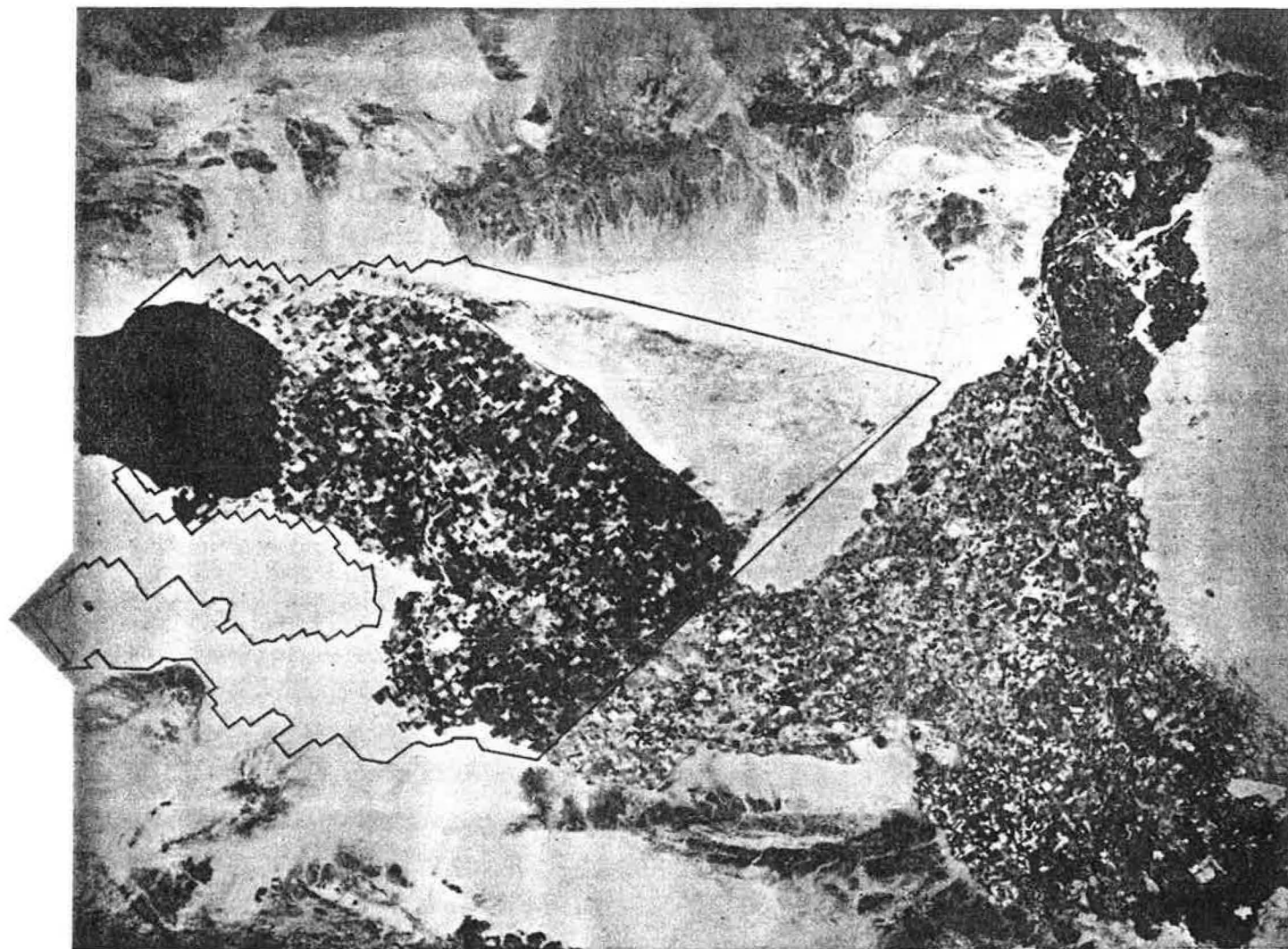


DOCKETED

| | |
|-------------------------|--|
| Docket Number: | 23-AFC-02 |
| Project Title: | Elmore North Geothermal Project (ENGP) |
| TN #: | 252490-3 |
| Document Title: | Elmore North Geothermal Project Data Request Response Set 1 Part 3 |
| Description: | N/A |
| Filer: | Jerry Salamy |
| Organization: | Jacobs |
| Submitter Role: | Applicant Consultant |
| Submission Date: | 10/2/2023 7:50:34 PM |
| Docketed Date: | 10/3/2023 |

Soil Survey of

**IMPERIAL COUNTY
CALIFORNIA
IMPERIAL VALLEY AREA**



United States Department of Agriculture Soil Conservation Service
in cooperation with
University of California Agricultural Experiment Station
and
Imperial Irrigation District

TABLE 11.--ENGINEERING INDEX PROPERTIES

[The symbol > means more than. Absence of an entry indicates that data were not estimated]

| Soil name and map symbol | Depth | USDA texture | Classification | | Frag- ments > 3 inches | Percentage passing sieve number-- | | | | Liquid limit | Plas- ticity index |
|-----------------------------|-----------|--|---------------------|-------------|---------------------------------|--------------------------------------|--------|--------|-------|-----------------|--------------------------|
| | | | Unified | AASHTO | | 4 | 10 | 40 | 200 | | |
| | <u>In</u> | | | | <u>Pct</u> | | | | | <u>Pct</u> | |
| 100----- Antho | 0-13 | Loamy fine sand | SM | A-2 | 0 | 100 | 100 | 75-85 | 10-30 | --- | NP |
| | 13-60 | Sandy loam, fine sandy loam. | SM | A-2, A-4 | 0 | 90-100 | 75-95 | 50-60 | 15-40 | --- | NP |
| 101*: Antho----- | 0-8 | Loamy fine sand | SM | A-2 | 0 | 100 | 100 | 75-85 | 10-30 | --- | NP |
| | 8-60 | Sandy loam, fine sandy loam. | SM | A-2, A-4 | 0 | 90-100 | 75-95 | 50-60 | 15-40 | --- | NP |
| Superstition----- | 0-6 | Fine sand----- | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| | 6-60 | Loamy fine sand, fine sand, sand. | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| 102*. Badland | | | | | | | | | | | |
| 103----- Carsitas | 0-10 | Gravelly sand--- | SP, SP-SM | A-1, A-2 | 0-5 | 60-90 | 50-85 | 30-55 | 0-10 | --- | NP |
| | 10-60 | Gravelly sand, gravelly coarse sand, sand. | SP, SP-SM | A-1 | 0-5 | 60-90 | 50-85 | 25-50 | 0-10 | --- | NP |
| 104* Fluvaquents | | | | | | | | | | | |
| 105----- Glenbar | 0-13 | Clay loam----- | CL | A-6 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-30 |
| | 13-60 | Clay loam, silty clay loam. | CL | A-6 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-30 |
| 106----- Glenbar | 0-13 | Clay loam----- | CL | A-6, A-7 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-25 |
| | 13-60 | Clay loam, silty clay loam. | CL | A-6, A-7 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-25 |
| 107*----- Glenbar | 0-13 | Loam----- | ML, CL-ML, CL | A-4 | 0 | 100 | 100 | 100 | 70-80 | 20-30 | NP-10 |
| | 13-60 | Clay loam, silty clay loam. | CL | A-6, A-7 | 0 | 100 | 100 | 95-100 | 75-95 | 35-45 | 15-30 |
| 108----- Holtville | 0-14 | Loam----- | ML | A-4 | 0 | 100 | 100 | 85-100 | 55-95 | 25-35 | NP-10 |
| | 14-22 | Clay, silty clay | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 22-60 | Silt loam, very fine sandy loam. | ML | A-4 | 0 | 100 | 100 | 95-100 | 65-85 | 25-35 | NP-10 |
| 109----- Holtville | 0-17 | Silty clay----- | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 17-24 | Clay, silty clay | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 24-35 | Silt loam, very fine sandy loam. | ML | A-4 | 0 | 100 | 100 | 95-100 | 65-85 | 25-35 | NP-10 |
| | 35-60 | Loamy very fine sand, loamy fine sand. | SM, ML | A-2, A-4 | 0 | 100 | 100 | 75-100 | 20-55 | --- | NP |
| 110----- Holtville | 0-17 | Silty clay----- | CH, CL | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 17-24 | Clay, silty clay | CH, CL | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 24-35 | Silt loam, very fine sandy loam. | ML | A-4 | 0 | 100 | 100 | 95-100 | 55-85 | 25-35 | NP-10 |
| | 35-60 | Loamy very fine sand, loamy fine sand. | SM, ML | A-2, A-4 | 0 | 100 | 100 | 75-100 | 20-55 | --- | NP |

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

| Soil name and map symbol | Depth | USDA texture | Classification | | Frag- ments > 3 inches Pct | Percentage passing sieve number-- | | | | Liquid limit Pct | Plas- ticity index |
|--------------------------|-------|---|----------------|----------|--|--------------------------------------|--------|--------|-------|------------------------|--------------------------|
| | | | Unified | AASHTO | | 4 | 10 | 40 | 200 | | |
| 111*: Holtville----- | 0-10 | Silty clay loam | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 10-22 | Clay, silty clay | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 22-60 | Silt loam, very fine sandy loam. | ML | A-4 | 0 | 100 | 100 | 95-100 | 65-85 | 25-35 | NP-10 |
| Imperial----- | 0-12 | Silty clay loam | CL | A-7 | 0 | 100 | 100 | 100 | 85-95 | 40-50 | 10-20 |
| | 12-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| 112----- | 0-12 | Silty clay----- | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| Imperial | 12-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| 113----- | 0-12 | Silty clay----- | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| Imperial | 12-60 | Silty clay, clay, silty clay loam. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| 114----- | 0-12 | Silty clay----- | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| Imperial | 12-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| 115*: Imperial----- | 0-12 | Silty clay loam | CL | A-7 | 0 | 100 | 100 | 100 | 85-95 | 40-50 | 10-20 |
| | 12-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| Glenbar----- | 0-13 | Silty clay loam | CL | A-6, A-7 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-25 |
| | 13-60 | Clay loam, silty clay loam. | CL | A-6, A-7 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-25 |
| 116*: Imperial----- | 0-13 | Silty clay loam | CL | A-7 | 0 | 100 | 100 | 100 | 85-95 | 40-50 | 10-20 |
| | 13-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| Glenbar----- | 0-13 | Silty clay loam | CL | A-6, A-7 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-25 |
| | 13-60 | Clay loam, silty clay loam. | CL | A-6 | 0 | 100 | 100 | 90-100 | 70-95 | 35-45 | 15-30 |
| 117, 118----- | 0-12 | Loam----- | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| Indio | 12-72 | Stratified loamy very fine sand to silt loam. | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| 119*: Indio----- | 0-12 | Loam----- | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| | 12-72 | Stratified loamy very fine sand to silt loam. | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| Vint----- | 0-10 | Loamy fine sand | SM | A-2 | 0 | 95-100 | 95-100 | 70-80 | 25-35 | --- | NP |
| | 10-60 | Loamy sand, loamy fine sand. | SM | A-2 | 0 | 95-100 | 95-100 | 70-80 | 20-30 | --- | NP |
| 120*----- | 0-12 | Loam----- | ML, CL-ML | A-4 | 0 | 100 | 95-100 | 75-85 | 55-65 | 20-30 | NP-10 |
| Laveen | 12-60 | Loam, very fine sandy loam. | ML, CL-ML | A-4 | 0 | 95-100 | 85-95 | 70-80 | 55-65 | 15-25 | NP-10 |

