CDM Camp Dresser & McKee

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May 18, 2000

Ms. Cheryl Marks
Solid Waste Section
North Carolina Department of Environment
and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605-1350

Subject: Supplement Information for Permit Amendment Application - Phase II (Cells 4-5)
Design Hydrogeologic Report
Buncombe County Solid Waste Management Facility
Permit No. 11-07

Dear Ms Marks:

Based on our phone conversations yesterday, Camp Dresser & McKee (CDM) is submitting the attached supplemental information for the Design Hydrogeologic Report to assist you in completing your review. The following is provided:

- A revised Table 3-1 to include data from borings completed during previous phases. Depth to bedrock is defined by auger refusal.
- Revised Cross-Sections A-A′, B-B′, C-C′, and D-D′ to show limits of landfill cells. A new cross section, E-E′ is also included which traverses Cell 5.
- Revised Sheet 3-1 which shows the new cross-section location.
- Revised Sheet 2-1 which shows the locations of the rock cores.
- Boring logs from borings installed during previous investigations that are located within the Cell 4-5 area.

CDM appreciates your time and attention to this important matter. If you have any questions or need additional information, please do not hesitate to contact us.

Very truly yours,

CAMP DRESSER & McKEE

Tim Grant

Timothy D. Grant, P.G.

cc: Bob Hunter, Buncombe County (w/o enclosure)
Joe Wiseman, CDM

Buncombe\marks3-16.doc

Table 3-1
Summary of Lithologic Data
Buncombe County Subtitle D Landfill Expansion - Cells 4 and 5

Borehole	Ground Surface Elev. (feet msl)	Depth to PWR (feet bgs)	PWR Elevation (feet msl)	Depth to Bedrock (feet bgs)	Bedrock Elevation (feet msl)
B-501	2009.93	44.0	1965.9	45.0	1964.9
B-502	2017.63	34.0	1983.6	37.5	1980.1
B-503	1997.96	28.5	1969.5	48.5	1949.5
B-503A	1999.08	28.5	1970.6	43.0	1956.1
B-503B	1998.95	28.5	1970.5	48.5	1950.5
B-504	2018.41	38.5	1979.9	56.0	1962.4
B-504A	2018.33	38.5	1979.8	56.0	1962.3
B-505	2049.91	15.0	2034.9	16.5	2033.4
B-505A	2049.5	15.0	2034.5	16.5	2033.0
B-506	2085.55	44.5	2041.1	57.0	2028.6
B-507	2076.41	19.0	2057.4	30.0	2046.4
B-508	2082.41	20.0	2062.4	23.0	2059.4
B-509	2030.96	21.5	2009.5	43.5	1987.5
B-510	2037.21	28.5	2008.7	44.0	1993.2
B-511	1999.94	21.5	1978.4	31.5	1968.4
B-512	2023.14	39.5	1983.6	49.0	1974.1
B-513	1973.49	33.0	1940.5	43.0	1930.5
B-513A	1975.04	33.0	1942.0	43.0	1932.0
B-514	1946.62	17.5	1929.1	18.0	1928.6
BC-107	2051.2	39.5	2011.7	>48.0	<2003.2
BC-107A	2052.1	40.0	2012.1	56.5	1995.6
BC-108	2019.9	28.5	1991.4	48.5	1971.4
B-308	2017.1	-	-	-	-
BC-109	2017.2	35.0	1982.2	>49.0	<1968.2
BC-109A	2017.2	35.0	1982.2	>75.0	<1942.2
BC-110	2032.2	33.0	1999.2	>48.5	<1983.7
B-310	2033.7	-	-	-	-
B-242	1988.4	7.0	1981.4	7.5	1980.9
B-245	1985.5	12.0	1973.8	12.5	1973.3

