SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project: 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1058

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									ML	SILT, with sand, light gray (2.5Y 7/2) with olive yellow (2.5 6/8) mottles, moist, very stiff, some manganese nodules, sand is fine grained (Lower Loess) *(Continued from previous page)*		
85		SPT 19	6 10 14	15								70
										67.8 — 87.0		
									SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, dense to very dense, fine sand, predominantly quartz, (Upland Complex Alluvium)		
90		SPT 20	24 22 22	9								65
95		SPT 21	44 50/5.9	0								60
										58.8 — 96.0		
									SP	Poorly-graded SAND, light gray, (2.5Y 7/1) with some olive yellow mottles (2.5Y 6/8), very dense, moist, very fine to fine quartz sand (Upland Complex Alluvium)		
100		SPT 22	25 37 41	13								55
										54.8 — 100.0		
										Boring terminated at 100 feet. Hole grouted upon completion.		
105												50
110												45
115												40
120												35

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1059

Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 551206.97 N; 277574.3 E feet		Total Depth 99.4 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 156.1 feet	Ground Water Depth Not Determined	Date Started 8/10/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz	Date Completed 8/11/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deadwill 3/6/07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									MH	156.1 0.0 SILT, dark yellowish brown (10YR 4/6), moist, medium stiff, few gravel, contains clay, organic material (Undocumented Fill)		155
		SPT 1	5 5 6	7								
5		SPT 2	4 6 8	9.5								150
		SPT 3	3 6 9	0						148.6 7.5		
		SPT 4	3 4 5	6.5					ML	SILT, light olive brown (2.5Y 5/4), moist, stiff, massive, trace sand (Upper Loess)		
10												145
		SPT 5	5 5 6	8						-Stiff, trace fine gravel, minor organics below 14 ft.		
15										139.1 17.0		140
									ML/MH	SILT, dark yellowish brown (10YR 4/4), moist, medium stiff to stiff, with CLAY (CH) interbeds, trace sand (Upper Loess)		
		SPT 6	3 4 5	6.5								
20												135
		SPT 7	2 2 3	4						- Medium stiff at 24 feet		
25										129.1 27.0		130
									MH/CH	SILT interbedded with CLAY, dark yellowish brown (10YR 4/6) to dark greenish gray (10 Y 4/1), stiff (Upper Loess)	90% water loss noted	
		SPT 8	4 5 5	8								
30										124.1 32.0		125
									ML	SILT, light olive brown (2.5Y, 5/4) moist, very stiff to stiff, trace sand, contains gastropod fragments (Upper Loess)	100% water loss noted	
		SPT 9	5 7 9	7								
35												120
											Set 35 feet casing	
		SPT 10	3 5 5	13								
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1059

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light olive brown (2.5Y, 5/4) moist, very stiff to stiff, trace sand, contains gastropod fragments (Upper Loess) *(Continued from previous page)*		115
		SPT 11	3 4 6	7								
45												110
		SPT 12	7 9 9	9								
50												105
		SPT 13	7 10 12	10								
55												100
		SPT 14	11 9 11	11								
60												95
		SPT 15	6 9 13	11						- Minor gastropod fragments at 64 feet	100% water loss noted	
65												90
		SPT 16	9 8 8	11						- Moist to wet below 69 feet		
70												85
		SPT 17	4 6 8	18								
75										79.6 — 76.5		80
									ML	SILT, pale brown (10YR 6/3), moist, very stiff, trace sand, trace clay (Lower Loess)	100% water loss noted	
		SPT 18	8 12 15	17.5								
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1059

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									ML	SILT, pale brown (10YR 6/3), moist, very stiff, trace sand, trace clay (Lower Loess) *(Continued from previous page)*		75
										73.1 — 83.0		
		SPT 19	6 8 14	11					CL/ML	CLAY to SILT, light gray (2.5Y 7/2), moist, very stiff, mottled (iron oxide), some manganese nodules, (Lower Loess)		
85										69.6 — 86.5		70
									SP-SC	Poorly-graded SAND with clay, gray (2.5Y 6/1), moist, dense to very dense (Upland Complex Alluvium)	Upper Qal	
		SPT 20	16 27 23	11								
90										64.1 — 92.0		65
									SP	Poorly-graded SAND, light yellowish brown (2.5Y 6/4), moist, very dense, few silt (Upland Complex Alluvium)		
		SPT 21	13 23 39	5								
95										59.1 — 97.0		60
									SM	Silty SAND, light yellowish brown (2.5Y 6/4), very dense, few gravel (sub rounded fine to medium gravel) (Upland Complex Alluvium)	Upper 6" is slough	
		SPT 22	6 30 50/4.5	18						56.7 — 99.4		
100										Boring terminated at 99.4 feet. Hole grouted upon completion.		55
105												50
110												45
115												40
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G :OL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc

SOIL LOG - Boring No. B-1061

Drilling Method and Hole Diameter Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 551124.68 N; 278624.91 E feet		Total Depth 75 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 137 feet	Ground Water Depth Not Determined	Date Started 8/22/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 8/22/06

Reviewed by / Date CEG 2100 5/29/07 Bill Dedy 5-21-07
REV-1

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (137 / 0.0)	Remarks	Elevation (feet)
0									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, strong HCl reaction (Upper Loess)		135
5		SPT 1	4 4 4	12								130
10		SPT 2	3 4 3	11								125
15		SPT 3	3 2 4	11						- Below 14 feet: Moist, trace shell fragments		120
20		SPT 4	3 3 4	10								115
25		SPT 5	3 3 4	11								110
30		SPT 6	3 3 4	9								105
35		SPT 7	4 4 6	11						- Below 34 feet: Stiff, no shell fragments		100
40		SPT 8	4 4 6	11						- Below 39 feet: Trace shell fragments		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1061

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, strong HCl reaction (Upper Loess) *(Continued from previous page)*		
45		SPT 9	6 7 6	10								95
												90
50		SPT 10	4 3 3	18								
									CL	85.5 — 51.5 CLAY, light yellowish brown (10YR 6/4), moist, stiff, contains silt, weak mottled appearance, maganese nodules, no HCl reaction (Lower Loess)		85
55		SPT 11	3 4 6	18								
									SM	80.5 — 56.5 SAND, yellowish brown (10YR 5/4), moist, medium dense, contains silt, sand is fine to medium-grained, well sorted, composed of subangular to subrounded quartz grains, thinly interbedded with silt rich material and organic matter (Upland Complex Alluvium)		80
60		SPT 12	6 6 7	11								
									SM/MH	75.3 — 61.7 SAND to SILT, light gray (10YR 7/2), moist, hard to very dense, trace clay, non HCl reactive, mottled appearance (Upland Complex Alluvium)		75
65		SPT 13	7 19 31	16								
									CL/ML	70.1 — 66.9 CLAY, gray (10YR 6/1), moist, hard, contains silt and sand, sands are fine-grained, subangular to subrounded quartz (Upland Complex Alluvium)		70
70		SPT 14	11 11 20	17								
									SW	65.5 — 71.5 Well-graded SAND, pale brown (10YR 6/3), wet, very dense, fine to medium-grained, subangular to subrounded quartz (Upland Complex Old Alluvium)		65
75		SPT 15	24 37 50/6	18						62.0 — 75.0 Boring terminated at 75 feet. Hole grouted upon completion.		60
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU ... L.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1063

Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549691.29 N: 279408.69 E feet		Total Depth 80 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 126.2 feet	Ground Water Depth Not Determined	Date Started 8/11/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz	Date Completed 8/12/06

Reviewed by / Date CEGN 2100 5/29/07 Bill Ordwell 5-21-07
REV-1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	126.2 / 0.0 SILT, dark yellowish brown (10YR 4/6), moist, very stiff (Upper Loess)		125
5		SPT 1	6 8 11	11								120
									CH	118.7 / 7.5 CLAY, olive yellow (2.5Y 6/8), moist, stiff, trace sand (Upland Complex Alluvium)		
10		SPT 2	4 5 8	13								115
									SC	114.2 / 12.0 Clayey SAND, strong brown (7.5YR 5/8) to light gray (2.5Y 7/1), loose, highly mottled, fine sand, locally sandy clay (CL) (Upland Complex Alluvium)		
15		SPT 3	4 4 5	18								110
									SP	109.2 / 17.0 Poorly-graded SAND, pale yellow (2.5Y 8/2) to olive yellow (2.5Y 6/8), moist, medium dense to dense, fine quartz sand (Upland Complex Alluvium)		
20		SPT 4	10 14 22	9								105
25		SPT 5	14 17 23	13						Below 23.5 feet: Strong brown (7.5YR 5/6)		100
30		SPT 6	9 9 12	7						Below 28.5 feet: Light gray (10YR 7/2)		95
									SP	94.2 / 32.0 Poorly-graded SAND, light grayish green (5GY 7/1), moist to wet, dense, fine to medium-grained quartz sand (Upland Complex Alluvium)		
35		SPT 7	11 15 20	9								90
									SC/SM	88.2 / 38.0		
40		SPT 8	7 9 12	11.5								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G DL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1063

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									SC/SM	Clayey, silty SAND, light greenish gray (10Y 8/1), moist, medium dense, fine-grained quartz sand (Upland Complex Alluvium)		85
									CL	*(Continued from previous page)* CLAY, light gray (2.5Y 7/2), moist, stiff, contains sand (Upland Complex Alluvium)		
45		SPT 9	5 5 10	0								80
									CL	CLAY, light gray (2.5Y 7/1), moist, stiff to very stifff, trace sand (Upland Complex Alluvium)		
50		SPT 10	4 4 7	18								75
55		SPT 11	8 7 9	18						Below 53.5 feet: Increasing sand content		70
									SC	Clayey SAND, light gray (2.5Y 7/1), moist, medium dense, fine quartz sand, some iron oxide staining around weathered clasts (Upland Complex Alluvium)		
60		SPT 12	4 5 10	17								65
									CL	CLAY, very dark gray (2.5Y 3/1) to dark greenish gray (5G 4/1), moist, stiff, trace to few fine sand, few thin sand interbeds (Upland Complex Old Alluvium)		
65		SPT 13	6 6 9	18								60
									CL/CH	CLAY, dark greenish gray (10GY 4/1), hard, trace sand (Catahoula FM)		
70		SPT 14	10 13 35	18								55
									SP/SC	Poorly-graded SAND with clay, greenish gray (5G 6/1), moist, very dense, fine quartz sand, poorly graded (Catahoula FM)		
75		SPT 15	30 44 50/6	18								50
									CL/CH	CLAY, dark greenish gray (5G 4/1), hard, trace sand (Catahoula FM)		
80		SPT 16	27 37 50/5	17						Boring terminated at 79.9 feet. Hole grouted upon completion.		

Elevation (feet): 84.2, 42.0, 79.2, 47.0, 68.7, 57.5, 64.2, 62.0, 58.7, 67.5, 54.2, 72.0, 49.7, 76.5, 46.3, 79.9

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: NuStart - Grand Gulf COL Project: 6468-06-1340 MACTEC WLA William Lettis & Associates, Inc.			SOIL LOG - Boring No. B-1067
Drilling Method and Hole Diameter: Hollow Stem Auger / 8.25 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550037.35 N; 277313.38 E feet		Total Depth: 91.5 feet
Drilling Contractor, Rig and (Hammer Efficiency): Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29): 155.4 feet	Ground Water Depth: Not Determined	Date Started: 5/31/06
Sampling Method: SPT with Auto Hammer	Borehole Inclination: Vertical	Logged by: A. Lutz	Date Completed: 5/31/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deckrell 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	155.4 SAND with gravel, color varies, moist (Undocumented Fill) 0.0		155
		SPT 1	4 6 7	18					ML	153.4 SILT, yellowish brown (10YR 5/4), moist, stiff (Upper Loess) 2.0		
5		SPT 2	3 6 8	18								150
		SPT 3	2 4 7	13.2					ML	148.4 SILT, brown (7.5YR 4/4), moist, medium stiff to stiff, indistinct clayey laminae (Upper Loess) 7.0		
10		SPT 4	2 2 4	13.2								145
15		SPT 5	2 3 4	12								140
									ML	137.1 SILT, yellowish brown (10YR 5/4), moist, medium stiff to very stiff, contains clay, trace carbonate filaments (Upper Loess) 18.3		
20		SPT 6	1 3 2	13.2								135
25		SPT 7	2 3 3	15.6								130
30		SPT 8	2 4 3	18								125
35		SPT 9	2 4 3	14.4								120
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1067

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 10	3 4 5	14.4					ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to very stiff, contains clay, trace carbonate filaments (Upper Loess) *(Continued from previous page)*		115
45		SPT 11	3 4 5	18								110
50		SPT 12	2 4 5	18								105
55		SPT 13	3 5 5	14.4								100
60		SPT 14	5 6 7	15.6								95
65		SPT 15	5 8 9	16.8						- Trace gastropod shells below 66 feet		90
70		SPT 16	1 1 1	18						- Moist to wet below 70 feet		85
									81.9 / CL	73.5 CLAY, light gray (2.5Y 7/2), moist, very soft, iron oxide mottling (Lower Loess)		
75		SPT 17	WOR WOR WOR	18							Sampler sank fully under weight of pipe	80
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1067

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		SPT 18	6 8 12	18					CL	CLAY, light gray (2.5Y 7/2), moist, very soft, iron oxide mottling (Lower Loess) *(Continued from previous page)*		75
										- Trace sand, very stiff below 80 feet		
85		SPT 19	4 7 9	18						- Below 85 feet: Rare manganese oxide mottling, trace fine-grained sand		70
90		SPT 20	10 11 16	15.6					SP	65.0 Poorly-graded SAND, light gray (5Y 7/1), moist to wet, medium dense, medium to coarse-grained sand with trace fines (Upland Complex Alluvium) 90.4 91.5		65
										Boring terminated at 91.5 feet. Hole grouted upon completion.		
95												60
100												55
105												50
110												45
115												40
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1068**
Drilling Method and Hole Diameter Wash Rotary / 6 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549852.14 N; 277221 E feet		Total Depth 143.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 155.8 feet	Ground Water Depth Not Determined	Date Started 6/12/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 6/15/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deckelmann 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	155.8 / 0.0 Well-graded SAND, various colors, dry to moist, contains fine gravel, various lithologies (Undocumented Fill)		155
									ML	155.3 / 0.5 SILT, brown (10YR 5/3), moist to dry, stiff, contains clay, stratified with clay and sand (Undocumented Fill)		
5		SPT 1	4 7 8	10.8								150
									ML	149.3 / 6.5 SILT, brown (7.5YR 4/4), moist, medium to very stiff, few to little clay, trace fine sand, massive, non-cemented, no reaction to HCl (Upper Loess)		
10		SPT 2	3 4 4	14.4								145
15		SPT 3	2 3 4	6								140
										- Brown (7.5YR 4/3) below 17.5 feet		
20		SPT 4	1 2 3	6								135
25		SPT 5	1 2 3	6								130
30		SPT 6	7 7 6	1.2						- 28.5 feet: Medium stiff, weak reaction to HCl		125
35		SPT 7	3 2 2	3.6						- Yellowish brown (10YR 5/4), dry to moist, gastropod shell fragments below 33.5 feet		120
40		SPT 8	4 5 5	12								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1068

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (7.5YR 4/4), moist, medium to very stiff, few to little clay, trace fine sand, massive, non-cemented, no reaction to HCl (Upper Loess) *(Continued from previous page)*		115
45		SPT 9	4 5 6	7.2						- 43.5 feet: Trace gastropod shell fragments		110
50		SPT 10	6 7 9	0							No Recovery	105
55		SPT 11	4 6 7	8.4						- 53.5 feet: Trace gastropod shell fragments		100
60		SPT 12	8 8 9	6						- 58.5 feet: No gastropod shells		95
65		SPT 13	6 9 10	8.4								90
70		SPT 14	6 9 9	8.4								85
75		SPT 15	3 3 4	14.4						- Dark yellowish brown (10YR 5/6), weak reaction to HCl below 73 feet		80
									MH	79.3	76.5	
80		SPT 16	6 9 10	18								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1068

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									MH	SILT, yellowish brown (10YR 5/4) and light yellowish brown (10Y 6/4), moist, very stiff, contains clay, subequal silt and clay content, massive, non-cemented, no reaction to HCl, iron and manganese oxide staining (Lower Loess) *(Continued from previous page)*		75
		SPT 17	6 10 10	18								
85												70
		SPT 18	7 10 9	18						- 88.5 feet: Light brownish gray (2.5Y 6/2), rarely stratified with <0.5"-thick fine-grained sand beds		
90										64.3 — 91.5		65
									SP	Poorly-graded SAND, pale brown (10YR 6/3), wet, very dense, few silt, fine-grained subangular to subrounded spherical quartz sand, trace lithics, massive, non-cemented (Upland Complex Alluvium)		
		SPT 19	25 35 45	4.8								
95												60
		SPT 20	41 50/5	7.2						- 98.5 feet: Light gray (2.5Y 7/1), moist		
100												55
		SPT 21	20 25 30	10.8						- 103.5 feet: Wet		
105										- 106 feet: Moist		50
										- 108.5-109.0 feet: Wet		
		SPT 22	14 12 22	13.2						46.8 — 109.0		
110									CH/SM	45.9 — 109.9 CLAY, grayish brown (2.5Y 5/2), to SAND, light brownish gray (2.5Y 6/2), moist, stiff to very stiff, CLAY and SAND are stratified in 0.1'-0.3' beds, sand is subangular spherical fine-grained quartz, non-cemented, iron oxide staining (Upland Complex Old Alluvium)		45
									SW	Well-graded SAND with gravel, various colors, moist, dense to very dense, spherical subangular coarse to fine-grained sand (mostly quartz medium and fine-grained sand), subrounded to subangular spherical fine-gravel (quartz, chert, shale, fine-grained crystaline), massive, non-cemented, rare iron oxide staining (Upland Complex Old Alluvium)		
		SPT 23	19 35 30	12								
115												40
		SPT 24	14 18 16	6							Rapid water loss into formation	
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1068

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW			35
										32.3 — 123.5		
		SPT 25	12 16 17	10.8					SP	Poorly-graded SAND, light brownish gray (10YR 6/2), moist, dense, trace silt, subangular to subrounded spherical fine-grained quartz sand, massive, non-cemented, iron oxide staining (Upland Complex Old Alluvium)		
125												30
										27.6 — 128.2		
		SPT 26	11 14 14	10.8					CL	CLAY, greenish gray (Gley1 5/10GY), dry to moist, very stiff, contains silt, fine to coarse grained gravel, brittle rock-like when broken (Upland Complex Old Alluvium)	Blow counts estimated?	
130									GW	25.7 — 130.1		25
										Well-graded GRAVEL, mostly chert and quartz, very broken from drilling and grinding, angular clasts up to 4mm-diameter (Upland Complex Old Alluvium)	Gravel Description based on cuttings	
135												20
										17.8 — 138.0		
									CL	CLAY, greenish gray (Gley1 5/10GY), stiff, contains silt, brittle rock-like when broken (Catahoula FM)	Smooth drilling Catahoula description based on cuttings	
140												15
										12.3 — 143.5		
										Boring terminated at 143.5 feet. Hole grouted upon completion.		
145												10
150												5
155												0
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1069**
Drilling Method and Hole Diameter Hollow stem auger / 8.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549695.57 N; 277114.57 E feet		Total Depth 75 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / D120 Track Rig (76%)	Elevation (Datum NGVD 29) 155.4 feet	Ground Water Depth Not Determined	Date Started 6/28/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 6/29/06

Reviewed by / Date CEGM 2100 3/8/07 Wm Deadwell 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	155.4 Well-graded GRAVEL, light yellowish brown (10YR 6/4), dry, loose, contains sand, gravel is fine to coarse grained (Undocumented Fill) 0.0		155
		SPT 1	12 7 7	15					ML	151.4 SILT, dark yellowish brown (10YR 4/4), moist, stiff, contains clay, massive (Upper Loess) 4.0		
5												150
		SPT 2	9 7 8	15								
10												145
		SPT 3	5 4 5	11								
15									ML	139.4 SILT, pale brown (10YR 6/3), dry to moist, medium stiff to stiff, trace clay, laminated (1-2mm), shell fragments, calcareous concretions, staining with clay rich laminations (Upper Loess) 16.0		140
		SPT 4	2 4 4	12								
20												135
		SPT 5	2 3 4	16								
25												130
		SPT 6	2 4 3	14								
30												125
		SPT 7	2 4 4	15								
35												120
		SPT 8	3 5 5	15						- 38.5 feet: Soft to medium stiff		
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1069

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, pale brown (10YR 6/3), dry to moist, medium stiff to stiff, trace clay, laminated (1-2mm), shell fragments, calcareous concretions, staining with clay rich laminations (Upper Loess) *(Continued from previous page)*		115
		SPT 9	4 6 6	15								
45												110
		SPT 10	4 5 6	17								
50												105
		SPT 11	5 6 8	17								
55												100
		SPT 12	5 6 6	14								
60										- Very stiff below 63 feet		95
		SPT 13	8 10 12	15								
65												90
		SPT 14	6 9 9	15						- 68.5 feet: Yellowish brown (10YR 5/4), moist		
70										- Increasing moisture	Approaching capillary fringe	85
		SPT 15	3 4 4	18						- 74 feet: Yellowish brown (10YR 5/6) 80.4 75.0		
75										Boring terminated at 75 feet. Hole grouted upon completion.		80
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN .F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1070

Drilling Method and Hole Diameter Hollow Stem Auger / 8.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549509.97 N; 277036.01 E feet		Total Depth 74.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / D120 Track Rig (76%)	Elevation (Datum NGVD 29) 131.9 feet	Ground Water Depth Not Determined	Date Started 6/29/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 6/30/06

Reviewed by / Date CGN 2100 3/8/07 Wm Dedyll 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	131.9 Well-graded SAND, contains gravel (Undocumented Fill) 0.0		
									SC	129.9 SAND, olive brown (2.5Y 4/3), moist, medium dense, contains clay, sand is fine-grained (Undocumented Fill) 2.0		130
		SPT 1	5 9 13	15					SP	127.9 Poorly-graded SAND, light olive brown (2.5Y 5/3), dry, medium dense, fine-grained, subrounded quartz with chert, mafics (Undocumented Fill) 4.0		
5									ML	126.4 SILT, light olive brown (2.5Y 5/4), moist, very stiff, contains clay, shell fragments (Upper Loess) 5.5		125
		SPT 2	6 13 14	15								
10												120
		SPT 3	8 13 16	18						- 14 feet: Calcareous concretions, light olive yellow (2.5Y 6/4)		
15										114.4		115
		SPT 4	5 9 13	16					ML	SILT, brown (10YR 4/3), moist, very stiff, contains clay, laminated (Upper Loess) 17.5		
20												110
		SPT 5	13 12 11	17						- Below 23 feet: Light olive (2.5Y 5/4), moist, shell fragments, increasing moisture		
25										106.4		
									CL	CLAY, olive brown (2.5Y 4/11), moist, very stiff, interbedded with silt lenses (Upper Loess) 25.5		105
		SPT 6	11 16 18	14						102.6		
30									CL	CLAY, greenish gray (Gley1 6/5GY), moist, very stiff, contains silt, interbedded with black carbonaceous deposits, wood debris (Upper Loess) 29.3		100
		SPT 7	6 9 12	18								
35										96.4		
									ML	SILT, light olive brown (2.5Y 5/4), moist, stiff to very stiff, contains clay, laminated with lenticular olive mottling (Upper Loess) 35.5		95
		SPT 8	4 6 7	16								
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND . COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1070

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light olive brown (2.5Y 5/4), moist, stiff to very stiff, contains clay, laminated with lenticular olive mottling (Upper Loess) *(Continued from previous page)* - Below 43 feet: No mottling, trace shell fragments		90
		SPT 9	6 9 10	16								
45										84.9 — 47.0		85
									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to very stiff, contains clay, laminated, trace shell fragments (Upper Loess)		
		SPT 10	4 4 5	15								
50											Tighter Drilling	80
		SPT 11	5 7 11	18						- Below 54 feet: Higher clay content		
55										76.4 — 55.5		75
									ML	SILT, light brownish gray (2.5Y 6/2), moist, stiff to hard, some clay, manganese nodules, iron staining throughout (mottled) (Lower Loess)		
		SPT 12	4 6 6	18								
60												70
		SPT 13	7 14 18	18						- Below 63 feet: Less iron staining and manganese, trace sand		
65										66.9 — 65.0		65
									SP	Poorly-graded SAND, yellowish brown, (10YR 5/4), wet, fine-grained, subangular to subrounded (Upland Complex Alluvium)		
										64.5 — 67.4		
									ML	63.9 — 68.0		
		SPT 14	9 14 24	18					ML/SM	SILT, (same as below) interbedded with SAND (same as above) (Upland Complex Alluvium)		
										62.9 — 69.0		
70									SP	SILT, light brownish gray (2.5Y 6/2), moist, stiff, contains clay, interbedded with , strong brown (7.5YR 4/6), wet, medium dense, fine-grained, subangular (Upland Complex Alluvium)		60
										61.4 — 70.5		
									SP		Flowing sand encountered	
		SPT 15	5 11 15	18						Poorly-graded SAND, light brownish gray (2.5Y 6/2), wet, medium dense, contains clay, fine-grained, subangular (Upland Complex Alluvium)		
75										57.4 — 74.5		55
										Poorly-graded SAND, light yellowish brown (2.5Y 6/4), wet, medium dense, fine to medium-grained, subangular to subrounded (Upland Complex Alluvium)		
										Boring terminated at 74.5 feet. Hole grouted upon completion.		
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU .GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc

SOIL LOG - Boring No. B-1074

Drilling Method and Hole Diameter Rotary wash SPT / 2 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549102.9 N; 276565.32 E feet		Total Depth 115 feet
Drilling Contractor Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 154.2 feet	Ground Water Depth Not Determined	Date Started 6/28/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by G. Maximov	Date Completed 6/29/06

Reviewed by / Date CEA 2400 5/29/07
REV. 1 Bill Dudenhold 5-21-07

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (154.2 / 0.0)	Remarks	Elevation (feet)
0									ML	SILT, brown (10YR 4/3), moist, soft to very stiff, little clay (Upper Loess)		
5		SPT 1	6 9 11	10								150
10		SPT 2	3 1 3	10								145
15		SPT 3	1 2 3	15								140
20		SPT 4	4 4 5	7						- Stiff, blocky structure below 18.5 feet		135
25		SPT 5	4 4 7	10								130
30		SPT 6	4 6 8	8						- Dry with trace gastropod shell fragments below 28.5 feet		125
35		SPT 7	5 6 7	9								120
40		SPT 8	5 6 9	8						- Moist below 39 feet		115

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU ...L.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1074

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (10YR 4/3), moist, soft to very stiff, little clay (Upper Loess) *(Continued from previous page)*		
45		SPT 9	6 6 8	9								110
50		SPT 10	6 7 9	9								105
55		SPT 11	6 6 7	9								100
60		SPT 12	6 8 10	8						- Increasing clay content below 59 feet		95
65		SPT 13	7 8 10	8								90
70		SPT 14	7 7 6	11								85
75		SPT 15	2 2 3	18								80
									CL	77.7 — 76.5 CLAY, light yellowish brown (10YR 6/4), moist, stiff to very stiff, some silt, trace sand-sized manganese oxide, (Lower Loess)		
80		SPT 16	7 8 10	17								75

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU L.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1074

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL	CLAY, light yellowish brown (10YR 6/4), moist, stiff to very stiff, some silt, trace sand-sized manganese oxide, (Lower Loess) *(Continued from previous page)* - Light gray (10YR 7/2) below 83.5 feet		
		SPT 17	5 5 7	16								70
85									CH	69.7 — 84.5 CLAY, gray (2.5YR 6/1), moist, stiff (Lower Loess)		
									SP	67.4 — 86.8 Poorly-graded SAND, light gray (10YR, 7/1), wet, medium dense to dense, fine grained quartz sand, equigranular (Upland Complex Alluvium) - Oxidized layer about 0.5 inch thick, strong brown (7.5YR 5/8) at 89.2 feet		
		SPT 18	19 18 13	9								65
90												
		SPT 19	9 10 11	6								60
95									SP	59.5 — 94.7 Poorly-graded SAND with gravel, yellowish brown (10YR, 5/4), wet, medium dense, mostly fine-grained sands with some coarse-grained sand and gravels average 0.75 inches, maximum 1.3 inches intermediate axis, chert gravels, quartz sand, gravels subrounded to subangular (Upland Complex Old Alluvium)		
		SPT 20	6 6 7	0								55
100									CL	52.2 — 102.0 CLAY, light yellowish brown (2.5Y 6/3), moist, stiff, little silt (Upland Complex Old Alluvium)	Driller reported "gravelly drilling" down to about 102 feet depth	
		SPT 21	5 6 8	5								50
105									SM	47.2 — 107.0 Silty SAND, light brownish gray (2.5Y 6/2), moist to wet, medium dense, few clay very fine grained quartz sand, some clay, trace medium sand (quartz and chert) rounded to subrounded (Upland Complex Old Alluvium)		
		SPT 22	16 10 10	8								45
110									CL	44.3 — 109.9		
									GP	43.2 — 111.0 CLAY, light yellowish brown (2.5Y, 6/3, moist, little silt (Upland Complex Old Alluvium)	Driller reported "gravelly drilling" over final 4 feet of hole from 111 feet to 115 feet	
		SPT 23	19 15 19	4						Poorly graded GRAVEL, sandy, yellowish brown (10YR 5/4), wet, dense, chert gravels (0.4 inch average, 1 inch maximum), mostly medium-coarse quartz sand, subrounded to subangular (Upland Complex Old Alluvium)		40
115										39.2 — 115.0 Boring terminated at 115 feet. Hole grouted upon completion.		
												35
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1075**
Drilling Method and Hole Diameter Wash Rotary / 2 inches	Boring Location Coordinates: MS State Grid (NAD 27) 548903.25 N; 276804.95 E feet		Total Depth 75 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 151.9 feet	Ground Water Depth Not Determined	Date Started 6/29/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by G. Maximov	Date Completed 6/29/06

Reviewed by / Date [illegible] CEG #2100 3/8/07 [illegible] 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									MH	151.9 SILT, brown (7.5YR 4/4), moist, medium stiff, contains clay (Undocumented Fill) 0.0		150
		SPT 1	3 4 4	8						147.2	4.7	
5									MH	SILT with clay, brown (7.5YR 4/4), moist, medium stiff, some clay, horizontal laminations present (Upper Loess)		145
10		SPT 2	3 4 4	7								140
15		SPT 3	2 3 3	6								135
20		SPT 4	3 3 3	6						- 19 feet: Dry with trace gastropod shell fragments		130
25		SPT 5	3 5 5	9						- Below 24 feet: Moist, stiff		125
30		SPT 6	4 4 6	8						120.2	31.8	120
35		SPT 7	6 7 8	9					ML	SILT, brown (7.5YR 4/4) when moist, yellowish brown (10YR 6/6) when dry, moist to dry, very stiff, some clay, blocky structure evident when dry, trace gastropod shell fragments (Upper Loess)		115
40		SPT 8	6 7 10	13								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND .F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1075

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (7.5YR 4/4) when moist, yellowish brown (10YR 6/6) when dry, moist to dry, very stiff, some clay, blocky structure evident when dry, trace gastropod shell fragments (Upper Loess) *(Continued from previous page)*		110
45		SPT 9	7 9 8	10								105
50		SPT 10	7 8 9	8								100
55		SPT 11	7 9 10	9								95
60		SPT 12	7 10 11	10						- Moist below 59 feet		90
65		SPT 13	11 12 13	9								85
70		SPT 14	2 3 5	18						- 69 feet: Medium stiff		80
									MH	80.2 / 71.8 SILT, yellowish brown (10YR 5/4), moist, stiff, some clay (Upper Loess)		
75		SPT 15	3 4 6	4						76.9 / 75.0 Boring terminated at 75 feet. Hole grouted upon completion.		75
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1078

Drilling Method and Hole Diameter Rotary wash / 2.75 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550171.01 N; 276691.81 E feet		Total Depth 181.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Mobile B59 (78%)	Elevation (Datum NGVD 29) 156.1 feet	Ground Water Depth Not Determined	Date Started 7/2/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by E. Weldon	Date Completed 7/11/06

Reviewed by / Date [illegible] CEG. 2100 3/8/07 [illegible] 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										156.1 - Undocumented Fill (No samples recovered) 0.0		155
5										150.6	5.5	
		SPT 1	10 9 9	13.2					ML	SILT, dark grayish brown (10YR 4/3), dry to moist, medium stiff to very stiff, trace to little clay faintly laminated less than or equal to 1 cm (Upper Loess)		150
10		SPT 2	6 6 5	9.6								145
15		SPT 3	2 2 3	14.4						- medium stiff below 17 feet		140
20		SPT 4	5 5 6	10.8								135
25		SPT 5	4 4 4	12						- yellowish brown (10YR 5/4), medium stiff to stiff, trace clay below 25.5 feet		130
30		SPT 6	6 5 8	10.8						- trace gastropod shells below 31.5 feet		125
35		SPT 7	7 5 5	12								120
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1078

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, dark grayish brown (10YR 4/3), dry to moist, medium stiff to very stiff, trace to little clay faintly laminated less than or equal to 1 cm (Upper Loess) *(Continued from previous page)*		115
		SPT 8	6 6 8	18								
45		SPT 9	8 10 8	10.8								110
50		SPT 10	8 7 10	0								105
55		SPT 11	8 8 10	12								100
60		SPT 12	11 10 13	12						- moist, no shells present below 60.5 feet		95
65		SPT 13	10 10 11	13.2								90
70		SPT 14	10 10 12	8.4								85
75		SPT 15	WOR/6 6 5	0					MH	80.1 — 76.0 SILT, yellowish brown (10YR 5/4), moist, stiff to very stiff, little clay, trace fine sand, iron mottled (10YR 6/8), calcium deposits, minor manganese nodules (unweathered, hard) occasional (Lower Loess)		80
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL .F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1078

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									MH			
		SPT 16	WOH/12 10 17	25.2						74.6 – 81.5		75
									SC	73.9 – 82.2		
									SP	SAND, light yellowish brown (2.5Y 6/3), moist, dense, contians clay, iron mottles more abundant and redder than above, occasional calcium deposits, manganese nodules weathered to iron, moderately graded (Upland Complex Alluvium)		
85		SPT 17	22 37 50	9.6						Poorly-graded SAND, light yellowish brown (2.5Y 6/3), moist, very dense, sand is fine grained, quartz rich, trace silt (Upland Complex Alluvium) - thin clay and gravel lenses between 87 feet and 88 feet		70
90		SPT 18	35 38 40	10.8					SP	65.6 – 90.5 Poorly-graded SAND, pale yellow (2.5Y 7/3), moist, very dense, trace fines, mostly quartz, laminated weakly, fine grained (Upland Complex Alluvium)		65
95		SPT 19	31 32 35	10.8					SP	61.1 – 95.0 Poorly-graded SAND, light gray to pale yellow (2.5Y 7/2 to 7/3),moist, very dense, trace fines, fine grained, quartz arenite (Upland Complex Alluvium)		60
100		SPT 20	17 15 15	8.4					SP	57.1 – 99.0 Poorly-graded SAND, light yellowish brown (2.5Y 6/3), moist, medium dense to very dense, trace fines, fine grading to coarse upward (Upland Complex Alluvium)		55
105		SPT 21	34 35 25	9.6					SP	49.6 – 106.5 Poorly-graded SAND, light yellowish brown to pale yellow upward (2.5Y 6/3 to 2.5Y 7/3), moist, very dense, fine grained, fines downward, mostly quartz (Upland Complex Alluvium)		50
									SW	48.1 – 108.0		
110		SPT 22	22 49 50	13.2					GW	44.9 – 111.2 Well-graded SAND, pale yellow (2.5Y 7/3), moist, very dense, contains gravel, quartz sand medium to coarse grained, gravel component comprised of angular rounded chert, quartz, siltstone, most 1/2-inch diameter (Upland Complex Alluvium)		45
115		SPT 23	31 37 28	12						Well-graded GRAVEL with sand, gray to light brown gray (10YR 6/1 to 6/2), moist, very dense quartz and chert medium to coarse grained sand, maximum gravel size to 1/2-inch gravels are subangular to well rounded, lithology- quartz, chert and siltstone (Upland Complex Old Alluvium)		40
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1078

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 24	ND 44 49	13					GW	Well-graded GRAVEL with sand, gray to light brown gray (10YR 6/1 to 6/2), moist, very dense quartz and chert medium to coarse grained sand, maximum gravel size to 1/2-inch gravels are subangular to well rounded, lithology- quartz, chert and siltstone (Upland Complex Old Alluvium) *(Continued from previous page)*		35
125		SPT 25	15 46 56	9.6								30
									GW	28.1 — 128.0 Well-graded GRAVEL, pale yellow (2.5Y 7/4), moist to wet, very dense, contains medium grained, poorly graded quartz sand (Upland Complex Old Alluvium)		
130		SPT 26	22 50/5.5	6					SP	25.1 — 131.0 Poorly-graded SAND, pale yellow (2.5Y 2/3) moist, very dense, sand is coarse to fine grained (Upland Complex Old Alluvium)		25
135											Drilling smoothly from 135 feet to 140 feet. Drilling fast. Probably SAND like seen in samples 25 and 27	20
140												15
										12.1 — 144.0	Willie wants to thicken drilling mud and clean hole before drilling to 150 feet. Replaced 5 foot casing with 10 foot section	
145		SPT 27	17 25 28	15.6					GW	Well-graded GRAVEL with sand, pale yellow (2.5Y 3/4), moist to wet, very dense, contains medium grained sand, gravel is fine grained (Upland Complex Old Alluvium)	Drilling fast, probably SAND. Spoon sank 3.5 feet with no hammer weight	10
										7.6 — 148.5		
150		SPT 28	WOR/28 11	1.2					SC/SM	SAND, clayey or silty, pale yellow (2.5Y 7/3), wet, very loose to medium dense, fine sand, clean, very well sorted, quartz arenite (Upland Complex Old Alluvium)	-Mud is thick, probably sand. No chattering, smooth drilling	5
155											-Contact depth uncertain; 156 feet +/- 3 ' est.	
										-0.9 — 157.0	Drilling smoothly	0
									SW		100 feet of rod slipped out of vise and fell to 160 feet after	
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND ...F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1078

