



GEOTECHNICAL BORING LOG

Prepared By PTM Date 5-30-08

Checked By PTM Date 5-30-08

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: P. Pitts/ R. Landeros		GROUND WATER (ft)										
BORING NO.: B-705		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA									
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,919 US ft (NAD83/90)		EASTING: 875,846 US ft (NAD83/90)		24 HR.	NA									
TOTAL DEPTH: 200.0 ft		BORING DIAMETER: 4" to 35.0", 3" to 200.0"		CASING DEPTH: 4" to 35.0', 3" to 135.0'		HAMMER (ID): 140 lb. Auto (MEC-05)										
DATE STARTED: 2/22/08		COMPLETED: 2/24/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Roller Cone										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100			
-1.3					Ground Surface							-1.3	0.0			
-1.3	0.0	WOH	WOH	WOH	0						705-1			MUCK, very dark brown (10YR2/2), very soft, wet		
-3.8	2.5	3	11	11							705-2				-4.2	2.9
-6.6	5.3	7	9	7							705-3			LIMESTONE, boundstone, white (5Y8/1), soft, moderately indurated, wet, strong HCl reaction (Miami Formation)		
-8.8	7.5	6	4	8							705-4			5.3ft: very soft		
-11.3	10.0	5	7	12							705-5			7.5ft: fossiliferous, oolitic		
-13.8	12.5	7	8	25							705-6			12.5ft: medium hard		
-16.3	15.0	14	14	22							705-7					
-19.8	18.5	4	4	8							705-8			18.5ft: very soft		
-24.8	23.5	6	10	5							705-9					
-29.8	28.5	15	22	17							705-10			LIMESTONE, boundstone, white (5Y8/1), medium hard, moderately indurated, wet, strong HCl reaction, fossiliferous (Upper Fort Thompson Formation)		
-34.8	33.5	9	8	12							705-11			28.0ft: loss of circulation		
-36.3	35.0										RUN-1			33.5ft: very soft		
-39.8	38.5										RUN-2			35.0ft: Switch sampling method to coring		
-44.8	43.5										RUN-3			35.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline		
-49.8	48.5										RUN-4			38.5ft: recrystallized calcite		
-54.8	53.5										RUN-5			43.5ft: white (10YR8/1) to 45.8ft then gray (2.5Y6/1) to 47.3ft. little vugs		
-59.8	58.5										RUN-6				-48.6	47.3
-64.8	63.5										RUN-7			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation)		
-69.8	68.5										RUN-8			48.5ft: few vugs		
-74.8	73.5										RUN-9			58.5ft: extremely indurated		
														63.5ft: indurated		
														68.5ft: some vugs		
														73.5ft: little vugs		

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL, GDT, 5-30-08



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: P. Pitts/ R. Landeros	GROUND WATER (ft) 0 HR. NA 24 HR. NA
BORING NO.: B-705	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,919 US ft (NAD83/90)	EASTING: 875,846 US ft (NAD83/90)	
TOTAL DEPTH: 200.0 ft	BORING DIAMETER: 4" to 35.0', 3" to 200.0'	CASING DEPTH: 4" to 35.0', 3" to 135.0'	HAMMER (ID): 140 lb. Auto (MEC-05)

DATE STARTED: 2/22/08	COMPLETED: 2/24/08	CORE SIZE: HQ3	BITS USED: 2 15/16" Roller Cone
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ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-76.1					Continued from previous page							
-79.8	78.5											LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.5ft: moderately hard to hard, moderately indurated to indurated, few vugs
-84.8	83.5											83.5ft: hard, indurated
-89.8	88.5											88.5ft: mostly shell molds and casts
-94.8	93.5											
-99.8	98.5											
-104.8	103.5											103.5ft: extremely indurated
-109.8	108.5											108.5ft: indurated
-114.8	113.5											113.5ft: very soft, friable
-119.8	118.5	4	6	8						705-12		Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation) 118.5ft: Switch sampling method to SPT 118.5ft: no recovery
-124.8	123.5	5	12	8						705-13		123.5ft: LIMESTONE, boundstone, pale yellow (2.5Y7/3), very soft, friable, wet, strong HCl reaction, fragmented, sandy
-129.8	128.5	4	4	7						705-14		
-134.8	133.5	5	8	11						705-15		133.5ft: few cemented sand pockets
-139.8	138.5	4	5	6						705-16		138.5ft: greenish gray (5GY6/1), strong HCl reaction, fine to medium grained sand
-144.8	143.5	7	11	11						705-17		143.5ft: trace shell fragments
-149.8	148.5	5	8	14						705-18		