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

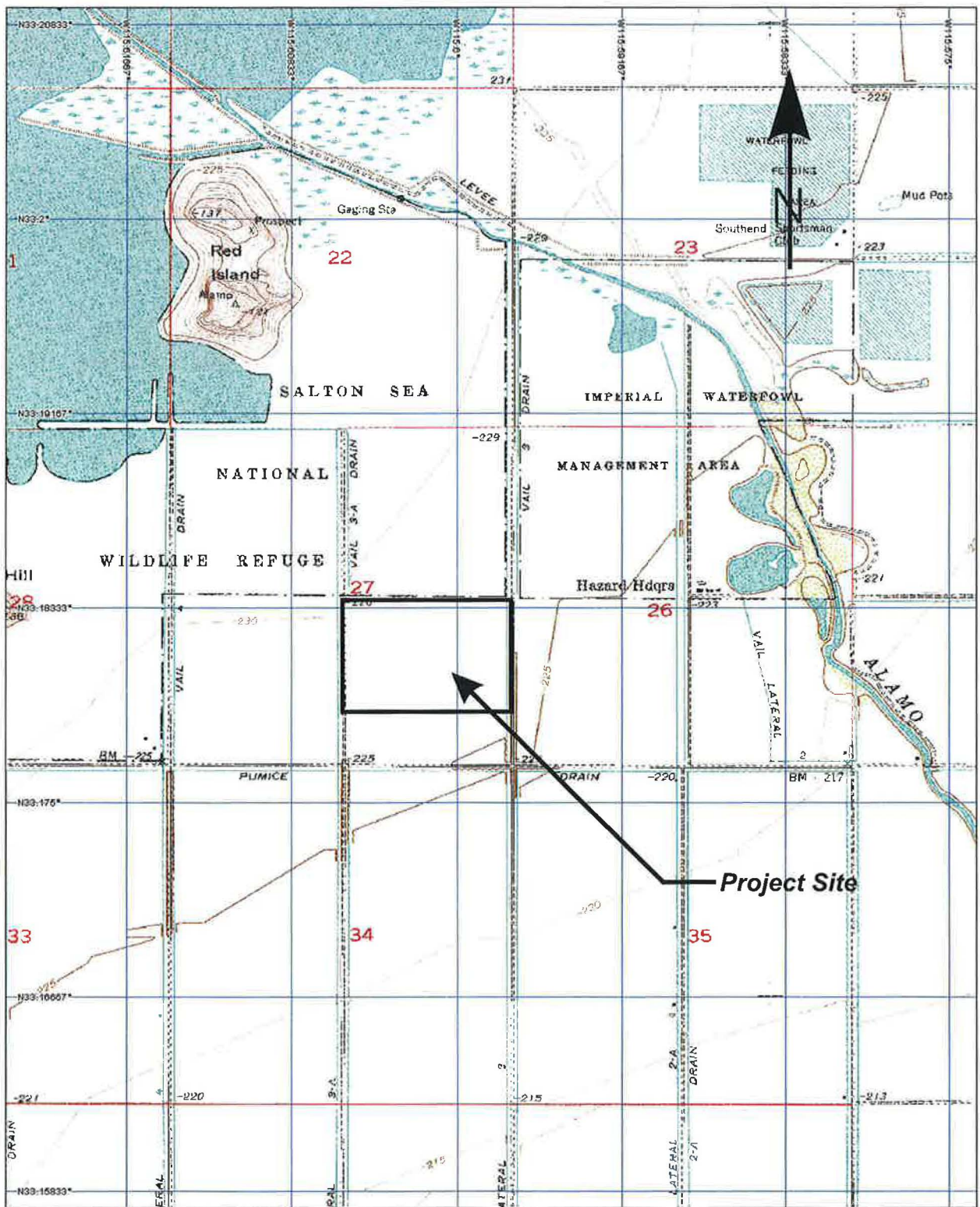
| Soil name and map symbol | Depth | USDA texture | Classification | | Frag-ments > 3 inches Pct | Percentage passing sieve number-- | | | | Liquid limit Pct | Plas- ticity index |
|--------------------------|-------|--|----------------|---------------------|------------------------------------|--------------------------------------|--------|--------|--------|------------------------|--------------------------|
| | | | Unified | AASHTO | | 4 | 10 | 40 | 200 | | |
| 121----- Meloland | 0-12 | Fine sand----- | SM, SP-SM | A-2, A-3 | 0 | 95-100 | 90-100 | 75-100 | 5-30 | --- | NP |
| | 12-26 | Stratified loamy fine sand to silt loam. | ML | A-4 | 0 | 100 | 100 | 90-100 | 50-65 | 25-35 | NP-10 |
| | 26-71 | Clay, silty clay, silty clay loam. | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-40 |
| 122----- Meloland | 0-12 | Very fine sandy loam. | ML | A-4 | 0 | 95-100 | 95-100 | 95-100 | 55-85 | 25-35 | NP-10 |
| | 12-26 | Stratified loamy fine sand to silt loam. | ML | A-4 | 0 | 100 | 100 | 90-100 | 50-70 | 25-35 | NP-10 |
| | 26-71 | Clay, silty clay, silty clay loam. | CH, CL | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-40 |
| 123*: Meloland----- | 0-12 | Loam----- | ML | A-4 | 0 | 95-100 | 95-100 | 95-100 | 55-85 | 25-35 | NP-10 |
| | 12-26 | Stratified loamy fine sand to silt loam. | ML | A-4 | 0 | 100 | 100 | 90-100 | 50-70 | 25-35 | NP-10 |
| | 26-38 | Clay, silty clay, silty clay loam. | CH, CL | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-40 |
| | 38-60 | Stratified silt loam to loamy fine sand. | SM, ML | A-4 | 0 | 100 | 100 | 75-100 | 35-55 | 25-35 | NP-10 |
| Holtville----- | 0-12 | Loam----- | ML | A-4 | 0 | 100 | 100 | 85-100 | 55-95 | 25-35 | NP-10 |
| | 12-24 | Clay, silty clay | CH, CL | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| | 24-36 | Silt loam, very fine sandy loam. | ML | A-4 | 0 | 100 | 100 | 95-100 | 55-85 | 25-35 | NP-10 |
| | 36-60 | Loamy very fine sand, loamy fine sand. | SM, ML | A-2, A-4 | 0 | 100 | 100 | 75-100 | 20-55 | --- | NP |
| 124, 125----- Niland | 0-23 | Gravelly sand--- | SM, SP-SM | A-2, A-3 | 0 | 90-100 | 70-95 | 50-65 | 5-25 | --- | NP |
| | 23-60 | Silty clay, clay, clay loam. | CL, CH | A-7 | 0 | 100 | 100 | 85-100 | 80-95 | 40-65 | 20-40 |
| 126----- Niland | 0-23 | Fine sand----- | SM, SP-SM | A-2, A-3 | 0 | 90-100 | 90-100 | 50-65 | 5-25 | --- | NP |
| | 23-60 | Silty clay----- | CL, CH | A-7 | 0 | 100 | 100 | 85-100 | 80-95 | 40-65 | 20-40 |
| 127----- Niland | 0-23 | Loamy fine sand | SM | A-2 | 0 | 90-100 | 90-100 | 50-65 | 15-30 | --- | NP |
| | 23-60 | Silty clay----- | CL, CH | A-7 | 0 | 100 | 100 | 85-100 | 80-95 | 40-65 | 20-40 |
| 128*: Niland----- | 0-23 | Gravelly sand--- | SM, SP-SM | A-2, A-3 | 0 | 90-100 | 70-95 | 50-65 | 5-25 | --- | NP |
| | 23-60 | Silty clay, clay, clay loam. | CL, CH | A-7 | 0 | 100 | 100 | 85-100 | 80-100 | 40-65 | 20-40 |
| Imperial----- | 0-12 | Silty clay----- | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| | 12-60 | Silty clay loam, silty clay, clay. | CH | A-7 | 0 | 100 | 100 | 100 | 85-95 | 50-70 | 25-45 |
| 129*: Pits | | | | | | | | | | | |
| 130, 131----- Rositas | 0-27 | Sand----- | SP-SM | A-3, A-1, A-2 | 0 | 100 | 80-100 | 40-70 | 5-15 | --- | NP |
| | 27-60 | Sand, fine sand, loamy sand. | SM, SP-SM | A-3, A-2, A-1 | 0 | 100 | 80-100 | 40-85 | 5-30 | --- | NP |

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

| Soil name and map symbol | Depth | USDA texture | Classification | | Frag-ments > 3 inches Pct | Percentage passing sieve number-- | | | | Liquid limit Pct | Plas- ticity index |
|--|-------|---|-------------------------------|---------------------|------------------------------------|--------------------------------------|--------|--------|-------|------------------------|--------------------------|
| | | | Unified | AASHTO | | 4 | 10 | 40 | 200 | | |
| 132, 133, 134, 135- Rositas | 0-9 | Fine sand----- | SM | A-3, A-2 | 0 | 100 | 80-100 | 50-80 | 10-25 | --- | NP |
| | 9-60 | Sand, fine sand, loamy sand. | SM, SP-SM | A-3, A-2, A-1 | 0 | 100 | 80-100 | 40-85 | 5-30 | --- | NP |
| 136----- Rositas | 0-4 | Loamy fine sand | SM | A-1, A-2 | 0 | 100 | 80-100 | 40-85 | 10-35 | --- | NP |
| | 4-60 | Sand, fine sand, loamy sand. | SM, SP-SM | A-3, A-2, A-1 | 0 | 100 | 80-100 | 40-85 | 5-30 | --- | NP |
| 137----- Rositas | 0-12 | Silt loam----- | ML | A-4 | 0 | 100 | 100 | 90-100 | 70-90 | 20-30 | NP-5 |
| | 12-60 | Sand, fine sand, loamy sand. | SM, SP-SM | A-3, A-2, A-1 | 0 | 100 | 80-100 | 40-85 | 5-30 | --- | NP |
| 138*: Rositas----- | 0-4 | Loamy fine sand | SM | A-1, A-2 | 0 | 100 | 80-100 | 40-85 | 10-35 | --- | NP |
| | 4-60 | Sand, fine sand, loamy sand. | SM, SP-SM | A-3, A-2, A-1 | 0 | 100 | 80-100 | 40-85 | 5-30 | --- | NP |
| Superstition----- | 0-6 | Loamy fine sand | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| | 6-60 | Loamy fine sand, fine sand, sand. | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| 139----- Superstition | 0-6 | Loamy fine sand | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| | 6-60 | Loamy fine sand, fine sand, sand. | SM | A-2 | 0 | 100 | 95-100 | 70-85 | 15-25 | --- | NP |
| 140*: Torriorthents Rock outcrop | | | | | | | | | | | |
| 141*: Torriorthents Orthids | | | | | | | | | | | |
| 142----- Vint | 0-10 | Loamy very fine sand. | SM, ML | A-4 | 0 | 100 | 100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 10-60 | Loamy fine sand | SM | A-2 | 0 | 95-100 | 95-100 | 70-80 | 20-30 | --- | NP |
| 143----- Vint | 0-12 | Fine sandy loam | ML, CL-ML, SM, SM-SC | A-4 | 0 | 100 | 100 | 75-85 | 45-55 | 15-25 | NP-5 |
| | 12-60 | Loamy sand, loamy fine sand. | SM | A-2 | 0 | 95-100 | 95-100 | 70-80 | 20-30 | --- | NP |
| 144*: Vint----- | 0-10 | Very fine sandy loam. | SM, ML | A-4 | 0 | 100 | 100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 10-40 | Loamy fine sand | SM | A-2 | 0 | 95-100 | 95-100 | 70-80 | 20-30 | --- | NP |
| | 40-60 | Silty clay----- | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |
| Indio----- | 0-12 | Very fine sandy loam. | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| | 12-40 | Stratified loamy very fine sand to silt loam. | ML | A-4 | 0 | 95-100 | 95-100 | 85-100 | 75-90 | 20-30 | NP-5 |
| | 40-72 | Silty clay----- | CL, CH | A-7 | 0 | 100 | 100 | 95-100 | 85-95 | 40-65 | 20-35 |

* See description of the map unit for composition and behavior characteristics of the map unit.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

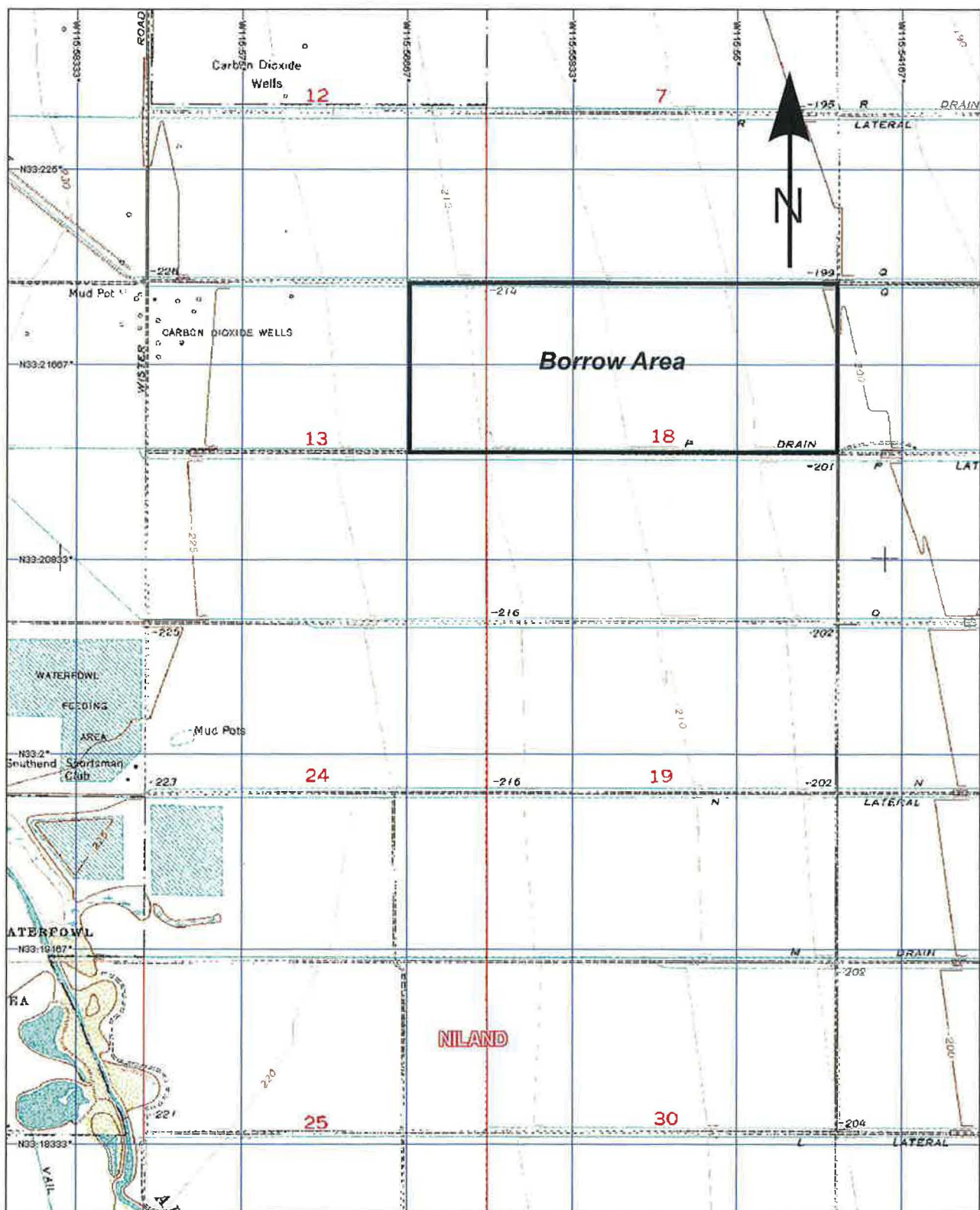
700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

