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	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	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 @ 16.8 ft
-18.1	16.8	4.7	1:24 1:36 3:49 1:23 1:38/0.7	(2.3) 49%	(1.2) 26%	RUN-1	(3.1) 43%	(1.2) 17%		LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, little fine grained sand, oolitic (Miami Formation) *(continued)* 16.8ft: white (2.5Y8/1), medium hard, moderately indurated, fossiliferous, few to little locally interconnected vugs
-22.8	21.5									
		4.8	5:22 1:56 3:11 1:28 0:48/0.8	(3.1) 65%	(1.7) 35%	RUN-2				
-25.3										24.0
-27.6	26.3						(23.8) 97%	(20.5) 84%		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
		5.0	0:34 0:53 1:57 2:16 2:01	(4.6) 92%	(3.2) 64%	RUN-3				
-32.6	31.3									31.3ft: moderately hard
		5.0	2:23 0:36 0:49 0:22 1:00	(4.8) 96%	(4.5) 90%	RUN-4				
-37.6	36.3									
		5.0	0:49 0:46 0:51 1:34 1:54	(4.9) 98%	(4.5) 90%	RUN-5				
-42.6	41.3									
		5.0	0:47 1:29 1:14 1:22 1:01	(5.0) 100%	(5.0) 100%	RUN-6				
-47.6	46.3									
		5.0	0:35 0:32 0:52 1:27 1:17	(4.8) 96%	(4.2) 84%	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						(56.5) 86%	(33.5) 51%		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation)
		5.0	0:35 0:39 0:27 0:10 1:10	(4.2) 84%	(3.2) 64%	RUN-8				51.3ft: trace shell molds and casts
-57.6	56.3									
		5.0	0:37 0:37 0:25 1:01 1:32	(5.0) 100%	(4.9) 98%	RUN-9				56.3ft: moderately hard, indurated
-62.6	61.3									
		5.0	1:25 0:47 0:44 0:37 0:26	(4.5) 90%	(2.9) 58%	RUN-10				
-67.6	66.3									
		5.0	0:03 0:09 0:30 1:14 1:42	(3.0) 60%	(1.8) 36%	RUN-11				66.3 to 68.3ft: possible sand layer
-72.6	71.3									
-73.5	72.2	0.9	3:09/0.9	(0.6) 67%	(0.6) 67%	RUN-12				71.3ft: hard
		4.1	0:08/0.1 0:39 0:43 0:20	(4.0) 98%	(2.0) 49%	RUN-13				
-77.6	76.3									
		5.0	0:25 0:21 0:24 0:15 0:07	(4.5) 90%	(2.5) 50%	RUN-14				76.3ft: moderately hard, moderately indurated
-82.6	81.3		0:11							
		5.0	0:24 0:24 0:29 0:21 0:41	(4.6) 92%	(1.3) 26%	RUN-15				81.3ft: little vugs, few shell molds and casts
-87.6	86.3									
		5.0	0:30 1:13 0:34 0:11 0:16	(4.3) 86%	(1.6) 32%	RUN-16				86.3ft: few shell molds and casts
-92.6	91.3									

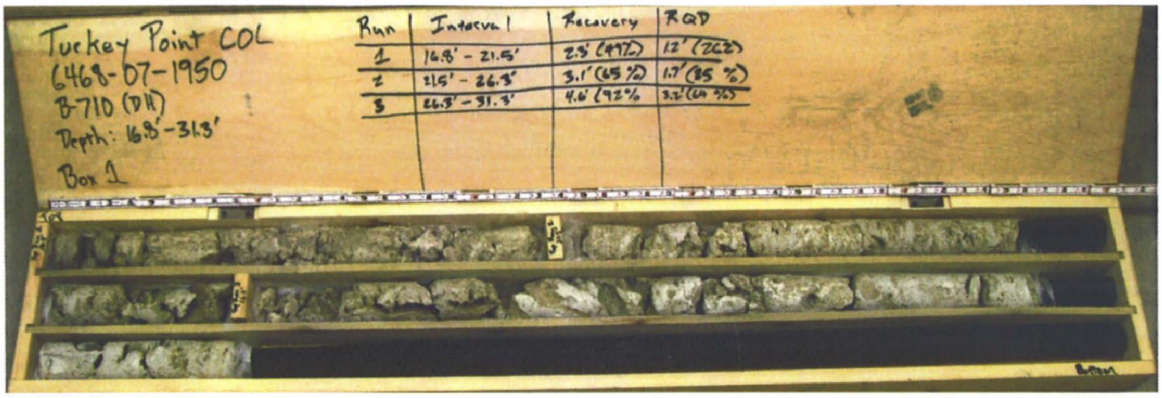
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08

