

Prepared By/Date: SD 3/6/14
 Checked By/Date: MR 3/6/14

TABLE 2.1
TESTING SUMMARY - BORINGS
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Boring Number	Equipment	Depth (ft)		As-Drilled Coordinates/Elevations			Drilling/Sampling		Downhole Testing							
	Drill Rig	Proposed	Actual	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	SPT ⁽³⁾	Rock Core	UD ⁽²⁾	Rock Pressuremeter	Packer Testing	Temperature Conductivity	PS Velocity	Televiwer	Geophysical Suite	Calliper
MP-101	CME-750X(P)	540	540.6	570249.6	2448355.2	800.5	X	X			X	X	X	X	X	X
MP-102	CME-750X(P)	350	350.6	570097.9	2448404.3	797.9	X	X					X	X	X	X
MP-103	D-120 (M&W)	175	174.5	570287.2	2448367.5	800.6	X	X								
MP-104	CME 55 (TSD)	175	177.2	570093.9	2448449.1	797.7	X	X								
MP-105	CME-750X(P)	175	195.2	570210.2	2448343.5	800.2	X	X		X						
MP-106	CME 550X (PD)	175	174.2	570136.4	2448377.2	798.7	X	X								
MP-107	CME 550X (PD)	175	174.6	570291.6	2448284.8	801.6	X	X								
MP-108	CME 550X (PD)	175	174.3	570051.7	2448376.3	798.5	X	X								
MP-109	CME 550X (PD)	175	174.0	570144.6	2448295.8	799.9	X	X								
MP-110	CME 550X (PD)	175	174.0	570190.7	2448403.3	798.7	X	X								
MP-111	CME 550X (PD)	175	173.9	570328.7	2448345.0	801.1	X	X					X	X	X	X
MP-111 PS ⁽⁷⁾	Schram T450 BH	65	59.5	570345.7	2448334.2	801.6							X			
MP-111 UD	D-120 (M&W)	N/A	20.0	570356.0	2448326.4	801.7			X							
MP-112 ⁽³⁾	CME 75 (TSD)	175	177.5	570261.9	2448472.1	799.2		X					X	X	X	
MP-113 ⁽³⁾	CME 75 (TSD)	175	178.0	570184.9	2448486.5	797.5		X					X	X	X	
MP-114	CME 75 (TSD)	175	175.2	570052.5	2448464.6	797.2	X	X								
MP-115	CME 550X (PD)	100	99.1	570094.9	2448562.0	796.9	X	X								
MP-116	CME-750X(P)	100	100.4	570202.4	2448560.2	797.6	X	X								
MP-117	CME 550X (PD)	100	99.7	570296.0	2448520.2	800.0	X	X								
MP-118	CME 550X (PD)	100	99.1	570370.9	2448445.5	799.8	X	X								
MP-119	CME-55LC (CT)	100	100.9	570414.6	2448544.7	802.1	X	X								
MP-120	CME 55 (TSD)	350	350.0	570319.1	2448584.2	800.1	X	X					X	X	X	X
MP-121	CME-550X(P)	100	100.9	570227.9	2448623.1	797.6	X	X								
MP-122	CME-550X(P)	100	99.3	570130.4	2448654.4	796.7	X	X								
MP-122 PS-A ⁽⁷⁾	Schram T450 BH	50	38.7	570140.5	2448638.2	796.7							X			
MP-122 PS-B ⁽⁷⁾	Schram T450 BH	50	51.0	570117.8	2448648.1	796.6							X	X		

Prepared By/Date: SR 3/6/14Checked By/Date: MRG 3/6/14

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Boring Number	Equipment	Depth (ft)		As-Drilled Coordinates/Elevations			Drilling/Sampling		Downhole Testing							
	Drill Rig	Proposed	Actual	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	SPT ⁽¹⁾	Rock Core	UD ⁽²⁾	Rock Pressurimeter	Packer Testing	Temperature Conductivity	PS Velocity	Televiwer	Geophysical Suite	Calliper
MP-122 UD-A	D-120 (M&W)	N/A	14.2	570128.9	2448643.7	796.6			X							
MP-122 UD-B	D-120 (M&W)	N/A	16.6	570155.3	2448670.6	797.0			X							
MP-201	CME-55LC (CT)	420	420.6	571083.7	2447980.8	790.9	X	X					X	X	X	X
MP-202	CME-55LC (CT)	460	461.0	570922.1	2448050.0	811.8	X	X			X	X	X	X	X	X
MP-203	CME-55LC (CT)	225	225.6	571118.2	2448014.3	791.5	X	X								
MP-204	CME 55 (TSD)	175	176.9	570921.7	2448097.0	812.0	X	X								
MP-205	CME 55LC (CT)	225	225.5	571025.3	2448006.8	810.9	X	X		X						
MP-206	CME-55(CT)	175	176.4	570964.0	2448025.6	811.8	X	X								
MP-207	CME-750X(P)	225	225.7	571101.6	2447930.3	779.7	X	X								
MP-208	D-120 (M&W)	175	174.6	570880.5	2448024.1	811.9	X	X								
MP-209	CME-55LC (CT)	225	225.7	570972.7	2447945.1	807.7	X	X								
MP-210	CME 550X (PD)	175	174.4	571019.3	2448051.2	809.9	X	X								
MP-211	CME 55 (TSD)	175	176.0	571162.0	2447986.6	779.8	X	X								
MP-212 ⁽³⁾	CME 75 (TSD)	175	177.8	571093.5	2448107.3	810.7		X					X	X	X	
MP-213 ⁽³⁾	CME 75 (TSD)	175	177.3	571009.3	2448148.5	813.0		X					X	X	X	
MP-214	CME 55	175	175.8	570881.2	2448110.8	812.5	X	X								
MP-215	CME-750X(P)	100	100.6	570924.5	2448210.7	813.4	X	X								
MP-216	CME-55(CT)	100	101.5	571031.0	2448209.1	813.4	X	X								
MP-217	D 120	100	99.3	571125.2	2448169.2	811.6	X	X								
MP-218	D-120 (M&W)	100	99.6	571176.5	2448147.4	810.9	X	X								
MP-219 ⁽⁴⁾	CME-55(CT)	270	96.5	571223.7	2448195.7	812.9	X	X								
MP-219A ⁽⁵⁾	CME-55(CT)	270	269.1	571254.2	2448184.6	808.6	X	X					X	X	X	X
MP-220	CME-55(CT)	100	101.3	571146.9	2448232.2	813.2	X	X								
MP-221	CME-55(CT)	100	101.2	571056.6	2448270.6	813.1	X	X								
MP-222	CME-55LC (CT)	100	101.0	570965.5	2448308.6	812.9	X	X								
MP-401	D-120 (M&W)	420	419.6	571954.2	2447605.1	817.7	X	X		X	X	X	X	X	X	X

Prepared By/Date: SS 3/6/14

Checked By/Date: MP 3/6/14

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OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Boring Number	Equipment	Depth (ft)		As-Drilled Coordinates/Elevations			Drilling/Sampling		Downhole Testing							
	Drill Rig	Proposed	Actual	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	SPT ⁽¹⁾	Rock Core	UD ⁽²⁾	Rock Pressuremeter	Packer Testing	Temperature Conductivity	PS Velocity	Televiwer	Geophysical Suite	Calliper
MP-402	D-120 (M&W)	200	199.3	571941.4	2447479.8	816.5	X	X								
MP-403	D-120 (M&W)	200	199.2	571646.0	2447607.5	836.2	X	X								
MP-404	D-120 (M&W)	200	199.8	571709.4	2447758.1	837.1	X	X								
MP-405 ⁽⁴⁾	D-120 (M&W)	200	20.4	571979.1	2447644.2	816.9	X	X								
MP-405A ⁽⁵⁾	D-120 (M&W)	200	199.4	571975.7	2447647.3	817.1	X	X								
MP-406	CME 55 (TSD)	200	201.3	571775.0	2447965.9	855.1	X	X								
MP-407	CME 55 (TSD)	200	200.2	569888.8	2447094.2	761.5	X	X								
MP-408 ⁽⁶⁾	N/A	N/A	N/A	N/A	N/A	N/A										
MP-409	CME-55(CT)	200	251.5	570584.3	2448158.9	807.0	X	X				X		X	X	X
MP-410	CME-55(CT)	200	201.0	570774.2	2448368.8	809.4	X	X								
MP-411	D-120(mw2)	200	199.6	571500.5	2447500.3	836.8	X	X								
MP-412	CME-750X(P)	320	321.0	571424.0	2447850.6	823.7	X	X					X	X	X	X
MP-413	D-120 (M&W)	200	199.2	571645.7	2446938.7	809.0	X	X								
MP-414	D-120 (M&W)	200	199.4	572070.0	2447564.7	817.5	X	X								
MP-415	CME-55(TSD)	320	320.1	569577.1	2448164.8	784.3	X	X			X	X	X	X	X	X
MP-416	CME-55(CT)	320	321.7	569978.3	2447520.0	809.6	X	X			X	X	X	X	X	X
MP-417	CME-55(TSD)	320	320.1	569915.4	2446630.3	772.7	X	X			X	X	X	X	X	X
MP-418 ⁽⁴⁾	CME-750X(P)	320	87.8	570500.3	2447030.2	811.6	X	X								
MP-418A ⁽⁵⁾	CME-750X(P)	320	320.6	570514.7	2447049.6	811.1	X	X			X	X	X	X	X	X
MP-419	D-120 (M&W)	320	321.1	571269.8	2446700.6	799.6	X	X			X	X	X	X	X	X
MP-420	D-120 (M&W)	320	319.4	572033.0	2446918.3	803.1	X	X			X	X	X	X	X	X
MP-421	CME 55 (TSD)	320	320.3	570532.3	2446439.6	803.6	X	X			X	X	X	X	X	X
MP-422	D-120 (M&W)	320	320.0	570423.7	2448732.0	799.9	X	X			X	X	X	X	X	X
MP-423	D-120 (M&W)	320	319.3	571470.3	2448276.4	799.0	X	X			X	X	X	X	X	X
MP-424 ⁽³⁾	CME-75(TSD)	270	273.2	570450.2	2448361.2	800.6		X								
MP-425 ⁽³⁾	CME 75 (TSD)	270	272.9	570814.6	2448199.5	811.9		X					X	X	X	

Prepared By/Date: SJC 3/6/14

Checked By/Date: MAN 3/6/14

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Boring Number	Equipment	Depth (ft)		As-Drilled Coordinates/Elevations			Drilling/Sampling			Downhole Testing					
		Proposed	Actual	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	SPT ⁽¹⁾	Rock Core	UD ⁽²⁾	Rock	Pressuremeter	Packer Testing	Temperature	PS Velocity	Televiwer
MP-426 ⁽³⁾	CME 75 (TSD)	270	272.3	571764.5	2447811.0	842.2		X						X	X
MP-427 ⁽⁶⁾	N/A	N/A	N/A	N/A	N/A	N/A									
MP-428	CME-750X(P)	250	250.7	570755.5	2448881.6	803.8	X	X					X		X
MP-429	D-120 (M&W)	200	199.2	569975.5	2448591.1	796.0	X	X					X		X
CC-B1	CME-55LC (CT)	350	140.6	569036.1	2449632.4	800.3	X	X							
CC-B2	CME-750X(P)	250	206.0	568891.0	2449759.9	799.8	X	X							

Horizontal/Vertical Datum: Tennessee State Plane Coordinates (East Zone) NAD 1983/NAVD 1988

- ⁽¹⁾ SPT - Standard Penetration Test
- ⁽²⁾ UD - Undisturbed Sampling (Shelby Tube Sampler)
- ⁽³⁾ Angled Core Boring-Inclined approximately 25 degrees from vertical.
- ⁽⁴⁾ Boring terminated early due to mechanical issues. Offset boring drilled.
- ⁽⁵⁾ Offset boring
- ⁽⁶⁾ Boring deleted from program.
- ⁽⁷⁾ Hole drilled with air rotary rig. PVC casing grouted in place for PS Velocity testing.