TURKEY POINT COL BORE TURKEY POINT G.P.I. TURKEY POINT COL G.D.T. 5:30/08



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: P. Pitts/ R. Landeros		GROUND WATER (ft)	
BORING NO.: B-705		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,919 US ft (NAD83/90)		EASTING: 875,846 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 200.0 ft		BORING DIAMETER: 4" to 35.0', 3" to 200.0'		CASING DEPTH: 4" to 35.0', 3" to 135.0'		HAMMER (ID): 140 lb. Auto (MEC-05)	

DATE STARTED: 2/22/08	COMPLETED: 2/24/08	CORE SIZE: HQ3	BITS USED: 2 15/16" Roller Cone
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ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100
-150.9					Continued from previous page								
-154.8	153.5	3	6	9						705-19		148.5ft: weak HCl reaction Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation) <i>(continued)</i>	
-159.8	158.5	3	5	7						705-20			
-164.8	163.5	5	6	14						705-21			
-169.8	168.5	3	5	10						705-22			
-174.8	173.5	2	3	4						705-23	-174.8		Sandy SILT (ML), greenish gray (5GY6/1), loose, wet, fine grained sand, strong HCl reaction
-179.8	178.5	2	3	4						705-24			
-184.8	183.5	2	5	15						705-25			183.5ft: very stiff
-189.8	188.5	2	3	6						705-26			188.5ft: stiff, strong HCl reaction
-194.8	193.5	2	3	10						705-27			
-199.8	198.5	3	5	15						705-28	-201.3		198.5ft: very stiff
												200.0	Boring Terminated at Elevation -201.3 ft

TURKEY POINT COL BORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30'08



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: P. Pitts/ R. Landeros		GROUND WATER (ft)	
BORING NO.: B-705		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,919 US ft (NAD83/90)		EASTING: 875,846 US ft (NAD83/90)		24 HR.	NA
TOTAL DEPTH: 200.0 ft		CASING DEPTH: 4" to 35.0', 3" to 135.0'				HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/22/08		COMPLETED: 2/24/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Begin Coring @ 35.0 ft
-36.3	35.0	3.5	1:50 1:27 1:28	(1.6) 46%	(0.4) 11%	RUN-1	(10.2) 83%	(7.2) 59%		LIMESTONE, boundstone, white (5Y8/1), medium hard, moderately indurated, wet, strong HCl reaction, fossiliferous (Upper Fort Thompson Formation)
-39.8	38.5	5.0	0:53/0.5 0:50 0:59	(4.8) 96%	(4.0) 80%	RUN-2				28.0ft: loss of circulation (continued) 35.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline 38.5ft: recrystallized calcite
-44.8	43.5	5.0	0:45 0:52 0:59	(5.0) 100%	(2.8) 56%	RUN-3				43.5ft: white (10YR8/1) to 45.8ft then gray (2.5Y6/1) to 47.3ft, little vugs
-49.8	48.5	5.0	1:00 2:05 1:06 0:49 1:02	(5.0) 100%	(4.4) 88%	RUN-4	(50.6) 75%	(32.6) 48%	-48.6	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) 48.5ft: few vugs
-54.8	53.5	5.0	1:12 1:04 1:17 1:14 0:49	(4.9) 98%	(2.1) 42%	RUN-5				58.5ft: extremely indurated
-59.8	58.5	5.0	0:38 0:44 1:20 1:15 1:06	(5.0) 100%	(5.0) 100%	RUN-6				63.5ft: indurated
-64.8	63.5	5.0	0:44 0:51 0:35 0:47 0:35	(3.1) 62%	(2.0) 40%	RUN-7				68.5ft: some vugs
-69.8	68.5	5.0	0:48 0:47 0:32 0:28 0:23	(2.0) 40%	(0.4) 8%	RUN-8				73.5ft: little vugs
-74.8	73.5	5.0	0:48 0:47 0:40 0:58 1:07	(4.2) 84%	(1.8) 36%	RUN-9				78.5ft: moderately hard to hard, moderately indurated to indurated, few vugs
-79.8	78.5	5.0	0:42 0:32 0:40 0:45 0:48	(4.2) 84%	(2.2) 44%	RUN-10				83.5ft: hard, indurated
-84.8	83.5	5.0	0:25 0:31 0:45 1:21 1:58	(3.8) 76%	(2.4) 48%	RUN-11				88.5ft: mostly shell molds and casts
-89.8	88.5	5.0	0:38 0:33 0:40 0:36 0:37	(4.0) 80%	(2.3) 46%	RUN-12				103.5ft: extremely indurated
-94.8	93.5	5.0	0:25 0:33 1:29 0:27 0:25	(0.8) 16%	(0.0) 0%	RUN-13				108.5ft: indurated
-99.8	98.5	5.0	0:23 0:32 0:31 0:39 0:39	(3.7) 74%	(2.3) 46%	RUN-14				
-104.8	103.5	5.0	0:48 0:41 0:32 0:34 0:30	(5.0) 100%	(5.0) 100%	RUN-15				
-109.8	108.5	5.0	0:30 0:31	(3.4) (2.7)	RUN-16					

