MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: H. Lyatuu/G. Pillappa |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (CLT) | DRILLER: Warren/Banks/Sloan/Rosser | GROUND WATER (ft) |
| BORING NO.: B-611 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,087 US ft (NAD83/90) | EASTING: 876,735 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.5 ft | CASING DEPTH: 4" to 25.0', 3" to 120.1' | | HAMMER (ID): 140 lb. Auto (MEC-04) |
| DATE STARTED: 2/26/08 | COMPLETED: 3/24/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Begin Coring @ 25.9 ft |
| -27.4 | 25.9 | 5.0 | 1:37<br>2:11<br>1:48<br>2:10<br>4:14 | (4.7)<br>94% | (4.0)<br>80% | RUN-1<br>611-CS-01 | (20.6)<br>94% | (18.5)<br>84% | | LIMESTONE, boundstone, white (7.5YR8/1), hard, wet, strong HCl reaction, trace shells (Upper Fort Thompson Formation) *(continued)*<br>25.9ft: white (10YR8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, little vugs |
| -32.4 | 30.9 | 5.0 | 1:31<br>1:11<br>1:10<br>1:40<br>1:25 | (5.0)<br>100% | (5.0)<br>100% | RUN-2 | | | | |
| -37.4 | 35.9 | 3.7 | 1:34<br>1:11<br>1:34<br>2:14/0.7 | (3.7)<br>100% | (3.7)<br>100% | RUN-3<br>611-CS-02 | | | | 35.9ft: few vugs |
| -41.1 | 39.6 | 1.3 | 5:16/1.3 | (1.3)<br>100% | (0.7)<br>54% | RUN-4 | | | | |
| -42.4 | 40.9 | 3.6 | 0:32<br>0:49<br>0:39<br>0:21/0.6 | (3.3)<br>92% | (3.0)<br>83% | RUN-5<br>611-CS-03 | | | | 40.9 to 41.5ft: Drilled out/washed out due to rig change and tool change |
| -43.0 | 41.5 | 5.0 | 0:49<br>0:41<br>0:40<br>0:30<br>0:41 | (4.8)<br>96% | (4.3)<br>86% | RUN-6 | | | | 45.1ft: gray (5Y6/1) to 47.9ft<br>-49.4 47.9 |
| -46.6 | 45.1 | 5.0 | 0:52<br>0:46<br>0:28<br>0:27<br>0:18 | (4.9)<br>98% | (3.0)<br>60% | RUN-7 | (37.5)<br>74% | (21.1)<br>42% | | LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation)<br>50.1ft: white (5YR8/1) |
| -51.6 | 50.1 | 5.0 | 0:26<br>0:17<br>0:24<br>0:23<br>0:30 | (4.6)<br>92% | (4.0)<br>80% | RUN-8 | | | | |
| -56.6 | 55.1 | 5.0 | 0:37<br>0:28<br>0:26<br>0:32<br>0:34 | (2.1)<br>42% | (0.6)<br>12% | RUN-9 | | | | |
| -61.6 | 60.1 | 5.0 | 0:33<br>0:40<br>0:28<br>0:36<br>0:27 | (4.6)<br>92% | (2.2)<br>44% | RUN-10<br>611-CS-05 | | | | |
| -66.6 | 65.1 | 5.0 | 0:16<br>0:27<br>0:30<br>0:19<br>0:41 | (2.6)<br>52% | (1.4)<br>28% | RUN-11 | | | | 70.1ft: trace fine sand |
| -71.6 | 70.1 | 5.0 | 0:18<br>0:28<br>0:22<br>0:28<br>0:50 | (1.2)<br>24% | (0.0)<br>0% | RUN-12 | | | | |
| -76.6 | 75.1 | 5.0 | 0:42<br>0:19<br>0:33<br>0:18<br>0:21 | (2.0)<br>40% | (0.5)<br>10% | RUN-13 | | | | |
| -81.6 | 80.1 | 5.0 | 0:28<br>0:30<br>0:28<br>0:48<br>0:37 | (4.4)<br>88% | (2.0)<br>40% | RUN-14 | | | | |
| -86.6 | 85.1 | 5.0 | 0:14<br>0:23<br>0:23<br>0:18<br>0:21 | (4.9)<br>98% | (3.8)<br>76% | RUN-15<br>611-CS-06 | | | | |
| -91.6 | 90.1 | 5.0 | 0:13<br>0:12<br>0:15<br>0:16<br>0:15 | (3.6)<br>72% | (1.4)<br>28% | RUN-16 | | | | -100.2 98.7 |
| -96.6 | 95.1 | | | | | | (1.8)<br>30% | (NA) | | Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone |
| -101.6 | 100.1 | | | | | | | | | |