Prepared By/Date: SJR 1/13/14
 Checked By/Date: BSA 1/13/14

TABLE 2.2
 TESTING SUMMARY - TEST PITS
 CLINCH RIVER SMR PROJECT
 OAK RIDGE, TENNESSEE
 AMEC PROJECT NO. 6468-13-1072

Test Pit Number	Termination Depth (ft)	Coordinates/Elevations of Corners			Sampling
		Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	
TP-1	8	570139.2	2448648.8	796.9	TP-1 S-1 6.0' to 8.0'
		570141.5	2448650.9	796.7	
		570137.3	2448656.5	796.7	
		570134.8	2448654.1	796.8	
TP-2	3	570932.4	2448044.9	811.5	TP - 2 S-1 1.0' to 2.5'
		570927.4	2448048.9	811.7	
		570925.8	2448047.5	811.8	
		570931.1	2448042.7	811.4	
TP-3	12	569034.6	2449640.9	800.4	TP - 3 S-1 3.0' to 6.0'
		569035.7	2449643.4	800.5	
		569024.2	2449644.7	800.8	
		569023.5	2449642.6	800.8	
					TP - 3 S-2 10.0' to 12.0'

Horizontal/Vertical Datum: Tennessee State Plane Coordinates (East Zone) NAD 1983/NAVD 1988

Each sample consisted of 2-3 five gallon buckets and 2 jar samples.

Prepared By/Date: SS 1/12/14
 Checked By/Date: SS 1/12/14

TABLE 2.3
TESTING SUMMARY - SURFACE GEOPHYSICS
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Point ID	Coordinates/Elevations - Start Point			Coordinates/Elevations - End Point		
	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)
Seismic Refraction Line 1 (SRS-1)	570478.0	2448238.1	804.4	571018.7	2448008.3	810.2
Seismic Refraction Line 2 (SRS-2)	570729.1	2448337.1	808.1	571161.5	2448152.9	810.9
Seismic Refraction Line 3 (SRS-3)	569842.1	2448507.9	795.0	570382.6	2448277.8	802.8
Seismic Refraction Line 4 (SRS-4)	569899.9	2448644.7	792.8	570440.7	2448415.1	800.9
Seismic Refraction Line 5 (SRS-5)	570440.0	2447999.1	807.9	570833.9	2448435.0	810.9
Seismic Refraction Line 6 (SRS-6)	570381.1	2447403.0	768.3	570867.0	2447733.2	776.7
Seismic Reflection Line 1 (SRL-1)	571414.0	2448125.9	807.5	568908.0	2449765.8	801.0
Seismic Reflection Line 2 (SRL-2)	570542.5	2446421.7	801.2	569476.7	2448346.3	780.0

For Refraction Lines: start coordinates from as-built survey; end coordinates from seismic refraction report
 For Reflection Lines: start and end coordinates from as-built survey
 Horizontal/Vertical Datum: Tennessee State Plane Coordinates (East Zone) NAD 1983/NAVD 1988

Prepared By/Date: MAN 5/12/14
 Checked By/Date: WSD 5/12/14

TABLE 3.1
 OBSERVATION WELL SUMMARY
 CLINCH RIVER SMR PROJECT
 OAK RIDGE, TENNESSEE
 AMEC PROJECT NO. 6468-13-1072

Well Number	Well Construction					As-Drilled Coordinates		Testing/Sampling		
	Riser / Screen Diameter (in)	Elevation Top of Casing (ft)	Depth of Well Cap (feet below Ground Surface)	Elevation Top of Screen (ft)	Elevation Bottom of Screen (ft)	Northing (US ft)	Easting (US ft)	Slug Testing	Long Term Transducer	Groundwater Sampling
OW-101U	2	803.72	46.5	774.6	754.6	570235.5	2448339.3	X	X	
OW-101L	2	803.48	158.5	662.7	642.7	570262.0	2448370.8	X	X	X
OW-101D	2	803.57	251.0	570.2	550.2	570274.9	2448386.4	X	X	
OW-202U	2	815.38	36.2	796.1	776.1	570946.0	2448081.1		X	
OW-202L	2	815.05	171.0	661.5	641.5	570934.2	2448064.9	X	X	X
OW-202D	2	815.00	296.9	535.7	515.7	570909.7	2448033.7	X	X	
OW-401U	2	820.48	35.7	802.2	782.2	571967.9	2447619.9	X		
OW-401L	2	820.57	155.7	682.0	662.0	571973.8	2447628.0	X		X
OW-401D	2	821.28	247.1	591.6	571.6	571941.2	2447589.7	X		
OW-409U	2	809.70	75.4	752.0	732.0	570557.1	2448130.3	X	X	X
OW-409L	2	809.51	109.6	717.6	697.6	570570.8	2448143.3	X	X	X
OW-415U	2	787.22	48.6	756.0	736.0	569590.2	2448180.2	X		X
OW-415L	2	786.75	175.4	628.8	608.8	569564.4	2448148.1	X		
OW-416U	2	812.82	95.9	734.1	714.1	569990.0	2447535.9	X		
OW-416L	2	812.73	131.1	698.8	678.8	569965.2	2447504.9	X		X
OW-417U	2	775.03	70.5	722.2	702.2	569927.1	2446646.9	X	X	
OW-417L	2	775.71	115.5	677.7	657.7	569903.0	2446614.6	X	X	X
OW-418U	2	812.94	105.5	715.0	705.0	570526.8	2447065.0	X		X
OW-418L	2	814.41	157.3	674.6	654.6	570506.0	2447038.8	X		
OW-419U	2	803.13	77.7	742.8	722.8	571283.4	2446716.1	X		X
OW-419L	2	802.72	125.0	695.3	675.3	571257.7	2446683.4	X		
OW-420U	2	805.70	46.5	776.9	756.9	572009.6	2446886.0			
OW-420L	2	806.15	151.4	672.2	652.2	572021.1	2446902.0	X		X
OW-421U	2	808.27	75.5	750.4	730.4	570557.7	2446471.7	X		
OW-421L	2	807.81	125.3	700.0	680.0	570544.2	2446455.6	X		X
OW-421D	2	805.20	196.2	626.8	606.8	570520.1	2446424.4	X		

Prepared By/Date: NA 5/12/14
 Checked By/Date: WBD 5/12/14

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Well Number	Well Construction					As-Drilled Coordinates		Testing/Sampling		
	Riser / Screen Diameter (in)	Elevation Top of Casing (ft)	Depth of Well Cap (feet below Ground Surface)	Elevation Top of Screen (ft)	Elevation Bottom of Screen (ft)	Northing (US ft)	Easting (US ft)	Slug Testing	Long Term Transducer	Groundwater Sampling
OW-422U*	2	804.9	41.5	781.4	761.4	570450.2	2448763.8			
OW-422L*	2	803.7	178.5	643.7	623.7	570438.1	2448748.1			
OW-422D*	2	805.4	310.5	512.1	492.1	570444.3	2448756.2			
OW-423U	2	800.21	62.7	755.2	735.2	571494.1	2448309.5	X	X	X
OW-423L	2	801.13	160.1	658.4	638.4	571481.6	2448293.2	X	X	
OW-423D	2	802.86	268.6	551.8	531.8	571457.9	2448262.0	X	X	
OW-428U	2	807.78	60.9	763.9	743.9	570781.4	2448710.6	X		
OW-428L	2	807.06	135.7	688.7	668.7	570767.9	2448696.6	X		
OW-428D	2	807.03	210.7	613.5	593.5	570741.9	2448666.5			
OW-429U	2	799.17	57.3	759.4	739.4	569989.1	2448606.2	X		
OW-429L	2	799.49	165.6	651.2	631.2	569965.3	2448576.5			
PT-OW-U1	2	801.52	62.3	756.8	736.8	571512.5	2448235.3			
PT-OW-L1	2	803.13	160.2	660.1	640.1	571493.2	2448235.2			
PT-OW-U2	2	805.31	62.5	760.2	740.2	571489.5	2448182.4			
PT-OW-L2	2	804.32	160.3	661.1	641.1	571478.7	2448192.1			
PT-OW-U3	2	801.65	63.1	756.6	736.6	571418.4	2448310.6			
PT-OW-L3	2	803.12	161.0	659.6	639.6	571420.6	2448290.2			
PT-PW	6	804.03	171.8	762.8	632.8	571432.2	2448229.1			

* Well installation dimensions are approximate due to access limitation for AMEC survey personnel.
 Horizontal/Vertical Datum: Tennessee State Plane Coordinates (East Zone) NAD 1983/NAVD 1988
 =Revised for Rev. 2 per Bechtel comments

Prepared By/Date: AS 4/9/14
 Checked By/Date: ADT 4/9/14

TABLE 3.2
FIELD PARAMETER SUMMARY - GROUNDWATER SAMPLING
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Well Number	Date	Parameter ⁽¹⁾						Purge Water Appearance
		pH (std units)	Specific Conductance (mS/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temperature (°C) ⁽²⁾	Redox potential (± mv)	
OW-101L	11/19/2013	7.17	0.620	3.86	0.05	16.5	-152.5	Clear, faint sulphur odor
OW-202L ⁽³⁾	11/19/2013	9.58	0.978	193.00	5.16	17.0	-116.9	Red, purged dry
OW-401L	11/21/2013	7.78	0.340	14.30	4.21	19.5	9.7	Clear
OW-409U	11/19/2013	7.10	0.672	49.70	45.30	17.2	186.2	Clear
OW-409L	11/18/2013	7.80	0.849	25.20	3.31	16.0	30.5	Clear
OW-415U	11/20/2013	7.24	0.598	122.00	3.61	17.3	75.7	Clear to slightly cloudy
OW-416L	11/21/2013	7.04	0.694	1.07	0.25	17.4	-188.1	Clear, sulphur odor
OW-417L	11/21/2013	7.21	0.609	2.55	1.51	16.3	53.4	Clear
OW-418U	11/19/2013	7.47	0.517	2.84	1.18	18.8	119.8	Clear
OW-419U	11/20/2013	6.97	0.532	1.27	1.15	16.3	63.0	Clear
OW-420L	11/22/2013	7.56	0.472	69.90	9.21	17.7	57.5	Clear
OW-421L	11/22/2013	8.00	0.400	17.50	8.53	17.0	44.3	Clear
OW-423U	11/19/2013	6.99	0.599	5.82	4.70	16.7	90.6	Clear

(1) Parameter values shown are at time of sampling unless otherwise noted
 (2) Values rounded to nearest tenth
 (3) Well purged dry; insufficient water for field parameter testing at time of sampling. Values are last before purged dry.

Prepared By/Date: SDZ 1/13/14
 Checked By/Date: RSA 1/13/14

TABLE 4.1
SAMPLES PREPARED FOR Kd ADSORPTION TESTING
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Soil/Rock Samples			Water Samples	
Boring Number	Sample Type	Sample Depth	Well Number	Sample Type
MP-101	Rock 1mm	147.4-148.6	OW-101L	Water - 2 liters
MP-101	Rock 1cm	147.4-148.6	OW-202L	Water - 4 liters
MP-202	Rock 1mm	156.4-157.8	OW-409U	Water - 2 liters
MP-202	Rock 1cm	156.4-157.8	OW-409L	Water - 2 liters
MP-202	Rock 1mm	231.0-232.3	OW-415U	Water - 2 liters
MP-202	Rock 1cm	231.0-232.3	OW-416L	Water - 4 liters
MP-409	Rock 1mm	193.6-194.1	OW-418U	Water - 2 liters
MP-409	Rock 1cm	193.6-194.1	OW-419U	Water - 2 liters
MP-415	Rock 1mm	27.6-28.4	OW-420L	Water - 2 liters
MP-415	Rock 1cm	27.6-28.4	OW-423U	Water - 2 liters
MP-415	Rock 1mm	32.8-33.6		
MP-415	Rock 1cm	32.8-33.6		
MP-416	Rock 1mm	66.0-71.5		
MP-416	Rock 1cm	66.0-71.5		
MP-416	Rock 1mm	111.5-113.8		
MP-416	Rock 1cm	111.5-113.8		
MP-418A	Rock 1mm	78.3-80.7		
MP-418A	Rock 1cm	78.3-80.7		
MP-418A	Rock 1mm	83.2-84.0		
MP-418A	Rock 1cm	83.2-84.0		
MP-419	Rock 1mm	56.1-57.4		
MP-419	Rock 1cm	56.1-57.4		
MP-420	Rock 1mm	136.4-137.8		
MP-420	Rock 1cm	136.4-137.8		
MP-423	Rock 1mm	69.4-70.9		
MP-423	Rock 1cm	69.4-70.9		
MP409	Soil	48.4-49.6		

Samples shipped to Argonne National Laboratory for Kd testing directed by Bechtel

