Turkey Point COC
6468-07-1950
B-707
Box 5
Depth: 83.8 - 108.6'
Run 13: 83.8 - 88.8' REC: 4.3' (86%) RQD: 3.1' (62%)
Run 14: 88.8' - 93.8' REC: 3.8' (76%) RQD: 2.9' (58%)
Run 15: 93.8' - 98.8' REC: 3.5' (70%) RQD: 1.6' (32%)
Run 16: 98.8 - 102.8' REC: 0.7' (14%) RQD: 0.0' (0%)
Run 17: 102.8 - 103.8' REC: 0.0' (0.0%) RQD: 0.0' (0.0%)
Run 18: 103.8 - 108.8' REC: 0.0' (0%) RQD: 0.0' (0%)
Correction: Run 16, REC 0.7'(18%)
JPH, 8-18-08

B-707 – Box 5

MACTEC

GEOTECHNICAL BORING LOG

Prepared By JFK Date 5-30-08

Checked By [illegible] Date 5-30-08

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 266.5 ft	BORING DIAMETER: 4" to 266.5'	CASING DEPTH: 4" to 105.8'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	BITS USED: 3 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
-1.4					Ground Surface				
-1.4	0.0	WOH	WOH	WOH	WOH 0	708(DH)-1			-1.4 0.0 MUCK, dark gray brown (10YR4/2), to black (10YR2/1), moist, mostly organic, strong HCl reaction
-4.0	2.6								-3.9 2.5 LIMESTONE, boundstone, gray (10YR6/1), to white (10YR8/1), medium hard, wet, strong HCl reaction, oolitic (Miami Formation)
		11	22	23	45	708(DH)-2			
-6.4	5.0				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				
		10	10	6	16	708(DH)-3			5.0ft: white (10YR8/1), very soft
-9.4	8.0								
-11.0	9.6	6	20	13	33	708(DH)-4			8.0ft: light gray (10YR7/1), to white (10YR8/1), medium hard
		3	12	15	27	708(DH)-5			9.6ft: soft
-14.4	13.0								
		11	50/0.5		61/1.0	708(DH)-6			13.0ft: hard, fossiliferous
-16.9	15.5								
		10	50/0.5		60/1.0	708(DH)-7			
-21.9	20.5								
		9	6	7	13	708(DH)-8			20.5ft: white (10YR8/1), very soft
-27.0	25.6								-26.4 25.0 LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-27.5	26.1	50/0.5			50/0.5	708(DH)-9 RUN-1			26.1ft: Switched sampling method to coring
						RUN-2			26.1ft: white (10YR8/1), with gray (10YR6/1), medium hard, moderately indurated, fossiliferous, recrystallized calcite, coralline, little to some vugs
-31.8	30.4								27.0ft: loss of circulation
-36.8	35.4					RUN-3			35.4ft: medium hard to hard, moderately indurated to indurated, little vugs
						708(DH)-CS-01			
-41.8	40.4					RUN-4			40.4ft: white (10YR8/1), hard, indurated, few vugs
-46.8	45.4					RUN-5			45.4 to 47.6ft: gray (10YR6/1), trace vugs
-49.0	47.6								LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-51.8	50.4					RUN-6 708(DH)-CS-04			53.3ft: moderately hard, moderately indurated, trace to few shell molds and casts
-56.8	55.4					RUN-7			55.4ft: hard, indurated
-61.8	60.4					RUN-8 708(DH)-CS-06			60.4ft: moderately hard to hard, moderately indurated to indurated
									63.0 to 65.4ft: friable, fractured
-66.8	65.4					RUN-9			65.4ft: indurated, sandy, coralline
-71.8	70.4					RUN-10			70.4ft: hard
-76.3	74.9								

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 266.5 ft	BORING DIAMETER: 4" to 266.5'	CASING DEPTH: 4" to 105.8'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	BITS USED: 3 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-11			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-81.9	80.5					RUN-12			80.5ft: moderately hard, moderately indurated, trace to few shell molds and casts
-86.9	85.5					RUN-13			85.5ft: moderately hard to hard, moderately indurated to indurated
-91.9	90.5					RUN-14			
-96.9	95.5					RUN-15			
-101.9	100.5					RUN-16 708(DH)-CS-07			100.5ft: hard, indurated, little shell molds and casts
-106.9	105.5					RUN-17			
-111.9	110.5					RUN-18			
-116.9	115.5								-115.4 — 114.0
		12	10	16	26	708(DH)-10			Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) 115.5ft: Switch sampling method to SPT
-127.4	126.0								
		8	10	13	23	708(DH)-11			126.0ft: greenish gray (10Y6/1), trace shell fragments
-136.9	135.5								
		8	11	8	19	708(DH)-12			135.5ft: trace shell fragments
-144.1	142.7								
		13	14	15	29	708(DH)-13			