MACTEC

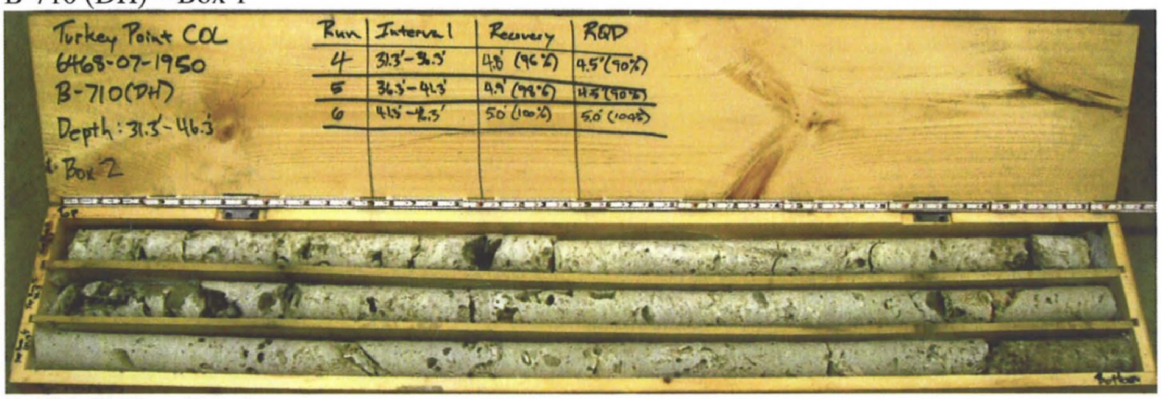
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)	
BORING NO.: B-710(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	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	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	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	0:05 0:08 0:10 0:10 0:09	(4.2) 84%	(1.7) 34%	RUN-17				91.3ft: sandy LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) *(continued)*
-97.6	96.3									
		5.0	0:30 0:06 0:06 0:24 0:16	(2.8) 56%	(0.9) 18%	RUN-18				
-102.6	101.3									
		5.0	0:12 0:13 1:15 0:12 0:20	(5.0) 100%	(3.9) 78%	RUN-19				101.3ft: medium hard, little shell molds and casts
-107.6	106.3									
		5.0	0:12 0:14 0:09 0:13 0:08	(4.8) 96%	(3.2) 64%	RUN-20				106.3ft: moderately hard to friable, few shell molds and casts
-112.6	111.3									
		5.0	0:27 0:33 0:14 0:05	(2.5) 50%	(0.4) 8%	RUN-21				
-115.3										114.0
-117.6	116.3		0:06				(0.7) 10%	(NA)		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) 116.3ft: limestone fragments
		5.0	0:05 0:06 0:08 0:02	(0.7) 14%	(0.0) 0%	RUN-22				
-122.6	121.3		0:02							
-122.6										121.3
										Coring Terminated at Elevation -122.6

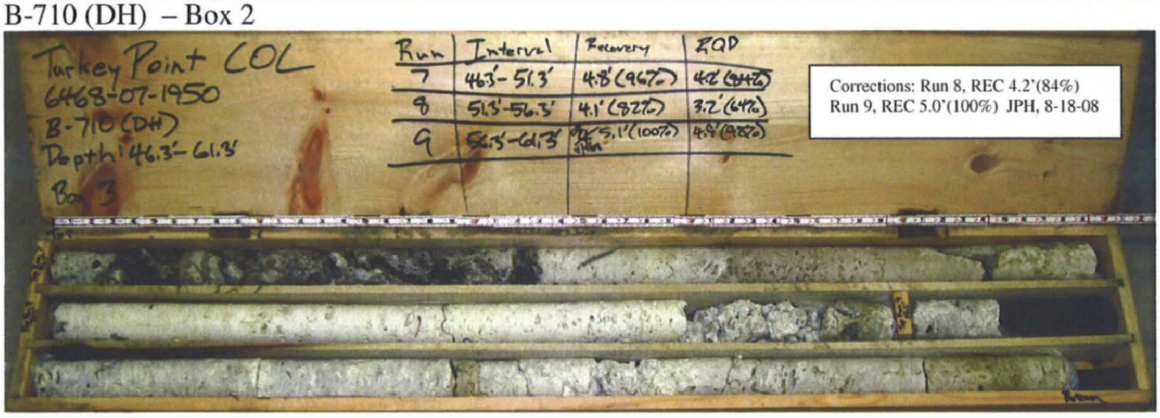
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