Prepared By/Date: SJR 1/13/14
Checked By/Date: RSA 1/13/14

TABLE 4.2
ROCK SAMPLES SHIPPED FOR
LETTIS CONSULTANTS INTERNATIONAL
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Boring Number	Sample Depth	Sample Type	Sample ID Number
MP-202	50.1' to 50.7'	Rock Core	L6-01
MP-202	261.0' to 261.6'	Rock Core	L6-07
MP-202	329.9' to 330.8'	Rock Core	L6-08
MP-101	39.1' to 40.0'	Rock Core	L6-10
MP-101	275.6' to 276.6'	Rock Core	L6-14

Samples shipped by AMEC to CTL Group, Skokie, IL under AMEC Chain of Custody

Testing of samples is at the direction and supervision of Lettis Consultants International, Walnut Creek, CA

Prepared By/Date: 1/13/14 STC
 Checked By/Date: RSA 1/13/14

TABLE 4.3
ROCK SAMPLES PREPARED WITH "SPECIAL CARE" PROCEDURES
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Boring Number	Samples Prepared with "Special Care" ⁽¹⁾		Samples Prepared with Standard Method ⁽²⁾	
	Sample Depth	Sample Type	Sample Depth	Sample Type
MP-218	66.7 to 67.7	Rock Core	67.8 to 68.8	Rock Core
MP-218	71.3 to 72.3	Rock Core	72.3 to 73.3	Rock Core
MP-218	79.5 to 80.5	Rock Core	80.5 to 81.5	Rock Core
MP-218	85.3 to 86.3	Rock Core	86.3 to 87.3	Rock Core
MP-218	90.3 to 91.3	Rock Core	91.3 to 92.3	Rock Core
MP-218	60.3 to 61.3	Rock Core	N/A	N/A
MP-218	74.3 to 75.3	Rock Core	N/A	N/A

⁽¹⁾ Prepared in Accordance with ASTM 5079-08 Section 7.5.2.2

⁽²⁾ Corresponding Adjacent Samples Prepared as Described in Report Section 4.2.1

Prepared By/Date: JS 1/13/14
 Checked By/Date: SS 1/13/14

TABLE 5.1
SUMMARY OF LABORATORY ORGANIZATIONS AND TESTING
CLINCH RIVER SMR PROJECT
OAK RIDGE, TENNESSEE
AMEC PROJECT NO. 6468-13-1072

Laboratory Organization	Tests Performed
AMEC - Durham, NC	Soil Testing on Disturbed Samples: Moisture content, particle size distribution, Atterberg limits, Proctor compaction
AMEC - Charlotte, NC	Rock Core Testing: Unit weight, specific gravity, moisture content, unconfined compressive strength (with and without stress strain)
AMEC - Atlanta, GA	Soil Testing on Intact Samples: Moisture content, particle size distribution, Atterberg limits, triaxial shear strength, resonant column/torsional shear
GeoTesting Express - Acton, MA	Rock Core Testing: Unit weight, specific gravity, slake durability, direct shear strength
TestAmerica, Inc. - St. Louis, MO	Geochemical Testing on Water Samples: Cations, total dissolved solids, inorganic ions, alkalinity, ammonia, nitrate/nitrite

TABLE 5.2

**SUMMARY OF SOIL INDEX TEST RESULTS
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072**

Prepared By *3/5/14*
Checked By *3/5/14*

Boring Number	Sample Number	Depth (ft) ⁽¹⁾	Sample Type	Gravel ⁽²⁾ (%)	Sand ⁽²⁾ (%)	Fines ⁽³⁾ (%)	Silt ⁽²⁾ (%)	0.005mm Clay ⁽²⁾ (%)	USCS Symbol	Natural Moisture (%)	LL (%)	PI (%)
MP-111UD	ST-3	9.9-11.9	UD	19.8	12.8	67.4	17.4	50.0	CH	26.2	57	32
MP-111UD	ST-5	17.4-19.4	UD	15.3	17.9	66.8	20.4	46.4	CH	31.0	56	32
MP-114	SS-2	2.5-4.0	SS	8.8	11.0	80.2	10.7	69.5	CH	29.9	66	42
MP-116	SS-9	23.9-25.4	SS	0.0	2.5	97.5	31.7	65.8	CH	26.5	62	40
MP-117	SS-4	8.8-10.0	SS	0.8	11.1	88.1	24.0	64.1	CH	32.0	72	46
MP-117	SS-7	19.5-21.0	SS	0.0	13.2	86.8	27.3	59.5	CH	27.1	68	46
MP-122	SS-5	11.1-12.6	SS	11.4	8.4	80.2	14.4	65.8	ND	ND	ND	ND
MP-122UDA	ST-2	7.1-9.3	UD	16.6	8.6	74.8	20.2	54.6	CH	27.8	63	33
MP-122UDA	ST-3	9.7-11.7	UD	15.5	7.4	77.1	16.0	61.1	CH	28.1	69	40
MP-122UDA	ST-4	12.2-14.2	UD	4.9	9.4	85.7	15.4	70.3	CH	32.7	70	42
MP-122UDB	ST-1	3.3-5.3	UD	2.7	4.3	93.0	20.2	72.8	CH	29.1	64	36
MP-122UDB	ST-3	9.2-11.2	UD							39.0	69	41
MP-122UDB	ST-5	14.6-16.6	UD	17.4	7.3	75.3	19.6	55.7	CH	27.7	59	32
MP-203	SS-3	5.1-6.6	SS	24.4	10.6	65.0	15.8	49.2	CH	34.3	56	35
MP-207	SS-4	8.6-10.1	SS	0.1	15.3	84.6	50.3	34.3	CL	10.9	31	13
MP-210	SS-4	8.4-9.9	SS	6.9	17.9	75.2	16.6	58.6	CH	20.3	51	31
MP-217	SS-12	36-37.5	SS	42.4	28.9	28.7	13.7	15.0	ND	ND	ND	ND
MP-402	SS-4	7.4-8.9	SS	13.1	16.3	70.6	8.3	62.3	CH	31.9	74	48
MP-409	SS-2	3.2-4.7	SS	11.6	16.2	72.2	23.4	48.8	CH	24.1	51	30
MP-409	SS-9	23.4-24.9	SS	46.2	25.0	28.8	12.9	15.9	ND	ND	ND	ND
MP-409	SS-12	38.4-39.9	SS	0.0	0.6	99.4	17.5	81.9	CH	45.7	62	42
MP-412	SS-2	3.6-5.1	SS	23.7	3.1	73.2	7.2	66.0	CH	58.1	109	78
MP-418A	SS-16	60.6-61.5	SS	4.0	6.5	89.5	23.8	65.7	ND	ND	ND	ND
MP-419	SS-13	44.6-46.6	SS	4.5	5.8	89.7	14.5	75.2	ND	ND	ND	ND

(1) Depth typically reported as length of drive or tube push

(2) Due to computer roundoff, particle size fractions may total 100 ± 1

(3) Fines include silt plus clay

(4) Shaded cells indicate that no test for that parameter assigned or test results not yet available
ND = Not determined; INS = Insufficient material for testing.

TABLE 5.2

**SUMMARY OF SOIL INDEX TEST RESULTS
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072**

Prepared By *DA 3/5/14*
Checked By *1/18/14 3/5/14*

Boring Number	Sample Number	Depth (ft) ⁽¹⁾	Sample Type	Gravel ⁽²⁾ (%)	Sand ⁽²⁾ (%)	Fines ⁽³⁾ (%)	Silt ⁽²⁾ (%)	0.005mm Clay ⁽²⁾ (%)	USCS Symbol	Natural Moisture (%)	LL	PI
MP-421	SS-7	15.0-16.5	SS	1.0	8.8	90.2	8.8	81.4	CH	37.3	75	48
MP-421	SS-11	34.3-35.8	SS	0.0	1.1	98.9	8.8	90.1	CH	39.7	75	54
MP-421	SS-12	39.3-40.8	SS	0.0	2.9	97.1	6.6	90.5	ND	ND	ND	ND
MP-423	SS-6	12.4-13.9	SS	0.4	7.9	91.7	30.2	61.5	CH	21.9	67	42
MP-423	SS-9	25.1-26.6	SS	0.0	18.8	81.2	45.9	35.3	CL	19.0	45	24
MP-423	SS-10	30.1-31.6	SS	0.1	11.5	88.4	59.0	29.4	ND	ND	ND	ND
MP-424	SS-8	21.5-23.0	SS	7.8	13.9	78.3	27.9	50.4	ND	ND	ND	ND
MP-424	SS-10	31.5-33.0	SS	14.8	15.8	69.4	23.9	45.5	ND	ND	ND	ND
MP-424	NA	138.4-139.6	Core	0.0	1.5	98.5	20.3	78.2	ND	ND	ND	ND
MP-424	NA	154.1-155.0	Core	6.1	4.9	89.0	13.2	75.8	ND	ND	ND	ND
CC-B1	SS-3	5.9-7.4	SS	41.8	39.6	18.6	ND	ND	ND	20.1	INS	INS
CC-B1	SS-5	11.3-12.8	SS	0.0	19.9	80.1	ND	ND	ML	41.5	40	11
CC-B1	SS-8	24.1-25.6	SS	0.0	17.2	82.8	60.9	21.9	ML	28.5	34	9
CC-B2	SS-4	8.7-10.2	SS	0.0	31.3	68.7	37.1	31.6	CL	24.5	36	16
CC-B2	SS-7	16.7-18.2	SS	0.0	32.5	67.5	39.7	27.8	ML	41.8	44	17
TP-1	S-1	6.0-8.0	Bulk	16.1	6.2	77.7	14.2	63.5	CH	32.2	61	37
TP-2	S-1	1-2.5	Bulk	21.1	19.8	59.1	26.2	32.9	CL	16.5	46	27
TP-3	S-1	3.0-6.0	Bulk	25.0	34.0	41.0	ND	ND	SC	20.9	58	31

(1) Depth typically reported as length of drive or tube push

(2) Due to computer roundoff, particle size fractions may total 100 ± 1

(3) Fines include silt plus clay

(4) Shaded cells indicate that no test for that parameter assigned or test results not yet available

ND = Not determined; INS = Insufficient material for testing.

Prepared By: *JA 3/5/14*
 Checked By: *BSA 3/5/14*

TABLE 5.3
SUMMARY OF UNCONSOLIDATED UNDRAINED TEST RESULTS - SOIL
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Source of Sample	Sample No.	Sample Depth (ft) ⁽¹⁾	Sample Type	Atterberg Limits ⁽²⁾		USCS Symbol ⁽²⁾	Specific Gravity ⁽²⁾	Dry Unit Weight (pcf)	Moisture Content (%)	Test Data		
				LL	PI					σ_c ⁽³⁾ (psi)	ϵ_f ⁽⁴⁾ (%)	Strength ⁽⁵⁾ (psi)
MP-111UD	ST-4	15.5 - 17.5	UD	NA ⁽⁶⁾	NA	NA	2.75	100.7	26.8	14	15.0	3.988
MP-122UDA	ST-4	12.2-14.2	UD	70	42	CH	2.75	85.5	36.1	14	6.7	10.85
MP-122UDB	ST-1	3.3 - 5.3	UD	64	36	CH	2.75	91.9	29.9	14	15.0	14.25
MP-122UDB	ST-3	9.2-11.2	UD	69	41	CH	2.75	87.0	34.0	14	9.6	7.354

(1) Sample depth shown reflects the depth of start of push plus the length of the recovered sample

(2) Atterberg Limits, USCS Symbol, and Specific Gravity are also reported in Table 5.2.; specific gravity value estimated.

(3) Confining pressure as assigned by Bechtel

(4) Strain at failure at strain rate of 1% per minute or at maximum 15% strain.

(5) Strength = Undrained Shear Strength

(6) NA = Not assigned

(7) Sample MP-122UDB ST-5, assigned for UU testing and CU testing, had insufficient material for both tests; Bechtel deleted UU testing.

