MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 5-30-08

Checked By [illegible] Date [illegible]

SHEET 1 OF 2

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	GROUND WATER (ft)
BORING NO.: B-714	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.0 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 876,021 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.6 ft	BORING DIAMETER: 4" to 27.7', 3" to 125.6'	CASING DEPTH: 4" to 27.7', 3" to 115.0'	HAMMER (ID):140 lb. Auto (M06)
DATE STARTED: 4/16/08	COMPLETED: 4/17/08	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
-1.0					Ground Surface				
-1.0	0.0	WOH	WOH	WOH	WOH 0	714-1			-1.0 0.0 MUCK, olive brown (2.5Y4/3), very soft, wet, strong HCl reaction, mostly organic
-3.7	2.7	WOH	5	5	10	714-2A&B			-4.4 3.4 LIMESTONE boundstone, light gray (2.5Y7/2), very soft, wet, some fine grained sand, strong HCl reaction, oolitic (Miami Formation)
-6.2	5.2	20	16	11	27 SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA	714-3			5.2ft: white (2.5Y8/1), soft
-8.7	7.7	11	21	3	24	714-4			7.7ft: trace sand
-10.9	9.9	4	8	7	15	714-5			9.9ft: very soft
-13.4	12.4	14	20	14	34	714-6			12.4ft: medium hard
-16.1	15.1	9	18	31	49	714-7			15.1ft: moderately hard
-22.8	21.8	8	6	6	12	714-8			21.8ft: very soft
-26.0	25.0								LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-27.9	26.9								27.7ft: Switch sampling method to coring
-28.7	27.7	44	50/0.3		94/0.8	714-9 RUN-1			27.7ft: moderately hard, moderately indurated
-32.0	31.0					RUN-2			31.0ft: moderately hard to hard, moderately indurated to indurated, trace vugs, coralline, recrystallized calcite
-37.0	36.0					RUN-3			36.0ft: little vugs
-42.0	41.0					RUN-4			41.0ft: medium hard to moderately hard, friable to moderately indurated, few vugs
-47.0	46.0					RUN-5			46.0ft: white (2.5Y8/1) to 46.5ft then light gray (10YR7/1) to 47.7ft
-48.7	47.7								LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation)
-52.0	51.0					RUN-6			51.0ft: moderately hard to hard
-57.0	56.0					RUN-7			56.0ft: medium hard to moderately hard, friable to moderately indurated
-62.0	61.0					RUN-8			61.0ft: medium hard to hard, friable to indurated, trace sand
-67.0	66.0					RUN-9			66.0ft: soft to medium hard, friable to moderately indurated, little fine grained sand
-72.0	71.0								
-73.5	72.5	6	5	7	12	714-10 RUN-10			71.0ft: Switch sampling method to SPT 71.0 to 71.5ft: POORLY GRADED SAND (SP), white (2.5Y8/1), medium dense, fine grained,

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: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-714	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.0 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 876,021 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.6 ft	BORING DIAMETER: 4" to 27.7', 3" to 125.6'	CASING DEPTH: 4" to 27.7', 3" to 115.0'	HAMMER (ID):140 lb. Auto (M06)
DATE STARTED: 4/16/08	COMPLETED: 4/17/08	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
-75.8					Continued from previous page				
-77.0	76.0					RUN-11			strong HCl reaction 71.5ft: transition to limestone 72.5ft: Switch sampling method to coring 72.5ft: moderately hard, moderately indurated, trace fine sand
-82.0	81.0					RUN-12			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 76.0ft: few sand
-87.0	86.0					RUN-13			81.0ft: medium hard to moderately hard, friable to moderately indurated
-92.0	91.0					RUN-14			86.0ft: moderately hard to hard, moderately indurated to indurated, little vugs, few shell molds 91.0ft: medium hard to moderately hard, friable to moderately indurated, sandy
-97.0	96.0					RUN-15			96.0ft: moderately hard, moderately indurated, little vugs
-102.0	101.0					RUN-16			101.0ft: mostly vugs, little to some shell molds and casts
-107.0	106.0					RUN-17			106.0ft: medium hard to moderately hard, friable to moderately indurated, mostly vugs, little shell molds and casts
-112.0	111.0					RUN-18			111.0ft: moderately hard, moderately indurated, trace vugs
-115.0									112.0 to 113.0ft: rod drop 114.0
-117.1	116.1	1	2	2	4	714-11			POORLY GRADED SAND (SP), light gray (2.5Y7/2), very loose, wet, fine grained sand, strong HCl reaction, trace limestone fragments (Tamiami Formation)
-125.1	124.1	1	4	4	8	714-12			
-126.6	125.6								124.1ft: loose Boring Terminated at Elevation -126.6 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: J. Liles	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)	
BORING NO.: B-714	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.0 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 876,021 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 125.6 ft	CASING DEPTH: 4" to 27.7', 3" to 115.0'		HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 4/16/08	COMPLETED: 4/17/08	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 @ 27.7 ft
-28.7	27.7	3.3	1:40 1:31 1:39	(3.3) 100%	(2.7) 82%	RUN-1	(19.5) 98%	(11.2) 56%		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) *(continued)* 27.7ft: moderately hard, moderately indurated
-32.0	31.0	5.0	1:23 1:03 1:22 1:32 1:10	(4.9) 98%	(3.6) 72%	RUN-2				31.0ft: moderately hard to hard, moderately indurated to indurated, trace vugs, coralline, recrystallized calcite
-37.0	36.0	5.0	1:15 1:12 0:57 1:01 1:12	(5.0) 100%	(0.9) 18%	RUN-3				36.0ft: little vugs
-42.0	41.0	5.0	1:20 1:12 1:31 1:00 0:40	(4.6) 92%	(2.6) 52%	RUN-4				41.0ft: medium hard to moderately hard, friable to moderately indurated, few vugs
-47.0	46.0	5.0	1:10 1:44 1:49 2:16 2:13	(4.4) 88%	(3.7) 74%	RUN-5				46.0ft: white (2.5Y8/1) to 46.5ft then light gray (10YR7/1) to 47.7ft -48.7 47.7
-52.0	51.0	5.0	2:04 1:47 1:52 1:28 0:59	(4.9) 98%	(4.0) 80%	RUN-6	(43.6) 67%	(17.9) 28%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) 51.0ft: moderately hard to hard
-57.0	56.0	5.0	0:58 0:49 1:05 0:52 1:15	(4.2) 84%	(1.7) 34%	RUN-7				56.0ft: medium hard to moderately hard, friable to moderately indurated
-62.0	61.0	5.0	1:41 1:27 1:41 0:45 0:31	(3.8) 76%	(2.9) 58%	RUN-8				61.0ft: medium hard to hard, friable to indurated, trace sand
-67.0	66.0	5.0	0:28 0:11 0:30 0:38 0:28	(1.2) 24%	(0.0) 0%	RUN-9				66.0ft: soft to medium hard, friable to moderately indurated, little fine grained sand
-72.0	71.0		*N=12*			*714-10*				71.0ft: Switch sampling method to SPT
-73.5	72.5	3.5	0:14/0.5 0:14 0:23 0:25	(1.3) 37%	(0.0) 0%	RUN-10				71.0 to 71.5ft: POORLY GRADED SAND (SP), white (2.5Y8/1), medium dense, fine grained, strong HCl reaction 71.5ft: transition to limestone 72.5ft: Switch sampling method to coring
-77.0	76.0	5.0	0:22 0:35 3:29 2:09 0:42	(2.4) 48%	(0.5) 10%	RUN-11				72.5ft: moderately hard, moderately indurated, trace fine sand 76.0ft: few sand
-82.0	81.0	5.0	0:19 0:36 8:25 1:33 1:02	(2.7) 54%	(0.3) 6%	RUN-12				81.0ft: medium hard to moderately hard, friable to moderately indurated
-87.0	86.0	5.0	2:11 2:05 1:52 2:19 1:06	(4.6) 92%	(2.1) 42%	RUN-13				86.0ft: moderately hard to hard, moderately indurated to indurated, little vugs, few shell molds
-92.0	91.0	5.0	1:01 1:11 0:55 0:58 1:26	(2.8) 56%	(0.0) 0%	RUN-14				91.0ft: medium hard to moderately hard, friable to moderately indurated, sandy
-97.0	96.0	5.0	0:43 0:55 0:44 0:48 0:55	(3.1) 62%	(1.0) 20%	RUN-15				96.0ft: moderately hard, moderately indurated, little vugs
-102.0	101.0	5.0	0:28	(4.0)	(0.4)	RUN-16				101.0ft: mostly vugs, little to some shell molds and casts