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 266.5 ft	BORING DIAMETER: 4" to 266.5'	CASING DEPTH: 4" to 105.8'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	BITS USED: 3 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				
-154.3	152.9								Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) *(continued)*
		6	8	12	20	708(DH)-14			
-164.4	163.0								
		6	14	10	24	708(DH)-15			
-174.4	173.0								
		1	2	6	8	708(DH)-16			173.0ft: loose
-184.4	183.0								
		2	2	6	8	708(DH)-17			
-194.4	193.0								
		1	2	4	6	708(DH)-18			193.0ft: weak HCl reaction
-204.4	203.0								
		3	3	4	7	708(DH)-19			
-214.4	213.0								
		3	5	8	13	708(DH)-20			213.0ft: medium dense, strong HCl reaction
-221.4									220.0
-224.4	223.0								Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group)
		9	8	5	13	708(DH)-21			

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 266.5 ft	BORING DIAMETER: 4" to 266.5'	CASING DEPTH: 4" to 105.8'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	BITS USED: 3 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
-225.8					Continued from previous page				
									Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group) *(continued)*
-234.4	233.0	7	12	16	28	708(DH)-22			
-244.4	243.0	10	15	21	36	708(DH)-23			243.0ft: dense, no HCl reaction
-254.3	252.9	4	10	19	29	708(DH)-24			252.9ft: medium dense
-266.4	265.0	5	12	30	42	708(DH)-25			
-267.9	266.5								256.0ft: dense Boring Terminated at Elevation -267.9 ft

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 266.5 ft	CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	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 @ 26.1 ft
-27.5	26.1	4.3	1:11/0.3 1:49 3:37 5:56 5:36	(4.2) 98%	(0.4) 9%	RUN-1	(19.7) 92%	(11.7) 54%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) *(continued)* 26.1ft: white (10YR8/1), with gray (10YR6/1), medium hard, moderately indurated, fossiliferous, recrystallized calcite, coralline, little to some vugs 27.0ft: loss of circulation
-31.8	30.4	5.0	2:37 2:16 3:02 2:18 3:41	(3.3) 66%	(0.7) 14%	RUN-2				
-36.8	35.4	5.0	2:15 3:08 3:31 3:25 6:01	(5.0) 100%	(3.7) 74%	RUN-3 *708(DH)-CS-01*				35.4ft: medium hard to hard, moderately indurated to indurated, little vugs
-41.8	40.4	5.0	2:33 2:06 2:58 3:01 3:27	(5.0) 100%	(5.0) 100%	RUN-4				40.4ft: white (10YR8/1), hard, indurated, few vugs
-46.8	45.4	5.0	1:49 2:35 2:26 1:58 1:34	(5.0) 100%	(4.7) 94%	RUN-5				45.4 to 47.6ft: gray (10YR6/1), trace vugs
-49.0										47.6
-51.8	50.4	5.0	2:42 2:16 1:36 0:55 0:35	(4.8) 96%	(3.5) 70%	RUN-6 *708(DH)-CS-04*	(50.1) 75%	(30.8) 46%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) 53.3ft: moderately hard, moderately indurated, trace to few shell molds and casts
-56.8	55.4	5.0	0:58 0:45 1:09 1:48 4:43	(5.0) 100%	(4.2) 84%	RUN-7				55.4ft: hard, indurated
-61.8	60.4	5.0	2:02 2:08 1:29 0:36 0:29	(3.2) 64%	(2.4) 48%	RUN-8 *708(DH)-CS-06*				60.4ft: moderately hard to hard, moderately indurated to indurated 63.0 to 65.4ft: friable, fractured
-66.8	65.4	5.0	0:15 0:41 0:30 2:00 1:35	(1.9) 38%	(0.6) 12%	RUN-9				65.4ft: indurated, sandy, coralline
-71.8	70.4	4.5	1:56 2:50 3:15 1:33 3.25/0.5	(3.2) 71%	(1.9) 42%	RUN-10				70.4ft: hard
-76.3	74.9	5.6	1:21/1.6 1:20 1:26 1:43 1:50	(4.2) 75%	(3.2) 57%	RUN-11				
-81.9	80.5	5.0	0:40 0:48 0:24 1:01 2:37	(3.2) 64%	(0.7) 14%	RUN-12				80.5ft: moderately hard, moderately indurated, trace to few shell molds and casts
-86.9	85.5	5.0	1:35 1:28 6:46 2:46 2:52	(4.7) 94%	(2.9) 58%	RUN-13				85.5ft: moderately hard to hard, moderately indurated to indurated
-91.9	90.5	5.0	1:17 1:49 1:00 1:04 1:44	(4.4) 88%	(2.9) 58%	RUN-14				
-96.9	95.5	5.0	0:26 0:40 0:51 1:18 1:50	(2.8) 56%	(0.4) 8%	RUN-15				
-101.9	100.5									

