



PROJECT NUMBER:

338884.FL

BORING NUMBER:

MW6D

SHEET 1 OF 7

SOIL BORING LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : (1724807.0 N, 456756.1 E)

ELEVATION : 42.7 ft MSL (NGVD83)

DRILLING CONTRACTOR : Prosonic, Ocala, FL; Driller: F. Kraus

DRILLING EQUIPMENT AND METHOD : Rotosonic S/N SR109, sonic, 4"x6"

ORIENTATION : Vertical

WATER LEVELS : ---

START : 2/2/2007

END : 2/5/2007

LOGGER : A. Teal, W. Elliot, T. Steward

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)		6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE								
42.7	0.0						Poorly Graded Sand (SP) 0.0-1.0' - grayish orange, (10 YR 7/4), moist, loose to medium dense, very fine to fine grained, no apparent bedding, silica sand, trace nonplastic fines			
		60.0	R1-SN				Sandy Clay (SC) 1.0-1.6' - pale olive, (10 YR 6/2), moist, loose to medium dense, silica sand, low plasticity fines, fines decrease with depth, abrupt contact at 1.6'			
							Sandy Silt (ML) 1.6-2.5' - grayish orange, (10 YR 7/4), moist, hard, low plasticity, silt sized carbonate material			
							Limestone Fragments 2.5-3.0' - grayish orange, (10 YR 7/4), strong HCl reaction, strong (R4)			
5	5.0						Poorly Graded Sand With Silt And Organics (SP-SM) 3.0-4.0' - moderate yellow brown, (10 YR 5/4), moist, loose to medium dense, est. 20% organics, silica sand, grades darker with more organics at 3.5-4.0'			
37.7							Silty Sand With Organics (SM) 4.0-5.0' - brownish black, (5 YR 2/1), moist, loose, fine silica sand, plant roots and organic silt up to 40% less organics 4.5 to 5.0'			
		120.0	R2-SN				Limestone And Sandy Silt (ML) 5.0-8.0' - grayish orange, (10 YR 7/4), mild HCl reaction, angular to subangular, subrounded up to 3" in diameter, in matrix of sand-sized and silt-sized carbonate material and limestone, rock is friable to well indurated			
10							Limestone 8.0-10.0' - very pale orange, grayish orange, (10 YR 8/2, 10YR 7/4), 8.0-8.6', 8.6-9.0', 9.0-10.0' - 1/16" voids over 50-75% of surface			
32.7							Limestone 10.0-11.1' - Same as 8.0-10.0' except fragments from 10.0-10.4' with 1/16" voids over 50-75% of surface, moderate HCl reaction, cannot be peeled with a knife, breaks with hammer point (R2), strongly indurated			
							Sandy Silt (ML) 11.1-15.0' - moderate yellow to dusky yellow, (5 Y 7/6, 5Y 6/4), very fine to fine grained, mild HCl reaction, 11.1-12.5' nonindurated, very fine to fine grains, 12.5-15.0' very weakly indurated, fine-medium grains that are extremely friable			
15	15.0						Limestone And Sandy Silt (ML) 15.0-20.0' - dusky yellow, (5 Y 6/4), limestone fragments are fossiliferous, 50-70% up to 1/16" voids on surface, strongly indurated, moderate to strong HCl reaction (same limestone fragments as 8-10'), trace fine to medium sand-sized green particles throughout; (ML) fine to medium sand-sized and silt-sized carbonate materials, mild HCl reaction			
27.7							Limestone Fragments 16.26-16.47'			
							Limestone Fragments 16.6-17.2'			
							Limestone Fragments 17.5-17.7'			
20										



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SHEET 2 OF 7

SOIL BORING LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : (1724807.0 N, 456756.1 E)

ELEVATION : 42.7 ft MSL (NGVD83)

DRILLING CONTRACTOR : Prosonic, Ocala, FL; Driller: F. Kraus

DRILLING EQUIPMENT AND METHOD : Rotasonic S/N SR109, sonic, 4"x6"

