**OHM Remediation Services Corp.**
*3347 Michelson Drive, Suite 200*
*Irvine, CA 92612-1692*
*Tel. 949.261.6441*
*Fax. 949.474.8309*

*A Member of The IT Group*

M60050.000626
MCAS EL TORO
SSIC #5090.3

the IT group

January 12, 2001

Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Richard Selby
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

**Subject: Final Boring Logs for New CERCLA Monitoring Wells**
**Contract N68711-93-D-1459, Delivery Order 065,**
**Removal and Remedial Actions at IRP Sites, MCAS El Toro, California**

Dear Ms. Hornecker:

Attached are the final Boring Logs for the fifteen new CERCLA groundwater monitoring wells that were installed last fall. The wells that were installed (and logs included) are as follows:

03_UGMW26A, 03_DGMW64A, 03_DGMW65XA
04_DGMW66A
05_UGMW27A, 05DGMW41A, 05_DGMW67A,, 05_DGMW68A
07_DBMW100A, 07_DBMW43A
08_UGMW29A
12_DBMW48A
18_PS3A, 18_BGMW101A, 18_BGMW18A

A copy of these logs has been sent to Earth Tech for their use and records as well.

If you have any questions or need additional copies of the logs please let me know.

Sincerely,

W Sedlak

William Sedlak
Sr. Project Manager

Attachment: Boring Logs

cc: Lucreatria Holloway, SWDIV, COTR (1C/1E)
Admin Record (1C/2E)
OHM PMO File (1C/1E)
Crispin Wanyoike, Earth Tech (1C/1E)
Project File, Correspondence B.01

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## OHM TRANSMITTAL/DELIVERABLE RECEIPT

**CONTRACT N68711-93-D-1459** **DOCUMENT CONTROL NO: SW9523**

**TO:** Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Michelle Crook, Code 02R1.MC
1220 Pacific Highway
San Diego, California 92132-5190

**Date:** 17-Jan-01

**D.O.:** 65

**Location:** MCAS EL TORO

**FROM:** _____
Stewart Bornhoft, Program Manager

Edwin G. Bond
Edwin G. Bond, Contracts Manager

**DESCRIPTION OF ENCLOSURE:** **Final Boring Logs for New CERCLA Monitoring Wells, dated January 12, 2001**

**TYPE:** Contract Deliverable ( ) ($) D. O. Deliverable ( **X** ) (Tech) Request for Change ( ) Other ( )

**VERSION:** FINAL **REVISION** 0

**ADMIN RECORD:** Yes ( **X** ) No ( ) Category ( ) Confidential ( )

**SCHEDULED DELIVERY DATE:** 17-Jan-01 **ACTUAL DELIVERY DATE:** 17-Jan-01

**NUMBER OF COPIES SUBMITTED TO THE NAVY:** 1/O, 4/C, 4/E
[AS REQUIRED/DIRECTED BY THE (SOW)]

| *COPIES TO:* SWDIV | OHM | OTHER |
|---|---|---|
| Name, Code | Name, Location | Name, Company, Location |
| General Files, 02R1 (1C/1E) | File (1C/1E) | C Wanyoike, Earth Tech 1E |
| L. Hornecker, 06CC.LH (1C/1E) | Chron (1C) | |
| G. Tinker, 06CC.GT (1C) | W. Sedlak, Irv (1C/1E) | |
| D. Silva, 05G.DS (AR/2E) | | |

Date/Time Received: _____ / _____

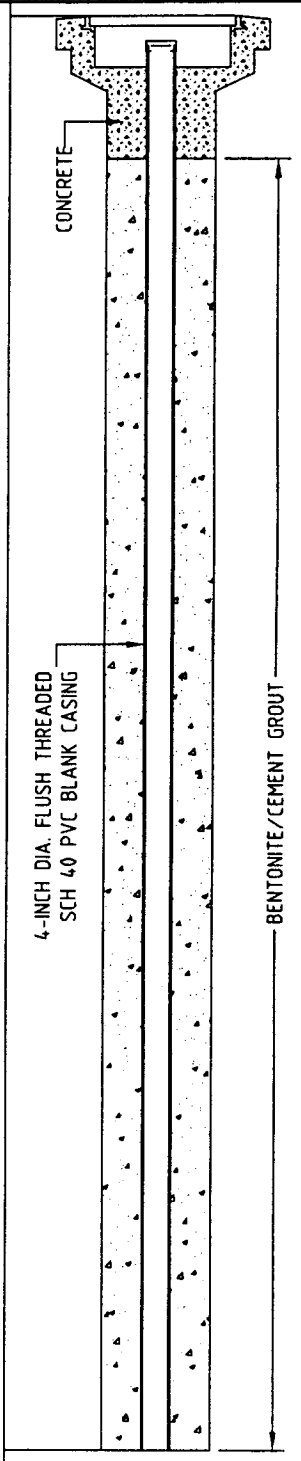
Doc Class: D-03

# Geologic Log of Boring 03_UGMW26A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig FOREMOST AP 1000 | Begin Drilling 10/4/00 |
| Client SWDIV | TOC Elevation - | Driller Pancho | End Drilling 10/5/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 0800 |
| Geologist Julie Erickson | DIAGRAM NOT TO SCALE | | End time: 0850 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 240 FEET | Depth to Water - | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Surface: 6-inch asphalt | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| | | | | | | 8 | 6 |
| | | | | | | 16 | 4 |
| | | | | | | 21 | 0 |
| Very fine Silty Sand (SM): Strong brown (7.5YR 5/6), 75% very fine sand, 25% fines, slightly moist, dense. | 10 | | | | | | |
| | 12 | | | | | | |
| | 14 | SM | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| | | | | | | 6 | 6 |
| | | | | | | 9 | 0 |
| | | | | | | 12 | 0 |
| Very fine Sandy Silt (SM): Brown (7.5 YR 5/4), 75% very fine sand, 25% silt, slightly moist, small pockets of clay, medium dense. | 20 | | | | | | |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| | | | | | | 10 | 6 |
| | | | | | | 27 | 6 |
| | | | | | | 45 | 0 |
| Very fine Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 80% silt, 20% very fine sand, slightly moist, very pale brown mottles, (10YR 7/4) hard. | 30 | | | | | | |
| | 32 | | | | | | |
| | 34 | ML | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| | | | | | | 7 | 6 |
| | | | | | | 28 | 2 |
| | | | | | | 37 | 0 |
| Very fine Sandy Silt (ML): Dark yellowish brown (10YR 3/6), 75% silt, 25% fines, iron and calcium carbonate mottles, slightly moist, hard. | 40 | | | | | | |

BORING DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

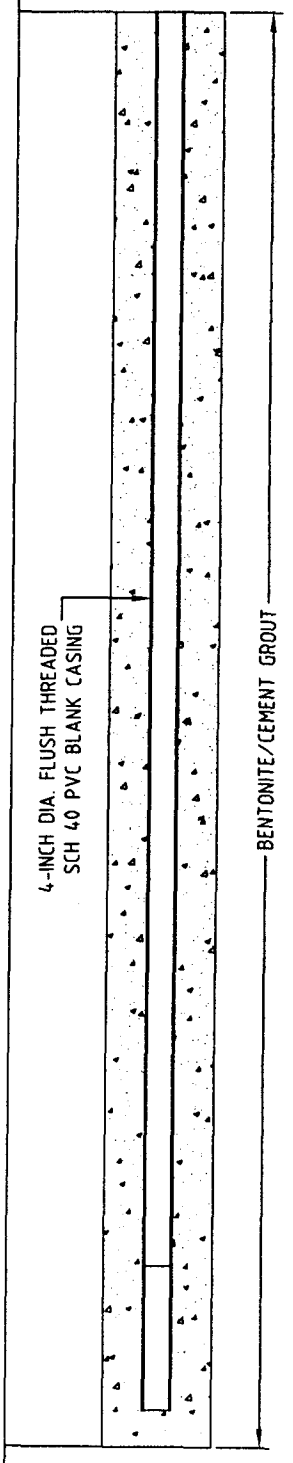
Jan 10, 2001 - 12:37:23 I:\OHM CORP\PROJECTS\18708\LOGS\3UGMW26A-01.dwg

# Geologic Log of Well 03_UGMW26A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Very fine Sandy Silt (ML): Dark yellowish brown (10YR 3/6), 75% silt, 25% fines, iron and calcium carbonate mottles, slightly moist, hard. | 40 | ML | | | | | |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 80% very fine sand, 20% silt, slightly moist, dense. | 50 | | | | | 10<br>15<br>22 | 6<br>3<br>0 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty very fine Sand (SM): Dark yellowish brown (10YR 5/6), 80% very fine sand, 20% silt, slightly moist, many calcium carbonate concretions, dense. | 60 | | | | | 31<br>16<br>25 | 6<br>2<br>0 |
| | 62 | SM | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Silty very fine Sand (SM): Dark yellowish brown (10YR 5/6), 80% very fine sand, 20% fines, slightly moist, very dense. | 70 | | | | | 9<br>19<br>30 | 6<br>6<br>6 |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Silty very fine Sand (SM): Brown (10YR 5/3), 75% very fine sand, 25% silt, slightly moist, very dense, many calcium carbonate concretions. | 80 | | | | | 4<br>22<br>35 | 6<br>6<br>6 |

WELL DETAIL

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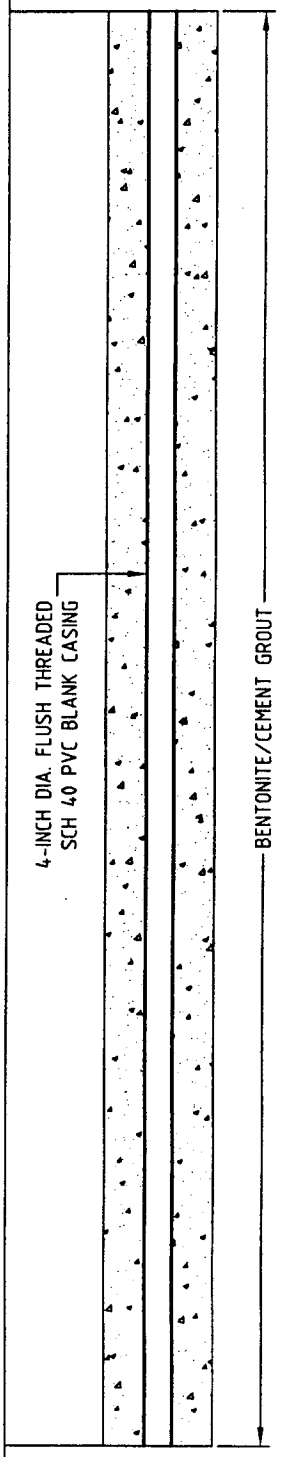
# Geologic Log of Well 03_UGMW26A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty very fine Sand (SM): Brown (10YR 4/3), 75% very fine sand, 25% silt, slightly moist, very dense, many calcium carbonate concretions. | 80 | | | | | | |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty very fine Sand (SM): Light olive brown (10YR 5/4), 75% very fine sand, 25% silt, slightly moist, dense. | 90 | | | | | 40<br>15<br>23 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Silty very fine Sand (SM): Pale yellow (5Y 7/4), slightly moist, very dense, few iron mottles, 75% very fine sand, 25% silt horizontal, 6-inch thick layer of coarse material mixed with very fine sand up to 1-inch subangular block, very fine grained fragments, transition layer to higher sand cement. | 100 | SM | | | | 18<br>34<br>45 | 6<br>6<br>6 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Silty very fine Sand (SM): Yellowish brown (10YR 5/6), moist, coarse fragments up to 1.5-inches in diameter, subrounded to subangular blocky very fine particle sizes, many calcium carbonate concretions. | 110 | | | | | 10<br>15<br>27 | 6<br>6<br>6 |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| Silty very fine Sand (SM): Yellowish brown (10YR 5/4), moist, 60% very fine sand, 40% silt, very dense. | 120 | | | | | 11<br>32<br>44 | 6<br>6<br>6 |

WELL DETAIL

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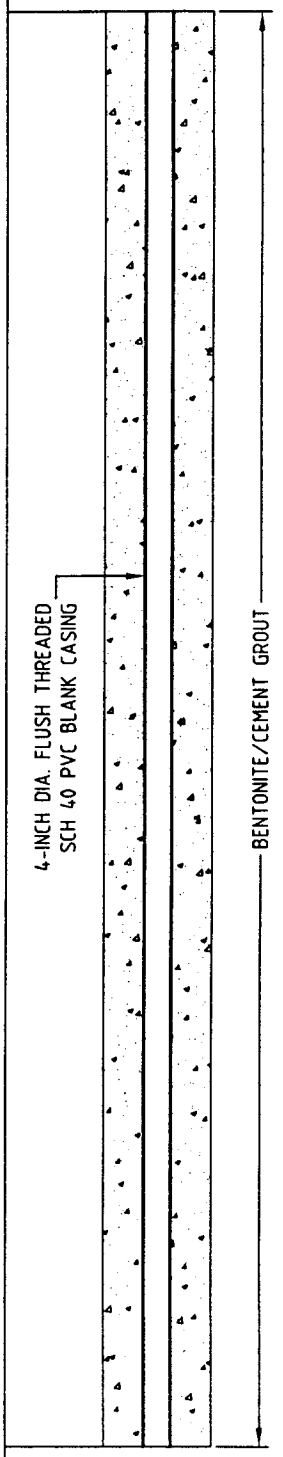
# Geologic Log of Well 03_UGMW26A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Very fine Sand (SW): Pale yellow (5Y 7/3), 90% very fine sand, 10% fines, slightly moist. | 120 | | | | | | |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| Very fine Sand (SW): Pale yellow (5Y 7/3), 90% very fine sand, 10% fines, slightly moist. | 130 | SW | | | | 15<br>29<br>43 | 6<br>6<br>6 |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), 60% silt, 40% very fine sand, hard, moist, calcium carbonate present. | 140 | | | | | 29<br>37<br>45 | 6<br>6<br>6 |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| Very fine Sandy (ML): Light olive brown (2.5Y 5/4), 85% silt, 15% very fine sand, slightly moist, faint iron mottles, hard, silt lenses, light yellowish brown. | 150 | ML | | | | 15<br>26<br>50/3 | 6<br>6<br>3 |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| Very fine Sandy Silt (ML): 75% silt, 20% very fine sand, 5% light olive, brown (2.5Y 5/4), moist, hard. | 160 | | | | | 12<br>20<br>32 | 6<br>4<br>0 |

WELL DETAIL

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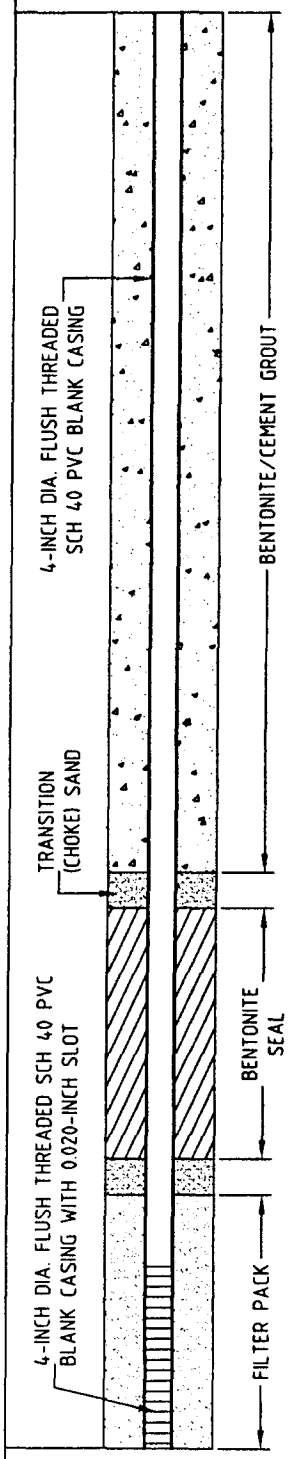
# Geologic Log of Well 03_UGMW26A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 160 | | | | | | |
| | 162 | | | | | | |
| | 164 | | | | | | |
| | 166 | | | | | | |
| | 168 | SM | | | | | |
| Silty very fine Sand (SM): (2.5 Y 5/4), 80% very fine sand, 20% silt, calcium carbonate concretions, moist, manganese concretions. | 170 | | | | | 17<br>30<br>50/3 | 6<br>6<br>3 |
| | 172 | | | | | | |
| | 174 | | | | | | |
| | 176 | | | | | | |
| | 178 | | | | | | |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), moist, medium plasticity, hard, manganese and calcium carbonate concretions, wet, 95% silt, 5% very fine sand. | 180 | | | | | 23<br>40<br>50/4 | 6<br>6<br>6 |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| | 188 | | | | | | |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/6), wet, hard, iron mottles. | 190 | ML | | | | 11<br>30<br>50 | 6<br>3<br>0 |
| | 192 | | | | | | |
| | 194 | | | | | | |
| | 196 | | | | | | |
| | 198 | | | | | | |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), hard, 80% silt, 20% very fine sand. | 200 | | | | | 8<br>20<br>36 | 6<br>0<br>0 |

WELL DETAIL




OHM Remediation Services Corp.



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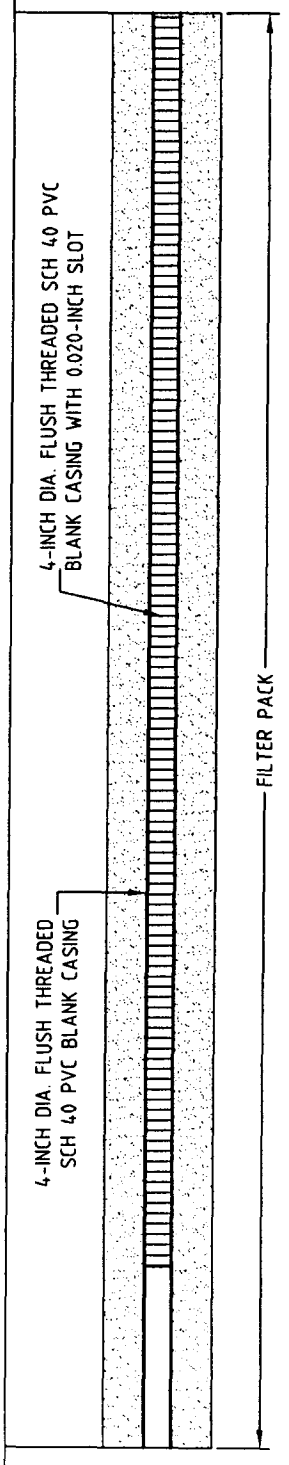
# Geologic Log of Well 03_UGMW26A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), wet, 40% silt, 60% very fine sand, 4-inch thick horizontal lay of fire sand, dense. | 200 | | | | | | |
| | 202 | | | | | | |
| | 204 | SM | | | | 9<br>14<br>23 | 6<br>6<br>6 |
| | 206 | | | | | | |
| | 208 | | | | | 8<br>16<br>50 | 6<br>6<br>4 |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), 60% silt, 40% very fine sand, moist to wet, hard. | 210 | ML | | | | | |
| | 212 | | | | | | |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 70% very fine sand, 30% silt, wet, very dense.<br>Sloughing, no more samples. | 214 | | | | | 13<br>32<br>50/2 | 6<br>6<br>2 |
| | 216 | | | | | | |
| | 218 | | | | | | |
| | 220 | | | | | | |
| | 222 | | | | | | |
| | 224 | | | | | | |
| | 226 | SM | | | | | |
| | 228 | | | | | | |
| | 230 | | | | | | |
| | 232 | | | | | | |
| | 234 | | | | | | |
| | 236 | | | | | | |
| | 238 | | | | | | |
| Total Depth= 240 feet. | 240 | | | | | | |

WELL DETAIL

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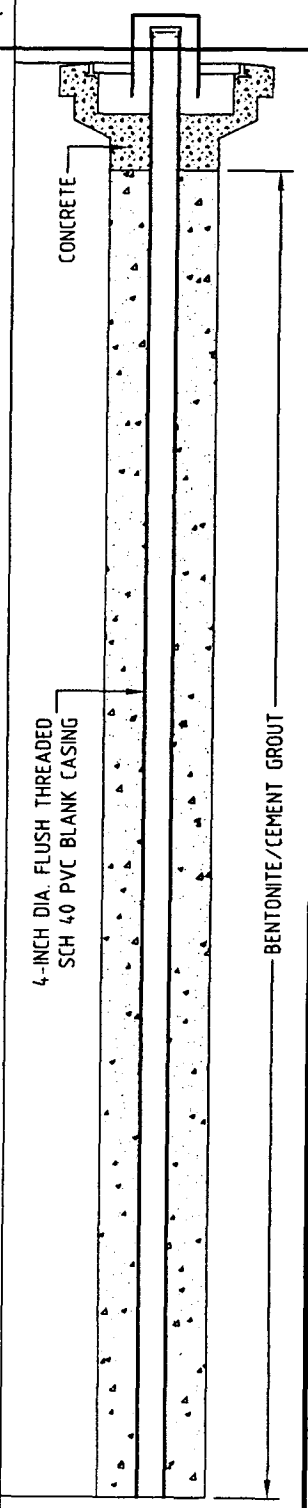
NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

# Geologic Log of Boring 05_UGMW27A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2189141.21 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6118142.85 | Drill Rig FORMOST AP 1000 | Begin Drilling 9/12/00 |
| Client SWDIV | TOC Elevation 439.17 | Driller Luis G. (Layne Drilling) | End Drilling 10/2/00 |
| Geologist C. Holcomb | TOC RIM 440.04 | Drill Method DWRCPH | Start time: 0830 |
| Location **MARINE CORPS AIR STATION** | DIAGRAM NOT TO SCALE | | End time: 1040 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 200 FEET | Depth to Water N/A | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| (SP/SM): Reddish brown, poorly graded, fine sand with silt, low strength, slightly moist, <30% silt. | 8 | SP SM | | | | | |
| | 10 | | | | | 15 16 17 | 6 6 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| (SM): Brown, moist, fine sitly sand, dense, medium strength, >40% silt, no odor. | 20 | SM | | | | 9 9 10 | 6 6 6 |
| | 22 | | | | | | |
| Less silt. | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| (SM): Brown, moist, fine sitly sand, dense, medium strength, >40% silt, no odor. | 30 | SM | | | | 9 9 10 | 6 6 6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| | 40 | | | | | | |

BORING DETAIL




OHM Remediation Services Corp.



