MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)	
BORING NO.: B-609	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,763 US ft (NAD83/90)	EASTING: 876,689 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 150.7 ft	CASING DEPTH: 4" to 25.0', 3" to 125.0'		HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/10/08	COMPLETED: 3/12/08	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 @ 25.3 ft
-26.8	25.3	2.8	1:02 1:06 1:33/0.8	(2.8) 100%	(2.5) 89%	RUN-1	(21.8) 96%	(19.3) 85%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) *(continued)*
-29.6	28.1	5.0	0:57 0:58 1:15 1:20 0:45	(4.9) 98%	(4.7) 94%	RUN-2 *609-CS-01* *609-CS-02*				25.3ft: white (7.5YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline, few to little vugs
-34.6	33.1	5.0	1:04 1:10 1:13 0:50 1:12	(5.0) 100%	(3.9) 78%	RUN-3				33.1ft: white (10YR8/1)
-39.6	38.1	5.0	1:09 0:53 1:26 1:25 1:46	(4.8) 96%	(4.3) 86%	RUN-4				38.1ft: white (2.5Y8/1), recrystallized calcite
-44.6	43.1	5.0	0:42 0:45 1:22 1:28 1:22	(4.5) 90%	(3.9) 78%	RUN-5				43.1ft: white (2.5Y8/1), to gray (10YR6/1) from 46.1ft to 47.9ft
-49.6	48.1									-49.4 47.9
-54.6	53.1	5.0	1:55 1:47 1:44 1:21 0:49	(5.0) 100%	(5.0) 100%	RUN-6 *609-CS-04*	(55.6) 85%	(38.2) 59%		LIMESTONE, boundstone, very pale brown (10YR8/3) to white (10YR8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 48.1ft: white (10YR8/1), trace vugs
-59.6	58.1	5.0	0:51 1:05 1:02 0:29 0:52	(4.8) 96%	(4.0) 80%	RUN-7				
-64.6	63.1	5.0	0:42 1:00 0:56 0:35 0:41	(5.0) 100%	(4.7) 94%	RUN-8				
-65.6	64.1	1.0	0:38	(1.0) 100%	(0.8) 80%	RUN-9				
-66.1	64.6	0.5	1:49/0.5			RUN-10				
-69.6	68.1	3.5	0:25/0.5 0:48 0:26	(0.0) 0%	(0.0) 0%	RUN-11				
-73.6	72.1	4.0	0:18 0:33 1:40 0:55 0:45	(1.6) 46% (3.8) 95%	(0.0) 0% (2.2) 55%	RUN-12				
-74.6	73.1	1.0	0:38	(1.0) 100%	(0.0) 0%	RUN-13				
-78.0	76.5	3.4	0:20 0:23 0:35	(1.0) 29%	(0.4) 12%	RUN-14				
-79.6	78.1	1.6	0.52/0.4			RUN-15				76.5ft: white (2.5Y8/1)
-84.6	83.1	5.0	0.50/0.6 1:12 2:01 1:34 0:48 0:45	(1.6) 100% (4.4) 88%	(0.9) 56% (2.2) 44%	RUN-16 *609-CS-06*				
-89.6	88.1	5.0	0:40 1:04 1:02 1:12 2:07 2:09	(4.5) 90%	(2.9) 58%	RUN-17				
-94.6	93.1	5.0	2:01 0:36 0:30 1:28 0:40	(5.0) 100%	(3.3) 66%	RUN-18				88.1ft: white (10YR8/1), few vugs
-97.6	96.1	3.0	0:42 1:07 2:08	(1.9) 63%	(0.4) 13%	RUN-19				
-99.6	98.1	2.0	0:45 1:15	(1.6) 80%	(0.6) 30%	RUN-20				
-101.6	100.1	2.0	1:05 1:18	(2.0)	(0.9)	RUN-21				98.1ft: white (7.5YR8/1)