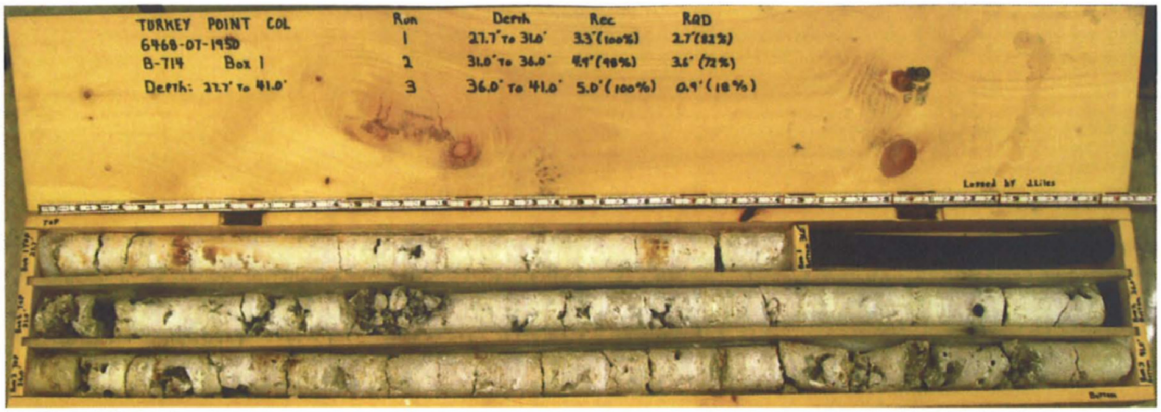
TURKEY POINT COL CORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

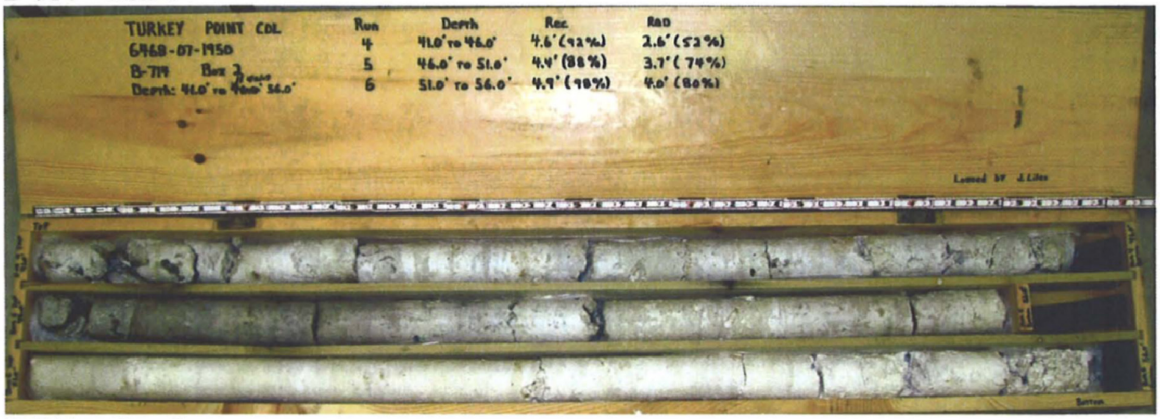
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-714	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.0 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 876,021 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.6 ft	CASING DEPTH: 4" to 27.7', 3" to 115.0'		HAMMER (ID): 140 lb. Auto (M06)
DATE STARTED: 4/16/08	COMPLETED: 4/17/08	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
-107.0	106.0		0:31 0:35 0:46 0:59	80%	8%					LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-112.0	111.0	5.0	1:41 1:09 0:43 0:55 0:56	(4.3) 86%	(2.2) 44%	RUN-17				106.0ft: medium hard to moderately hard, friable to moderately indurated, mostly vugs, little shell molds and casts
-117.0	116.0	5.0	1:45 0:01 0:58 0:37 0:38	(1.6) 32%	(0.5) 10%	RUN-18	(0.0) 0%	(NA)		111.0ft: moderately hard, moderately indurated, trace vugs 112.0 to 113.0ft: rod drop -115.0 114.0 POORLY GRADED SAND (SP), light gray (2.5Y7/2), very loose, wet, fine grained sand, strong HCl reaction, trace limestone fragments (Tamiami Formation) -117.0 116.0 Coring Terminated at Elevation -117.0