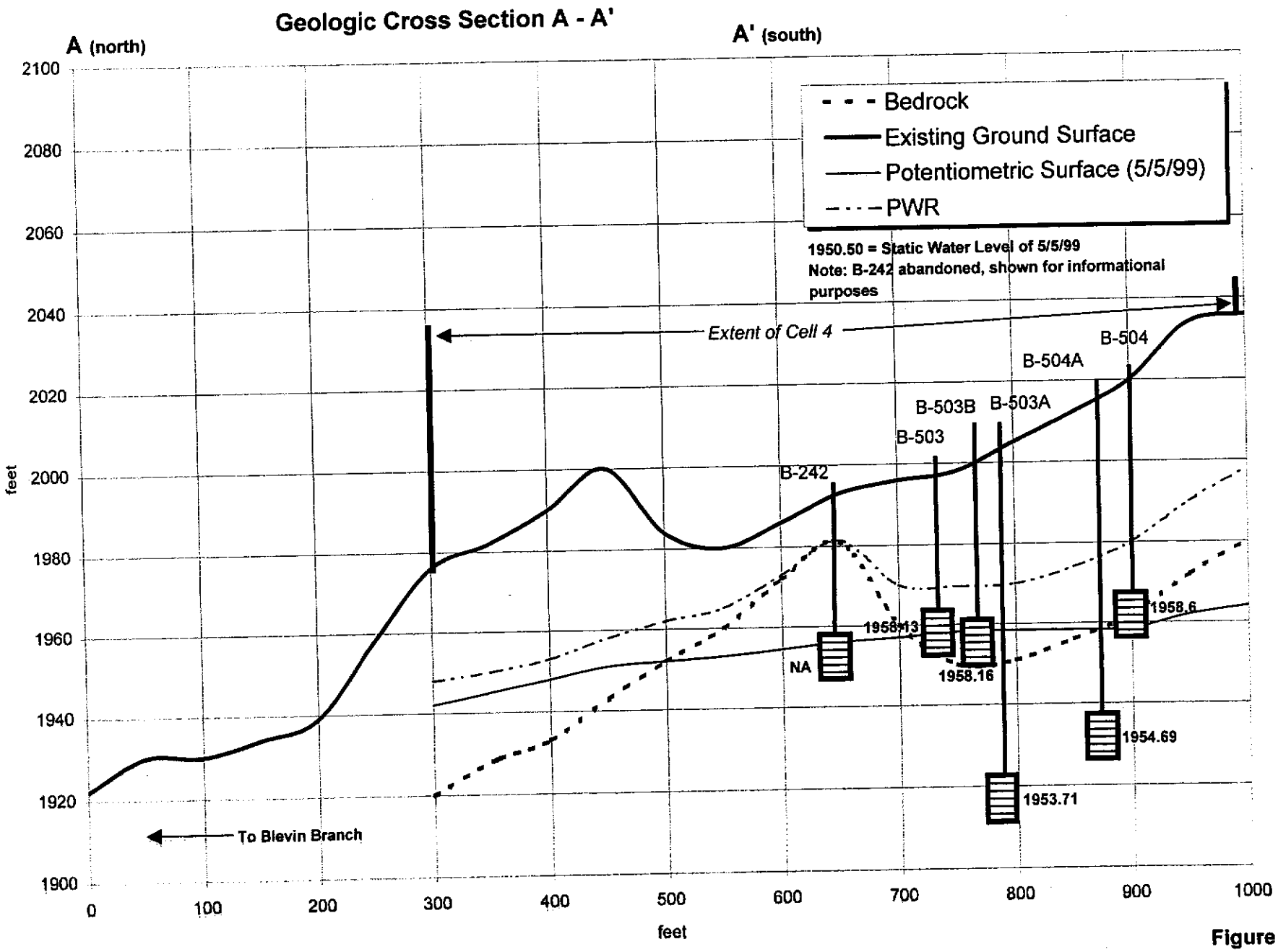

Figure 3-1
Geologic Cross Section A-A'
Buncombe County Solid Waste Management Facility

