Can Prevent Sewage Spills

1. **Never put grease down garbage disposals, drains or toilets.**
2. **Perform periodic cleaning to eliminate grease, debris and roots in your service laterals.**
3. **Repair any structural problems in your sewer system and eliminate any rainwater infiltration/inflow leaks into your service laterals.**



Preventing Grease Blockages

The drain is not a dump! Recycle or dispose of grease properly and never pour grease down the drain.

Homeowners should mix fats, oils and grease with absorbent waste materials such as paper, coffee grounds, or kitty litter and place it in the trash. Wipe food scraps from plates and pans and dump them in the trash.

Restaurants and commercial food service establishments should always use "Kitchen Best Management Practices." These include:

- Collecting all cooking grease and liquid oil from pots, pans and fryers in covered grease containers for recycling.
- Scraping or dry-wiping excess food and grease from dishes, pots, pans and fryers into the trash.
- Installing drain screens on all kitchen drains.
- Having spill kits readily available for cleaning up spills.
- Properly maintaining grease traps or interceptors by having them serviced regularly. Check your local city codes.

Orange County Agency Responsibilites

- **City Sewer/Public Works Departments—** Responsible for protecting city property and streets, the local storm drain system, sewage collection system and other public areas.
- **Public Sewer/Sanitation District—** Responsible for collecting, treating and disposing of wastewater.
- **County of Orange Health Care Agency—** Responsible for protecting public health by closing ocean/bay waters and may close food-service businesses if a spill poses a threat to public health.
- **Regional Water Quality Control Boards—** Responsible for protecting State waters.
- **Orange County Stormwater Program—** Responsible for preventing harmful pollutants from being discharged or washed by stormwater runoff into the municipal storm drain system, creeks, bays and the ocean.

You Could Be Liable for Not Protecting the Environment

Local and state agencies have legal jurisdiction and enforcement authority to ensure that sewage spills are remedied.

They may respond and assist with containment, relieving pipe blockages, and/or clean-up of the sewage spill, especially if the spill is flowing into storm drains or onto public property.

A property owner may be charged for costs incurred by these agencies responding to spills from private properties.



Report Sewage Spills!

City Sewer/Public Works Departments

Aliso Viejo	(949) 425-2500
Anaheim	(714) 765-6860
Brea	(714) 990-7691
Buena Park	(714) 562-3655
Costa Mesa	(949) 645-8400
Cypress	(714) 229-6760
Dana Point	(949) 248-3562
Fountain Valley	(714) 593-4600
Fullerton	(714) 738-6897
Garden Grove	(714) 741-5375
Huntington Beach	(714) 536-5921
Irvine	(949) 453-5300
Laguna Beach	(949) 497-0765
Laguna Hills	(949) 707-2650
Laguna Niguel	(949) 362-4337
Laguna Woods	(949) 639-0500
La Habra	(562) 905-9792
Lake Forest	(949) 461-3480
La Palma	(714) 690-3310
Los Alamitos	(562) 431-3538
Mission Viejo	(949) 831-2500
Newport Beach	(949) 644-3011
Orange	(714) 532-6480
Orange County	(714) 567-6363
Placentia	(714) 993-8245
Rancho Santa Margarita	(949) 635-1800
San Clemente	(949) 366-1553
San Juan Capistrano	(949) 443-6363
Santa Ana	(714) 647-3380
Seal Beach	(562) 431-2527
Stanton	(714) 379-9222
Tustin	(714) 962-2411
Villa Park	(714) 998-1500
Westminster	(714) 893-3553
Yorba Linda	(714) 961-7170

Public Sewer/Water Districts

Costa Mesa Sanitary District	(714) 393-4433/ (949) 645-8400
El Toro Water District	(949) 837-0660
Emerald Bay Service District	(949) 494-8571
Garden Grove Sanitary District	(714) 741-5375
Irvine Ranch Water District	(949) 453-5300
Los Alamitos/Rossmoor Sewer District	(562) 431-2223
Midway City Sanitary District (Westminster)	(714) 893-3553
Moulton Niguel Water District	(949) 831-2500
Orange County Sanitation District	(714) 962-2411
Santa Margarita Water District	(949) 459-6420
South Coast Water District	(949) 499-4555
South Orange County Wastewater Authority	(949) 234-5400
Sunset Beach Sanitary District	(562) 493-9932
Trabuco Canyon Sanitary District	(949) 858-0277
Yorba Linda Water District	(714) 777-3018

Other Agencies

Orange County Health Care Agency	(714) 433-6419
Office of Emergency Services	(800) 852-7550



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.



- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.



- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit **www.ipm.ucdavis.edu**.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oclandfills.com



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as painting can lead to water pollution if you're not careful. Paint must be used, stored and disposed of properly to ensure that it does not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump paint into the ocean, so don't let it enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline
at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while using, storing and disposing of paint. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Projects Using Paint



Tips for Projects Using Paint

Paint can cause significant damage to our environment. Whether you hire a contractor or do it yourself, it is important to follow these simple tips when purchasing, using, cleaning, storing and disposing of paint.

Purchasing Paint

- Measure the room or object to be painted, then buy only the amount needed.
- Whenever possible, use water-based paint since it usually does not require hazardous solvents such as paint thinner for cleanup.

Painting

- Use only one brush or roller per color of paint to reduce the amount of water needed for cleaning.
- Place open paint containers or trays on a stable surface and in a position that is unlikely to spill.
- Always use a tarp under the area or object being painted to collect paint drips and contain spills.

Cleaning

- Never clean brushes or rinse paint containers in the street, gutter or storm drain.
- For oil-based products, use as much of the paint on the brushes as possible. Clean brushes with thinner. To reuse thinner, pour it through a fine filter (e.g. nylon, metal gauze or filter paper) to remove solids such as leftover traces of paint.
- For water-based products, use as much of the paint on the brushes as possible, then rinse in the sink.
- Collect all paint chips and dust. Chips and dust from marine paints or paints containing lead, mercury or tributyl tin are hazardous waste. Sweep up and dispose of at a Household Hazardous Waste Collection Center (HHWCC).

Storing Paint

- Store paint in a dry location away from the elements.
- Store leftover water-based paint, oil-based paint and solvents separately in original or clearly marked containers.
- Avoid storing paint cans directly on cement floors. The bottom of the can will rust much faster on cement.
- Place the lid on firmly and store the paint can upside-down to prevent air from entering. This will keep the paint usable longer. Oil-based paint is usable for up to 15 years. Water-based paint remains usable for up to 10 years.

Alternatives to Disposal

- Use excess paint to apply another coat, for touch-ups, or to paint a closet, garage, basement or attic.
- Give extra paint to friends or family. Extra paint can also be donated to a local theatre group, low-income housing program or school.
- Take extra paint to an exchange program such as the **"Stop & Swap"** that allows you to drop off or pick up partially used home care products free of charge. **"Stop & Swap"** programs are available at most HHWCCs.
- For HHWCC locations and hours, call **(714) 834-6752** or visit **www.oclandfills.com**.



Disposing of Paint

- Never put wet paint in the trash.

For water-based paint:

- If possible, brush the leftover paint on cardboard or newspaper. Otherwise, allow the paint to dry in the can with the lid off in a well-ventilated area protected from the elements, children and pets. Stirring the paint every few days will speed up the drying.
- Large quantities of extra paint should be taken to a HHWCC.
- Once dried, paint and painted surfaces may be disposed of in the trash. When setting a dried paint can out for trash collection, leave the lid off so the collector will see that the paint has dried.

For oil-based paint:

- Oil-based paint is a household hazardous waste. All leftover paint should be taken to a HHWCC.

Aerosol paint:

- Dispose of aerosol paint cans at a HHWCC.

Spills

- Never hose down pavement or other impermeable surfaces where paint has spilled.
- Clean up spills immediately by using an absorbent material such as cat litter. Cat litter used to clean water-based paint spills can be disposed of in the trash. When cleaning oil-based paint spills with cat litter, it must be taken to a HHWCC.
- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at **(714) 567-6363** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION



Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, not properly disposing of household hazardous waste can lead to water pollution. Batteries, electronics, paint, oil, gardening chemicals, cleaners and other hazardous materials cannot be thrown in the trash. They also must never be poured or thrown into yards, sidewalks, driveways, gutters or streets. Rain or other water could wash the materials into the storm drain and eventually into our waterways and the ocean. In addition, hazardous waste must not be poured in the sanitary sewers (sinks and toilets).

NEVER DISPOSE OF HOUSEHOLD HAZARDOUS WASTE IN THE TRASH, STREET, GUTTER, STORM DRAIN OR SEWER.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To Report Illegal Dumping of Household Hazardous Waste call 1-800-69-TOXIC

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

RECYCLE USED OIL

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Proper Disposal of Household Hazardous Waste



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

ORANGE COUNTY

Pollution Prevention

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered to be "household hazardous waste" or "HHW." HHW can be found throughout your home, including the bathroom, kitchen, laundry room and garage.

WHEN POSSIBLE, USE NON-HAZARDOUS OR LESS-HAZARDOUS PRODUCTS.

Disposal of HHW down the drain, on the ground, into storm drains, or in the trash is illegal and unsafe.