LANDMARK
Geo-Engineers and Geologists

Project No.: LE11138

Black Rock 5-6 Topographic Map

Plate
A-6



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

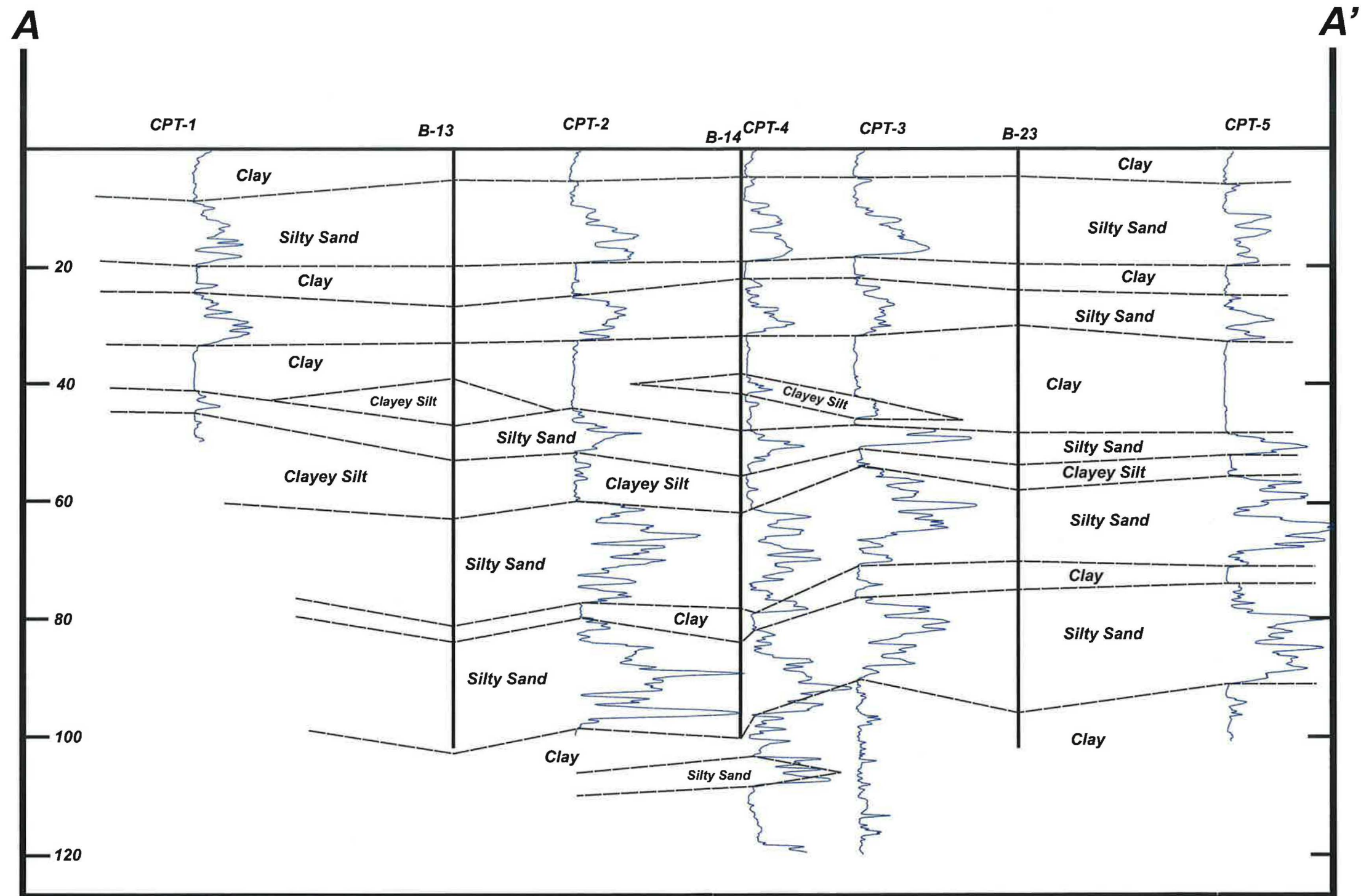
LANDMARK

Geo-Engineers and Geologists

Project No.: LE11138

Borrow Area Topographic Map

**Plate
A-7**



LANDMARK

Geo-Engineers and Geologists

Project No.: LE11138

Schematic Geologic
Cross-section

Plate

A-8

APPENDIX B

| DEPTH | FIELD | | | LOG OF BORING No. B-1 SHEET 1 OF 1 | LABORATORY | | | |
|-------|--------|-------------|------------|---------------------------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | ● | | | | SILTY CLAY (CL): Brown, moist to wet, roots, firm. | | | |
| 5 | ▣ | | 7 | 0.5 | | | | |
| | ▣ | | 13 | | SILT (ML): Brown, saturated, medium dense, some clay. | | | |
| | ▣ | | 3 | | loose, some very fine grained sand. | | | |
| 10 | ▣ | | 13 | | SILTY SAND (SM): Lt. brown, saturated, medium dense, very fine to fine grained. | | | |
| | ▣ | | 12 | | | | | |
| 15 | ▣ | | 41 | | dense. | | | |
| 20 | ▣ | | 21 | | medium dense. | | | |
| 25 | ▣ | | 10 | | | | | |
| 30 | ▣ | | 27 | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | Total Depth = 31.5' Groundwater measured at 4.0 feet after 24 hours Backfilled with excavated soil | | | |

















| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 7/1/11 | TOTAL DEPTH: | 31.5 Feet | DEPTH TO WATER: | 4.0 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-----------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-1 |
|---------------------|---|-----------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-2 SHEET 1 OF 1 | LABORATORY | | |
|-------|--------|-------------|--|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | 6 | | SILTY CLAY (CL): Brown, moist to very moist. | | | |
| | ▧ | | 9 | | SILT (ML): Brown, saturated, loose, some very fine sand, grades downward to silty sand. | | | |
| | ▧ | 7 | | | | | | |
| | ▧ | 19 | SILTY SAND (SM): Lt. brown, saturated, medium dense to dense, fine grained. fine to medium grained. dense, fine grained. | | | | | |
| | ▧ | 15 | | | | | | |
| ▧ | 33 | | | | | | | |
| 10 | ▧ | | 20 | | | | | |
| 15 | ▧ | | 22 | | | | | |
| 20 | ▧ | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |
| | | | | | Total Depth = 21.5' Groundwater measured at 5.5 feet after 24 hours Backfilled with excavated soil | | | |













| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 7/1/11 | TOTAL DEPTH: | 21.5 Feet | DEPTH TO WATER: | 5.5 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-----------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-2 |
|---------------------|---|-----------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-3 SHEET 1 OF 1 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 15 | 1.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff. | | | |
| |  |  | 5 | | SILT (ML): Brown, saturated, loose. | | | |
| |  |  | 9 | | | | | |
| 10 |  |  | 10 | | SILTY SAND (SM): Lt. brown, saturated, medium dense, very fine to fine grained. | | | |
| 15 |  |  | 18 | | | | | |
| |  |  | 20 | | | | | |
| |  |  | 17 | | | | | |
| 20 |  |  | 16 | | dark brown | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | Total Depth = 21.5' Boring caved at 1 ft. after 3 days Backfilled with excavated soil | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|--------|
| DATE DRILLED: | 7/1/11 | TOTAL DEPTH: | 21.5 Feet | DEPTH TO WATER: | N/A |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-----------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-3 |
|---------------------|---|-----------|

| DEPTH | FIELD | | | LOG OF BORING No. B-4 SHEET 1 OF 1 | LABORATORY | | | |
|-------|--|--|------------|---------------------------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 13 | 2.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff. | | | |
| | | | 6 | | SILT (ML): Brown, saturated, loose, some clay. | | | |
| 10 |  |  | 12 | | SILTY SAND (SM): Brown, saturated, loose to medium dense, very fine to fine grained. | | | |
| | | | 6 | | | | | |
| | | | 24 | | | | | |
| | | | 14 | | | | | |
| 15 |  |  | 19 | | | | | |
| 20 |  |  | 5 | 1.5 | SILTY CLAY (CL): Dark brown, very moist, stiff | | | |
| 25 |  |  | 13 | | | | | |
| 30 |  |  | 15 | | SILTY SAND (SM): Dark brown, saturated, medium dense, very fine to fine grained. | | | |
| 35 | | | | | Total Depth = 31.5' Groundwater measured at 4.0 feet after 24 hours Backfilled with excavated soil | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|--------|
| DATE DRILLED: | 6/30/11 | TOTAL DEPTH: | 31.5 Feet | DEPTH TO WATER: | 4.0 ft |
| LOGGED BY: | E. Camacho | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-----------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-4 |
|---------------------|---|-----------|


















| DEPTH | FIELD | | | | LOG OF BORING No. B-5 SHEET 1 OF 1 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|---|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | | | 12 | 1.5 | SILTY CLAY (CL): Brown, moist to very moist, stiff to very stiff. | 90.6 | 32.4 | % Passing #200 = 97% % Passing #200 = 21% Sp. Gr. = 2.642 |
| | | | 8 | 1.5 3.0 | grades into silt at 6.5 ft. | | | |
| 10 | | | 5 | | SILT (ML): Brown, saturated, loose, some very fine grained sand. | | | |
| | | | 7 | | SILTY SAND (SM): Brown, saturated, loose, very fine grained. | | | |
| 15 | | | 12 | | | | | |
| | | | 7 | | siltier | | | |
| 20 | | | 6 | | SANDY SILT (ML): Brown, saturated, loose, very fine grained sand. | | | |
| | | | 28 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine grained, fine laminations. | | | |
| 25 | | | 24 | | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | 39.8 | 39.8 | LL=58% PI=34% |
| 30 | | | 8 | | loose, fine laminations. | | | |
| 35 | | | 16 | 1.0 | CLAY (CH): Brown, wet, stiff. | | | |
| 40 | | | 3 | 0.25 | soft | | | |
| 45 | | | 10 | 0.5 | soft | | | |
| 50 | | | 5 | 1.5 | stiff | | | |
| 55 | | | | | Total Depth = 51.5' Groundwater measured at 4.25 feet after 3 days. Backfilled with excavated soil | | | |
| 60 | | | | | | | | |

DATE DRILLED: 7/1/11 TOTAL DEPTH: 51.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-5






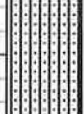

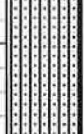



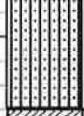





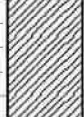

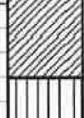


| DEPTH | FIELD | | | | LOG OF BORING No. B-6 | LABORATORY | | |
|-------|--|--|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | | | | | | |
| 5 |  |  | 5 | 2.0 | SILTY CLAY (CL): Brown, moist to wet, roots, stiff to very stiff. | 96.0 | 27.7 | |
| |  | | 7 | |  | | | |
| 10 |  |  | 3 | | SANDY SILT (ML): Brown, saturated, loose, very fine sand. | | | |
| 15 |  |  | 14 | | SILTY SAND (SM): Lt. brown, saturated, medium dense, very fine to fine grained. | | | |
| |  | | 9 | | | | | |
| |  | | 36 | | dense. | | | |
| 20 |  |  | 4 | 2.0 | SILTY CLAY (CL): Dark brown, very moist, stiff to very stiff. | 96.0 | 27.7 | |
| |  | | 24 | | | | | |
| 25 |  |  | 4 | | SANDY SILT (ML): Dark brown, saturated, loose, very fine sand. | | | |
| 30 |  |  | | | SILTY SAND (SM): Dark brown, saturated, medium dense, fine grained. | | | |
| | | | 25 | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |
| | | | | | Total Depth = 31.5' Groundwater measured at 3.75 feet after 24 hours Backfilled with excavated soil | | | |

DATE DRILLED: 6/30/11 TOTAL DEPTH: 31.5 Feet DEPTH TO WATER: 3.75 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
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PLATE B-6



















| DEPTH | FIELD | | | | LOG OF BORING No. B-7 | LABORATORY | | | | | | | |
|-------|---|---|------------|-------------------|--|-------------------|---------------------------------|---|------|------|----------------------|------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS | | | | | |
| | | | | | | | | | | | | | |
| 5 |  |  | 12 | 1.5 | SILTY CLAY (CL): Brown, moist to very moist, stiff to very stiff. | 99.9 | 29.4 | Sp. Gr. = 2.657 % Passing #200 = 87% | | | | | |
| | | | 9 | | CLAYEY SILT (ML): Brown, wet, loose. | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 10 |  |  | 5 | | SILTY SAND (SM): Brown, saturated, loose, very fine to fine grained. medium dense | | | | 88.5 | 26.6 | % Passing #200 = 49% | | |
| 15 |  |  | 7 | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 20 |  |  | 4 | 1.5 | SILTY CLAY (CL): Brown, wet, stiff. | | | | | | | 21.8 | % Passing #200 = 24% |
| 25 |  |  | 3 | | SILTY SAND (SM): Brown, saturated, loose, very fine to fine grained. | | | | | | | | |
| 30 |  |  | 5 | 1.0 | SILTY CLAY (CL): Dark brown, wet, stiff to very stiff. | 32.3 | c=0.89 tsf LL=46% PI=27% | | | | | | |
| 35 |  |  | 12 | 2.0 | | | | | | | | | |
| 40 |  |  | 5 | 1.0 | | | | | | | | | |
| 45 |  |  | 4 | | CLAYEY SILT (ML): Dark brown, saturated, loose. | | | | | | | | |
| 50 |  |  | 11 | 2.5 | SILTY CLAY (CL): Dark brown, wet, very stiff. | 88.5 | 32.3 | | | | | | |
| 55 |  |  | | | SILTY SAND (SM): Dark brown, saturated, fine grained. | | | | | | | | |
| 60 | | | | | | | | | | | | | |

DATE DRILLED: 6/30/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 3.75 ft.
 LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
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PLATE B-7a

| DEPTH | FIELD | | | | LOG OF BORING No. 7 SHEET 2 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 |  |  | 3 | | SILTY SAND (SM): Dark brown, saturated, loose, fine grained. | | | |
| |  |  | 21 | | | | | |
| 70 |  |  | 29 | | SANDY SILT (ML): Dark brown, saturated, medium dense, very fine grained sand. | | | |
| 75 |  |  | 14 | | | | | |
| 80 |  |  | 10 | | CLAYEY SILT (ML): Dark brown, saturated, medium dense. | | | |
| 85 |  |  | 6 | | SILTY SAND (SM): Dark brown, saturated, loose, fine grained. | | | |
| 90 |  |  | 38 | | dense | | | |
| 95 |  |  | 29 | | medium dense | | | |
| 100 |  |  | 6 | 1.5 | SILTY CLAY (CL): Dark brown, wet, stiff. | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |































Total Depth = 101.5'
Groundwater measured at 3.75 feet after 24 hours
Backfilled with excavated soil

