Appendix H
Details of Geotechnical Soil Sampling

Table H-1: Details of Near Surface Geotechnical Soil Sampling – RSE Investigation

Location ID	EPA ID	Earth Tech ID	Depth Interval (feet)	Analysis Type								
									Modified Proctor Compaction			
				Moisture Content ASTM D 2216	Dry Density	Particle Size Distribution ASTM D 422	Percent Passing No. 200 Sieve ASTM D 1140	Atterberg Limits ASTM D 4318	Maximum Dry Density ASTM D 1557	Optimum Moisture Content (ASTM D 1557)	Specific Gravity ASTM D 854	Soil Classification/ Identification ASTM D2487/ ASTM D 2488
TR01	LK141	AA 3-TR01SS-S01-D002	0–2	√	√	√	—	√	—	—	—	√
	LK142	AA 3-TR01SS-S02-D010	4–10	√	—	—	√	—	—	—	—	√
	LK143	AA 3-TR01SS-S03-D008	2–8	√	—	√	—	—	√	√	√	√
	LK144	AA 3-TR01SS-S04-D012	8–12	√	—	—	√	√	—	—	—	√
TR03	LK145	AA 3-TR03SS-S01-D004	0–4	√	—	√	—	—	—	—	—	√
	LK146	AA 3-TR03SS-S02-D007	0–7	√	—	√	—	—	—	—	—	√
TR04	LK147	AA 3-TR04SS-S01-D003	0–3	√	—	√	—	—	—	—	—	√
	LK148	AA 3-TR04SS-S02-D006	3–6	√	—	—	—	—	—	—	—	√
TR06	LK149	AA 3-TR06SS-S01-D008	0–8	√	—	√	—	—	—	—	—	√
TR07	LK150	AA 3-TR07SS-S01-D003	2–3	√	—	√	—	—	—	—	—	√
TR08	LK151	AA 3-TR08SS-S01-D002	1–2	√	√	—	√	√	√	√	√	√
	LK152	AA 3-TR08SS-S02-D005	4–5	√	—	√	—	—	—	—	—	√
TR09	LK153	AA 3-TR09SS-S01-D002	1–2	√	—	—	√	—	—	—	—	√
TR11	LK154	AA 3-TR11SS-S01-D004	0–4	√	√	—	√	—	—	—	—	√
HA02	LK155	AA 3-HA02SS-S02-D001	0–1	√	—	√	—	√	—	—	—	√
	LK156	AA 3-HA02SS-S03-D004	3.5–4.0	√	√	—	—	—	—	—	—	√
HA07	LK157	AA 3-HA07SS-S02-D000	0–0.5	√	—	—	—	—	—	—	—	√
	LK158	AA 3-HA07SS-S03-D005	4.5–5.0	√	√	—	—	—	—	—	—	√
HA15	LK159	AA 3-HA15SS-S02-D000	0–0.5	√	—	—	√	—	—	—	—	√
	LK160	AA 3-HA15SS-S03-D004	3.5–4.0	√	—	√	—	—	—	—	—	√
HA17	LK161	AA 3-HA17SS-S02-D000	0–0.5	√	—	√	—	—	—	—	—	√
	LK162	AA 3-HA17SS-S03-D004	3.7–4.2	√	—	—	—	—	—	—	—	√
HA25	LK163	AA 3-HA25SS-S02-D000	0–0.5	√	—	—	√	—	—	—	—	√
	LK164	AA 3-HA25SS-S03-D004	3.5–4.0	√	—	—	√	—	—	—	—	√
HA27	LK165	AA 3-HA27SS-S02-D000	0–0.5	√	—	—	√	—	—	—	—	√
	LK166	AA 3-HA27SS-S03-D004	3.5–4.0	√	—	√	—	—	—	—	—	√

Table H-2: Details of Subsurface Geotechnical Soil Samples – RSE Investigation

Location ID	EPA ID	Earth Tech ID	Depth Interval (feet bgs)	Analysis Type					
				Soil Classification/ Identification ASTM D2487/ ASTM D 2488*	Moisture Content ASTM D 2216	Dry Unit Weight - Drive Cylinder ASTM D2937	Percent Passing No. 200 Sieve ASTM D 1140	Particle Size Distribution ASTM D 422	Atterberg Limits ASTM D 4318
MW05	LK169	AA 3-MW05SS-S01-D002	2.0–2.5	√	√	√	—	√	—
	LK170	AA 3-MW05SS-S02-D006	6.0–6.5	√	√	√	—	—	—
	LK171	AA 3-MW05SS-S03-D010	10.5–11.0	√	√	√	—	√	—
	LK172	AA 3-MW05SS-S04-D015	15.5–16.0	√	√	√	—	√	—
	LK173	AA 3-MW05SS-S05-D020	20.0–20.5	√	√	√	—	—	—
	LK174	AA 3-MW05SS-S06-D025	25.5–26.0	√	√	√	—	√	—
	LK175	AA 3-MW05SS-S07-D030	30.5–31.0	√	√	√	—	—	—
	LK176	AA 3-MW05SS-S08-D035	35.0–5.5	√	√	√	—	—	—
	LK177	AA 3-MW05SS-S09-D040	40.0–41.5	√	√	—	—	√	—
	LK178	AA 3-MW05SS-S10-D045	45.0–46.5	√	√	—	√	—	√
	LK179	AA 3-MW05SS-S11-D055	55.0–56.5	√	√	—	—	—	—
	LK180	AA 3-MW05SS-S12-D057	57.0–57.5	√	√	√	√	—	—
MW06	LK181	AA 3-MW06SS-S01-D001	1.5–2.0	√	√	√	√	—	—
	LK182	AA 3-MW06SS-S02-D005	6.0–6.5	√	√	√	—	—	—
	LK183	AA 3-MW06SS-S03-D010	11.0–11.5	√	√	√	—	—	—
	LK184	AA 3-MW06SS-S04-D015	16.0–16.5	√	√	√	√	—	√
	LK185	AA 3-MW06SS-S05-D020	21.0–21.5	√	√	√	—	√	—
	LK186	AA 3-MW06SS-S06-D025	26.0–26.5	√	√	√	—	—	—
	LK187	AA 3-MW06SS-S07-D030	31.0–31.5	√	√	√	—	√	—
	LK188	AA 3-MW06SS-S08-D035	36.0–36.5	√	√	√	√	—	—
	LK189	AA 3-MW06SS-S09-D040	40.0–41.5	√	√	—	√	—	√
MW07	LK190	AA 3-MW07SS-S01-D002	2.0–2.5	√	√	√	—	—	—
	LK191	AA 3-MW07SS-S02-D006	6.0–6.5	√	√	√	—	√	—
	LK192	AA 3-MW07SS-S03-D010	10.5–11.0	√	√	√	—	—	—
	LK193	AA 3-MW07SS-S04-D015	15.5–16.0	√	√	√	—	√	—
	LK194	AA 3-MW07SS-S06-D025	25.0–25.5	√	√	√	—	√	—
	LK195	AA 3-MW07SS-S07-D031	31.0–31.5	√	√	√	√	—	—
	LK196	AA 3-MW07SS-S08-D035	36.0–36.5	√	√	√	—	—	√
	LK197	AA 3-MW07SS-S09-D040	40.5–41.0	√	√	—	√	—	—
	LK198	AA 3-MW07SS-S10-D046	46.0–46.5	√	√	√	—	—	—
	LK199	AA 3-MW07SS-S11-D050	50.0–50.5	√	√	√	—	√	—
MW08	LK200	AA 3-MW08SS-S01-D001	1.0–1.5	√	√	√	—	—	—
	LK201	AA 3-MW08SS-S02-D006	6.0–6.5	√	√	√	√	—	—
	LK202	AA 3-MW08SS-S03-D011	11.0–11.5	√	√	√	—	√	—
	LK203	AA 3-MW08SS-S04-D016	16.0–16.5	√	√	√	—	√	—

Table H-2: Details of Subsurface Geotechnical Soil Samples – RSE Investigation

Location ID	EPA ID	Earth Tech ID	Depth Interval (feet bgs)	Analysis Type					
				Soil Classification/ Identification ASTM D2487/ ASTM D 2488*	Moisture Content ASTM D 2216	Dry Unit Weight - Drive Cylinder ASTM D2937	Percent Passing No. 200 Sieve ASTM D 1140	Particle Size Distribution ASTM D 422	Atterberg Limits ASTM D 4318
	LK204	AA 3-MW08SS-S05-D021	21.0–21.5	√	√	√	—	—	—
	LK205	AA 3-MW08SS-S06-D026	26.0–26.5	√	√	√	—	√	—
MW09	LK206	AA 3-MW09SS-S01-D001	1.0–1.5	√	√	√	—	—	—
	LK207	AA 3-MW09SS-S02-D006	6.0–6.5	√	√	√	—	√	—
	LK208	AA 3-MW09SS-S03-D010	10.5–11.0	√	√	√	—	—	—
	LK209	AA 3-MW09SS-S04-D016	16.0–16.5	√	√	√	—	√	—
	LK210	AA 3-MW09SS-S05-D021	21.0–21.5	√	√	√	√	—	—
	LK211	AA 3-MW09SS-S06-D026	26.0–26.5	√	√	√	—	—	—
	LK212	AA 3-MW09SS-S07-D031	31.0–31.5	√	√	√	—	√	—
	LK213	AA 3-MW09SS-S08-D035	35.0–36.5	√	√	—	—	—	—
	LK214	AA 3-MW09SS-S09-D040	40.0–41.5	√	√	—	—	√	—
	LK215	AA 3-MW09SS-S10-D045	45.0–46.5	√	√	—	—	—	—
	LK216	AA 3-MW09SS-S11-D050	50.0–51.5	√	√	—	—	√	—
	LK217	AA 3-MW09SS-S12-D055	55.0–56.5	√	√	—	—	—	—
	LK218	AA 3-MW09SS-S13-D060	60.0–61.5	√	√	—	—	—	—
	LK219	AA 3-MW09SS-S14-D065	65.0–66.5	√	√	—	—	√	—
	LK220	AA 3-MW09SS-S15-D070	70.0–71.5	√	√	—	—	—	—
	LK221	AA 3-MW09SS-S16-D075	75.0–76.5	√	√	—	—	—	—
	LK222	AA 3-MW09SS-S17-D080	80.0–81.5	√	√	—	—	√	—
MW10	LK223	AA 3-MW10SS-S01-D002	2.0–2.5	√	√	√	—	—	—
	LK224	AA 3-MW10SS-S02-D006	6.0–6.5	√	√	√	—	√	—
	LK225	AA 3-MW10SS-S03-D011	11.0–11.5	√	√	√	—	—	—
	LK226	AA 3-MW10SS-S04-D016	16.0–16.5	√	√	√	√	—	√
	LK227	AA 3-MW10SS-S05-D020	20.5–21.0	√	√	√	—	√	—
	LK228	AA 3-MW10SS-S06-D026	26.0–26.5	√	√	√	—	—	—
	LK229	AA 3-MW10SS-S07-D031	31.0–31.5	√	√	√	—	√	—
	LK230	AA 3-MW10SS-S08-D036	36.0–36.5	√	√	√	√	—	—
	LK231	AA 3-MW10SS-S09-D041	41.0–41.5	√	√	√	—	√	—
	LK232	AA 3-MW10SS-S10-D044	44.5–45.0	√	√	—	—	√	—

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

November 12, 2002

Earth Tech, Inc.
100 West Broadway, Suite 240
Long Beach, CA 90802-4443

Attention: Mr. Crispin Wanyoike

Subject: **Report/Laboratory Testing Results**
Project Name: Anomaly Area 3, Former MCAS El Toro, California
Project No.: 37380 / CTO 0078
Subcontract No.: 02S-2831-HI09 / CTO No.: 0078
TERATEST No.: 015230

Dear Mr. Wanyoike:

Enclosed please find laboratory testing results for the soil samples from the above referenced project. The requested tests were conducted in essential accordance with the standard test methods listed below.

TYPE OF TEST	TEST METHOD
Laboratory Determination of Water (Moisture) Content of Soil and Rock	ASTM D 2216
"Chunk" Dry Unit Weight	Displacement Method
Amount of Material in Soils Finer Than the No. 200 Sieve	ASTM D 1140
Particle-Size Analysis of Soils	ASTM D 422
Liquid Limit, Plastic Limit and Plasticity Index of Soils	ASTM D 4318
Specific Gravity of Soils	ASTM D 854
Direct Shear Test of Soils Under Consolidated Drained Conditions	ASTM D 3080
Laboratory Compaction Characteristics of Soil Using Modified Effort	ASTM D 1557

Test results are presented Table 1 and the attached Data Sheets.

ASTM: American Society for Testing and Materials, Annual Book of ASTM Standards, Section 4 Construction, Volume 04.08 Soil and Rock (I), 2000.

17781 Cowan ■ Irvine, CA 92614-6009
949.253.5922 ■ Fax 949.263.8843 ■ www.teratest.com

Thank you for selecting Teratest Labs, Inc. to provide laboratory testing services to Earth Tech, Inc. Please feel free to contact us if you should have any questions concerning these results.

Very truly yours,

TERATEST LABS, INC.
Laboratory Testing Services

REGISTERED PROFESSIONAL ENGINEER
MOHAMMAD H. FAKHARPOUR
No. C049035
Exp. 9-30-04
CIVIL
STATE OF CALIFORNIA

Lester Fruth, Ph.D.
Soils Laboratory Supervisor

Mohammad Fakharpour, P.E.
Registered Civil Engineer

Enclosures

17781 Cowa[illegible]e 150, Irvine, CA 92614 TERATEST[illegible] INC. Tel.No. (949) 253-5922 Fax. No. (949) 7[illegible]57

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Teratest No.: 015230

Project No.: 37380 / CTO 0078

Tabulated By: LF

Client: Earth Tech, Inc.

Date: 11/12/02

TABLE 1

SUMMARY of LABORATORY TEST RESULTS

EPA ID	Sample No.	Depth (ft.)	Moisture Content ASTM D 2216 (%)	Dry Density Displacement Method / Wax coated Specimen (pcf)	Particle - Size Distribution ASTM D 422 GR:SA:FI[2] (%)	Percent Passing No. 200 Sieve ASTM D 1140 (%)	Atterberg Limits ASTM D 4318 LL,PL,PI[1]	Modified Proctor Compaction ASTM D 1557		Specific Gravity ASTM D 854	Soil Classification / Identification ASTM D 2487 / ASTM D 2488* (group symbol)
								Maximum Dry Density / Proc. (pcf / A,B,C)	Optimum Moisture Content (%)		
LK141	AA3-TR01-S1	0 - 2	3.9	118.9	2:58:40		25,18,7				SC-SM
LK142	AA3-TR01-S2	4 - 10	3.3			12.5					SM
LK143	AA3-TR01-S3	2 - 8	4.5		2:71:27			125.0 / A	9.5	2.65	SM
LK144	AA3-TR01-S4	8 - 12	19.0			43.0	48,30,18				SM
LK145	AA3-TR03-S1	0 - 4	3.9		1:70:29						SM
LK146	AA3-TR03-S2	0 - 7	4.6		0:84:16						SM
LK147	AA3-TR04-S1	0 - 3	2.0		8:72:20						SM
LK148	AA3-TR04-S1	3 - 6	11.3								SM*
LK149	AA3-TR06-S1	0 - 8	6.7		6:66:28						SM
LK150	AA3-TR07-S1	2 - 3	5.1		9:65:26						SM
LK151	AA3-TR08-S1	1 - 2	3.6	115.5		37.0	31,19,12	118.5 / A	11.5	2.64	SC
LK152	AA3-TR08-S2	4 - 5	3.9		2:79:22						SM
LK153	AA3-TR09-S1	1 - 2	6.8			50.7					s(ML)
LK154	AA3-TR11-S1	0 - 4	4.5	112.3		49.1					SM

[1] LL,PL,PI = Liquid Limit, Plastic Limit, Plasticity Index

[2] GR:SA:FI = Gravel: Sand: Fines (Percent Passing #200 Sieve)

17781 Cowan , Suite 150, Irvine, CA 92614 TERATEST LABS, INC. Tel.No. (949) 253-5922 Fax. No. (949) 724-1557

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Teratest No.: 015230

Project No.: 37380 / CTO 0078

Tabulated By: LF

Client: Earth Tech, Inc.

Date: 11/12/02

TABLE 1 (Continued)

SUMMARY of LABORATORY TEST RESULTS

EPA ID	Sample No.	Depth (ft.)	Moisture Content ASTM D 2216 (%)	Dry Density Displacement Method / Wax coated Specimen (pcf)	Particle - Size Distribution ASTM D 422 GR:SA:FI[2] (%)	Percent Passing No. 200 Sieve ASTM D 1140 (%)	Atterberg Limits ASTM D 4318 LL,PL,PI[1]	Modified Proctor Compaction ASTM D 1557 Maximum Dry Density / Proc. (pcf / A,B,C)	Modified Proctor Compaction ASTM D 1557 Optimum Moisture Content (%)	Specific Gravity ASTM D 854	Soil Classification Identification ASTM D 2487 / ASTM D 2488* (group symbol)
LK155	AA3-HA02	0 - 1	1.5		4:74:22		Nonplastic				SM
LK156	AA3-HA02	3.5 - 4.0	11.2	128.0							SC*
LK157	AA3-HA07	0 - 0.5	2.0								SM*
LK158	AA3-HA07	4.5 - 5.0	20.9	125.0							CL*
LK159	AA3-HA15	0 - 0.5	2.8			31.5					SM
LK160	AA3-HA15	3.5 - 4.0	3.9		1:77:22						SM
LK161	AA3-HA17	0 - 0.5	3.2		0:61:39						SM
LK162	AA3-HA17	3.7 - 4.2	7.5								SM*
LK163	AA3-HA25	0 - 0.5	3.1			32.6					SM
LK164	AA3-HA25	3.5 - 4.0	5.3			17.4					SM
LK165	AA3-HA27	0 - 0.5	3.8			32.7					SM
LK166	AA3-HA27	3.5 - 4.0	8.8		1:66:33						SM

[1] LL,PL,PI = Liquid Limit, Plastic Limit, Plasticity Index

[2] GR:SA:FI = Gravel: Sand: Fines (Percent Passing #200 Sieve)

2

GEOTECHNICAL LABORATORY TESTING - EXISTING COVER MATERIALS AND NEAR-SURFACE FILL SOILS

EL TORO MCAS - ANOMALY AREA 3 (AA3)

EPA ID	Sample Number	Exploration Location	Depth (feet)	Type	Field Classification (ASTM D2488)	Moisture Content (ASTM D2216)	Dry Unit Weight - Drive Cilinder (ASTM D2937)	"Chunck" Dry Unit Weight	Fines Fraction (ASTM D1140)	Grain Size Distribution - Sieve Analysis (ASTM D422)	Grain Size Distribution - Hydrom. Analysis (ASTM D422)	Atterberg Limits (ASTM D4318)	Compaction (ASTM D1557)	Specific Gravity (ASTM D854)	Direct Shear (ASTM D3038)	Sulfate (Cal 417)	Chlorides (Cal 422)	pH (Cal 643)	Minimum Resistivity (Cal 532)	REMARKS
LK141	AA3-TR01-S1	TR-01	0 - 2	Bucket	ML	√		√		√		√								
LK142	AA3-TR01-S2	TR-01	4 - 10	Bucket	SP-SM	√			√											
LK143	AA3-TR01-S3	TR-01	2 - 8	Bucket	SM	√				√			√	√	√					Direct Shear at RC = 85%, w = w_{opt} +2%, and 90% Saturated, 1, 2, and 4 ksf CD
LK144	AA3-TR01-S4	TR-01	8 - 12	Bucket	SC / CL	√			√			√								
LK145	AA3-TR03-S1	TR-03	0 - 4	Bucket	SM	√				√										
LK146	AA3-TR03-S2	TR-03	0 - 7	Bucket	SP-SM	√				√										
LK147	AA3-TR04-S1	TR-04	0 - 3	Bucket	SM	√				√										
LK148	AA3-TR04-S1	TR-04	3 - 6	Bucket	SM	√														
LK149	AA3-TR06-S1	TR-06	0 - 8	Bucket	SM	√				√										
LK150	AA3-TR07-S1	TR-07	2 - 3	Bucket	SM	√				√										
LK151	AA3-TR08-S1	TR-08	1 - 2	Bucket	ML	√		√	√			√	√	√	√					Direct Shear at RC = 85%, w = w_{opt} +2%, and 90% Saturated, 1, 2, and 4 ksf, shearing rate = ~~0.001 inch/min~~ CD
LK152	AA3-TR08-S2	TR-08	4 - 5	Bucket	SM	√				√										
LK153	AA3-TR09-S1	TR-09	1 - 2	Bucket	ML	√			√											
LK154	AA3-TR11-S1	TR-11	0 - 4	Bucket	ML	√		√	√											
LK155	AA3-HA02	HA-02	0 - 1	Plastic Tube	ML / SM	√					√	√								
LK156	AA3-HA02	HA-02	3.5 - 4.0	Plastic Tube	SC / CL	√		√												
LK157	AA3-HA07	HA-07	0 - 0.5	Plastic Tube	SM	√														
LK158	AA3-HA07	HA-07	4.5 - 5.0	Plastic Tube	SC / CL	√		√												
LK159	AA3-HA15	HA-15	0 - 0.5	Plastic Tube	ML / SM	√			√											
LK160	AA3-HA15	HA-15	3.5 - 4.0	Plastic Tube	SM	√				√										
LK161	AA3-HA17	HA-17	0 - 0.5	Plastic Tube	SM	√				√										
LK162	AA3-HA17	HA-17	3.7 - 4.2	Plastic Tube	ML / SM	√														
LK163	AA3-HA25	HA-25	0 - 0.5	Plastic Tube	ML / SM	√			√											
LK164	AA3-HA25	HA-25	4.25 ~~3.5~~ - 4.0	Plastic Tube	ML / SM	√			√											
LK165	AA3-HA27	HA-27	0 - 0.5	Plastic Tube	ML / SM	√			√											
LK166	AA3-HA27	HA-27	3.5 - 4.0	Plastic Tube	SM / ML	√				√										
						26		5	9	11	1	4	2	2	4					

Per Ernesto Shear Rates for Drained Conditions Required/Varies with Soil Type

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

Chain of Custody Record

1 of 2.

MCAS-EL TORO: AA-3

Project Number	Project Name/Client
37380-02-30-02	MCAS. EL TORO · AA3

Sample Custodian: (Signature)

Custody Seal #

Rust E&I Cooler #

Item No.	EPA ID ~~Sample Description (Field ID Number)~~	Date	Time	Grab	Comp.	PID Reading (ppm)	Label Number	Moisture Content (ASTM D2216)	Unit Weight (ASTM D1140)	Fines Fraction (ASTM D422)	G.S.D. S. Analysis (ASTM D422)	G.S.D. Hydrom. Analysis (ASTM D422)	Atterberg Limits (ASTM D4318)	Compaction (ASTM D1557)	Sp. Gravity (ASTM D854)	D. Shear (ASTM D3080)	Matrix: Sample Type	Sample Container: 5-gal Bkt.	Sample Container: 4-Tubes
1	LK141	10-22		✓				✓	✓		✓		✓				ML	✓	
2	LK142			✓				✓		✓							SP-SM	✓	
3	LK143			✓				✓			✓			✓	✓	✓	SM	✓	
4	LK144			✓				✓		✓	✗		✓				SC/CC	✓	
5	LK145	10-22		✓				✓			✓						SM	✓	
6	LK146	10-21		✓				✓			✓						SP-SM	✓	
7	LK147			✓				✓			✓						SM	✓	
8	LK148			✓				✓									SM	✓	
9	LK149	10-21		✓				✓			✓						SM	✓	
10	LK150	10-23		✓				✓			✓						SM	✓	
11	LK151			✓				✓	✓	✓			✓	✓	✓	✓	ML	✓	
12	LK152			✓				✓			✓						SM	✓	
13	LK153	10-23		✓				✓		✓							ML	✓	
14	LK154	10-22		✓				✓	✓	✓							ML	✓	
15	LK155	10-15		DP				✓				✓	✓				MLS		✓
16	LK156							✓	✓								SC/CLS		✓
17	LK157							✓									SM		✓
18	LK158	10-16		DP				✓	✓								SC/CLS		✓

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Disposed of by: (Signature)	Items:	Date / Time
Rod Lobo	10-28 1/3:18	Les Frazier			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Disposed of by: (Signature)	Items:	Date / Time

Send Lab Results To: C. Wanyoike
100. W. Broadway - 240
Long Beach, CA - 90802
(562) 951-2057

Remarks:

Federal Express Airbill No.:
Lab:

Check Delivery Method:
☐ Samples delivered in person
☐ Common carrier

Laboratory Receiving Notes:
Custody Seal Intact?
Temp. of Shipping Container:
Sample Condition:

Rev. 10/98 White Copy - Lab Yellow Copy - File Pink Copy - Client

F514/Earth.Sci

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

Chain of Custody Record

2 of 2.

MCAS. EL TORO. AA-3

Project Number	Project Name/Client
37380-02.30.02	MCAS. EL TORO. AA3.

Sample Custodian: (Signature)

Custody Seal #

Rust E&I Cooler #

Item No.	EPA ID ~~Sample Description~~ (~~Field ID Number~~)	Date	Time	Grab	Comp.	PID Reading (ppm)	Label Number	MOISTURE CONT. (ASTM D2216)	MOISTURE CONT. DRY UNIT WEIGHT.	FINES FRACTION (ASTM D1140)	G.S.D. SIEVE ANALYSIS (ASTM D422)	G.S.D. HYDROM. ANALY (ASTM D422)	ATTERBERG LIMITS (ASTM D4318)	COMPACTION (ASTM D1557)	SP. GRAVITY (ASTM D854)	D-SHEAR (ASTM D3080)			Matrix: Sample Type	Sample Container
1	LK159	10.15		DP				✓		✓									MLS MLS/SM	
2	LK160							✓			✓								SM.	
3	LK161							✓			✓								SM	
4	LK162							✓											MLS/SM	
5	LK163							✓		✓									MLS/SM	
6	LK164							✓		✓									MLS/SM	
7	LK165							✓		✓									MLS/SM.	
8	LK166.	10.15		DP				✓			✓								SM/MLS	
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Disposed of by: (Signature)	Items:	Date / Time
Rob Lara	10-28 / 1312	Lea Frith			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Disposed of by: (Signature)	Items:	Date / Time

Send Lab Results To: C. WANYOIKE.
100 W. BROADWAY - 240
LONG BEACH CA. 90802.
(562) 951-2057.

Remarks:

Federal Express Airbill No.:
Lab:

Check Delivery Method:
- ☐ Samples delivered in person
- ☐ Common carrier

Laboratory Receiving Notes:
Custody Seal Intact?
Temp. of Shipping Container:
Sample Condition:

Rev. 10/98 White Copy - Lab Yellow Copy - File Pink Copy - Client F514/Earth.Sci

EPA ID	LK141	LK142	LK143	LK144	LK145	LK146	LK147	LK148
Sample No.	AA3-TR01-S1	AA3-TR01-S2	AA3-TR01-S3	AA3-TR01-S4	AA3-TR03-S1	AA3-TR03-S2	AA3-TR04-S1	AA3-TR04-S1
Depth (ft.)	0 - 2	4 - 10	2 - 8	8 - 12	0 - 4	0 - 7	0 - 3	3 - 6
Sample Type	Bucket	Bucket	Bucket	Bucket	Bucket	Bucket	Bucket	Bucket
Visual Soil Classification	Dark brown silty, clayey sand (SC-SM)	Brown silty sand (SM)	Brown silty sand (SM)	Olive silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)
Pocket Penetrometer								
Weight Soil + Rings / Tube (gm.								
Weight of Rings / Tube (gm.								
Average Length (in.)								
Average Diameter (in.)								
Wet. Wt. of Soil + Cont. (gm.	353.87	827.22	2259.65	861.26	1001.08	777.48	3768.90	728.42
Dry Wt. of Soil + Cont. (gm.)	342.51	803.00	2166.60	735.90	966.40	746.40	3694.10	662.00
Weight of Container (gm)	52.47	77.62	107.25	74.68	76.70	74.48	0.00	74.29
Container No.:								
Wet Density								
Moisture Content (%)	**3.9**	**3.3**	**4.5**	**19.0**	**3.9**	**4.6**	**2.0**	**11.3**
Dry Density (pcf)								
Degree of Saturation (%)								

Teratest Labs, Inc.
A [illegible] GROUP COMPANY

MOISTURE CONTENT of SOILS

ASTM D 2216

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: [illegible]01/02

EPA ID	LK149	LK150	LK151	LK152	LK153	LK154	LK155	LK156
Sample No.	AA3-TR06-S1	AA3-TR07-S1	AA3-TR08-S1	AA3-TR08-S2	AA3-TR09-S1	AA3-TR11-S1	AA3-HA02	AA3-HA02
Depth (ft.)	0 - 8	2 - 3	1 - 2	4 - 5	1 - 2	0 - 4	0 - 1	3.5 - 4.0
Sample Type	Bucket	Bucket	Bucket	Bucket	Bucket	Bucket	Plastic Tube	Plastic Tube
Visual Soil Classification	Brown silty sand (SM)	Brown silty sand (SM)	Brown clayey sand (SC)	Brown silty sand (SM)	Brown sandy silt s(ML)	Brown silty sand (SM)	Olive silty sand (SM)	Brown clayey sand (SC)
Pocket Penetrometer								
Weight Soil + Rings / Tube (gm.								
Weight of Rings / Tube (gm.								
Average Length (in.)								
Average Diameter (in.)								
Wet. Wt. of Soil + Cont. (gm.	2728.50	3580.50	282.37	1683.95	532.74	483.10	801.98	126.72
Dry Wt. of Soil + Cont. (gm.)	2562.80	3405.60	274.48	1624.30	504.00	464.72	792.50	119.31
Weight of Container (gm)	107.87	0.00	54.02	108.79	82.06	52.77	159.81	52.91
Container No.:								
Wet Density								
Moisture Content (%)	**6.7**	**5.1**	**3.6**	**3.9**	**6.8**	**4.5**	**1.5**	**11.2**
Dry Density (pcf)								
Degree of Saturation (%)								

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE CONTENT of SOILS
ASTM D 2216

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: 11/01/02

EPA ID	LK157	LK158	LK159	LK160	LK161	LK162	LK163	LK164
Sample No.	AA3-HA07	AA3-HA07	AA3-HA15	AA3-HA15	AA3-HA17	AA3-HA17	AA3-HA25	AA3-HA25
Depth (ft.)	0 - 0.5	4.5 - 5.0	0 - 0.5	3.5 - 4.0	0 - 0.5	3.7 - 4.2	0 - 0.5	3.5 - 4.0
Sample Type	Plastic tube	Plastic tube	Plastic tube	Plastic tube	Plastic tube	Plastic tube	Plastic tube	Plastic tube
Visual Soil Classification	Brown silty sand (SM)	Olive lean clay (CL)	Brown silty sand (SM)	Olive silty sand (SM)	Olive silty sand (SM)	Olive silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)
Pocket Penetrometer								
Weight Soil + Rings / Tube (gm.								
Weight of Rings / Tube (gm.								
Average Length (in.)								
Average Diameter (in.)								
Wet. Wt. of Soil + Cont. (gm.	449.36	86.39	485.32	371.48	417.26	422.69	407.74	507.35
Dry Wt. of Soil + Cont. (gm.)	441.93	80.62	474.04	360.20	406.67	398.43	397.94	485.49
Weight of Container (gm)	76.73	53.05	75.83	72.10	76.82	76.98	79.17	76.65
Container No.:								
Wet Density								
Moisture Content (%)	**2.0**	**20.9**	**2.8**	**3.9**	**3.2**	**7.5**	**3.1**	**5.3**
Dry Density (pcf)								
Degree of Saturation (%)								

Teratest Labs, Inc.
A [illegible] GROUP COMPANY

MOISTURE CONTENT of SOILS

ASTM D 2216

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: [illegible]01/02

EPA ID	LK165	LK166						
Sample No.	AA3-HA27	AA3-HA27						
Depth (ft.)	0 - 0.5	3.5 - 4.0						
Sample Type	Plastic Tube	Plastic Tube						
Visual Soil Classification	Brown silty sand (SM)	Olive silty sand (SM)						
Pocket Penetrometer								
Weight Soil + Rings / Tube (gm.								
Weight of Rings / Tube (gm.								
Average Length (in.)								
Average Diameter (in.)								
Wet. Wt. of Soil + Cont. (gm.	517.46	411.89						
Dry Wt. of Soil + Cont. (gm.)	501.40	384.71						
Weight of Container (gm)	74.36	76.66						
Container No.:								
Wet Density								
Moisture Content (%)	**3.8**	**8.8**						
Dry Density (pcf)								
Degree of Saturation (%)								

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE CONTENT of SOILS

ASTM D 2216

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: 11/01/02

Boring No.	LK 151	LK 141	LK 154	LK 158	LK 156		
Sample No.	AA3-TR08-S1	AA3-TR01-S1	AA3-TR11-S1	AA3-HA07	AA3-HA02		
Depth (ft.)	1.0-2.0	0.0-2.0	0.0-4.0	4.5-5.0	3.5-4.0		
Sample Type	Chunk	Chunk	Chunk	Chunk	Chunk		
Visual Soil Classification	Brown clayey sand (SC)	Dark brown silty, clayey sand (SC-SM)	Brown silty sand (SM)	Olive lean clay (CL)	Brown clayey sand (SC)		
Weight of Sample (g)	306.03	564.27	804.66	43.75	94.82		
Weight of Waxed Sample (g)	313.92	575.92	822.49	45.23	96.79		
Weight of Waxed Sample in Water (g	145.50	277.80	374.40	25.50	53.00		
Specific Gravity of Wax (g/cm³)	0.89	0.89	0.89	0.89	0.89		
Wet Weight of Soil + Container (g)	282.37	353.87	483.10	86.39	126.72		
Dry Weight of Soil + Container (g)	274.48	342.51	464.72	80.62	119.31		
Weight of Container (g)	54.02	52.47	52.77	53.05	52.91		
Container No.							
Wet Density	119.68	123.53	117.30	151.10	142.31		
Moisture Content (%)	**3.58**	**3.92**	**4.46**	**20.93**	**11.16**		
Dry Density (pcf)	**115.5**	**118.9**	**112.3**	**125.0**	**128.0**		

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE & DENSITY of "UNDISTURBED" CHUNK SAMPLES

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc. - Honolulu, HI
Tested By: ESS Date: 11/08/02

EPA ID	LK142	LK144	LK151	LK153	LK154	LK159	LK163	LK164
Sample No.	AA3-TR01-S2	AA3-TR01-S4	AA3-TR08-S1	AA3-TR09-S1	AA3-TR11-S1	AA3-HA15	AA3-HA25	AA3-HA25
Depth (ft.)	4-10	8-12	1-2	1-2	0-4	0-0.5	0-0.5	3.25-4.0
Sample Type	Bucket	Bucket	Bucket	Bucket	Bucket	Plastic Tube	Plastic Tube	Plastic Tube
Visual Soil Classification	Brown silty sand (SM)	Olive silty sand (SM)	Brown clayey sand (SC)	Brown sandy silt s(ML)	Brown silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)	Brown silty sand (SM)
Moisture Correction								
Wet Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weight of Container (gm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Moisture Content (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Container No.:								
Sample Dry Weight Determination								
Weight of Sample + Container (gm.)	803.00	525.09	297.02	507.09	487.02	474.04	397.94	485.49
Weight of Container (gm.)	77.62	74.68	76.06	82.06	74.60	75.83	79.17	76.65
Weight of Dry Sample (gm.)	725.38	450.41	220.96	425.03	412.42	398.21	318.77	408.84
Container No.:								
After Wash								
Dry Weight of Sample + Container (gm)	712.60	331.52	215.23	291.41	284.50	348.49	293.98	414.43
Weight of Container (gm)	77.62	74.68	76.06	82.06	74.60	75.83	79.17	76.65
Dry Weight of Sample (gm)	634.98	256.84	139.17	209.35	209.90	272.66	214.81	337.78
% Passing No. 200 Sieve	**12.5**	**43.0**	**37.0**	**50.7**	**49.1**	**31.5**	**32.6**	**17.4**
% Retained No. 200 Sieve	87.5	57.0	63.0	49.3	50.9	68.5	67.4	82.6

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PERCENT PASSING No. 200 SIEVE

ASTM D 1140

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: 11/01/02

EPA ID	LK165							
Sample No.	AA3-HA27							
Depth (ft.)	0-0.5							
Sample Type	Plastic Tube							
Visual Soil Classification	Brown silty sand (SM)							
Moisture Correction								
Wet Weight of Soil + Container (gm.)	0.00							
Dry Weight of Soil + Container (gm.)	0.00							
Weight of Container (gm)	1.00							
Moisture Content (%)	0.00							
Container No.:								
Sample Dry Weight Determination								
Weight of Sample + Container (gm.)	501.40							
Weight of Container (gm.)	74.36							
Weight of Dry Sample (gm.)	427.04							
Container No.:								
After Wash								
Dry Weight of Sample + Container (gm)	361.73							
Weight of Container (gm)	74.36							
Dry Weight of Sample (gm)	287.37							
% Passing No. 200 Sieve	**32.7**							
% Retained No. 200 Sieve	67.3							

Teratest Labs, Inc.
LEIGHTON GROUP COMPANY

PERCENT PASSING No. 200 SIEVE

ASTM D 1140

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: ACS Date: 01/02

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Terralest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/11/02
EPA ID	LK141	Depth (ft.):	0-2		
Sample No.:	AA3-TR01-S1				

Visual Sample Description: Dark brown silty, clayey sand (SC-SM)

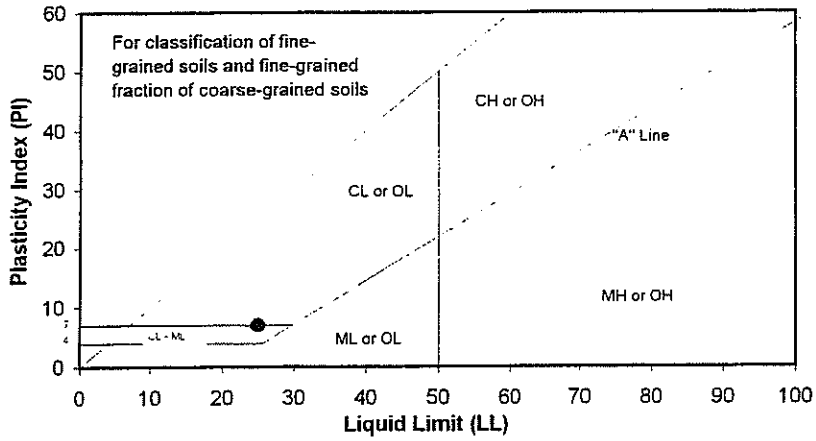
		Moisture Content of Total Air - Dry Soil	
Container No.:	788	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	365.46	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.35	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	290.11	Moisture Content (%)	0.00

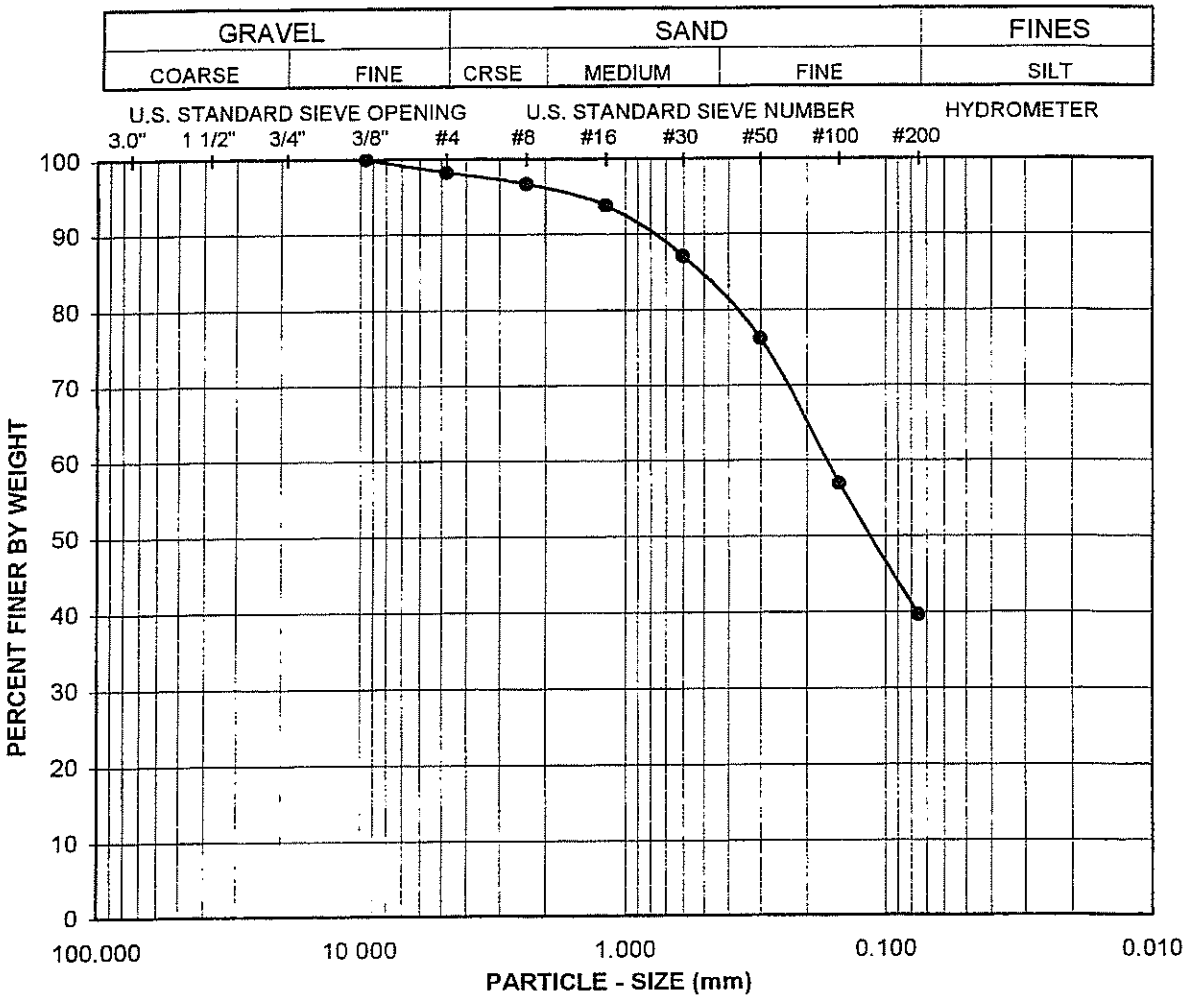
After Wet Sieve	Container No.	788
	Wt. of Dry Soil + Container (gm.)	252.48
	Wt. of Container (gm.)	75.35
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	177.13

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	5.11	98.2
#8	2.360	9.60	96.7
#16	1.180	18.09	93.8
#30	0.600	37.35	87.1
#50	0.300	69.04	76.2
#100	0.150	124.91	56.9
#200	0.075	175.19	39.6
PAN			

GRAVEL:	**2 %**	Liquid Limit:	**25**
SAND:	**58 %**	Plastic Limit	**18**
FINES:	**40 %**	Plasticity Index:	**7**
GRP. SYMBOL:	**SC-SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK141	AA3-TR01-S1	0-2	SC-SM	2 : 58 : 40	25 , 18 , 7

Visual Sample Description:
Dark brown silty, clayey sand (SC-SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

SA LK141.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/08/02
EPA ID:	LK143	Depth (ft.):	2-8		
Sample No.:	AA3-TR01-S3				

Visual Sample Description: Brown silty sand (SM)

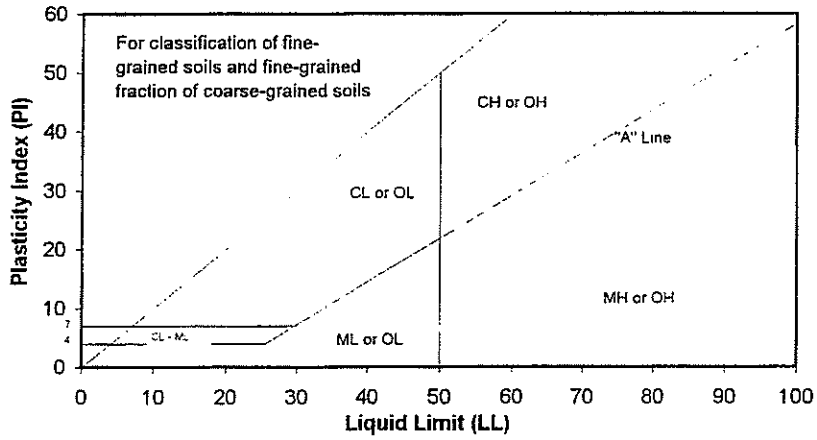
		Moisture Content of Total Air - Dry Soil	
Container No.:	936	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	2166.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	107.25	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	2059.35	Moisture Content (%)	0.00

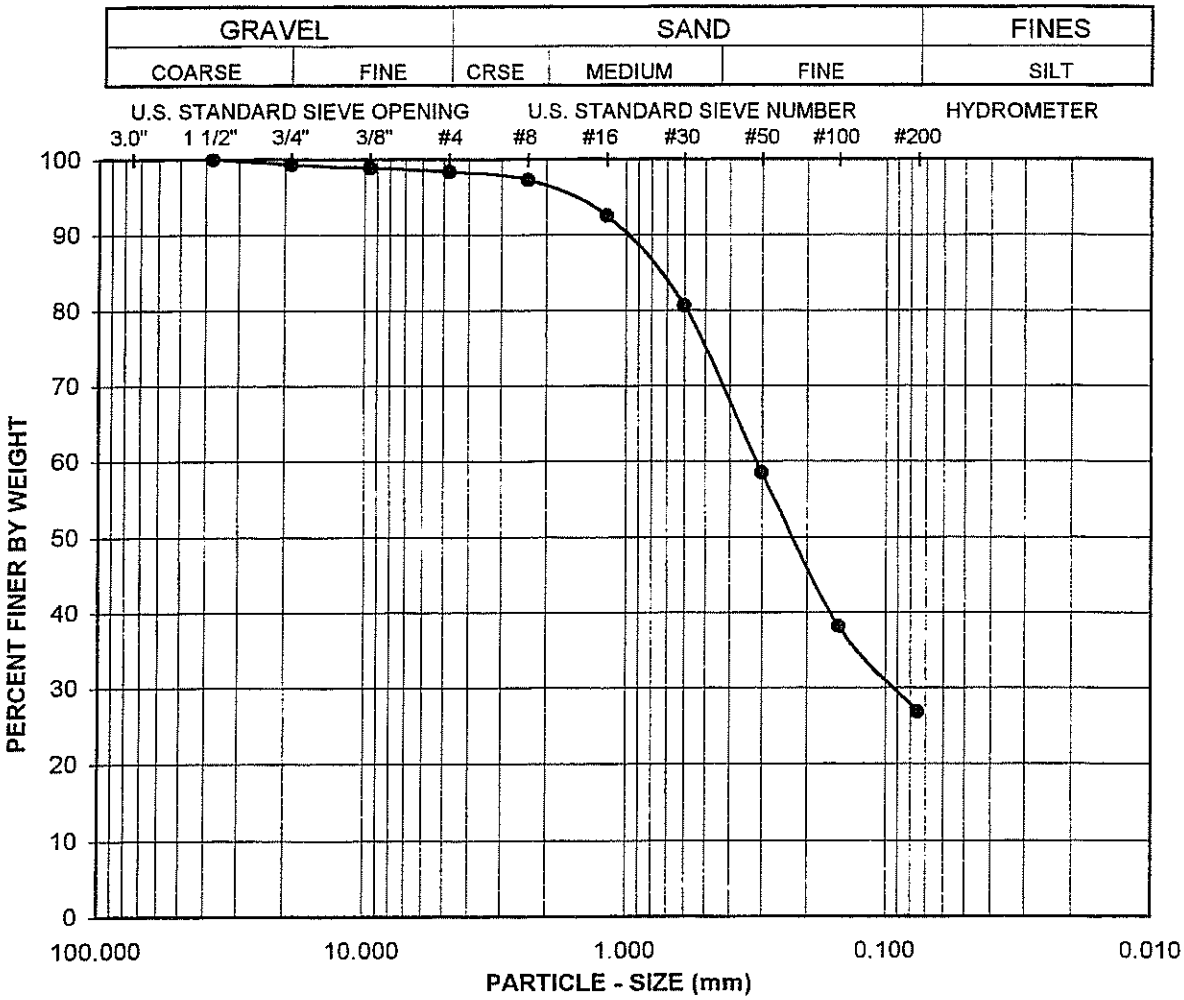
After Wet Sieve	Container No.	936
	Wt. of Dry Soil + Container (gm.)	1619.40
	Wt. of Container (gm.)	107.25
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	1512.15