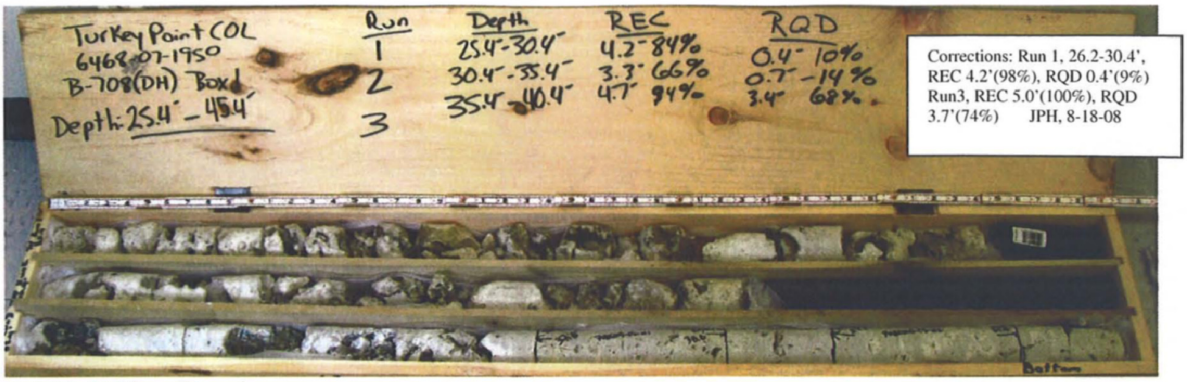
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

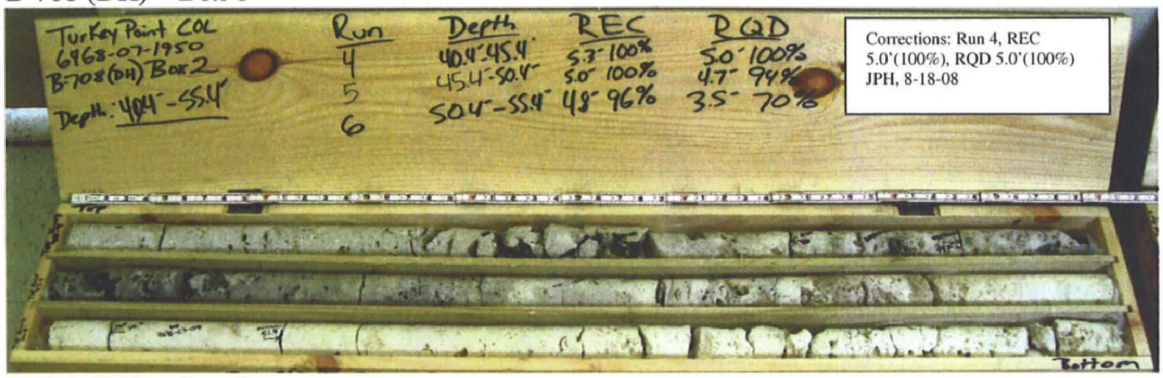
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 266.5 ft	CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	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
		5.0	0:55 1:50 1:20 0:58 1:23	(4.9) 98%	(4.2) 84%	RUN-16 *708(DH)-CS-07*				100.5ft: hard, indurated, little shell molds and casts LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-106.9	105.5									
		5.0	1:43 1:10 1:33 1:05 1:08	(3.4) 68%	(1.1) 22%	RUN-17				
-111.9	110.5									
		5.0	0:52 1:04 1:01 1:04 0:30	(1.6) 32%	(0.0) 0%	RUN-18				
										-115.4 114.0
-116.9	115.5						(0.0) 0%	(NA)		-116.9 Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) 115.5 Coring Terminated at Elevation -116.9