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

MACTEC

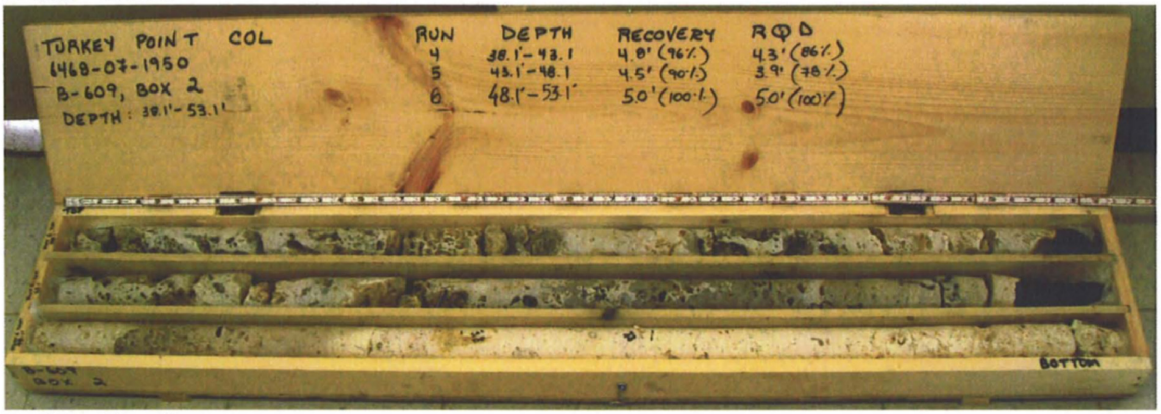
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-609	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,763 US ft (NAD83/90)	EASTING: 876,689 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.7 ft	CASING DEPTH: 4" to 25.0', 3" to 125.0'		HAMMER (ID): 140 lb. Auto (MEC-03)
DATE STARTED: 3/10/08	COMPLETED: 3/12/08	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
		3.0	0:57 0:58 1:04	100% (3.0) 100%	45% (2.8) 93%	RUN-22 RUN-22 609-CS-07				100.1ft: white (2.5Y8/1), few vugs, little shell molds and casts
-104.6	103.1	5.0	0:48 0:44 0:56 0:56 1:05	(4.7) 94%	(4.7) 94%	RUN-23				LIMESTONE, boundstone, very pale brown (10YR8/3) to white (10YR8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-109.6	108.1	4.0	0:40 0:49 1:12 0:13	(2.9) 73%	(2.2) 55%	RUN-24				108.1ft: white (10YR8/1)
-113.6	112.1	1.0	0:40	(0.6) 60%	(0.0) 0%	RUN-25				
-114.6	113.1	5.0	0:48 0:53 0:44 0:22 0:15	(0.0) 0%	(0.0) 0%	RUN-26	(0.0) 0%	(NA)		-114.5 113.0 Silty SAND (SM), light gray (7.5YR7/1), medium dense, wet, fine grained sand, strong HCl reaction (Tamiami Formation)
-119.6	118.1									-119.6 118.1 Coring Terminated at Elevation -119.6