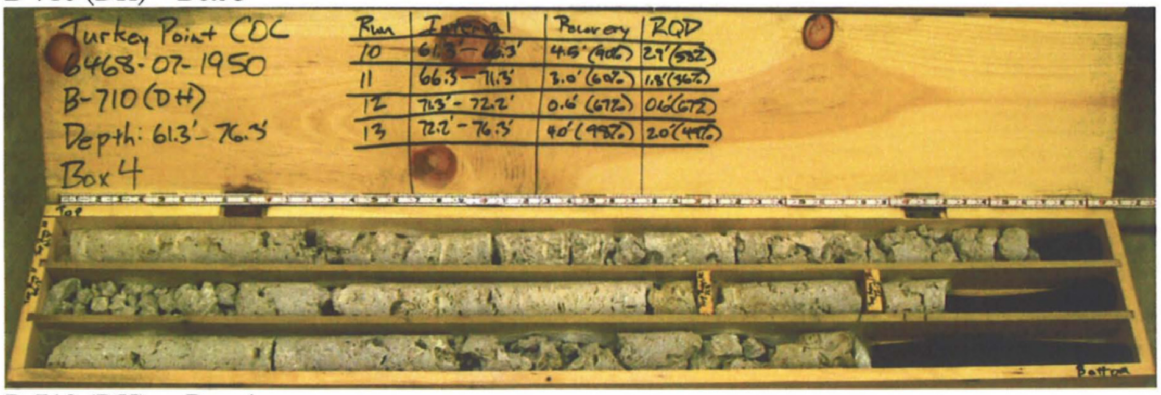
B-710 (DH) – Box 1



B-710 (DH) – Box 2



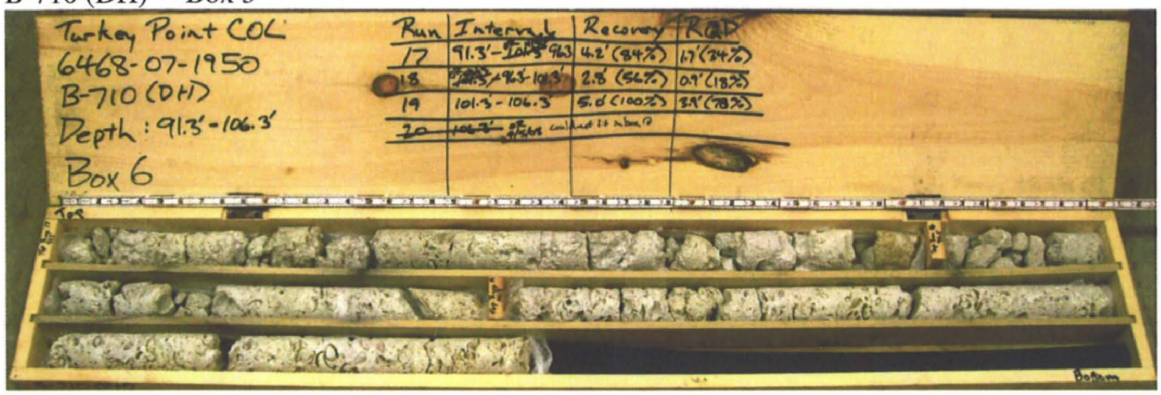
B-710 (DH) – Box 3



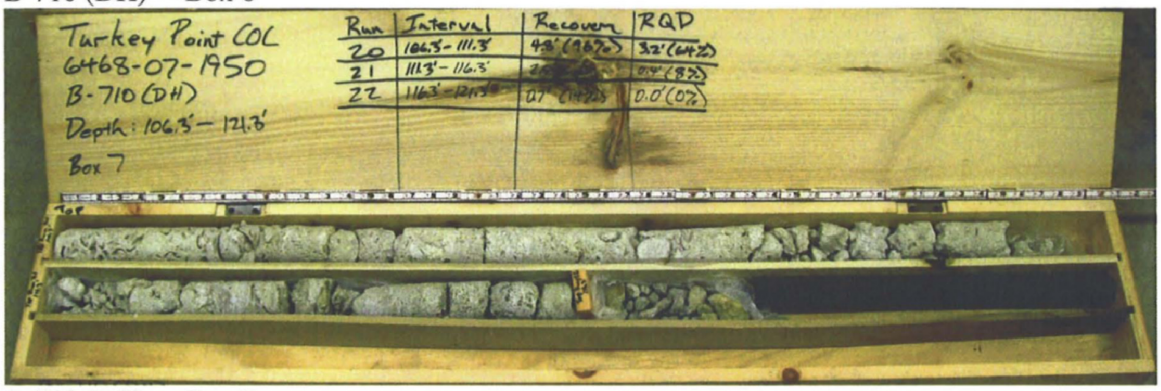
B-710 (DH) – Box 4



B-710 (DH) – Box 5



B-710 (DH) – Box 6



B-710 (DH) – Box 7

MACTEC

GEOTECHNICAL BORING LOG

Prepared By: [illegible] Date: 7/10/08

Checked By: [illegible] Date: 7-10-08

SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)
BORING NO.: B-710(DH)R	DRILL METHOD: Mud Rotary	SAMPLE METHODS: SPT	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,782 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 15.0 ft	BORING DIAMETER: 3" to 15'	CASING DEPTH: 0.0	HAMMER (ID):140 lb. Auto (MEC-04)
DATE STARTED: 4/22/08	COMPLETED: 4/22/08	CORE SIZE:	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
					Ground Surface				0.0
	0.0	WOH	WOH	WOH	WOH	710(DH)R-1			This boring drilled to ammend standard penetration tests performed in boring B-710(DH) from 0.0 to 15.0ft, which were invalid due to nonconforming hammer drop distance.
	3.5								2.5
		11	9	7	16	710(DH)R-2			MUCK, dark grayish brown (2.5Y4/2), to black (2.5Y2.5/1), very soft, wet, organics, strong HCl reaction
	6.0				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				
		5	10	14	24	710(DH)R-3			LIMESTONE, boundstone, white (2.5Y8/1), very soft, moderately indurated, oolitic, strong HCl reaction (Miami Formation)
	8.5								6.0ft: white (2.5Y8/1), to gray (2.5Y6/1), soft
		5	5	3	8	710(DH)R-4			8.5ft: white (2.5Y8/1), very soft
	11.0								11.0ft: soft
		20	8	13	21	710(DH)R-5			13.5ft: medium hard
	13.5								15.0
		3	8	34	42	710(DH)R-6			Boring Terminated at Depth 15.0 ft