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

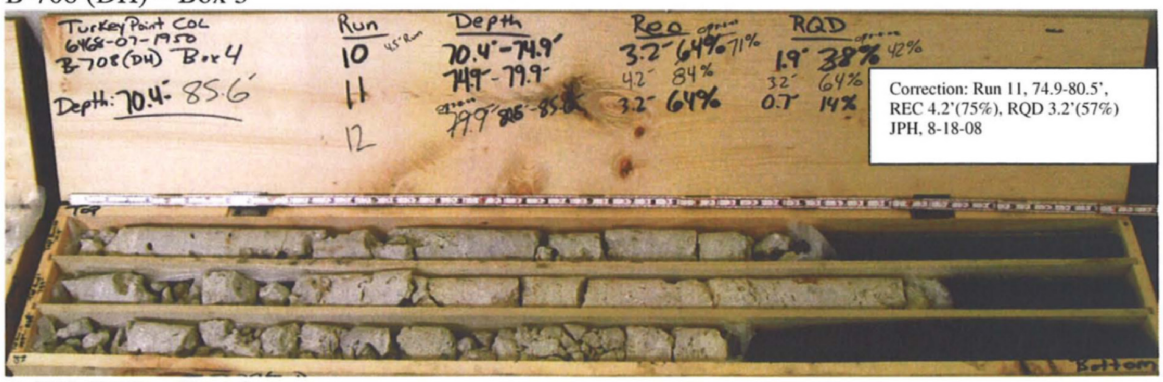


B-708 (DH) – Box 1

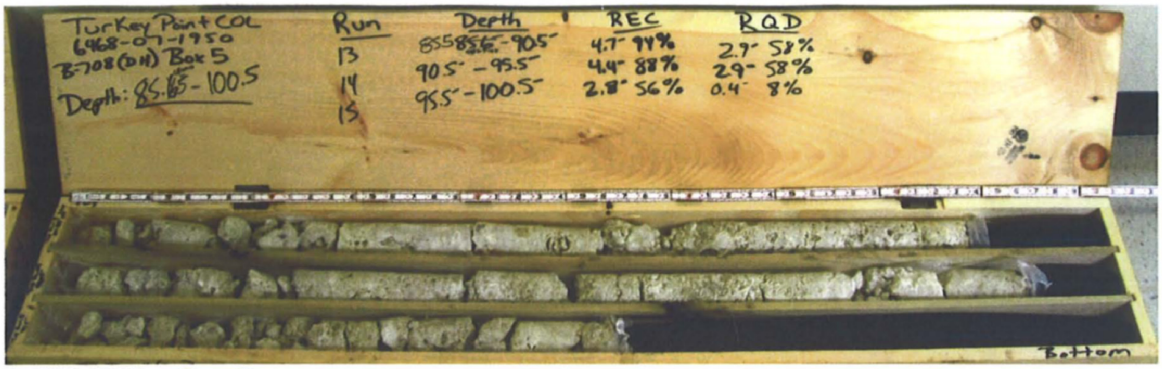


B-708 (DH) – Box 2

B-708 (DH) – Box 3



B-708 (DH) – Box 4



B-708 (DH) – Box 5

B-708 (DH) – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By _____ Date 5-20-08

Checked By _____ Date 5-23-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/P. Pitts	GROUND WATER (ft)	
BORING NO.: B-709	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,761 US ft (NAD83/90)	EASTING: 875,841 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 150.0 ft	BORING DIAMETER: 4" to 28.5', 3" to 150.0'	CASING DEPTH: 4" to 28.5', 3" to 120.0'	HAMMER (ID):140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08	COMPLETED: 3/4/08	CORE SIZE: HQ3	BITS USED: 2 15/16 & 4 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
-1.3					Ground Surface				
-1.3	0.0	WOH	WOH	WOH	WOH 0	709-1			-1.3 0.0 MUCK, very dark brown (10YR2/2). very soft, moist, organic
-3.8	2.5	WOH	5	8	13	709-2A&B			-4.6 3.3 LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, strong HCl reaction, fossiliferous, oolitic (Miami Formation)
-6.6	5.3	8	8	4	12	709-3			5.3ft: white (5Y8/1)
-8.8	7.5	4	9	4	13	709-4			7.5ft: white (10YR8/1)
-11.3	10.0	8	12	9	21	709-5			10.0ft: soft
-13.8	12.5	11	14	11	25	709-6			
-16.3	15.0	10	18	11	29	709-7			
-19.8	18.5	6	6	8	14	709-8			18.5ft: very soft
-24.8	23.5	3	4	12	16	709-9			
-29.8	28.5								-27.3 26.0 LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation)
-30.5	29.2	40	50/0.2		90/0.7	709-10 RUN-1			29.2ft: Switched sampling method to coring
-35.3	34.0					RUN-2			29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs
-40.3	39.0					RUN-3			30.0ft: loss of circulation
-45.3	44.0					RUN-4			34.0ft: few vugs
-50.3	49.0					RUN-5			44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs
-55.3	54.0					RUN-6			-49.7 48.4 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-60.3	59.0					RUN-7			49.0ft: moderately hard, moderately indurated, few vugs
-65.3	64.0					RUN-8			54.0ft: hard, indurated
-70.3	69.0					RUN-9			69.0ft: moderately hard to hard, moderately indurated to indurated. sandy, some vugs
-75.3	74.0					RUN-10			

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/P. Pitts	GROUND WATER (ft)
BORING NO.: B-709	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,761 US ft (NAD83/90)	EASTING: 875,841 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.0 ft	BORING DIAMETER: 4" to 28.5', 3" to 150.0'	CASING DEPTH: 4" to 28.5', 3" to 120.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 2/26/08	COMPLETED: 3/4/08	CORE SIZE: HQ3	BITS USED: 2 15/16 & 4 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
-76.1					Continued from previous page				
-80.3	79.0								74.0ft: hard, indurate74.0 to 79.0ft: possible interbedded sand LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 79.0ft: no recovery, inner barrel sand-locked 80.3ft: Switch sampling method to SPT 80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand 81.8ft: Switch sampling method to coring 81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds 84.0ft: extremely indurated, few vugs 89.0ft: indurated
-81.6	80.3					RUN-11			
-83.1	81.8	6	12	17	29	709-11			
-85.3	84.0					RUN-12			
-90.3	89.0					RUN-13			
-95.3	94.0					RUN-14			
-100.3	99.0					RUN-15			
-105.3	104.0					RUN-16			99.0ft: moderately hard, some vugs, little to some shell molds and casts
-110.3	109.0					RUN-17			104.0ft: hard
-115.3	114.0					RUN-18			
-116.3	114.0					RUN-19			114.0ft: light gray (5Y7/1) 115.0 Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, little fines, HCl reaction (Tamiami Formation)
-121.8	120.5	6	7	9	16	709-12			120.5ft: Switch sampling method to SPT
-124.8	123.5								
-129.8	128.5	18	18	7	25	709-13			123.5ft: moist, friable cemented zones 125.0ft: half of circulation returned
-134.8	133.5	6	8	11	19	709-14			
-139.8	138.5	WOH	WOH	2	2	709-15			133.5ft: very loose
-144.8	143.5	7	9	11	20	709-16			138.5ft: medium dense, trace shell fragments
-149.8	148.5	6	6	12	18	709-17			
		5	6	10	16	709-18			