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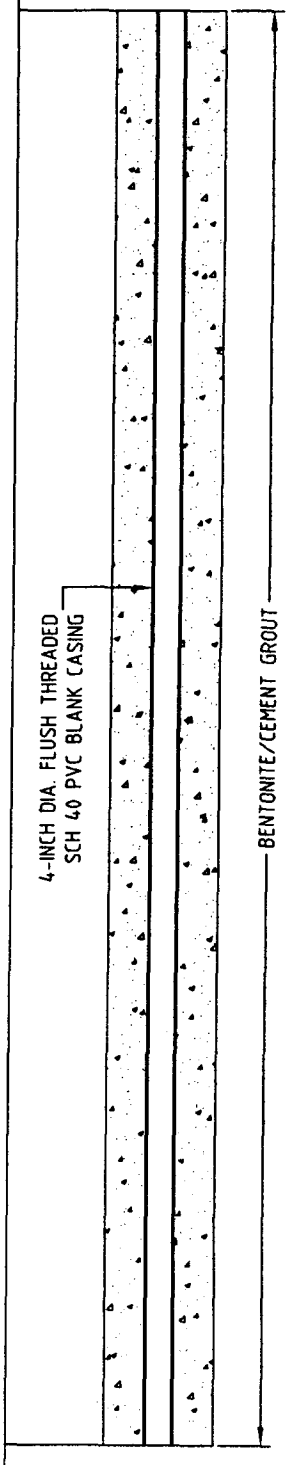
# Geologic Log of Well 05_UGMW27A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| (ML): Poorly graded, fine sandy silt, medium plasticity, slightly moist, dense. Some ???????, no odor. | 40 | ML | | | | 12<br>22<br>26 | 6<br>6<br>6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| (SM): Dark brown, silty fine sand, dense, moist, >30% silt. | 50 | SM | | | | 11<br>13<br>17 | 6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| (SM): Light brown, well graded sand (>80% fines) with silt, some gravel (rose quartz) chunks, low moist, medium dense, no odor. | 60 | SM | | | | 13<br>8<br>23 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| (SP): Brown/gray, poolry graded sand with silt and gravels, slightly moist, medium dense. | 70 | SP | | | 0.0 | 4<br>12<br>25 | 100% |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| | 80 | | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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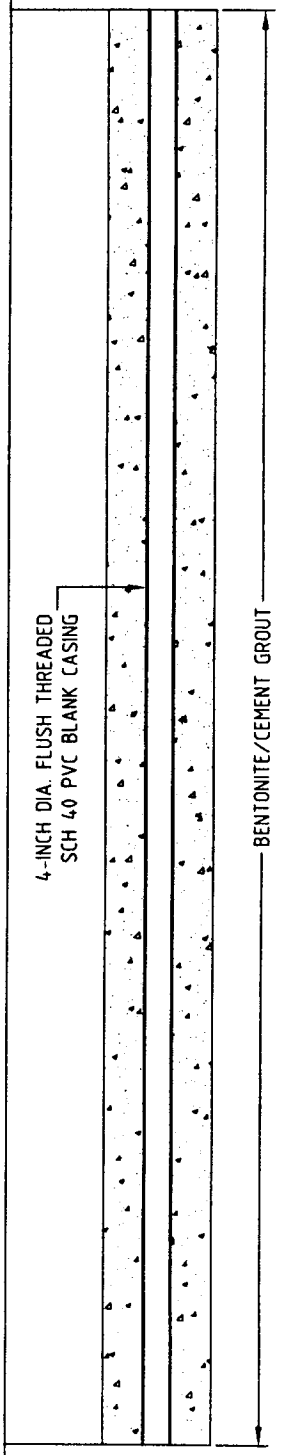
# Geologic Log of Well 05_UGMW27A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| No recovery. Cuttings indicate no change in lithology, except less silt. | 80 | SP | | | | | |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| (SP): Light brown, fine sandy silt, poorly graded, moist, slightly dense, soil x-?????, no odor, micaceous. | 90 | SP | | | | 9<br>16<br>28 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Less silt. | 100 | SP | | | | | 6<br>6 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Dark brown, sandy silt, poorly graded, mostly fines, moist, no odor. | 110 | SP | | | | 9<br>16<br>35 | 6<br>6<br>6 |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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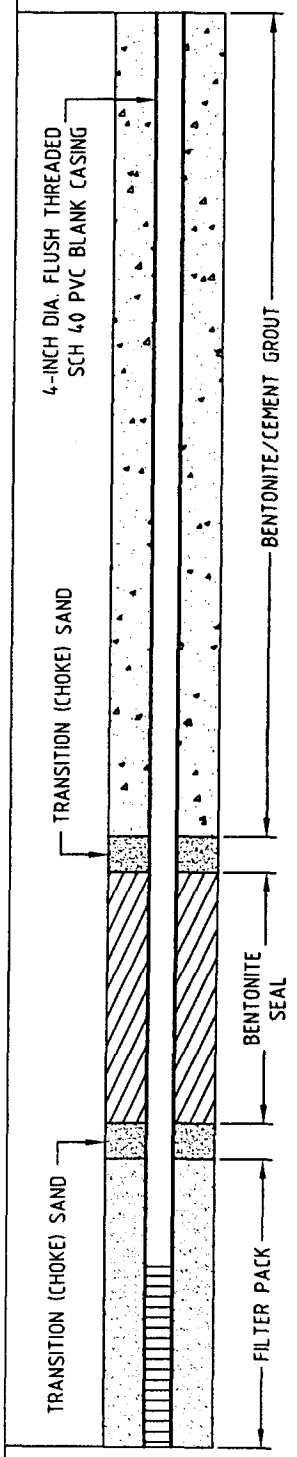
# Geologic Log of Well 05_UGMW27A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Brown w/red striations, fine to coarse sand, slightly dense, moist, poorly graded, some gravel, no odor. | 120 | SP | | | 0.0 | 18 25 31 | |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| (SP): Light brown, poorly graded sand with silt, slightly dense, moist, no odor. | 130 | SP | | | 0.0 | 3 3 6 | 100% |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| Less silt. | 140 | SP | | | 0.0 | 3 30 30 | 100% |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| (SP): Brown fine grain, moist, sand with silt. | 150 | SP | | | 0.0 | 4 7 26 | 100% |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



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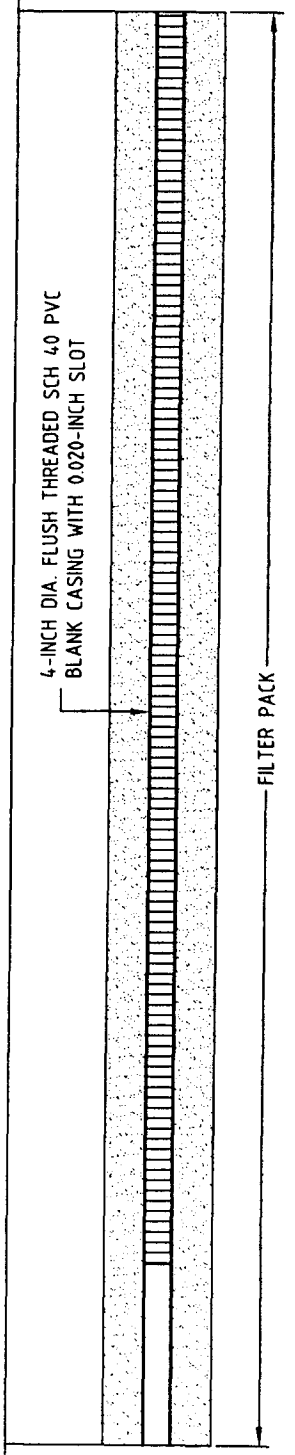
# Geologic Log of Well 05_UGMW27A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| (SP): Brown, silt with fine sand (>80% silt), dense, moist, stiff. | 160 | SP | | | 0.0 | 8 18 28 | 6 6 6 |
| | 162 | | | | | | |
| | 164 | | | | | | |
| (SP): Brown, fine sand with silt, poorly graded, loose with cobbles, no odor, moist. | 166 | | | | 0.0 | 10 20 50/3 | 6 6 6 |
| ~167-168 feet groundwater encountered. | 168 | | | | | | |
| (SW): Light brown/gray, well graded sand, little strength, some gravel, wet, no odor, <10% silt. | 170 | SW | | | 0.0 | 8 5 14 | 6 6 6 |
| | 172 | | | | | | |
| | 174 | | | | | | |
| (ML): Brown, fine sandy silt, very dense, moist, plastic,>30% sand, no odor. | 176 | ML | | | 0.0 | 2 2 14 | 6 6 6 |
| | 178 | | | | | | |
| (ML): Brown/reddish, fine sand with silt, dense, very moist, medium plasticity. | 180 | ML | | | 0.0 | 4 11 20 | 6 6 6 |
| | 182 | | | | | | |
| | 184 | | | | | | |
| (SP): Light brown/gray, well graded coarse sand, little strength, wet, no odor, (<5% silt). | 186 | SP | | | 0.0 | 6 14 25 | 6 6 6 |
| | 188 | | | | | | |
| | 190 | | | | | | |
| | 192 | | | | | | |
| | 194 | | | | | | |
| Same as above. | 196 | SP | | | | | |
| | 198 | | | | | | |
| | 200 | | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



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# Geologic Log of Well 05_UGMW27A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) | WELL DETAIL |
|---|---|---|---|---|---|---|---|---|
| | 200 | | | | | | | FILTER PACK |
| | 202 | | | | | | | |
| | 204 | | | | | | | |
| Total depth of borehole= 205 feet. | 206 | | | | | | | |
| | 208 | | | | | | | |
| | 210 | | | | | | | |
| | 212 | | | | | | | |
| | 214 | | | | | | | |
| | 216 | | | | | | | |
| | 218 | | | | | | | |
| | 220 | | | | | | | |
| | 222 | | | | | | | |
| | 224 | | | | | | | |
| | 226 | | | | | | | |
| | 228 | | | | | | | |
| | 230 | | | | | | | |
| | 232 | | | | | | | |
| | 234 | | | | | | | |
| | 236 | | | | | | | |
| | 238 | | | | | | | |
| | 240 | | | | | | | |

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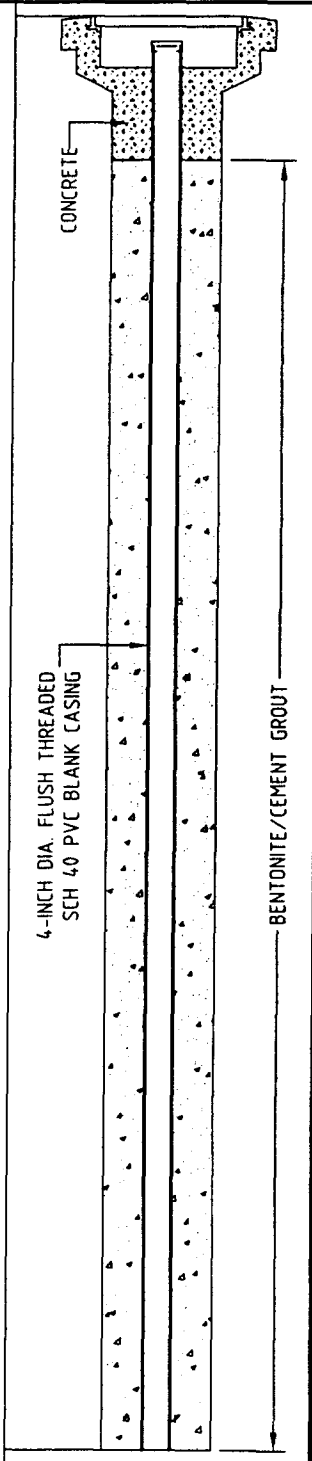
# Geologic Log of Boring 03_DGMW64A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2193462.76 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6115384.64 | Drill Rig FORMOST AP 1000 | Begin Drilling 9/29/00 |
| Client SWDIV | TOC Elevation 418.16 | Driller Luis G. (Layne Drilling) | End Drilling 10/2/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 0830 |
| Geologist J. Erickson | DIAGRAM NOT TO SCALE | | End time: 1040 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 255 FEET | Depth to Water 219.60 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| | 0 | | | | | | |
| | 2 | SP | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Silty, very fine Sand (SP): Yellowish brown (10YR 5/4), 65% sand, 5% silt, loose, increasing from very fine to fine at lower depths, slightly moist. | 10 | | | | | 3<br>3<br>3 | 6<br>1<br>0 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Very fine Silty Sand (SM): Yellowish brown (10YR 5/4), 80% very fine sand, 20% silt, slighty moist, dense. | 20 | SM | | | | 9<br>13<br>19 | 6<br>2<br>0 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Fine Silty Sand (SM): Light yellowish brown (10YR 6/4), 80% sand, 20% silt, few faint yellowish brown (10YR 5/4) mottles, slightly moist, medium dense. | 30 | | | | | 10<br>10<br>10 | 6<br>0<br>0 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| Very fine Sandy Silt (ML): Brown (10YR 5/3), 70% silt, 30% very fine sand, low plasticity, slightly moist, inclusions of calcium carbonate mottles, very stiff. | 38 | ML | | | | | |
| | 40 | | | | 5 | | 6 |

BORING DETAIL




OHM Remediation Services Corp.



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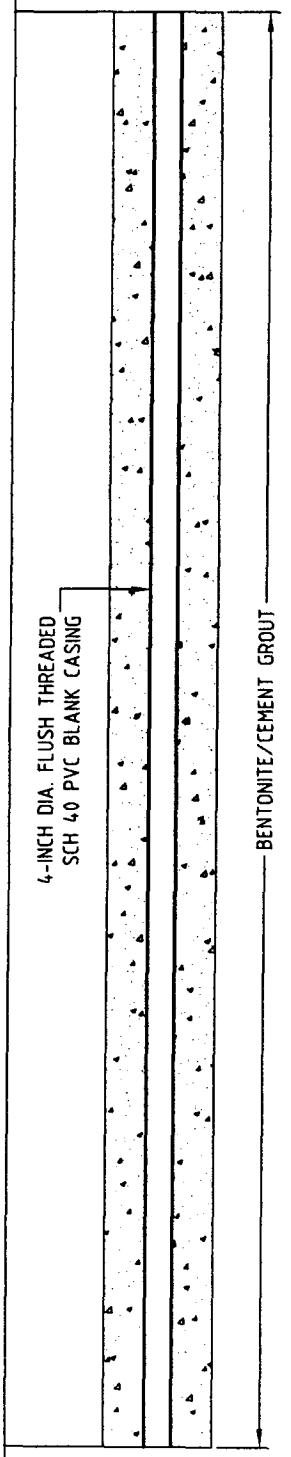
Jan 08, 2001 - 16:25:19 I:\OHM CORP\PROJECTS\18708\LOGS\3DGMW64A-01.dwg

# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Very fine Sandy Silt (ML): Brown (10YR 5/3), 70% silt, 30% very fine sand, low plasticity, slightly moist, inclusions of calcium carbonate mottles, very stiff. | 40 | ML | | | | 5<br>10<br>15 | 6<br>2<br>0 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Very fine Sandy Silt (ML): Brown (10YR 5/3), 80% silt, 20% very fine sand, high calcium carbonate content, many calcium carbonate mottles, slightly moist, very stiff. | 50 | | | | | 6<br>14<br>15 | 6<br>6<br>2 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Very fine Sandy Silt (ML): Light yellowish brown (10YR 6/4), 70% silt, 30% very fine sand, angular black coarse fragments, 1/2 inch in size, calcium carbonate mottles, low plasticity, hard. | 60 | | | | | 8<br>35<br>40 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Very fine Sandy Silt (ML): Yellowish brown (10YR 5/4), 80% silt, 20% very fine sand, moist to slightly moist, low plasticity, calcium carbonate mottles, hard. | 70 | ML | | | | 15<br>20<br>30 | 6<br>0<br>0 |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | Limestone | | | | | |
| Limestone: Light gray (7.5Y 7/2), subangular, blocky, very hard (R5), dry, size from 1/8 inch to 2 inches in diameter. | 78 | | | | | | |
| | 80 | | | | | 5 | 6 |

WELL DETAIL

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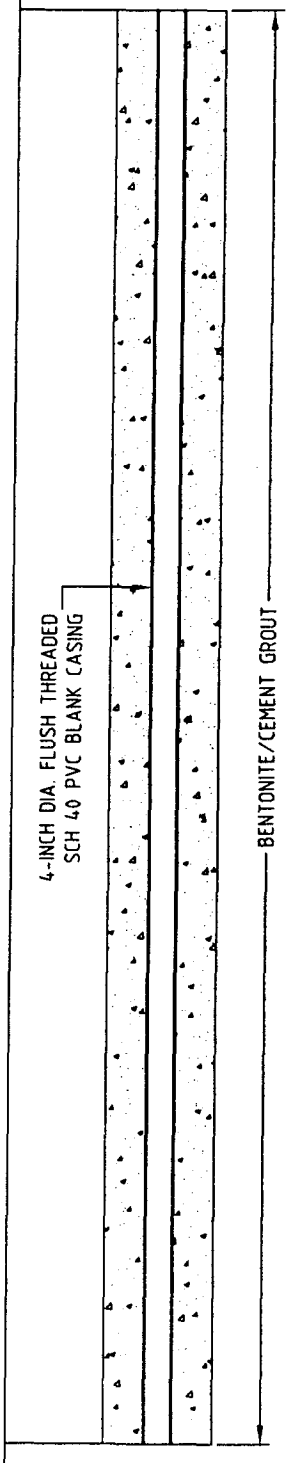
# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Limestone: Lighy gray (7.5Y 7/2), subangular blocky, very hard (R5), dry, size from 1/2 inch to 2 inches in diameter. | 80 | Limestone | | | | 5<br>26<br>30 | 6<br>6<br>6 |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| No recovery of soils. | 90 | | | | | 4<br>4<br>5 | 0<br>0<br>0 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Coarse Sand (SP): Gray (2.5Y 7/2), many subangular blocky limestone fragments, 1/8 inch to 1 inch in diameter, dry. | 100 | SP | | | | 8<br>8<br>10 | 6<br>6<br>0 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Very fine Silty/clayey Sand (SM): Dark yellowish brown (10YR 4/4), 80% very fine sand, 10% clay, 10% silt, slighty moist, subrounded 1/2 inch in diameter, medium plasticity, dense. | 110 | | | | | 6<br>15<br>21 | 3<br>0<br>0 |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| Very fine Sandy Silt (ML): Light yellowish brown (10YR 6/4), 70% silt, 30% very fine sand, vertically bedded sand lenses, few manganese concretions, fine iron mottles, strong brown (7.5YR 5/8), 3 mm in diameter, slightly moist, hard. | 118 | ML | | | | | |
| | 120 | | | | | 23 | 6 |

WELL DETAIL

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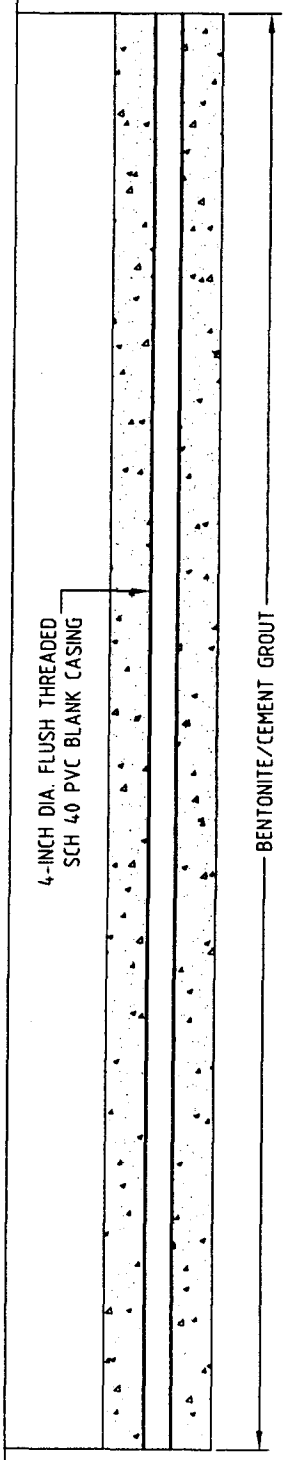
# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Very fine Sandy Silt (ML): Light yellowish brown (10YR 6/4), 70% silt, 30% very fine sand, vertically bedded sand lenses, few manganese concretions, fine iron mottles, strong brown (7.5YR 5/8), 3 mm in diameter, slightly moist, hard. | 120 | ML | | | | 23<br>34<br>47 | 6<br>2<br>0 |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| Fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), 80% silt, 20% very fine sand, slightly moist, hard. | 130 | | | | | 13<br>39<br>47 | 6<br>6<br>0 |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | SM | | | | | |
| | 138 | | | | | | |
| Very fine Sandy Silt (SM): Light olive brown (2.5Y 5/4), 70% fine sand, 25% silt, 5% clay, sand contact increases at lower depth, horizontal inclusions of slightly higher clay content, brown (10YR 5/3), slighty moist, very hard. | 140 | | | | | 11<br>44<br>50 | 6<br>6<br>6 |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| Very fine Silty Sand (SM): Light yellowish brown (2.5Y 6/4), 60% sand, 30% silt, 10% clay, slighty moist, calcium carbonate concretions, very dense. | 150 | | | | | 13<br>20<br>38 | 6<br>6<br>6 |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | Limestone/SM | | | | | |
| | 158 | | | | | | |
| Limestone: Light yellowish brown (2.4Y 6/4), very fine grained, subrounded, 1.5 inch in diameter, very fine Silty Sand, 5% of matrix. | 160 | | | | | 14 | 6 |

WELL DETAIL

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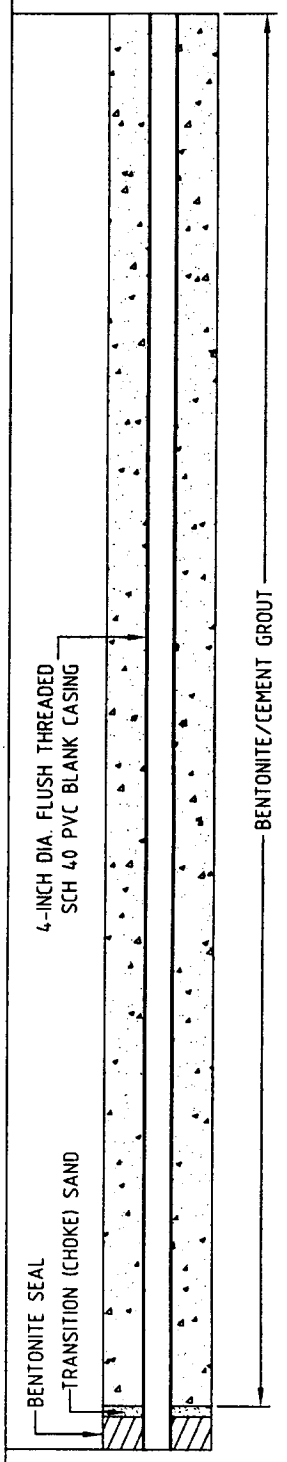
# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Limestone: Light yellowish brown (2.4Y 6/4), very fine grained, subrounded, 1.5 inch in diameter, very Silty Sand, 5% of matrix. | 160 | Limestone/SM | | | | 14<br>16<br>20 | 6<br>0<br>0 |
| | 162 | | | | | | |
| | 164 | | | | | | |
| | 166 | | | | | | |
| | 168 | | | | | | |
| Limestone: same as above, granite, subangular, blocky 1 inch diameter fragment. | 170 | | | | | 20<br>50.5 | 4<br>0 |
| | 172 | | | | | | |
| | 174 | | | | | | |
| | 176 | | | | | | |
| | 178 | | | | | | |
| | 180 | | | | | | |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| | 188 | | | | | | |
| Sandstone and Granite: Very fine grained, subangular, blocky, 1 inch diameter fragments, coating of very fine Sandy Silt, light yellowish brown (2.5Y 6/4). | 190 | | | | | 6<br>25<br>28 | 2<br>0<br>0 |
| | 192 | | | | | | |
| | 194 | | | | | | |
| | 196 | | | | | | |
| Coarse fragments up to 1 inch in diameter, very fine grain, pale yellow (5Y 7/3), 5% soil, Silty Sand, pale olive (5Y 6/4). | 198 | | | | | | |
| | 200 | | | | | 10 | 6 |