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



B-609 – Box 1



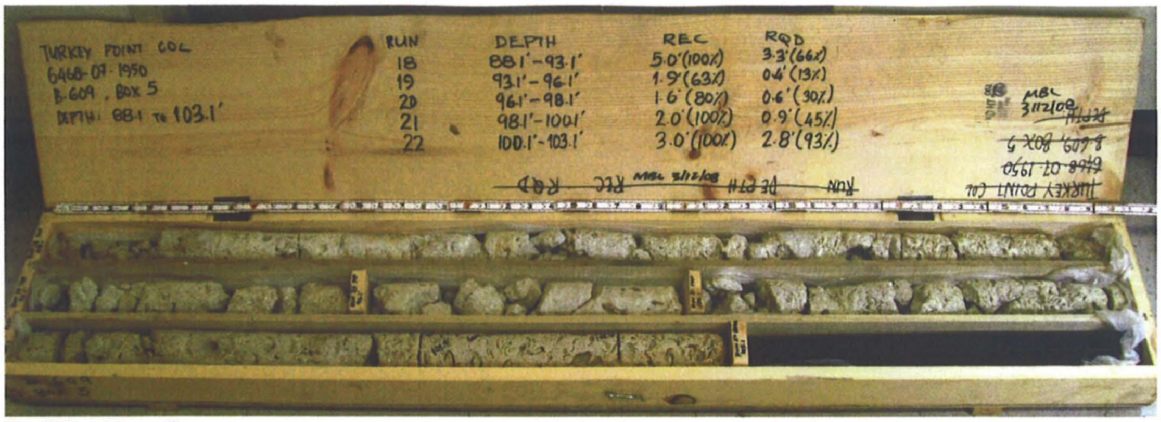
B-609 – Box 2



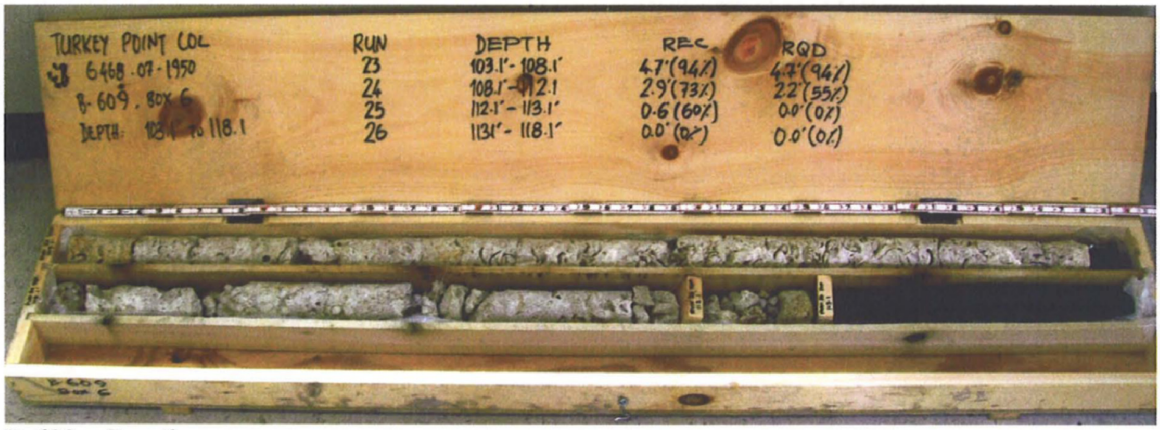
B-609 – Box 3



B-609 – Box 4



B-609 – Box 5



B-609 – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 7-10-08

Checked By [illegible] Date 7-10-08

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 269.0 ft	BORING DIAMETER: 4" to 106.0', 3" to 269.0'	CASING DEPTH: 4" to 106.0'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 3 7/8" 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
-1.4					Ground Surface				
-1.4	0.0	WOH	WOH	WOH	WOH 0	610(DH)-1			MUCK, pinkish gray (7.5YR/2), to black (7.5YR2.5/1), very soft, wet, mostly organic, strong HCl reaction
-4.2	2.8								
-4.0	2.6	1	2	5	7	610(DH)-2A&B			LIMESTONE, boundstone, pale yellow (2.5Y7/3), very soft, wet, friable, some sand, strong HCl reaction, oolitic (Miami Formation)
-6.4	5.0	6	9	8	17 SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA	610(DH)-3			5.0ft: white (5Y8/1), fossiliferous
-8.9	7.5	6	6	3	9	610(DH)-4			
-11.5	10.1	5	5	4	9	610(DH)-5			
-13.9	12.5	17	22	34	56	610(DH)-6			12.5ft: moderately hard
-16.4	15.0								
-17.9	16.5	11	10	50/0.5	60/1.0	610(DH)-7			16.5ft: Switch sampling method to coring
						RUN-1			16.5ft: white (5Y8/1), soft to hard, friable to indurated, strong HCl reaction, fossiliferous, locally interconnected vugs
-22.4	21.0					RUN-2			21.0ft: hard, indurated, few to little vugs, porous
-26.4	25.0								LIMESTONE, boundstone, white (5Y8/1), hard, indurated, strong HCl reaction, fossiliferous, recrystallized calcite, little vugs (Upper Fort Thompson Formation)
-27.4	26.0					RUN-3			28.5ft: loss of circulation
-32.4	31.0					610(DH)-CS-01 610(DH)-CS-02 RUN-4			
-37.4	36.0					RUN-5			36.0ft: coralline
-42.4	41.0					RUN-6			41.0ft: white (5Y8/1) to light bluish gray (5PB7/1) at 45.5ft
-47.4	46.0					RUN-7			46.0ft: light bluish gray (5PB7/1) to 48.3ft; horizontal bedding plane at 48.3ft