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/P. Pitts	GROUND WATER (ft)
BORING NO.: B-709	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,761 US ft (NAD83/90)	EASTING: 875,841 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.0 ft	BORING DIAMETER: 4" to 28.5', 3" to 150.0'	CASING DEPTH: 4" to 28.5', 3" to 120.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 2/26/08	COMPLETED: 3/4/08	CORE SIZE: HQ3	BITS USED: 2 15/16 & 4 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
-150.9					Continued from previous page				
-151.3	150.0								Boring Terminated at Elevation -151.3 ft

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/P. Pitts	GROUND WATER (ft)	
BORING NO.: B-709	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,761 US ft (NAD83/90)	EASTING: 875,841 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 150.0 ft	CASING DEPTH: 4" to 28.5', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08	COMPLETED: 3/4/08	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 @ 29.2 ft
-30.5	29.2	4.8	1:42 1:20 1:30 1:10 2:00/0.8	(4.2) 88%	(2.5) 52%	RUN-1	(16.7) 87%	(12.7) 66%		LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation) *(continued)* 29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs
-35.3	34.0	5.0	0:33 1:09 1:15 1:12 1:30	(3.9) 78%	(2.9) 58%	RUN-2				30.0ft: loss of circulation 34.0ft: few vugs
-40.3	39.0	5.0	1:10 1:12 1:13 0:51 1:06	(5.0) 100%	(4.5) 90%	RUN-3				
-45.3	44.0	5.0	0:44 1:20 1:12 1:04 1:58	(4.2) 84%	(3.4) 68%	RUN-4				44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs
-50.3	49.0	5.0	0:57 0:43 1:06 1:11 1:12	(4.9) 98%	(4.0) 80%	RUN-5	(43.8) 66%	(26.6) 40%		-49.7 48.4 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.0ft: moderately hard, moderately indurated, few vugs
-55.3	54.0	5.0	0:52 0:55 0:20 0:45 0:30	(3.9) 78%	(2.6) 52%	RUN-6				54.0ft: hard, indurated
-60.3	59.0	5.0	0:37 0:35 1:12 1:02 0:42	(4.6) 92%	(4.6) 92%	RUN-7				
-65.3	64.0	5.0	0:36 0:39 0:56 0:36 0:10	(3.3) 66%	(1.5) 30%	RUN-8				
-70.3	69.0	5.0	0:15 0:10 0:36 0:57 1:23	(3.0) 60%	(0.4) 8%	RUN-9				69.0ft: moderately hard to hard, moderately indurated to indurated, sandy, some vugs
-75.3	74.0	5.0	0:30 0:27 0:25 0:20 0:47	(1.6) 32%	(0.0) 0%	RUN-10				74.0ft: hard, indurate74.0 to 79.0ft: possible interbedded sand
-80.3	79.0									
-81.6	80.3	1.3	0:15 0:07/0.3	(0.0) 0%	(0.0) 0%	RUN-11 *709-11*				79.0ft: no recovery, inner barrel sand-locked 80.3ft: Switch sampling method to SPT
-83.1	81.8	2.2	*N=29* 1:15	(1.8)	(0.9)	RUN-12				80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand
-85.3	84.0	5.0	1:45 0:36/0.2 1:36 1:15 5:37 3:41 2:28	82% (3.5) 70%	41% (1.3) 26%	RUN-13				81.8ft: Switch sampling method to coring 81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds 84.0ft: extremely indurated, few vugs
-90.3	89.0	5.0	3:32 1:09 0:54 1:25 0:26	(0.5) 10%	(0.4) 8%	RUN-14				89.0ft: indurated
-95.3	94.0	5.0	1:25 1:05 0:26 0:31 0:21	(2.3) 46%	(1.2) 24%	RUN-15				
-100.3	99.0	5.0	0:51 0:55 0:27 0:40 0:46	(4.9) 98%	(3.3) 66%	RUN-16				99.0ft: moderately hard, some vugs, little to some shell molds and casts
-105.3	104.0									