WELL DETAIL

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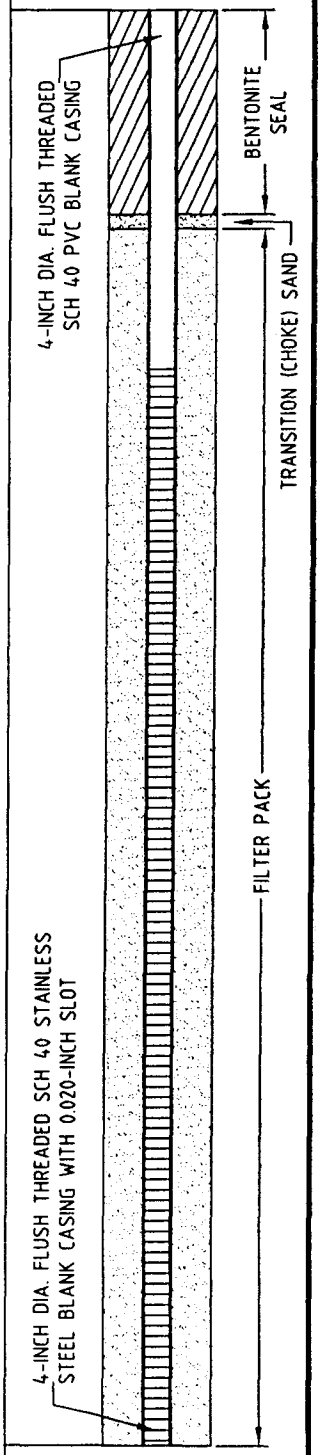
# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Coarse fragments up to 1 inch in diameter, very fine grain, pale yellow (5Y 7/3), 5% soil, Silty Sand, pale olive (5Y 6/4). | 200 | Limestone/SM | | | | 10<br>15<br>40 | 6<br>6<br>3 |
| | 202 | | | | | | |
| | 204 | | | | | | |
| | 206 | | | | | | |
| | 208 | | | | | | |
| Very fine Sandy Silt (ML): Light yellowish brown (2.5Y 6/4), 80% silt, 15% very fine sand, 5% clay, slight plasticity, slightly moist, calcium carbonate concretions, few coarse fragments, 1/2 inch in diameter, low plasticity, very stiff. | 210 | | | | | 9<br>9<br>14 | 6<br>6<br>6 |
| | 212 | | | | | | |
| | 214 | ML | | | | | |
| Very fine Sandy Silt (ML): Light yellowish brown (2.5Y 6/4), 80% silt, 15% very fine sand, 5% clay, slightly moist, calcium carbonate concretions, low plasticity, hard. | 216 | | | | | 15<br>10<br>29 | 4<br>0<br>0 |
| | 218 | | | | | | |
| Groundwater encountered at approximately 219 feet. | | | | | | | |
| Very fine Sandy/clayey Silt (ML): Pale oliver (5Y 6/4), 70% silt, 20% clay , 10% very fine sand, slightly moist, medium plasticity, horizontal inclusion (1/4 inch) of pale yellow (5Y 7/4) very fine Sandy Clay, hard. | 220 | | | | | 9<br>16<br>26 | 6<br>6<br>6 |
| | 222 | | | | | | |
| | 224 | | | | | | |
| Very fine Silty Sand (SM): Light olive brown (2.5Y 5/4), 60% very fine sand, 40% silt, becoming gradually siltier at lower portion, low plasticity, dense. | 226 | SM | | | | 9<br>10<br>22 | 6<br>6<br>6 |
| | 228 | | | | | | |
| Fine Sand (SP): Pale yellow (2.5Y 7/4), 95% fine sand, 5% fines, one gray, rounded (1/4 inch), very fine grained fragment, few iron mottles, moist, dense. | 230 | | | | | 9<br>21<br>29 | 6<br>6<br>6 |
| | 232 | | | | | | |
| | 234 | SP | | | | | |
| | 236 | | | | | | |
| | 238 | | | | | | |
| | 240 | | | | | | |

WELL DETAIL

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# Geologic Log of Well 03_DGMW64A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) | WELL DETAIL |
|---|---|---|---|---|---|---|---|---|
| Fine Sand (SP): same as above, saturated, beginning to slough, no more samples collected from this point. | 240 | SP | | | | | | 4-INCH DIA. FLUSH THREADED SCH 40 STAINLESS STEEL BLANK CASING WITH 0.020-INCH SLOT; FILTER PACK |
| | 242 | | | | | | | |
| | 244 | | | | | | | |
| | 246 | | | | | | | |
| | 248 | | | | | | | |
| | 250 | | | | | | | |
| | 252 | | | | | | | |
| | 254 | | | | | | | |
| Total Depth= 255 feet. | 256 | | | | | | | |
| | 258 | | | | | | | |
| | 260 | | | | | | | |
| | 262 | | | | | | | |
| | 264 | | | | | | | |
| | 266 | | | | | | | |
| | 268 | | | | | | | |
| | 270 | | | | | | | |
| | 272 | | | | | | | |
| | 274 | | | | | | | |
| | 276 | | | | | | | |
| | 278 | | | | | | | |
| | 280 | | | | | | | |

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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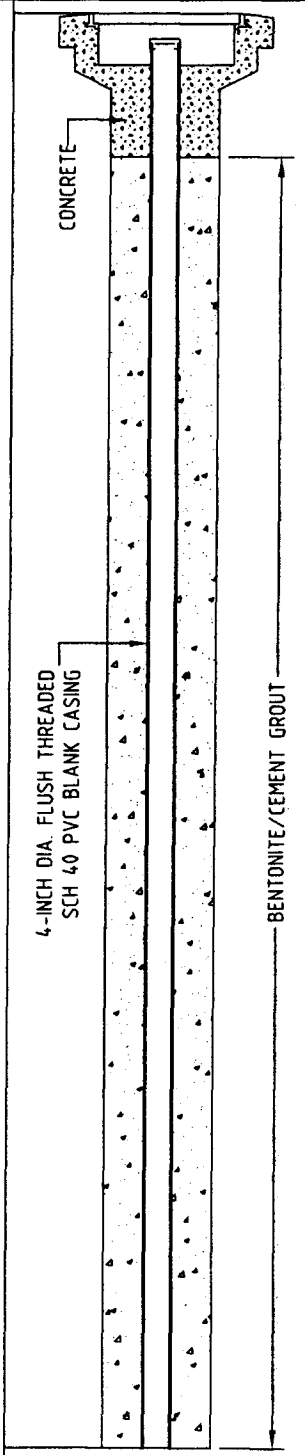
# Geologic Log of Boring 08_UGMW29A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig CME 95 | Begin Drilling 8/9/00 |
| Client SWDIV | TOC Elevation | Driller Jim Kline | End Drilling 8/10/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method H.S.A. | Start time: |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | End time: |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 115 FEET | Depth to Water 84 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| 6 inch asphalt pavement at surface. | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Sandy SILT: brown (7.5 YR 5/4) 80% low plastic fines, 20% fine sand, slightly moist, stiff. | 10 | ML | | | | 3 4 7 | 6 6 5 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| SILT; brown (7.5YR 5/4) 90% non to low plastic fines, 10% fine sand, slightly moist, stiff. | 20 | | | | | 4 9 9 | 6 6 6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Sandy SILT: dark yellowish brown (10YR 5/6) 65% non plastic fines, 35% fine to medium sand, slightly moist, very stiff. | 30 | | | | 4 10 22 | | 6 6 6 |
| Silty SAND, dark yellowish brown (10YR 5/6) 80% fine to medium sand, 20 % non plastic fines, moist, medium dense. | 32 | | | | | | |
| | 34 | SM | | | | | |
| | 36 | | | | | | |
| Silty SAND; dark yellowish brown (10YR 5/6) 70% fine (mostly) to medium sand, 30% low plastic fines, slightly moist, medium dense, interbedded with 1-inch lense of poorly graded sand with silt. | 38 | | | | | | |
| | 40 | | | | 6 | | 6 |

BORING DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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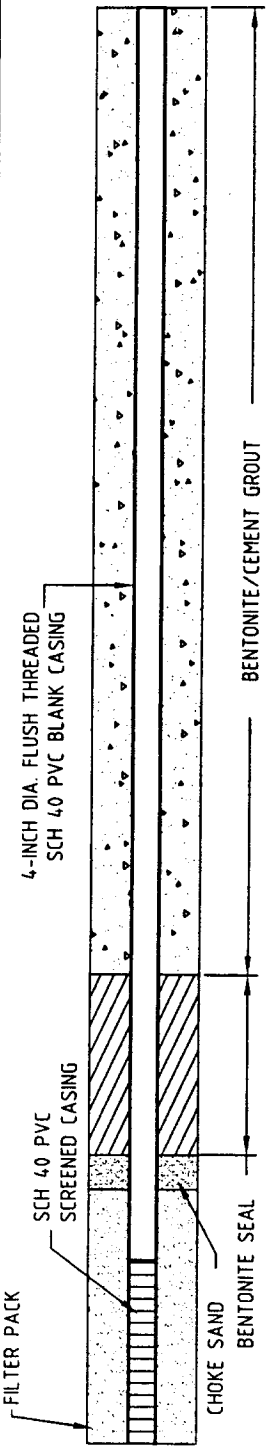
# Geologic Log of Well 08_UGMW29A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 40 | | | | | 17 | 6 |
| | | | | | | 27 | 6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | | SM | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Sandy SILT: yellowish brown (10YR 5/6), 70% non to low plastic fines, 30% fine sand, slightly moist, hard. | | | | | | 8 | 6 |
| | 50 | | | | | 12 | 6 |
| | | | | | | 17 | 6 |
| | 52 | | | | | | |
| | 54 | ML | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/6), 70% fine sand, 30% low plastic fines, slightly moist, medium dense, interbedded with sandy silt. | | | | | | 5 | 6 |
| | 60 | SM | | | | 15 | 6 |
| | | | | | | 34 | 6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/4) 65% fine sand, 35% low plastic fines, slightly moist, dense, interbedded into sandy silt at places. | | | | | | 17 | 6 |
| | 70 | | | | | 26 | 6 |
| | | | | | | 44 | 6 |
| | 72 | | | | | | |
| Poorly graded SAND with silt, light olive brown (2.5Y 5/4), 90% fine sand, 10% fines, slightly moist, medium dense, very well sorted. | 74 | | | | | 5 | 6 |
| | | SM | | | | 11 | 6 |
| | | | | | | 17 | 6 |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Silty SAND, dark yellowish brow (10YR 5/4) 70% fine (mostly) to medium sand, 30% non to low plastic fines, trace piece of micaceous olive color sandy silt, very moist, medium dense. | | | | | | 11 | 6 |
| | 80 | | | | | 17 | 6 |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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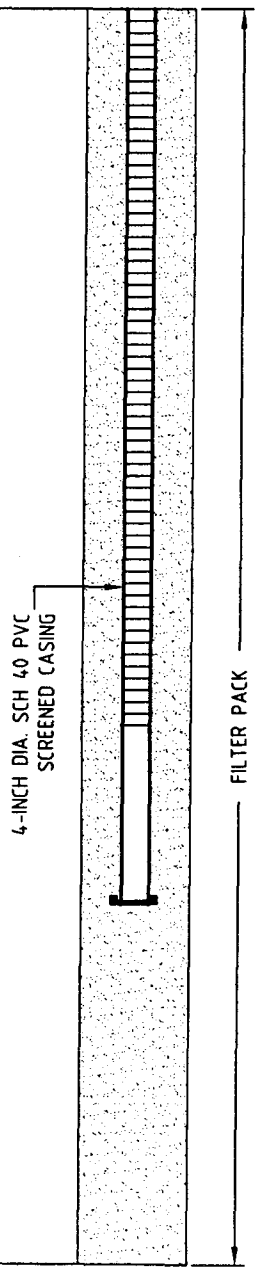
# Geologic Log of Well 08_UGMW29A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 80 | | | | | 18 | 6 |
| | 82 | | | | | | |
| Silty SAND: yellowish brown to dark yellowish brown (10YR 5/4) to (10YR 5/4) 75% fine sand, 25% non plastic, fine, very moist to wet, medium dense interbedded with poorly graded sand with silt. | 84 | SP/SM | | | | 6<br>14<br>19 | 6<br>6<br>6 |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty SAND: yellowish brown (10YR 5/4) 85% fine to medium sand, 15% fines, wet, medium dense, little coarse sand. | 90 | | | | | 12<br>16<br>23 | 6<br>6<br>6 |
| | 92 | SP | | | | | |
| Poorly graced AND, light yellowish brown (2.5Y 5/3) 100% fine to medium to coarse sand, trace gravel, wet. | 94 | | | | | 2<br>5<br>14 | 6<br>6<br>6 |
| | 96 | SM | | | | | |
| Silty SAND: light olive brown (2.5Y 5/3) 70% fine sand, 30% non plastic fines, very well sorted micaceous wet, loose to medium dense. | 98 | | | | | | |
| 3 feet of heave in bore hole consisting of fine to medium to coarse grained poorly graded sand, no sample collected at 100 feet. | 100 | | | | | | |
| | 102 | SP | | | | | |
| 4 feet of heave in bore hole at 105 feet, no sample collected at 105 feet fine to medium grained sp to sp-sm. | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Clean heave inside auger and drill to 110'. Now there is 12 feet of heave material inside the augers. | 110 | | | | | | |
| There is 9 ½ feet of heave inside the augers at 115 feet; trying to get it out. Can not get the sand out of the auger however the hole is open to 115 ft. So it appears that there is silt or clay or sandy silt/clay at 115 feet. Stop drilling at 115 ft. with small auger; when pulled sample out of augers it is full of heave consisting of fine grained sp. | 112 | ML | | | | | |
| | 114 | | | | | | |
| TOTAL DEPTH = 115.0 FEET | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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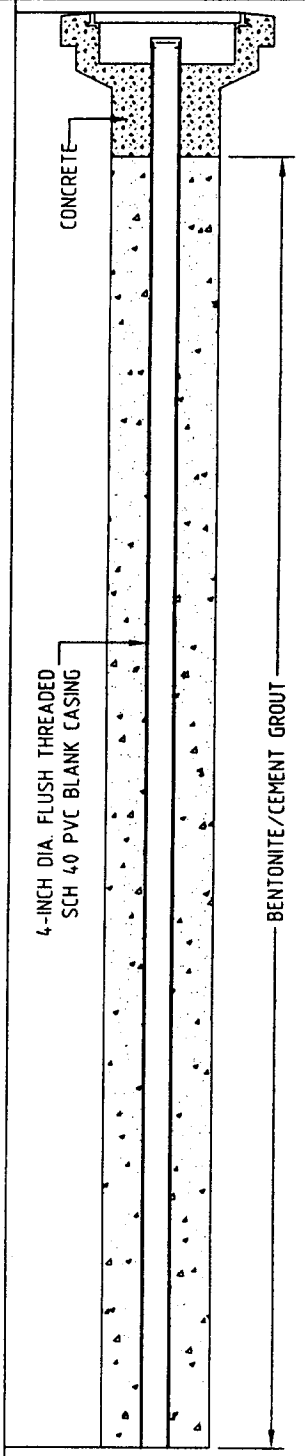
# Geologic Log of Boring 07_DBMW100A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2187960.16 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6110538.74 | Drill Rig CME 95 | Begin Drilling 8/11/00 |
| Client SWDIV | TOC Elevation 286.06 | Driller Jim Kline | End Drilling 8/11/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method HSA | |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 138 FEET | Depth to Water - | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Surface: 6-inch asphalt | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 75% non to low plastic fine, 25% fine sand, stiff, slightly moist. | 10 | ML | | | | 2 3 5 | 6 6 6 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 80% low plastic fines, 20 % fine sand, slightly moist, stiff. | 20 | ML | | | | 3 5 11 | 6 6 6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Poorly graded Sand with Silt (SP-SM): Brown (10YR 5/3), 95% fine sand, 5 % fines, slightly moist, loose, well sorted. | 30 | SP-SM | | | | 4 | 6 |
| Silt (ML): Brown (7.5YR 5/4), 100% low plastic, silt, trace fine sand, slightly moist, firm, slightly micaceous | | ML | | | | 5 4 | 6 6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 4/4), 80% fine to medium sand, 20% low plastic fines, slightly moist, loose. | 40 | SM | | | | 4 8 | 6 6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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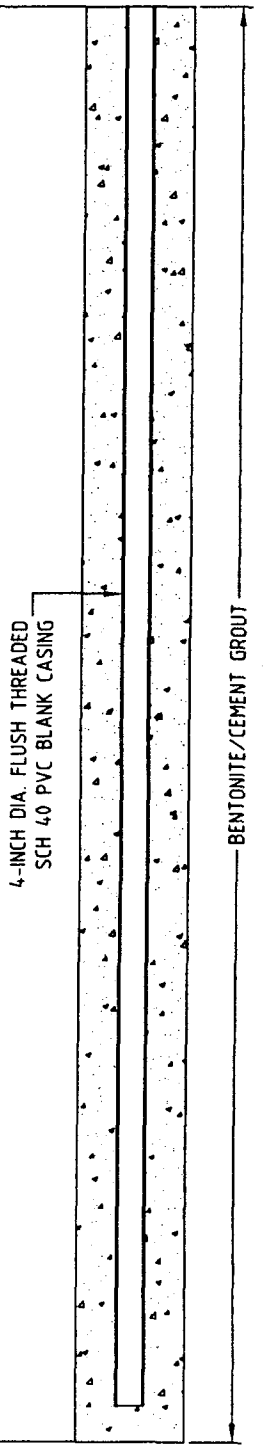
# Geologic Log of Well 07_DBMW100A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silt (ML): Yellowish brown (10YR 5/4), 85% low plastic fines, 15% fine sand, slightly moist, stiff to very stiff. | 40 | ML | | | | 10 | 6 |
| ~1 foot of Gravel layer at 42 feet. | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silt (ML): Yellowish brown (10YR 5/4), 90% low plastic fines, 10% fine sand, slightly moist, very stiff to hard. | 50 | ML | | | | 8<br>15<br>24 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 5/4), 80% low to medium plastic fines, 20% fine sand, slightly moist, very stiff. | 60 | ML | | | | 5<br>12<br>22 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Silt (ML): Dark yellowish brown (10YR 5/4), 90% medium plastic fines, 10% fine sand, slightly moist, very stiff. | 70 | ML | | | | 5<br>12<br>23 | 6<br>6<br>6 |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Silty Sand (SM): Light olive brown (2.5Y 5/4), 85% fine sand, 15% fines, slightly moist, medium dense, interbeded with poorly graded sand, well sorted. | 80 | SM | | | | 8<br>10 | 6<br>6 |