Prepared By: *DR 3/2/14*
 Checked By: *ASA 3/5/14*

TABLE 5.4
SUMMARY OF CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS - SOIL
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Source of Sample	Sample No. ⁽⁴⁾	Sample Depth (ft) ⁽¹⁾	Sample Type	Atterberg Limits ^{(2), (3)}		USCS Symbol ⁽²⁾	Specific Gravity ⁽²⁾	Dry Unit Weight ⁽³⁾ (pcf)	Moisture Content ⁽³⁾ (%)	Triaxial Test Data (CU)			
				LL	PI					c (psi)	Φ (degree)	c' (psi)	Φ' (degree)
MP-111UD	ST-3	9.9-11.9	Tube	57	32	CH	2.75	93.3	30.0	2.7	12.1	1.3	21.7
								94.8	28.9				
MP-122UDA	ST-3	9.7-11.7	Tube	69	40	CH	2.75	91.0	29.7	2.2	16.4	0.9	26.8
	ST-4	12.2-14.2						93.0	28.6				
	ST-3	9.7-11.7						94.4	28.3				
MP-122UDB	ST-5	14.6-16.6	Tube	59	32	CH	2.75	86.1	35.0	3	13.3	2	20.1
	ST-3	9.2-11.2						88.7	33.2				
	ST-5	14.6-16.6						97.1	27.5				

(1) Sample depth shown reflects the depth of start of push plus the length of the recovered sample

(2) Atterberg Limits, USCS Symbol, and Specific Gravity are also reported in Table 5.2.

(3) Values shown are for each point prior to beginning test procedure.

(4) Where more than one tube is listed, samples were taken from similar tubes to provide sufficient sample for testing with Bechtel approval.

TABLE 5.5

SUMMARY OF MOISTURE-DENSITY TEST RESULTS
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Source of Sample	Sample No.	Atterberg Limits ⁽³⁾		Natural Moisture ^(1,3) (%)	Percent Passing No. 200 Sieve (%)	USCS Classification	Moisture-Density Relationship Data ⁽²⁾	
		Liquid Limit (LL)	Plasticity Index (PI)				Maximum Dry Density (pcf)	Optimum Moisture (%)
Test Pit TP-1, 6 - 8 ft	S-1	61	37	32.2	77.7	CH	109.0 ^A	16.7 ^A
Test Pit TP-2, 1 - 2.5 ft	S-1	46	27	16.5	59.1	CL	120.6 ^B	10.9 ^B
							122.7 ^C	10.3 ^C
Test Pit TP-3, 3 - 6 ft	S-1	58	31	20.9	41.0	SC	105.4 ^A	17.4 ^A

NOTES:

- (1) Natural moisture content tests performed on jar samples obtained at same time as bulk sample.
- (2) Proctor compaction tests performed as indicated by letter superscript:
 - A. ASTM D1557-12 Modified Method C
 - B. ASTM D 1557-12 Modified Method C with no oversize correction applied.
 - C. ASTM D 1557-12 Modified Method C with oversize correction [ASTM D 4718-87 (2007)] applied.
- (3) Atterberg limits and moisture content are also reported on Table 5.2.

Prepared By: JK 3/6/14Checked By: PSA 3/6/14

Prepared By: JPJ 4/13/14
 Checked By: AKSA 4/13/14

TABLE 5.6
SUMMARY OF DIRECT SHEAR TEST RESULTS - ROCK
CLINCH RIVER SMR PROJECT
AMEC PROJECT No. 6468131072

Boring No.	Sample ID	Sample Depth ⁽¹⁾ (ft)	Test Type ⁽²⁾	Rock Information ⁽³⁾		Test Normal Stress ⁽⁶⁾ (psi)	Shear Stress Parameters ⁽⁷⁾		Strength Parameters (Sliding Test)			
				Type ⁽⁴⁾	Formation ⁽⁵⁾		Peak (psi)	Post-Peak (psi)	Peak		Post-Peak	
									c (psi)	φ (degree)	c (psi)	φ (degree)
MP-101	L5-1	112.2-112.7	Sliding	Siltstone	Benbolt (UE)	100, 150, 200	118, 97, 123	79, 86, 104	18.0	27.7	32.0	19.8
MP-101	L5-4	118.30-118.56	Intact	Limestone (W/M/G)	Benbolt (UE)	115	150	81	NA	NA	NA	NA
MP-101	L5-5	121.26-121.51	Intact	Limestone (W/M/G)	Benbolt (UE)	115	152	80	NA	NA	NA	NA
MP-101	L5-2	135.20-135.47	Sliding	Limestone (G)	Rockdell (UD)	110, 150 200,	104, 126, 170	97, 122, 140	19.3	36.6	47.1	25.3
MP-201	L5-11	28.40-28.65	Sliding	Siltstone	Fleanor (UB)	100, 150, 200	90, 100, 125	61, 92, 121	52.4	19.3	1.3	31.0
MP-201	L5-12	53.62-53.85	Intact	Siltstone	Fleanor (UB)	115	239	126	NA	NA	NA	NA
MP-201	L5-13	73.35-73.65	Intact	Siltstone	Fleanor (UB)	115	105	79	NA	NA	NA	NA
MP-201	L5-14	114.15-114.37	Sliding	Limestone (M)	Eidson(UA)	100, 150, 200	75, 102, 131	68, 92, 121	19.3	29.1	14.2	27.9
MP-201	L5-15	148.80-149.05	Intact	Limestone (M)	Eidson(UA)	120	228	96	NA	NA	NA	NA

(1) Sample depth is based on lab measurements made along edge of sample due to irregular shapes, and may not exactly match field designation which is measured on centerline of core.

(2) Tested in accordance with ASTM D 5607-08 with approved deviations as noted on test reports. Tested at as-received moisture condition and not soaked.

(3) Information from boring logs.

(4) Rock types are: Wackestone/Micritic/Grainstone (W/M/G); Grainstone (G); Micrite (M); Siltstone

(5) Formation, Unit designation (UA, etc.). Fleonor and Eidson are Members of the Lincolnshire Formation.

(6) Intact test done at one normal pressure; Sliding test done at three normal pressures.

(7) Values for sliding test presented in same order as normal pressures.

(1) Sample depth is based on lab measurements made along edge of sample due to irregular shapes, and may not exactly match field designation which is measured on centerline of core.

(2) Tested in accordance with ASTM D 5607-08 with approved deviations as noted on test reports. Tested at as-received moisture condition and not soaked.

(3) Information from boring logs.

(4) Rock types are: Wackestone/Micrite/Grainstone (WMG); Grainstone (G); Micrite (M); Siltstone

(5) Formation, Unit designation (UA, etc.). Fleonor and Eidson are Members of the Lincolnshire Formation.

(6) Intact test done at one normal pressure; Sliding test done at three normal pressures.

(7) Values for sliding test presented in same order as normal pressures.

TABLE 5.7
SUMMARY OF SLAKE DURABILITY TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation	As-received Moisture Content, %	Slake Durability Index, % ⁽²⁾	Description of Fragments ⁽³⁾
MP-103	L3-2	130.5-131.5	M/W	Rockdell, Unit D	0.1	99.2	Type II
MP-105	L3-6	127.0-127.7	CS	Benbolt, Unit E	1.0	97.2	Type II
MP-105	L3-8	161.7-162.6	M/W	Rockdell, Unit D	0.5	97.9	Type II
MP-106	L3-12	127.7-128.6	W/M	Benbolt, Unit E	0.1	99.1	Type I/Type II
MP-107	L3-14	139.6-140.8	MWP	Rockdell, Unit D	0.1	99.4	Type I/Type II
MP-115	L3-23	60.7-62.0	Micrite	Benbolt, Unit E	0.2	99.2	Type I/Type II
MP-118	L3-28	62.0-63.3	CS	Benbolt, Unit E	1.2	92.8	Type II
MP-207	L3-41	157.1-157.6	CS	Upper Blackford	1.8	94.4	Type II
MP-214	L3-42	80.5-81.3	CS	Lincolnshire, Fleanor Unit B	0.6	96.9	Type II
MP-217	L3-44	74.2-75.3	CS	Lincolnshire, Fleanor Unit B	0.7	98.4	Type II

(1) Rock Types: Micrite; Micrite/Wackestone (M/W); Micrite/Wackestone/Packstone (M/W/P); Wackestone/Micrite (W/M); Calcareous Siltstone (CS)

(2) Test Method ASTM D4644-08 with deviations approved by Bechtel

(3) Following terminology of ASTM D 4644-08

Prepared By 902745/14
Checked By USA 3/4/14

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.
RALEIGH, NC

TABLE 5.8

SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Prepared By Dr. G. A.
 Checked By CDT G-17-14
 By SJC on 6-17-14

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%) (4)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (5)	Type of Break	Comment
MP-101	L1-1	L1-1 BG	48.6-50.1	MW	Benbolt UE	167	(8)	2.67	2,300	COL	
MP-101	L1-2	L1-2 G	66.1-67.3	MW	Benbolt UE				5,660	COL	
MP-101	L1-4	L1-4 G	127.2-128.1	W/M	Benbolt UE				2,380	S	
MP-101	L1-5	L1-5 BCG	148.7-149.7	Micrite	Rockdell UD	168		2.69	7,000	COL	
MP-101	L1-6	L1-6 G	186.6-187.5	MW	Rockdell UD				3,830	S	
MP-101	L1-8	L1-8 BG	251.8-253.6	Micrite	Rockdell UD	NA			12,680	COL	
MP-101	L1-9	L1-9 G	272.9-273.6	Micrite	Rockdell UD				15,990	COL	
MP-101	L1-11	L1-11 BG	351.9-353.1	MW	Rockdell UC	168		2.70	11,440	COL	
MP-101	L1-12	L1-12 G	396.9-397.9	MW	Rockdell UD				5,120	COL	slight S
MP-101	L1-14	L1-14 BG	498.2-499.0	Siltstone	Fleanor UB	169		2.71	5,200	COL	
MP-106	L3-11	L3-11-BG	96.3-96.8	W/M	Rockdell UC	167		2.69	note (6)		
MP-106	L3-13	L3-13-BCG	163.4-164.0	Siltstone	Fleanor UB	167		2.69	note (6)		
MP-107	L3-15	L3-15-BG	159.6-160.7	MW	Rockdell UD	168		2.69	8,100	COL	
MP-109	L3-16	L3-16-BG	88.0-88.8	MW	Benbolt UE	168		2.70	6,380	S w/COL	
MP-109	L3-18	L3-18-BG	151.8-152.8	MW	Benbolt UE	169		2.71	7,240	S w/COL	
MP-110	L2-2	L2-2 BCG	76.7-77.5	MW	Benbolt UE	169		2.71	4,880	S/COL	COL between planes
MP-110	L2-3	L2-3 BG	119.0-120.9	Siltstone	Benbolt UE	169		2.72	6,300	COL	S on planes
MP-113	L2-5	L2-5 BCG	51.1-51.7	Siltstone	Benbolt UE	168		2.70	9,660	S	
MP-121	L2-10	L2-10 BG	80.6-81.8	MW	Benbolt UE	167		2.68	2,420	S	
MP-122	L3-30	L3-30-BG	63.1-64.3	Micrite	Benbolt UE	170		2.72	6,880	COL	w/slight S
MP-201	L2-15	L2-15 BG	288.8-269.5	Siltstone	Upper Blackford UA	166		2.66	4,770	C	
MP-201	L2-17	L2-17 BCG	366.4-367.5	Dolomite	Newala	176		2.82	16,290	C	Gypsum capped
MP-202	L1-16	L1-16 BG	31.6-32.6	Siltstone	Fleanor UB	168		2.70	7,310	COL	

Tests performed using ASTM D7012-10, Method C (with Deviations per SDDR-33)

NA for L1-8 indicates that sample was not weighed prior to test therefore the unit weight test not performed.

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (M/M); Micrite/Wackestone (M/W); Micrite/Wackestone/Packstone (M/W/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(2) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(3) Types of Breaks: COL=Columnar, C=Cone, S=Shear, C/S=Cone/Shear

(4) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of rock cores. See lab sheets in Appendix G.6 for actual dimensions.

(5) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(6) UC values rounded to nearest 10.

(7) Shaded cells indicate that test not assigned.

