

APPENDIX A
BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

Remedial Investigation Summary Report

Former Hulett Lagoon

Camdenton, Missouri

SECOR Project No.: 61UN.03001

November 24, 2003

Project No: 003.22000.500

Log of Borehole: GP-1

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

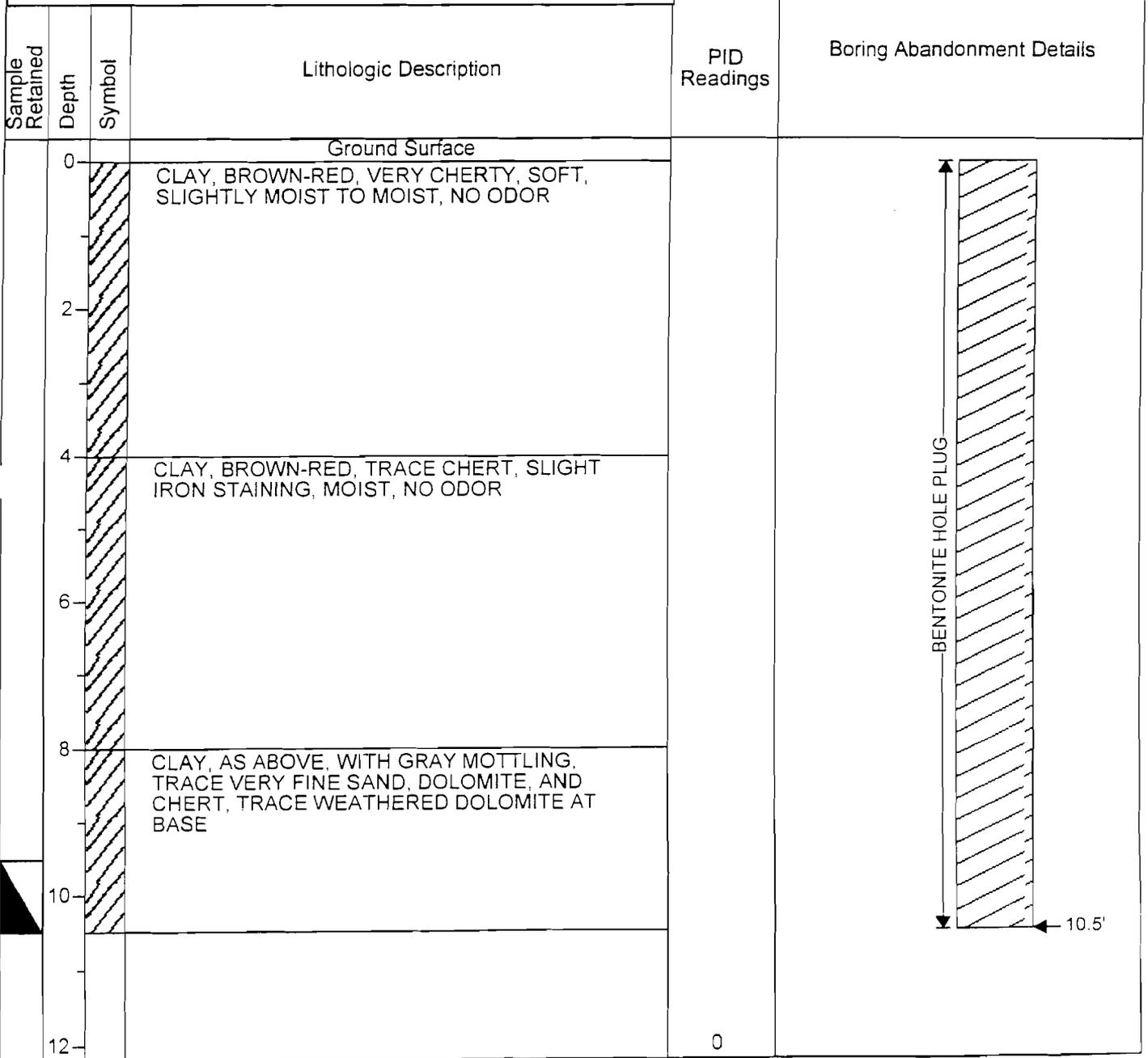
Location: Former Hulett Lagoon

Geologist: S. Yankey

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1340 W. Battlefield, Suite 1
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SUBSURFACE PROFILE



Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 942.1

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-3

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

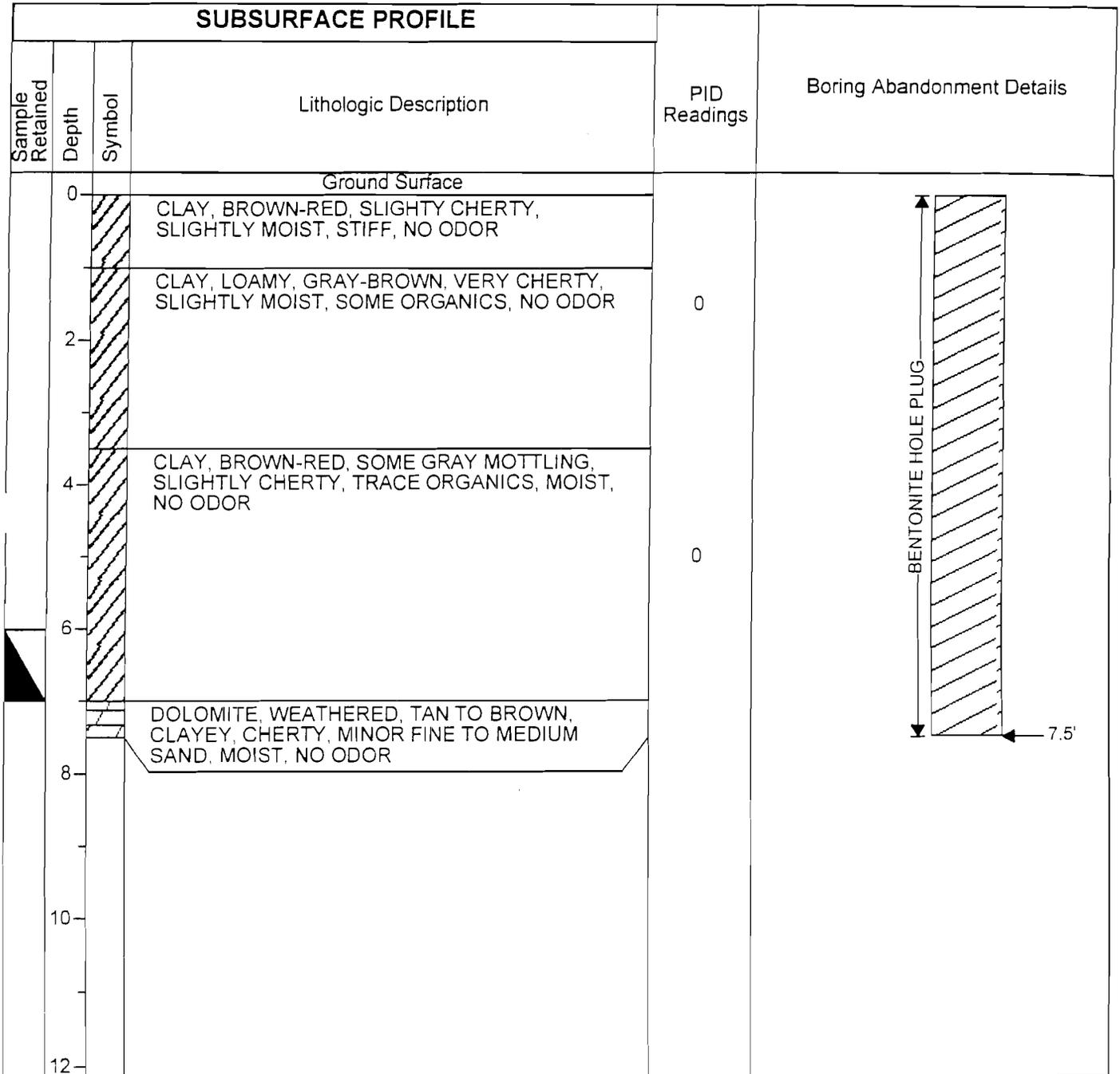
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE



Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 941.2

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-4

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

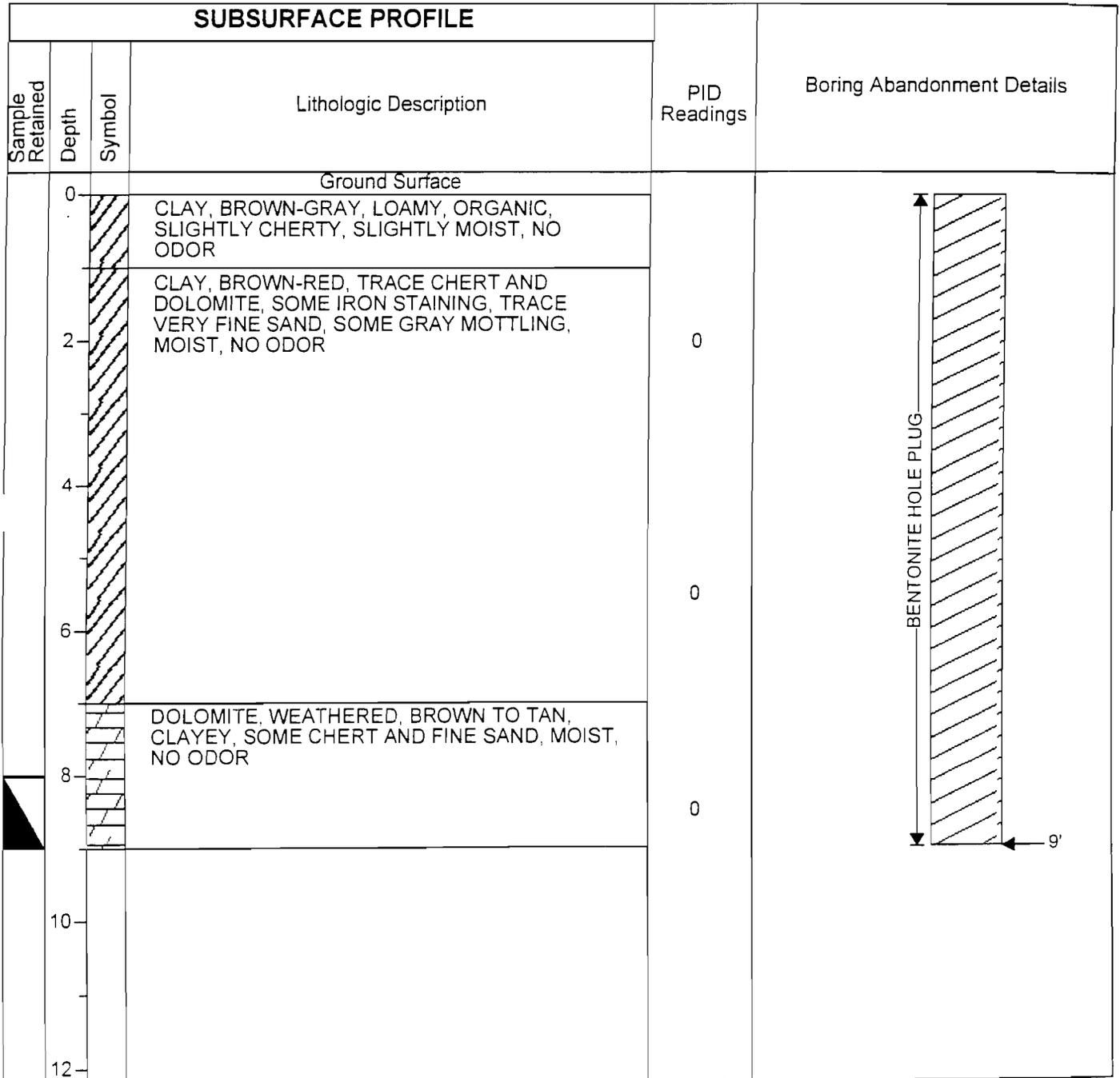
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE



Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 937.6

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-5

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

Geologist: S. Yankey

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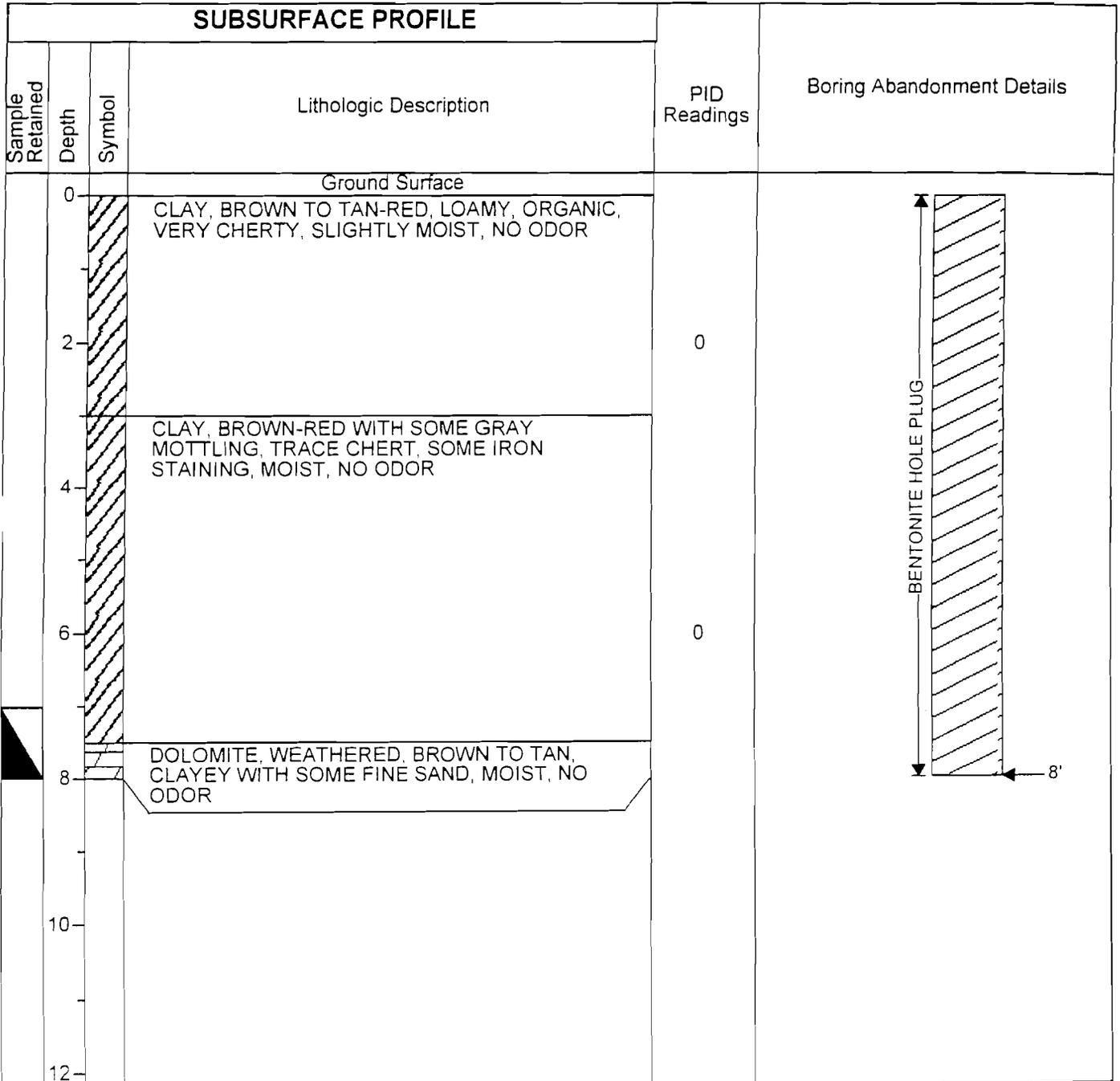
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SUBSURFACE PROFILE



Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 935.5

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-6

Project: UTC - Hulett Lagoon, Camdenton, Missouri

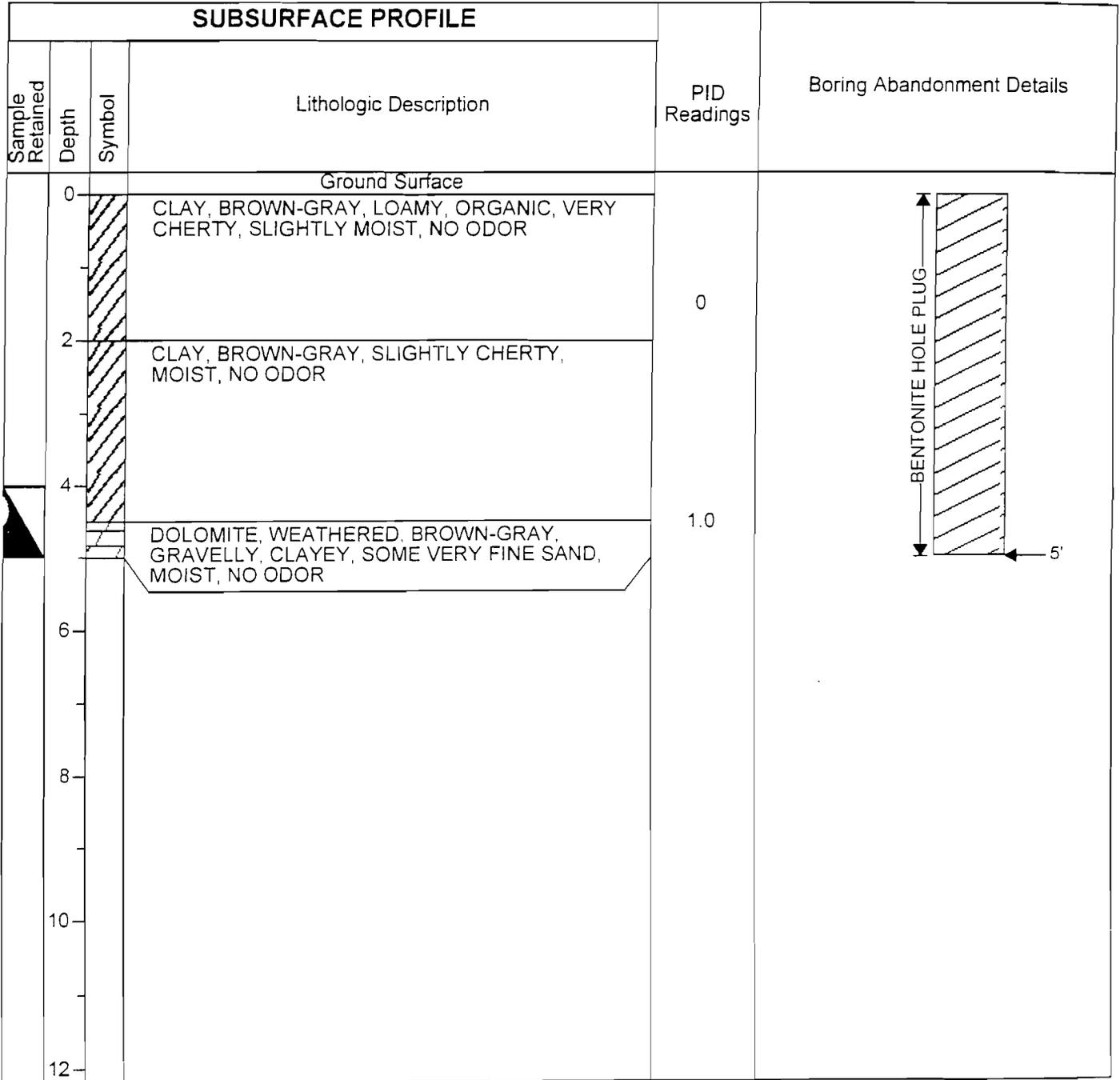
Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

Geologist: S. Yankey

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Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 934.3

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-7

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

Geologist: S. Yankey

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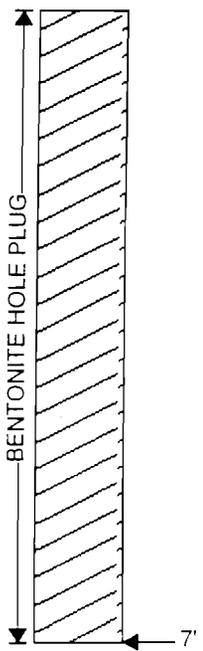
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SUBSURFACE PROFILE				PID Readings	Boring Abandonment Details
Sample Retained	Depth	Symbol	Lithologic Description		
	0		Ground Surface		
	0		CLAY, BROWN-GRAY, LOAMY, ORGANIC, SLIGHTLY CHERTY, SLIGHTLY MOIST, NO ODOR	0	
	2		CLAY, RED-BROWN, TRACE GRAY MOTTLING, TRACE IRON STAINING, SLIGHTLY CHERTY, MOIST, NO ODOR		
	4			0	
	6		DOLOMITE, WEATHERED, BROWN-GRAY, CLAYEY, SANDY, CHERTY, MOIST, NO ODOR		
	8				
	10				
	12				

Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 931.6

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-8

Project: UTC - Hulett Lagoon, Camdenton, Missouri

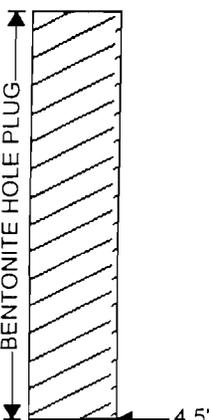
Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE				PID Readings	Boring Abandonment Details
Sample Retained	Depth	Symbol	Lithologic Description		
	0		Ground Surface		
			CLAY, BROWN-GRAY, LOAMY, ORGANIC, SLIGHTLY CHERTY, SLIGHTLY MOIST, NO ODOR		
	2		CLAY, RED-BROWN, TRACE GRAY MOTTLING, TRACE IRON STAINING, SLIGHTLY CHERTY, MOIST, NO ODOR	0	
	4		DOLOMITE, WEATHERED, BROWN-GRAY, SANDY, CHERTY, SLIGHTLY CLAYEY, MOIST, NO ODOR	0	
	6				
	8				
	10				
	12				

Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 931.1

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-9

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

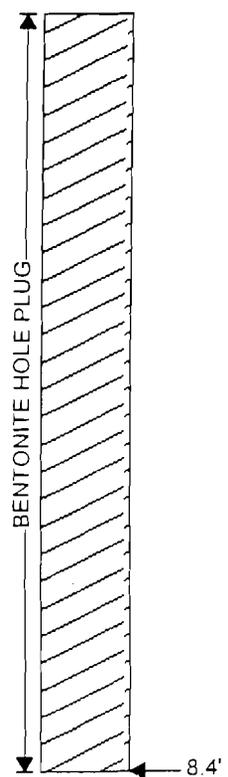
Geologist: S. Yankey

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SUBSURFACE PROFILE

Sample Retained	Depth	Symbol	Lithologic Description	PID Readings	Boring Abandonment Details
	0		Ground Surface		
	0		CLAY, BROWN-RED, CHERTY, ORGANIC, SLIGHTLY MOIST, NO ODOR		
	2		CLAY, BROWN-RED, SOME GRAY MOTTLING, SLIGHTLY CHERTY, MOIST, MORE BROWN-GRAY WITH DEPTH, NO ODOR	0	
	4		CLAY, BROWN-RED, TRACE GRAY MOTTLING, SLIGHTLY CHERTY/SANDY, SAND IS VERY FINE GRAINED, MOIST, NO ODOR	13.2	
	8		DOLOMITE, WEATHERED, BROWN-GRAY, SANDY (FINE GRAINED) CHERTY, MOIST, NO ODOR	0	
	10				
	12				



Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 931.8

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

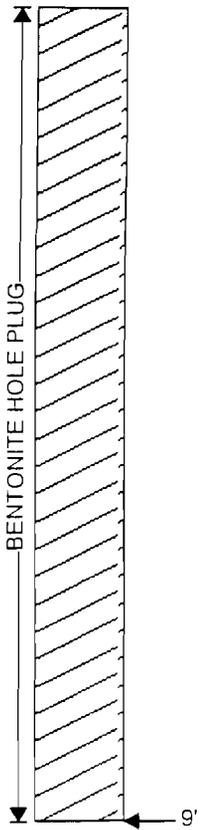
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE