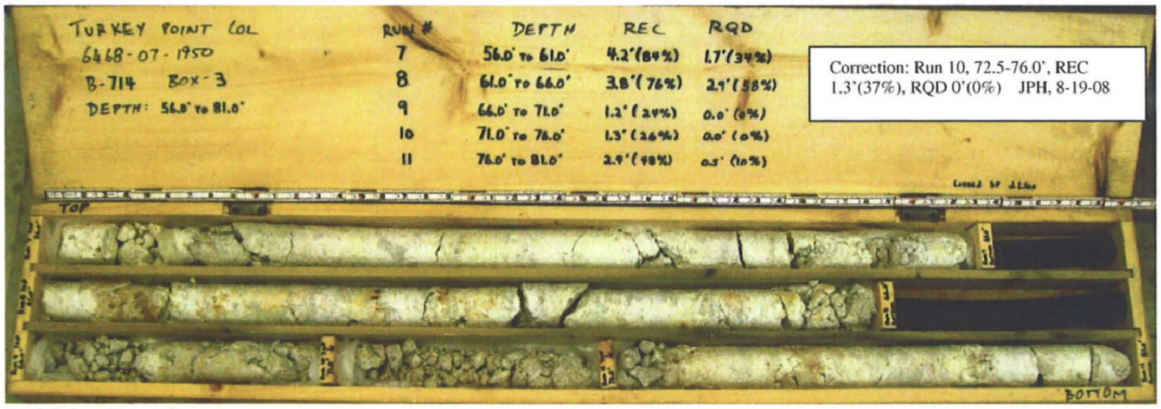
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



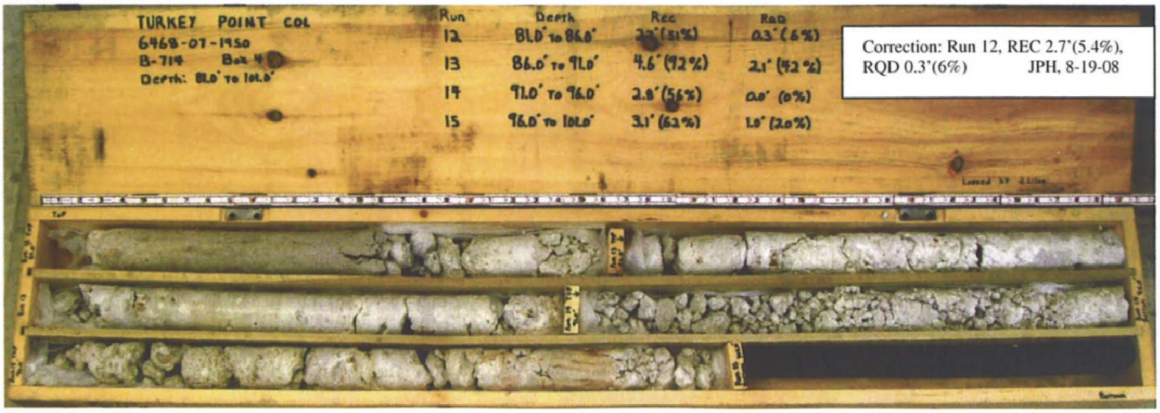
B-714 – Box 1



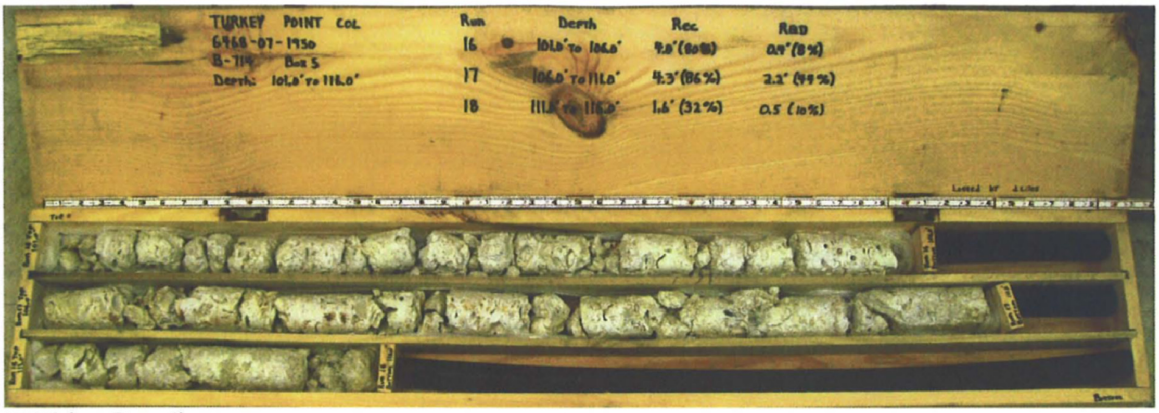
B-714 – Box 2



B-714 – Box 3



B-714 – Box 4


TURKEY POINT COL
6468-07-1950
B-714 Box 5
Depth: 101.0' To 116.0'
Run
Depth
Rec
RQD
16 101.0' To 106.0' 9.0' (80%) 0.9' (8%)
17 106.0' To 111.0' 4.3' (86%) 2.2' (49%)
18 111.0' To 116.0' 1.6' (32%) 0.5 (10%)