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC



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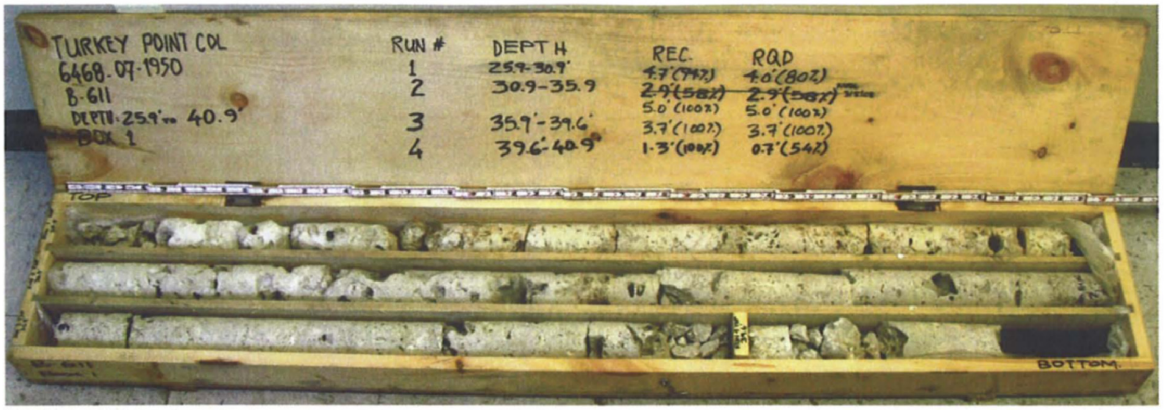
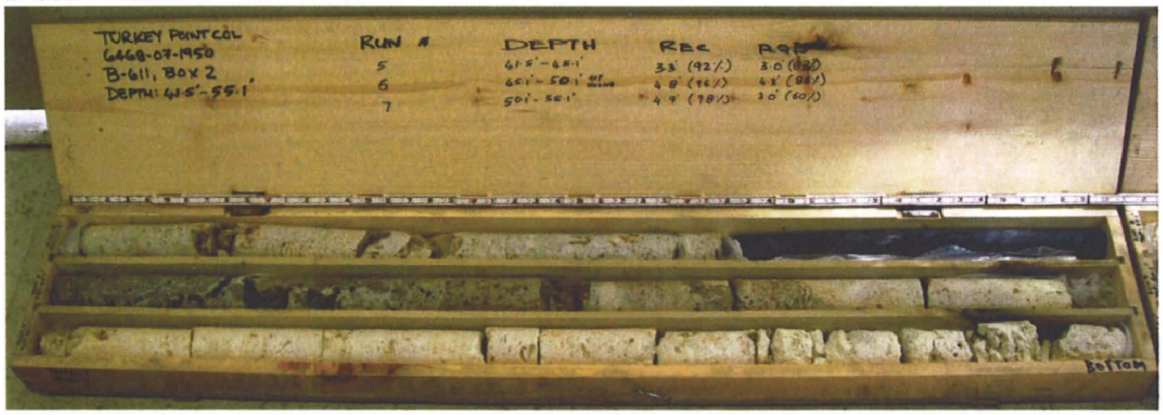
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: H. Lyatuu/G. Pillappa |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (CLT) | DRILLER: Warren/Banks/Sloan/Rosser | GROUND WATER (ft) |
| BORING NO.: B-611 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,087 US ft (NAD83/90) | EASTING: 876,735 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.5 ft | CASING DEPTH: 4" to 25.0', 3" to 120.1' | | HAMMER (ID): 140 lb. Auto (MEC-04) |
| DATE STARTED: 2/26/08 | COMPLETED: 3/24/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Continued from previous page |
| -106.6 | 105.1 | 5.0 | 0:40 0:32 0:39 0:37 0:40 | (2.2) 44% | (0.0) 0% | RUN-17 | | | | Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone *(continued)* -106.2 / 104.7 |
| -111.6 | 110.1 | 5.0 | 0:24 0:25 0:26 0:21 0:27 | (4.8) 96% | (4.3) 86% | RUN-18 *611-CS-07* | (7.6) 92% | (4.8) 58% | | LIMESTONE, boundstone, white (5Y8/1), hard, indurated, sandy, fossiliferous, strong HCl reaction, few vugs, little shell molds and casts |
| -116.6 | 115.1 | 5.0 | 0:18 0:20 0:23 0:16 0:17 | (2.4) 48% | (0.5) 10% | RUN-19 | (0.0) 0% | (NA) | | -114.5 / 113.0 Silty SAND with gravel (SM), light brownish gray (10YR6/2), medium dense, wet, fine to coarse grained sand, fine to coarse gravel, weak HCl reaction (Tamiami Formation) |
| -121.6 | 120.1 | 5.0 | 0:12 0:14 0:10 0:14 0:17 | (0.0) 0% | (0.0) 0% | RUN-20 | | | | -121.6 / 120.1 |
| | | | | | | | | | | Coring Terminated at Elevation -121.6 |