WELL DETAIL

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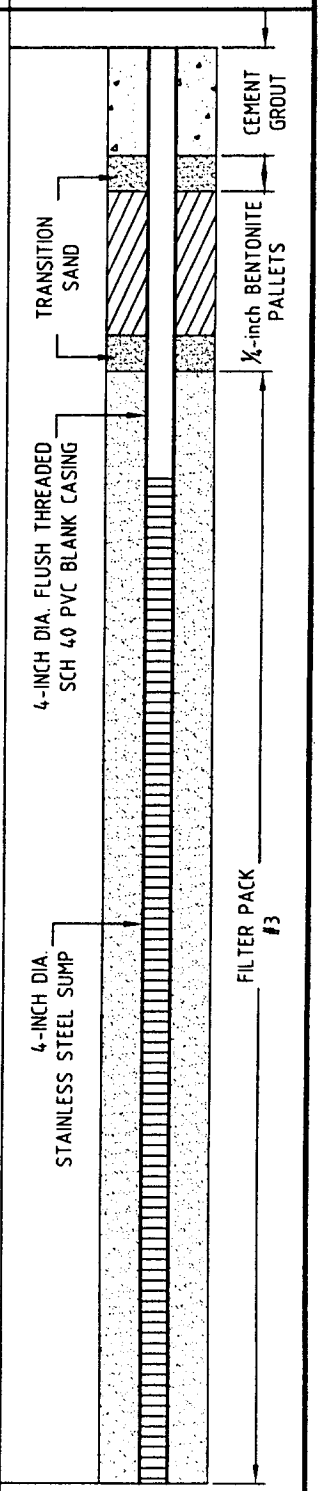
# Geologic Log of Well 07_DBMW100A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Light olive brown (2.5Y 5/4), 85% fine sand, 15% fine, slightly moist, medium dense, interbeded with poorly graded sand, well sorted. | 80 | SM | | | | 19 | 6 |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty Sand (SM): Yellowish brown (10YR 5/4), 85% fine (mostly) to medium sand, 15% fines, trace fine angular gravel, slightly moist, dense. | 90 | SM | | | | 16<br>21<br>29 | 6<br>6<br>6 |
| | 92 | | | | | | |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium sand, trace fine subrounded gravel, trace fines, slightly moist to moist, medium dense. | 94 | SP | | | | 7<br>16<br>25 | 6<br>6<br>6 |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 90% medium plastic fines, 10% fine sand, very moist, stiff, inerbeded with olive brown color lens of saturated poorly graded sand. | 100 | ML | | | | 7<br>6<br>8 | 6<br>6<br>6 |
| | 102 | | | | | | |
| Sandy Silt (ML): Light olive brown (2.5Y 5/3) to (2.5Y 5/4), 90% low to medium plastic fines, 10% fine sand, very moist to wet, very stiff, interbeded with fine grain silty sand. | 104 | ML | | | | 4<br>5<br>14 | 6<br>6<br>6 |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Silty Sand (SM): Olive brown (2.5Y 4/4), 70% fine to medium sand, 30% low plastic fines, wet, interbeded with low plastic silt, and poorly graded sand. | 110 | SM | | | | 9<br>7<br>10 | 6<br>6<br>6 |
| | 112 | | | | | | |
| Silty Sand (SM): Light olive brown (2.5Y 5/4), 80% fine to medium sand, (2.5Y 5/4), 80% fine to medium sand, 20% low plastic fines, wet, loose, grades into poorly graded sand. | 114 | SM | | | | 4<br>6<br>10 | 6<br>6<br>6 |
| | 116 | | | | | | |
| | 118 | | | | | | |
| Silt (ML): Dark yellowish brown (10YR 3/4), 90% medium plastic fines, 10% fine sand, moist, very stiff. | 120 | ML | | | | 8<br>12 | 6<br>6 |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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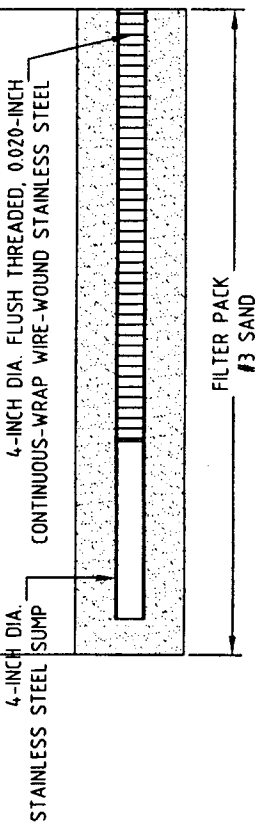
# Geologic Log of Well 07_DBMW100A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silt (ML): Dark yellowish brown (10YR 3/4), 90% medium plastic fines, 10% fine sand, moist, very stiff. | 120 | ML | | | | 21 | 6 |
| | 122 | | | | | | |
| Silt (ML): Light olive brown to olive brown (2.5Y 5/3) to (2.5Y 4/4), 90% low to medium plastic fines, 10% fine sand, very moist, very stiff. | 124 | ML | | | | 9<br>16<br>14 | 6<br>6<br>6 |
| | 126 | | | | | | |
| | 128 | | | | | | |
| Poorly graded Sand with Silt (SP-SM): Light olive brown (2.5Y 5/4), 95% fine to medium sand, 5% fines, wet, dense. | 130 | SP-SM | | | | 21<br>38 | 6<br>6 |
| | 132 | | | | | | |
| Poorly graded Sand with Silt (SP-SM): Fine to medium to coarse sand, same as above. | 134 | SP-SM | | | | 22<br>50/5" | 6<br>6 |
| | 136 | | | | | | |
| Total Depth= 138 feet. | 138 | | | | | | |
| | 140 | | | | | | |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| | 150 | | | | | | |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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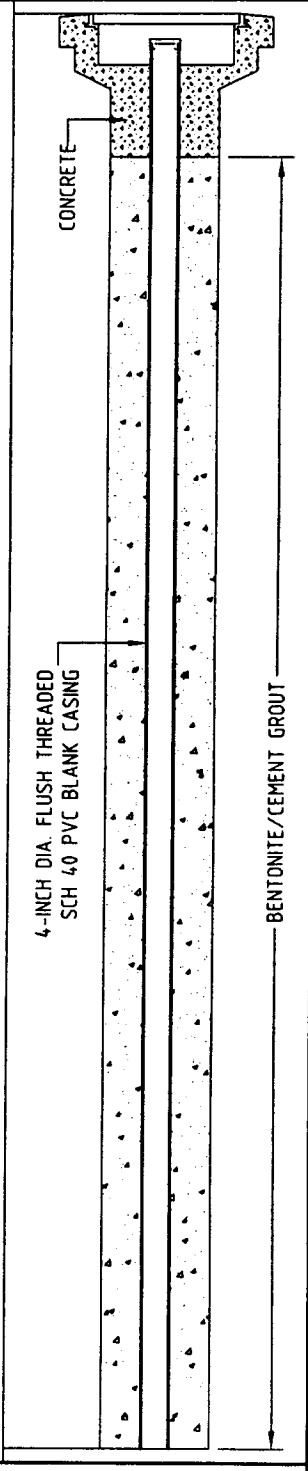
# Geologic Log of Boring 07_DBMW43A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2188761.90 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6110690.28 | Drill Rig CME 95 | Begin Drilling 8/15/00 |
| Client SWDIV | TOC Elevation 292.53 | Driller Jim Kline | End Drilling 8/15/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method H.S.A. | |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 146 FEET | Depth to Water 109 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| 1 foot concrete at surface. | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| No recovery from soil cuttings. Silty SAND (SM): With 80% fine sand, 20% fines, dark yellowish brown in color. | 10 | SM | | | | 1 0 0 | |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Silty SAND. | 20 | SM | | | | 7 24 25 | 6 0 0 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Poorly graded SAND: dark yellowish brown (10YR 5/6) 95% fine to medium sand, little coarse sand, trace fine sub angular to subrounded gravel slightly moist, medium dense. | 30 | SP ML | | | | 9 14 14 | 6 6 6 |
| | 32 | | | | | | |
| Sandy SILT, brown (7.5YR 5/4) 70% non to low plastic fine, 30% very fine sand, slightly moist, very stiff. | 34 | | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| SILT: dark yellowish brown (10YR 3/4) to (10YR 3/6) 90% low plastic fines, 10% fine sand, slightly moist, very stiff. | 40 | ML | | | | 7 9 | 6 6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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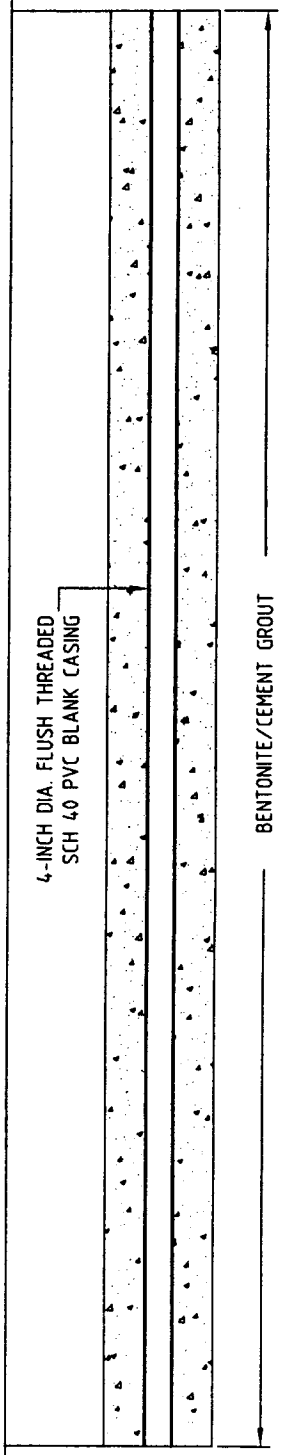
# Geologic Log of Well 07_DBMW43A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 40 | ML | | | | 14 | 6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| SILT: dark yellowish brown (10YR 4/4) to (10YR 5/6), 90% low to medium plastic fines, 10% very fine sand, slightly moist, hard. | 50 | ML | | | | 8<br>16<br>28 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Sandy SILT: dark yellowish brown (10YR 5/6) 75% low plastic fines; 25% fine sand, slightly moist, very stiff. | 60 | ML | | | | 10<br>13<br>14 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Poorly graded SAND, light yellowish brown (2.5Y 6/3) 100% fine to medium sand, little coarse sand, trace fine subrounded gravel, slightly moist, medium dense. | 70 | SP | | | | 8<br>19<br>24 | 6<br>6<br>6 |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Poorly graded SAND with silt; yellowish brown (10YR 5/4) 95% fine to medium to coarse sand, 5% fines, slightly moist; medium dense. | 80 | SM | | | | 11<br>21 | 6<br>6 |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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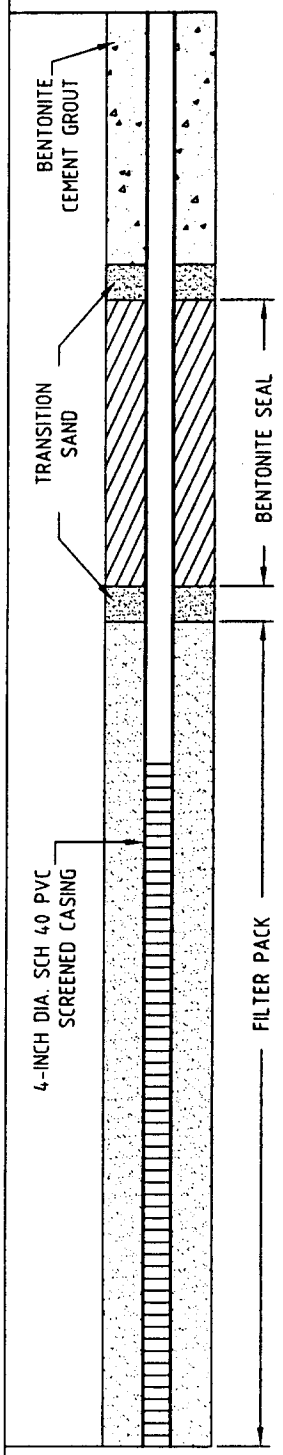
# Geologic Log of Well 07_DBMW43A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| SILT: olive brown (2.5Y 4/4) 95% low to medium plastic fines, 5% fine sand, slightly moist, very stiff. | 80 | ML | | | | 14 | 6 |
| | 82 | | | | | | |
| | 84 | ML | | | | 8<br>13<br>22 | 6<br>6<br>6 |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty SAND, dark yellowish brown (10YR 4/4) 65% fine sand, 35% low plastic fines, slightly moist, medium dense, grades into sandy silt at places. | 90 | SM | | | | 8<br>13<br>22 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Poorly graded SAND, yellowish brown (10YR 5/4) 100% fine to medium sand, trace fines, slightly moist to moist, dense. | 100 | SP | | | | 14<br>30<br>50 | 6<br>6<br>6 |
| | 102 | | | | | | |
| SILT, dark yellowish brown (10YR 4/4), 90% low to medium plastic fines, 10% fine sand, very moist, very stiff. | 104 | ML | | | | 6<br>11<br>20 | 6<br>6<br>6 |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 4/4) 75% fine sand, 25% fines, wet, medium dense. | 110 | SM | | | | 8<br>11<br>15 | 6<br>6<br>6 |
| | 112 | | | | | | |
| Silty SAND, dark yellowish brown (10YR 3/6) 70% fine sand, 30% low plastic fines, wet, medium dense. | 114 | SM | | | | 3<br>9<br>20 | 6<br>6<br>6 |
| | 116 | | | | | | |
| | 118 | | | | | | |
| Unable to collect sample ~3 feet of heave inside hole, consisting of silty sand and poorly graded sand with silt. | 120 | SM | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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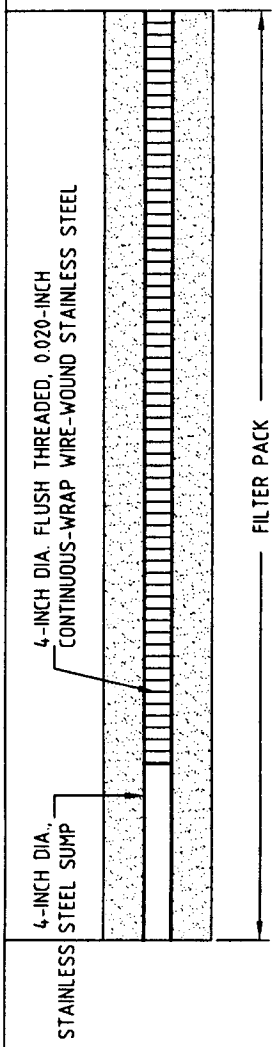
# Geologic Log of Well 07_DBMW43A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 120 | SP | | | | | |
| | 122 | | | | | | |
| Poorly graded SAND, brown (10YR 5/3), 95% fine to medium sand, 5% sub rounded fine gravel, trace fines, wet, dense. | 124 | SP | | | | 12<br>25<br>26 | 6<br>6<br>6 |
| | 126 | | | | | | |
| | 128 | | | | | | |
| No sample; 3 ½ feet of heaving sand inside the augers. | 130 | | | | | | |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| At 140 feet, ~5 feet of heave inside the augers. Attempt to get heave out and collect sample but unable to do so. | 140 | | | | | | |
| | 142 | | | | | | |
| | 144 | | | | | | |
| TOTAL DEPTH = 146.0 FEET | 146 | | | | | | |
| | 148 | | | | | | |
| | 150 | | | | | | |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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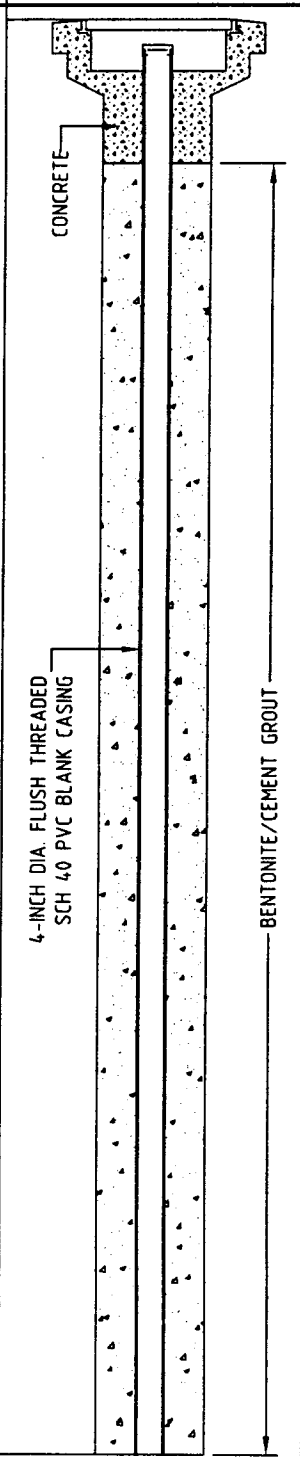
# Geologic Log of Boring 18_PS3A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2187093.49 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6109290.87 | Drill Rig CME 95 | Begin Drilling 8/24/00 |
| Client SWDIV | TOC Elevation 263.76 | Driller Jim Kline | End Drilling 8/24/00 |
| Geologist A. Siddiqui | RIM Elevation 264.06 | Drill Method HSA | |
| Location **MARINE CORPS AIR STATION** | DIAGRAM NOT TO SCALE | | |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 110.5 FEET | Depth to Water 80 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| 4-inch asphalt at surface. Boring was hand augured to 10 feet bgs for utility clearance. | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Silty Sound (SM): Dark yellowish brown (10YR 3/6), 75% fine sand , 25% non to low plastic fines, slightly mist. Based on soil cuttings from hand auger. | 10 | | | | | | |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Gravelly Sand (SP): Yellowish brown (10YR 5/4), 80% fine to medium sand, 20% fine to coarse subrounded gravel, slightly moist, medium dense, gravel end at 26 feet bgs. | 20 | SP | | | | 8<br>13<br>24 | 6<br>6<br>6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 3/6), 70% fine sand, 30% non plastic fines, slightly moist, dense. | 30 | SM | | | | 3<br>24<br>36 | 6<br>6<br>6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 3/6), 85% fine sand, 15% fines, wet, medium dense. | 38 | | | | | | |
| | 40 | SM | | | | 5<br>6 | 6<br>6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered

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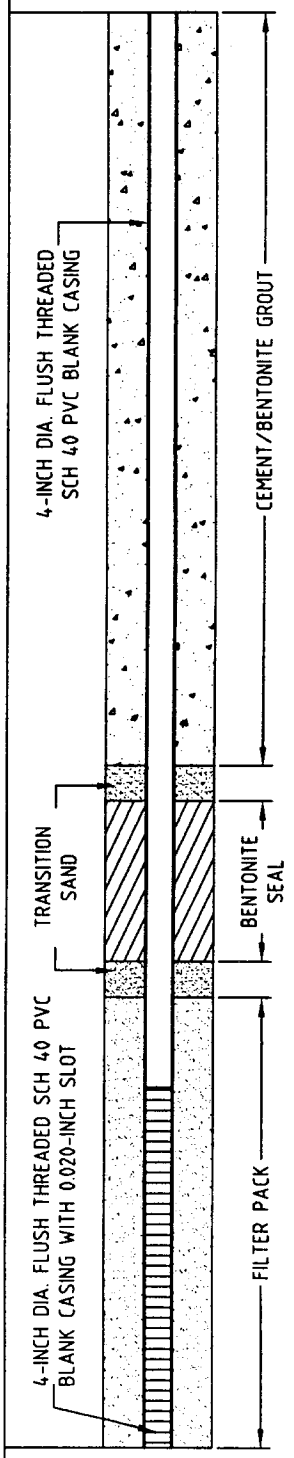
# Geologic Log of Well 18_PS3A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Dark yellowish brown (10YR 3/6), 85% fine sand, 15% fines, wet, medium dense. | 40 | SM | | | | 15 | 6 |
| | 42 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 5/6), 70% low plastic fines, 30 % fine sand, moist, stiff. | 44 | ML | | | | 4<br>5<br>9 | 6<br>6<br>6 |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Clayey Silt (ML): Olive brown (2.5Y 5/4), 90% medium plastic fines, 10% fine sand, slightly moist, very stiff. | 50 | ML | | | | 3<br>8<br>14 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 5/4), 70% fine sand, 30% low plastic fines, slightly moist to moist, medium dense. | 60 | SM | | | | 2<br>10<br>17 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Poorly Graded Sand (SP): Yellowish brown (10YR 5/4), 95% fine to medium to coarse sand, 5% fine subangular gravel, slightly moist, medium dense. | 70 | SP | | | | 5<br>12<br>19 | 6<br>6<br>6 |
| | 72 | | | | | | |
| Poorly Graded Sand (SP): Same as above, trace gravel. | 74 | SP | | | | 4<br>16<br>23 | 6<br>6<br>6 |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Poorly Graded Sand with Silt (SP-SM): Yellowish brown (10YR 5/4), 90% fine to medium sand, 10% fine, wet, loose. | 80 ▽ | SP/SM | | | | 3<br>4<br>11 | 6<br>5<br>0 |




WELL DETAIL

OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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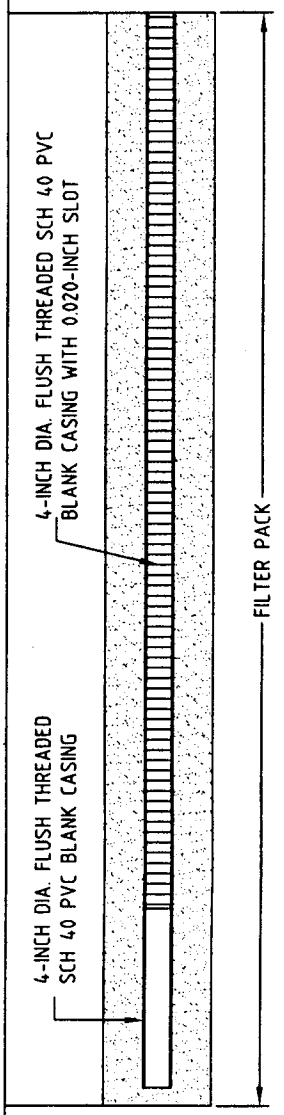
# Geologic Log of Well 18_PS3A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Poorly Graded Sand with Silt (SP-SM): Yellowish brown (10YR 5/4), 90% fine to medium sand, 10% fine, wet, loose. | 80 | SP/SM | | | | 11 | 0 |
| | 82 | | | | | | |
| Silty Sand (SM): Light olive brown (2.5Y 5/4), 65% fine sand, 35% fines, wet, loose. | 84 | SM/ML | | | | 1 4 7 | 6 6 6 |
| Clayey Silt (ML): Dark brown, very dark grayish brown (10YR 3/2), to (10YR 3/3), 100% medium plastic fines, slightly moist, stiff. | 86 | | | | | | |
| | 88 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 4/4), 65% fine sand, 35% fines, wet, medium dense. | 90 | SM | | | | 6 14 14 | 6 6 6 |
| | 92 | | | | | | |
| Poorly Graded Sand (SP): Yellowish brown (10YR 5/4), 95% fine to medium sand, 5% fines, wet, loose. | 94 | SP | | | | 6 8 10 | 6 6 6 |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Sandy Silt (ML): Light olive brown to olive brown (2.5Y 5/4), to (2.5Y 4/4), 80% medium plastic fines, 20% fine to medium sand, wet, stiff. | 100 | ML | | | | 1 3 7 | 6 6 6 |
| | 102 | | | | | | |
| Clayey Silt (ML): Dark yellowish brown (10YR 4/4), 100% medium plastic fines, moist, stiff. | 104 | ML | | | | 6 6 9 | 6 6 6 |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/3), 100% fine to medium to coarse sand, trace fines, wet, medium dense. | 110 | SP | | | | 4 9 14 | 6 6 6 |
| Total Depth= 110½ feet. | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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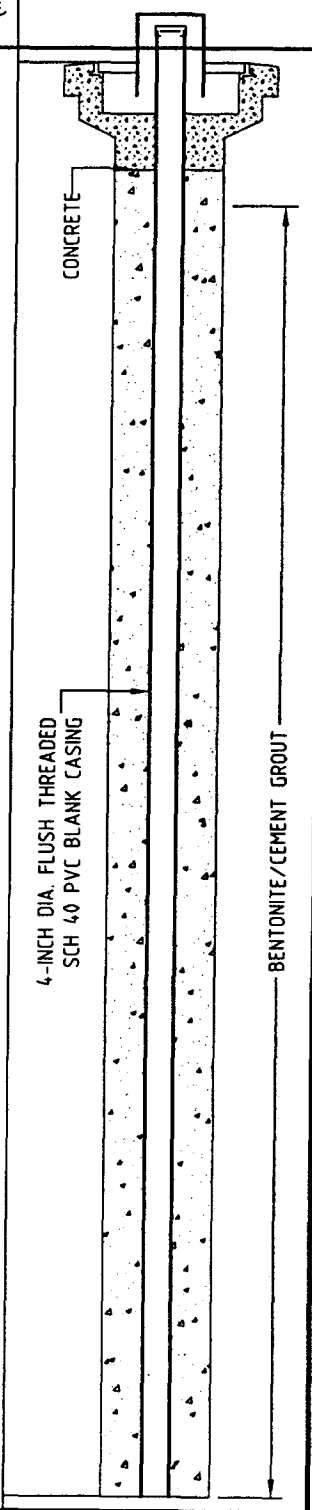
# Geologic Log of Boring 12_DBMW48A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2189647.19 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6106891.32 | Drill Rig CME 95 | Begin Drilling 8/22/00 |
| Client SWDIV | TOC Elevation 248.93 | Driller Jim Kline | End Drilling 8/22/00 |
| Geologist A. Siddiqui | TOC RIM 249.34 | Drill Method H.S.A. | |
| Location **MARINE CORPS AIR STATION** | DIAGRAM NOT TO SCALE | | |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 146 FEET | Depth to Water 109 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| *1 foot concrete at surface.* | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Silt (ML): Brown (7.5YR 4/3), 90% low to medium plastic fines, 10% fine sand, slightly moist to moist, stiff. | 10 | ML | | | | 3 4 7 | 6 6 6 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 80% low plastic fines, 20% fine sand, slightly moist to moist, firm, interbeded with 3 *inch thick lens of medium grained poorly graded sand.* | 20 | ML | | | | 2 2 3 | 6 6 6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 3/4), to (10YR 3/6), 70% fine *sand, 30% non to low plastic fines, slightly moist, loose.* | 30 | SM | | | | 2 2 4 | 6 6 6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| Silty Sand (SM): Dark Brown (7.5YR 3/3), 80%, fine to medium sand, 20% *low plastic fines, slightly moist, medium dense.* | 38 | | | | | | |
| | 40 | SM | | | | 6 10 | 6 6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: *This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.*