-49.7	48.3								LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-52.4	51.0					610(DH)-CS-04 RUN-8			51.0ft: medium hard, moderately indurated 53.0 to 54.0ft: soft, friable
-57.4	56.0					RUN-9			56.0ft: medium hard to hard, moderately indurated to indurated
-62.4	61.0					RUN-10			61.0 to 62.4ft: soft, friable 62.4ft: hard, indurated, some sand
-67.4	66.0					RUN-11			66.0ft: medium hard, moderately indurated to indurated
-72.4	71.0					RUN-12			71.0ft: hard, indurated

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 269.0 ft	BORING DIAMETER: 4" to 106.0', 3" to 269.0'	CASING DEPTH: 4" to 106.0'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 3 7/8" 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
-76.2					Continued from previous page				
-77.4	76.0					RUN-13			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous. trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
						610(DH)-CS-05			
-82.4	81.0					RUN-14			81.0ft: few vugs, shell molds and casts 84.0 to 86.5ft: no recovery, soft layer-possible sand lense
-87.4	86.0					RUN-15			86.5ft: medium hard to hard, moderately indurated to indurated
-92.4	91.0					RUN-16			91.0ft. hard, indurated, little bivalve and gastropod shell molds and casts
-97.4	96.0					RUN-17			96.0ft: mostly bivalve and gastropod shell molds and casts
-102.4	101.0					RUN-18			
-107.4	106.0					RUN-19			106.0ft: trace sand
-112.4	111.0					RUN-20			
-114.9	113.5								POORLY SORTED SAND with silt (SP-SM), pale yellow (5Y8/2), loose, wet, fine to coarse grained sand, fine gravel, strong HCl reaction, trace limestone gravel-sized fragments (Tamiami Formation)
-117.4	116.0	6	5	4	9	610(DH)-8			116.0ft: Switch sampling method to SPT
-123.9	122.5	3	4	5	9	610(DH)-9			122.5ft: trace shell fragments
-133.9	132.5								
-133.9	132.5	4	4	4	8	610(DH)-10			Silty SAND (SM), olive gray (5Y5/2), loose, wet, friable calcareous cemented sandstone fragments, strong HCl reaction, fine to medium grained sand, fine to coarse gravel
-143.9	142.5	6	4	7	11	610(DH)-11			142.5ft: medium dense