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

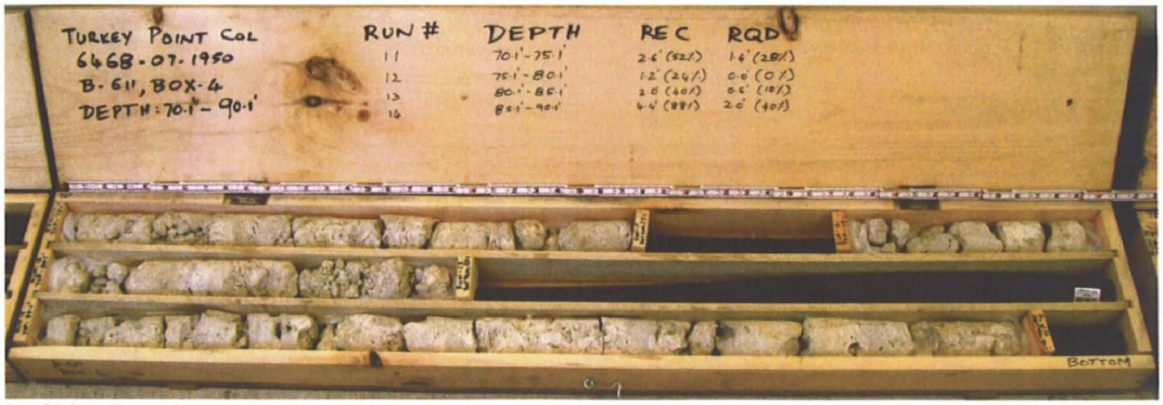



B-611 – Box 1

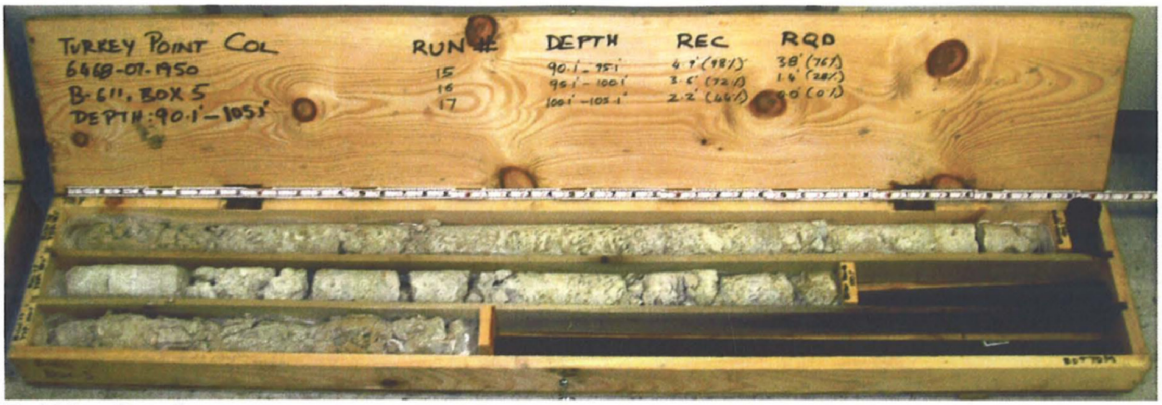



B-611 – Box 2

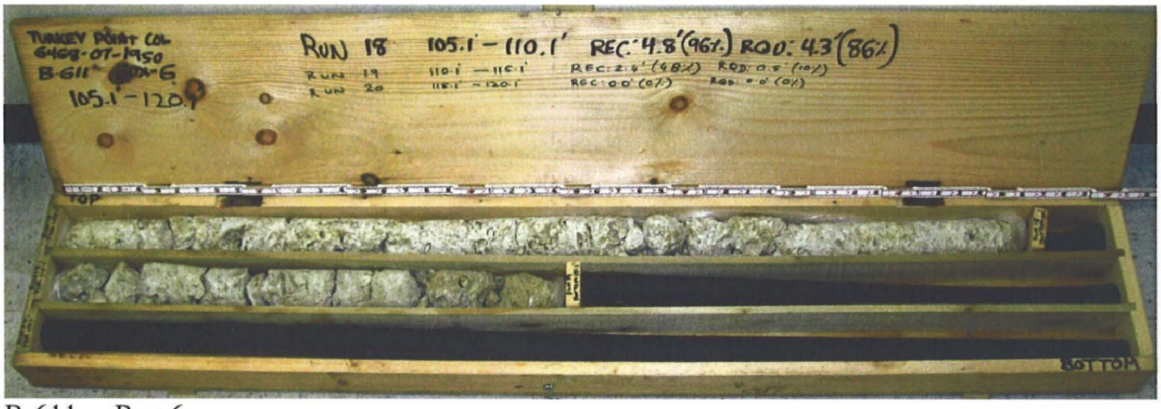
B-611 – Box 3




B-611 – Box 4




B-611 – Box 5




B-611 – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By JDZ Date 8-14-08

Checked By SOC Date 8/17/08



| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: L. Bisson |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (ATL) | DRILLER: L. Carter/ J. Landeros | GROUND WATER (ft) |
| BORING NO.: B-612 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 876,869 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 125.1 ft | BORING DIAMETER: 4" to 16.0', 3" to 125.1' | CASING DEPTH: 4" to 16.0', 3" to 118.6' | HAMMER (ID):140 lb. Auto (MEC-03) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | BITS USED: 4" & 3" Roller Cones |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT (0 20 40 60 80 100) | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -1.5 | | | | | Ground Surface | | | | -1.5 / 0.0 |
| -1.5 / -4.0 | 0.0 / 2.5 | WOR | WOR | WOR | WOR 0 | 612-1 | | | MUCK, grayish brown (2.5Y5/2), very soft, wet, no HCl reaction |
| -6.5 | 5.0 | 4 | 5 | 8 | 13 | 612-2A&B | | | -4.5 / 3.0 LIMESTONE, boundstone, pale yellow (2.5Y8/3), very soft, wet, sandy, strong HCl reaction, oolitic (Miami Formation) 5.0ft: soft |
| -9.0 | 7.5 | 7 | 11 | 10 | 21 (SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA) | 612-3 | | | |
| -11.5 | 10.0 | 5 | 6 | 7 | 13 | 612-4 | | | 7.5ft: white (2.5Y8/1), to light gray (2.5Y7/1), very soft |
| -14.0 | 12.5 | 4 | 4 | 6 | 10 | 612-5 | | | 10.0ft: white (2.5Y8/1) |
| -16.5 | 15.0 | 4 | 8 | 8 | 16 | 612-6 | | | 12.5ft: white (2.5Y8/1), to gray (2.5Y6/1), fossiliferous |
| -17.9 | 16.4 | 12 | 15 | 50/0.4 | 65/0.9 | 612-7 | | | 15.0ft: white (2.5Y8/1), hard |
| -19.6 | 18.1 | | | | | RUN-1 | | | 16.4ft: Switch sampling method to coring |
| -24.6 | 23.1 | | | | | RUN-2 | | | 16.4ft: white (10YR8/1), mottled light brownish gray (10YR6/1), hard, indurated, strong HCl reaction, oolitic, vertical solution cavities 18.1ft: fossiliferous, few vugs |
| -29.6 | 28.1 | | | | | RUN-3 | | | -25.5 / 24.0 LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, trace sand, trace recrystallized calcite, strong HCl reaction, few vugs (Upper Fort Thompson Formation) |
| -34.6 | 33.1 | | | | | RUN-4 | | | |
| -39.6 | 38.1 | | | | | RUN-5 | | | 27.0ft: loss of circulation 28.1ft: white (10YR8/1), to gray (10YR5/1), to olive yellow (10YR6/8) 33.1ft: white (10YR8/1), moderately hard to hard |
| -44.6 | 43.1 | | | | | RUN-6 | | | |
| -49.6 | 48.1 | | | | | RUN-7 | | | 43.1ft: white (10YR8/1), to gray (10YR5/1) at 45.5ft to 47.5ft, hard, little vugs |
| -54.6 | 53.1 | | | | | RUN-8 | | | -49.0 / 47.5 LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 52.1 to 53.1ft: soft |
| -59.6 | 58.1 | | | | | RUN-9 | | | 53.1ft: white (10YR8/1), soft to hard, moderately indurated to indurated, sandy |
| -64.6 | 63.1 | | | | | RUN-10 | | | 58.1ft: white (10YR8/1), to light gray (10YR7/1), hard, indurated |
| -69.6 | 68.1 | | | | | RUN-11 | | | |
| -74.6 | 73.1 | | | | | RUN-12 | | | |
| | | | | | | RUN-13 | | | |