Sample Retained	Depth	Symbol	Lithologic Description	PID Readings	Boring Abandonment Details
	0		Ground Surface		
	0		CLAY, BROWN-RED, CHERTY, ORGANIC, MOIST, NO ODOR	0	
	2			0	
	4		DOLOMITE, WEATHERED, GRAY-BROWN TO TAN, CHERTY, SANDY (FINE GRAINED), SLIGHTLY CLAYEY, MOIST, VERY SLIGHT SOLVENT-TYPE ODOR	0	
	6			0	
	8		CLAY, BROWN-RED AS ABOVE, MOIST, NO ODOR	0	
	8		DOLOMITE, WEATHERED AS ABOVE, VERY SLIGHT ODOR	0	
	10				
	12				

Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 937.8

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-11

Project: UTC - Hulett Lagoon, Camdenton, Missouri

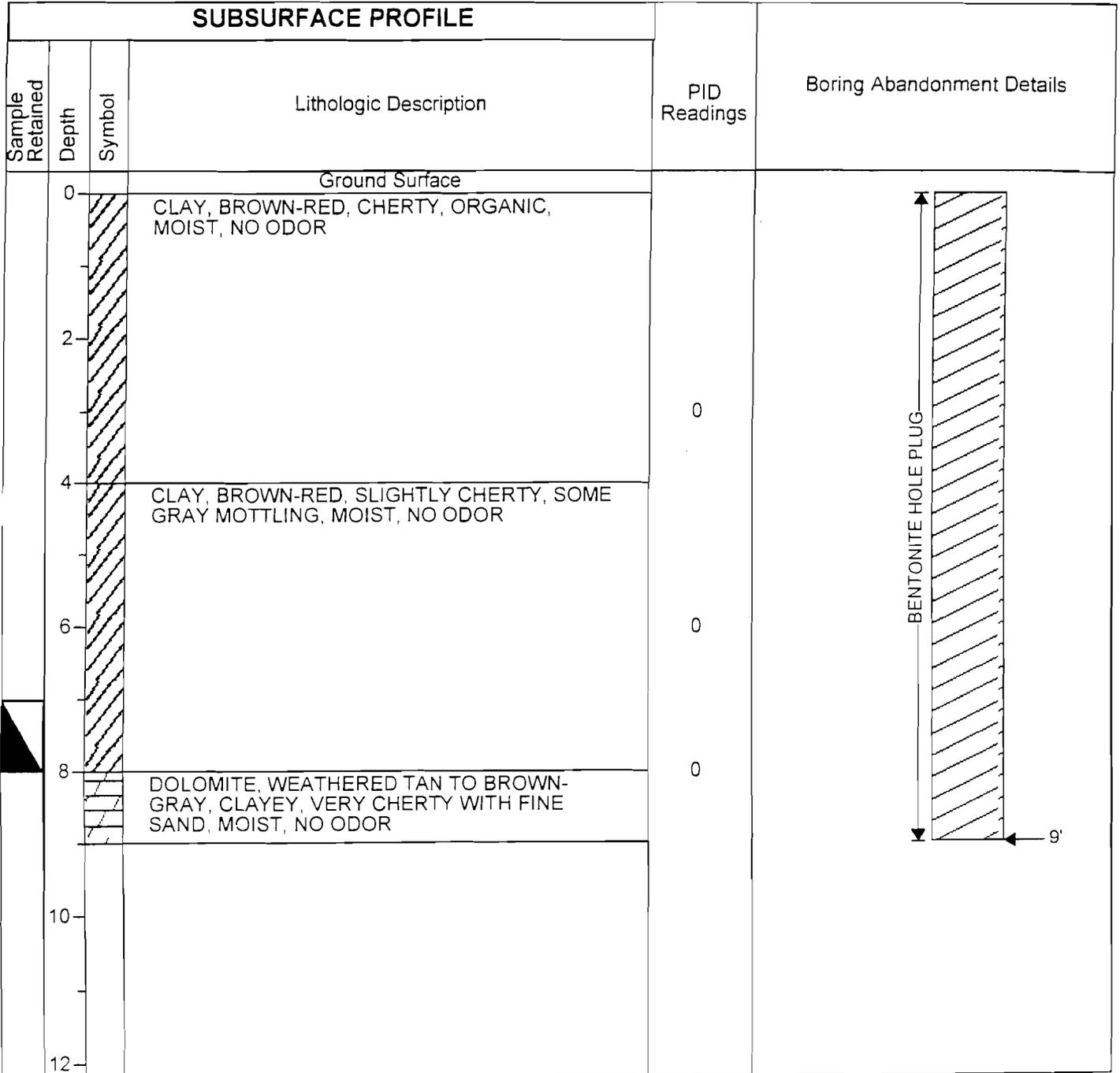
Client: UTC Hamilton Sundstrand

Location: Former Hulett Lagoon

Geologist: S. Yankey

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Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 938.6
Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-12

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

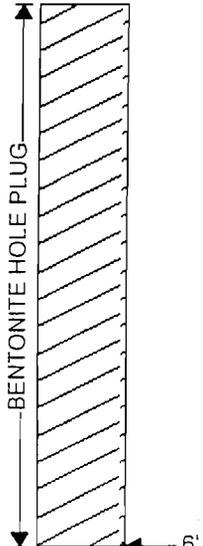
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE

Sample Retained	Depth	Symbol	Lithologic Description	PID Readings	Boring Abandonment Details
	0		Ground Surface		
	0		CLAY, BROWN-RED, SLIGHTLY ORGANIC, SLIGHTLY CHERTY, MOIST, NO ODOR	0	
	2				
	4		CLAY, YELLOW-BROWN, TRACE IRON STAINING, SOME GRAY MOTTLING, SLIGHTLY CHERTY, MINOR WEATHERED DOLOMITE AT BASE, NO ODOR	0	
	6				
	8				
	10				
	12				

Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 936.7

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-13

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

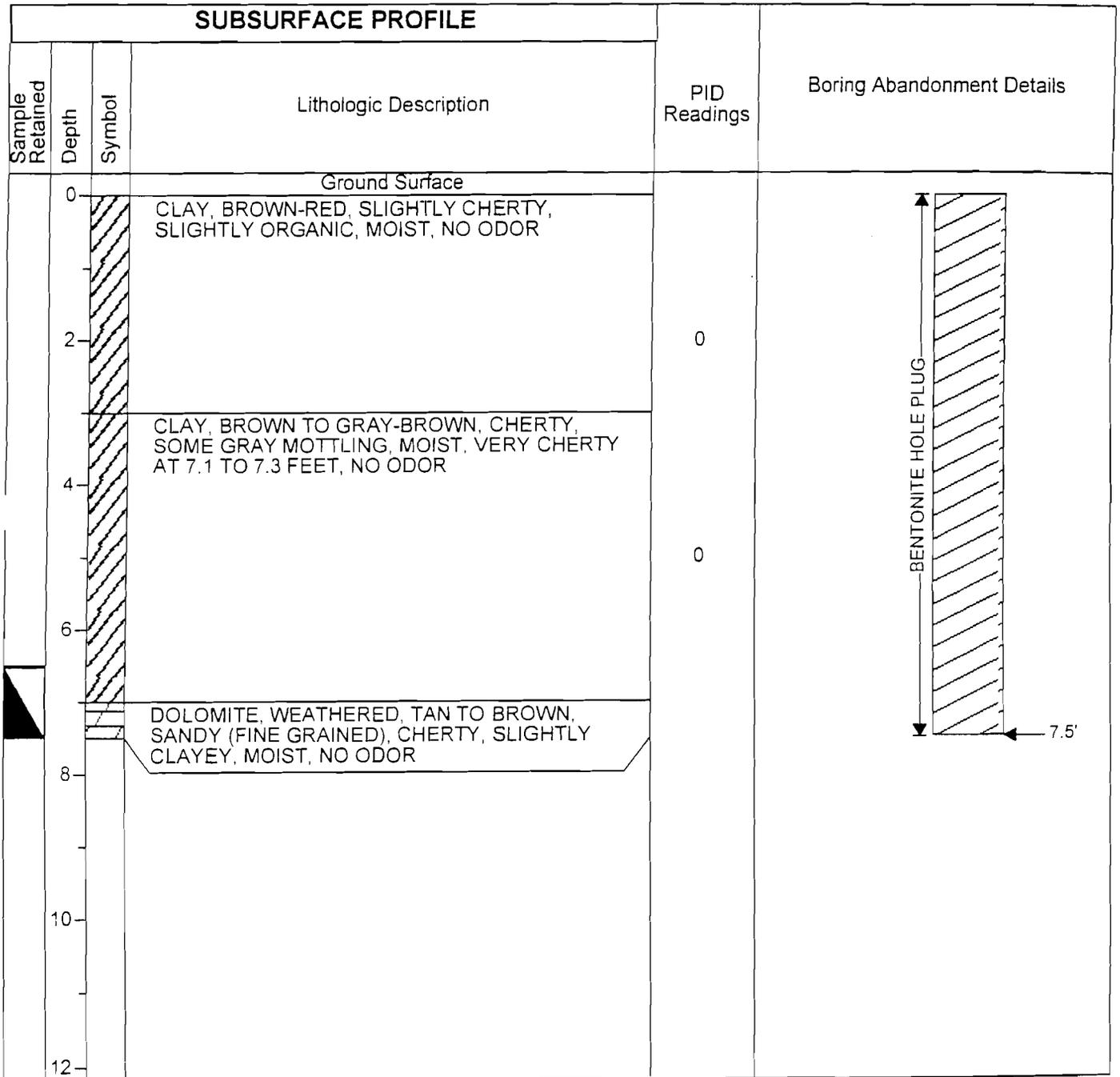
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE



Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 935.8
Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-14

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

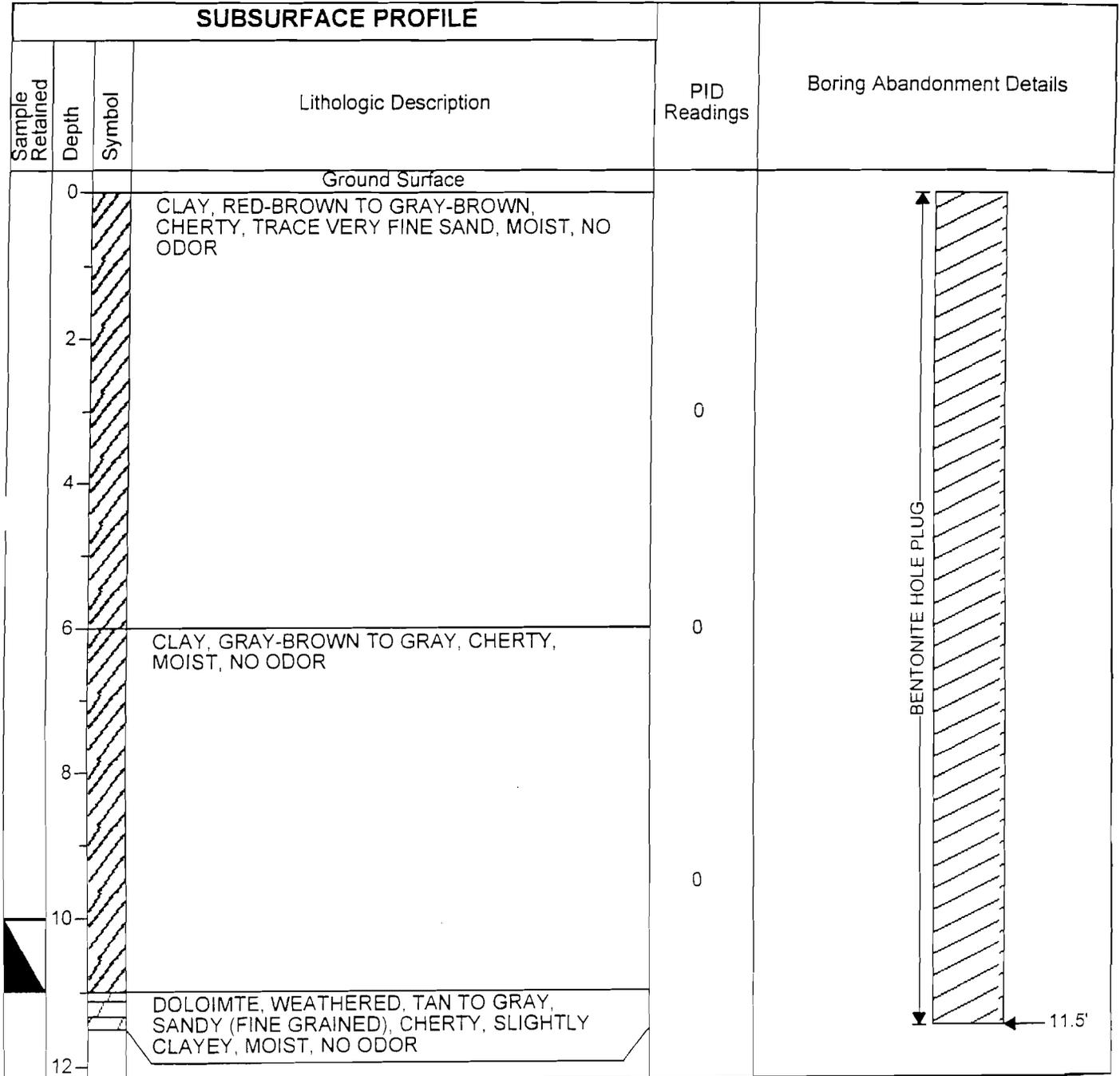
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE