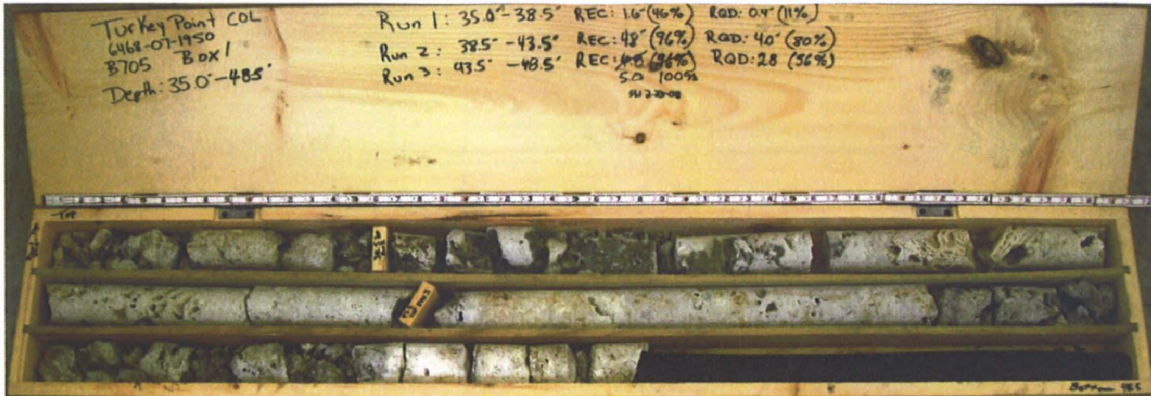
TURKEY POINT COL CORE TURKEY POINT G.P.I. TURKEY POINT COL G.D.F. 5/30/08



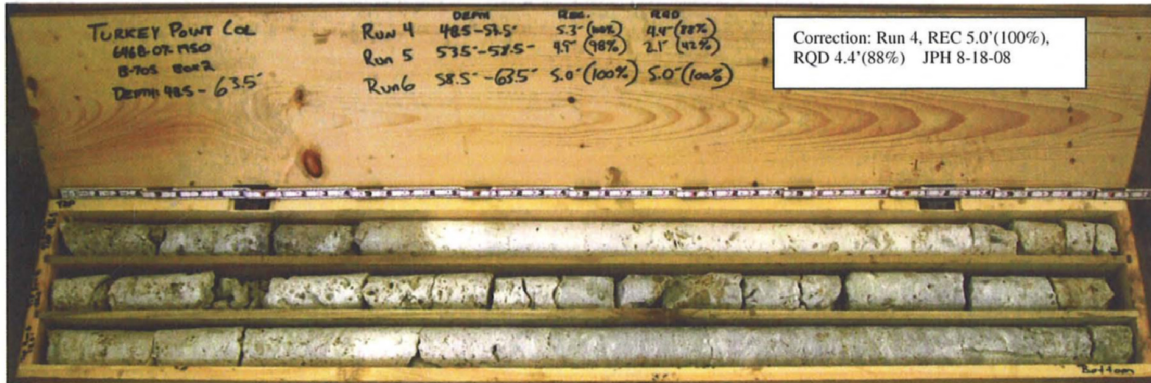
BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: P. Pitts/ R. Landeros	
BORING NO.: B-705		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core	
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,919 US ft (NAD83/90)		EASTING: 875,846 US ft (NAD83/90)	
TOTAL DEPTH: 200.0 ft		CASING DEPTH: 4" to 35.0', 3" to 135.0'			HAMMER (ID): 140 lb. Auto (MEC-05)
DATE STARTED: 2/22/08		COMPLETED: 2/24/08		CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-114.8	113.5		0:26 0:27 0:31 0:25	68%	54%					LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	1:18 0:29 0:30 0:35 0:31	(0.3) 6%	(0.0) 0%	RUN-17	(0.0) 0%	(NA)		113.5ft: very soft, friable Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation)
-119.8	118.5									Coring Terminated at Elevation -119.8