Proper disposal of HHW is actually easy. Simply drop them off at a Household Hazardous Waste Collection Center (HHWCC) for free disposal and recycling. Many materials including anti-freeze, latex-based paint, motor oil and batteries can be recycled. Some centers have a "Stop & Swap" program that lets you take partially used home, garden, and automobile products free of charge. There are four HHWCCs in Orange County:

Anaheim:.....1071 N. Blue Gum St
Huntington Beach:.....17121 Nichols St
Irvine:..... 6411 Oak Canyon
San Juan Capistrano:... 32250 La Pata Ave

Centers are open Tuesday-Saturday, 9 a.m.-3 p.m. Centers are closed on rainy days and major holidays. For more information, call **(714) 834-6752** or visit **www.oclandfills.com.**

Common household hazardous wastes

- Batteries
- Paint and paint products
- Adhesives
- Drain openers
- Household cleaning products
- Wood and metal cleaners and polishes
- Pesticides
- Fungicides/wood preservatives
- Automotive products (antifreeze, motor oil, fluids)
- Grease and rust solvents
- Fluorescent lamps
- Mercury (thermometers & thermostats)
- All forms of electronic waste including computers and microwaves
- Pool & spa chemicals
- Cleaners
- Medications
- Propane (camping & BBQ)
- Mercury-containing lamps
- Television & monitors (CRTs, flatscreens)

Tips for household hazardous waste

- Never dispose of HHW in the trash, street, gutter, storm drain or sewer.
- Keep these materials in closed, labeled containers and store materials indoors or under a cover.
- When possible, use non-hazardous products.
- Reuse products whenever possible or share with family and friends.
- Purchase only as much of a product as you'll need. Empty containers may be disposed of in the trash.
- HHW can be harmful to humans, pets and the environment. Report emergencies to 911.





Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Pet waste and pet care products can be washed into the storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never put pet waste or pet care products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline
1-877-89-SPILL (1-877-897-7455).

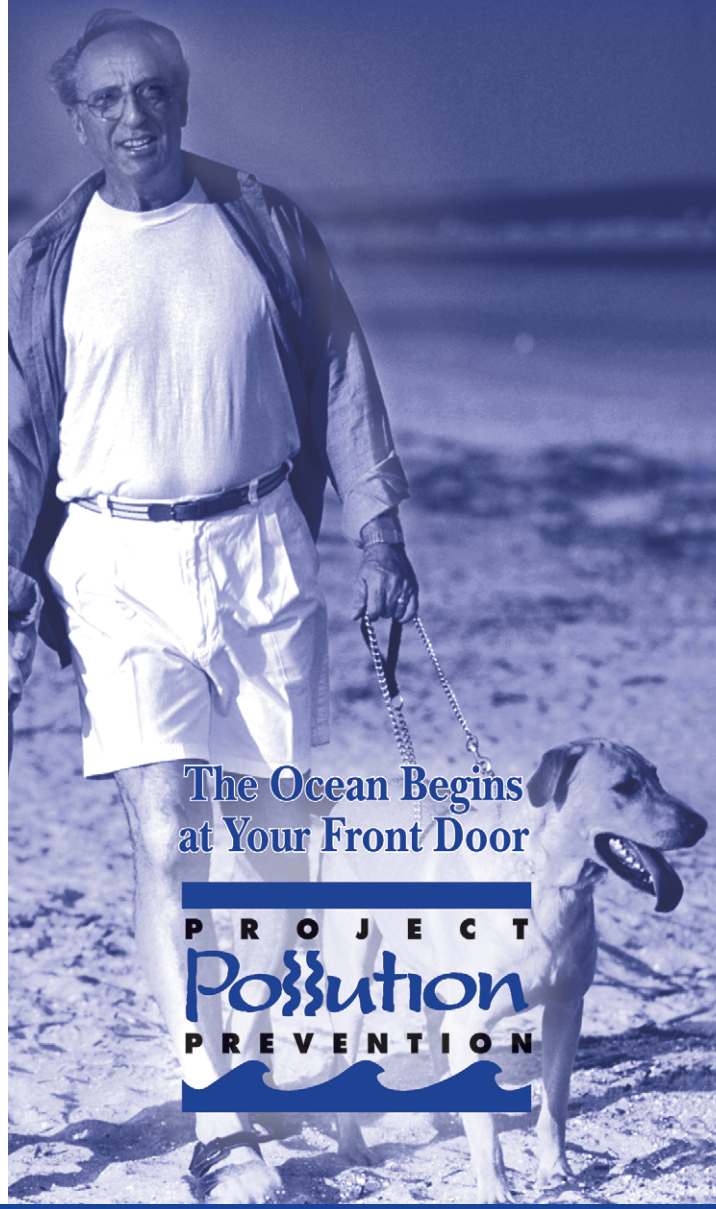
For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while caring for your pet. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Pet Care



Tips for Pet Care

Never let any pet care products or washwater run off your yard and into the street, gutter or storm drain.

Washing Your Pets

Even biodegradable soaps and shampoos can be harmful to marine life and the environment.

- If possible, bathe your pets indoors using less-toxic shampoos or have your pet professionally groomed. Follow instructions on the products and clean up spills.

- If you bathe your pet outside, wash it on your lawn or another absorbent/ permeable surface to keep the washwater from running into the street, gutter or storm drain.



Flea Control

- Consider using oral or topical flea control products.

- If you use flea control products such as shampoos, sprays or collars, make sure to dispose of any unused products at a Household Hazardous Waste Collection Center. For location information, call **(714) 834-6752**.



Why You Should Pick Up After Your Pet

It's the law! Every city has an ordinance requiring you to pick up after your pet. Besides being a nuisance, pet waste can lead to water pollution, even if you live inland. During rainfall, pet waste left outdoors can wash into storm drains. This waste flows directly into our waterways and the ocean where it can harm human health, marine life and the environment.



As it decomposes, pet waste demands a high level of oxygen from water. This decomposition can contribute to killing marine life by reducing the amount of dissolved oxygen available to them.



Have fun with your pets, but please be a responsible pet owner by taking care of them and the environment.

- Take a bag with you on walks to pick up after your pet.

- Dispose of the waste in the trash or in a toilet.

PROJECT Pollution PREVENTION



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Home improvement projects and work sites must be maintained to ensure that building materials do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump building materials into the ocean, so don't let them enter the storm drains. Follow these tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while performing home improvement projects. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

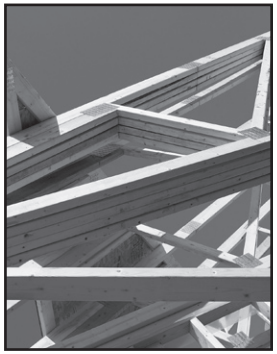
Tips for Home Improvement Projects



Tips for Home Improvement Projects

Home improvement projects can cause significant damage to the environment. Whether you hire a contractor or work on the house yourself, it is important to follow these simple tips while renovating, remodeling or improving your home:

General Construction



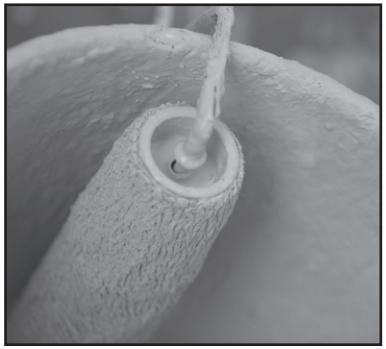
- Schedule projects for dry weather.
- Keep all construction debris away from the street, gutter and storm drain.
- Store materials under cover with temporary roofs or plastic sheets to eliminate or reduce the possibility that rainfall, runoff or wind will carry materials from the project site to the street, storm drain or adjacent properties.

Building Materials

- Never hose materials into a street, gutter or storm drain.
- Exposed piles of construction material should not be stored on the street or sidewalk.
- Minimize waste by ordering only the amount of materials needed to complete the job.
- Do not mix more fresh concrete than is needed for each project.
- Wash concrete mixers and equipment in a designated washout area where the water can flow into a containment area or onto dirt.
- Dispose of small amounts of dry excess materials in the trash. Powdery waste, such as dry concrete, must be properly contained within a box or bag prior to disposal. Call your local trash hauler for weight and size limits.

Paint

- Measure the room or object to be painted, then buy only the amount needed.
- Place the lid on firmly and store the paint can upside-down in a dry location away from the elements.
- Tools such as brushes, buckets and rags should never be washed where excess water can drain into the street, gutter or storm drain. All tools should be rinsed in a sink connected to the sanitary sewer.
- When disposing of paint, never put wet paint in the trash.
- Dispose of water-based paint by removing the lid and letting it dry in the can. Large amounts must be taken to a Household Hazardous Waste Collection Center (HHWCC).



- Oil-based paint is a household hazardous waste. All leftover paint should be taken to a HHWCC.
- For HHWCC locations and hours, call **(714) 834-6752** or visit **www.oclandfills.com**.

Erosion Control

- Schedule grading and excavation projects for dry weather.
- When temporarily removing soil, pile it in a contained, covered area where it cannot spill into the street, or obtain the required temporary encroachment or street closure permit and follow the conditions instructed by the permit.
- When permanently removing large quantities of soil, a disposal location must be found prior to excavation. Numerous businesses are available to handle disposal needs. For disposal options, visit **www.ciwmb.ca.gov/SWIS**.
- Prevent erosion by planting fast-growing annual and perennial grasses. They will shield and bind the soil.

Recycle

- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry (bricks, concrete, etc.), carpet, plastic, pipes (plastic, metal and clay), drywall, rocks, dirt and green waste.



- For a listing of construction and demolition recycling locations in your area, visit **www.ciwmb.ca.gov/recycle.**

Spills

- Clean up spills immediately by using an absorbent material such as cat litter, then sweep it up and dispose of it in the trash.
- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at **(714) 567-6363** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION

- For sites located on or within 50 feet of a steep slope (15% or greater), do not irrigate landscape within three days of a storm event to avoid potential geotechnical instability.[2]
- Implement Integrated Pest Management practices.

For additional guidelines and requirements, refer to the Los Angeles County Department of Health Services.