Prepared By 9/25/14
 Checked By CDT 6-17-14

TABLE 5.8
SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (5) (7)	Type of Break	Comment
MP-202	L1-18	L1-18 G	67.0-67.9	Siltstone	Fleanor UB				2,870	S	along planes
MP-202	L1-20	L1-20 BG	91.7-93.3	Siltstone	Fleanor UB	169		2.71	9,780	COL	
MP-202	L1-21	L1-21 BCG	111.7-112.9	Siltstone	Fleanor UB	167		2.68	4,180	COL	slight shear
MP-202	L1-25	L1-25 BCG	217.7-218.7	Micrite	Eidson UA	168		2.70	3,920	COL	
MP-202	L1-26	L1-26 BG	238.1-239.5	Micrite	Eidson UA	167		2.68	5,320	COL	some shear on planes
MP-202	L1-27	L1-27 G	258.6-259.6	Micrite	Eidson UA				18,310	C/COL	Gypsum capped
MP-202	L1-29	L1-29 BG	288.9-289.8	Micrite	Eidson UA	168		2.70	4,400	COL/S	
MP-202	L1-30	L1-30 G	299.0-299.7	Micrite	Eidson UA				7,390	COL	
MP-202	L1-32	L1-32 BG	348.4-349.8	Siltstone	Upper Blackford UA	168		2.70	10,250	COL	
MP-202	L1-33	L1-33 G	363.0-364.3	Siltstone	Upper Blackford UA				1,340	S	
MP-202	L1-34	L1-34 BG	411.0-412.3	Siltstone	Upper Blackford UA	169		2.71	4,690	COL	
MP-205	L3-35	L3-35-BG	144.7-145.5	Micrite	Eidson UA	169		2.71	7,370	S w/COL	
MP-206	L2-19	L2-19 BCG	76.8-78.0	Siltstone	Fleanor UB	168		2.69	7,950	S	
MP-206	L2-22	L2-22 BG	153.3-154.2	Siltstone	Fleanor UB	169		2.71	4,630	S	
MP-207	L3-38	L3-38-BG	96.8-97.8	M/W	Eidson UA	167		2.69	9820	COL	w/shear crack
MP-209	L2-24	L2-24 BG	81.8-82.3	Siltstone	Fleanor UB	168		2.70	9,910	S	
MP-209	L2-25	L2-25 BCG	106.9-107.4	Siltstone	Fleanor UB	168		2.70	5,150	S	
MP-209	L2-27	L2-27 BCG	181.3-182.2	M/W	Eidson UA	168		2.70	8,150	S	
MP-209	L2-28	L2-28 BG	206.0-206.5	Micrite	Eidson UA	167		2.69	11,810	COL	
MP-209	L2-29	L2-29 BCG	223.7-224.7	Micrite	Eidson UA	167		2.69	5,170	C/S	
MP-215	L2-30	L2-30 BG	17.1-18.0	W/M	Rockdell UC	167		2.68	5,120	S	
MP-215	L2-33	L2-33 BG	93.3-94.1	Siltstone	Fleanor UB	168		2.70	6,960	S	

Tests performed using ASTM D7012-10, Method C (with Deviations per SDDR.33)

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (M/W); Micrite/Wackestone/Packstone (M/W/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Types of Breaks: COL=Columnar, C=Cone, S=Shear, C/S=Cone/Shear

(5) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of rock cores. See lab sheets in Appendix G.6 for actual dimensions.

(6) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(7) UC values rounded to nearest 10.

(8) Shaded cells indicate that test not assigned.

Prepared By 6/21/0
 Checked By CDT 6-17-14

TABLE 5.8
SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (5)	Type of Break	Comment
MP-218	CL9-1	CL9-1-ABG	66.7-67.7	Siltstone	Fleanor UB	169	0.6	2.71	4,090	COL	Special Care Handling
MP-218	CL9-6	CL9-6-ABG	67.8-68.8	Siltstone	Fleanor UB	167	1.0	2.68	3,170	S	
MP-218	CL9-2	CL9-2-ABG	71.3-72.3	Siltstone	Fleanor UB	166	1.6	2.67	2,930	COL	Special Care Handling
MP-218	CL9-7	CL9-7-ABG	72.3-73.3	Siltstone	Fleanor UB	169	1.1	2.71	4,480	S	slight columnar
MP-218	CL9-3	CL9-3-ABG	79.5-80.5	Siltstone	Fleanor UB	168	1.7	2.70	1,130	S	Special Care Handling
MP-218	CL9-8	CL9-8-ABG	80.5-81.5	Siltstone	Fleanor UB	168	1.4	2.69	2,050	S	
MP-218	CL9-4	CL9-4-ABG	85.3-86.3	Siltstone	Fleanor UB	169	1.1	2.72	3,900	COL	Special Care Handling
MP-218	CL9-9	CL9-9-ABG	86.3-87.3	Siltstone	Fleanor UB	169	1.0	2.71	5,830	COL	
MP-218	CL9-5	CL9-5-ABG	90.3-91.3	Siltstone	Fleanor UB	168	1.4	2.69	3,070	COL	Special Care Handling - slight shear
MP-218	CL9-10	CL9-10-ABG	91.3-92.3	Siltstone	Fleanor UB	167	1.4	2.69	3,580	COL	
MP-219A	L3-51	L3-51-BG	134.1-134.7	Micrite	Eidson UA	168	(6)	2.69	3,500	S	
MP-219A	L3-54	L3-54-BG	219.1-219.6	Siltstone	Upper Blackford UA	166		2.66	note (5)		
MP-220	L2-36	L2-36 BG	81.3-82.7	Siltstone	Fleanor UB	166		2.67	5,430	COL/S	
MP-401	L3-59	L3-59-BG	148.4-149.8	Dolomite	Newala	175		2.82	30,780	Complete break	
MP-415	L3-61	L3-61-BG	23.3-24.1	Siltstone	Bowen UF	160		2.57	4,080	S	
MP-415	L3-65	L3-65-BG	113.5-114.5	Micrite	Berbolt UE	167		2.68	3,490	COL/S	
MP-416	L3-70	L3-70-BG	215.4-216.4	W/M	Rockdell UC	169		2.71	5,460	S	

Tests performed using ASTM D7012-10, Method C (with Deviations per SDDR-33)

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (M/M); Micrite/Wackestone (M/W); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Types of Breaks: COL=Columnar; C=Cone; S=Shear; C/S=Cone/Shear

(5) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of rock cores. See lab sheets in Appendix G.6 for actual dimensions.

(6) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(7) UC values rounded to nearest 10.

(8) Shaded cells indicate that test not assigned.

Prepared By *W 6/17/14*
 Checked By *CDT 6-17-14*

TABLE 5.8
SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (5)	Type of Break	Comment
MP-419	L2-37	L2-37 BCG	115.6-116.4	Dolomite	Newala	176	11.8	2.82	16,660	COL	
MP-419	L2-39	L2-39 BG	170.1-170.6	Dolomite	Newala	177		2.84	18,670	No pieces	Shattered
MP-423	L7-29	L7-29-BG	65.2-66.1	Micrite	Eidson UA	164		2.64	7570	S	along planes
MP-423	L7-30	L7-30-BG	72.6-73.5	Micrite	Eidson UA	165		2.65	8,000	S	
MP-423	L7-33	L7-33-BCG	121.5-122.6	Micrite	Eidson UA	167		2.69	9,870	S	
MP-423	L7-34	L7-34-BG	134.2-135.2	Grainstone/M	Blackford UA	168		2.69	4,460	S	along planes
MP-423	L7-35	L7-35-BG	182.6-183.1	Siltstone	Blackford UA	166		2.67	note (5)		
MP-423	L7-36	L7-36-BG	213.6-214.1	W	Blackford UA	165		2.65	note (5)		
MP-423	L7-37	L7-37-BG	299.3-300.7	Dolomite	Newala	176		2.83	22,900	complete break	
CC B2	L7-38	L7-38-BG	121.3-122.0	Siltstone	Rome	164		2.63	note (5)		
CC B2	L7-39	L7-39-BG	161.6-162.4	Siltstone	Rome	163		2.62	790	S	along planes

Tests performed using ASTM D7012-10, Method C (with Deviations per SDDR.33)

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (M/M); Micrite/Wackestone (M/W); Wackestone/Packstone (M/W/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleanor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Types of Breaks: COL=Columnar, C=Cone, S=Shear, C/S=Cone/Shear

(5) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of rock cores. See lab sheets in Appendix G.6 for actual dimensions.

(6) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(7) UC values rounded to nearest 10.

(8) Shaded cells indicate that test not assigned.

Prepared By *JSR 2/16/14*
 Checked By *CDT 2/16/14*

TABLE 5.9
 SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS WITH STRESS STRAIN - ROCK CORE
 CLINCH RIVER SMR PROJECT
 AMEC PROJECT No. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (4)	Poisson's Ratio	Type of Break (5)	Young's Modulus (ksi)	Comment
MP-101	L1-3	L1-3-BCH	92.7-93.5	Siltstone	Benbolt UE	167	(7)	2.69	Note (6)	Note (6)	Note (6)	Note (6)	
MP-101	L1-7	L1-7-BCH	216.4-217.6	Micrite	Rockdell UD	167		2.68	14,880	0.13	COL	13,660	
MP-101	L1-10	L1-10-BCH	302.3-303.3	Micrite	Rockdell UD	166		2.67	8,660	0.25	COL	8,410	
MP-101	L1-13	L1-13-BCH	451.4-452.4	Siltstone	Fleanor UB	170		2.73	6,100	0.30	COL	4,820	
MP-103	L3-3	L3-3-BH	163.5-164.3	M/W	Rockdell UD	168		2.70	4,950	0.11	S	1,920	S on planes
MP-105	L3-5	L3-5-BH	82.7-83.3	W/M	Benbolt UE	168		2.70	6,700	0.32	COL	10,510	
MP-105	L3-7	L3-7-BH	138.1-138.9	W/G/M	Benbolt UE	169		2.71	6,800	0.19	S	8,230	
MP-105	L3-9	L3-9-BH	186.6-187.2	M/W	Rockdell UD	166		2.67	13,100	0.25	S	9,880	
MP-111	L3-19	L3-19-BH	118.9-119.5	Micrite	Rockdell UD	167		2.69	5,690	0.19	S	6,240	
MP-111	L3-21	L3-21-BH	159.2-160.2	Micrite	Rockdell UD	167		2.68	Note (6)	Note (6)	Note (6)	Note (5)	
MP-115	L3-24	L3-24-BH	69.4-70.6	Micrite	Benbolt UE	168		2.70	4,210	0.18	S	5,270	
MP-118	L3-29	L3-29-BH	97.6-99.0	W/M	Benbolt UE	168		2.70	4,870	0.20	S	2,490	
MP-122	L3-31	L3-31-BCH	79.3-80.6	Micrite	Benbolt UE	169		2.71	12,430	0.22	COL	5,550	
MP-201	L2-13	L2-13-BCH	130.6-131.8	W/P	Eldson UA	168		2.69	5,000	0.29	S	11,080	
MP-201	L2-14	L2-14-BCH	186.2-186.6	W/P	Upper Blackford UA	168		2.70	9,900	0.22	S	3,700	
MP-201	L2-16	L2-16-BCH	338.3-339.7	Dolomite	Newala	173		2.78	21,910	0.30	COL	12,840	
MP-202	L1-17	L1-17-BCH	58.0-58.6	Siltstone	Fleanor UB	168		2.70	5,880	0.18	S	2,560	
MP-202	L1-24	L1-24-BCH	161.7-163.3	Siltstone	Fleanor UB	168		2.69	3,130	0.03	S	930	
MP-202	L1-31	L1-31-BCH	327.7-328.8	Siltstone	Upper Blackford UA	166		2.67	4,040	0.10	C/S	5,700	
MP-202	L1-35	L1-35-BCH	436.0-436.9	Siltstone	Upper Blackford UA	166		2.67	Note (6)	Note (6)	Note (6)	Note (5)	
MP-203	L7-1	L7-1-BH	70.6-71.1	Siltstone	Fleanor UB	176		2.83	6,350	0.14	COL	2,360	
MP-203	L7-2	L7-2-BCH	98.9-99.9	W/M	Eldson UA	169		2.71	9,320	0.19	COL	5,010	
MP-203	L7-3	L7-3-BH	121.7-122.7	W/M	Eldson UA	167		2.68	9,190	0.14	complete Break	2,620	
MP-205	L3-32	L3-32-BH	72.7-73.5	Siltstone	Fleanor UB	167		2.69	6,890	0.09	COL	2,370	complete
MP-205	L7-4	L7-4-BH	76.0-77.0	W/M	Fleanor UB	169		2.71	Note (6)	Note (6)	Note (6)	Note (5)	
MP-205	L3-36	L3-36-BCH	162.6-163.4	M/W	Eldson UA	168		2.70	7,130	0.20	COL	4,650	Slight S
MP-205	L3-37	L3-37-BH	208.5-209.0	Micrite	Eldson UA	168		2.70	15,310	0.28	S	9,530	w/columnar
MP-207	L7-6	L7-6-BH	70.7-71.7	M/W	Eldson UA	167		2.69	5,970	0.18	COL	4,040	Slight S
MP-207	L7-8	L7-8-BCH	122.2-122.9	M/W	Eldson UA	169		2.71	9,020	Note (8)	COL	10,470	

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MW/P); Wackestone/Micrite (W/M); Siltstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleanor and Eldson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of the rock cores. See dimension sheets in Appendix G.6 for details.