CDM Camp Dresser & McKee

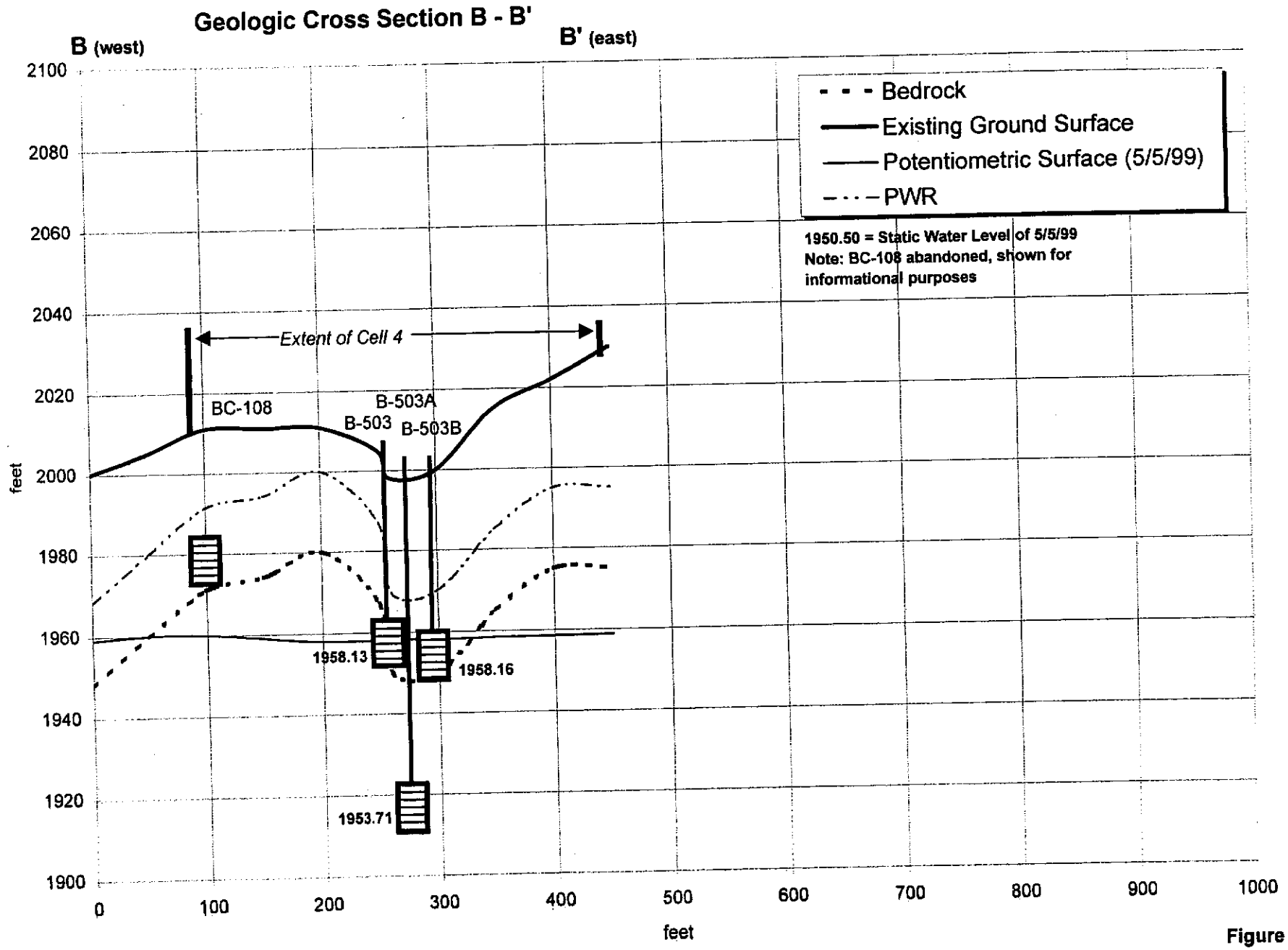

Figure 3-2
Geologic Cross Section B-B'
Buncombe County Solid Waste Management Facility