Maintenance Requirements

Maintain irrigation areas to remove trash and debris and loose vegetation. Rehabilitate areas of bare soil. If a rain or pressure sensor is installed, it should be checked periodically to ensure proper function. Inspect and maintain irrigation equipment and components to ensure proper functionality. Clean equipment as necessary to prevent algae growth and vector breeding. Maintenance agreements between LACDPW and the owner/operator may be required. Failure to properly maintain building and property may subject the property owner to citation.

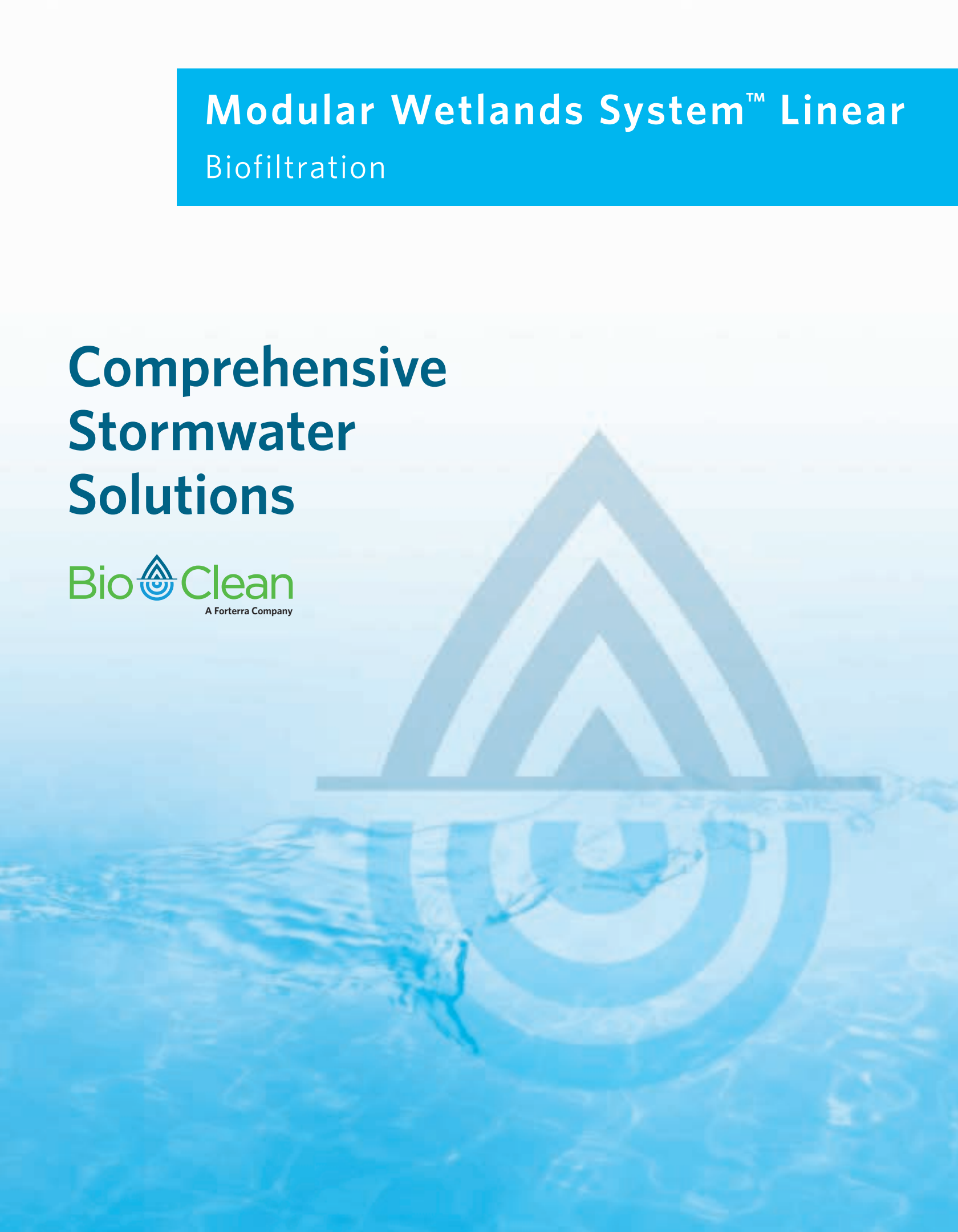
[2] As determined by the City of Los Angeles, Building and Safety Division

Modular Wetlands System™ Linear

Biofiltration

Comprehensive Stormwater Solutions

Bio Clean
A Forterra Company



OVERVIEW

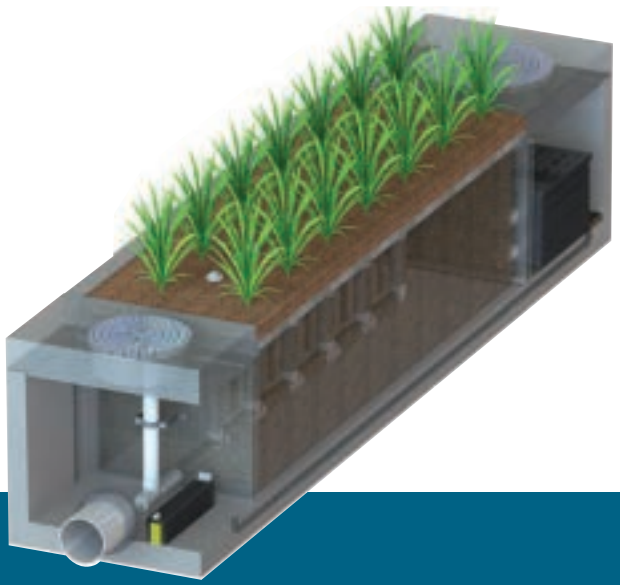
The Bio Clean Modular Wetlands System™ Linear (MWS Linear) represents a pioneering breakthrough in stormwater technology as the only biofiltration system to utilize patented horizontal flow, allowing for a smaller footprint and higher treatment capacity. While most biofilters use little or no pretreatment, the MWS Linear incorporates an advanced pretreatment chamber that includes separation and pre-filter cartridges. In this chamber, sediment and hydrocarbons are removed from runoff before entering the biofiltration chamber, in turn reducing maintenance costs and improving performance.

The Urban Impact

For hundreds of years, natural wetlands surrounding our shores have played an integral role as nature's stormwater treatment system. But as our cities grow and develop, these natural wetlands have perished under countless roads, rooftops, and parking lots.

Plant A Wetland

Without natural wetlands, our cities are deprived of water purification, flood control, and land stability. Modular Wetlands and the MWS Linear re-establish nature's presence and rejuvenate waterways in urban areas.



PERFORMANCE

The MWS Linear continues to outperform other treatment methods with superior pollutant removal for TSS, heavy metals, nutrients, hydrocarbons, and bacteria. Since 2007 the MWS Linear has been field tested on numerous sites across the country. With its advanced pretreatment chamber and innovative horizontal flow biofilter, the system is able to effectively remove pollutants through a combination of physical, chemical, and biological filtration processes. With the same biological processes found in natural wetlands, the MWS Linear harnesses nature's ability to process, transform, and remove even the most harmful pollutants.

66% REMOVAL OF DISSOLVED ZINC	**69%** REMOVAL OF TOTAL ZINC	**38%** REMOVAL OF DISSOLVED COPPER	**64%** REMOVAL OF TOTAL PHOSPHORUS	
45% REMOVAL OF NITROGEN	**50%** REMOVAL OF TOTAL COPPER	**95%** REMOVAL OF MOTOR OIL	**67%** REMOVAL OF ORTHO PHOSPHORUS	**85%** REMOVAL OF TSS

APPROVALS

The MWS Linear has successfully met years of challenging technical reviews and testing from some of the most prestigious and demanding agencies in the nation and perhaps the world.

WASHINGTON STATE TAPE APPROVED

The MWS Linear is approved for General Use Level Designation (GULD) for Basic, Enhanced, and Phosphorus treatment at 1 gpm/ft^2 loading rate. The highest performing BMP on the market for all main pollutant categories.

DEQ ASSIGNMENT

The Virginia Department of Environmental Quality assigned the MWS Linear, the highest phosphorus removal rating for manufactured treatment devices to meet the new Virginia Stormwater Management Program (VSMP) Regulation technical criteria.

MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED

Granted Environmental Site Design (ESD) status for new construction, redevelopment, and retrofitting when designed in accordance with the design manual.

MASTEP EVALUATION

The University of Massachusetts at Amherst – Water Resources Research Center issued a technical evaluation report noting removal rates up to 84% TSS, 70% total phosphorus, 68.5% total zinc, and more.

RHODE ISLAND DEM APPROVED

Approved as an authorized BMP and noted to achieve the following minimum removal efficiencies: 85% TSS, 60% pathogens, 30% total phosphorus, and 30% total nitrogen.

ADVANTAGES

- HORIZONTAL FLOW BIOFILTRATION
- GREATER FILTER SURFACE AREA
- PRETREATMENT CHAMBER
- PATENTED PERIMETER VOID AREA
- FLOW CONTROL
- NO DEPRESSED PLANTER AREA
- AUTO DRAINDOWN MEANS NO MOSQUITO VECTOR

OPERATION

The MWS Linear is the most efficient and versatile biofiltration system on the market, and it is the only system with horizontal flow which improves performance, reduces footprint, and minimizes maintenance. Figure 1 and Figure 2 illustrate the invaluable benefits of horizontal flow and the multiple treatment stages.