ORIENTATION : Vertical

WATER LEVELS : ---

START : 2/2/2007

END : 2/5/2007

LOGGER : A. Teal, W. Elliot, T. Steward

DEPTH BELOW EXISTING GRADE (ft)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
INTERVAL (ft)	RECOVERY (in)		#TYPE				
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
22.7		120.0	R3-SN		Silt With Sand (ML) 20.0-20.9' - dusky yellow, (5Y 6/4), est. 20% sand-sized and gravel-sized carbonate materials Silt (ML) 20.9-22.0' - dusky yellow, (5Y 6/4), trace gravel-sized and sand-sized carbonate materials Limestone 22.0-23.6' - fossiliferous, 50-70% <1mm voids on surface, strongly indurated, trace fine to medium grain sand-sized particles Silt (ML) 23.6-25.0' - Same as 20.9-22.0'		
25	25.0						
17.7					Silt With Sand (ML) 25.0-28.9' - dusky yellow, (5Y 6/4), fine to medium grained sand-sized carbonate material, increasing from 25 to 50% with depth; 25.3-28.9' fossiliferous limestone fragments, silt-sized and sand-sized carbonate materials Silt (ML) 28.9-30.0' - dusky yellow, (5 Y 6/4), <5% fine sand-sized carbonate materials Silt With Sand And Limestone (ML) 30.0-31.55' - dusky yellow to light olive gray, (5 Y 6/4 to 5 Y 5/2), <10% sand-sized, all carbonate materials, mottled at 31.0' Limestone 31.55-32.7' - light olive gray, (5 Y 5/2), 50-70% 1/16" voids on surface, fossiliferous, well indurated Silty Sand And Limestone (SM) 32.7-35.0' - dark yellowish orange, (10 YR 6/6), very fine to medium grained, sand-sized fossil casts, indurated limestone at 34.15-34.35', all carbonate materials		
30		120.0	R4-SN				
12.7							
35	35.0				Limestone 35.0-36.8' - light olive gray, (5 Y 5/2), fine grained, moderate HCl reaction, medium strong to strong (R3 to R4), predominantly no voids with areas over 10% of surface with 50-70% voids, well indurated; broken to roughly 2"diameter pieces, with 35.6-35.8' and 36.1-36.6' intact limestone cores. Silt (ML) 36.8-40.0' - moderate yellowish brown, (10 YR 5/4), nonplastic, rapid dilatancy, carbonate, 35.8-40.0' fine to medium sand-sized carbonate particles		
7.7							
40							



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SHEET 3 OF 7

SOIL BORING LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : (1724807.0 N, 456756.1 E)

ELEVATION : 42.7 ft MSL (NGVD83)

DRILLING CONTRACTOR : Prosonic, Ocala, FL; Driller: F. Kraus

DRILLING EQUIPMENT AND METHOD : Rotasonic S/N SR109, sonic, 4"x6"

ORIENTATION : Vertical

WATER LEVELS : ---

START : 2/2/2007

END : 2/5/2007

LOGGER : A. Teal, W. Elliot, T. Steward

WATER LEVELS:		START: 2/2/2007		END: 2/2/2007		LOGGER: J. A. Ford, V. Ernst		
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
	RECOVERY (in)	#TYPE		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION			
							6"-6"-6" (N)	
2.7		120.0	R5-SN		Sandy Silt (ML) 40.0-46.9' - light olive gray, (5 Y 5/2), moderate HCl reaction, silt-sized carbonate materials with medium to coarse sand-sized particles, with quartz and black grains			
45 -2.3	45.0							
50 -7.3	120.0	R6-SN		Limestone 46.9-50.3' - light olive gray, (5 Y 5/2), moderate HCl reaction, weak to medium strong (R2 to R3), well indurated, 2-4" pieces, <1/16" voids over 50-70% of surface, fossiliferous (casts and molds)				
55 -12.3	55.0			Silt (ML) 50.3-50.9' - moderate yellowish brown, (10 YR 5/4), est. <20% sand-sized particles, all carbonate materials Silt (ML) 50.9-55.0' - moderate yellowish brown, (10 YR 5/4), 0-10% sand-sized particles, all carbonate materials				
60				Sandy Silt (ML) 55.0-56.0' - dark yellowish orange, (10 YR 6/6), moderate HCl reaction, carbonate silt-sized, est. 35-40% medium to coarse sand-sized, with quartz and black grains Silt (ML) 56.0-57.05' - Same as 50.3-50.9' Limestone 57.05-59.1' - grayish orange, (10 YR 7/4), fine grained, moderate HCl reaction, very weak to weak (R1 to R2), 50-70% voids, black staining or organic material, well indurated				