DATE DRILLED: 6/30/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 3.75 ft.
LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-7b

| DEPTH | FIELD | | | | LOG OF BORING No. B-8 SHEET 1 OF 1 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 3 | 2.0 | SILTY CLAY (CL): Brown, moist to very moist, very stiff. | 100.0 | 27.7 | |
| |  |  | 13 | 2.5 | | | | |
| 10 |  |  | 2 | | CLAYEY SILT (ML): Lt. brown, saturated, very loose. | 98.7 | 24.6 | % Passing #200 = 38% |
| |  |  | 21 | | SILTY SAND (SM): Brown, saturated, loose to medium dense, fine grained. | | | |
| 15 |  |  | 8 | | | | | |
| |  |  | 17 | | | | | |
| 20 |  |  | 7 | | | | | |
| |  |  | 13 | | | 29.3 | 24.2 | Sp. Gr. = 2.617 |
| 25 |  |  | 7 | | CLAYEY SILT (ML): Brown, saturated, loose. | | | |
| 30 |  |  | 5 | | | | | |
| 35 |  |  | 3 | 1.5 | SILTY CLAY (CL): Grayish brown, wet, stiff. | | | |
| 40 |  |  | 6 | | | | | |
| 45 |  |  | 6 | | | 29.3 | 22.8 | % Passing #200 = 31% |
| 50 |  |  | 5 | | some sand | | | |
| 55 |  |  | 15 | | SILTY SAND (SM): Brown, saturated, medium dense, fine grained. | | | |
| 60 | | | | | | | | |

DATE DRILLED: 7/1/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.0 ft.
 LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-8a

| DEPTH | FIELD | | | | LOG OF BORING No. 8 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 6 | 1.5 | SILTY CLAY (CL): Dark brown, very moist, very stiff. | | | |
| 65 | | | 12 | | CLAYEY SILT (ML): Brown, saturated, medium dense. | | | |
| 70 | | | 10 | | SANDY SILT (ML): Dark brown, saturated, medium dense, very fine grained sand. | | | |
| 75 | | | 19 | | SILTY SAND (SM): Dark brown, saturated, medium dense, fine grained. | | | |
| 80 | | | 17 | | CLAYEY SILT (ML): Dark brown, saturated, medium dense to loose. | | | |
| 85 | | | 7 | | | | | |
| 90 | | | 30 | | SILTY SAND (SM): Dark brown, saturated, dense, fine grained. | | | |
| 95 | | | 29 | | | | | |
| 100 | | | 9 | 1.0 | SILTY CLAY (CL): Greyish brown, saturated, stiff. | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |


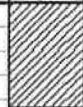


























DATE DRILLED: 7/1/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.0
 LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-8b

| DEPTH | FIELD | | | | LOG OF BORING No. B-9 SHEET 1 OF 1 | LABORATORY | | |
|--|--------|-------------|--|---|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | 4 | 1.5 | SILTY CLAY (CL): Brown, moist to very moist, stiff. | | | |
| | 6 | | SILTY SAND (SM): Brown, saturated, loose to medium dense, very fine to fine grained. | | | | | |
| | 5 | | | | | | | |
| 10 | 13 | | | | | | | |
| | 8 | | | | | | | |
| 15 | 12 | | | | | | | |
| 20 | 10 | | 2.0 | SILTY CLAY (CL): Dark brown, very moist, stiff to hard. | | | | |
| | 19 | | 4.5 | | | | | |
| 25 | | | | | Total Depth = 21.5' 20' piezometer installed Groundwater measured at 3.5 feet after 24 hours Backfilled with excavated soil | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| DATE DRILLED: 6/30/11 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: 3.5 ft LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in. SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in. | | | | | | | | |
| PROJECT NO. LE11138 | | | | Geo-Engineers and Geologists | | PLATE B-9 | | |



















| DEPTH | FIELD | | | | LOG OF BORING No. B-10 SHEET 1 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 11 | 2.5 | SILTY CLAY (CL): Brown, moist to very moist, very stiff. | 87.8 | 33.9 | % Passing #200 = 99% |
| | | | 4 | | CLAYEY SILT (ML): Brown, wet, loose. | | | |
| | | | 2 | | | | | |
| 10 |  |  | 13 | | SILTY SAND (SM): Brown, saturated, loose, very fine to fine grained. | 106.8 | 23.0 | % Passing #200 = 37% |
| 15 |  |  | 5 | | | | 27.2 | % Passing #200 = 28% |
| |  |  | 6 | | | | | |
| 20 |  |  | 6 | 1.0 | CLAY (CH): Brown, wet, stiff. | | 33.9 | LL=54% PI=36% |
| |  |  | 4 | 1.5 | | | | |
| 25 |  |  | 9 | | SANDY SILT (ML): Brown, saturated, loose, very fine to fine grained sand. | | | |
| 30 |  |  | 14 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | | | % Passing #200 = 81% |
| 35 |  |  | 12 | 2.0 | SILTY CLAY (CL): Brown, very moist, stiff. | | | |
| 40 |  |  | 4 | 0.5 | firm | | | |
| 45 |  |  | 6 | 1.5 | stiff | 83.6 | 35.2 | c=0.81 tsf |
| 50 |  |  | 8 | | SANDY SILT (ML): Dark brown, saturated, loose, fine grained sand. | | | |
| 55 |  |  | 13 | | SILTY SAND (SM): Brown, saturated, medium dense, fine grained. | | | |
| 60 |  |  | | | SILTY CLAY (CL): Brown, very moist, stiff. | | 30.4 | LL=39% PI=24% |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.25 ft.
LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-10a

































| DEPTH | FIELD | | | | LOG OF BORING No. 10 SHEET 2 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| |  |  | 9 | 1.0 | SILTY CLAY (CL): Brown, very moist, stiff. | | | |
| 65 |  |  | 15 | | SANDY SILT (ML): Dark brown, saturated, medium dense, very fine grained sand. | | | |
| 70 |  |  | 23 | | | | | |
| 75 |  |  | 8 | | CLAYEY SILT (ML): Dark brown, saturated, medium dense, clay at tip of sampler. | | | |
| 80 |  |  | 12 | | SILT (ML): Brown, saturated, medium dense, some very fine grained sand. | | | |
| 85 |  |  | 13 | | SILTY SAND (SM): Dark brown, saturated, medium dense to dense fine grained. | | | |
| 90 |  |  | 31 | | thin clay layer at 91 ft. | | | |
| 95 |  |  | 25 | | | | | |
| 100 |  |  | 12 | 0.5 | CLAYEY SILT/SILTY CLAY (ML/CL): Brown, very moist, medium dense/firm. | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | Total Depth = 101.5' Groundwater measured at 4.25 feet after 24 hours Backfilled with excavated soil | | | |
| 120 | | | | | | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-10b

| DEPTH | FIELD | | | | LOG OF BORING No. B-11 SHEET 1 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|--|-------------------|------------------------------|----------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 11 | 1.0 | SILTY CLAY (CL): Brown, moist, stiff | 105.8 | 25.8 | EI = 132 % Passing #200 = 80% |
| |  |  | 13 | | SANDY SILT (ML): Light brown, saturated, medium dense to loose, very fine grained. | | | |
| |  |  | 6 | | | | | |
| 10 |  |  | 17 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine grained. | | | |
| |  |  | 10 | | | 89.9 | 30.5 | c=1.06 tsf |
| 15 |  |  | 27 | | | | | |
| |  |  | 14 | | | | | |
| 20 |  |  | 23 | 1.5 | SILTY CLAY (CL): Brown, wet, stiff. | | | |
| 25 |  |  | 5 | | SILTY SAND (SM): Light brown, saturated, loose, very fine grained. | 89.9 | 40.8 | LL=52% PI=32% |
| 30 |  |  | 21 | 3.5 | CLAY (CH): Brown, wet, very stiff | | | |
| 35 |  |  | 4 | 0.25 | soft | | | |
| 40 |  |  | 20 | 2.5 | SILT (ML): Brown, saturated, medium dense, some fine grained sand | | | |
| 45 |  |  | 7 | 1.0 | CLAY (CH): Brown, wet, firm to hard. | | | |
| 50 |  |  | 44 | 4.5 | | | | |
| 55 |  |  | 8 | | SILTY SAND (SM): Brown, saturated, fine grained, loose. | | | |
| 60 |  |  | | | | | | |

DATE DRILLED: 6/30/11 TOTAL DEPTH: 76.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138



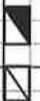
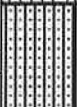
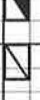

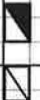















LANDMARK
 Geo-Engineers and Geologists

PLATE B-11a

| DEPTH | FIELD | | | | LOG OF BORING No. 11 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 22 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | | | |
| 70 | | | 12 | | SILT (ML): Dark brown, saturated, medium dense, some very fine grained sand, some fine laminations. | | | |
| 75 | | | 14 | 2.5 | SILTY CLAY (CL): Grayish brown, very moist, very stiff. | | | |
| 80 | | | 16 | | SILT (ML): Dark brown, saturated, medium dense, some very fine grained sand. | | | |
| 85 | | | | | | | | |
| 90 | | | | | | | | |
| 95 | | | | | | | | |
| 100 | | | | | | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | Total Depth = 76.5' Boring caved at 3 feet after 24 hours Backfilled with excavated soil | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|--------|
| DATE DRILLED: | 6/30/11 | TOTAL DEPTH: | 76.5 Feet | DEPTH TO WATER: | N/A |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-11b |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-12 SHEET 1 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------------|-------------------|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 |  |  | 14 | 1.5 | CLAY (CL): Brown, moist, stiff | 106.4 | 26.1 | % Passing #200 = 48% |
| | | | 5 | | SANDY SILT (ML): Light brown, saturated, loose, very fine grain sand | | | |
| 10 |  |  | 12 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine grained sand. loose | | | |
| | | | 4 | | | | | |
| 15 |  |  | 24 | | | | | |
| | | | 13 | | | | | |
| 20 |  |  | 10 | 2.5 | CLAY (CH): Brown, very moist, very stiff | | | |
| | | | 6 | 2.5 | | | | |
| 25 |  |  | 16 | | SILT (ML): Lt. brown, saturated medium dense, sandy at tip. | | | |
| 30 |  |  | 6 | 1.5 | SILTY CLAY (CL): Brown, wet, stiff | | | |
| 35 |  |  | | | SILTY SAND (SM): Lt. brown, saturated, medium dense. | | | |
| 40 |  |  | 12 | 0.25 | SILTY CLAY (CL): Brown, wet, soft, very silty. very stiff | | | |
| | | | 3 | 0.25 | | | | |
| 45 |  |  | 15 | 3.0 | | | | |
| 50 |  |  | 9 | | CLAYEY SILT (ML): Dark brown, saturated, loose. | | | |
| 55 |  |  | 25 | | SILTY SAND (SM): Light brown, saturated, fine grain, medium dense. | | | |
| 60 | | | | | | | | |

DATE DRILLED: 6/30/11 TOTAL DEPTH: 76.5 Feet DEPTH TO WATER: 4.75 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

























LANDMARK
 Geo-Engineers and Geologists

PLATE B-12a

| DEPTH | FIELD | | | | LOG OF BORING No. 12 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 25 | | SILTY SAND (SM): Light brown, saturated, fine grain, medium dense. | | | |
| 65 | | | 9 | | SILT (ML): Grayish brown, saturated, loose to medium dense, fine grained, grades from sandy silt downward to clayey silt. | | | |
| 70 | | | 17 | | interbedded with clay | | | |
| 75 | | | 12 | | | | | |
| 80 | | | | | | | | |
| 85 | | | | | | | | |
| 90 | | | | | | | | |
| 95 | | | | | | | | |
| 100 | | | | | | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | Total Depth = 76.5' Groundwater measured at 4.75 feet after 24 hours Backfilled with excavated soil | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|----------|
| DATE DRILLED: | 6/30/11 | TOTAL DEPTH: | 76.5 Feet | DEPTH TO WATER: | 4.75 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-12b |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-13 SHEET 1 OF 2 | LABORATORY | | |
|-------|---|--|------------|-------------------|---|-------------------------|-------------------|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 |  |  | 10 | 1.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff.  | 102.0 | 29.8 35.7 | % Passing #200 = 78% |
| |  | | 6 | | CLAYEY SILT (ML): Brown, wet, loose. | | | |
| 10 |  | | 4 | | SANDY SILT (ML): Brown, wet, loose, very fine to fine grained sand. | | | |
| |  | | 1 | | | | | |
| 15 |  |  | 12 | | SILTY SAND (SM): Brown, saturated, loose, very fine to fine grained. | | | |
| |  | | 8 | | | | | |
| |  | | 7 | | | | | |
| 20 |  | | 2 | | CLAYEY SILT (ML): Brown, saturated, very loose. | | | |
| |  |  | | 0.5 | SILTY CLAY (CH): Brown, wet, firm. | | | |
| 25 |  | | 9 | | CLAYEY SILT (ML): Brown, saturated, loose. | | | |
| 30 |  |  | 5 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | 28.6 | 28.6 | % Passing #200 = 24% |
| 35 |  |  | 8 | 1.0 | CLAY (CH): Brown, very moist, stiff. | | | |
| 40 |  | | 6 | | CLAYEY SILT (ML): Brown, saturated, loose. | | | |
| 45 |  | | 9 | | some very fine grained sand. | | | |
| 50 |  |  | 2 | | SANDY SILT/SILTY SAND (ML/SM): Dark brown, saturated, very loose, very fine grained sand. | | | |
| 55 |  | | 7 | | CLAYEY SILT (ML): Brown, saturated, loose. | | | |
| 60 |  | | | | | | | |

DATE DRILLED: 7/1/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 3.75 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-13a

| DEPTH | FIELD | | | | LOG OF BORING No. 13 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 10 | | CLAYEY SILT (ML): Brown, saturated, medium dense, interbedded clay layers. | | | |
| 65 | | | 7 | | SILTY SAND (SM): Dark brown, saturated, loose to dense, very fine grained sand. | | | |
| 70 | | | 32 | | | | | |
| 75 | | | 12 | | SANDY SILT (ML): Brown, saturated, medium dense, fine grained sand. | | | |
| 80 | | | 7 | | SILTY SAND (SM): Dark brown, saturated, medium dense to dense fine grained. | | | |
| | | | | 1.0 | CLAY (CH): Grayish brown, very moist, stiff. | | | |
| 85 | | | 11 | | SILT (ML): Brown, saturated, medium dense, some clay. | | | |
| 90 | | | 4 | | SANDY SILT (ML): Brown, saturated, loose, some very fine to fine grained sand. | | | |
| 95 | | | 30 | | SILTY SAND (SM): Brown, saturated, medium dense to dense, fine grained. | | | |
| 100 | | | 10 | | | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | Total Depth = 101.5' Groundwater measured at 3.75 feet after 3 days Backfilled with excavated soil | | | |
| 120 | | | | | | | | |

