

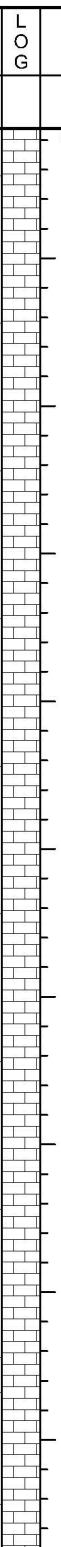


GEOTECHNICAL CORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25847				AMEC PROJECT NO.: 6468-13-1072				COUNTY: Roane, TN		GEOLOGIST: M. Flanik	
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee								DRILLER: J. Landeros/N. Molinalara			Boring Orientation
BORING NO.: MP-115				DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: CME-550X (P)			Inclination: Vertical
GROUND ELEV.: 796.9 ft (NAVD88)				NORTHING: 570,095 US ft (NAD83)				EASTING: 2,448,562 US ft (NAD83)		Azimuth: NA	
TOTAL DEPTH: 99.1 ft			SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb Auto (337153)		
DATE STARTED: 6/23/13			COMPLETED: 6/24/13		CASING DEPTH: 16.7 ft		CORE BARREL TYPE: HQ3/Diamond Impregnated core bits				
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	L O G	ROCK DESCRIPTION AND REMARKS			
								Begin Coring @ 17.5 ft			
779.4	17.5	1.6	6:30	(1.6)	(0.9)	Run 1		779.4	LIMESTONE (MICRITE), gray (N 6/ to N 5/), strong, very thinly to moderately bedded, slightly weathered to fresh, interbedded with few to little, mostly laminated to thin, wavy and diffuse Calcareous SILTSTONE, very dark gray (N 3/); locally strongly bioturbated with vertical and horizontal burrows, trace to few calcite filled pits and burrows and sparry calcite "bird eyes", strong HCl reaction (Benbolt Formation-Unit E)		17.5
777.8	19.1	5.0	2:54/0.6	100%	56%						
		5.0	3:30	(5.0)	(2.9)	Run 2					
			2:49	100%	58%						
			2:33								
			3:22								
772.8	24.1		5:00								
		5.0	3:29	(5.0)	(3.1)	Run 3					
			4:30	100%	62%						
			3:58								
			5:10								
767.8	29.1		4:37								
		5.0	2:50	(5.0)	(4.5)	Run 4					
			3:30	100%	90%						
			4:30								
			4:55								
762.8	34.1		4:33								
		5.0	4:06	(5.0)	(4.9)	Run 5					
			3:57	100%	98%						
			4:29								
			4:09								
757.8	39.1		3:04								
		5.0	2:54	(5.0)	(5.0)	Run 6					
			2:35	100%	100%						
			2:39								
			2:47								
752.8	44.1		2:53								
		5.0	3:33	(5.0)	(4.7)	Run 7					
			3:36	100%	94%						
			2:59								
			3:09								
747.8	49.1		2:59								
		5.0	4:59	(5.0)	(5.0)	Run 8					
			4:07	100%	100%						
			3:33								
			3:20								
742.8	54.1		3:02								
		5.0	2:20	(5.0)	(4.7)	Run 9					
			2:25	100%	94%						
			2:22								
			2:30								
737.8	59.1		2:45								
		1.2	2:20	(1.2)	(1.2)	Run 10					
736.6	60.3		0:24/0.2	100%	100%						
		3.8	3:36/0.8	(3.8)	(3.8)	Run 11					
			3:09	100%	100%	L3-23					
			3:33								
732.8	64.1		3:31								
		5.0	3:27	(5.0)	(5.0)	Run 12					
			2:39	100%	100%						