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



B-705 - Box 1



B-705 - Box 2



B-705 - Box 3



B-705 - Box 4



B-705 - Box 5



GEOTECHNICAL BORING LOG

Prepared By SPZ Date 8-19-08

Checked By SJC Date 9/19/08

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-706		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA								
GROUND ELEV.: -1.2 ft (NAVD88)		NORTHING: 396,963 US ft (NAD83/90)		EASTING: 875,885 US ft (NAD83/90)		24 HR.	NA								
TOTAL DEPTH: 151.9 ft		BORING DIAMETER: 3" to 151.9'		CASING DEPTH: 3" to 117.3'		HAMMER (ID): 140 lb. Auto (07)									
DATE STARTED: 2/9/08		COMPLETED: 2/13/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Drag Bit & 2 15/16" Roller Cone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80					100	
-1.2					Ground Surface									0.0	
-1.2	0.0	WOH	WOH	WOH											
-4.3	3.1	7	6	7						706-1					
-7.2	6.0	5	50	29						706-2					3.2
-9.2	8.0	3	4	4						706-3					
-11.7	10.5	4	9	48						706-4					
-14.1	12.9	8	19	11						706-5					
-16.9	15.7									706-6					
-17.2	16.0	50/0.3								706-7					
-22.2	21.0									RUN-1					
-27.2	26.0									RUN-2					
-32.0	30.8	3	1	6						706-8					
-37.0	35.8									RUN-3					31.2
-42.0	40.8									RUN-4					
-47.0	45.8									RUN-5					
-52.0	50.8									RUN-6					
-57.0	55.8									RUN-7					
-62.0	60.8									RUN-8					
-67.0	65.8									RUN-9					
-72.0	70.8									RUN-10					
										RUN-11					

TURKEY POINT COL BORE TURKEY POINT GP1 TURKEY POINT COL GDT S. 18 US



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-706		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA						
GROUND ELEV.: -1.2 ft (NAVD88)		NORTHING: 396,963 US ft (NAD83/90)		EASTING: 875,885 US ft (NAD83/90)		24 HR.	NA						
TOTAL DEPTH: 151.9 ft		BORING DIAMETER: 3" to 151.9'		CASING DEPTH: 3" to 117.3'		HAMMER (ID): 140 lb. Auto (07)							
DATE STARTED: 2/9/08		COMPLETED: 2/13/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Drag Bit & 2 15/16" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100
-76.0					Continued from previous page								
-77.0	75.8												LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, little vugs, porous, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-82.0	80.8												80.8ft: little vugs 83.0ft to 84.0ft: soft zone
-87.0	85.8												85.8ft: few vugs 87.0ft to 90.0ft: soft zone
-92.0	90.8												91.0ft to 94.0ft: soft zone
-97.0	95.8												
-102.0	100.8												100.8ft: some vugs 104.0ft to 105.8ft: soft zone
-107.0	105.8												105.8ft: few vugs
-112.0	110.8												
-117.0	115.8												
-117.0	115.8	5	17	17									115.8ft: Switch sampling method to SPT POORLY GRADED SAND with silt (SP-SM), white (5Y8/1), dense, wet, fine to coarse grained sand, fine angular sandstone and limestone gravel fragments/lenses, weak HCl reaction (Tamiami Formation)
-122.0	120.8	3	4	8									120.8ft: pale yellow (5Y7/3), medium dense
-127.1	125.9	3	4	8									Silty SAND (SM), pale yellow (5Y7/3), medium dense, wet, fine to medium grained sand, fine gravel, strong HCl reaction
-131.6	130.4	3	4	5									130.4ft: light gray (5Y7/2), loose, trace shell fragments
-136.6	135.4	4	3	4									135.4ft: strong to weak HCl reaction, fine to coarse grained sand
-141.6	140.4	7	8	10									140.4ft: light olive gray (5Y6/2), medium dense, strong HCl reaction
-146.6	145.4	5	8	16									Silty GRAVEL with sand (GM), light olive gray (5Y6/2), medium dense, wet, fine to coarse gravel sized cemented sand fragments, fine to coarse grained sand, strong HCl reaction

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