DATE DRILLED: 7/1/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 3.75 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-13b

| DEPTH | FIELD | | | | LOG OF BORING No. B-14 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------------|-------------------|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 | | | 11 | 2.5 | SILTY CLAY (CL): Brown, moist, stiff to very stiff | 105.7 | 16.7 | LL=39% PI=23% |
| 10 | | | 7 | | SANDY SILT (ML): Light brown, saturated, loose, fine grained sand. | | 31.2 | % Passing #200 = 92% |
| 15 | | | 5 | | | | | % Passing #200 = 68% |
| 20 | | | 5 | | | | | |
| 25 | | | 24 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine grained sand. | 80.3 | 23.6 | % Passing #200 = 15% |
| 30 | | | 12 | 0.25 | | | | |
| 35 | | | 4 | 1.5 | SILTY CLAY (CL): Grayish brown, wet, stiff | | | |
| 40 | | | 13 | | SANDY SILT/SILTY SAND (ML/SM): Lt. brown, saturated, medium dense, very fine grained sand. | | | |
| 45 | | | 10 | | SILTY SAND (SM): Lt. brown, saturated, medium dense, very fine grained sand. | | | % Passing #200 = 28% |
| 50 | | | 15 | 0.5 | SILTY CLAY (CL): Grayish brown, very moist, firm | | 38.3 | c=0.47 tsf |
| 55 | | | 9 | | SANDY SILT (ML): Grayish brown, saturated, loose, very fine grained sand. | | | |
| 60 | | | 26 | 3.5 | CLAY (CH): Reddish brown, very moist, very stiff | | | |
| 60 | | | 12 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine to fine grained. | | | |
| 60 | | | 10 | | | | | |
| 60 | | | | | CLAYEY SILT (ML): Brown, wet, medium dense, fine laminations. | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|--------|
| DATE DRILLED: | 6/28/11 | TOTAL DEPTH: | 101.5 Feet | DEPTH TO WATER: | N/A |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
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| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-14a |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 14 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 9 | | CLAYEY SILT (ML): Brown, wet, medium dense, fine laminations. | | | |
| 65 | | | 11 | | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | | | |
| 70 | | | 10 | | SILTY SAND (SM): Brown, saturated, medium dense, fine to medium grained sand. | | | |
| 75 | | | 9 | | SANDY SILT (ML): Brown, saturated, loose to medium dense, very fine grained sand. | | | |
| 80 | | | 15 | 3.5 | CLAY (CH): Greyish brown, very stiff, very moist. | | | |
| 85 | | | 5 | | SILT (ML): Grayish brown, loose, saturated, fine laminations (banding). | | | |
| 90 | | | 16 | | | | | |
| 95 | | | 38 | | SILTY SAND (SM): Brown, saturated, dense, fine grained | | | |
| 100 | | | 16 | | medium dense | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | Total Depth = 101.5' Boring caved at 3.5 feet after 24 hours Backfilled with excavated soil | | | |
| 120 | | | | | | | | |

| | | |
|--|--------------------------------|---------------------|
| DATE DRILLED: 6/28/11 | TOTAL DEPTH: 101.5 Feet | DEPTH TO WATER: N/A |
| LOGGED BY: S. Williams | TYPE OF BIT: Hollow Stem Auger | DIAMETER: 8 in. |
| SURFACE ELEVATION: Approximately -224' | HAMMER WT.: 140 lbs. | DROP: 30 in. |

| | | |
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| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-14b |
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

















| DEPTH | FIELD | | | | LOG OF BORING No. B-15 SHEET 1 OF 2 | LABORATORY | | | | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|--|--|------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS | | | |
| 5 | | | 11 | 1.5 | SILTY CLAY (CL): Brown, very moist, stiff | 94.6 | 36.0 | % Passing #200 = 99% % Passing #200 = 58% | | | |
| | | | 5 | | | | | | | | |
| 10 | | | 4 | | SANDY SILT (ML): Brown, saturated, loose, very fine grained | | | | | | |
| | | | 5 | | | | | | | | |
| 15 | | | 26 | | SILTY SAND (SM): Lt. brown, saturated, loose to medium dense, very fine grained. | | | | | 24.6 | % Passing #200 = 20% |
| | | | 5 | | | | | | | | |
| 20 | | | 28 | | | | | | | | |
| | | | | | | | | | | | |
| 25 | | | 6 | 1.0 | CLAY (CH): Brown, moist, stiff. | | | | | 33.0 | LL=61% PI=42% |
| | | | | | | | | | | | |
| 30 | | | 9 | | SILT (ML): Brown, saturated, loose, some very fine grained sand. | | | | | | |
| | | | | | | | | | | | |
| 35 | | | 12 | | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | | | | | | |
| | | | | | | | | | | | |
| 40 | | | 11 | 1.0 | CLAY (CH): Grayish brown, stiff to firm, wet | 82.3 | 35.7 | | | | |
| | | | | | | | | | | | |
| 45 | | | 3 | 0.25 | | | | | | 38.8 | LL=63% PI=43% |
| | | | | | | | | | | | |
| 50 | | | 11 | 4.5 | hard | | | | | | |
| | | | | | | | | | | | |
| 55 | | | 13 | | SILTY SAND (SM): Lt. brown, saturated, medium dense, fine grained sand. | | | | | | |
| | | | | | | | | | | | |
| 60 | | | 9 | | SILT (ML): Brown, saturated, loose, some sand and clay | | | | | | |
| | | | | | | | | | | | |
| | | | | | SILTY CLAY (CL): Brown, wet, stiff | | | | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-15a

| DEPTH | FIELD | | | | LOG OF BORING No. 15 SHEET 2 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| |  |  | 6 | 1.5 | SILTY CLAY (CL): Brown, wet, stiff. | | | |
| 65 |  |  | 7 | | SILTY SAND (SM): Lt. brown, saturated, loose to medium dense, fine grained. | | | |
| 70 |  |  | 21 | | | | | % Passing #200 = 30% |
| 75 |  |  | 12 | | SILT (ML): Grayish brown, saturated, medium dense, some sand and clay. | | | |
| 80 |  |  | 10 | 3.0 | SILTY CLAY (CL): Grayish brown, wet, very stiff, very silty. thin silty sand layer with gastropods @ 81 ft. | | | |
| 85 |  |  | 9 | | | | | |
| 90 |  |  | 29 | | SILTY SAND (SM): Grayish brown, saturated, medium dense, fine grained. | | | |
| 95 |  |  | 21 | | | | | |
| 100 |  |  | 9 | 1.5 | SILTY CLAY (CL): Grayish brown, wet, stiff, some micaceous sand. | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | Total Depth = 101.5' Groundwater measured at 4.25 feet after 24 hours Backfilled with excavated soil | | | |
| 120 | | | | | | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-15b

| DEPTH | FIELD | | | | LOG OF BORING No. B-16 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | | | 7 | 0.5 | SILTY CLAY (CL): Brown, very moist, firm. | 90.6 | 11.2 | LL=45% PI=29% |
| 10 | | | 14 | | SANDY SILT (ML): Light brown, saturated, medium dense to loose, very fine grained sand. | | | % Passing #200 = 96% |
| 15 | | | 21 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine grained | | | % Passing #200 = 29% |
| 20 | | | 13 | | | | | |
| 25 | | | 18 | | | | | |
| 30 | | | 6 | | loose | 89.2 | | % Passing #200 = 28% |
| 35 | | | 18 | 4.0 | CLAY (CH): Brown, hard, very moist | | 27.3 | |
| 40 | | | 6 | | SILT (ML): Brown, saturated, loose | | 27.9 | % Passing #200 = 95% |
| 45 | | | 28 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine to medium grained. | | | |
| 50 | | | 4 | 0.25 | CLAY (CH): Gray/brown, soft, wet, high plasticity. | | | |
| 55 | | | 16 | 3.0 | SANDY SILT CLAY (CL): Brown, wet, very stiff. | 89.2 | 29.3 | |
| 60 | | | 16 | 1.5 | SILTY CLAY (CL): Brown, very moist, stiff | | | |
| 65 | | | 14 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine to medium grained. | | | |
| 70 | | | 11 | 2.0 | CLAY/SILTY SAND: Brown, saturated, stiff/medium dense, interbedded. | | | |
| 75 | | | | | CLAY/SILT: Brown, saturated, stiff/medium dense, interbedded. | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-16a

| DEPTH | FIELD | | | | LOG OF BORING No. 16 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 12 | 1.0 | SILTY CLAY/CLAYEY SILT (CL/ML): Brown, saturated, stiff/medium dense, interbedded. | | | |
| 65 | | | 8 | | SILT (ML): Brown, saturated, loose, some sandy zones. | | 29.0 | % Passing #200 = 98% |
| 70 | | | 36 | | | | | |
| 75 | | | 20 | | | | | |
| 80 | | | 9 | 0.5 2.0 | SILTY CLAY (CL): Grayish brown, wet, firm to stiff. | | | |
| 85 | | | 12 | | SILT (ML): Grayish brown, saturated, medium dense, some very fine grained sand. | | | |
| 90 | | | 16 | | | | | |
| 95 | | | 31 | | SILTY SAND (SM): Grayish brown, saturated, dense, fine grained. | | | |
| 100 | | | 8 | 0.25 | SILTY CLAY (CL): Grayish brown, wet, soft to firm. | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | Total Depth = 101.5' Groundwater measured at 4.25 feet after 24 hours Backfilled with excavated soil | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 151.5 Feet DEPTH TO WATER: 4.25 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-16b

| DEPTH | FIELD | | | | LOG OF BORING No. B-17 SHEET 1 OF 3 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | | | 5 | 1.5 | SILTY CLAY (CL): Dark brown, moist to very moist, stiff. | 95.4 | 27.2 30.6 | c=0.23 tsf % Passing #200 = 88% |
| | | | 7 | | CLAYEY SILT (ML): Brown, wet, loose, some very fine sand. | | | |
| | | | 3 | | | | | |
| 10 | | | 13 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | 99.7 | 26.7 | % Passing #200 = 30% |
| | | | 14 | | | | | |
| | | | 19 | | | | | |
| 15 | | | 5 | | | 85.6 | 38.3 | |
| 20 | | | 23 | 2.5 | CLAY (CH): Brown, very moist, very stiff, high plasticity. | | | |
| | | | 1 | | CLAYEY SANDY SILT (ML): Brown, saturated, very loose, very fine sand. | | | |
| 30 | | | 9 | | | 85.6 | 38.3 | |
| | | | | 1.0 | CLAY (CH): Grayish brown, very moist, stiff. | | | |
| | | | 4 | 1.0 | | | | |
| 40 | | | 6 | | | 85.6 | 38.3 | |
| | | | 21 | 0.5 | CLAYEY SILT/SILTY CLAY (ML/CL): Brown, saturated, loose/firm. | | | |
| 45 | | | 13 | 1.0 | CLAY (CH): Brown, very moist, stiff, high plasticity. | | | |
| 50 | | | 10 | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, medium dense, fine grained sand. | 85.6 | 38.3 | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |

DATE DRILLED: 6/28/11 TOTAL DEPTH: 121.5 Feet DEPTH TO WATER: 4.9 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-17a

| DEPTH | FIELD | | | | LOG OF BORING No. 17 SHEET 2 OF 3 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 6 | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, loose, fine grained sand. | | 24.8 | % Passing #200 = 46% |
| 70 | | | 8 | | CLAY (CH): Brown, very moist, very stiff. | | | |
| 75 | | | 13 | 2.0 | | | | |
| 80 | | | 11 | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, medium dense to dense, fine grained sand. | | | |
| 85 | | | 32 | | | | | |
| 90 | | | 24 | | | | | |
| 95 | | | 8 | 1.0 | CLAY (CH): Grayish brown, very moist, stiff to very stiff. | | | |
| 100 | | | 13 | 3.5 | | | | |
| 105 | | | 13 | 3.0 | | | | |
| 110 | | | 1 | | SILTY SAND (SM): Brown, saturated, very loose, fine grained. | | | |
| 115 | | | 32 | | dense | | | |
| 120 | | | 48 | | | | | |

| | | |
|--|--------------------------------|-------------------------|
| DATE DRILLED: 6/28/11 | TOTAL DEPTH: 121.5 Feet | DEPTH TO WATER: 4.9 ft. |
| LOGGED BY: J. Avalos | TYPE OF BIT: Hollow Stem Auger | DIAMETER: 8 in. |
| SURFACE ELEVATION: Approximately -224' | HAMMER WT.: 140 lbs. | DROP: 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-17b |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 17 SHEET 3 OF 3 | LABORATORY | | |
|---|-------------------------------------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | <input checked="" type="checkbox"/> | | 15 | 4.0 | CLAY (CH): Grayish brown, very moist, hard. | | | |
| 125 | | | | | | | | |
| 130 | | | | | | | | |
| 135 | | | | | | | | |
| 140 | | | | | | | | |
| 145 | | | | | | | | |
| 150 | | | | | | | | |
| 155 | | | | | | | | |
| 160 | | | | | | | | |
| 165 | | | | | | | | |
| 170 | | | | | | | | |
| 175 | | | | | | | | |
| 180 | | | | | Total Depth = 121.5' Groundwater measured at 4.9 feet after 24 hours Backfilled with excavated soil | | | |
| DATE DRILLED: <u>6/28/11</u> TOTAL DEPTH: <u>121.5 Feet</u> DEPTH TO WATER: <u>4.9 ft.</u> LOGGED BY: <u>J. Avalos</u> TYPE OF BIT: <u>Hollow Stem Auger</u> DIAMETER: <u>8 in.</u> SURFACE ELEVATION: <u>Approximately -224'</u> HAMMER WT.: <u>140 lbs.</u> DROP: <u>30 in.</u> | | | | | | | | |
| PROJECT NO. LE11138 | | | | | LANDMARK Geo-Engineers and Geologists | | PLATE B-17c | |