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	100.0
3/4"	19.000	13.39	99.3
3/8"	9.500	22.23	98.9
#4	4.750	33.08	98.4
#8	2.360	55.24	97.3
#16	1.180	152.62	92.6
#30	0.600	400.26	80.6
#50	0.300	854.64	58.5
#100	0.150	1275.65	38.1
#200	0.075	1508.30	26.8
PAN			

GRAVEL:	**2 %**	Liquid Limit:	
SAND:	**71 %**	Plastic Limit	
FINES:	**27 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK143	AA3-TR01-S3	2-8	SM	2 : 71 : 27	, N/A,

Visual Sample Description:
Brown silty sand (SM)

Terraset Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CU

ASTM D 4318, D 422

11-02

SA LK143.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Terratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/07/02
EPA ID:	LK145	Depth (ft.):	0-4		
Sample No.:	AA3-TR03-S1				

Visual Sample Description: Brown silty sand (SM)

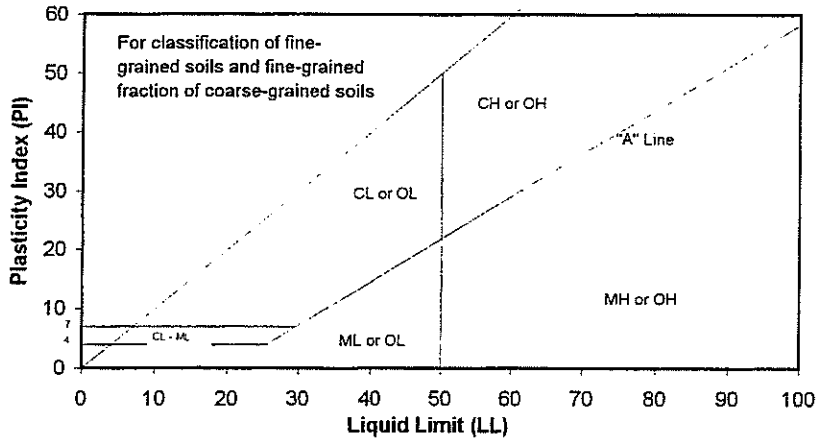
		Moisture Content of Total Air - Dry Soil	
Container No.:	V-1	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	1000.22	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	108.96	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	891.26	Moisture Content (%)	0.00

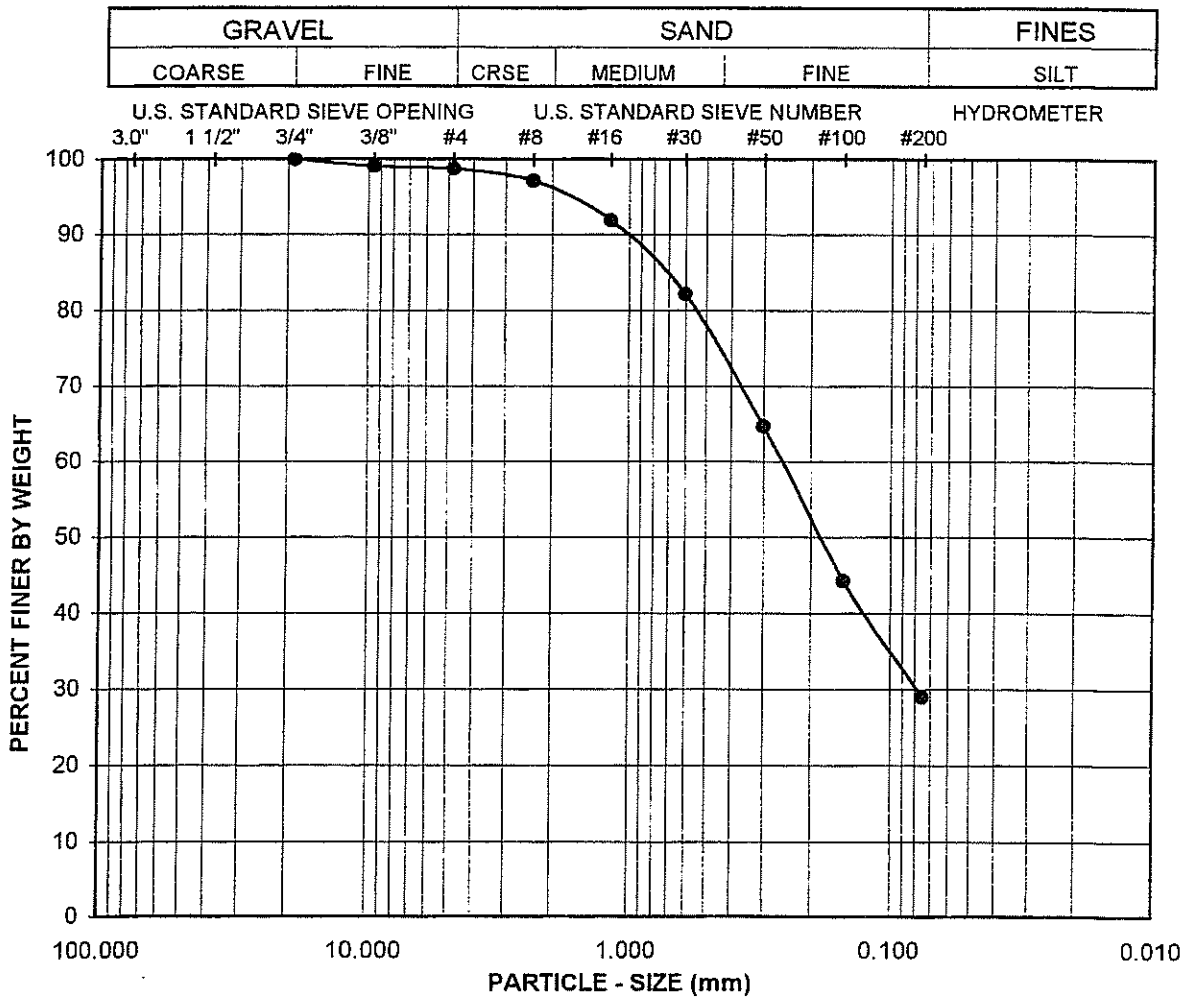
After Wet Sieve	Container No.	V-1
	Wt. of Dry Soil + Container (gm.)	745.50
	Wt. of Container (gm.)	108.96
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	636.54

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	8.02	99.1
#4	4.750	11.23	98.7
#8	2.360	26.15	97.1
#16	1.180	72.36	91.9
#30	0.600	158.51	82.2
#50	0.300	314.51	64.7
#100	0.150	497.60	44.2
#200	0.075	632.72	29.0
PAN			

GRAVEL:	**1 %**	Liquid Limit:	
SAND:	**70 %**	Plastic Limit	
FINES:	**29 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK145	AA3-TR03-S1	0-4	SM	1 : 70 : 29	, N/A,

Visual Sample Description:
Brown silty sand (SM)

Terrasient Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CU

ASTM D 4318, D 422

11-02

SA LK145.xls

PARTICLE-SIZE ANALYSIS of SOILS
ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/07/02
EPA ID:	LK146	Depth (ft.):	0-7		
Sample No.:	AA3-TR03-S2				

Visual Sample Description: Brown silty sand (SM)

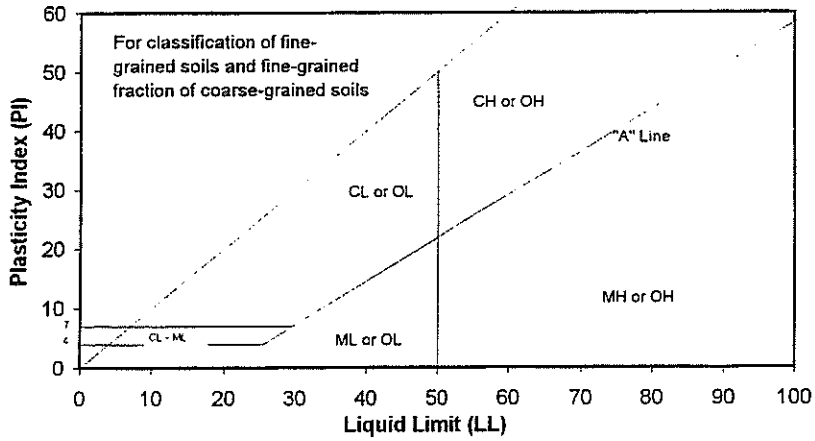
		Moisture Content of Total Air - Dry Soil	
Container No.:	910	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	746.40	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	74.48	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	671.92	Moisture Content (%)	0.00

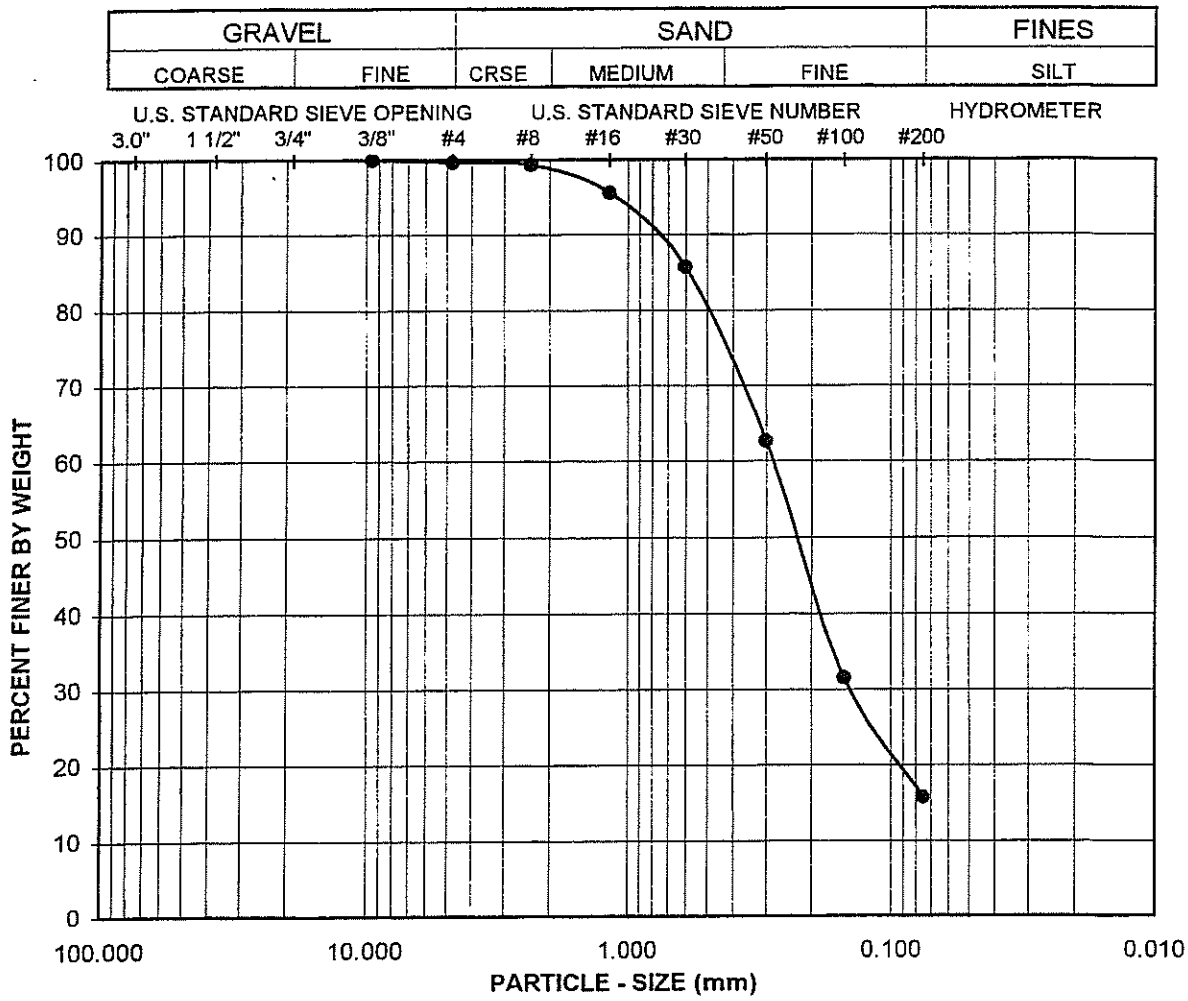
After Wet Sieve	Container No.	910
	Wt. of Dry Soil + Container (gm.)	643.70
	Wt. of Container (gm.)	74.48
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	569.22

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	1.97	99.7
#8	2.360	4.80	99.3
#16	1.180	29.55	95.6
#30	0.600	96.25	85.7
#50	0.300	251.60	62.6
#100	0.150	460.26	31.5
#200	0.075	566.18	15.7
PAN			

GRAVEL:	0 %	Liquid Limit:	
SAND:	84 %	Plastic Limit	
FINES:	16 %	Plasticity Index:	
GRP. SYMBOL:	SM	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK146	AA3-TR03-S2	0-7	SM	0 : 84 : 16	, N/A,

Visual Sample Description:
Brown silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CU

ASTM D 4318, D 422

11-02

SA LK146.xls

Teraiest Labs, inc.

PARTICLE - SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By: ACS	Date: 11/04/02
Project No.:	37380 / CTO 0078	Input By: RA	Date: 11/07/02
EPA ID:	LK147	Checked By: LF	Date: 11/07/02
Sample No.:	AA3-TR04-S1	Depth (ft):	0.0-3.0
Sample Description:	Brown silty sand (SM)		

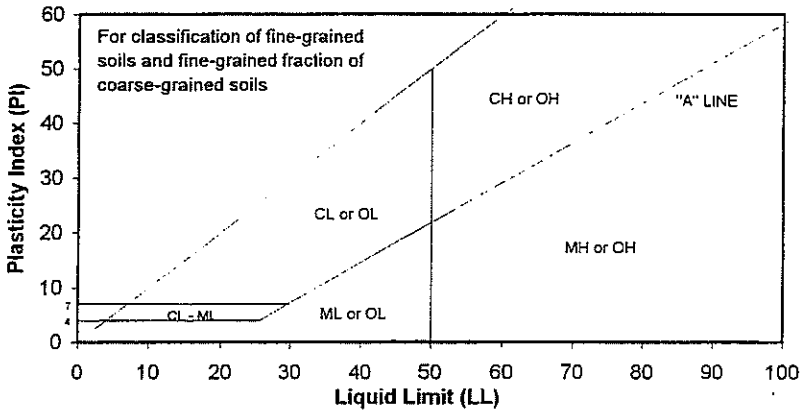
Calculation of Dry Weights	Whole Sample	Sample -#4	Moisture Contents	+#4	-#4
Container No.:	EZ-8	738	Wt. Air-Dry Soil + Container	0.00	0.00
Wt. Air-Dry Soil + Container	3768.90	804.54	Wt. Dry Soil + Container	0.00	0.00
Wt. of Container	0.00	75.64	Wt. of Container	1.00	1.00
Dry Wt. of Soil	3768.90	728.90	**Moisture Content (%)**	0.00	0.00

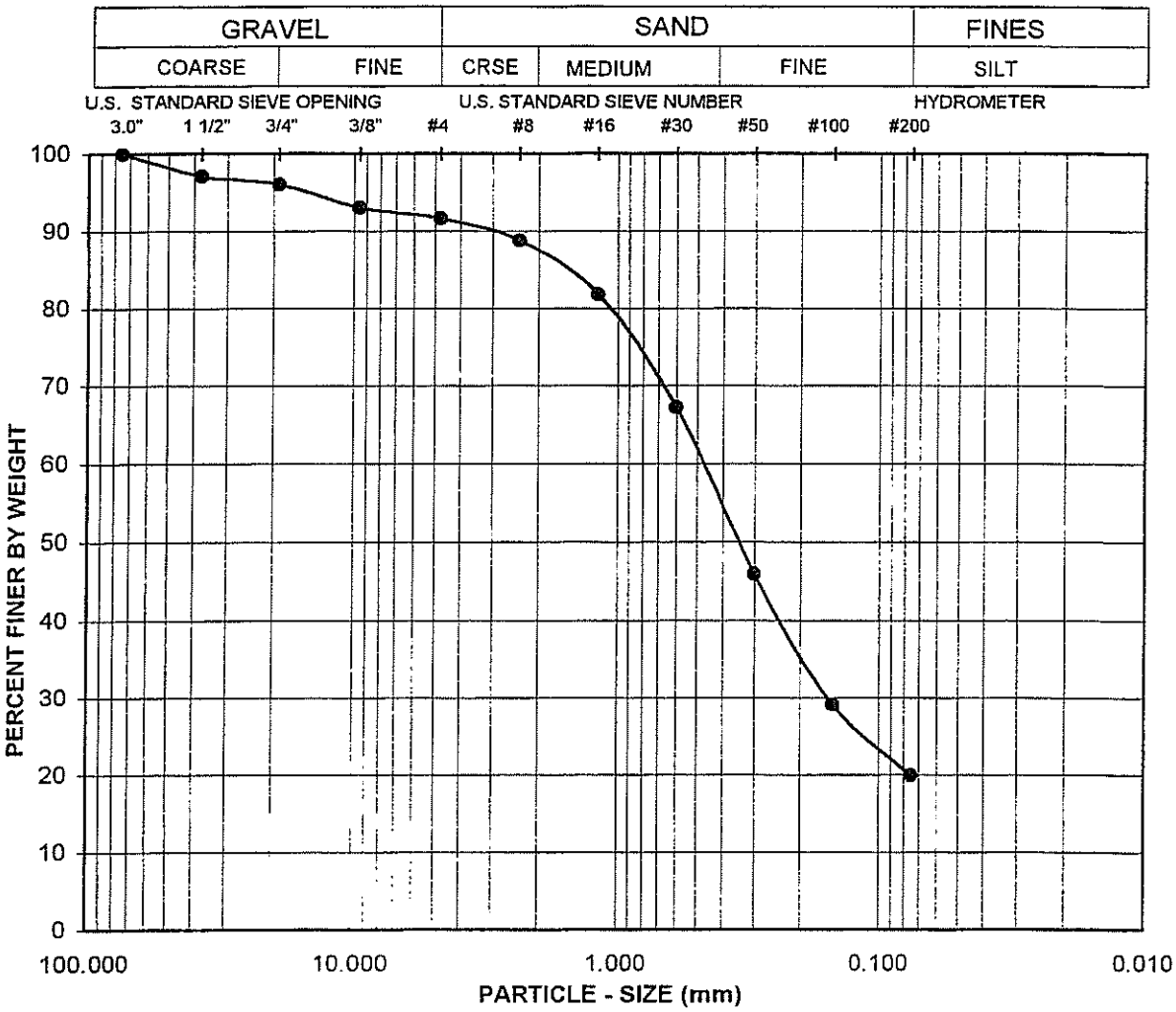
Smaller Sample -#4 Material After Wet Sieve	Container No.:	738
	Wt. of Dry Soil + Cont. (gm.)	647.20
	Wt. of Container (gm.)	75.64
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	571.56

U. S. Sieve Size		Cumulative Weight of Dry Soil Retained		Percent Passing
(in.)	(mm)	Whole Sample	Small Sample -#4	(%)
6"	152.400			
3"	75.000	0.0		100.0
1 1/2	37.500	110.44		97.1
3/4"	19.000	151.75		96.0
3/8"	9.500	265.24		93.0
#4	4.750	318.32		91.6
#8	2.360		22.22	88.8
#16	1.180		77.95	81.8
#30	0.600		194.49	67.2
#50	0.300		363.32	45.9
#100	0.150		497.35	29.1
#200	0.075		570.94	19.9
PAN				

GRAVEL:	8 %	Liquid Limit:	
SAND:	72 %	Plastic Limit	
FINES:	20 %	Plasticity Index:	
GRP. SYMBOL:	SM	Cu = D60/D10	
		Cc = $(D30)^2/(D60*D10)$	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material.





EPA ID	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LK147	AA3-TR04-S1	0.0-3.0	SM	8:72:20	N/A

Sample Description:

Brown silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

Teralest Labs, inc.

PARTICLE - SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By: ACS	Date: 11/05/02
Project No.:	37380 / CTO 0078	Input By: RA	Date: 11/07/02
EPA ID:	LK149	Checked By: LF	Date: 11/07/02
Sample No.:	AA3-TR06-S1	Depth (ft):	0.0-8.0
Sample Description:	Brown silty sand (SM)		

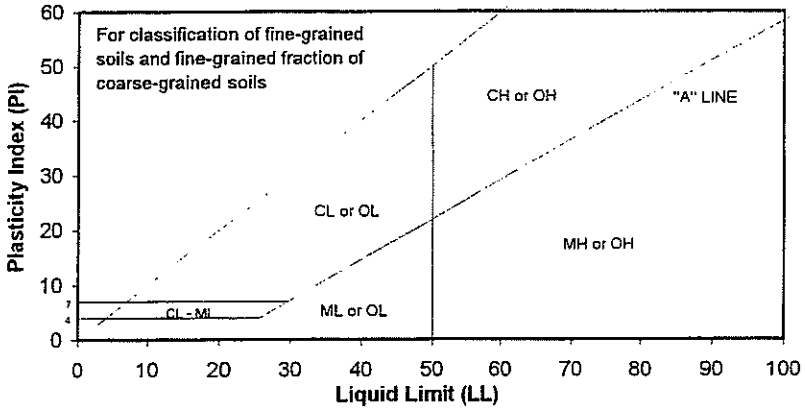
Calculation of Dry Weights	Whole Sample	Sample -#4	Moisture Contents	+#4	-#4
Container No.:	4-6	741	Wt. Air-Dry Soil + Container	0.00	0.00
Wt. Air-Dry Soil + Container	2562.80	621.92	Wt. Dry Soil + Container	0.00	0.00
Wt. of Container	107.87	76.50	Wt. of Container	1.00	1.00
Dry Wt. of Soil	2454.93	545.42	**Moisture Content (%)**	0.00	0.00

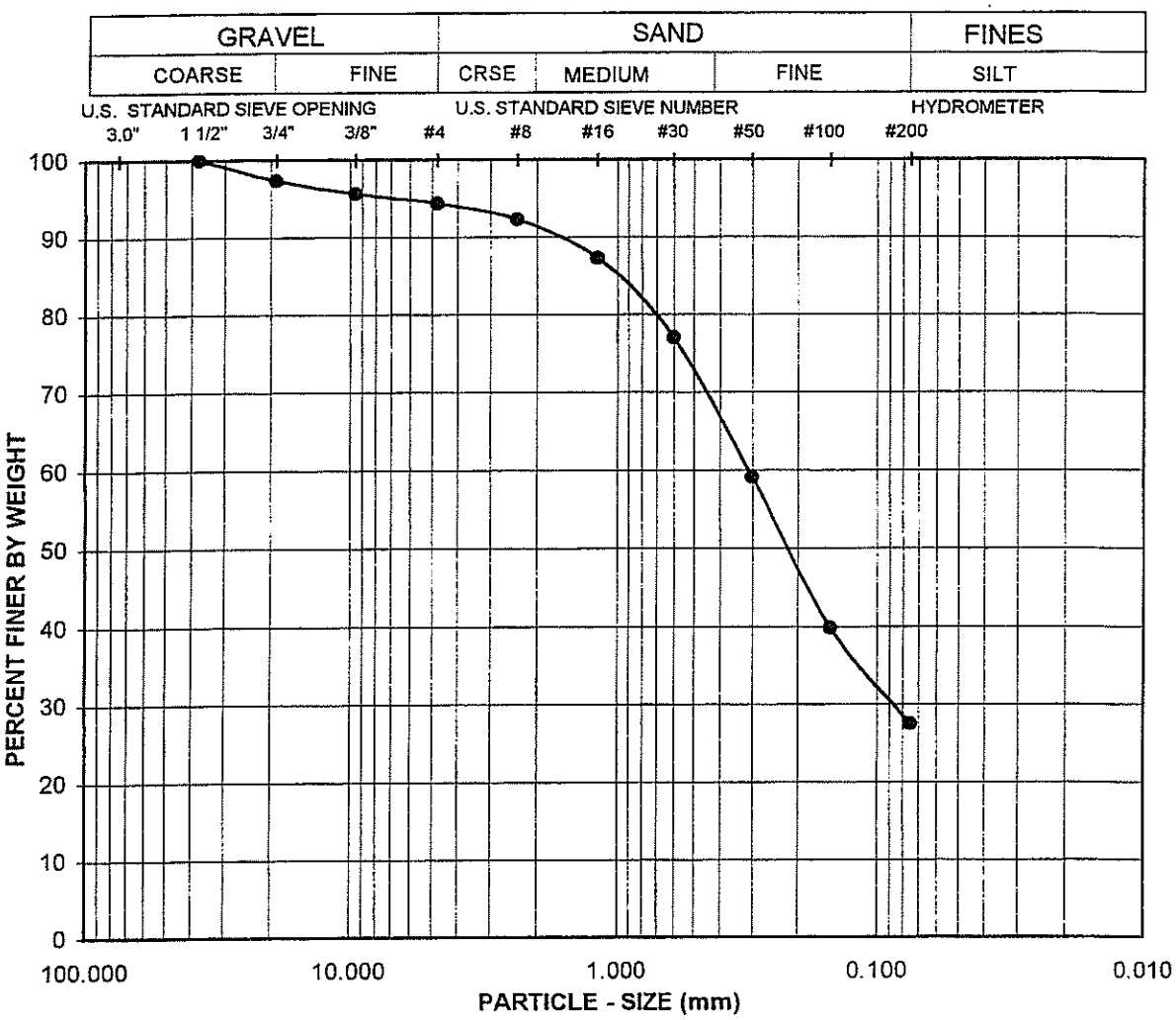
Smaller Sample -#4 Material After Wet Sieve	Container No.:	741
	Wt. of Dry Soil + Cont. (gm.)	465.03
	Wt. of Container (gm.)	76.50
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	388.53

U. S. Sieve Size		Cumulative Weight of Dry Soil Retained		Percent Passing
(in.)	(mm)	Whole Sample	Small Sample -#4	(%)
6"	152.400			
3"	75.000	0.0		
1 1/2	37.500	0.00		100.0
3/4"	19.000	67.28		97.3
3/8"	9.500	107.00		95.6
#4	4.750	139.71		94.3
#8	2.360		11.45	92.3
#16	1.180		40.89	87.2
#30	0.600		99.81	77.0
#50	0.300		203.34	59.1
#100	0.150		315.35	39.8
#200	0.075		386.25	27.5
PAN				

GRAVEL:	**6 %**	Liquid Limit:	
SAND:	**66 %**	Plastic Limit	
FINES:	**28 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10	
		$Cc = (D30)^2/(D60*D10)$	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material.





EPA ID	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LK149	AA3-TR06-S1	0.0-8.0	SM	6:66:28	N/A

Sample Description:

Brown silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

Teralest Labs, Inc.

PARTICLE - SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By: ACS	Date: 11/05/02
Project No.:	37380 / CTO 0078	Input By: RA	Date: 11/07/02
EPA ID:	LK150	Checked By: LF	Date: 11/07/02
Sample No.:	AA3-TR07-S1	Depth (ft):	2.0-3.0
Sample Description:	Brown silty sand (SM)		

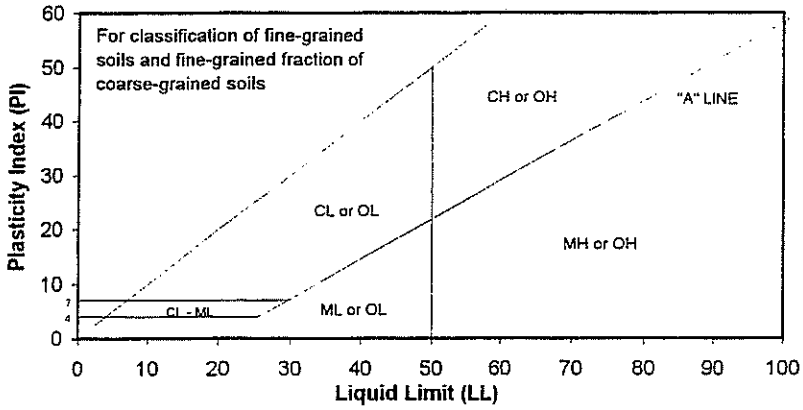
Calculation of Dry Weights	Whole Sample	Sample -#4	Moisture Contents	+#4	-#4
Container No.:	E-1	750	Wt. Air-Dry Soil + Container	0.00	0.00
Wt. Air-Dry Soil + Container	3405.60	527.64	Wt. Dry Soil + Container	0.00	0.00
Wt. of Container	0.00	75.86	Wt. of Container	1.00	1.00
Dry Wt. of Soil	3405.60	451.78	**Moisture Content (%)**	0.00	0.00

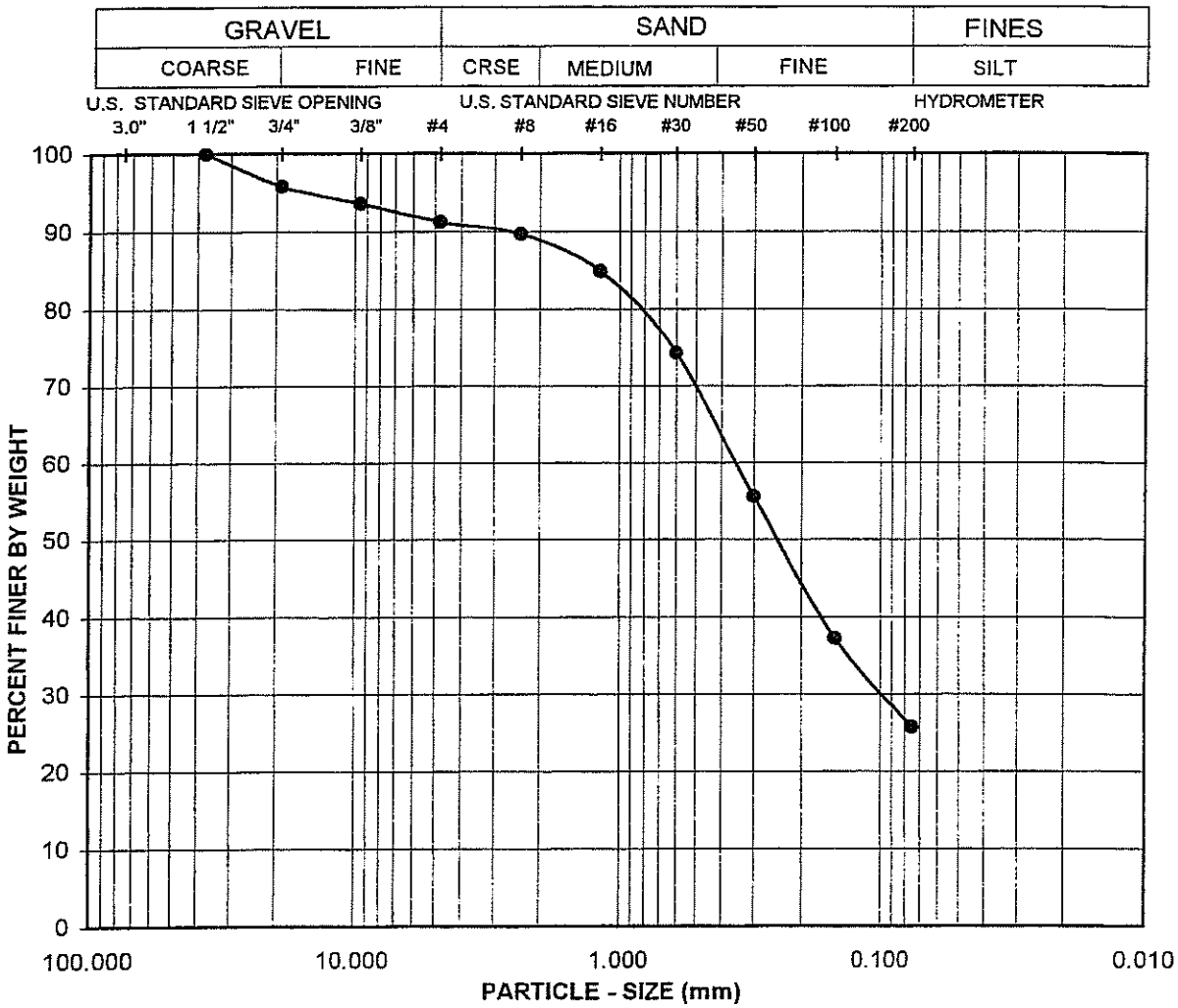
Smaller Sample -#4 Material After Wet Sieve	Container No.:	750
	Wt. of Dry Soil + Cont. (gm.)	402.17
	Wt. of Container (gm.)	75.86
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	326.31

U. S. Sieve Size		Cumulative Weight of Dry Soil Retained		Percent Passing
(in.)	(mm)	Whole Sample	Small Sample -#4	(%)
6"	152.400			
3"	75.000	0.0		
1 1/2	37.500	0.00		100.0
3/4"	19.000	142.18		95.8
3/8"	9.500	219.07		93.6
#4	4.750	299.45		91.2
#8	2.360		7.66	89.7
#16	1.180		31.27	84.9
#30	0.600		83.71	74.3
#50	0.300		176.21	55.6
#100	0.150		267.74	37.2
#200	0.075		324.63	25.7
PAN				

GRAVEL:	**9 %**	Liquid Limit:	
SAND:	**65 %**	Plastic Limit	
FINES:	**26 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10	
		Cc = (D30)²/(D60*D10)	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material.





EPA ID	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LK150	AA3-TR07-S1	2.0-3.0	SM	9:65:26	N/A

Sample Description:

Brown silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

Teralest Labs, Inc.

PARTICLE - SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By: ACS	Date: 11/05/02
Project No.:	37380 / CTO 0078	Input By: RA	Date: 11/07/02
EPA ID:	LK152	Checked By: LF	Date: 11/07/02
Sample No.:	AA3-TR08-S2	Depth (ft):	4.0-5.0
Sample Description:	Brown silty sand (SM)		

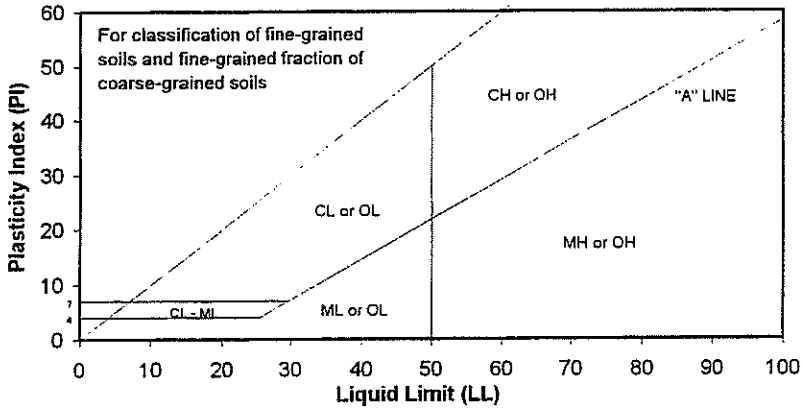
Calculation of Dry Weights	Whole Sample	Sample -#4	Moisture Contents	+#4	-#4
Container No.:	954	731	Wt. Air-Dry Soil + Container	0.00	0.00
Wt. Air-Dry Soil + Container	1624.30	499.18	Wt. Dry Soil + Container	0.00	0.00
Wt. of Container	108.79	76.82	Wt. of Container	1.00	1.00
Dry Wt. of Soil	1515.51	422.36	**Moisture Content (%)**	0.00	0.00

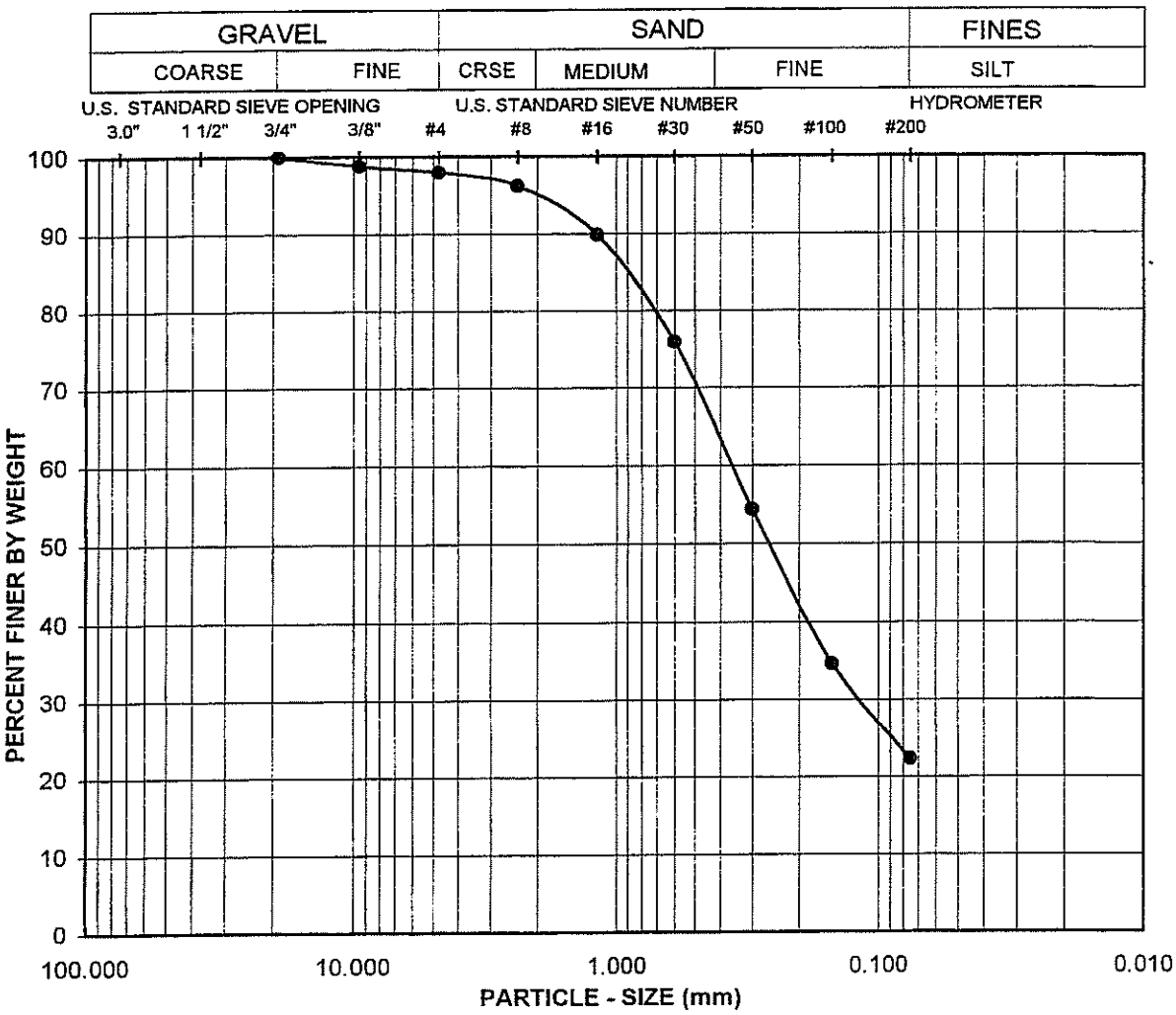
Smaller Sample -#4 Material After Wet Sieve	Container No.:	731
	Wt. of Dry Soil + Cont. (gm.)	403.98
	Wt. of Container (gm.)	76.82
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	327.16

U. S. Sieve Size		Cumulative Weight of Dry Soil Retained		Percent Passing
(in.)	(mm)	Whole Sample	Small Sample -#4	(%)
6"	152.400			
3"	75.000	0.0		
1 1/2	37.500	0.00		
3/4"	19.000	0.00		100.0
3/8"	9.500	18.59		98.8
#4	4.750	30.38		98.0
#8	2.360		7.85	96.2
#16	1.180		35.32	89.8
#30	0.600		95.35	75.9
#50	0.300		188.08	54.4
#100	0.150		273.33	34.6
#200	0.075		326.12	22.3
PAN				

GRAVEL:	2 %	Liquid Limit:	
SAND:	76 %	Plastic Limit	
FINES:	22 %	Plasticity Index:	
GRP. SYMBOL:	SM	Cu = D60/D10	
		Cc = (D30)²/(D60*D10)	

Remarks: _____





EPA ID	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LK152	AA3-TR08-S2	4.0-5.0	SM	2:76:22	N/A

Sample Description:

Brown silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 422

Terracon Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By :	ACS	Date:	11/05/02
Project No. :	37380 / CTO 0078	Data Input By:	RA	Date:	11/07/02
EPA ID	LK155	Checked By:	LF	Date:	11/07/02
Sample No.:	AA3-HA02	Depth (ft.) :	0-1		

Visual Sample Description: Olive silty sand (SM)

				Moisture Content of Total Air-Dry Soils	Moisture Content of Air-Dry Soils Passing # 10	After Hydrometer & wet sieve ret. on #200 sieve
Liquid Limit:		LL,PL,PI:	**Nonplastic**			
Plastic Limit:		GR:SA:FI:	**4:74:22**			
Plasticity Index:		Grp. Symbol:	**SM**			
Specific Gravity (Assumed)	2.70	Wt.of Air-Dry Soil + Cont.(gm.)		0.00	0.00	
Correction for Specific Gravity	0.99	Dry Wt. of Soil + Cont. (gm.)		0.00	0.00	152.86
Wt.of Air-Dry Soil + Cont. (gm.)	792.50	Wt. of Container No.___ (gm.)		1.00	1.00	75.68
Wt. of Container	159.81	Moisture Content (%)		0.00	0.00	
Dry Wt. of Soil (gm.)	632.69	Wt. of Dry Soil (gm.)				77.18

Coarse Sieve

U.S. Sieve Size	Cumulative Wt.of Dry Soil Retained(gm)	% Passing
3"	0.00	100.0
1½"	0.00	100.0
3/4"	0.00	100.0
3/8"	13.70	97.8
No. 4	24.48	96.1
No. 10	50.79	92.0
Pan		

Sieve after Hydrometer & Wet Sieve

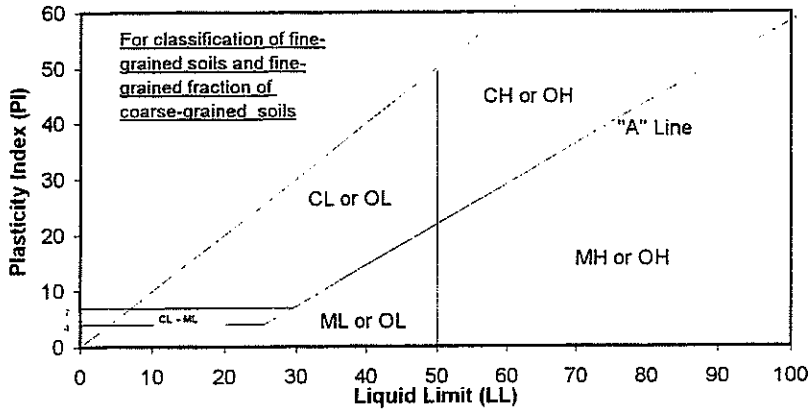
U.S. Sieve Size	Cumulative Wt. of Dry Soil Retained (gm)	% Passing	% Total Sample
No. 10	0.00	100.0	92.0
No. 16	3.93	96.1	88.4
No. 30	17.00	83.0	76.4
No. 50	39.24	60.8	55.9
No. 100	61.32	38.7	35.6
No. 200	76.40	23.6	21.7
Pan			

Hydrometer

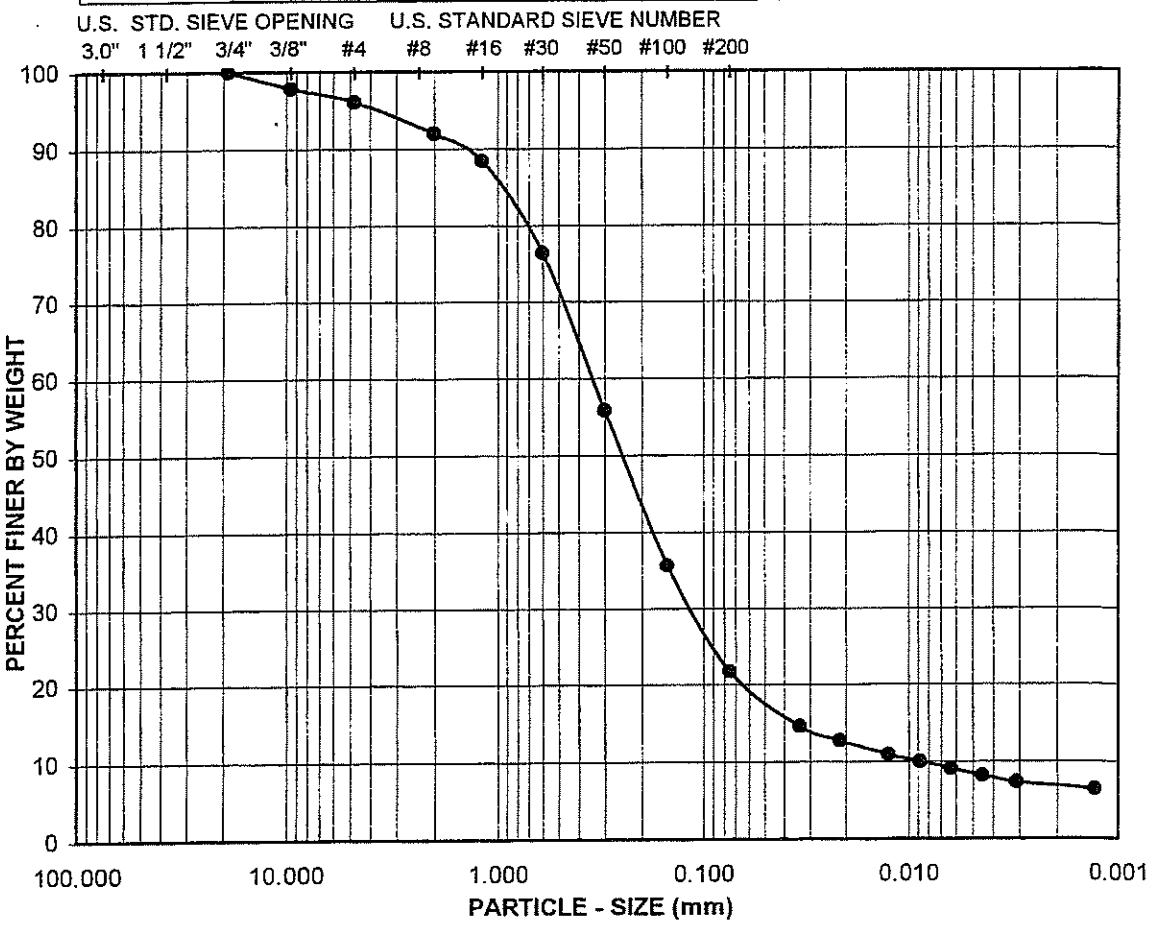
Wt. of Air-Dry Soil (gm) 100.01 Wt. of Dry Soil (gm) 100.01

Deflocculant 125 cc of 4% Solution

Date	Time	Elapsed Time (min)	Water Temperature °C	Composite Correction 152 H	Actual Hydrometer Readings	% Total Sample (%)	Soil Particle Diameter (mm)
06-Nov-02	9:30	0		6.0			
	9:32	2	21.8	6.0	22.0	14.6	0.0335
	9:35	5	21.8	6.0	20.0	12.7	0.0214
	9:45	15	21.9	6.0	18.0	10.9	0.0125
	10:00	30	22.2	6.0	17.0	10.0	0.0088
	10:30	60	22.6	6.0	16.0	9.1	0.0063
	11:30	120	22.5	6.0	15.0	8.2	0.0045
	13:40	250	23.0	6.0	14.0	7.3	0.0031
07-Nov-02	9:30	1440	21.4	6.0	13.0	6.4	0.0013



GRAVEL		SAND			FINES	
COARSE	FINE	CRSE	MEDIUM	FINE	SILT	CLAY



EPA ID	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LK155	AA3-HA02	0-1	SM	4:74:22	Nonplastic

Sample Description:

Olive silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/05/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/07/02
EPA ID:	LK160	Depth (ft.):	3.5-4.0		
Sample No.:	AA3-HA15				

Visual Sample Description: Olive silty sand (SM)