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 269.0 ft	BORING DIAMETER: 4" to 106.0', 3" to 269.0'	CASING DEPTH: 4" to 106.0'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 3 7/8" 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
-151.0					Continued from previous page				
-153.9	152.5								Silty SAND (SM), olive gray (5Y5/2), loose, wet, friable calcareous cemented sandstone fragments, strong HCl reaction, fine to medium grained sand, fine to coarse gravel *(continued)*
		5	6	8	14	610(DH)-12			
-163.9	162.5								
		4	3	8	11	610(DH)-13			
-173.9	172.5								
		3	3	9	12	610(DH)-14			172.5ft: light olive gray (5Y6/2)
-183.9	182.5								
		3	5	9	14	610(DH)-15			
-193.9	192.5								
		3	2	7	9	610(DH)-16			192.5ft: olive gray (5Y5/2), loose
-203.9	202.5								
		4	5	7	12	610(DH)-17			202.5ft: medium dense
-213.9	212.5								
		6	4	6	10	610(DH)-18			212.5ft: loose
-217.4									216.0
-224.1	222.7								Silty SAND (SM), light olive brown (5Y6/2), medium dense, wet, fine grained sand, strong HCl reaction (Hawthorn Group)
		6	7	13	20	610(DH)-19			

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT 7.10.08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR. NA	
TOTAL DEPTH: 269.0 ft	BORING DIAMETER: 4" to 106.0', 3" to 269.0'	CASING DEPTH: 4" to 106.0'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	BITS USED: 2 15/16" & 3 7/8" 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
-225.8					Continued from previous page				
									Silty SAND (SM), light olive brown (5Y6/2), medium dense, wet, fine grained sand, strong HCl reaction (Hawthorn Group) *(continued)*
-233.9	232.5	7	9	12	21	610(DH)-20			
-243.9	242.5	16	17	21	38	610(DH)-21			242.5ft: dense
-253.9	252.5	6	9	20	29	610(DH)-22			252.5ft: gray (5Y5/1), medium dense
-268.9	267.5	10	19	32	51	610(DH)-23			
-270.4	269.0								267.5ft: olive gray (5Y5/2), very dense
									Boring Terminated at Elevation -270.4 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 269.0 ft	CASING DEPTH: 4" to 106.0'		HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	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 @ 16.5 ft
-17.9	16.5	4.5	1:38 0:33 0:17 0:20 0:13/0.5	(1.5) 33%	(1.0) 22%	RUN-1	(3.2) 38%	(1.4) 16%		LIMESTONE, boundstone, pale yellow (2.5Y7/3), very soft, wet, friable, some sand, strong HCl reaction, oolitic (Miami Formation) *(continued)* 16.5ft: white (5Y8/1), soft to hard, friable to indurated, strong HCl reaction, fossiliferous, locally interconnected vugs
-22.4	21.0	5.0	0:41 0:11 0:07 0:09 1:27	(1.7) 34%	(0.4) 8%	RUN-2				21.0ft: hard, indurated, few to little vugs, porous
-26.4										25.0
-27.4	26.0	5.0	0:59 1:05 1:11 2:01 2:21	(4.8) 96%	(4.8) 96%	RUN-3 *610(DH)-CS-01* *610(DH)-CS-02*	(21.1) 91%	(17.8) 76%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, strong HCl reaction, fossiliferous, recrystallized calcite, little vugs (Upper Fort Thompson Formation) 28.5ft: loss of circulation
-32.4	31.0	5.0	1:25 1:27 0:52 2:26 2:11	(4.0) 80%	(1.6) 32%	RUN-4				
-37.4	36.0	5.0	1:35 1:31 1:52 2:51 2:15	(5.0) 100%	(4.3) 86%	RUN-5				36.0ft: coralline
-42.4	41.0	5.0	2:11 2:59 2:45 2:39 2:41	(5.0) 100%	(5.0) 100%	RUN-6				41.0ft: white (5Y8/1) to light bluish gray (5PB7/1) at 45.5ft
-47.4	46.0	5.0	3:32 3:35 3:30 2:45 2:57	(5.0) 100%	(4.8) 96%	RUN-7				46.0ft: light bluish gray (5PB7/1) to 48.3ft; horizontal bedding plane at 48.3ft
-49.7										48.3
-52.4	51.0	5.0	1:40 1:11 0:28 1:10 1:16	(3.8) 76%	(3.1) 62%	*610(DH)-CS-04* RUN-8	(52.0) 80%	(36.1) 55%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) 51.0ft: medium hard, moderately indurated 53.0 to 54.0ft: soft, friable
-57.4	56.0	5.0	0:43 0:49 1:05 1:11 1:28	(3.6) 72%	(2.2) 44%	RUN-9				56.0ft: medium hard to hard, moderately indurated to indurated
-62.4	61.0	5.0	0:35 0:31 1:21 1:35 0:56	(4.5) 90%	(3.9) 78%	RUN-10				61.0 to 62.4ft: soft, friable 62.4ft: hard, indurated, some sand
-67.4	66.0	5.0	1:48 1:28 2:05 2:04 2:01	(4.4) 88%	(3.0) 60%	RUN-11				66.0ft: medium hard, moderately indurated to indurated
-72.4	71.0	5.0	1:11 1:05 1:20 1:35 1:46	(3.7) 74%	(2.5) 50%	RUN-12				71.0ft: hard, indurated
-77.4	76.0	5.0	0:09 0:47 1:14 1:14 1:59	(3.8) 76%	(3.0) 60%	RUN-13 *610(DH)-CS-05*				
-82.4	81.0	5.0	1:11 1:13 0:45 0:09 0:02	(2.7) 54%	(1.3) 26%	RUN-14				81.0ft: few vugs, shell molds and casts 84.0 to 86.5ft: no recovery, soft layer-possible sand lense
-87.4	86.0	5.0	0:30 1:01 1:20 2:05 2:01	(3.0) 60%	(1.1) 22%	RUN-15				86.5ft: medium hard to hard, moderately indurated to indurated
-92.4	91.0									