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



BECHTEL PROJECT NO.: 25847				AMEC PROJECT NO.: 6468-13-1072				COUNTY: Roane, TN		GEOLOGIST: M. Flanik	
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee								DRILLER: J. Landeros/N. Molinalara		Boring Orientation Inclination: Vertical Azimuth: NA	
BORING NO.: MP-115				DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: CME-550X (P)			
GROUND ELEV.: 796.9 ft (NAVD88)				NORTHING: 570,095 US ft (NAD83)				EASTING: 2,448,562 US ft (NAD83)			
TOTAL DEPTH: 99.1 ft			SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb Auto (337153)		
DATE STARTED: 6/23/13			COMPLETED: 6/24/13		CASING DEPTH: 16.7 ft		CORE BARREL TYPE: HQ3/Diamond Impregnated core bits				
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % ROD (ft) %		SAMP. NO.	L O G	ROCK DESCRIPTION AND REMARKS			
								Continued from previous page			
727.8	69.1	5.0	2:48 2:36 2:12					LIMESTONE (MICRITE), gray (N 6/ to N 5/), strong, very thinly to moderately bedded, slightly weathered to fresh, interbedded with few to little, mostly laminated to thin, wavy and diffuse Calcareous SILTSTONE, very dark gray (N 3/); locally strongly bioturbated with vertical and horizontal burrows, trace to few calcite filled pits and burrows and sparry calcite "bird eyes", strong HCl reaction (Benbolt Formation-Unit E) (<i>continued</i>)			
			3:23 2:40 2:27 3:15 3:25	(5.0) 100%	(5.0) 100%	Run 13 L3-24		71.1ft: As above, little to some Calcareous SILTSTONE interbeds			
722.8	74.1	5.0	3:29 3:04 3:22 3:50 3:27	(5.0) 100%	(5.0) 100%	Run 14		723.5 721.0 CALCAREOUS SILTSTONE, greenish black (10Y 2.5/1), weak to medium strong, very thinly to moderately bedded, fresh, interbedded with few, laminated to very thin, amorphous LIMESTONE (MICRITE), dark gray (N 4/); strong HCl reaction			
717.8	79.1	5.0	4:27 3:43 3:24 3:27 3:21	(5.0) 100%	(4.5) 90%	Run 15		713.4 LIMESTONE (MICRITE), dark gray (N 4/), medium strong to strong, laminated to very thinly bedded, fresh, interbedded with some, laminated to very thinly bedded Calcareous SILTSTONE, greenish black (10Y 2.5/1); trace calcite filled pits and burrows, strong HCl reaction			
712.8	84.1	5.0	2:48 2:24 3:31 3:30 3:46	(5.0) 100%	(4.5) 90%	Run 16		83.1ft: BJ, 30°, PR, PO, B, II			
707.8	89.1	5.0	5:08 3:35 3:24 3:45 2:33	(5.0) 100%	(4.2) 84%	Run 17		LIMESTONE (MICRITE/WACKESTONE), gray (N 5/) to dark gray (N 4/), medium strong to strong, very thinly to moderately bedded, fresh, interbedded with little, laminated to thin, wavy to irregular Calcareous SILTSTONE, greenish black (10Y 2.5/1), and few very thin to thin chert beds, lenses, and nodules (dark gray to black, with calcite healed tensional fractures orthogonal to bedding); trace calcite and pyrite filled burrows, strong HCl reaction 83.6,83.7,83.8,83.9ft: SH, 20-25°, PL, T, B, II 85.2ft: BJ, 25°, PR, T, B, III, trace pyrite			
702.8	94.1	5.0	3:23 2:54 3:00 3:00 2:41	(4.9) 98%	(4.9) 98%	Run 18		90.3,93.7ft: BJ, 30°, PS, T, B, II-III 93.2ft: J, 65°, PR, T, C, III			
697.8	99.1							697.8 Boring and coring terminated at 99.1 feet.			

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14

MP-115 – Boxes 1 and 2



MP-115 – Boxes 3 and 4



MP-115 – Boxes 5 and 6





GEOTECHNICAL BORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

SHEET 1 OF 1

BECHTEL NO.: 25847				AMEC PROJECT NO.: 6468-13-1072				COUNTY: Roane, TN				GEOLOGIST: K. Lloyd			
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee								DRILLER: L. Carter/J. Rosser				Boring Orientation			
BORING NO.: MP-116				DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: CME-750X (P)				Inclination: Vertical			
GROUND ELEV.: 797.6 ft (NAVD88)				NORTHING: 570,202 US ft (NAD83)				EASTING: 2,448,560 US ft (NAD83)				Azimuth: NA			
TOTAL DEPTH: 100.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID): 140-lb Auto (323438)					
DATE STARTED: 7/30/13		COMPLETED: 7/31/13		HOLE DIA.: 4"		CASING DEPTH: 33.5 ft		CORE SIZE: HQ3		BITS USED: 4" Roller Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL DESCRIPTION AND REMARKS			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					NO.
797.6					Ground Surface							797.6	0.0		
797.6	0.0	2	4	10						SS-1		795.1	2.5		
794.1	3.5	5	4	7							SS-2				
791.6	6.0	2	2	5							SS-3				
789.1	8.5	6	5	12							SS-4				
786.4	11.2	4	7	7							SS-5				
783.7	13.9	5	5	12							SS-6				
781.2	16.4	7	6	7							SS-7				
778.7	18.9	6	4	5							SS-8				
773.7	23.9	4	6	12							SS-9				
768.7	28.9	44	50/0.4								SS-10				
763.7	33.9	50/0.1									SS-11				

CLINCH RIVER SMR BORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14