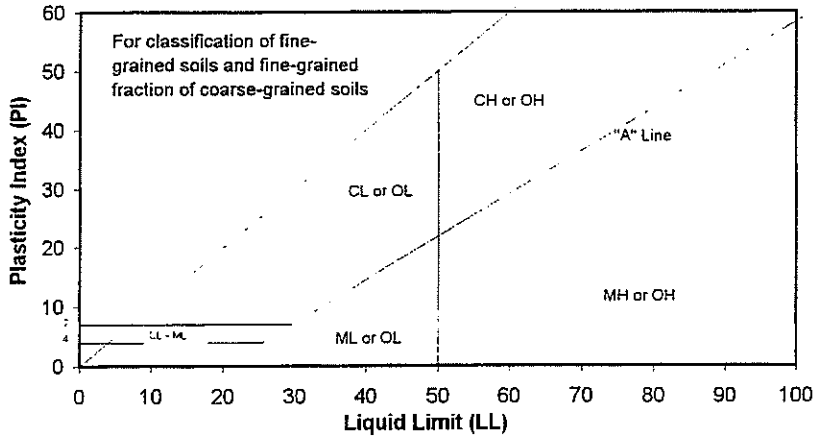
		Moisture Content of Total Air - Dry Soil	
Container No.:	1955	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	360.20	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	72.10	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	288.10	Moisture Content (%)	0.00

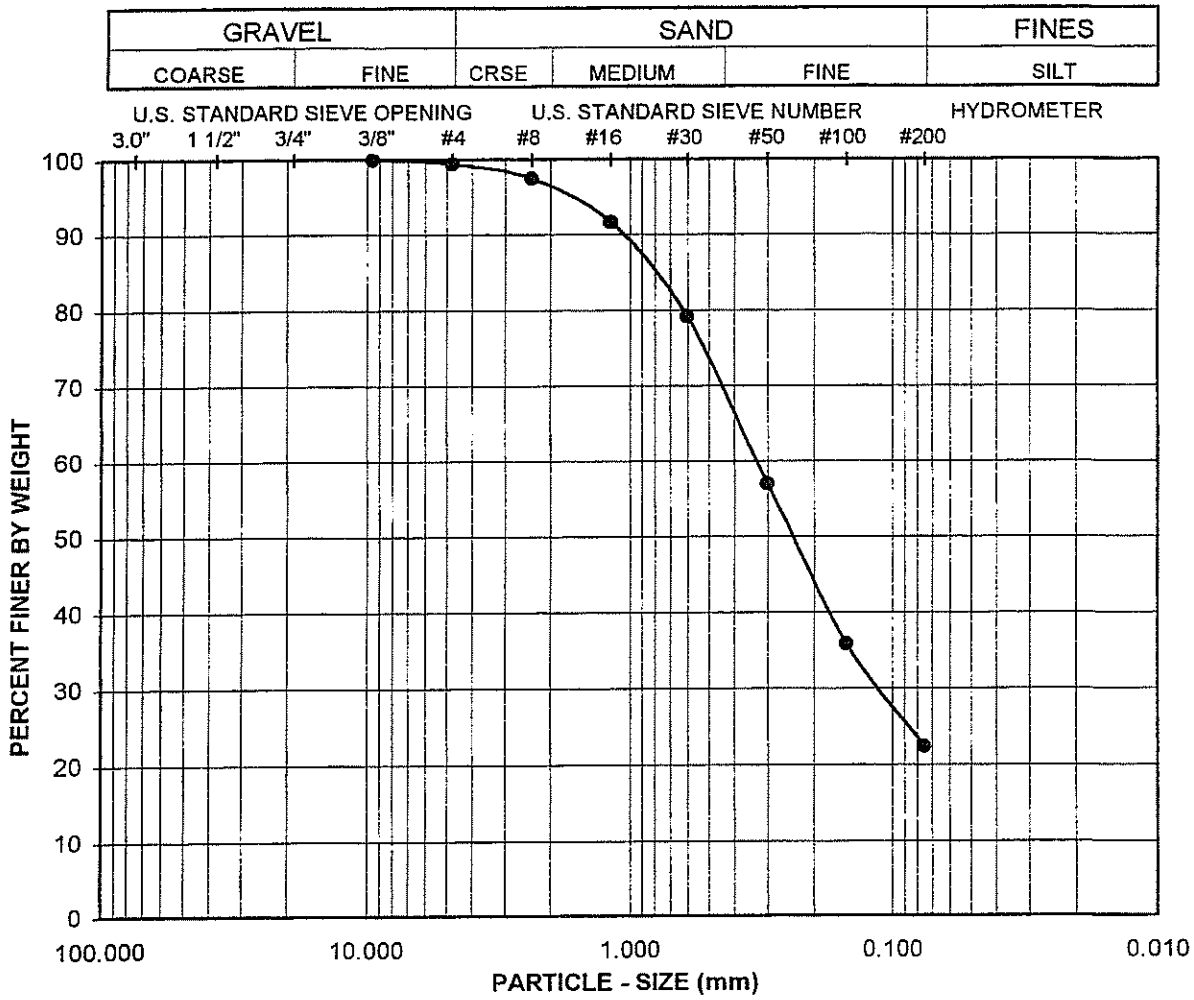
After Wet Sieve	Container No.	N/A
	Wt. of Dry Soil + Container (gm.)	N/A
	Wt. of Container (gm.)	N/A
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	N/A

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	1.73	99.4
#8	2.360	7.29	97.5
#16	1.180	24.18	91.6
#30	0.600	60.17	79.1
#50	0.300	123.85	57.0
#100	0.150	185.03	35.8
#200	0.075	223.69	22.4
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	77 %	Plastic Limit	
FINES:	22 %	Plasticity Index:	
GRP. SYMBOL:	SM	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK160	AA3-HA15	3.5-4.0	SM	1 : 77 : 22	, N/A,

Visual Sample Description:
Olive silty sand (SM)

Terraset Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

SA LK160.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Tested By: ACS Date: 11/05/02
Project No.: 37380 / CTO 0078
Checked By: LF Date: 11/07/02
EPA ID: LK161
Depth (ft.): 0-0.5
Sample No.: AA3-HA17
Visual Sample Description: Olive silty sand (SM)

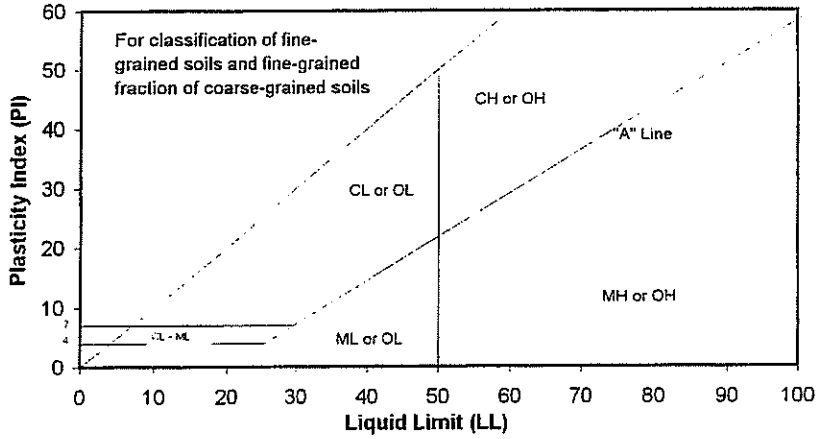
		Moisture Content of Total Air - Dry Soil	
Container No.:	1490	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	406.67	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.82	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	329.85	Moisture Content (%)	0.00

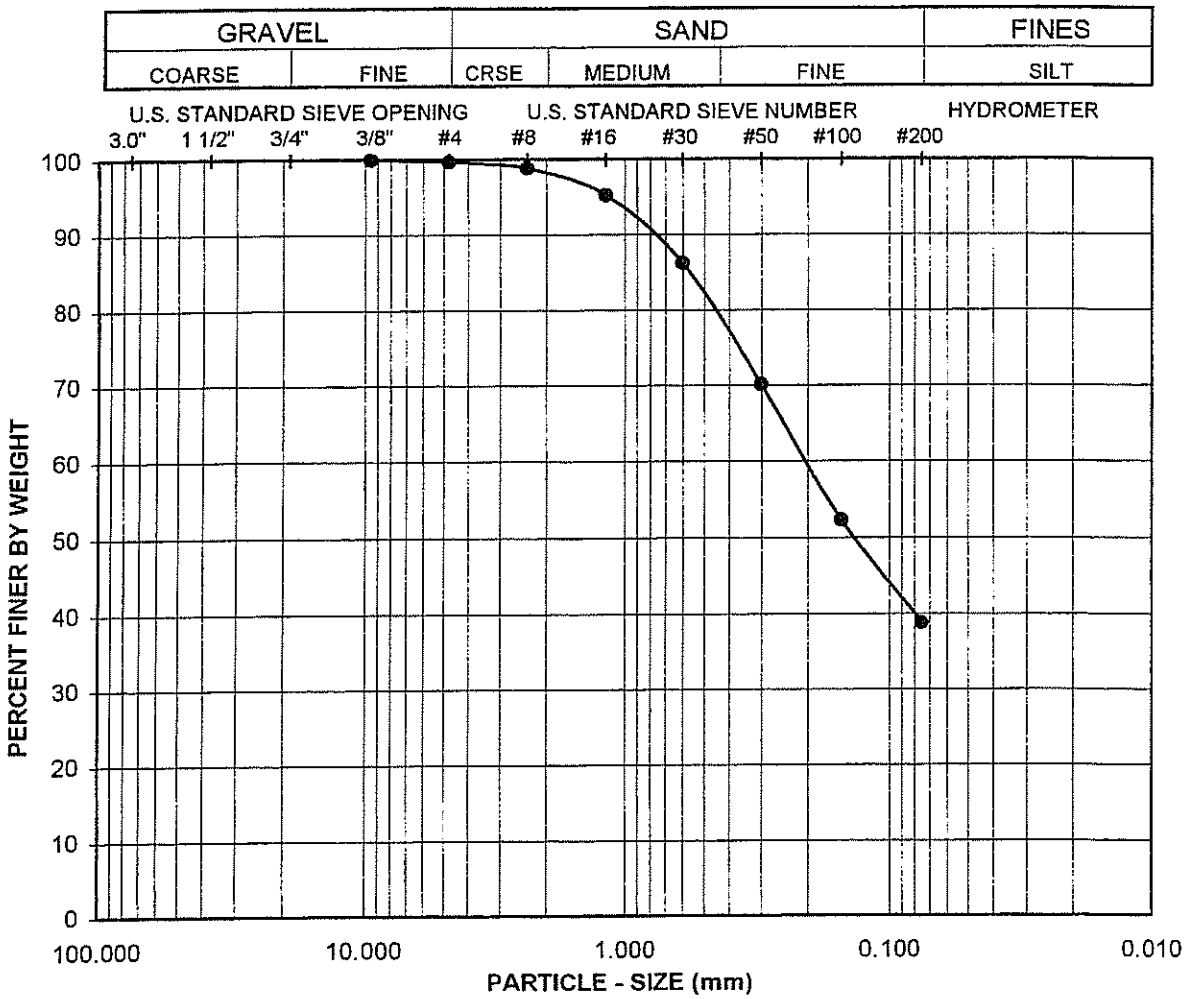
After Wet Sieve	Container No.	N/A
	Wt. of Dry Soil + Container (gm.)	N/A
	Wt. of Container (gm.)	N/A
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	N/A

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	1.02	99.7
#8	2.360	4.12	98.8
#16	1.180	15.63	95.3
#30	0.600	45.49	86.2
#50	0.300	98.66	70.1
#100	0.150	157.71	52.2
#200	0.075	201.77	38.8
PAN			

GRAVEL:	**0 %**	Liquid Limit:	
SAND:	**61 %**	Plastic Limit	
FINES:	**39 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK161	AA3-HA17	0-0.5	SM	0 : 61 : 39	, N/A,

Visual Sample Description:
Olive silty sand (SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

11-02

SA LK161.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Terraset Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/05/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	11/07/02
EPA ID:	LK166	Depth (ft.):	3.5-4.0		
Sample No.:	AA3-HA27				

Visual Sample Description: Olive silty sand (SM)

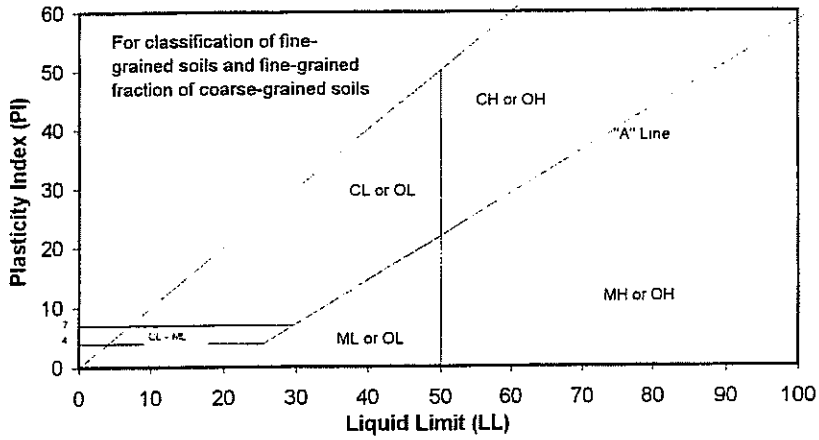
		Moisture Content of Total Air - Dry Soil	
Container No.:	750	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	384.71	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.66	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	308.05	Moisture Content (%)	0.00

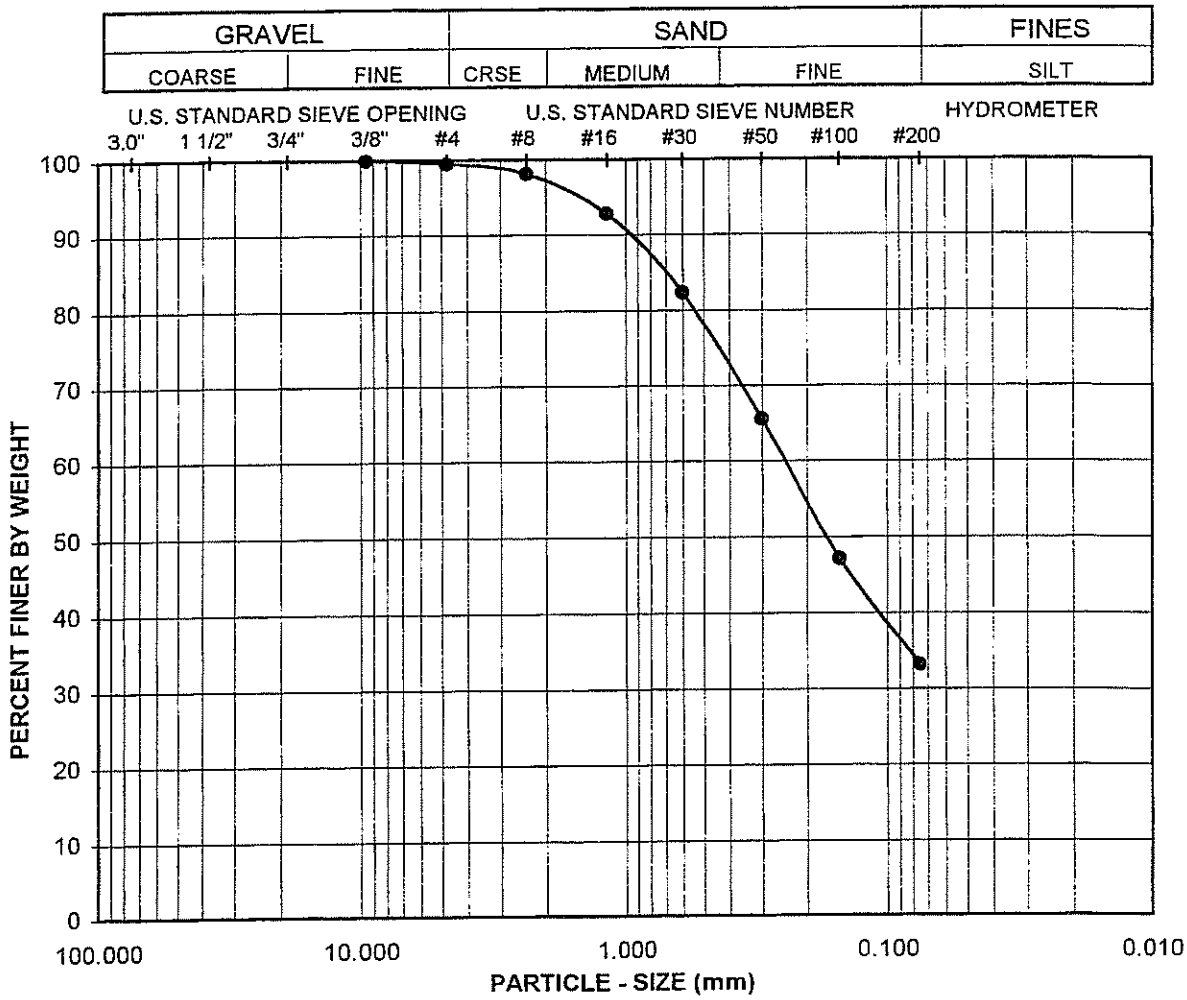
After Wet Sieve	Container No.	N/A
	Wt. of Dry Soil + Container (gm.)	N/A
	Wt. of Container (gm.)	N/A
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	N/A

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	1.41	99.5
#8	2.360	5.99	98.1
#16	1.180	22.27	92.8
#30	0.600	54.41	82.3
#50	0.300	106.14	65.5
#100	0.150	163.01	47.1
#200	0.075	205.95	33.1
PAN			

GRAVEL:	**1 %**	Liquid Limit:	
SAND:	**66 %**	Plastic Limit	
FINES:	**33 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





EPA ID:	Sample No.:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK166	AA3-HA27	3.5-4.0	SM	1 : 66 : 33	, N/A,

Visual Sample Description:
Olive silty sand (SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CU[illegible]

ASTM D 4318, D 422

11-02

SA LK166.xls

ATTERBERG LIMITS

ASTM D 4318

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	11/11/02
EPA ID:	LK141	Checked By:	LF	Date:	11/11/02
Sample No.:	AA3-TR01-S1	Depth (ft.)	0 - 2		

Visual Sample Description: Dark brown silty, clayey sand (SC-SM)

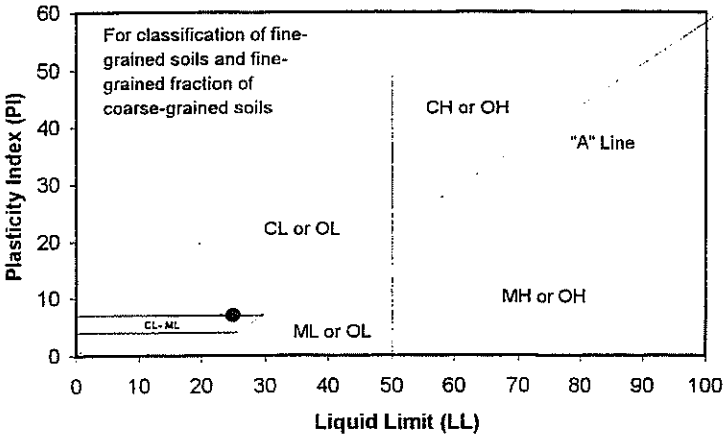
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			35	23	13	
Wet Wt. of Soil + Cont. (gm)	9.81	9.43	18.63	17.57	21.44	
Dry Wt. of Soil + Cont. (gm)	8.45	8.15	15.22	14.21	17.09	
Wt. of Container (gm)	1.07	1.09	1.08	1.10	1.02	
Moisture Content (%) [Wn]	18.43	18.13	24.12	25.63	27.07	

Liquid Limit	**25**
Plastic Limit	**18**
Plasticity Index	**7**
USCS Classification	**CL-ML**

PI at "A" - Line = 0.73(LL-20) = 3.65

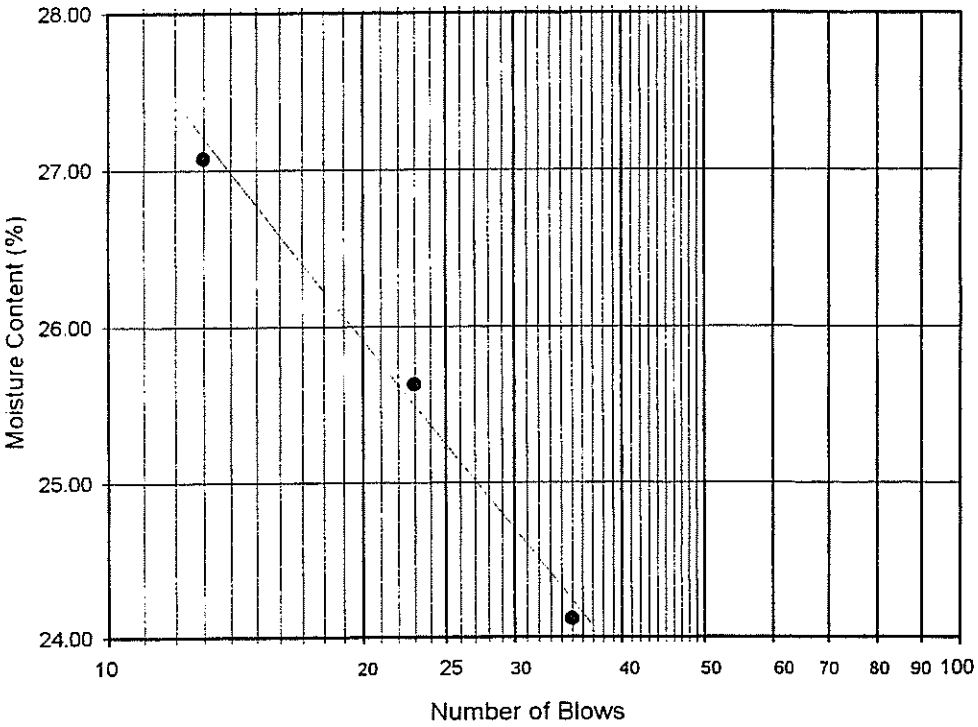
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	11/11/02
EPA ID:	LK144	Checked By:	LF	Date:	11/11/02
Sample No.:	AA3-TR01-S4	Depth (ft.)	8 - 12		

Visual Sample Description: Olive silty sand (SM)

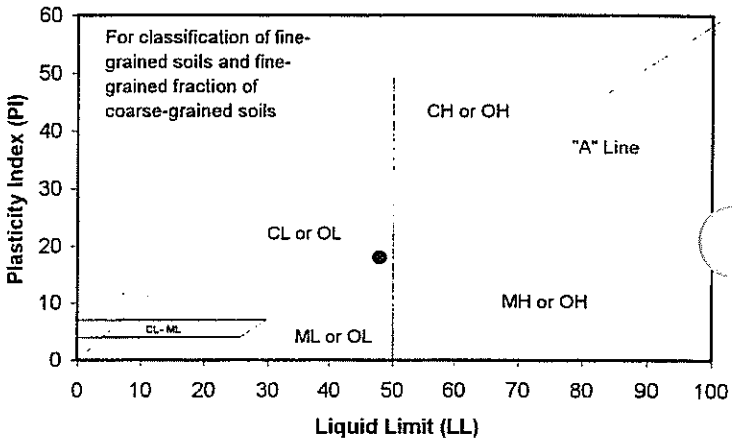
	PLASTIC LIMIT		LIQUID LIMIT		
TEST NO.	1	2	1	2	3
Number of Blows [N]			36	24	19
Wet Wt. of Soil + Cont. (gm)	8.81	8.34	17.31	17.18	18.13
Dry Wt. of Soil + Cont. (gm)	7.02	6.68	12.17	11.96	12.46
Wt. of Container (gm)	1.00	1.12	1.10	1.08	1.03
Moisture Content (%) [Wn]	29.73	29.86	46.43	47.98	49.61

Liquid Limit	**48**
Plastic Limit	**30**
Plasticity Index	**18**
USCS Classification	**ML**

PI at "A" - Line = 0.73(LL-20) = 20.44

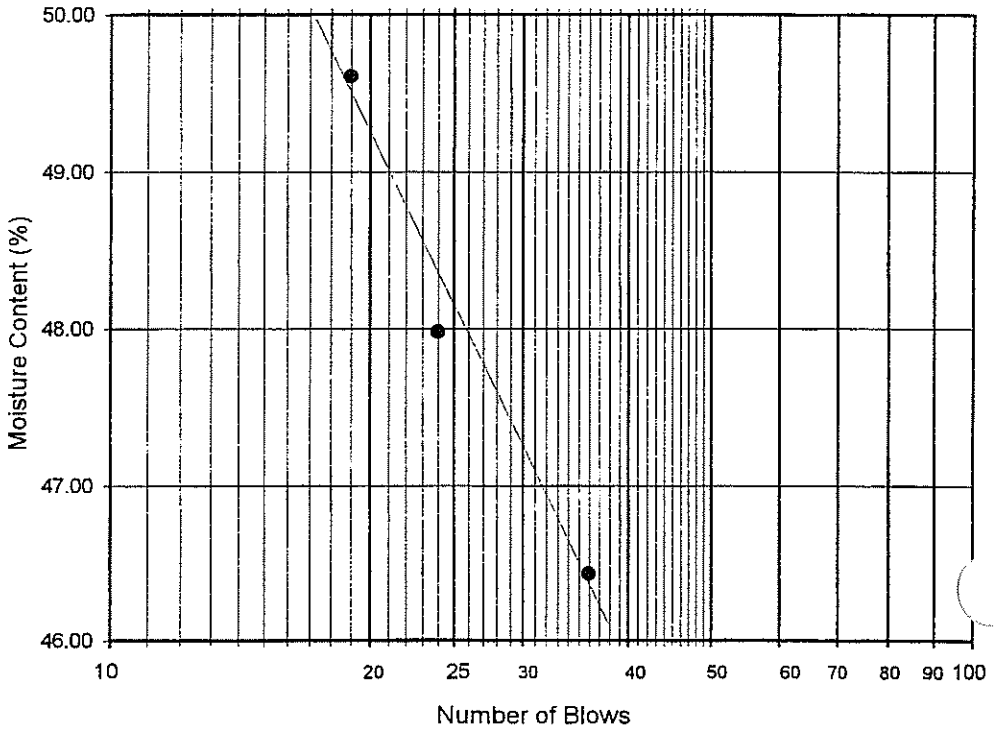
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	11/01/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	11/11/02
EPA ID:	LK151	Checked By:	LF	Date:	11/11/02
Sample No.:	AA3-TR08-S1	Depth (ft.)	1 - 2		

Visual Sample Description: Brown clayey sand (SC)

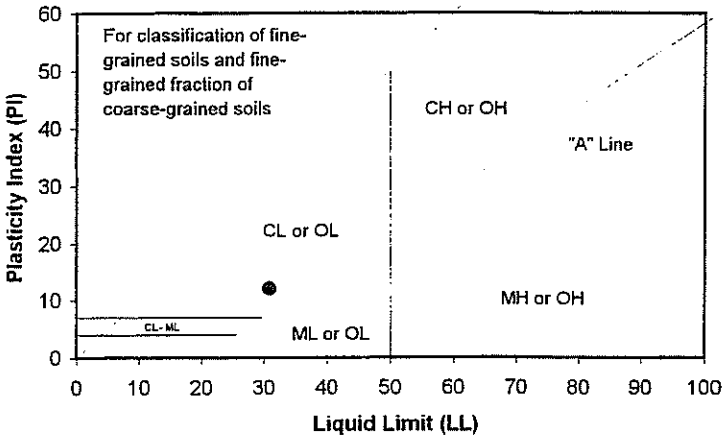
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			28	22	18	
Wet Wt. of Soil + Cont. (gm)	10.01	9.77	17.98	17.19	19.30	
Dry Wt. of Soil + Cont. (gm)	8.60	8.39	14.10	13.34	14.86	
Wt. of Container (gm)	1.07	1.00	1.14	1.06	1.10	
Moisture Content (%) [Wn]	18.73	18.67	29.94	31.35	32.27	

Liquid Limit	**31**
Plastic Limit	**19**
Plasticity Index	**12**
USCS Classification	**CL**

PI at "A" - Line = 0.73(LL-20) = 8.03

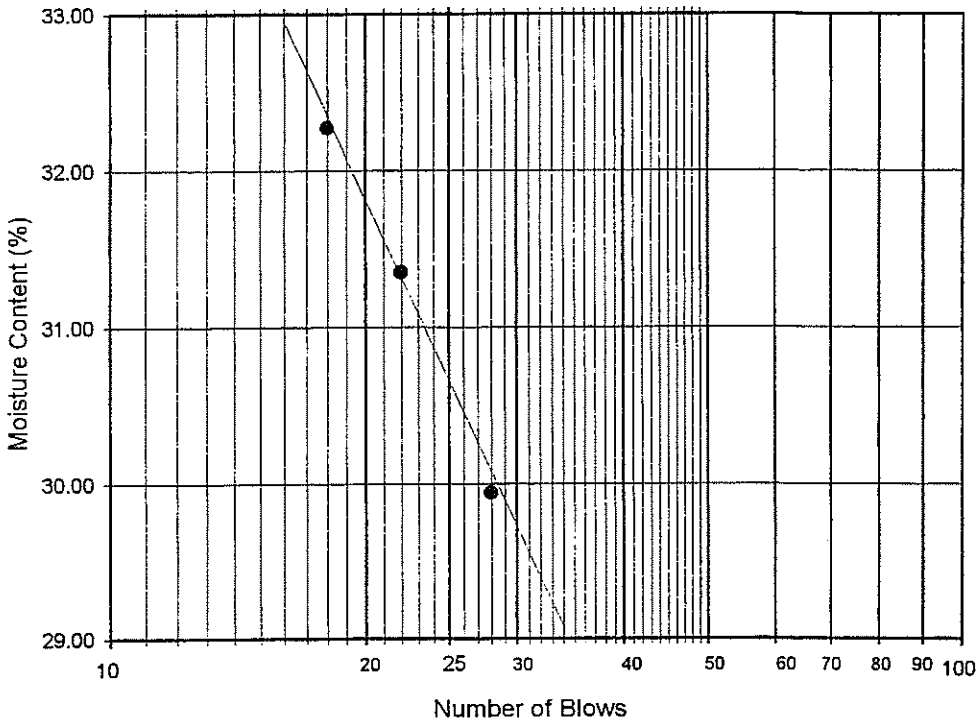
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	VJ	Date:	11/05/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	11/08/02
EPA ID:	LK155	Checked By:	LF	Date:	11/08/02
Sample No.:	AA3-HA02	Depth (ft.)	0-1.0		

Visual Sample Description: Olive silty sand (SM)

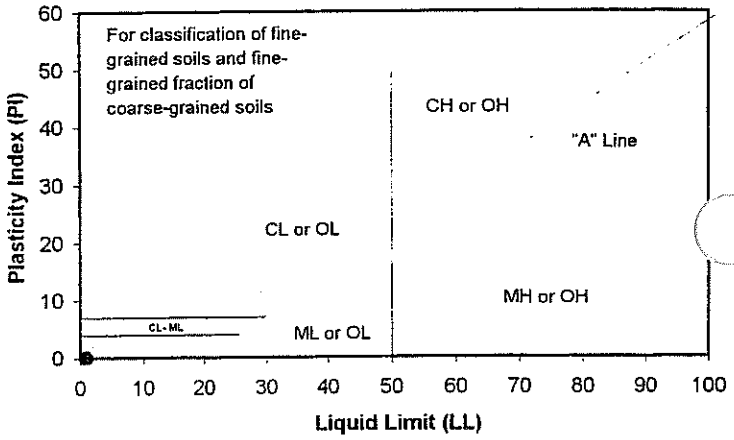
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			14			
Wet Wt. of Soil + Cont. (gm)			17.80	Cannot get >14 blows		
Dry Wt. of Soil + Cont. (gm)	Cannot be rolled		15.10	NONPLASTIC		
Wt. of Container (gm)	NONPLASTIC		1.12			
Moisture Content (%) [Wn]			19.31			

Liquid Limit	**NP**
Plastic Limit	**#DIV/0!**
Plasticity Index	**#DIV/0!**
USCS Classification	**NP**

PI at "A" - Line = 0.73(LL-20) = -14.6

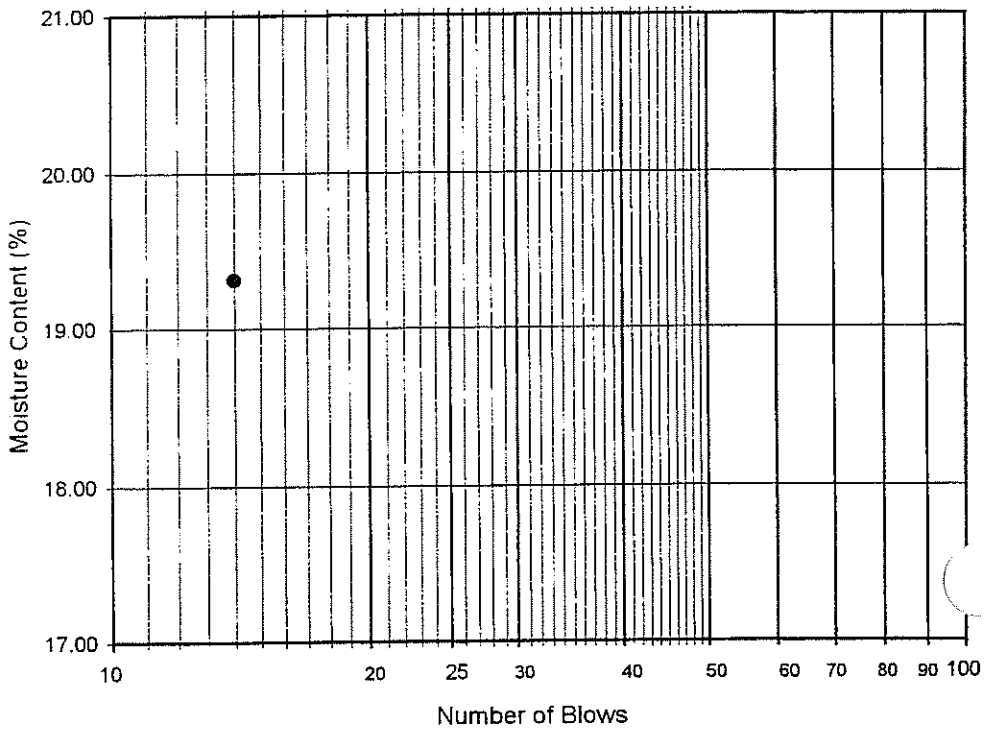
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

COMPACTION TEST

ASTM D 1557

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By :	MTR	Date:	11/01/01
Project No.:	37380 / CTO 0078	Calculated By :	ESS	Date:	11/05/02
EPA ID:	LK143	Depth (ft.)	2.0-8.0		
Sample No. :	AA3-TR01-S3				
Visual Sample Description:	Brown silty sand (SM)				

Preparation Method: [X] Moist [ ] Dry

[X] Mechanical Ram [ ] Manual Ram

Mold Volume (ft³) 0.03322 *Ram Weight 10 LBS Drop 18 inches*

	0	2.5	5	7.5		
TEST NO.	1	2	3	4	5	6
Wt. Comp. Soil + Mold (gm.)	3545.0	3689.0	3771.0	3764.0		
Wt. of Mold (gm.)	1707.0	1707.0	1707.0	1707.0		
Net Wt. of Soil (gm.)	1838.0	1982.0	2064.0	2057.0		
Wet Wt. of Soil + Cont. (gm.)	469.90	377.60	418.10	319.10		
Dry Wt. of Soil + Cont. (gm.)	450.10	353.90	384.40	290.00		
Wt. of Container (gm.)	49.10	50.70	53.00	52.80		
Moisture Content (%)	4.94	7.82	10.17	12.27		
Wet Density (pcf)	122.0	131.5	137.0	136.5		
Dry Density (pcf)	116.2	122.0	124.3	121.6		

Maximum Dry Density (pcf) 125.0 **Optimum Moisture Content(%)** 9.5

PROCEDURE USED

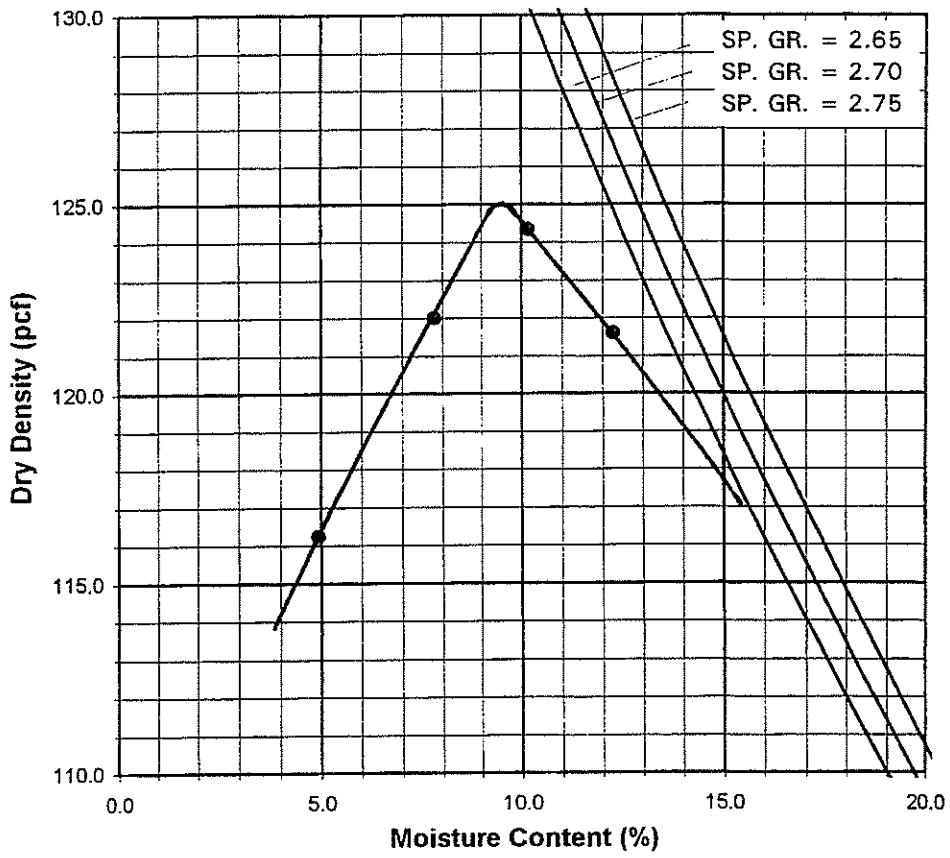
[X] **Procedure A**
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
May be used if No.4 retained < 20%

[ ] **Procedure B**
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
Use if + #4 > 20% and + 3/8 " < 20%

[ ] **Procedure C**
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)
Use if + 3/8 in >20% and + ¾ in <30%

Particle-Size Distribution:
2:71:27
GR:SA:FI

Atterberg Limits:
LL,PL,PI



Teratest Labs, Inc.

COMPACTION TEST

ASTM D 1557

Project Name:	Anomaly Area 3, Formar MCAS Eltoro, CA	Tested By :	JRS	Date:	11/01/01
Project No.:	37380 / CTO 0078	Calculated By :	MTR	Date:	11/05/02
EPA ID:	LK151	Depth (ft.)	1.0-2.0		
Sample No. :	AA3-TR08-S1				

Visual Sample Description: Brown clayey sand (SC)

Preparation Method: [X] Moist [ ] Dry

[X] Mechanical Ram [ ] Manual Ram

Mold Volume (ft ³) 0.03322 *Ram Weight 10 LBS Drop 18 inches*

	2.5	5	7.5	10		
TEST NO.	1	2	3	4	5	6
Wt. Comp. Soil + Mold (gm.)	3559.0	3706.0	3784.0	3719.0		
Wt. of Mold (gm.)	1803.0	1803.0	1803.0	1803.0		
Net Wt. of Soil (gm.)	1756.0	1903.0	1981.0	1916.0		
Wet Wt. of Soil + Cont. (gm.)	490.10	443.80	451.40	485.70		
Dry Wt. of Soil + Cont. (gm.)	459.90	408.30	406.30	428.50		
Wt. of Container (gm.)	52.50	51.50	47.50	50.00		
Moisture Content (%)	7.41	9.95	12.57	15.11		
Wet Density (pcf)	116.5	126.3	131.5	127.2		
Dry Density (pcf)	108.5	114.9	116.8	110.5		

Maximum Dry Density (pcf) 118.5 **Optimum Moisture Content(%)** 11.5

PROCEDURE USED

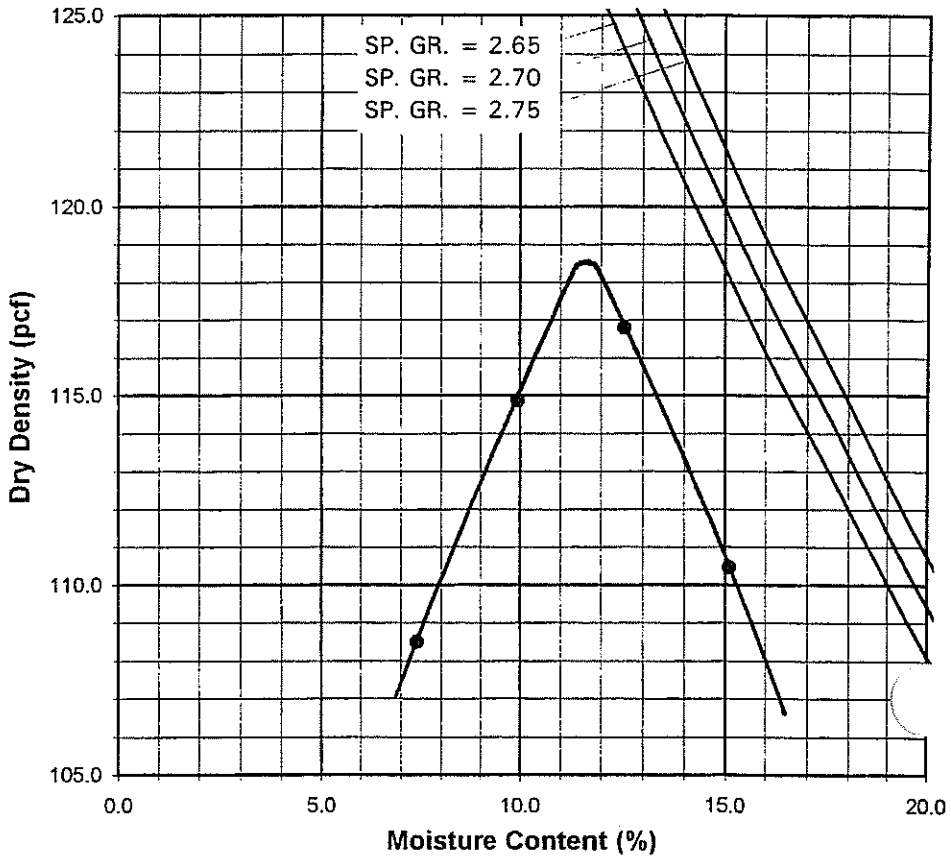
[X] **Procedure A**
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
May be used if No.4 retained < 20%

[ ] **Procedure B**
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
Use if + #4 > 20% and + 3/8 " < 20%

[ ] **Procedure C**
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)
Use if + 3/8 in >20% and + ¾ in <30%

Particle-Size Distribution:
: :37
GR:SA:FI

Atterberg Limits:
31 19 12
LL,PL,PI



TERATEST LABS, INC.