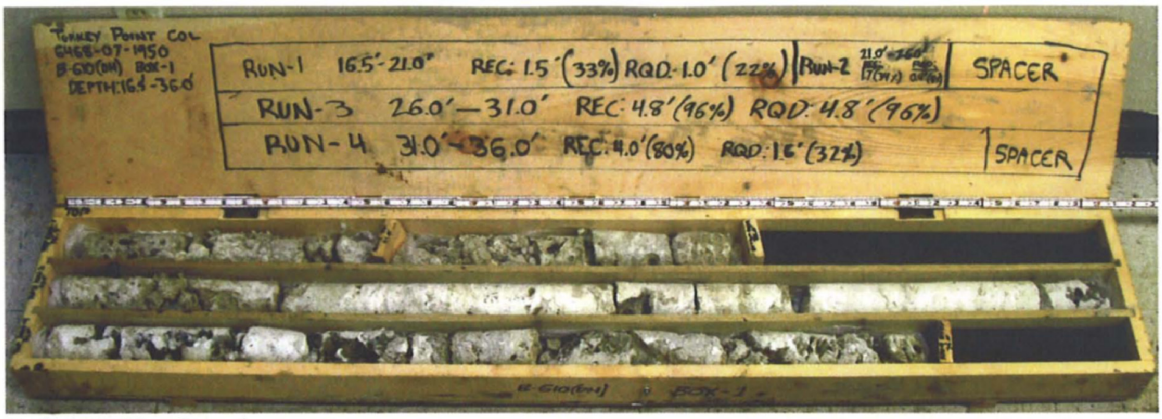
TURKEY POINT COL_CORE_TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