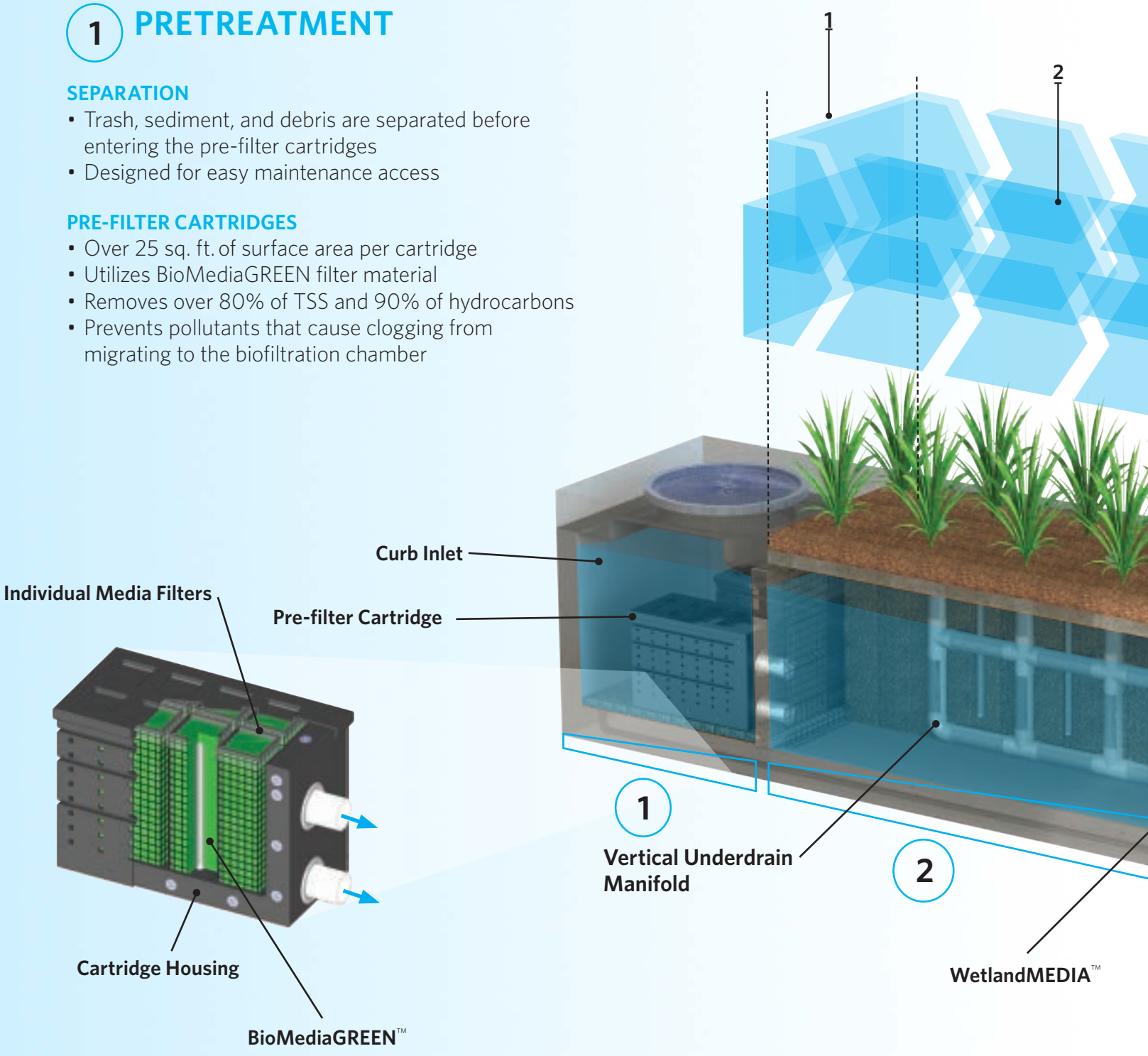
1 PRETREATMENT

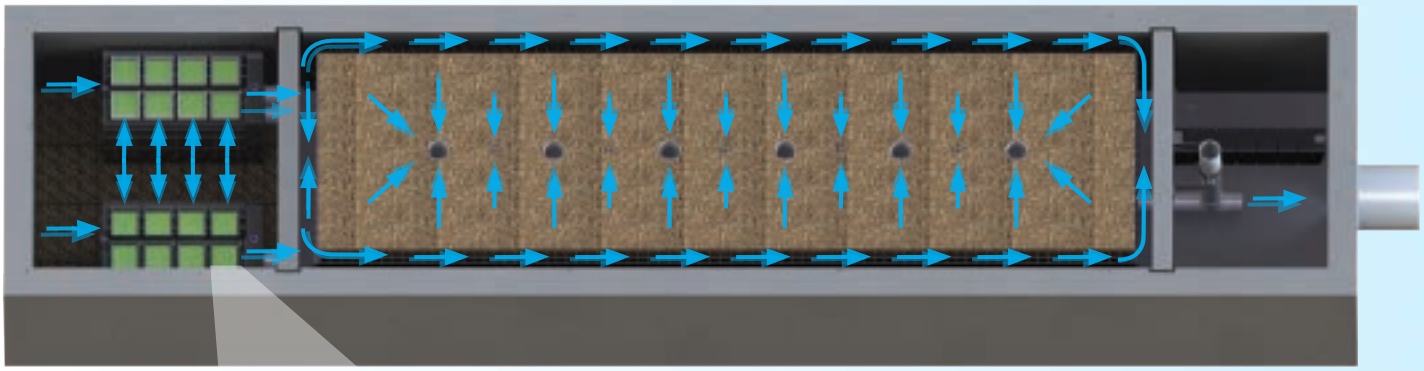
SEPARATION

- Trash, sediment, and debris are separated before entering the pre-filter cartridges
- Designed for easy maintenance access

PRE-FILTER CARTRIDGES

- Over 25 sq. ft. of surface area per cartridge
- Utilizes BioMediaGREEN filter material
- Removes over 80% of TSS and 90% of hydrocarbons
- Prevents pollutants that cause clogging from migrating to the biofiltration chamber





2x to 3x more surface area than traditional downward flow bioretention systems.

Figure 2, Top View



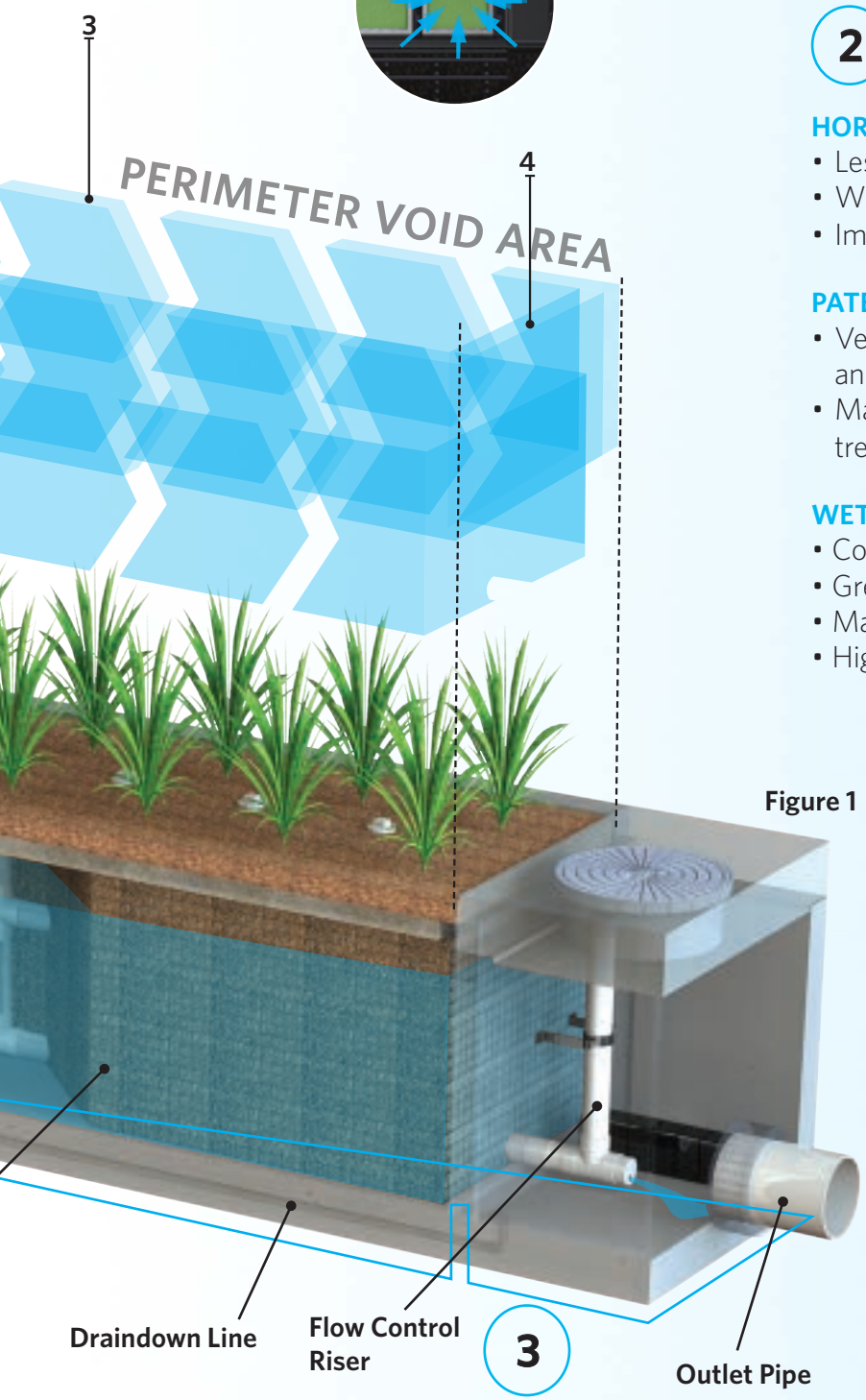


Figure 1

2 BIOFILTRATION

HORIZONTAL FLOW

- Less clogging than downward flow biofilters
- Water flow is subsurface
- Improves biological filtration