SPECIFIC GRAVITY OF SOILS
ASTM D 854

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No. : 37380 / CTO 0078

Tested By : ACS Date: 11/07/02
Data Input By: LF Date: 11/11/02
Checked By: LF Date: 11/11/02

BORING NUMBER	LK143	LK151				
SAMPLE NUMBER	AA3-TR01-S3	AA3-TR08-S1				
DEPTH (FT)	2 - 8	1 - 2				
USCS	SM	SC				
AVG. SPECIFIC GRAVITY (Gs)	**2.65**	**2.64**				
(Gs) PASSING #4	**2.62**	**2.61**				
(Gs) PASSING #4 (Dry Back)	**2.67**	**2.67**				
BULK SPECIFIC GRAVITY						
ABSORBTION (%)						
CONTAINER	55	146				
FLASK NUMBER	13	16				
WT. FLASK+WATER+SOIL	419.74	418.09				
TEMPERATURE	20	19				
CORRECTION FACTOR	1.0000	1.0002				
WT. DRY SOIL	100.66	100.49				
WT. FLASK & WATER	357.44	356.12				
% RETAINED #4	0.0	0.0				
% PASSING #4	100.0	100.0				
CONTAINER NO.	K-2	K-5				
DRY SOIL AFTER TEST + CONT.	174.56	175.11				
WT.+ #4 SATURATE + CONT.						
WT.+ #4 + CONT.(WATER)						
WT. OF CONTAINER	75.05	75.93				
WT. OF CONTAINER (WATER)						
WT.DRY BACK SOIL	99.51	99.18				
WT.+ #4 SATURATE (AIR)						
WT.+ #4 IN WATER						

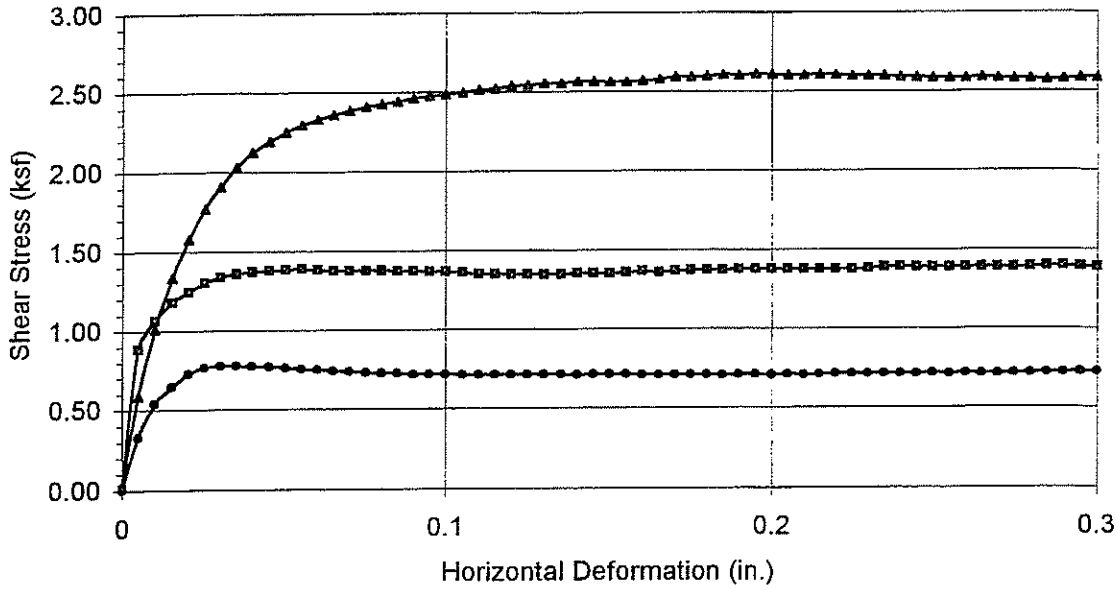
TEMPERATURE (CELSIUS)	CORRECTION FACTOR
17	1.0006
18	1.0004
19	1.0002
20	1.0000
21	0.9998
22	0.9996
23	0.9993
24	0.9991
25	0.9989
26	0.9986
27	0.9983

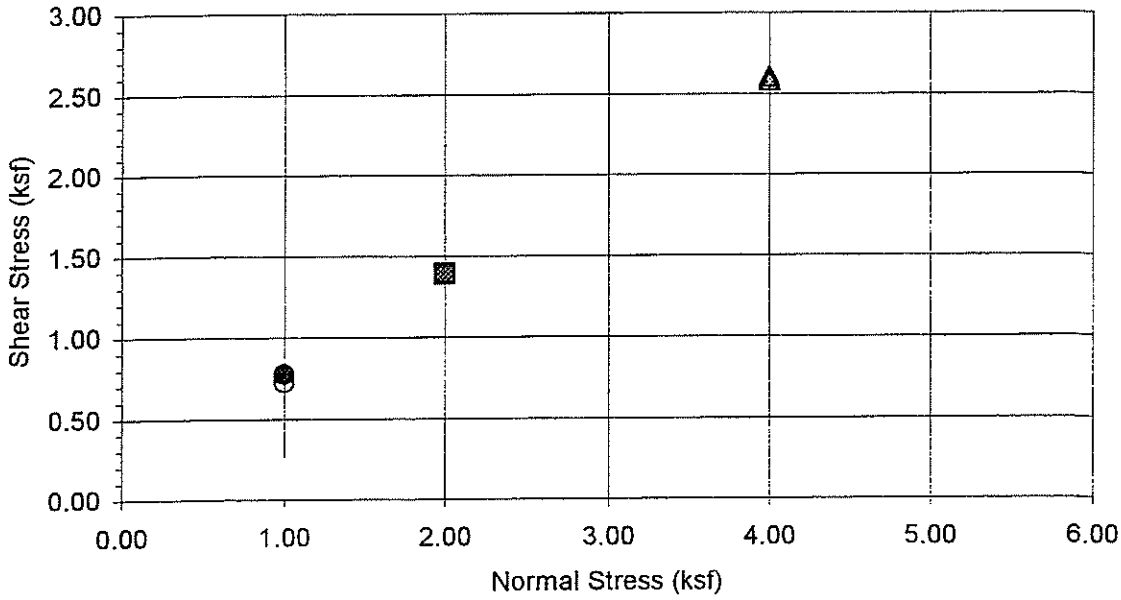
DIRECT SHEAR TEST

ASTM D3080

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Tested By: ACS
Date: 11/06/02
Project No.: 37380 / CTO 0078
Checked By: LF
EPA ID: LK143
Sample Type: Remolded to 85% RC @ Opt. +2% M. C
Sample No.: AA3-TR01-S3 (85% Remold)
Depth (ft.): 2 - 8
Sample Description: Brown silty sand (SM)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	188.49	187.87	188.08
Weight of Ring(gm):	45.76	45.59	45.38
Before Shearing			
Weight of Wet Sample+Cont.(gm):	245.72	245.72	245.72
Weight of Dry Sample+Cont.(gm):	228.05	228.05	228.05
Weight of Container(gm):	70.45	70.45	70.45
Vertical Rdg.(in): Initial	0.0000	0.3386	0.3154
Vertical Rdg.(in): Final	-0.0065	0.3475	0.3320
After Shearing			
Weight of Wet Sample+Cont.(gm):	211.60	215.65	201.96
Weight of Dry Sample+Cont.(gm):	188.95	193.59	180.85
Weight of Container(gm):	62.38	66.81	53.80
Specific Gravity :	2.65	2.65	2.65
Water Density(pcf):	62.43	62.43	62.43





Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.776	▩ 1.394	▲ 2.606
Shear Stress @ End of Test (ksf)	○ 0.726	□ 1.384	△ 2.582
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	11.21	11.21	11.21
Dry Density (pcf)	106.7	106.4	106.7
Saturation (%)	54.0	53.5	54.0
Soil Height Before Shearing (in.)	0.9935	0.9911	0.9834
Final Moisture Content (%)	17.9	17.4	16.6

Teratest Labs, Inc
A Lenkton Group Company

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

EPA ID: LK143
Sample No.: AA3-TR01-S3 (85% Remold)
Depth (ft): 2 - 8
Soil Description: Brown silty sand (SM)

Project No.: 37380 / CTO 007
Anomaly Area 3, Former MCAS El Toro, CA

11-02

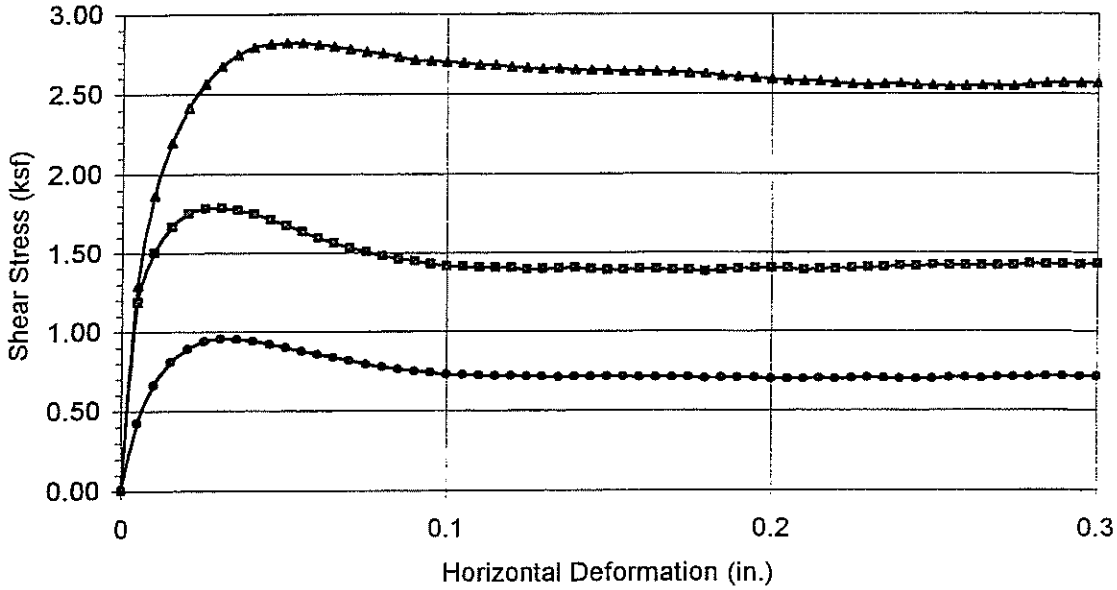
DS LK143 @ 85%.xls

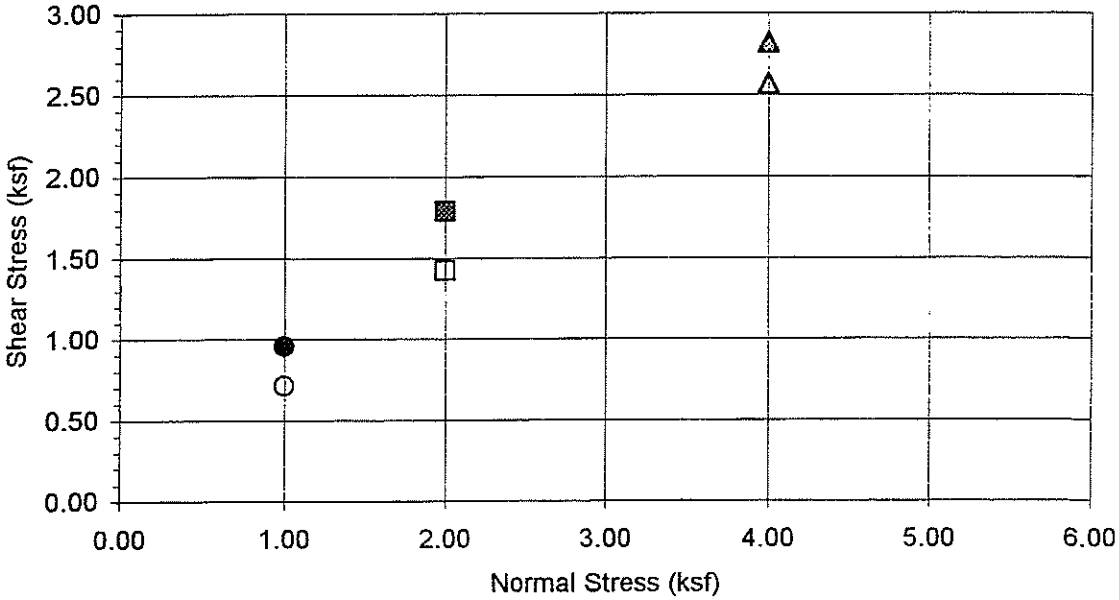
DIRECT SHEAR TEST

ASTM D3080

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Tested By: ACS
Date: 11/06/02
Project No.: 37380 / CTO 0078
Checked By: LF
EPA ID: LK143
Sample Type: Remolded to 90% RC @ Opt. +2% M.
Sample No.: AA3-TR01-S3 (90% Remold)
Depth (ft.): 2 - 8
Sample Description: Brown silty sand (SM)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	195.71	197.27	197.37
Weight of Ring(gm):	45.62	46.29	46.39
Before Shearing			
Weight of Wet Sample+Cont.(gm):	245.72	245.72	245.72
Weight of Dry Sample+Cont.(gm):	228.05	228.05	228.05
Weight of Container(gm):	70.45	70.45	70.45
Vertical Rdg.(in): Initial	0.0000	0.3223	0.3638
Vertical Rdg.(in): Final	-0.0001	0.3280	0.3791
After Shearing			
Weight of Wet Sample+Cont.(gm):	231.01	212.55	193.26
Weight of Dry Sample+Cont.(gm):	208.81	191.10	171.95
Weight of Container(gm):	75.75	56.47	38.18
Specific Gravity :	2.65	2.65	2.65
Water Density(pcf):	62.43	62.43	62.43





Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.957	▩ 1.786	◬ 2.818
Shear Stress @ End of Test (ksf)	○ 0.714	□ 1.425	△ 2.566
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	11.21	11.21	11.21
Dry Density (pcf)	112.2	112.9	112.9
Saturation (%)	62.7	63.9	63.9
Soil Height Before Shearing (in.)	0.9999	0.9943	0.9847
Final Moisture Content (%)	16.7	15.9	15.9

Teratest Labs, Inc
A Langton Group Company

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

EPA ID: LK143
Sample No.: AA3-TR01-S3 (90% Remold)
Depth (ft): 2 - 8
Soil Description: Brown silty sand (SM)

Project No.: 37380 / CTO 007
Anomaly Area 3, Former MCAS El Toro, CA

11-02

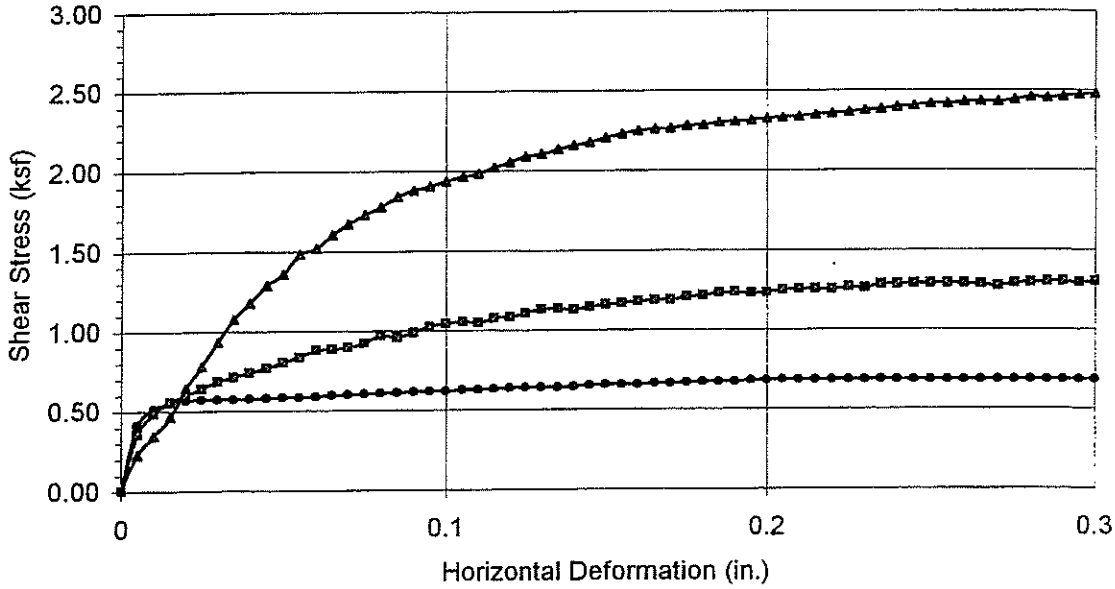
DS LK143 @ 90%.xls

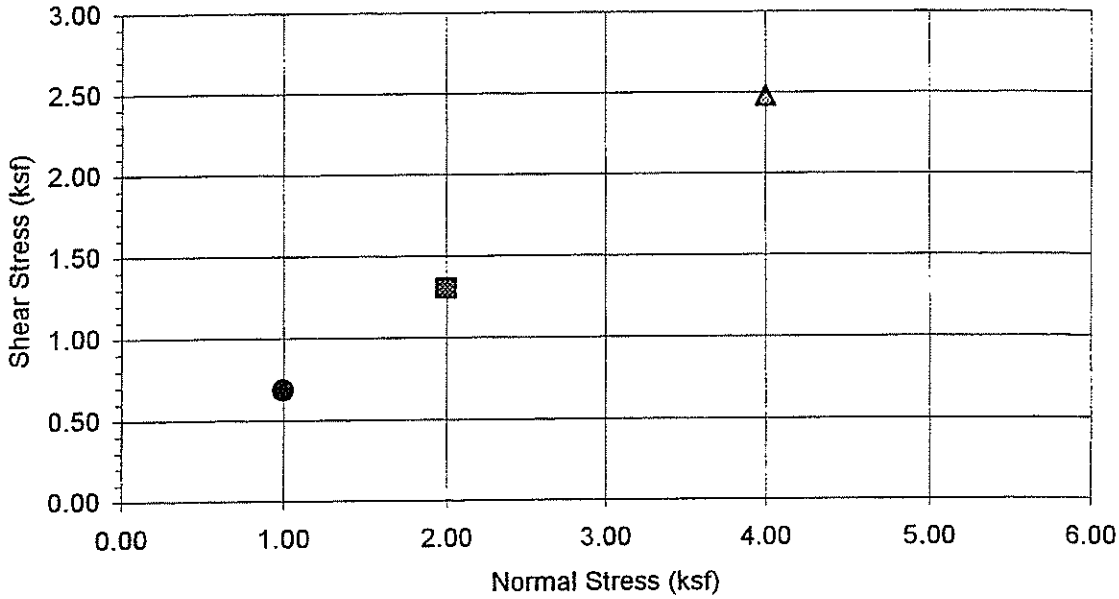
DIRECT SHEAR TEST

ASTM D3080

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Tested By: ACS
Date: 11/07/02
Project No.: 37380 / CTO 0078
Checked By: LF
EPA ID: LK151
Sample Type: Remolded to 85% RC @ Opt. +2% M. C
Sample No.: AA3-TR08-S1 (85% Remold)
Depth (ft.): 1 - 2
Sample Description: Brown clayey sand (SC)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	183.99	182.96	183.55
Weight of Ring(gm):	46.29	45.38	45.62
Before Shearing			
Weight of Wet Sample+Cont.(gm):	215.05	215.05	215.05
Weight of Dry Sample+Cont.(gm):	196.47	196.47	196.47
Weight of Container(gm):	56.93	56.93	56.93
Vertical Rdg.(in): Initial	0.3355	0.3349	0.0000
Vertical Rdg.(in): Final	0.3414	0.3459	-0.0260
After Shearing			
Weight of Wet Sample+Cont.(gm):	200.77	182.49	214.76
Weight of Dry Sample+Cont.(gm):	177.42	160.76	195.02
Weight of Container(gm):	57.02	39.78	74.24
Specific Gravity:	2.64	2.64	2.64
Water Density(pcf):	62.43	62.43	62.43





Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.689	▩ 1.303	◬ 2.476
Shear Stress @ End of Test (ksf)	○ 0.683	□ 1.303	△ 2.476
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	13.32	13.32	13.32
Dry Density (pcf)	101.1	101.0	101.2
Saturation (%)	55.7	55.6	56.0
Soil Height Before Shearing (in.)	0.9941	0.9890	0.9740
Final Moisture Content (%)	19.4	18.0	16.3

Teratest Labs, Inc
A Leighton Group Company

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

EPA ID: LK151
Sample No.: AA3-TR08-S1 (85% Remold)
Depth (ft): 1 - 2
Soil Description: Brown clayey sand (SC)

Project No.: 37380 / CTO 007
Anomaly Area 3, Former MCAS El Toro, CA

11-02

DS LK151 @ 85%.xls

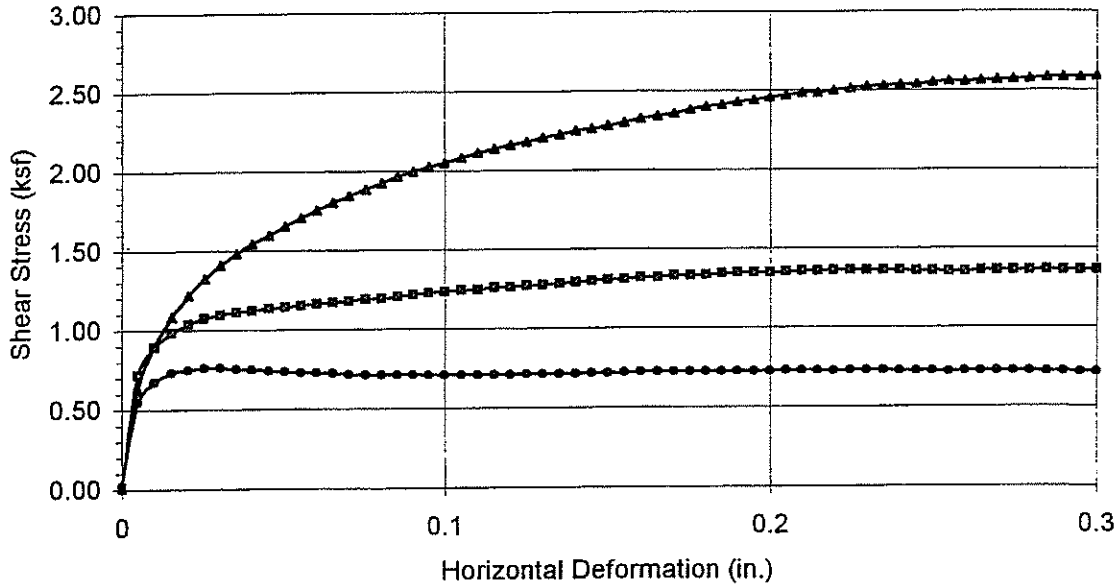
Torrent Labs, Inc.

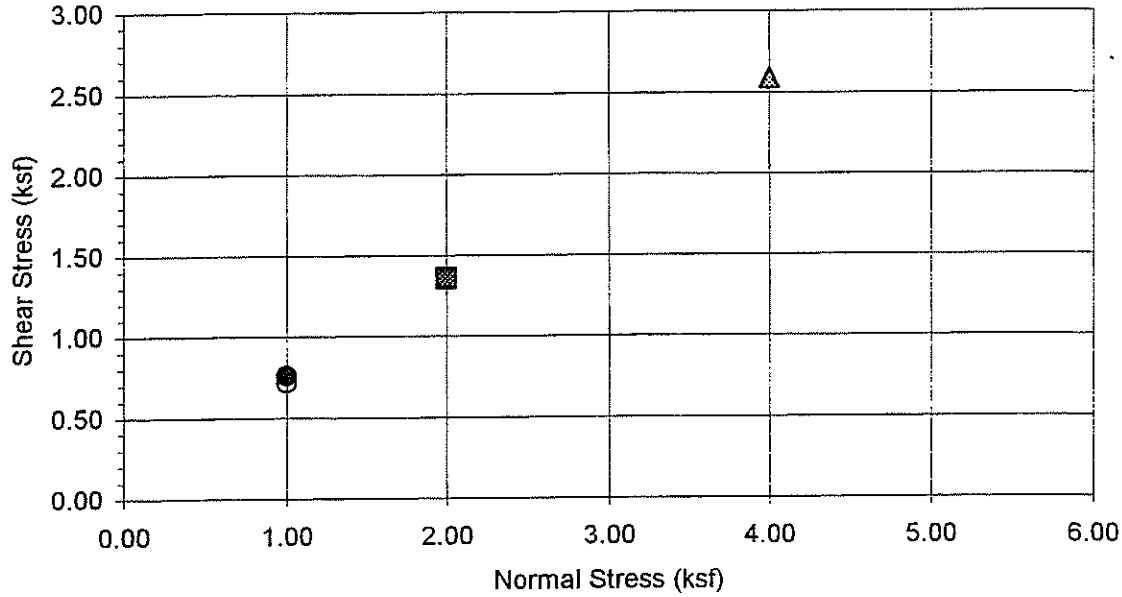
DIRECT SHEAR TEST

ASTM D3080

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Tested By: ACS
Date: 11/07/02
Project No.: 37380 / CTO 0078
Checked By: LF
EPA ID: LK151
Sample Type: Remolded to 90% RC @ Opt. +2% M.
Sample No.: AA3-TR08-S1 (90% Remold)
Depth (ft.): 1 - 2
Sample Description: Brown clayey sand (SC)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	191.52	191.48	191.55
Weight of Ring(gm):	45.57	45.52	45.48
Before Shearing			
Weight of Wet Sample+Cont.(gm):	215.05	215.05	215.05
Weight of Dry Sample+Cont.(gm):	196.47	196.47	196.47
Weight of Container(gm):	56.93	56.93	56.93
Vertical Rdg.(in): Initial	0.3104	0.3345	0.0000
Vertical Rdg.(in): Final	0.3155	0.3448	-0.0011
After Shearing			
Weight of Wet Sample+Cont.(gm):	201.70	225.83	205.18
Weight of Dry Sample+Cont.(gm):	178.48	203.88	184.26
Weight of Container(gm):	51.16	76.36	56.24
Specific Gravity:	2.64	2.64	2.64
Water Density(pcf):	62.43	62.43	62.43





Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.761	▩ 1.362	◬ 2.588
Shear Stress @ End of Test (ksf)	○ 0.717	□ 1.356	△ 2.588
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	13.32	13.32	13.32
Dry Density (pcf)	107.1	107.1	107.2
Saturation (%)	65.3	65.3	65.4
Soil Height Before Shearing (in.)	0.9949	0.9897	0.9989
Final Moisture Content (%)	18.2	17.2	16.3

Teratest Labs, Inc
A Leighton Group Company

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

EPA ID: LK151
Sample No.: AA3-TR08-S1 (90% Remold)
Depth (ft): 1 - 2
Soil Description: Brown clayey sand (SC)

Project No.: 37380 / CTO 007
Anomaly Area 3, Former MCAS El Toro, CA

11-02

DS LK151 @ 90%.xls

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

December 11, 2002

Earth Tech, Inc.
100 West Broadway, Suite 240
Long Beach, CA 90802-4443

Attention: Mr. Crispin Wanyoike

Subject: **Report/Laboratory Testing Results**
Project Name: Anomaly Area 3, Former MCAS El Toro, California
Project No.: 37380 / CTO 0078
Subcontract No.: 02S-2831-HI09 / CTO No.: 0078
TERATEST No.: 015230

Dear Mr. Wanyoike:

Enclosed please find laboratory testing results for the soil samples from the above referenced project. The requested tests were conducted in essential accordance with the standard test methods listed below.

TYPE OF TEST	TEST METHOD
Laboratory Determination of Water (Moisture) Content of Soil and Rock	ASTM D 2216
Density of Soil in Place by the Drive-Cylinder Method	ASTM D 2937
Amount of Material in Soils Finer Than the No. 200 Sieve	ASTM D 1140
Particle-Size Analysis of Soils	ASTM D 422
Liquid Limit, Plastic Limit and Plasticity Index of Soils	ASTM D 4318

Test results are presented Table 2 and the attached Data Sheets.

ASTM: American Society for Testing and Materials, Annual Book of ASTM Standards, Section 4 Construction, Volume 04.08 Soil and Rock (I), 2000.

17781 Cowan ■ Irvine, CA 92614-6009
949.253.5922 ■ Fax 949.263.8843 ■ www.teratest.com

Thank you for selecting Teratest Labs, Inc. to provide laboratory testing services to Earth Tech, Inc. Please feel free to contact us if you should have any questions concerning these results.

Very truly yours,

TERATEST LABS, INC.
Laboratory Testing Services

REGISTERED PROFESSIONAL ENGINEER
MOHAMMAD H. FAKHARPOUR
No. C049035
Exp. 9-30-04
CIVIL
STATE OF CALIFORNIA

Lester Fruth, Ph.D.
Soils Laboratory Supervisor

Mohammad Fakharpour, P.E.
Registered Civil Engineer

Enclosures

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Teratest No.: 015230

Project No.: 37380 / CTO 0078

Tabulated By: LF

Client: Earth Tech, Inc.

Date: 12/11/02

TABLE 2

SUMMARY of LABORATORY TEST RESULTS

Sample ID	Exploration Location	Depth (ft)	Moisture Content ASTM D 2216 (%)	Dry Density ASTM D 2937 (pcf)	Particle - Size Distribution ASTM D 422 GR:SA:FI[2] (%)	Percent Passing No. 200 Sieve ASTM D 1140 (%)	Atterberg Limits ASTM D 4318 LL,PL,PI[1]	Soil Classification / Identification ASTM D 2487 / ASTM D 2488* (group symbol)
LK169	AA3-MW05	2-2.5	5.2	96.3	3:94:3			SP
LK170	AA3-MW05	6-6.5	2.6	97.6				SP*
LK171	AA3-MW05	10.5-11	6.1	106.5	4:79:17			SM
LK172	AA3-MW05	15.5-16	5.2	99.3	1:88:11			SP-SM
LK173	AA3-MW05	20-20.5	5.1	98.7				SP-SM & SP*
LK174	AA3-MW05	25.5-26	8.2	120.7	38:49:13			(SM)g
LK175	AA3-MW05	30.5-31	29.7	98.2				SM & CL*
LK176	AA3-MW05	35-35.5	23.2	102.6				CL*
LK177	AA3-MW05	40-41.5	27.5		5:36:59			s(CL)
LK178	AA3-MW05	45-46.5	48.3			85.0	96,50,46	(MH)s
LK179	AA3-MW05	55-56.5	57.1					CL*
LK180	AA3-MW05	57-57.5	37.1	83.0		67.7		s(CL)
LK181	AA3-MW06	1.5-2	4.0	99.5		29.5		SM
LK182	AA3-MW06	6.6.5	8.4	90.6				SM*
LK183	AA3-MW06	11-11.5	11.5	90.8				SM*
LK184	AA3-MW06	16-16.5	16.8	102.2		44.6	41,22,19	SC
LK185	AA3-MW06	21-21.5	24.1	95.4	2:39:59			s(ML)
LK186	AA3-MW06	26-26.5	21.1	97.4				SC & CL*
LK187	AA3-MW06	31-31.5	9.6	128.9	41:49:10			(SW-SM)g
LK188	AA3-MW06	36-36.5	78.5	53.0		85.5		CL
LK189	AA3-MW06	40-41.5	73.3			90.6	84,46,38	MH
LK190	AA3-MW07	2-2.5	2.6	100.3				SP-SM*
LK191	AA3-MW07	6-6.5	2.6	103.7	0:88:12			SW-SM
LK192	AA3-MW07	10.5-11	2.7	96.5				SP*
LK193	AA3-MW07	15.5-16	2.3	100.7	1:93:6			SP-SM
LK194	AA3-MW07	25-25.5	4.2	112.6	22:66:12			(SW-SM)g

[1] LL,PL,PI = Liquid Limit, Plastic Limit, Plasticity Index

[2] GR:SA:FI = Gravel: Sand: Fines (Percent Passing #200 Sieve)

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Teratest No.: 015230

Project No.: 37380 / CTO 0078

Tabulated By: LF

Client: Earth Tech, Inc.

Date: 12/11/02

TABLE 2

SUMMARY of LABORATORY TEST RESULTS

Sample ID	Exploration Location	Depth (ft)	Moisture Content ASTM D 2216 (%)	Dry Density ASTM D 2937 (pcf)	Particle - Size Distribution ASTM D 422 GR:SA:FI[2] (%)	Percent Passing No. 200 Sieve ASTM D 1140 (%)	Atterberg Limits ASTM D 4318 LL,PL,PI[1]	Soil Classification / Identification ASTM D 2487 / ASTM D 2488* (group symbol)
LK195	AA3-MW07	31-31.5	11.8	110.6		22.4		SM
LK196	AA3-MW07	36-36.5	27.9	92.4			36,26,10	ML
LK197	AA3-MW07	40.5-41	19.6			34.4		SM
LK198	AA3-MW07	46-46.5	29.2	91.4				ML*
LK199	AA3-MW07	50-50.5	24.0	100.1	0:86:14			SM
LK200	AA3-MW08	1-1.5	1.9	93.1				SP*
LK201	AA3-MW08	6-6.5	13.2	106.6		55.1		s(CL)
LK202	AA3-MW08	11-11.5	21.3	89.7	2:15:83			(ML)s
LK203	AA3-MW08	16-16.5	8.3	104.3	1:75:24			SM
LK204	AA3-MW08	21-21.5	9.5	109.6				SM*
LK205	AA3-MW08	26-26.5	14.4	102.2	5:79:16			SC
LK206	AA3-MW09	1-1.5	3.9	99.6				SM*
LK207	AA3-MW09	6-6.5	4.3	105.0	1:88:11			SP-SM
LK208	AA3-MW09	10.5-11	7.7	108.4				SM*
LK209	AA3-MW09	16-16.5	11.8	96.0	2:75:23			SM
LK210	AA3-MW09	21-21.5	11.9	96.6		35.4		SM
LK211	AA3-MW09	26-26.5	12.1	108.3				SC*
LK212	AA3-MW09	31-31.5	7.3	126.7	55:37:8			(GW-GM)s
LK213	AA3-MW09	35-36.5	13.0					(SP)g*
LK214	AA3-MW09	40-41.5	16.7		1:97:2			SP
LK215	AA3-MW09	45-46.5	17.0					SP*
LK216	AA3-MW09	50-51.5	21.5		1:93:6			SP-SM
LK217	AA3-MW09	55-56.5	12.1					SP*
LK218	AA3-MW09	60-61.5	20.0					SP*
LK219	AA3-MW09	65-66.5	17.4		1:95:4			SP
LK220	AA3-MW09	70-71.5	13.9					SP*
LK221	AA3-MW09	75-76.5	17.7					SP*
LK222	AA3-MW09	80-81.5	17		0:94:6			SP-SM

[1] LL,PL,PI = Liquid Limit, Plastic Limit, Plasticity Index

[2] GR:SA:FI = Gravel: Sand: Fines (Percent Passing #200 Sieve)

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Teratest No.: 015230

Project No.: 37380 / CTO 0078

Tabulated By: LF

Client: Earth Tech, Inc.

Date: 12/11/02

TABLE 2

SUMMARY of LABORATORY TEST RESULTS

Sample ID	Exploration Location	Depth (ft)	Moisture Content ASTM D 2216 (%)	Dry Density ASTM D 2937 (pcf)	Particle - Size Distribution ASTM D 422 GR:SA:FI[2] (%)	Percent Passing No. 200 Sieve ASTM D 1140 (%)	Atterberg Limits ASTM D 4318 LL,PL,PI[1]	Soil Classification / Identification ASTM D 2487 / ASTM D 2488* (group symbol)
LK223	AA3-MW10	2-2.5	6.8	95.3				CL*
LK224	AA3-MW10	6-6.5	5.5	109.3	15:56:29			(SC)g
LK225	AA3-MW10	11-11.5	17.4	93.2				CL*
LK226	AA3-MW10	16-16.5	15.9	91.8		41.6	49,21,28	SC
LK227	AA3-MW10	20.5-21	2.4	104.9	14:81:5			SP-SM
LK228	AA3-MW10	26-26.5	2.3	114.1				SP*
LK229	AA3-MW10	31-31.5	2.8	105.6	4:91:5			SP-SM
LK230	AA3-MW10	36-36.5	9.7	98.8		30.8		SC
LK231	AA3-MW10	41-41.5	15.8	109.5	0:93:7			SP-SM
LK232	AA3-MW10	45.0	8.9		1:95:4			SP

[1] LL,PL,PI = Liquid Limit, Plastic Limit, Plasticity Index

[2] GR:SA:FI = Gravel: Sand: Fines (Percent Passing #200 Sieve)

CHAIN OF CUSTODY RECORD

GEOTECHNICAL LABORATORY TESTING - EXISTING COVER MATERIALS AND NEAR-SURFACE FILL SOILS
EL TORO MCAS - ANOMALY AREA 3 (AA3)

1 of 3

Laboratory: Teratest Labs
17781 Cowan Avenue, Suite 150
Irvine, California 92614

Due 12-9-02

Project Name: Anomaly Area 3
Project Number: 37380-02-30-02
Project Manager: Mr. Crispin Wanyoike
Telephone Number: 562-951-2057
Fax Number: 562-951-2086

Sampler: Rod Lazo
Date: 11/22/2002

Sample IDs	Exploration Location	Depth (feet)	Matrix	Type of Container	Sampling Date	Moisture Content (ASTM D2216)	Dry Unit Weight - Drive Cylinder (ASTM D2937)	Fines Fraction (ASTM D1140)	Grain Size Distribution - Sieve Analysis (ASTM D422)	Atterberg Limits (ASTM D4318)	Comments
						16 MC	48 M+D	12	26	5	
LK169	AA3-MW05	2.0-2.5	Soil	MC (2.5" I.D.)	11/5/2002	√	✓		✓		
LK170	AA3-MW05	6 - 6.5	Soil	MC (2.5" I.D.)	11/5/2002	√	✓				
LK171	AA3-MW05	10.5-11.0	Soil	MC (2.5" I.D.)	11/5/2002	√	✓		✓		
LK172	AA3-MW05	15.5 16.0	Soil	MC (2.5" I.D.)	11/5/2002	√	✓		✓		
LK173	AA3-MW05	20 - 20.5	Soil	MC (2.5" I.D.)	11/5/2002	√	✓				
LK174	AA3-MW05	25.5 26.0	Soil	MC (2.5" I.D.)	11/5/2002	√	✓		✓		
LK175	AA3-MW05	30.5 31.0	Soil	MC (2.5" I.D.)	11/5/2002	√	✓				
LK176	AA3-MW05	35 - 35.5	Soil	MC (2.5" I.D.)	11/5/2002	√	✓				
LK177	AA3-MW05	40 - 41.5	Soil	SPT (Bag)	11/5/2002	✓			✓		
LK178	AA3-MW05	45 - 46.5	Soil	SPT (Bag)	11/5/2002	✓		✓		✓	
LK179	AA3-MW05	55 - 56.5	Soil	SPT (Bag)	11/4/2002	✓					
57-57.5 LK180	AA3-MW05	57-57.5	Soil	~~SPT (Bag)~~ Drive	11/4/2002	✓	✓	✓			
LK181	AA3-MW06	16-20	Soil	MC (2.5" I.D.)	11/4/2002	√	✓	✓			
LK182	AA3-MW06	6 - 6.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓				
LK183	AA3-MW06	10 - 11.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓				
16-16.5 LK184	AA3-MW06	16 - 16.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓	✓		✓	
LK185	AA3-MW06	20 - 21.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓		✓		
LK186	AA3-MW06	26 - 28.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓				
LK187	AA3-MW06	30 - 31.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓		✓		
LK188	AA3-MW06	35 - 36.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓	✓			
LK189	AA3-MW06	40 - 41.5	Soil	SPT (Bag)	11/4/2002	✓		✓		✓	
LK190	AA3-MW07	2.0-2.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓				
LK191	AA3-MW07	6 - 6.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓		✓		
LK192	AA3-MW07	10.5-11.0	Soil	MC (2.5" I.D.)	11/4/2002	√	✓				
LK193	AA3-MW07	15.5 16.0	Soil	MC (2.5" I.D.)	11/4/2002	√	✓		✓		
LK194	AA3-MW07	25 - 25.5	Soil	MC (2.5" I.D.)	11/4/2002	√	✓		✓		
						4	22	6	16	3	

Received by: James Ward
JAMES WARD 5:27
11/25/02

CHAIN OF CUSTODY RECORD

GEOTECHNICAL LABORATORY TESTING - EXISTING COVER MATERIALS AND NEAR-SURFACE FILL SOILS
EL TORO MCAS - ANOMALY AREA 3 (AA3)

Laboratory: Teralest Labs
17781 Cowan Avenue, Suite 150
Irvine, California 92614

Project Name: Anomaly Area 3
Project Number: 37380-02-30-02
Project Manager: Mr. Crispin Wanyoike
Telephone Number: 562-951-2057
Fax Number: 562-951-2086

Sampler: Rod Lazo
Date: 11/22/2002

Sample IDs	Exploration Location	Depth (feet)	Matrix	Type of Container	Sampling Date	Moisture Content (ASTM D2216)	Dry Unit Weight - Drive Cylinder (ASTM D2937)	Fines Fraction (ASTM D1140)	Grain Size Distribution - Sieve Analysis (ASTM D422)	Atterberg Limits (ASTM D4318)	Comments
LK195	AA3-MW07	30 - 31.5	Soil	MC (2.5" I.D.)	11/4/2002	✓	✓	✓			
LK196	AA3-MW07	36 ~~30~~ - 36.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓			✓	
LK197	AA3-MW07	40 ~~5~~ - 41.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	Dist.	✓			Disturbed Sample
LK198	AA3-MW07	45 - 46.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓				
LK199	AA3-MW07	50 - 50.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓		✓		
LK200	AA3-MW08	1.0-1.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓				
LK201	AA3-MW08	6 - 6.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓	✓			
LK202	AA3-MW08	11 - 11.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓		✓		
LK203	AA3-MW08	16 - 16.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓		✓		
LK204	AA3-MW08	21 - 21.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓				
LK205	AA3-MW08	26 - 26.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓		✓		
LK206	AA3-MW08	30 - 31.5	Soil	MC (2.5" I.D.)	11/6/2002	✓	✓				
LK207	AA3-MW08	35 - 36.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓		✓		
LK208	AA3-MW08	40 - 41.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓	N/A	✓		N/A
LK209	AA3-MW08	45 - 46.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓	✓		✓	
LK210	AA3-MW08	50 - 51.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓				
~~LK211~~ 206	AA3-MW09	1.0-1.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓				
~~LK212~~ 207	AA3-MW09	6 - 6.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓		✓		
~~LK213~~ 208	AA3-MW09	10 ~~5~~ - 11.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓				
~~LK214~~ 209	AA3-MW09	16 - 16.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓		✓		
~~LK215~~ 210	AA3-MW09	21 - 21.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓	✓			
~~LK216~~ 211	AA3-MW09	26 - 26.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓				
~~LK217~~ 212	AA3-MW09	30 - 31.5	Soil	MC (2.5" I.D.)	10/29/2002	✓	✓		✓		
~~LK218~~ 213	AA3-MW09	35 - 36.5	Soil	SPT (Bag)	10/29/2002	✓					
~~LK219~~ 214	AA3-MW09	40 - 41.5	Soil	SPT (Bag)	10/29/2002	✓			✓		
~~LK220~~ 215	AA3-MW09	45 - 46.5	Soil	SPT (Bag)	10/29/2002	✓					
						4	17	4	8	1	

NO Samples

3 of 3

CHAIN OF CUSTODY RECORD

GEOTECHNICAL LABORATORY TESTING - EXISTING COVER MATERIALS AND NEAR-SURFACE FILL SOILS
EL TORO MCAS - ANOMALY AREA 3 (AA3)

Laboratory: Teratest Labs
17781 Cowan Avenue, Suite 150
Irvine, California 92614

Project Name: Anomaly Area 3
Project Number: 37380-02-30-02
Project Manager: Mr. Crispin Wanyoike
Telephone Number: 562-951-2057
Fax Number: 562-951-2086

Sampler: Rod Lazo
Date: 11/22/2002

Sample IDs	Exploration Location	Depth (feet)	Matrix	Type of Container	Sampling Date	Moisture Content (ASTM D2216)	Dry Unit Weight - Drive Cylinder (ASTM D2937)	Fines Fraction (ASTM D1140)	Grain Size Distribution - Sieve Analysis (ASTM D422)	Atterberg Limits (ASTM D4318)	Comments
~~LK221~~ 216	AA3-MW09	50 - 51.5	Soil	SPT (Bag)	10/29/2002	√			√		
LK222 217	AA3-MW09	55 - 56.5	Soil	SPT (Bag)	10/29/2002	√					
~~LK223~~ 218	AA3-MW09	60 - 61.5	Soil	SPT (Bag)	10/29/2002	√					
~~LK224~~ 219	AA3-MW09	65 - 66.5	Soil	Bag	10/31/2002	√			√		
~~LK225~~ 220	AA3-MW09	70 - 71.5	Soil	Bag	10/31/2002	√					
~~LK226~~ 221	AA3-MW09	75 - 76.5	Soil	Bag	10/31/2002	√					
~~LK227~~ 222	AA3-MW09	80 - 81.5	Soil	Bag	10/31/2002	√			√		
~~LK228~~ 223	AA3-MW10	2.0-2.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√				
~~LK229~~ 224	AA3-MW10	6 - 6.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√		√		
~~LK230~~ 225	AA3-MW10	10 - 11.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√				
16-16.5+ ~~LK231~~ 226	AA3-MW10	~~15 - 16.5~~ 16.0	Soil	MC (2.5" I.D.)	10/31/2002	√	√	√		√	
~~LK232~~ 227	AA3-MW10	20.5-21.0	Soil	MC (2.5" I.D.)	10/31/2002	√	√		√		
~~LK233~~ 228	AA3-MW10	26 - 26.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√				
~~LK234~~ 229	AA3-MW10	31 - 31.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√		√		
~~LK235~~ 230	AA3-MW10	36 - 36.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√	√			
~~LK236~~ 231	AA3-MW10	41 - 41.5	Soil	MC (2.5" I.D.)	10/31/2002	√	√		√		
~~LK237~~ 232	AA3-MW10	AS ~~75 - 76.5~~	Soil	MC (2.5" I.D.)	10/31/2002	√	√		√		

Relinquished by:	Rod Lazo	Received by:	JAMES WARD
Signature	Rod Lazo	Signature	James Ward
Printed	ROD LAZO	Printed	JAMES WARD
Company	EARTH TECH	Company	TERATEST LABS
Reason	LAB-TESTING	Reason	TESTING
Date	11/25/02	Date	11/25/02
Time	1527	Time	15:27

Comments:

Sample ID	LK169	LK170	LK171	LK172	LK173	LK174	LK175	LK176
Exploration Location	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05
Depth (ft.)	2-2.5	6-6.5	10.5-11	15.5-16	20-20.5	25.5-26	30.5-31	35-35.5
Sample Type	Drive	Drive	Drive	Drive	Drive	Drive	Drive	Drive
Visual Soil Classification	Brown poorly graded sand (SP); LOOSE	Light brown poorly graded sand (SP); LOOSE	Light brown silty sand (SM); FIRM	Light brown poorly graded sand with silt (SP-SM); LOOSE	Light brown, Top: poorly graded sand with silt (SP-SM); Bot: poorly graded sand (SP)	Light brown silty sand with gravel (SM)g; LOOSE	Brown, Top; silty sand (SM); Bot: lean clay (CL); WET & SOFT	Olive lean clay (CL)
Pocket Penetrometer	N/A	N/A	3.5	N/A	2.5 / 0.75	2.0	0.5	2.5
Weight Soil + Rings / Tube (gm.	893.12	825.30	973.86	951.80	849.96	989.54	1081.86	967.20
Weight of Rings / Tube (gm.	251.76	201.16	200.70	200.70	200.70	200.70	200.70	200.70
Average Length (in.)	5.240	5.160	5.660	5.950	5.180	5.000	5.721	5.022
Average Diameter (in.)	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	628.80	214.44	649.58	599.59	214.95	987.28	238.63	257.50
Dry Wt. of Soil + Cont. (gm.)	601.60	210.78	616.60	573.80	207.48	918.60	199.25	220.22
Weight of Container (gm)	75.15	68.29	75.77	76.77	60.15	79.15	66.80	59.20
Container No.:								
Wet Density	101.3	100.1	113.0	104.5	103.7	130.6	127.5	126.3
Moisture Content (%)	**5.2**	**2.6**	**6.1**	**5.2**	**5.1**	**8.2**	**29.7**	**23.2**
Dry Density (pcf)	**96.3**	**97.6**	**106.5**	**99.3**	**98.7**	**120.7**	**98.2**	**102.6**
Degree of Saturation (%)	18.6	9.5	28.3	20.1	19.3	55.7	112.2	97.1

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE & DENSITY of SOILS

ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 11/22/02

Sample ID	LK177	LK178	LK179	LK180	LK181	LK182	LK183	LK184
Exploration Location	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW05	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW06
Depth (ft.)	40-41.5	45-46.5	55-56.5	57-57.5	1.5-2	6-6.5	11-11.5	16-16.5
Sample Type	SPT (Bag)	SPT (Bag)	SPT (Bag)	Drive	Drive	Drive	Drive	Drive
Visual Soil Classification	Olive sandy lean clay s(CL)	Olive elsatic silt with sand (MH)s	Olive lean clay (CL)	Olive, sandy Bot: lean clay (CL); Top: silt (ML)	Yellowish brown silty sand (SM); LOOSE	Brown silty sand (SM); LOOSE	Dark brown silty sand (SM) with lumps of clay	Dark brown clayey sand (SC)
Pocket Penetrometer				N/A	N/A	N/A	N/A	2.5
Weight Soil + Rings / Tube (gm.				984.62	947.32	739.10	667.60	604.58
Weight of Rings / Tube (gm.				200.70	261.66	202.08	261.36	200.70
Average Length (in.)				5.700	5.481	4.522	3.321	2.800
Average Diameter (in.)				2.421	2.421	2.421	2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	404.81	370.65	317.21	416.47	455.61	231.70	262.71	577.93
Dry Wt. of Soil + Cont. (gm.)	333.83	274.34	229.90	324.51	440.86	217.63	241.47	505.79
Weight of Container (gm)	75.80	74.83	76.89	76.75	75.65	50.99	56.29	75.50
Container No.:								
Wet Density				113.8	103.5	98.3	101.2	119.4
Moisture Content (%)	**27.5**	**48.3**	**57.1**	**37.1**	**4.0**	**8.4**	**11.5**	**16.8**
Dry Density (pcf)				**83.0**	**99.5**	**90.6**	**90.8**	**102.2**
Degree of Saturation (%)				97.2	15.7	26.5	36.2	69.8

Teratest Labs, Inc.
A TEN GROUP COMPANY

MOISTURE & DENSITY of SOILS

ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 22/02

Sample ID	LK185	LK186	LK187	LK188	LK189	LK190	LK191	LK192
Exploration Location	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW07	AA3-MW07	AA3-MW07
Depth (ft.)	21-21.5	26-26.5	31-31.5	36-36.5	40-41.5	2-2.5	6-6.5	10.5-11
Sample Type	Drive	Drive	Drive	Drive	SPT (Bag)	Drive	Drive	Drive
Visual Soil Classification	Olive sandy silt s(ML)	Reddish brown, Top: clayey sand (SC); Bot: lean clay (CL)	Brown well-graded sand with silt and gravel (SW-SM)g; LOOSE	Pale yellow lean clay (CL)	Olive elastic silt (MH)	Reddish brown poorly graded sand with silt (SP-SM); LOOSE	Reddish brown well-graded sand with silt (SW-SM); LOOSE	Yellowish brown poorly graded sand (SP); LOOSE
Pocket Penetrometer	0.75	2.0	4.0	2.0		N/A	N/A	N/A
Weight Soil + Rings / Tube (gm.	873.06	612.14	1180.16	885.76		926.82	1007.42	797.84
Weight of Rings / Tube (gm.	200.70	251.02	202.04	202.52		261.20	251.15	251.44
Average Length (in.)	4.700	2.532	5.731	5.981		5.353	5.882	4.561
Average Diameter (in.)	2.421	2.421	2.421	2.421		2.421	2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	501.03	221.73	958.28	340.71	369.59	243.85	534.64	251.71
Dry Wt. of Soil + Cont. (gm.)	419.05	195.63	881.18	227.05	246.36	238.66	523.09	246.45
Weight of Container (gm)	79.15	72.10	74.26	82.27	78.21	36.83	76.04	52.76
Container No.:								
Wet Density	118.4	118.0	141.2	94.5		102.9	106.4	99.1
Moisture Content (%)	**24.1**	**21.1**	**9.6**	**78.5**	**73.3**	**2.6**	**2.6**	**2.7**
Dry Density (pcf)	**95.4**	**97.4**	**128.9**	**53.0**		**100.3**	**103.7**	**96.5**
Degree of Saturation (%)	84.9	78.2	83.9	97.1		10.2	11.2	9.8

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE & DENSITY of SOILS
ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 11/22/02

Sample ID	LK193	LK194	LK195	LK196	LK197	LK198	LK199	LK200
Exploration Location	AA3-MW07	AA3-MW07	AA3-MW07	AA3-MW07	AA3-MW07	AA3-MW07	AA3-MW07	AA3-MW08
Depth (ft.)	15.5-16	25-25.5	31-31.5	36-36.5	40.5-41	46-46.5	50-50.5	1-1.5
Sample Type	Drive	Drive	Drive	Drive	Drive	Drive	Drive	Drive
Visual Soil Classification	Pale brown poorly graded sand with silt (SP-SM)	Pale brown well- graded sand with silt and gravel (SW-SM)g	Brown silty sand (SM)	Light yellow silt (ML)	Pale olive silty sand (SM); LOOSE / DISTURBED / No Density	Pale olive silt (ML)	Pale yellow silty sand (SM)	Reddish brown poorly graded sand (SP); LOOSE
Pocket Penetrometer	1	>4.5	>4.5	3.5	N/A	1.5	1.0	N/A
Weight Soil + Rings / Tube (gm.	956.96	994.62	1001.38	1080.60		959.04	1095.80	793.86
Weight of Rings / Tube (gm.	261.19	250.43	251.18	251.05		251.87	263.05	201.29
Average Length (in.)	5.590	5.250	5.021	5.810		4.952	5.553	5.171
Average Diameter (in.)	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	494.66	650.22	600.32	351.20	389.39	246.68	469.14	254.95
Dry Wt. of Soil + Cont. (gm.)	485.32	627.18	545.02	290.88	338.11	206.70	393.31	251.40
Weight of Container (gm)	76.06	75.63	77.27	74.73	76.85	70.01	77.02	66.00
Container No.:								
Wet Density	103.0	117.3	123.6	118.2		118.2	124.1	94.8
Moisture Content (%)	**2.3**	**4.2**	**11.8**	**27.9**	**19.6**	**29.2**	**24.0**	**1.9**
Dry Density (pcf)	**100.7**	**112.6**	**110.6**	**92.4**		**91.4**	**100.1**	**93.1**
Degree of Saturation (%)	9.1	22.7	60.9	91.4		93.6	94.7	6.4

Teratest Labs, Inc.