PROJECT NUMBER: 338884.FL	BORING NUMBER: MW6D
SHEET 4 OF 7	
SOIL BORING LOG	

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : (1724807.0 N, 456756.1 E)
 ELEVATION : 42.7 ft MSL (NGVD83) DRILLING CONTRACTOR : Prosonic, Ocala, FL; Driller: F. Kraus
 DRILLING EQUIPMENT AND METHOD : Rotosonic S/N SR109, sonic, 4"x6" ORIENTATION : Vertical
 WATER LEVELS : --- START : 2/2/2007 END : 2/5/2007 LOGGER : A. Teal, W. Elliot, T. Steward

DEPTH BELOW EXISTING GRADE (ft)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL (ft)	RECOVERY (in)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION		
	#TYPE						
-17.3		120.0	R7-SN	6"-6"-6" (N)	Sandy Silt (ML) 59.1-61.55' - grayish orange to moderate yellowish brown, (10 YR 7/4 to 10YR 5/4), color changes with depth, friable pieces, <10% sand-sized, carbonate materials Limestone Fragments 61.55-63.5' - moderate yellowish brown, (10 YR 5/4), very fine grained, moderate HCl reaction, medium strong to strong (R3 to R4), non fossiliferous, 1/16" voids over 10% of surface Sandy Silt (ML) 63.5-65.0' - Same as 59.1-61.55' except strong HCl reaction		
65 -22.3					Begin Rock Coring at 65.0 ft bgs See the next sheet for the rock core log		
70 -27.3							
75 -32.3							
80							



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SHEET 5 OF 7

ROCK CORE LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : (1724807.0 N, 456756.1 E)

ELEVATION : 42.7 ft MSL (NGVD83)

DRILLING CONTRACTOR : Prosonic, Ocala, FL; Driller: F. Kraus

CORING EQUIPMENT AND METHOD : Rotosonic S/N SR109

ORIENTATION : Vertical

WATER LEVELS : ---

START : 2/2/2007

END : 2/5/2007

LOGGER : A. Teal, W. Elliot, T. Stewart,

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
-22.3	65.0		NA	65.0-75.0' - NA		Limestone 65.0-74.0' - moderate yellowish brown to yellowish gray, (10 YR to 5 Y 7/2), moderate HCl reaction, weak to medium strong (R2 to R3), 50-70% 1/16" voids on surface, fossiliferous, casts and molds, trace black laminations start at 70.9', fragmented at 65.0-66.0', 67.0-67.1', 70.0-71.0', and 73.0-74.0'	
70			NA				
-27.3	R8-SN 10 ft 90%		NA				
			NA				
			NA				
			NA				
			NA				
			NA				
			NA				
			NA				
75			NA			No Recovery 74.0-75.0'	
-32.3	75.0		NA	75.0-85.0' - NA		Limestone 75.0-77.5' - very pale orange, (10 YR 8/2), fine grained, strong HCl reaction, weak shell fragments	At 75' began using water to test recovery. Continued to use method to end of drilling this hole.
			NA				
			NA				
			NA				
			NA				
80			NA			Disaggregated Limestone 77.5-84.3' - pale yellowish brown, (10YR 6/2), strong HCl reaction, very weak to weak (R1 to R2), sand-sized and gravel-sized limestone fragments, 50-70% 1/16" voids on surface, fossiliferous, trace laminar black material, carbonate clay seam at 84.0' with strong HCl reaction	
-37.3	R9-SN 10 ft 93%		NA				
			NA				
			NA				
			NA				
			NA				
			NA				
			NA				
85			NA			No Recovery 84.3-85.0'	
	85.0						