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160		SPT 29	50/6	6					SW	Well-graded SAND, pale yellow (2.5 Y 7/3), moist to wet, very dense, contains gravel, lithologies include: chert, quartz, siltstone and sandstone conglomerate gravel and coarse sand. Maximum size of gravels is about 1/2-inch, subangular to subrounded grain shape (Lower Alluvium) *(Continued from previous page)*	we drilled to 160 feet. Recovered at depth then pulled up to secure. Stick up 3.0 feet. It is possible sample was disturbed because of rod slippage, but spoon was at correct depth prior to blow counts	-5
165												-10
170		SPT 30	50/6	3.6							Stick up 2.9 feet (0.1' too low) Drills like sand, sandy gravel with some gravel lenses to 180 feet	-15
175												-20
										-22.9 / 179.0		
180		SPT 31	16 21 16	20.4					CL	CLAY, greenish gray (Gley 1 10GY 6/1), moist, hard, little silt (Catahoula FM)		-25
										-25.4 / 181.5		
										Boring terminated at 181.5 feet. Hole grouted upon completion.		
185												-30
190												-35
195												-40
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1079**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550196.37 N; 276570.03 E feet		Total Depth 116.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 158.8 feet	Ground Water Depth Not Determined	Date Started 6/7/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz	Date Completed 6/13/06

Reviewed by / Date CEG 2100 3/8/07 Win Dedrall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	158.8 SILT, dark yellowish brown (10YR 4/4), dry to moist, very stiff, contains fine to medium grained sand (Undocumented Fill) 0.0		155
5		SPT 1	10 11 13	13								
									ML	150.8 SILT, olive yellow (2.5Y 6/6), dry to moist, trace fine sand, stiff to very stiff, very thin laminations (Upper Loess) 8.0		150
10		SPT 2	6 5 6	12								
												145
15		SPT 3	4 5 6	11								
												140
20		SPT 4	4 5 8	14						- Dry to moist below 20 feet		
												135
25		SPT 5	5 7 8	9								
												130
30		SPT 6	8 8 10	8						- Very stiff below 30 feet		
												125
35		SPT 7	7 7 10	11								
												120
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1079

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	8 8 11	9					ML	SILT, olive yellow (2.5Y 6/6), dry to moist, trace fine sand, stiff to very stiff, very thin laminations (Upper Loess) *(Continued from previous page)*		
												115
45		SPT 9	6 8 11	13								
												110
50		SPT 10	7 6 8	12						- Light olive brown (2.5Y 5/4) below 50 feet		
												105
55		SPT 11	7 9 12	7						- Olive yellow (2.5Y 6/6), below 55 feet		
												100
60		SPT 12	9 8 12	10						- Light yellowish brown (10YR 6/4), few laminations below 60 feet		
												95
65		SPT 13	7 8 9	17						- Trace gastropod shells below 65 feet		
												90
70		SPT 14	10 10 15	7.5								
												85
75		SPT 15	9 4 4	12						- Medium stiff to stiff below 75 feet		
										80.8 — 78.0		
									ML/MH	SILT, light olive brown (2.5Y 5/4), moist, stiff, contains clay, manganese staining (Lower Loess)		80
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1079

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks
80		SPT 16	4 5 6	18					ML/MH	SILT, light olive brown (2.5Y 5/4), moist, stiff, contains clay, manganese staining (Lower Loess) *(Continued from previous page)*	
										75.8 — 83.0	
									SP	Poorly-graded SAND, yellowish brown (10YR 5/6) to light brownish gray (10YR 6/2), moist, dense to very dense, contains clay, mottled manganese staining (Upland Complex Alluvium)	
85		SPT 17	14 12 25	14							
90		SPT 18	32 62 63	9						- Very dense below 90 feet - 1/4 inch brownish yellow (10YR 6/6) SAND (SP) lense	
95		SPT 19	32 50 53	7							
100		SPT 20	20 30 35	5						- Pale yellow (2.5Y 7/4) to light gray (2.5 Y 7/2) below 100 feet	
										54.8 — 104.0	
									SM	Silty SAND, very pale yellow (10YR 8/4), moist, medium dense, medium grained, subangular to subrounded, fines brown (10YR 5/3), mostly quartz (Upland Complex Alluvium)	Bentonite added
105		SPT 21	12 9 8	6			GSZ				
										49.8 — 109.0	
									SP	Poorly-graded SAND, light brownish gray (10YR 7/2), moist, very dense, fine to medium, subangular to subrounded, medium grained, mostly quartz (Upland Complex Alluvium)	
110		SPT 22	30 35 42	10							
										45.8 — 113.0	
									SW/GW	Well-graded SAND to well-graded GRAVEL, yellowish brown (10YR 5/6), wet, very dense, clasts are rounded to subangular, quartz, chert, feldspathetic gravel is fine to medium grained and sand is fine to medium grained (Upland Complex Old Alluvium)	
115		SPT 23	34 38 45	10							
										42.3 — 116.5	
										Boring terminated at 116.5 feet. Hole grouted upon completion.	
120											

Elevation (feet): 75, 70, 65, 60, 55, 50, 45, 40

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU DL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Drilling Method and Hole Diameter Hollow stem auger (6.5 inches)/Mud Rotary (4.5 inches)	Boring Location Coordinates: MS State Grid (NAD 27) 546547.53 N; 276132.44 E feet		Total Depth 201.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 196.1 feet	Ground Water Depth Not Determined	Date Started 5/15/06
Sampling Method CME Continuous Sampler and SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 5/19/06

Reviewed by / Date CEG 2100 5/29/07 Bill Dooley 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (196.1 / 0.0)	Remarks	Elevation (feet)
0		CME 1		6					ML	SILT, yellowish brown (10 YR 5/4), moist to dry, few to little clay, trace sand (Upper Loess)		195
5		CME 2		6								190
10		CME 3		57.6						- Horizontal laminations, shell fragments, trace fine sand below 8.5 feet		185
15		CME 4		30								180
20		CME 5		14.4								175
25		CME 6		14.4								170
30		CME 7		26.4								165
35		CME 8		6								160
40										- Moist below 39 feet		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G DL.GPJ WLA GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		CME 9		54					ML	SILT, yellowish brown (10 YR 5/4), moist to dry, few to little clay, trace sand (Upper Loess) *(Continued from previous page)*		155
										152.6 — 43.5		
45		CME 10		46.8					CL	CLAY, brown (10YR 4/3), moist, some silt (Upland Complex Alluvium)		150
										146.1 — 50.0		
50		CME 11		54					CL	CLAY, strong brown (7.5 YR 4/6) to mottled brownish yellow (10YR 5/6), moist, contains silt (Upland Complex Alluvium)		145
										141.1 — 55.0		
55		CME 12		60					CL	CLAY, yellowish brown (10YR 5/4) to mottled brownish yellow (10YR 5/6), contains manganese nodules, few to little silt, trace fine sand (Upland Complex Alluvium)		140
										137.6 — 58.5		
60		CME 13		60					CL	CLAY, light yellowish brown (10YR 6/4), moist, trace to few silt, contains manganese nodules (Upland Complex Alluvium)		135
										133.1 — 63.0		
65		CME 14		60					CL	CLAY, yellowish brown (10YR 5/4) to mottled light yellowish brown (2.5 YR 6/4), moist, contains silt (Upland Complex Alluvium)		130
										130.6 — 65.5		
									CL	CLAY, light yellowish brown (2.5Y 6/4), moist, few to little silt, contains manganese nodules, trace sand (Upland Complex Alluvium)		
										127.1 — 69.0		
70		CME 15		60					CL	CLAY, yellowish brown (10 YR 5/4) to mottled light yellowish brown (2.5YR 6/4), moist, few silt (Upland Complex Alluvium)		125
75		CME 16		60								120
										117.1 — 79.0		
80									SC		Slight change in drilling	

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lewis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks
80		CME 17		7					SC	SAND, light yellowish brown (2.5Y 6/3), moist to wet, fine grained sand, little to some fines (mostly clay) (Upland Complex Alluvium) *(Continued from previous page)*	behavior: "softer drilling" noted
									SP	Poorly-graded SAND, strong brown (7.5YR 4/6), moist to wet, trace fines (Upland Complex Alluvium)	End of hollow stem augering at 83.5 feet, switched to mud rotary drilling
85		SPT 18	50/5	7.2					SW	Well-graded SAND, yellowish brown (10YR 5/4), wet, very dense, contains clay, fine to coarse grained, subrounded to rounded grains, quartz, feldspar, few lithics (Upland Complex Alluvium)	
									SW	Well-graded SAND, pale brown (10YR 6/3), very dense, contains gravel, fine to coarse grained sand. Sand is subrounded to rounded. Coarse sand is subangular. Gravel is fine grained (about 1/8-inch) subangular. Mineralogy includes: quartz, feldspar, chert, some heavy minerals in sand (Upland Complex Old Alluvium)	Gravelly response from drilling rig observed
90		SPT 19	33 50/5	7.2					GW	Well-graded GRAVEL, sandy, variable color, very dense, contains sand, fine to coarse grained gravel up to 3/4-inch diameter, subrounded to subangular, includes: quartz, chert, feldspars, amphibole, granitic lithic fragments (Upland Complex Old Alluvium)	
95		SPT 20	28 50/6	9.6					GW	Well-graded GRAVEL, strong brown (7.5YR 5/6), very dense, fine to coarse grained, trace clay, few sand grains, angular, "platy" clasts, includes chert (Upland Complex Old Alluvium)	Driller noted "softer drilling" at 99.5 feet
100		SPT 21	50/5	4.8					CL	CLAY, greenish gray (Gley 1 5G 5/1), dry to moist, hard to very stiff, contains silt, brittle behavior when broken (Catahoula Formation)	"Hard drilling" at 103 feet. Higher pressure observed.
105		SPT 22	22 32 50/5	18							
110		SPT 23	45 50/4	12						- Hard, not brittle when broken (below 110 feet) - "Softer Drilling" below 112 feet	
115		SPT 24	8 12 15	18						- Very stiff below 115 feet	
120											

Elevation (feet): 115, 110, 105, 100, 95, 90, 85, 80

Lithology boundaries: 113.6 (82.5); 111.6 (84.5); 107.6 (88.5); 105.6 (90.5); 97.1 (99.0); 93.1 (103.0)

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 25	15 18 28	18					CL	CLAY, greenish gray (Gley 1 5G 5/1), dry to moist, hard to very stiff, contains silt, brittle behavior when broken (Catahoula Formation) *(Continued from previous page)* - Hard below 120 feet		75
125		SPT 26	23 29 39	18						- Few thin seams of fine grained sand (about 1 mm thick), moist, below 125 feet		70
										- Brittle "rock-like" behavior below 128.5 feet, "hard drilling" rock/gravelly response from rig		
130		SPT 27	28 25 50/4	8					SC/CL	65.1 — 131.0 SAND or CLAY, greenish gray (Gley 1 5G 5/1), moist, hard to very dense, sand is fine grained (Catahoula Formation)		65
135		SPT 28	50/3	0								60
									SC	57.6 — 138.5 SAND, greenish gray (Gley 1 5G 5/1), moist, very dense, fine grained, contains clay (Catahoula Formation)		
140		SPT 29	50/3	3.6								55
									ML	52.1 — 144.0 SILT, greenish gray (Gley 1 5G 5/1), moist, hard, contains clay, trace fine sand (Catahoula Formation)	Drilled without bit, casing only below 145 feet	
145		SPT 30	17 23 29	18								50
150		SPT 31	13 22 31	0								45
									CL	42.1 — 154.0 CLAY, greenish gray (GLEY 1 5/5G), dry, hard, weakly cemented, friable, brittle "rock-like" behavior, contains silt, and fine sand (Catahoula FM)		
155		SPT 32	50/4	3.6								40
									ML	38.6 — 157.5 SILT, greenish gray (Gley 1 5G 5/1), moist, hard, contains clay (Catahoula Formation)		
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160		SPT 33	41 25 35	14					ML	SILT, greenish gray (Gley 1 5G 5/1), moist, hard, contains clay (Catahoula Formation) *(Continued from previous page)*		35
									SC (32.1 – 164.0)	SAND, greenish gray (Gley 1 5G 5/1), moist, very dense, contains clay and silt, fine grained sand (Catahoula Formation) - Brittle "rock-like" behavior, dry, below 166 feet		
165		SPT 34	27 40 30/1	13								30
									SC (27.1 – 169.0)	SAND, greenish gray (Gley 1 5G 5/1), dry, very dense, contains clay, sand, weakly cemented, friable, brittle, "rock-like" behavior (Catahoula Formation)		
170		SPT 35	24 27 47	13.2					SC (25.1 – 171.0)			25
									CL (22.6 – 173.5)	SAND, greenish gray (Gley 1 5G 5/1), dry, contains clay and silt, fine grained sand (Catahoula Formation)		
175		SPT 36	9 35 47	14						CLAY, greenish gray (Gley 1 5G 5/1), dry, hard, contains silt, trace sand (Catahoula Formation)		20
180		SPT 37	34 50/6	12								15
									CL (13.6 – 182.5)	CLAY, greenish gray (Gley 1, 5G 5/1), dry , hard, trace silt, (Catahoula Formation)		
185		SPT 38	50/5	7.2								10
190		SPT 39	14 35 47	18								5
195		SPT 40	27 50/5	12						- Green sand-sized concretions below 195 feet		0
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G. OL.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1082

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PL)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200		SPT 41	20 28 40	18					CL	-5.4 201.5 Boring terminated at 201.5 feet. Hole grouted upon completion.		-5
205												-10
210												-15
215												-20
220												-25
225												-30
230												-35
235												-40
240												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G DL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Drilling Method and Hole Diameter Rotary wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550053.47 N; 277114.08 E feet		Total Depth 225 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29) 154.6 feet	Ground Water Depth Not Determined	Date Started 5/18/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 6/3/06

Reviewed by / Date CEG 2100 5/29/07
REV. 1 SIGI Dick 5-21-07

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0		SPT 1	31 50/3	13.2					SM	154.6 SAND, brown (10YR 5/3), moist, very dense, contains silt (Undocumented Fill) 0.0		
									GW	153.6 Well-graded GRAVEL, light brown (7.5YR 6/3), dry to slightly moist, non-plastic, angular to subrounded, gravels up to 1 inch diameter (Undocumented Fill) 1.0		
		SPT 2	6 7 13	15.6					ML	151.6 SILT, dark yellowish brown (10YR 4/4), moist, trace shell fragments (Undocumented Fill) 3.0		150
5		SPT 3	14 11 11	8.4						- Mottled appearance below 6 feet, reduced mottles are about 2 cm in diameter with a greenish gray (10Y 5/1) color		
		SPT 4	7 10 12	18						- Increased clay content below 8 feet		145
10									CL	143.1 CLAY, brown (7.5YR 4/4), moist, stiff, some sections are mottled (Undocumented Fill) 11.5		
		SPT 5	4 5 9	14.4								140
15									ML	138.6 SILT, gray (10YR 5/1), moist, stiff, small manganese nodules present at about 20 feet (Undocumented Fill) 16.0		
		SPT 6	9 9 9	13.2								135
20												
		SPT 7	2 3 4	13.2					CL-CH	130.6 CLAY, dark greenish gray (10Y 4/1), moist, medium stiff, trace fine sands, charcoal/root remains found at 24.5 feet, abrupt contact with SILT unit above (Undocumented Fill) 24.0		130
25									CL-CH	126.6 CLAY, dark yellowish brown (10 YR 4/4) from 29.5 - 30 feet, moist, medium stiff (Undocumented Fill) 28.0		
		SPT 8	3 5 6	12							Zone of organic matter from 29 feet to 29.1 feet composed of roots and bark	125
30									ML	123.6 SILT, yellowish brown (10YR 5/4), moist, medium stiff (Undocumented Fill) 31.0		
		SPT 9	5 3 3	0						- No recovery from 33.5 feet to 35 feet	Driller notes loss of water	120
35									ML	117.6 SILT, brown (10YR 5/3), moist, some parts of the sample are moister than others, medium stiff (Upper Loess) 37.0		
		SPT 10	4 3 4	0						- No recovery from 38.5 feet to 40 feet	Still losing water	115
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU)L.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (10YR 5/3), moist, some parts of the sample are moister than others, medium stiff (Upper Loess) *(Continued from previous page)*		
45		SPT 11	5 6 6	13.2								110
50		SPT 12	6 4 3	13.2								105
55		SPT 13	5 4 6	10.8						- Slight increase in clay content below 54 feet		100
60		SPT 14	4 8 5	15.6						- Moist, stiff, carbonate staining below 59 feet		95
65		SPT 15	5 7 8	13.2								90
									ML	88.6 — 66.0 SILT, dark yellowish brown (10YR 4/4) moist, very stiff, trace fine sand and clay (Upper Loess)		
70		SPT 16	8 9 13	16.8						- Very pale brown (10YR 7/4) below 69.5 feet		85
75		SPT 17	7 9 11	13.2						- Light yellowish brown (10YR 6/4), faint laminations present (about 1 mm thick) at 74 feet		80
									ML	77.6 — 77.0 SILT, yellowish brown (10YR 5/4), moist to wet, stiff, some small (< 2 mm diameter) shell fragments (Upper Loess)		
80		SPT 18	7 7 10	13.2								75

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G DL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									ML			
									CH	73.1 – 81.5: CLAY, brown (10YR 5/3), moist, stiff, mottled appearance (Lower Loess)		
		SPT 19	13 12 13	18								70
85									SW	68.1 – 86.5: Well-graded SAND, light brownish gray (2.5Y 6/2), moist, very dense, medium grained sand, subrounded to rounded grains (Upland Complex Alluvium)		
		SPT 20	14 23 29	12						- Band of darker oxidized sand at 89.3 - 89.5 feet, color is strong brown (7.5YR 4/6)		65
90												
		SPT 21	31 45 45	10.8								60
95										- Dark grains present throughout the sand, of unknown mineralogy		
		SPT 22	31 48 48	3.6						- Moist to wet below 98.5 feet		55
100									SW	52.6 – 102.0: Well-graded SAND, light gray (2.5Y 7/1), moist to wet, very dense, coarse-grained sand, subrounded to rounded, some medium grained sand is also present (Upland Complex Alluvium)		
		SPT 23	35 46 54	0								50
105									CH	48.1 – 106.5: CLAY, brown (7.5YR 5/4), moist, hard, contains coarse sand (Upland Complex Old Alluvium)		
		SPT 24	27 32 46	18					SW	45.6 – 109.0: Well-graded SAND with gravel, light yellowish brown (10YR 6/4), wet, very dense, grains are subangular to subrounded, fine to medium grained up to 1.25 inches in size, (Upland Complex Old Alluvium)	CLAY layer in sampler from 108.5 feet to 109 feet	45
110									GW	42.6 – 112.0: Well-graded GRAVEL, light brownish gray (10YR 6/2), wet, medium dense, contains sand, subangular to subrounded gravel up to 1 inch in size (Upland Complex Old Alluvium)	- Sharp contact with clay above	
		SPT 25	15 26 24	13.2					SW	40.2 – 114.4: Well-graded SAND with gravel, light brownish gray (10YR 6/2), wet, very dense, subrounded gravel up to 1.25 inches in size, sharp contact with gravel above (Upland Complex Old Alluvium)	Water return at 115 feet	40
115									GW	37.6 – 117.0		
		SPT 26	19 34 28	15.6								35
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									GW	Well-graded GRAVEL, light olive brown (2.5Y 5/4), wet, very dense, contains sand, gravels are angular to subrounded, composed of chert and are up to 1.6 inches in diameter, sand is coarse grained, subangular to subrounded (Upland Complex Old Alluvium) *(Continued from previous page)*		
125		SPT 27	5 24 22	7.2							1. Most of sample recovered is gravels fallen onto bottom of borehole 2. Bit getting stuck-no gravels are being brought to surface	30
										- No water return	3. Attempting to thicken drill mud	25
130											4. Chattering at about 125 feet 5. Bit stuck on pullout at about 125 feet	
											6. Still no water return	20
135										- No water return	7. Jim Hengesh advised about gravels and loss of water Drill stem getting stuck on removal	
140										- No samples, and no water return	Thick mud added, still no wash in return	15
												10
145										- No water return, and no samples	More mud added, no wash water return	
		SPT 28	4 6 10	8.4							Drill stem removed without trouble after batch of thick mud added Blow counts seem low-maybe material fallen into bottom of hole. Matrix is mainly composed of drilling mud/ sample is contaminated with sloughed material.	5
150												
155											"Chattering" of drill rods noted Continued loss of mud/water	0
160										5.4 160.0		-5

SOIL LOG_MFC_WLA 6468-06-1340 GRAND G OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									GW	Well-graded GRAVEL with sand, dark yellowish brown (10YR 4/4), wet, medium dense, trace of clay, gravels are subangular to subrounded, up to 4.5 cm in size, sand is angular to subangular coarse grained (Upland Complex Old Alluvium)	Rig is chattering on gravels (Heavy)	
		SPT 29	14 25 30	10.2							Extreme water loss at about 163 feet	-10
165												
												-15
170											- Gravel caving at approximately 155 feet - Injected mud mix to lift out gravel - Mixed 1 bag of bentonite	
												-20
175											Added 1-1/2 bags of bentonite to pull up gravel Added 1 1/2 bags of bentonite. Jim Hengesh instructed to drill 180 feet (183.5 feet to 185.0 feet)	
												-25
180									CL	-25.4 CLAY, greenish gray (10GY 5/1), moist, hard, trace fine to medium grained sand, contains silt, subangular grains, (Catahoula FM) 180.0	Driller notes change in lithology at 180 feet during casing installation	
		SPT 32	23 25 29	18							Drilling stopped due to gravel caving and filling hole. Casing is needed to pull up sample	-30
185												
		SPT 33	48 50/2	9.6						- Dark greenish gray (10GY 4/1), hard, below 188.5 feet	Sample appears to break into subangular blocks that range in size from 3-15 mm. Possibly due to drill bit chewing sample	-35
190												
		SPT 34	28 50/5	12								-40
195										- Greenish gray (10GY 5/1) below 195 feet	Refusal of SPT on second 6 inch increment	
		SPT 35	50/5	8.4								-45
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1083

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200									CL			
									CL-ML	47.4 — 202.0 CLAY, dark greenish gray (5GY 4/1), moist, hard, contains silt and fine-grained sand, trace mica flakes (Catahoula FM)	Sampling interval changed to 10 feet per Jim Hengesh	
205		SPT 36	18 27 50	12								-50
210												-55
									CH	57.4 — 212.0 CLAY, dark greenish gray (5G 4/1) moist, very stiff, (Catahoula FM)		
215		SPT 37	16 14 19	18								-60
											10 foot sample interval	
220												-65
225		SPT 38	45 50/1	8.4						- Hard below 224 feet; 70.4 — 225.0 Boring terminated at 225.0 feet. Hole grouted upon completion.	Refusal on 2nd, 6 inch interval	-70
230												-75
235												-80
240												-85

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1084**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550129.67 N; 277162.08 E feet		Total Depth 248.9 feet
Drilling Contractor, Rig and (Hammer Efficiency) Miller Drilling Co. / CME 750 (88%)	Elevation (Datum NGVD 29) 154.5 feet	Ground Water Depth Not Determined	Date Started 8/7/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by N. Peterson / C. Rittel	Date Completed 8/15/06

Reviewed by / Date CEG 2100 3/8/07 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									CL	154.5 CLAY, dark yellowish brown (10YR 9/4), moist, medium stiff, contains silt, trace gravels (Undocumented Fill) 0.0	Ground surface is compacted gravel fill with grass cover (0.0 feet to 1.0 feet)	
5		SPT 1	4 4 4	10.8								150
10		SPT 2	2 3 3	9.6							12 feet of casing and 2.5 feet stick up = 9.5 feet to top of sample	145
15		SPT 3	2 3 3	9.6								140
									ML	137.0 SILT, brown (10YR 4/3) to dark yellowish brown (10YR 4/4), moist, medium stiff to stiff, trace clay, trace calcareous deposits (Upper Loess) 17.5		
20		SPT 4	2 3 3	8.4								135
25		SPT 5	2 4 3	10.8								130
30		SPT 6	5 5 5	8.4						- Stiff below 30 feet		125
35		SPT 7	4 6 4	12								120
40			4									115

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN .LF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	5 6	9.6					ML	SILT, brown (10YR 4/3) to dark yellowish brown (10YR 4/4), moist, medium stiff to stiff, trace clay, trace calcareous deposits (Upper Loess) *(Continued from previous page)*		
45		SPT 9	5 7 7	9.6								110
50		SPT 10	4 5 7	12								105
55		SPT 11	5 7 7	8.4								100
60		SPT 12	6 7 8	10.8					▽	- Ground water at about 63 feet		95
65		SPT 13	8 6 9	12						- Wet below 65 feet		90
70		SPT 14	6 4 5	14.4								85
									CL	82.0 CLAY, light olive brown (2.5YR 5/4), moist, very stiff, trace silt, manganese nodules throughout (Lower Loess)	72.5 Very soft material between Samples SPT-14 and SPT-15	80
75		SPT 15	5 8 9	18						- Lost 80% water at 77 feet, per driller measurements		
80			11								Continue to lose mud and	75

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC — WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		SPT 16	11 10	18					CL	CLAY, light olive brown (2.5YR 5/4), moist, very stiff, trace silt, manganese nodules throughout (Lower Loess) *(Continued from previous page)* - Continued water loss from 81 feet (100% loss) - Iron staining and gray (10YR 6/1), some fine sand below 84.5 feet	water below 81 feet. 200 lbs. of mud and 250 gallons of water lost from 79 feet to 89 feet	
85		SPT 17	5 8 12	18						68.7	85.8	Sample 1084-17A 84.5 feet to 85.8 feet	70
									SW	Well-graded SAND with clay, gray (10YR 6/1), wet, medium dense to very dense, contains clay, fine grained, quartz rich (Upland Complex Alluvium)	Sample 1084-17B 85.8 feet to 86.0 feet	
90		SPT 18	8 12 14	18									65
95		SPT 19	23 25 26	6							No water return	60
100		SPT 20	12 14 14	8.4						- Interbedded gravels, fine to medium grained, iron staining along gravel lenses below 100 feet		55
105		SPT 21	7 9 14	10.8						- Iron staining at 105.5 feet	No water return	50
										46.0	108.5	
110		SPT 22	20 23 21	9.6					GP	Poorly-graded GRAVEL, yellowish brown (10YR 5/4), to gray (10YR 6/1), wet, dense, trace sand, medium and fine grained gravels with fine grained quartz rich sand, poorly graded, poorly sorted, gravels are mainly chert (Upland Complex Old Alluvium) - Drilled from 109.5 feet to 112 feet and lost all water and 100 lbs. of mud. - Drilled from 112 feet to 114.5 feet and again lost all mud and water. No water return since 77 feet	Driller notes change in material at 108.5 feet; Lower Qal below 108.5 feet	45
115		SPT 23	20 20 16	4.8								40
									CL	37.5 - Blow counts/ 1 inch: 1st: 2, 4, 4, 4, 3, 3; 2nd: 3, 3, 5, 3, 3, 3; 3rd: 3, 3, 2, 3, 2, 3 - Trace gravels of 1 inch in diameter at 115 feet	117.0	Driller notes change in material at 117 feet	
120			12							34.5	120.0		35

SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 24	12 14	9.6					SW	CLAY, light gray (2.5YR, 7/1), moist, very stiff, trace sand and gravels (medium grained) (Upland Complex Old Alluvium))	Strata break at 120 feet	
									CL	31.5 Well-graded SAND, gray (10YR 6/1), wet, medium dense, firm grained quartz rich with medium gravels, (Upland Complex Old Alluvium) - No water return from 121.5 feet to 123 feet 123.0	Drilling rate increases at 123 feet	
125		SPT 25	15 12 11	8.4						CLAY, olive yellow (2.5YR 6/6), moist, very stiff, trace silt and sand (Upland Complex Old Alluvium) - No water return from 124 feet to 126 feet		30
130		SPT 26	11 9 12	13.2						- Thin sand lense at 130.3 feet	Used 200 gallons of water and 125 lbs.. of mud to drill from 129.5 feet to 134.5 feet No water return	25
									SW	22.5 Well-graded SAND, gray 10YR 6/1) wet, dense to very dense, fine grained, quartz rich, some iron staining (Upland Complex Old Alluvium) 132.0		
135		SPT 27	6 12 37	4.8								20
											Boring collapsed when rods pulled up to add 10-foot section of casing	
140		SPT 28	20 23 27	6								15
145		SPT 29	17 25 28	4.8								10
150		SPT 30	32 33 29	0						- Driller notes that we are still in sand. No water return to check cuttings		5
										- Driller notes encountering gravels at 152 feet. Lost 100 gallons of water and 50 lbs. of drilling mud from 149.5 feet to 152 feet		
155		SPT 31	18 23 35	7.2						- Trace medium grained gravels, subrounded to rounded below 155 feet		0
160			33									-5

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SOIL LOG_MFC_WLA 6468-06-1340 GRA... JLF COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160		SPT 32	50/5	6					SW	Well-graded SAND, gray 10YR 6/1) wet, dense to very dense, fine grained, quartz rich, some iron staining (Upland Complex Old Alluvium) *(Continued from previous page)*		
										-9.5 / 164.0		
165		SPT 33	26 31 22	8					GW	Well-graded GRAVEL, yellowish brown (10YR 5/6), wet, very dense, contains sand, well graded chert gravels up to 1-inch long and 1/2 to 3/4-inch in diameter, subangular to subrounded sands are well graded quartz and chert, coarse to fine grained (Upland Complex Old Alluvium) - No water return		-10
										-15.5 / 170.0		-15
170		SPT 34	46 50/4	6					SW/GW	Well-graded SAND to well-graded GRAVEL, light yellowish brown (2.5Y 6/4), wet, very dense, sand is fine to coarse grained, subangular to subrounded quartz and chert lithologies, gravels are well sorted up to 1-inch long, 1/2-inch diameter, most gravels are 1/2-inch long and 1/4-inch diameter, composed of chert and quartz lithologies (Upland Complex Old Alluvium)		
										-19.5 / 174.0		-20
175		SPT 35	21 34 40	9					SW	Well-graded SAND with gravel, light yellowish brown (2.5Y 6/4), wet, very dense, angular to subrounded sands, fine to coarse grains of chert and quartz, gravels are 40% composed of subangular to subrounded quartz and chert up to 10mm long, 5-7 mm in diameter (Upland Complex Old Alluvium) - 176 feet extreme gravel response; JVH instructed no more sampling in the sand/gravels		
180												-25
										-28.0 / 182.5	- Change in color in wash return cuttings at about 182.5 feet; **(Catahoula Formation)**	
									ML	SILT, greenish gray (5GY 5/1), moist, hard, contains fine grained sand, rock-like fracture in some areas, slight to medium cementation (Catahoula FM)		-30
185		SPT 36	22 46 50/3	17								
										-32.9 / 187.4		
									SM	SAND, greenish gray (5GY 6/1), moist, very dense, contains silt, fine grained quartz sand, trace medium sand grains, uniformly sorted (Catahoula FM)		
190		SPT 37	30 49 50	18								-35
										-39.5 / 194.0		
195									ML/MH	SILT, greenish gray (10GY 6/1), moist, hard, trace clay (Catahoula FM)		-40
		SPT 38	18 26 48	18								-45
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200									ML/MH	SILT, greenish gray (10GY 6/1), moist, hard, trace clay (Catahoula FM) *(Continued from previous page)*		
205												-50
		SPT 39	50/2	2								
210												-55
										-58.5 — 213.0		
									CH	CLAY, greenish gray (5GY 6/1), moist, hard, moderately cemented, trace fine grained sand (Catahoula FM)		
215												-60
		SPT 40	50/3	10						- Dry color is light gray (5Y 7/1)		
220												-65
225												-70
		SPT 41	43 50/3	14								
230												-75
235												-80
		SPT 42	36 50/5	14								
240												-85

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SOIL LOG_MFC_WLA 6468-06-1340 GRA... JLF COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1084

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
240									CH	CLAY, greenish gray (5GY 6/1), moist, hard, moderately cemented, trace fine grained sand (Catahoula FM) *(Continued from previous page)*		
245												-90
		SPT 43	36 50/5	18						-94.4 248.9		
250										Boring terminated at 248.9 feet. Hole grouted upon completion.	Boring grouted on 8/15/06	-95
255												-100
260												-105
265												-110
270												-115
275												-120
280												-125

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF (PJ WLA.GDT 8/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1085**
Drilling Method and Hole Diameter Hollow stem auger / 8.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549699.86 N; 277592.69 E feet		Total Depth 65 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Boart Longyear B-66 (N/A)	Elevation (Datum NGVD 29) 132.8 feet	Ground Water Depth Not Determined	Date Started 8/9/07
Sampling Method UD and Bulk	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/9/07

Reviewed by / Date Bill Deobald 8-17-07 Ryan Clem CEG 2100 8/24/07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	132.8 GRAVEL (Undocumented Fill) 0.5	Soil descriptions based on auger cuttings	
									SW	132.3 SAND, contains silt (Undocumented Fill)		
		GRAB BS-1									Bulk sample of auger cuttings collected from 0 to 8 feet (5 gal)	130
5										126.8 6.0		
									ML	SILT, yellowish brown (10 YR 5/4), moist, contains clay, trace gastropod shell fragments to 30 feet (Upper Loess)	Auger cuttings lighter in color with clumping structure at 6.0 feet	125
		UD 1		4								
10											Bulk sample of auger cuttings collected from 8 to 14 feet (5 gal)	
		GRAB BS-2										120
15		UD 2		7								
		GRAB BS-3									Bulk sample of auger cuttings collected from14 to 18 feet (5 gal)	115
		UD 3		7								
20											Bulk sample of auger cuttings collected from 18 to 24 feet (5 gal)	
		GRAB BS-4										110
25		UD 4		24								
											Bulk sample of auger cuttings collected from 24 to 32 feet (5 gal)	105
		GRAB BS-5										
30										30 feet: Trace sand below 30 feet.		
		UD 5		18								100
35												
												95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF .GPJ WLA.GDT 8/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1085

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		UD 6		8					ML	SILT, yellowish brown (10 YR 5/4), moist, contains clay, trace gastropod shell fragments to 30 feet (Upper Loess) *(Continued from previous page)*		
											Bulk sample of auger cuttings collected from 40 to 49 feet (5 gal)	90
45		GRAB BS-6										85
50		UD 7		19								
											Bulk sample of auger cuttings collected from 49 to 60 feet (15 gal)	80
55		GRAB BS-7a, 7b, 7c								76.8 — 56.0		
									CL	CLAY, light gray (2.5 Y 7/2), moist, contains silt, trace to few fine-grained sand, oxide mottling (Lower Loess)	Drillers feedback: Change in drilling conditions at 56 feet (tightening) Overdrilled and skipped planned UD sample at 58 feet	75
60		UD 8		19								
		GRAB BS-8								69.3 — 63.5	Bulk sample of auger cuttings collected from 60 to 64 feet (5 gal)	70
									SM	SAND (Upland Complex Alluvium)	Drillers feedback: Sand at 63.5 feet (very tight augering)	
		UD 9		0						67.8 — 65.0		
65										Boring terminated at 65.0 feet. Hole grouted upon completion.		65
70												60
75												55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF GPJ WLA.GDT 8/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC — WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1086

Drilling Method and Hole Diameter Hollow stem auger / 8.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549614.23 N; 277549.78 E feet		Total Depth 71 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Boart Longyear B-66 (N/A)	Elevation (Datum NGVD 29) 132.6 feet	Ground Water Depth Not Determined	Date Started 8/8/07
Sampling Method UD and Bulk	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/8/07

Reviewed by / Date C.E.G. 2100 8/24/07 Bill Deakold 8-17-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0		GRAB BS-1							SW	132.6 SAND, light yellowish brown (10 YR 6/4) moist, contains fines and gravel (Undocumented Fill)	Soil descriptions based on auger cuttings Bulk sample of auger cuttings collected from 0 to 4.5 feet (5 gal)	130
5		SS 1	3 3 2	16						4.5 feet: SPT for information only		
		GRAB BS-2							CL	127.1 CLAY, light yellowish brown (10 YR 4/6) moist (Undocumented fill)	Bulk sample of auger cuttings collected from 4.5 to 8 feet (5 gal)	125
		UD 1		23					ML	124.6 SILT, yellowish brown (10 YR 5/4), moist, few clay, trace sand, thin (<0.5 inches thick) lifts/laminae of slightly increased clay content (Undocumented Fill)		
10		SS 2	7 7 9	17						10 feet: SPT for information only; Samples dry to moist, but auger cuttings moist to wet below approx. 10 feet		
		GRAB BS-3									Bulk sample of auger cuttings collected from 11.5 to 14 feet (5 gal)	120
		UD 2		16					ML	119.6 SILT, yellowish brown (10 YR 5/4) moist, trace to few clay, trace sand and gastropod shells, no lifts/laminae observed (Undocumented Fill)		
15		UD 3		22					ML	115.6 SILT, greenish gray (5 GY 5/1), moist (Undocumented Fill)	Bulk sample of auger cuttings collected from 16 to 22 feet (5 gal)	115
20		GRAB BS-4							ML	112.6 SILT, yellowish brown (10 YR 5/4) moist, contains clay, trace sand and gastropod shells (Upper Loess)		
		UD 4		20								110
25												105
		UD 5		22								
30		GRAB BS-5									Bulk sample of auger cuttings collected from 28 to 34 feet (5 gal)	100
35		UD 6		8								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF GPJ WLA.GDT 8/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1086