MOISTURE & DENSITY of SOILS
ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 22/02

Sample ID	LK201	LK202	LK203	LK204	LK205	LK206	LK207	LK208
Exploration Location	AA3-MW08	AA3-MW08	AA3-MW08	AA3-MW08	AA3-MW08	AA3-MW09	AA3-MW09	AA3-MW09
Depth (ft.)	6-6.5	11-11.5	16-16.5	21-21.5	26-26.5	1-1.5	6-6.5	10.5-11
Sample Type	Drive	Drive	Drive	Drive	Drive	Drive	Drive	Drive
Visual Soil Classification	Brown sandy lean clay s(CL)	Brown silt with sand (ML)s	Brown silty sand (SM)	Yellowish brown silty sand (SM)	Brown, Top: clayey sand (SC); Bot: poorly graded sand (SP)	Dark brown silty sand (SM)	Brown poorly graded sand with silt (SP-SM)	Yellowish brown silty sand (SM)
Pocket Penetrometer	>4.5	3.5	1.5	4.5	1.0	0.5	3.0	1.75
Weight Soil + Rings / Tube (gm.	1076.46	955.06	993.22	1013.82	674.86	995.04	1006.30	1086.22
Weight of Rings / Tube (gm.	202.01	201.90	201.47	201.35	201.48	250.97	251.15	251.17
Average Length (in.)	6.001	5.730	5.800	5.601	3.350	5.951	5.702	5.921
Average Diameter (in.)	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	381.37	370.56	510.27	223.84	558.78	309.22	485.54	289.06
Dry Wt. of Soil + Cont. (gm.)	345.76	319.13	476.99	209.38	497.98	300.21	468.46	272.85
Weight of Container (gm)	75.20	77.62	76.42	57.81	76.71	70.43	74.31	61.70
Container No.:								
Wet Density	120.6	108.8	113.0	120.0	116.9	103.5	109.6	116.7
Moisture Content (%)	**13.2**	**21.3**	**8.3**	**9.5**	**14.4**	**3.9**	**4.3**	**7.7**
Dry Density (pcf)	**106.6**	**89.7**	**104.3**	**109.6**	**102.2**	**99.6**	**105.0**	**108.4**
Degree of Saturation (%)	61.1	65.4	36.4	47.9	60.0	15.3	19.3	37.3

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

MOISTURE & DENSITY of SOILS

ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 11/22/02

Sample ID	LK209	LK210	LK211	LK212	LK213	LK214	LK215	LK216
Exploration Location	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09
Depth (ft.)	16-16.5	21-21.5	26-26.5	31-31.5	35-36.5	40-41.5	45-46.5	50-51.5
Sample Type	Drive	Drive	Drive	Drive	SPT (Bag)	SPT (Bag)	SPT (Bag)	SPT (Bag)
Visual Soil Classification	Brown silty sand (SM)	Brown silty sand (SM)	Dark brown clayey sand (SC)	Yellowish brown well-graded gravel with silt and sand (GW-GM)s	Pale yellow poorly graded sand with gravel (SP)g	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand (SP)	Pale yellow poorly graded sand with silt (SP-SM)
Pocket Penetrometer	0.75	1.5	>4.5	>4.5				
Weight Soil + Rings / Tube (gm.	967.00	970.08	1101.74	1034.24				
Weight of Rings / Tube (gm.	261.20	261.66	261.45	262.13				
Average Length (in.)	5.441	5.420	5.730	4.702				
Average Diameter (in.)	2.421	2.421	2.421	2.421				
Wet. Wt. of Soil + Cont. (gm.	460.27	466.89	237.90	929.36	329.16	752.56	300.09	896.68
Dry Wt. of Soil + Cont. (gm.)	419.66	425.26	216.34	871.30	297.60	655.60	267.24	757.20
Weight of Container (gm)	76.73	76.81	37.60	72.14	55.30	75.03	74.15	107.92
Container No.:								
Wet Density	107.3	108.2	121.4	135.9				
Moisture Content (%)	**11.8**	**11.9**	**12.1**	**7.3**	**13.0**	**16.7**	**17.0**	**21.5**
Dry Density (pcf)	**96.0**	**96.6**	**108.3**	**126.7**				
Degree of Saturation (%)	42.3	43.3	58.5	59.3				

Teratest Labs, Inc.

MOISTURE & DENSITY of SOILS

ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA

Project No.: 37380 / CTO 0078

Client Name: Earth Tech, Inc.

Tested By: RA Date: 22/02

Sample ID	LK217	LK218	LK219	LK220	LK221	LK222	LK223	LK224
Exploration Location	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW09	AA3-MW10	AA3-MW10
Depth (ft.)	55-56.5	60-61.5	65-66.5	70-71.5	75-76.5	80-81.5	2-2.5	6-6.5
Sample Type	SPT (Bag)	SPT (Bag)	Bag	Bag	Bag	Bag	Drive	Drive
Visual Soil Classification	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand (SP)	Olive yellow poorly graded sand with silt (SP-SM)	Dark brown lean clay (CL)	Brown clayey sand with gravel (SC)g
Pocket Penetrometer							>4.5	>4.8
Weight Soil + Rings / Tube (gm.							948.28	954.08
Weight of Rings / Tube (gm.							261.33	250.93
Average Length (in.)							5.581	5.042
Average Diameter (in.)							2.421	2.421
Wet. Wt. of Soil + Cont. (gm.	308.44	191.09	976.60	304.68	367.20	1387.85	187.32	747.90
Dry Wt. of Soil + Cont. (gm.)	281.21	165.92	847.80	274.26	322.20	1202.30	177.60	712.50
Weight of Container (gm)	56.64	40.21	107.76	55.26	68.18	108.88	35.67	74.15
Container No.:								
Wet Density							101.9	115.4
Moisture Content (%)	**12.1**	**20.0**	**17.4**	**13.9**	**17.7**	**17.0**	**6.8**	**5.5**
Dry Density (pcf)							**95.3**	**109.3**
Degree of Saturation (%)							24.1	27.6

Teratest Labs, Inc.
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MOISTURE & DENSITY of SOILS
ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 11/22/02

Sample ID	LK225	LK226	LK227	LK228	LK229	LK230	LK231	LK232
Exploration Location	AA3-MW10	AA3-MW10	AA3-MW10	AA3-MW10	AA3-MW10	AA3-MW10	AA3-MW10	AA3-MW10
Depth (ft.)	11-11.5	16-16.5	20.5-21	26-26.5	31-31.5	36-36.5	41-41.5	45.0
Sample Type	Drive	Drive	Drive	Drive	Drive	Drive	Drive	SPT (Bag)
Visual Soil Classification	Olive lean clay (CL)	Olive clayey sand (SC)	Brown poorly graded sand with silt (SP-SM); LOOSE	Yellowish brown poorly graded sand (SP)	Pale Yellow poorly graded sand with silt (SP-SM)	Dark brown clayey sand (SC)	Olive poorly graded sand with silt (SP-SM)	Olive yellow poorly graded sand (SP)
Pocket Penetrometer	N/A	>4.5	N/A	0.5	.05	0.5	0.25	
Weight Soil + Rings / Tube (gm.	1055.68	899.32	738.00	1096.96	1002.24	918.40	1125.64	
Weight of Rings / Tube (gm.	261.50	251.27	251.20	250.79	251.20	249.71	252.64	
Average Length (in.)	6.003	5.040	3.751	6.001	5.723	5.103	5.700	
Average Diameter (in.)	2.421	2.421	2.421	2.421	2.421	2.421	2.421	
Wet. Wt. of Soil + Cont. (gm.	276.36	773.44	493.38	240.89	707.08	639.82	610.24	704.22
Dry Wt. of Soil + Cont. (gm.)	240.85	678.70	483.61	236.84	689.90	589.80	538.30	653.60
Weight of Container (gm)	36.96	82.29	76.07	58.18	75.60	75.34	82.24	82.22
Container No.:								
Wet Density	109.5	106.4	107.4	116.7	108.6	108.4	126.7	
Moisture Content (%)	**17.4**	**15.9**	**2.4**	**2.3**	**2.8**	**9.7**	**15.8**	**8.9**
Dry Density (pcf)	**93.2**	**91.8**	**104.9**	**114.1**	**105.6**	**98.8**	**109.5**	
Degree of Saturation (%)	58.2	51.3	10.7	12.8	12.7	37.2	78.9	

Teratest Labs, Inc.
A [illegible] COMPANY

MOISTURE & DENSITY of SOILS

ASTM D 2937

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: [illegible]22/02

ATTERBERG LIMITS

ASTM D 4318

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	12/09/02
Sample ID:	LK178	Checked By:	LF	Date:	12/09/02
Exploration Location:	AA3-MW05	Depth (ft.)	45-46.5		

Visual Sample Description: Olive elastic silt with sand (MH)s

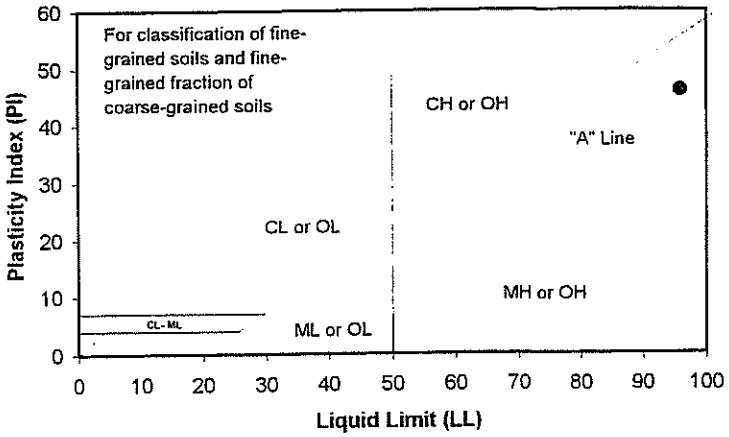
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			30	23	16	
Wet Wt. of Soil + Cont. (gm)	8.28	8.21	17.15	17.19	16.92	
Dry Wt. of Soil + Cont. (gm)	5.86	5.83	9.34	9.26	9.01	
Wt. of Container (gm)	1.04	1.02	1.03	1.02	1.14	
Moisture Content (%) [Wn]	50.21	49.48	93.98	96.24	100.51	

Liquid Limit	**96**
Plastic Limit	**50**
Plasticity Index	**46**
USCS Classification	**MH**

PI at "A" - Line = 0.73(LL-20) = 55.48

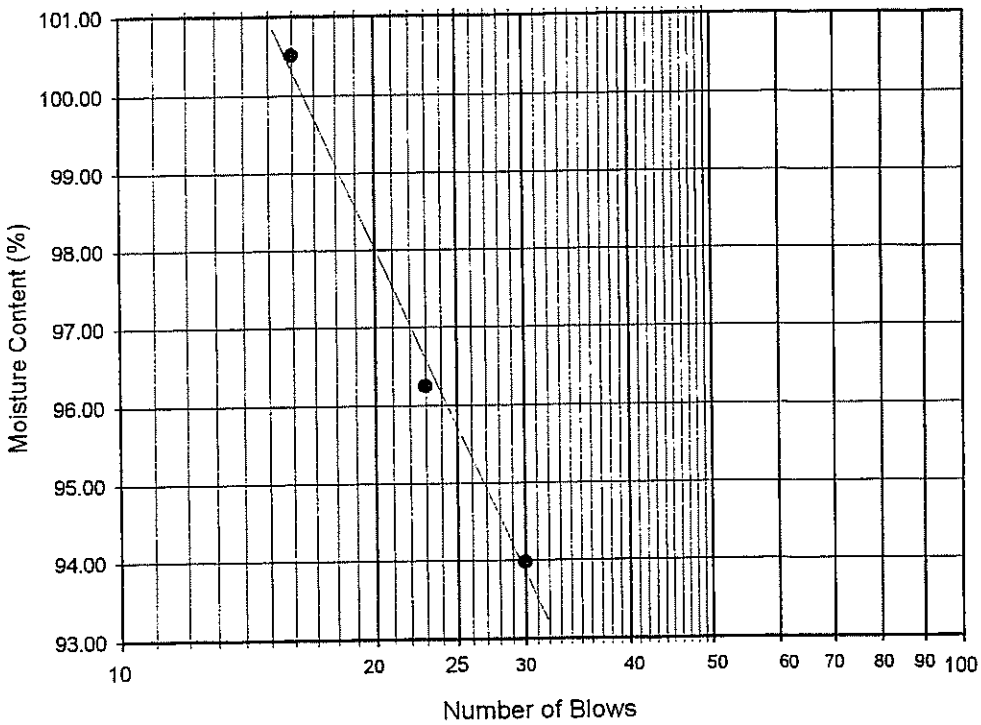
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	12/11/0
Sample ID:	LK184	Checked By:	LF	Date:	12/11/02
Exploration Location:	AA3-MW06	Depth (ft.)	16-16.5		

Visual Sample Description: Dark brown clayey sand (SC)

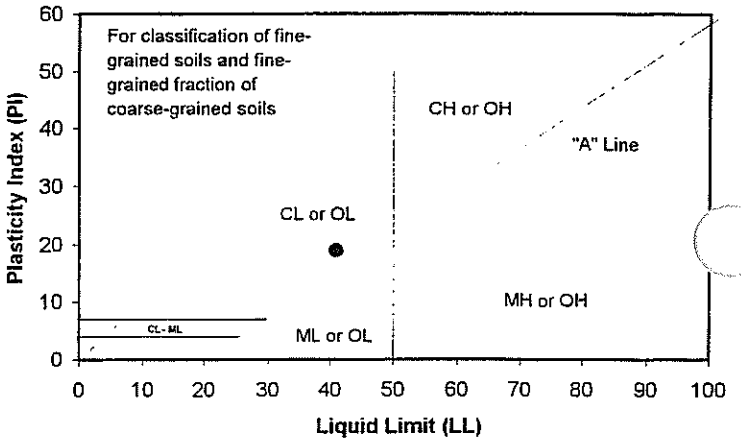
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			31	23	18	
Wet Wt. of Soil + Cont. (gm)	9.82	10.46	19.70	19.82	18.32	
Dry Wt. of Soil + Cont. (gm)	8.27	8.80	14.40	14.30	13.11	
Wt. of Container (gm)	1.11	1.11	1.07	1.08	1.05	
Moisture Content (%) [Wn]	21.65	21.59	39.76	41.75	43.20	

Liquid Limit	**41**
Plastic Limit	**22**
Plasticity Index	**19**
USCS Classification	**CL**

PI at "A" - Line = 0.73(LL-20) = 15.33

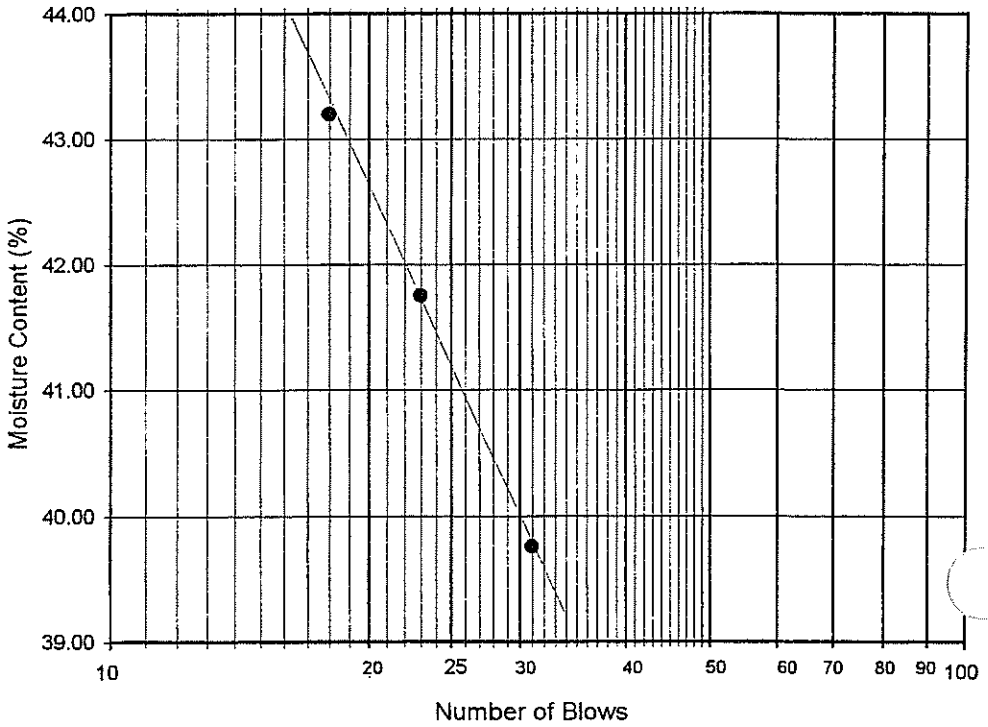
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



ATTERBERG LIMITS

ASTM D 4318

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	12/09/02
Sample ID:	LK189	Checked By:	LF	Date:	12/09/02
Exploration Location:	AA3-MW06	Depth (ft.)	40-41.5		

Visual Sample Description: Olive elastic silt (MH)

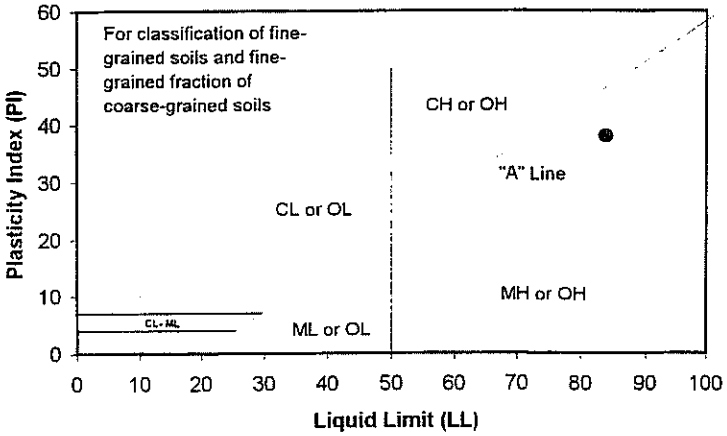
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			32	22	18	
Wet Wt. of Soil + Cont. (gm)	9.44	8.75	16.92	16.05	16.37	
Dry Wt. of Soil + Cont. (gm)	6.80	6.32	9.73	9.15	9.26	
Wt. of Container (gm)	1.09	1.05	1.04	1.03	1.05	
Moisture Content (%) [Wn]	46.23	46.11	82.74	84.98	86.60	

Liquid Limit	**84**
Plastic Limit	**46**
Plasticity Index	**38**
USCS Classification	**MH**

PI at "A" - Line = 0.73(LL-20) = 46.72

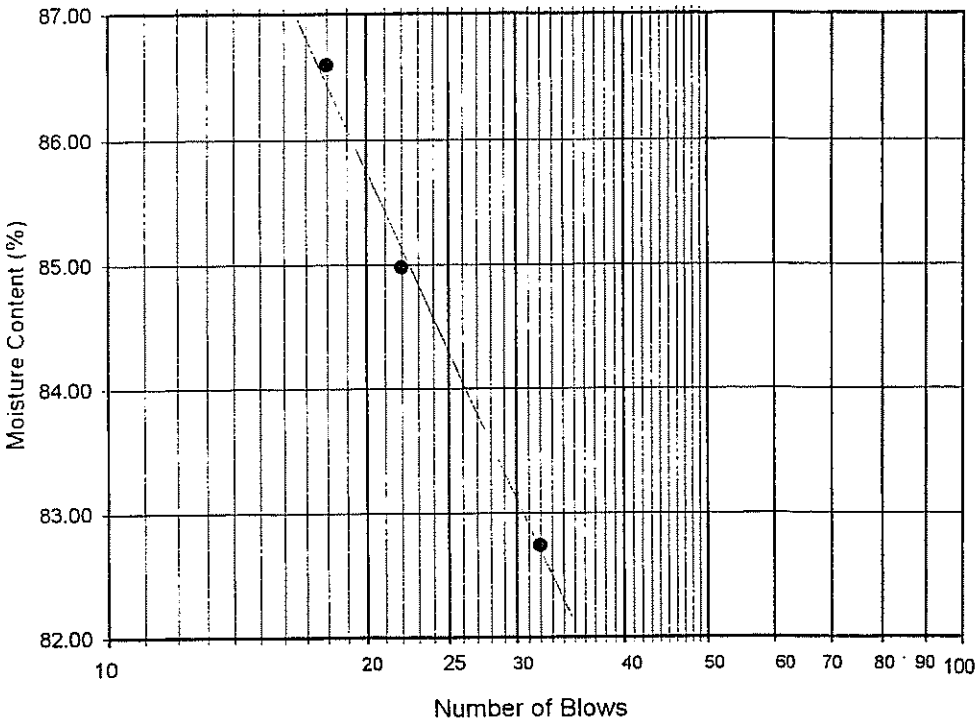
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	12/11/0
Sample ID:	LK196	Checked By:	LF	Date:	12/11/02
Exploration Location:	AA3-MW07	Depth (ft.)	36-36.5		

Visual Sample Description: Light yellow silt (ML)

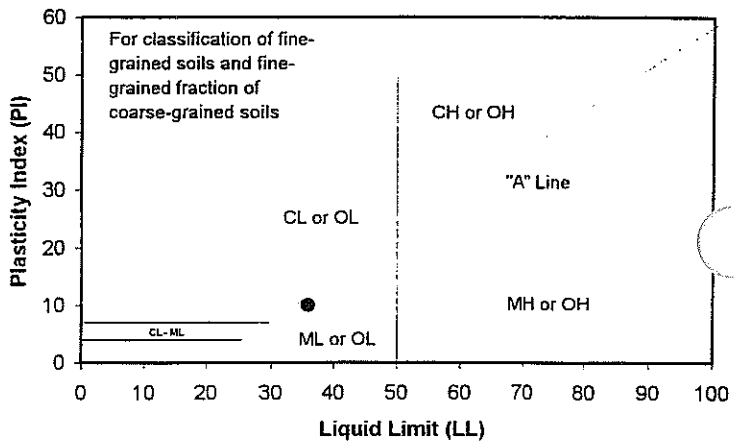
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			31	23	16	
Wet Wt. of Soil + Cont. (gm)	9.36	8.66	16.96	17.77	19.86	
Dry Wt. of Soil + Cont. (gm)	7.67	7.09	12.84	13.34	14.72	
Wt. of Container (gm)	1.05	1.01	1.04	1.09	1.05	
Moisture Content (%) [Wn]	25.53	25.82	34.92	36.16	37.60	

Liquid Limit	**36**
Plastic Limit	**26**
Plasticity Index	**10**
USCS Classification	**ML**

PI at "A" - Line = 0.73(LL-20) = 11.68

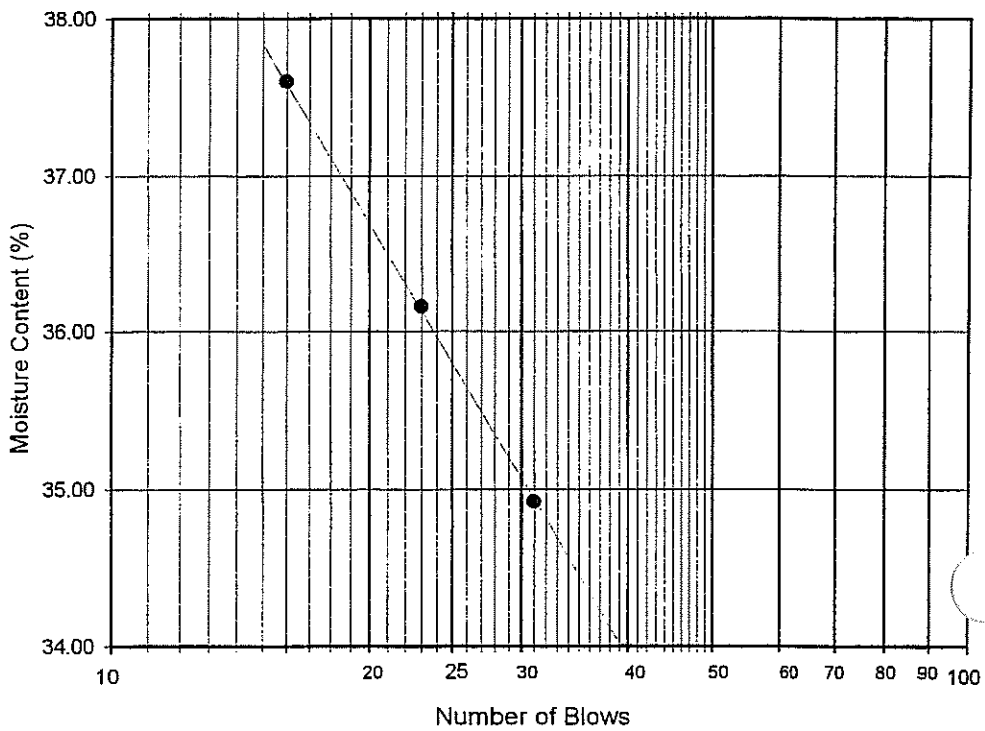
One - Point Liquid Limit Calculation

LL =Wn(N/25) $^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Teratest Labs, Inc.

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	RA	Date:	12/04/02
Project No. :	37380 / CTO 0078	Input By:	RA	Date:	12/11/02
Sample ID:	LK226	Checked By:	LF	Date:	12/11/02
Exploration Location:	AA3-MW10	Depth (ft.)	16-16.5		

Visual Sample Description: Olive clayey sand (SC)

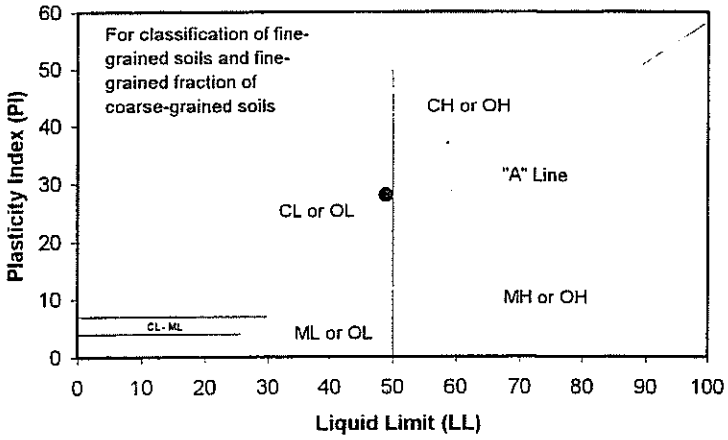
	PLASTIC LIMIT		LIQUID LIMIT			
TEST NO.	1	2	1	2	3	
Number of Blows [N]			35	27	22	
Wet Wt. of Soil + Cont. (gm)	13.59	14.56	15.34	18.11	17.09	
Dry Wt. of Soil + Cont. (gm)	11.40	12.20	10.74	12.51	11.73	
Wt. of Container (gm)	1.06	1.01	1.01	0.98	1.07	
Moisture Content (%) [Wn]	21.18	21.09	47.28	48.57	50.28	

Liquid Limit	**49**
Plastic Limit	**21**
Plasticity Index	**28**
USCS Classification	**CL**

PI at "A" - Line = 0.73(LL-20) = 21.17

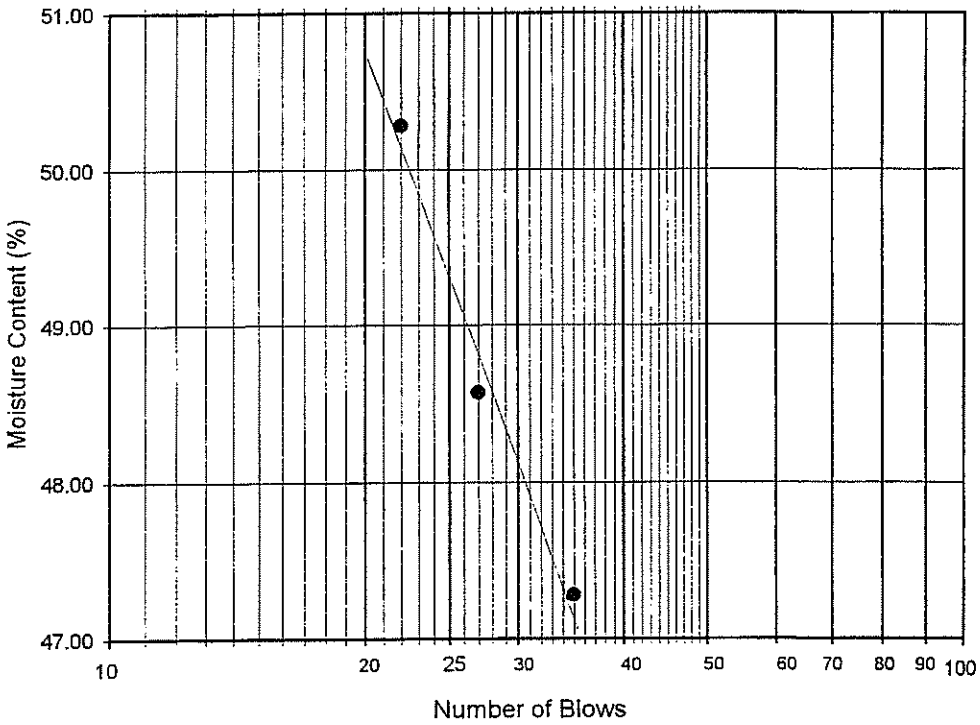
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Sample ID	LK178	LK180	LK181	LK184	LK188	LK189	LK195	LK197
Exploration Location	AA3-MW05	AA3-MW05	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW06	AA3-MW07	AA3-MW07
Depth (ft.)	45-46.5	57-57.5	1.5-2.0	16-16.5	36-36.5	40-41.5	31-31.5	40.5-41
Sample Type	SPT	SPT	Drive	Drive	Drive	SPT	Drive	Drive
Visual Soil Classification	Olive elastic silt with sand (MH)s	Olive sandy lean clay s(CL)	Yellowish brown silty sand (SM)	Dark brown clayey sand (SC)	Pale yellow lean clay (CL)	Olive elastic silt (MH)	Brown silty sand (SM)	Pale Olive silty sand (SM)
Moisture Correction								
Wet Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weight of Container (gm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Moisture Content (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Container No.:								
Sample Dry Weight Determination								
Weight of Sample + Container (gm.)	202.74	324.51	440.86	288.37	227.05	184.68	545.02	338.11
Weight of Container (gm.)	74.83	76.75	75.65	75.50	82.27	78.21	77.27	76.85
Weight of Dry Sample (gm.)	127.91	247.76	365.21	212.87	144.78	106.47	467.75	261.26
Container No.:								
After Wash								
Dry Weight of Sample + Container (gm)	93.97	156.88	333.18	193.47	103.20	88.19	440.32	248.26
Weight of Container (gm)	74.83	76.75	75.65	75.50	82.27	78.21	77.27	76.85
Dry Weight of Sample (gm)	19.14	80.13	257.53	117.97	20.93	9.98	363.05	171.41
% Passing No. 200 Sieve	**85.0**	**67.7**	**29.5**	**44.6**	**85.5**	**90.6**	**22.4**	**34.4**
% Retained No. 200 Sieve	15.0	32.3	70.5	55.4	14.5	9.4	77.6	65.6

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PERCENT PASSING No. 200 SIEVE

ASTM D 1140

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: /03/02

Sample ID	LK201	LK210	LK226	LK230				
Exploration Location	AA3-MW08	AA3-MW09	AA3-MW10	AA3-MW10				
Depth (ft.)	6-6.5	21-21.5	16-16.5	36-36.5				
Sample Type	Drive	Drive	Drive	Drive				
Visual Soil Classification	Brown sandy lean clay s(CL)	Brown silty sand (SM)	Olive clayey sand (SC)	Brown clayey sand (SC)				
Moisture Correction								
Wet Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00				
Dry Weight of Soil + Container (gm.)	0.00	0.00	0.00	0.00				
Weight of Container (gm)	1.00	1.00	1.00	1.00				
Moisture Content (%)	0.00	0.00	0.00	0.00				
Container No.:								
Sample Dry Weight Determination								
Weight of Sample + Container (gm.)	345.76	425.26	435.47	589.80				
Weight of Container (gm.)	75.20	76.81	82.29	75.34				
Weight of Dry Sample (gm.)	270.56	348.45	353.18	514.46				
Container No.:								
After Wash								
Dry Weight of Sample + Container (gm)	196.81	301.77	288.72	431.16				
Weight of Container (gm)	75.20	76.81	82.29	75.34				
Dry Weight of Sample (gm)	121.61	224.96	206.43	355.82				
% Passing No. 200 Sieve	**55.1**	**35.4**	**41.6**	**30.8**				
% Retained No. 200 Sieve	44.9	64.6	58.4	69.2				

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PERCENT PASSING No. 200 SIEVE

ASTM D 1140

Project Name: Anomaly Area 3, Former MCAS El Toro, CA
Project No.: 37380 / CTO 0078
Client Name: Earth Tech, Inc.
Tested By: RA Date: 12/03/02

Teralast Labs, Inc.

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK169	Depth (ft.):	2-2.5		
Exploration Location:	AA3-MW05				

Visual Sample Description: Brown poorly graded sand (SP)

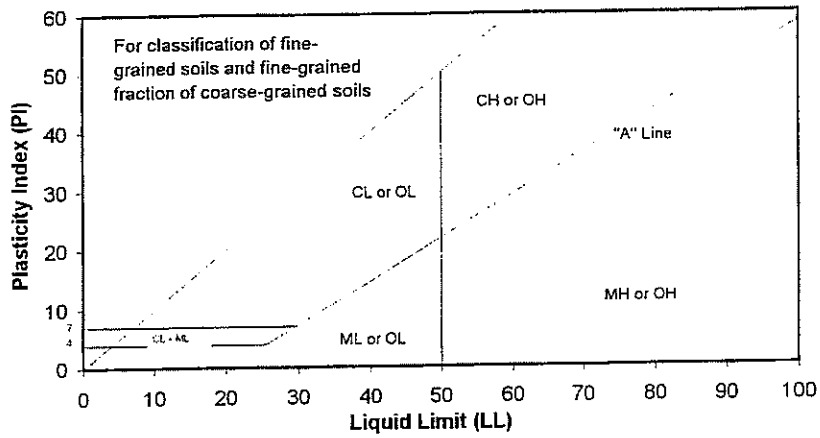
		Moisture Content of Total Air - Dry Soil	
Container No.:	RX-22	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	601.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.15	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	526.45	Moisture Content (%)	0.00

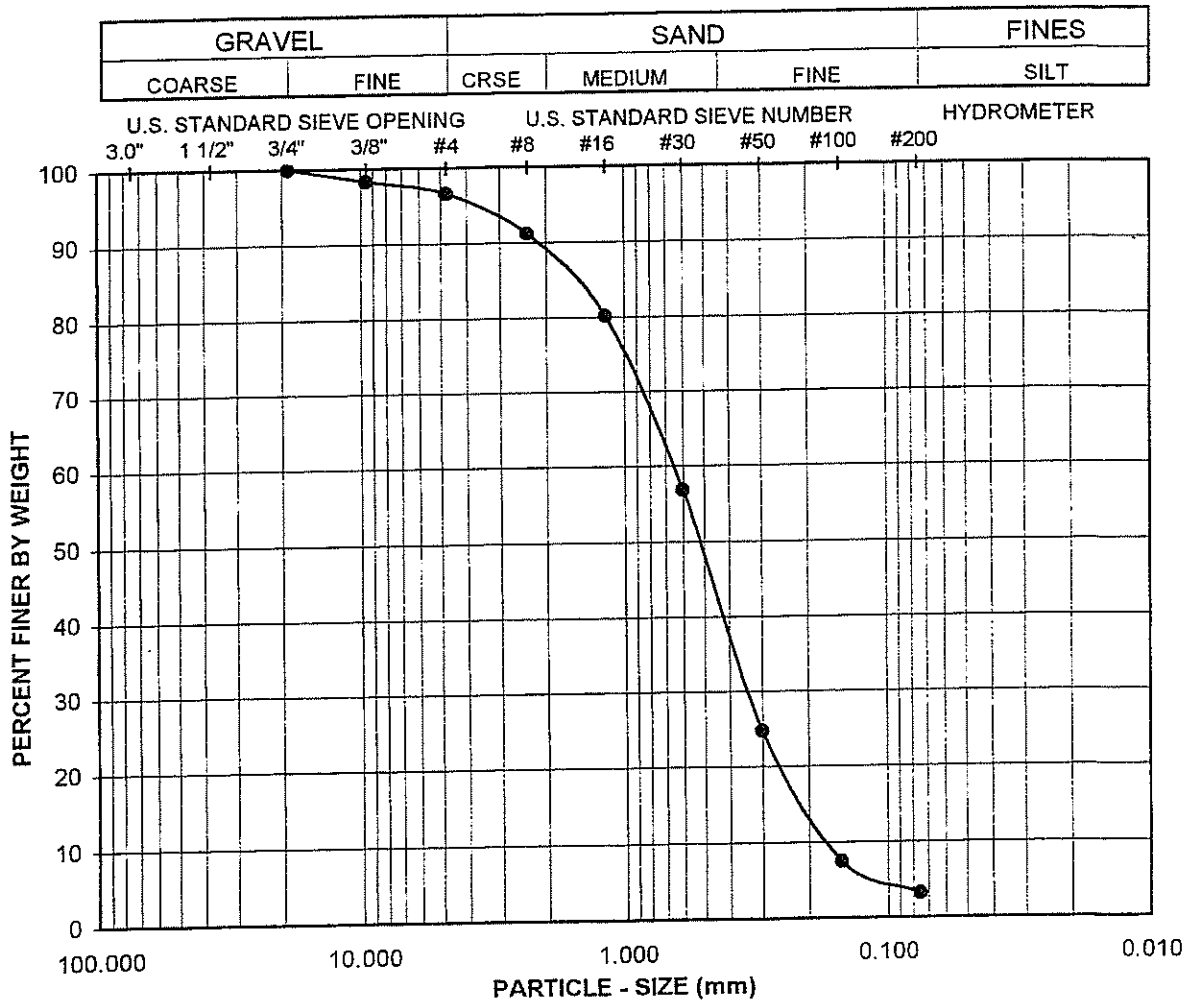
After Wet Sieve	Container No.	RX-22
	Wt. of Dry Soil + Container (gm.)	584.90
	Wt. of Container (gm.)	75.15
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	509.75

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	9.04	98.3
#4	4.750	18.09	96.6
#8	2.360	46.25	91.2
#16	1.180	104.79	80.1
#30	0.600	227.56	56.8
#50	0.300	395.82	24.8
#100	0.150	487.32	7.4
#200	0.075	509.62	3.2
PAN			

GRAVEL:	3 %	Liquid Limit:	
SAND:	94 %	Plastic Limit	
FINES:	3 %	Plasticity Index:	
GRP. SYMBOL:	SP	Cu = D60/D10 =	3.76
		Cc = $(D30)^2/(D60*D10)$ =	1.06

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK169	AA3-MW05	2-2.5	SP	3 : 94 : 3	, N/A,

Visual Sample Description:
Brown poorly graded sand (SP)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078
Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

12-02

SA LK169.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK171	Depth (ft.):	10.5-11		
Exploration Location:	AA3-MW05				

Visual Sample Description: Light brown silty sand (SM)

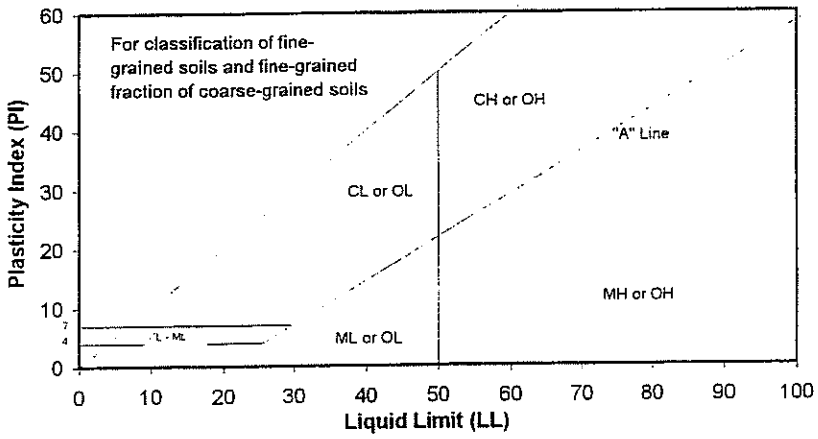
		Moisture Content of Total Air - Dry Soil	
Container No.:	521	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	616.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.77	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	540.83	Moisture Content (%)	0.00

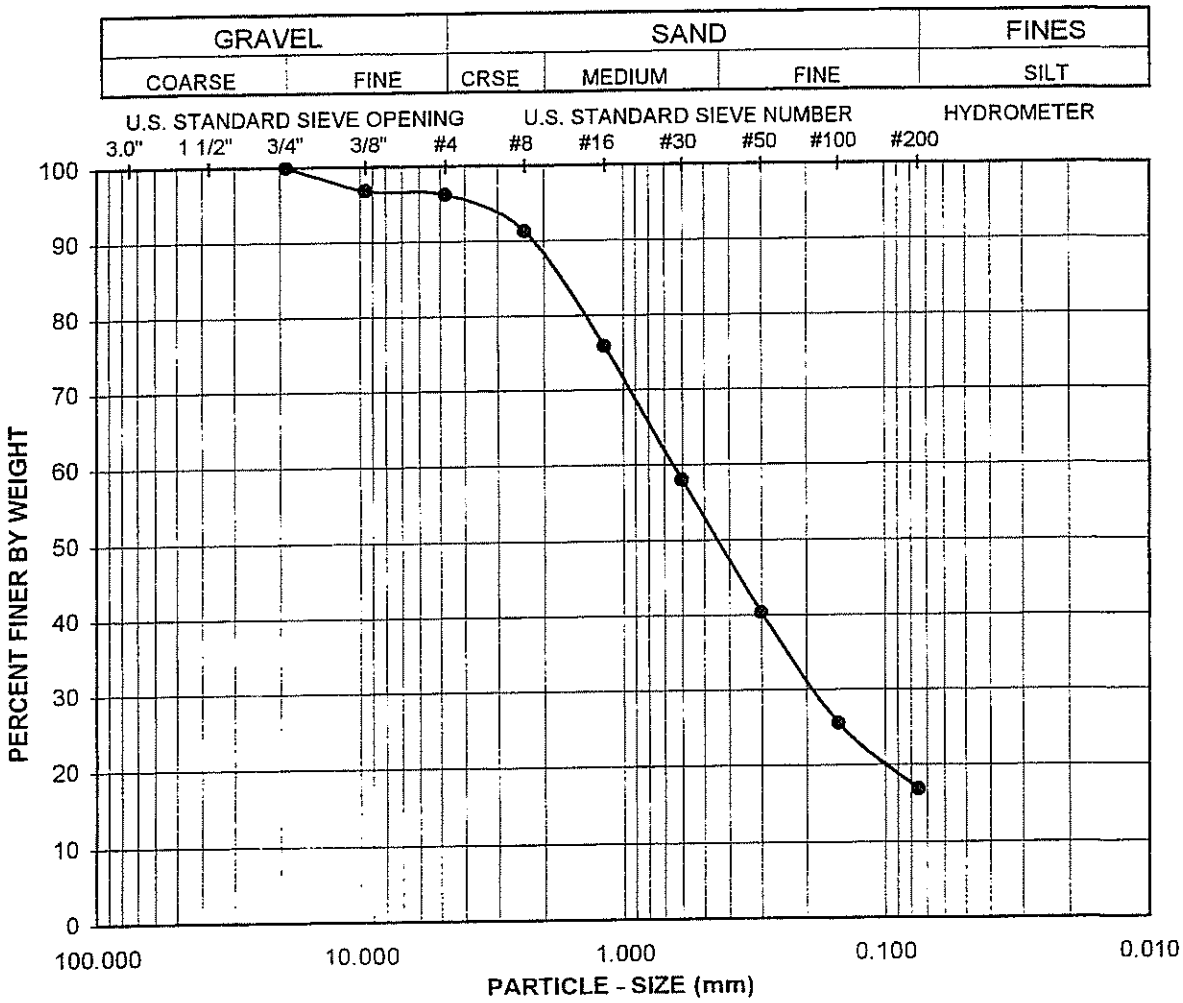
After Wet Sieve	Container No.	521
	Wt. of Dry Soil + Container (gm.)	527.90
	Wt. of Container (gm.)	75.77
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	452.13

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	16.69	96.9
#4	4.750	19.99	96.3
#8	2.360	47.18	91.3
#16	1.180	131.12	75.8
#30	0.600	226.99	58.0
#50	0.300	322.66	40.3
#100	0.150	403.01	25.5
#200	0.075	450.05	16.8
PAN			

GRAVEL:	**4 %**	Liquid Limit:	
SAND:	**79 %**	Plastic Limit	
FINES:	**17 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK171	AA3-MW05	10.5-11	SM	4 : 79 : 17	, N/A,

Visual Sample Description:
Light brown silty sand (SM)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK171.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK172	Depth (ft.):	15.5-16		
Exploration Location:	AA3-MW05				

Visual Sample Description: Light brown poorly graded sand with silt (SP-SM)

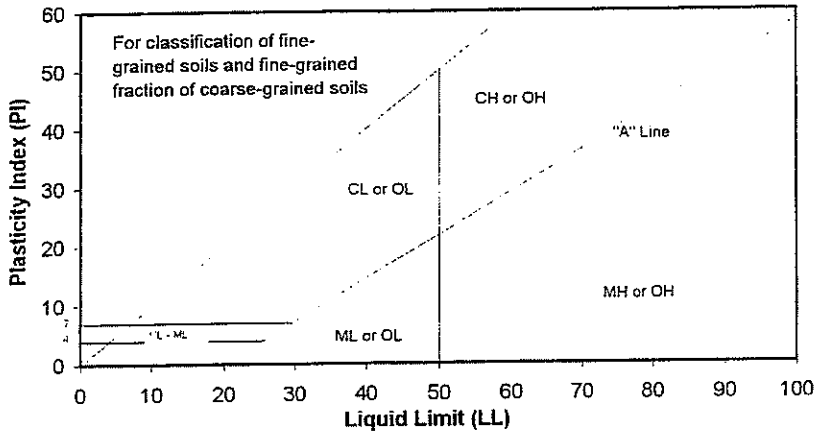
		Moisture Content of Total Air - Dry Soil	
Container No.:	741	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	573.80	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.77	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	497.03	Moisture Content (%)	0.00