PATENTED PERIMETER VOID AREA

- Vertically extends void area between the walls and the WetlandMEDIA on all four sides
- Maximizes surface area of the media for higher treatment capacity

WETLANDMEDIA

- Contains no organics and removes phosphorus
- Greater surface area and 48% void space
- Maximum evapotranspiration
- High ion exchange capacity and lightweight

3 DISCHARGE

FLOW CONTROL

- Orifice plate controls flow of water through WetlandMEDIA to a level lower than the media's capacity
- Extends the life of the media and improves performance

DRAINDOWN FILTER

- The draindown is an optional feature that completely drains the pretreatment chamber
- Water that drains from the pretreatment chamber between storm events will be treated





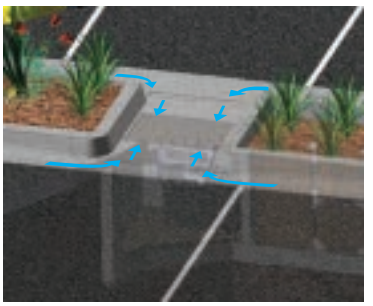
CONFIGURATIONS

The MWS Linear is the preferred biofiltration system of civil engineers across the country due to its versatile design. This highly versatile system has available "pipe-in" options on most models, along with built-in curb or grated inlets for simple integration into your storm drain design.



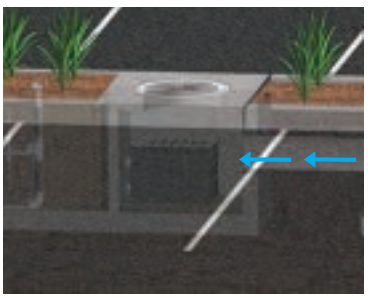
CURB TYPE

The Curb Type configuration accepts sheet flow through a curb opening and is commonly used along roadways and parking lots. It can be used in sump or flow-by conditions. Length of curb opening varies based on model and size.



GRATE TYPE

The Grate Type configuration offers the same features and benefits as the Curb Type but with a grated/drop inlet above the systems pretreatment chamber. It has the added benefit of allowing pedestrian access over the inlet. ADA-compliant grates are available to assure easy and safe access. The Grate Type can also be used in scenarios where runoff needs to be intercepted on both sides of landscape islands.



VAULT TYPE

The system's patented horizontal flow biofilter is able to accept inflow pipes directly into the pretreatment chamber, meaning the MWS Linear can be used in end-of-the-line installations. This greatly improves feasibility over typical decentralized designs that are required with other biofiltration/ bioretention systems. Another benefit of the "pipe-in" design is the ability to install the system downstream of underground detention systems to meet water quality volume requirements.



DOWNSPOUT TYPE

The Downspout Type is a variation of the Vault Type and is designed to accept a vertical downspout pipe from rooftop and podium areas. Some models have the option of utilizing an internal bypass, simplifying the overall design. The system can be installed as a raised planter, and the exterior can be stuccoed or covered with other finishes to match the look of adjacent buildings.

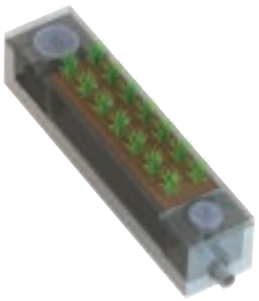
ORIENTATIONS

SIDE-BY-SIDE



The Side-By-Side orientation places the pretreatment and discharge chamber adjacent to one another with the biofiltration chamber running parallel on either side.This minimizes the system length, providing a highly compact footprint. It has been proven useful in situations such as streets with directly adjacent sidewalks, as half of the system can be placed under that sidewalk. This orientation also offers internal bypass options as discussed below.

END-TO-END



The End-To-End orientation places the pretreatment and discharge chambers on opposite ends of the biofiltration chamber, therefore minimizing the width of the system to 5 ft. (outside dimension). This orientation is perfect for linear projects and street retrofits where existing utilities and sidewalks limit the amount of space available for installation. One limitation of this orientation is that bypass must be external.

BYPASS

INTERNAL BYPASS WEIR (SIDE-BY-SIDE ONLY)

The Side-By-Side orientation places the pretreatment and discharge chambers adjacent to one another allowing for integration of internal bypass. The wall between these chambers can act as a bypass weir when flows exceed the system's treatment capacity, thus allowing bypass from the pretreatment chamber directly to the discharge chamber.

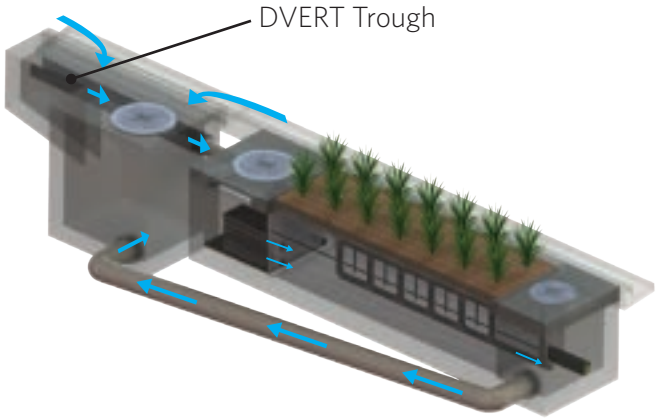
EXTERNAL DIVERSION WEIR STRUCTURE

This traditional offline diversion method can be used with the MWS Linear in scenarios where runoff is being piped to the system. These simple and effective structures are generally configured with two outflow pipes. The first is a smaller pipe on the upstream side of the diversion weir - to divert low flows over to the MWS Linear for treatment. The second is the main pipe that receives water once the system has exceeded treatment capacity and water flows over the weir.

FLOW-BY-DESIGN

This method is one in which the system is placed just upstream of a standard curb or grate inlet to intercept the first flush. Higher flows simply pass by the MWS Linear and into the standard inlet downstream.

DVERT LOW FLOW DIVERSION



This simple yet innovative diversion trough can be installed in existing or new curb and grate inlets to divert the first flush to the MWS Linear via pipe. It works similar to a rain gutter and is installed just below the opening into the inlet. It captures the low flows and channels them over to a connecting pipe exiting out the wall of the inlet and leading to the MWS Linear. The DVERT is perfect for retrofit and green street applications that allow the MWS Linear to be installed anywhere space is available.

SPECIFICATIONS

FLOW-BASED

The MWS Linear can be used in stand-alone applications to meet treatment flow requirements. Since the MWS Linear is the only biofiltration system that can accept inflow pipes several feet below the surface, it can be used not only in decentralized design applications but also as a large central end-of-the-line application for maximum feasibility.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq.ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4′ x 4′	23	0.052
MWS-L-4-6	4′ x 6′	32	0.073
MWS-L-4-8	4′ x 8′	50	0.115
MWS-L-4-13	4′ x 13′	63	0.144
MWS-L-4-15	4′ x 15′	76	0.175
MWS-L-4-17	4′ x 17′	90	0.206
MWS-L-4-19	4′ x 19′	103	0.237
MWS-L-4-21	4′ x 21′	117	0.268
MWS-L-6-8	7′ x 9′	64	0.147
MWS-L-8-8	8′ x 8′	100	0.230
MWS-L-8-12	8′ x 12′	151	0.346
MWS-L-8-16	8′ x 16′	201	0.462
MWS-L-8-20	9′ x 21′	252	0.577
MWS-L-8-24	9′ x 25′	302	0.693

SPECIFICATIONS

VOLUME-BASED

Many states require treatment of a water quality volume and do not offer the option of flow-based design. The MWS Linear and its unique horizontal flow makes it the only biofilter that can be used in volume-based design installed downstream of ponds, detention basins, and underground storage systems.

MODEL #	TREATMENT CAPACITY (cu. ft.) @ 24-HOUR DRAINDOWN	TREATMENT CAPACITY (cu. ft.) @ 48-HOUR DRAINDOWN
MWS-L-4-4	1140	2280
MWS-L-4-6	1600	3200
MWS-L-4-8	2518	5036
MWS-L-4-13	3131	6261
MWS-L-4-15	3811	7623
MWS-L-4-17	4492	8984
MWS-L-4-19	5172	10345
MWS-L-4-21	5853	11706
MWS-L-6-8	3191	6382
MWS-L-8-8	5036	10072
MWS-L-8-12	7554	15109
MWS-L-8-16	10073	20145
MWS-L-8-20	12560	25120
MWS-L-8-24	15108	30216

APPLICATIONS

The MWS Linear has been successfully used on numerous new construction and retrofit projects. The system's superior versatility makes it beneficial for a wide range of stormwater and waste water applications - treating rooftops, streetscapes, parking lots, and industrial sites.



INDUSTRIAL

Many states enforce strict regulations for discharges from industrial sites. The MWS Linear has helped various sites meet difficult EPA-mandated effluent limits for dissolved metals and other pollutants.



RESIDENTIAL

Low to high density developments can benefit from the versatile design of the MWS Linear. The system can be used in both decentralized LID design and cost-effective end-of-the-line configurations.



STREETS

Street applications can be challenging due to limited space. The MWS Linear is very adaptable, and it offers the smallest footprint to work around the constraints of existing utilities on retrofit projects.



PARKING LOTS

Parking lots are designed to maximize space and the MWS Linear's 4 ft. standard planter width allows for easy integration into parking lot islands and other landscape medians.



COMMERCIAL

Compared to bioretention systems, the MWS Linear can treat far more area in less space, meeting treatment and volume control requirements.