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10 YR 5/4) moist, contains clay, trace sand and gastropod shells (Upper Loess) *(Continued from previous page)*		
		UD 7		4								90
45		GRAB BS-6a, 6b								Auger cuttings began appearing drier as boring was advanced from 42 to 50 feet	Bulk sample of auger cuttings collected from 42 to 50 feet (10 gal)	85
50		UD 8		0								80
55		UD 9		20								75
									CL	74.6 — 58.0 CLAY, light gray (2.5 Y 7/2), moist, contains silt, trace sand, oxide mottled (Lower Loess)		
60		UD 10		21							Bulk sample of auger cuttings collected from 60 to 70 feet (5 gal)	70
65		GRAB BS-7								65.6 — 67.0		
									SP	SAND, light gray (5 Y 7/1), wet, trace to few fines, no mottling observed (Upland Complex Alluvium)	Driller's feedback: Sand at 67 feet	65
70		UD 11		12						61.6 — 71.0		
										Boring terminated at 71.0 feet. Hole grouted upon completion.		60
75												55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU JL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340 MACTEC / WLA William Lettis & Associates, Inc.			SOIL LOG - Boring No. B-1100
Drilling Method and Hole Diameter: Rotary wash SPT / 3-7/8 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549672.23 N; 277218.46 E feet		Total Depth: 149 feet
Drilling Contractor, Rig and (Hammer Efficiency): Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29): 134.4 feet	Ground Water Depth: Not Determined	Date Started: 6/27/06
Sampling Method: SPT with Auto Hammer	Borehole Inclination: Vertical	Logged by: A. Lutz / E. Weldon	Date Completed: 6/29/06

Reviewed by / Date: CEG 2100 5/29/07; Bill Dunkelberger 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	134.4 SILT, brown (7.5YR 5/2), moist, hard, contains fine grained sand and gravel up to maximum 1/2-inch diameter (Undocumented Fill) 0.0	-0-1 feet: Dry drilled -E Weldon logging borehole from surface to 115 feet -Begin SPT sampling at 1.0 feet depth -Contact between 2.5 and 3.5 feet -Abrupt contact noted	
		SPT 1	21 28 26	16.8								
									CL	131.4 CLAY, olive gray (5Y 5/2), moist, very stiff (Undocumented Fill) 3.0		130
5		SPT 2	9 11 10	15.6								
									ML	128.9 SILT, dark yellowish brown (10YR 4/4), moist, medium stiff to very stiff, trace poorly graded sand and coarse gravel up to maximum 1/2-inch diameter directly below clay (Upper Loess) 5.5		
		SPT 3	2 3 4	14.4						8.5 feet: Trace clay below 8.5 feet		
		SPT 4	3 3 3	10.8								125
10												
		SPT 5	4 3 4	10.8								120
15												
		SPT 6	4 5 7	9.6						- 18.5 feet: Stiff, occasional gastropod shells below 18.5 feet		115
20												
		SPT 7	5 4 5	14.4								110
25												
									ML	106.4 SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, contains gastropod shells, trace to little clay, massive (Upper Loess) 28.0		
		SPT 8	5 5 6	13.2								105
30												
		SPT 9	5 5 8	12								100
35												
		SPT 10	5 5 8	16.8								95
40												

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND GU JL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1100

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, contains gastropod shells, trace to little clay, massive (Upper Loess) *(Continued from previous page)*		
45		SPT 11	8 8 7	14.4								90
50		SPT 12	6 7 7	13.2								85
55		SPT 13	2 2 3	18								80
									MH	77.4 — 57.0 SILT, very pale brown (10YR 7/3), mottled brownish yellow (10YR6/6) and black (10YR 2/1), moist, very stiff, contains manganese nodules, some clay (Lower Loess)	-Contact marking change in color (mottled with Mn nodules) and stiffness at 55 feet to 58.5 feet depth	
60		SPT 14	5 8 12	19								75
65		SPT 15	4 7 8	0					ML	70.4 — 64.0 - No sample recovered at 63.5 feet to 65 feet		70
										SILT with sand, light gray (10YR 7/1), moist, hard, contains fine sand, trace to little clay, massive, no shells observed (Upland Complex Alluvium)	-Contact noted by color change and stiffness	
70		SPT 16	18 18 16	14								65
75		SPT 17	39 50/5	13	18		GSZ		SM	60.7 — 73.7 Silty SAND, white (10YR 8/2) to very pale brown (10YR 8/3), very dense medium to fine grained sand, subangular to subrounded grains, trace clay, very clean quartz arenite (Upland Complex Alluvium)	-Abrupt contact at 73.7 feet -Refusal at 74.4 feet	60
80		SPT 18	32 40 27	0							-SPT 18: Recovery inches not recorded	55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU /L.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1100

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SM			
									SP	53.4 – 81.0 Poorly-graded SAND with few fines, light gray (10YR 7/1 to 7/2) to pale brown (10YR 6/3), moist, very dense, grades upward from medium to fine grained sand, subangular to subrounded, trace silt and clay, very clean, well sorted quartz arenite (Upland Complex Alluvium)		
		SPT 19	27 29 22	12			GSZ					50
85									SW	48.4 – 86.0 Well-graded SAND with gravel, very pale brown (10YR 7/3), moist, dense to very dense, sand fraction coarsens upward from fine to coarse, gravel up to maximum 1/2-inch diameter, angular to subrounded chert, siltstone, and quartz gravel (Upland Complex Old Alluvium)	-Contact between 85 and 88.5 feet	
		SPT 20	35 25 17	14.4								45
90									CL	44.9 – 89.5	-Contact sharp, irregular at 89.6 feet, 30-60 degree dip. Scoured by overlying gravels	
									SM	44.4 – 90.0 CLAY, yellow (10YR 7/6), moist, hard (Upland Complex Old Alluvium)	-Contact abrupt, horizontal at 89.9 feet	
									SW	41.4 – 93.0 SAND, silty, strong brown (7.5YR 5/8) to light gray (10YR 7/2), moist, coarsens upward from fine to fine-medium grained sand (Upland Complex Old Alluvium)	-Losing 100% water below 93 feet	
95		SPT 21	25 26 21	13.2						Well-graded SAND with gravel, light yellowish brown (10Y 6/4), moist, very dense, trace silt, medium to coarse grained sand, coarsens upward, contains gravel up to 3/4-inch maximum diameter, subangular to rounded, chert, quartz, and siltstone gravel (Upland Complex Old Alluvium)	-Rig shaking 93 feet to 103 feet during casing advancement due to gravels	40
		SPT 22	32 50/5	8.4								35
100									CH	32.9 – 101.5 CLAY, olive (5Y 6/3 to 5Y 5/3), moist, hard, contains trace to few rounded chert gravel (Upland Complex Old Alluvium)	-Advanced casing to 103 feet	
		SPT 23	19 26 29	19	21	61/35			CH	30.2 – 104.2 CLAY, grayish green (Gley 1 4/2), moist, hard (Catahoula FM)	-Contact at 103 feet based on drilling	30
105											-Contact, abrupt color change, irregular to wavy, scoured by overlying gravels	
											-Gravels embedded in clay	
		SPT 24	23 31 48	24								25
110												
		SPT 25	40 39 50	23								20
115											-A. Lutz logging borehole from 115 feet to terminus	
									SP	17.4 – 117.0		
		SPT 26	50/5	6								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GI OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA Williams Lemos & Associates, Inc.

SOIL LOG - Boring No. B-1100

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP	Poorly-graded SAND, greenish gray (Gley 1 6/10GY), moist, very dense, trace to few silt, sand is fine and very fine grained, spherical, subangular to subrounded quartz with trace lithics, non-cemented (Catahoula FM) *(Continued from previous page)*		
		SPT 27	50/3	8							-SPT 27: Recovery inches not recorded	
125									CL	8.9 - 122.5 feet: Moderate to weak cementation 125.5		10
		SPT 28	15 25 26	18	24	47/30				CLAY with sand, greenish gray (Gley 1 5.5/10GY), moist, hard, little clay, spherical, subangular to subrounded, fine-grained sand, no HCl reaction, laminations <1/4-inch thickness, laminae of varying sand and clay content including sand laminae, non-cemented (Catahoula FM)		5
130												
		SPT 29	17 30 50/5	16								0
135									SM	-1.6 136.0 Silty SAND, greenish gray (Gley 1 5/5GY), moist, very dense, spherical, subangular, fine-grained, quartz sand with trace lithics, no HCl reaction, low cementation (Catahoula FM)		
		SPT 30	50/5	6							-Driller's feedback: very hard drilling from 137.5 feet to 142.5 feet	-5
140									CL	-6.1 140.5 CLAY, dark greenish gray (Gley 1 4/5GY), moist, hard, some silt, no HCl reaction, non-cemented (Catahoula FM)		
		SPT 31	39 37 50/6	18							-Split spoon full - recommend to discard last blow count (50/6" inches)	-10
145									SM	-11.6 146.0 Silty SAND, light olive brown (2.5Y 5/3), moist, very dense, fine-grained, spherical, subangular quartz, no HCl reaction, non-cemented (Catahoula FM.)		
		SPT 32	21 31 35	18					ML	-14.0 148.4 -14.6 149.0 Sandy SILT, light olive brown (2.5Y 5/3), moist, hard, fine grained sand, no HCl reaction, non-cemented, iron-oxide staining absent (Catahoula FM)	-Gradual contact over 2 to 4 inch depth range	-15
150										Boring terminated at 149.0 feet. Hole grouted upon completion.		
155												-20
160												-25

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1101

Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549646.12 N; 277258.04 E feet		Total Depth 129.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / D120 Track Rig (76%)	Elevation (Datum NGVD 29) 133.9 feet	Ground Water Depth Not Determined	Date Started 7/1/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 7/3/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deckdall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	133.9 SILT, brown (7.5YR 5/2), moist, Contains sand and gravel (Undocumented Fill) 0.0	-Mud rotary-casing advancer	
									ML	130.4 SILT, light olive brown (2.5Y 5/4), moist, medium stiff to stiff, contains clay and shell fragments (Upper Loess) 3.5		130
5		SPT 1	2 3 4	9								
												125
10		SPT 2	2 2 3	9							-Switch to open-hole mud rotary below 11 feet	
		SPT 3	2 3 4	11						13 feet: Laminated, light yellowish brown (2.5Y 6/4) below 13 feet		120
15												
		SPT 4	3 4 5	12						Stiff below 18 feet		115
20												
		SPT 5	4 5 7	13								110
25												
		SPT 6	4 4 5								SPT 6: Recovery not recorded	105
30												
		SPT 7	5 6 7	12								100
35												
		SPT 8	6 7 8	13						38 feet: Increasing moisture and clay content		95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL LF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1101

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light olive brown (2.5Y 5/4), moist, medium stiff to stiff, contains clay and shell fragments (Upper Loess) *(Continued from previous page)*		
		SPT 9	6 7 8	10								90
45												
		SPT 10	7 7 8	9								85
50									CL	82.9 CLAY, dark yellowish brown (10YR 4/6), moist, medium stiff, laminated, contains silt, manganese nodules and shell fragments (Lower Loess) 51.0		
		SPT 11	3 3 5	18								80
55									ML	78.4 SILT, light brownish gray (2.5Y 6/2), moist, hard, mottled iron-oxide staining, contains clay (Lower Loess) 55.5		
		SPT 12	17 22 18	12								75
60												
		SPT 13	16 17 22	18								70
65												
		SPT 14	11 12 12	12					ML	66.9 SILT, light brownish gray (2.5Y 6/2), moist, very stiff, contains clay and 1-inch thick fine grained sand lense at 68.5 feet (Lower Loess) 67.0		65
70									SP-SC	63.4 Poorly-graded SAND with clay and silt, light gray (2.5Y 7/2), wet , very dense, fine grained, subrounded quartz (Upland Complex Alluvium) 70.5		
		SPT 15	19 26 27	8			GSZ					60
75									ML	58.9 Sandy SILT, light gray (2.5Y 7/2), moist, very stiff, interbedded with thin fine grained sand lenses (Upland Complex Alluvium) 75.0		
		SPT 16	11 10 25	8			GSZ		SP	54.9 79.0		55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1101

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	52.9 Poorly-graded SAND, yellow (2.5Y 7/4), wet, dense, fine grained, subrounded quartz (Upland Complex Alluvium) *(Continued from previous page)* 81.0		
									CL			
		SPT 17	5 13 26	24	15	22/9				CLAY, gray (2.5Y 6/1), moist, hard, iron stained between 84 feet and 84.5 feet, interbedded with well sorted gravelly sand, light gray (2.5Y 7/2), wet, angular to subrounded grains, various mineralogy/lithology (Upland Complex Old Alluvium) 85.0	-Sample 1101-17: first six inches fell by weight of rods. SPT blows recorded from 83.5 feet to 85.0 feet -Gravelly response from rig	50
85									SW	48.9		
90										Well-graded SAND, light gray (2.5Y 7/2), wet, contains gravel, medium to coarse grained sand, fine to coarse grained gravel, angular to subrounded, rounding increases with decreasing grain size (Upland Complex Old Alluvium)	-Hole would not stay open for sample. Skipped SPT sample interval (1101-18) per KBC, collected cuttings for sample, and drilled to next interval	45
									GW	40.9 93.0 Well-graded GRAVEL with sand, light gray (2.5Y 7/2) matrix, various color clasts, wet, dense, trace fines, fine grained gravel contains sand, interbedded with coarse gravel up to maximum 1-inch diameter, angular to rounded sand grains (Upland Complex Old Alluvium)		40
95		SPT 19	18 19 15	7			GSZ				-Sample 1101-19 1-inch Blow Counts collected: -1st 6-inch interval: 2,1,2,3,5,5 -2nd 6-inch interval: 4,3,3,3,3,3 -3rd 6-inch interval: 2,3,4,2,2,2	35
100		SPT 20	10 12 11	7							-Sample 1101-20 1-inch Blow Counts collected: -1st 6-inch interval: 1,1,2,2,2,2 -2nd 6-inch interval: 2,2,2,2,2,2 -3rd 6-inch interval: 2,2,1,2,2,2 -Water pressure increase, very slow drilling	
									CL	32.4 101.5 CLAY, greenish gray (GLEY 1 4/5GY), dry, hard, contains silt, brittle rock-like behavior (Catahoula FM)		30
105		SPT 21	25 37 50/5	18								
		SPT 22	33 36 50/6	18								25
110												
		SPT 23	25 36 50/6	18								20
115									CL	18.4 115.5 CLAY, greenish gray (GLEY 1 5/5GY), dry, hard, contains silt, weak, brittle rock-like behavior (Catahoula FM)		
		SPT 24	42 50/6	13								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1101

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (GLEY 1 5/5GY), dry, hard, contains silt, weak, brittle rock-like behavior (Catahoula FM) *(Continued from previous page)*	-Tight drilling response noted	
125											-Skipped 123-124.5 feet sample interval per K. Clahan, drilled to 128 feet for next sample	10
		SPT 25	11 14 17	18	24	46/28				4.4 129.5		5
130										Boring terminated at 129.5 feet. Hole grouted upon completion.		0
135												-5
140												-10
145												-15
150												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lewis & Associates, Inc.

SOIL LOG - Boring No. B-1102

Drilling Method and Hole Diameter Rotary Wash / 3 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549563.78 N; 277423.22 E feet		Total Depth 149 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29) 133.4 feet	Ground Water Depth Not Determined	Date Started 7/1/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 7/3/06

Reviewed by / Date CEG 2100 5/29/07 Gill Deckard 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.4 0.0 Well graded SAND, contains gravel of various colors and lithologies, moist (Fill)		
									ML	131.9 1.5 SILT, dark yellowish brown (10YR 4/6), moist, hard, trace fine sand and few to little clay (Undocumented Fill)		
		SPT 1	23 24 24	18								130
5									ML	127.4 6.0 SILT, dark yellowish brown (10YR 4/4), moist, hard, few clay, homogenous with gray clay blebs and discontinuous clay laminae (Undocumented Fill)		
		SPT 2	13 17 23	17								125
10												
		SPT 3	14 16 21	18								120
15												
		SPT 4	7 11 12	15.5								115
20												
		SPT 5	14 22 17	15.5								110
25												
		SPT 6	10 13 18	15.5								105
30									ML	102.4 31.0 SILT, dark greenish gray (Gley 1 4/10Y), moist, stiff to very stiff, contains clay, laminated, interbedded with abundant woody debris (Undocumented Fill)		
		SPT 7	6 10 11	15.5								100
35												
		SPT 8	4 7 9	13								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1102

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, dark greenish gray (Gley 1 4/10Y), moist, stiff to very stiff, contains clay, laminated, interbedded with abundant woody debris (Undocumented Fill) *(Continued from previous page)*	-Changed to 1 foot long drag bit	
		SPT 9	5 5 6	11						- Dark yellowish brown (10YR 4/4) and greenish gray (Gley 1 6/10Y) below 42.5 feet		90
45												
		SPT 10	4 4 5	15.5								85
50										82.9 — 50.5		
									MH	SILT, brown (10YR 5/3), moist, stiff, iron oxide mottling, and manganese oxide mottling, little to some clay (Undocumented Fill)		
		SPT 11	3 6 6	18							- Soil has less organized/consistent fabric than lower loess	80
55										77.9 — 55.5	-Probably fill	
									ML	SILT, yellowish brown (10YR 5/4), wet, very soft to medium stiff, few clay, with gastropod shells, sand and oxide mottling absent (Upper Loess)		
		SPT 12	1 1 2	0								75
60												
		SPT 13	3 3 4	18								70
65												
		SPT 14	2 1 1	18	30	26/3						65
70										62.9 — 70.5		
									ML	SILT, light olive brown (2.5Y 5/4), moist, very soft, few to little fine grained sand, manganese nodules, and iron oxide staining (Lower Loess)		
		SPT 15	WOH WOH WOH	18						59.9 — 73.5		60
									MH	SILT, light brownish gray (2.5Y 6/2), moist, very soft, iron and manganese oxide staining, some clay (Lower Loess)	-Contact gradual over 2 inches	
75										56.4 — 77.0		
									SP		-Driller's feedback: Contact at approximately 77 feet	
		SPT 16	32 36 41	14.5								55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G( )L GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettes & Associates, Inc.

SOIL LOG - Boring No. B-1102

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly graded SAND, white (5Y 8/1), moist, dense, spherical, subangular, fine grained quartz sand, trace lithics, homogeneous (Upland Complex Alluvium) *(Continued from previous page)*	-Switched to 10 inch long roller bit	
		SPT 17	17 19 26	12								50
									SW	48.9 — 84.5 Well graded SAND with gravel, various colors, moist, dense, spherical, subrounded to subangular quartz, chert, and lithic sand, subrounded to rounded gravel (Upland Complex Old Alluvium)	-Driller's feedback: Sand with gravel at 84.5 feet --Drill rods chattering	
85												
		SPT 18	18 25 21	8.5								45
90											-Casing (4-1/2 inch) installed to 93.5 feet (overdrilled to 95.0 feet)	
											-SPT 19: Skipped sample due to loose gravel - OK per KBC	40
95											-Lost approximately 400 gallons of H2O drilling from 95 feet to 99 feet -Skipped sample due to sloughing gravel - Ok per KBC	35
100												
									MH	31.9 — 101.5 SILT, dark greenish gray (Gley 1 4/10GY), moist, hard, contains concretion nodules, clay, few sand (Catahoula FM)	-Driller's feedback: Catahoula FM at approximately 101.5 feet	
		SPT 20	35 30 43	19								30
105											-Changed to 1 foot long drag bit	
									CL	27.9 — 105.5 CLAY, greenish gray (Gley 1 5/GY), moist, hard, some silt, subequal clay and silt with trace fine grained sand (Catahoula FM)		
		SPT 21	29 44 50/5	18								25
110												
		SPT 22	24 29 37	18								20
115									ML	17.9 — 115.5 SILT with sand, greenish gray (Gley 1 6/10GY), moist, hard, sand is fine grained (Catahoula FM)	-Driller's feedback: hard drilling from 115 feet to 117 feet	
		SPT 23	40 49 50/5	18					ML	15.4 — 118.0 Sandy SILT, grayish green (Gley 1 4/5G), moist, hard, sand is fine grained (Catahoula FM)	-Contact gradual over 1 inch	15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU. L.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1102

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									ML	Sandy SILT, grayish green (Gley 1 4/5G), moist, hard, sand is fine grained (Catahoula FM) *(Continued from previous page)*		
										10.4 — 123.0		
									SM	Silty SAND, grayish green (Gley 1 4/5GY), moist, very dense (Catahoula FM)		10
125												
		SPT 24	13 26 46	17								5
130												
										0.1 — 133.5		0
									CH	CLAY, greenish gray (Gley 1 5/10GY), moist, hard, little silt (Catahoula FM)		
135												
		SPT 25	20 26 35	17						-4.8 — 138.2		-5
									CL	CLAY, silty, dark greenish gray (Gley 1 4/10GY), dry to moist, hard, some silt (Catahoula FM)	-Contact gradual over 1/2 inch	
140												
										-9.6 — 143.0		-10
									SM	Silty SAND, greenish gray (Gley 1 5/5GY) and dark greenish gray (Gley 1 4/10GY), moist to wet, very dense, subangular, fine grained quartz sand, trace silty sand seams (Catahoula FM)	
145												
		SPT 26	24 48 50/5	12						-15.6 — 149.0		-15
150										Boring Terminated at 149.0 feet. Hole grouted upon completion.		
												-20
155												
												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G OL.GPJ WLA GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1103

Drilling Method and Hole Diameter Hollow stem auger (8.25" dia.)/rotary wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549717.14 N; 277292.8 E feet		Total Depth 105 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 134.1 feet	Ground Water Depth Not Determined	Date Started 6/18/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 6/21/06

Reviewed by/ Date CEG 2100 5/29/07 Bill Leslie 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	134.1 Well-graded SAND, various colors/lithologies, moist, very dense, contains gravel (Undocumented Fill) 0.0		130
									ML	133.1 SILT, yellowish brown (10YR 5/4), moist stiff to very stiff, few to little clay, trace fine grained sand (Upper Loess) 1.0		
5											-Hollow stem augers advanced to 10 feet in order to install PVC collar for mud tub -Upper 10 feet logged from cuttings	125
10		SPT 1	3 4 4	18						- Carbonate mottling below 10 feet	-Rotary wash techniques below 10 feet	120
15												115
20		SPT 2	4 5 6	14								110
25		SPT 3	4 5 7	9.5							-Additional sample scheduled by KBC at 25 feet	105
30		SPT 4	4 7 9	10.5							-Slow trickle of water out of casing during pressuremeter testing (from raveling sand outside casing) -Drilled from 30 feet to 36 feet for pressuremeter test interval -Slough in hole bottom--instrument at 35.5 feet	100
35		SPT 5	7 8 11	9.5						- Gastropod shell fragments at 36.8 feet		95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G .OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1103

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 6	5 11 14	9.5					ML	SILT, yellowish brown (10YR 5/4), moist stiff to very stiff, few to little clay, trace fine grained sand (Upper Loess) *(Continued from previous page)*		
45												90
												85
50		SPT 7	3 3 4	15.5						- Medium stiff below 50 feet		
55												80
									MH	78.1 — 56.0 SILT, light brownish gray (2.5Y 6/2), moist, stiff, some clay, contains gastropod shells, manganese oxide mottling, iron oxide mottling (Lower Loess)		75
60		SPT 8	4 4 6	20.5							-Drilled from 60 feet to 66 feet with 2-15/16 inch bit for pressuremeter test interval -Slough in hole bottom -- instrument at 65.5 feet	
												70
65		SPT 9	8 9 15	18					CL	67.5 — 66.6 Sandy CLAY, light brownish gray (2.5Y 6/2), moist, very stiff, little silt, sand is fine grained, subrounded to subangular quartz, iron oxide mottling (Upland Complex Alluvium)	-Contact clear over 1 inch depth range -Sample 1103-09A from 66 feet to 66.6 feet -Sample 1103-09B from 66.6 feet to 67.5 feet	65
70		SPT 10	17 25 32	13.5		28/9	GSZ		CL	63.6 — 70.5 CLAY with sand, light gray (2.5Y 7/1), hard, contains silt (Upland Complex Alluvium)	-Contact gradual over 2 inches -Sample 1103-10A from 70 feet to 70.4 feet -Sample 1103-10B from 70.4 feet to 71.5 feet	
									SM	60.6 — 73.5 Silty SAND, light gray (5Y 7/1), moist, very dense, subrounded to subangular fine grained quartz sand, iron oxide mottling (Upland Complex Alluvium)		60
75		SPT 11	25 38 47	5			GSZ				-Drilled from 75 feet to 81.5 feet with 2-15/16 inch bit for pressuremeter test interval -Slough in hole bottom instrument at 79.1 feet	
80												55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1103

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SM	Silty SAND, light gray (5Y 7/1), moist, very dense, subrounded to subangular fine grained quartz sand, iron oxide mottling (Upland Complex Alluvium) *(Continued from previous page)* 83.0		
		SPT 12	26 40 36	7.5							-Based on driller's feedback	50
									GW	51.1 Well graded Gravel (Upland Complex Old Alluvium) 85.0		
85									SW	49.1 Well-graded SAND, contains gravel interbedded from approximately 85 feet to 91 feet (Upland Complex Old Alluvium)	-Based on driller's feedback	
												45
90											-Based on driller's feedback	
												40
95												35
100										32.1 102.0		
									CL	CLAY (Catahoula Formation)	-Based on driller's feedback	30
105										29.1 105.0 Boring Terminated at 105.0 feet. Hole grouted upon completion.		
110												25
115												20
120												15

Page 3 of 3

SOIL LOG_MFC_WLA 6468-06-1340 GRAND ... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1104

Drilling Method and Hole Diameter Mud Rotary / 2.5 inches to 3.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549650.13 N; 277412.4 E feet		Total Depth 149.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling/Mobile B59 / D120 Track Rig (76%)	Elevation (Datum NGVD 29) 133.5 feet	Ground Water Depth Not Determined	Date Started 7/10/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 7/12/06

Reviewed by / Date CEG. 2100 3/8/07 Wm Dedall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.5 Well-graded SAND, various colors/lithologies, moist, contains gravel (Undocumented Fill) 0.0		130
									ML	132.0 SILT, yellowish brown (10YR 5/4), moist, stiff to hard, homogenous, contains gray clay (Undocumented Fill) 1.5		
5		SPT 1	5 8 9	8.5								125
10		SPT 2	9 15 20	13								
15		SPT 3	9 11 12	13						- 13.0 feet: Trace gastropod shell fragments and woody debris		120
20		SPT 4	7 9 9	13						- 18.0 feet: Olive gray (5Y 5/2), light olive brown (2.5Y 5/3), very dark gray (5Y 3/1), greenish gray (Gley 1 5/5GY), interbedded lifts of fill, 3 to 5 inches thick		115
25		SPT 5	4 5 7	8.5						- Iron oxide staining and woody debris at 23 feet		110
									ML	107.0 SILT, yellowish brown (10YR 5/4), moist to dry, medium stiff to very stiff, with carbonate filaments/nodules, trace clay (Upper Loess) 26.5		
30		SPT 6	4 6 7	11								105
35		SPT 7	6 7 8	8.5								100
40		SPT 8	5 6 7	8.5								95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1104

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist to dry, medium stiff to very stiff, with carbonate filaments/nodules, trace clay (Upper Loess) *(Continued from previous page)*		
		SPT 9	6 8 10	11								90
45												
		SPT 10	5 7 7	12								85
50											-G. Akins driller from 50 feet to 80 feet	
		SPT 11	2 2 4	18						- Wet, soft below 53 feet		80
55												
		SPT 12	4 4 4	17						- Trace gastropod shell fragments below 58 feet		75
60										72.5 / 61.0		
		SPT 13	3 5 6	13.5					MH	SILT, brown (10YR 5/3), moist, stiff, iron oxide mottling, contains manganese oxide nodules, and some clay (Lower Loess)		70
65										67.5 / 66.0		
		SPT 14	5 5 7	18		26/8	GSZ		CL	CLAY, light gray (5Y 7/2), moist, stiff, contains silt and sand, interbedded clayey silt and silty sand, sand is fine grained, spherical, subangular to subrounded quartz, iron oxide mottling present, silt contains clay (Lower Loess)		65
70										62.5 / 71.0		
		SPT 15	12 24 35	12					SP-SM	Poorly-graded SAND with silt, light gray (2.5Y 7/1) and light brownish gray (2.5Y 6/2), moist, very dense or hard, spherical, subangular to subrounded, fine grained quartz sand grading up to sandy silt with fine grained sand interbeds (graded) (Upland Complex Alluvium)		60
75												
		SPT 16	18 23 28	7			GSZ					55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1104

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Soil Type (USCS)	Lithology	Remarks
80								SP-SM	Poorly-graded SAND with silt, light gray (2.5Y 7/1) and light brownish gray (2.5Y 6/2), moist, very dense or hard, spherical, subangular to subrounded, fine grained quartz sand grading up to sandy silt with fine grained sand interbeds (graded) (Upland Complex Alluvium) *(Continued from previous page)* -Trace iron oxide mottling below 83 feet	-Driller: B. Ketron
		SPT 17	11 31 38	18						
85										
		SPT 18	10 8 14	12						
90								GW	Well-graded GRAVEL with sand, various colors, moist, medium dense, trace fines, rounded to subrounded, subdiscoidal quartz and chert clasts, sand is fine to coarse grained, abundant iron oxide staining (Upland Complex Old Alluvium)	
		SPT 19	6 10 8	10			GSZ			-Blows per inch at 94 feet - 95.5 feet: 1st 6": (0.5, 0.5, 0.5, 0.5, 2, 2) 2nd 6": (2, 1, 1, 2, 1, 3) 3rd 6": (2, 1, 1, 1, 2, 1)
95								CL	CLAY (Upland Complex Old Alluvium)	
		SPT 20	7 10 18	6				GW	Well-graded GRAVEL, various colors, moist, medium dense, contains sand, subdiscoidal, rounded to subrounded gravel, fine to coarse grained sand, lithologies include quartz, chert, limestone, quartzite, trace lithic sand (Upland Complex Old Alluvium)	
100								CL	CLAY, grayish green (Gley 1 4/5G), moist, hard, subequal silt and clay with trace fine grained sand, homogeneous (Catahoula FM)	
		SPT 21	29 40 50/5	18	26	48/28				
105										
		SPT 22	29 35 48	18						
110								CL	CLAY, grayish green (Gley 1 4/5G), moist, hard, little silt, homogeneous (Catahoula FM)	
		SPT 23	26 32 46	18						
115								ML	SILT, greenish gray (Gley 1 5/10GY), moist, hard, contains spherical, subrounded to subangular, fine grained quartz sand (Catahoula FM)	
		SPT 24	50/5.5	5.5						
120										

Elevation (feet): 50, 45, 40, 35, 30, 25, 20, 15

44.7 — 88.8; 35.5 — 98.0; 35.0 — 98.5; 31.5 — 102.0; 22.5 — 111.0; 17.5 — 116.0

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1104

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									ML	12.5 / 121.0		
									MH	SILT with clay, greenish gray (Gley 1 5/10GY), hard, interbedded (Catahoula FM)		10
		SPT 25	20 26 39	19	25	58/25						
125										7.5 / 126.0		
									SM	Silty SAND, greenish gray (Gley 1 5/10GY), moist, very dense, spherical, subangular to subrounded, fine grained quartz, homogenous, contains sandy silt laminae (Catahoula FM)		5
		SPT 26	23 44 50/3.5	15.5								
130												
		SPT 27	33 30 40	17			GSZ					0
135										-2.5 / 136.0		
									CH	CLAY, grayish green (Gley 1 5/10GY), moist, hard, contains silt, homogeneous (Catahoula FM)		
		SPT 28	19 26 33	21.5								-5
140										-7.5 / 141.0		
									MH	SILT, grayish green (Gley 1 5/10GY), moist, hard, contains clay, trace fine grained sand, homogeneous (Catahoula FM)		
		SPT 29	21 27 33	20	31	63/28						-10
145												
										-14.9 / 148.4		
		SPT 30	17 30 37	15.5					SP-SM	-16.0 Poorly graded SAND with silt, dark greenish gray (Gley 1 4/5GY), wet to moist, very dense, subrounded to subangular, fine grained quartz sand (Catahoula FM) 149.5	-Contact clear over 1/2 inch	-15
150										Boring Terminated at 149.5 feet. Hole grouted upon completion.		
												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1105

Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549712.93 N; 277446.36 E feet		Total Depth 140 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.3 feet	Ground Water Depth Not Determined	Date Started 7/30/06
Sampling Method SPT / UD	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 8/1/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedrick 3-6-07

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										133.3 Ground surface is compacted gravel, contains concrete (Undocumented Fill) 0.0–1.0		
									ML	132.3 SILT, yellowish brown (10YR 5/4), moist, stiff, trace clay (Undocumented Fill) 1.0–12.0		130
5		SPT 1	4 6 9	9.6								
												125
10		SPT 2	1 3 5	6								
									CL	121.3 CLAY, very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2), moist, stiff, contains silt, organics (Undocumented Fill) 12.0–17.5	-Some clay in cuttings noted at 12 feet	120
15		SPT 3	2 4 7	10.8								
									ML	115.8 SILT, brown (10YR 4/3), moist, medium stiff, contains clay, some organics (Undocumented Fill) 17.5–21.0	-Driller notes change in material at 17.5 feet	115
20		SPT 4	2 2 4	6								
									ML	112.3 SILT, yellowish brown (10YR 5/4), dry, stiff to very stiff, trace gastropods (Upper Loess) 21.0–		110
25		SPT 5	3 6 5	6								
												105
30		SPT 6	3 3 5	7.2								
												100
35		S UD1		24								
		SPT 7	5 6 9	8.4								
												95
40		SPT 8	3 6 8	8.4								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1105

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry, stiff to very stiff, trace gastropods (Upper Loess) *(Continued from previous page)*		
45		SPT 9	7 9 10	9.6								90
											-Groundwater at 47 feet depth	85
50		SPT 10	5 6 6	10.8						- Soil is wet below 48.5 feet		
55		SPT 11	1 2 4	18								80
									CL	CLAY, gray (10YR 6/1), moist, very stiff, contains silt, manganese nodules, iron staining (Lower Loess)	-Driller notes change in material at 56 feet	75
60		S UD2		18								
		SPT 12	3 7 14	20.4								
		S UD3		15.6					SW	Well-graded SAND, light gray (2.5YR 7/2), dry, very dense, contains clay and silt, iron staining (Upland Complex Alluvium)	-Bottom of tube crushed on sample 1105-UD3	70
65		SPT 13	23 32 34	15.6								
70		SPT 14	26 25 30	13.2						- Thin clay lenses present at 68.5 feet		65
		S UD4		12			GSZ CON		SM	Silty SAND, gray (10YR 6/1), moist to wet, (Upland Complex Alluvium) - Description from material at bottom of sample tube	-Pushed tube 1105-UD4 -1.5 feet and recovered 1 foot - Bottom of tube was crushed	60
75		SPT 15	6 21 33	12					SW	Well-graded SAND, light gray (2.5YR 7/2) to brown (10YR 5/3), wet, medium dense to very dense, trace clay (Upland Complex Alluvium)		
									SM	Silty SAND, gray (10YR 6/1), wet, medium dense to very dense, fine grained quartz (Upland Complex Alluvium)		55
80		SPT 16	32 50/4	7.2								

Elevation (feet): 77.3; 56.0; 69.8; 63.5; 61.8; 71.5; 58.8; 74.5; 56.3; 77.0

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND [illegible] COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1105

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SM	Silty SAND, gray (10YR 6/1), wet, medium dense to very dense, fine grained quartz (Upland Complex Alluvium) *(Continued from previous page)*		
		SPT 17	14 21 23	7.2			GSZ					50
85												
		SPT 18	11 11 6	9.6								45
90												
										40.3 — 93.0		
									CL	CLAY, light brownish gray (2.5 YR 6/2), moist, very stiff, contains silt, trace fine sand (Upland Complex Old Alluvium) 38.8 — 94.5	-Some clay in cuttings noted -93.5 feet to 94.3 feet: Sample 1105-19A	40
		SPT 19	6 4 18	8.4								
95									SW	Well graded SAND, gray (10YR 6/1), wet, dense, fine grained quartz sand, contains subrounded to subangular gravels (Upland Complex Old Alluvium) 35.3 — 98.0	-94.3 feet to 95 feet: Sample 1105-19B	
		SPT 20	14 19 25	12	22	44/24			CL	CLAY, yellowish brown (10YR 5/6), dry, hard, contains silt, iron stained (Upland Complex Old Alluvium) 33.3 — 100.0	-Clay in cuttings at 98 feet	35
100									CL	CLAY, greenish gray (Gley 1 5/1 5G), dry, hard, contains silt (Catahoula FM)	-100 feet: Catahoula FM -Very bottom of split spoon shoe contained trace amount of Catahoula soil -Attempted shelby tube at 103 feet, pushed 1 inch and crushed tube	
		SPT 21	23 41 50/4	9.6								30
105												
		SPT 22	22 41 50/3	12							-Advised to switch to 10 feet sample intervals by K. Clahan (WLA)	25
110												
												20
115												
		SPT 23	30 44 50/3	12								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1105