(5) Types of Breaks: COL=Columnar, C=Core, S=Shear, C/S=Core/Shear

(6) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(7) Shaded cells indicate that test not assigned.

(8) A strain gage problem prevented reliable lateral strain measurements.

Prepared By 2024/10/12
 Checked By 2024/10/14

TABLE 5.9
 SUMMARY OF UNCONFINED COMPRESSION TEST RESULTS WITH STRESS STRAIN - ROCK CORE
 CLINCH RIVER SMR PROJECT
 AMEC PROJECT No. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Unconfined Compressive Strength (psi) (4)	Poisson's Ratio	Type of Break (5)	Young's Modulus (ksi)	Comment
MP-210	L7-9	L7-9-BH	114.0-114.6	Siltstone	Fleanor UB	167	(7)	2.68	Note (6)	Note (6)	Note (6)	Note (5)	
MP-218	L3-47	L3-47-BH	74.5-75.3	Siltstone	Fleanor UB	167		2.68	Note (6)	Note (6)	Note (6)	Note (5)	
MP-219A	L3-50	L3-50-BH	103.3-104.0	Siltstone	Fleanor UB	167		2.69	Note (6)	Note (6)	Note (6)	Note (5)	
MP-219A	L3-53	L3-53-BH	199.1-200.1	Micrite	Eldson UA	167		2.68	6,240	0.20	COL	4,980	
MP-220	L2-35	L2-35-BH	74.0-74.6	Siltstone	Fleanor UB	169		2.71	6,640	0.21	S	2,290	
MP-222	L3-56	L3-56-BH	66.0-67.3	Siltstone	Fleanor UB	168		2.70	7,910	0.25	S	1,730	
MP-402	L7-11	L7-11-BH	52.1-53.2	Dolomite	Newala	175		2.81	32,540	0.27	complete Break	11,540	
MP-402	L7-12	L7-12-H	109.3-110.5	Micrite	Newala	167			22,100	0.18	S	8,260	
MP-402	L7-13	L7-13-BCH	144.3-145.1	Dolomite	Newala	175		2.81	19,820	0.22	COL	9,560	
MP-403	L7-14	L7-14-H	23.2-24.1	Micrite	Lower Blackford UA	168			8,680	0.23	COL	7,260	
MP-403	L7-15	L7-15-BH	70.2-71.0	Dolomite	Newala	176		2.82	29,590	0.28	Complete Break	12,600	
MP-403	L7-16	L7-16-H	114.2-115.3	Dolomite	Newala	177			33,110	0.31	Complete Break	13,980	
MP-410	L7-20	L7-20-BH	67.4-67.9	Grainstone	Rockdell UD	160		2.57	4,000	0.26	S	1,930	S on plane
MP-410	L7-23	L7-23-BH	166.0-167.0	Siltstone	Fleanor UB	168		2.70	6,960	0.25	S	5,950	
MP-412	L7-19	L7-19-BH	166.4-166.9	Siltstone	Upper Blackford UA	167		2.68	7,990	0.21	COL	3,150	
MP-415	L3-66	L3-66-BCH	133.9-134.9	Micrite	Benbolt UE	168		2.70	12,340	0.26	Complete Break	8,270	
MP-416	L3-69	L3-69-BH	179.7-180.6	W/M	Rockdell UC	169		2.71	13,400	0.43	COL	10,200	
MP-416	L3-71	L3-71-BH	255.1-255.7	Siltstone	Fleanor UB	169		2.72	9,240	0.16	S	2,680	
MP-419	L2-38	L2-38-BH	157.1-157.8	Micrite	Newala	169		2.71	16,830	0.35	COL	12,910	
MP-419	L2-40	L2-40-BCH	173.4-174.1	Chert/Sandstone	Newala	161		2.59	5,810	0.45	COL	2,360	
MP-421	L7-26	L7-26-BCH	175.5-178.3	Dolomite	Newala	176		2.83	12,510	0.05	S	9,040	
MP-421	L7-27	L7-27-H	225.6-226.2	Dolomite	Newala	175			21,790	0.30	COL	11,290	
MP-423	L7-31	L7-31-BH	81.5-82.5	Micrite	Eldson UA	166		2.66	6,960	0.16	COL	1,620	

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MWP); Wackestone/Micrite (WM); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eldson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Due to core conditions, it was not possible to meet dimensional tolerances of ASTM 4543 for some of the rock cores. See dimension sheets in Appendix G.6 for details.

(5) Types of Breaks: COL=Columnar, C=Core, S=Shear, C/S=Core/Shear

(6) Unable to perform assigned unconfined test due to core breaking during shipping, handling, or trimming; unit weight and specific gravity test performed.

(7) Shaded cells indicate that test not assigned.

TABLE 5.11
SUMMARY OF CARBONATE CONTENT TESTING - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation ⁽²⁾	Calcite Equivalent (%)
MP-101	L6-11	90.9-91.5	Siltstone	Benbolt UE	27
MP-101	L6-12	144.6-145.1	Grainstone	Rockdell UD	75
MP-101	L1-5	148.7-149.7	Grainstone	Rockdell UD	62
MP-101	L6-13	184.6-185.2	MW	Rockdell UD	45
MP-101	L6-15	378.9-379.6	Micrite	Rockdell UC	48
MP-101	L1-13	451.4-452.4	Micrite	Fleanor UB	45
MP-202	L6-2	78.5-79.1	Siltstone	Fleanor UB	28
MP-202	L6-3	113.1-113.7	Siltstone	Fleanor UB	40
MP-202	L1-22	148.7-149.6	Siltstone	Fleanor UB	28
MP-202	L6-4	195.8-197.9	Micrite	Fleanor UB	28
MP-202	L6-5	241.0-242.4	Micrite	Eidson UA	51
MP-202	L6-6	247.8-249	Micrite	Eidson UA	54
MP-202	L6-9	385.2-385.9	Siltstone	Upper Blackford UA	39
MP-401	L6-19	79.0-79.6	Dolomite	Newala	77
MP-401	L6-20	216.4-216.9	Dolomite	Newala	90
MP-415	L6-17	25.1-25.7	Siltstone	Bowen UF	57
MP-415	L6-16	28.5-28.9	Siltstone	Bowen UF	88
MP-415	L6-18	38.6-39.1	Siltstone	Bowen UF	26

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MWP); Wackestone/Micrite (WM); Siltstone; Grainstone; Dolomite
 (2) Formation, Unit Designation (UA, etc.). Fleonor and Eidson are Members of the Lincolnshire Formation.

TABLE 5.12

SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE

CLINCH RIVER SMR PROJECT

AMEC PROJECT NO. 6468131072

Prepared By

Checked By

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation ⁽²⁾	Unit Weight (pcf) ⁽³⁾	Moisture Content (%) ⁽⁴⁾	Specific Gravity ⁽³⁾	Comments
MP-101	L1-1	L1-1 BG	48.6-50.1	MW	Benbolt UE	167		2.68	
MP-101	L1-3	L1-3 BCG	92.7-93.5	Siltstone	Benbolt UE	167		2.69	MW interbeds
MP-101	L1-5	L1-5 BCG	148.7-149.7	Micrite	Rockdell UD	168		2.69	Siltstone interbeds
MP-101	L1-7	L1-7 BCH	216.4-217.6	Micrite	Rockdell UD	167		2.68	
MP-101	L1-8	L1-8 BG	251.8-253.6	Micrite	Rockdell UD	ND		ND	see note (5)
MP-101	L1-10	L1-10-BCH	302.3-303.3	Micrite	Rockdell UD	166		2.67	Siltstone interbeds
MP-101	L1-11	L1-11 BG	351.9-353.1	MW	Rockdell UC	168		2.70	
MP-101	L1-13	L1-13-BCEH	451.4-452.4	Siltstone	Fleanor UB	170		2.73	
MP-101	L1-14	L1-14 BG	498.2-499.0	Micrite	Fleanor UB	169		2.71	
MP-103	L3-2	L3-2	130.6-131.0	MW	Rockdell UD	168		2.69	Siltstone and W/P interbeds
MP-103	L3-3	L3-3-BH	163.5-164.3	MW	Rockdell UD	168		2.70	Siltstone and W/P interbeds
MP-105	L3-5	L3-5-BH	82.7-83.3	W/M	Benbolt UE	168		2.70	
MP-105	L3-6	L3-6	127.4-127.6	Siltstone	Benbolt UE	168		2.69	MW interbeds
MP-105	L3-7	L3-7-BH	138.1-138.9	W/G/M	Benbolt UE	169		2.71	
MP-105	L3-8	L3-8	161.7-162.1	MW	Rockdell UD	168		2.69	
MP-105	L3-9	L3-9-BH	186.6-187.2	MW	Rockdell UD	166		2.67	
MP-106	L3-11	L3-11-BG	96.3-96.8	W/M	Benbolt UE	167		2.69	
MP-106	L3-12	L3-12	127.8-128.2	WM	Benbolt UE	169		2.71	
MP-106	L3-13	L3-13-BCG	163.4-164.0	Siltstone	Benbolt UE	167		2.69	
MP-107	L3-14	L3-14	139.6-140.0	MW/P	Rockdell UD	168		2.70	
MP-107	L3-15	L3-15-BG	159.6-160.7	MW	Rockdell UD	168		2.69	
MP-109	L3-16	L3-16-BG	88.0-88.8	MW	Benbolt UE	168		2.70	Siltstone interbeds
MP-109	L3-18	L3-18-BG	151.8-152.8	MW	Benbolt UE	169		2.71	Siltstone interbeds
MP-110	L2-1	L2-1-B	56.0-58.0	MW	Benbolt UE	170		2.72	
MP-110	L2-2	L2-2 BCG	76.7-77.5	MW	Benbolt UE	169		2.71	
MP-110	L2-3	L2-3-BG	119.0-120.9	Siltstone	Benbolt UE	169		2.72	

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (M/M); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MW/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eldson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Shaded cells indicate that test not assigned.

(5) ND indicates test not performed - sample not weighed prior to UC test.

TABLE 5.12

SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE

CLINCH RIVER SMR PROJECT

AMEC PROJECT NO. 6468131072

Prepared By *JD 4/14*Checked By *CDT 4/14*

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation ⁽²⁾	Unit Weight (pcf) ⁽³⁾	Moisture Content (%) ⁽⁴⁾	Specific Gravity ⁽³⁾	Comments
MP-110	L2-4	L2-4B	162.6-164.0	MW	Benbolt UE	168		2.70	
MP-111	L3-19	L3-19-BH	118.9-119.5	Micrite	Rockdell UD	167		2.69	Siltstone interbeds
MP-111	L3-21	L3-21-BH	159.2-160.2	Micrite	Rockdell UD	167		2.68	Siltstone interbeds
MP-113	L2-5	L2-5-BCG	51.1-51.7	MW	Benbolt UE	168		2.70	
MP-113	L2-6	L2-6-B	60.4-60.9	MW	Benbolt UE	167		2.69	
MP-113	L2-7	L2-7-B	78.7-79.2	MW	Benbolt UE	168		2.70	
MP-115	L3-23	L3-23	61.2-61.8	Micrite	Benbolt UE	168		2.70	
MP-115	L3-24	L3-24-BH	69.4-70.6	Micrite	Benbolt UE	168		2.70	
MP-117	L3-26	L3-26-BH	96.5-97.0	MW	Benbolt UE	167		2.68	Siltstone interbeds
MP-118	L3-28	L3-28	62.8-63.2	W/MG	Benbolt UE	167		2.68	Siltstone interbeds
MP-118	L3-29	L3-29-BH	97.6-99.0	W/M	Benbolt UE	168		2.70	Siltstone interbeds
MP-121	L2-9	L2-9-B	51.0-51.5	Micrite	Benbolt UE	163		2.62	Siltstone interbeds
MP-121	L2-10	L2-10-BG	80.6-81.8	MW	Benbolt UE	167		2.68	Siltstone interbeds
MP-122	L3-30	L3-30-BG	63.1-64.3	Micrite	Benbolt UE	170		2.72	
MP-122	L3-31	L3-31-BCH	79.3-80.6	Micrite	Benbolt UE	169		2.71	Siltstone interbeds
MP-201	L2-12	L2-12-B	116.2-116.9	Micrite	Eidson UA	167		2.68	Siltstone interbeds
MP-201	L2-13	L2-13-BCH	130.6-131.8	W/P	Eidson UA	168		2.69	Siltstone interbeds
MP-201	L2-14	L2-14-BCH	186.2-186.6	W/P	Upper Blackford UA	168		2.70	
MP-201	L2-15	L2-15-BG	268.8-269.5	Siltstone	Upper Blackford UA	166		2.66	MW/P interbeds
MP-201	L2-16	L2-16-BH	338.3-339.7	Dolomite	Newala	173		2.78	
MP-201	L2-17	L2-17-BCG	366.4-367.5	Dolomite	Newala	176		2.82	
MP-202	L1-16	L1-16 BG	31.6-32.6	Siltstone	Fleanor UB	168		2.70	
MP-202	L1-17	L1-17-BCH	58.0-58.6	Siltstone	Fleanor UB	168		2.70	Siltstone interbeds
MP-202	L1-20	L1-20-BG	91.7-93.3	Siltstone	Fleanor UB	169		2.71	MW interbeds
MP-202	L1-21	L1-21-BCG	111.7-112.9	Siltstone	Fleanor UB	167		2.68	Micrite interbeds

(1) Rock Types: Dolomitic Limestone (DL), Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MW/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Shaded cells indicate that test not assigned.