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

MACTEC

SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (CLT)	DRILLER: J. Warren/ C. Sloan/ M. Harvey	GROUND WATER (ft)
BORING NO.: B-710(DH)R	DRILL METHOD: Mud Rotary	SAMPLE METHODS: SPT	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 875,782 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 15.0 ft	CASING DEPTH: 0.0		HAMMER (ID): 140 lb. Auto (MEC-04)
DATE STARTED: 4/22/08	COMPLETED: 4/22/08	CORE SIZE:	CORE BARREL TYPE: NA

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
	0.0									Ground Surface
			N=0			710(DH)R-1				This boring drilled to ammend standard penetration tests performed in boring B-710(DH) from 0.0 to 15.0ft, which were invalid due to nonconforming hammer drop distance.
			N=16			710(DH)R-2				MUCK, dark grayish brown (2.5Y4/2), to black (2.5Y2.5/1), very soft, wet, organics, strong HCl reaction 2.5
			N=24			710(DH)R-3				LIMESTONE, boundstone, white (2.5Y8/1), very soft, moderately indurated, oolitic, strong HCl reaction (Miami Formation)
			N=8			710(DH)R-4				6.0ft: white (2.5Y8/1), to gray (2.5Y6/1), soft 8.5ft: white (2.5Y8/1), very soft
			N=21			710(DH)R-5				11.0ft: soft
			N=42			710(DH)R-6				13.5ft: medium hard 15.0

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

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 5-30-08

Checked By [illegible] Date 5-30-08

SHEET 1 OF 4

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/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-710G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,075 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 273.5 ft	BORING DIAMETER: 4" to 273.5'	CASING DEPTH: 4" to 115.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 3/10/08	COMPLETED: 3/13/08	CORE SIZE: NA	BITS USED: 3 7/8" Milling & 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
					SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				Boring drilled to perform down-hole geophysical testing. See boring B-710(DH) for complete soil and rock descriptions.
									-4.9 3.5 Muck
									LIMESTONE (Miami Formation)
									-26.4 25.0 LIMESTONE (Upper Fort Thompson Formation)
									30.0ft: some loss of circulation
									-49.9 48.5 LIMESTONE (Lower Fort Thompson Formation)

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/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-710G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,075 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 273.5 ft	BORING DIAMETER: 4" to 273.5'	CASING DEPTH: 4" to 115.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 3/10/08	COMPLETED: 3/13/08	CORE SIZE: NA	BITS USED: 3 7/8" Milling & 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				
									LIMESTONE (Lower Fort Thompson Formation) *(continued)*
									-114.4 to 113.0: Silty SAND (SM) (Tamiami Formation)
-139.7	138.3	8	9	11	20				138.3ft: SPT energy measurement
-144.7	143.3								
-146.2	144.8	9	14	18	32				143.3ft: SPT energy measurement
		7	10	11	21				144.8ft: SPT energy measurement

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/ N. Rodriguez	GROUND WATER (ft)	
BORING NO.: B-710G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,075 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 273.5 ft	BORING DIAMETER: 4" to 273.5'	CASING DEPTH: 4" to 115.0'	HAMMER (ID):140 lb. Auto (MEC-05)	
DATE STARTED: 3/10/08	COMPLETED: 3/13/08	CORE SIZE: NA	BITS USED: 3 7/8" Milling & 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				
									Silty SAND (SM) (Tamiami Formation) *(continued)*
-221.4									220.0 Silty SAND (SM) (Hawthorn Group)

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/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-710G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,075 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 273.5 ft	BORING DIAMETER: 4" to 273.5'	CASING DEPTH: 4" to 115.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 3/10/08	COMPLETED: 3/13/08	CORE SIZE: NA	BITS USED: 3 7/8" Milling & 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) (Hawthorn Group) *(continued)*
									250.0ft: loss of circulation
									-274.9 273.5 Boring Terminated at Elevation -274.9 ft

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

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: 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-711	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 875,885 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.7 ft	BORING DIAMETER: 4" to 30.5', 3" to 151.7'	CASING DEPTH: 4" to 30.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/4/08	COMPLETED: 3/6/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone