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (Gley 1 5/1 5G), dry, hard, contains silt (Catahoula FM) *(Continued from previous page)*		
125												10
		SPT 24	17 22 38	15.6								5
130												0
135											-Boring terminated at 140 feet -Boring collapsed to 90 feet overnight and could not get tools back to 140 feet -Terminated by K. Clahan (WLA)	-5
		SPT 25	18 25 32	10.8						- Trace fine sand at 138.5 feet -6.7 140.0		
140										Boring Terminated at 140.0 feet. Hole grouted upon completion.		-10
145												-15
150												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1106**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549734.13 N; 277522.18 E feet		Total Depth 140 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Mobile B57	Elevation (Datum NGVD 29) 133.6 feet	Ground Water Depth Not Determined	Date Started 7/30/06
Sampling Method SPT / UD	Borehole Inclination Vertical	Logged by T. Ramirez	Date Completed 8/7/06

Reviewed by / Date CEG. 2100 3/8/07 Wm Dedrick 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	133.6 SILT, light yellowish brown (10YR 6/4), moist, trace fine sand, carbonate staining (Undocumented Fill) 0.0		
									ML	131.6 SILT, light olive brown (2.5Y 5/4), moist, soft to very stiff, few to little clay, trace sand, carbonate staining (Upper Loess) 2.0		130
5		SPT 1	4 3 4	18								125
10		SPT 2	2 1 2	12								120
15		SPT 3	4 4 5	9.6								115
20		SPT 4	4 5 5	12			GSZ SG				- Specific gravity of solids = 2.80	110
25		SPT 5	5 5 7	9.6						- 25.5 feet: Contains broken weathered shells		105
30		SPT 6	7 6 8	10.8	22	27/4						100
		S UD1		10.8							-Recovered 17 inches	
35		SPT 7	9 7 10	8.4								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project: 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1106

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	6 7 10	9.6			GSZ SG		ML	SILT, light olive brown (2.5Y 5/4), moist, soft to very stiff, few to little clay, trace sand, carbonate staining (Upper Loess) *(Continued from previous page)*	- Specific gravity of solids = 2.69	
45		SPT 9	8 8 11	9.6					ML	- Laminations below 45 feet		90
												85
50		SPT 10	4 4 6	18	25	29/8			CL-ML	Silty CLAY, yellowish brown (10YR 5/6), moist, stiff, (Upper Loess)		
									CL	CLAY, yellowish brown (10 YR 5/6), moist, very stiff, mostly silt, few sand, oxidation staining, manganese staining (Lower Loess)		80
55		SPT 11	7 10 11	18								
		S UD2		22.8	21	32/16	GSZ TRX					75
60		SPT 12	8 8 14	18	17	34/17			CL	CLAY, gray (10YR 6/1), moist, very stiff, oxidation and manganese staining/mottling (Lower Loess)		
		S UD3		20.4	21	32/16			CL/ML	CLAY to SILT, light gray (2.5Y 7/1), moist, very stiff, trace sand, oxidation staining (Lower Loess)		70
65		SPT 13	31 16 12	18								
									SC	Clayey SAND, light gray (2.5Y 7/1) to gray (2.5Y 6/1), moist, dense to very dense, oxidation staining, fine grained, intercalated clay (Upland Complex Alluvium)		65
70		SPT 14	30 21 18	9.6			GSZ					60
75		S UD4		0					SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, dense to very dense, fine quartz sand, oxidation staining, trace clay (Upland Complex Alluvium)		
		SPT 15	16 21 18	5								55
80												

83.6 — 50.0
79.6 — 54.0
74.1 — 59.5
70.1 — 63.5
65.6 — 68.0
57.6 — 76.0

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1106

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		SPT 16	21 29 39	7.2					SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, dense to very dense, fine quartz sand, oxidation staining, trace clay (Upland Complex Alluvium) *(Continued from previous page)*		
85		SPT 17	22 32 42	12								50
90		SPT 18	29 34 37	12						- Fine grained quartz sand with trace lithics below 90.5 feet		45
									40.6		93.0	
95		SPT 19	22 19 28	10.8			GSZ		SM	Silty SAND with gravel, light brownish gray (2.5Y 6/2), moist, dense, subrounded to subangular fine grained quartz sand, with subrounded quartz and chert gravel (Upland Complex Old Alluvium)		40
									35.6		98.0	
100		SPT 20	48 45 50/4	18					CL	CLAY, grayish green (Gley 1 5/2), dry, hard, brittle rock-like fracture (Catahoula FM)		35
												30
105		SPT 21	32 34 50/5	15.6								25
110		SPT 22	21 38 50/5	14.4								20
115												15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1106

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 23	21 31 50/5	18					CL	CLAY, grayish green (Gley 1 5/2), dry, hard, brittle rock-like fracture (Catahoula FM) *(Continued from previous page)*		10
125									CL	8.6 — 125.0 CLAY with sand, grayish green (5G 5/2), dry to moist, hard (Catahoula FM)		5
130		SPT 24	30 50/5.5	11							-Start of day : 8-7-06; R. Ortiz logging borehole during sample 1106-24 -No am H2O level due to thick mud in hole to gound surface	0
135									SC	-0.4 — 134.0 Clayey SAND, greenish gray (Gley 1 5/10GY), moist, very dense (Catahoula FM)	-Willie adjusted drill/sample interval but did not inform rig geologist until after sample collected and logged. -Next sample will be from 138.5 feet to 140.0 feet -Kate Krug took over logging borehole at 138.5 feet	-5
140		SPT 25	49 39 50/5	20.4					CL	-5.4 — 139.0 -6.3 — 139.9 CLAY, grayish green (Gley 1 4/2), dry, moist, hard, contains silt (Catahoula FM) Boring terminated at 139.9 feet. Hole grouted upon completion.		-10
145												-15
150												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL COL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1107

Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549915.94 N; 277358.47 E feet		Total Depth 150 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 134.5 feet	Ground Water Depth Not Determined	Date Started 8/1/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by N. Peterson / C. Rittel	Date Completed 8/8/06

Reviewed by / Date CEG 2100 5/24/07 Bill Deckelbaum 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										134.5 0.0 Concrete slab and compacted gravel 0.5	-N. Peterson logging borehole	
									ML	SILT with sand, strong brown (7.5YR 5/6), contains gravels, concrete fragments (Undocumented Fill) 132.5 2.0		
									ML	SILT, brown (10YR 5/3), moist, medium stiff, contains clay (Undocumented Fill)		
5		SPT 1	1 2 5	8.4								130
10		SPT 2	2 3 4	8.4								125
15		SPT 3	1 4 4	4.8	18	27/4				- 13.5 feet: Trace sand, few to little clay		120
									ML	118.5 16.0 SILT, yellowish brown (10YR 5/4), soft to stiff, few to little clay (Upper Loess)		
20		SPT 4	1 1 3	6								115
25		SPT 5	4 5 5	8.4			GSZ					110
		S UD1		24								105
30		SPT 6	6 6 7	8.4								
35		SPT 7	3 3 4	6	22	24/1						100
40		SPT 8	4 6 6	10.8								95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU... JL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1107

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), soft to stiff, few to little clay (Upper Loess) *(Continued from previous page)*		
45		SPT 9	4 7 7	9.6			GSZ			- 43.5 feet: Few clay, trace sand		90
									CH	88.0 — 46.5 CLAY, yellowish brown (10YR 5/4), wet medium stiff, gastorpod shells present throughout (Upper Loess)	-Groundwater at approximately 47 feet	
		S UD2		22.8								85
50		SPT 10	3 3 4	14.4	24	89/56						
									CL	81.5 — 53.0 CLAY, light yellowish brown (2.5YR 6/3), moist, medium stiff to very stiff, contains silt, manganese nodules (Lower Loess)		80
55		SPT 11	2 3 4	18								
		S UD3		24								75
60		SPT 12	4 7 9	18								
		S UD4		0							-Pushed shelby tube from 63 feet to 65 feet -Tube pulled off and was left in hole	70
65									SP-SC	68.5 — 66.0 Poorly-graded SAND with clay, light gray (10YR 7/1), wet, medium dense to very dense, iron stained (Upland Complex Alluvium)	-Drilled to 68.5 feet to collect next sample -Drilled through shelby tube	
70		SPT 13	11 8 10	13.2			GSZ					65
75		SPT 14	20 30 36	10.8								60
80		SPT 15	15 31 26	0								55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU. L.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1107

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP-SC	Poorly-graded SAND with clay, light gray (10YR 7/1), wet, medium dense to very dense, iron stained (Upland Complex Alluvium) *(Continued from previous page)*		
85		SPT 16	18 24 49	10.8							-C. Rittel logging borehole	50
									CL-ML	47.5 — 87.0 Silty CLAY, dark greenish gray (Gley 1 4/N), moist, stiff (Upland Complex Old Alluvium)		
90		SPT 17	3 4 6	18	39	28/6						45
									SW	42.5 — 92.0 Well-graded SAND with clay, yellowish brown (10YR 5/4), wet, medium dense, subangular to subrounded, fine to medium grained quartz sand (Upland Complex Old Alluvium)	-Start of water loss -Crew mixing mud -1/2 tank since start of day (150 gal)	
95		SPT 18	14 11 9	6								40
									SW	37.5 — 97.0 Well-graded SAND, yellowish brown (10YR 5/4), wet, very dense, trace gravel, subangular to subrounded, fine to medium grained quartz sand, subangular to subrounded chert lithologies (Upland Complex Old Alluvium)		
100		SPT 19	28 29 23	9							-Loss of 1/2 tank of water (150 gal) between 100 feet and 105 feet	35
									SP	32.5 — 102.0 Poorly-graded SAND with gravel, yellowish brown (10YR 5/4), wet, very dense, subangular to subrounded, fine grained chert gravels, fine to coarse grained sands (Upland Complex Old Alluvium)		
105		SPT 20	13 24 31	8			GSZ				150 gal. water loss from 105' and 110'	30
									GW	28.0 — 106.5 Well-graded GRAVEL with sand, light yellowish brown, wet, very dense, subangular to subrounded chert gravel, subangular to subrounded, fine to medium quartz sand (Upland Complex Old Alluvium)	-Loss of 230 gal from 105' to 110'	
110		SPT 21	29 46 37	14			GSZ				-Blows Per Inch at 108.5' to 110' -(6, 3, 3, 4, 6, 7) 1st 6" -(6, 9, 8, 7, 8, 8) 2nd 6" -(6, 6, 7, 7, 8, 3) 3rd 6" -Interbedded sands and gravels -Water loss continues	25
115		SPT 22	26 26 32	15							-Hole caved 7 feet when attempting to sample at 113.5 feet to 115 feet -Hole cleared and sampled	20
									ML	20.0 — 114.5 SILT with sand, pale brown (10YR 6/3), moist, hard, contains fine grained sand (Upland Complex Old Alluvium)	-Blows Per Inch at 113.5' - 115' -(3, 4, 4, 4, 3, 4) 1st 6" -(3, 3, 4, 5, 5, 6) 2nd 6" -(4, 5, 5, 5, 6, 7) 3rd 6" -Water loss continues	
									CL	17.5 — 117.0 SILT with sand, greenish gray (10Y 6/1), moist, hard, contains clay, sand is fine grained (Catahoula FM)		
120		SPT 23	26 20 26	7	22	33/7						15

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL JOL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project: 6468-06-1340**

MACTEC WLA William Lettus & Associates, Inc.

SOIL LOG - Boring No. B-1107

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	SILT with sand, greenish gray (10Y 6/1), moist, hard, contains clay, sand is fine grained (Catahoula FM) *(Continued from previous page)*	-Change in color of drill cuttings from tan to greenish gray	
125		SPT 24	30 49 50/4	15								10
130											-Crew adding portland cement to mud to attempt to stabilize boring walls -10 feet sample interval to 150 feet, per KBC	5
135												0
140		SPT 25	48 50/3	8								-5
145									SM	-10.5 145.0 SAND, greenish gray (10GY 6/1), moist, hard, contains silt, subangular to subrounded fine grained sand (Catahoula FM)		-10
150		SPT 26	23 38 50/6	6						-15.5 150.0 Boring Terminated at 150.0 feet. Hole grouted upon completion.		-15
155												-20
160												-25

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1108**
Drilling Method and Hole Diameter Mud Rotary / 3.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549849.44 N; 277427.66 E feet		Total Depth 120 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 134.3 feet	Ground Water Depth Not Determined	Date Started 6/14/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 6/17/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deadwell 3-6-07

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	134.3 Well-graded SAND, various colors and lithologies, moist, contains gravel (Undocumented Fill) 0.0		
									ML	133.3 SILT, yellowish brown (10YR 5/5), dry to moist, medium stiff to very stiff, few clay, faintly laminated, weak reaction to HCl (Upper Loess) 1.0		
5		SPT 1	4 5 5	16.8								130
10		SPT 2	4 4 4	12								125
15		SPT 3	4 4 5	12								120
20		SPT 4	4 4 6	12								115
25		SPT 5	5 6 7	13.2						- Trace gastropod shell fragments below 25 feet		110
30		SPT 6	5 6 7	12						- Pressuremeter Test: 1108-02 from 31.35 feet to 32.85 feet	-Drilling from 30 feet to 35 feet with 2-15/16 inch roller bit on 1-3/4 inch OD AW rods. Bit is 8 inches long. Drilling stopped at 34.5 feet to accomodate drill rod lengths	105
									CL-ML	102.3 Silty CLAY, yellowish brown (10YR 5/5), moist, medium stiff (Upper Loess) 32.0		
35		SPT 7	5 7 7	12	19	26/5				- Pressuremeter Test: 1108-01 from 32.85 feet to 34.35 feet		100
40										- Pressuremeter Test: Denotes pressure meter test interval		95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1108

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	6 6 9	0					CL-ML	Silty CLAY, yellowish brown (10YR 5/5), moist, medium stiff (Upper Loess) *(Continued from previous page)*		
										90.3 — 44.0		90
										SILT, yellowish brown (10YR 5/5), dry to moist, very stiff to medium stiff, few clay, trace sand (Upper Loess) - Pressuremeter Test: 1108-04 from 46.0 feet to 47.5 feet	-Drilled to 49.0 feet for pressure meter testing. Stopped at 49.0 feet to accomodate drill rod length	
45		SPT 9	7 8 9	8.4			GSZ SG					
		SPT 10	6 4 4	6						- Pressuremeter Test: 1108-03 from 47.5 feet to 49.0 feet		85
50										81.8 — 52.5		
									MH	SILT, pale brown (10YR 6/3), moist, medium stiff to hard, some clay, iron oxide and manganese oxide mottling (Lower Loess)		80
55		SPT 11	4 4 8	18								
												75
60		SPT 12	7 9 10	18						- Pressuremeter Test: 1108-06 from 61.2 feet to 62.7 feet	-Drilled from 60 feet to 64.5 feet with 2-15/16 inch bit for pressure meter test interval. Slough in hole bottoms instrument at 64.2 feet	
										- Pressuremeter Test: 1108-05 from 62.7 feet to 64.2 feet		70
65		SPT 13	7 15 24	13.5								
										66.3 — 68.0		65
									ML	Sandy SILT with clay, light gray (5Y 7/1), moist, very stiff, few to little clay, sand is subrounded to subangular, spherical quartz, homogeneous, lower contact sharp over 1/4-inch (Upland Complex Alluvium)		
70		SPT 14	15 24 29	13					SP-SM	63.8 — 70.5		
										Poorly-graded SAND with silt, light gray (5Y 7/1), moist, medium dense to very dense, spherical, subangular to subrounded, fine grained quartz sand (Upland Complex Alluvium)	-Drilled from 74.0 feet to 79.0 feet with 2-15/16 inch bit for pressure meter test interval. Slough in hole bottoms instrument at 78.1 feet	60
75		SPT 15	33 39 50/5	12						- Pressuremeter Test: 1108-08 from 75.1 feet to 76.6 feet	-Upper 12 inches of sample 1108-16 is likely slough. Recommend discard first two blow counts from SPT-161108-16	
		SPT 16	10 7 18	5			GSZ			- Pressuremeter Test: 1108-07 from 76.6 feet to 78.1 feet		55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND - COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1108

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP-SM	Poorly-graded SAND with silt, light gray (5Y 7/1), moist, medium dense to very dense, spherical, subangular to subrounded, fine grained quartz sand (Upland Complex Alluvium) *(Continued from previous page)*		
										48.8 — 85.5		50
85		SPT 17	32 23 24	13					MH	SILT, brown (10YR 5/3), moist, hard, subequal silt and clay, trace fine grained sand (Upland Complex Alluvium)	-Drilled from 85.0 feet to 91.0 feet with 2-15/16 inch bit for pressure meter test interval. Slough in hole botoms instrument at 89.1 feet	
										46.8 — 87.5		
									SW	Well-graded SAND, white (5Y 8/1), moist, very dense, spherical, subrounded to rounded, medium and coarse grained quartz sand, trace lithics, trace rounded, subprismoidal, fine quartz and chert gravel (Upland Complex Old Alluvium)	- PM 1108-10 from 86.1 feet to 87.6 feet - PM 1108-09 from 87.6 feet to 89.1 feet	45
90		SPT 18	13 24 39	5								
										41.3 — 93.0		
									SW	Well-graded SAND, various colors, moist, very dense, spherical, subangular to subrounded, fine to coarse grained quartz sand with feldspar, lithics, few to little rounded, prismoidal fine gravel (Upland Complex Old Alluvium)		40
95		SPT 19	27 16 14	17	22	39/22			CL		-Drilled from 95.0 feet to 101.0 feet with 2-15/16 inch bit for pressure meter test interval. Slough in hole bottoms instrument at 99.6 feet -Driller's feedback: Contact at 97.0 feet -Driller's feedback: Contact at 98.0 feet	
										38.8 — 95.5		
										37.3 — 97.0		
									SW	CLAY, olive brown (2.5Y 5/4), moist, very stiff, some silt, homogeneous, iron oxide mottling, trace fine grained sand (Upland Complex Old Alluvium)		
									CL			
										36.3 — 98.0		
										Well-graded SAND with gravel (Upland Complex Old Alluvium)		
100		SPT 20	19 50/5	11						CLAY, greenish gray (GLEY 1 5/10GY), moist, hard, some silt, trace fine grained sand (Catahoula FM)	- PM 1108-12 from 96.6 feet to 98.1 feet - PM 1108011 from 98.1 feet to 99.6 feet	30
105		SPT 21	25 27 50/6	21.5						- Pressuremeter Test: 1108-14 from 107.8 feet to 109.3 feet	-Drilled from 105.0 feet to 111.0 feet with 2-15/16 inch bit for pressure meter test interval. Slough in hole bottoms instrument at 110.8 feet	
110										- Pressuremeter Test: 1108-13 from 109.3 feet to 110.8 feet	-K. Clahan changed boring assignment details to omit SPT samples at 110.8 feet and 115.0 feet	25
										114.0 feet: Drill cuttings: silty CLAY		20
115		SPT 22	37 34 44	21.5						- Pressuremeter Test: 1108-16 from 116.3 feet to 117.8 feet	-Driller mistakenly sampled at 115 feet	
										- Pressuremeter Test: 1108-15 from 117.8 feet to 119.3 feet	-Drilled from 115.0 feet to 120.0 feet with 2-15/16 inch bit for pressure meter testing interval. Slough in hole	
120										14.3 — 120.0 - silty CLAY in drill bit upon removal at		15

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1108

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120										120 feet Boring Terminated at 120.0 feet. Hole grouted upon completion.	bottoms instrument at 119.3 feet -Sample skipped at 120 feet, per KBC	
125												10
130												5
135												0
140												-5
145												-10
150												-15
155												-20
160												-25

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND . . COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1109**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549806.08 N; 277502.64 E feet		Total Depth 149 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration, Inc. / CME 750 (80%)	Elevation (Datum NGVD 29) 133.5 feet	Ground Water Depth Not Determined	Date Started 7/10/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 7/11/06

Reviewed by CALG 2100 3/8/07 Date Bill Dedrall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.5 Well-graded SAND, moist, contains gravel (Undocumented Fill) 0.0		
									ML	132.0 SILT, yellowish brown (10YR 5/4), moist, very stiff, contains clay (Undocumented Fill) 1.5		
		SPT 1	17 15 14	18								130
5									ML	128.5 SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, contains clay, shell fragments (Upper Loess) 5.0		
		SPT 2	7 7 5	13								125
10												
		SPT 3	3 3 3	12								120
15									ML	116.5 SILT, light yellowish brown (2.5Y 6/4), moist, medium stiff to stiff, thinly laminated, contains clay, trace shell fragments (Upper Loess) 17.0		
		SPT 4	5 5 6	15								115
20												
		SPT 5	4 5 7	13								110
25												
		SPT 6	5 4 6	13								105
30												
		SPT 7	4 6 6	13								100
35												
		SPT 8	5 6 7	15								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1109

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light yellowish brown (2.5Y 6/4), moist, medium stiff to stiff, thinly laminated, contains clay, trace shell fragments (Upper Loess) *(Continued from previous page)*		
		SPT 9	4 6 7	16								90
45												
		SPT 10	6 6 7	15						- Moist below 48 feet		85
50												
		SPT 11	2 3 3	18						- Increased clay content below 53 feet		80
55										77.5 / 56.0		
									CL	CLAY, light brownish gray (10YR 6/2), moist, very stiff, contains silt, manganese nodules and staining, mottled iron staining (Lower Loess)	-SPT 12: Sample recovery not recorded	
		SPT 12	6 9 14	7								75
60												
		SPT 13	6 9 14	18						- Trace fine sand below 63 feet		70
65										65.5 / 68.0		
		SPT 14	21 16 11	16					SP	Poorly-graded SAND, light yellowish brown (2.5Y 6/3), moist, medium dense, contians clay, very fine grained, trace silt, interbedded with silt seams, light brownish gray (2.5Y 6/2) with iron staining, contains clay (Upland Complex Alluvium)		65
70										60.5 / 73.0		
		SPT 15	14 21 31	18					SM	Silty SAND, light brownish gray (2.5Y 6/2), moist, dense to very dense, very fine grained, interbedded with iron stained clay seams (Upland Complex Alluvium)		60
75												
		SPT 16	14 21 31	15			GSZ					55
80										53.5 / 80.0		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1109

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly-graded SAND, light gray (2.5Y 7/2), wet, dense, fine grained, subrounded to rounded, few mafics (Upland Complex Alluvium)		
		SPT 17	16 19 22	10								50
										48.5 — 85.0		
85									CL	CLAY, dark gray (Gley 1 4/N), moist, stiff (Reworked Catahoula FM)		
		SPT 18	5 5 5	18	31	49/29						45
90										42.5 — 91.0		
									CL	CLAY, light yellowish brown (2.5Y 6/3), moist, very stiff, contains sand and silt, iron staining observed at 93.5 feet (Reworked Catahoula FM)		
		SPT 19	7 9 9	16	26	42/23						40
										38.5 — 95.0		
95									CL	CLAY, greenish gray (Gley 1 5/10GY), dry, hard, contains silt, trace sand (Catahoula FM)		
		SPT 20	34 33 31	18	20	44/25						35
100												
		SPT 21	28 32 49	18								30
105												
		SPT 22	25 45 47	18								25
110												
		SPT 23	24 33 45	18								20
115												
		SPT 24	20 46 50/5	18								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN_ _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1109

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (Gley 1 5/10GY), dry, hard, contains silt, trace sand (Catahoula FM) *(Continued from previous page)* - Brittle rock-like behavior below 122.5 feet		
		SPT 25	26 35 50/5	18								10
125										8.0 — 125.5		
									ML	SILT, greenish gray (Gley 1 5/10 GY), dry, hard, contains clay, hard concretions (Catahoula FM)		
		SPT 26	25 50/4	12								5
130										3.0 — 130.5		
									SM	Silty SAND, greenish gray (Gley 1 5/10GY), moist, dense, fine grained sand, interbedded with silt seams (Catahoula FM)	-SPT 27: Sample recovery not recorded	
		SPT 27	19 22 27	18								0
135										-2.5 — 136.0		
									CL	CLAY, greenish gray (Gley 1 5/5G), dry, hard, contains silt, brittle rock-like behavior (Catahoula FM)		
		SPT 28	37 32 50/6	18								-5
140										-7.5 — 141.0		
									ML	SILT, greenish gray (Gley 1 5/5G), moist, hard, contains clay (Catahoula FM)		
		SPT 29	26 24 27	18								-10
145										-12.0 — 145.5		
									CL	CLAY, greenish gray (Gley 15/5G), moist, hard, contains silt (Catahoula FM)	-SPT 30: Sample recovery not recorded	
		SPT 30	10 18 25	18						-15.5 — 149.0		-15
150										Boring Terminated at 149.0 feet. Hole grouted upon completion.		
												-20
155												-25
160												

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND G OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1110

Drilling Method and Hole Diameter Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549963.32 N; 277383.49 E feet		Total Depth 168.67 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.8 feet	Ground Water Depth Not Determined	Date Started 7/15/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 7/18/06

Reviewed by / Date CEG 2100 5/29/07 Bill Dunkerley 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										133.8 (Undocumented Fill) Undefined 0.0		
										131.8 2.0		
									ML	SILT, brown (7.5YR 4/4), moist, medium stiff to stiff (Upper Loess)		
5		SPT 1	3 3 3	13							-Some gravels present up to 1-inch in diameter in top few inches	130
10		SPT 2	2 3 3	0							-No recovery even with catcher placed in shoe	125
15		SPT 3	2 2 3	8								120
20		SPT 4	1 3 2	8							-Hole caved overnight, re-drilled back to 23.5 feet	115
25		SPT 5	2 3 4	11						- Yellowish brown (10YR 5/4) below 24.0 feet		110
30		SPT 6	4 4 6	10						- 29.0 feet: Stiff below 29.0 feet		105
35		SPT 7	4 6 5	11								100
40		S 8		12								95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G( )L.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettes & Associates, Inc.

SOIL LOG - Boring No. B-1110

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (7.5YR 4/4), moist, medium stiff to stiff (Upper Loess) *(Continued from previous page)*		
45		SPT 9	5 8 7	11						- 44.0 feet: Trace shell fragments		90
50		SPT 10	3 2 3	17						- 49.0 feet: Moist to wet		85
									CL	61.8 — 52.0 CLAY, light olive brown (2.5Y 5/4), moist, very stiff, contains silt, mottled appearance, few manganese nodules (Lower Loess)		
55		SPT 11		17							-SPT 11: Blow Count Not Recorded	80
60		SPT 12	7 8 11	17						- Stiff, increasing in mottled appearance and manganese nodule content below 59 feet		75
65		S 13		6							-Shelby tube refusal after 6 inches of push, tube bent, tube sealed with wax and tape	70
									SM	67.3 — 66.5 SAND, light brownish gray (2.5Y 6/2), moist, medium dense, contains silt, subangular to subrounded, fine grained quartz, mottled appearance (Upland Complex Alluvium)		
70		SPT 14	11 10 14	12	15						-Grades into sand below	65
75		S 15	17 26 33	ND 6					SP	59.8 — 74.0 Poorly-graded SAND, gray (2.5Y 6/1), moist to wet, medium dense to very dense, subangular to subrounded fine grained quartz (Upland Complex Alluvium)	-Shelby tube refusal after 7 inches of penetration, bent tube	60
		SPT 16										
80		SPT 17	7 10 10	5							-In the photo of 1110-17, color is due to drill mud, not actual color, same color as	55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU JL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1110

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly-graded SAND, gray (2.5Y 6/1), moist to wet, medium dense to very dense, subangular to subrounded fine grained quartz (Upland Complex Alluvium) *(Continued from previous page)*	1110-16 when not mixed with drill mud	
		SPT 18	16 18 12	5								50
85												
		SPT 19	23 15 14	13							-Sample 1110-19A: 88.5 feet to 89.5 feet -Sample 1110-19B: 89.5 feet to 90.0 feet	45
90									CH	44.3 — 89.5 CLAY, greenish gray 10Y 5/1), moist, very stiff (Upland Complex Old Alluvium)		
									SW	42.3 — 91.5 Well-graded SAND with gravel, light yellowish brown (10YR 6/4), wet, medium dense, subangular to subrounded medium to coarse grained sand (Upland Complex Old Alluvium)		
		SPT 20	15 16 10	8								40
95												
									SP	37.3 — 96.5 Poorly-graded SAND, gray (2.5Y 6/1), dense, subangular to subrounded medium grained quartz sand (Upland Complex Old Alluvium)		
		SPT 21	12 16 31	12							-No sample taken of small clay lense, most of interval is SAND (SP)	35
100												
		SPT 22	20 23 35	8								30
105												
									SW/GW	27.3 — 106.5 Well-graded SAND to well-graded GRAVEL, light olive brown (2.5Y 5/4), wet, very dense, subrounded, medium to coarse grained quartz and chert sand (Upland Complex Old Alluvium)		
		SPT 23	10 26 41	13							-Interval is sometimes dominated by sands with gravel but switches to gravels with sand	25
110												
		SPT 24	16 29 50/6	ND							-Sample appears to be cuttings of broken, fragmented gravels	20
115									SP-SM	19.3 — 114.5 Poorly-graded SAND, light olive brown (2.5Y 5/6) to light brownish gray (2.5Y 6/2), moist to wet, dense, contains silt, subangular to subrounded, medium grained quartz sand, grades to silty SAND (SM) downward (Upland Complex Old Alluvium)		
		SPT 25	13 18 25	5							-Grades to silty SAND (SM) downward	15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GL OL GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1110

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP-SM			
									CH	12.3 — 121.5 CLAY, gray (2.5Y 5/1), moist, very stiff (Upland Complex Old Alluvium)		10
		SPT 26	10 6 17	11						9.3 — 124.5		
125									SP-SC	Poorly-graded SAND, gray (2.5Y 5/1), moist, very dense, contains clay, subangular to subrounded medium grained quartz sand (Catahoula FM)		
		SPT 27	50/1	ND						4.3 — 129.5	-Spoon not advancing - Refusal, rock in shoe?	5
130									SP	Poorly-graded SAND, greenish gray (5G 6/1), moist to wet, very dense, subangular to subrounded, medium grained quartz, trace fines (Catahoula FM)		
		SPT 28	35 47 50/3	14								0
135										-2.7 — 136.5		
									SM	SAND, greenish gray (10GY 6/1), moist, very dense, contains silt, subangular to subrounded, medium grained quartz sand, rock like fracture (Catahoula FM)		
		SPT 29	50/3	3							-Refusal on 1st 6 inches, rod is bouncing and not advancing: JVH advised at 3:30 pm (7-17-06)	-5
140										-7.2 — 141.0		
									CL	CLAY, greenish gray (10GY 6/1), moist, hard, contains silt (Catahoula FM)		
		SPT 30	16 16 21	17								-10
145										-13.2 — 147.0		
									SM/ML	Silty SAND to SILT, dark greenish gray (10GY 4/1), moist to wet, very dense to hard, subangular to subrounded, medium grained quartz sand, rock like fracture (Catahoula FM) - No Samples taken from 150 feet to 170 feet - Drilling performed for P-S logging No Samples Taken, Drilling for P-S Logging		-15
		SPT 31	17 31 32	15							-Work Instruction changed bottom of boring from 150 feet to 170 feet for P-S logging equipment -Last sample at 170 feet	
150												-20
155												-25
160										-26.2 — 160.0		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA Williams Lettes & Associates, Inc.