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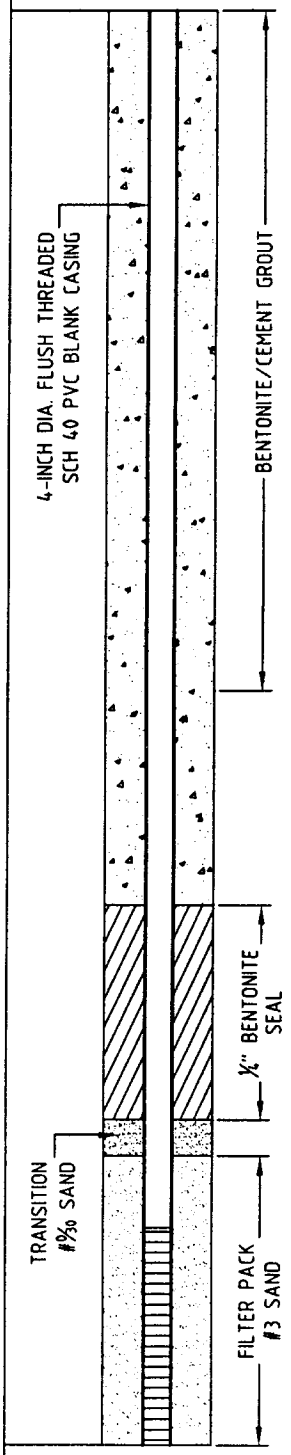
# Geologic Log of Well 12_DBMW48A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Dark Brown (7.5YR 3/3), 80%, fine to medium sand, 20% low plastic fines, slightly moist, medium dense. | 40 | SM | | | | 16 | 6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silt (ML): Brown (7.5YR 5/4), 90% low plastic fines, 10% fine sand, slightly moist, very stiff. | 50 | ML | | | | 5<br>8<br>17 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 5/6), 75% non to low plastic fines, 25% fine sand, slightly moist, hard. | 60 | ML | | | | 11<br>15<br>38 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Sandy Silt (ML): Dark yellowish brown (10YR 3/4), 80% low plastic fines, 20% fine sand, slightly moist. | 70 | ML | | | | 11 | 6 |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium sand, slightly moist, medium dense. | | SP | | | | 12<br>17 | 6<br>6 |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Poorly Graded Sand (SP): Yellowish brown (10YR 5/6), 100% fine to medium sand, trace fine subrounded gravel, moist, dense. | 80 | SP | | | | 6<br>23 | 6<br>6 |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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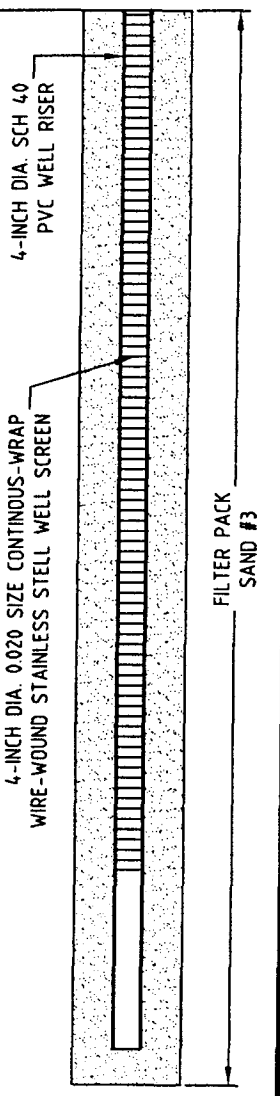
# Geologic Log of Well 12_DBMW48A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Poorly Graded Sand (SP): Yellowish brown (10YR 5/6), 100% fine to medium sand, trace fine subrounded gravel, moist, dense. | 80 | SP | | | | 39 | 6 |
| | 82 | | | | | | |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium sand, trace fines, wet, dense. | 84 | SP | | | | 9<br>12<br>34 | 6<br>6<br>6 |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty Sand (SM): Olive brown (2.5Y 5/4), 60% fine to medium sand, 40% non to low plastic fines, wet, medium dense, grades into sandy silt at places. | 90 | SM | | | | 6<br>8<br>14 | 6<br>6<br>6 |
| | 92 | | | | | | |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium sand, trace fine, subrounded gravel, trace fines, wet, medium dense. | 94 | SP | | | | 14<br>19<br>23 | 6<br>6<br>6 |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Silty Sand (SM): Olive brown (2.5Y 5/4), 85% fine to medium sand, 15% fines, wet medium dense. | 100 | SM | | | | 9<br>9<br>16 | 6<br>6<br>6 |
| | 102 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 3/6), 40% non to low plastic fines, 60% fine sand, wet, medium dense, grades into sandy silt at places. | 104 | SM | | | | 6<br>10<br>22 | 6<br>6<br>6 |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 5/4), 70% fine sand, 30% non to low plastic fines, wet, medium dense. | 110 | SM | | | | 14<br>17<br>23 | 6<br>6<br>6 |
| Total Depth= 110 feet. | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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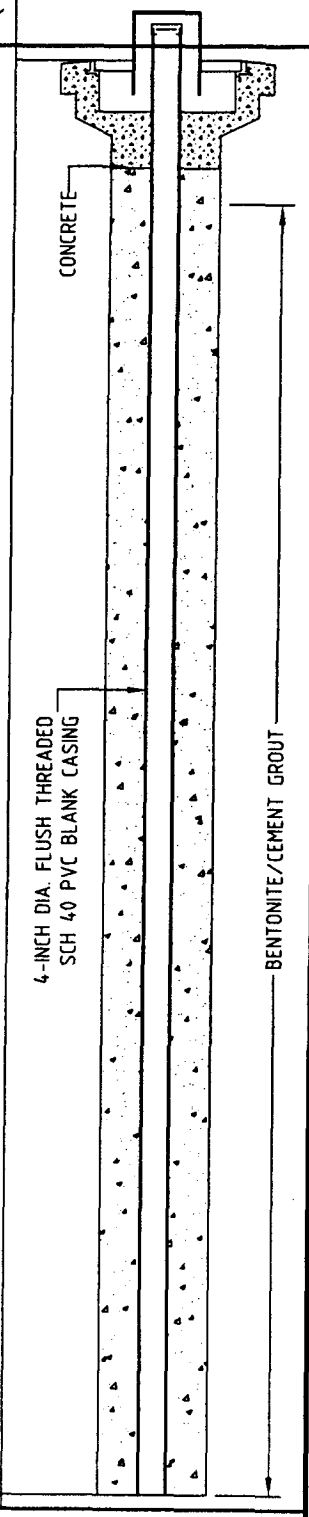
# Geologic Log of Boring 18_BGMW101A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2190571.94 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6105397.76 | Drill Rig CME 95 | Begin Drilling 8/15/00 |
| Client SWDIV | TOC Elevation 232.30 | Driller Jim Kline | End Drilling 8/15/00 |
| Geologist A. Siddiqui | TOC RIM 233.11 | Drill Method H.S.A. | |
| Location **MARINE CORPS AIR STATION** | DIAGRAM NOT TO SCALE | | |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 146 FEET | Depth to Water 109 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| 1 foot concrete at surface. | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 4/2), 80% fine sand, 20% fines, slightly moist, loose, micaceous. | 10 | SM | | | | 3 3 7 | 6 6 6 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Silt (ML): Brown (7.5YR 4/3), 85% low plastic fines, 15% fine sand, slightly moist, stiff, micaceous. | 20 | ML | | | | 3 5 10 | 6 6 6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 4/2), silty sand, low plastic silt and poorly graded sand all together in lumps, appears to be fill material. | 30 | SM | | | | 4 3 3 | 6 6 6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| Silt (ML): Dark yellowish brown (10YR 3/2), 100% low plastic fines, slightly moist, very stiff to stiff, interbeded with yellowish brown color, poorly graded sound. | 38 | | | | | | |
| | 40 | ML | | | | 3 7 | 6 6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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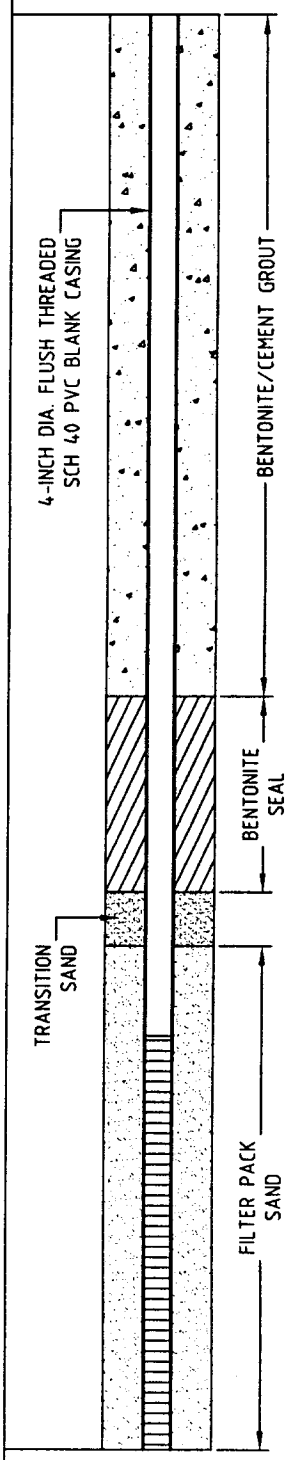
# Geologic Log of Well 18_BGMW101A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silt (ML): Dark yellowish brown (10YR 3/4), 100% low plastic fines, slightly moist, very stiff to stiff, interbeded with yellowish brown color, poorly graded sound. | 40 | ML | | | | 12 | 6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silty Sand (SM): Brown (7.5YR 5/4), 70% fine sand, 30% low plastic fines, slightly moist, loose, grades into sandy silt at paces. | 50 | SM | | | | 4<br>6<br>10 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 5/6), 65% fine sand, 35% low plastic fines, slightly moist, medium dense, grades into sandy silt at places. | 60 | SM | | | | 3<br>5<br>29 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 5/6), 80% fine sand, 20% fines, trace coarse subangular gravel, slightly moist, medium dense. | 70 | SM | | | | 8<br>10<br>21 | 6<br>6<br>6 |
| | 72 | | | | | | |
| Silt (ML): Dark yellowish brown (10YR 5/4), 100% medium plastic fines, trace fine sand, moist, stiff. | 74 | SM | | | | 6<br>7 | 6<br>6 |
| Poorly Graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium sand, trace fines, wet, medium dense. | | SP | | | | 11 | 6 |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 5/4), 70% fine sand, 30% low plastic fines, wet, loose. | 80 | SM | | | | 5<br>5 | 6<br>6 |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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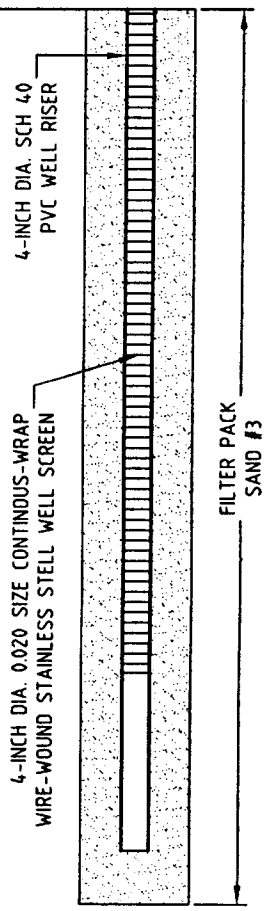
# Geologic Log of Well 18_BGMW101A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Dark yellowish brown (10YR 4/4), 70% fine sand, 30% low plastic fines, wet, loose. | 80 | SM | | | | 8 | 6 |
| | 82 | | | | | | |
| Clayey Silt (ML): Dark yellowish brown (10YR 3/4), 100% medium plastic fines, slightly moist to moist, hard. | 84 | ML | | | | 9<br>26<br>34 | 6<br>6<br>6 |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Sandy Clayey Silt (ML): Yellowish brown (10YR 5/4), 85% low to medium plastic fines, 15% fine sand, moist to very moist, very stiff. | 90 | ML | | | | 5<br>8<br>12 | 6<br>6<br>6 |
| | 92 | | | | | | |
| Silty Clays (CH): Brown (10YR 5/3), 100% medium to high plastic fines, moist, stiff. | 94 | CH | | | | 3 | 6 |
| Poorly Graded Sand with Silt (SP-SM): Light olive brown (2.5Y 5/4), 90% fine to medium sand, 10% fines, wet, medium dense. | | SP-SM | | | | 7<br>12 | 6<br>6 |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Silty Clay (CH): Light olive brown (2.5Y 5/4), 100% medium to high plastic fines, very moist, soft, interbeded with poorly graded sand at places. | 100 | CH | | | | 1<br>1<br>1 | 6<br>6<br>6 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| Total Depth= 105 feet. | 106 | | | | | | |
| | 108 | | | | | | |
| | 110 | | | | | | |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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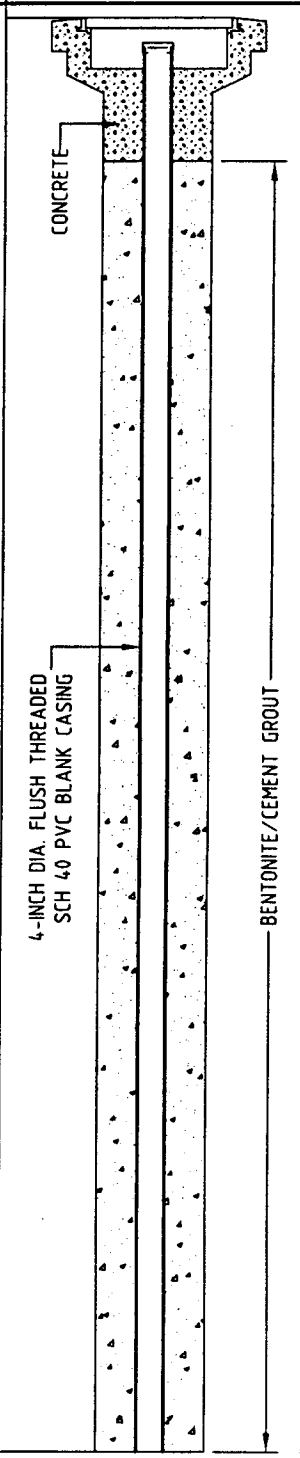
# Geologic Log of Boring 18_BGMW18A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig CME 95 | Begin Drilling 8/28/00 |
| Client SWDIV | TOC Elevation - | Driller Jim Kline | End Drilling 8/30/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method H.S.A. | Start time: |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | End time: |
| Borehole Diameter 12 INCHES | Total Depth of Borehole 154 FEET | Depth to Water 122 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| Poorly graded SAND: yellowish brown (10YR 5/4) 100% fine to medium sand, trace fine, loose. | 10 | SP | | | | 3 4 5 | 6 6 6 |
| | 12 | | | | | | |
| | 14 | | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 4/6) 70% fine sand, 30% non plastic fines, slightly moist, loose. | 20 | | | | | 4 5 4 | 6 6 6 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | SM | | | | | |
| Silty SAND: dark yellowish brown (10YR 4/6) 70% fie sand, 30% non o low plastic fines, slightly moist, loose, interbedded with sandy silt at places. | 30 | | | | | 3 4 5 | 6 6 6 |
| | 32 | | | | | | |
| | 34 | | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| Poorly graded SAND: light yellowish brown (10YR 5/4) 100% fine to medium to coarse sand, slightly moist, medium dense. | 40 | SP | | | | 5 14 | 6 6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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# Geologic Log of Well 18_BGMW18A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) | WELL DETAIL |
|---|---|---|---|---|---|---|---|---|
| | 40 | | | | | 24 | 6 | |
| | 42 | | | | | | | |
| | 44 | SP | | | | | | |
| | 46 | | | | | | | |
| | 48 | | | | | | | |
| Clayey SILT: dark brown (10YR 3/3) 100% low to medium plastic fines, slightly moist, stiff. | 50 | ML | | | | 2<br>3<br>8 | 6<br>6<br>6 | |
| | 52 | | | | | | | |
| | 54 | | | | | | | |
| | 56 | | | | | | | |
| | 58 | | | | | | | |
| Silty SAND: dark yellowish brown (10YR 3/6) 60% fine sand, 40% low plastic fines, slightly moist; medium dense, grades into sandy silt at places. | 60 | SM | | | | 3<br>9<br>11 | 6<br>6<br>6 | 4-INCH DIA. FLUSH THREADED SCH 40 PVC BLANK CASING<br>BENTONITE/CEMENT GROUT |
| | 62 | | | | | | | |
| | 64 | | | | | | | |
| | 66 | | | | | | | |
| | 68 | | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/6) 75% fine sand, 25% fines, slightly moist, medium dense. | 70 | | | | | 5<br>8<br>9 | 6<br>6<br>6 | |
| | 72 | | | | | | | |
| | 74 | SM | | | | | | |
| | 76 | | | | | | | |
| | 78 | | | | | | | |
| Clayey SILT: dark yellowish brown (10YR 3/6) 90% low to medium plastic fines, 10% fine sand, slightly moist, very stiff. | 80 | ML | | | | 4<br>5 | 6<br>6 | |

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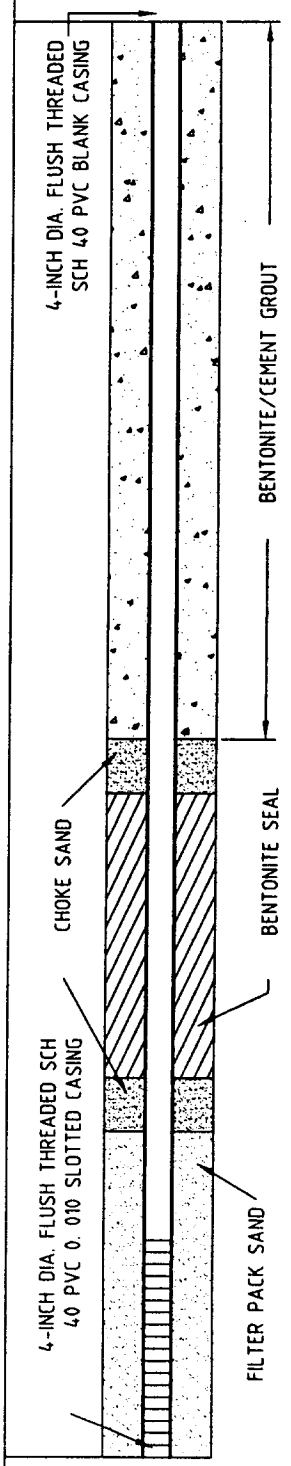
# Geologic Log of Well 18_BGMW18A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 80 | | | | | 14 | 4 |
| | 82 | | | | | | |
| | 84 | ML | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| Silty SAND: strong brown (7.5YR 5/6) 70% fine sand 30% low plastic fines, slightly moist, medium dense, at places interbedded with sandy silt. | 90 | | | | | 4<br>21<br>23 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | SM | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Silty SAND: light yellowish brown (10YR 5/4) 75% fine sand, 25% fines, slightly moist, medium dense. | 100 | | | | | 11<br>12<br>20 | 6<br>6<br>6 |
| | 102 | | | | | | |
| | 104 | SM | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| Gravelly SAND: yellowish brown (10YR 5/6) 90% fine to medium to coarse sand, 10% fine sub rounded gravel, trace fines, moist, medium dense, interbedded with thin lenses of sandy silt at places. | 110 | | | | | 5<br>8<br>12 | 6<br>6<br>6 |
| | 112 | | | | | | |
| | 114 | SP | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| Poorly graded SAND: yellowish brown (10YR 5/4) 100% fine to medium sand, very moist, trace fines, very moist; loose. | 120 | | | | | 6<br>4 | 6<br>6 |

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NOTE: *This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.*

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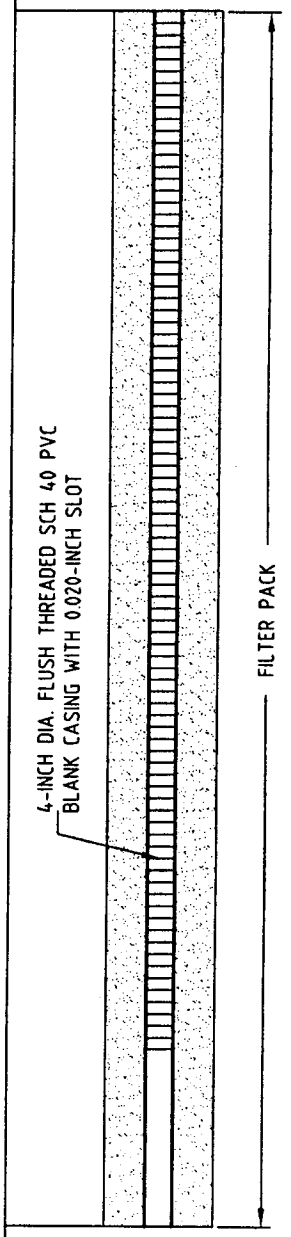
# Geologic Log of Well 18_BGMW18A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| | 120 | | | | | 11 | 6 |
| | 122 | SP | | | | | |
| Poorly graded SAND with silt, brown (10YR 5/3) 90% fine to medium sand, 10% fines, wet, loose. | 124 | | | | | 2 | 6 |
| | | | | | | 2 | 6 |
| | 126 | SP-SM | | | | 5 | 3 |
| | 128 | | | | | | |
| Clayey SILT, dark yellowish brown (10YR 4/6) 100% medium plastic fines, moist, stiff. | 130 | | | | | 4 | 6 |
| | | | | | | 5 | 6 |
| | | | | | | 4 | 6 |
| | 132 | | | | | | |
| SILT; dark yellowish brown (10YR 4/6) 90% low plastic fines, 10% very fine sand, moist, stiff. | 134 | ML | | | | 2 | 6 |
| | | | | | | 5 | 6 |
| | | | | | | 6 | 6 |
| | 136 | | | | | | |
| | 138 | | | | | | |
| Silty CLAY: dark yellowish brown (10YR 4/4) 100% medium to high plastic fines, slightly moist to moist, very stiff. | 140 | | | | | 4 | 6 |
| | | | | | | 5 | 6 |
| | | | | | | 15 | 6 |
| | 142 | CH | | | | | |
| Clayey sandy SILT: dark yellowish brown (10YR 3/6) 85% medium plastic fines, 15% fine sand, wet, very stiff. | 144 | | | | | 3 | 6 |
| | | | | | | 5 | 2 |
| | | | | | | 14 | 0 |
| | 146 | | | | | | |
| | 148 | | | | | | |
| Sandy SILT: dark yellowish brown (10YR 4/6) 80% low to medium plastic fines 20% fine sand, wet, very stiff. | 150 | ML | | | | 5 | 6 |
| | | | | | | 9 | 6 |
| | | | | | | 15 | 6 |
| | 152 | | | | | | |
| TOTAL DEPTH = 154.0 FEET | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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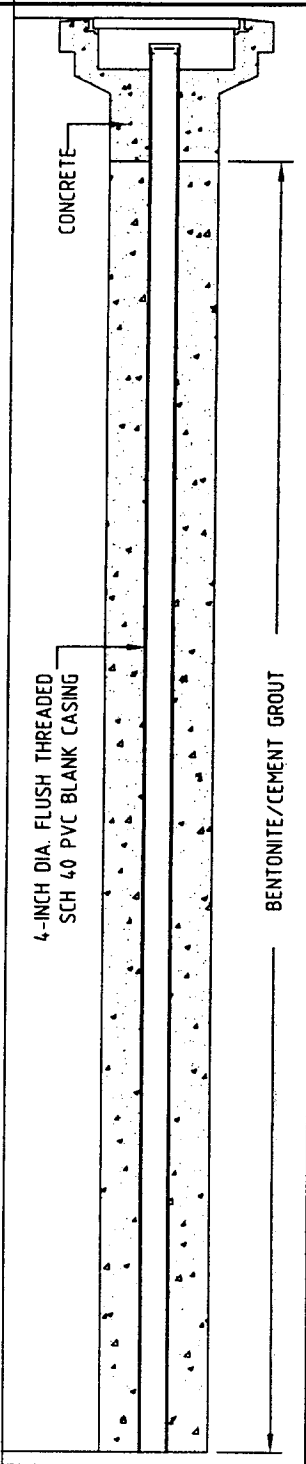
# Geologic Log of Boring 05_DGMW41A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig FORMOST AP 1000 | Begin Drilling 9/1/00 |
| Client SWDIV | TOC Elevation -67.11 | Driller Luis G. | End Drilling 9/1/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 1125 |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | End time: 0900 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 200 FEET | Depth to Water 167 TO 168 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Silty SAND: brown (7.5YR 5/4) 80% fine sand, 20% non plastic fines, slightly moist, medium dense. | 10 | SM | | | | 29<br>22<br>18 | 6<br>6<br>5 |
| Poorly graded SAND, yellowish brown (10YR 5/4) 100% fine to medium sand, trace fine, slightly moist, medium dense. | 20 | SP | | | | 11<br>14<br>18 | 6<br>6<br>4 |
| Sandy SILT, dark yellowish brown (10YR 5/4) 80% non to low plastic fines, 20% very fine sand, slightly moist, very stiff. | 30 | ML | | | | 7<br>9<br>12 | 6<br>6<br>6 |

BORING DETAIL




OHM Remediation Services Corp.