MIXED USE

The MWS Linear can be installed as a raised planter to treat runoff from rooftops or patios, making it perfect for sustainable "live-work" spaces.

More applications include:

• Agriculture • Reuse • Low Impact Development • Waste Water

PLANT SELECTION



Abundant plants, trees, and grasses bring value and an aesthetic benefit to any urban setting, but those in the MWS Linear do even more - they increase pollutant removal. What's not seen, but very important, is that below grade, the stormwater runoff/flow is being subjected to nature's secret weapon: a dynamic physical, chemical, and biological process working to break down and remove non-point source pollutants. The flow rate is controlled in the MWS Linear, giving the plants more contact time so that pollutants are more successfully decomposed, volatilized, and incorporated into the biomass of the MWS Linear's micro/macro flora and fauna.

A wide range of plants are suitable for use in the MWS Linear, but selections vary by location and climate. View suitable plants by visiting biocleanenvironmental.com/plants.

INSTALLATION



The MWS Linear is simple, easy to install, and has a space-efficient design that offers lower excavation and installation costs compared to traditional tree-box type systems. The structure of the system resembles precast catch basin or utility vaults and is installed in a similar fashion.

The system is delivered fully assembled for quick installation. Generally, the structure can be unloaded and set in place in 15 minutes. Our experienced team of field technicians are available to supervise installations and provide technical support.

MAINTENANCE



Reduce your maintenance costs, man hours, and materials with the MWS Linear. Unlike other biofiltration systems that provide no pretreatment, the MWS Linear is a self-contained treatment train which incorporates simple and effective pretreatment.

Maintenance requirements for the biofilter itself are almost completely eliminated, as the pretreatment chamber removes and isolates trash, sediments, and hydrocarbons. What's left is the simple maintenance of an easily accessible pretreatment chamber that can be cleaned by hand or with a standard vac truck. Only periodic replacement of low-cost media in the pre-filter cartridges is required for long-term operation, and there is absolutely no need to replace expensive biofiltration media.



Bio Clean
A Forterra Company

398 Via El Centro
Oceanside, CA 92058
855.566.3938
stormwater@forterrabp.com
biocleanenvironmental.com

072318R1

FlexStorm® Inlet Filter Operation & Maintenance Guide

Installation Instructions

1. Remove grate from the inlet.
2. Clean debris from the ledges of the inlet.
3. Place the inlet filter onto the load bearing ledges of the structure.
4. Replace the grate and confirm it's not elevated more than 1/8" (3.2 mm).

Frequency of Inspections

1. Inspection should occur following rain events >½". (> 12.5 mm)
2. Temporary use filters should be monitored accordingly to current site runoff conditions.
3. Permanent use filter inspections to occur a minimum of 3 times per year and in snowfall affected regions, inspections prior to and after snowfall season.
4. Industrial application site inspections (loading ramps, wash racks & maintenance facilities) to be scheduled on a recurring basis no less than 4 times per year or as needed.

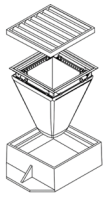
Maintenance Guidelines

1. Empty the filter bag manually or by industrial vacuum taking care not to damage the geotextile bag when more than half filled or during scheduled inspection period.
2. Remove compacted silt from sediment bag and flush with medium spray.
3. Permanent filter "PCP" style bags should be pressed or wrung to recover retained oils.
4. ADS oil skimmer pouches solidify and darken when saturated, indicating time for replacement.
5. Dispose of all oil contaminated products and recovered oils in accordance with EPA guidelines. ADS oil skimmer pouches, since a solidifier, will not leach & can be disposed of directly.
6. Inspect and replace bag if torn or punctured.

Sediment Bag Replacement

1. Remove the bag by loosening or cutting off clamping band.
2. Take the new correctly sized sediment bag and secure hose clamping band to the frame channel as previously removed.
3. Ensure bag is secure and there is no slack around perimeter.

Operation & Maintenance Log



Inlet ID: _____

Date	Task Performed	Initials

adspipe.com
800-821-6710

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo, EcoPure BioFilter™ and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
© 2024 Advanced Drainage Systems, Inc. MG3.01 3/24 CS

Attachment E

Plans

CONCEPTUAL GRADING PLAN
1400 MONTEFINO AVENUE

CITY OF DIAMOND BAR,
IN THE COUNTY OF LOS ANGELES,
STATE OF CALIFORNIA

LEGAL DESCRIPTION

PRELIMINARY TITLE REPORT NO. FBDO–2402120
(FIDELITY NATIONAL TITLE)

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF DIAMOND BAR, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

PARCEL 2 OF PARCEL MAP NO. 14894, IN THE CITY OF DIAMOND BAR, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 153, PAGES 71 AND 72 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXISTING EASEMENTS

ITEM LETTERS INDICATED WITH A HEXAGON (⟨⟩) REFLECT ITEMS WHICH ARE PLOTTED HEREON:

⟨4⟩ AN EASEMENT FOR SLOPE PURPOSES RECORDED MAY 27, 1981, IN BOOK 981, PAGE 82, OFFICIAL RECORDS. (TO BE QUITCLAIMED)

PROPOSED EASEMENTS

⟨D⟩ INDICATES AN EASEMENT FOR SLOPE PURPOSES DEDICATED PER PARCEL MAP 84946 TO THE CITY OF DIAMOND BAR. AREA = 4,221 sf

BENCHMARK

LA COUNTY BENCHMARK NO. 4243, ELEVATION 880.012' (NAVD88), OTTERBEIN QUAD 2013

RDBM TAG IN EAST CATCH BASIN DIAMOND BAR BLVD 2 FEET S/O BCR @ SE CORNER QUAIL SUMMIT DR.

BASIS OF BEARINGS

BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF MONTEFINO AVENUE BEING NORTH 63°48'45" WEST ON PARCEL MAP 14894, P.M.B 153/71–72

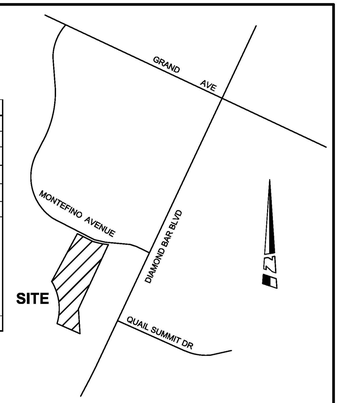
AVERAGE LOT SLOPE CALCULATION

AVERAGE SLOPE = 0.002296*IL/A WHERE,
I = CONTOUR INTERVAL IN FEET
L = SUMMATION OF LENGTH OF ALL CONTOURS IN FEET
A = AREA IN ACRES OF PARCEL BEING CONSIDERED

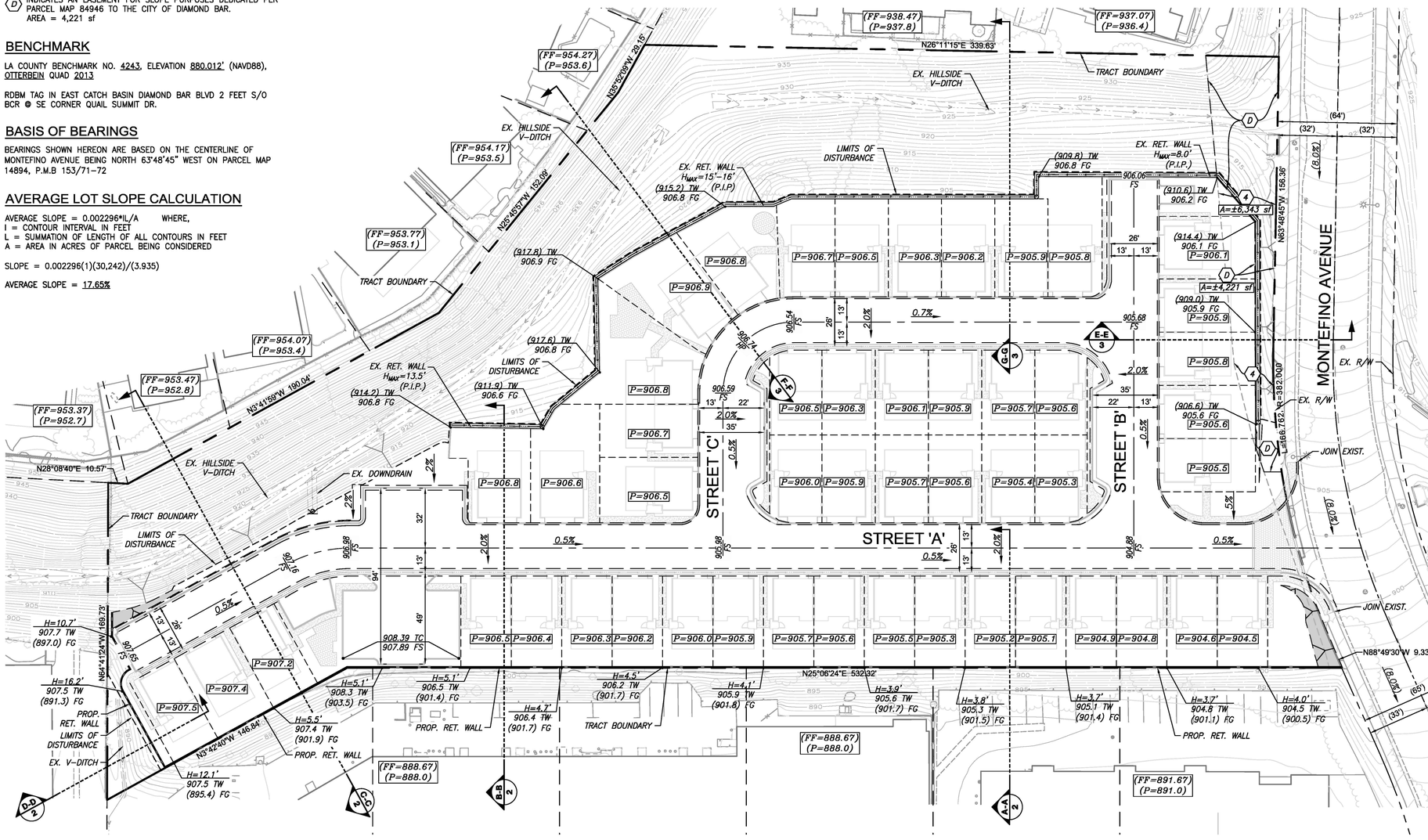
SLOPE = 0.002296(1)(30,242)/(3.935)