SOIL LOG - Boring No. B-1110

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									ML	SILT with sand, dark greenish gray (10GY 4/1), moist, hard, subangular to subrounded fine grained quartz sand, rock like fracture (Catahoula FM)		
165											-Sampler advanced 2 inches, then bounced (refusal)	-30
		SPT 32	50/2	3						34.9 — 168.7 Boring Terminated at 169.0 feet. Hole grouted upon completion.	-Sample exhibited cementation, difficult to determine texture	-35
170												-40
175												-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1111

Drilling Method and Hole Diameter Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549923.5 N; 277467.15 E feet		Total Depth 149 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29) 133.8 feet	Ground Water Depth Not Determined	Date Started 7/12/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 7/14/06

Reviewed by / Date [illegible] CEG. 2100 3/8/07 [illegible] 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.8 Well graded SAND, dry, contains gravel (Undocumented Fill) 0.0		
									ML	131.8 SILT, brown (10YR 4/3), moist, soft to stiff, contains clay (Upper Loess) 2.0		
		SPT 1	6 6 7	17								130
5												
		SPT 2	2 2 2	12						- Yellowish brown (10YR 5/4), moist, below 8 feet		125
10												
		SPT 3	2 2 2	15								120
15												
		SPT 4	3 2 3	11						- Trace shell fragments below 18 feet		115
20												
		SPT 5	3 3 3	13								110
25												
		SPT 6	3 5 5	16								105
30												
		SPT 7	4 5 5	9								100
35												
		SPT 8	4 4 5	13								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1111

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (10YR 4/3), moist, soft to stiff, contains clay (Upper Loess) *(Continued from previous page)*		
		SPT 9	5 6 7	12						- Moist to wet below 43 feet		90
45												
		SPT 10	3 2 2	15								85
50										83.3 — 50.5		
									CL/ML	CLAY to SILT, yellowish brown (10YR 5/4), moist, very soft, contains manganese nodules and staining (Lower Loess)		
		SPT 11	WOH WOH WOH	18							-Sample 1111-11: First 12-inches driven by weight of rod. Last 6 inches driven by weight of hammer	80
55										76.8 — 57.0		
									ML	SILT, light yellowish brown (2.5Y 6/3), moist, very stiff, mottled iron staining, contains clay, manganese nodules (Lower Loess)		
		SPT 12	9 11 12	18								75
60										73.8 — 60.0		
									ML	SILT, light brownish gray (2.5Y 6/2), moist, very stiff to hard, mottled iron staining, contains clay, manganese nodules (Lower Loess)		
		SPT 13	7 9 13	18								70
65												
		SPT 14	21 20 11	2								65
70										63.3 — 70.5		
									ML	SILT, light brownish gray (2.5Y 6/2), moist, hard, contains fine grained sand (Upland Complex Alluvium)		
		SPT 15	18 24 20	17						60.8 — 73.0		
									SP	Poorly graded SAND, light gray (2.5Y 7/2), wet, dense to very dense, fine grained, subrounded to rounded quartz, trace mafics (Upland Complex Alluvium)		60
75												
		SPT 16	14 28 44	12								55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1111

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly graded SAND, light gray (2.5Y 7/2), wet, dense to very dense, fine grained, subrounded to rounded quartz, trace mafics (Upland Complex Alluvium) *(Continued from previous page)*		
		SPT 17	27 31 21	18								
									CL	50.3 - Olive yellow (2.5Y 6/6) below 82.5 feet	83.5	50
85										CLAY, light olive brown (2.5Y 5/3), moist, hard, contains silt and thin laminations of iron stained fine sand (Upland Complex Alluvium)		
		SPT 18	21 24 15	10					SW	46.3 Well graded SAND, various colors, wet, dense, coarse grained (Upland Complex Alluvium)	87.5	45
90									CL	43.8 CLAY, light yellowish brown (2.5Y 6/4), moist, very stiff, contains silt, iron stained horizons (Upland Complex Alluvium)	90.0	-Intermittent gravel to clayey response from rig between 89 feet and 92.5 feet depth
		SPT 19	14 13 15	12								
									SW	40.3 Well graded SAND, various colors, wet, medium dense, contains gravel, angular to subrounded coarse grained sand, and fine and coarse grained gravel (0.2-inch to 0.8-inch diameter), composed of chert, volcanics, metamorphics, with rounded, medium grained quartz sand (Upland Complex Alluvium)	93.5	40
95												-"Gravelly" response from rig
		SPT 20	4 12 12	10					GW	36.8 Well graded GRAVEL, wet, medium dense, subrounded, fine to coarse gravel up to maximum 1-inch diameter, composed of chert, volcanics, metamorphics (Upland Complex Old Alluvium)	97.0	35
100									CL	32.8 CLAY, light brownish gray (2.5Y 6/2), moist, hard, contains silt and sand (Upland Complex Old Alluvium)	101.0	
		SPT 21	20 19 15	18								30
105									CL	28.3 CLAY, greenish gray (Gley 1 5/10GY), moist, very stiff to hard, contains silt (Catahoula FM)	105.5	
		SPT 22	7 14 15	18								25
110												
		SPT 23	18 28 32	18						- Dry, hard below 113 feet		20
115												
		SPT 24	25 35 35	18								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND ... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1111

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (Gley 1 5/10GY), moist, very stiff to hard, contains silt (Catahoula FM) *(Continued from previous page)*		
		SPT 25	22 29 44	18								10
125												
		SPT 26	50/5	5						- Laminar and sand size granular concretions of hard rock-like material of the same silty clay consistancy below 128 feet		5
130												
		SPT 27	37 50/5	12								0
135												
		SPT 28	28 42 49	18								-5
140										-7.2 141.0		
									ML	SILT, greenish gray (Gley 1 5/10GY), moist, hard, contains clay (Catahoula FM)		
		SPT 29	14 18 21	18								-10
145												
		SPT 30	15 21 33	18						-15.2 - Contains hard, sand size granular concretions of clayey silt below 148 feet 149.0		-15
150										Boring Terminated at 149.0 feet. Hole grouted upon completion.		
												-20
155												
												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1112**
Drilling Method and Hole Diameter Mud Rotary / 2 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549849.11 N; 277627.73 E feet		Total Depth 149.9 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.2 feet	Ground Water Depth Not Determined	Date Started 7/11/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz	Date Completed 7/13/06

Reviewed by / Date CEH 2100 3/8/07 Wm Deadwald 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	133.2 Well graded GRAVEL, very loose, fine to coarse, no sand or fines, road base material (Undocumented Fill) 0.0		130
5		SPT 1	1 1 1	0								125
10		SPT 2	2 1 3	5								
									ML	121.7 SILT, yellowish brown (10YR 5/4), moist, medium stiff to very stiff, trace sand (Upper Loess) 11.5		120
15		SPT 3	2 3 4	9								115
20		SPT 4	2 4 5	4								110
25		SPT 5	4 4 8	6							-Some gravel slough at approximately 25 feet	105
30		SPT 6	5 5 8	8								100
35		SPT 7	4 6 7	9						- 34 feet: Dark yellowish brown (10YR 4/4)		95
40		SPT 8	5 7 9	9.5								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND _ _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1112

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to very stiff, trace sand (Upper Loess) *(Continued from previous page)*		90
45		SPT 9	4 6 8	8								85
50		SPT 10	4 4 5	15						- 49 feet: Trace shell fragments (gastropods?)		80
									ML	80.2 — 53.0 SILT, light olive brown (2.5Y 5/4), moist, stiff, trace to few fine sand, contains clay, manganese oxide nodules, iron oxide staining (Lower Loess)		
55		SPT 11	4 6 8	15								75
									CL/ML	76.2 — 57.0 CLAY to SILT, light brownish gray (2.5Y 6/2), stiff, trace sand, contains manganese nodules, iron staining (Lower Loess)	-Clay lens?	
60		SPT 12	5 6 7	18								70
									SP-SM	72.2 — 61.0 Poorly graded SAND, light gray (2.5Y 7/1), moist, dense, contains silt, iron stained, fine grained sand (Upland Complex Alluvium)		
65		SPT 13	17 25 23	14								65
									SP-SM	65.2 — 68.0 Poorly-graded SAND with silt, light gray (2/5Y 7/1) to brownish yellow (10YR 6/6), moist, very dense, very fine to fine grained sand (Upland Complex Alluvium)		
70		SPT 14	28 42 50/4	12								
									CL	60.7 — 72.5 CLAY, greenish gray (5G 5/1), dry to moist, hard to very stiff, minor iron stains, few to little sand (Catahoula FM)		60
75		SPT 15	26 31 50/6	18						- 2-inch thick sandy clay lens at 79 feet		
80		SPT 16	9 12 15	18								55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1112

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL	CLAY, greenish gray (5G 5/1), dry to moist, hard to very stiff, minor iron stains, few to little sand (Catahoula FM) *(Continued from previous page)*		
85		SPT 17	11 13 14	18								50
90		SPT 18	10 13 25	18						- Fine grained sand lens at 89.8 feet		45
									ML	41.2 — 92.0 SILT, greenish gray (5G 5/1), dry to moist, very stiff, contains clay (Catahoula FM)		40
95		SPT 19	10 12 17	18								
									CL	35.2 — 98.0 CLAY, greenish gray (5G 5/1), dry to moist, hard, little silt, trace sand (Catahoula FM)		35
100		SPT 20	36 41 50/4.5	16.5								30
105		SPT 21	28 31 47	18							-No available am water level - Hole filled to surface with thick mud	25
110		SPT 22	32 40 50/5	18								20
115		SPT 23	30 40 50/5	18								15
120		SPT 24	26 41 50/5	18								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project: 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1112

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (5G 5/1), dry to moist, hard, little silt, trace sand (Catahoula FM) *(Continued from previous page)*		10
125		SPT 25	27 42 50/5	18								5
130		SPT 26	33 50/4	13.5								0
135		SPT 27	50/5.8	6							-SPT 27: Sample recovery not recorded	-5
140		SPT 28	41 50/4.5	12								-10
									CL/ML	-8.8 142.0 CLAY to SILT, grayish green (5G 5/2), moist, hard, trace fine to coarse grained sand (Catahoula FM)		
145		SPT 29	14 15 22	18							-Silt and sand rich zone within Catahoula Formation	-15
									SM	-13.8 147.0 Silty SAND, grayish green (5G 5/2), moist, hard, few clay, fine grained sand (Catahoula FM)		
150		SPT 30	21 39 50/5	15						-16.7 149.9 Boring Terminated at 149.9 feet. Hole grouted upon completion.	-Sand lens?	-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND ... F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1113**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549827.21 N; 277709.56 E feet		Total Depth 166.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133 feet	Ground Water Depth Not Determined	Date Started 7/15/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz	Date Completed 7/17/06

Reviewed by / Date 3/8/07 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	133 Well-graded GRAVEL; road base (Undocumented Fill) 0.0		
		SPT 1	2 3 3	8					ML	129.2 SILT, dark yellowish brown (10 YR 4/4), moist to wet, medium stiff, trace sand (Upper Loess) 3.8		130
5									ML	126.0 SILT, light olive brown (2.5Y 5/4), dry to moist, medium stiff, trace sand and gravel, few to little clay (Upper Loess) 7.0		125
		SPT 2	1 3 3	5					ML	121.0 SILT, light olive brown (2.5Y 5/4), dry to moist, medium stiff, trace sand and gravel, little clay (Upper Loess) 12.0		120
10									ML	116.0 SILT, light olive brown (2.5Y 6/4), dry to moist, stiff to very stiff, trace sand and gravel, gastropod shells (Upper Loess) 17.0		115
		SPT 3	3 2 4	6								110
15												105
		SPT 4	3 4 5	10								100
20												95
		SPT 5	4 4 6	7								
25												
		SPT 6	4 5 6	10								
30												
		SPT 7	5 6 7	9								
35												
		SPT 8	6 9 12	11						- 39.0 feet: Very stiff below 39.0 feet		
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND . - COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1113

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light yellowish brown (2.5Y 6/4), dry to moist, stiff to very stiff, trace sand and gravel, gastropod shells (Upper Loess) *(Continued from previous page)*		
45		SPT 9	7 9 11	11								90
50		SPT 10	3 4 6	16						- 49.0 feet: Stiff below 49.0 feet		85
									CL/CH (81.0 – 52.0)	CLAY, light olive brown (2.5Y 5/6), moist, stiff to very stiff, contains silt, iron staining and manganese nodules, trace sand (Lower Loess)	-7/16/06: am H2O level is unavailable; thick mud filled hole and up into mud tub	80
55		SPT 11	3 5 6	16								75
60		SPT 12	6 7 11	18						- 59.0 feet: Light brownish gray (2.5Y 6/2)		
									CL (71.0 – 62.0)	CLAY with sand, light gray (2.5Y 7/2), moist, hard, little silt, iron staining, manganese nodules, sand is fine grained, sand content increases with depth (Lower Loess)		70
65		SPT 13	13 14 21	15								65
									SC (65.0 – 68.0)	Clayey SAND, light brownish gray (2.5Y 6/2), moist, dense, little silt, fine grained sand, iron staining (Upland Complex Alluvium)		
70		SPT 14	16 14 17	18								
									CL/CH (60.5 – 72.5)	CLAY, grayish green (5G 5/2), dry to moist, very stiff to hard, little silt, trace sand (Reworked Catahoula FM)		60
75		SPT 15	9 15 31	18								55
80		SPT 16	10 12 15	18						- 79.0 feet: Very stiff below 79.0 feet		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1113

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL/CH	CLAY, grayish green (5G 5/2), dry to moist, very stiff to hard, little silt, trace sand (Reworked Catahoula FM) *(Continued from previous page)*		
85		SPT 17	10 14 21	18								50
90		SPT 18	14 14 24	18								45
									41.0		92.0	
									SP	Poorly-graded SAND, grayish green (5G 5/2), moist, dense, trace clay and silt (Reworked Catahoula FM)		40
95		SPT 19	14 14 17	18							-Sand lense?	
									35.0		98.0	35
									CL/CH	CLAY, grayish green (5G 5/2), dry to moist, hard, little silt, trace fine sand (Catahoula FM)		
100		SPT 20	15 28 43	18								30
105		SPT 21	27 39 50	18								25
110		SPT 22	26 44 50/4.5	18								20
115		SPT 23	33 43 50/5	18								15
120		SPT 24	24 30 43	18								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1113

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL/CH	CLAY, grayish green (5G 5/2), dry to moist, hard, little silt, trace fine sand (Catahoula FM) *(Continued from previous page)*		10
125		SPT 25	30 44 50/4.5	18								5
130		SPT 26	50/4	4						- 129.0 feet: Greenish gray (5GY 5/1) to greenish gray (5G 5/1)	-7/17/06: am H2O level not available due to thick mud filling hole to surface and into mud tub	0
135		SPT 27	50/2	1.5								-5
140		SPT 28	40 50/5	14								-10
145		SPT 29	17 20 24	18								-15
150											-Per JVH instructions: Geophysics (P-S log) will be done in this hole. No Sample at 148.5 feet to 150.0 feet -Drill to 165 feet, sample, ream hole to do P-S logs -No samples taken -P-S logging will take place between 0 feet and 165 feet	-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1113

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									CL/CH	CLAY, grayish green (5G 5/2), dry to moist, hard, little silt, trace fine sand (Catahoula FM) *(Continued from previous page)*	-No Sample taken as above	-30
165		SPT 30	26 29 36	19						-33.5 166.5		
										Boring Terminated at 166.5 feet. Hole grouted upon completion.		-35
170												-40
175												-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1114**
Drilling Method and Hole Diameter Mud Rotary / 2 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550015.83 N; 277414.88 E feet		Total Depth 170 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.8 feet	Ground Water Depth Not Determined	Date Started 7/24/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 7/27/06

Reviewed by / Date CEG #2100 3/8/07 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										133.8 / 0.0 Concrete and Gravel road base (Undocumented Fill)		
										132.8 / 1.0 SAND and SILT (Undocumented Fill)		
										130.8 / 3.0		
		SPT 1	2 2 4	4.8					ML	SILT, brown (10YR 5/3), moist, medium stiff to stiff, trace fine sand (Undocumented Fill)		130
5										127.8 / 6.0		
									ML	SILT, brown (10YR 5/3), moist, medium stiff to stiff, trace fine sand (Upper Loess)		
10		SPT 2	2 3 4	6								125
15		SPT 3	3 4 4	5.4								120
20		SPT 4	3 4 5	6						- 18.5 feet: stiff, trace gastropod shells		115
25		SPT 5	3 3 5	6								110
		S UD1		21.6								105
30		SPT 6	3 4 6	7.2								
35		SPT 7	3 6 6	7.2								100
40		SPT 8	3 4 6	8.4								95

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1114

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (10YR 5/3), moist, medium stiff to stiff, trace fine sand (Upper Loess) *(Continued from previous page)*		
45		SPT 9	3 4 9	3							-Sample 1114-9: Recovery not recorded	90
50		SPT 10	1 2 4	14.4						- 48.5 feet: wet, trace clay		85
									CL (82.3 – 51.5)	CLAY, pale brown (10YR 6/3), moist, stiff to hard, contains silt, manganese nodules (Lower Loess)		80
55		SPT 11	4 5 6	18								
		S UD2		24							-Pushed tube 2.0 feet and allowed it to sit for 5 minutes before pulling tools	75
60		SPT 12	12 19 23	18								
65		SPT 13	12 7 9	16.8								70
									SW-SC (65.8 – 68.0)	Well-graded SAND, light gray (10YR 7/1), moist, medium dense, contains clay, fine grained, iron staining of clay lenses present throughout (Upland Complex Alluvium)	-Driller noted material change at 68 feet	65
70		SPT 14	9 9 10	12								
									SW-SC (60.8 – 73.0)	Well-graded SAND, light gray (10YR 7/1), wet, medium dense, contains clay, fine grained (Upland Complex Alluvium)	-Water at 74 feet	60
75		SPT 15	12 14 14	7.2								
80		SPT 16	9 11 10	0							-SPT 16: No Recovery -Sand in cuttings up to sample interval and beyond	55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1114

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SW-SC	52.8 / 81.0	to next interval	
									SW	Well-graded SAND, yellowish brown (10YR 5/6), wet, medium dense, fine grained, iron stained (Upland Complex Alluvium)		
		SPT 17	10 14 16	9.6						49.8 / 84.0		50
									CH	CLAY, gray (10YR 6/1), wet, very stiff (Upland Complex Alluvium)		
85									SW	49.3 / 84.5 Well-graded SAND, brown (10YR 4/3), wet, dense, fine grained, iron stained (Upland Complex Alluvium)		
										46.3 / 87.5		
									CH	CLAY, brown (10YR 4/3), moist, very stiff, trace silt, fine grained sand lense present at 89.5 feet and 90.0 feet, strong brown (7.5YR 4/6), iron stained (Upland Complex Old Alluvium)	-Driller notes change in material at approximately 87.5 feet	
		SPT 18	6 12 16	14.4								45
90										40.8 / 93.0		
									CL	CLAY, with sand, light brownish gray (10YR 6/2), moist, hard, contains sand, trace silt (Upland Complex Old Alluvium)		
		SPT 19	12 18 15	7.2								40
95										37.8 / 96.0		
									SW/GW	Well-graded SAND and well-graded GRAVEL, wet, various colors, 1/8 inch to 1/4 inch particle diameter (Upland Complex Old Alluvium)	-Driller notes change in material at approximately 96 feet -30%-40% water loss at 97 feet -Could not take sample at 98.5-100.0 feet because of gravels and sand collapsing into annulus. Collected cuttings from mud tub and labeled them as 1114-20	35
100												
											-Gravels collapsed into annulus and rods stopped at 94 feet when tripping into boring with spoon. Collected cuttings from mud pan and label 1114-21	30
105										26.8 / 107.0		
									SW	Well-graded SAND, light gray (10YR 7/2), wet, very dense, fine grained, quartz rich, contains subangular to angular gravel up to maximum 1/4 inch diameter (Upland Complex Old Alluvium)		
		SPT 22	12 38 51	7.2							-6 inch blow counts: SPT 22 -1st: 2,1,1,2,1,5 -2nd: 8,8,6,6,7,3 -3rd: 6,9,10,11,10,5	25
110												
		SPT 23	14 11 8	12						19.6 / 114.2	-Sample 1114-23A: 113.5 feet to 114.2 feet -Sample 1114-23B: 114.2 feet to 115.0 feet	20
									CL	CLAY, pale brown (10YR 6/3), moist to wet, very stiff, contains silt, trace fine sand, and trace manganese nodules (Upland Complex Old Alluvium)		
115									SW	17.8 / 116.0 Well-graded SAND, light gray (10YR 7/2), wet, dense, fine grained (Upland Complex Old Alluvium)		
		SPT 24	16 20 19	7.2								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN_ _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1114

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW	Well-graded SAND, light gray (10YR 7/2), wet, dense, fine grained (Upland Complex Old Alluvium) *(Continued from previous page)*		
									10.8 / 123.0			
									CL	CLAY, gray (2.5YR 5/1), wet, very stiff, contains sand, trace organics (Upland Complex Old Alluvium)		10
125		SPT 25	24 12 16	3.6								
									7.8 / 126.0			
									SW	Well-graded SAND, light brownish gray (2.5YR 6/2) to gray (2.5YR 6/1), wet, dense, fine grained, dark banding of organics at 128.7 feet (Upland Complex Old Alluvium)	-Change in cuttings noted at approximately 126 feet	
		SPT 26	14 17 18	7.2								5
130												
									0.8 / 133.0			
		SPT 27	50/5	0					CL	CLAY, dark greenish gray (GLEY 2 4/1 10G), dry to moist, hard, contains silt, and claystone fragments (Catahoula FM)	-Gray green clay in cuttings: Catahoula contact	0
135		S UD3		0						- No recovery from 133.5 feet to 135 feet	-Attempted undisturbed sampling at 135 feet to 137 feet per K. Clahan instructions. Pushed 2 inches and had refusal	
		SPT 28	50/3	3.6								-5
140												
		SPT 29	18 17 20	18								-10
145												
		SPT 30	16 18 31	18								-15
150												
											-SPT sample interval changed to 10 feet by K. Clahan (WLA)	-20
155												
		SPT 31	14 22 45	12						- 158.5 feet: Horizontal Laminations of claystone		-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1114

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									CL	CLAY, dark greenish gray (GLEY 2 4/1 10G), dry to moist, hard, contains silt, and claystone fragments (Catahoula FM) - No recovery from 133.5 feet to 135 feet *(Continued from previous page)*		-30
165												-35
170		SPT 32	32 36 49	18						-36.2 169.5 feet: Sand lense at 169.5 feet to 169.7 feet, greenish gray (GLEY 1 6/1 5GY), fine grained Boring terminated at 170.0 feet. Hole grouted upon completion.	170.0 -Sample 1114-32: Recovery not recorded	-40
175												-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL COL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340 MACTEC WLA Williams Lewis & Associates, Inc.			SOIL LOG - Boring No. B-1115
Drilling Method and Hole Diameter: Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549998.2 N; 277506.46 E feet		Total Depth: 174 feet
Drilling Contractor, Rig and (Hammer Efficiency): Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29): 133.6 feet	Ground Water Depth: Not Determined	Date Started: 7/25/06
Sampling Method: SPT with Auto Hammer	Borehole Inclination: Vertical	Logged by: S. Lehman / J. Pearce	Date Completed: 7/29/06

Reviewed by / Date: CEG 2100 5/29/07 Bill Dedrick 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	133.6 Well-graded GRAVEL, various colored gravel, contians strong brown (7.5YR 4/8) sand (Undocumented Fill) 0.0	-S. Lehman logging borehole	
									ML	131.6 SILT, dark brown (10YR 3/4), moist, medium stiff to stiff, contains clay (Upper Loess) 2.0		
		SPT 1	4 6 7	11								130
5												
		SPT 2	4 2 3	6						- Dark yellowish brown (10YR 4/4), dry, below 7.5 feet		125
10												
		SPT 3	7 4 5	13.2								120
15												
		SPT 4	4 6 6	4						- Trace shell fragments below 18.0 feet		115
20												
		SPT 5	5 5 7	6								110
25												
		SPT 6	4 5 6	4								105
30												
		SPT 7	6 5 6	0								100
35												
		SPT 8	5 5 5	18								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL COL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1115

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, dark brown (10YR 3/4), moist, medium stiff to stiff, contains clay (Upper Loess) *(Continued from previous page)*		
		SPT 9	5 5 8	12								90
45												
		SPT 10	4 2 3	18								85
50									ML	83.1 — 50.5 SILT, yellowish brown (10YR 5/4), moist, medium stiff, contains clay, manganese nodules, iron staining (Lower Loess)		
		SPT 11	WOH 2 5	18							-Sample 1115-11: First 6-inches fell by weight of hammer	80
55									ML	77.6 — 56.0 SILT, light brownish gray (2.5Y 6/2), moist, very stiff, contains clay, manganese nodules, iron staining, trace sand (Lower Loess)		
		SPT 12	5 8 14	18						75.1 — 58.5		75
60									SC	SAND, dark yellowish brown (10YR 4/4), moist, medium dense, contains clay, poorly sorted, fine to medium grained, angular to subrounded (Lower Loess)		
									CL	72.6 — 61.0 CLAY, light brownish gray (2.5 Y 6/2), moist, stiff, contains silt, manganese nodules, mottled and layered iron staining (Lower Loess)		
		SPT 13	6 6 7	17								70
65									ML	67.6 — 66.0 SILT, light gray (7.5 YR 7/1), moist, very stiff, mottled over 1-inch zone, trace fine sand and clay (Lower Loess)		
		SPT 14	9 11 9	14							-Switched Rig Geologist: J. Pearce (WLA) on rig at 1500, 7-26-06	65
70									CL	62.6 — 71.0 CLAY, light gray (2.5YR 7/1), moist, soft, angular chert fragments of 1/4-inch diameter (Upland Complex Alluvium)		
		SPT 15	2 2 7	13						60.0 — 73.6		60
75									SP	Poorly-graded SAND, light yellow (2.5YR 8/3), moist, medium dense, rounded quartz grains, clear contact with overlying clay (Upland Complex Alluvium)		
									SP	57.6 — 76.0 Poorly-graded SAND, pale yellow (2.5YR 7/3), moist, dense, medium to coarse grained, subangular chert gravel fragment in upper 2-inches of sample (Upland Complex Alluvium)		
		SPT 16	14 15 19	15								55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1115

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP			
									SW	52.6 – 81.0: Well-graded SAND with gravel, light gray (10YR 7/1), moist, very dense, angular to subangular chert, limestone, and lithic gravel fragments (Upland Complex Old Alluvium)	-Increasing gravel content with depth	
		SPT 17	20 35 38	9								50
85												
									SW	46.6 – 87.0: Well-graded SAND with gravel, very light brown (10YR 8/2), wet, very dense, contains chert, quartz, and shale gravel and sand, very slightly mottled (Upland Complex Old Alluvium)		
		SPT 18	42 45 49	13								45
90												
									SP	42.6 – 91.0: Poorly-graded SAND, light gray (10YR 7/2), moist, very dense, coarse grained, spheroidal to oblong, angular, mostly quartz with chert, non-stratified, contains gravel fragments up to maximum 0.3-inch diameter (Upland Complex Old Alluvium)	-Lost return to formation (Lower Alluvium) -Set casing (4-1/4 inch outside diameter)	
		SPT 19	22 27 25	12								40
95												
		SPT 20	5 12 15	13					ML	35.3 – 98.3: -1-inch thick gravel lense at 98 feet		35
									SW	34.8 – 98.8: SILT, light brownish gray (10YR 6/2), hard, contains clay (Upland Complex Old Alluvium)		
100									SW	32.6 – 101.0: Well graded SAND, brownish yellow (10YR 6/8), moist, angular, flat grains composed of quartz, chert, and lithics, mottled (Upland Complex Old Alluvium)		
		SPT 21	50/5.5	8								30
105									SW	27.6 – 106.0: Well-graded SAND, very pale brown (10YR 7/4), moist, very dense, medium to coarse sand, fining downward, trace angular to subrounded gravel composed of rose quartz, chert, lithics, mottled in lower 4-inches (Upland Complex Old Alluvium)	-Good fluid return observed	
		SPT 22	38 50/6	8								25
110									CL	22.1 – 111.5: Well-graded SAND, reddish yellow (7.5YR 8/6), moist, very dense, medium to coarse grained, few gravel clasts up to maximum 1/2-inch diameter, sand is white quartz, larger clasts are rose quartz, chert, lithics, slight mottling in lower 2-inches of sample (Upland Complex Old Alluvium)	-Rapid advance. Clay?	
		SPT 23	7 15 24	24					SP	19.9 – 113.7: CLAY, greenish gray (10Y 6/1), moist, stiff to very stiff, trace silt, fine sand (Upland Complex Old Alluvium)		20
115									SP	16.6 – 117.0: Poorly-graded SAND, light gray (2.5Y 7/2), moist, very dense, fine grained, trace iron oxide stains, mottled (Upland Complex Old Alluvium)		
		SPT 24	24 27 24	15								15
120												

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1115

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP	12.6 — 121.0 Poorly-graded SAND, light gray (2.5Y 7/2), moist, dense, fine grained quartz sand, trace organic matter and oxide (?) flecks, mottled (Upland Complex Old Alluvium)		
		SPT 25	15 50/6	14					SP	*(Continued from previous page)*		
									SP	9.8 — 123.8 Poorly-graded SAND, pale yellow (2.5Y 7/3), moist, very dense, fine grained, trace organic matter, abrupt lower contact (Upland Complex Old Alluvium)	-Color change is abrupt and clear at 123.8 feet	10
125									SP	6.6 — 127.0 Poorly-graded SAND, greenish gray (10Y 6/1), moist, slightly lithified, trace oxide nodules (Catahoula FM)		
		SPT 26	31 30 24	15					SP	Poorly-graded SAND, greenish gray (5G 5/1), moist, very dense, fine grained, trace silt, non-stratified (Catahoula FM)		5
130									ML	2.6 — 131.0 SILT, greenish gray (5GY 5/1), moist, hard to very stiff, trace fine sand (Catahoula FM)		
		SPT 27	50/3	6								0
135												
		SPT 28	17 17 15	18						- Greenish gray (10GY 5/1) below 138 feet	-7-28-06: Eddie Fuller lead driller (EEI)	-5
140												
		SPT 29	7 9 11	18						- Trace clay at 143 feet		-10
145									ML	-12.4 — 146.0 SILT with sand, dark greenish gray (5GY 4/1), dry to moist, hard, sand is fine grained, contains thin lenses of clay (Catahoula FM)	-Good return on drilling fluid (0945 hrs)	
		SPT 30	24 32 49	18								-15
150									CL	-18.4 — 152.0 CLAY, grayish green (5G 4/2), moist, hard, contains silt, trace fine sand, sand content increases toward bottom of sample (Catahoula FM)	-Good fluid return	
		SPT 31	17 37 40	18								-20
155									ML	-21.4 — 155.0 SILT, dark greenish gray (10GY 4/1), dry, hard, trace to few clay (Catahoula FM)		
		SPT 32	24 37 40	18								-25
160												

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1115

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									ML	27.4 — 161.0		
		SPT 33	28 32 50/3	18					CL	CLAY, silty, greenish gray (5GY 6/1), dry, hard, contains silt, slightly mottled (Catahoula FM)	-No change in drilling, no chatter	-30
165												
		SPT 34	22 37 50/3	18								-35
170										37.4 — 171.0		
									ML	SILT, greenish gray (10GY 5/1), dry, hard, contains clay (Catahoula FM)		
		SPT 35	50/4	4						40.4 — 174.0		-40
175										Boring Terminated at 174.0 feet. Hole grouted upon completion.		-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1116**
Drilling Method and Hole Diameter Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549895.29 N; 277570.96 E feet		Total Depth 166.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29) 133.4 feet	Ground Water Depth Not Determined	Date Started 7/14/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by S. Lehman	Date Completed 7/17/06

Reviewed by / Date CEM 2100 3/8/07 Wm Deadwyll 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.4 Well-graded SAND, contains gravel (Undocumented Fill) 0.0		
									ML	131.9 SILT, brown (10YR 4/3), moist, hard, contains clay (Undocumented Fill) 1.5		
		SPT 1	13 17 17	18								130
5									ML	126.9 SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, laminated, trace shell fragments (Upper Loess) 6.5		
		SPT 2	3 2 4	13								125
10												
		SPT 3	3 3 3	18								120
15												
		SPT 4	3 3 5	18								115
20												
		SPT 5	4 4 6	18						Very thinly laminated below 23 feet		110
25												
		SPT 6	4 4 4	18						Unlaminated below 28 feet		105
30												
		SPT 7	5 6 7	18						Very thinly laminated below 33 feet		100
35												
		SPT 8	4 5 6	16						Unlaminated below 38 feet		95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND ... COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1116

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, medium stiff to stiff, laminated, trace shell fragments (Upper Loess) *(Continued from previous page)*		
		SPT 9	6 7 7	16						Very thinly laminated below 43 feet		90
45												
		SPT 10	3 3 3	18								85
50												
									CL	CLAY, yellowish brown (10YR 5/4), moist, stiff, contains silt, manganese nodules (Lower Loess)		80
		SPT 11	4 5 7	18								
55									ML	SILT, light brownish gray (10YR 6/2), moist, stiff, mottled iron staining, contains clay, manganese nodules (Lower Loess)		
		SPT 12	3 4 5	18								75
60									SP	Poorly-graded SAND, light gray (10YR 7/2), moist to wet, medium dense, very fine grained, interbedded with silt seams, light gray (10YR 7/2), moist, stiff, contains clay, trace sand (Upland Complex Alluvium)	-No Shelby tube sample recovered from 63 feet to 65 feet	
		S 13		0								70
65		S 14		22	23		GSZ TRX				-Shelby tube sample 14: Recovery not determined	
		SPT 15	5 8 11	18	12							65
									SP	Poorly-graded SAND, brownish yellow (10YR 6/6), wet, very dense, fine grained, subrounded quartz, few fines (Upland Complex Alluvium)	-Shelby tube sample 16: Recovery not determined	
70		S 16		ND			GSZ					
		SPT 17	16 50/5	12						- 71 feet: Light gray (2.5Y 7/1), very dense, subangular to subrounded quartz grains		
												60
75												
		SPT 18	16 29 30	10						- 78 feet: Yellowish brown (10YR 5/4), fine grained, mostly sugangular to subrounded quartz		55
80									SW			

81.9 — 51.5
76.9 — 56.5
71.9 — 61.5
65.4 — 68.0
54.1 — 79.3

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1116

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SW	Well-graded SAND, yellowish brown (10YR 5/4), wet, very dense, fine grained, contains gravel up to maximum 1/2 inch diameter, rounded to subangular chert, lithics (Upland Complex Old Alluvium) *(Continued from previous page)* (51.9 – 81.5)		
		SPT 19	16 18 20	18					CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard (Catahoula FM)	-Sample 1116-20 shelby tube was pushed into material 17 inches. After waiting 10 minutes, the sample rod was pulled out. The shelby tube was stuck at the bottom of the hole. Drilled through the shelby tube.	50
85		S 20		0								
		SPT 21	50/5	5								45
90									ML	SILT, greenish gray (GLEY 1 5/10GY), dry, very stiff to hard, contains clay (Catahoula FM) (42.4 – 91.0)	-No shelby tube sample recovered from 85 feet to 87 feet	
		SPT 22	7 11 14	11								40
95												
		SPT 23	9 8 12	18								35
100												
		SPT 24	12 19 48	18						- Hard, brittle rock-like material below 104 feet		30
105									CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt (Catahoula FM) (27.4 – 106.0)		
		SPT 25	28 39 50/4	18								25
110												
		SPT 26	28 32 49	18								20
115												
		SPT 27	29 36 49	18								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1116

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt (Catahoula FM) *(Continued from previous page)*		
		SPT 28	30 42 49	18								10
125												
		SPT 29	27 27 42	18								5
130												
		SPT 30	36 50/5	12								0
135												
		SPT 31	50/6	6								-5
140												
		SPT 32	50/6	6								-10
145										-13.1 / 146.5		
									ML	SILT, greenish gray (GLEY 1 5/10GY), moist, hard, contains clay (Catahoula FM)		
		SPT 33	19 18 24	18								-15
150											-Boring continued to accomodate down-hole geophysical instrumentation	
												-20
155										-23.6 / 157.0		
									CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt, has brittle, rock-like characteristics (Catahoula FM)		-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1116

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt, has brittle, rock-like characteristics (Catahoula FM) *(Continued from previous page)*		-30
165		SPT 34	25 36 50/5	18					SM	-32.1 Silty SAND, greenish gray (GLEY 1 5/10Y), moist, very dense, fine grained, mostly rounded quartz (Catahoula FM) -33.1	165.5 166.5	-35
170										Boring Terminated at 166.5 feet. Hole grouted upon completion.		-40
175												-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU... JL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340 MACTEC WLA William Lettis & Associates, Inc.			SOIL LOG - Boring No. B-1117
Drilling Method and Hole Diameter: Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549996.31 N; 277628.02 E feet		Total Depth: 178.5 feet
Drilling Contractor, Rig and (Hammer Efficiency): Environmental Exploration, Inc. / CME 750 (80%)	Elevation (Datum NGVD 29): 133.3 feet	Ground Water Depth: Not Determined	Date Started: 7/17/06
Sampling Method: SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination: Vertical	Logged by: S. Lehman	Date Completed: 7/25/06

Reviewed by / Date: CEG 2100 5/29/07 Bill Deckelbaum 5-21-07 REV-1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.3 Well-graded SAND, contains gravel (Undocumented Fill) 0.0		
		SPT 1	4 4 4	12					ML	131.3 SILT, yellowish brown (10YR 5/4), dry, medium stiff (Undocumented Fill) 2.0		130
5									ML	127.3 SILT, yellowish brown (10YR 5/4), dry, soft to medium stiff, very thin laminations, contains clay, and shell fragments (Upper Loess) 6.0		
		SPT 2	2 2 2	18								125
10												
		SPT 3	6 6 5	18						- 12.5 feet: Dark yellowish brown (10YR 4/4), moist, trace shell fragments		120
15												
		SPT 4	2 3 2	18						- Moist to damp below 17.5 feet		115
20												
		SPT 5	3 3 2	11								110
25												
		SPT 6	3 4 3	18								105
30												
		SPT 7	3 3 4	13						- Yellowish brown (10YR 5/4) below 32.5 feet		100
35												
		SPT 8	4 4 4	13								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU... OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC | WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1117

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry, soft to medium stiff, very thin laminations, contains clay, and shell fragments (Upper Loess) *(Continued from previous page)*		
		SPT 9	5 5 5	13						- Moist below 42.5 feet		90
45		S 10		24	24		GSZ TRX SG			- Moist to wet, few clay, trace gravel and sand below 45.5 feet		
		SPT 11	3 2 2	18								85
50		S 12		28	23	29/11	GSZ		CL	51.5 — CLAY, yellowish brown (10YR 5/4) mottled light brownish gray (10YR 6/2), damp, stiff, mostly silt, few sand, light iron staining, manganese nodules (Lower Loess)		
		SPT 13	3 5 7	18								80
55		S 14		26								
		SPT 15	5 5 8	18								75
60		SPT 16	9 10 16	18						- Light brownish gray (10YR 6/2), very stiff, thin iron-stained fine sand laminations below 62.5 feet		70
65		SPT 17	7 17 35	18					SP	68.0 — Poorly-graded SAND, light yellowish brown (2.5Y6/3), moist, very dense, fine grained, contains silt, bedded with sandy SILT (Upland Complex Alluvium)		65
70		SPT 18	19 23 37	18					SP	69.0 — Poorly-graded SAND, yellow (2.5Y 7/3), wet, very dense, fine to medium grained, subrounded quartz with trace mafics (Upland Complex Alluvium) - Light gray (10YR 7/1) below 72.5 feet		60
75		SPT 19	20 23 45	17								55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL L GPJ WLA GDT 5/17/07

Project Name and No. NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC | WLA William Lettus & Associates, Inc.