Drilled By: PSA Environmental

Drill Method: Geoprobe

Drill Date: 6/13/00

Hole Size: 2"

Checked By: Ben Francka

Ground Elevation: 933.9

Sheet: 1

Project No: 003.22000.500

Log of Borehole: GP-15

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

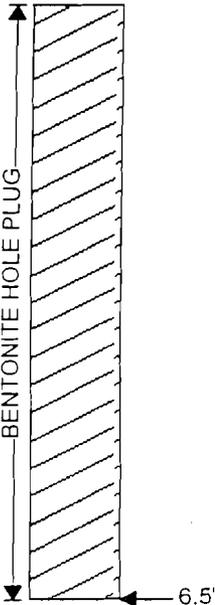
Location: Former Hulett Lagoon

Geologist: S. Yankey

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SUBSURFACE PROFILE

Sample Retained	Depth	Symbol	Lithologic Description	PID Readings	Boring Abandonment Details
	0		Ground Surface		
	0	Diagonal hatching	CLAY, BROWN-GRAY, LOAMY, ORGANIC, CHERTY, SLIGHTLY MOIST, NO ODOR	0	
	2	Diagonal hatching	CLAY, RED-BROWN, SOME GRAY MOTTLING, SLIGHTLY CHERTY, MOIST, NO ODOR		
	4	Diagonal hatching	CLAY, GRAY-BROWN, SOME GRAY MOTTLING, VERY CHERTY, TRACE FINE GRAINED SAND, NO ODOR	0	
	6	Diagonal hatching			
	8				
	10				
	12				

Drilled By: PSA Environmental
Drill Method: Geoprobe
Drill Date: 6/13/00
Hole Size: 2"

Checked By: Ben Francka
Ground Elevation: 935.2

Sheet: 1

Project No: 003.22000.200

Log of Borehole: MW-7

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

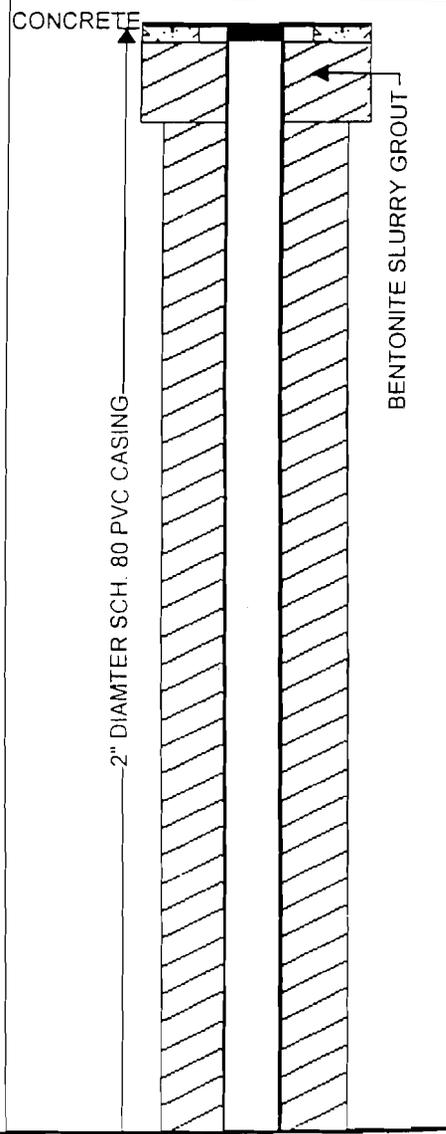
Location: Behind Hulett Chevrolet

Geologist: B. Francka

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SUBSURFACE PROFILE			
Depth	Symbol	Lithologic Description	PID Readings (ppm)
0		Ground Surface	
0 - 10		GRAVEL/SILT FILL	0
10 - 20		CLAY, RED-BROWN, CHERTY TO VERY CHERTY, SLIGHTLY MOIST	
20 - 30		DOLOMITE, WHITE/GRAY, SLIGHTLY CHERTY	0
30 - 40		DOLOMITE, TAN/BROWN, SLIGHTLY MOIST, CHERTY	0
40 - 45		DOLOMITE, WHITE/GRAY, SLIGHTLY CHERTY	0
45 - 50		DOLOMITE, TAN/YELLOW, CHERTY	0
50 - 55		DOLOMITE, WHITE/GRAY, SLIGHTLY CHERTY	0
55 - 60		DOLOMITE, TAN/YELLOW, MOIST, CHERTY	0
60 - 75		DOLOMITE, WHITE/LIGHT GRAY, SLIGHTLY CHERTY	0
75 - 100		DOLOMITE, TAN/YELLOW, CHERTY, SATURATED FROM 103 TO 108 FEET AND VERY CHERTY	0
100 - 110		DOLOMITE, LIGHT TAN, MOIST, CHERTY	0



Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 6/7/00 to 6/9/00
Hole Size: 0' - 10' 8.25", 10' - TD 6.5"

Checked By: Ben Francka
Ground Elevation: 1009.4
Top of Casing Elevation: 1009.07
Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-7

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Behind Hulett Chevrolet

Geologist: B. Francka

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SUBSURFACE PROFILE

Depth	Symbol	Lithologic Description	PID Readings (ppm)	Well Completion Details
130		DOLOMITE, LIGHT TAN, MOIST, CHERTY DOLOMITE, WHITE/GRAY, SLIGHTLY MOIST, CHERTY, VERY MOIST FROM 144 TO 150 FEET, MORE TAN WITH DEPTH	0	<p>2" DIA. SCH. 80 PVC WELL SCREEN W/ 0.02" SLOT 12/20 SAND FILTER PACK BENTONITE HOLE PLUG</p>
150		DOLOMITE, YELLOW/TAN, SATURATED	0	
170		DOLOMITE, WHITE/TAN, DRY	0	
190		DOLOMITE, YELLOW/TAN, VERY CHERTY, VERY COARSE, SATURATED	0	
210		DOLOMITE, WHITE/GRAY, SLIGHTLY MOIST		

Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 6/7/00 to 6/9/00

Hole Size: 0' - 10' 8.25", 10' - TD 6.5"

Checked By: Ben Francka

Ground Elevation: 1009.4

Top of Casing Elevation: 1009.07

Sheet: 2 of 2

Project No: 003.22000.200

Log of Borehole: MW-8

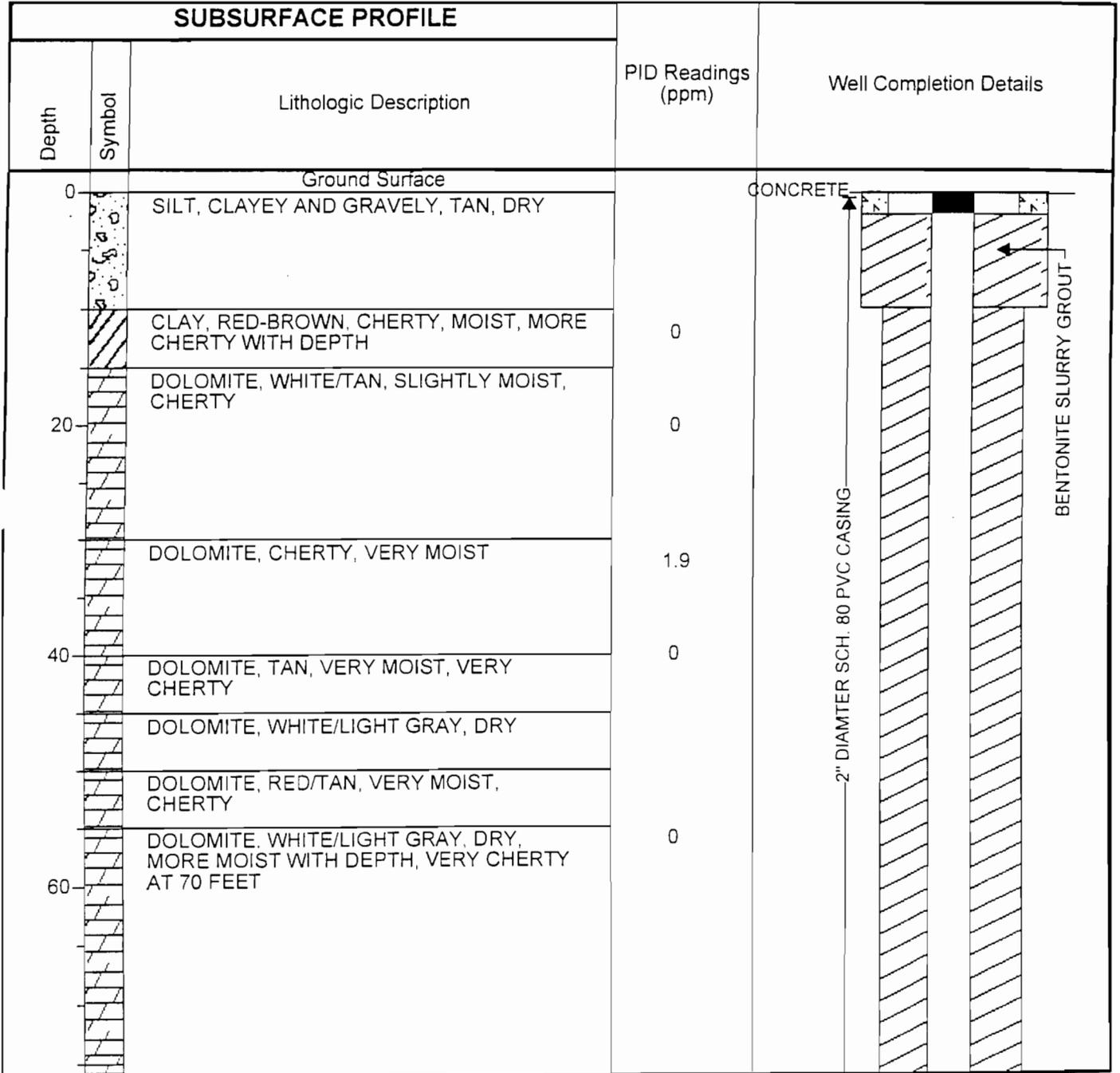
Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: SW edge/Former Hulett Lagoon Geologist: B. Francka

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Drilled By: Layne Western
 Drill Method: Air Rotary
 Drill Date: 6/9/00 to 6/12/00
 Hole Size: 0' - 10' 8.25"/10' - TD 6.5"