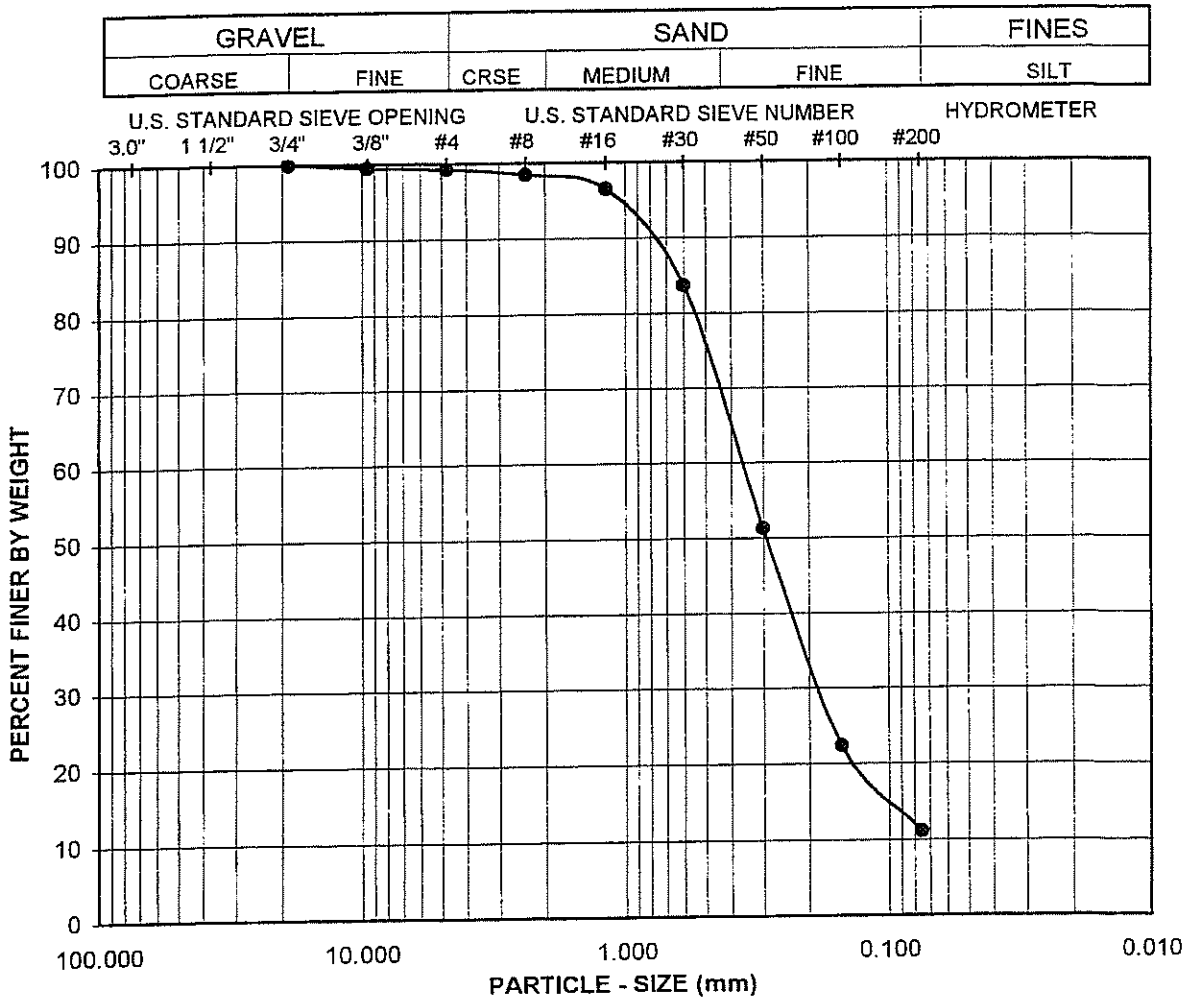
After Wet Sieve	Container No.	741
	Wt. of Dry Soil + Container (gm.)	520.89
	Wt. of Container (gm.)	76.77
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	444.12

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	2.50	99.5
#4	4.750	4.09	99.2
#8	2.360	7.25	98.5
#16	1.180	17.61	96.5
#30	0.600	81.06	83.7
#50	0.300	242.51	51.2
#100	0.150	385.49	22.4
#200	0.075	441.93	11.1
PAN			

GRAVEL:	**1 %**	Liquid Limit:	
SAND:	**88 %**	Plastic Limit	
FINES:	**11 %**	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	5.38
		Cc = $(D30)^2/(D60*D10)$ =	1.59

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK172	AA3-MW05	15.5-16	SP-SM	1 : 88 : 11	, N/A,

Visual Sample Description:
Light brown poorly graded sand with silt (SP-SM)

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK172.xls

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS
ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK174	Depth (ft.):	25.5-26		
Exploration Location:	AA3-MW05				

Visual Sample Description: Light brown silty sand with gravel (SM)g

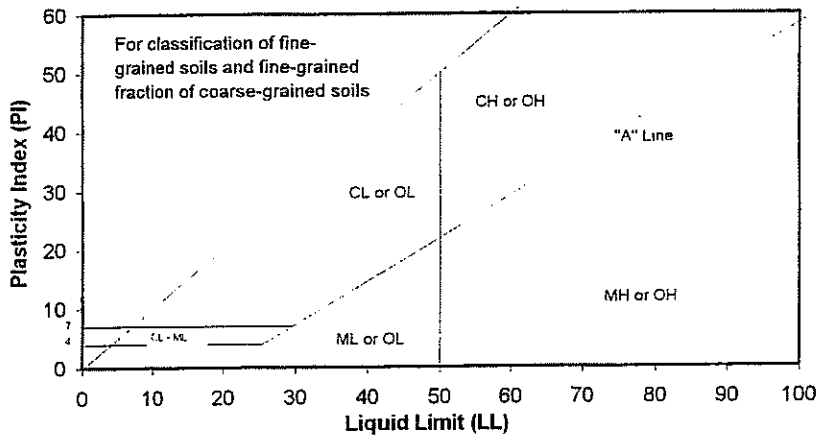
		Moisture Content of Total Air - Dry Soil	
Container No.:	722	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	918.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	79.15	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	839.45	Moisture Content (%)	0.00

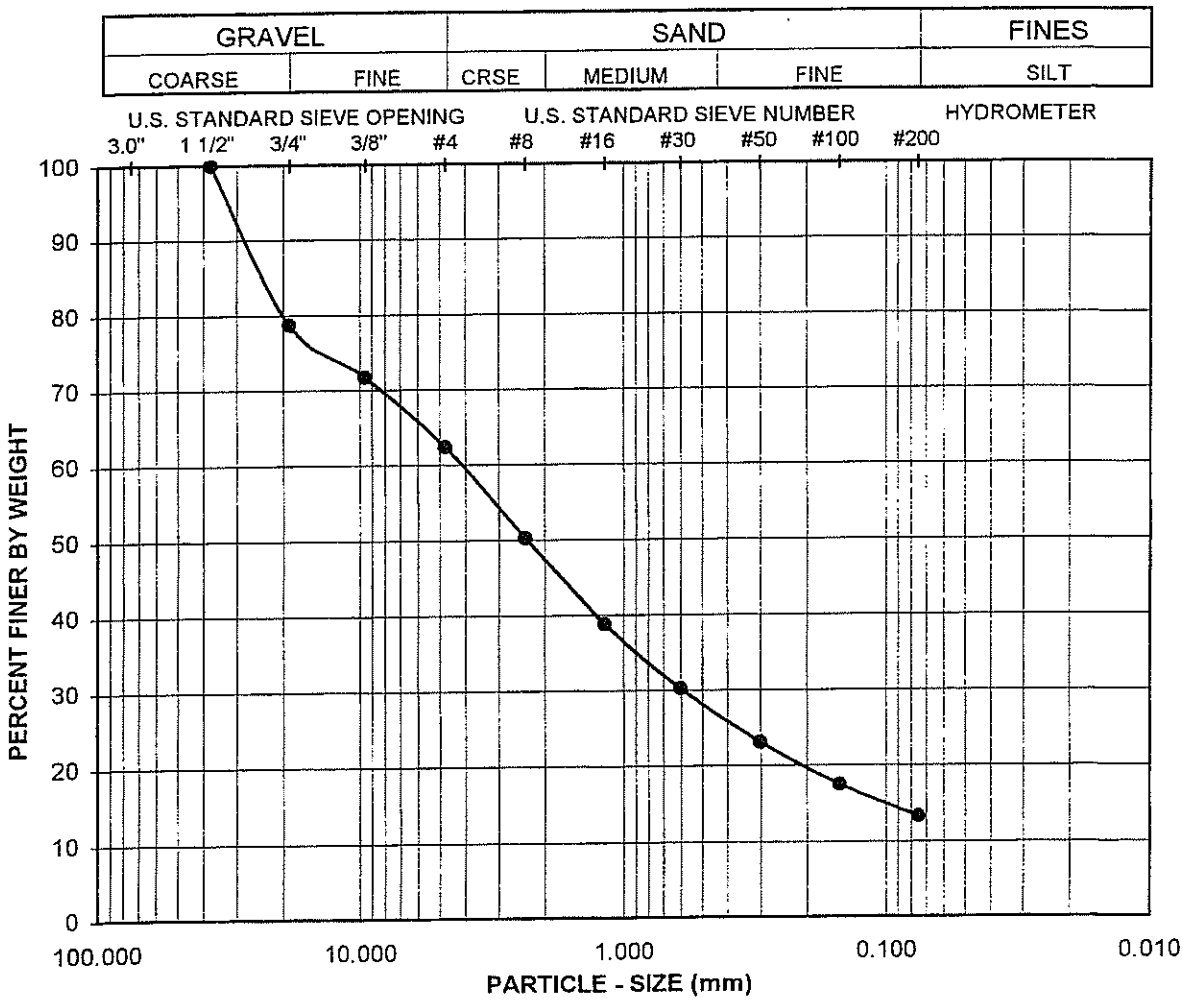
After Wet Sieve	Container No.	722
	Wt. of Dry Soil + Container (gm.)	810.20
	Wt. of Container (gm.)	79.15
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	731.05

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	100.0
3/4"	19.000	178.90	78.7
3/8"	9.500	237.15	71.7
#4	4.750	315.91	62.4
#8	2.360	418.26	50.2
#16	1.180	514.10	38.8
#30	0.600	585.40	30.3
#50	0.300	645.90	23.1
#100	0.150	692.80	17.5
#200	0.075	728.10	13.3
PAN			

GRAVEL:	38 %	Liquid Limit:	
SAND:	49 %	Plastic Limit	
FINES:	13 %	Plasticity Index:	
GRP. SYMBOL:	(SM)g	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK174	AA3-MW05	25.5-26	(SM)g	38 : 49 : 13	, N/A,

Visual Sample Description:
Light brown silty sand with gravel (SM)g

Terrasient Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK174.xls

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS
ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK177	Depth (ft.):	40-41.5		
Exploration Location:	AA3-MW05				

Visual Sample Description: Olive sandy lean clay s(CL)

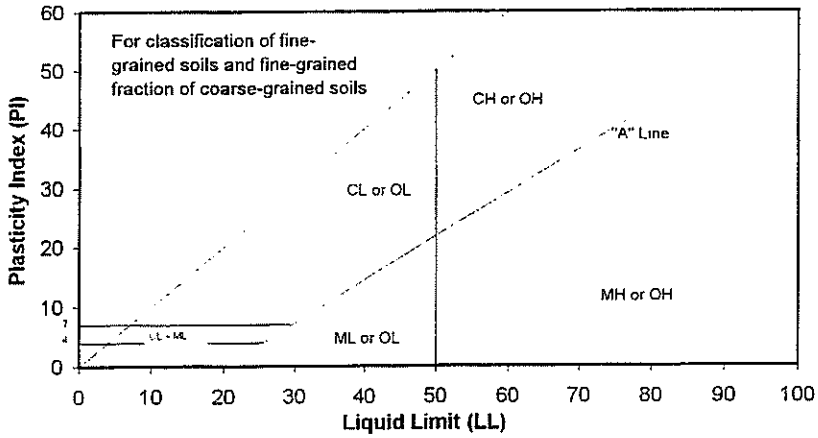
		Moisture Content of Total Air - Dry Soil	
Container No.:	772	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	333.83	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.80	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	258.03	Moisture Content (%)	0.00

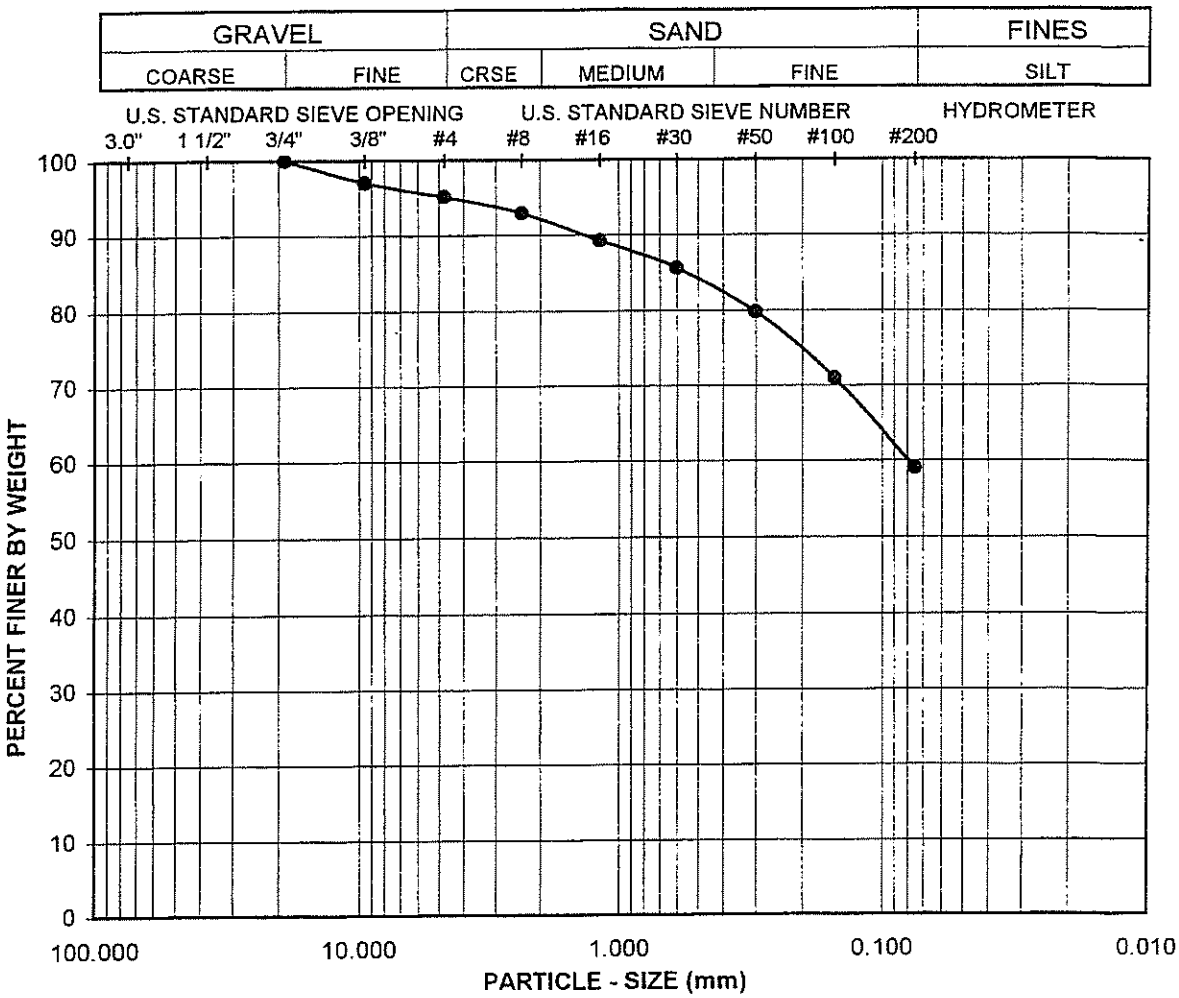
After Wet Sieve	Container No.	772
	Wt. of Dry Soil + Container (gm.)	183.20
	Wt. of Container (gm.)	75.80
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	107.40

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	7.63	97.0
#4	4.750	12.44	95.2
#8	2.360	18.16	93.0
#16	1.180	27.53	89.3
#30	0.600	37.15	85.6
#50	0.300	52.23	79.8
#100	0.150	75.21	70.9
#200	0.075	105.67	59.0
PAN			

GRAVEL:	5 %	Liquid Limit:	
SAND:	36 %	Plastic Limit	
FINES:	59 %	Plasticity Index:	
GRP. SYMBOL:	s(CL)	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK177	AA3-MW05	40-41.5	s(CL)	5 : 36 : 59	, N/A,

Visual Sample Description:
Olive sandy lean clay s(CL)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK177.xls

Teratest Labs, Inc.

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK185	Depth (ft.):	21-21.5		
Exploration Location:	AA3-MW06				

Visual Sample Description: Olive sandy silt s(ML)

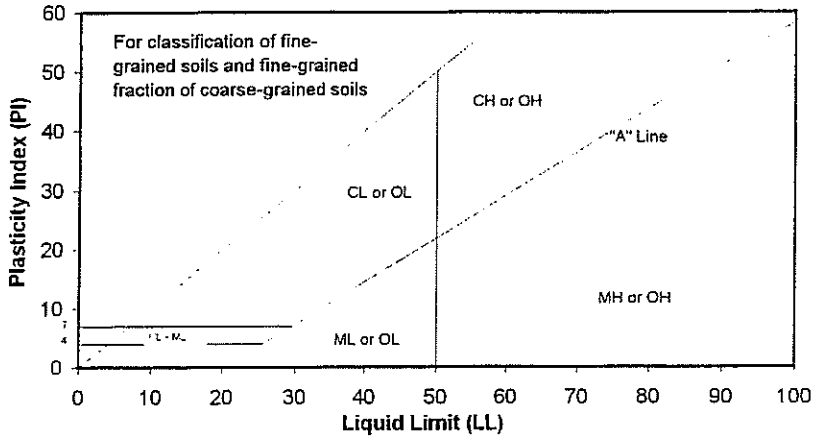
		Moisture Content of Total Air - Dry Soil	
Container No.:	742	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	419.05	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	79.15	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	339.90	Moisture Content (%)	0.00

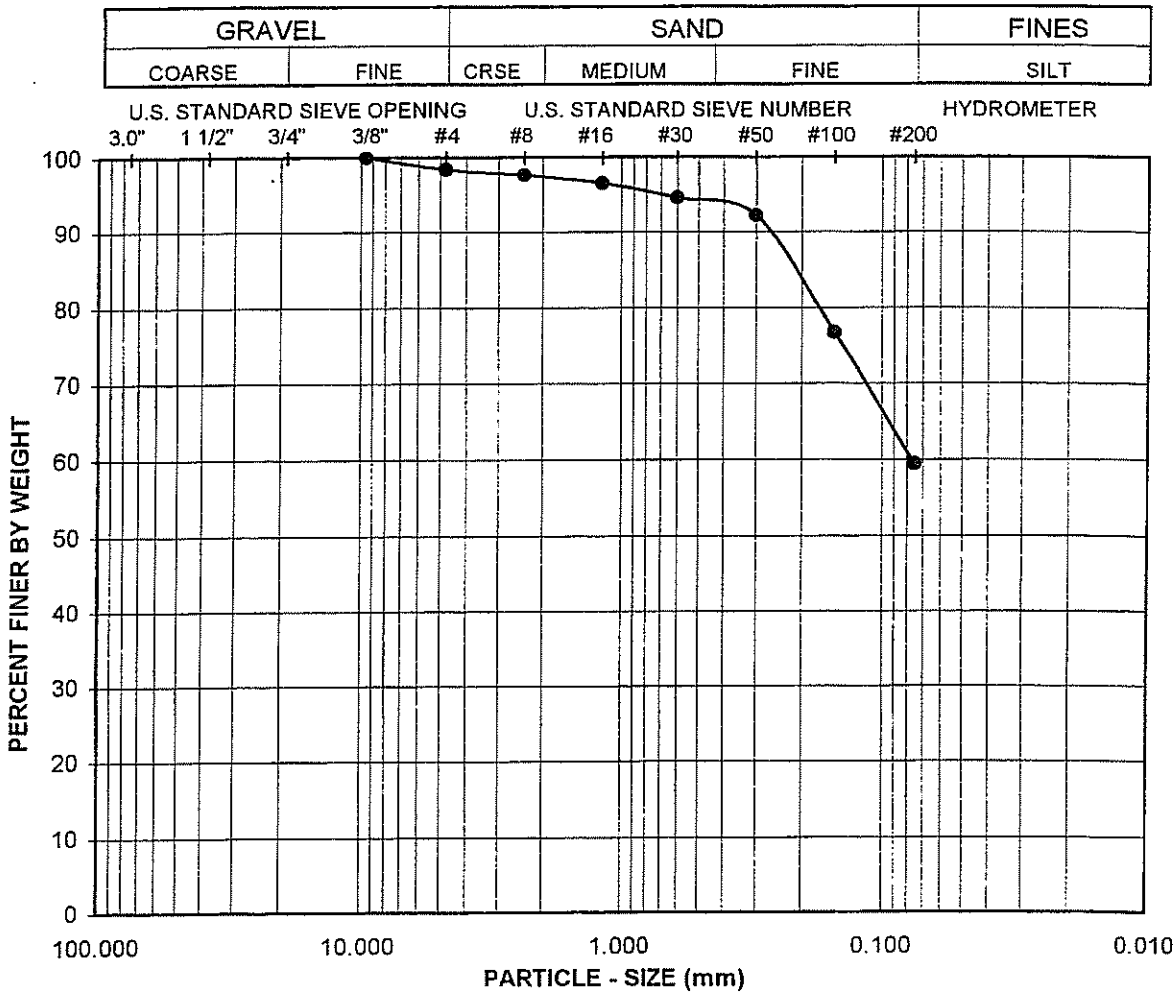
After Wet Sieve	Container No.	742
	Wt. of Dry Soil + Container (gm.)	218.76
	Wt. of Container (gm.)	79.15
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	139.61

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	5.60	98.4
#8	2.360	8.25	97.6
#16	1.180	11.81	96.5
#30	0.600	18.25	94.6
#50	0.300	26.65	92.2
#100	0.150	79.31	76.7
#200	0.075	138.10	59.4
PAN			

GRAVEL:	2 %	Liquid Limit:	
SAND:	39 %	Plastic Limit	
FINES:	59 %	Plasticity Index:	
GRP. SYMBOL:	s(ML)	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK185	AA3-MW06	21-21.5	s(ML)	2 : 39 : 59	, N/A,

Visual Sample Description:
Olive sandy silt s(ML)

Terrasat Labs, Inc

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK185.xls

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK187	Depth (ft.):	31-31.5		
Exploration Location:	AA3-MW06				

Visual Sample Description: Brown well-graded sand with silt and gravel (SW-SM)g

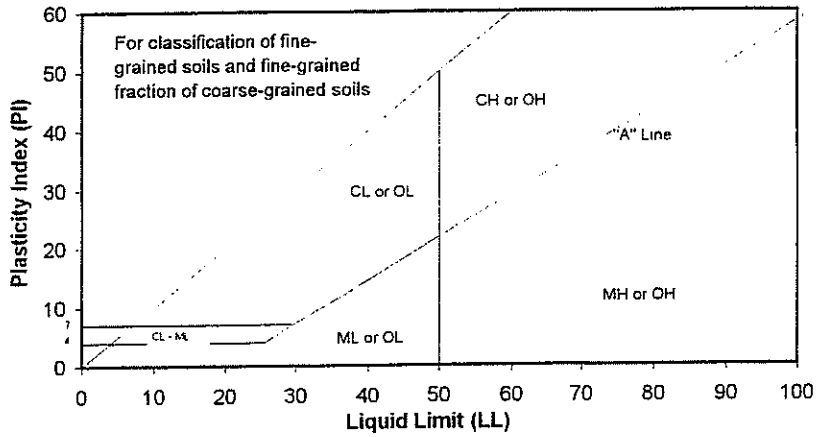
		Moisture Content of Total Air - Dry Soil	
Container No.:	C108	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	881.18	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	74.26	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	806.92	Moisture Content (%)	0.00

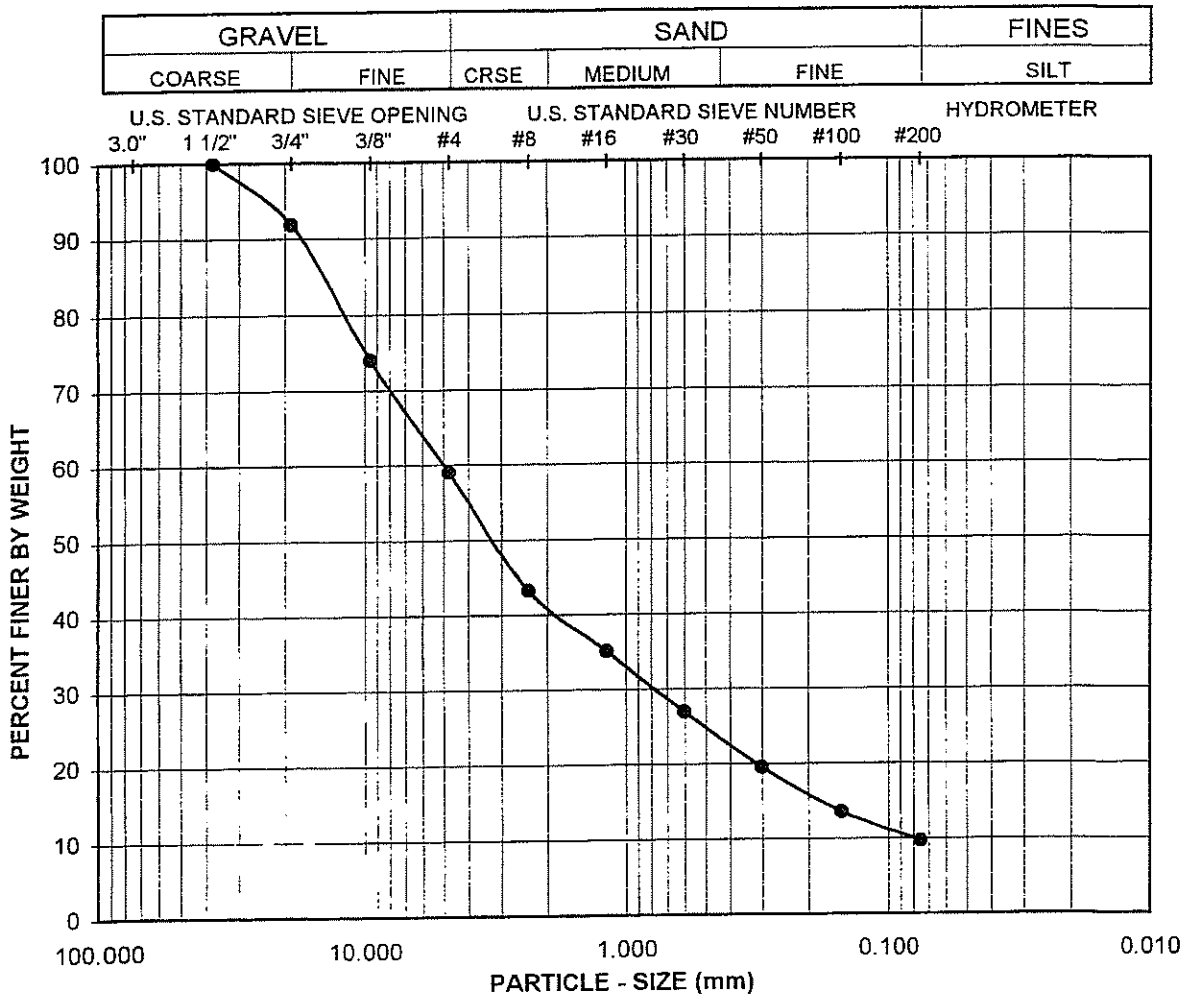
After Wet Sieve	Container No.	C108
	Wt. of Dry Soil + Container (gm.)	806.30
	Wt. of Container (gm.)	74.26
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	732.04

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	100.0
3/4"	19.000	65.17	91.9
3/8"	9.500	209.60	74.0
#4	4.750	330.69	59.0
#8	2.360	457.98	43.2
#16	1.180	523.49	35.1
#30	0.600	589.32	27.0
#50	0.300	649.54	19.5
#100	0.150	697.92	13.5
#200	0.075	729.46	9.6
PAN			

GRAVEL:	**41 %**	Liquid Limit:	
SAND:	**49 %**	Plastic Limit	
FINES:	**10 %**	Plasticity Index:	
GRP. SYMBOL:	**(SW-SM)g**	Cu = D60/D10 =	66.67
		Cc = $(D30)^2/(D60*D10)$ =	1.50

Remarks: Insufficient sample mass available to meet the ASTM specification for this material





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK187	AA3-MW06	31-31.5	(SW-SM)g	41 : 49 : 10	, N/A,

Visual Sample Description:
Brown well-graded sand with silt and gravel (SW-SM)g

Terrasonic Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK187.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK191	Depth (ft.):	6-6.5		
Exploration Location:	AA3-MW07				

Visual Sample Description: Reddish brown well-graded sand with silt (SW-SM)

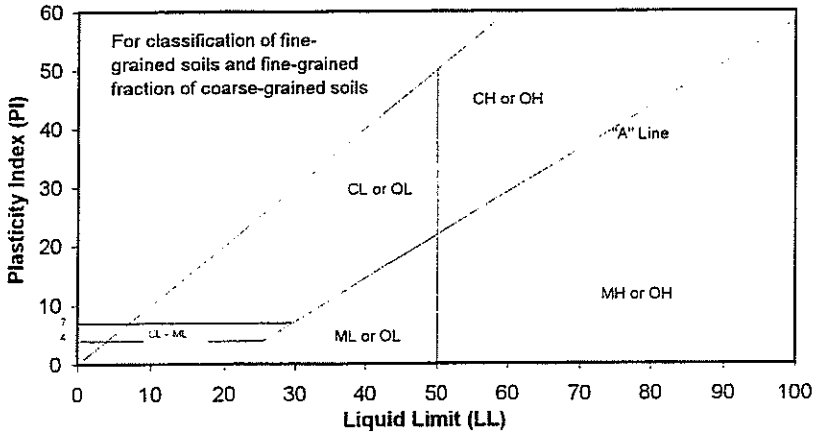
		Moisture Content of Total Air - Dry Soil	
Container No.:	798	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	523.09	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.04	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	447.05	Moisture Content (%)	0.00

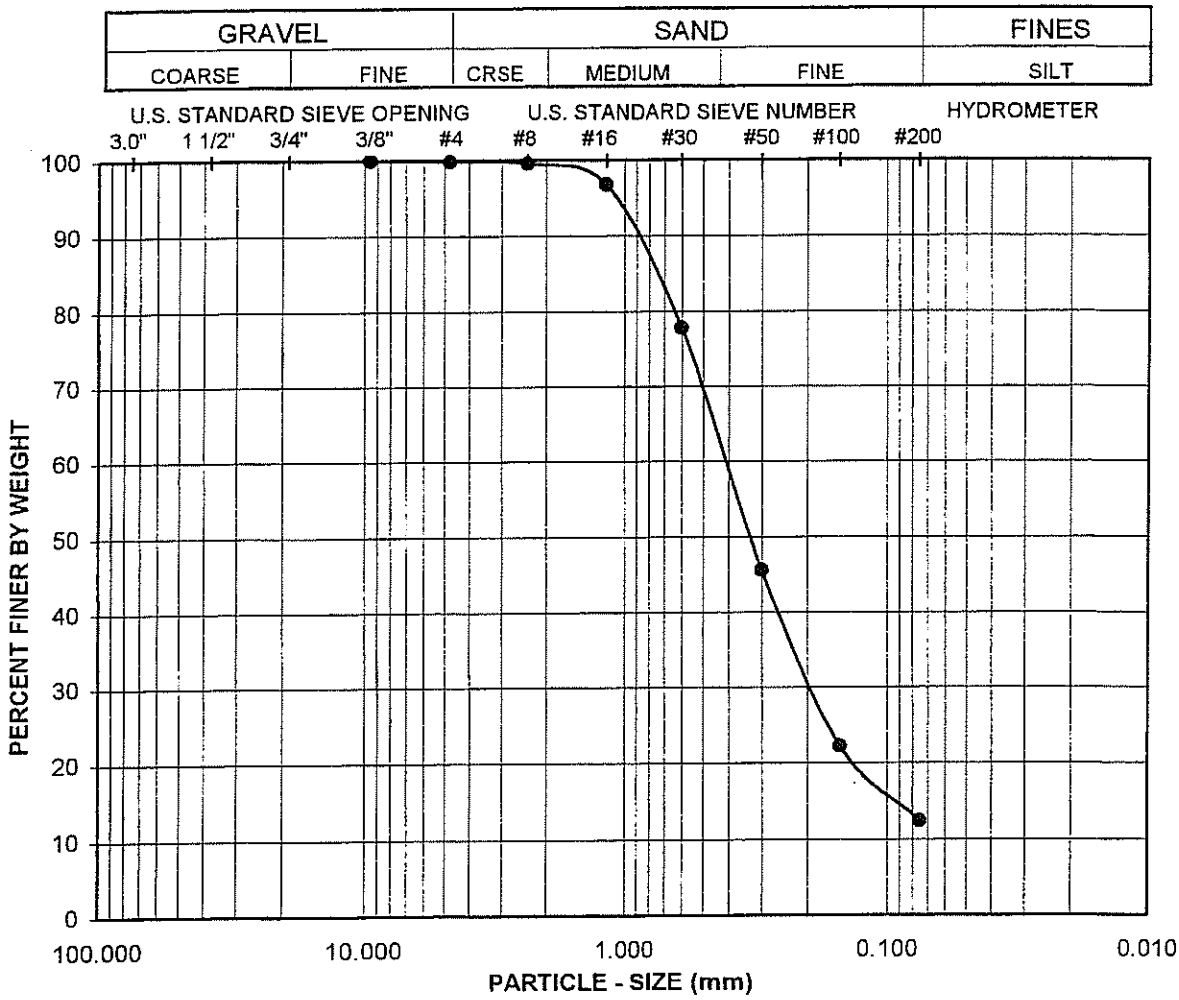
After Wet Sieve	Container No.	798
	Wt. of Dry Soil + Container (gm.)	469.99
	Wt. of Container (gm.)	76.04
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	393.95

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	0.76	99.8
#8	2.360	1.72	99.6
#16	1.180	14.16	96.8
#30	0.600	99.37	77.8
#50	0.300	243.34	45.6
#100	0.150	347.64	22.2
#200	0.075	391.90	12.3
PAN			

GRAVEL:	**0 %**	Liquid Limit:	
SAND:	**88 %**	Plastic Limit	
FINES:	**12 %**	Plasticity Index:	
GRP. SYMBOL:	**SW-SM**	Cu = D60/D10 =	6.83
		Cc = $(D30)^2/(D60*D10)$ =	1.63

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK191	AA3-MW07	6-6.5	SW-SM	0 : 88 : 12	,N/A,

Visual Sample Description:
Reddish brown well-graded sand with silt (SW-SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078
Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

12-02

SA LK191.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK193	Depth (ft.):	15.5-16		
Exploration Location:	AA3-MW07				

Visual Sample Description: Pale brown poorly graded sand with silt (SP-SM)

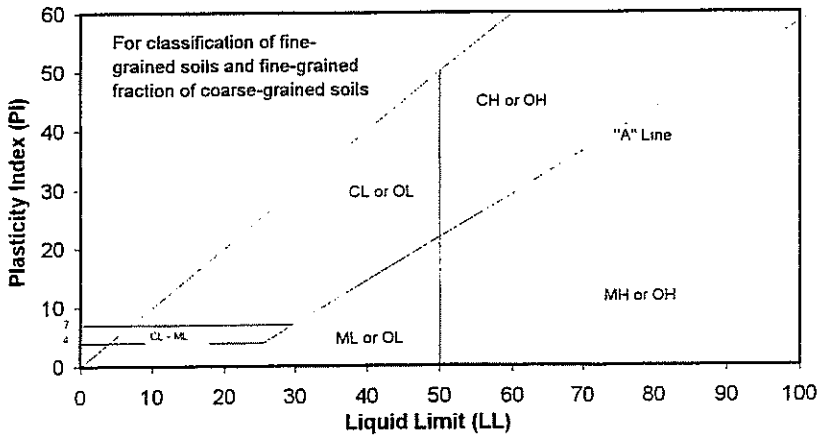
		Moisture Content of Total Air - Dry Soil	
Container No.:	757	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	485.32	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.06	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	409.26	Moisture Content (%)	0.00

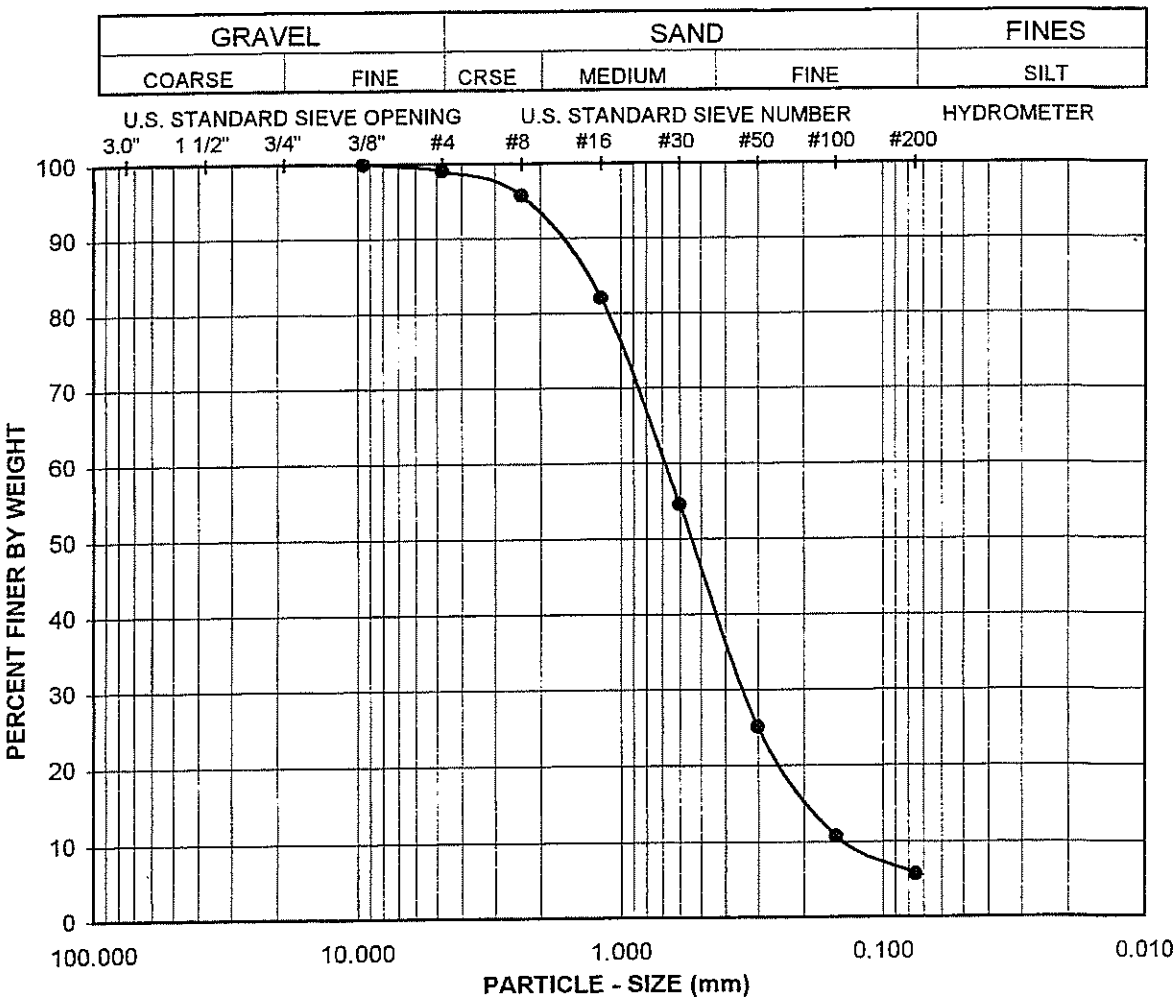
After Wet Sieve	Container No.	757
	Wt. of Dry Soil + Container (gm.)	462.85
	Wt. of Container (gm.)	76.06
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	386.79

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	3.56	99.1
#8	2.360	17.09	95.8
#16	1.180	73.59	82.0
#30	0.600	186.40	54.5
#50	0.300	306.68	25.1
#100	0.150	365.61	10.7
#200	0.075	386.04	5.7
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	93 %	Plastic Limit	
FINES:	6 %	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	4.69
		Cc = $(D30)^2/(D60*D10)$ =	1.21

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK193	AA3-MW07	15.5-16	SP-SM	1 : 93 : 6	, N/A,

Visual Sample Description:
Pale brown poorly graded sand with silt (SP-SM)

Tersient Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK193.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK194	Depth (ft.):	25-25.5		
Exploration Location:	AA3-MW07				

Visual Sample Description: Pale brown well-graded sand with silt and gravel (SW-SM)g

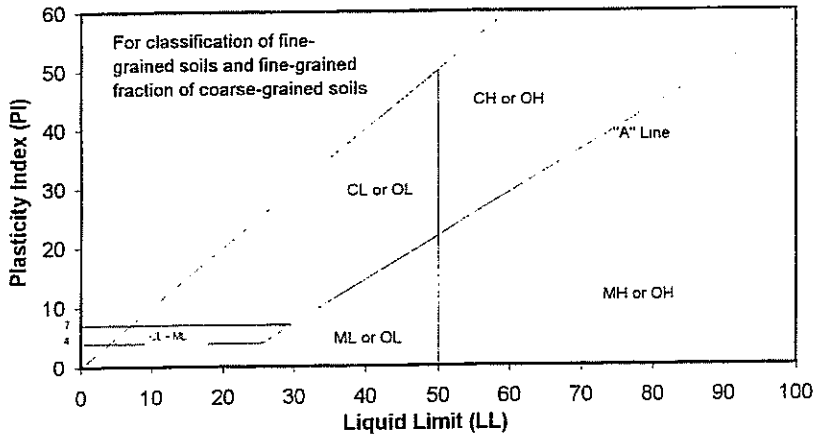
		Moisture Content of Total Air - Dry Soil	
Container No.:	780	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	627.18	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.63	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	551.55	Moisture Content (%)	0.00

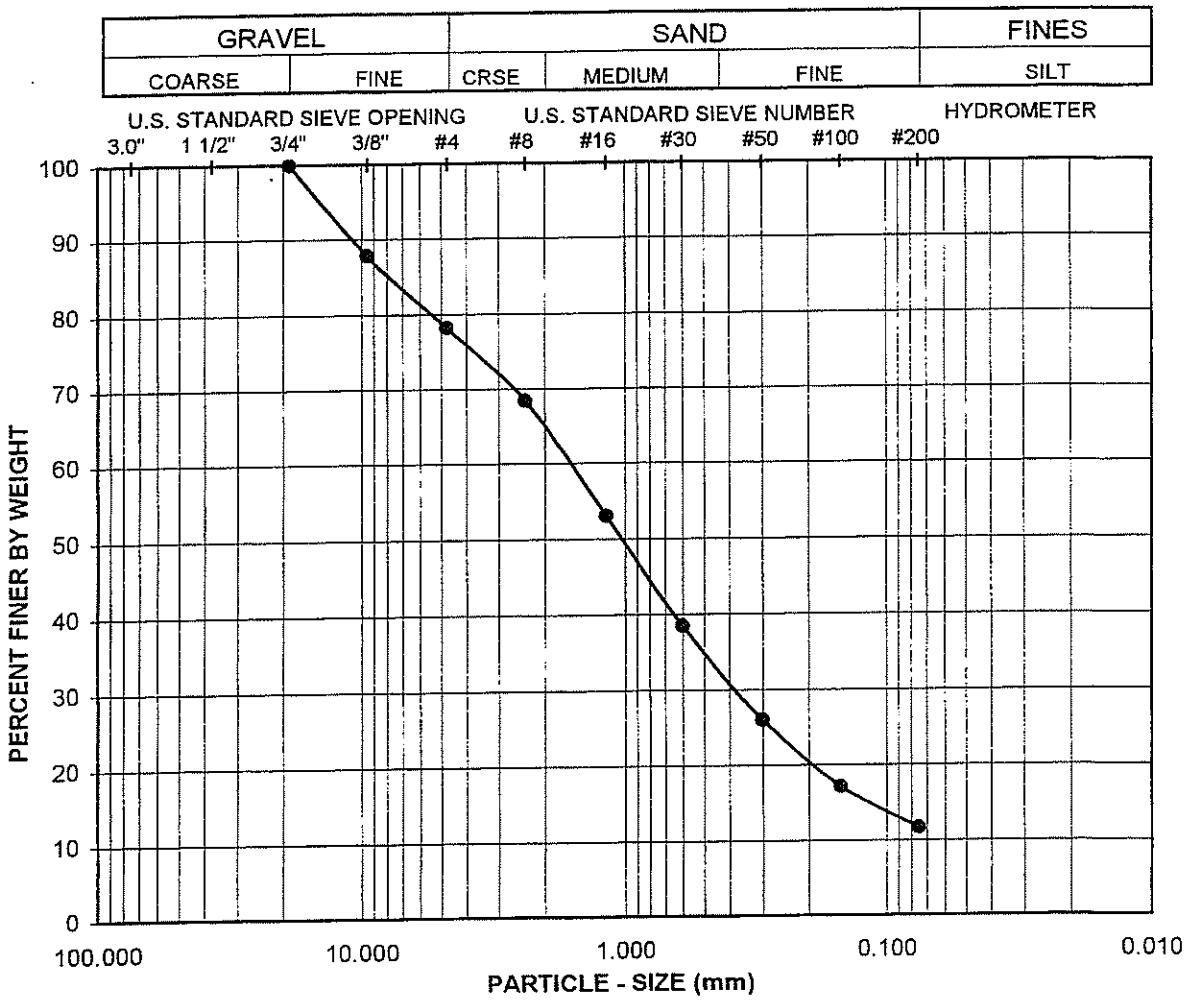
After Wet Sieve	Container No.	780
	Wt. of Dry Soil + Container (gm.)	564.70
	Wt. of Container (gm.)	75.63
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	489.07

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	67.47	87.8
#4	4.750	120.20	78.2
#8	2.360	174.54	68.4
#16	1.180	259.38	53.0
#30	0.600	339.30	38.5
#50	0.300	408.31	26.0
#100	0.150	456.59	17.2
#200	0.075	487.06	11.7
PAN			

GRAVEL:	**22 %**	Liquid Limit:	
SAND:	**66 %**	Plastic Limit	
FINES:	**12 %**	Plasticity Index:	
GRP. SYMBOL:	**(SW-SM)g**	Cu = D60/D10 =	32.00
		Cc = $(D30)^2/(D60*D10)$ =	1.81

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK194	AA3-MW07	25-25.5	(SW-SM)g	22 : 66 : 12	, N/A,

Visual Sample Description:

Pale brown well-graded sand with silt and gravel (SW-SM)g

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK194.xls

Teralast Labs, Inc.