TABLE 5.12

SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE

CLINCH RIVER SMR PROJECT

AMEC PROJECT NO. 6468131072

Prepared By JGJ 4/4/14
Checked By EST 4/14/14

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%) (4)	Specific Gravity (5)	Comments
MP-202	L1-22	L1-22-BCEG	148.7-149.6	Siltstone	Fleanor UB	169	(4)	2.71	MW interbeds
MP-202	L1-24	L1-24-BCH	161.7-163.3	Siltstone	Fleanor UB	168		2.69	MW interbeds
MP-202	L1-25	L1-25-BCG	217.7-218.7	Micrite	Eidson UA	168		2.70	Siltstone interbeds
MP-202	L1-26	L1-26-BG	238.1-239.5	Micrite	Eidson UA	167		2.68	Siltstone interbeds
MP-202	L1-28	L1-28-BC	280.2-280.7	Micrite	Eidson UA	164		2.64	Siltstone partings
MP-202	L1-29	L1-29-BG	288.9-289.8	Micrite	Eidson UA	168		2.70	Siltstone partings
MP-202	L1-31	L1-31-BCH	327.7-328.8	Siltstone	Upper Blackford UA	166		2.67	MW/P interbeds
MP-202	L1-32	L1-32-BG	348.4-349.8	Siltstone	Upper Blackford UA	168		2.70	MW/P interbeds
MP-202	L1-34	L1-34-BG	411.0-412.3	Siltstone	Upper Blackford UA	169		2.71	MW/P interbeds
MP-202	L1-35	L1-35-BCH	436.0-436.9	Siltstone	Upper Blackford UA	166		2.67	MW/P interbeds
MP-202	L1-36	L1-36-BG	457.0-457.7	Grainstone/W/M	Upper Blackford UA	169		2.71	Siltstone interbeds
MP-203	L7-1	L7-1-BH	70.6-71.1	Siltstone	Fleanor UB	176		2.83	MW interbeds
MP-203	L7-2	L7-2-BCH	98.9-99.9	W/M	Eidson UA	169		2.71	Siltstone interbeds
MP-203	L7-3	L7-3-BH	121.7-122.7	W/M	Eidson UA	167		2.68	Siltstone interbeds
MP-205	L3-32	L3-32-BH	72.7-73.5	Siltstone	Fleanor UB	167		2.69	MW interbeds
MP-205	L7-4	L7-4-BH	76.0-77.0	W/M	Fleanor UB	169		2.71	
MP-205	L3-35	L3-35-BG	144.7-145.5	Micrite	Eidson UA	169		2.71	Siltstone interbeds
MP-205	L3-36	L3-36-BCH	162.6-163.4	MW	Eidson UA	168		2.70	Siltstone interbeds
MP-205	L3-37	L3-37-BH	208.5-209.0	Micrite	Eidson UA	168		2.70	Siltstone interbeds
MP-206	L2-18	L2-18-B	57.7-58.9	Siltstone	Fleanor UB	168		2.70	MW interbeds
MP-206	L2-19	L2-19-BCG	76.8-78.0	Siltstone	Fleanor UB	168		2.69	MW interbeds
MP-206	L2-20	L2-20-B	121.8-122.2	Siltstone	Fleanor UB	169		2.72	MW interbeds
MP-206	L2-21	L2-21-B	126.8-127.5	Micrite	Fleanor UB	168		2.70	Siltstone interbeds
MP-206	L2-22	L2-22-BG	153.3-154.2	Siltstone	Fleanor UB	169		2.71	MW interbeds
MP-206	L2-23	L2-23-B	168.7-169.2	Siltstone	Fleanor UB	167		2.68	MW interbeds
MP-207	L7-6	L7-6-BH	70.7-71.7	MW	Eidson UA	167		2.69	Siltstone interbeds
MP-207	L3-38	L3-38-BG	96.8-97.8	MW	Eidson UA	167		2.69	Siltstone interbeds
MP-207	L7-8	L7-8-BCH	122.2-122.9	MW	Eidson UA	169		2.71	Siltstone interbeds

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MW); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MW/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Shaded cells indicate that test not assigned.

TABLE 5.12

SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE

CLINCH RIVER SMR PROJECT

AMEC PROJECT NO. 6468131072

Prepared By 202/14/14Checked By CDT 4/14/14

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type (1)	Formation (2)	Unit Weight (pcf) (3)	Moisture Content (%)	Specific Gravity (3)	Comments
MP-207	L3-41	L3-41	157.1-157.5	Siltstone	Upper Blackford UA	167	(4)	2.68	MW interbeds
MP-209	L2-24	L2-24-BG	81.8-82.3	Siltstone	Fleanor UB	168		2.70	Wackestone interbeds
MP-209	L2-25	L2-25-BCG	106.9-107.4	Siltstone	Fleanor UB	168		2.70	Wackestone interbeds
MP-209	L2-27	L2-27-BCG	181.3-182.2	MW	Eldson UA	168		2.70	Siltstone interbeds
MP-209	L2-28	L2-28-BG	206.0-206.5	Micrite	Eldson UA	167		2.69	Siltstone interbeds
MP-209	L2-29	L2-29-BCG	223.7-224.7	Micrite	Eldson UA	167		2.69	Siltstone interbeds
MP-210	L7-9	L7-9-BH	114.0-114.6	Siltstone	Fleanor UB	167		2.68	Wackestone interbeds
MP-214	L3-42	L3-42	80.85-81.25	Siltstone	Fleanor UB	167		2.68	MW interbeds
MP-215	L2-30	L2-30-BG	17.1-18.0	W/M	Rockdell UC	167		2.68	
MP-215	L2-31	L2-31-C	36.5-37.1	Siltstone	Fleanor UB	167		2.68	
MP-215	L2-32	L2-32-B	79.2-80.1	Siltstone	Fleanor UB	169		2.71	
MP-215	L2-33	L2-33-BG	93.3-94.1	Siltstone	Fleanor UB	168		2.70	
MP-217	L3-44	L3-44	74.30-74.70	Siltstone	Fleanor UB	168		2.69	
MP-218	L3-47	L3-47-BH	74.5-75.3	Siltstone	Fleanor UB	167		2.68	MW interbeds
MP-218	CL9-1	CL9-1-ABG	66.7-67.7	Siltstone	Fleanor UB	169	0.6	2.71	MW interbeds (Special Care)
MP-218	CL9-6	CL9-6-ABG	67.8-68.8	Siltstone	Fleanor UB	167	1.0	2.68	MW interbeds (Ordinary Care)
MP-218	CL9-2	CL9-2-ABG	71.3-72.3	Siltstone	Fleanor UB	166	1.6	2.67	MW interbeds (Special Care)
MP-218	CL9-7	CL9-7-ABG	72.3-73.3	Siltstone	Fleanor UB	169	1.1	2.71	MW interbeds (Ordinary Care)
MP-218	CL9-3	CL9-3-ABG	79.5-80.5	Siltstone	Fleanor UB	168	1.7	2.70	MW interbeds (Special Care)
MP-218	CL9-8	CL9-8-ABG	80.5-81.5	Siltstone	Fleanor UB	168	1.4	2.69	MW interbeds (Ordinary Care)
MP-218	CL9-4	CL9-4-ABG	85.3-86.3	Siltstone	Fleanor UB	169	1.1	2.72	MW interbeds (Special Care)
MP-218	CL9-9	CL9-9-ABG	86.3-87.3	Siltstone	Fleanor UB	169	1.0	2.71	MW interbeds (Ordinary Care)
MP-218	CL9-5	CL9-5-ABG	90.3-91.3	Siltstone	Fleanor UB	168	1.4	2.69	MW interbeds (Special Care)
MP-218	CL9-10	CL9-10-ABG	91.3-92.3	Siltstone	Fleanor UB	167	1.4	2.69	MW interbeds (Ordinary Care)
MP-219A	L3-50	L3-50-BH	103.3-104.0	Siltstone	Fleanor UB	167		2.69	Wackestone interbeds
MP-219A	L3-51	L3-51-BG	134.1-134.7	Micrite	Eldson UA	168		2.69	Siltstone interbeds
MP-219A	L3-52	L3-52-B	167.6-168.1	Micrite	Eldson UA	166		2.66	Siltstone interbeds

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Mudstone (MW); Micrite/Wackestone (MW/P); Wackestone/Micrite (W/M); Siltstone; Grains/Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eldson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Shaded cells indicate that test not assigned.

Prepared By 4/4/14
 Checked By 4/4/14

TABLE 5.12
SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE
CLINCH RIVER SMR PROJECT
AMEC PROJECT NO. 6468131072

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation ⁽²⁾	Unit Weight (pcf) ⁽³⁾	Moisture Content (%) ⁽⁴⁾	Specific Gravity ⁽³⁾	Comments
MP-219A	L3-63	L3-53-BH	199.1-200.1	Micrite	Eldon UA	167		2.68	Siltstone interbeds
MP-219A	L3-54	L3-54-BG	219.1-219.6	Siltstone	Upper Blackford UA	166		2.66	M/W interbeds
MP-220	L2-34	L2-34-C	57.9-59.0	Siltstone	Fleanor UB	168		2.70	M/W interbeds
MP-220	L2-35	L2-35-BH	74.0-74.6	Siltstone	Fleanor UB	169		2.71	M/W interbeds
MP-220	L2-36	L2-36 BG	81.3-82.7	Siltstone	Fleanor UB	166		2.67	M/W interbeds
MP-222	L3-55	L3-55-B	37.4-38.0	W/G/M	Rockdell UC	167		2.68	Siltstone interbeds
MP-222	L3-56	L3-56-BH	66.0-67.3	Siltstone	Fleanor UB	168		2.70	Micrite interbeds
MP-401	L3-58	L3-58-B	90.2-91.2	Dolomite	Newala	177		2.84	
MP-401	L3-59	L3-59-BG	148.4-149.8	Dolomite	Newala	175		2.82	
MP-401	L3-60	L3-60-B	213.5-214.6	Dolomite	Newala	172		2.77	
MP-402	L7-11	L7-11-BH	52.1-53.2	Dolomite	Newala	175		2.81	
MP-402	L7-13	L7-13-BCH	144.3-145.1	Dolomite	Newala	175		2.81	
MP-403	L7-15	L7-15-BH	70.2-71.0	Dolomite	Newala	176		2.82	
MP-410	L7-20	L7-20-BH	67.4-67.9	Grainstone	Rockdell UD	160		2.57	
MP-410	L7-21	L7-21-B	87.1-87.8	Siltstone	Rockdell UC	168		2.70	
MP-410	L7-23	L7-23-BH	166.0-167.0	Siltstone	Fleanor UB	168		2.70	M/W interbeds
MP-410	L7-24	L7-24-B	186.5-187.2	Siltstone	Fleanor UB	169		2.72	M/W interbeds
MP-412	L7-17	L7-17-B	51.0-51.6	Siltstone	Upper Blackford UA	164		2.64	M/W interbeds
MP-412	L7-19	L7-19-BH	166.4-166.9	Siltstone	Upper Blackford UA	167		2.68	M/W interbeds
MP-415	L3-61	L3-61-BG	23.3-24.1	Siltstone	Bowen UF	160		2.57	M/W interbeds
MP-415	L3-62	L3-62-B	35.1-35.5	Siltstone	Bowen UF	163		2.62	M/W interbeds
MP-415	L3-63	L3-63-B	52.9-53.8	M/W	Benbolt UE	169		2.71	Siltstone interbeds
MP-415	L3-64	L3-64-B	93.1-94.1	Micrite	Benbolt UE	168		2.70	Siltstone interbeds
MP-415	L3-65	L3-65-BG	113.5-114.5	Micrite	Benbolt UE	167		2.68	Siltstone interbeds
MP-415	L3-66	L3-66-BH	133.9-134.9	Micrite	Benbolt UE	168		2.70	Siltstone interbeds
MP-416	L3-67	L3-67-B	37.2-38.1	Micrite	Rockdell UD	169		2.71	
MP-416	L3-68	L3-68-B	166.5-167.6	Micrite	Rockdell UC	169		2.71	Siltstone interbeds
MP-416	L3-69	L3-69-BH	179.7-180.6	W/M	Rockdell UC	169		2.71	Siltstone interbeds
MP-416	L3-70	L3-70-BG	215.4-216.4	W/M	Rockdell UC	169		2.71	Siltstone interbeds

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Wackestone (M/W); Micrite/Wackestone (M/W); Micrite/Wackestone/Packstone (M/W/P); Wackestone/Micrite (W/M); Siltstone; Grainstone; Dolomite
 (2) Formation, Unit Designation (UA, etc). Fleonor and Eldon are Members of the Lincolnshire Formation.
 (3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.
 (4) Shaded cells indicate that test not assigned.