Checked By: Ben Francka
 Ground Elevation: 950.3
 Top of Casing Elevation: 950.14
 Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-9

Project: UTC - Hulett Lagoon, Camdenton, Missouri

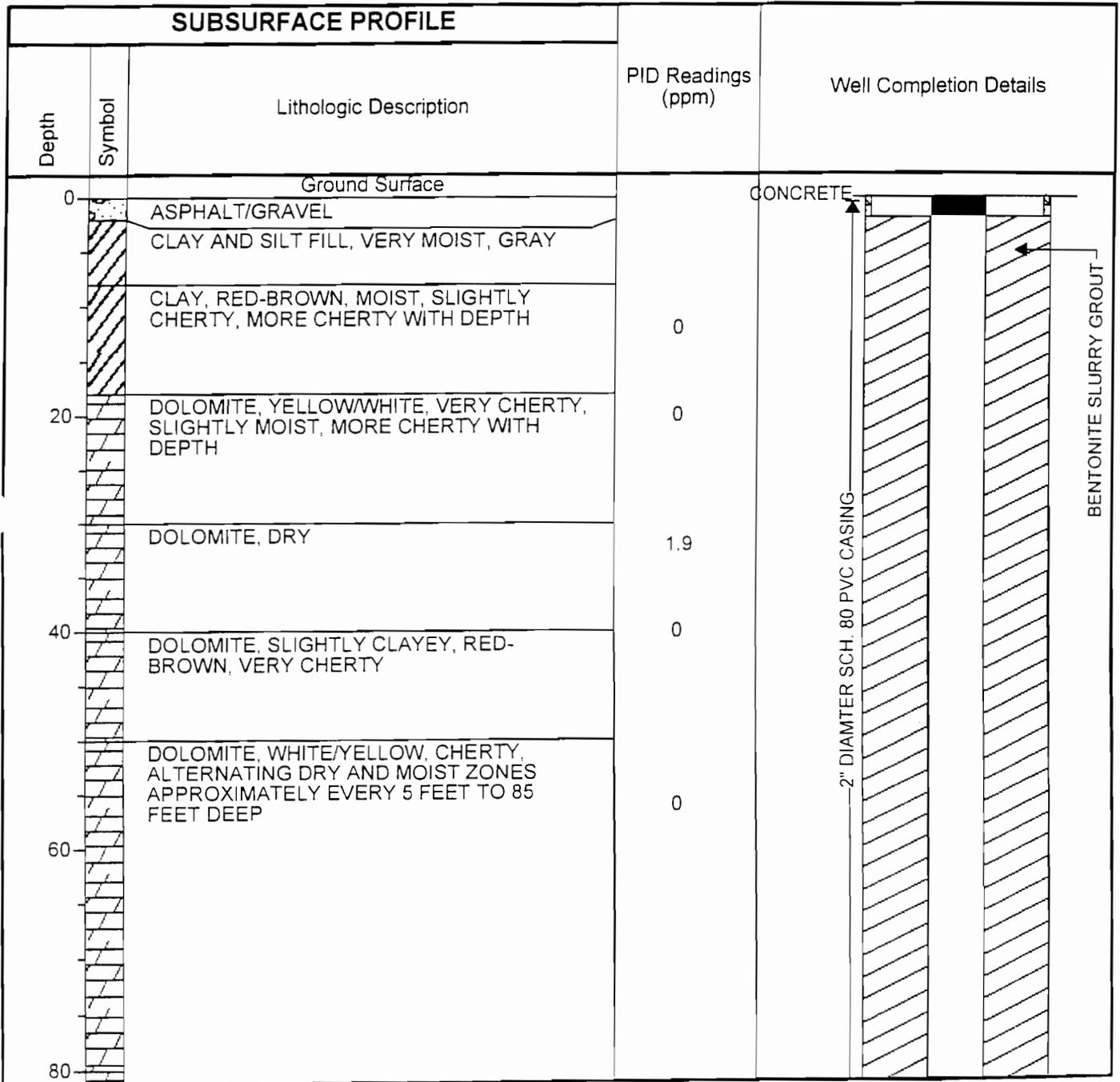
Client: UTC Hamilton Sundstrand

Location: End of Mulberry Drive

Geologist: B. Francka

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Drilled By: Layne Western
 Drill Method: Air Rotary
 Drill Date: 6/21/00 to 6/22/00
 Hole Size: 6.5"

Checked By: Ben Francka
 Ground Elevation: 965.5
 Top of Casing Elevation: 965.28
 Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-9

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: End of Mulberry Drive

Geologist: B. Francka

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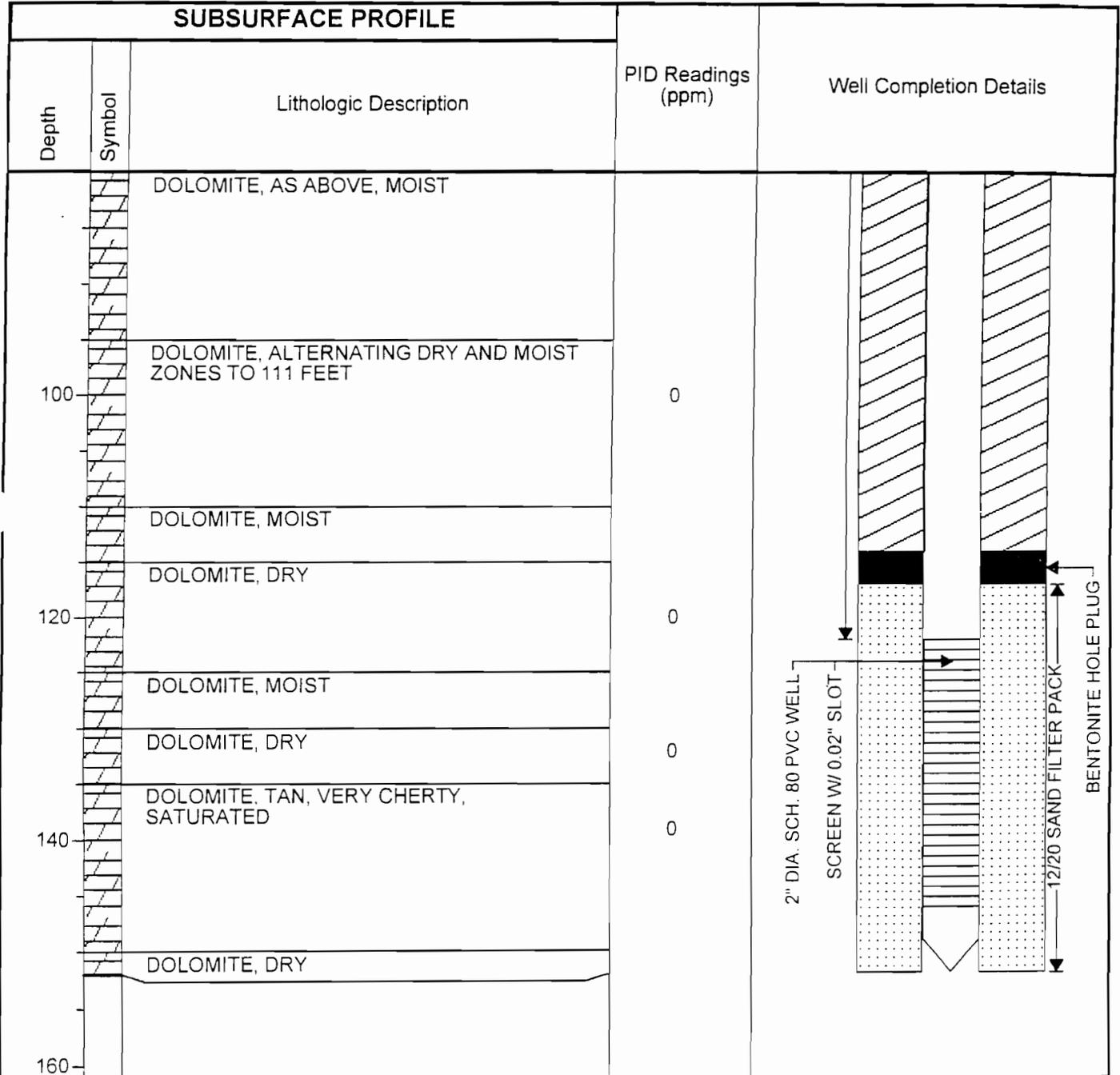
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Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 6/21/00 to 6/22/00

Hole Size: 6.5"

Checked By: Ben Francka

Ground Elevation: 965.5

Top of Casing Elevation: 965.28

Sheet: 2 of 2

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

(INITIAL)

Client: UTC Hamilton Sundstrand

Location: Near Blair Cemetery

Geologist: B. Francka

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SUBSURFACE PROFILE

Depth	Symbol	Lithologic Description	PID Readings (ppm)	Well Completion Details
0		Ground Surface		NATIVE SOIL
		SILT, BROWN/TAN, GRAVELY, DRY, SLIGHTLY CLAYEY		
		CLAY, RED-BROWN, CHERTY, SLIGHTLY MOIST		
		DOLOMITE, WHITE/TAN, VERY CHERTY	0	
20		CLAY, RED-BROWN AS ABOVE		
		DOLOMITE, AS ABOVE	0	
		CLAY AS ABOVE, SATURATED		
		DOLOMITE, TAN/WHITE, VERY MOIST	1.9	
		CLAY, VERY CHERTY, SLIGHTLY MOIST		
40		DOLOMITE, AS ABOVE, VERY CHERTY, DRY	0	
		CLAY, VERY CHERTY, DRY		
		DOLOMITE, WHITE/LIGHT GRAY, MORE TAN WITH DEPTH AND MORE MOIST WITH DEPTH	0	
60		DOLOMITE, WHITE, MORE TAN WITH DEPTH		
		DOLOMITE, YELLOW-TAN, VERY MOIST, COARSE		
80		DOLOMITE, WHITE		
		DOLOMITE, TAN, MOIST		
		DOLOMITE, WHITE		
		DOLOMITE, TAN, SLITGHTLY MOIST		
100		DOLOMITE, WHITE, COARSER WITH DEPTH, SLIGHTLY MOIST	0	

BENTONITE SLURRY GROUT

Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 6/13/00 to 6/15/00

Hole Size: 0' - 10' 8.25", 10' - TD 6.5"

Checked By: Ben Francka

Ground Elevation: Not Applicable

Top of Casing Elevation: Not Applicable

Sheet: 1 of 3

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

(INITIAL)

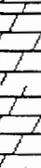
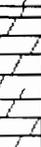
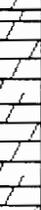
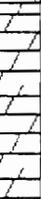
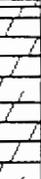
Client: UTC Hamilton Sundstrand

Location: Near Blair Cemetery

Geologist: B. Francka

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SUBSURFACE PROFILE		Lithologic Description	PID Readings (ppm)	Well Completion Details
Depth	Symbol			
		DOLOMITE, AS ABOVE		 BENTONITE SLURRY GROUT
		DOLOMITE, TAN/WHITE, DRY	0	
130		DOLOMITE, WHITE/LIGHT GRAY, DRY, CHERTY, MORE MOIST WITH DEPTH	0	
		DOLOMITE, AS ABOVE, VERY MOIST	0	
150		DOLOMITE, AS ABOVE, SLIGHTLY MOIST		
170		DOLOMITE, WHITE/GRAY, SLIGHTLY MOIST, COARSE		
190		DOLOMITE, WHITE/LIGHT GRAY, CHERTY, DRY		
210				

Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 6/13/00 to 6/15/00
Hole Size: 0' - 10' 8.25", 10' - TD 6.5"

Checked By: Ben Francka
Ground Elevation: Not Applicable
Top of Casing Elevation: Not Applicable
Sheet: 2 of 3

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

(INITIAL)

Client: UTC Hamilton Sundstrand

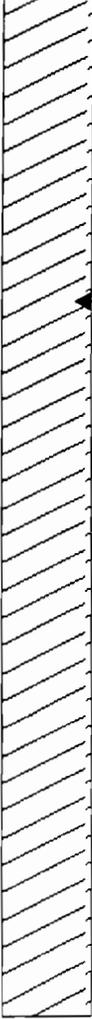
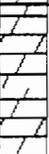
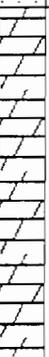
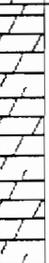
Location: Near Blair Cemetery