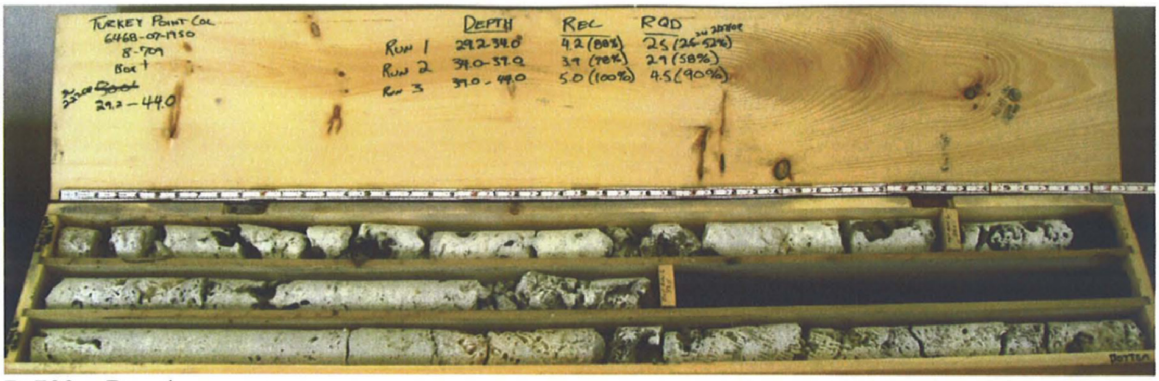
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5.30.08

MACTEC

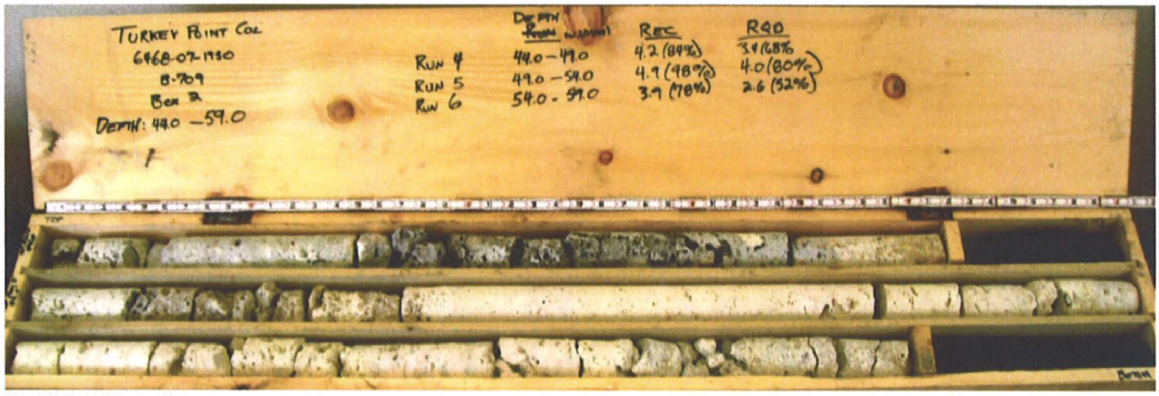
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/P. Pitts	GROUND WATER (ft)	
BORING NO.: B-709	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,761 US ft (NAD83/90)	EASTING: 875,841 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 150.0 ft	CASING DEPTH: 4" to 28.5', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08	COMPLETED: 3/4/08	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
		5.0	1:10 0:53 0:46 1:00 0:40	(5.0) 100%	(4.0) 80%	RUN-17				104.0ft: hard LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-110.3	109.0									
		5.0	0:30 1:50 1:29 0:43 0:31	(3.4) 68%	(1.8) 36%	RUN-18				
-115.3	114.0									
		5.0	0:38 0:37 0:24 0:19 0:25	(0.5) 10%	(0.0) 0%	RUN-19	(0.0) 0%	(NA)		-116.3 114.0ft: light gray (5Y7/1) 115.0 Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, little fines, HCl reaction (Tamiami Formation)
-120.3	119.0									-120.3 119.0 Coring Terminated at Elevation -120.3

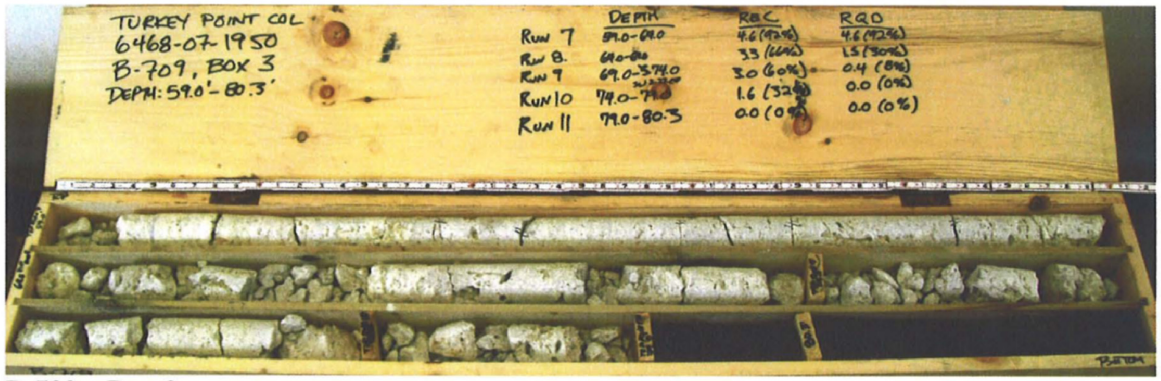
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 5/30/08