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
-1.1					Ground Surface				
-1.1	0.0	WOH	WOH	1	1	711-1			-1.1 MUCK, grayish brown (10YR5/2), to light gray (10YR7/2), very soft, wet, strong HCl reaction, mostly organic 0.0
-3.6	2.5	WOR	8	11	19	711-2A&B			-4.1 2.5ft: dark grayish brown (10YR4/2) 3.0
-6.1	5.0	8	7	6	13	711-3			LIMESTONE, boundstone, white (5Y8/1), very soft, wet, friable, strong HCl reaction, oolitic (Miami Formation)
-8.6	7.5	7	11	3	14	711-4			
-11.0	9.9	4	7	7	14	711-5			
-13.6	12.5	35	36	22	58	711-6			12.5ft: moderately hard
-16.1	15.0	11	17	22	39	711-7			15.0ft: medium hard
-21.1	20.0								16.5ft: loss of circulation
-25.1	24.0	8	6	5	11	711-8			20.0ft: very soft
-30.0	28.9	14	8	1	9	711-9			24.0ft: friable to indurated, some circulation returned
-31.6	30.5	19	29	32	61	711-10			-27.1 26.0 LIMESTONE, boundstone, white (5Y8/1), hard, wet, strong HCl reaction, indurated, highly fragmented (Upper Fort Thompson Formation)
-36.6	35.5					RUN-1 711-CS-01			30.5ft: Switch sampling method to coring 30.5ft: hard, indurated, few to little vugs, fossiliferous, recrystallized calcite, coralline 30.5ft: loss of circulation
-41.6	40.5					RUN-2 711-CS-02			
-46.6	45.5					RUN-3			
-51.6	50.5					RUN-4			45.5ft: white (5Y8/1), to 46.7ft then gray (5Y6/1), to 48.4ft, trace vugs
-56.6	55.5					RUN-5 711-CS-03			-49.5 48.4 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)
-61.6	60.5					RUN-6 711-CS-04			
-66.6	65.5					RUN-7 711-CS-05 711-CS-06			
-71.6	70.5					RUN-8			
						RUN-9			

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: 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-711	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 875,885 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.7 ft	BORING DIAMETER: 4" to 30.5', 3" to 151.7'	CASING DEPTH: 4" to 30.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/4/08	COMPLETED: 3/6/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone

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
-75.9					Continued from previous page				
-76.6	75.5					RUN-10			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 75.5ft: hard to moderately hard, indurated to moderately indurated 80.5ft: white (5Y8/1), to light gray (10YR7/2), hard, indurated, trace shell molds and casts
-81.6	80.5					RUN-11			
-86.6	85.5					RUN-12			85.5ft: white (5YR8/1), moderately hard, moderately indurated, trace vugs
						711-CS-07			
-91.6	90.5					RUN-13			90.5ft: white (10YR8/1), medium hard to hard, moderately indurated, no vugs
-96.6	95.5					RUN-14			
-101.6	100.5					RUN-15			100.5ft: hard, indurated, little shell molds and casts
						711-CS-08			
-106.6	105.5					711-CS-09			
						RUN-16			105.5ft: medium hard to hard
-111.6	110.5					RUN-17			110.5ft: soft to hard, indurated
									-114.1 ——— 113.0
-116.6	115.5					RUN-18			Silty SAND (SM), white (10YR8/1), wet, indurated to friable, fine grained sand, little fines (Tamiami Formation)
-121.6	120.5	5	7	6	13	711-11			120.5ft: Switch sampling method to SPT 120.5ft: medium dense
-131.3	130.2	3	3	5	8	711-12			130.2ft: greenish gray (10Y6/1), loose, fine to medium grained sand, trace indurated cemented sand
-141.3	140.2	7	7	11	18	711-13			140.2ft: medium dense

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: 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-711	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 875,885 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 151.7 ft	BORING DIAMETER: 4" to 30.5', 3" to 151.7'	CASING DEPTH: 4" to 30.5', 3" to 123.0'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/4/08	COMPLETED: 3/6/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone	