AVERAGE SLOPE = 17.65%

PRELIMINARY EARTHWORK	CUT (CY)	FILL (CY)	RAW NET	
RAW EARTHWORK	275	16,800	16,525	IMPORT
OVEREX (6' OVER SITE MINUS PARK AREA, minus 6" loss for clear and grub)	17,500	17,500		
OVEREX SHRINKAGE (16%) assumes overex in majority of shinkage		2,800		
SUBSIDENCE (0.2' OVER SITE)		650		
ROUGH GRADING EARTHWORK	17,775	37,750	19,975	IMPORT
SPOILS				
OLD BUILDING? -TBD				
LOTS (25CY/LOT)	1,225			
STORM DRAIN	260			
SEWER	160			
WATER	220			
FINAL NET	19,640	37,750	18,110	IMPORT



VICINITY MAP
NOT TO SCALE



SHEET INDEX

CONCEPTUAL GRADING PLAN	1
TYPICAL SITE SECTIONS	2–3
CONCEPTUAL EARTHWORK	4

LEGEND:

- TRACT BOUNDARY
- PROPOSED STREET CENTERLINE
- EXISTING RIGHT OF WAY
- PROPOSED RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING EASEMENT
- LIMITS OF DISTURBANCE
- SLOPE (2:1 UNLESS NOTED OTHERWISE)
- P=900.0 PAD ELEVATION

30 0 15 30 60
SCALE 1"= 30'

UTILITY NOTE

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1–800–227–2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

BENCHMARK

LA COUNTY BENCHMARK NO. 4243

ELEVATION 880.012' (NAVD88)

OTTERBEIN QUAD 2013

RDBM TAG IN EAST CATCH BASIN DIAMOND BAR BLVD 2 FEET S/O BCR @ SE CORNER QUAIL SUMMIT DR.

ISSUE DRAWING LOG:

MARK	DATE	DESCRIPTION
1	7/31/2025	PRELIMINARY DESIGN 1ST SUBMITTAL
2	10/6/2025	PLANNING APPLICATION 2ND SUBMITTAL
3	11/21/2025	PLANNING APPLICATION 3RD SUBMITTAL

INTRACORP SW, LLC
895 DOVE STREET, SUITE 400
NEWPORT BEACH, CA 92660

HUITT ZOLLARS
2603 Main Street, Suite 600
Irvine, California 92614-4250
949.988.5815
www.huitt-zollars.com

1400 MONTEFINO AVENUE
CITY OF DIAMOND BAR
COUNTY OF LOS ANGELES

CONCEPTUAL GRADING PLAN

HZ PROJECT NO.: R317913.01
DRAWN BY:
REVIEWED BY:
APPROVED BY:

1 OF 4

R:\R317913.01 - INTRACORP 1400 MONTEFINO DIAMOND BAR\10 CADD & BIM\10.1 AUTOCAD\10.1.1 CIVIL\PRODUCTION\PRELIMINARY GRADING PLAN\R317913.01-MONTEFINO PRELIMINARY GRADING PLAN.DWG
RQUINTERO 11/20/2025 12:11PM

CONTECH®
ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

UrbanPond® Concrete Stormwater Detention



The experts you need to solve your stormwater challenges



Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

Your Contech Team



STORMWATER CONSULTANT

It's my job to recommend the best solution to meet permitting requirements.



STORMWATER DESIGN ENGINEER

I work with consultants to design the best approved solution to meet your project's needs.



REGULATORY MANAGER

I understand the local stormwater regulations and what solutions will be approved.



SALES ENGINEER

I make sure our solutions meet the needs of the contractor during construction.

Contech is your partner in stormwater management solutions



Innovative Concrete Stormwater Detention – UrbanPond®

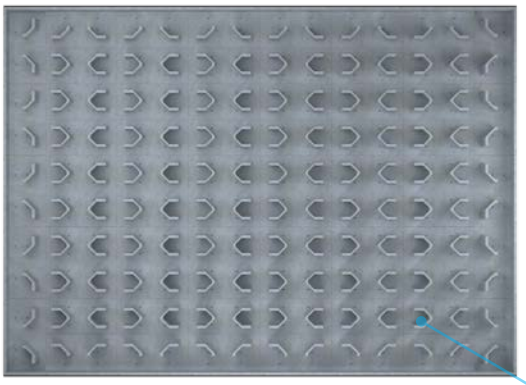
UrbanPond, a traffic-rated underground stormwater storage system, is designed and produced with considerations such as height of cover, live and dead loads, proximity to adjacent structures, and required detention volume.

UrbanPond is a modular precast concrete underground storage system that mimics the function of ponds and open detention basins. UrbanPond can be utilized for runoff reduction, recharging groundwater, or optimizing a water quality system. Package with Contech's best-in-class treatment products to provide a complete stormwater solution for your site.

UrbanPond is comprised of 8' x 16' interior and perimeter modules with inside heights ranging from 3' to 14' in 6" increments, giving designers more versatility to accommodate dense development, urban infill, or larger high-volume projects. The modular design can be placed under roadways, parking lots and landscape areas in various shapes, sizes, and depths.

UrbanPond is available in select regions. Please contact your local Stormwater Consultant for details.