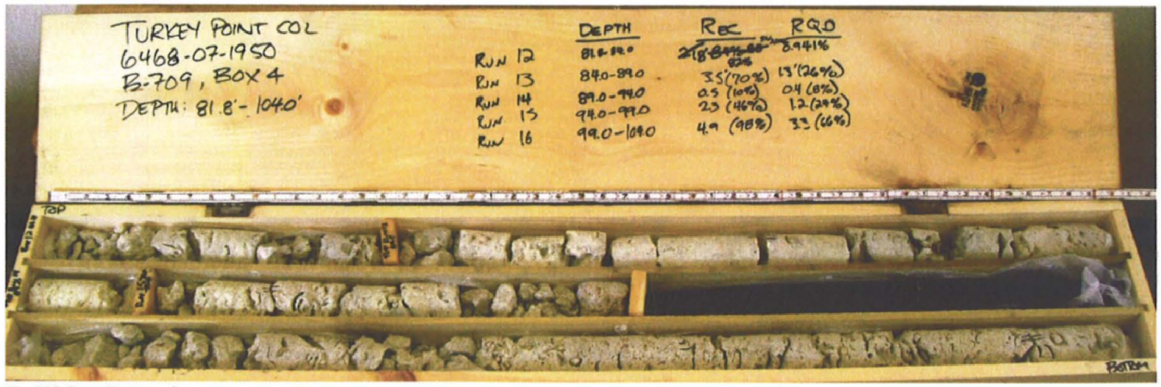
B-709 – Box 1



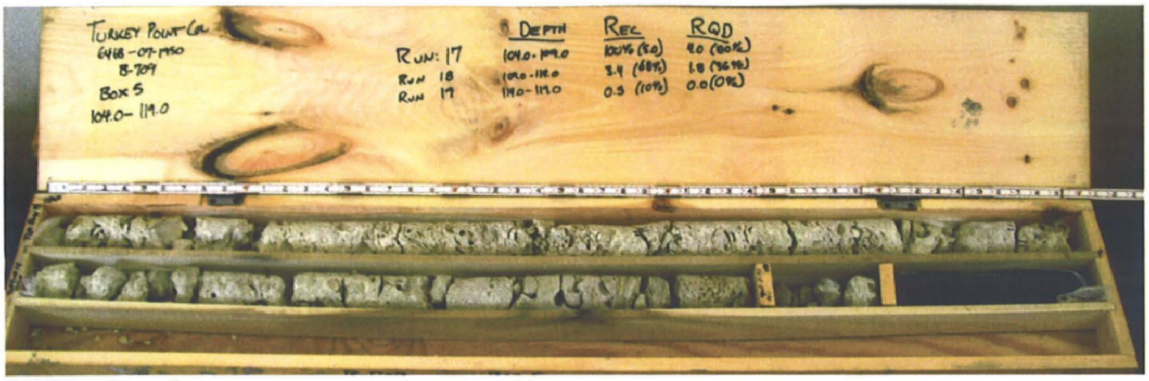
B-709 – Box 2



B-709 – Box 3



B-709 – Box 4


TURKEY POINT COL
6468-07-1950
B-709
BOX 5
104.0 - 119.0
RUN: 17
RUN 18
RUN 19
DEPTH
109.0 - 119.0
108.0 - 118.0
118.0 - 119.0
REC
100% (5.0)
3.4 (68%)
0.5 (10%)
RQD
4.0 (80%)
1.8 (36%)
0.0 (0%)

B-709 – Box 5

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: O. Rodriguez
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)
BORING NO.: B-710(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,793 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 250.9 ft	BORING DIAMETER: 4" to 18.5', 3" to 250.9'	CASING DEPTH: 4" to 18.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (MEC-09)
DATE STARTED: 4/2/08	COMPLETED: 4/9/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 4.5" Tricones