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
-150.7					Continued from previous page				
-151.3	150.2	3	6	10	16	711-14			-152.8 150.2ft: fine to coarse grained sand, fine to coarse gravel 151.7
									Boring Terminated at Elevation -152.8 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: 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-711	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 875,885 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.7 ft	CASING DEPTH: 4" to 30.5', 3" to 123.0'		HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/4/08	COMPLETED: 3/6/08	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 @ 30.5 ft
-31.6	30.5	5.0	0:43 1:03 2:31 2:15	(5.0) 100%	(3.5) 70%	RUN-1	(16.6) 93%	(13.5) 75%		LIMESTONE, boundstone, white (5Y8/1), hard, wet, strong HCl reaction, indurated, highly fragmented (Upper Fort Thompson Formation) *(continued)* 30.5ft: hard, indurated, few to little vugs, fossiliferous, recrystallized calcite, coralline
-36.6	35.5		2:08			*711-CS-01*				30.5ft: loss of circulation
		5.0	1:16 2:31 3:00 1:32	(4.1) 82%	(3.8) 76%	RUN-2 *711-CS-02*				
-41.6	40.5		1:38							
		5.0	1:19 1:57 2:45 2:47	(4.6) 92%	(4.0) 80%	RUN-3				
-46.6	45.5		2:43							
		5.0	2:34 1:41 1:01 1:45	(4.4) 88%	(3.3) 66%	RUN-4				45.5ft: white (5Y8/1), to 46.7ft then gray (5Y6/1), to 48.4ft, trace vugs
-51.6	50.5		3:58				(52.3) 81%	(37.1) 57%		-49.5 48.4 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)
		5.0	2:41 2:02 1:47 1:18	(5.0) 100%	(4.1) 82%	RUN-5 *711-CS-03*				
-56.6	55.5		2:02							
		5.0	2:35 2:38 2:12 0:59	(5.0) 100%	(5.0) 100%	RUN-6				
-61.6	60.5		1:33			*711-CS-04*				
		5.0	2:51 2:12 2:17 2:02	(4.9) 98%	(4.2) 84%	RUN-7 *711-CS-05* *711-CS-06*				
-66.6	65.5		1:00							
		5.0	0:56 0:49 0:43 0:52	(3.0) 60%	(1.4) 28%	RUN-8				
-71.6	70.5		4:15							
		5.0	3:29 4:55 4:43 2:20	(4.8) 96%	(4.1) 82%	RUN-9				
-76.6	75.5		4:25							
		5.0	1:21 1:33 1:42 1:28	(3.0) 60%	(0.9) 18%	RUN-10				75.5ft: hard to moderately hard, indurated to moderately indurated
-81.6	80.5		1:49							
		5.0	1:06 0:56 1:42 2:35	(3.6) 72%	(1.0) 20%	RUN-11				80.5ft: white (5Y8/1), to light gray (10YR7/2), hard, indurated, trace shell molds and casts
-86.6	85.5		1:42							
		5.0	2:13 3:21 4:00 3:36	(4.6) 92%	(3.9) 78%	RUN-12 *711-CS-07*				85.5ft: white (5YR8/1), moderately hard, moderately indurated, trace vugs
-91.6	90.5		1:28							
		5.0	0:13 0:51 0:28 0:28	(3.5) 70%	(2.6) 52%	RUN-13				90.5ft: white (10YR8/1), medium hard to hard, moderately indurated, no vugs
-96.6	95.5		1:08							
		5.0	0:33 0:36 0:40 0:43	(3.2) 64%	(0.8) 16%	RUN-14				
-101.6	100.5		1:03							
		5.0	0:54 0:44 1:20 1:03	(4.9) 98%	(4.4) 88%	RUN-15 *711-CS-08*				100.5ft: hard, indurated, little shell molds and casts
-106.6	105.5		1:46			*711-CS-09*				

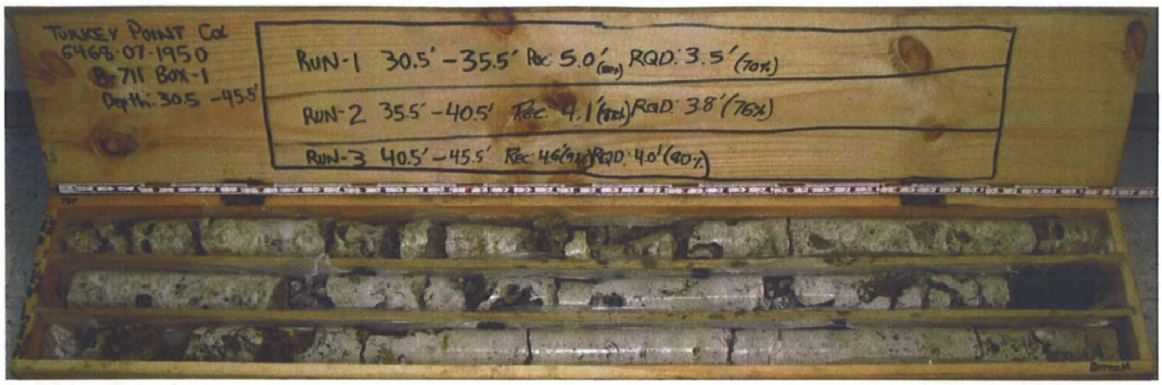
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