TABLE 5.12

SUMMARY OF UNIT WEIGHT, MOISTURE CONTENT, AND SPECIFIC GRAVITY TEST RESULTS - ROCK CORE

CLINCH RIVER SMR PROJECT

AMEC PROJECT NO. 6468131072

Prepared By *PS 4/6/14*Checked By *CDT 4/4/14*

Boring Number	Sample ID	Lab ID No.	Sample Depth (feet)	Rock Type ⁽¹⁾	Formation ⁽²⁾	Unit Weight (pcf) ⁽³⁾	Moisture Content (%)	Specific Gravity ⁽³⁾	Comments
MP-416	L3-71	L3-71-BH	255.1-255.7	Siltstone	Fleanor UB	169	(4)	2.72	Siltstone interbeds
MP-419	L2-37	L2-37 BCG	115.6-116.4	Dolomite	Newala	176		2.82	
MP-419	L2-38	L2-38-BH	157.1-157.8	Micrite	Newala	169		2.71	
MP-419	L2-39	L2-39-BG	170.1-170.6	Dolomite	Newala	177		2.84	
MP-419	L2-40	L2-40-BCH	173.4-174.1	Chert/Sandstone	Newala	161		2.59	Appx. 2 foot bed
MP-421	L7-25	L7-25-BC	85.2-86.1	MM/W	Upper Blackford UA	168		2.70	
MP-421	L7-26	L7-26-BCH	175.5-176.3	Dolomite	Newala	176		2.83	
MP-421	L7-28	L7-28-BC	305.2-305.7	Micrite	Newala	176		2.82	
MP-423	L7-29	L7-29-BG	65.2-66.1	Micrite	Eidson UA	164		2.64	
MP-423	L7-30	L7-30-BG	72.6-73.5	Micrite	Eidson UA	165		2.65	
MP-423	L7-31	L7-31-BH	81.5-82.5	Micrite	Eidson UA	166		2.66	
MP-423	L7-32	L7-32-B	102.5-103.4	Micrite	Eidson UA	169		2.71	
MP-423	L7-33	L7-33-BCG	121.5-122.6	Micrite	Eidson UA	167		2.69	
MP-423	L7-34	L7-34-BG	134.2-135.2	Grainstone/M	Upper Blackford UA	168		2.69	
MP-423	L7-35	L7-35-BG	182.6-183.1	Siltstone	Upper Blackford UA	166		2.67	
MP-423	L7-36	L7-36-BG	213.6-214.1	W	Upper Blackford UA	165		2.65	
MP-423	L7-37	L7-37-BG	299.3-300.7	Dolomite	Newala	176		2.83	
CC-B2	L7-38	L7-38-BG	121.3-122.0	Siltstone	Rome	164		2.63	Micrite interbeds
CC-B2	L7-39	L7-39-BG	161.6-162.4	Siltstone	Rome	163		2.62	Micrite interbeds

(1) Rock Types: Dolomitic Limestone (DL); Micrite; Micrite/Mudstone (MM); Micrite/Wackestone (MW); Micrite/Wackestone/Packstone (MMWP); Wackestone/Micrite (WM); Siltstone; Dolomite

(2) Formation, Unit Designation (UA, etc). Fleonor and Eidson are Members of the Lincolnshire Formation.

(3) Unit weight and specific gravity based on as-received moisture conditions. Unit weight reported to nearest pound.

(4) Shaded cells indicate that test not assigned.

TABLE 5.13
SUMMARY OF VALIDATED GEOCHEMISTRY TEST RESULTS
CLINCH RIVER SMR PROJECT
AMEC PROJECT No. 6468131072

Method	Parameter	Well Location: Sample Date:		OW-101L		OW-101L DUP		OW-202L		OW-401L		OW-409U		OW-409L		OW-415U		OW-416L	
		Units		Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Anions																			
300.0	Nitrate as N	mg/L	0.0054 JQ	0.0099 JQ	0.028	0.15	0.88	0.12	0.90	0.20									
300.0	Nitrite as N	mg/L	<0.020 U	<0.020 U	<0.020 UL	<0.020 UL	<0.020 U	0.0052 JQ	<0.020 UL	<0.020 U									
300.0	Fluoride	mg/L	0.22	0.19	7.4	0.20 JH	0.25	0.37	0.13	0.39									
300.0	Chloride	mg/L	2.1	2.1	24	1.4	1.8	2.2	8.8	7.6									
300.0	Bromide	mg/L	0.038 JQ	0.04 JQ	0.17 JQ	<0.25 U	<0.25 U	<0.25 U	0.053 JQ	0.071 JQ									
300.0	Sulfate	mg/L	42	43	93	6.9	83	150	36	63									
Alkalinity																			
310.1	Total Alkalinity	mg/L	300	290	680	180	270	300	270	300									
310.1	Bicarbonate Alk as CaCO ₃	mg/L	300	290	600	180	270	300	270	300									
310.1	Carbonate Alk as CaCO ₃	mg/L	<5.0 U	<5.0 U	78	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U									
Ammonia																			
350.1	Ammonia	mg/L	0.310 J	0.350 J	0.580 J	0.140 J	0.099 J	0.710 J	0.140 J	0.120 J									
Total Dissolved Solids																			
	TDS	mg/L	370	370	1100	190	410	520	370	420									
Total Metals																			
SW6020A	Calcium	mg/L	130 J	99 J	23	40	140	46	150	99									
SW6020A	Iron	mg/L	0.33	0.31	19	0.14	0.22	0.068	0.39	0.072									
SW6020A	Potassium	mg/L	2.1	2.1	14	1.8	1.2	8.1	2.4	0.77									
SW6020A	Magnesium	mg/L	23	22	9.9	22	23	31	13	13									
SW6020A	Manganese	mg/L	0.05	0.048	0.16	0.008	0.011	0.017	0.046	0.020									
SW6020A	Sodium	mg/L	7.8	7.6	280	0.91	4.8	99	5.2	29									
SW6020A	Silicon	mg/L	3.9	4.2	82	4.7	7.6	4.6	7.6	5									
SW6020A	Silica	mg/L	8.3	9	170	10	16	9.9	16	11									
Cation/Anion Balance																			
SM1030F	Sum of Anions	meq/L	6.9	6.8	17	3.8	7.2	9.2	6.5	7.6									
SM1030F	Sum of Cations	meq/L	8.8	7.2	16	3.9	9.1	9.4	8.9	7.3									
SM1030F	Cation/Anion Balance	%	12	3.0	-3.2	1.4	12	1.1	16	-1.7									
SM1030F	% Error	%	12	3.0	-3.2	1.4	12	1.1	16	-1.7									

Notes:
meq/L = milliequivalents per liter
mg/L = milligrams per liter
% = percent

Data Qualifier Definitions
J = Estimated quantitation based on associated QC data
JQ = Estimated quantitation; value is between the reporting limit and the detection limit
JH = Estimated quantitation; possibly biased high based on QC data
JL = Estimated quantitation; possibly biased low based on QC data
U = Undetected.
UJ = Undetected; the reporting detection limit is considered imprecise.
UL = Undetected; data biased low: the reporting detection limit is higher than indicated.

TABLE 5.13
SUMMARY OF VALIDATED GEOCHEMISTRY TEST RESULTS
CLINCH RIVER SMR PROJECT
AMEC PROJECT No. 6468131072

Method	Parameter	Well Location:	OW-417L		OW-418U		OW-419U		OW-420L		OW-420L DUP		OW-421L		OW-423U		
		Sample Date:	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Anions																	
300.0	Nitrate as N		mg/L	<0.020 U		0.68		0.43		0.36 J		0.25 J		1.6		0.14	
300.0	Nitrite as N		mg/L	<0.020 U		<0.020 U		<0.020 U		<0.020 UL		<0.020 UL		<0.020 UL		<0.020 U	
300.0	Fluoride		mg/L	0.18		0.3		0.16		0.31 JH		0.35		0.58		0.090 JQ	
300.0	Chloride		mg/L	2.8		2.7		1.3		2.1 J		2.6 J		2.6		2.7	
300.0	Bromide		mg/L	0.048 JQ		<0.25 U		<0.25 U		<0.25 U		<0.25 U		<0.25 U		<0.25 U	
300.0	Sulfate		mg/L	13		20		17		14		15		8.3		24	
Alkalinity																	
310.1	Total Alkalinity		mg/L	320		270		270		230		240		210		290	
310.1	Bicarbonate Alk as CaCO ₃		mg/L	320		270		270		230		240		210		290	
310.1	Carbonate Alk as CaCO ₃		mg/L	<5.0 U		<5.0 U		<5.0 U		<5.0 U		<5.0 U		<5.0 U		<5.0 U	
Ammonia																	
350.1	Ammonia		mg/L	0.140 J		0.059 J		0.140 J		0.110 J		0.140 J		<0.050 UL		0.083 J	
Total Dissolved Solids																	
	TDS		mg/L	340		300		290		270		280		230		340	
Total Metals																	
SW6020A	Calcium		mg/L	61		52		72		59		59		38		99	
SW6020A	Iron		mg/L	0.041 JQ		0.055		0.023 JQ		0.25		0.29		0.23		0.076	
SW6020A	Potassium		mg/L	3.4		2.7		1.5		1.8		1.9		12		1.3	
SW6020A	Magnesium		mg/L	31		19		29		26		26		27		19	
SW6020A	Manganese		mg/L	0.021		0.0037		0.0023		0.033		0.032		0.01		0.051	
SW6020A	Sodium		mg/L	22		40		0.91		1.2		1.3		12		8.7	
SW6020A	Silicon		mg/L	6.1		8.7		3.2		4.2		4.4		6		7.2	
SW6020A	Silica		mg/L	13		19		6.8		9		9.4		13		15	
Cation/Anion Balance																	
SM1030F	Sum of Anions		meq/L	6.8		6.0		5.8		5.0		5.2		4.6		6.4	
SM1030F	Sum of Cations		meq/L	6.7		6.0		6.1		5.2		5.2		5.0		6.9	
SM1030F	Cation/Anion Balance		%	-0.76		0.019		2.0		2.1		-0.019		3.9		4.1	
SM1030F	% Error		%	-0.76		0.019		2.0		2.1		-0.019		3.9		4.1	

Notes:

meq/L = milliequivalents per liter

mg/L = milligrams per liter

% = percent

Data Qualifier Definitions

J = Estimated quantitation based on associated QC data

JQ = Estimated quantitation; value is between the reporting limit and the detection limit

JH = Estimated quantitation; possibly biased high based on QC data

JL = Estimated quantitation; possibly biased low based on QC data

U = Undetected.

UJ = Undetected; the reporting detection limit is considered imprecise.

UL = Undetected; data biased low: the reporting detection limit is higher than indicated.

Prepared by/Date: JAH 4/09/14

Checked by/Date: WFB 4/09/14

Reviewed JAH 4/10/14