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/14/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: L. Bisson |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (ATL) | DRILLER: L. Carter/ J. Landeros | GROUND WATER (ft) |
| BORING NO.: B-612 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 876,869 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 125.1 ft | BORING DIAMETER: 4" to 16.0', 3" to 125.1' | CASING DEPTH: 4" to 16.0', 3" to 118.6' | HAMMER (ID):140 lb. Auto (MEC-03) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | BITS USED: 4" & 3" Roller Cones |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT 0 20 40 60 80 100 | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -76.3 | | | | | Continued from previous page | | | | |
| -79.6 | 78.1 | | | | | RUN-14 | | | LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* |
| -83.6 | 82.1 | | | | | | | | |
| -84.6 | 83.1 | | | | | RUN-15 | | | 82.1ft: moderately hard, some vugs |
| | | | | | | RUN-16 | | | 83.1ft: hard, few vugs |
| -89.6 | 88.1 | | | | | RUN-17 | | | 88.1ft: moderately hard |
| -94.6 | 93.1 | | | | | RUN-18 | | | 93.1ft: hard, interbedded sand lenses |
| -99.6 | 98.1 | | | | | RUN-19 | | | 98.1ft: few shell molds and casts |
| -104.6 | 103.1 | | | | | RUN-20 | | | |
| -109.6 | 108.1 | | | | | RUN-21 | | | 108.1ft: white (10YR8/1), to light gray (10YR7/2), to greenish gray (10Y5/1), hard to moderately hard |
| -114.6 | 113.1 | | | | | RUN-22 | | | 113.1ft: greenish gray (10Y5/1), hard |
| | | | | | | | | | -116.5 — 115.0 |
| -120.1 | 118.6 | | | | | | | | Silty SAND (SM), gray (2.5Y6/1), loose, wet, fine grained sand, strong HCl reaction (Tamiami Formation) |
| | | 3 | 3 | 2 | 5 | 612-8 | | | 118.6ft: Switch sampling method to SPT |
| -125.1 | 123.6 | | | | | | | | |
| | | 6 | 25 | 12 | 37 | 612-9A&B | | | -126.2 — 124.7 |
| | | | | | | | | | 123.6ft: light gray (10YR7/1), hard, medium to coarse grained sand, some shell fragments |
| | | | | | | | | | -126.6 — 125.1 |
| | | | | | | | | | SiLT (ML), light olive gray (5Y6/2), very stiff, wet, strong HCl reaction |
| | | | | | | | | | Boring Terminated at Elevation -126.6 ft |

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/14/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: L. Bisson |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (ATL) | DRILLER: L. Carter/ J. Landeros | GROUND WATER (ft) |
| BORING NO.: B-612 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 876,869 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 125.1 ft | CASING DEPTH: 4" to 16.0', 3" to 118.6' | | HAMMER (ID): 140 lb. Auto (MEC-03) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Begin Coring @ 16.4 ft |
| -17.9 | 16.4 | 1.7 | 1:42<br>1:06/0.7 | (1.7)<br>100% | (1.0)<br>59% | RUN-1 | (2.5)<br>33% | (1.0)<br>13% | | LIMESTONE, boundstone, pale yellow (2.5Y8/3), very soft, wet, sandy, strong HCl reaction, oolitic (Miami Formation) *(continued)* |
| -19.6 | 18.1 | 5.0 | 0:48<br>0:27<br>0:35<br>0:40<br>0:44 | (0.5)<br>10% | (0.0)<br>0% | RUN-2 | | | | 16.4ft: white (10YR8/1), mottled light brownish gray (10YR6/1), hard, indurated, strong HCl reaction, oolitic, vertical solution cavities<br>18.1ft: fossiliferous, few vugs |
| -24.6 | 23.1 | 5.0 | 0:46<br>1:53<br>0:45<br>0:28<br>0:31 | (4.4)<br>88% | (2.8)<br>56% | RUN-3 | (20.0)<br>85% | (14.8)<br>63% | | -25.5 — 24.0<br>LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, trace sand, trace recrystallized calcite, strong HCl reaction, few vugs (Upper Fort Thompson Formation) |
| -29.6 | 28.1 | 5.0 | 0:09<br>0:03<br>0:22<br>0:05<br>0:51 | (1.5)<br>30% | (0.0)<br>0% | RUN-4 | | | | 27.0ft: loss of circulation<br>28.1ft: white (10YR8/1), to gray (10YR5/1), to olive yellow (10YR6/8) |
| -34.6 | 33.1 | 5.0 | 1:46<br>0:55<br>0:58<br>0:58<br>1:20 | (5.0)<br>100% | (3.5)<br>70% | RUN-5 | | | | 33.1ft: white (10YR8/1), moderately hard to hard |
| -39.6 | 38.1 | 5.0 | 1:47<br>1:22<br>1:27<br>1:04<br>1:10 | (5.0)<br>100% | (4.5)<br>90% | RUN-6 | | | | |
| -44.6 | 43.1 | 5.0 | 1:23<br>1:24<br>0:57<br>1:31<br>1:21 | (5.0)<br>100% | (4.6)<br>92% | RUN-7 | | | | 43.1ft: white (10YR8/1), to gray (10YR5/1) at 45.5ft to 47.5ft, hard, little vugs |
| -49.6 | 48.1 | 5.0 | 1:04<br>1:38<br>1:15<br>0:49<br>0:35 | (5.0)<br>100% | (4.9)<br>98% | RUN-8 | (55.4)<br>82% | (35.8)<br>53% | | -49.0 — 47.5<br>LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)<br>52.1 to 53.1ft: soft |
| -54.6 | 53.1 | 5.0 | 0:24<br>0:37<br>0:33<br>0:54<br>0:46 | (5.0)<br>100% | (4.0)<br>80% | RUN-9 | | | | 53.1ft: white (10YR8/1), soft to hard, moderately indurated to indurated, sandy |
| -59.6 | 58.1 | 5.0 | 1:08<br>1:48<br>1:52<br>0:45<br>1:46 | (4.7)<br>94% | (4.1)<br>82% | RUN-10 | | | | 58.1ft: white (10YR8/1), to light gray (10YR7/1), hard, indurated |
| -64.6 | 63.1 | 5.0 | 1:02<br>0:37<br>0:52<br>0:52<br>0:26 | (3.5)<br>70% | (1.9)<br>38% | RUN-11 | | | | |
| -69.6 | 68.1 | 5.0 | 0:33<br>0:27<br>1:01<br>1:38<br>0:20 | (3.2)<br>64% | (0.6)<br>12% | RUN-12 | | | | |
| -74.6 | 73.1 | 5.0 | 0:55<br>0:37<br>0:08<br>0:19<br>1:10 | (2.4)<br>48% | (0.9)<br>18% | RUN-13 | | | | |
| -79.6 | 78.1 | 4.0 | 1:01<br>1:02<br>1:06<br>1:15 | (4.0)<br>100% | (3.3)<br>83% | RUN-14 | | | | |
| -83.6 | 82.1 | 1.0 | 0:29 | (0.8)<br>80% | (0.4)<br>40% | RUN-15 | | | | 82.1ft: moderately hard, some vugs |
| -84.6 | 83.1 | 5.0 | 0:35<br>0:09<br>0:48<br>0:32<br>0:49 | (4.1)<br>82% | (1.0)<br>20% | RUN-16 | | | | 83.1ft: hard, few vugs |
| -89.6 | 88.1 | 5.0 | 1:04<br>0:46<br>0:30 | (3.2)<br>64% | (0.4)<br>8% | RUN-17 | | | | 88.1ft: moderately hard |