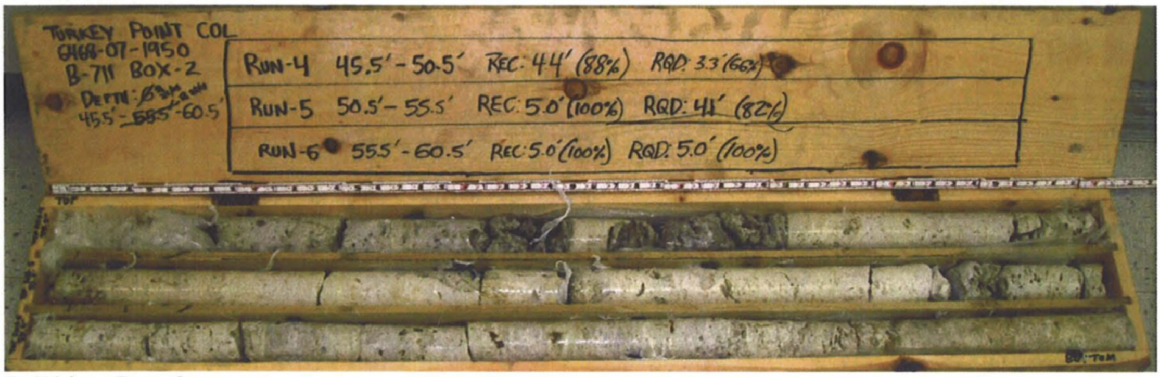
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-711	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 875,885 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.7 ft	CASING DEPTH: 4" to 30.5', 3" to 123.0'		HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/4/08	COMPLETED: 3/6/08	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
-111.6	110.5	5.0	0:42 0:54 0:54 0:48 0:45	(4.4) 88%	(3.6) 72%	RUN-16				LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 105.5ft: medium hard to hard 110.5ft: soft to hard, indurated
-114.1		5.0	0:38 0:47 0:55 0:59 0:23	(2.1) 42%	(0.0) 0%	RUN-17				113.0
-116.6	115.5						(1.2) 16%	(NA)		Silty SAND (SM), white (10YR8/1), wet, indurated to friable, fine grained sand, little fines (Tamiami Formation)
-121.6	120.5	5.0	0:39 0:33 0:46 1:11 0:47	(0.0) 0%	(0.0) 0%	RUN-18				-121.6 120.5 Coring Terminated at Elevation -121.6

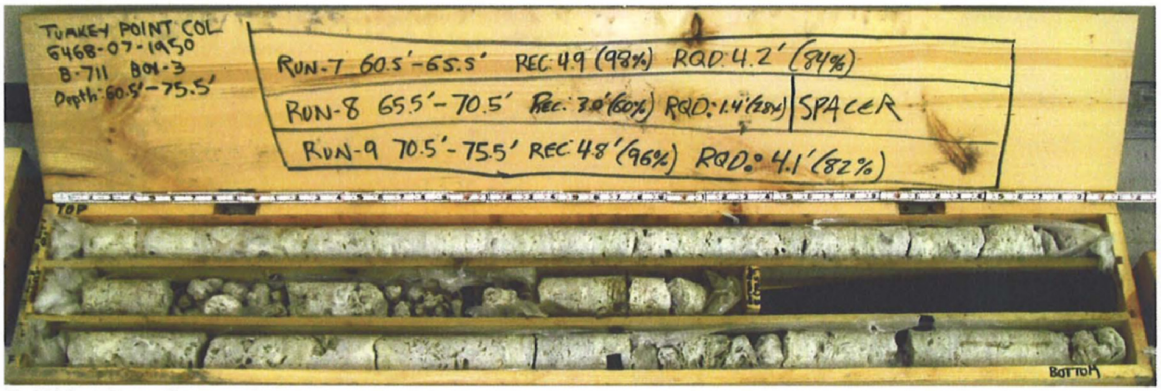
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