SOIL LOG - Boring No. B-1117

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL	52.8 — 80.5: CLAY, light brownish gray (10YR 6/2), moist, very stiff, contains sand (Upland Complex Alluvium)		
		SPT 20	6 17 21	16					SP	49.8 — 83.5: Poorly-graded SAND, light gray (10YR 7/1), wet, dense, fine grained, subrounded quartz, trace mafics (Upland Complex Alluvium)		50
85									ML	47.8 — 85.5: - Yellow (2.5Y 7/3) below 83.5 feet; SILT, light brownish gray (10YR 6/2), moist, very stiff, contains clay, interbedded with fine grained sand (Upland Complex Old Alluvium)		
		SPT 21	3 5 11	18								45
90									CL	42.3 — 91.0: CLAY, light gray (2.5Y 7/2), moist, hard, with fine grained quartz sand interbeds (Upland Complex Old Alluvium)		
		SPT 22	11 15 31	18								40
95									SP	37.8 — 95.5: Poorly-graded SAND, light brownish gray (2.5Y 7/2), wet, dense, fine grained, subrounded to rounded quartz, trace mafics (Upland Complex Old Alluvium)		
		SPT 23	10 21 26	18								35
100									ML	32.8 — 100.5: SILT, greenish gray (GLEY 1 5/5GY), moist, very stiff, contains sand (Upland Complex Old Alluvium)		
		SPT 24	4 7 10	18								30
105									CL	28.3 — 105.0: CLAY, greenish gray (GLEY 1 5/10Y), moist, very soft to medium stiff, contains silt, black carbonaceous material, trace sand (Upland Complex Old Alluvium)		
		SPT 25	WOH/10 7/2 17	18					SM	24.8 — 108.5: SAND, greenish gray (Gley 1 5/10Y), moist, medium dense, contains silt, fine grained, subangular to subrounded quartz, trace mafics (Upland Complex Old Alluvium)	-Sample 1117-25: first 10 inches fell by weight of hammer, 7 blows to advance the remaining 2 inches of the second interval, 17 blows for the entire third interval	25
110									ML	22.8 — 110.5: SILT, greenish gray (GLEY 1 6/10Y), moist, stiff, contains clay, trace sand (Upland Complex Old Alluvium)		
		SPT 26	5 5 10	18								20
115									CL	17.8 — 115.5: CLAY, greenish gray (GLEY 1 5/10Y, moist, soft, trace silt, sand (Upland Complex Old Alluvium)		
		SPT 27	2 3 3	18					SC / CL	15.3 — 118.0; 14.8 — 118.5: SAND, greenish gray (GLEY 1 5/10Y), moist, loose, contains clay, fine grained (Upland Complex Old Alluvium)		15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU JL GPJ WLA GDT 5/17/07

Project Name and No NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1117

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									ML	13.2 CLAY, greenish gray (GLEY 1 5/10Y), moist, medium stiff, trace silt and sand (Upland Complex Old Alluvium) *(Continued from previous page)* 120.1		
		S 28		19.5	23		GSZ CON SG			SILT with sand, greenish gray (GLEY 1 5/10Y), moist, soft, little clay, fine grained sand interbeds (Upland Complex Old Alluvium)		10
125		SPT 29	5 1 3	18						7.3		
									SM	SAND, greenish gray (GLEY 1 6/5GY), moist, very dense, contains silt, fine grained subrounded quartz (Catahoula FM) 126.0		
		SPT 30	50/5	5								5
130									ML	2.8 SILT, greenish gray (GLEY 1 4/5G, moist, hard, contains sand, fine grained sand (Catahoula FM) 130.5		
		SPT 31	18 46 41	18								0
135									CL	-1.7 CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt (Catahoula FM) 135.0		
		SPT 32	40 32 38	18								-5
140											142 feet to 150 feet: losing drilling mud	
		SPT 33	10 17 23	0					ML	-10.2 SILT, greenish gray (GLEY 1 5/10GY), moist, hard, contains fine grained sand, trace concretions (Catahoula FM) 143.5		-10
145												
		SPT 34	14 18 28	18								-15
150												
									SP	-19.7 Poorly-graded SAND, greenish gray (GLEY 1 5/5GY), moist, very dense, fine grained, rounded quartz with trace mafics (Catahoula FM) 153.0		-20
155												
		SPT 35	32 50/4	10								-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GUL ...L.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1117

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SP	Poorly-graded SAND, greenish gray (GLEY 1 5/5GY), moist, very dense, fine grained, rounded quartz with trace mafics (Catahoula FM)		
										-29.7 (Continued from previous page) 163.0		
									ML	SILT, greenish gray (GLEY 1 5/5G), moist to dry, hard, contains clay, trace fine sand (Catahoula FM)		-30
165												
		SPT 36	12 21 32	18								-35
170												-40
175											-No recovery of sample 1117-37	
		SPT 37	32 50/6	0						-45.2 178.5		-45
										Boring terminated at 178.5 feet. Hole grouted upon completion.		
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1118

Drilling Method and Hole Diameter Rotary wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549978.61 N; 277735.27 E feet		Total Depth 158.8 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / D50/Turbo	Elevation (Datum NGVD 29) 132.6 feet	Ground Water Depth Not Determined	Date Started 7/25/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 7/27/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deadwall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (132.6 – 0.0)	Remarks	Elevation (feet)
0									ML	SILT, olive brown (2.5Y 4/4), moist, medium stiff to very stiff, trace shell fragments, weak HCl reaction (Upper Loess)		130
5		SPT 1	1 2 3	8								125
10		SPT 2	2 3 4	4								120
15		SPT 3	3 3 4	9								115
20		SPT 4	3 3 5	12								110
25		SPT 5	4 4 5	14								105
30		SPT 6	5 5 7	13						- Dark yellowish brown (10YR 4/4) below 28.5 feet	-Shell placed on top of sample in jar 1118-6	100
35		SPT 7	4 6 7	13								95
40		SPT 8	6 6 10	13						- Brown (10YR 5/3) and very stiff below 38.5 feet		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1118

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, olive brown (2.5Y 4/4), moist, medium stiff to very stiff, trace shell fragments, weak HCl reaction (Upper Loess) *(Continued from previous page)*		90
45		SPT 9	5 4 6	15.6						- Brown (10YR 4/3) and stiff below 43.5 feet		85
50		SPT 10	3 2 3	18						- Moist and medium stiff with trace fine sand below 48.5 feet		
									ML	80.6 — 52.0 SILT, light yellowish brown (2.5Y 6/4), moist, very stiff, mottled appearance (Lower Loess)		80
55		SPT 11	6 7 10	18								
									CL-ML	75.6 — 57.0 Silty CLAY, yellowish brown (10YR 5/6), moist, medium stiff, mottled appearance, contains silt (Lower Loess)		75
60		SPT 12	5 4 4	18								
									SP-SC	70.6 — 62.0 Poorly-graded SAND, with clay, light gray (2.5Y 7/2) to brownish yellow (10YR 6/6), moist, dense, mottled appearance, fine grained, subangular to subrounded sand (Upland Complex Alluvium)		70
65		SPT 13	14 22 16	7								
									SP	65.6 — 67.0 Poorly-graded SAND, pale yellow (2.5Y 7/4), wet, very dense, fine grained, subangular to subrounded quartz sand, trace subangular dark mafic grains (Upland Complex Alluvium)		65
70		SPT 14	28 31 36	14								
									CL	60.6 — 72.0 CLAY, light gray (5Y 7/2), moist, very stiff, contains fine grained, subangular to subrounded quartz sand (Upland Complex Alluvium)		60
75		SPT 15	7 8 14	14								55
80		SPT 16	2 6 9	14						53.1 — 79.5		

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SOILLOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1118

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly-graded SAND, yellowish brown (10YR 5/6), wet, medium dense, fine grained, subangular to subrounded quartz grains (Upland Complex Old Alluvium) *(Continued from previous page)*		
									50.6		82.0	50
									CL	CLAY, greenish gray (10Y5/1), moist, stiff, contains silt (Upland Complex Old Alluvium)		
85		SPT 17	5 6 7	18								
									45.6		87.0	45
									CH	CLAY, greenish gray (5GY 6/1), moist, very soft to verystiff, contains roots and branches (Upland Complex Old Alluvium)	-Collected sample that doesn't contain roots	
90		SPT 18	WOH WOH 10	18								
									40.6		92.0	40
									CL-ML	CLAY, greenish gray (5GY 6/1), moist,stiff to very stiff, contains silt and fine to medium grained, subangular to subrounded sand (Upland Complex Old Alluvium)		
95		SPT 19	5 9 12	18								35
100		SPT 20	4 6 9	18						- Zone of organics (roots?) with small subangular pebbles from 98.5 feet to 98.75 feet	-Zone of organic matter in small pebbles collected (1118-20A) from 98.5 feet to 98.75 feet	
									30.6		102.0	30
									CH	CLAY, greenish gray (5G 6/1), moist, very stiff, trace organics at 104.5 feet (Upland Complex Old Alluvium)		
105		SPT 21	6 9 12	18								
									26.6		106.0	25
									ML-CL	Clayey SILT, greenish gray (5GY 6/1), moist, hard, trace very fine sand (Catahoula FM)		
110		SPT 22	11 14 19	18								
									21.1		111.5	20
									SW-SM	Well-graded SAND to silty SAND, greenish gray (10Y6/1), wet, dense, fine to medium grained, subangular to subrounded quartz, contains silt (Catahoula FM)		
115		SPT 23	14 20 29	13								15
120		SPT 24	12 15 23	12								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1118

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW-SM	10.6 / 122.0		
									SP	Poorly-graded SAND, gray (2.5Y 6/1), moist, very dense, fine grained, subangular to subrounded quartz, interval has rock-like fracture (like sandstone) (Catahoula FM)		10
		SPT 25	50/5	2								
125										6.6 / 126.0		
									CH	Sandy CLAY, greenish gray (10GY 5/1), moist, hard, contains fine grained, subangular to subrounded sand (Catahoula FM)		5
		SPT 26	16 50/5	9								
130												0
		SPT 27	39 50/5	11						- Greenish gray (5G 5/1) below 133.5 feet		
135										-4.4 / 137.0		
									CH	CLAY, greenish gray (10GY 6/1), moist, hard, trace fine sand (Catahoula FM)		-5
		SPT 28	19 24 38	18								
140										-9.4 / 142.0		
									SC	Clayey SAND, greenish gray (5G 5/1), moist, very dense, fine grained, subangular to subrounded quartz, contains clay (Catahoula FM)		-10
		SPT 29	39 50/5	3								
145												-15
		SPT 30	25 40 50/5	15								
150											-No change in drilling (from 150.0 feet to 158.5 feet)	-20
155										158.5 feet: Initial refusal 23 blows/3 inches. Re-struck spoon with hammer 50 more times (no advance noted). Drill rig lifted off ground when attempted to drill deeper. Refusal conditions.	-Material at 158.5 feet is a white, rock-like material	-25
		SPT 31	23/3	0						-26.2 / 158.8		
160										Boring terminated at 158.8 feet. Hole grouted upon completion.		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1119**
Drilling Method and Hole Diameter Mud Rotary / 4 inches to 8.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550167.11 N; 277492.01 E feet		Total Depth 195.3 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 134.6 feet	Ground Water Depth Not Determined	Date Started 7/25/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by T. Ramirez	Date Completed 7/30/06

Reviewed by / Date

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	134.6 SILT, yellowish brown (10YR 5/6), dry to moist, medium stiff, top 2 inches contians gravel (Undocumented Fill) 0.0		130
5		SPT 1	4 2 5	8.4								
									ML	126.6 SILT, light olive brown (2.5Y 5/6), moist, stiff, fine laminations, trace to few clay (Upper Loess) 8.0		125
10		SPT 2	4 4 5	14.4								
15		SPT 3	3 5 5	8.4								120
20		SPT 4	4 6 7	14.4						- Gastropod shells and carbonate staining below 20 feet		115
									ML	110.6 SILT, dark yellowish brown (10YR 4/6), moist, soft to very stiff, contains gastropod shells, trace to few clay, massive (Upper Loess) 24.0		110
25		SPT 5	2 2 2	13.2								
30		SPT 6	2 6 7	18						- 30.0 feet: Stiff below 30.0 feet		105
35		SPT 7	8 7 8	13.2						- Carbonate staining in very fine laminations below 35 feet		100
40												95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1119

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	10 9 11	10.8					ML	SILT, dark yellowish brown (10YR 4/6), moist, soft to very stiff, contains gastropod shells, trace to few clay, massive (Upper Loess) *(Continued from previous page)*		
										- 41.0 feet: Massive and very stiff below 41.0 feet		90
45		SPT 9	5 2 3	8.4								
												85
50		SPT 10	4 3 4	14.4						- 51.0 feet: medium stiff below 51.0 feet		
												80
55		SPT 11	4 5 9	12						- 56.0 feet: Yellowish brown (10YR 5/8), moist		
									76.6		58.0	
									CL	CLAY, yellowish brown (10YR 5/4), moist, stiff to very stiff, contains silt, manganese nodules (Lower Loess)		75
60		SPT 12	6 5 4	10.8								
												70
65		SPT 13	8 12 16	20.4						- 65.0 feet: Gray (10YR 6/1) to yellowish brown (10YR 5/4), very stiff, contains sand lenses, iron staining		
												65
70		SPT 14	9 12 16	0						- 70.0 feet: Gray (10YR 6/1), increasing sand content		
									61.6		73.0	
									SP	Poorly-graded SAND, yellow (2.5Y 7/8), moist, very dense, subrounded, fine to medium quartz sand with lithics, trace fines (Upland Complex Alluvium)		60
75		SPT 15	23 29 37	10.8							-7 batches of mud and 2,100 gallons of water used to stabilize the hole	
									56.1		78.5	
									ML			
80												55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1119

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks
80		SPT 16	13 13 12	18					ML	SILT, gray (2.5Y 6/1), moist, very stiff, some clay, contains yellow, subangular, coarse grained sand with chert gravel between 80.5 feet and 81.0 feet, and grayish brown sand between 81.0 feet and 81.5 feet (Upland Complex Alluvium) *(Continued from previous page)*	
									SP	Poorly-graded SAND, grayish brown (2.5Y 5/2), moist, dense, subangular to subrounded, medium to coarse grained quartz sand, trace gravel, intercalated clay (Upland Complex Old Alluvium)	
85		SPT 17	6 16 32	16.8					SW	Well-graded SAND, reddish yellow (7.5YR 6/6), moist, very dense, subangular to subrounded, coarse grained quartz sand with lithics, trace to few clay, contains chert and quartz gravels (Upland Complex Old Alluvium)	-11 batches of mud and 3,300 gallons of water used to stabilize the hole
90		SPT 18	50/5 44	9.6					SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, very dense, quartz sand with trace lithics, trace fines (Upland Complex Old Alluvium)	
95		SPT 19	20 35 46	9.6					CL	CLAY, brownish yellow (10YR 6/8), hard, trace silt (Upland Complex Old Alluvium)	
100		SPT 20	50/5	6					SW	Well-graded SAND with gravel, light gray (2.5YR 7/1), very dense, subangular, coarse grained quartz sand with trace lithics, with subrounded, quartz and chert gravel (Upland Complex Old Alluvium)	
									GW	Well-graded GRAVEL, light gray (2.5YR 7/2), wet, very dense, fine to coarse gravels of various lithologies including chert, quartz, few to little sand (Upland Complex Old Alluvium)	-Contact at 107 feet, drilling smoother
105		SPT 21	50/5	4.8					CL	CLAY, greenish gray (Gley 1 5/1), moist, stiff to very stiff, few to little silt (Catahoula FM)	
110		SPT 22	8 7 7	18							
115		SPT 23	7 8 10	18					SW		
120											

Elevation (feet): 50, 45, 40, 35, 30, 25, 20, 15

51.6 — 83.0 — 46.1 — 88.5 — 41.1 — 93.5 — 36.1 — 98.5 — 33.4 — 101.2 — 30.6 — 104.0 — 27.6 — 107.0 — 16.6 — 118.0

SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1119

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 24	30 32 27	8.4					SW	Well-graded SAND with gravel, light gray (2.5Y 7/1), moist, very dense, subangular to subrounded coarse sand (Upland Complex Old Alluvium) *(Continued from previous page)*		
										10.6 — 124.0		
									CL	CLAY, greenish gray (Gley 1 5/1), moist, very stiff, some silt, color change at 126.5 feet to light olive brown (2.5Y 5/3) (Upland Complex Old Alluvium)		10
125		SPT 25	10 12 14	18								
										6.6 — 128.0		
									SC	Clayey SAND, light brownish gray (2.5Y 6/2), moist, dense, subrounded, fine to medium grained quartz sand (Upland Complex Old Alluvium)		5
130		SPT 26	11 7 36	15.6								
										1.6 — 133.0		
									SP	Poorly-graded SAND, light brownish gray (2.5Y 6/2), moist, dense, subrounded, medium to coarse grained quartz sand, trace fines (Upland Complex Old Alluvium)		0
135		SPT 27	20 20 24	8.4								
										-4.4 — 139.0		
									SW	Well-graded SAND, light yellowish brown (2.5Y 6/3), moist, dense to very dense, subrounded to subangular, fine to coarse grained, quartz sand, oxidation staining, trace fines, trace gravels (Upland Complex Old Alluvium)		-5
140		SPT 28	23 35 50/5	18								
												-10
145		SPT 29	20 27 19	4.8								
												-15
150											-400 gallons of water and 5 batches of mud used to pull up gravel -Skip one sample, unable to pull up gravel	
												-20
155		GRAB 30									-900 gallons of mud added, gravel keeps caving -Total 20 batches of mud mixed to pull up gravel	
160										-25.4 — 160.0		-25

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1119

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160		SPT 31	20 37 46	12					SP	Poorly-graded SAND, greenish gray (Gley 1 5/1), dense to very dense, subrounded, fine grained quartz sand, trace fines, contains clay layers (Upland Complex Old Alluvium)	-Blows per inch for SPT 31: (3, 3, 3, 4, 3, 4) - 1st 6 inches (3, 3, 4, 7, 10, 10) - 2nd 6 inches (7, 8, 7, 8, 8, 8) - 3rd 6 inches -Driller informed below 161.5 feet: sand and mud	
									CL	-28.4 163.0 CLAY, greenish gray (Gley 1 6/1) to grayish green (Gley1 4/2), moist, hard, little silt, change at 170.5 feet from greenish gray to grayish green (Catahoula FM)		-30
165												
												-35
170		SPT 32	37 50/5	16.8								
												-40
175		SPT 33	50/4	4.8								
												-45
180												
												-50
185		SPT 34	19 36 50/5	12								
												-55
190												
												-60
195		SPT 35	50/4	4.8						-60.7 195.3 Boring Terminated at 195.3 feet. Hole grouted upon completion.		
												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1120**
Drilling Method and Hole Diameter Rotary wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550099.87 N; 277558.02 E feet		Total Depth 150.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration, Inc. / CME 750 (80%)	Elevation (Datum NGVD 29) 133.4 feet	Ground Water Depth Not Determined	Date Started 8/27/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by K. KRUG	Date Completed 8/28/06

Logged by [illegible] CEG. 2100 3/8/07
Reviewed by / Date [illegible] 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (133.4 / 0.0)	Remarks	Elevation (feet)
0										- Rotary wash drilled to 59 feet, then initiated SPT on 5 feet intervals		130
5												125
10												120
15												115
20												110
25												105
30												100
35												95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND U COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1120

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40												
45												90
50												85
55												80
60		SPT 1	6 8 12	18					CH	CLAY, light yellowish brown (10YR 6/4), moist, very stiff, mottled (Lower Loess)		75
65		SPT 2	11 12 12	18						- Manganese mottling below 64 feet		70
										65.9 — 67.5		
									SW	Well-graded SAND, brownish yellow (10YR 6/8), wet, very dense, fine grained, well rounded quartz feldspathic (Upper Alluvium)		65
70		SPT 3	21 24 36	13.2						- Very pale brown (10YR 7/3) below 69.5 feet		
75		SPT 4	23 20 27	13.2								60
										56.4 — 77.0		
									CL	CLAY, very pale brown (10YR 7/3), moist, hard, trace to few fine grained sand, rust stains (Upland Complex Old Alluvium)		55
80		SPT	16 29	13.2						53.4 — 80.0		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND U COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1120

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		5	33						SW	Well-graded SAND, very pale brown (10YR 7/3), wet, very dense, fine grained, rounded (Upland Complex Old Alluvium) 50.9 – 82.5		
85		SPT 6	36 47 49	13.2					SP	Poorly-graded SAND with gravel, brownish yellow (10YR 6/8), moist, very dense, sand composition is fine grained, well rounded, quartzo-feldsspathic, with trace rounded chert and quartz gravel (Upland Complex Old Alluvium)		50
90		SPT 7	18 21 21	15.6								45
									SW	Well-graded SAND, very pale brown (10YR 7/4), wet, dense, fine grained, rounded, quartzo-feldspathic composition (Upland Complex Old Alluvium) 41.4 – 92.0		40
95		SPT 8	18 21 21	14.4								
100		SPT 9	36 48 50/3	14.4					SP	Poorly-graded SAND, with gravel, brownish yellow (10YR 6/8), moist to wet, very dense, rounded, quartzo-feldspathic, few to little rounded chert and quartz gravels (Upland Complex Old Alluvium) 36.4 – 97.0		35
105		SPT 10	49 50/3	13.2						- Sand with gravel below 104 feet		30
									CH	CLAY, greenish gray (Gley 1 6/5GY), moist, stiff to hard (Upland Complex Old Alluvium) 26.4 – 107.0		25
110		SPT 11	5 6 14	18								20
115		SPT 12	0 6 8	18								15
120		SPT	18 18	0								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND U COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1120

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		13	16						CH	CLAY, greenish gray (Gley 1 6/5GY), moist, stiff to hard (Upland Complex Old Alluvium) *(Continued from previous page)*		
125												10, 5
130		SPT 14	0 0 10	10.8						- Moist to wet, soft below 129 feet	Hammer blows in last 6 inches due to full SPT Sampler	0
135										-3.6 / 137.0		
									CL	CLAY, greenish gray (Gley 1 6/5GY), dry, hard, some to mostly silt (Catahoula FM)		-5
140		SPT 16	50/1.5	1.2								-10
145										- Wet to moist below 144 feet		-15
150		SPT 17	18 22 25	18						-17.1 / 150.5		
										Boring terminated at 150.5 feet. Hole grouted upon completion.		-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1121**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550072.64 N; 277681.9 E feet		Total Depth 178.75 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.1 feet	Ground Water Depth Not Determined	Date Started 7/18/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by R. Ortiz/C. Rittel	Date Completed 7/25/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedrick 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GP	133.1 Poorly-graded GRAVEL, road base (Undocumented Fill) 0.0		130
		SPT 1	6 13 14	5								
5									ML	127.1 SILT, light olive brown (2.5Y 5/4), moist, medium stiff to very stiff, contains gastropod shells (Upper Loess) 6.0		125
		SPT 2	3 3 4	7								
10												120
		SPT 3	4 4 7	7								
15												115
		SPT 4	4 4 5	5						- Trace sand below 18.5 feet		
20												110
		SPT 5	4 5 8	8						- Light yellowish brown (2.5Y 6/4) below 23.5 feet		
25												105
		SPT 6	6 7 9	9								
30												100
		SPT 7	6 7 6	10.5						- Light olive brown (2.5Y 5/4), trace sand below 33.5 feet		
35												95
		SPT 8	5 7 10	10.5								
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1121

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light olive brown (2.5Y 5/4), moist, medium stiff to very stiff, contains gastropod shells (Upper Loess) *(Continued from previous page)*		90
45		SPT 9	8 10 13	10						- Very fine laminated below 43.5 feet		
		S		0								85
50		S		0								
									ML/MH	81.1 — 52.0 SILT, olive yellow (2.5Y 6/6), moist, stiff to hard, contains clay, manganese nodules (Lower Loess)		80
55		SPT 10	4 6 9	16								
		S		0								75
60		SPT 11	13 16 18	15								
		S 12a		24								70
65		SPT 12b	8 10 16	18						- Light gray (2.5Y 7/2) to olive yellow (2.5Y 6/8) below 63.5 feet		
									SM	66.1 — 67.0 Silty SAND, white (2.5Y 8/1), moist, very dense (Upland Complex Alluvium)		65
70		SPT 13	24 30 36	13								
									CL	61.1 — 72.0 CLAY with sand, light gray (2.5Y 7/1), moist to wet, very stiff, (Upland Complex Alluvium)		60
75		SPT 14	13 8 13	12							-Sample 14: Recovery not recorded	
									SM	56.1 — 77.0 SAND, strong brown (7.5 YR 4/6) to gray (2.5Y 6/1), moist, medium dense, contains silt, with thin clay interbeds (Upland Complex Alluvium)		55
80		SPT 15	11 11 15	14								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1121

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SM			
										51.1 — 82.0		
									CL	CLAY, gray (2.5Y 6/1) to strong brown (7.5YR 4/6), moist, very stiff, contains silt, with thin sand interbeds (Upland Complex Allluvium)	-7/19/06 am water level: thick mud to 40 feet below ground surface	50
85		SPT 16	8 12 18	18								
										46.1 — 87.0		
									CL	CLAY, pale olive (5Y 6/3), moist, very stiff, contains silt, trace sand (Upland Complex Alluvium)		45
90		SPT 17	5 6 17	18								
										41.1 — 92.0		
									SM	Silty SAND, pale yellow (2.5Y 7.4), moist, very dense, quartz sand with felsic and lithic grains, trace gravel (Upland Complex Old Alluvium)		40
95		SPT 18	46 50/5.5	0								
												35
100		SPT 19	18 35 50	9								
											-Losing approximately 30% to 40 % of mud into formation	30
105		SPT 20	20 27 36	0								
										26.1 — 107.0		
									CH	CLAY, greenish gray (5G 6/1), moist, very stiff, trace sand, woody debris, and other organic material (Upland Complex Old Alluvium)		25
110		SPT 21	5 6 10	18								
										21.1 — 112.0		
									CH	CLAY, greenish gray (10Y 5/1), moist, stiff, trace fine sand and mica flakes, trace fibrous organic matter (Upland Complex Old Alluvium)	-Reworked Catahoula FM in Alluvium?	20
115		SPT 22	6 5 8	18								
										16.1 — 117.0		
									SP			15
120		SPT 23	17 23 32	9								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1121

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP	Poorly-graded SAND, light brownish gray (2.5Y 6/2), wet, very dense, medium grained, subangular to subrounded quartz sand with trace mafics; 1" interbed of sandy clay (Upland Complex Old Alluvium) *(Continued from previous page)* - Wet below 123.5 feet		10
125		SPT 24	17 28 30	11							-Slow drilling because of sand. A lot of time is being spent on keeping the borehole open by circulating water through borehole	5
130		SPT 25	28 37 50/6	7						Trace organic matter below 128.5 feet		0
135		SPT 26	28 33 48	0								-5
									CL/CH	-3.4 / 136.5 CLAY, dark greenish gray (10GY 4/1), moist, hard, rock-like fracture (Catahoula FM)		
140		SPT 27	50/3	3							-Refusal after 3-inch advancement. Rod is bouncing and not moving downward.	-10
									SM	-7.9 / 141.0 Silty SAND, dark greenish gray (5G 4/1), moist, very dense, subangular to subrounded fine grained quartz sand, trace mica flakes (Catahoula FM)	-Only shoe contained sample -Bottom depth changed to 180 feet per KBC	
145		SPT 28	29 35 41	18								-15
									SP-SM	-13.9 / 147.0 Poorly-graded SAND with silt, greenish gray (10Y 5/1), moist to wet, very dense, subangular to subrounded fine grained quartz sand, trace dark mafic grains (Catahoula FM)		
150		SPT 29	36 39 43	17							-10 feet sampling interval per SJC (MACTEC)	-20
155												-25
160		SPT 30	35 42 50/6	15						- Wet below 158.5 feet		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1121

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SP-SM	Poorly-graded SAND with silt, greenish gray (10Y 5/1), moist to wet, very dense, subangular to subrounded fine grained quartz sand, trace dark mafic grains (Catahoula FM) *(Continued from previous page)*		-30
										-30.9 164.0		
165									ML	SILT, grayish green (5G 4/2), moist, hard, moderately cemented with rock-like fracture (Catahoula FM)		-35
170		SPT 31	50/3	3							-Rod advanced 3-inches after 50 blows of hammer	-40
175												-45
										-45.7 178.8		
180		SPT 32	50/3	3						Boring Terminated at 178.8 feet. Hole grouted upon completion.	-3-inch advancement after 50 blows	-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1123**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550141.26 N; 277676.58 E feet		Total Depth 168.7 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.5 feet	Ground Water Depth Not Determined	Date Started 7/27/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 7/29/06

Reviewed by / Date CEG 2100 3/8/07 Wm Deadwyll 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	133.5 SILT, dark yellowish brown (10YR 4/4), contains gravel (Undocumented Fill) 0.0		
									ML	130.5 SILT, dark yellowish brown (10YR 4/4), moist, soft to stiff, trace clay (Upper Loess) 3.0		130
5		SPT 1	1 1 2	6								
												125
10		SPT 2	1 1 3	6								
												120
15		SPT 3	1 2 4	7.2	21		GSZ					
												115
20		SPT 4	2 2 4	9.6								
												110
25		SPT 5	2 3 3	7.2								
												105
30		SPT 6	4 6 7	6								
												100
35		SPT 7	2 4 6	8.4								
												95
40		S UD1		24								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1123

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		SPT 8	4 6 9	10.8					ML	SILT, dark yellowish brown (10YR 4/4), moist, soft to stiff, trace clay (Upper Loess) *(Continued from previous page)* - Very stiff, trace gastropod shells below 40 feet		
45		SPT 9	6 7 9	9.6							-Groundwater at 47.5 feet	90
50		SPT 10	3 2 2	15.6						- Clayey, wet, soft below 48.5 feet		85
									CL (82.0 – 51.5)	CLAY, light yellowish brown (10YR 6/4), moist, medium stiff to very stiff, contains silt, trace manganese nodules (Lower Loess)	-Driller notes change in material at 51.5 feet	80
55		SPT 11	3 3 4	10								
60		S UD2		24								75
		SPT 12	6 7 9	16.8								
65		SPT 13	4 5 5	18								70
									SP (67.0 – 66.5)	Poorly-graded SAND, gray (10YR 6/1), wet, loose, fine grained, quartz rich (Upland Complex Alluvium)	-Sand in cuttings at 66.5 feet	65
70		SPT 14	4 3 3	ND								
75		SPT 15	11 15 29	10.2					CL (59.7 – 73.8)	CLAY, gray (10YR 6/1), wet, hard, contains sand (Upland Complex Alluvium)		60
									SP (59.2 – 74.3)	Poorly-graded SAND, gray (10YR 6/1), wet, medium dense to dense, fine grained, quartz rich (Upland Complex Alluvium) - Clay lenses below 78.5 feet		55
80		SPT 16	10 9 10	9.6								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1123

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP			
										51.0 – 82.5		
									ML	Sandy SILT, gray (10YR 6/1), moist to wet, sand is fine grained, contains sandy lenses and manganese nodules (Upland Complex Old Alluvium)		50
		S UD3		21.6			CON			48.5 – 85.0		
85		SPT 17	6 7 10	3.6					SP	Poorly-graded SAND, gray (10YR 6/1), wet, medium dense to dense, fine grained, quartz rich (Upland Complex Old Alluvium)		45
		SPT 18	14 25 23	0								
90										41.5 – 92.0	-Chattering of tools at approximately 91 feet -Driller notes smoother drilling at approximately 92 feet	
									CL	CLAY, light brownish gray (2/5YR 6/2), very stiff, moist, contains silt, trace fine sand (Upland Complex Old Alluvium)		40
		SPT 19	11 14 12	12								
95										36.5 – 97.0		
									SP	Poorly-graded SAND, brownish yellow (10YR 6/6), wet, very dense, fine grained, quartz rich (Upland Complex Old Alluvium)	-No change noted during drilling	35
		SPT 20	31 50/5	4.8								
100										31.5 – 102.0	-Chattering of tools at approximately 101 feet	
									SW	Well-graded SAND, light gray (10YR 6/1), wet, very dense, fine to medium grained, quartz rich, trace gravel (Upland Complex Old Alluvium)		30
		SPT 21	36 35 33	8								
105										26.0 – 107.5		
									CL	CLAY, greenish gray (GLEY 1 5/5GY), moist, stiff to very stiff, trace organics, trace fine sand lenses (Upland Complex Old Alluvium)	-Gray green cuttings in mud tub	25
		SPT 22	2 4 8	12								
110												
		S UD4		ND							-Pushed tube 2.0 feet and crushed tube. No Recovery	20
115		SPT 23	9 7 12	12						- Increased sand content below 115 feet		
												15
		SPT 24	8 9 10	16.8								
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1123

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (GLEY 1 5/5GY), moist, stiff to very stiff, trace organics, trace fine sand lenses (Upland Complex Old Alluvium) *(Continued from previous page)*		
		SPT 25	6 9 17	15.6								10
125												
		SPT 26	12 32 49	13.2					SW	4.5 — 129.0 Well-graded SAND, greenish gray (GLEY 1 6/10Y, wet, very dense, fine to medium grained, quartz rich sand, trace subrounded gravel (Upland Complex Old Alluvium)		5
130											-Chattering of tools from 130 feet	
		SPT 27	22 28 36	6								0
135												
		SPT 28	50/5	7.2								-5
140										- Increased gravel content at 141 feet		
		GRAB 29									-No sample collected at 143.5 to 145 feet because of collapsing gravels (1/8 to 1/4 inch diameter) -Collected cuttings for sample 1123-29	-10
145												
		GRAB 30									-No sample at 148.5 to 150.0 feet -Collected cuttings as sample 1123-30 -Sample 1123-30 represents cuttings from 145 to 155 feet -100% water loss at 152 feet -Continue to rotate tools and mix mud	-15
150												
155											-Continue drilling to 163.5 feet, per Kevin Clahan, to try and tag Catahoula FM	-20
												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND L COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1123

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SW	Well-graded SAND, greenish gray (GLEY 1 6/10Y, wet, very dense, fine to medium grained, quartz rich sand, trace subrounded gravel (Upland Complex Old Alluvium) *(Continued from previous page)*		-30
165												
									CL	-33.5 167.0 CLAY, greenish gray (GLEY 1 5/5GY); (Catahoula FM) -35.2 168.7	-Greenish gray clay in cuttings	-35
		SPT 31	50/4	ND						Boring Terminated at 168.7 feet. Hole grouted upon completion.	-No sample recovered. -Split spoon broke off in boring -Not recoverable	
170												-40
175												-45
180												-50
185												-55
190												-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC | WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1124

Drilling Method and Hole Diameter Rotary Wash / 3.5 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550038.31 N; 277824.26 E feet		Total Depth 150.3 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 132.4 feet	Ground Water Depth Not Determined	Date Started 8/7/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by K. KRUG	Date Completed 8/10/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedrall 3-6-07

Depth (feet)	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Soil Type (USCS)	Lithology	Remarks
0								132.4 / 0.0	
								131.9 / 0.5 CONCRETE (6 inches thick)	
								Undocumented Fill 130.4 / 2.0	
							ML	SILT, brown (10YR 5/3), dry, medium stiff to very stiff, little clay, weak reaction with HCl, contains clay (Upper Loess)	
	SPT 1	4 3 3	16						-Hollow Stem Auger (9-inch diameter) to 3.5 feet depth
5									
	SPT 2	5 3 4	18						
10									
	SPT 3	6 5 6	18						
15									-Switched to rotary drill between samples 1124-3 and 1124-4
	SPT 4	5 5 5	16					- Moist below 18.5 feet	-Drill/Sampling depth changed by 6-inches for ease of change out of drill rods
20									
	SPT 5	7 6 8	17					- Brown (10YR 4/3) below 23 feet	
25									-Flush out boring to get rid of cuttings
	SPT 6	8 6 9	17					- Trace shell fragments below 28 feet	
30									
	SPT 7	9 8 9	18						-Flushed hole -Good dilatancy
35									
	S 8		12					- Pushed Shelby tube from 38 feet to 38.8 feet -- No recovery in tube	
40	SPT	8 7	17						

Elevation (feet): 130, 125, 120, 115, 110, 105, 100, 95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1124

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40		9	9						ML	SILT, brown (10YR 5/3), dry, medium stiff to very stiff, little clay, weak reaction with HCl, contains clay (Upper Loess) *(Continued from previous page)*	-Small cave-in at 40.3 feet -- washed out	90
45		SPT 10	8 7 8	12						- Slight clay content increase below 43.8 feet		85
50		SPT 11	5 4 5	18								
										80.4 — 52.0		80
									CL	CLAY, yellowish brown (10YR 5/6), moist, stiff to hard, contains silt, manganese nodules (Lower Loess)	-Contact between samples, unknown characteristics	
55		SPT 12	12 12 19	24								75
60		SPT 13	10 6 6	13						- Very pale brown (10YR 7/4) mottling below 58.5 feet		70
										68.2 — 64.2		
65		SPT 14	30 36 42	17					SP	Poorly-graded SAND, light gray (10YR 7/2), moist to wet, very dense to medium dense, fine grained, subangular to rounded (Upland Complex Alluvium)	- Flushed out hole after sampling	65
70		S 15		0						- Mottled reddish yellow (2.5YR 6/8) below 69 feet	- Pushed Shelby tube from 68.8 feet to 70.5 feet - No recovery	
		SPT 16	9 14 16	14								60
75		SPT 17	14 11 13	13								55
80		SPT	20 12	18								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND . . COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1124

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		18	14						SP	Poorly-graded SAND, light gray (10YR 7/2), moist to wet, very dense to medium dense, fine grained, subangular to rounded (Upland Complex Alluvium) *(Continued from previous page)*		50
85		SPT 19	6 9 20	18								
									SW	Well-graded SAND, light gray (10YR7/2), wet, medium dense, fine grained, trace to few clay (Upland Complex Old Alluvium)		45
90		SPT 20	16 12 10	13								40
95		SPT 21	6 7 8	0								
									OL	ORGANIC CLAY, greenish gray (GLEY 1 5/2) to dark yellowish brown (10YR 3/6), moist to wet, very stiff, contains sand and wood (Upland Complex Old Alluvium)	- Pushed Shelby tube from 98.8 feet to 100.8 feet	35
100		S 22		20								
		SPT 23	8 11 18	19							-Organics are cohesive pieces, or pieces of wood. Wood grain visible	30
									CL	CLAY, greenish gray (GLEY 1 5/2), moist to wet, very stiff, trace to few organics (Upland Complex Old Alluvium)		
105		SPT 24	9 9 11	22								25
110		SPT 25	7 7 10	19								
									SC	Clayey SAND, greenish gray (GLEY 1 6/10Y), wet, dense to very dense, fine grained, quartzo-feldspathic sand (Upland Complex Old Alluvium)		20
115		SPT 26	17 16 23	16								15
120		SPT	23 29	13								

45.4 — 87.0
35.4 — 97.0
29.4 — 103.0
20.4 — 112.0

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1124

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		27	31						SC	Clayey SAND, greenish gray (GLEY 1 6/10Y), wet, dense to very dense, fine grained, quartzo-feldspathic sand (Upland Complex Old Alluvium) *(Continued from previous page)*		
											-High water pressure	10
125		SPT 28	10 13 21	13						- Increased clay content below 124.0 feet		
											- "Artesian flow" coming from drill rods as tripped before sampling	5
130		SPT 29	20 22 21	13								
												0
135										-4.6 / 137.0		
									GP	Poorly-graded GRAVEL, wet, very dense, angular to subangular chert and rose quartz, trace to few sand (Upland Complex Old Alluvium)		-5
140		SPT 31	50/3	3								-10
145		SPT 32	50/2	0						-14.6 / 147.0		-15
									SW	Well-graded SAND, greenish gray (Gley 1 5/10Y), wet, very dense, quartzo-feldspathic with micas, trace clay (Upland Complex Old Alluvium)		
150		SPT 33	6 2 47	18						-17.9 / 150.3		
										Boring Terminated at 150.3 feet. Hole grouted upon completion.		-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND G... COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1125**
Drilling Method and Hole Diameter Rotary Wash / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550038.55 N; 277824.01 E feet		Total Depth 139.25 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 132.5 feet	Ground Water Depth Not Determined	Date Started 8/9/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 8/14/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	132.5 SILT, brown (7.5YR 4/4), moist, medium stiff, contains fine grained sand (Upper Loess)	0.0	130
		SPT 1	3 4 4	12								
5										126.0	6.5	125
									ML	SILT, yellowish brown (10YR 5/4), moist, soft to very stiff, weak HCl reaction, trace cemented nodules (Upper Loess)		
		SPT 2	2 2 2	5								
10												120
		SPT 3	2 3 3	7							-Some tailings present in sampler	
15												115
		SPT 4	2 4 4	7						- Trace shell fragments and strong HCl reaction below 18.5 feet		
20												110
		SPT 5	3 4 4	11								
25												105
		SPT 6	4 4 4	6								
30												100
		SPT 7	5 8 8	12								
35												95
		SPT 8	6 7 7	11						- Weak HCl reaction below 38.5 feet		
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND - COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1125