B-714 – Box 5

MACTEC

GEOTECHNICAL BORING LOG

Prepared By JPH Date 5-30-08

Checked By RTM Date 5-30-08

SHEET 1 OF 3

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	GROUND WATER (ft)
BORING NO.: B-715	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 875,909 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.1 ft	BORING DIAMETER: 4" to 28.3', 3" to 150.1'	CASING DEPTH: 4" to 28.3', 3" to 120.0'	HAMMER (ID):140 lb. Auto (M06)
DATE STARTED: 4/8/08	COMPLETED: 4/10/08	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
-0.9					Ground Surface				
-0.9	0.0	WOH	WOH	WOH	WOH 0	715-1			-0.9 0.0 MUCK, black (2.5Y2.5/1), very soft, wet, strong HCl reaction, fibrous
-3.5	2.6	WOH	2	5	7	715-2A&B			-4.4 3.5 LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation)
-5.9	5.0	10	7	7	14	715-3			
-8.4	7.5	18	27	11	38	715-4			7.5ft: medium hard, trace fine sand
-10.9	10.0	4	4	4	8	715-5			10.0ft: very soft
-13.3	12.4	6	6	10	16	715-6			
-15.8	14.9	4	6	18	24	715-7			14.9ft: soft
-22.6	21.7	8	12	14	26	715-8			
-25.9	25.0								
-27.7	26.8	13	40	50	90	715-9			LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation)
-29.2	28.3					RUN-1			28.3ft: Switch sampling method to coring
-31.2	30.3					RUN-2			28.3ft: moderately hard, moderately indurated, trace vugs, coralline
-36.2	35.3					715-CS-01			30.3ft: moderately hard to hard, moderately indurated to indurated, trace recrystallized calcite
-41.2	40.3					RUN-3			35.3ft: hard, indurated, little vugs
-46.2	45.3					RUN-4			40.3ft: trace vugs
-48.9	48.0					715-CS-03			
-51.2	50.3					RUN-5			45.3ft: white (2.5Y8/1) to 46.0ft then light gray (10YR7/1) to 48.0ft
-56.2	55.3					RUN-6			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-61.2	60.3					RUN-7			50.3ft: moderately hard to hard, moderately indurated to indurated
-66.2	65.3					715-CS-05			55.3ft: moderately hard, moderately indurated
-71.2	70.3					RUN-8			60.3ft: medium hard to hard, friable to indurated, trace sand, trace shell molds and casts
						RUN-9			65.3ft: interbedded sand, little vugs
						RUN-10			70.3ft: few vugs

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: J. Liles	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)	
BORING NO.: B-715	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA	
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 875,909 US ft (NAD83/90)	24 HR. NA	
TOTAL DEPTH: 150.1 ft	BORING DIAMETER: 4" to 28.3', 3" to 150.1'	CASING DEPTH: 4" to 28.3', 3" to 120.0'	HAMMER (ID):140 lb. Auto (M06)	
DATE STARTED: 4/8/08	COMPLETED: 4/10/08	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
-75.7					Continued from previous page				
-76.2	75.3					RUN-11			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 75.3ft: hard, indurated
-81.2	80.3					RUN-12			80.3ft: moderately hard, moderately indurated
-86.2	85.3					RUN-13			85.3ft: hard, indurated
						715-CS-07			
-91.2	90.3					RUN-14			90.3ft: medium hard to hard, friable to indurated, trace vugs, few to little sand
-96.2	95.3					RUN-15			95.3ft: friable to moderately indurated
-101.2	100.3					RUN-16			100.3ft: moderately hard, moderately indurated, little shell molds and casts
-106.2	105.3					RUN-17			105.3ft: moderately hard to hard, moderately indurated to indurated, some vugs
-111.2	110.3					RUN-18			110.3ft: moderately hard, moderately indurated, little to some fine grained sand
-113.9									113.0
-119.3	118.4	8	4	3	7	715-10			POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/2), loose, wet, fine grained sand, strong HCl reaction, trace limestone fragments (Tamiami formation) 118.4ft: Switch sampling method to SPT
-129.0	128.1								128.1
-129.0		3	4	8	12	715-11			Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, fine to coarse grained sand, fine to coarse gravel
-139.3	138.4	7	9	12	21	715-12			
-149.5	148.6	5	8	10	18	715-13			