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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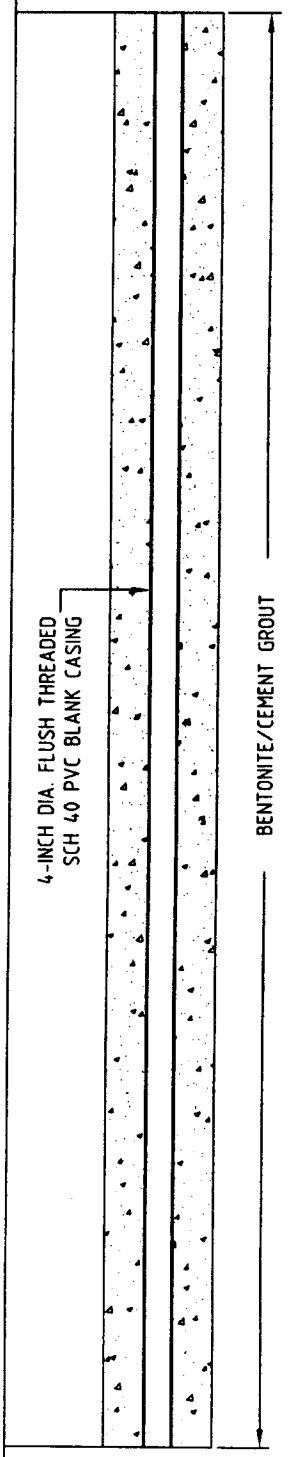
# Geologic Log of Well 05_DGMW41A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Poorly graded SAND: yellowish brown (10YR 5/6), 100% fine to medium sand, trace fines, slightly moist, medium dense to dense. | 40 | SP | | | 7 | | 6 |
| | | | | | 9 | | 6 |
| | 42 | | | | 19 | | 3 |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/6) 60% fine sand, 40% low to non plastic fines, slightly moist, medium dense, amount of fines variable 30-40% at place, grades into sandy silt. | 50 | SM | | | 8 | | 6 |
| | | | | | 12 | | 6 |
| | 52 | | | | 17 | | 6 |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/4) 60% very fine sand, 40% non to low plastic fines, slightly moist, medium dense to dense, grades into sandy silt at places. | 60 | | | | 8 | | 6 |
| | | | | | 20 | | 6 |
| | 62 | | | | 30 | | 6 |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/4), 70% fine sand, 30% low plastic fine, dense, slightly moist. | 70 | SM | | | 15 | | 6 |
| | | | | | 25 | | 6 |
| | 72 | | | | 33 | | 6 |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| | 80 | | | | | | |

WELL DETAIL

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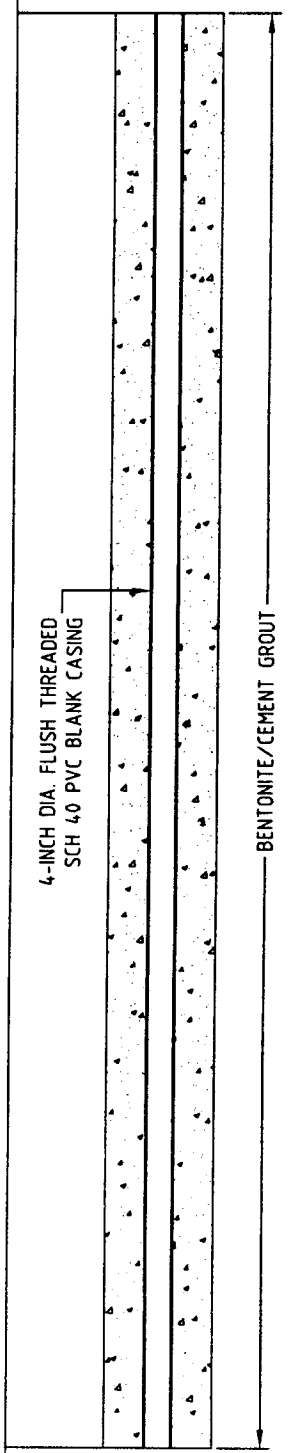
# Geologic Log of Well 05_DGMW41A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Poorly graded SAND with silt, light olive brown (2.5Y 5/4) 90% fine to medium sand, 10% low plastic fines, slightly moist, very dense.** | 80 | SP/SM | | | | 20<br>50/3 | 6<br>4 |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| **Sandy SILT, dark yellowish brown (10YR 4/6) 80% non to low plastic fines, 20% very fine sand, slightly moist, hard.** | 90 | ML | | | | 15<br>22<br>30 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| **Silty SAND: light olive brown (2.5Y 5/4), 80% fine sand, 20% non to low plastic fines, slightly moist, dense.** | 100 | SM | | | | 14<br>27<br>33 | 6<br>6<br>6 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| **Poorly graded SAND, light yellowish brown (2.5Y 6/3), 100% fine to medium to coarse sand, trace fine to sub angular gravel, slightly moist, dense.** | 110 | SP | | | | 10<br>25<br>39 | 6<br>6<br>6 |
| **Same as above.** | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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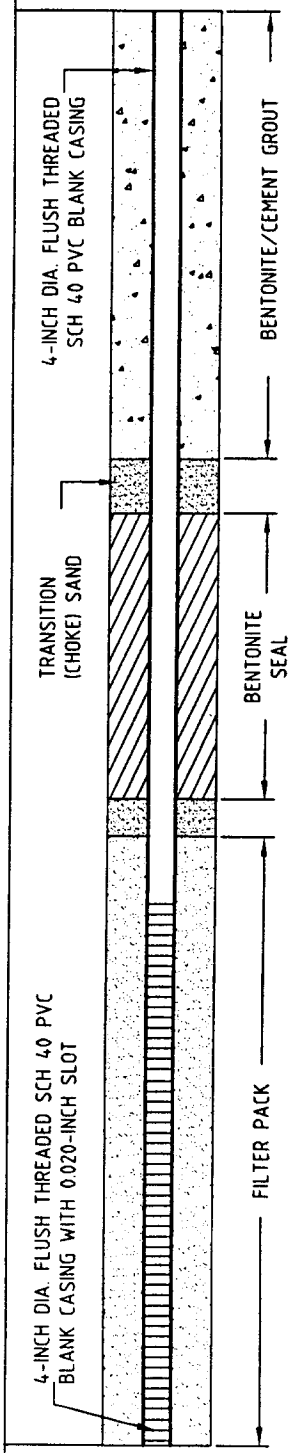
# Geologic Log of Well 05_DGMW41A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Sandy SILT, light olive brown (2.5Y 5/4), 80% low plastic fines, 20% fine sand, slightly moist, hard laminated.** | 120 | ML | | | | 9<br>23<br>30 | 6<br>6<br>6 |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| **Silty SAND, dark olive brown (2.5Y 3/3) 75% fine sand, 25% non plastic fines, slightly moist, medium dense to dense.** | 130 | SM | | | | 8<br>25<br>25 | 6<br>6<br>6 |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| **Poorly graded GRAVEL, fine to coarse sub angular to sub rounded gravel. Some cobbles 5" diameter in soil cuttings and 149 ft.** | 140 | GP | | | | 9<br>50/4 | 3<br>0 |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| **Sandy GRAVEL, light olive brown (2.5Y 5/4) 70% fine to coarse sub rounded gravel, 30% fine to medium to coarse gravel, moist, dense.** | 150 | | | | | 4<br>52/4 | 6<br>1 |
| | 152 | | | | | | |
| | 154 | | | | | | |
| **Poorly graded SAND, olive brown (2.5Y 4/4) 100% fine to medium sand, trace gravel, trace fine, wet, dense.** | 156 | SP | | | | 14<br>29<br>50/3 | 6<br>6<br>2 |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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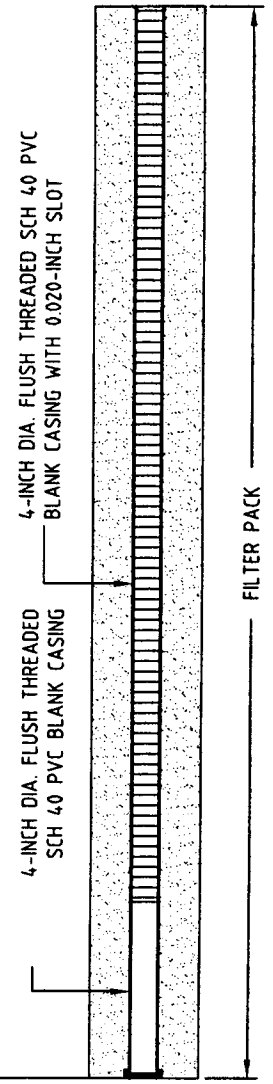
# Geologic Log of Well 05_DGMW41A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Poorly graded SAND with silt and gravel, yellowish brown (10YR 5/4) 85% fine to medium to coarse sand, 10% fines, 5% fine sub rounded gravel, wet, dense.** | 160 | SM | | | | 13<br>23<br>29 | 6<br>6<br>6 |
| | 162 | | | | | | |
| **Clayey SILT, dark yellowish brown (10YR 3/6) 100% medium plastic fines, moist, very stiff.** | 164 | ML | | | | 5<br>11<br>20 | 6<br>6<br>5 |
| | 166 | | | | | | |
| | 168 | | | | | | |
| **Clayey SILT, light olive brown (2.5Y 5/4) 100% medium plastic fines, moist, hard.** | 170 | | | | | 8<br>24<br>40 | 6<br>6<br>6 |
| | 172 | | | | | | |
| **No sample at 175 ft. flowing sand coming into drill string.** | 174 | | | | | | |
| | 176 | | | | | | |
| | 178 | | | | | | |
| | 180 | | | | | | |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| **Same as above, fine to medium flowing sand.** | 188 | | | | | | |
| **7 feet of flowing sand in hole.** | 190 | | | | | | |
| **TOTAL DEPTH = 190.0 FEET** | 192 | | | | | | |
| | 194 | | | | | | |
| | 196 | | | | | | |
| | 198 | | | | | | |
| | 200 | | | | | | |

WELL DETAIL

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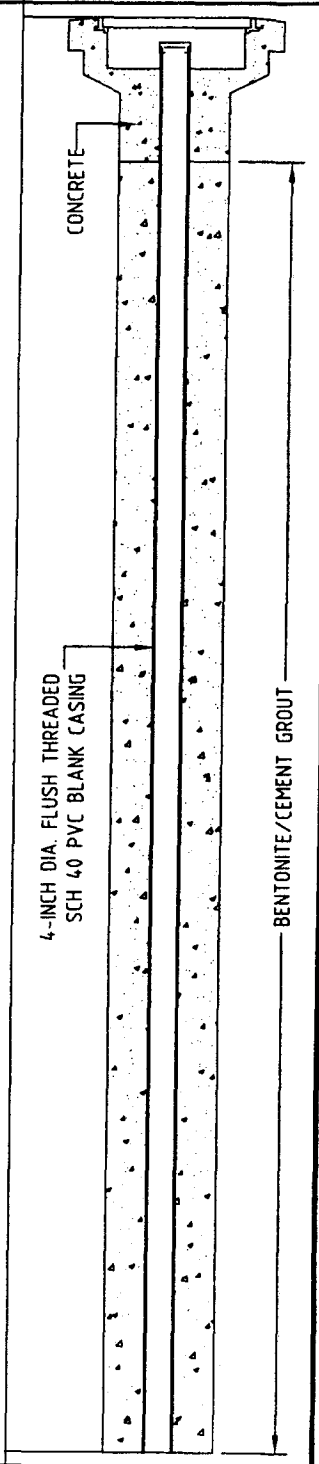
# Geologic Log of Boring 05_DGMW67A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig FORMOST AP 1000 | Begin Drilling 9/1/00 |
| Client SWDIV | TOC Elevation -67.11 | Driller Luis G. | End Drilling 9/1/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 1125 |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | End time: 0900 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 200 FEET | Depth to Water 167 TO 168 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Silty SAND: dark yellowish brown (10YR 5/6), 80% fine sand, 20% non plastic fines, slightly moist, medium dense. | 10 | SM | | | | 13<br>13<br>12 | 6<br>6<br>2 |
| SILT: dark yellowish brown (10YR 5/4) to (10YR 5/6) 90%; low plastic fines, 10% very fine sand, slightly moist, stiff. | 20 | ML | | | | 5<br>7<br>9 | 6<br>6<br>6 |
| Silty SAND: dark yellowish brown (10YR 5/6) 75% fine sand, 25% non to low plastic fines; slightly moist; medium dense. | 30 | SM | | | 10<br>15<br>22 | | 6<br>6<br>5 |

BORING DETAIL

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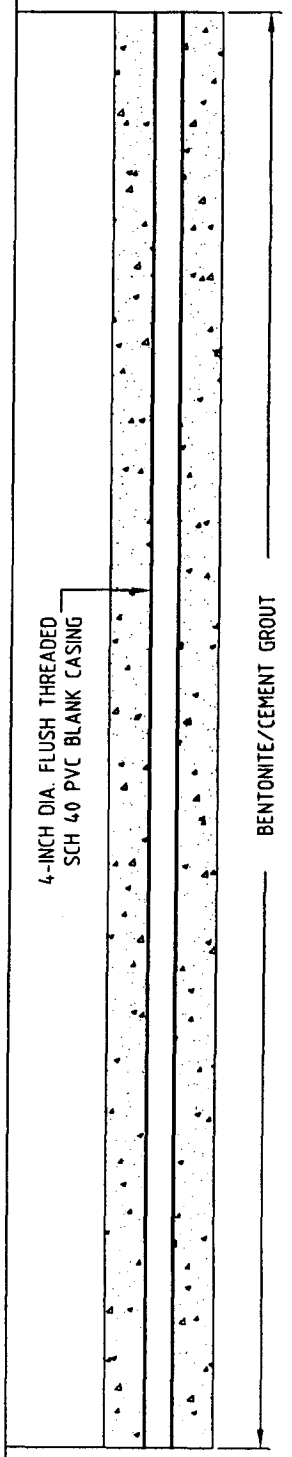
# Geologic Log of Well 05_DGMW67A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Poorly graded SAND: yellowish brown (10YR 5/6), 100% fine to medium sand, trace fines, slightly moist, medium dense to dense. | 40 | SP | | | 14 | | 6 |
| | | | | | 23 | | 6 |
| | 42 | | | | 31 | | 6 |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silty SAND: yellowish brown (10YR 5/6) 70% fine sand, 30% low plastic fines, slightly moist, very dense, trace caliche. | 50 | SM | | | 22 | | 6 |
| | | | | | 50/5 | | 5 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty SAND: dark yellowish brown (10YR 5/6) 70% fine sand, 30% non plastic fines, slightly moist, dense. | 60 | | | | 15 | | 6 |
| | | | | | 27 | | 6 |
| | 62 | | | | 40 | | 6 |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Poorly graded SAND, light yellowish brown (2.5Y 5/4) 100% fine to medium sand, slightly moist, dense. | 70 | SP | | | 10 | | 6 |
| | | | | | 30 | | 6 |
| | 72 | | | | 42 | | 5 |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| | 80 | | | | | | |

WELL DETAIL

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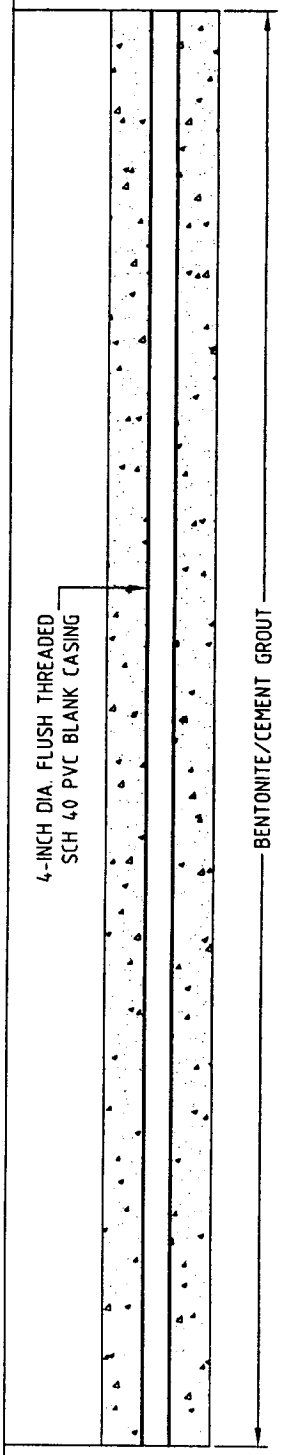
# Geologic Log of Well 05_DGMW67A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Silty SAND: dark yellowish brown (10YR 4/6), 60% fine sand, 40% non plastic fines, trace caliche, slightly moist dense.** | 80 | SM | | | | 10<br>30<br>42 | 6<br>6<br>5 |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| **Sandy SILT: dark yellowish brown, (10YR 3/6) 80% non plastic fines, 20% very fine sand, trace caliche, slightly moist, very stiff.** | 90 | ML | | | | 7<br>13<br>20 | 6<br>6<br>6 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| **Silty SAND; light yellowish brown (2.5Y 6/4) 80% fine sand, 20% fines, slightly moist, medium dense.** | 100 | SM | | | | 6<br>11<br>20 | 6<br>6<br>5 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| **Silty SAND: light olive brown (2.5Y 5/6) 80% fine sand, 20% non plastic fines, slightly moist, medium dense.** | 110 | | | | | 5<br>7<br>20 | 6<br>6<br>6 |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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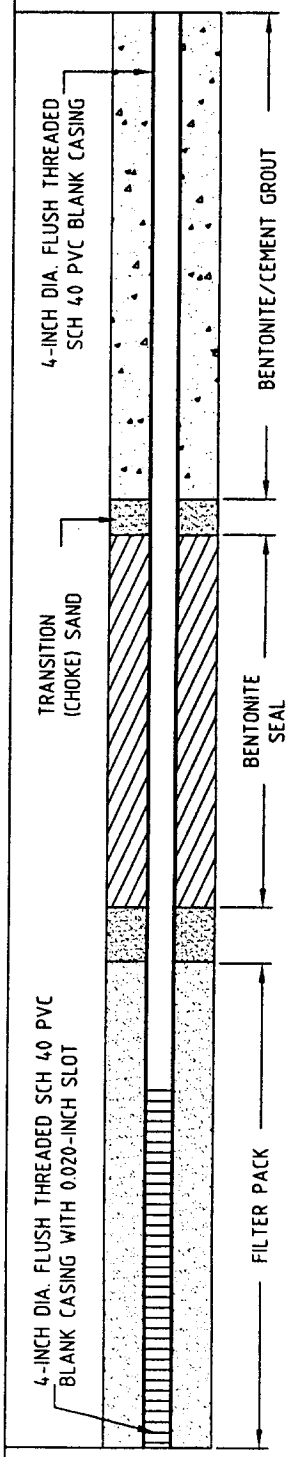
# Geologic Log of Well 05_DGMW67A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Poorly graded SAND; light olive brown (2.5Y 5/4), 95% fine to medium sand, 5% coarse subrounded gravel, trace fines, slightly moist, medium dense.** | 120 | SP | | | | 3<br>9<br>20 | 6<br>4<br>0 |
| **?25% coarse to fine subrounded gravels in soil cuttings. Soil cuttings are very moist firm 122 feet.** | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| **Poorly graded SAND with silty, 90% fine to medium sand, 10% medium plastic fines, very moist, loose.** | 130 | SM | | | | 3<br>3<br>6 | 6<br>5<br>0 |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| **Sandy GRAVEL: 80% fine to coarse sub angular to subrounded gravel, 20% fine to medium to coarse sand, trace fine slightly moist; sand is light olive brown (2.5Y 5/4), dense.** | 140 | GP | | | | 15<br>50/3 | 6<br>1 |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| **Same as above.** | 150 | | | | | 7<br>10<br>30 | 6<br>1<br>0 |
| | 152 | | | | | | |
| **At 155 ft. no recovery.** | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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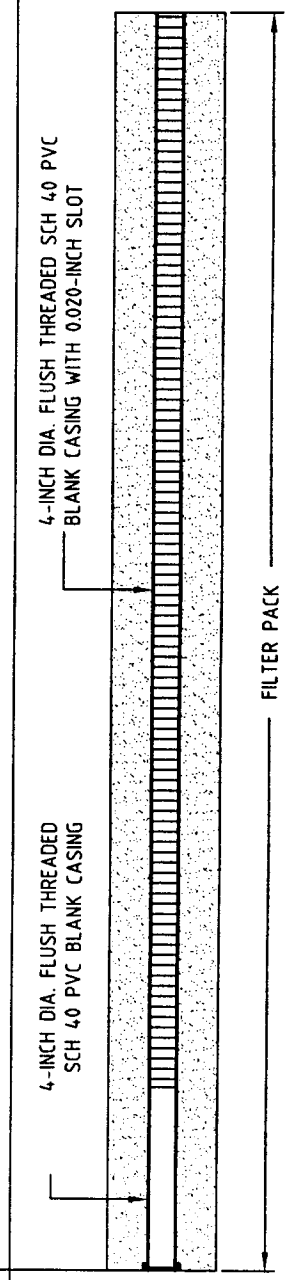
# Geologic Log of Well 05_DGMW67A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Clayey SILTS; light olive brown (2.5Y 5/4), 90% medium plastic fines, 10% veryfine sand, moist, very stiff.** | 160 | ML | | | | 5<br>10<br>20 | 6<br>6<br>6 |
| | 162 | | | | | | |
| | 164 | | | | | | |
| **Silty clayey SAND: dark yellowish brown (10YR 4/6) 75% fine sand, 35% medium plastic fines, very moist, very dense to dense.** | 166 | SM/SC | | | | 5<br>35<br>50/5' | 6<br>6<br>5 |
| | 168 | | | | | | |
| **Silty SAND, light olive brown (2.5Y 5/4) 85% fine to medium sand 15% medium plastic fines, 2" gravel in shoe, very moist, dense.** | 170 | SM | | | | 20<br>50/2' | 6<br>1 |
| | 172 | | | | | | |
| **At?175 ft. before collecting sample, inside of drive casing plugged, add water to clean it spent ½ hr to clean out. Silty SAND: dark yellowish brown (10YR 4/6) 60% fine sand, 40% low plastic fines, very moist, dense, grades into sandy silt at ?** | 174 | | | | | | |
| | 176 | | | | | 12<br>20<br>31 | 6<br>6<br>4 |
| | 178 | | | | | | |
| **Silty clayey SAND: light olive brown (2.5Y 5/4) 60% fine sand, 40% medium plastic fines, very moist, dense.** | 180 | SM/SC | | | | 7<br>30<br>50/2' | 6<br>6<br>6 |
| | 182 | | | | | | |
| | 184 | | | | | | |
| **Silty CLAY: olive brown (2.5Y 4/4) 100% medium plastic fines, moist, very stiff.** | 186 | CL | | | | 9<br>9<br>17 | 6<br>6<br>6 |
| | 188 | | | | | | |
| **Poorly graded SAND; light yellowish brown (2.5Y 5/4) 100% fine to medium sand, little coarse sand, trace fines, wet, loose.** | 190 | SP | | | | 3<br>3<br>4 | 6<br>6<br>5 |
| **Massive bottom 194 ft. and sands coming into hole.** | 192 | | | | | | |
| | 194 | | | | | | |
| **TOTAL DEPTH = 195.0 FEET** | 196 | | | | | | |
| | 198 | | | | | | |
| | 200 | | | | | | |