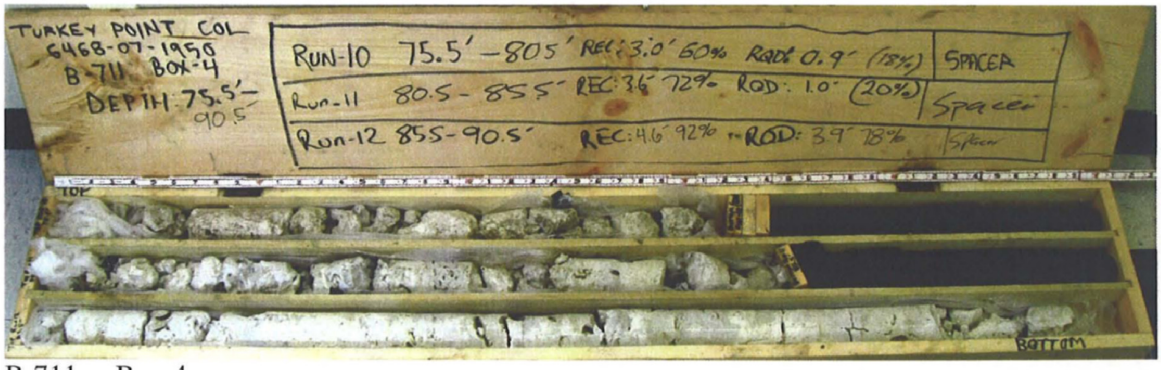
B-711 – Box 1



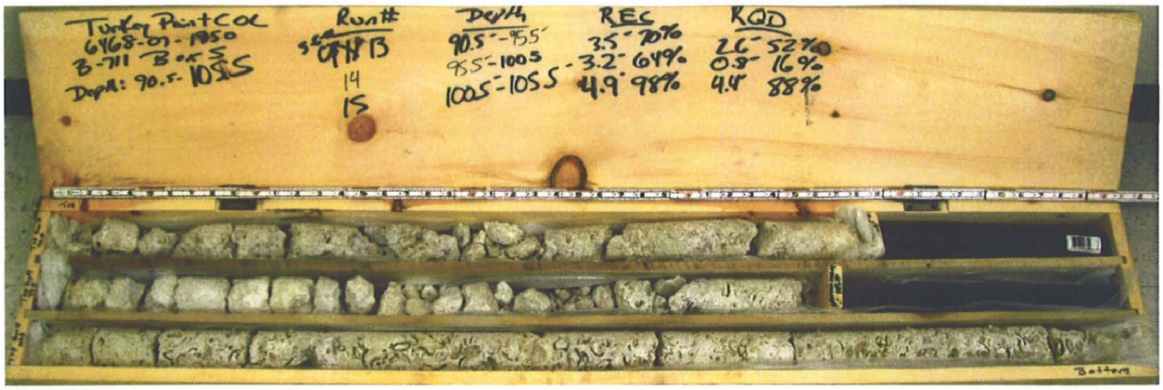
B-711 – Box 2



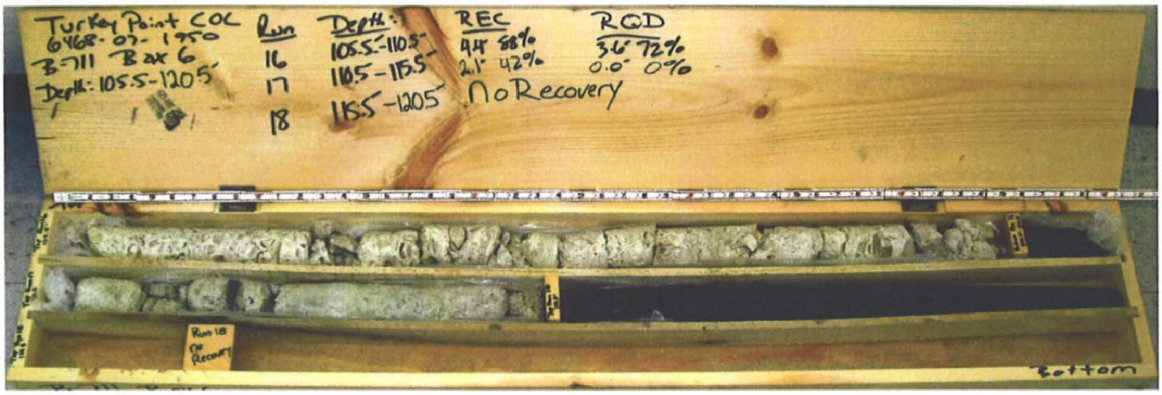
B-711 – Box 3



B-711 – Box 4



B-711 – Box 5



B-711 – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By _____ Date 7-10-08

Checked By _____ Date 7-10-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)	
BORING NO.: B-712	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,082 US ft (NAD83/90)	EASTING: 876,022 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 128.3 ft	BORING DIAMETER: 4" to 28.1', 3" to 128.3'	CASING DEPTH: 4" to 28.1', 3" to 122.0'	HAMMER (ID):140 lb. Auto (MEC-02)	
DATE STARTED: 3/19/08	COMPLETED: 3/21/08	CORE SIZE: HQ3	BITS USED: 2 7/8" Tricone	

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
-1.1					Ground Surface				
-1.1	0.0	WOH	WOH	WOH	WOH 0	712-1			-1.1 0.0 MUCK, very dark grayish brown (2.5Y3/2), very soft, moist, mostly organic, strong HCl reaction
-4.0	2.9								-4.2 3.1
		7	6	5	11	712-2			LIMESTONE, boundstone, pale yellow (5Y8/2), very soft, wet, strong HCl reaction, oolitic
-7.1	6.0				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				
		6	4	16	20	712-3			6.0ft: white (5Y8/1)
-10.1	9.0								
		3	4	7	11	712-4			
-12.5	11.4								11.4ft: white (10YR8/1), moderately hard
		16	46	12	58	712-5			
-14.9	13.8								
		16	28	44	72	712-6			
-20.1	19.0								19.0ft: very soft, moist, trace shell fragments
		6	9	11	20	712-7			
-25.1	24.0								
		6	9	4	13	712-8			
-30.1	29.0								-27.1 26.0
-31.6	30.5	24	27	30	57	712-9			LIMESTONE, boundstone, white (10YR8/1), very soft, moist, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation)
-32.9	31.8					RUN-1			26.5ft: loss of circulation
						RUN-2			29.0ft: hard
									30.5ft: Switch sampling method to coring
									30.5ft: white, (5Y8/1), hard, indurated, strong HCl reaction, little vugs
-37.9	36.8								31.8ft: fossiliferous, coralline, some vugs
						RUN-3			36.8ft: dark greenish gray (4/10Y), few vugs
-42.9	41.8								
						RUN-4			41.8ft: pale yellow (2.5Y8/4)
-47.9	46.8								
						RUN-5			46.8ft: white (2.5Y8/1), to 48.4ft then gray (N5/) to 50.8ft
-52.9	51.8								-51.9 50.8
						RUN-6			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-57.9	56.8					RUN-7			56.8ft: white (5Y8/1)
-62.9	61.8					RUN-8			
-67.9	66.8					RUN-9			66.8ft: white (8/N)
-72.9	71.8					RUN-10			71.8ft: white (5Y8/1)

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