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: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-715	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 875,909 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.1 ft	BORING DIAMETER: 4" to 28.3', 3" to 150.1'	CASING DEPTH: 4" to 28.3', 3" to 120.0'	HAMMER (ID):140 lb. Auto (M06)
DATE STARTED: 4/8/08	COMPLETED: 4/10/08	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
-150.5					Continued from previous page				
-151.0									148.6ft: fine grained sand
									Boring Terminated at Elevation -151.0 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: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-715	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 875,909 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.1 ft	CASING DEPTH: 4" to 28.3', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (M06)
DATE STARTED: 4/8/08	COMPLETED: 4/10/08	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 @ 28.3 ft
-29.2	28.3	2.0	1:13 1:11	(2.0) 100%	(1.9) 95%	RUN-1	(19.0) 96%	(17.7) 90%		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation) *(continued)*
-31.2	30.3	5.0	1:01 0:34 0:36 0:30 0:32	(4.9) 98%	(4.3) 86%	RUN-2 *715-CS-01*				28.3ft: moderately hard, moderately indurated, trace vugs, coralline 30.3ft: moderately hard to hard, moderately indurated to indurated, trace recrystallized calcite
-36.2	35.3	5.0	1:04 0:38 0:59 0:44 0:32	(4.6) 92%	(4.3) 86%	RUN-3				35.3ft: hard, indurated, little vugs
-41.2	40.3	5.0	0:41 1:26 1:15 1:13 1:13	(5.0) 100%	(4.7) 94%	RUN-4 *715-CS-03*				40.3ft: trace vugs
-46.2	45.3	5.0	1:23 1:27 1:32 1:27 1:11	(4.8) 96%	(4.8) 96%	RUN-5				45.3ft: white (2.5Y8/1) to 46.0ft then light gray (10YR7/1) to 48.0ft
										-48.9 48.0
-51.2	50.3	5.0	1:15 1:16 1:47 1:48 2:15	(4.9) 98%	(3.5) 70%	RUN-6	(49.8) 77%	(24.1) 37%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) 50.3ft: moderately hard to hard, moderately indurated to indurated
-56.2	55.3	5.0	1:28 0:39 1:07 0:59 1:02	(4.9) 98%	(4.0) 80%	RUN-7 *715-CS-05*				55.3ft: moderately hard, moderately indurated
-61.2	60.3	5.0	1:15 0:59 0:53 0:26 1:10	(4.5) 90%	(2.6) 52%	RUN-8				60.3ft: medium hard to hard, friable to indurated, trace sand, trace shell molds and casts
-66.2	65.3	5.0	0:25 0:26 0:22 0:14 0:49	(2.6) 52%	(0.4) 8%	RUN-9				65.3ft: interbedded sand, little vugs
-71.2	70.3	5.0	0:44 1:14 1:58 1:58 0:25	(4.5) 90%	(1.9) 38%	RUN-10				70.3ft: few vugs
-76.2	75.3	5.0	1:18 1:50 2:13 0:50 1:50	(3.0) 60%	(1.3) 26%	RUN-11				75.3ft: hard, indurated
-81.2	80.3	5.0	0:35 0:19 0:54 0:46 0:15	(1.8) 36%	(0.0) 0%	RUN-12				80.3ft: moderately hard, moderately indurated
-86.2	85.3	5.0	0:55 1:24 2:58 1:44 0:55	(4.7) 94%	(2.4) 48%	RUN-13 *715-CS-07*				85.3ft: hard, indurated
-91.2	90.3	5.0	0:40 0:58 0:44 0:43 1:37	(2.6) 52%	(1.2) 24%	RUN-14				90.3ft: medium hard to hard, friable to indurated, trace vugs, few to little sand
-96.2	95.3	5.0	1:12 0:50 0:36 0:53 1:07	(2.9) 58%	(1.2) 24%	RUN-15				95.3ft: friable to moderately indurated
-101.2	100.3	5.0	1:18 0:46 0:55	(5.0) 100%	(2.3) 46%	RUN-16				100.3ft: moderately hard, moderately indurated, little shell molds and casts

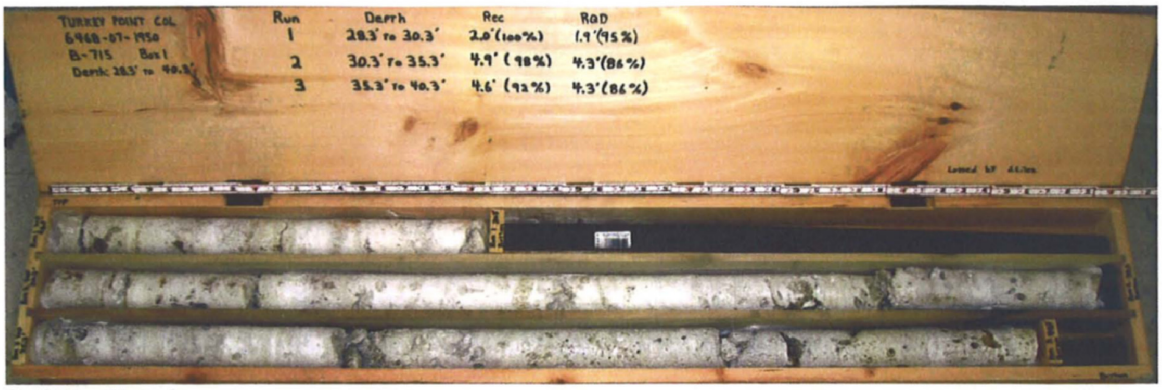
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

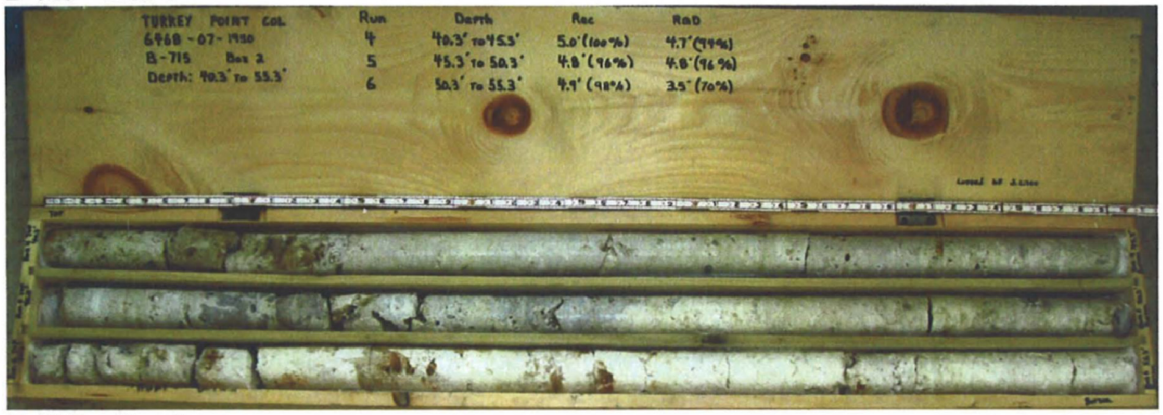
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-715	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,259 US ft (NAD83/90)	EASTING: 875,909 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.1 ft	CASING DEPTH: 4" to 28.3', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (M06)
DATE STARTED: 4/8/08	COMPLETED: 4/10/08	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
-106.2	105.3		0:30 0:34							LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
		5.0	0:42 0:34 0:43 0:56	(3.9) 78%	(0.4) 8%	RUN-17				105.3ft: moderately hard to hard, moderately indurated to indurated, some vugs
-111.2	110.3		0:40							
		5.0	0:41 1:23 0:50	(2.2) 44%	(0.6) 12%	RUN-18				110.3ft: moderately hard, moderately indurated, little to some fine grained sand
-113.9										113.0
							(0.0) 0%	(NA)		POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/2), loose, wet, fine
-116.2	115.3		0:34 0:23							grained sand, strong HCl reaction, trace limestone fragments (Tamiami formation) 115.3
										Coring Terminated at Elevation -116.2