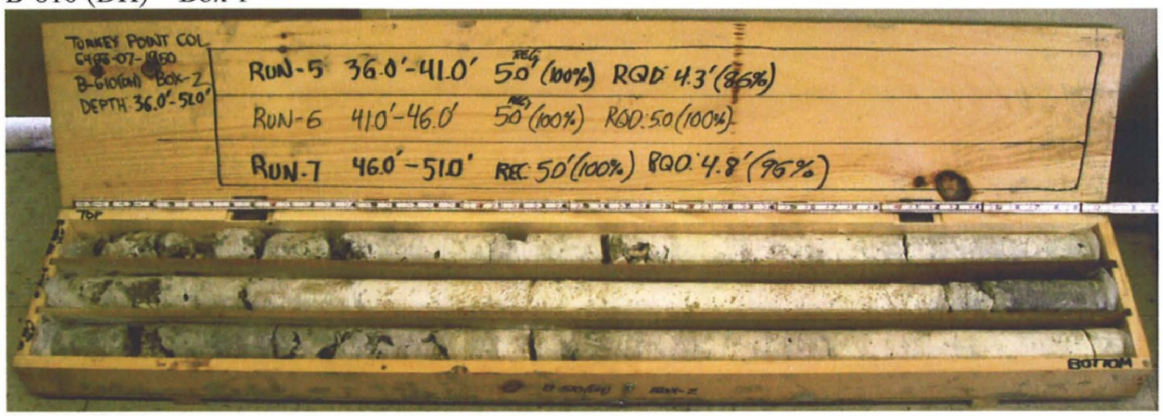
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 269.0 ft	CASING DEPTH: 4" to 106.0'		HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	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	0:31 1:04 1:10 1:20	(4.0) 80%	(2.6) 52%	RUN-16				91.0ft: hard, indurated, little bivalve and gastropod shell molds and casts LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-97.4	96.0		1:12							
		5.0	1:01 0:54 0:59 1:04	(4.2) 84%	(2.7) 54%	RUN-17				96.0ft: mostly bivalve and gastropod shell molds and casts
-102.4	101.0		1:38							
		5.0	1:24 0:58 1:21 1:22	(5.0) 100%	(4.0) 80%	RUN-18				
-107.4	106.0		1:25							
		5.0	1:23 1:14 1:01 1:28	(4.5) 90%	(3.3) 66%	RUN-19				106.0ft: trace sand
-112.4	111.0		1:22							
		5.0	0:42 0:14 1:04 0:48	(2.1) 42%	(0.7) 14%	RUN-20				-114.9 113.5
-117.4	116.0		0:33				(0.0) 0%	(NA)		POORLY SORTED SAND with silt (SP-SM), pale yellow (5Y8/2), loose, wet, fine to coarse grained sand, fine gravel, strong HCl reaction, trace limestone gravel-sized fragments (Tamiami Formation) -117.4 116.0 Coring Terminated at Elevation -117.4