WELL DETAIL

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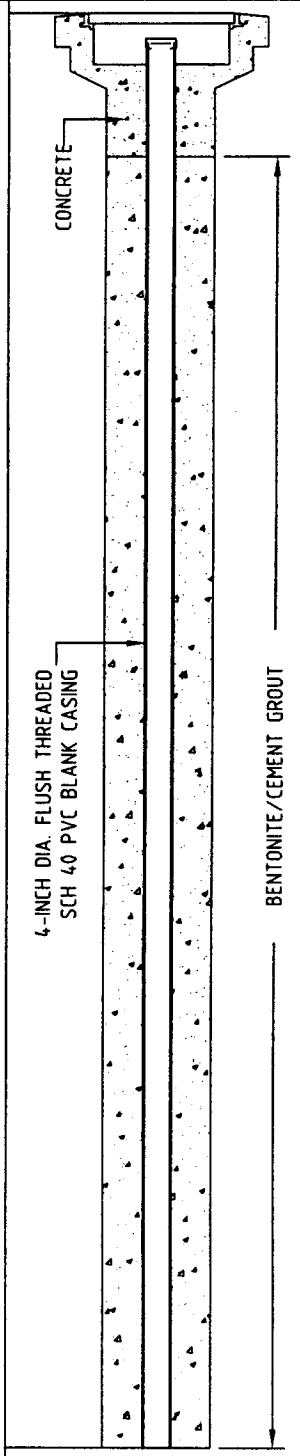
# Geologic Log of Boring 05_DGMW68A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing - | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting - | Drill Rig FORMOST AP 1000 | Begin Drilling 9/1/00 |
| Client SWDIV | TOC Elevation -67.11 | Driller Luis G. | End Drilling 9/1/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 1125 |
| Geologist A. Siddiqui | DIAGRAM NOT TO SCALE | | End time: 0900 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 200 FEET | Depth to Water 167 TO 168 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Silty SAND: brown (7.5Y 5/4), 75% fine sand, 25% fines, slightly moist, dense. | 10 | SM | | | | 26<br>37<br>42 | 6<br>6<br>6 |
| Sandy SILT: dark yellowish brown (10YR 5/4) to (10YR 5/6), 80% low plastic fines, 20% fine sand, slightly moist, very stiff. | 20 | | | | | 25<br>16<br>17 | 6<br>6<br>6 |
| Sandy SILT: dark yellowish brown (10YR 5/4) 90% low plastic fines, 10% fine sand, slightly moist, very stiff. | 30 | ML | | | | 6<br>8<br>12 | 6<br>6<br>6 |

BORING DETAIL

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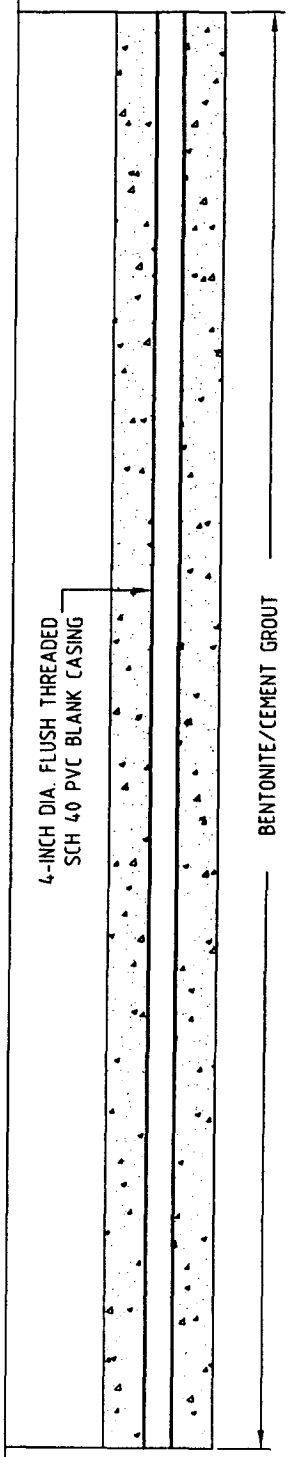
# Geologic Log of Well 05_DGMW68A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Poorly graded SAND, light yellowish brown (10YR 5/4) 100% fine well sorted sand, interbedded with dark yellowish brown, 3 inch lenses of low plastic silt, slightly moist, loose. | 40 | SP | | | 26 | | 6 |
| | | | | | 37 | | 6 |
| | | | | | 42 | | 6 |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Sandy SILT: dark yellowish brown (10YR 3/4) 70% low plastic fine, 30% fine sand, mist, stiff, grades into silty sand at places. | 50 | ML | | | 4 | | 6 |
| | | | | | 7 | | 6 |
| | | | | | 8 | | 6 |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Poorly graded SAND: light yellowish brown (2.5Y 5/4) 90% fine to medium to coarse sand, 10% fine sub rounded gravel, trace fines, slightly moist, dense. | 60 | SP | | | 11 | | 6 |
| | | | | | 50/3" | | 2 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Coarse gravel and some cobbles in soil cuttings | 70 | GP | | | 50/3" | | |
| Sandy GRAVEL; on 2 1/2" gravel in sampler. | | | | | | | |
| Gravel end at 73 ft. | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| | 80 | | | | | | |

WELL DETAIL

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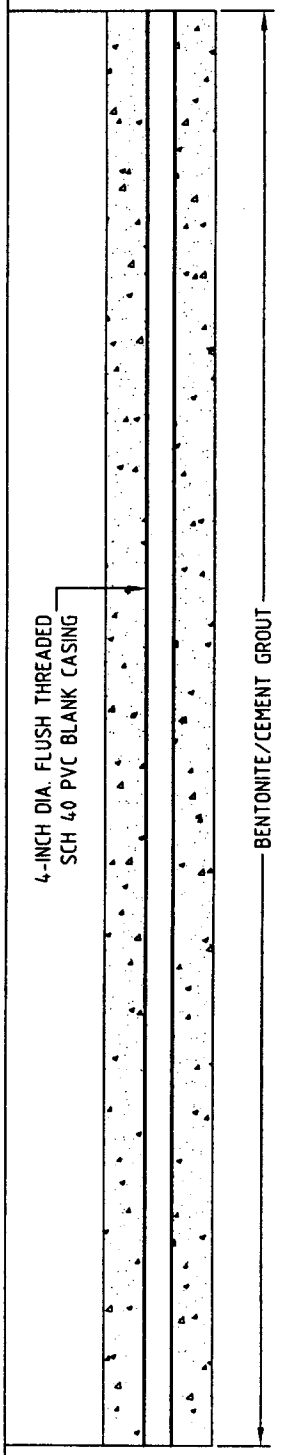
# Geologic Log of Well 05_DGMW68A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Poorly graded SAND with silt, dark yellowish brown (10YR 4/6), 95% fine to medium sand, 5% fines, slightly moist, dense.** | 80 | SP/SM | | | | 6<br>6<br>6 | 25<br>30<br>31 |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| **Clayey SILT, dark yellowish brown (10YR 4/4) 100% medium plastic fines, slightly moist, very stiff to hard.** | 90 | ML | | | | 6<br>6<br>6 | 10<br>11<br>27 |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| **Sandy SILT: dark yellowish brown (10YR4/4) 70% low plastic fines, 30% fine sand, slighlty moist to moist, hard.** | 100 | | | | | 6<br>6<br>6 | 15<br>25<br>46 |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| **Poorly graded SAND with silt, light yellowish brown (2.5Y 6/3), 90% fine to medium sand, 10% fines, interbedded with lenses 3" of sandy silt, slightly moist, medium dense.** | 110 | SP/SM | | | | 6<br>6<br>6 | 8<br>14<br>17 |
| | 112 | | | | | | |
| | 114 | | | | | | |
| **Poorly graded SAND, light olive brown (2.5Y 5/4) 100% fine to medium to coarse sand, slightly moist, interbedded with 2 inch thick lenses of olive brown color laminated silt, dense.** | 116 | SP | | | | 6<br>6<br>6 | 10<br>32<br>36 |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered

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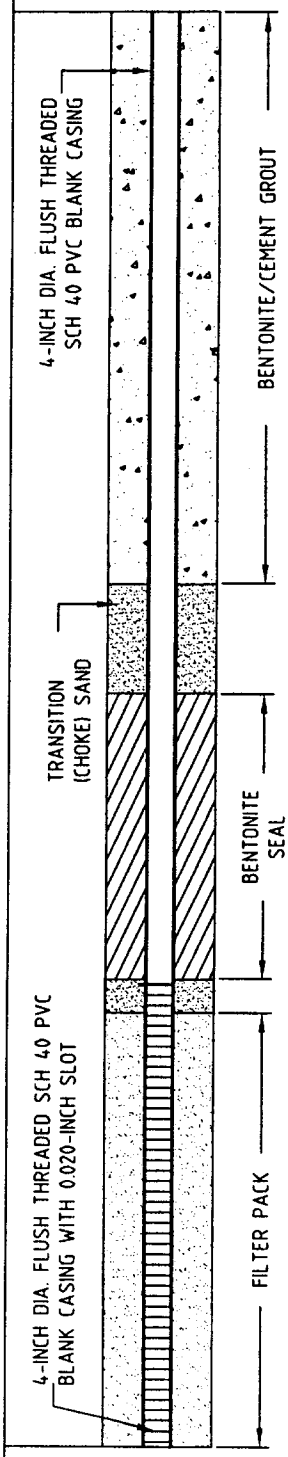
# Geologic Log of Well 05_DGMW68A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Silty SAND: dark brown (10YR ⅔) 70% very fine sand, 30% non to low plastic fines, moist, medium dense.** | 120 | SP/SM | | | | 16<br>24<br>20 | 6<br>6<br>6 |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| **Poorly graded SAND with silt; light olive brown (2.5Y ⅝) 95% fine to medium sand, 5% fines, slightly moist; medium dense, trace pieces of siltstone.** | 130 | | | | | 10<br>15<br>17 | 6<br>6<br>6 |
| | 132 | | | | | | |
| **At 135 inside of drive casing plugging up with silt/clay clasts at 140 ft. driller blew out the hose that carry cuttings to cyclone.** | 134 | SP/SM | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| **Poorly graded SAND with silt, yellowish brown fine sand with 80-90% silt, slight moist, medium dense, no odor, low plasticity.** | 140 | | | | | 6<br>13<br>20 | 6<br>6<br>6 |
| **Some 5% coarse sand (?.08 dia.)** | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| **Poorly graded granitic SAND, little to no silt slightly moist, yellow-light brown (alluvial sand) no odor.** | 150 | SP | | | | 6<br>26<br>50/4 | 6<br>6 |
| | 152 | | | | | | |
| | 154 | | | | | | |
| **Well graded SAND, brown, moist, 10% silt some gravels (N.75) low strength, no odor.** | 156 | SW | | | | 20<br>40<br>50 | 6<br>6 |
| | 158 | ML | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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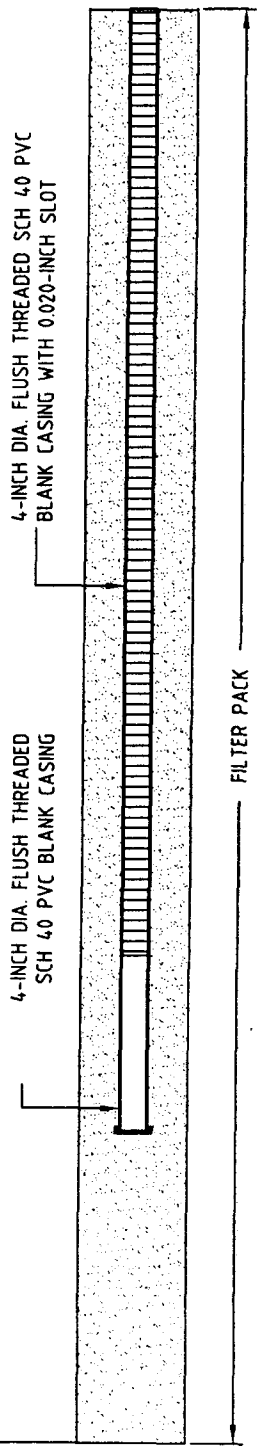
# Geologic Log of Well 05_DGMW68A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| **Olive plastic medium dense, moist CLAY with silt, very fine sands ( 5%)** | 160 | ML | | | | 13<br>35<br>18 | 6<br>6<br>6 |
| | 162 | | | | | | |
| **Water on tools**<br>**Well graded SAND, brown , very moist (wet), low silt ( 5%), low strength, no odor.** | 164 | SW | | | | | |
| | 166 | | | | | 4<br>20<br>30 | 6<br>6<br>6 |
| | 168 | | | | | | |
| **Olive gray medium plasticity, dense, clay with little silt, moist, ( 1% sand) no odor.** | 170 | ML | | | | 7<br>10<br>15 | 6<br>6<br>6 |
| | 172 | | | | | | |
| | 174 | | | | | | |
| **Poorly graded SAND, with silt, brown, (wet) moist, with gravels (no. 6), no odor.** | 176 | SP | | | | | 6<br>6 |
| | 178 | | | | | | |
| | 180 | | | | | | |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| | 188 | | | | | | |
| | 190 | | | | | | |
| | 192 | | | | | | |
| **TOTAL DEPTH = 191.6 FEET** | 194 | | | | | | |
| | 196 | | | | | | |
| | 198 | | | | | | |
| | 200 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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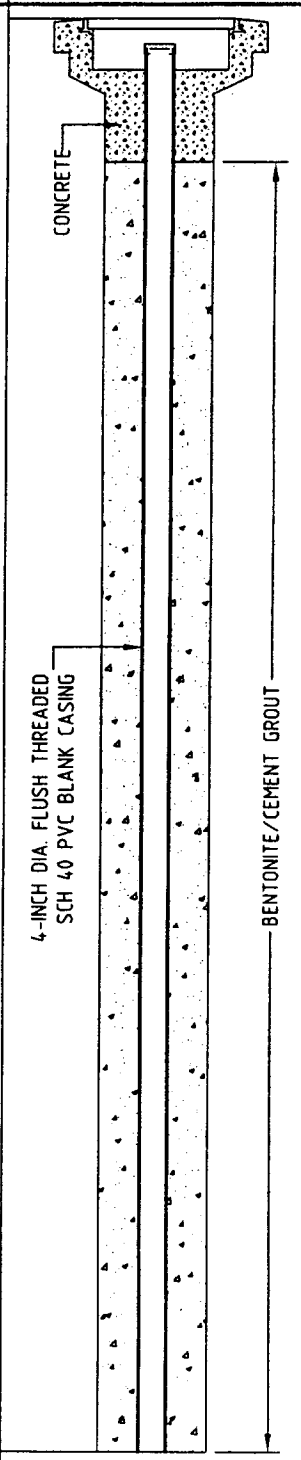
# Geologic Log of Boring 03_DGMW65XA

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2193155.07 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 611542.45 | Drill Rig FORMOST AP 1000 | Begin Drilling 9/22/00 |
| Client SWDIV | TOC Elevation 409.71 | Driller Luis G. (Layne Drilling) | End Drilling 9/26/00 |
| Location **MARINE CORPS AIR STATION** | | Drill Method DWRCPH | Start time: 0730 |
| Geologist J. Erickson | DIAGRAM NOT TO SCALE | | End time: 1315 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 248.5 FEET | Depth to Water 211 FEET | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| | 0 | | | | | | |
| | 2 | | | | | | |
| | 4 | | | | | | |
| | 6 | | | | | | |
| | 8 | | | | | | |
| | | | | | | 5 | 6 |
| | | | | | | 3 | 3 |
| Fill soil, light yellowish brown (10YR 5/4). | 10 | | | | | 6 | 0 |
| | 12 | | | | | | |
| | 14 | SP | | | | | |
| | 16 | | | | | | |
| | 18 | | | | | | |
| | | | | | | 15 | 6 |
| | | | | | | 23 | 1 |
| Silty Sand (SP): Brown (10YR 5/3), very dense, few 2mm iron concretions, 90 % sand, 10% silt/clay, very dense. | 20 | | | | | 99 | 0 |
| | 22 | | | | | | |
| | 24 | | | | | | |
| | 26 | | | | | | |
| | 28 | | | | | | |
| | | | | | | 5 | 6 |
| | | | | | | 6 | 3 |
| Very fine Sandy Silt (ML): Brown (10YR 5/3), 80% silt, 10% very fine sand, 10% clay, medium plasticity, very stiff. | 30 | | | | | 15 | 0 |
| | 32 | | | | | | |
| | 34 | ML | | | | | |
| | 36 | | | | | | |
| | 38 | | | | | | |
| | | | | | | 3 | 6 |
| | | | | | | 15 | 6 |
| | 40 | | | | | 17 | 6 |

BORING DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered

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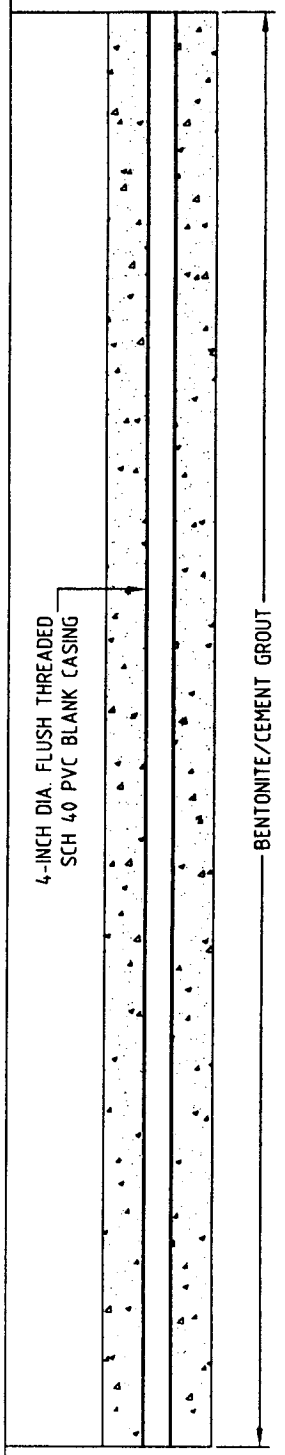
# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Brown (10YR 5/3), 90% silt, 10% very fine sand, medium plastic, very stiff, very pale brown (10YR 7/3), mottles. | 40 | | | | | | |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Silty Sand (SM): Dark yellowish brown (10YR 4/4), 80% very fine sand, 20% silt, medium dense. | 50 | | | | | 9<br>15<br>5 | 6<br>6<br>6 |
| | 52 | | | | | | |
| | 54 | SM | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Silty Sand (SM): Light olive brown (2.5Y 5/4), and light yellowish brown (2.5Y 6/4), horizontally interbedding lamella, medium dense, slightly moist. | 60 | | | | | 6<br>9<br>14 | 6<br>6<br>6 |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Very fine Sand Clay (ML): Dark yellowish brown (10YR 3/6), very fine sandy clay, 70% silt, 30% very fine sand, slightly moist, medium plasticity, very stiff, many calcium carbonate concretions. | 70 | | | | | 2<br>4<br>26 | 6<br>0<br>0 |
| | 72 | | | | | | |
| | 74 | ML | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| Very fine Sandy Silt (ML): Strong brown (7.5YR 4/6), 90% silt, 10% very fine sand, slightly moist, medium plasticity, hard, many calcium carbonate concretions. | 80 | | | | | 11<br>18<br>34 | 6<br>6<br>6 |

WELL DETAIL

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# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) | WELL DETAIL |
|---|---|---|---|---|---|---|---|---|
| Very fine Sandy Silt (ML): Strong brown (7.5YR 4/6), 90% silt, 10% very fine sand, slightly moist, medium plasticity, hard, many calcium carbonate concretions. | 80 | ML | | | | | | 4-INCH DIA. FLUSH THREADED SCH 40 PVC BLANK CASING; BENTONITE/CEMENT GROUT |
| | 82 | | | | | | | |
| | 84 | | | | | | | |
| | 86 | | | | | | | |
| | 88 | | | | | 18 | 6 | |
| | | | | | | 50 | 6 | |
| Sand (SW): Light olive brown (2.5Y 5/4), 90% sand, 10% clay, many coarse gravel-sized fragments, few iron concretions, slightly moist, very dense. | 90 | SW | | | | 5 | 6 | |
| | 92 | | | | | | | |
| | 94 | | | | | | | |
| | 96 | | | | | | | |
| | 98 | | | | | 6 | 6 | |
| | | | | | | 10 | 6 | |
| Very fine Sandy Silt (ML): Yellowish brown (10YR 5/4), 80% silt, 15% very fine sand, 5% clay, low plasticity, moist, increasing sand content lower depths, strong brown (7.5YR 5/8), and very pale brown (10YR 8/4) mottles, very stiff. | 100 | | | | | 60 | 6 | |
| | 102 | | | | | | | |
| | 104 | | | | | | | |
| | 106 | | | | | | | |
| | 108 | ML | | | | 4 | 6 | |
| | | | | | | 5 | 6 | |
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), 60% silt, 40% very fine sand, moist to saturated, few pale yellow mottles. | 110 | | | | | 8 | 6 | |
| | 112 | | | | | | | |
| | 114 | | | | | | | |
| | 116 | | | | | | | |
| | 118 | | | | | 5 | 6 | |
| | | | | | | 20 | 6 | |
| | 120 | | | | | 30 | 0 | |

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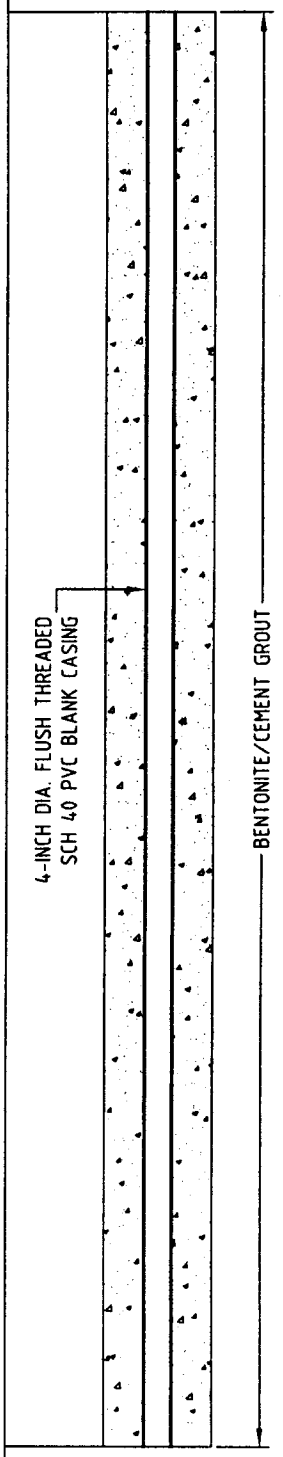
# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 80% very fine sand, 10% silt, 10% clay, brown (10YR 5/3), horizontally interbedded layers of ½-inch thick lamella, medium plasticity, slightly moist, dense. | 120 | | | | | | |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | 6 | 6 |
| Very fine Sand (SM): Light olive (2.5Y 5/4), 75% sand, 15% silt, 5% clay, slightly moist, medium dense, few fine iron concretions, many 2mm calcium carbonate concretions. | 130 | | | | | 6<br>18 | 6<br>6 |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | 4 | 6 |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/3), 90% very fine sand, 10% silt horizontally bedded sand lenses, slightly moist, medium dense. | 140 | SM | | | | 4<br>7 | 6<br>6 |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | 8 | 6 |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 90% very fine sand, 10% silt, moist, dense. | 150 | | | | | 23<br>31 | 0<br>0 |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | 2 | 0 |
| | 160 | | | | | 2<br>4 | 0<br>0 |