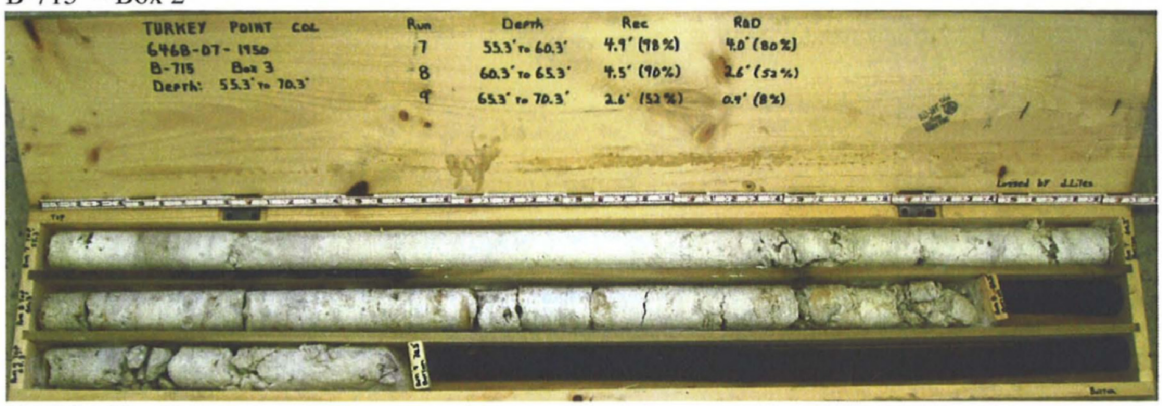
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5.30/08