CDM Camp Dresser & McKee

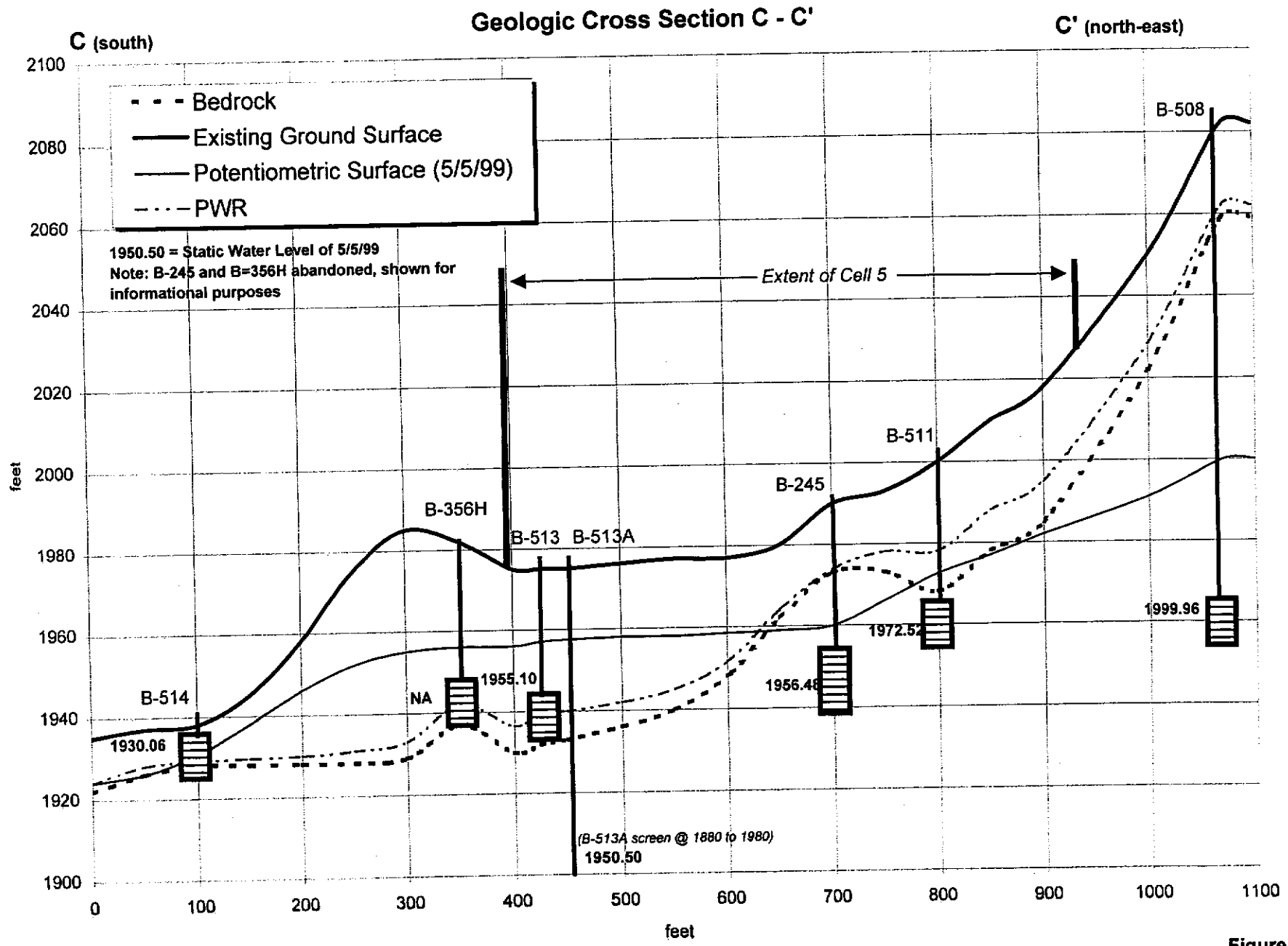

Figure 3-3
Geologic Cross Section C-C'
Buncombe County Solid Waste Management Facility