Geologist: B. Francka

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SUBSURFACE PROFILE

Depth	Symbol	Lithologic Description	PID Readings (ppm)	Well Completion Details
		DOLOMITE, TAN, CHERTY, VERY MOIST, WHITER WITH DEPTH		 BENTONITE SLURRY GROUT
240		DOLOMITE, TAN, VERY MOIST		
260		SANDSTONE, TAN, FINE GRAINED, WELL SORTED OCCASIONAL GREEN SHALE		
280		DOLOMITE, WHITE/LIGHT GRAY, CHERTY TO VERY CHERTY, SLIGHTLY MOIST TO MOIST		
300		DOLOMITE, AS ABOVE		
320				

Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 6/13/00 to 6/15/00

Hole Size: 0' - 10' 8.25", 10' - TD 6.5"

Checked By: Ben Francka

Ground Elevation: Not Applicable

Top of Casing Elevation: Not Applicable

Sheet: 3 of 3

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Near Blair Cemetery

Geologist: B. Francka

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SUBSURFACE PROFILE

Depth	Symbol	Lithologic Description	PID Readings (ppm)	Well Completion Details
0		Ground Surface		
0 - 27		INTERBEDDED CHERT/RED-BROWN CLAY AND DOLOMITE TO 27 FEET, LOST CIRCULATION AT 27 TO 33 FEET IN DOLOMITE	0	<p>CONCRETE</p> <p>10.5" DIAMETER STEEL SURFACE CASING</p> <p>2" DIAMETER SCH. 80 PVC CASING</p> <p>CEMENT</p> <p>BENTONITE SLURRY GROUT</p>
27 - 58		DOLOMITE, TAN/BROWN/CREAM, FRACTURED, MOIST, VERY CHERTY TO 58 FEET	0	
58 - 80		DOLOMITE, TAN/BROWN, DRY	0	
80 - 100		DOLOMITE, GRAY, MOIST	0	
100 - 138		DOLOMITE, DRY	0	
138 - 139		DOLOMITE, TAN, VERY MOIST FROM 138 TO 139 FEET (START DRILLING WITH WATER INJECTION AT 140 FEET)	0	
139 - 164		DOLOMITE, GRAY, APPARENT FRACTURES FROM 164 TO 169 FEET	0	
164 - 169			0	

Drilled By: Layne Western
 Drill Method: Air Rotary
 Drill Date: 8/2/00 to 9/6/00
 Hole Size: 0' - 40' 14", 40' - TD 10"

Checked By: Ben Francka
 Ground Elevation: 947.88
 Top of Casing Elevation: 947.45 (top of well seal)
 Sheet: 1 of 3

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

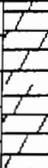
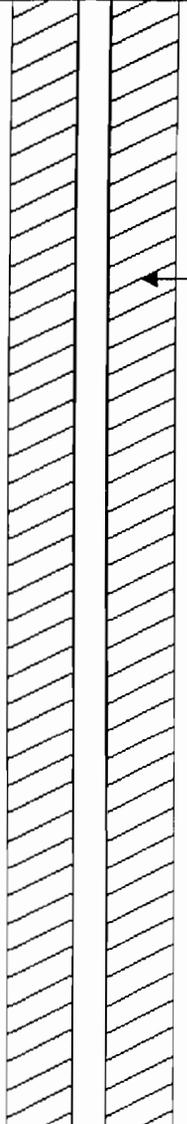
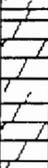
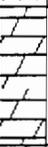
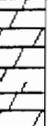
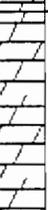
Client: UTC Hamilton Sundstrand

Location: Near Blair Cemetery

Geologist: B. Francka

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SUBSURFACE PROFILE				PID Readings (ppm)	Well Completion Details
Depth	Symbol	Lithologic Description			
180		DOLOMITE, AS ABOVE		0	 <p>BENTONITE SLURRY GROUT</p>
200		DOLOMITE, GRAY WITH WHITE AND BLUE CHERT, POROUS/FRACTURED		0	
220		DOLOMITE, LIGHT GRAY TO MILKY TAN, CHERTY		0	
220		SANDSTONE, BROWN, MOIST, WELL SORTED, MEDIUM GRAINED		0	
240		DOLOMITE, TAN TO GRAY, FACTURED, WHITE CHERT FROM 240 TO 245 FEET		0	
260		DOLOMITE, WHITE CRYSTALLINE TO TAN		0	
280		DOLOMITE, LIGHT GRAY		0	
300				0	
320		DOLOMITE, LIGHT GRAY TO WHITE, COARSE		0	

Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 8/2/00 to 9/6/00
Hole Size: 0' - 40' 14", 40' - TD 10"

Checked By: Ben Francka
Ground Elevation: 947.88
Top of Casing Elevation: 947.45 (top of well seal)
Sheet: 2 of 3

Project No: 003.22000.200

Log of Borehole: MW-10

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Near Blair Cemetery

Geologist: B. Francka

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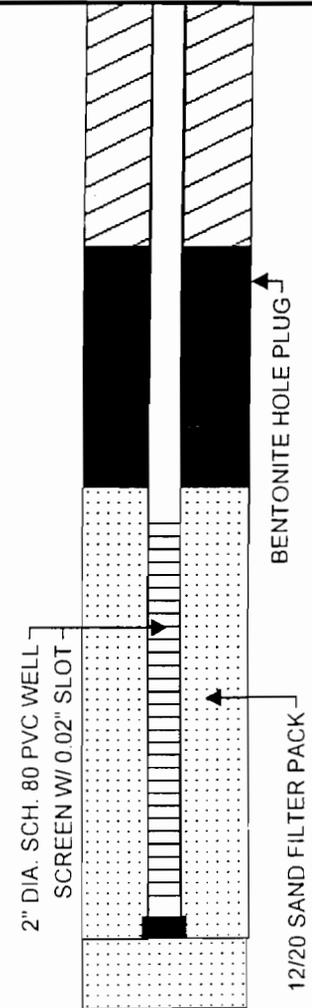
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SUBSURFACE PROFILE			
Depth	Symbol	Lithologic Description	PID Readings (ppm)
		DOLOMITE, AS ABOVE	0
340		DOLOMITE, TAN TO GRAY, COARSE, OCCASIONAL GREEN SHALE	0
360		DOLOMITE, TAN, COARSE	0
380		DOLOMITE, LIGHT GRAY, POROUS, OCCASIONAL BLACK CHERT	0
400		DOLOMITE, TAN-GRAY WITH WHITE/BLUE CHERT, VERY FRACTURED AT 395 FEET WITH GRAY CHERT, VERY CHERTY AT 413 FEET WITH VERY DARK GRAY CHERT, NO CHERT AT 420 FEET BUT VERY FRACTURED	0
420		DOLOMITE, POROUS, VERY CHERTY (BLUE/WHITE)	0
440		DOLOMITE, TAN, LESS POROUS FROM 440 TO 445 FEET	0
460		DOLOMITE, VERY CHERTY (WHITE/GRAY/BLACK)	0
480		DOLOMITE, GRAY, SLIGHTLY CHERTY (TAN)	0



Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 8/2/00 to 9/6/00

Hole Size: 0' - 40' 14", 40' - TD 10"

Checked By: Ben Francka

Ground Elevation: 947.88

Top of Casing Elevation: 947.45 (top of well seal)

Sheet: 3 of 3

Project No: 003.22000.200

Log of Borehole: MW-11

Project: UTC - Hulett Lagoon, Camdenton, Missouri

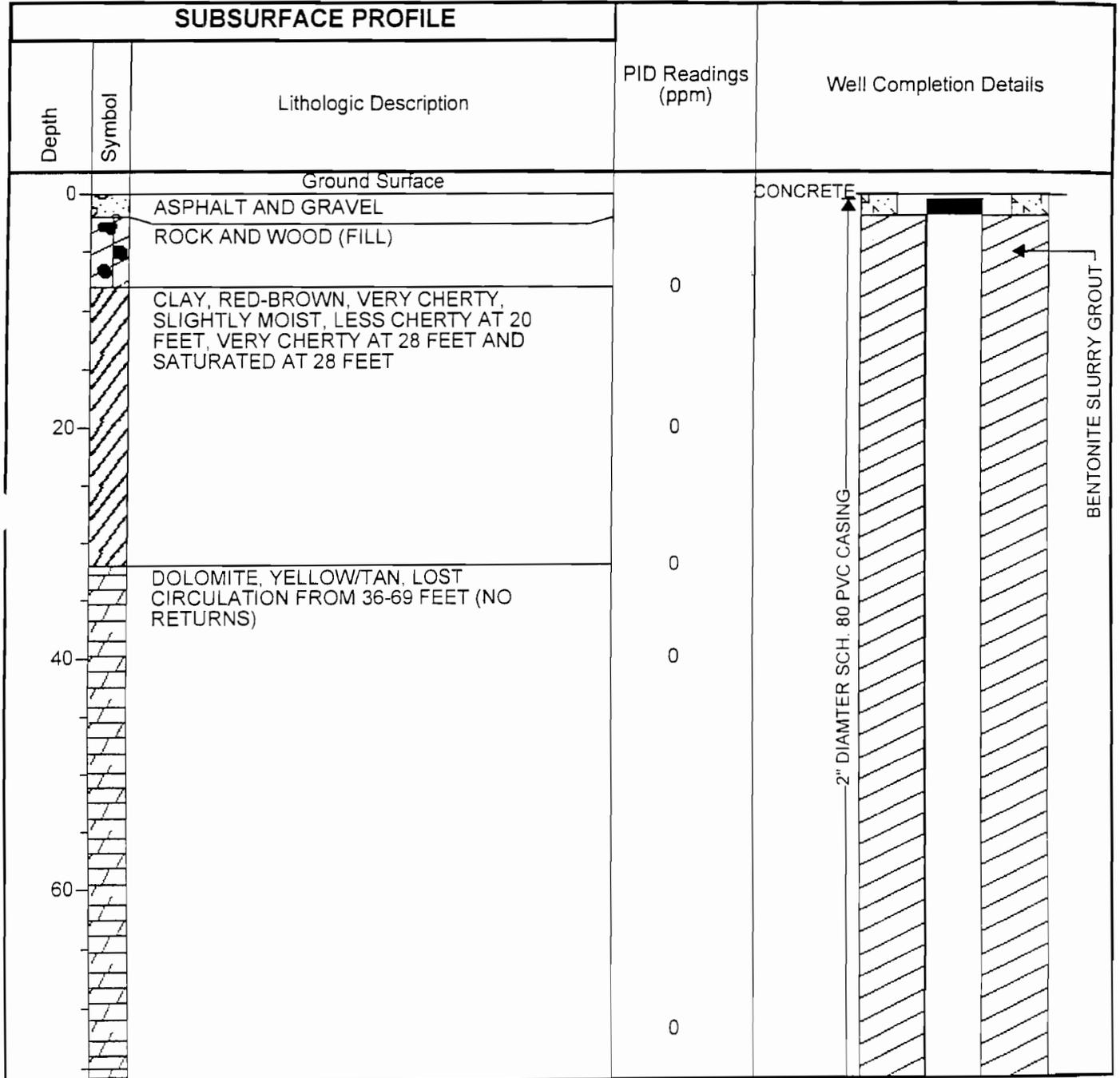
Client: UTC Hamilton Sundstrand

Location: Cul-De-Sac Bentree Lane

Geologist: B. Francka

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Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 6/19/00 to 6/20/00
Hole Size: 6.5"

Checked By: Ben Francka
Ground Elevation: 920.6
Top of Casing Elevation: 920.32
Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-11