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, soft to very stiff, weak HCl reaction, trace cemented nodules (Upper Loess) *(Continued from previous page)*		90
45		S 9		13	31		GSZ CON SG			- Few clay, trace sand below 43.5 feet		
		SPT 10	4 4 4	18								
									ML	SILT, light yellowish brown (10YR 6/4), wet, medium stiff, weak HCl reaction, trace shell fragments (Upper Loess)		85
50		SPT 11	2 3 3	18								
									CL	CLAY, light yellowish brown (10YR 6/4), moist, medium stiff to stiff, contains silt, no HCl reaction, mottled appearance (Lower Loess)		80
55		SPT 12	3 2 4	18								75
60		S 13		23							-Very small bend on end of shelby tube	
		SPT 14	3 5 8	18						- Pale brown (10YR 6/3), stiff below 60.5 feet		70
		SPT 15	7 8 14	18					CL	CLAY, light gray (2.5Y 7/2), moist, very stiff, contains silt, mottled appearance, trace fine sand (Lower Loess)		
65									SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, dense, subangular to subrounded quartz, trace silt (Upland Complex Alluvium)		65
70		SPT 16	11 15 20	9					SM	Silty SAND, light gray (2.5Y 7/2), moist, medium dense, fine grained, subangular to subrounded (Upland Complex Alluvium)		60
75		SPT 17	6 10 8	17					SP-SM	Poorly-graded SAND with silt, light gray (2.5Y 2/2), moist to wet, medium dense, fine grained, subangular to subrounded sand (Upland Complex Alluvium)		55
80		S		0								

Lithology boundaries: 85.0 (47.5); 81.0 (51.5); 69.5 (63.0); 66.0 (66.5); 61.0 (71.5); 55.0 (77.5)

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1125

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80			18						SP-SM	Poorly-graded SAND with silt, light gray (2.5Y 2/2), moist to wet, medium dense, fine grained, subangular to subrounded sand (Upland Complex Alluvium) *(Continued from previous page)*		
		SPT 19	5 2 9	17								50
									SP	49.5 — 83.0 Poorly-graded SAND, light gray (2.5Y 7/1), wet, dense to very dense, fine grained, subangular to subrounded quartz, trace mafic grains, (Upland Complex Alluvium)	-SPT Sample 19: Recovery not recorded	
85		SPT 20	18 20 22	13								45
		SPT 21	24 26 25	13								
90										41.0 — 91.5		
									CL	CLAY, greenish gray (GLEY 1 6/5GY), moist, very stiff, trace fine sand (Upland Complex Old Alluvium)		40
		SPT 22	7 11 34	16						38.0 — 94.5		
95									SC	Clayey SAND, greenish gray (GLEY 1 6/5GY), wet, very dense, fine grained, subangular to subrounded sand (Upland Complex Old Alluvium)		
									CL	36.0 — 96.5 CLAY, greenish gray (GLEY 1 5/5GY), moist, stiff (Upland Complex Old Alluvium)		35
		SPT 23	4 5 7	18								
100										31.0 — 101.5		
									CL	CLAY, greenish gray (GLEY 1 5/10GY), moist, stiff, trace organic matter (Upland Complex Old Alluvium)		30
		SPT 24	6 6 7	18							-Organic matter composed of roots and wood fragments	
105										26.0 — 106.5		
									CH	CLAY, gray (2.5Y 5/1), moist, stiff, trace organic matter (Upland Complex Old Alluvium)		25
		SPT 25	6 7 8	18								
110										21.0 — 111.5		
									ML	SILT, gray (GLEY 1 5/N), moist, stiff, contains fine grained sand (Upland Complex Old Alluvium)		20
		SPT 26	6 8 7	18								
115										16.0 — 116.5		
									SP	Poorly-graded SAND, greenish gray (GLEY 1 6/10Y), wet, dense to very dense, fine grained, subangular to subrounded quartz, trace mafic grains (Upland Complex Old Alluvium)		15
		SPT 27	21 23 25	9								
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN... ...LF COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1125

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP	Poorly-graded SAND, greenish gray (GLEY 1 6/10Y), wet, dense to very dense, fine grained, subangular to subrounded quartz, trace mafic grains (Upland Complex Old Alluvium) *(Continued from previous page)*		10
		SPT 28	23 25 30	4								
125												
									5.5		127.0	5
									SP	Poorly-graded SAND, gray (10YR 6/1), wet, very dense, fine grained, quartz rich, trace iron staining (Upland Complex Old Alluvium)	-N. Peterson cont. logging 8-14-16	
		SPT 29	20 27 31	9.6								
130												0
									-1.0		133.5	
		SPT 30	34 35 36	12					CL	CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silty claystone fragments, trace sand (Catahoula FM)	-Contact of sand and Catahoula Formation at top of sample	
135												-5
		SPT 31	38 50/3	0					-6.8		139.3	
140										Boring Terminated at 139.3 feet. Hole grouted upon completion.	-Split spoon broke off at sample interval -J. Hengesh (WLA) terminates boring at 139.25 feet	-10
145												-15
150												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN... ULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Drilling Method and Hole Diameter 8" Dia. Hollow stem auger to 70' / Mud Rotary below / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 548910.65 N; 277323.69 E feet		Total Depth 201.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.9 feet	Ground Water Depth Not Determined	Date Started 6/16/06
Sampling Method CME Continuous Sampler and SPT with Auto Hammer	Borehole Inclination Vertical	Logged by G. Maximov	Date Completed 6/27/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dadall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0		CME 1		48					ML	133.9 SILT, yellowish brown (10YR 5/4), moist, few clay (Undocumented Fill) 0.0		130
5		CME 2		34.8						125.4 8.5		
									SP	124.6 Poorly-graded SAND, light olive brown (2.5Y 5/4), moist, contains clay (Undocumented Fill) 9.3		125
10		CME 3		39.6					CL	CLAY, olive gray (5Y 4/2), moist, contains silt (Undocumented Fill) - Grayish brown (2.5Y 5/2) below 13 feet - Very dark gray (2.5Y 3/1) below 13.5 feet - Brown (10YR 4/3) below 14.2 feet		120
15		CME 4		48						117.7 16.2		
									ML	SILT, light yellowish brown (10YR 4/4), moist, contains clay (Undocumented Fill)		
										115.5 18.4		115
20		CME 5		50.4					ML	SILT, light yellowish brown (2.5Y 6/4), dry to moist, few clay (Undocumented Fill) - Yellowish brown (10YR 5/4) below 22.5 feet		110
25		CME 6		52								105
30		CME 7		46						- Moist below 30 feet		100
35		CME 8		14								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN_ _ULF COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light yellowish brown (2.5Y 6/4), dry to moist, few clay (Undocumented Fill) *(Continued from previous page)*		
		CME 9		54								90
45										- Gastropod shells present below 45.0 feet		
		CME 10		48								85
50												
		CME 11		47						- Wet from 51.3 feet to 51.8 feet 53.0 feet: Trace limestone fragments, angular, strong reaction with HCl		80
55									CL	78.9 — 55.0 CLAY, light olive brown (2.5Y 5/3), moist, little silt, mottled appearance (Lower Loess)		
		CME 12		60								75
60												
		CME 13		13						- Light gray (2.5Y 7/2) from 63.9 feet to 64.7 feet		70
65										66.9 — 67.0		
		CME 14		38					SP-SM	Poorly-graded SAND with silt, light yellowish brown (2.5Y 6/3), wet, fine grained, subangular quartz sand (Upland Complex Alluvium)		65
									65.3	68.6		
									CL	CLAY, light gray (2.5Y 7/2), wet, some silt, trace fine sand, trace angular coarse grained concretions (Upland Complex Alluvium)		
									65.1	68.8		
70									SM	Silty SAND, light gray (2.5Y 7/2), very dense, fine, subangular quartz sand grains (Upland Complex Alluvium)		60
75		SPT 14a	18 24 30	0							-SPT sampling starting at 75 feet -SPT Sample :No Recovery	
									55.9 — 78.0 GP			55
80												

SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		SPT 15	31 37 37	9					GP	Poorly-graded sandy GRAVEL, light yellowish brown (2.5Y 6/3), wet, very dense, clasts subangular to subrounded quartz, chert, fine to medium grained sand (Upland Complex Old Alluvium) *(Continued from previous page)*		
85												50
									SW	Well-graded SAND with gravel, light gray (2.5Y 7/2), wet, very dense, medium to coarse grained quartz sand , subrounded to subangular quartz and chert gravel with trace lithics, gravels are various colors (Upland Complex Old Alluvium)		45
90		SPT 16	21 30 29	9							-Casing advanced to 90 feet depth	
									GP	Poorly-graded GRAVEL with sand, brownish yellow (10YR 6/6), wet, very dense, medium to coarse grained sand, trace lithics (Upland Complex Old Alluvium)		40
95		SPT 17	16 22 32	17								
100												35
												30
105		SPT 18	5 5 7	9						- Wet, with traces of dark gray clay, trace rounded quartz grains below 105.0 feet		
												25
110		SPT 19	16 18 24	16					CL	CLAY, greenish gray (GLEY 1 5/10GY), moist, hard, some silt, trace fine sand (Catahoula FM)		
										- Drilled to 110 feet, hydraulic line broke, made repairs, 4 feet of cave-in noted - Some gravel in Sample 1134-19 -- may have fallen into borehole - Gravel in water return from 10 feet of uncased borehole in gravel layer		20
115		SPT 20	10 18 21	12								
120												15

47.4 — 86.5

40.9 — 93.0

23.7 — 110.2

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120		SPT 21	13 12 25	16					CL	CLAY, greenish gray (GLEY 1 5/10GY), moist, hard, some silt, trace fine sand (Catahoula FM) *(Continued from previous page)* - 120.0 feet: Dry to moist, contains white sand-sized concretions	- Casing advanced to 105 feet -Drilled through 10 feet of cave-in	10
125		SPT 22	7 13 20	8								5
130		SPT 23	11 18 19	17						- Trace fine sand below 130 feet		
									SC	2.7 131.2 Clayey SAND, greenish gray (GLEY 1 5/10GY), dry to moist, dense, quartz sand (Catahoula FM)		0
									CL	0.9 133.0 CLAY, greenish gray (GLEY 1 5/10GY), dry to moist, hard, contains silt (Catahoula FM)		
135		SPT 24	12 22 31	18						-4.1 138.0		
									MH	SILT, greenish gray (GLEY 1 5/10GY), dry to moist, hard, contains lenses of very fine sand, some clay, and trace manganese oxide nodules (Catahoula FM)		-5
140		SPT 25	12 23 30	18						-9.1 143.0		
									MH	SILT, greenish gray (GLEY 1 5/10GY), dry to moist, hard, some clay (Catahoula FM)		-10
145		SPT 26	18 27 44	9							- SPT Sample 26: Recovery not recorded	
150										-17.1 151.0	-K. Clahan gave OK to skip sample at 150 feet, and drill to 155 feet for next sample	-15
									SP	Poorly-graded SAND, with silt, dark greenish gray (GLEY 1 4/5G), moist, very dense, fine quartz sand, trace silt, manganese oxide nodules (Catahoula FM)		-20
155		SPT 27	14 23 28	6								-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GULF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160		SPT 28	18 35 40	4					SP			
										-29.1 / 163.0		
									MH	SILT, greenish gray (GLEY 1 5/10GY), dry to moist, hard, contains clay and fine sand lenses (Catahoula FM)		-30
165		SPT 29	22 21 26	9								
												-35
170										-37.1 / 171.0	-Skipped sample at 170 feet per Kevin Clahan	
									CL	Sandy CLAY, greenish gray (GLEY 1 5/5GY), moist, hard, fine quartz sand, trace medium sand-sized concretions (Catahoula FM)		-40
175		SPT 30	19 21 24	6								
										-44.1 / 178.0		
									ML	SILT, greenish gray (GLEY 1 5/10GY), dry, hard, poorly lithified, contains clay (Catahoula FM)	-178.5 to 201.5 feet: could be claystone, hard to tell clay% vs. silt % since soil beginning to become lithified	-45
180		SPT 31	28 50/4	10								
												-50
185		SPT 32	27 49 50/4	16								
												-55
190												
												-60
195		SPT 33	18 40 50	14						- Rock-like qualities below 195 feet		
												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN_ _OLF COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1134

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200		SPT 34	20 23 37	18					ML	-67.6 201.5 Boring Terminated at 201.5 feet. Hole grouted upon completion.		
205												-70
210												-75
215												-80
220												-85
225												-90
230												-95
235												-100
240												-105

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1135**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549780.8 N; 277176.08 E feet		Total Depth 139.4 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration, Inc. / CME 750 (80%)	Elevation (Datum NGVD 29) 155.5 feet	Ground Water Depth Not Determined	Date Started 8/24/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 8/26/06

Reviewed by / Date CEGI 2100 3/8/07 Wm Deadwell 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									CL	155.5 Ground surface consists of compacted gravels, silt, and clay (Undocumented Fill) 0.5 CLAY, dark yellowish brown (10YR 4/4), dry, very stiff, contains silt (Undocumented Fill)		155
		SPT 1	4 11 11	9.6								
5									ML	149.0 SILT, dark yellowish brown (10YR 4/4), dry, medium stiff to very soft, contains clay (Upper Loess) 6.5		150
		SPT 2	2 3 5	8.4								
10												145
		SPT 3	1 1 1	9.6								
15									CL	139.0 CLAY, yellowish brown (10YR 5/4), dry, very soft to stiff, mostly silt, trace gravel and sand, calcareous deposits present at 19.5 feet (Upper Loess) 16.5		140
		SPT 4	WOH WOH 1	7.2								
20												135
		SPT 5	2 3 3	10.8								
25												130
		S 6		12	25	32/15	GSZ CON SG				-Pushed shelby tube from 28 feet to 30 feet	
30		SPT 7	4 3 3	7.2						Trace clay below 30 feet		125
		SPT 8	1 1 2	12						Trace gastropod shell fragments below 33.5 feet		
35												120
40		SPT 9	3 4 5	12					ML	116.5 39.0		

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1135

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry, medium stiff to very stiff, few to little clay, trace sand (Upper Loess) *(Continued from previous page)*		115
45		SPT 10	4 4 4	13.2						43.5 feet: Moist below 43.5 feet		110
		S 11		9.6	16		GSZ CON SG				-Pushed shelby tube from 48 feet to 50 feet	
50		SPT 12	8 9 10	ND							-No recovery in sample 1135-12- Chert gravel in end of shoe from fall-in	105
55		SPT 13	7 6 6	14.4								100
60		SPT 14	7 8 8	12								95
65		SPT 15	6 7 8	14.4								90
70		SPT 16	7 4 5	15.6						Wet below 68.5 feet		85
									ML	84.0 — 71.5 SILT, yellowish brown (10YR 5/4), wet, very soft to soft, black manganese nodules present throughout, contains clay (Lower Loess)		
75		SPT 17	WOH WOH 3	18								80
									CL	78.5 — 77.0 CLAY, brown (10YR 5/3), moist, hard to stiff, iron stained, contains silt and manganese nodules throughout, and trace fine sand (Lower Loess)		
80		SPT 18	19 20 17	12								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1135

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL	CLAY, brown (10YR 5/3), moist, hard to stiff, iron stained, contains silt and manganese nodules throughout, and trace fine sand (Lower Loess) *(Continued from previous page)*		75
		SPT 19	5 6 9	18						Gray (10YR 6/1) below 83.5 feet		
85												70
									SC	68.5 — 87.0 Clayey SAND, brown (10YR 5/3), moist, some silt (Lower Loess)		
		S 20		24	23	27/18	GSZ CON TRX SG				-Pushed shelby tube from 88 feet to 90 feet	
90									CL	65.5 — 90.0 CLAY, gray (10YR 6/1), wet, medium stiff, iron stained, contains fine grained sand (Lower Loess)		65
		SPT 21	2 2 4	18								
		SPT 22	34 50/3	15.6						61.1 — 94.4	-Sample 1135-22A at 93.5 feet to 94.4 feet -Sample 1135-22B at 94.4 feet to 95 feet	
95									SP	Poorly-graded SAND, gray (10YR 6/1), wet, very dense to loose, fine grained (Upland Complex Alluvium)		60
		S 23		9.6							-Pushed shelby tube 1.5 feet from 98 feet to 99.5 feet, Sample 1135-23, Rec: 10 inches	
100		S 24		0							-Pushed shelby tube 1.5 feet from 99.5 feet to 101.0 feet, Rec: 0 inches	55
		SPT 25	2 2 4	1.2								
105										49.0 — 106.5		50
									GP	Poorly-graded GRAVEL, gray (10YR 6/1), wet, medium dense, contains sand, gravels are rounded to subrounded chert, quartz (Upland Complex Old Alluvium)		
		SPT 26	8 15 22	15.6						45.9 — 109.6	-Sample 1135-26A: 108.5 feet to 109.6 feet -Sample 1135-26B: 109.6 feet to110 feet	
110									CL	45.0 — 110.5 CLAY, gray (10YR 6/1) to yellowish brown (10YR 5/4), moist, hard, contains gravel (Upland Complex Old Alluvium)		45
									GP	Poorly-graded GRAVEL, gray (10YR 6/1), wet, very dense, contains sand, rounded to subrounded quartz and chert gravels (Upland Complex Old Alluvium)		
		SPT 27	25 24 30	16.8								
115												40
		SPT 28	5 20 34	4.8								
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1135

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									GP	Poorly-graded GRAVEL, gray (10YR 6/1), wet, very dense, contains sand, rounded to subrounded quartz and chert gravels (Upland Complex Old Alluvium) *(Continued from previous page)*		35
125												30
130												25
									CL	24.0 — 131.5 CLAY, greenish gray (GLEY 1 5/10GY), dry, hard, contains silt (Catahoula FM)		
		31		18						- Unable to obtain SPT sample due to hammer malfunction		
135												20
		SPT 32	38 50/5	12						16.0 — 139.5		
140										Boring Terminated at 139.5 feet. Hole grouted upon completion.		15
145												10
150												5
155												0
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1136**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550005.5 N; 277302.06 E feet		Total Depth 198.6 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration, Inc. / CME 750 (80%)	Elevation (Datum NGVD 29) 155.6 feet	Ground Water Depth Not Determined	Date Started 8/21/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 8/24/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedrick 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology (155.6 / 0.0)	Remarks	Elevation (feet)
0									ML	SILT, brown (10YR 5/3) to dark gray (10YR 4/1), moist, soft to very stiff, contains clay (Upper Loess)		155
		SPT 1	7 9 10	12								
5												150
		SPT 2	3 3 3	13.2						- Dark yellowish brown (10YR 4/4), trace clay below 8.5 feet		
10												145
		SPT 3	2 2 2	14.4								
15												140
		SPT 4	2 2 1	9.6						- Yellowish brown (10YR 5/4), soft, trace clay below 18.5 feet		
20												135
		SPT 5	2 3 3	12						- Calcareous deposits below 23.5 feet		
25												130
		SPT 6	2 1 1	10.8								
30												125
		SPT 7	2 2 3	14.4						- Trace gastropod shells below 33.5 feet		
35												120
		SPT 8	4 5 5	13.2								
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1136

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, brown (10YR 5/3) to dark gray (10YR 4/1), moist, soft to very stiff, contains clay (Upper Loess) *(Continued from previous page)*		115
45		SPT 9	4 4 6	14.4								110
50		SPT 10	1 2 4	12								105
55		SPT 11	4 6 7	12								100
60		SPT 12	6 6 7	12								95
									ML	94.1 — 61.5 SILT, yellowish brown (10YR 5/4), moist, soft to very stiff, contains calcareous deposits, trace clay (Upper Loess)		
65		SPT 13	5 5 6	13.2								90
70		SPT 14	7 6 8	12						- Wet below 68.5 feet	Groundwater encountered at 68 feet	85
75		SPT 15	1 1 2	18						- Soft, increased clay content below 73.5 feet		80
									CL	78.6 — 77.0 CLAY, light gray (10YR 7/1) to light gray (10YR 7/2), moist, stiff to very stiff, contains silt, manganese nodules (Lower Loess)		
80		SPT 16	6 9 9	18								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1136

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									CL	CLAY, light gray (10YR 7/1) to light gray (10YR 7/2), moist, stiff to very stiff, contains silt, manganese nodules (Lower Loess) *(Continued from previous page)*		75
85		SPT 17	7 7 11	18								70
90		SPT 18	5 4 7	18						- Iron staining present below 88.5 feet		65
									61.8		93.8	
95		SPT 19	18 30 46	15.6					SP	Poorly-graded SAND, gray (10YR 6/1), wet, very dense to dense, fine grained, strong brown (7.5YR 5/8) iron staining at 93.8 feet to 94.1 feet (Upland Complex Alluvium)	-Sample 1136-19A at 93.5 feet to 93.8 feet -Sample 1136-19B at 93.8 feet to 95 feet	60
100		SPT 20	24 40 50/5	10.8						- Gray clay lenses contain silt at 98.5 feet and 98.8 feet		55
105		SPT 21	14 18 16	12								50
									48.6		107.0	
110		SPT 22	WOH 7 8	18					CH	CLAY, dark gray (10YR 4/1), moist, stiff, trace sand (lense) at 109.3 feet (Upland Complex Old Alluvium)	-8-22-06: Start of day, boring collapsed to 95 feet	45
115		SPT 23	5 6 8	18								40
									38.1		117.5	
120		SPT 24	30 34 30	10.8					SW	Well-graded SAND, gray (10YR 6/1), wet, very dense, fine grained, quartz sand, contains quartz and chert gravels (Upland Complex Old Alluvium)	-Driller notes change in material at approximately 117.5 feet	

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1136

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW	Well-graded SAND, gray (10YR 6/1), wet, very dense, fine grained, quartz sand, contains quartz and chert gravels (Upland Complex Old Alluvium) *(Continued from previous page)*		35
125		SPT 25	31 40 41	12						- Increased gravel content below 123.5 feet		30
130		SPT 26	22 45 50	12								25
135		SPT 27	30 30 37	9.6								20
140		SPT 28	34 50/5	4.8								15
									CL	13.6 — 142.0 CLAY, light brownish gray (2.5YR 6/2), moist, hard, contains sand lenses at 143.7 feet to 144.1 feet (Upland Complex Old Alluvium)	-Drilling becomes faster with no chattering of tools -Sample 1136-29A at 143.5 to 144.1 feet -Sample 1136-29B at 144.1 feet to 145.0 feet	
145		SPT 29	21 19 14	18								10
									SP	9.1 — 146.5 Poorly-graded SAND, yellowish brown (10YR 5/4) to yellowish brown (10YR 5/5), wet, very dense, fine grained, iron staining (Upland Complex Old Alluvium)	-Driller notes change in drilling material at approximately 146.5 feet	
150		SPT 30	24 28 32	12							-Switched to 10 feet sampling interval after 150 feet depth per K. Clahan instructions	5
									SP	1.6 — 154.0 Poorly-graded SAND, light brownish gray (10YR 6/2), wet, very dense, fine grained, rock-like qualities, friable (Upland Complex Old Alluvium)	-Chattering of tools at 154 feet	
155												0
160		SPT 31	50/5	3.6								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN... ...F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1136

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SP	Poorly-graded SAND, light brownish gray (10YR 6/2), wet, very dense, fine grained, rock-like qualities, friable (Upland Complex Old Alluvium) *(Continued from previous page)*	-Driller notes very hard material below 159 feet	-5
165										-10.4 166.0		-10
									CL	Sandy CLAY, greenish gray (GLEY 1 5/10GY), moist, hard (Catahoula FM)		
		SPT 32	14 22 34	18							-20% water loss at appproximately 168 feet	
170												-15
175												-20
		SPT 33	23 22 35	18								
180												-25
185												-30
		SPT 34	14 23 45	0							-No recovery on sample 1136-34	
190												-35
195												-40
		SPT 35	50/1	3.6						-43.0 - Rock-like qualities below 198.5 feet (Catahoula FM) 198.6		
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1136

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200										Boring Terminated at 198.6 feet. Hole grouted upon completion.		-45
205												-50
210												-55
215												-60
220												-65
225												-70
230												-75
235												-80
240												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1137**
Drilling Method and Hole Diameter Rotary Wash / 3 7/8 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550239.81 N; 277442.21 E feet		Total Depth 204 feet
Drilling Contractor, Rig and (Hammer Efficiency) Environmental Exploration / CME 750 (80%)	Elevation (Datum NGVD 29) 155.3 feet	Ground Water Depth Not Determined	Date Started 8/10/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Tillery	Date Completed 8/15/06

Reviewed by / Date CRG 2100 3/8/07 Wm Deadwall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									MH	155.3 0.0 SILT, brown (7.5YR 4/4), moist, stiff, slight mottling to tan/yellow and gray, contains roots, MnO staining (Undocumented Fill)		155
		SPT 1	7 7 7	14.4								
									MH	151.3 4.0 SILT, brown (7.5YR 4/3), moist, stiff, few MnO stains, contains clay, homogenous (Undocumented Fill)		
5		SPT 2	5 5 7	14.4								150
		SPT 3	4 4 5	18						147.3 8.0		
		SPT 4	2 2 3	14.4					ML	SILT, yellowish brown (10YR 5/4) dry to moist, soft to medium stiff (Upper Loess)		
10												145
		SPT 5	2 1 2	14.4								
15											-Water return good -Down hole pressure = 1800 psi	140
		SPT 6	1 2 3	13.2						- Trace fine sand below 18.5 feet		
20												135
		SPT 7	2 1 3	14.4						- Weak reaction with HCl, soft to medium stiff below 23.5 feet		
25												130
		SPT 8	2 3 3	8.4								
30											-Water return good -Down hole pressure = 1800 psi	125
		SPT 9	2 3 4	14.4						- Very fine carbonate stringers below 33.5 feet		
35												120
		SPT 10	4 3 3	10.8								
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1137

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4) dry to moist, soft to medium stiff (Upper Loess) *(Continued from previous page)*		115
		SPT 11	4 5 5	13.2						- Contains shells, very fine sand below 43.5 feet		
45											-Water return good -Down hole pressure = 1800 psi	110
		SPT 12	4 4 5	13.2								
50												105
		SPT 13	5 5 7	0								
55												100
		SPT 14	5 5 6	13.2								
60											-Water return good -Down hole pressure = 1800 psi	95
		SPT 15	7 7 8	14.4								
65												90
									ML	88.3 — 67.0 SILT, brown (10YR 5/3), moist, stiff (Upper Loess)		
		SPT 16	8 5 5	15.6								
70												85
		SPT 17	2 4 7	27.6								
75									ML	79.3 — 76.0 SILT, yellowish brown (10YR 5/4), moist, very stiff, mottled gray and orange with black MnO staining, trace very fine sand (Lower Loess)		80
80		SPT 18	6 9 12	16.8								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN_ _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1137

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									ML			75
										73.3 — 82.0		
									ML	SILT, pale brown (10YR 6/3), moist, hard, moderate mottling, trace clay (Lower Loess)		
		SPT 19	16 29 15	28.8						70.8 — 84.5		
85									SP	Poorly-graded SAND, very pale brown (10YR 6/3) to dark yellowish brown (10YR 4/6), moist, dense to very dense (Upland Complex Alluvium)		70
		SPT 20	21 42 50/4	12						- Very pale brown (10YR 7/4), moist, hard below 88.5 feet		
90												65
		SPT 21	29 33 30	0								
95												60
		SPT 22	21 24 24	13.2						- Pale yellow (2.5YR 7/4), mostly quartz sand, some orange staining below 98.5 feet		
100												55
		SPT 23	18 24 42	13.2						- Light yellowish brown (2.5YR 6/4), moist, very dense, trace fines below 103.5 feet		
										50.5 — 104.8		
105									GP	Poorly-graded GRAVEL, light brownish gray (2.5YR 6/2), wet, dense, fine to medium chert and quartz gravel, contains fine grained sand (Upland Complex Old Alluvium)		50
		SPT 24	30 21 19	12								
110												45
		SPT 25	14 16 17	12								
115												40
										38.3 — 117.0		
									SW			
		SPT 26	39 50/6	7.2							-Installed casing to 118.5 feet	
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1137

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW	Well-graded SAND, light gray (2.5YR 7/2), moist, very dense, fine to medium grained quartz sand, trace fine quartz and chert gravel, rounded to subrounded (Upland Complex Old Alluvium) *(Continued from previous page)*		35
		SPT 27	38 50/3	18					SW			
125									GW	Well-graded SAND, pale yellow (2.5YR 7/3), moist to wet, very dense, fine to medium grained (Upland Complex Old Alluvium)		30
									CL	Well-graded GRAVEL, wet, very dense, variable color, fine grained chert (Upland Complex Old Alluvium)		
		SPT 28	9 7 7	18						CLAY, light yellowish brown (2.5YR 6/3), moist, stiff (Upland Complex Old Alluvium)		
130												25
		SPT 29	19 39 50	18					ML	SILT, light olive gray (5YR 6/2), moist, hard, contains thin clay lenses (Upland Complex Old Alluvium)		
135									SW	Well-graded SAND, pale yellow (2.5YR 7/3), wet, very dense, fine to medium grained (Upland Complex Old Alluvium)		20
		SPT 30	37 35 46	0								
140									SW/GW	Well-graded SAND and GRAVEL, light olive gray (5Y 6/2), moist to wet, very dense, medium grained quartz sand with trace fines, fine grained, subrounded to rounded, quartz and chert gravel (Upland Complex Old Alluvium)		15
		SPT 31	33 31 31	6							-Still no Catahoula -Switched to 10 feet SPT interval	10
150									SP	Poorly-graded SAND, yellow (2.5Y 8/4), wet, dense to very dense, medium grained, trace fines (Upland Complex Old Alluvium		5
		SPT 32	26 24 25	26.4							-Drove SPT sampler but left in hole	
155												0
160												

Depth scale: 33.8 (121.5); 31.0 (124.3); 26.8 (126.5); 21.3 (134.0); 20.8 (134.5); 14.3 (141.0); 4.8 (150.5)

SOIL LOG_MFC_WLA 6468-06-1340 GRANL ULF COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1137

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SP	Poorly-graded SAND, yellow (2.5Y 8/4), wet, dense to very dense, medium grained, trace fines (Upland Complex Old Alluvium *(Continued from previous page)*		-5
		SPT 33	21 39 34	9.6							-Driller pushed sampler down to 163.5 feet, then began hammer blows	
										-9.5 164.8		
165									SW	Well-graded SAND, pale yellow (2.5Y 7/3), wet, very dense, contains gravel, medium grained quartz sand, trace fines, subrounded gravel (Upland Complex Old Alluvium)	-Drilling through gravel	-10
170											-Losing water	-15
		SPT 34	27 32 40	10.8							-Driller pushed SPT sampler down to 172.5, then drove sampler	
175											-Water return is improved, still losing water, but not as much -Drilling through gravel	-20
180												-25
		SPT 35	29 38 45	13.2								
185												-30
										-34.7 190.0		
190									ML	SILT, greenish gray (GLEY 1 5/10Y), moist, hard, contains claystone fragments (Catahoula FM)	-Driller observes changes indicative of Catahoula	-35
		SPT 36	50/4	6								
195												-40
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL ..F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1137

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
200									ML	SILT, greenish gray (GLEY 1 5/10Y), moist, hard, contains claystone fragments (Catahoula FM) *(Continued from previous page)*		-45
		SPT 37	24 33 45	22.8						-48.7 204.0		
205										Boring Terminated at 204.0 feet. Hole grouted upon completion.		-50
210												-55
215												-60
220												-65
225												-70
230												-75
235												-80
240												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1138**
Drilling Method and Hole Diameter Rotary Wash / 3 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550274.23 N; 277654.11 E feet		Total Depth 190 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.4 feet	Ground Water Depth Not Determined	Date Started 8/21/06
Sampling Method SPT with Auto Hammer	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/23/06

Reviewed by / Date CEGA 2100 3/8/07 Wm Deobald 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.4 Well-graded SAND, various colors, dry to moist, contains gravel, various lithologies (Undocumented Fill) 0.0	-Gravelly response from rig	
									ML	131.9 SILT, yellowish brown (10YR 5/4), dry to moist, medium stiff to very stiff, trace clay (Upper Loess) 1.5		
		SPT 1	3 5 5	9.5								130
5											smooth, easy drilling noted	
		SPT 2	5 5 7	7								125
10												
		SPT 3	2 4 5	6						- Trace gastropod shell fragments below 14 feet		120
15												
		SPT 4	6 8 8	8								115
20												
		SPT 5	4 5 8	8								110
25												
		SPT 6	6 8 7	8								105
30												
		SPT 7	7 10 12	9.5								100
35												
		SPT 8	7 10 12	7								95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1138

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry to moist, medium stiff to very stiff, trace clay (Upper Loess) *(Continued from previous page)*		
45		SPT 9	9 9 11	11								90
50		SPT 10	4 4 4	15.5								85
									ML/MH (81.9 – 51.5)	SILT, light yellowish brown (2.5Y 6/3), moist, stiff to very stiff, contains clay, manganese and iron oxide mottling (Lower Loess)		80
55		SPT 11	5 5 8	19								
60		SPT 12	9 10 12	19						60.0 feet: Very stiff below 60 feet		75
65		SPT 13	6 8 10	17								70
									SP (66.9 – 66.5)	Poorly-graded SAND, brownish yellow (10YR 6/6), wet, dense, spherical, subangular, fine-grained quartz sand, trace lithic grains, iron oxide staining (Upland Complex Alluvium)		65
70		SPT 14	30 29 19	12								
									SP-CL (61.9 – 71.5)	Poorly-graded SAND, and interbedded CLAY, light gray (2.5Y 5/1), wet, very dense or hard, thin interbeds of fine-grained quartz sand and clay, clay contains sand and has iron oxide mottling (Upland Complex Alluvium)		60
75		SPT 15	16 29 37	11								
									SP (56.9 – 76.5)	Poorly-graded SAND, light gray (2.5Y 7/1), wet to moist, dense, spherical, subangular, fine-grained quartz sand with trace lithic grains (Upland Complex Alluvium)		55
80		SPT 16	22 23 26	13								

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SOIL LOG_MFC_WLA 6468-06-1340 GRANL _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1138

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	51.9 / 81.5		
									SP	Poorly-graded SAND, light gray (5Y 7/2), moist, very dense, spherical, subangular, fine-grained quartz sand, trace silt, iron oxide staining (Upland Complex Alluvium)		50
85		SPT 17	22 34 50/5	8.5								
									SW	46.9 / 86.5 Well-graded SAND, light yellowish brown (5Y 6/3), moist, very dense, spherical, subangular, fine to coarse grained sand, trace gravel up to 1/2-inch diameter, iron oxide staining below 89 feet, quartz grains, trace lithics (Upland Complex Old Alluvium)		45
90		SPT 18	32 50/5	7								
									SP	41.9 / 91.5 Poorly-graded SAND, light gray (2.5Y 7/2), moist, very dense, spherical, subangular, fine-grained quartz sand, trace mafic grains (Upland Complex Old Alluvium)		40
95		SPT 19	27 32 38	7								
									SW	36.9 / 96.5 Well-graded SAND, light yellowish brown (2.5Y 6/3), moist, very dense, spherical, subangular, fine to coarse grained quartz sand, with trace lithics and trace gravel (chert) up to 1/2" Dia. (Upland Complex Old Alluvium)		35
100		SPT 20	25 38 50/4	6								
									SW	31.9 / 101.5 Well-graded SAND with gravel, light yellowish brown (2.5Y 6/3), moist, very dense, spherical, subangular, fine to coarse grained, quartz sand with subangular gravel (chert and quartz) up to maximum 1/2-inch diameter (Upland Complex Old Alluvium)	-Blows per inch: (3, 2, 3, 3, 4, 5) - 1st 6 inches (7, 7, 8, 9, 8, 6) - 2nd 6 inches (8, 10, 11, 10, 11, x) - 3rd 6 inches	30
105		SPT 21	21 45 50/6	9.5								
											-Blows per inch: (3, 4, 8, 8, 8, 9) - 1st 6 inches (8, 8, 9, 10, 10, 5/0.5-inch) - 2nd 6 inches	25
110		SPT 22	40 50/5	6								
									SW	21.9 / 111.5 Well-graded SAND, light gray (5Y 7/1), moist, very dense, spherical, subangular, fine to coarse grained quartz sand, trace lithics, trace gravel up to maximum 1/3-inch diameter (Upland Complex Old Alluvium)		20
115		SPT 23	47 45 43	13								
									CL	16.9 / 116.5 CLAY, greenish gray (Gley 1 6/5G), moist, hard, contains silt and irregular fine-grained quartz sand lenses (1-inch to 6-inch thickness), iron oxide mottling (Upland Complex Old Alluvium)		15
120		SPT 24	20 19 20	14.5								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND_F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1138