CDM Camp Dresser & McKee

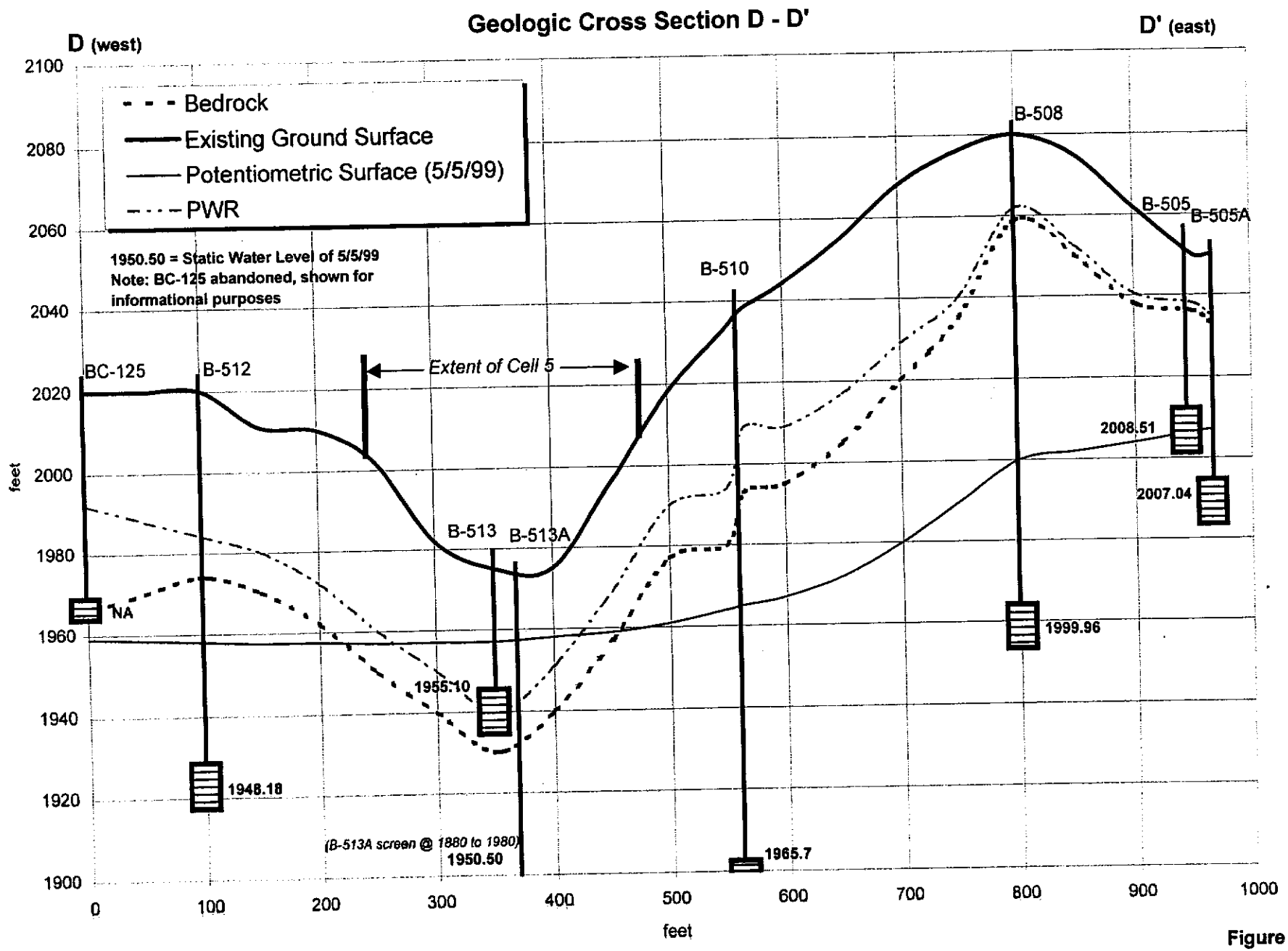

Figure 3-4
Geologic Cross Section D-D'
Buncombe County Solid Waste Management Facility

CDM Camp Dresser & McKee

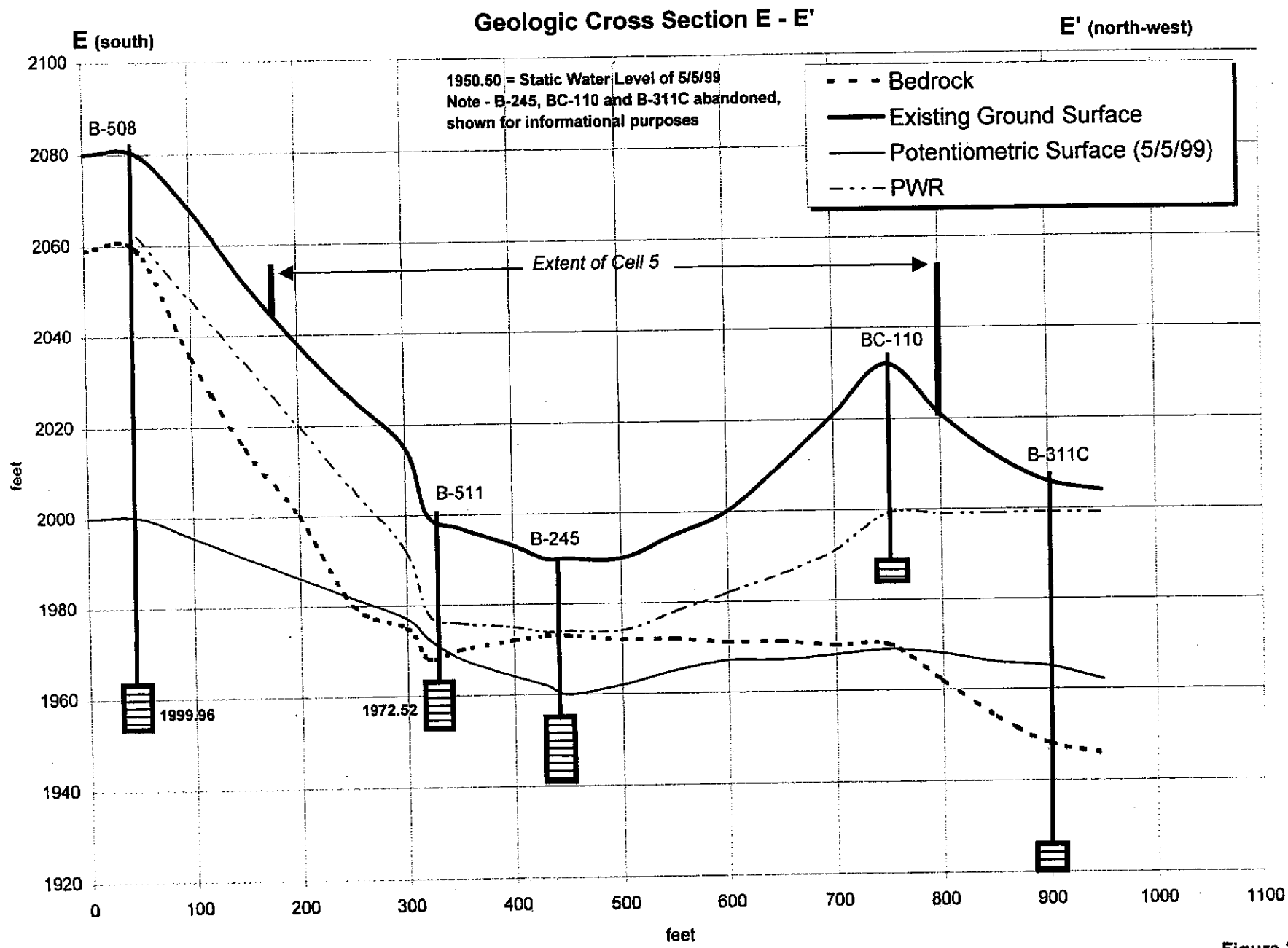

Figure 3-4b
Geologic Cross Section E-E'
Buncombe County Solid Waste Management Facility