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08



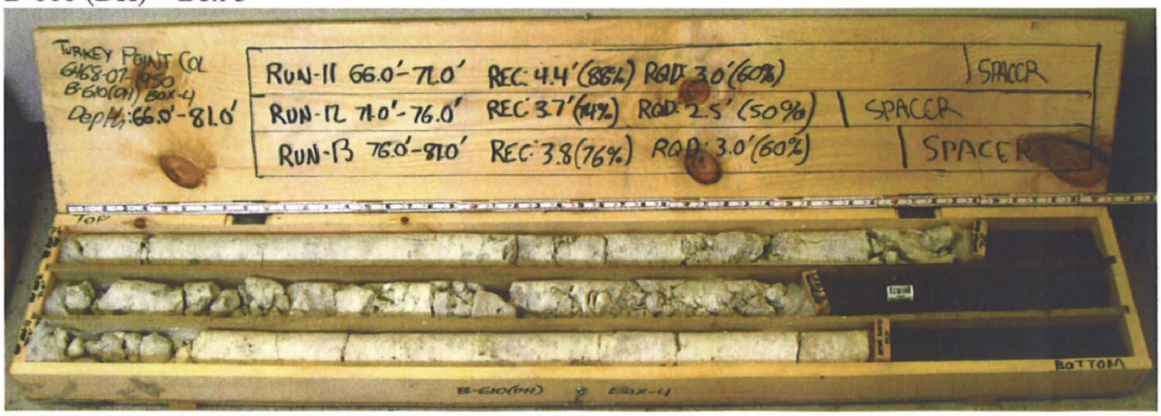
B-610 (DH) – Box 1



B-610 (DH) – Box 2



B-610 (DH) – Box 3



B-610 (DH) – Box 4



B-610 (DH) – Box 5



B-610 (DH) – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 5-30-08

Checked By [illegible] Date 5-30-08

SHEET 1 OF 3

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	BORING DIAMETER: 4" to 25.0', 3" to 151.5'	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	BITS USED: 2 15/16" & 2 7/8" 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
-1.5					Ground Surface				
-1.5	0.0	WOH	WOH	WOH	WOH 0	611-1			-1.5 0.0 MUCK, very pale brown (10YR7/3), mottled dark gray (10YR4/1), very soft, moist, weak HCl reaction
-4.0	2.5								-3.5 2.0 LIMESTONE, boundstone, white (10YR8/1), medium hard, wet, strong HCl reaction, oolitic (Miami Formation)
		4	15	22	37	611-2			5.0ft: very soft
-6.5	5.0				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				
		9	8	9	17	611-3			7.5ft: white (2.5Y8/1)
-9.0	7.5								
		6	5	6	11	611-4			10.0ft: white (10YR8/1), soft
-11.5	10.0								
		4	8	21	29	611-5			12.5ft: moderately hard, trace shells
-14.0	12.5								
		4	21	25	46	611-6			
-16.5	15.0								
		3	6	34	40	611-7			
-21.5	20.0								
		5	6	9	15	611-8			20.0ft: white (7.5YR8/1), very soft
-26.5	25.0								-25.5 24.0 LIMESTONE, boundstone, white (7.5YR8/1), hard, wet, strong HCl reaction, trace shells (Upper Fort Thompson Formation)
-27.4	25.9	16	50/0.4		66/0.9	611-9			25.9ft: Switch sampling method to coring
						RUN-1			25.9ft: white (10YR8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, little vugs
-32.4	30.9					611-CS-01			
						RUN-2			
-37.4	35.9								
						RUN-3			35.9ft: few vugs
-41.1	39.6					611-CS-02			
-43.0	41.5					RUN-4			
						RUN-5			40.9 to 41.5ft. Drilled out/washed out due to rig change and tool change
-46.6	45.1					611-CS-03			
						RUN-6			45.1ft: gray (5Y6/1) to 47.9ft
-51.6	50.1								-49.4 47.9 LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation)
						RUN-7			50.1ft: white (5YR8/1)
-56.6	55.1								
						RUN-8			
-61.6	60.1								
						RUN-9			
-66.6	65.1								
						RUN-10			
-71.6	70.1					611-CS-05			
						RUN-11			70.1ft: trace fine sand

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: 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	BORING DIAMETER: 4" to 25.0', 3" to 151.5'	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	BITS USED: 2 15/16" & 2 7/8" 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
-76.3					Continued from previous page				
-76.6	75.1					RUN-12			LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation) *(continued)*
-81.6	80.1					RUN-13			
-86.6	85.1					RUN-14			
-91.6	90.1					RUN-15			
-96.6	95.1					611-CS-06			
-101.6	100.1					RUN-16			
-100.2	98.7								Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone
-106.6	105.1					RUN-17			
-106.2	104.7								LIMESTONE, boundstone, white (5Y8/1), hard, indurated, sandy, fossiliferous, strong HCl reaction, few vugs, little shell molds and casts
-111.6	110.1					RUN-18			
						611-CS-07			
-116.6	115.1					RUN-19			
-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					RUN-20			
		6	8	10	18	611-10			120.1ft: Switch sampling method to SPT
-132.5	131.0								
		5	9	9	18	611-11			
-141.5	140.0								
		4	4	4	8	611-12			140.0ft: olive gray (5Y5/2), loose

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: 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	BORING DIAMETER: 4" to 25.0', 3" to 151.5'	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	BITS USED: 2 15/16" & 2 7/8" 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
-151.1					Continued from previous page				
-151.5	150.0	9	9	13	22	611-13			-153.0 150.0ft: medium dense 151.5
									Boring Terminated at Elevation -153.0 ft

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