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/14/08

MACTEC



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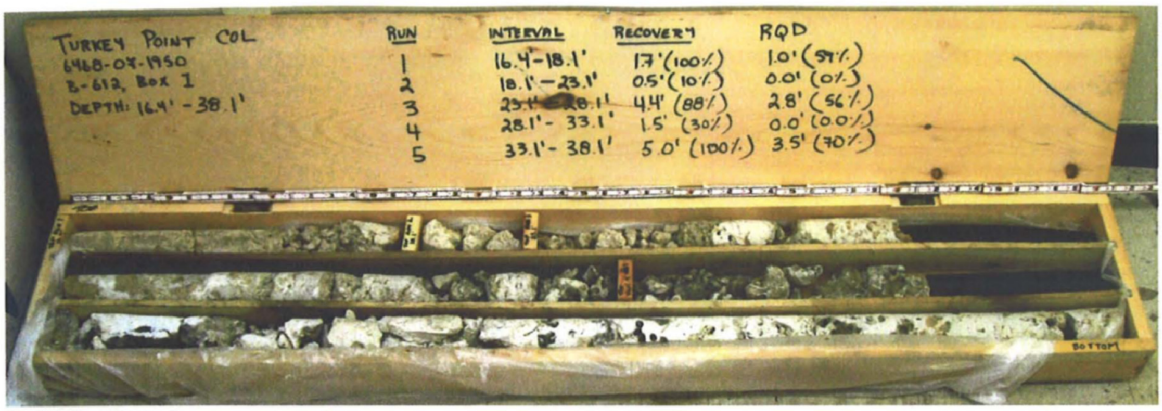
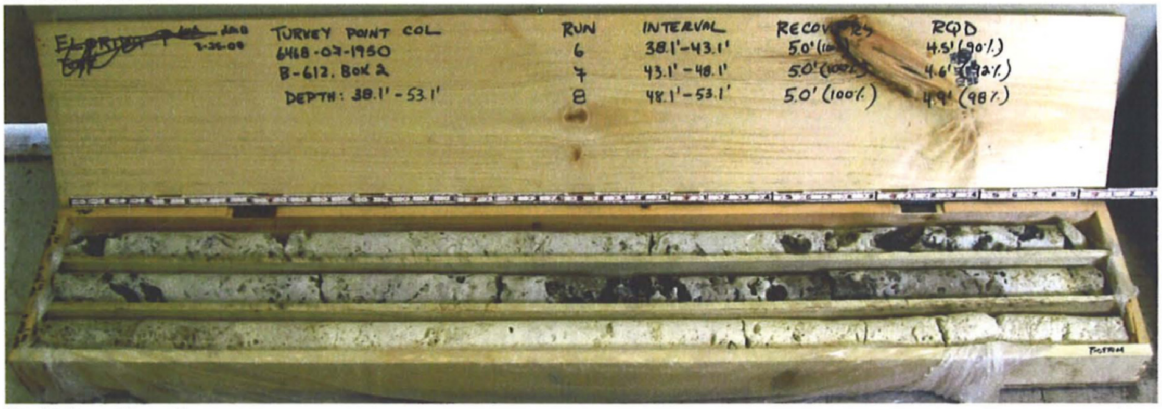
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: L. Bisson |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (ATL) | DRILLER: L. Carter/ J. Landeros | GROUND WATER (ft) |
| BORING NO.: B-612 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.5 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 876,869 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 125.1 ft | CASING DEPTH: 4" to 16.0', 3" to 118.6' | | HAMMER (ID): 140 lb. Auto (MEC-03) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Continued from previous page |
| -94.6 | 93.1 | | 0:30<br>0:26 | | | | | | | LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* |
| -99.6 | 98.1 | 5.0 | 0:26<br>1:18<br>0:42<br>0:44<br>0:40 | (2.6)<br>52% | (0.9)<br>18% | RUN-18 | | | | 93.1ft: hard, interbedded sand lenses |
| -104.6 | 103.1 | 5.0 | 0:36<br>0:50<br>0:32<br>0:27<br>1:03 | (5.0)<br>100% | (4.2)<br>84% | RUN-19 | | | | 98.1ft: few shell molds and casts |
| -109.6 | 108.1 | 5.0 | 0:43<br>0:53<br>0:48<br>1:03<br>0:45 | (5.0)<br>100% | (5.0)<br>100% | RUN-20 | | | | |
| -114.6 | 113.1 | 5.0 | 0:31<br>0:19<br>0:35<br>0:24<br>0:39 | (5.0)<br>100% | (3.6)<br>72% | RUN-21 | | | | 108.1ft: white (10YR8/1), to light gray (10YR7/2), to greenish gray (10Y5/1), hard to moderately hard<br>113.1ft: greenish gray (10Y5/1), hard |
| -119.6 | 118.1 | 5.0 | 0:37<br>0:22<br>0:24<br>0:41<br>0:18 | (1.3)<br>26% | (0.0)<br>0% | RUN-22 | (0.0)<br>0% | (NA) | | -116.5 — 115.0<br>Silty SAND (SM), gray (2.5Y6/1), loose, wet, fine grained sand, strong HCl reaction (Tamiami Formation)<br>-119.6 — 118.1 |
| | | | | | | | | | | Coring Terminated at Elevation -119.6 |