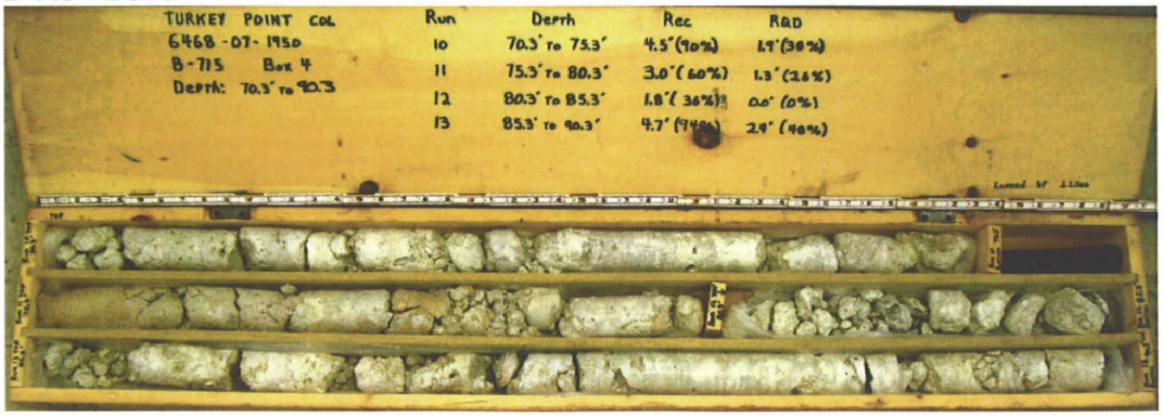
B-715 – Box 1



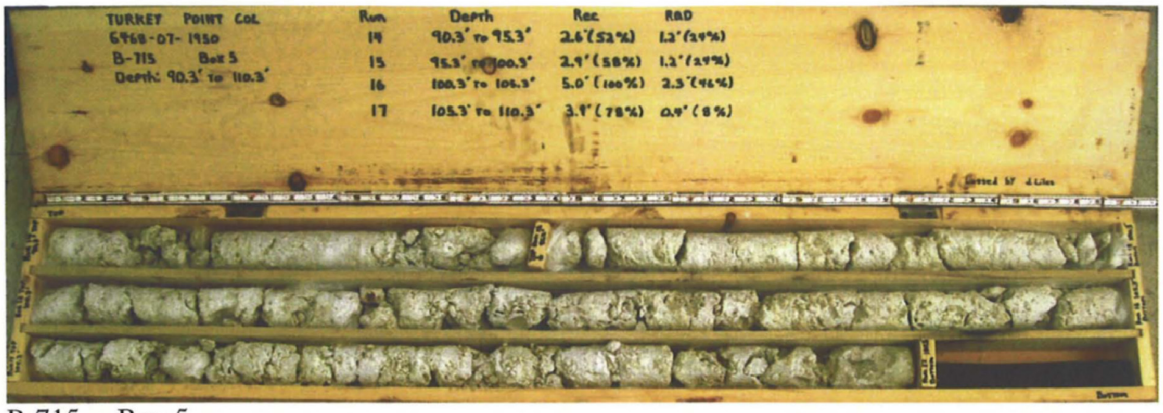
B-715 – Box 2



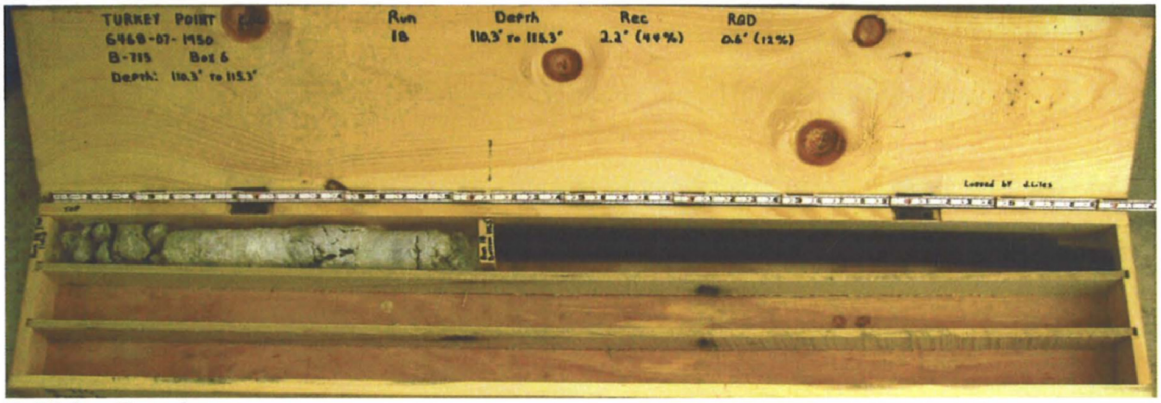
B-715 – Box 3



B-715 – Box 4



B-715 – Box 5



B-715 – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 7-10-08

Checked By [illegible] 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-716	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,214 US ft (NAD83/90)	EASTING: 875,873 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.6 ft	BORING DIAMETER: 4" to 23.6', 3" to 126.6'	CASING DEPTH: 4" to 23.6', 3" to 115.2'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/8/08	COMPLETED: 4/16/08	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	716-1			-1.1 0.0 MUCK, light brownish gray (10YR6/3), very soft, wet, mostly organic, trace shell fragments, strong HCl reaction
-3.7	2.6	3	7	9	16	716-2			-4.1 3.0 Field notes do not indicate that sample 716-2 was split into separate jars
-6.1	5.0	2	4	4	8	716-3			LIMESTONE, boundstone, white (10YR8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation)
-8.6	7.5	28	3	8	11	716-4			5.0ft: trace shell fragments
-11.1	10.0	3	5	6	11	716-5			
-13.6	12.5	50/0.3			50/0.3	716-6			12.5ft: hard
-16.1	15.0	7	15	32	47	716-7			15.0ft: moderately hard
-19.6	18.5	14	5	5	10	716-8			18.5ft: very soft
-24.6	23.5	10	50/0.4		60/0.9	716-9			23.5ft: hard
-26.3	25.2					RUN-1			-26.1 25.2ft: Switch sampling method to coring 25.0 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, coralline, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation)
-31.3	30.2					RUN-2			30.2ft: white (10YR8/1), to light gray (10YR7/1), poor recovery may be due to open spaces and/or interconnected vugs
-36.3	35.2					RUN-3			35.2ft: trace vugs, recrystallized calcite
-41.3	40.2					RUN-4			40.2ft: white (10YR8/1)
-46.3	45.2					RUN-5			45.2ft: few vugs, horizontal bedding plane at
-48.4	47.3								47.3ft LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, trace to few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)
-51.3	50.2					RUN-6			
-56.3	55.2					RUN-7			55.2ft: few vugs
-61.3	60.2					RUN-8			60.2ft: trace vugs, few to some shell molds and casts
-66.3	65.2					RUN-9			65.2ft: few shell molds
-71.3	70.2					RUN-10			

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

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: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-716	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,214 US ft (NAD83/90)	EASTING: 875,873 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.6 ft	BORING DIAMETER: 4" to 23.6', 3" to 126.6'	CASING DEPTH: 4" to 23.6', 3" to 115.2'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/8/08	COMPLETED: 4/16/08	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
-75.9					Continued from previous page				
-76.3	75.2					RUN-11			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, trace to few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-80.4	79.3								75.2ft: no vugs
-81.3	80.2					RUN-12			
						RUN-13			80.2ft: trace to few shell molds and casts
-86.3	85.2					RUN-14			85.2ft: little vugs
-91.3	90.2					RUN-15			
-96.3	95.2					RUN-16			95.2ft: medium hard to moderately hard, moderately indurated, no vugs, some shell molds and casts
-101.3	100.2					RUN-17			
-106.3	105.2					RUN-18			105.2ft: medium hard, moderately indurated, little vugs, mostly shell molds and casts
-111.3	110.2					RUN-19			110.2ft: soft to medium hard, friable to moderately indurated
-114.1	113.0								Silty SAND (SM), white (10YR8/1), dense, moist, weak HCl reaction, fine grained sand, little fines (Tamiami Formation)
-116.3	115.2	11	16	25	41	716-10			115.2ft: Switch sampling method to SPT
-126.2	125.1	22	14	8	22	716-11			
-127.7	126.6								125.1ft: olive gray (5Y5/2), medium dense, trace shell fragments
									Boring Terminated at Elevation -127.7 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: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-716	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,214 US ft (NAD83/90)	EASTING: 875,873 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.6 ft	CASING DEPTH: 4" to 23.6', 3" to 115.2'		HAMMER (ID): 140 lb. Auto (MEC-02)
DATE STARTED: 4/8/08	COMPLETED: 4/16/08	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 @ 25.2 ft
-26.3	25.2	5.0	1:15 0:51 1:03 2:23	(3.1) 62%	(1.7) 34%	RUN-1	(16.5) 75%	(11.7) 53%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, coralline, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation) *(continued)*
-31.3	30.2		1:13							
		5.0	0:26 0:21 0:18 0:12	(1.6) 32%	(0.0) 0%	RUN-2				30.2ft: white (10YR8/1), to light gray (10YR7/1), poor recovery may be due to open spaces and/or interconnected vugs
-36.3	35.2		0:21							
		5.0	0:29 0:27 0:26 0:32	(4.7) 94%	(3.3) 66%	RUN-3				35.2ft: trace vugs, recrystallized calcite
-41.3	40.2		0:51							
		5.0	0:40 0:33 0:32 0:37	(5.0) 100%	(5.0) 100%	RUN-4				40.2ft: white (10YR8/1)
-46.3	45.2		0:46							
		5.0	0:42 0:52 0:42 0:39	(5.0) 100%	(4.4) 88%	RUN-5				45.2ft: few vugs, horizontal bedding plane at 47.3ft
-48.4										47.3
-51.3	50.2		0:34				(39.3) 60%	(20.6) 31%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, trace to few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)
		5.0	0:47 0:40 0:38 0:39	(5.0) 100%	(4.0) 80%	RUN-6				
-56.3	55.2		0:40							
		5.0	0:49 0:26 0:36 0:35	(4.6) 92%	(3.0) 60%	RUN-7				55.2ft: few vugs
-61.3	60.2		0:38							
		5.0	0:31 0:30 0:28 0:28	(4.9) 98%	(4.8) 96%	RUN-8				60.2ft: trace vugs, few to some shell molds and casts
-66.3	65.2		0:38							
		5.0	0:31 0:34 0:32 0:25	(2.5) 50%	(2.2) 44%	RUN-9				65.2ft: few shell molds
-71.3	70.2		0:16							
		5.0	0:26 0:29 0:28 0:16	(1.6) 32%	(0.4) 8%	RUN-10				
-76.3	75.2		0:19							
		4.1	0:33 0:37 0:28	(2.0) 49%	(0.7) 17%	RUN-11				75.2ft: no vugs
-80.4	79.3		0:54							
-81.3	80.2	0.9	1:38/0.1 0.55/0.9	(0.8) 89%	(0.8) 89%	RUN-12				80.2ft: trace to few shell molds and casts
		5.0	0:35 0:32 0:22 0:18	(2.7) 54%	(0.4) 8%	RUN-13				
-86.3	85.2		0:21							
		5.0	0:24 0:36 0:38 0:26	(3.2) 64%	(0.5) 10%	RUN-14				85.2ft: little vugs
-91.3	90.2		0:23							
		5.0	0:30 0:21 0:18 0:16	(2.6) 52%	(1.1) 22%	RUN-15				
-96.3	95.2		0:21							
		5.0	0:28 0:31 0:25 0:16	(2.1) 42%	(0.0) 0%	RUN-16				95.2ft: medium hard to moderately hard, moderately indurated, no vugs, some shell molds and casts
-101.3	100.2		0:20							