| DEPTH | FIELD | | | | LOG OF BORING No. B-18 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|--|---|-------------------------|---|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 | | | 6 | 2.0 | SILTY CLAY (CL): Dark brown, moist to very moist, stiff. | | 23.4 | LL=48% PI=31% |
| | 16 | | 2.0 | | | | | |
| 10 | | | 3 | | CLAYEY SILT (ML): Brown, wet, loose, some very fine sand. | | 30.7 | % Passing #200 = 94% |
| | 25 | | | SILTY SAND (SM): Brown, saturated, loose to medium dense, very fine to fine grained. | | | | |
| | 7 | | | | | | % Passing #200 = 25% | |
| 15 | | | 16 | | | | | |
| | 5 | | | | | | 25.5 | % Passing #200 = 33% |
| 20 | | | | 8 | 1.0 | | CLAY (CH): Brown, very moist, stiff, high plasticity. | |
| 25 | | 1 | | | SANDY SILT (ML): Brown, saturated, very loose, very fine sand. | | | % Passing #200 = 85% |
| 30 | | | 8 | | SILTY SAND (SM): Brown, saturated, loose, fine grained sand. | | | |
| 35 | | | 5 | 1.0 | CLAY (CH): Grayish brown, very moist, stiff, some silty clay zones. | | | |
| 40 | | 11 | 2.0 | | | | | |
| 45 | | 6 | 0.5 | | | | | |
| 50 | | 17 | 3.0 | | | | | |
| 55 | | | 16 | | SILTY SAND (SM): Brown, saturated, medium dense, fine grained sand. | | | |
| 60 | | | | | | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 6/28/11 | TOTAL DEPTH: | 101.5 Feet | DEPTH TO WATER: | 5.0 ft. |
| LOGGED BY: | J. Avalos | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-18a |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 18 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | 13 | | SANDY SILT (ML): Brown, saturated, medium dense, fine grained sand. | | 26.5 | % Passing #200 = 53% |
| 65 | | | 55 | | SILTY SAND (SM): Brown, saturated, very dense, fine grained sand. | | | |
| 70 | | | 4 | 2.0 | CLAY (CH): Grayish brown, very moist, stiff to very stiff. | | | |
| 75 | | | 8 | | CLAYEY SILT (ML): Grayish brown, saturated, loose to medium dense, low plasticity. | | | |
| 80 | | | 18 | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, medium dense to dense, fine grained sand. loose | | | |
| 85 | | | 28 | | | | | |
| 90 | | | 5 | | | | | |
| 95 | | | 18 | 1.5 | CLAY (CH): Grayish brown, very moist, stiff. | | | |
| 100 | | | 11 | 1.0 | | | | |
| 105 | | | | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |































Total Depth = 101.5'
Groundwater measured at 5.0 feet after 24 hours
Backfilled with excavated soil

DATE DRILLED: 6/28/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 5.0 ft.
LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-18b

| DEPTH | FIELD | | | | LOG OF BORING No. B-19 SHEET 1 OF 2 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 13 | 2.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff to very stiff. | 101.2 | 24.3 | |
| 10 |  |  | 8 | | SANDY SILT (ML): Brown, wet, loose, some clayey zones. | 104.0 | 27.8 | % Passing #200 = 53% |
| |  |  | 8 | | | | | |
| |  |  | 4 | | | | | |
| 15 |  |  | 12 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | | 24.0 | % Passing #200 = 22% |
| |  |  | 16 | | | | | |
| 20 |  |  | 19 | | | | | |
| |  |  | 13 | | | | | |
| 25 |  |  | 13 | | | | | |
| 30 |  |  | 6 | | SANDY SILT (ML): Brown, saturated, loose, very fine to fine grained sand. | | | |
| 35 |  |  | 14 | 4.0 | SILTY CLAY (CL): Dark brown, wet, stiff to hard. | | 28.9 | |
| 40 |  |  | 7 | 2.0 | | | | |
| 45 |  |  | 9 | 0.75 | | | | |
| |  |  | 10 | 4.0 | | | | |
| 55 |  |  | 8 | | SILTY SAND (SM): Brown, saturated, loose, fine grained. | | | |
| 60 | | | | | | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 6.0 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-19a

| DEPTH | FIELD | | | | LOG OF BORING No. 19 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 18 | | SILTY SAND (SM): Dark brown, saturated, loose, fine grained. | | | |
| 70 | | | 21 | | SILTY CLAY (CL): Dark brown, wet, stiff to very stiff. | | | |
| 75 | | | 10 | 2.0 | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | | | |
| 80 | | | 11 | | SILT (ML): Dark brown, saturated, medium dense. | | | |
| 85 | | | 16 | | SANDY SILT (ML): Brown, saturated, medium dense, fine grained sand. | | | |
| 90 | | | 10 | | | | | |
| 95 | | | 4 | | grades to clayey silt | | | |
| 100 | | | 6 | 1.5 | SILTY CLAY (CL): Grayish brown, wet, stiff. | | | |
| 105 | | | 12 | 1.5 | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |

DATE DRILLED: 6/29/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 6.0 ft.
 LOGGED BY: J. Avalos TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-19b

| DEPTH | FIELD | | | | LOG OF BORING No. B-20 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | | | | | | El = 115 |
| 5 | | | 5 | 1.5 | CLAY (CH): Dark brown, moist, stiff. | 94.6 | 34.2 | % Passing #200 = 98% |
| | | | 17 | | SANDY SILT (ML): Brown, saturated, medium dense to very loose. | | | |
| 10 | | | 3 | | | | | |
| | | | 8 | | SILTY SAND (SM): Dark brown, saturated, loose, fine grained. | | | |
| | | | 7 | | | | | |
| 15 | | | 35 | | dense | | | |
| | | | 1 | | SANDY SILT (ML): Brown, saturated, very loose. | | | |
| 20 | | | 9 | 1.0 | SILTY CLAY (CL): Brown, very moist, stiff. | | 33.5 | % Passing #200 = 90% |
| | | | | | | | | |
| 25 | | | 1 | | SILTY SAND (SM): Dark brown, saturated, very loose, very fine to fine grained. | | | |
| | | | | | | | | |
| 30 | | | 8 | | SANDY CLAY (CL): Brown, wet, stiff, fine grained sand. | | | |
| | | | | | | | | |
| 35 | | | 5 | 1.5 | CLAY (CH): Brown, very moist, stiff. | | | |
| | | | | | | | | |
| 40 | | | 3 | 1.5 | | | | |
| | | | | | | | | |
| 45 | | | 24 | 1.0 | SANDY CLAY (CL): Brown, wet, stiff, fine grained sand. | | | |
| | | | | | | | | |
| 50 | | | 10 | | SILTY SAND (SM): Dark brown, saturated, very loose, very fine to fine grained. | | | |
| | | | | | | | | |
| 55 | | | 8 | | SANDY SILT (ML): Brown, very moist, stiff. | | | |
| | | | | | | | | |
| 60 | | | | | SILTY SAND (SM): Dark brown, saturated, very loose, very fine to fine grained. | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 7/5/11 | TOTAL DEPTH: | 101.5 Feet | DEPTH TO WATER: | 4.0 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-20a

| DEPTH | FIELD | | | | LOG OF BORING No. 20 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 24 | | SILTY SAND (SM): Dark brown, saturated, very loose, very fine to fine grained. | | | |
| 70 | | | 12 | | | | | |
| 75 | | | 7 | 3.0 | SILTY CLAY (CL): Dark brown, wet, very stiff. | | | |
| 80 | | | 20 | 2.5 | | | | |
| 85 | | | 15 | | SILTY SAND (SM): Dark brown, saturated, very loose, very fine to fine grained. | | | |
| 90 | | | 20 | | grayish brown | | | |
| 95 | | | 12 | 2.0 | SILTY CLAY (CL): Dark brown, wet, very stiff. | | | |
| 100 | | | 10 | 2.0 | SILTY CLAY (CL): Dark brown, wet, very stiff. | | | |
| 105 | | | 8 | | | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | Total Depth = 101.5' Groundwater measured at 4.0 feet after 24 hours Backfilled with excavated soil | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 7/5/11 | TOTAL DEPTH: | 101.5 Feet | DEPTH TO WATER: | 4.0 ft. |
| LOGGED BY: | E. Camacho | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-20b |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-21 SHEET 1 OF 3 | LABORATORY | | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|----------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS | |
| 5 | ● | | 8 | 0.5 | CLAY (CL-CH): Brown, soft, very moist. | 100.0 | 33.2 | LL=50% PI=32% | |
| | ▣ | | 10 | | SANDY SILT (ML): Light brown, saturated, medium dense to very loose, very fine grained sand. | | 30.1 | % Passing #200 = 69% | |
| 10 | ▣ | | 2 | | | | | % Passing #200 = 98% | |
| | ▣ | | 30 | | SILTY SAND (SM): Light brown, saturated, medium dense to dense, fine grained. | | | % Passing #200 = 46% | |
| 15 | ▣ | | 16 | | | | | % Passing #200 = 19% | |
| | ▣ | | 44 | | loose | | | | |
| 20 | ▣ | | 7 | | | | | | |
| | ▣ | | 16 | | | | | | |
| 25 | ▣ | | | | SILTY CLAY (CL): Brown, very moist. | | 28.4 | | |
| | ▣ | | 6 | | CLAYEY SILT (ML): Brown, saturated, loose, some very fine grained sand. | | | | % Passing #200 = 96% |
| 30 | ▣ | | | | | | | | |
| | ▣ | | 16 | | SILTY SAND (SM): Light brown, saturated, medium dense to dense, fine grained. | | | | |
| 35 | ▣ | | | | | | | | |
| | ▣ | | 7 | 1.5 | CLAY (CH): Grayish brown, very moist, stiff to firm. | | | | |
| 40 | ▣ | | | | | | | | |
| | ▣ | | 9 | 0.25 | | | | | |
| 45 | ▣ | | | | | | | | |
| | ▣ | | 2 | | sandy | | | | |
| 50 | ▣ | | | | | | | | |
| | ▣ | | 14 | | CLAYEY SILTY (ML): Brown, saturated, medium dense, some very fine sand. | | | | |
| 55 | ▣ | | | | | | | | |
| | ▣ | | 8 | 0.5 | SILTY CLAY (CL): Brown, very moist, soft to firm | | | | |
| 60 | ▣ | | | | | | | | |
| | ▣ | | | | SILTY SAND (SM): Light brown, saturated, medium dense, fine grained. | | | | |



| | | |
|--|--------------------------------|-------------------------|
| DATE DRILLED: 6/28/11 | TOTAL DEPTH: 121.5 Feet | DEPTH TO WATER: 4.6 ft. |
| LOGGED BY: S. Williams | TYPE OF BIT: Hollow Stem Auger | DIAMETER: 8 in. |
| SURFACE ELEVATION: Approximately -224' | HAMMER WT.: 140 lbs. | DROP: 30 in. |

| | | |
|---------------------|---|-------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-21a |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 21 SHEET 2 OF 3 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|--|-------------------|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 65 | | | 15 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine grained. | | | |
| | | | 16 | | | | | |
| 70 | | | 46 | | | | | |
| 75 | | | 9 | | SILT (ML): Grayish brown, saturated, loose, some very fine sand, grades from silty sand to silt | | | |
| 80 | | | 9 | 3.0 | SILTY CLAY (CL): Grayish brown, very moist, very stiff. | | | |
| 85 | | | 3 | | SILT (ML): Grayish brown, saturated, loose. | | | |
| 90 | | | 12 | | SILTY SAND (SM): Grayish brown, saturated, medium dense, fine grained. | | | |
| 95 | | | 23 | | | | | |
| 100 | | | 13 | | | | | |
| 105 | | | 6 | | SILT (ML): Grayish brown, saturated, medium dense to loose, fine laminations, some very fine sand. | | | |
| 110 | | | 10 | 3.5 | SILTY CLAY (CL): Grayish brown, very moist, very stiff. | | | |
| 115 | | | 8 | 3.0 | | | | |
| 120 | | | | | | SILTY SAND/SANDY SILT (SM/ML): Grayish brown, saturated, very soft, fine grained sand. | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 6/28/11 | TOTAL DEPTH: | 121.5 Feet | DEPTH TO WATER: | 4.6 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
|---------------------|----------------------------------|-------------|
| PROJECT NO. LE11138 | Geo-Engineers and Geologists | PLATE B-21b |
|---------------------|----------------------------------|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 21 SHEET 3 OF 3 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| |  |  | 1 | | SILTY SAND/SANDY SILT (SM/ML): Grayish brown, saturated, very soft, fine grained sand. | | | |
| 125 | | | | | | | | |
| 130 | | | | | | | | |
| 135 | | | | | | | | |
| 140 | | | | | | | | |
| 145 | | | | | | | | |
| 150 | | | | | | | | |
| 155 | | | | | | | | |
| 160 | | | | | | | | |
| 165 | | | | | | | | |
| 170 | | | | | | | | |
| 175 | | | | | | | | |
| 180 | | | | | Total Depth = 121.5' Groundwater measured at 4.6 feet after 24 hours Backfilled with excavated soil | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 6/28/11 | TOTAL DEPTH: | 121.5 Feet | DEPTH TO WATER: | 4.6 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
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| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-21c |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-22 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | | | 18 | 4.5 | SILTY CLAY (CL): Brown, moist, hard to stiff. | 103.7 | 27.1 24.4 | % Passing #200 = 30% |
| | | | 5 | 1.5 | SILTY SAND (SM): Light brown, saturated, loose, very fine grained. | | | |
| 10 | | | 5 | | SANDY SILT (ML): Light brown, saturated, loose, very fine grained sand. | | | |
| | | | 4 | | | | | |
| 15 | | | 28 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine to fine grained. | | | |
| | | | 11 | | | | | |
| 20 | | | 32 | | dense | | | |
| | | | 12 | | | | | |
| 25 | | | 7 | | SILT (ML): Brown, saturated, loose, some very fine grained sand | | | |
| 30 | | | 12 | | | | | |
| 35 | | | 5 | 1.0 | CLAY (CH): Gray/brown, stiff, wet. | | | |
| 40 | | | 4 | 1.0 | | | | |
| 45 | | | 7 | 1.0 | SILTY CLAY (CL): Brown, stiff, wet. | | | |
| 50 | | | 5 | 3.0 | reddish brown, wet, very stiff, thin sandy layers (1/2"). | | | |
| 55 | | | 9 | | SILTY SAND (SM): Brown, saturated, loose, fine grained. | | | |
| 60 | | | | | | | | |