WELL DETAIL

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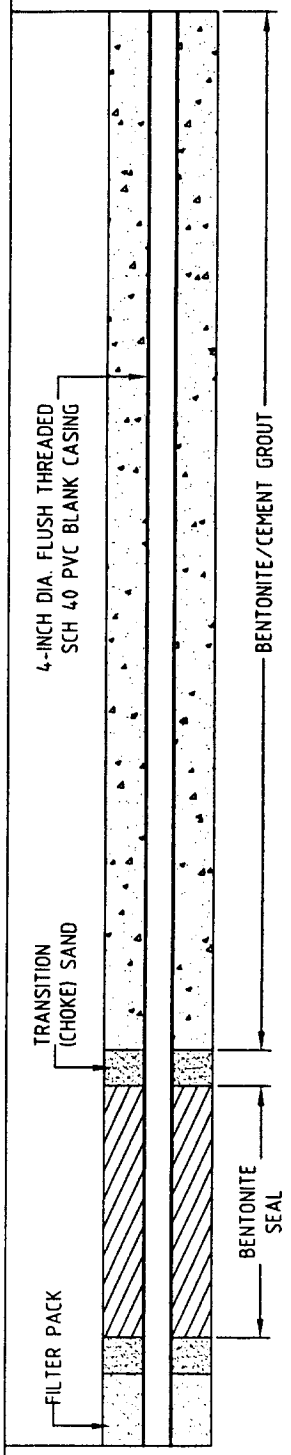
# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| No sample recovery, sloughing to 180 feet. | 160 | | | | | | |
| | 162 | | | | | | |
| | 164 | | | | | | |
| | 166 | | | | | | |
| | 168 | | | | | | |
| No sample recovery. | 170 | | | | | | |
| | 172 | | | | | | |
| | 174 | | | | | | |
| | 176 | | | | | | |
| | 178 | | | | | | |
| No sample recovery. | 180 | SM | | | | | |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| | 188 | | | | | | |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 80% very fine sand, 20% silt, water saturated, very dense, calcium carbonate concretions, few iron concretions. | 190 | | | | | 20<br>27<br>39 | 6<br>3<br>0 |
| | 192 | | | | | | |
| | 194 | | | | | | |
| | 196 | | | | | | |
| | 198 | | | | | | |
| Silty very fine Sand (SM): Light olive brown (2.5Y 5/4), 80% very fine sand, 10% silt, vertically bedded layer of soil coated with calcium carbonate, low plasticity, very dense, iron mottling. | 200 | | | | | 17<br>23<br>30 | 6<br>6<br>6 |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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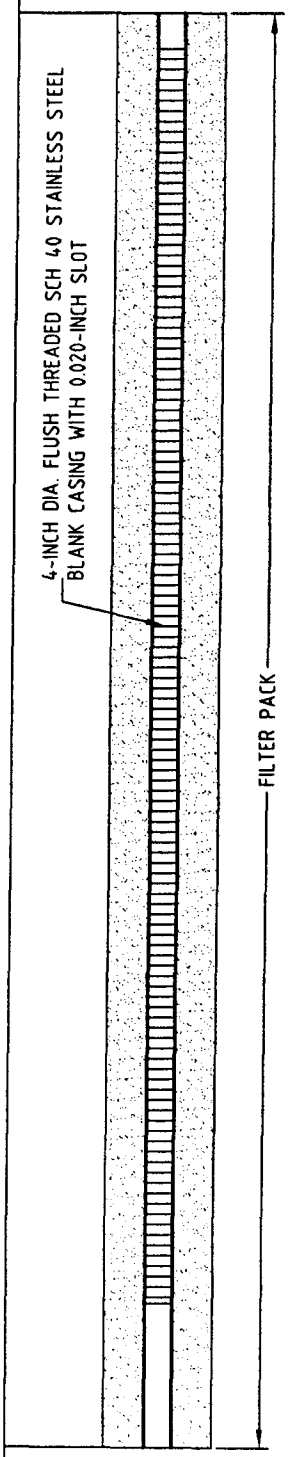
# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Very fine Sandy Silt (ML): Light olive brown (2.5Y 5/4), 60% silt, 40% fines, horizontal inclusions of fine sand (3mm), many prominent calcium carbonate concretions, hard. | 200 | ML | | | | 10<br>25<br>37 | 6<br>3<br>0 |
| | 202 | | | | | | |
| | 204 | | | | | | |
| | 206 | | | | | | |
| | 208 | | | | | | |
| Fine Sand (SW): Light yellowish brown (2.5Y 6/4), 90% fine sand, 10% fines, moist, very dense, subrounded gravel-sized coarse fragments 2%. | 210 | SW | | | | 11<br>44<br>50.5 | 6<br>3<br>0 |
| | 212 | | | | | | |
| Very fine Sandy Silt (ML): Olive, 85% silt, 10% very fine sand, 5% clay, medium plasticity, moist, pale olive mottles, hard, few calcium carbonate concretions. | 214 | ML | | | | 7<br>9<br>32 | 6<br>6<br>6 |
| | 216 | | | | | | |
| | 218 | | | | | | |
| Poorly graded Sand (SP): Based on soil cuttings, sample not collected, heaving sand. | 220 | SP | | | | | |
| | 222 | | | | | | |
| | 224 | | | | | | |
| | 226 | | | | | | |
| | 228 | | | | | | |
| | 230 | | | | | | |
| | 232 | | | | | | |
| | 234 | | | | | | |
| | 236 | | | | | | |
| | 238 | | | | | | |
| | 240 | | | | | | |

WELL DETAIL

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NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered

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# Geologic Log of Well 03_DGMW65XA

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) | WELL DETAIL |
|---|---|---|---|---|---|---|---|---|
| Poorly graded Sand (SP): Based on soil cutting sample not collected. Heaving sand. | 240 | | | | | | | |
| | 242 | | | | | | | |
| | 244 | SP | | | | | | FILTER PACK |
| | 246 | | | | | | | |
| Total Depth= 248 feet. | 248 | | | | | | | |
| | 250 | | | | | | | |
| | 252 | | | | | | | |
| | 254 | | | | | | | |
| | 256 | | | | | | | |
| | 258 | | | | | | | |
| | 260 | | | | | | | |
| | 262 | | | | | | | |
| | 264 | | | | | | | |
| | 266 | | | | | | | |
| | 268 | | | | | | | |
| | 270 | | | | | | | |
| | 272 | | | | | | | |
| | 274 | | | | | | | |
| | 276 | | | | | | | |
| | 278 | | | | | | | |
| | 280 | | | | | | | |



NOTE: This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

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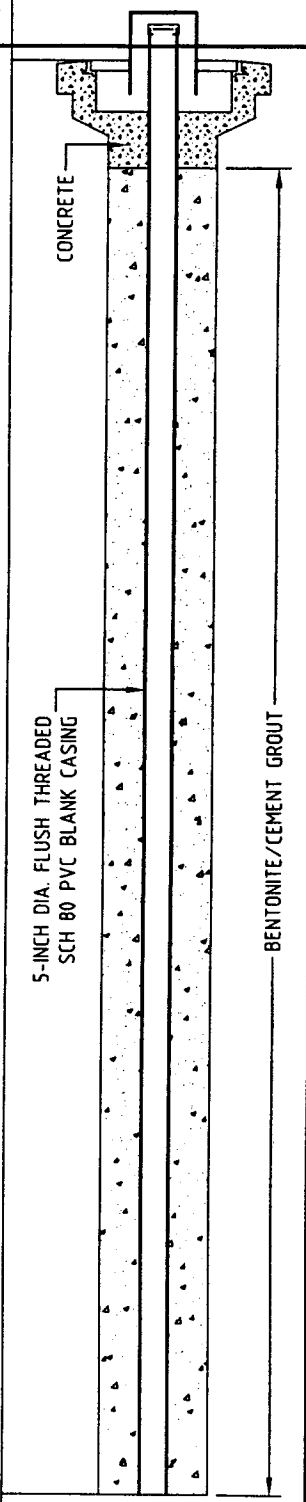
# Geologic Log of Boring 04_DGMW66A

| | | | |
|---|---|---|---|
| Project **MCAS, EL TORO** | Northing 2192711.39 | Drilling Company LAYNE CHRISTENSEN CO. | |
| Project Number **918708** | Easting 6114919.65 | Drill Rig FORMOST AP 1000 | Begin Drilling 9/18/00 |
| Client SWDIV | TOC Elevation 399.09 | Driller Luis G. (Layne Drilling) | End Drilling 10/2/00 |
| Geologist J. Erickson | RIM Elevation 399.54 | Drill Method DWRCPH | Start time: 0830 |
| Location **MARINE CORPS AIR STATION** | DIAGRAM NOT TO SCALE | | End time: 1040 |
| Borehole Diameter 10 INCHES | Total Depth of Borehole 235 FEET | Depth to Water N/A | |

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) |
|---|---|---|---|---|---|---|---|
| Silty Sand (SM): Yellowish brown (10YR 5/4), disturbed, sandy clay, no odor. (SM) probable fill, (10YR 5/4), 50% sand, 5% gravel, 45% clay, dry to slightly moist. | 8 | SM | | | | | |
| | 10 | | | | 0.0 | 8 10 | 60% |
| Sand 50%, clay 45%, gravel 5%, slightly moist, ?????????????. | 12 | | | | | | |
| Fine Sandy Silt (ML): 10YR 5/4, 60% silt, 405 sand, no odor, dry to slightly moist, stiff. | 20 | ML | | | 0.0 | 6 7 8 | 60% |
| Clay (CL): 7.5YR 4/4, 80% clay, 20% sand, high plasticity, no odor. | 30 | ML | | | 0.0 | 40 50 4 | 20% |

BORING DETAIL

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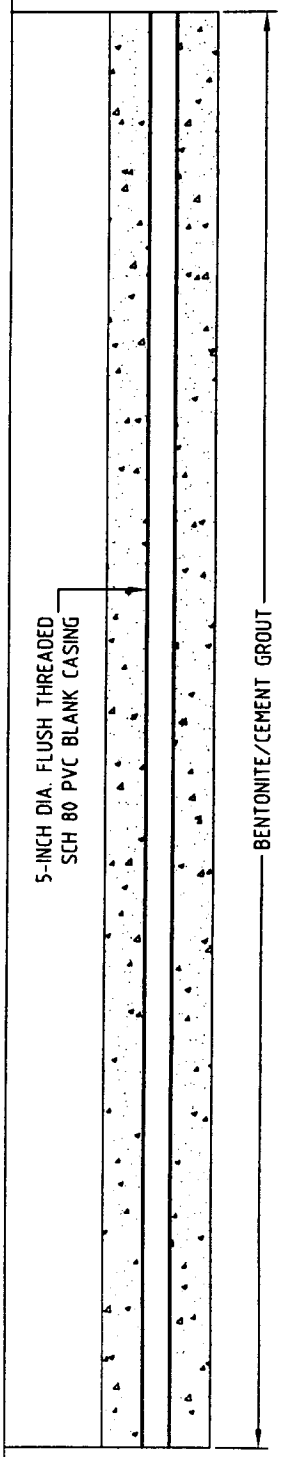
# Geologic Log of Well 04_DGMW66A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| Clays gradually becomming silts, 7.5YR 4/4, moist, high plasticity, very stiff, 90% clays, 10% very fine sand. | 40 | CL | | | 0.0 | 6 8 14 | |
| | 42 | | | | | | |
| | 44 | | | | | | |
| | 46 | | | | | | |
| | 48 | | | | | | |
| Clay (CL): 10YR 4/4 and fine 2.5Y 7/3, very stiff, moist, highly plastic, 90% clay, 10% very stiff sand, slightly moist, high plasticity. | 50 | CL | | | | 3 5 20 | 100% |
| | 52 | | | | | | |
| | 54 | | | | | | |
| | 56 | | | | | | |
| | 58 | | | | | | |
| Clay (CL): 10YR 4/6, moist, more root ????????, 2.5Y 7/3, 90% clay, 10% very fine sand, very stiff, slightly moist, high plasticity. | 60 | CL | | | | 5 16 20 | 100% |
| | 62 | | | | | | |
| | 64 | | | | | | |
| | 66 | | | | | | |
| | 68 | | | | | | |
| Clay (CL): 10Yr 4/4, slightly moist, 90% clay, 5% sand, 5% very fine sand, very stiff, no odor. | 70 | CL | | | 0.0 | 4 12 25 | 100% |
| | 72 | | | | | | |
| | 74 | | | | | | |
| | 76 | | | | | | |
| | 78 | | | | | | |
| | 80 | | | | | | |

WELL DETAIL

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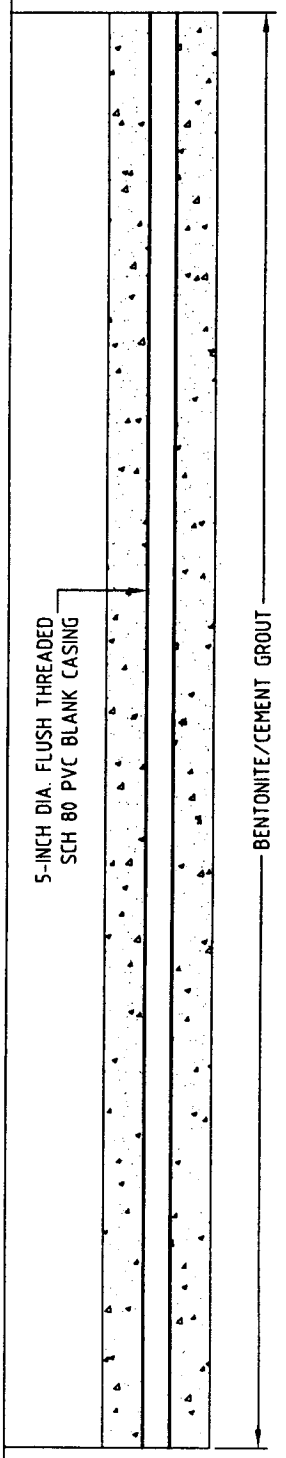
# Geologic Log of Well 04_DGMW66A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| (CL) gradually becomes SM. SM slightly moist, 10YR 5/4, 85% very fine sand, 15% silts, no odor. | 80 | CL | | | 0.0 | 12 2 40 | 100% |
| | 82 | | | | | | |
| | 84 | | | | | | |
| | 86 | | | | | | |
| | 88 | | | | | | |
| (SW): 2.5Y 6/3, dry to slightly moist, few silty clay inclusions about 1.5-inches. | 90 | SW | | | | 5 18 50 | 100% |
| | 92 | | | | | | |
| | 94 | | | | | | |
| | 96 | | | | | | |
| | 98 | | | | | | |
| Clay (CL): 20% coarse materials, matix is a 2.5Y 5/4 with 10YR 5/6 mottling, coarse materials up to 2-inches in size (cobbles), some gravel present, slightly moist, 60% clay, 30% very fine sand, 10% silt. | 100 | CL | | | 0.0 | 5 18 50 | 100% |
| | 102 | | | | | | |
| | 104 | | | | | | |
| | 106 | | | | | | |
| | 108 | | | | | | |
| (CH): Very stiff, 90% clay, 10% very fine sand, calcium carbonate inclusions- 2-inch, very few, 2.5Y 5/4, no odor. | 110 | CH | | | | 6 10 19 | 10% |
| | 112 | | | | | | |
| | 114 | | | | | | |
| | 116 | | | | | | |
| | 118 | | | | | | |
| | 120 | | | | | | |

WELL DETAIL

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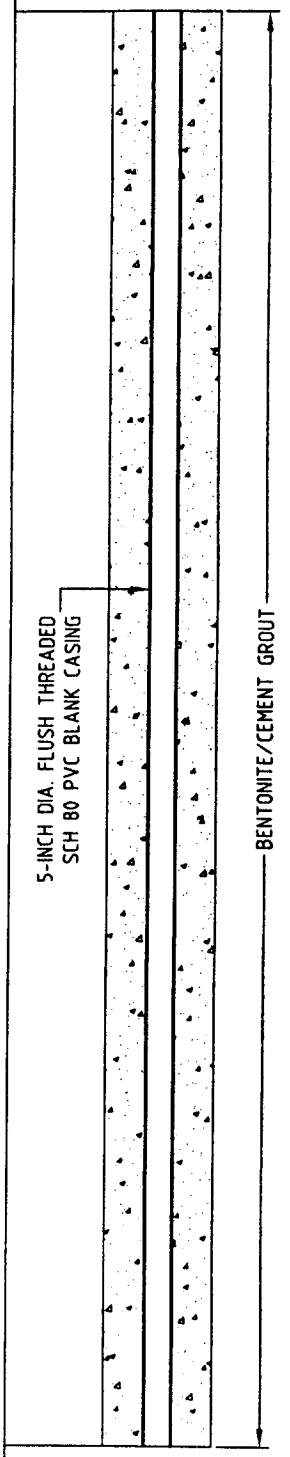
# Geologic Log of Well 04_DGMW66A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| (CL): Medium plasticity, ???????, stiff, 2.5Y 5/6, 60% silt, 40% clay, no odor, moist. | 120 | CL | | | 0.0 | 18 25 31 | |
| | 122 | | | | | | |
| | 124 | | | | | | |
| | 126 | | | | | | |
| | 128 | | | | | | |
| Clay (CL): Moist, 50% clay, 50% silt, 2.5Y 5/4, no odor. | 130 | CL | | | 0.0 | 3 3 6 | 100% |
| | 132 | | | | | | |
| | 134 | | | | | | |
| | 136 | | | | | | |
| | 138 | | | | | | |
| Clay (CL): Medium plasticity, 2.5Y 6/4, 50% clay, 20% fine sand, 30% silt, moist, no odor. | 140 | CL | | | 0.0 | 3 30 30 | 100% |
| | 142 | | | | | | |
| | 144 | | | | | | |
| | 146 | | | | | | |
| | 148 | | | | | | |
| (SC): 80% very fine sand, 10% clay, 10% sand, 2.5Y 5/4 matrix, few mottles, 5YR 5/8, medium plasticity, few coarse fragments, gravel size, moist, no odor. | 150 | SC | | | 0.0 | 4 7 26 | 100% |
| | 152 | | | | | | |
| | 154 | | | | | | |
| | 156 | | | | | | |
| | 158 | | | | | | |
| | 160 | | | | | | |

WELL DETAIL

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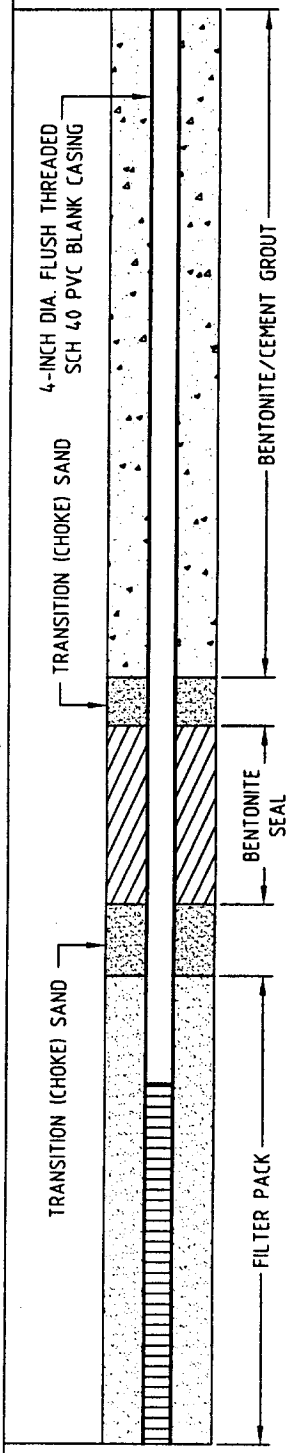
# Geologic Log of Well 04_DGMW66A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| (ML): 2.5Y 5/4, saturated, 10% very fine sand, 30% silt, 60% clay, high plasticity, no odor, saturated. | 160 | ML | | | 0.0 | 31 35 40 | 10% |
| | 162 | | | | | | |
| | 164 | | | | | | |
| | 166 | | | | | | |
| | 168 | | | | | | |
| (ML): Matrix: 2.5Y 5/4, mottles, 2.5Y 3/3, 50% silt, 20% very fine sand, 30% clay, moist, no odor, gravel present - 1%, 1-inch diameter. | 170 | ML | | | 0.0 | 10 30 40 | 100% |
| | 172 | | | | | | |
| | 174 | | | | | | |
| | 176 | | | | | | |
| | 178 | | | | | | |
| (SC): 2.3Y 5/4, 30% clay, 50% very fine sand, 20% silt, many coarse fragments - gravel, no odor, slightly moist, medium plastic. | 180 | SC | | | 0.0 | 2 3 5 | 25% |
| | 182 | | | | | | |
| | 184 | | | | | | |
| | 186 | | | | | | |
| | 188 | | | | | | |
| (SC): Medium plastic, 10YR 4/6, 70% very fine sand, 20% silt, 10% clay, slightly moist, no odor, few gravel fragments. | 190 | SC | | | 0.0 | 3 4 5 | 50% |
| | 192 | | | | | | |
| | 194 | | | | | | |
| (ML): 60% silt, 30% very fine sand, 10% clay, many coarse fragments, cobbles and gravel, slightly moist, no odor, 2.5Y 5/4. | 196 | ML | | | 0.0 | 3 5 5 | 70% |
| | 198 | | | | | | |
| | 200 | | | | | | |

WELL DETAIL

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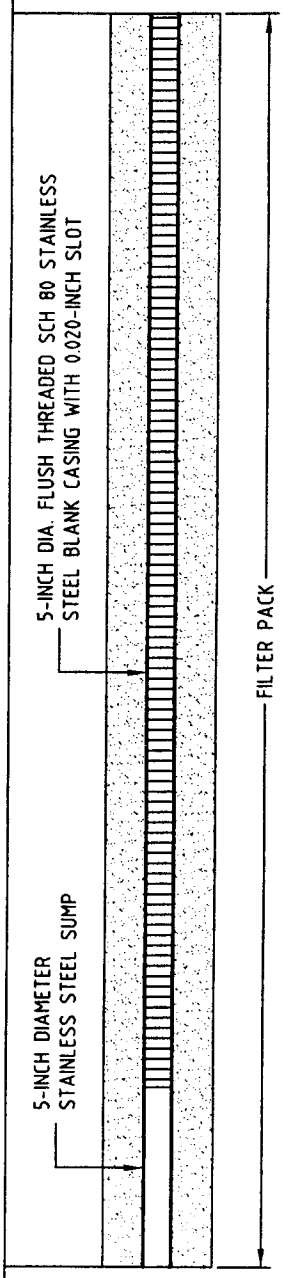
# Geologic Log of Well 04_DGMW66A

Project **EL TORO, MCAS** Project No. **918708**

| DESCRIPTION | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 In. | Recovery (6 inches) |
|---|---|---|---|---|---|---|---|
| No recovery of soil. | 200 | | | | 0.0 | 4 10 10 | |
| | 202 | | | | | | |
| | 204 | | | | | | |
| (ML): 60% silt, 40% very fine sand, 2.5Y 5/4, slightly moist, few gravel fragments, no odor. | 206 | | | | 0.0 | 4 5 15 | 20% |
| | 208 | | | | | | |
| (SM): 2.5Y 5/4, 60% very fine sand, 30% silt, 10% clay, few coarse fragments gravel size, moist, no odor. | 210 | | | | 0.0 | 3 4 6 | 20% |
| | 212 | | | | | | |
| | 214 | ML | | | | | |
| (ML): 60% silt, 30% very fine sand, 10% clay, few cobbles, 2.5Y 4/4, slightly moist, no odor, cobble fragments. | 216 | | | | 0.0 | 4 7 12 | 50% |
| | 218 | | | | | | |
| (CL): 30% silt, 40% clay, 30% very fine sand, 2.5Y 6/4, few gravel size coarse fragments, no odor. | 220 | | | | 0.0 | 5 7 13 | 10% |
| From 222 feet (SP): Heaving inside drive casing, coarse and fine sub-rounded gravel show up in soil cutting. | 222 | | | | | | |
| | 224 | | | | | | |
| | 226 | SM | | | | | |
| | 228 | | | | | | |
| (ML): 50% silt, 50% clay, large fragments, cobble size with iron staining, 5Y 5/4, no odor, saturated. | 230 | | | | 0.0 | 14 50 1 | 2% |
| | 232 | | | | | | |
| | 234 | SP | | | | | |
| | 236 | | | | | | |
| | 238 | | | | | | |
| | 240 | | | | | | |

WELL DETAIL

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