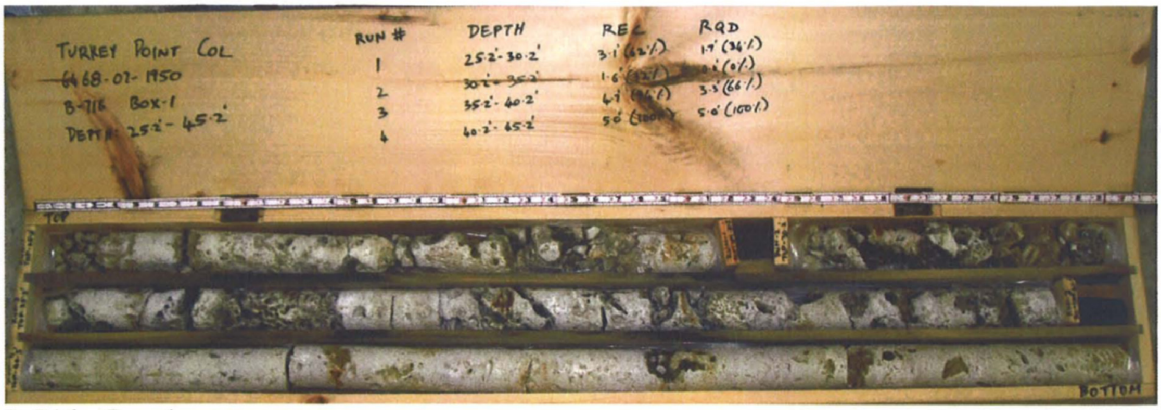
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-716	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,214 US ft (NAD83/90)	EASTING: 875,873 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.6 ft	CASING DEPTH: 4" to 23.6', 3" to 115.2'	HAMMER (ID): 140 lb. Auto (MEC-02)	
DATE STARTED: 4/8/08	COMPLETED: 4/16/08	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
-106.3	105.2	5.0	0:23 0:24 0:21 0:20 0:21	(0.5) 10%	(0.0) 0%	RUN-17				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, fossiliferous, trace to few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-111.3	110.2	5.0	0:28 0:27 0:13 0:18 0:16	(2.0) 40%	(0.0) 0%	RUN-18				105.2ft: medium hard, moderately indurated, little vugs, mostly shell molds and casts
		5.0	0:18 0:24 0:21	(1.9) 38%	(0.0) 0%	RUN-19				110.2ft: soft to medium hard, friable to moderately indurated
-114.1										113.0
-116.3	115.2		0:21 0:18				(0.0) 0%	(NA)		Silty SAND (SM), white (10YR8/1), dense, moist, weak HCl reaction, fine grained sand, little fines (Tamiami Formation) 115.2
										Coring Terminated at Elevation -116.3

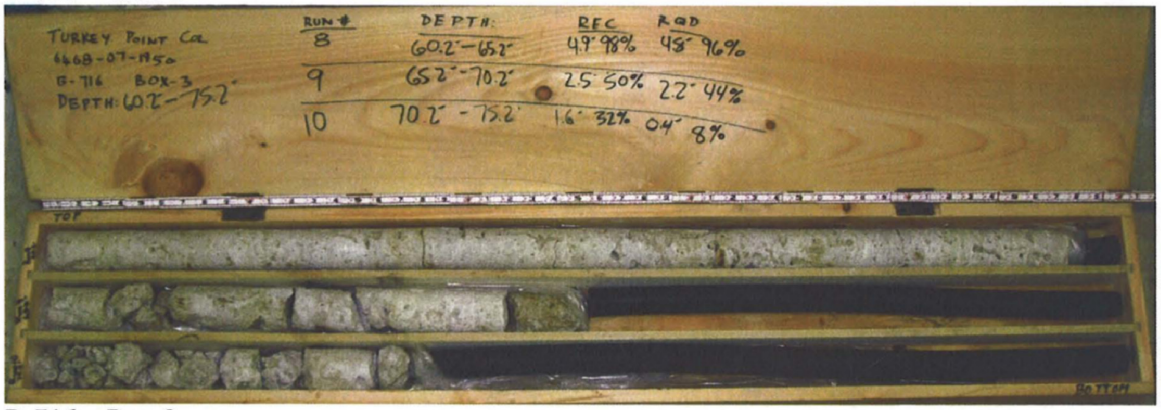
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7-10-08



B-716 – Box 1



B-716 – Box 2



B-716 – Box 3



B-716 – Box 4