| | | |
|--|--------------------------------|-------------------------|
| DATE DRILLED: 7/6/11 | TOTAL DEPTH: 101.5 Feet | DEPTH TO WATER: 5.0 ft. |
| LOGGED BY: S. Williams | TYPE OF BIT: Hollow Stem Auger | DIAMETER: 8 in. |
| SURFACE ELEVATION: Approximately -224' | HAMMER WT.: 140 lbs. | DROP: 30 in. |

| | | |
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| PROJECT NO. LE11138 | | PLATE B-22a |
|---------------------|--|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 22 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 11 | | SILTY SAND (SM): Brown, saturated, loose, fine grained. | | | |
| | | | | | SILT (ML): Brown, saturated, medium dense. | | | |
| 70 | | | 24 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | | | |
| | | | 30 | | | | | |
| 75 | | | 15 | | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | | | |
| 80 | | | 5 | 3.0 | SILTY CLAY (CL): Gray brown, wet, stiff | | | |
| 85 | | | 4 | 0.5 | CLAYEY SILT/SILTY CLAY (ML/CL): Grayish brown, wet, loose/firm. | | | |
| 90 | | | 39 | | SILTY SAND (SM): Grayish brown, saturated, dense to medium dense, fine grained. | | | |
| 95 | | | 26 | | | | | |
| 100 | | | 15 | | | | | |
| 105 | | | | | Total Depth = 101.5' Groundwater measured at 5.0 feet after 24 hours Backfilled with excavated soil | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|---------|
| DATE DRILLED: | 7/6/11 | TOTAL DEPTH: | 101.5 Feet | DEPTH TO WATER: | 5.0 ft. |
| LOGGED BY: | S. Williams | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
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| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-22b |
|---------------------|---|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. B-23 SHEET 1 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | | | | | | | | |
| | | | 4 | 1.0 | SILTY CLAY (CL): Brown, moist, stiff | | | |
| 5 | | | 26 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine grained. | 105.0 | 23.2 | |
| | | | 2 | | SANDY SILT (ML): Light brown, saturated, very loose, fine grained sand. | | | |
| 10 | | | 19 | | SILTY SAND (SM): Light brown, saturated, medium dense, fine grained. | 103.5 | 22.4 | % Passing #200 = 24% |
| | | | 12 | | | | | |
| 15 | | | 34 | | | | | |
| | | | 4 | | | | | |
| 20 | | | 7 | 0.5 | CLAY (CH): Brown, wet, firm. | | | |
| 25 | | | 4 | | SILTY SAND (SM): Light brown, saturated, loose to medium dense, fine grained. | | | |
| 30 | | | 12 | | | | | |
| | | | | 1.5 | CLAY (CH): Grayish brown, wet, soft to stiff. | | | |
| 35 | | | 5 | 0.5 2.0 | | | | |
| 40 | | | 6 | 0.25 | | | | |
| 45 | | | 2 | 0.25 | SANDY SILTY CLAY (CL): Brown, wet, soft, fine grained sand | | | |
| 50 | | | 50/6" | | SILTY SAND (SM): Light brown, saturated, very dense, very fine to fine grained. | | | |
| 55 | | | 1 | 0.25 | SILTY CLAY/CLAYEY SILT (CL/ML): Light brown, wet, soft/very loose. | | | |
| 60 | | | | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine to fine grained. | | | |

DATE DRILLED: 7/6/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 5.0 ft.
 LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-23a

| DEPTH | FIELD | | | | LOG OF BORING No. 23 SHEET 2 OF 2 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | ✓ | | 18 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine to fine grained. | | | |
| 70 | ✓ | | 11 | | SANDY SILT (ML): Light brown, saturated, medium dense, very fine grained sand. | | | |
| 75 | ✓ | | 9 | 2.5 | SILTY SAND (SM): Grayish brown, saturated, loose, very fine grained. | | | |
| 80 | ✓ | | 5 | | SILTY CLAY (CL): Grayish brown, wet, very stiff. | | | |
| 85 | ✓ | | 13 | | SILT (ML): Grayish brown, saturated, loose. | | | |
| 90 | ✓ | | 39 | | SANDY SILT (ML): Light brown, saturated, dense, very fine to fine grained sand. | | | |
| 95 | ✓ | | 3 | | very loose | | | |
| 100 | ✓ | | 5 | | SILTY SAND (SM): Brown, saturated, loose, very fine to fine grained, clay at tip of sampler. | | | |
| 105 | ✓ | | 7 | 1.0 | SILTY CLAY (CL): Brown, wet, stiff. | | | |
| 110 | | | | | | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |

Total Depth = 101.5'
Groundwater measured at 5.0 feet after 24 hours
Backfilled with excavated soil

DATE DRILLED: 7/6/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 5.0 ft.
LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
Geo-Engineers and Geologists

PLATE B-23b

| DEPTH | FIELD | | | | LOG OF BORING No. B-24 SHEET 1 OF 3 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | 15 | 2.0 | SILTY CLAY (CL): Dark brown, moist, stiff to very stiff. | 98.9 | 32.3 14.6 | % Passing #200 = 70% |
| | ▲ | | 8 | 2.0 | | | | |
| 10 | ▲ | | 5 | | SANDY SILT (ML): Dark brown, saturated, loose, very fine to fine grained sand. | | | |
| | ▲ | | 4 | | | | | |
| 15 | ▲ | | 10 | | SILTY SAND (SM): Dark brown, saturated, loose to medium dense, very fine to fine grained. | | | |
| | ▲ | | 9 | | | | | |
| | ▲ | | 14 | | | | | |
| 20 | ▲ | | 4 | 1.5 | SILTY CLAY (CL): Dark brown, wet, stiff. | | | |
| 25 | ▲ | | 8 | | SANDY SILT (ML): Dark brown, saturated, loose, very fine to fine grained sand. | | 29.8 | % Passing #200 = 71% |
| 30 | ▲ | | 10 | | SILTY SAND (SM): Dark brown, saturated, loose to medium dense, very fine to fine grained. | | | |
| 35 | ▲ | | 14 | | | | | |
| 40 | ▲ | | 4 | 2.0 | CLAY (CH): Dark brown, wet, stiff to very stiff. | | | |
| 45 | ▲ | | 13 | 2.0 | | | | |
| 50 | ▲ | | 5 | | SILTY SAND (SM): Brown, saturated, loose, fine grained. | | | |
| 55 | ▲ | | 7 | 1.0 | SILTY CLAY (CL): Dark brown, very moist, stiff. | | | |
| 60 | | | | | SILTY SAND (SM): Lt. brown, saturated, medium dense to dense, fine grained. | | | |

DATE DRILLED: 7/6/11 TOTAL DEPTH: 121.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
 Geo-Engineers and Geologists

PLATE B-24a

| DEPTH | FIELD | | | | LOG OF BORING NO. 24 SHEET 2 OF 3 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | ✓ | | 21 | | SILTY SAND (SM): Lt. brown, saturated, medium dense to dense, fine grained. | | | |
| | ✓ | | 34 | | | | | |
| 70 | ✓ | | 6 | 1.0 | SILTY CLAY (CL): Brown, wet, stiff. | | | |
| 75 | ✓ | | 8 | | SANDY SILT (ML): Dark brown, saturated, loose to medium dense, fine grained sand. | | | |
| 80 | ✓ | 19 | | | | | | |
| 85 | ✓ | | 19 | | SILTY SAND (SM): Dark brown, saturated, medium dense to dense, fine grained. | | | |
| 90 | ✓ | | 35 | | | | | |
| 95 | ✓ | | 5 | | CLAYEY SILT (ML): Dark brown, saturated, loose. | | | |
| 100 | ✓ | | 14 | 4.0 | SILTY CLAY (CL): Dark brown, very moist, very stiff to stiff. | | | |
| 105 | ✓ | 9 | 3.5 | | | | | |
| 110 | ✓ | 9 | 1.5 | | | | | |
| 115 | ✓ | 7 | 3.5 | | | | | |
| 120 | | | | | | | | |

| | | | | | |
|--------------------|---------------------|--------------|-------------------|-----------------|--------|
| DATE DRILLED: | 7/6/11 | TOTAL DEPTH: | 121.5 Feet | DEPTH TO WATER: | N/A |
| LOGGED BY: | E. Camacho | TYPE OF BIT: | Hollow Stem Auger | DIAMETER: | 8 in. |
| SURFACE ELEVATION: | Approximately -224' | HAMMER WT.: | 140 lbs. | DROP: | 30 in. |

| | | |
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| PROJECT NO. LE11138 | Geo-Engineers and Geologists | PLATE B-24b |
|---------------------|----------------------------------|-------------|




















| DEPTH | FIELD | | | | LOG OF BORING No. 24 SHEET 3 OF 3 | LABORATORY | | |
|--|-------------------------------------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| | <input checked="" type="checkbox"/> | | 8 | 3.5 | SILTY CLAY (CL): Dark brown, very moist, very stiff. | | | |
| 125 | | | | | | | | |
| 130 | | | | | | | | |
| 135 | | | | | | | | |
| 140 | | | | | | | | |
| 145 | | | | | | | | |
| 150 | | | | | | | | |
| 155 | | | | | | | | |
| 160 | | | | | | | | |
| 165 | | | | | | | | |
| 170 | | | | | | | | |
| 175 | | | | | | | | |
| 180 | | | | | Total Depth = 121.5' Groundwater not measured after 24 hours due to caving Backfilled with excavated soil | | | |
| DATE DRILLED: 7/6/11 TOTAL DEPTH: 121.5 Feet DEPTH TO WATER: N/A LOGGED BY: E. Camacho TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in. SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in. | | | | | | | | |
| PROJECT NO. LE11138 | | | | | LANDMARK Geo-Engineers and Geologists | | PLATE B-24c | |

| DEPTH | FIELD | | | | LOG OF BORING No. B-25 SHEET 1 OF 2 | LABORATORY | | | |
|-------|--------|-------------|------------|-------------------|---|-------------------------|-------------------|------------------------------|----------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | | | 12 | 3.5 | SILTY CLAY (CL): Brown, moist, stiff to very stiff | 97.6 | 22.4 | % Passing #200 = 99% | |
| | | | 6 | | SILT (ML): Brown, saturated, loose, sandy at 6.8 ft. | | | | |
| 10 | | | 2 | | | | | | |
| | | | 8 | | SILTY SAND (SM): Light brown, saturated, loose to medium dense, very fine to fine grained. | | | | |
| 15 | | | 21 | | | | | | |
| | | | 28 | | | | | | |
| 20 | | | 14 | | | | | | |
| | | | 3 | 0.5 2.0 | CLAY (CH): Brown, very moist, firm to stiff | | 27.3 | | LL=59% PI=40% |
| 25 | | | 23 | | SILTY CLAY/SILTY SAND(CL/SM): Brown, very moist/saturated, grades down from clay to silty sand. | | | | |
| 30 | | | 4 | | SILTY SAND (SM): Light brown, saturated, very loose, very fine to fine grained. | | 24.6 | | % Passing #200 = 32% |
| 35 | | | 13 | 1.5 | CLAY (CH): Dark brown, wet, stiff, very plastic. | | | | |
| 40 | | | 2 | 0.25 | firm, some very thin sand layers. | | | | |
| 45 | | | 11 | | SILT (ML): Brown, saturated, medium dense. | | | | |
| 50 | | | 15 | | SILTY SAND (SM): Light brown, saturated, medium dense, very fine to fine grained. | | | | |
| 55 | | | 21 | | SANDY SILT (ML): Brown, saturated, medium dense, very fine grained sand. | | | | |
| 60 | | | | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, medium dense, very fine to fine grained sand. | | | | |

| | | |
|--|--------------------------------|--------------------------|
| DATE DRILLED: 7/5/11 | TOTAL DEPTH: 101.5 Feet | DEPTH TO WATER: 5.25 ft. |
| LOGGED BY: S. Williams | TYPE OF BIT: Hollow Stem Auger | DIAMETER: 8 in. |
| SURFACE ELEVATION: Approximately -224' | HAMMER WT.: 140 lbs. | DROP: 30 in. |

| | | |
|---------------------|----------------------------------|-------------|
| PROJECT NO. LE11138 | Geo-Engineers and Geologists | PLATE B-25a |
|---------------------|----------------------------------|-------------|

| DEPTH | FIELD | | | | LOG OF BORING No. 25 SHEET 2 OF 2 | LABORATORY | | |
|--|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 65 | | | 15 | | SANDY SILT/SILTY SAND (ML/SM): Brown, saturated, medium dense, very fine to fine grained sand. | | | |
| 70 | | | 11 | | SILTY SAND (SM): Brown, saturated, medium dense, fine grained. | | | |
| 75 | | | 12 | | SILT (ML): Dark brown, saturated, medium dense, some fine grained sand. | | | |
| 80 | | | 4 | | CLAYEY SILT (ML): Dark brown, saturated, loose. | | | |
| 85 | | | 18 | | SILTY SAND (SM): Brown, saturated, medium dense to dense, very fine to fine grained. | | | |
| 90 | | | 38 | | | | | |
| 95 | | | 42 | | | | | |
| 100 | | | 13 | | | | | |
| 105 | | | | | SILT (ML): Brown, saturated, medium dense. | | | |
| 110 | | | 11 | 1.5 | SILTY CLAY (CL): Brown, wet, stiff. | | | |
| 115 | | | | | | | | |
| 120 | | | | | | | | |
| | | | | | Total Depth = 101.5' Groundwater measured at 5.25 feet after 24 hours Backfilled with excavated soil | | | |
| DATE DRILLED: 7/5/11 TOTAL DEPTH: 101.5 Feet DEPTH TO WATER: 5.25 ft. LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in. SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in. | | | | | | | | |
| PROJECT NO. LE11138 | | | | | Geo-Engineers and Geologists | | PLATE B-25b | |

| DEPTH | FIELD | | | | LOG OF BORING No. B-26 SHEET 1 OF 1 | LABORATORY | | |
|-------|---|---|------------|-------------------|---|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 8 | 1.5 | SILTY CLAY (CL): Brown, moist to very moist, stiff.  | | | |
| 10 |  |  | 4 | | SILT (ML): Brown, saturated, loose, some very fine grained sand. | | | |
| |  |  | 4 | | | | | |
| |  |  | 7 | | | | | |
| 15 |  |  | 18 | | SILTY SAND (SM): Brown, saturated, medium dense to loose, very fine to fine grained. | | | |
| |  |  | 6 | | | | | |
| |  |  | 5 | | | | | |
| 20 |  |  | 7 | | SILTY CLAY (CL): Dark brown, very moist, stiff. | | | |
| |  |  | | 1.5 | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |