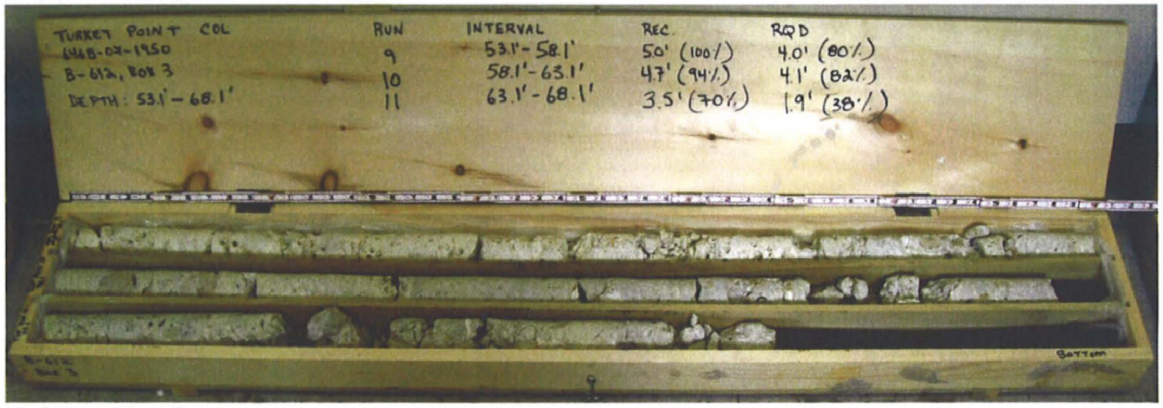
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 8/14/08