CDM Camp Dresser & McKee

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *8/12/92*	SHEET *1* OF *3*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
				0-3" TOPSOIL	
				3" - 23.0' - dark brown, fine-grained, sandy SILT, micaceous	
	1				
	2				
	3				
	4		5 7 10		
	5				
	6				
	7				
	8				
	9		6 8 14		
	10				
	1				
	2				
	3				
	4		5 8 10		
	15				
	6				
	7				
	8				
	9		5 8 11		
	20				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*	DATE *8/12/92*	SHEET *2 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21			*Cont.* *dark brown, fine-grained, sandy SILT, micaceous*	
	2				
	3			*23.0' - 38.0' - reddish-brown, fine-grained, sandy SILT with trace clay*	
	4		6 14 15		
	25				
	6				
	7				
	8				
	9		9 20 26		
	30				
	1				
	2				
	3				
	4		12 22 22		
	35				
	6				
	7				
	8			*38.0' - 43.0' - white, fine to medium-grained, sandy SILT*	
	9		20 22 50/4"		
	40				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*	DATE *8/12/92*	SHEET *3 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	41			*Cont.- white, fine to medium-grained, sandy SILT*	
	2				
	3				
	4		*24* *50/4"*	*43.0' - 48.0' - white, silty, fine to medium-grained SAND*	
	45				
	6				*No groundwater encountered at time of boring*
	7				
	8				*Boring terminated at 48.0'*
	9				
	50				
	1				
	2				
	3				
	4				
	55				
	6				
	7				
	8				
	9				
	60				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *9/1/92*	SHEET *1* OF *4*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107A*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
				0-3" TOPSOIL	
	1			*3" - 23.0' - dark brown, fine-grained, sandy SILT, micaceous*	
	2				
	3				
	4		5 7 10		
	5				
	6				
	7				
	8				
	9		6 8 14		
	10				
	1				
	2				
	3				
	4		5 8 10		
	15				
	6				
	7				
	8				
	9		5 8 11		
	20				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *9/1/92*	SHEET *2 of 4*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107A*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21			*Cont. dark brown., fine-grained, sandy SILT, micaceous*	
	2				
	3			*23.0' - 38.0' - reddish-brown, fine-grained, sandy SILT with trace clay*	
	4		6 14 15		
	25				
	6				
	7				
	8				
	9		9 20 26		
	30				
	1				
	2				
	3				
	4		12 22 22		
	35				
	6				
	7				
	8			*38.0' - 43.0' - white, fine to medium- grained, sandy SILT*	
	9		20 22 50/4"		
	40			*40.0' - partially weathered rock*	

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *9/1/92*	SHEET *3 of 4*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107A*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	41			*Cont.- white, fine to medium-grained, sandy SILT*	
	2				
	3				
	4		*24* *50/4"*	*43.0' - 56.4' - white silty fine to medium-grained SAND*	
	45				
	6				
	7				
	8				*Boring terminated at 48.0'*
	9				
	50				*Auger refusal at 56.5'*
	1				
	2				
	3				
	4				
	55				
	6			*56.4' -76.4' - Core drilling*	
	7				
	8				
	9				
	60				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*9/1/92*	*4 of 4*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-107A* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	61				
	2				
	3				
	4			*1st Run- 56.4- 61.4'*	
				Recovery- 15%	
	65			*RQD- 0%*	
				2nd Run- 61.4' -66.4'	
	6			*Recovery- 20%*	
				RQD- 0%	
	7			*3rd Run- 66.4'- 71.4'*	
				Recovery-25%	
	8			*RQD- 0%*	
	9			*4th Run- 71.4' - 76.4'*	
				Recovery- 15%	
	70			*RQD- 0%*	
	1				
				56.4' - 67.5' - Biotite-Quartz Schist	*No groundwater encountered at time of boring*
	2			*67.5' - 71.4' - Amphibolite*	
				71.4' - 76.4' - Biotite-Quartz Schist	
	3				
	4				
	75				*Coring terminated at 76.4'*
	6				
	7				
	8				
	9				
	80				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *8/12/92*	SHEET *1* OF *3*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-108*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
				0-3" TOPSOIL	
	1			*3" - 28.5' - dark to light brown, fine-grained, sandy SILT, micaceous*	
	2				
	3				
	4		5		
			6		
			7		
	5				
	6				
	7				
	8				
	9		7		
			10		
			12		
	10				
	1				
	2				
	3				
	4		5		
			8		
			9		
	15				
	6				
	7				
	8				
	9		17		
			24		
			31		
	20				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/18/92*	*2 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	