Total Depth = 21.5'
Groundwater measured at 3.25 feet after 24 hours
Backfilled with excavated soil













DATE DRILLED: 6/30/11 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: 3.25 ft.
LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

PROJECT NO. LE11138

LANDMARK
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PLATE B-26

| DEPTH | FIELD | | | LOG OF BORING No. B-27 SHEET 1 OF 1 | LABORATORY | | | |
|---|--------|-------------|------------|--|--|-------------------------|-------------------|------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 | | | 12 | 1.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff. | | | |
| 10 | | | 7 | | SILT (ML): Brown, saturated, loose. | | | |
| 15 | | | 10 | | | | | |
| 20 | | | 6 | | SANDY SILT (ML): Lt. brown, saturated, loose, very fine grained sand. | | | |
| 25 | | | 16 | | | | | |
| 30 | | | 11 | | SILTY SAND (SM): Brown, saturated, medium dense to loose, very fine to fine grained. | | | |
| 35 | | | 29 | | | | | |
| 40 | | | 25 | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |
| | | | | | Total Depth = 21.5' Groundwater not measured after 24 hours due to caving Backfilled with excavated soil | | | |
| DATE DRILLED: 6/30/11 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: N/A LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in. SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in. | | | | | | | | |
| PROJECT NO. LE11138 | | | | | | | PLATE B-27 | |

| DEPTH | FIELD | | | | LOG OF BORING No. B-28 SHEET 1 OF 1 | LABORATORY | | |
|-------|---|---|------------|-------------------|--|-------------------|------------------------------|-------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | 8 | 1.0 | SILTY CLAY (CL): Brown, moist to very moist, stiff. | | | |
| |  | | 9 | | SILT (ML): Brown, saturated, loose to medium dense, some very fine grained sand. | | | |
| 10 |  |  | 4 | | SILTY SAND (SM): Brown, saturated, loose to medium dense, very fine to fine grained. | | | |
| |  | | 12 | | thin clay layer with gypsum crystals at 11 ft. | | | |
| 15 |  |  | 7 | | SANDY SILT (ML): Brown, saturated, loose, very fine grained sand. | | | |
| |  | | 16 | | SILTY SAND (SM): Brown, saturated, medium dense, very fine to fine grained. | | | |
| 20 |  |  | 16 | | | | | |
| |  | | 41 | | dense | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | | | | | | | | |
| 60 | | | | | | | | |

Total Depth = 21.5'
Groundwater measured at 5.25 feet after 24 hours
Backfilled with excavated soil

DATE DRILLED: 7/1/11 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: 5.25 ft.
LOGGED BY: S. Williams TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: Approximately -224' HAMMER WT.: 140 lbs. DROP: 30 in.

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PLATE B-28

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-1 SHEET 1 OF 1 | LABORATORY | | |
|--|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | | | SILTY CLAY (CL): Brown, moist, stiff to very stiff. | | 12.3 | LL=45% Pl=27% Passing #200 = 99% |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| Total Depth = 6.0 ft. No free groundwater at time of excavation Backfilled with excavated soil | | | | | | | | |
| DATE EXCAVATED: 6/28/11 TOTAL DEPTH: 6.0 Feet DEPTH TO WATER: N/A LOGGED BY: E. Camacho TYPE OF BIT: Backhoe DIAMETER: N/A SURFACE ELEVATION: -200 ft. HAMMER WT.: N/A DROP: N/A | | | | | | | | |
| PROJECT NO. LE11138 | | | | | LANDMARK Geo-Engineers and Geologists | | PLATE B-29 | |

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-2 SHEET 1 OF 1 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | | | CLAY (CL-CH): Brown, moist, stiff to very stiff. | | 19.1 | LL=50% PI=30% Passing #200 = 99% |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

DATE EXCAVATED: 6/28/11 TOTAL DEPTH: 10.0 Feet DEPTH TO WATER: N/A
 LOGGED BY: E. Camacho TYPE OF BIT: Backhoe DIAMETER: N/A
 SURFACE ELEVATION: -203 ft. HAMMER WT.: N/A DROP: N/A

PROJECT NO. LE11138



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PLATE B-30


| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-3 SHEET 1 OF 1 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|--|-------------------------|-------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) |
| 5 | ● | | | | CLAY (CH): Brown, moist, stiff to very stiff. | | 14.8 | LL=51% PI=31% Passing #200 = 99% |
| 10 | | | | | | | | |
| 15 | | | | | Total Depth = 7.0 ft. No free groundwater noted at time of excavation Backfilled with excavated soil | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

| | | |
|-----------------------------|-----------------------|---------------------|
| DATE EXCAVATED: 6/28/11 | TOTAL DEPTH: 7.0 Feet | DEPTH TO WATER: N/A |
| LOGGED BY: E. Camacho | TYPE OF BIT: Backhoe | DIAMETER: N/A |
| SURFACE ELEVATION: -204 ft. | HAMMER WT.: N/A | DROP: N/A |

| | | |
|---------------------|---|------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-31 |
|---------------------|---|------------|

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-4 SHEET 1 OF 1 | LABORATORY | | |
|-------|---|---|------------|-------------------|--|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 |  |  | | | SILTY CLAY (CL): Brown, moist, stiff to very stiff. | | 15.1 | LL=46% PI=28% Passing #200 = 99% |
| 10 | | | | | | | | |
| 15 | | | | | Total Depth = 8.0 ft. No free groundwater noted at time of excavation Backfilled with excavated soil | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

| | | |
|-----------------------------|-----------------------|---------------------|
| DATE EXCAVATED: 6/28/11 | TOTAL DEPTH: 8.0 Feet | DEPTH TO WATER: N/A |
| LOGGED BY: E. Camacho | TYPE OF BIT: Backhoe | DIAMETER: N/A |
| SURFACE ELEVATION: -207 ft. | HAMMER WT.: N/A | DROP: N/A |

| | | |
|---------------------|--|------------|
| PROJECT NO. LE11138 |  | PLATE B-32 |
|---------------------|--|------------|

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-5 SHEET 1 OF 1 | LABORATORY | | |
|--|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | | | SILTY CLAY (CL): Brown, moist, stiff to very stiff. | | 17.3 | LL=44% PI=25% Passing #200 = 96% |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |
| Total Depth = 5.0 ft. No free groundwater noted at time of excavation Backfilled with excavated soil | | | | | | | | |
| DATE EXCAVATED: 6/28/11 TOTAL DEPTH: 5.0 Feet DEPTH TO WATER: N/A LOGGED BY: E. Camacho TYPE OF BIT: Backhoe DIAMETER: N/A SURFACE ELEVATION: -209 ft. HAMMER WT.: N/A DROP: N/A | | | | | | | | |
| PROJECT NO. LE11138 | | | | | LANDMARK Geo-Engineers and Geologists | | PLATE B-33 | |

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-6 SHEET 1 OF 1 | LABORATORY | | |
|-------|--------|-------------|------------|-------------------|---|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| 5 | ● | | | | SILTY CLAY (CL): Brown, moist, stiff to very stiff. | | 17.5 | LL=47% PI=28% Passing #200 = 98% |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

| | | |
|-----------------------------|-----------------------|---------------------|
| DATE EXCAVATED: 6/28/11 | TOTAL DEPTH: 6.0 Feet | DEPTH TO WATER: N/A |
| LOGGED BY: E. Camacho | TYPE OF BIT: Backhoe | DIAMETER: N/A |
| SURFACE ELEVATION: -212 ft. | HAMMER WT.: N/A | DROP: N/A |

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PLATE B-34

| DEPTH | FIELD | | | | LOG OF TEST PIT No. T-7 SHEET 1 OF 1 | LABORATORY | | |
|---|--------|-------------|------------|-------------------|--|-------------------|------------------------------|-------------------------------------|
| | SAMPLE | USCS CLASS. | BLOW COUNT | POCKET PEN. (tsf) | DESCRIPTION OF MATERIAL | DRY DENSITY (pcf) | MOISTURE CONTENT (% dry wt.) | OTHER TESTS |
| <div style="text-align: center;">●</div> <div style="text-align: center;">5</div> <div style="text-align: center;">10</div> <div style="text-align: center;">15</div> <div style="text-align: center;">20</div> <div style="text-align: center;">25</div> <div style="text-align: center;">30</div> | | | | | SILTY CLAY (CL): Brown, moist, stiff to very stiff. | | 20.8 | LL=46% PI=27% Passing #200 = 98% |
| | | | | | Total Depth = 9.0 ft. No free groundwater noted at time of excavation Backfilled with excavated soil | | | |

| | | |
|-----------------------------|-----------------------|---------------------|
| DATE EXCAVATED: 6/28/11 | TOTAL DEPTH: 9.0 Feet | DEPTH TO WATER: N/A |
| LOGGED BY: E. Camacho | TYPE OF BIT: Backhoe | DIAMETER: N/A |
| SURFACE ELEVATION: -215 ft. | HAMMER WT.: N/A | DROP: N/A |

| | | |
|---------------------|---|------------|
| PROJECT NO. LE11138 | LANDMARK Geo-Engineers and Geologists | PLATE B-35 |
|---------------------|---|------------|

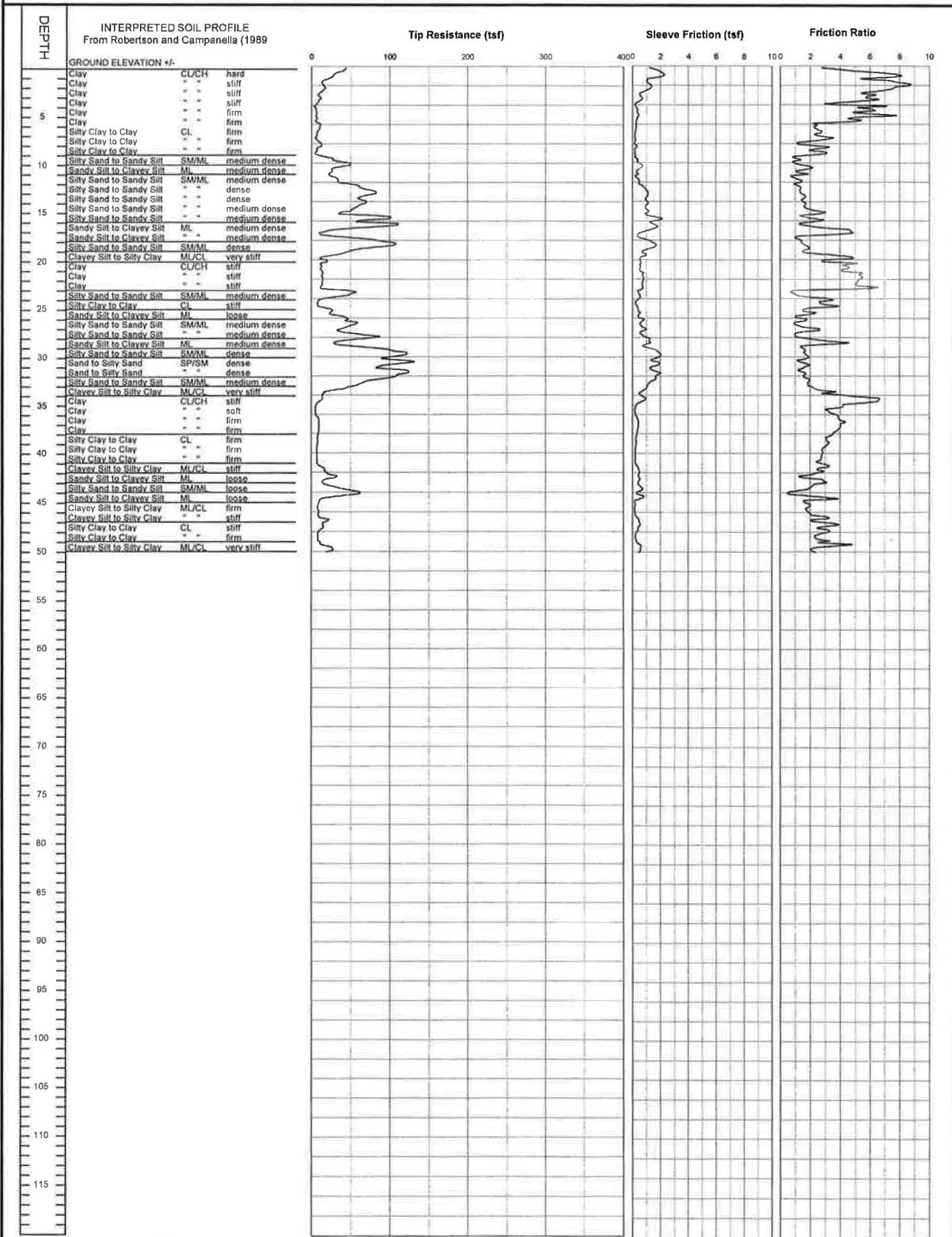
CLIENT: Cal Energy
PROJECT: Black Rock 5-6 Geothermal Plant -- Calipatria, CA

CONE PENETROMETER: Middle Earth Geotesting Truck Mounted Electric
Cone with 23 ton reaction weight

LOCATION: See Site and Boring Location Plan

DATE: 6/28/2011

CONE SOUNDING DATA CPT-1



Project No.
LE111138

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PLATE
B-36