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK199	Depth (ft.):	50-50.5		
Exploration Location:	AA3-MW07				

Visual Sample Description: Pale yellow silty sand (SM)

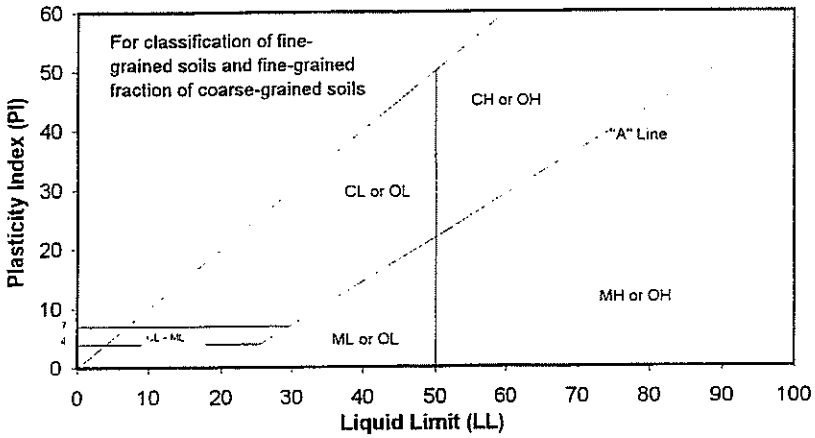
		Moisture Content of Total Air - Dry Soil	
Container No.:	533	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	393.31	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	77.02	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	316.29	Moisture Content (%)	0.00

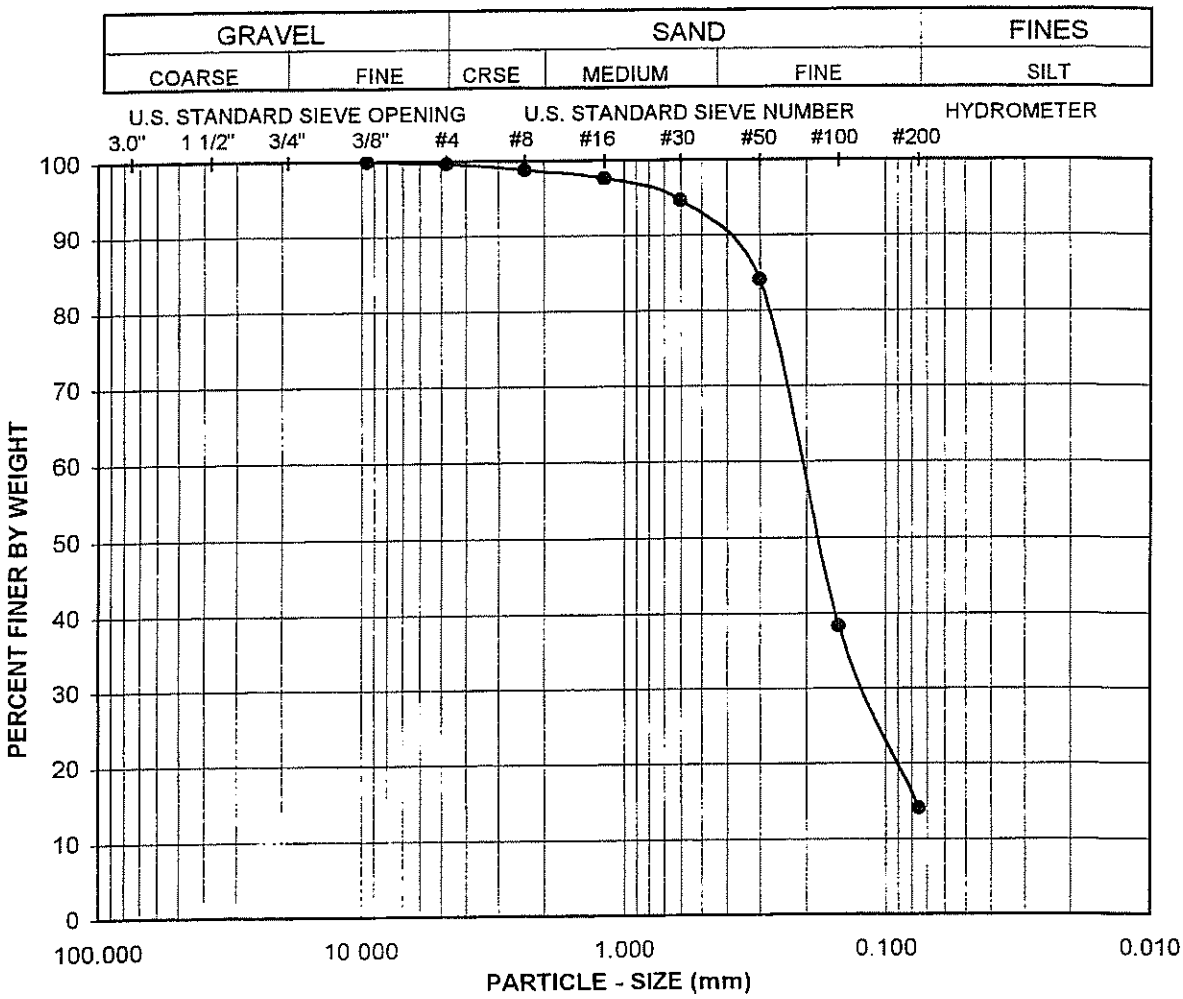
After Wet Sieve	Container No.	533
	Wt. of Dry Soil + Container (gm.)	351.49
	Wt. of Container (gm.)	77.02
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	274.47

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	0.84	99.7
#8	2.360	3.75	98.8
#16	1.180	7.69	97.6
#30	0.600	16.90	94.7
#50	0.300	50.26	84.1
#100	0.150	195.12	38.3
#200	0.075	272.15	14.0
PAN			

GRAVEL:	**0 %**	Liquid Limit:	
SAND:	**86 %**	Plastic Limit	
FINES:	**14 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK199	AA3-MW07	50-50.5	SM	0 : 86 : 14	, N/A,

Visual Sample Description:
Pale yellow silty sand (SM)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK199.xls

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK202	Depth (ft.):	11-11.5		
Exploration Location:	AA3-MW08				

Visual Sample Description: Brown silt with sand (ML)s

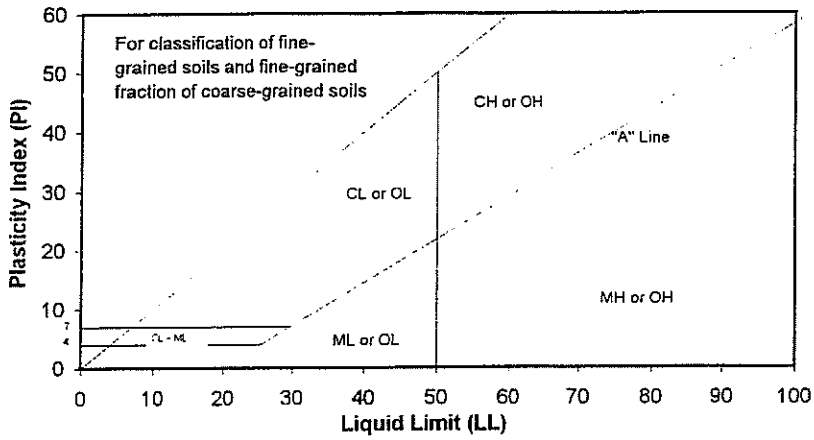
		Moisture Content of Total Air - Dry Soil	
Container No.:	549	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	319.13	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	77.62	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	241.51	Moisture Content (%)	0.00

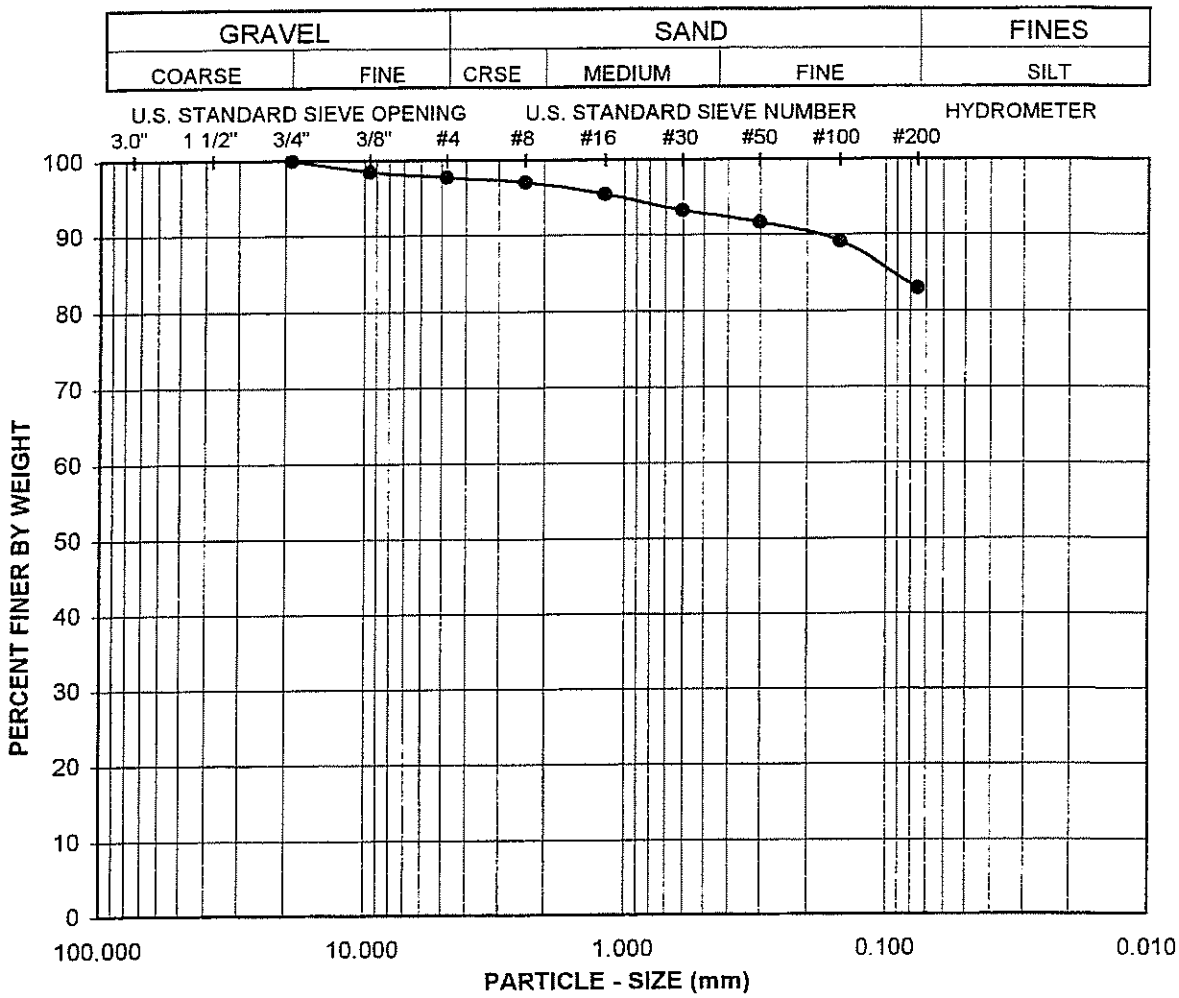
After Wet Sieve	Container No.	549
	Wt. of Dry Soil + Container (gm.)	122.74
	Wt. of Container (gm.)	77.62
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	45.12

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	3.63	98.5
#4	4.750	5.57	97.7
#8	2.360	7.21	97.0
#16	1.180	11.08	95.4
#30	0.600	16.32	93.2
#50	0.300	20.28	91.6
#100	0.150	26.40	89.1
#200	0.075	41.34	82.9
PAN			

GRAVEL:	**2 %**	Liquid Limit:	
SAND:	**15 %**	Plastic Limit	
FINES:	**83 %**	Plasticity Index:	
GRP. SYMBOL:	**(ML)s**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK202	AA3-MW08	11-11.5	(ML)s	2 : 15 : 83	, N/A,

Visual Sample Description:
Brown silt with sand (ML)s

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK202.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK203	Depth (ft.):	16-16.5		
Exploration Location:	AA3-MW08				

Visual Sample Description: Brown silty sand (SM)

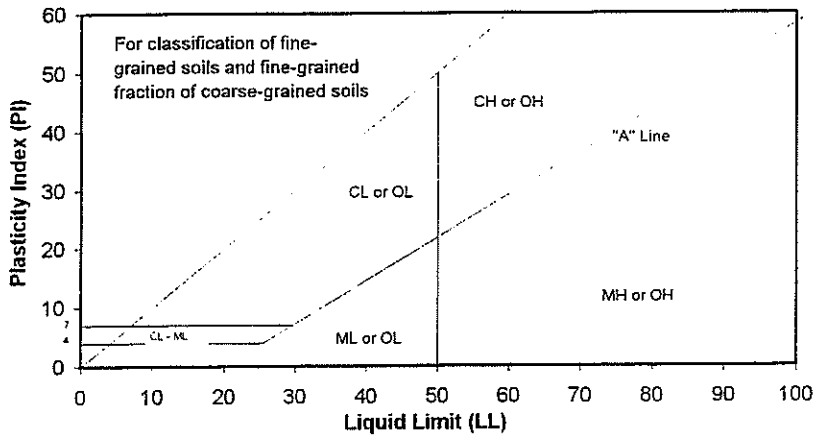
		Moisture Content of Total Air - Dry Soil	
Container No.:	737	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	476.99	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.42	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	400.57	Moisture Content (%)	0.00

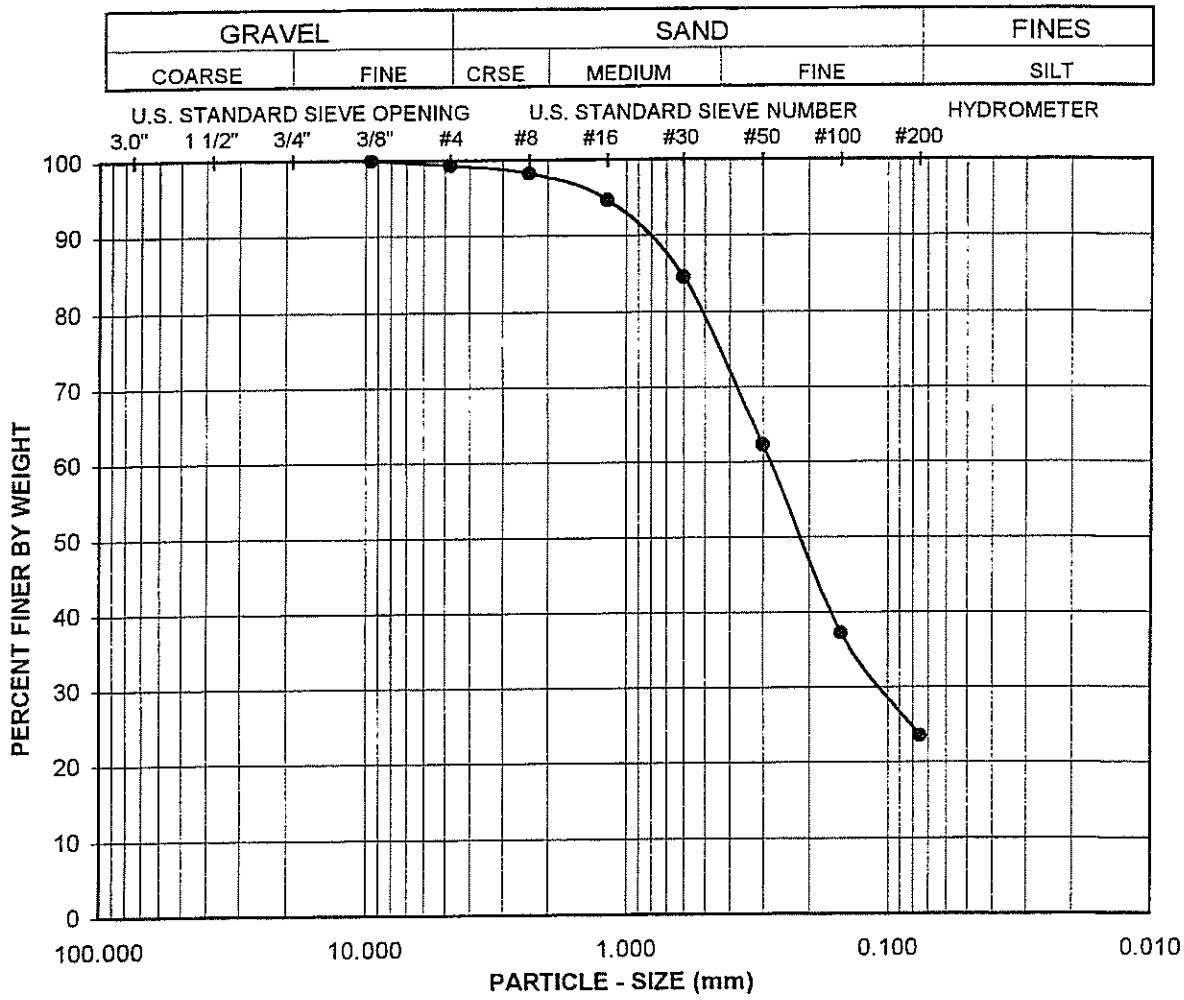
After Wet Sieve	Container No.	737
	Wt. of Dry Soil + Container (gm.)	387.36
	Wt. of Container (gm.)	76.42
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	310.94

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	2.74	99.3
#8	2.360	7.34	98.2
#16	1.180	21.41	94.7
#30	0.600	62.18	84.5
#50	0.300	150.87	62.3
#100	0.150	251.62	37.2
#200	0.075	306.49	23.5
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	75 %	Plastic Limit	
FINES:	24 %	Plasticity Index:	
GRP. SYMBOL:	SM	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK203	AA3-MW08	16-16.5	SM	1 : 75 : 24	, N/A,

Visual Sample Description:
Brown silty sand (SM)

Terrasient Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK203.xls

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS
ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK205	Depth (ft.):	26-26.5		
Exploration Location:	AA3-MW08				

Visual Sample Description: Brown clayey sand (SC)

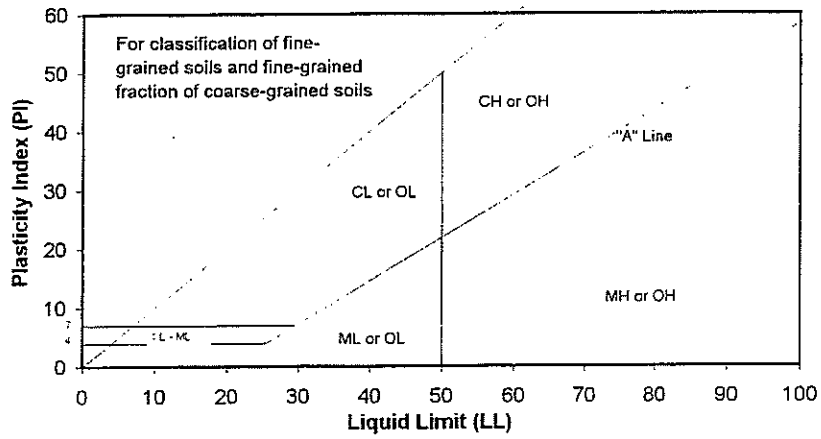
		Moisture Content of Total Air - Dry Soil	
Container No.:	724	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	497.98	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.71	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	421.27	Moisture Content (%)	0.00

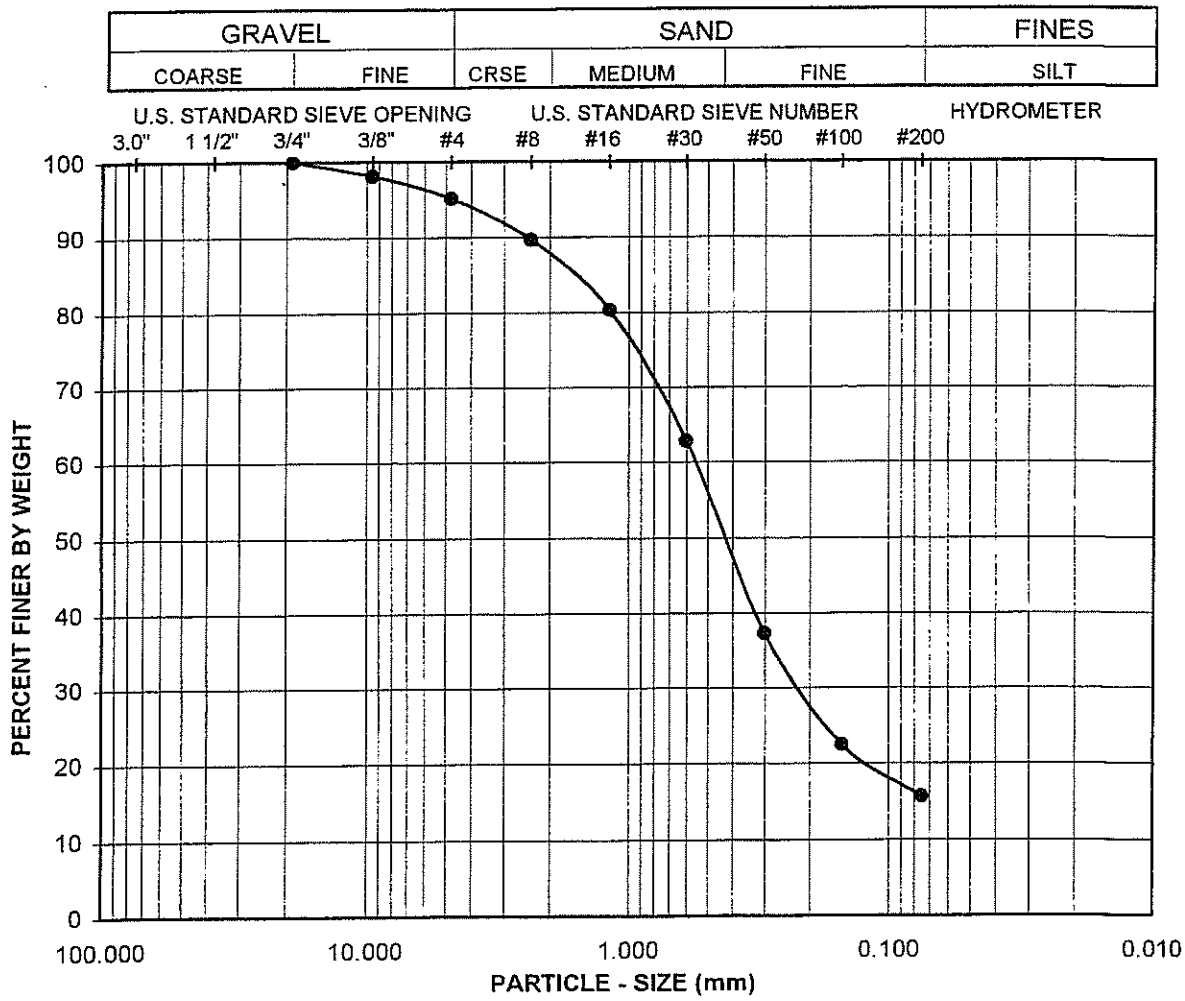
After Wet Sieve	Container No.	724
	Wt. of Dry Soil + Container (gm.)	434.07
	Wt. of Container (gm.)	76.71
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	357.36

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	8.07	98.1
#4	4.750	20.35	95.2
#8	2.360	43.22	89.7
#16	1.180	83.13	80.3
#30	0.600	156.85	62.8
#50	0.300	264.00	37.3
#100	0.150	326.39	22.5
#200	0.075	355.60	15.6
PAN			

GRAVEL:	5 %	Liquid Limit:	
SAND:	79 %	Plastic Limit	
FINES:	16 %	Plasticity Index:	
GRP. SYMBOL:	SC	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK205	AA3-MW08	26-26.5	SC	5 : 79 : 16	, N/A,

Visual Sample Description:
Brown clayey sand (SC)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK205.xls

Teralest Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK207	Depth (ft.):	6-6.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Brown poorly graded sand with silt (SP-SM)

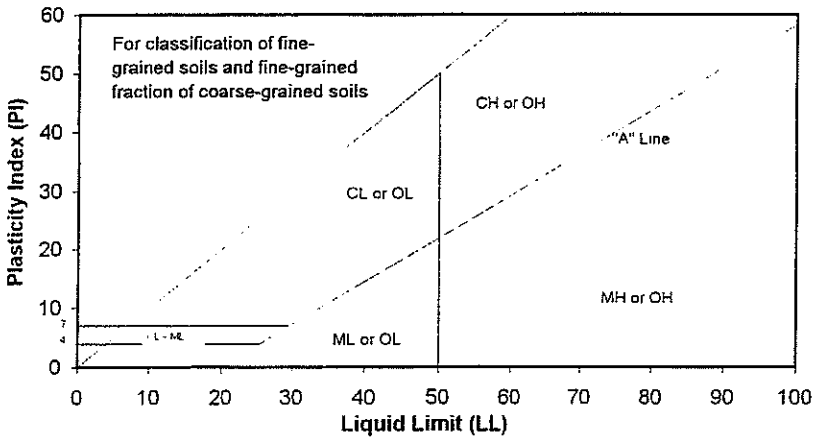
		Moisture Content of Total Air - Dry Soil	
Container No.:	NG18	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	468.46	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	74.31	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	394.15	Moisture Content (%)	0.00

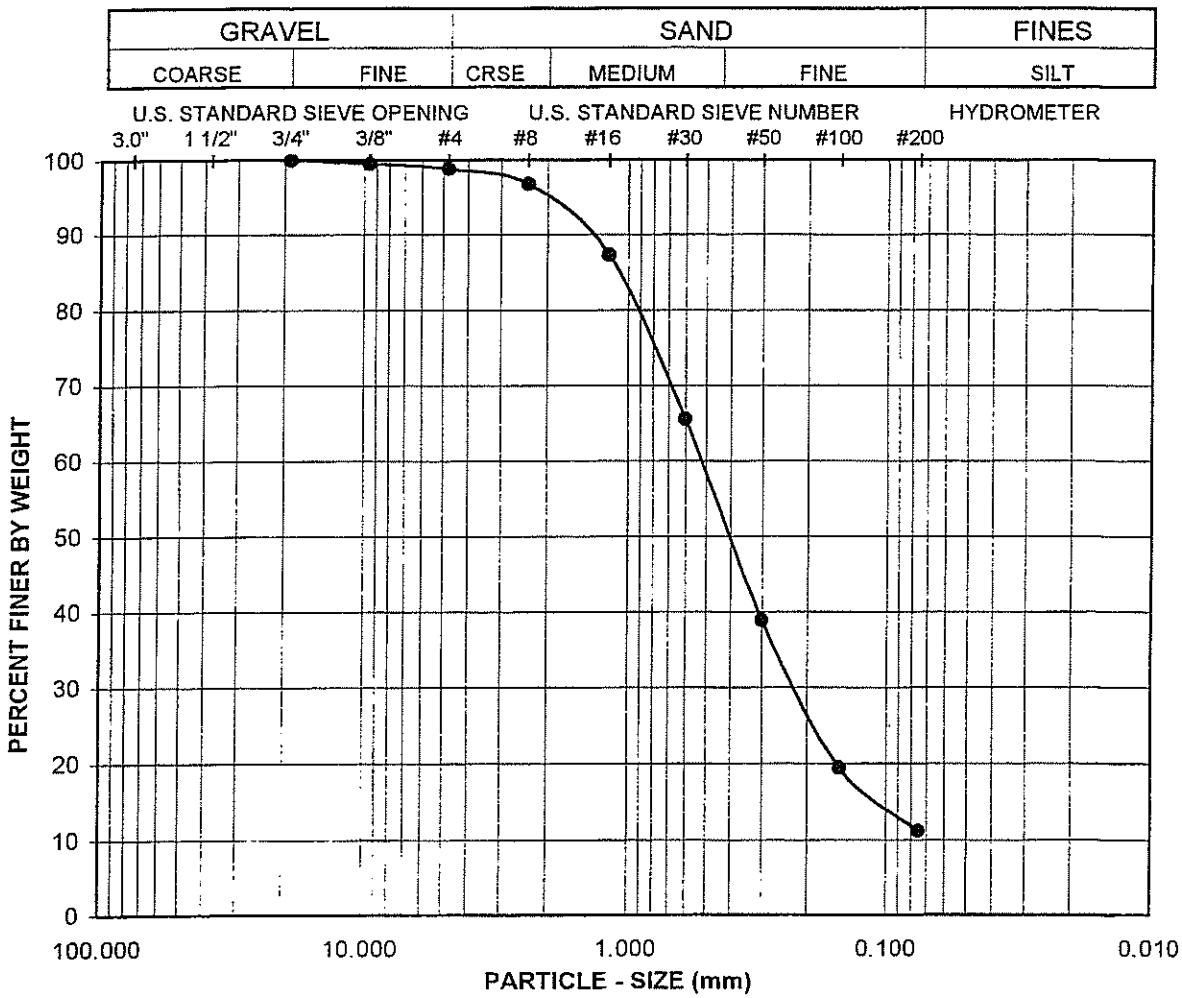
After Wet Sieve	Container No.	NG18
	Wt. of Dry Soil + Container (gm.)	425.38
	Wt. of Container (gm.)	74.31
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	351.07

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	1.81	99.5
#4	4.750	4.82	98.8
#8	2.360	12.64	96.8
#16	1.180	49.93	87.3
#30	0.600	135.99	65.5
#50	0.300	241.02	38.9
#100	0.150	317.66	19.4
#200	0.075	349.91	11.2
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	88 %	Plastic Limit	
FINES:	11 %	Plasticity Index:	
GRP. SYMBOL:	SP-SM	Cu = D60/D10 =	8.67
		Cc = (D30)²/(D60*D10) =	0.54

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK207	AA3-MW09	6-6.5	SP-SM	1 : 88 : 11	, N/A,

Visual Sample Description:
Brown poorly graded sand with silt (SP-SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK207.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK209	Depth (ft.):	16-16.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Brown silty sand (SM)

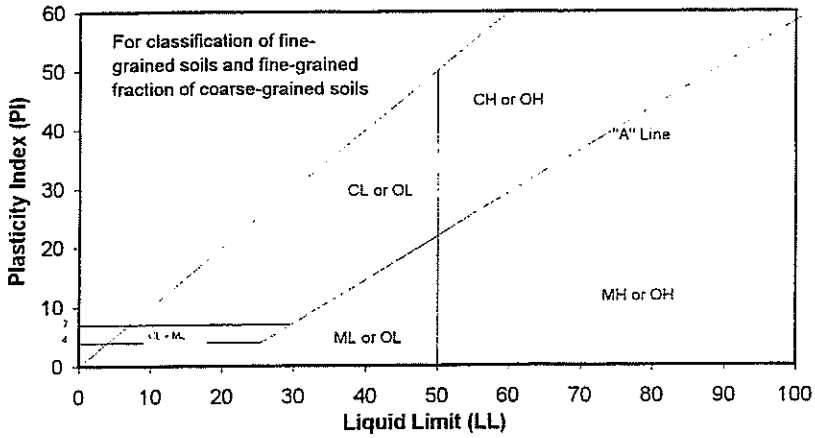
		Moisture Content of Total Air - Dry Soil	
Container No.:	784	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	419.66	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.73	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	342.93	Moisture Content (%)	0.00

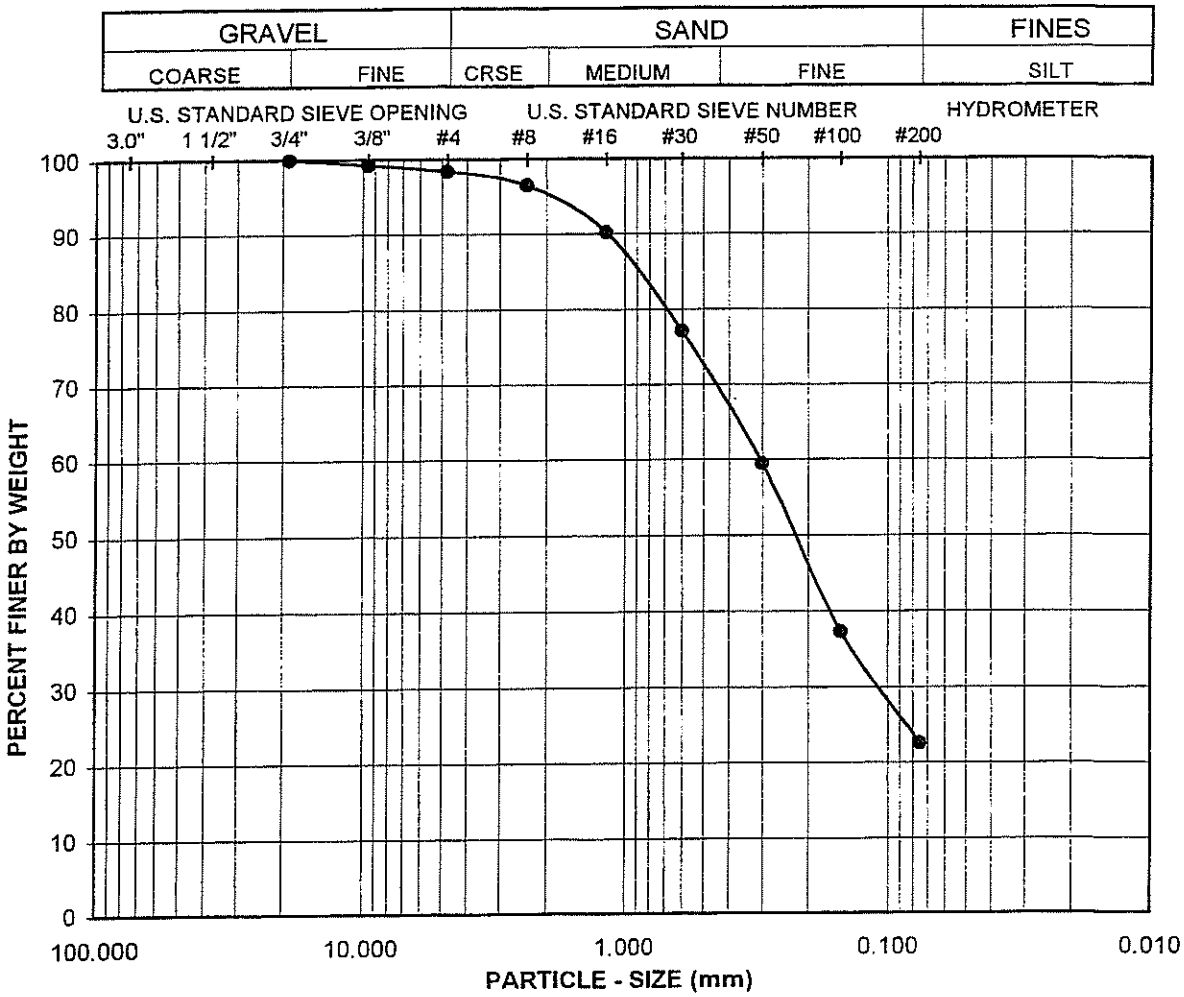
After Wet Sieve	Container No.	784
	Wt. of Dry Soil + Container (gm.)	345.33
	Wt. of Container (gm.)	76.73
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	268.60

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	2.74	99.2
#4	4.750	5.35	98.4
#8	2.360	12.04	96.5
#16	1.180	33.60	90.2
#30	0.600	78.52	77.1
#50	0.300	139.18	59.4
#100	0.150	214.86	37.3
#200	0.075	265.56	22.6
PAN			

GRAVEL:	**2 %**	Liquid Limit:	
SAND:	**75 %**	Plastic Limit	
FINES:	**23 %**	Plasticity Index:	
GRP. SYMBOL:	**SM**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK209	AA3-MW09	16-16.5	SM	2 : 75 : 23	, N/A,

Visual Sample Description:
Brown silty sand (SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK209.xls

Terratest Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS
ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK212	Depth (ft.):	31-31.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Yellowish brown well-graded gravel with silt and sand (GW-GM)s

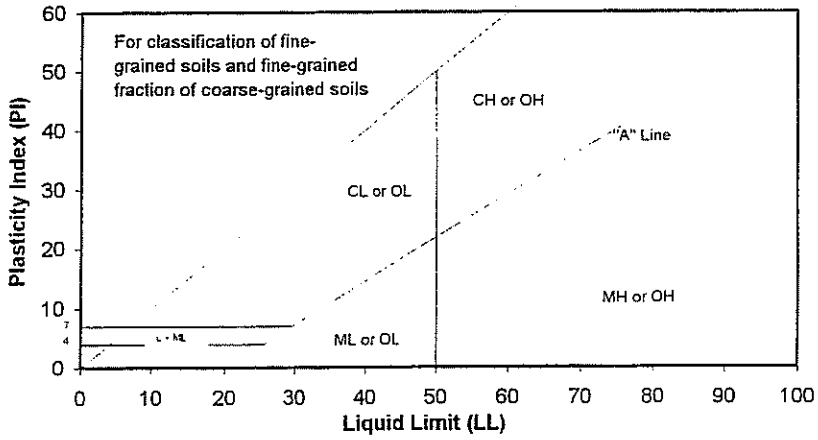
		Moisture Content of Total Air - Dry Soil	
Container No.:	1955	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	871.30	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	72.14	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	799.16	Moisture Content (%)	0.00

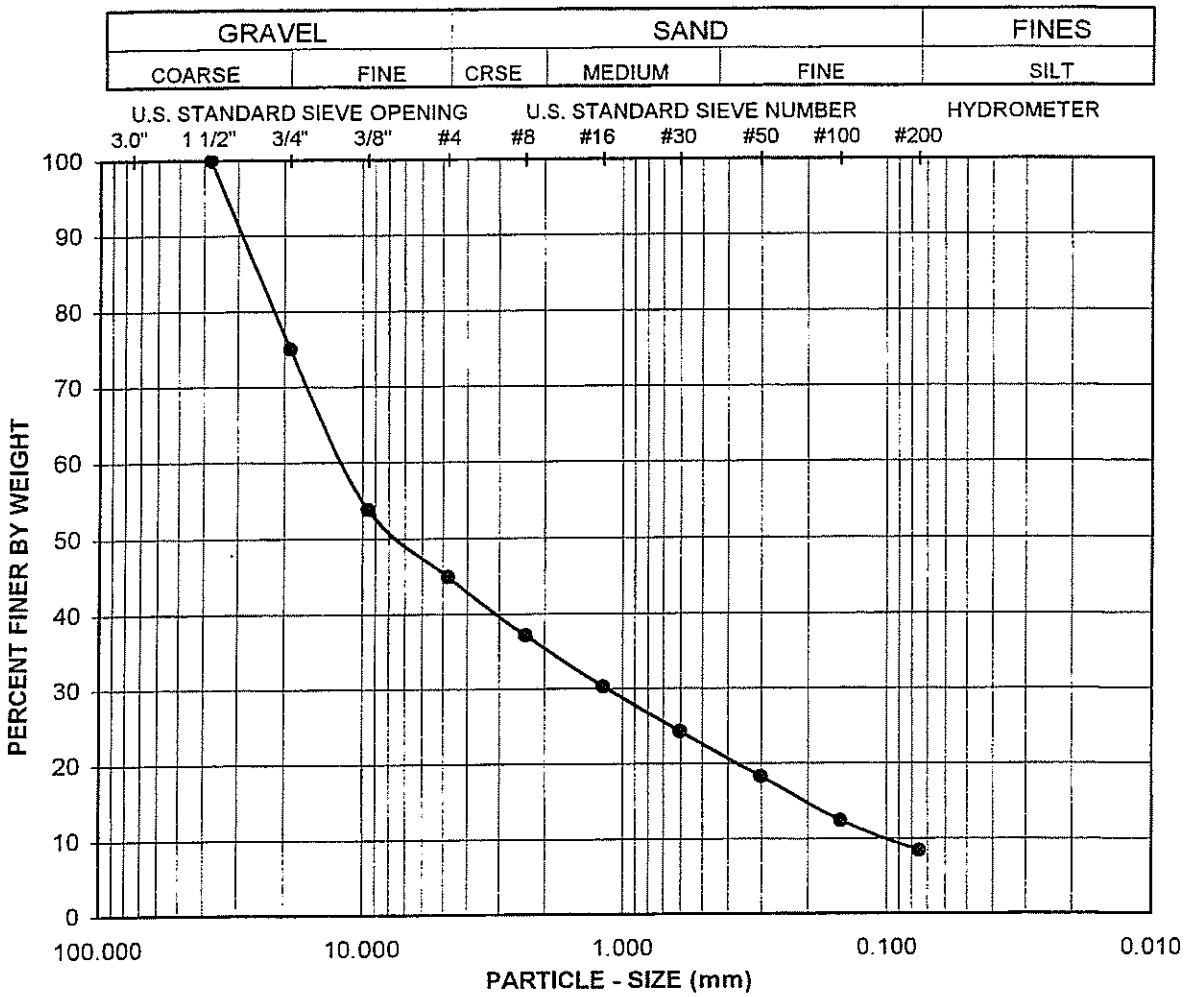
After Wet Sieve	Container No.	1955
	Wt. of Dry Soil + Container (gm.)	806.63
	Wt. of Container (gm.)	72.14
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	734.49

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	100.0
3/4"	19.000	199.47	75.0
3/8"	9.500	368.98	53.8
#4	4.750	440.64	44.9
#8	2.360	502.81	37.1
#16	1.180	556.83	30.3
#30	0.600	604.90	24.3
#50	0.300	653.20	18.3
#100	0.150	701.00	12.3
#200	0.075	732.30	8.4
PAN			

GRAVEL:	55 %	Liquid Limit:	
SAND:	37 %	Plastic Limit	
FINES:	8 %	Plasticity Index:	
GRP. SYMBOL:	(GW-GM)s	Cu = D60/D10 =	120.00
		Cc = $(D30)^2/(D60*D10)$ =	1.20

Remarks: Insufficient sample mass available to meet the ASTM specification for this material





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK212	AA3-MW09	31-31.5	(GW-GM)s	55 : 37 : 8	, N/A,

Visual Sample Description:
Yellowish brown well-graded gravel with silt and sand (GW-GM)s

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK212.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK214	Depth (ft.):	40-41.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Olive yellow poorly graded sand (SP)

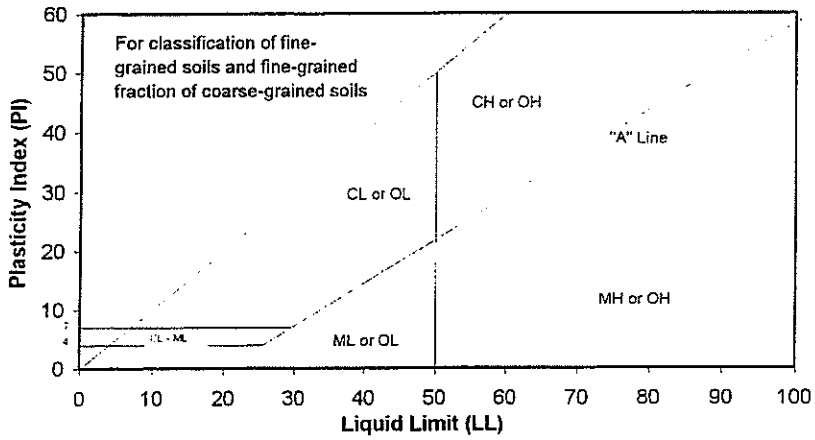
		Moisture Content of Total Air - Dry Soil	
Container No.:	884	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	655.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.03	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	580.57	Moisture Content (%)	0.00

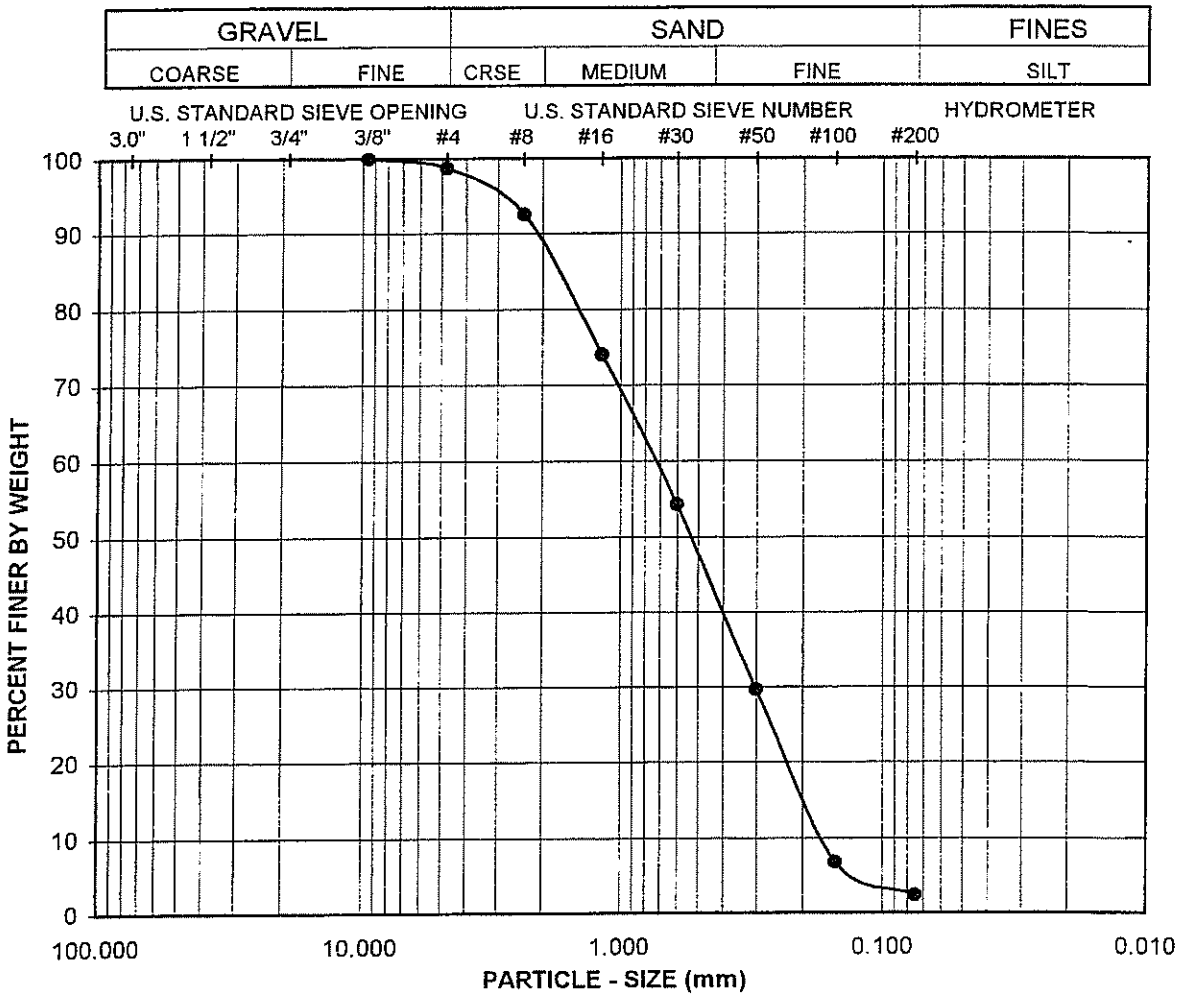
After Wet Sieve	Container No.	884
	Wt. of Dry Soil + Container (gm.)	642.00
	Wt. of Container (gm.)	75.03
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	566.97

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	7.62	98.7
#8	2.360	43.25	92.6
#16	1.180	150.77	74.0
#30	0.600	265.21	54.3
#50	0.300	408.08	29.7
#100	0.150	541.12	6.8
#200	0.075	566.82	2.4
PAN			

GRAVEL:	**1 %**	Liquid Limit:	
SAND:	**97 %**	Plastic Limit	
FINES:	**2 %**	Plasticity Index:	
GRP. SYMBOL:	**SP**	Cu = D60/D10 =	3.94
		Cc = $(D30)^2/(D60*D10)$ =	0.70

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK214	AA3-MW09	40-41.5	SP	1 : 97 : 2	, N/A,

Visual Sample Description:
Olive yellow poorly graded sand (SP)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK214.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK216	Depth (ft.):	50-51.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Pale yellow poorly graded sand with silt (SP-SM)

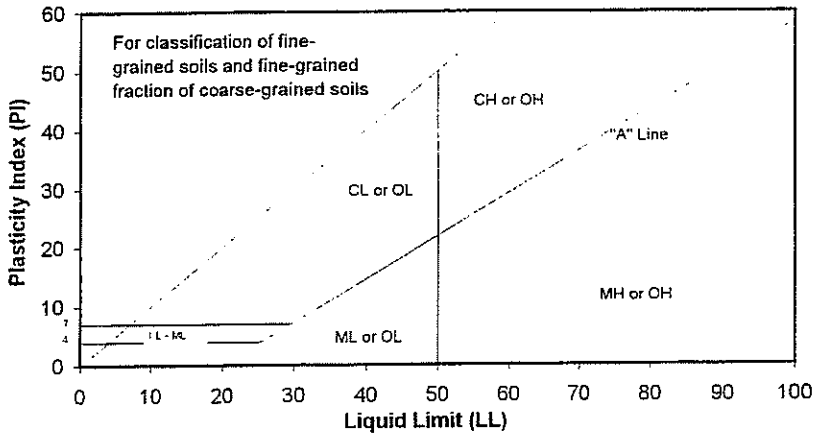
		Moisture Content of Total Air - Dry Soil	
Container No.:	4-C	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	757.20	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	107.92	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	649.28	Moisture Content (%)	0.00