WELL No.	SAMPLING METHOD	DRILLER
BC-108	*Split Spoon*	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21			*Cont. dark to light brown, fine-grained, sandy SILT, micaceous*	
	2				
	3				
	4		*21*		
			30		
			23		
	25				
	6				
	7				
	8			*28.5' - 48.5'- white with reddish-brown streaks, silty, fine to medium-grained SAND, partially weathered rock*	
	9		*50/4"*		
	30				
	1				
	2				
	3				
	4		*50/1"*		
	35				
	6				
	7				
	8				
	9		*50/5"*		
	40				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/18/92*	*3 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	

WELL No.	SAMPLING METHOD	DRILLER
BC-108	*Split Spoon*	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 3/4" O.D. HSA*

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	41			*Cont.- white with reddish-brown streaks, silty, fine to medium-grained SAND*	
	2				
	3				
	4		*50/5"*		
	45				
	6				*No groundwater encountered at time of boring*
	7				
	8				*Auger Refusal at 48.5*
	9				
	50				
	1				
	2				
	3				
	4				
	55				
	6				
	7				
	8				
	9				
	60				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*	DATE *8/18/92*	SHEET *1* OF *3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-109* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
				0-3" TOPSOIL	
	1			*3" - 19.0' - slightly clayey, fine to coarse-grained, sandy SILT, slightly micaceous*	
	2				
	3				
	4		3 7 8		
	5				
	6				
	7				
	8				
	9		4 6 8		
	10				
	1				
	2				
	3				
	4		4 5 10		*Bag sample collected at 14- 19'*
	15				
	6				
	7				
	8				
	9		S.T.	*19.0' - 29.0' - brown to tan, silty, fine to coarse-grained sand, slightly micaceous*	*Shelby Tube collected at 19- 21'*
	20				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *8/18/92*	SHEET *2 of 3*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-109*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21				
	2				
	3				
	4		8 9 15		
	25				
	6				
	7				
	8				
	9		16 22 50	*29.0' - 39.0' - green with white streaks, fine-grained, sandy SILT, micaceous*	
	30				
	1				
	2				
	3				
	4		34 50/5"	*35.0' - partially weathered rock*	
	35				
	6				
	7				
	8		50/5"	*39.0' - 49.0' - dark green, fine-grained, sandy SILT, micaceous with 5% rock fragments*	
	9				
	40				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *8/27/92*	SHEET *2 of 4*
		DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-109A*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 1/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21				
	2				
	3				
	4		8 9 15		
	25				
	6				
	7				
	8				
	9		16 22 50	*29.0' - 39.0' - green with white streaks, fine-grained, sandy SILT, micaceous*	
	30				
	1				
	2				
	3				
	4		34 50/5"	*35.0' - partially weathered rock*	
	35				
	6				
	7				
	8			*39.0' - 49.0' - dark green, fine-grained, sandy SILT, micaceous with 5% rock fragments*	
	9		50/5"		
	40				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/27/92*	*3 of 4*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-109A* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 1/4" O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	41			*Cont.- dark green, fine-grained, sandy SILT, micaceous, with 5% rock fragments*	
	2				
	3				
	4		*50/5"*		
	45				
	6				
	7				
	8				
	9			*50' - 64.5' - grey with white streaks, silty, fine to medium grained SAND*	
	50				
	1				
	2				
	3				
	4		*45* / *50/5"*		
	55				
	6				
	7				
	8				
	9		*50/3"*		
	60				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/27/92*	*4 of 4*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-109A* / SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford* / OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	61			*Cont.- gray with white streaks, silty, fine to medium grained SAND*	
	2				
	3				
	4		*50/2"*	*64.5'- 74.5' - dark brown with white streaks, slightly clayey, silty, fine to coarse-grained SAND with fine gravel size rock fragments*	
	65				
	6				
	7				*Groundwater encountered at 67'*
	8				
	9		*50/2"*		*Bag sample collected at 70'-75'*
	70				
	1				*Boring terminated at 75'*
	2				
	3				
	4		*50/0"*		
	75				
	6				
	7				
	8				
	9				
	80				

FIELD GEOLOGIC LOG

PROJECT *BUNCOMBE COUNTY PROPOSED LANDFILL*		DATE *8/19/92*	SHEET *1* OF *3*
		DRILLING CONTRACTOR *Southeastern Geotech Inc.*	
WELL No. *BC-110*	SAMPLING METHOD *Split Spoon*	DRILLER	
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
				0-3" TOPSOIL	
	1			*3" - 23.5' - reddish- brown with black streaks, fine to medium-grained, sandy SILT,*	
	2				
	3				
	4		8 16 20		
	5				
	6				
	7				
	8				
	9		10 16 19		
	10				
	1				
	2				
	3				
	4		13 18 19		
	15				
	6				
	7				
	8				
	9		29 50/4"		
	20				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/19/92*	*2 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	