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CL	CLAY, greenish gray (Gley 1 6/5G), moist, hard, contains silt and irregular fine-grained quartz sand lenses (1-inch to 6-inch thickness), iron oxide mottling (Upland Complex Old Alluvium) *(Continued from previous page)*	-Switched to 10 feet sampling interval per KBC instructions	
									9.4 / SW	124.0 / Well-graded SAND, light gray (5Y 7/1), moist, very dense, spherical, subangular, fine to coarse grained quartz sand, trace lithic grains, trace gravel up to maximum 1/3-inch diameter (Upland Complex Old Alluvium)		10
125												
		SPT 25	35 50/3	6								5
130									1.4 / SP	132.0 / Poorly-graded SAND, light gray (2.5Y 7/2), moist to wet, very dense, spherical, subangular, fine-grained quartz sand with trace mafic grains (Upland Complex Lower Alluvium)		0
135												
		SPT 26	28 33 41	12								-5
140												-10
145												-15
		SPT 27	20 35 50	9.5								
150									-20.6 / SW	154.0 / Well-graded SAND with gravel, pale yellow (5Y 7/3), moist, very dense, spherical, subangular, fine to coarse grained quartz sand, quartz and chert gravel up to maximum 1/2-inch diameter (Upland Complex Old Alluvium)	-Blows per inch: (6, 7, 7, 8, 7, 7) - 1st 6 inches (9, 11, 12, 16. x, x) - 2nd 6 inches	-20
155												
		SPT 28	43 50/4	3.5								-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN... ...F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1138

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SW	Well-graded SAND with gravel, pale yellow (5Y 7/3), moist, very dense, spherical, subangular, fine to coarse grained quartz sand, quartz and chert gravel up to maximum 1/2-inch diameter (Upland Complex Old Alluvium) *(Continued from previous page)*		-30
165									SP-SM	-32.1 / 165.5 Poorly-graded SAND, with silt, greenish gray (Gley 1 5/10Y), moist, hard, spherical, subangular to subrounded, fine grained quartz sand (Catahoula FM)	-Driller's feedback: sandy silty clay in return at 165.5 feet	-35
170		SPT 29	18 23 38	17								-40
175									SC	-41.1 / 174.5 Clayey SAND, greenish gray (Gley 1 6/10Y), moist, hard, spherical, subangular to subrounded, very fine grained quartz sand, thin clay laminae (Catahoula FM)		-45
180		SPT 30	36 50/3	9.5								-50
185									SM	-51.1 / 184.5 SAND, greenish gray (Gley 1 6/10GY), moist, very dense, contains silt, laminated very fine grained sand and sand containing silt (Catahoula FM)		-55
190		SPT 31	11 18 39	17						-56.6 / 190.0 Boring Terminated at 190.0 feet. Hole grouted upon completion.		-60
195												-65
200												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1139**
Drilling Method and Hole Diameter Mud Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 550069.74 N; 277498.84 E feet		Total Depth 138.6 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.8 feet	Ground Water Depth Not Determined	Date Started 8/14/06
Sampling Method SPT / UD	Borehole Inclination Vertical	Logged by N. Peterson	Date Completed 8/16/06

Reviewed by / Date CEG 2100 3/8/07 Ron Deobald 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0										133.8 Concrete Slab 133.3		133.8
									ML	SILT, yellowish brown (10YR 5/4), dry to moist, variable clay content (Upper Loess) (Description per photo review)	-Boring will be drilled to 60 feet before starting SPT sampling	
5												130
10												125
15												120
20												115
25												110
30												105
35												100
40												95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN... F COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1139

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry to moist, variable clay content (Upper Loess) (Description per photo review) *(Continued from previous page)*		90
45												85
50												80
55										78.8 — 55.0		
									CL	CLAY, gray (10YR 6/1), to pale brown (10YR 6/3), moist, very stiff to hard, contains silt, manganese nodules, iron staining (Lower Loess)		75
60		SPT 1	6 7 8	18								
		SPT 2	15 17 14	16						- Trace silt below 63.5 feet		70
65										66.8 — 67.0		
									SW	Well-graded SAND, gray (10YR 6/1), to light brownish gray (10YR 6/2), wet, medium dense to dense, fine grained quartz sand, trace fine gravel (Upland Complex Alluvium)		65
70		S 3		0							-Pushed Shelby Tube from 68.5 feet to 70.5 feet - No Recovery	
		SPT 4	5 15 18	2						- Chert fragments recovered in spoon taken from 70.5 feet to 72 feet	-Took split spoon from 70.0 feet to 71.5 feet -Measured tools when spoon lowered into boring	
		S 5		0						- Samples S-5 and SPT 6: Sand and fine gravels in cuttings	-Drilled to 73 feet to attempt Shelby Tube	60
75		SPT 6	6 5 7	0							-Pushed tube 1.2 feet and rig lifted up -Sample 1139-6 at 74.0 feet to 75.5 feet	
		SPT 7	19 16 23	10								55
80												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1139

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SW	Well-graded SAND, gray (10YR 6/1), to light brownish gray (10YR 6/2), wet, medium dense to dense, fine grained quartz sand, trace fine gravel (Upland Complex Alluvium) *(Continued from previous page)* - White (10YR 8/1) to very pale brown (10YR 8/2) below 83.5 feet		
		SPT 8	16 13 24	2.4								50
85									SW	48.3 - Heavy chattering of drilling tools at 85.5 feet. Indicates gravels present 85.5	-Boring collapsed 3 feet after taking sample	
										Well-graded SAND, light brownish gray (2.5YR 6/2), wet, medium dense to dense, fine grained, trace organics, iron staining (Upland Complex Old Alluvium) 88 feet: Fine to medium gravels and quartz rich sand in cuttings 90 feet: Fine to medium gravels and quartz sand in cuttings	-Unable to collect sample at 88.5 feet to 90.0 feet because of gravels collapsing into borehole	45
90												
		SPT 9	18 15 23	10								40
95												
		S 10		0							-Pushed shelby tube from 98 feet to 99 feet -Crushed tube, fall in was only material in tube -Sample intervals now at 10 feet after 100 feet depth	35
		SPT 11	4 11 15	7						- Gray (10YR 6/1) below 99 feet		
100												
105												30
									CL	26.8 107.0 CLAY, light brownish gray (2.5YR 6/2) to greenish gray (GLEY 1 5/5G), hard, contains fine grained sand, trace organics (Upland Complex Old Alluvium)		
		SPT 12	7 16 19	14								25
110												
												20
115									SW	18.8 115.0 Well-graded SAND, light gray (Gley 1 7/N), wet, dense to very dense, fine grained (Upland Complex Old Alluvium)		
		SPT 13	19 17 27	7								15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAN _F COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1139

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SW	Well-graded SAND, light gray (Gley 1 7/N), wet, dense to very dense, fine grained (Upland Complex Old Alluvium) *(Continued from previous page)*		10
125												5
130		SPT 14	23 37 47	10								0
135												-5
									CL	-4.2 / -4.7 CLAY, greenish gray (GLEY 1 5/5GY), dry, hard, contains silt, fine sand (Catahoula FM) 138.0 / 138.5		
140		SPT 15	50/1	1						Boring Terminated at 138.6 feet. Hole grouted upon completion.		-10
145												-15
150												-20
155												-25
160												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU .OL.GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1140

Drilling Method and Hole Diameter Hollow stem auger (9")/rotary wash (3.5")	Boring Location Coordinates: MS State Grid (NAD 27) 550028.86 N; 276967.7 E feet		Total Depth 193.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) M&W Drilling / Foremost Mobile B59 (78%)	Elevation (Datum NGVD 29) 154.6 feet	Ground Water Depth Not Determined	Date Started 8/11/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by K. KRUG	Date Completed 8/14/06

Reviewed by / Date CEG 2100 5/29/07 Bill Dedrick 5-21-07
REV-1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									GW	154.6 Well-graded Gravel (Undocumented Fill) 0.0	-Hollow stem augering with 9 inch diameter auger	
									ML	153.1 SILT, yellowish brown (10YR 5/8), dry, hard, few clay, weak reaction with HCl (Undocumented Fill) 1.5		
5		SPT 1	14 19 18	22								150
10		SPT 2	5 7 9	13					CL	145.6 CLAY, olive (5Y 4/4), dry to moist, very stiff, weak reaction with HCl, trace silt (Undocumented Fill) 9.0		145
									ML	141.6 SILT, yellowish brown (10YR 5/8), dry, hard, weak reaction with HCl, few clay, trace shell fragments (Undocumented Fill) 13.0	-Sample 1140-3: First 5 inches of sample is slough	
15		SPT 3	7 17 27	18								140
									CL	137.1 CLAY, brown (10YR 4/3), mottled dark yellowish brown (10YR 4/6), moist to wet, very stiff, weak to no reaction with HCl (Undocumented Fill) 17.5	-Back to rotary wash open hole drilling using 3.5 inch diameter bit	
20		SPT 4	7 9 14	13								135
									ML	132.6 SILT, yellowish brown (10YR 5/8), dry to moist, medium stiff to very stiff, few to little clay, weak reaction with HCl (Upper Loess) 22.0 - 24.0 feet: Medium stiff to stiff below 29.0 feet		
25		SPT 5	4 5 5	11								130
30		SPT 6	4 3 5	8								125
35		SPT 7	6 6 8	11						- 34.0 feet: Stiff below 34.0 feet		120
40		SPT 8	4 4 7	8.4								115

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND GU... OL.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1140

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/8), dry to moist, medium stiff to very stiff, few to little clay, weak reaction with HCl (Upper Loess) *(Continued from previous page)*		
45		SPT 9	6 6 8	12								110
50		S 10		10								105
		SPT 11	12 10 12	13								
55		SPT 12	8 7 10	11								100
60		SPT 13	8 9 11	10								95
65		SPT 14	10 10 14	12							-Sample 1140-14: High blow counts in last 6 inches; could be due to full spoon	90
70		SPT 15	9 9 10	9.6								85
									ML	82.6 — 72.0 SILT, yellowish brown (10YR 5/8), wet, soft, weak reaction with HCl, few to little clay (Upper Loess)		
75		SPT 16		18								80
									CL	78.1 — 76.5 CLAY, yellowish brown (10YR 5/8), wet, stiff,		
80		S 17		18								75

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU... OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1140

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		SPT 18	12 15 20	22					SC	74.1 – 80.5: Clayey SAND, light gray (10YR 7/2), moist, dense to very dense, fine grained, contains manganese nodules (Upland Complex Alluvium)		
85		SPT 19	15 34 50/6	18						- Strong brown (7.5YR 5/8) below 84 feet		70
									SW	67.6 – 87.0: Well-graded SAND, very pale brown (10YR 7/4), moist, very dense, fine grained, quartzo-feldspathic, iron stained layers (Upland Complex Alluvium)		
90		SPT 20	40 50 47	14								65
95		SPT 21	33 43 50/.5	13						- Wet below 94 feet		60
100		SPT 22	28 42 50/6	12						- Dry to moist below 99 feet		55
									CL	53.1 – 101.5: CLAY, pale brown (10YR 6/2), moist, very stiff, slightly mottled, trace well sorted sand, trace gravel (quartz rich granitoid?) up to 3/4-inch diameter, iron staining in sand (Upland Complex Old Alluvium)		
105		SPT 23	12 8 11	22								50
									SP	46.6 – 108.0: Poorly-graded SAND with gravel, very pale brown (10YR 3/4), wet, dense to very dense, well rounded, fine grained, quartzo-feldspathic sand, with subangular to subrounded, fine grained quartz and chert gravel with various additional lithologies (Upland Complex Old Alluvium)	-Drillers adding "super gel" to drilling mud	
110		SPT 24	26 17 18	10								45
115		SPT 25	43 40 39	10								40
									GW	38.6 – 116.0: Well-graded GRAVEL, various color clasts, wet, very dense, few sand, subangular, fine grained gravel, with rounded, fine grained sand (Upland Complex Old Alluvium)	-Hole collapsed, re-drilled	
120		SPT 26	29 31 32	16					SP	35.6 – 119.0		35

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA Williams Lehrs & Associates, Inc.

SOIL LOG - Boring No. B-1140

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									SP	Poorly-graded SAND with gravel, very pale brown (10YR 3/4), wet, dense to very dense, well rounded, fine grained, quartzo-feldspathic sand, with subangular to subrounded, fine grained quartz and chert gravel with various additional lithologies (Upland Complex Old Alluvium) *(Continued from previous page)*	-Hole collapsed, re-drilled, flushed, and added drilling mud	
125												30
									GP	27.6 — 127.0 Poorly-graded GRAVEL, various colors and lithologies, wet, dense, subangular chert and quartz (Upland Complex Old Alluvium)		
130		SPT 28	15 14 21	6								25
									MH	22.6 — 132.0 SILT, greenish gray (Gley 1 5/1), moist to wet, very stiff, some to mostly clay, manganese oxide staining (Upland Complex Old Alluvium)		
135		SPT 29	9 8 12	20								20
									GP	17.6 — 137.0 Poorly-graded GRAVEL, wet, very dense, subangular chert and quartz		
		SPT 30	38 50/5.5	10					SW	15.6 — 139.0 Well-graded SAND, very pale brown (10YR 7/4), wet, very dense, well-rounded, fine grained, quartzo-feldspathic sand (Upland Complex Old Alluvium)		
140									CH	12.6 — 142.0 CLAY, light yellowish brown (2.5Y 6/3), moist, hard, contains thin lenses of well sorted, fine grained sand, iron staining (Upland Complex Old Alluvium)	-Clay and sand are same color	15
145		SPT 31	18 18 29	19								10
									SW	7.6 — 147.0 Well-graded SAND, very pale brown (10YR 7/4), wet, very dense, fine grained quartzo-feldspathic sand (Upland Complex Old Alluvium)		
150		SPT 32	37 39 42	12								5
155		SPT 33	23 17 40	18						- Few to little gravel and few clay at 154 feet	-Hole collapsed, re-drilled to 155 feet	0
									SP	-2.4 — 157.0		
160		SPT 34	28 32 25	12								-5

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GL _OL.GPJ WLA GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1140

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
160									SP	Poorly-graded SAND with gravel, light yellowish brown (10YR 6/4), wet, very dense, well sorted, fine grained, quartzo-feldspathic sand, with subangular, fine grained, quartz and chert gravel (Upland Complex Old Alluvium) *(Continued from previous page)*	-Drilling advanced an extra 2 feet in order to have appropriate stick-up for SPT energy calibration tests -Drilling to top of Catahoula Formation without sampling	
165												-10
170												-15
175												-20
180												-25
185										186.5 feet: Top of Catahoula Formation visible in cuttings. Collected cuttings during drilling from 186.5 feet to 193.5 feet depth (-31.9, 186.5)		-30
		GRAB 35							CL	CLAY, greenish gray (Gley 1 6/5GY), contains silt (Catahoula FM)		
190												-35
										(-38.9, 193.5) Boring terminated at 193.5 feet. Hole grouted upon completion.		
195												-40
200												-45

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GL OL GPJ WLA.GDT 5/17/07

Project Name and No.: **NuStart-Grand Gulf COL Project: 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc

SOIL LOG - Boring No. B-1142

Drilling Method and Hole Diameter Wash Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549821.29 N; 277449.66 E feet		Total Depth 140 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 134.2 feet	Ground Water Depth Not Determined	Date Started 8/23/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by C Rittel	Date Completed 8/24/06

Reviewed by / Date CEG 2100 5/29/07 Bill Dedall 5-21-07
REV. 1

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
134.2											0.0	
0									ML	SILT, dark yellowish brown (10YR 4/4), moist, soft to stiff, strong HCl reaction (Upper Loess)		
5		SPT 1	3 2 2	16								130
10		SPT 2	2 3 3	6						- 8.5 feet: light yellowish brown (10YR 6/4)		125
15		SPT 3	2 3 7	6						- 14 feet: stiff, trace clay and fine sand below 14 feet	-Sample 1142-3: Recovery not recorded	120
20		SPT 4	2 2 3	6								115
25		SPT 5	4 3 4	8						- 23.5 feet: weak HCl reaction		110
30		SPT 6	3 4 3	8						- 28.5 feet: yellowish brown (10YR 5/4)	-Sample 1142-6: Recovery not recorded	105
35		SPT 7	4 5 5	5							-Slight increase in blow counts -4 inches of cuttings on top of 5 inches of sample	100
40		SPT 8	5 5 6	10						-38.5 feet: light yellowish brown (10YR 6/4), trace shell fragments		95

Page 1 of 4

SOIL LOG_MFC_WLA 6468-06-1340 GRAND GL OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project; 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1142

Depth (feet)	Sample	Sample Type & No	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, dark yellowish brown (10YR 4/4), moist, soft to stiff, strong HCl reaction (Upper Loess) *(Continued from previous page)*		
45		SPT 9	6 7 8	11								90
50		SPT 10	4 3 3	16						- 48.5 feet: pale brown (10YR 6/3), moist to wet, medium stiff		85
										82.2 — 52.0		
									ML	SILT, light yellowish brown (2.5Y 6/4), moist, stiff, faint mottled appearance, trace dark manganese concretions, trace fine sand (Lower Loess)	-Color/texture change at 52 feet	
55		SPT 11	4 4 7	18								80
										77.2 — 57.0		
									CL	CLAY, pale brown (10YR 6/3), moist, stiff, strong mottled appearance, contains silt and manganese concretions (Lower Loess)		
60		SPT 12	6 7 7	18								75
65		SPT 13	4 6 8	18						- 63.5 feet: brownish yellow (10YR 6/6), strong mottled appearance		70
70		S 14		27							-Shelby tube pushed 2.5 feet (68.5-71.0 feet)	65
		SPT 15	10 21 28	16								
										62.7 — 71.5		
									SP-SM	Poorly-graded SAND, light gray (10YR 7/1), moist, dense, contains silt, fine grained, subangular to subrounded quartz, contains silt, top six inches of sample slightly mottled, with higher silt content (Upland Complex Alluvium)		
		S 16		12							-Shelby tube sample 1142-16: Recovery not recorded	
75		SPT 17	5 12 20	10								60
										56.2 — 78.0		
									SP			
80		SPT 18	33 37 38	9								55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND GU OL.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1142

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly-graded SAND, very pale brown (10YR 8/2), wet, very dense, fine to medium grained quartz, trace dark grains (Upland Complex Alluvium) *(Continued from previous page)* 52.2 / 82.0		
									SW	Well-graded SAND, yellowish brown (10YR 5/4), wet, medium dense, fine to medium grained, subangular to subrounded quartz and chert, trace gravels up to maximum 1/4 inch diameter, color influenced by drill mud (Upland Complex Old Alluvium)	-Shelby tube pushed 2 feet, sat for 15 minutes, no recovery, tube not damaged	50
85		S 19		0								
		SPT 20	6 7 14	18								
											-Shelby tube pushed 2.5 feet	45
90		S 21		27					SW	Well-graded SAND, very pale brown (10YR 7/4), wet, medium dense, fine to medium grained, subangular to subrounded quartz (Upland Complex Old Alluvium) 44.7 / 89.5		
		SPT 22	9 6 6	16								
									SW	- 92 feet to 92.2 feet: Interval of sandy CLAY, gray (10YR 5/1) (CL) 41.2 / 93.0	-Photo was taken after sample was placed in jar	40
95		SPT 23	15 15 21	11						Well-graded SAND, light yellowish brown (10YR 6/4), wet, dense, fine to coarse grained, subangular to subrounded, contains subangular to subrounded chert gravel (Upland Complex Old Alluvium) 37.2 / 97.0		
									CL	CLAY, greenish gray (10GY 6/1), moist, very stiff, contains silt, trace fine grained sand (Catahoula FM)		35
		SPT 24	8 9 16	18								
100												
		S 25	49 46 50/6	6	33	51/28	GSZ CON SG		CH	Sandy CLAY, greenish gray (5GY 5/1), moist, hard, some silt, few to little gravel (Catahoula FM) 30.7 / 103.5	-Shelby tube pushed 6 inches, bent on end -Sample 1142-26: Recovery not recorded	30
105		SPT 26		19								
		SPT 27	25 26 42	18								25
110												
		SPT 28	24 23 34	18								20
115												
		SPT 29	17 25 35	18							-Sample interval changed to 10 feet (from 120 feet, and	15
120												

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SOIL LOG_MFC_WLA_6468-06-1340 GRAND GU ...L.GPJ WLA.GDT 5/17/07

Project Name and No.: NuStart-Grand Gulf COL Project: 6468-06-1340

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1142

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
120									CH	Sandy CLAY, greenish gray (5GY 5/1), moist, hard, some silt, few to little gravel (Catahoula FM) *(Continued from previous page)*	below) per KBC	
										9.2 — 125.0		10
125									CL	CLAY with sand, greenish gray (10GY 5/1), moist, hard, fine grained sand (Catahoula FM)		
		SPT 30	33 29 39	18								5
130												
135												0
		SPT 31	21 26 48	18								-5
140										-5.8 — 140.0 Boring terminated at 140.0 feet. Hole grouted upon completion.	-Termination depth at 140-feet per KBC	
145												-10
150												-15
155												-20
160												-25

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. B-1143**
Drilling Method and Hole Diameter Wash Rotary / 4 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549673.9 N; 277364.51 E feet		Total Depth 118.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D120 (108%)	Elevation (Datum NGVD 29) 133.2 feet	Ground Water Depth Not Determined	Date Started 8/24/06
Sampling Method SPT with Auto Hammer/Undisturbed Sampling	Borehole Inclination Vertical	Logged by C. Rittel	Date Completed 8/25/06

Reviewed by / Date CEGA 2100 3/8/07 Wm Deadrick 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	133.2 SILT, brown (7.5YR 4/4), moist, stiff (Undocumented Fill) 0.0		130
5		SPT 1	6 6 7	11								
									ML	127.2 SILT, grayish brown (10YR 5/2), moist, stiff, trace organics (Undocumented Fill) 6.0	Several compacted lifts visible in sample	125
10		SPT 2	9 7 7	15								
									ML	121.2 SILT, greenish gray (10Y 6/1), moist, stiff, slight color changes in thin bands (Undocumented Fill) 12.0	-Compacted fill-lifts visible	120
15		SPT 3	8 5 10	14								
									ML	117.2 SILT, dark yellowish brown (10YR 4/4), moist, medium stiff to stiff (Undocumented Fill) 16.0		115
20		SPT 4	4 4 5	13								
25		SPT 5	6 4 4	12						- 24.0 feet: Brown (7.5 YR 5/4), medium stiff, contains trace fine sand		110
									ML	106.2 SILT, yellowish brown (10YR 5/4), moist, stiff, strong HCl reaction (Upper Loess) 27.0		105
30		SPT 6	4 5 6	9								
35		SPT 7	5 5 6	11						- 34.0 feet: Weak HCl reaction, trace shell fragments		100
40		SPT 8	5 6 7	10						- 39.0 feet: Weak to strong HCl reaction	-Slight increase in moisture content	95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1143

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, stiff, strong HCl reaction (Upper Loess) *(Continued from previous page)*		
										91.2 / 42.0		
									ML	SILT, brown (10YR 5/3), moist, stiff, trace fine sand, strong HCl reaction (Upper Loess)		90
45		SPT 9	6 6 8	11								
												85
50		SPT 10	5 5 4	16						- 49.0 feet: Light yellowish brown (10YR 6/4), weak HCl reaction		
										81.2 / 52.0		
									ML-MH	SILT, light yellowish brown (2.5Y 6/4), moist, stiff, faint mottling, contains clay, trace manganese concretions/nodules (Lower Loess)	-Color/texture change	80
55		SPT 11	5 4 6	18								
										76.2 / 57.0		
									CL	CLAY, pale yellow (2.5Y 7/4), moist, stiff, contains silt, mottled, manganese nodules (Lower Loess)	-Increase in blow counts	75
60		SPT 12	6 7 8	17								
										71.2 / 62.0		
									ML-MH	SILT, pale yellow (2.5Y 7/4), moist, very stiff, contains clay (Lower Loess)		70
65		SPT 13	8 7 10	17								
										66.7 / 66.5		
									SP	Poorly-graded SAND with silt, light gray (10YR 7/1), wet, medium dense, subangular to subrounded, fine grained quartz sand (Upland Complex Alluvium)		65
70		S 14		28							-Shelby tube pushed 2.5 feet	
		SPT 15	6 7 13	12							-Drill mud affecting sample color	
												60
		S 16		0						59.2 / 74.0		
75		SPT 17	8 22 22	8					SP	Poorly-graded SAND with silt, white (10YR 8/1) to light gray (10YR 7/1), wet, dense, subangular to subrounded, fine grained quartz sand, trace mafics (Upland Complex Alluvium)	-Shelby tube pushed 1.5 feet before refusal	
										55.2 / 78.0		
									SP-SM			55
80		SPT 18	14 42 26	11								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. B-1143

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP-SM	51.7 Poorly-grade SAND, very pale brown (10YR 8/2), moist to wet, very dense, contians silt, fine to medium grained sand, grades into silty sand toward top of sample, 2 inch lense of gravel present between 78.5 feet and 79.0 feet, gravels are subangular to subrounded chert, up to a maximum 1/2-inch diameter (Upland Complex Alluvium *(Continued from previous page)* 81.5		
									SP			50
		S 19		0							-Pushed Shelby tube 1.5 feet before rig lifted up	
85		SPT 20	12 21 26	12								
										45.7 Poorly-graded SAND, light gray (10YR 7.2), wet, dense, subangular to subrounded, fine to medium grained quartz (Upland Complex Alluvium) 87.5		
									GW			45
		SPT 21	23 21 24	10							-Driller notes gravels at sample interval -Skipping sample due to gravels	
90										Well-graded GRAVEL, white (10YR 8/1) matrix, wet, dense, contains sand, subangular to subrounded, chert gravels up to maximum 1/4-inch diameter, contains subangular to subrounded, fine to coarse grained quartz sand (Upland Complex Old Alluvium) 92.5		
									40.7 GP			40
		SPT 22	18 17 18	18						poorly-graded GRAVEL, pale brown (10YR 6/3), wet, dense, contains sand quartz and chert gravel up to maximum 1/4-inch diameter, with subangular to subrounded, medium to coarse grained quartz and chert sand (Upland Complex Old Alluvium)	-Gravel (fines upward) -GRAVEL with sand	
95												35
100										29.7 103.5		30
		SPT 23	32 50/4	8					CL	CLAY, greenish gray (5GY 6/1), moist, hard, contains silt (Catahoula FM)	-Driller notes change in drilling at 103.5 feet	
105											-Losing water -Hole collapsed 8 feet when sampler placed -Hole collapsed again 12 feet -KBC advised, will drill to 120 feet	25
110											-No change in drilling noted -Skipping samples and attempting to sample at 120 feet per KBC -Water loss continues	20
115										-Gravels from alluvium above continue to fall into drilled borehole below when drill rods are pulled out. Pump unable to lift/push gravels out of drilled boring 14.7 118.5	-Hole collapsed 18 feet (back to 100 feet) -KBC advised: Hole terminated at last sample (1143-23)	15
120										Boring Terminated at 118.5 feet. Hole grouted upon completion.		

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1101

Drilling Method and Hole Diameter Mud Rotary / 6 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549642.38 N; 277256.31 E feet		Total Depth 83.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 134.1 feet	Ground Water Depth Not Determined	Date Started 8/28/06
Sampling Method Pitcher Barrell	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/28/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dedrick 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									ML	134.1 SILT, brown (7.5YR 5/2), moist, contains sand, gravel (Undocumented Fill) 0.0	0 feet to 73.5 feet: logging done by comparing drill cuttings to log of B-1101	
									ML	130.6 SILT, light olive brown (2.5Y 5/4), moist, (Upper Loess) 3.5		
5												130
10												125
15												120
20												115
25												110
30												105
35												100
40												95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND (COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project: 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1101

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, light olive brown (2.5Y 5/4), moist, (Upper Loess) *(Continued from previous page)*		
45												90
50												85
										83.1 — 51.0		
									MH	SILT, contains clay (Lower loess)		
55												80
60												75
65												70
70												65
										63.6 — 70.5		
									SP	SAND, light gray (Upland Complex Alluvium)		
75		P 1		0							No recovery	60
		P 2		0							No recovery	
80		P		6						54.1 — 80.0		55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1101

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		3							SM	53.1 SAND, light gray, contains silt (Upland Complex Alluvium) 81.0		
		P 4		8.5					SW	Well-graded SAND, contains gravel gravel (Upland Complex Alluvium) 50.6 83.5		
85										Boring terminated at 83.5 feet. Hole grouted upon completion.		50
90												45
95												40
100												35
105												30
110												25
115												20
120												15

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC / WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. P-1102**
Drilling Method and Hole Diameter Mud Rotary / 6 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549561.84 N; 277421.07 E feet		Total Depth 88.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.1 feet	Ground Water Depth Not Determined	Date Started 8/26/06
Sampling Method Pitcher Barrell	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/27/06

Reviewed by / Date CEGA 2100 3/8/07 Wm Deobald 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.1 Well-graded SAND, contains gravel (Undocumented Fill) 0.0	0 feet to 68.5 feet logged by comparing cuttings to log for B-1102 (about 2 feet north)	130
									ML	131.6 SILT, trace to little clay (Undocumented Fill) 1.5		
5												125
10												120
15												115
20												110
25												105
30												100
35												95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1102

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, trace to little clay (Undocumented Fill) *(Continued from previous page)*		
45												90
50												85
										82.1 — 51.0		
									MH	SILT, little to some clay (Undocumented Fill)		80
55										77.6 — 55.5		
									ML	SILT, trace clay (Upper Loess)		
60												75
65												70
												65
70										62.6 — 70.5		
									SP	Poorly-graded SAND (Lower Loess)		60
75		P 1		24						57.6 — 75.5		
		P 2		14.4					SM	SAND, light olive gray (5Y 6/2), moist, contains silt (Upland Complex Alluvium) 56.1 — 77.0		
									SP	Poorly-graded SAND, light yellowish brown (2.5Y 6/3), moist (Upland Complex Alluvium)		55
80		P		9.5								

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1102

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80		3							SP	Poorly-graded SAND, light yellowish brown (2.5Y 6/3), moist (Upland Complex Alluvium) *(Continued from previous page)*		
		P 4		12		NV/NP	CON SG					50
										48.6 — 84.5		
85									SW	Well-graded SAND, contains gravel (Upland Complex Alluvium)		
										44.6 — 88.5		45
										Boring terminated at 88.5 feet. Hole grouted upon completion.		
90												40
95												35
100												30
105												25
110												20
115												15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. P-1105**
Drilling Method and Hole Diameter Mud Rotary / 6 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549709.51 N; 277442.96 E feet		Total Depth 100.5 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.5 feet	Ground Water Depth Not Determined	Date Started 8/25/06
Sampling Method Pitcher Barrell	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/26/06

Reviewed by / Date Wm Deedald 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks
0									SW	133.5 Well-graded SAND, contains gravel (Fill) 0.0	0 feet to 70 feet logged from cuttings and referenced to log for B-1105
									ML	132.5 SILT, yellowish brown (10YR 5/4), moist, trace clay (Fill) 1.0	
5											
10										121.5	12.0
									CL	CLAY, very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2), moist, contains silt, organics present throughout (Fill)	
15										116.0	17.5
									ML	SILT, brown (10YR 4/3), moist, contains clay, some organics, (Fill)	
20										112.5	21.0
									ML	SILT, yellowish brown (10YR 5/4), dry, trace gastropods shells and calcareous deposits (Upper Loess)	
25											
30											
35											
40											

Elevation (feet): 130, 125, 120, 115, 110, 105, 100, 95

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1105

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), dry, trace gastropods shells and calcareous deposits (Upper Loess) *(Continued from previous page)*		
45												90
												85
50										- SILT, as above, wet		
												80
55										- SILT, contains clay, as above, wet		
										77.5 — 56.0		
									CL	CLAY, gray (10YR 6/1), moist, manganese nodules, iron staining, contains silt (Lower Loess)		
60												75
										70.0 — 63.5		
									CL/ML	CLAY or SILT with sand, light gray (2.5YR 7/2), dry, sand is fine grained (Lower Loess)		70
65												
70												65
												60
75		P 1		20.5			GSZ TRX			58.5 — 75.0		
									SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, fine to medium grained quartz sand, trace fines (Upland Complex Alluvium)		
		P 2		8.5			GSZ CON					
80												55

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1105

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP	Poorly-graded SAND, light gray (2.5Y 7/1), moist, fine to medium grained quartz sand, trace fines (Upland Complex Alluvium) *(Continued from previous page)*		50
85												45
90		P 3		23								40
		P 4		24						- P5: No recovery, base of sample tube torn and damaged (Photo 0700)		
95		P 5		0						38.5 / 95.0		
		P 6		27.5	18	49/28	GSZ CON			- GRAVEL (GW), up to 0.5 inch diameter, various lithologies (Upland Complex Old Alluvium) 36.0 / 97.5		35
									SC	Clayey SAND, greenish gray (G1 5/5G), moist to dry, fine grained sand, some silt (Catahoula FM) 35.0 / 98.5		
100		P 7		24	19	50/25	GSZ CON		GP-GC	Poorly-graded GRAVEL with clay, greenish gray (Gley 1 5/5G), moist to dry, few sand, trace clay (Catahoula FM) 33.0 / 100.5	1105-PO7: bottom of tube torn and lower 6 inches is distorted (ovalled)	30
105										Boring Terminated at 100.5 feet. Hole grouted upon completion.		25
110												20
115												15
120												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340** MACTEC WLA William Lettis & Associates, Inc.			**SOIL LOG - Boring No. P-1109**
Drilling Method and Hole Diameter Rotary wash SPT / 6 inches	Boring Location Coordinates: MS State Grid (NAD 27) 549804.24 N; 277500.92 E feet		Total Depth 102.2 feet
Drilling Contractor, Rig and (Hammer Efficiency) Walker Hill Environmental / Diedrich D 50 Turbo (78%)	Elevation (Datum NGVD 29) 133.7 feet	Ground Water Depth Not Determined	Date Started 8/24/06
Sampling Method Pitcher Barrell	Borehole Inclination Vertical	Logged by A. Lutz	Date Completed 8/25/06

Reviewed by / Date CEG 2100 3/8/07 Wm Dudall 3-6-07

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
0									SW	133.7 Well-graded SAND, moist, contains gravel (Undocumented Fill) 0.0	0 feet to 70 feet logged using cuttings and referencing log of B-1109 (about 3 feet north)	130
5									ML	128.7 SILT, yellowish brown (10YR 5/4), moist, contains clay, homogeneous, rare shell fragments (Upper Loess) 5.0		125
10												120
15												115
20												110
25												105
30												100
35												95
40												

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND C COL.GPJ WLA.GDT 3/6/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1109

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
40									ML	SILT, yellowish brown (10YR 5/4), moist, contains clay, homogeneous, rare shell fragments (Upper Loess) *(Continued from previous page)*		
45												90
50												85
55												80
										77.7 — 56.0		
60									MH	SILT, light brownish gray (10YR 6/2), moist, contains clay, iron manganese oxide mottling/staining, trace fine grained sand (Lower Loess)		75
65												70
										65.7 — 68.0		
									SP	Poorly graded SAND (Upland Complex Alluvium)		65
70		P 1		14.5			GSZ CON					
										63.2 — 70.5		
		P 2		33.5	23	23/5	CON		CL-ML	Silty CLAY, light brownish gray (5Y 6/3), moist, few fine grained sand (Upland Complex Alluvium)		
										60.7 — 73.0		
75		P 3		13					SP-SM	Poorly-graded SAND with silt, light gray (5Y 7/2), moist, fine grained sand (Upland Complex Alluvium)	- 1109-P04 sample tube mildly deformed around attachment holes at top, no damaged to lower barrel containing sample - Repeat of above drilling conditions and damage report for 1109-P05	60
		P 4		12			GSZ CON					
												55
80		P 5		11			GSZ CON					

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SOIL LOG_MFC_WLA 6468-06-1340 GRAND COL.GPJ WLA.GDT 3/7/07

Project Name and No.: **NuStart - Grand Gulf COL Project; 6468-06-1340**

MACTEC

WLA William Lettis & Associates, Inc.

SOIL LOG - Boring No. P-1109

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content (%)	Atterberg Limit (LL/PI)	Other Testing	Lithology	Soil Type (USCS)	Lithology	Remarks	Elevation (feet)
80									SP-SM	Poorly-graded SAND with silt, light gray (5Y 7/2), moist, fine grained sand (Upland Complex Alluvium) *(Continued from previous page)*		50
85									CL	48.7 — 85.0 CLAY, gray (2.5Y 5/1), moist, contains silt (Upland Complex Alluvium)		45
90		P 6		32.5					SC/SM	43.7 — 90.0 SAND, light brownish gray (2.5Y 6/2), moist, contains clay, or SAND, light yellowish brown (2.5Y 6/4), moist, contains silt (Upland Complex Alluvium)		40
		P 7		23								
95		P 8		27.5					SC	38.7 — 95.0 Clayey SAND, greenish gray (G1 5/10GY), moist, some silt, trace gravel (Catahoula FM)		35
		P 9		24	52	52/29	GSZ CON					
100		P 10		26.5					SM	35.2 — 98.5 Silty SAND with gravel, greenish gray (Gley 1 5/10GY), moist, few clay (Catahoula FM)		30
		P 11		24			GSZ CON		CL	31.7 — 102.0 CLAY, greenish gray (G1 5/5GY), moist, contains sand (Catahoula FM) 31.5 — 102.2 Boring terminated at 102.2 feet. Hole grouted upon completion.	1109-P11 refused at 102.2', base of sample tube slightly torn (see photos 0685 and 0686)	
105												25
110												20
115												15
120												

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