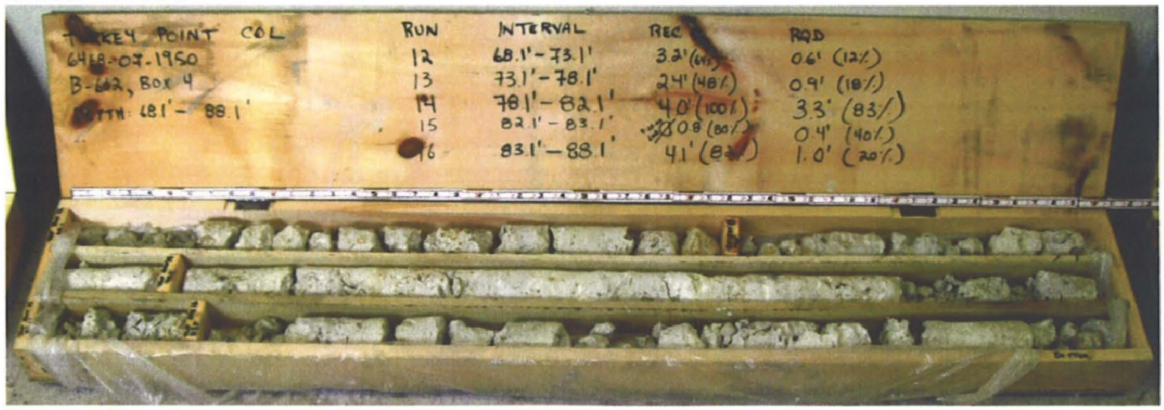

B-612 – Box 1




B-612 – Box 2

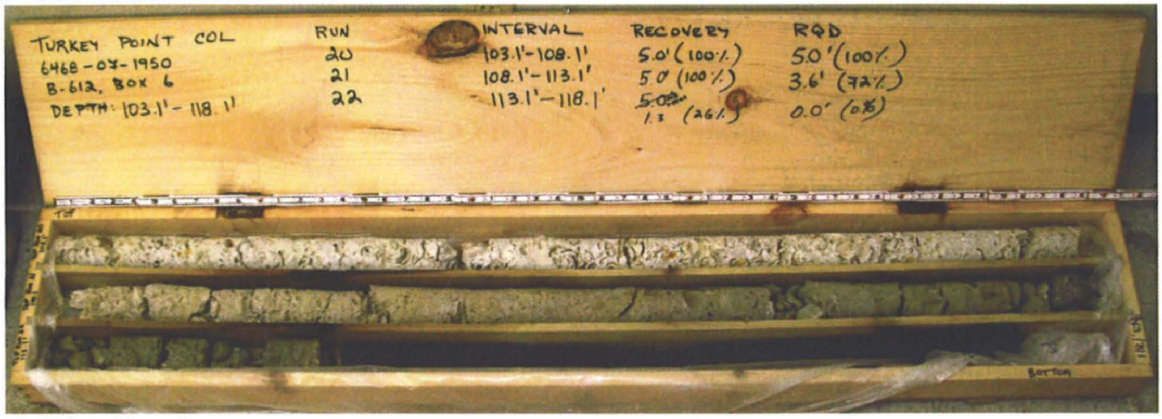



B-612 – Box 3




B-612 – Box 4

B-612 – Box 5




B-612 – Box 6

MACTEC

# GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 8-19-08
Checked By [illegible] Date 8/19/08



| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: J. Liles |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (Miller) | DRILLER: R. White/ J. Dugger/ C. White | GROUND WATER (ft) |
| BORING NO.: B-613 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,162 US ft (NAD83/90) | EASTING: 876,809 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 150.2 ft | BORING DIAMETER: 3" to 150.2' | CASING DEPTH: 3" to 115.0' | HAMMER (ID):140 lb. Auto (M06) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | BITS USED: 2 7/8" Roller Cone |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | SAMP. NO. | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|
| -1.4 | | | | | | Ground Surface |
| -1.4 | 0.0 | WOH | WOH | WOH | 613-1 | MUCK, black (2.5Y2.5/1), very soft, wet, strong HCl reaction, mostly organics |
| -4.2 | 2.8 | | | | | |
| -6.5 | 5.1 | 2 | 3 | 4 | 613-2A&B | LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, little fine grained sand, strong HCl reaction, oolitic (Miami Formation) |
| -8.9 | 7.5 | 8 | 10 | 7 | 613-3 | |
| -11.1 | 9.7 | 15 | 42 | 11 | 613-4 | 7.5ft: moderately hard |
| -13.1 | 11.7 | 3 | 5 | 10 | 613-5 | 9.7ft: very soft |
| -16.4 | 15.0 | 2 | 11 | 21 | 613-6 | 11.7ft: medium hard |
| -21.4 | 20.0 | 5 | 10 | 13 | 613-7 | 15.0ft: soft |
| -27.7 | 26.3 | 3 | 3 | 8 | 613-8 | 20.0ft: very soft |
| -32.9 | 31.5 | 2 | 2 | 14 | 613-9 | LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, trace clayey sand, strong HCl reaction (Upper Fort Thompson Formation) |
| -33.3 | 31.9 | 50/0.4 | | | 613-10 | 31.5ft: hard |
| -36.3 | 34.9 | | | | RUN-1 | 31.9ft: Switch sampling method to coring |
| -41.3 | 39.9 | | | | RUN-2 | 31.9ft: white (2.5Y8/1), moderately hard, moderately indurated, coralline, few vugs<br>34.9ft: fossiliferous, little vugs |
| -46.3 | 44.9 | | | | RUN-3 | 39.9ft: few vugs |
| -51.3 | 49.9 | | | | RUN-4 | 44.9ft: light gray (2.5Y7/2), moderately hard to hard, moderately indurated to indurated |
| -56.3 | 54.9 | | | | RUN-5 | LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation) |
| -61.3 | 59.9 | | | | RUN-6 | |
| -66.3 | 64.9 | | | | RUN-7 | 59.9ft: medium hard to moderately hard, friable to moderately indurated, sandy |
| -71.3 | 69.9 | | | | RUN-8 | 64.9ft: no recovery, very fast/soft drilling |
| -76.3 | 74.9 | | | | RUN-9 | 69.9ft: moderately hard, moderately indurated, very fast/soft drilling |

Blows per foot (0 20 40 60 80 100): 0, WOH, 7, 17, 53, 15, 32, 23, 11, 16, 50/0.4

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

-1.4 — 0.0
-4.8 — 3.4
-26.4 — 25.0
-48.5 — 47.1

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: J. Liles |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (Miller) | DRILLER: R. White/ J. Dugger/ C. White | GROUND WATER (ft) |
| BORING NO.: B-613 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,162 US ft (NAD83/90) | EASTING: 876,809 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 150.2 ft | BORING DIAMETER: 3" to 150.2' | CASING DEPTH: 3" to 115.0' | HAMMER (ID):140 lb. Auto (M06) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | BITS USED: 2 7/8" Roller Cone |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT 0 20 40 60 80 100 | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -76.2 | | | | | Continued from previous page | | | | |
| | | | | | | RUN-10 | | | LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation) *(continued)* |
| -81.3 | 79.9 | | | | | RUN-11 | | | 74.9ft: medium hard to moderately hard, friable to moderately indurated |
| -86.3 | 84.9 | | | | | RUN-12 | | | 84.9ft: trace fine to medium grained sand, few vugs |
| -91.3 | 89.9 | | | | | RUN-13 | | | 89.9ft: moderately hard, moderately indurated |
| -96.3 | 94.9 | | | | | RUN-14 | | | |
| -101.3 | 99.9 | | | | | RUN-15 | | | 99.9ft: some vugs, little shell molds and casts |
| -106.3 | 104.9 | | | | | RUN-16 | | | |
| -111.3 | 109.9 | | | | | RUN-17 | | | -114.4 113.0 |
| -116.3 | 114.9 | | | | | RUN-18 | | | POORLY GRADED SAND (SP), light gray (2.5Y7/1), wet, fine grained sand, strong HCl reaction, trace limestone fragments and shells (Tamiami Formation) |
| -118.3 | 116.9 | 9 | 10 | 1 | 11 | 613-11 | | | 116.9ft: Switch sampling method to SPT<br>116.9ft: medium dense, shell fragments |
| -127.5 | 126.1 | 4 | 7 | 11 | 18 | 613-12 | | | 126.1ft: greenish gray (10Y6/1) |
| -137.6 | 136.2 | 3 | 2 | 2 | 4 | 613-13 | | | 136.2ft: no recovery, very loose |
| -140.1 | 138.7 | 2 | 3 | 5 | 8 | 613-14 | | | 138.7ft: loose |
| -150.1 | 148.7 | 4 | 6 | 7 | | 613-15 | | | |

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: J. Liles |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (Miller) | DRILLER: R. White/ J. Dugger/ C. White | GROUND WATER (ft) |
| BORING NO.: B-613 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,162 US ft (NAD83/90) | EASTING: 876,809 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 150.2 ft | BORING DIAMETER: 3" to 150.2' | CASING DEPTH: 3" to 115.0' | HAMMER (ID):140 lb. Auto (M06) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | BITS USED: 2 7/8" Roller Cone |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT 0 20 40 60 80 100 | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -151.0 | | | | | Continued from previous page | | | | |
| | | | | | 13 | | | | -151.6 148.7ft: medium dense 150.2 |
| | | | | | | | | | Boring Terminated at Elevation -151.6 ft |