WELL No.	SAMPLING METHOD	DRILLER
BC-110	*Split Spoon*	
LOGGED BY	**OFFICE**	**DRILLING METHOD**
M. Sanford	*CDM/Ral*	*6" O.D. HSA*

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	21			*Cont. reddish- brown with black streaks, fine to medium-grained, sandy SILT*	
	2				
	3				
	4		36 50/5"	*23.5' - 28.5' - brown-green with tan streaks, medium-grained, course, sandy SILT*	
	25				
	6				
	7				
	8				
	9		15 35 28	*28.5' - 33.5' - grey to white with black streaks, fine-grained, sandy SILT*	
	30				
	1				
	2				
	3				
	4		50/4"	*33.5' - 48.5' - grey to white, fine to medium-grained, sandy SILT, with some rock fragments*	*Rock fragment in cutting at 33.5-38.5*
	35				
	6			*33.0' - partially weathered rock*	
	7				
	8				
	9		26 46 50/5"		
	40				

FIELD GEOLOGIC LOG

PROJECT	DATE	SHEET
BUNCOMBE COUNTY PROPOSED LANDFILL	*8/19/92*	*3 of 3*
	DRILLING CONTRACTOR *Southeastern Geotech, Inc.*	
WELL No. *BC-110*	SAMPLING METHOD *Split Spoon*	DRILLER
LOGGED BY *M. Sanford*	OFFICE *CDM/Ral*	DRILLING METHOD *6 " O.D. HSA*

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	41			*Cont.- grey to white, fine to medium-grained, sandy SILT, with some rock fragments*	
	2				
	3				
	4		*20*		
			34		
			50		*Cuttings are moist at 43.5 - 48.5*
	45				
	6				
	7				*No groundwater encountered at time of boring*
	8				
	9				*Boring terminated at 48.5'*
	50				
	1				
	2				
	3				
	4				
	55				
	6				
	7				
	8				
	9				
	60				

CAMP DRESSER & McKEE INC.

Client Buncombe County Site Proposed Landfill Job No. 6447-010 Soil Bore/ Well No. **B-308**

Drill Contractor Caldwell Drilling Drilling Method Air Rotary Date Drilled 10/17/94

Piez/Casing Size & Type 2" PVC Screened Length/Interval 90'-100' Total Depth 101'

Field Geologist/Technician FW Stickup 2.2' Casing Elevation 2019.31 Static Water Level 62'

DEPTH (feet)	Lithology	DESCRIPTION Lithological Description from Cuttings	USCS	Drilling Comments	Samples	Water Level	WELL CONSTRUCTION
		Sandy silt-silty sand, med red-brown, fine-med grained, slightly micaceous, slightly moist.	ML				
20		Sandy silt, lt red-brown, fine-med grained, slightly micaceous, slightly moist.	ML				
		Silty sand, lt red-brown, fine grained, micaceous, slightly moist.	SM				
40		SAA.	SM				
		Sandy silt, med red-brown, v. fine-fine grained, 50% sand, silghtly moist.		*48.5' HSA refusal.* 55' hard .			
60		SAA.		55'-78' Soft rock.			
		SAA, w/ less sand.					
80		Sandy silt, lt-med grey, w/ 2% rock fragments to 3mm, v. slightly moist.		86' Water.			
		SAA, w/ 50% rock fragments to 5mm.					
100		Silty sand, fine-v. coarse grained.					
		Drilled to 101'.					
120							
140							

Drill Rig Type Tamrock T25K2W Borehole Diameter 6"

CAMP DRESSER & McKEE INC.

Client Buncombe County Site Proposed Landfill Job No. 6447-010 Soil Bore/ Well No. **B-310**

Drill Contractor Caldwell Drilling Drilling Method Air Rotary Date Drilled 10/12/94

Piez/Casing Size & Type 2" PVC Screened Length/Interval 84-94' Total Depth 96'

Field Geologist/Technician FW Stickup 2.9' Casing Elevation 2036.60 Static Water Level 74'

DEPTH (feet)	Lithology	DESCRIPTION Lithological Description from Cuttings	USCS	Drilling Comments	Samples	Water Level	WELL CONSTRUCTION
		Silty sand, medium red-brown, fine.	SM				
20		Silty sand, tan, fine, dry.	SM				
		SAA, Slightly moist.	SM	30' Harder			
40		Silty sand, medium tan, slightly moist.	SM				
		SAA.		*HSA refusal >48.5'*			
60		SAA, w/ some hard rock fragments to 5mm.		60' 30 min blow dry test			
		SAA.		70' Overnite blow test, dry			
80		SAA.		77' Hard 80' Soft zone			
		SAA.		96' 30 min blow test, water			
100		*Drilled to 96'.*					
120							
140							

Drill Rig Type Tamrock T25K2W Borehole Diameter 6"