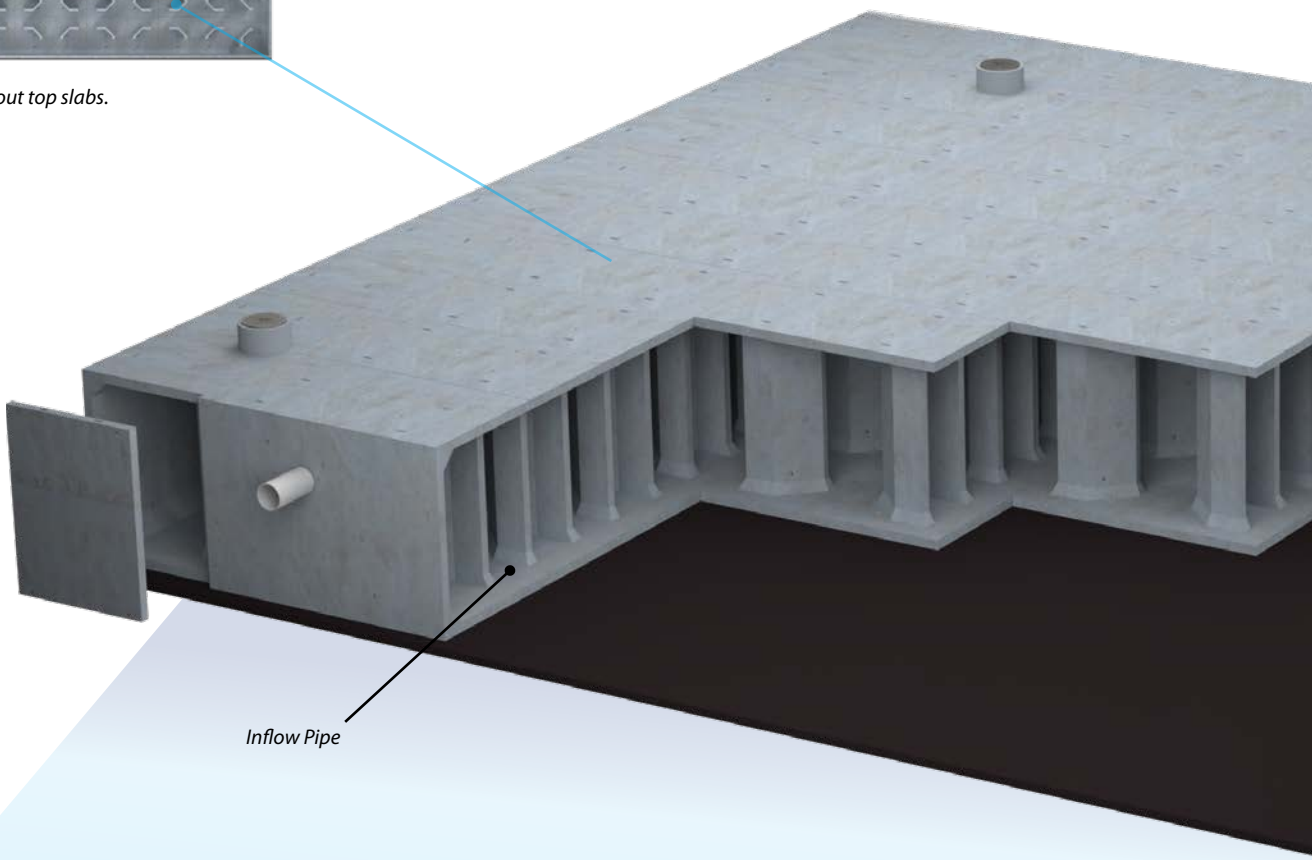
UrbanPond® Configuration



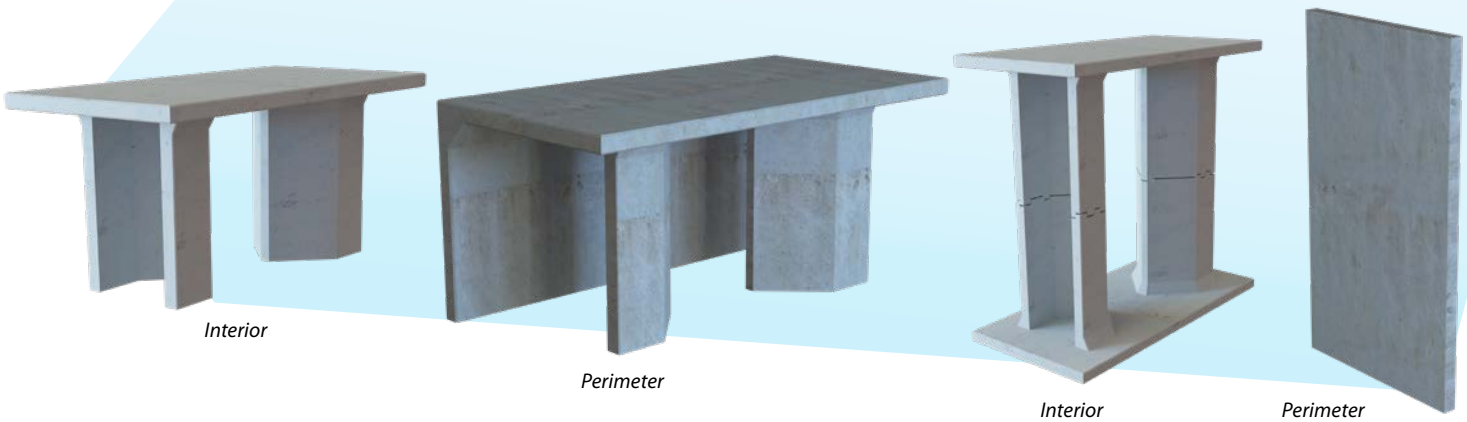
Top view without top slabs.

8' x 16' Module Assembly

The UrbanPond structure benefits from repeating tessellated shapes. The offset leg configuration of the modules creates an open, channel-less internal space. Minimal types of modules allows for easier design and contractor installation.



Inflow Pipe



Interior

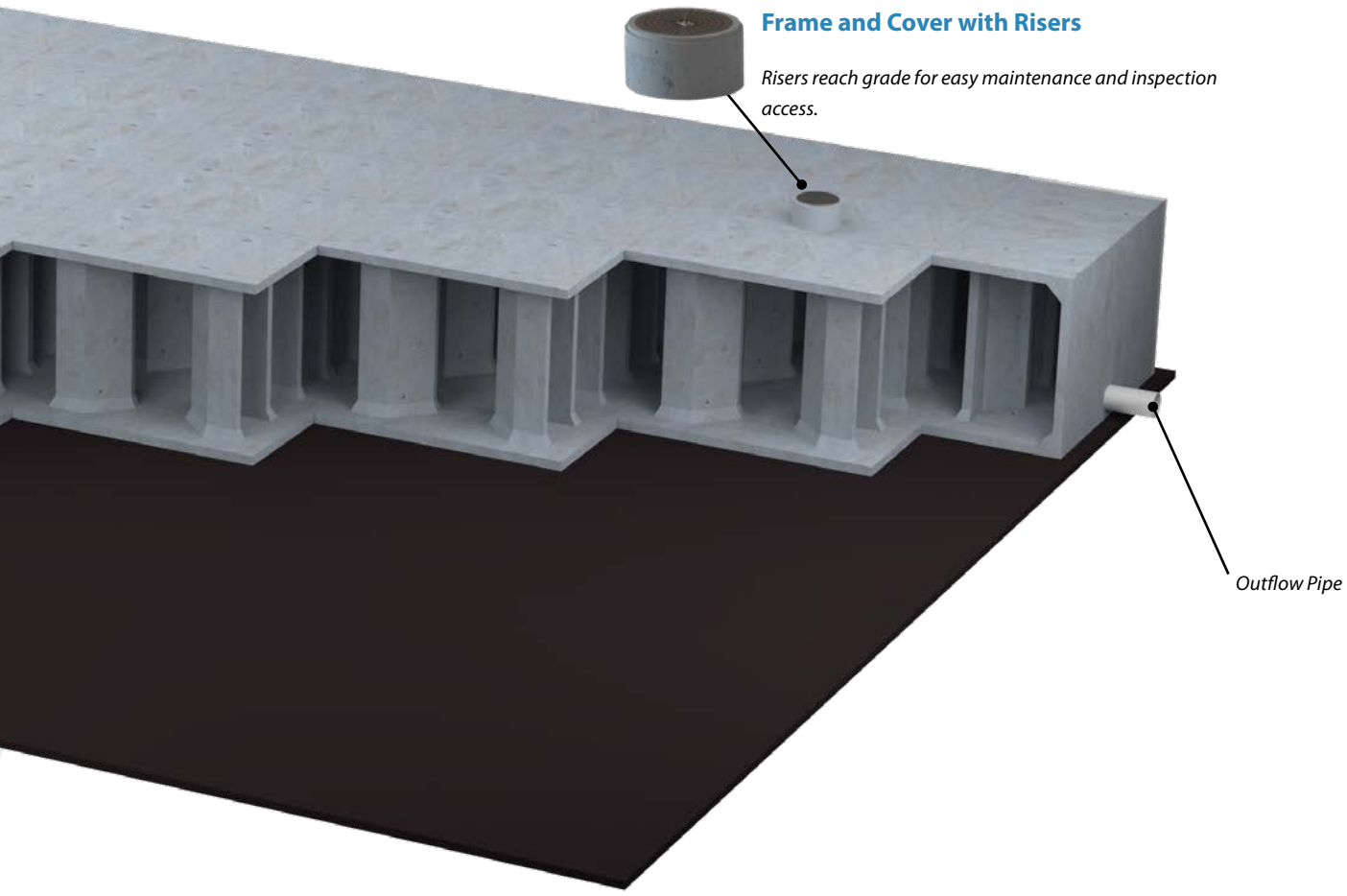
Perimeter

Interior Stacked

Perimeter Wall Panel

Superior strength and load capacity

TOP VIEW



Frame and Cover with Risers

Risers reach grade for easy maintenance and inspection access.

Outflow Pipe

Eliminates the need to purchase rock backfill required in other concrete systems.

UrbanPond® Features and Benefits

FEATURE	BENEFIT
Footprint reduction	Design flexibility while maximizing storage space
Optional built-in orifice control riser	Slowly discharges captured runoff to keep your site in compliance with local regulations
Designed to meet HS-20 and HS-25 loading requirements	Superior strength & load capacity
Minimum cover of only 12”	Maximizes available depth
Can be backfilled with native soil	Eliminates the need to purchase rock required in other concrete systems



APPLICATION TIPS

- Best practice designs for subsurface infiltration include pretreatment to reduce cost and frequency of maintenance while ensuring the infiltration capacity of the facility.

UrbanPond® System Sizing

UrbanPond modules are available with inside heights ranging from 3 feet to 7 feet, in 6-inch increments, and the stacked UrbanPond modules are stackable up to 14 feet.

URBAN POND INSIDE HEIGHT (FT)	8’ X 16’ INTERIOR MODULE STORAGE VOLUME (CF)	8' X 16' PERIMETER MODULE STORAGE VOLUME (CF)
3	356	360
4	475	484
5	595	607
6	714	730
7	834	854
8	950	
9	1070	
10	1190	
11	1310	
12	1428	
13	1548	
14	1668	

TOP VIEW

UrbanPond® Applications

Detention/Retention

Detention with controlled discharge utilizing built-in outlet orifice structures. Retention for long-term storage of runoff onsite to meet strict stormwater requirements.

Flood Control

Flood Control of peak storm events to minimize downstream flooding and erosion.

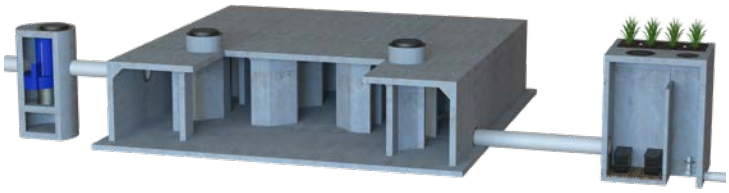
Infiltration Galleries

UrbanPond infiltration galleries are designed to maximize the transfer of water for percolation into native soils and groundwater recharge. The features include 30″ diameter infiltration openings in each module.

Treatment Train Design Options

The example shows an upstream CDS® to treat large flows, and capture trash, debris, and suspended solids, as well as hydrocarbons. The Modular Wetlands Linear is downstream, and the only biofiltration product that can be placed downstream of a detention system.





UrbanPond® Maintenance

UrbanPond is designed to be maintained from the finished surface via a vacuum truck. Access ports are strategically placed throughout the system to facilitate maintenance. Modules can be modified to act as clear wells or pretreatment chambers for capturing trash, debris, and sediment. This consolidates maintenance requirements to a select few modules. Standard manholes, hinged manholes, and other access hatches are available.



UrbanPond® systems are designed with multiple port locations for easy maintenance.

A partner you can rely on



STORMWATER SOLUTIONS

PIPE SOLUTIONS

STRUCTURES SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

TAKE THE NEXT STEP

For more information: www.ContechES.com

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.

CONTECH® ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

Get social with us:
800-338-1122 | www.ContechES.com

© 2025 Contech Engineered Solutions LLC, a QUIKRETE Company

All Rights Reserved. Printed in the USA.

PDF 032025