Project: UTC - Hulett Lagoon, Camdenton, Missouri

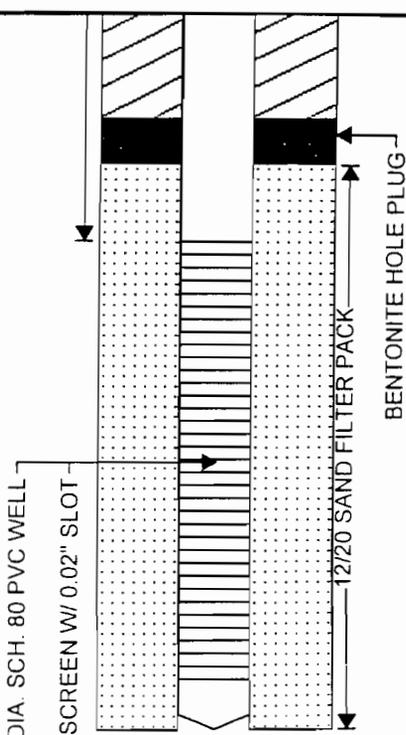
Client: UTC Hamilton Sundstrand

Location: Cul-De-Sac Bentree Lane Geologist: B. Francka

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SUBSURFACE PROFILE

Depth	Symbol	Lithologic Description	PID Readings (ppm)	Well Completion Details
		DOLOMITE, YELLOW/TAN, VERY CHERTY, COARSE, VERY MOIST TO SATURATED, MORE CHERTY WITH DEPTH	0	
		DOLOMITE, AS ABOVE, DRY		
95		DOLOMITE, AS ABOVE, VERY MOIST, CHERTY		
		DOLOMITE, YELLOW/TAN, VERY CHERTY, SATURATED	0	
115				
135				

Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 6/19/00 to 6/20/00
Hole Size: 6.5"

Checked By: Ben Francka
Ground Elevation: 920.6
Top of Casing Elevation: 920.32
Sheet: 2 of 2

Project No: 003.22000.200

Log of Borehole: MW-12

Project: UTC - Hulett Lagoon, Camdenton, Missouri

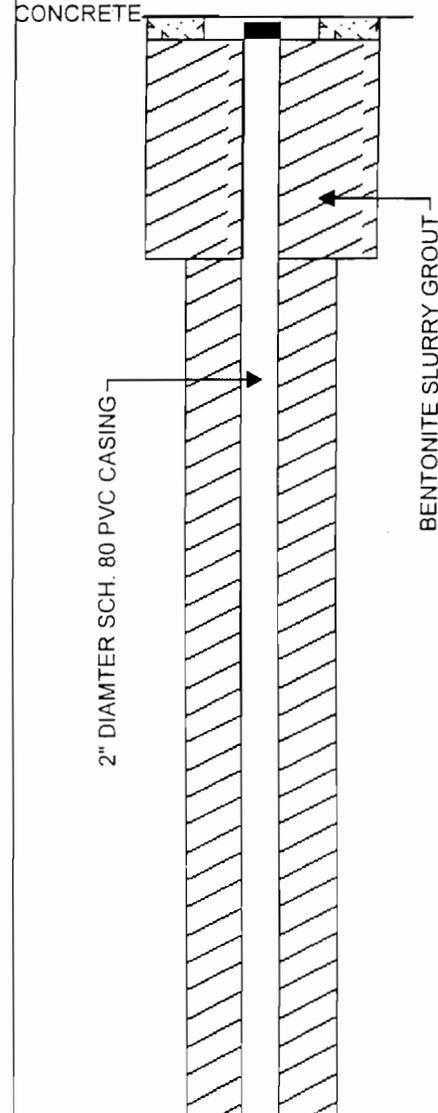
Client: UTC Hamilton Sundstrand

Location: On Dawson Road Near Modine **Geologist:** B. Francka

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SUBSURFACE PROFILE			
Depth	Symbol	Lithologic Description	PID Readings (ppm)
0		Ground Surface	
0 - 8	Diagonal hatching	ASPHALT/GRAVEL/SILT/CLAY TO 8 FEET THEN NATIVE CLAY, TAN-RED TO RED-BROWN, SLIGHTLY CHERTY TO VERY CHERTY AT 17 FEET, SLIGHTLY MOIST TO MOIST	0
8 - 20	Diagonal hatching	DOLOMITE, GRAY/WHITE, HARD, DRY, SLIGHTLY CHERTY	0
20 - 40	Diagonal hatching	DOLOMITE, TAN, SLIGHTLY MOIST, SLIGHTLY CHERTY	0
40 - 60	Diagonal hatching	DOLOMITE, LIGHT TAN, VERY MOIST, CHERTY (WHITE), LESS MOIST WITH DEPTH	0
60 - 80	Diagonal hatching	DOLOMITE, GRAY/WHITE, DRY, CHERTY (DARK GRAY)	0
80 - 92	Diagonal hatching		0



CONCRETE

2" DIAMETER SCH. 80 PVC CASING

BENTONITE SLURRY GROUT

Drilled By: Layne Western
 Drill Method: Air Rotary
 Drill Date: 10/31/00 to 11/2/00
 Hole Size: 0' - 20' 12", 20' to TD 7 7/8"

Checked By: Ben Francka
 Ground Elevation: 958.24
 Top of Casing Elevation: 957.92
 Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-12

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: On Dawson Road Near Modine Geologist: B. Francka

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SUBSURFACE PROFILE		Lithologic Description	PID Readings (ppm)	Well Completion Details
Depth	Symbol			
110		DOLOMITE, AS ABOVE, VERY CHERTY, (LIGHT GRAY)	0	<p>12/20 SAND FILTER PACK</p> <p>BENTONITE HOLE PLUG</p> <p>2" DIA. SCH. 80 PVC WELL SCREEN W/ 0.02" SLOT</p>
130		DOLOMITE, TAN, VERY CHERTY (GRAY), SATURATED	0	
150			0	
170				

Drilled By: Layne Western
Drill Method: Air Rotary
Drill Date: 10/31/00 to 11/2/00
Hole Size: 0' - 20' 12", 20' to TD 7 7/8"

Checked By: Ben Francka
Ground Elevation: 958.24
Top of Casing Elevation: 957.92
Sheet: 2 of 2

Project No: 003.22000.200

Log of Borehole: MW-13

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: LDS Church Lot

Geologist: B. Francka

SECOR

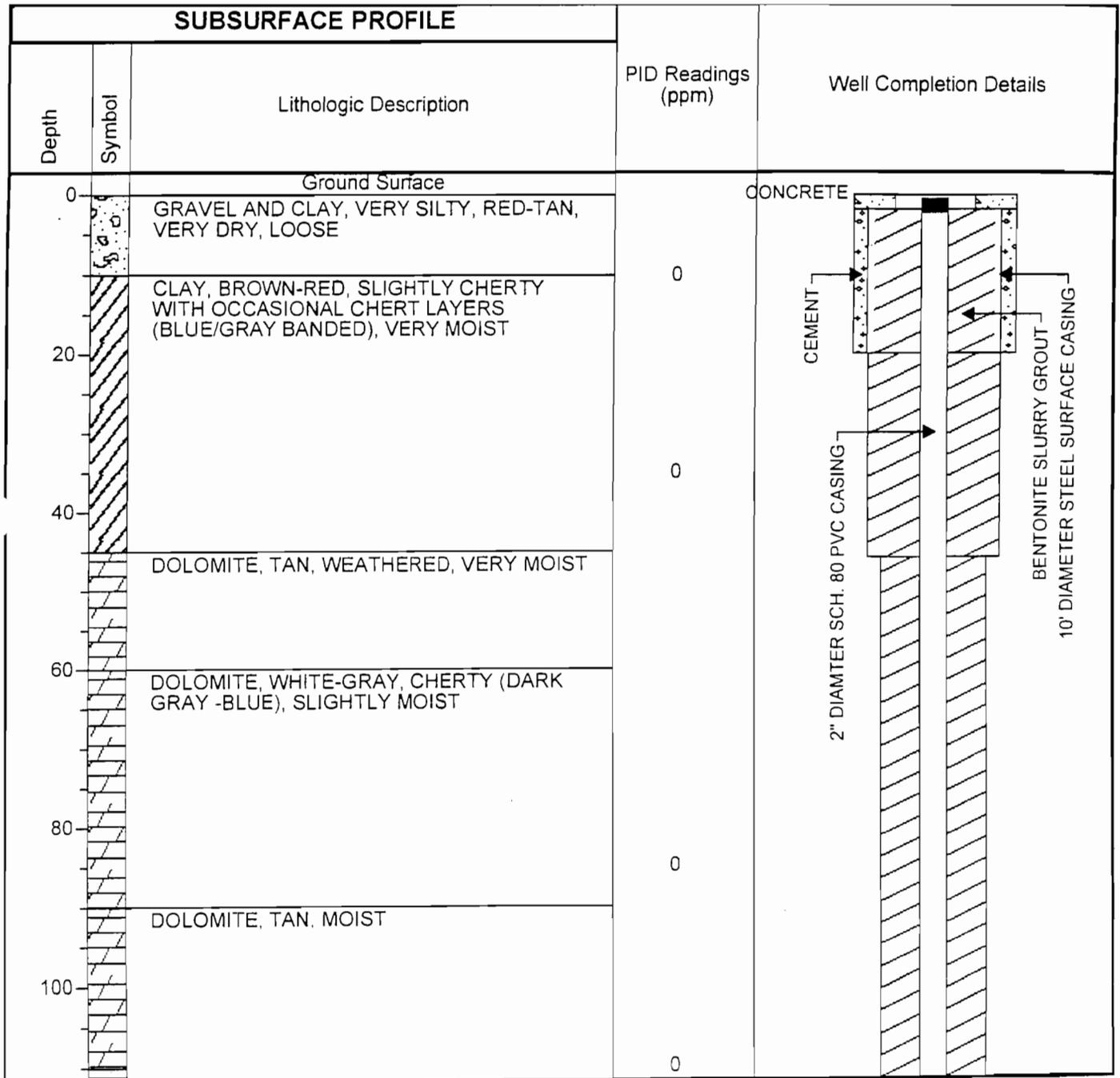
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Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 11/2/00 to 11/08/00

Hole Size: 0'-20' 12", 20'-46' 9 7/8", 46'-TD 7 7/8"