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
-1.3					Ground Surface				
-1.3	0.0	WOH	WOH	WOH	WOH 0	710(DH)-1			-1.3 0.0
-3.8	2.5								Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R.
		7	8	10	18	710(DH)-2			-3.3 2.0
-6.1	4.8								MUCK, no recovery
		8	8	7	15	710(DH)-3			LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, little fine grained sand, oolitic (Miami Formation)
-8.8	7.5				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				7.5ft: little to few fine grained sand
		11	4	4	8	710(DH)-4			
-11.1	9.8								
		3	4	5	9	710(DH)-5			
-14.1	12.8								
		4	6	5	11	710(DH)-6			12.5ft: trace sand
-16.3	15.0								
-18.1	16.8	8	50/0.4		58/0.9	710(DH)-7			15.0ft: hard
						RUN-1			16.8ft: Switch sampling method to coring
									16.8ft: white (2.5Y8/1), medium hard, moderately indurated, fossiliferous, few to little locally interconnected vugs
-22.8	21.5					RUN-2			
									-25.3 24.0
-27.6	26.3					RUN-3			LIMESTONE, boundstone, white (2.5Y8/1), medium hard to moderately hard, moderately indurated, fossiliferous, coralline, few vugs (Upper Fort Thompson Formation)
									27.0ft: loss of circulation
-32.6	31.3					RUN-4			31.3ft: moderately hard
-37.6	36.3					RUN-5			
-42.6	41.3					RUN-6			
-47.6	46.3					RUN-7			46.3ft: white (2.5Y8/1), to 46.6ft then greenish gray (10Y6/1), to 48.5ft
									-49.8 48.5
-52.6	51.3					RUN-8			LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation)
									51.3ft: trace shell molds and casts
-57.6	56.3					RUN-9			56.3ft: moderately hard, indurated
-62.6	61.3					RUN-10			
-67.6	66.3					RUN-11			66.3 to 68.3ft: possible sand layer
-72.6	71.3								
-73.5	72.2					RUN-12			71.3ft: hard
						RUN-13			

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)	
BORING NO.: B-710(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,793 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 250.9 ft	BORING DIAMETER: 4" to 18.5', 3" to 250.9'	CASING DEPTH: 4" to 18.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (MEC-09)	
DATE STARTED: 4/2/08	COMPLETED: 4/9/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 4.5" Tricones	

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
-76.1					Continued from previous page				
-77.6	76.3					RUN-14			LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) *(continued)* 76.3ft: moderately hard, moderately indurated
-82.6	81.3					RUN-15			81.3ft: little vugs, few shell molds and casts
-87.6	86.3					RUN-16			86.3ft: few shell molds and casts
-92.6	91.3					RUN-17			91.3ft: sandy
-97.6	96.3					RUN-18			
-102.6	101.3					RUN-19			101.3ft: medium hard, little shell molds and casts
-107.6	106.3					RUN-20			106.3ft: moderately hard to friable, few shell molds and casts
-112.6	111.3					RUN-21			
-115.3	114.0								POORLY GRADED SAND (SP), pale yellow (2.5Y8/3), medium dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments (Tamiami Formation)
-117.6	116.3					RUN-22			116.3ft: limestone fragments
-122.6	121.3	7	6	7	13	710(DH)-8			121.3ft: Switch sampling method to SPT
-126.3	125.0								Silty SAND (SM), pale yellow (2.5Y8/3), dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments
-129.7	128.4	10	15	17	32	710(DH)-9			
-139.7	138.4	8	11	20	31	710(DH)-10			138.4ft: greenish gray (10Y6/1)
-149.7	148.4	23	35	44	79	710(DH)-11			148.4ft: very dense, trace shell fragments

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)	
BORING NO.: B-710(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,793 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 250.9 ft	BORING DIAMETER: 4" to 18.5', 3" to 250.9'	CASING DEPTH: 4" to 18.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (MEC-09)	
DATE STARTED: 4/2/08	COMPLETED: 4/9/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 4.5" Tricones	

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
-150.9					Continued from previous page				
									Silty SAND (SM), pale yellow (2.5Y8/3), dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments *(continued)*
-159.7	158.4	7	10	23	33	710(DH)-12			158.6ft: dense
-169.7	168.4	18	45	50/0.3	95/0.8	710(DH)-13			168.4ft: very dense
-179.7	178.4	8	5	10	15	710(DH)-14			178.4ft: medium dense
-190.3	189.0	6	15	19	34	710(DH)-15			189.0ft: dense
-196.3	195.0								Sandy SILT (ML), greenish gray (10Y6/1), hard, wet, strong HCl reaction, cemented silt fragments
-199.7	198.4	17	22	30	52	710(DH)-16			
-209.7	208.4	10	11	18	29	710(DH)-17			208.4ft: very stiff
-219.7	218.4	14	16	30	46	710(DH)-18			218.4ft: hard
-223.3	222.0								

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)	
BORING NO.: B-710(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,793 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 250.9 ft	BORING DIAMETER: 4" to 18.5', 3" to 250.9'	CASING DEPTH: 4" to 18.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (MEC-09)	
DATE STARTED: 4/2/08	COMPLETED: 4/9/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 4.5" Tricones	

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
-225.7					Continued from previous page				
-229.7	228.4								Silty SAND (SM), greenish gray (10Y6/1), dense wet strong HCl reaction, trace shell fragments (Hawthorn Group) *(continued)*
		15	16	25	41	710(DH)-19			
-235.3									234.0
-239.7	238.4								POORLY GRADED SAND (SP), light greenish gray (10Y7/1), dense wet strong HCl reaction
		12	14	20	34	710(DH)-20			
-245.3									244.0
-250.6	249.3								Silty SAND (SM), greenish gray (10Y6/1), dense, wet, strong HCl reaction
		9	13	22	35	710(DH)-21			
-252.2									250.9

Note: Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R.
Boring Terminated at Elevation -252.2 ft

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