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: J. Liles |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (Miller) | DRILLER: R. White/ J. Dugger/ C. White | GROUND WATER (ft) |
| BORING NO.: B-613 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,162 US ft (NAD83/90) | EASTING: 876,809 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 150.2 ft | CASING DEPTH: 3" to 115.0' | | HAMMER (ID): 140 lb. Auto (M06) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Begin Coring @ 31.9 ft |
| -33.3<br>-36.3 | 31.9<br>34.9 | 3.0 | 1:01<br>1:02<br>1:10 | (3.0)<br>100% | (1.0)<br>33% | RUN-1 | (14.1)<br>93% | (8.4)<br>55% | | LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, trace clayey sand, strong HCl reaction (Upper Fort Thompson Formation) *(continued)*<br>31.9ft: white (2.5Y8/1), moderately hard, moderately indurated, coralline, few vugs<br>34.9ft: fossiliferous, little vugs |
| -41.3 | 39.9 | 5.0 | 1:05<br>0:54<br>1:08<br>1:09<br>0:18 | (4.1)<br>82% | (2.3)<br>46% | RUN-2 | | | | |
| -46.3 | 44.9 | 5.0 | 0:44<br>0:53<br>0:57<br>2:02<br>1:52 | (4.8)<br>96% | (3.6)<br>72% | RUN-3 | | | | 39.9ft: few vugs |
| -51.3 | 49.9 | 5.0 | 1:08<br>1:49<br>2:03<br>2:10<br>1:00 | (4.9)<br>98% | (3.5)<br>70% | RUN-4 | | | | 44.9ft: light gray (2.5Y7/2), moderately hard to hard, moderately indurated to indurated<br>-48.5 47.1 |
| | | | | | | | (33.8)<br>51% | (12.9)<br>20% | | LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation) |
| -56.3 | 54.9 | 5.0 | 0:58<br>0:38<br>0:50<br>0:47<br>0:42 | (5.0)<br>100% | (3.6)<br>72% | RUN-5 | | | | |
| -61.3 | 59.9 | 5.0 | 0:25<br>0:10<br>0:37<br>0:38<br>0:39 | (3.1)<br>62% | (1.6)<br>32% | RUN-6 | | | | |
| -66.3 | 64.9 | 5.0 | 0:48<br>1:06<br>0:26<br>0:19<br>0:38 | (1.8)<br>36% | (0.7)<br>14% | RUN-7 | | | | 59.9ft: medium hard to moderately hard, friable to moderately indurated, sandy |
| -71.3 | 69.9 | 5.0 | 0:11<br>0:06<br>0:05<br>0:06<br>0:11 | (0.0)<br>0% | (0.0)<br>0% | RUN-8 | | | | 64.9ft: no recovery, very fast/soft drilling |
| -76.3 | 74.9 | 5.0 | 0:09<br>0:08<br>0:17<br>0:14<br>0:14 | (1.1)<br>22% | (0.0)<br>0% | RUN-9 | | | | 69.9ft. moderately hard, moderately indurated, very fast/soft drilling |
| -81.3 | 79.9 | 5.0 | 0:06<br>1:28<br>0:37<br>3:01<br>2:26 | (3.2)<br>64% | (0.0)<br>0% | RUN-10 | | | | 74.9ft: medium hard to moderately hard, friable to moderately indurated |
| -86.3 | 84.9 | 5.0 | 1:07<br>1:10<br>1:21<br>1:11<br>0:30 | (2.9)<br>58% | (1.0)<br>20% | RUN-11 | | | | |
| -91.3 | 89.9 | 5.0 | 0:30<br>1:08<br>0:53<br>1:15<br>0:56 | (2.9)<br>58% | (1.3)<br>26% | RUN-12 | | | | 84.9ft: trace fine to medium grained sand, few vugs |
| -96.3 | 94.9 | 5.0 | 0:35<br>0:33<br>0:54<br>0:48<br>0:25 | (0.2)<br>4% | (0.0)<br>0% | RUN-13 | | | | 89.9ft: moderately hard, moderately indurated |
| -101.3 | 99.9 | 5.0 | 0:44<br>0:23<br>0:28<br>0:19<br>0:48 | (1.4)<br>28% | (0.0)<br>0% | RUN-14 | | | | |
| -106.3 | 104.9 | 5.0 | 0:52<br>0:40<br>0:46<br>0:46<br>0:45 | (4.6)<br>92% | (2.6)<br>52% | RUN-15 | | | | 99.9ft: some vugs, little shell molds and casts |
| | | 5.0 | 0:46<br>0:37 | (3.2) | (0.0) | RUN-16 | | | | |

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08

MACTEC



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|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: J. Liles |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (Miller) | DRILLER: R. White/ J. Dugger/ C. White | GROUND WATER (ft) |
| BORING NO.: B-613 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,162 US ft (NAD83/90) | EASTING: 876,809 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 150.2 ft | CASING DEPTH: 3" to 115.0' | | HAMMER (ID): 140 lb. Auto (M06) |
| DATE STARTED: 3/25/08 | COMPLETED: 3/26/08 | CORE SIZE: HQ3 | CORE BARREL TYPE: Triple Tube Wireline (Split inner liners) |

| ELEV. (ft) | DEPTH (ft) | RUN (ft) | DRILL RATE (Min/ft) | RUN REC. (ft) % | RUN RQD (ft) % | SAMP. NO. | STRATA REC. (ft) % | STRATA RQD (ft) % | LOG | DESCRIPTION AND REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Continued from previous page |
| | | | 0:36 | 64% | 0% | | | | | LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately |
| | | | 0:35 | | | | | | | indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few |
| -111.3 | 109.9 | | 0:25 | | | | | | | gastropod shell molds and casts (Lower Fort Thompson Formation) *(continued)* |
| | | 5.0 | 0:34 | (1.6) | (0.0) | RUN-17 | | | | |
| | | | 0:32 | 32% | 0% | | | | | |
| | | | 0:26 | | | | | | | -114.4 113.0 |
| | | | 0:25 | | | | (0.4) | (NA) | | POORLY GRADED SAND (SP), light gray (2.5Y7/1), wet, fine grained sand, |
| -116.3 | 114.9 | | 0:55 | | | | 10% | | | strong HCl reaction, trace limestone fragments and shells (Tamiami Formation) |
| | | 2.0 | 0:08 | (0.4) | (0.4) | RUN-18 | | | | |
| -118.3 | 116.9 | | 0:36 | 20% | 20% | | | | | -118.3 116.9ft: Switch sampling method to SPT 116.9 |
| | | | | | | | | | | Coring Terminated at Elevation -118.3 |

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08