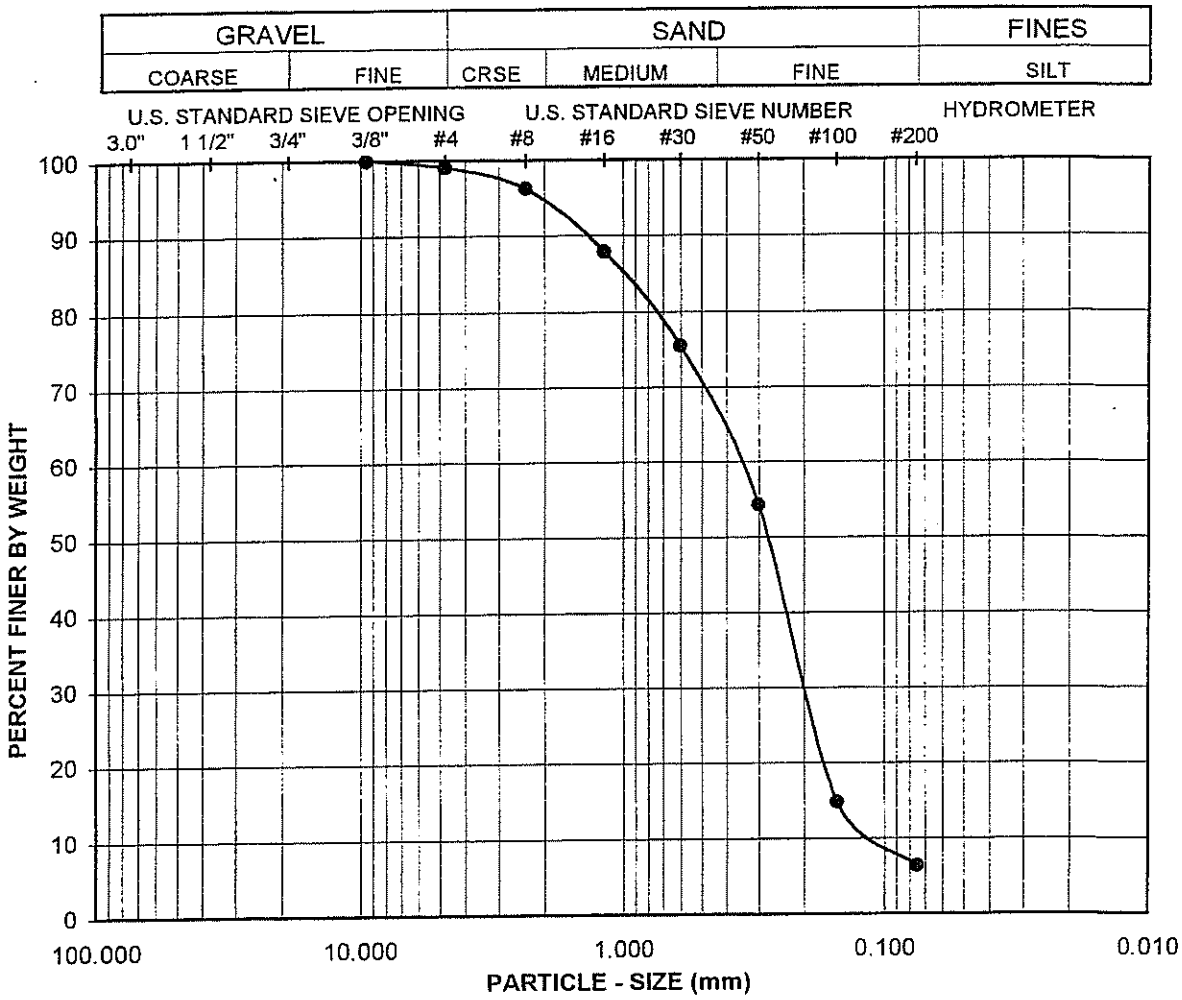
After Wet Sieve	Container No.	4-C
	Wt. of Dry Soil + Container (gm.)	718.10
	Wt. of Container (gm.)	107.92
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	610.18

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	5.92	99.1
#8	2.360	23.90	96.3
#16	1.180	78.29	87.9
#30	0.600	159.35	75.5
#50	0.300	296.72	54.3
#100	0.150	553.00	14.8
#200	0.075	608.30	6.3
PAN			

GRAVEL:	**1 %**	Liquid Limit:	
SAND:	**93 %**	Plastic Limit	
FINES:	**6 %**	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	2.88
		Cc = $(D30)^2/(D60*D10)$ =	0.97

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK216	AA3-MW09	50-51.5	SP-SM	1 : 93 : 6	, N/A,

Visual Sample Description:
Pale yellow poorly graded sand with silt (SP-SM)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK216.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK219	Depth (ft.):	65-66.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Olive yellow poorly graded sand (SP)

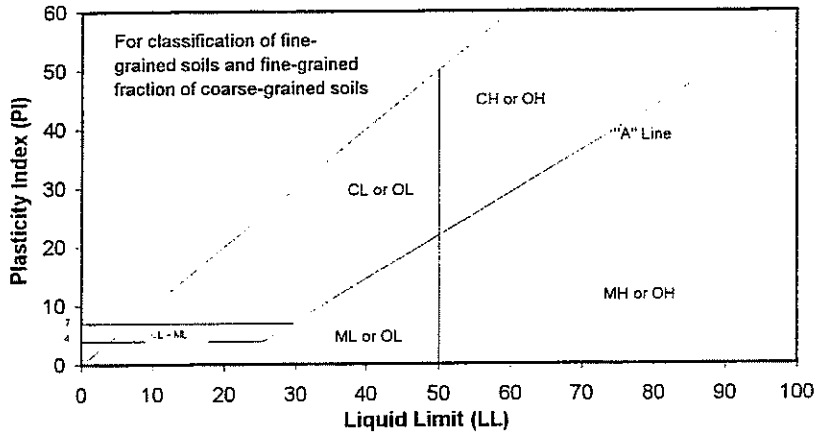
		Moisture Content of Total Air - Dry Soil	
Container No.:	934	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	847.80	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	107.70	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	740.10	Moisture Content (%)	0.00

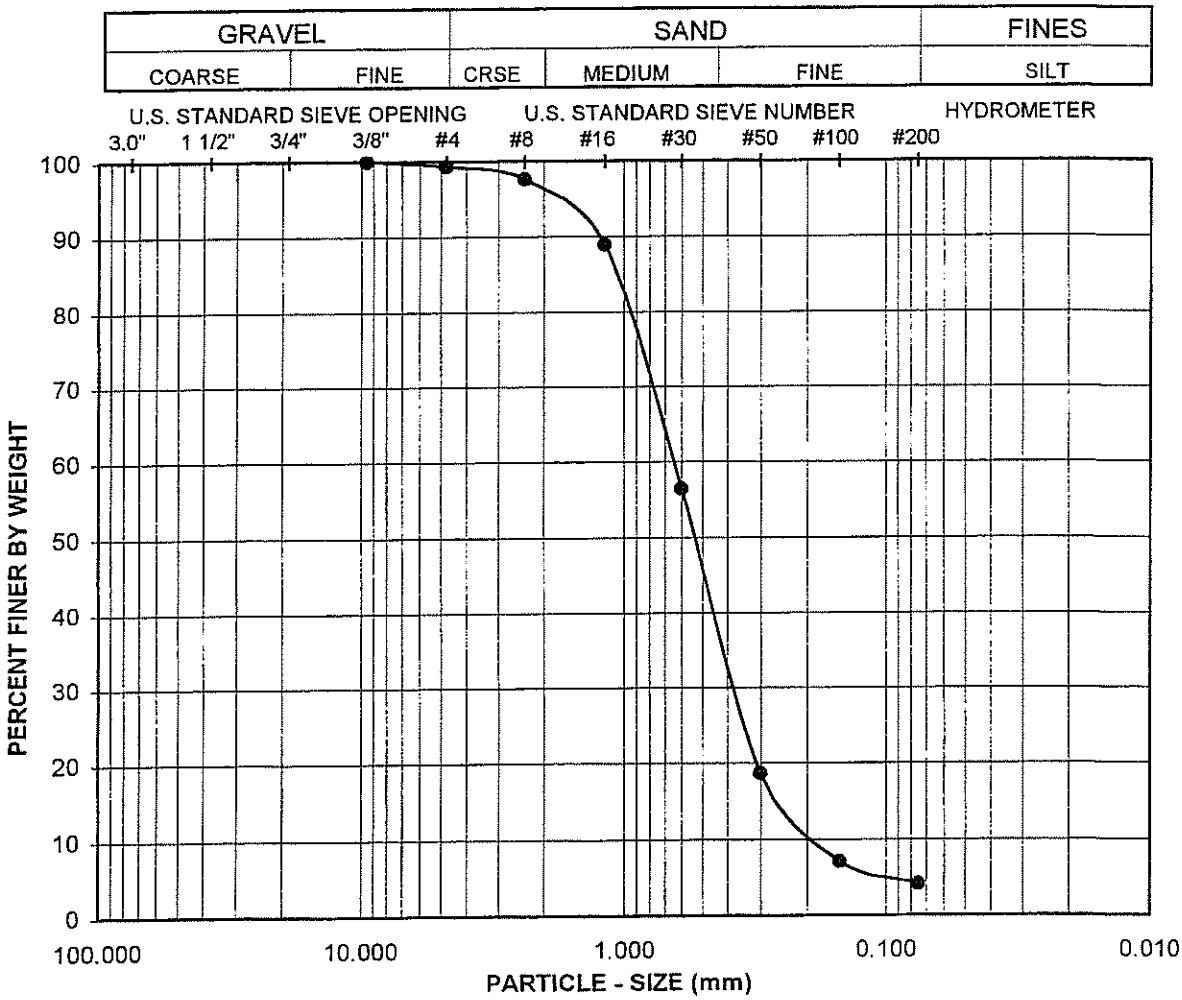
After Wet Sieve	Container No.	934
	Wt. of Dry Soil + Container (gm.)	818.10
	Wt. of Container (gm.)	107.70
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	710.40

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	5.04	99.3
#8	2.360	18.11	97.6
#16	1.180	82.09	88.9
#30	0.600	321.74	56.5
#50	0.300	601.70	18.7
#100	0.150	687.30	7.1
#200	0.075	710.10	4.1
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	95 %	Plastic Limit	
FINES:	4 %	Plasticity Index:	
GRP. SYMBOL:	SP	Cu = D60/D10 =	3.20
		Cc = $(D30)^2/(D60*D10)$ =	1.13

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK219	AA3-MW09	65-66.5	SP	1 : 95 : 4	, N/A,

Visual Sample Description:
Olive yellow poorly graded sand (SP)

Terraset Labs, Inc.

Project No.: 37380 / CTO 0078
Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

12-02

SA LK219.xls

Terralab Labs, Inc.
A LEIGHTON GROUP COMPANY

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/09/02
Sample ID:	LK222	Depth (ft.):	80-81.5		
Exploration Location:	AA3-MW09				

Visual Sample Description: Olive yellow poorly graded sand with silt (SP-SM)

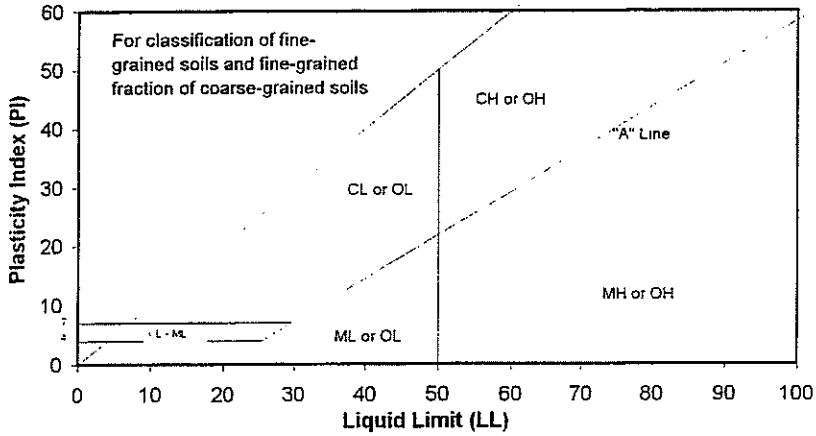
		Moisture Content of Total Air - Dry Soil	
Container No.:	954	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	1202.30	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	108.88	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	1093.42	Moisture Content (%)	0.00

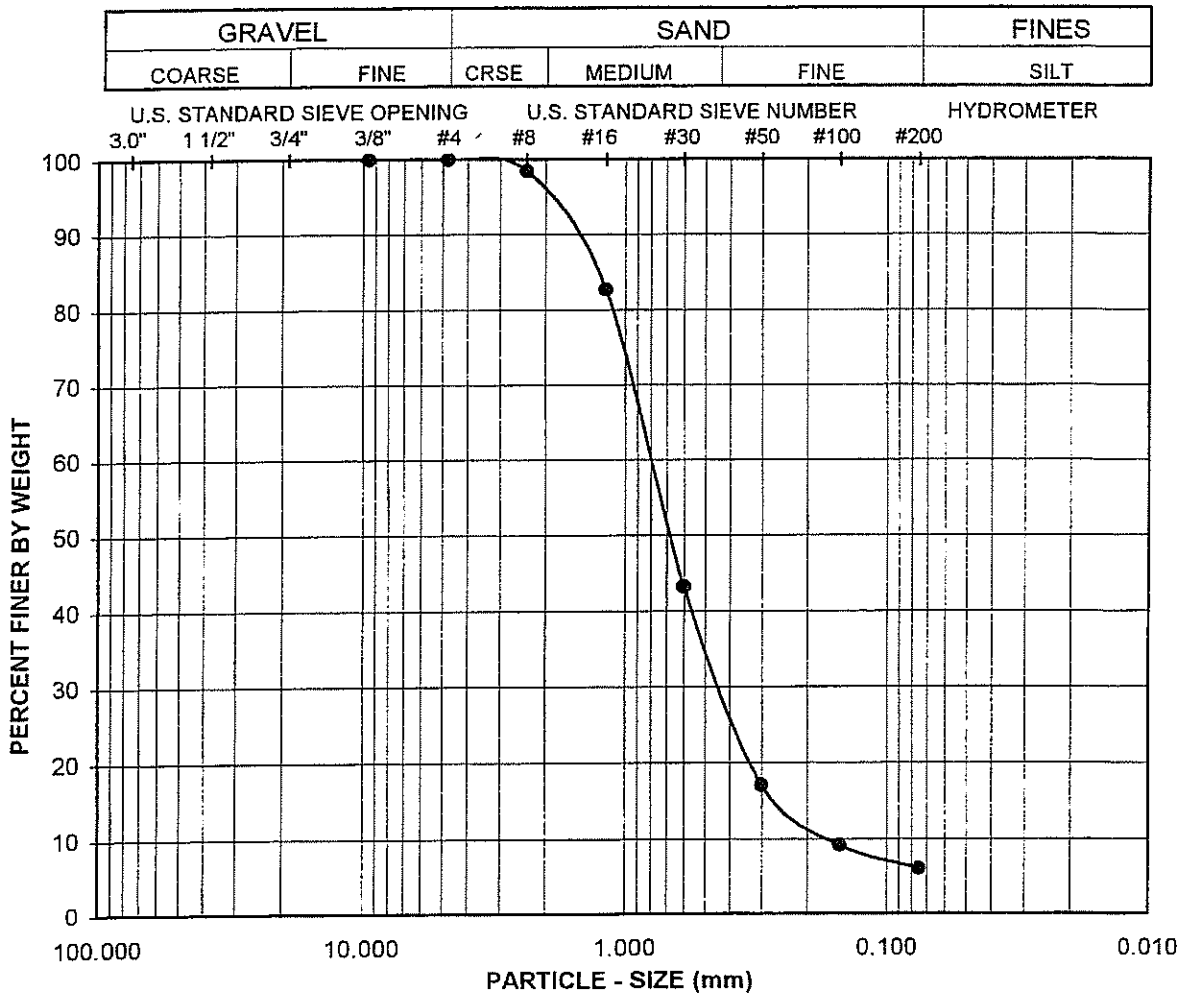
After Wet Sieve	Container No.	954
	Wt. of Dry Soil + Container (gm.)	1137.70
	Wt. of Container (gm.)	108.88
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	1028.82

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	0.17	100.0
#8	2.360	16.93	98.5
#16	1.180	188.79	82.7
#30	0.600	621.20	43.2
#50	0.300	906.10	17.1
#100	0.150	993.80	9.1
#200	0.075	1027.80	6.0
PAN			

GRAVEL:	0 %	Liquid Limit:	
SAND:	94 %	Plastic Limit	
FINES:	6 %	Plasticity Index:	
GRP. SYMBOL:	SP-SM	Cu = D60/D10 =	4.71
		Cc = $(D30)^2/(D60*D10)$ =	1.49

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK222	AA3-MW09	80-81.5	SP-SM	0 : 94 : 6	,N/A,

Visual Sample Description:
Olive yellow poorly graded sand with silt (SP-SM)

Terrasat Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK222.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/10/02
Sample ID:	LK224	Depth (ft.):	6-6.5		
Exploration Location:	AA3-MW10				

Visual Sample Description: Brown clayey sand with gravel (SC)g

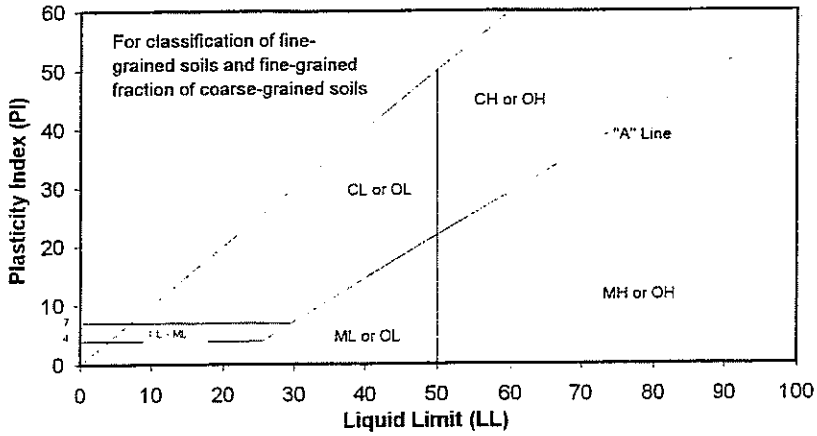
		Moisture Content of Total Air - Dry Soil	
Container No.:	RX-21	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	712.50	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	74.15	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	638.35	Moisture Content (%)	0.00

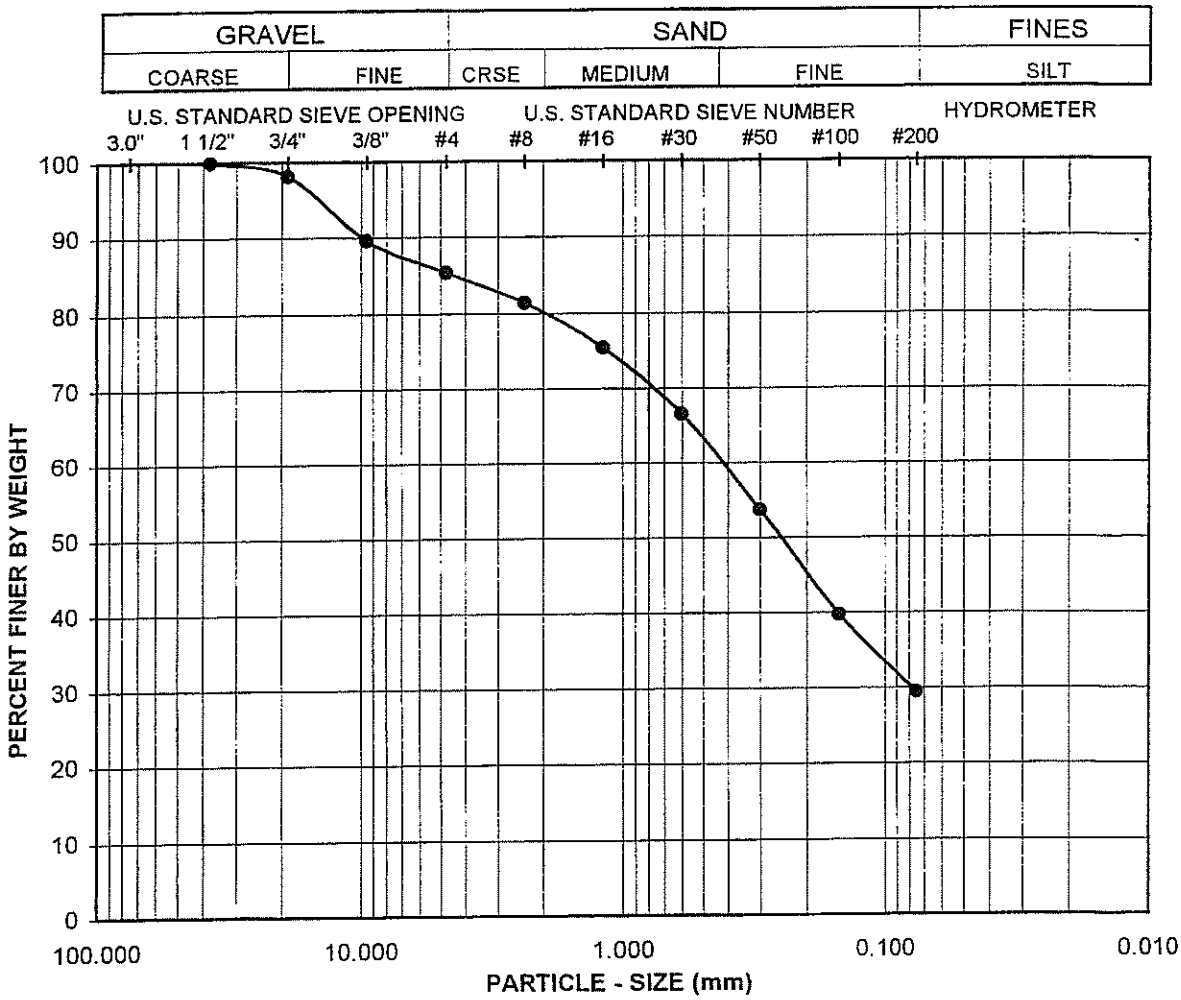
After Wet Sieve	Container No.	RX-21
	Wt. of Dry Soil + Container (gm.)	530.20
	Wt. of Container (gm.)	74.15
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	456.05

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	100.0
3/4"	19.000	12.28	98.1
3/8"	9.500	66.40	89.6
#4	4.750	93.00	85.4
#8	2.360	118.58	81.4
#16	1.180	156.91	75.4
#30	0.600	213.76	66.5
#50	0.300	295.76	53.7
#100	0.150	384.95	39.7
#200	0.075	450.83	29.4
PAN			

GRAVEL:	**15 %**	Liquid Limit:	
SAND:	**56 %**	Plastic Limit	
FINES:	**29 %**	Plasticity Index:	
GRP. SYMBOL:	**(SC)g**	Cu = D60/D10 =	
		Cc = $(D30)^2/(D60*D10)$ =	

Remarks: Insufficient sample mass available to meet the ASTM specification for this material





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK224	AA3-MW10	6-6.5	(SC)g	15 : 56 : 29	, N/A,

Visual Sample Description:
Brown clayey sand with gravel (SC)g

Terstriat Labs. Inc

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK224 xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/10/02
Sample ID:	LK227	Depth (ft.):	20.5-21		
Exploration Location:	AA3-MW10				

Visual Sample Description: Brown poorly graded sand with silt (SP-SM)

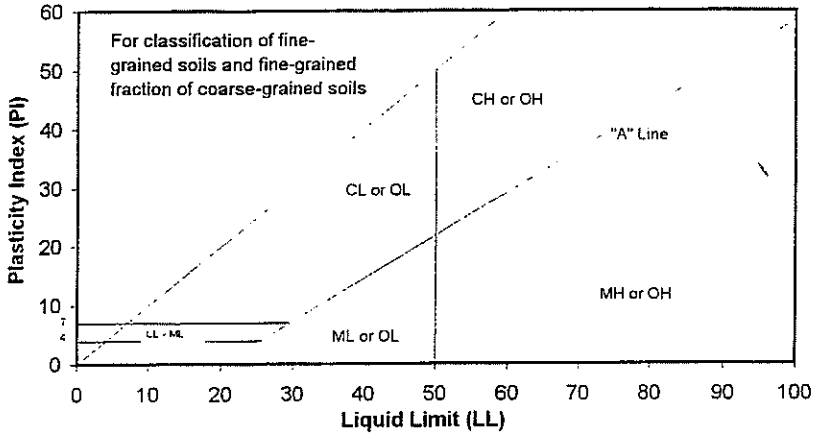
		Moisture Content of Total Air - Dry Soil	
Container No.:	757	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	483.61	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	76.07	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	407.54	Moisture Content (%)	0.00

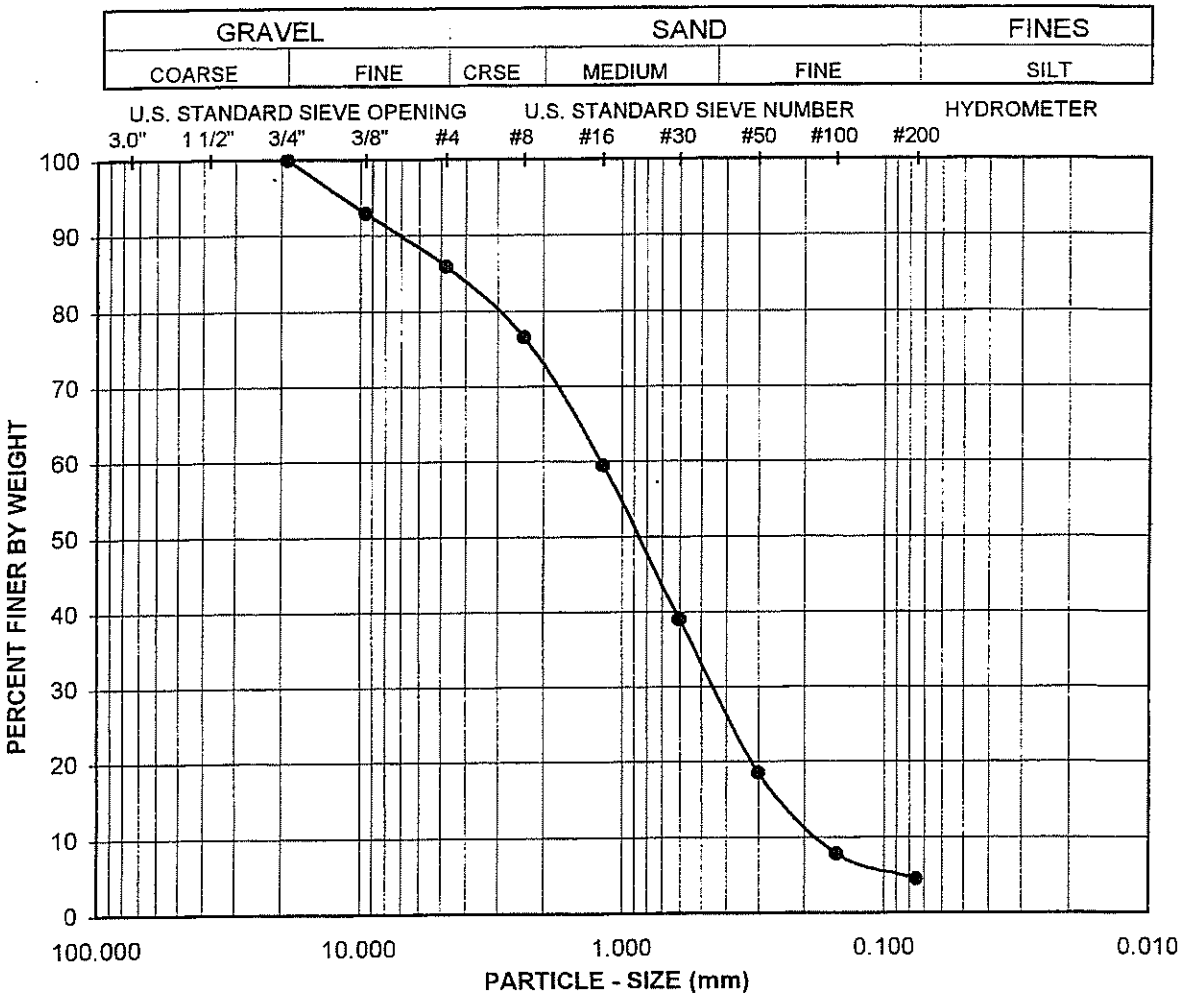
After Wet Sieve	Container No.	757
	Wt. of Dry Soil + Container (gm.)	465.67
	Wt. of Container (gm.)	76.07
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	389.60

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	28.92	92.9
#4	4.750	57.52	85.9
#8	2.360	95.83	76.5
#16	1.180	165.47	59.4
#30	0.600	248.45	39.0
#50	0.300	332.25	18.5
#100	0.150	375.66	7.8
#200	0.075	389.14	4.5
PAN			

GRAVEL:	**14 %**	Liquid Limit:	
SAND:	**81 %**	Plastic Limit	
FINES:	**5 %**	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	6.67
		Cc = $(D30)^2/(D60*D10)$ =	0.94

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK227	AA3-MW10	20.5-21	SP-SM	14 : 81 : 5	, N/A,

Visual Sample Description:
Brown poorly graded sand with silt (SP-SM)

Terratest Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK227.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teratest Labs, Inc.
A LABORATORY GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/10/02
Sample ID:	LK229	Depth (ft.):	31-31.5		
Exploration Location:	AA3-MW10				

Visual Sample Description: Pale yellow poorly graded sand with silt (SP-SM)

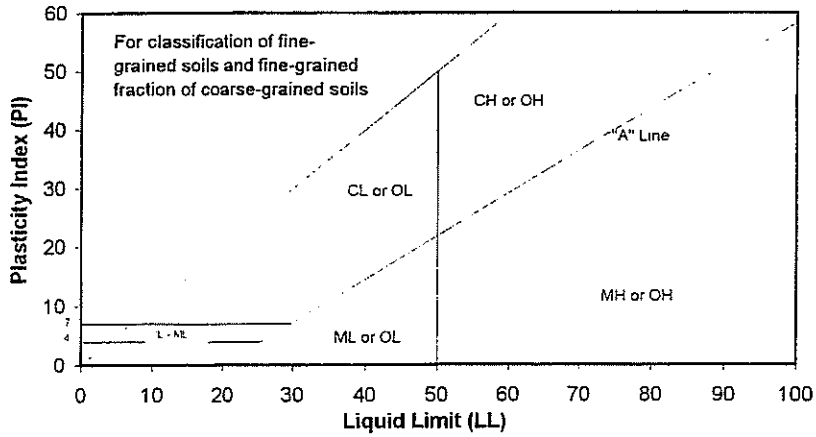
		Moisture Content of Total Air - Dry Soil	
Container No.:	780	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	689.90	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	75.60	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	614.30	Moisture Content (%)	0.00

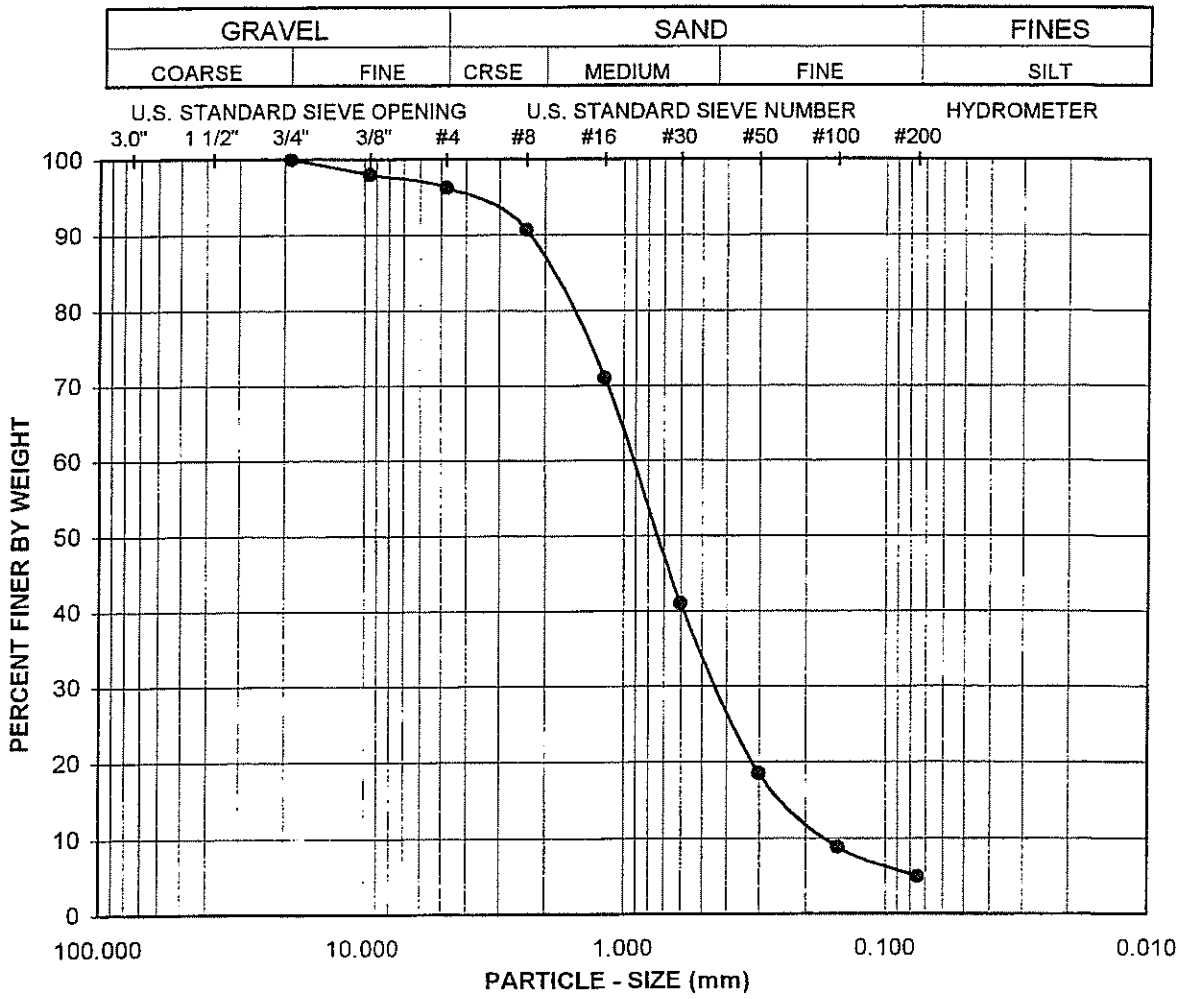
After Wet Sieve	Container No.	780
	Wt. of Dry Soil + Container (gm.)	660.90
	Wt. of Container (gm.)	75.60
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	585.30

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	100.0
3/8"	9.500	12.07	98.0
#4	4.750	22.70	96.3
#8	2.360	57.40	90.7
#16	1.180	178.27	71.0
#30	0.600	362.17	41.0
#50	0.300	500.38	18.5
#100	0.150	560.03	8.8
#200	0.075	584.17	4.9
PAN			

GRAVEL:	**4 %**	Liquid Limit:	
SAND:	**91 %**	Plastic Limit	
FINES:	**5 %**	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	5.29
		Cc = $(D30)^2/(D60*D10)$ =	1.32

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK229	AA3-MW10	31-31.5	SP-SM	4 : 91 : 5	, N/A,

Visual Sample Description:
Pale yellow poorly graded sand with silt (SP-SM)

Project No.: 37380 / CTO 0078
Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

12-02

SA LK229.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/10/02
Sample ID:	LK231	Depth (ft.):	41-41.5		
Exploration Location:	AA3-MW10				

Visual Sample Description: Olive poorly graded sand with silt (SP-SM)

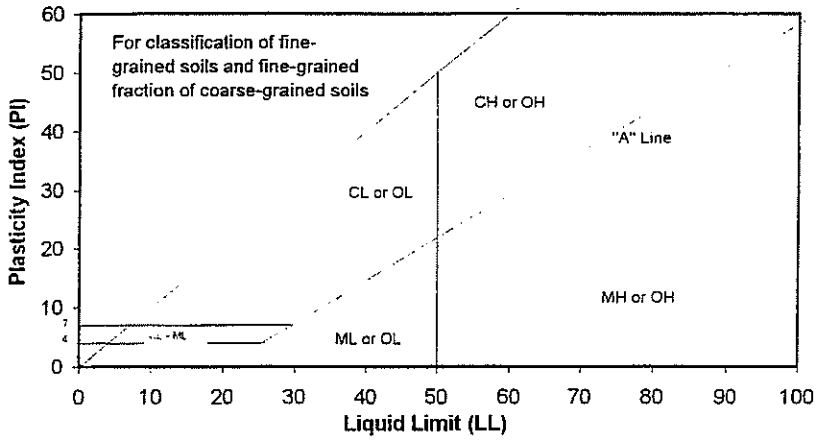
		Moisture Content of Total Air - Dry Soil	
Container No.:	538	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	537.20	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	82.24	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	454.96	Moisture Content (%)	0.00

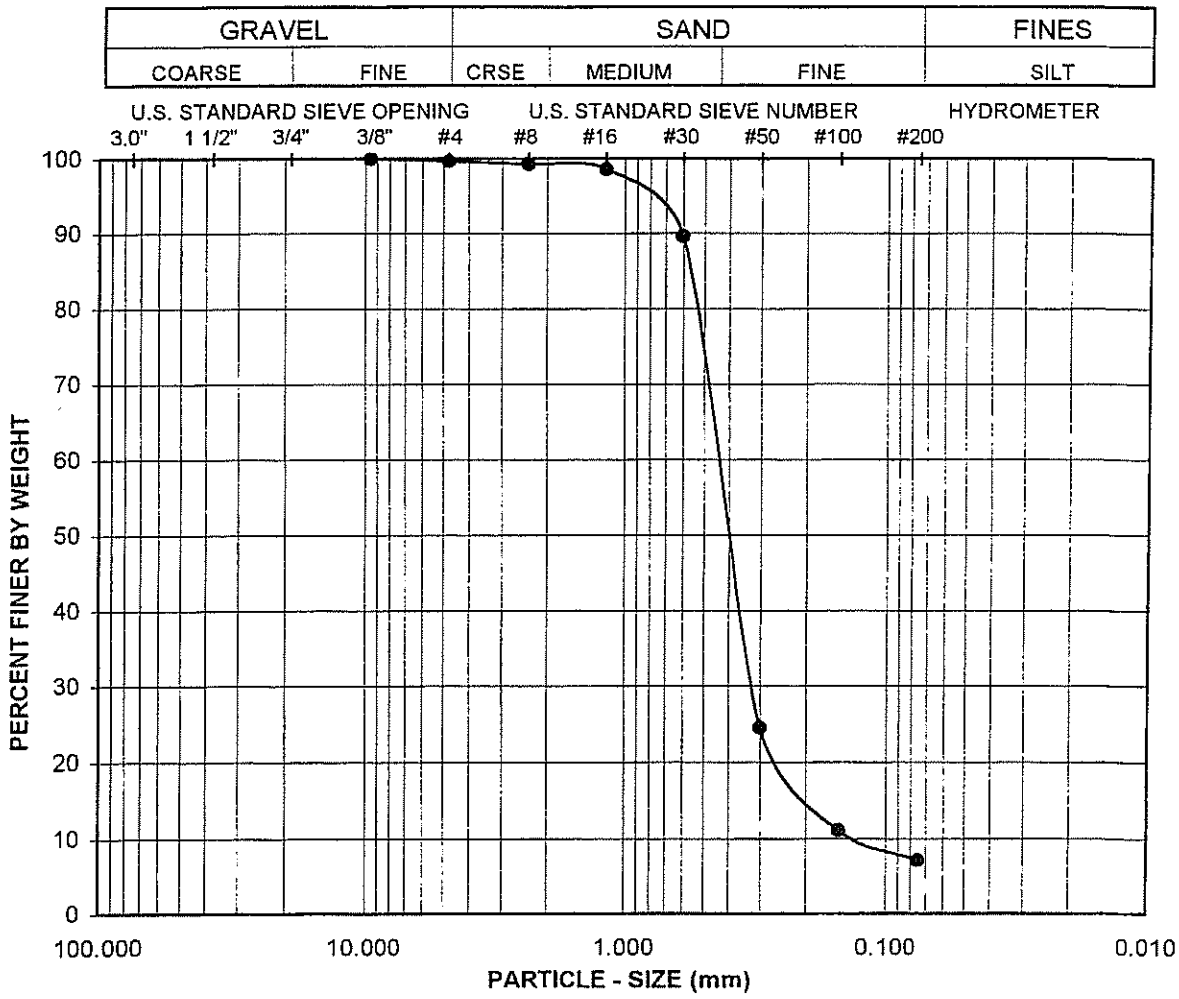
After Wet Sieve	Container No.	538
	Wt. of Dry Soil + Container (gm.)	506.20
	Wt. of Container (gm.)	82.24
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	423.96

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	1.51	99.7
#8	2.360	3.56	99.2
#16	1.180	6.34	98.6
#30	0.600	47.43	89.6
#50	0.300	343.56	24.5
#100	0.150	404.39	11.1
#200	0.075	422.86	7.1
PAN			

GRAVEL:	**0 %**	Liquid Limit:	
SAND:	**93 %**	Plastic Limit	
FINES:	**7 %**	Plasticity Index:	
GRP. SYMBOL:	**SP-SM**	Cu = D60/D10 =	3.14
		Cc = $(D30)^2/(D60*D10)$ =	1.77

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK231	AA3-MW10	41-41.5	SP-SM	0 : 93 : 7	, N/A,

Visual Sample Description:
Olive poorly graded sand with silt (SP-SM)

Terraset Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK231.xls

PARTICLE-SIZE ANALYSIS of SOILS

ASTM D 422

Teralast Labs, Inc.
A LEIGHTON GROUP COMPANY

Project Name:	Anomaly Area 3, Former MCAS El Toro, CA	Tested By:	ACS	Date:	12/02/02
Project No.:	37380 / CTO 0078	Checked By:	LF	Date:	12/10/02
Sample ID:	LK232	Depth (ft.):	45		
Exploration Location:	AA3-MW10				

Visual Sample Description: Olive yellow poorly graded sand (SP)

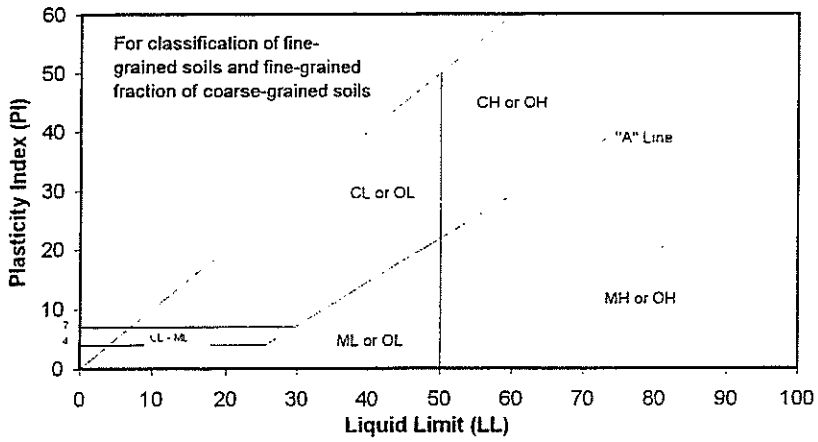
		Moisture Content of Total Air - Dry Soil	
Container No.:	535	Wt. of Air-Dry Soil + Cont. (gm.)	0.00
Wt. of Air Dry Soil+Cont.(gm.)	653.60	Wt. of Dry Soil + Cont. (gm.)	0.00
Wt. of Container (gm.)	82.22	Wt. of Container No._____ (gm.)	1.00
Dry Wt. of Soil (gm.)	571.38	Moisture Content (%)	0.00

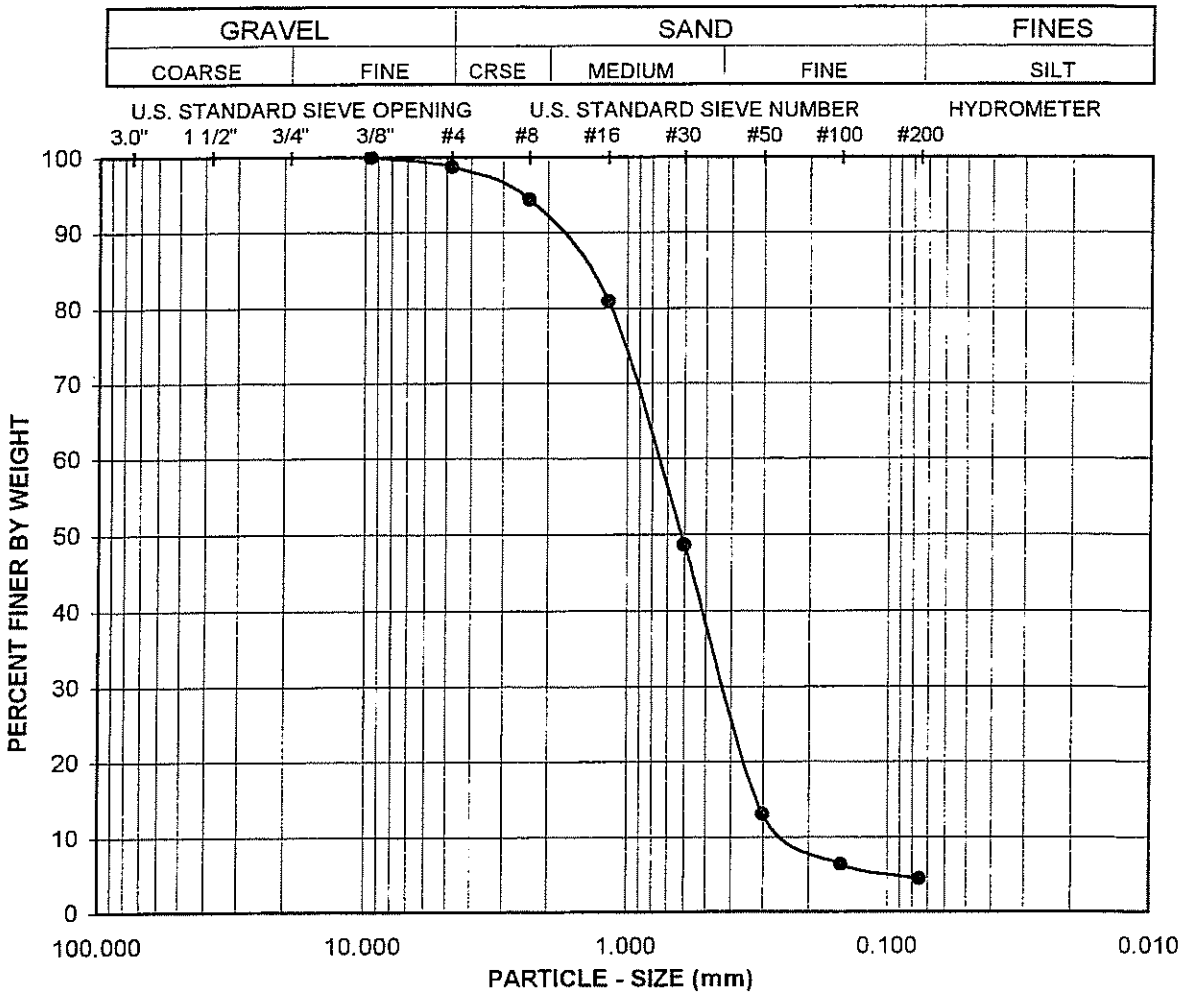
After Wet Sieve	Container No.	535
	Wt. of Dry Soil + Container (gm.)	628.99
	Wt. of Container (gm.)	82.22
	Dry Wt. of Soil Retained on # 200 Sieve (gm.)	546.77

U. S. Sieve Size (in.)	(mm.)	Cumulative Weight Dry Soil Retained (gm.)	Percent Passing (%)
6"	152.400	0.00	
3"	75.000	0.00	
1 1/2	37.500	0.00	
3/4"	19.000	0.00	
3/8"	9.500	0.00	100.0
#4	4.750	7.34	98.7
#8	2.360	32.28	94.4
#16	1.180	109.36	80.9
#30	0.600	293.87	48.6
#50	0.300	497.32	13.0
#100	0.150	535.51	6.3
#200	0.075	546.25	4.4
PAN			

GRAVEL:	1 %	Liquid Limit:	
SAND:	95 %	Plastic Limit	
FINES:	4 %	Plasticity Index:	
GRP. SYMBOL:	SP	Cu = D60/D10 =	2.85
		Cc = (D30)²/(D60*D10) =	1.01

Remarks:





Sample ID:	Exploration Location:	Depth (ft.):	Soil Type	GR:SA:FI	LL,PL,PI
LK232	AA3-MW10	45	SP	1 : 95 : 4	, N/A,

Visual Sample Description:
Olive yellow poorly graded sand (SP)

Terraset Labs, Inc.

Project No.: 37380 / CTO 0078

Anomaly Area 3, Former MCAS El Toro, CA

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

12-02

SA LK232.xls