Checked By: Ben Francka

Ground Elevation: 994.89

Top of Casing Elevation: 994.58

Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-14

Project: UTC - Hulett Lagoon, Camdenton, Missouri

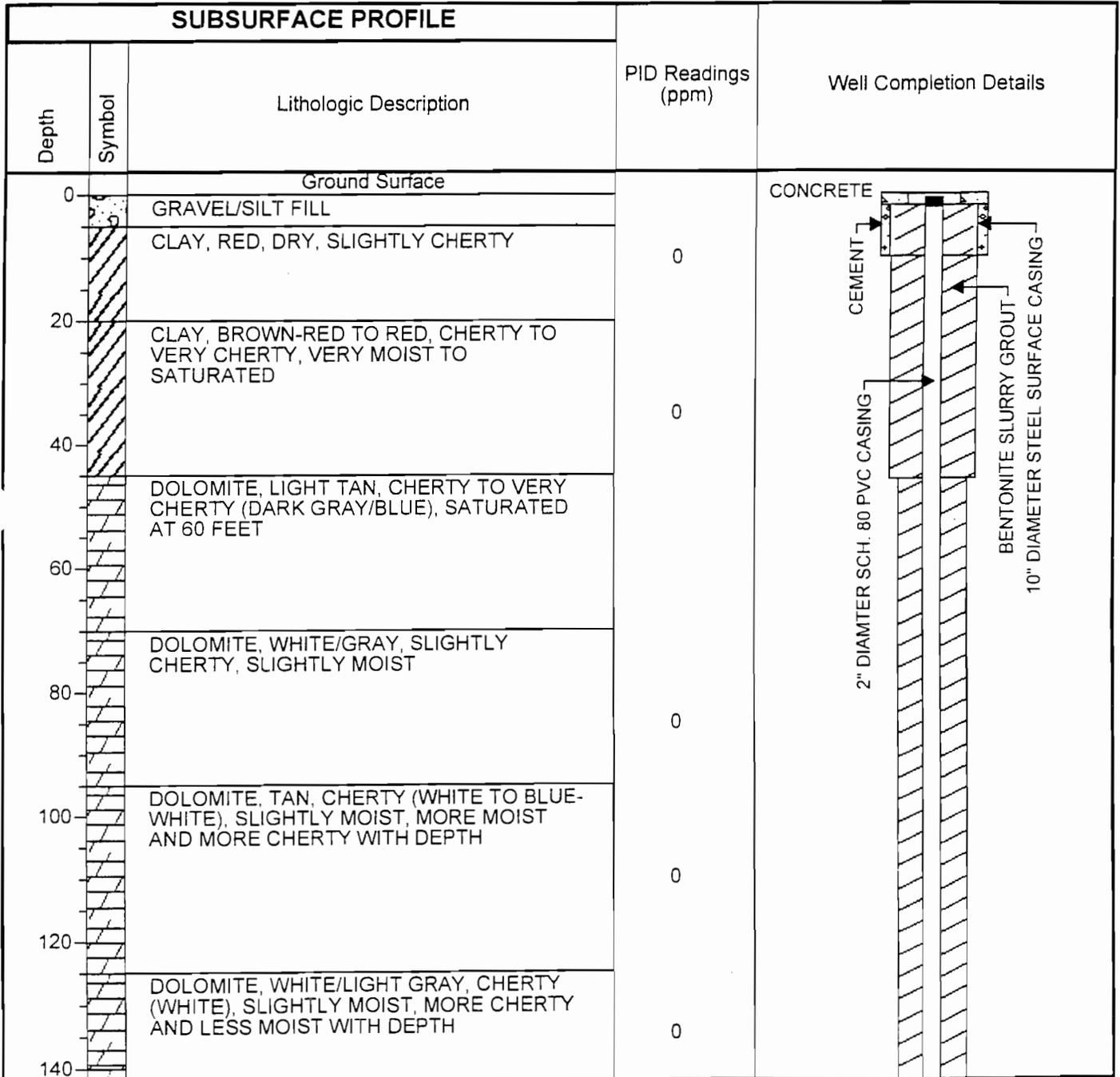
Client: UTC Hamilton Sundstrand

Location: LDS Church Lot

Geologist: B. Francka

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Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 11/8/00 to 11/14/00

Hole Size: 0'-10' 12", 10'-46' 9 7/8", 46'-TD 7 7/8"

Checked By: Ben Francka

Ground Elevation: 995.77

Top of Casing Elevation: 995.44

Sheet: 1 of 2

Project No: 003.22000.200

Log of Borehole: MW-14

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: LDS Church Lot

Geologist: B. Francka

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SUBSURFACE PROFILE		Lithologic Description	PID Readings (ppm)	Well Completion Details
Depth	Symbol			
160		DOLOMITE, AS ABOVE	0	<p>DRILL CUTTINGS</p> <p>12/20 SAND FILTER PACK</p> <p>2" DIA. SCH. 80 PVC WELL SCREEN W/ 0.02" SLOT</p> <p>BENTONITE HOLE PLUG</p>
180		DOLOMITE, WHITE/TAN, VERY CHERTY, VERY MOIST	0	
200		DOLOMITE, TAN/GRAY, VERY CHERTY, SATURATED	0	
220		DOLOMITE, TAN/GRAY, VERY CHERTY, SATURATED	0	
240		DOLOMITE, LIGHT GRAY, VERY CHERTY (WHITE/GRAY), VERY MOIST TO SATURATED	0	
260				
280				

Drilled By: Layne Western

Drill Method: Air Rotary

Drill Date: 11/8/00 to 11/14/00

Hole Size: 0'-10' 12", 10'-46' 9 7/8", 46'-TD 7 7/8"

Checked By: Ben Francka

Ground Elevation: 995.77

Top of Casing Elevation: 995.44

Sheet: 2 of 2

Project No: 003.22000.200

Log of Borehole: MW-15

Project: UTC - Hulett Lagoon, Camdenton, Missouri

Client: UTC Hamilton Sundstrand

Location: Sunset Lane/Sunset Drive Geologist: B. Francka

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SUBSURFACE PROFILE			PID Readings (ppm)	Well Completion Details
Depth	Symbol	Lithologic Description		
0		Ground Surface		<p>CONCRETE</p> <p>2" DIAMETER SCH. 80 PVC CASING</p> <p>BENTONITE SLURRY GROUT</p>
		CLAY, RED-BROWN, DRY, CHERTY	0	
		CLAY, RED, SLIGHTLY CHERTY, MOIST		
20		CLAY, AS ABOVE, BUT VERY MOIST TO SATURATED	0	
40		DOLOMITE, WHITE/GRAY, CHERTY (DARK BLUE/GRAY), VERY WEATHERED CHERT ZONE FROM 65 FEET TO 68 FEET	0	
60			0	
80		DOLOMITE, TAN, SLIGHTLY MOIST, CHERTY	0	
100		DOLOMITE, LIGHT GRAY/WHITE, SLIGHTLY CHERTY (BLUE/WHITE BANDED), DRY	0	

Drilled By: Layne Western
 Drill Method: Air Rotary
 Drill Date: 11/14/00 to 11/16/00
 Hole Size: 0' - 20' 9 7/8", 20' - TD 7 7/8"

Checked By: Ben Francka
 Ground Elevation: 992.48
 Top of Casing Elevation: 992.10
 Sheet: 1 of 2

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-16

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		
		Orange-brown, stiff, plastic, CLAY with chert and dolomite fragments	0	<p>8" Diameter Surface Casing</p> <p>Bentonite Slurry Grout</p> <p>2" Diameter Sch. 80 PVC Casing</p> <p>Cement</p>
20		Gray-brown, sucrosic, DOLOMITE, trace gray chert Considerable gray chert at approximately 25'	0	
40		Tan-brown, porous, DOLOMITE, with dark gray chert	0	
60		Light gray with some brown, DOLOMITE, variable porosity. Soft drilling from 52.0'-52.5', 54.0'-55.0', and 57.0'-58.0'. Brown to tan, sucrosic, DOLOMITE, with light gray, chert Clay filled void at 68.0'-70.0' Chert layer from 75.0'-80.0'	0	
80			0	
100		Gray-brown, low porosity, DOLOMITE with trace white/gray chert	0	
0			0	

Drilled By: Layne Western

Logged By: Mark Densmore

Hole Size: 0'-17.5' 10", 17.5'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Justin Olson

Top of Casing Elevation: 936.55

Drill Date: 7/22/02-7/23/02

Ground Elevation: 936.85

Sheet: 1 of 2

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-16

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140		Brown-tan, low porosity, DOLOMITE with trace white chert	0	<p>12/20 Sand Filter Pack</p> <p>2" Dia. Sch. 80 PVC Well Screen w/ 0.02" slots</p> <p>Bentonite Pellets Plug</p>
60			0	
180		Light gray-brown, sucrosic, fine-grained, moderate to good porosity, DOLOMITE, free calcite crystals	0	
200			0	
220			0	
3			0	

Drilled By: Layne Western

Logged By: Mark Densmore

Hole Size: 0'-17.5' 10", 17.5'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Justin Olson

Top of Casing Elevation: 936.55

Drill Date: 7/22/02-7/23/02

Ground Elevation: 936.85

Sheet: 2 of 2

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INTERNATIONAL INCORPORATED

Log of Borehole: MW-17

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface	0	
0-10	Asphalt Road	Asphalt Road	0	
10-15	Reddish brown, fine-med grained SAND w/ some coarse sand and fine gravel	Reddish brown, fine-med grained SAND w/ some coarse sand and fine gravel	0	
15-55	Red-brown, moist CLAY to silty clay, with chert and dolomite intermixed	Red-brown, moist CLAY to silty clay, with chert and dolomite intermixed	0	
55-60	Gray with some tan, sucrosic. DOLOMITE, gray chert	Gray with some tan, sucrosic. DOLOMITE, gray chert	0	
60-81	Soft drilling 81'-82'	Soft drilling 81'-82'	0	
81-82			0	
82-100	Brown-tan, DOLOMITE, gray-chert	Brown-tan, DOLOMITE, gray-chert	0	
100-140			0	
140-145			0	
145-150			0	
150-155			0	

Drilled By: Layne Western

Logged By: Mark Densmore

Hole Size: 0'-60' 10", 60'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Justin Olson

Top of Casing Elevation: 1004.96

Drill Date: 7/15/02-7/19/02

Ground Elevation: 1005.26

Sheet: 1 of 2

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INTERNATIONAL INCORPORATED

Log of Borehole: MW-17

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
170		Gray-brown, DOLOMITE	0	<p>12/20 Sand Filter Pack</p> <p>2" Dia. Sch 80 PVC Well Screen w/ 0.02" Slots</p> <p>Bentonite Pellets Plug</p>
190		Gray-brown, DOLOMITE with gray chert	0	
210		Brown-tan, porous, DOLOMITE with some grey chert	0	
230			0	
250			0	
270		Gray-tan, sucrosic, DOLOMITE, free calcite crystals, trace white-gray chert	0	
290				

Drilled By: Layne Western

Logged By: Mark Densmore

Hole Size: 0'-60' 10", 60'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Justin Olson

Top of Casing Elevation: 1004.96

Drill Date: 7/15/02-7/19/02

Ground Elevation: 1005.26

Sheet: 2 of 2

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Log of Borehole: MW-18

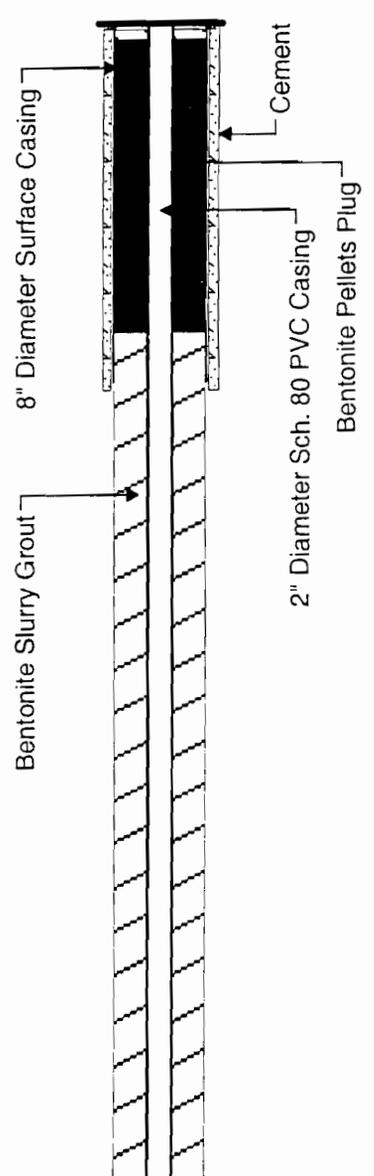
Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		
		Asphalt and road bedding		
		Gray, moist, plastic, CLAY with some chert	0	
		Red, mod stiff, damp, CLAY with some gray chert		
20				
		White chert with some red CLAY	0	
		Tan DOLOMITE, considerable white chert		
40		Gray CHERT some white chert, varying amounts of gray and tan dolomite. Chert from 40'-45' radiolarian chert	0	
60				
		Gray-tan DOLOMITE with trace gray chert, increasing sucrosic texture with depth	0	
80				
100		Free calcite crystals	0	
		Tan-brown, DOLOMITE, dense		
120			0	



Drilled By: Layne Western **Logged By:** Justin Olson **Hole Size:** 0-39' 10", 39'-T.D. 7' 7/8"
Drill Method: Air Rotary **Checked By:** Mark Densmore, MO. R.G. **Top of Casing Elevation:** 920.47
Drill Date: 12/16/02-12/17/02 **Ground Elevation:** 920.77 **Sheet:** 1 of 2

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-18

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140		Gray-tan, DOLOMITE, trace white chert content, sucrosic texture increasing with depth.	0	 <p>12/20 Sand Filter Pack</p> <p>2" Dia. Sch. 80 PVC Well Screen w/ 0.02" slots</p> <p>Bentonite Pellets Plug</p>
160			0	
180			0	
200			0	
220				
240				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0-39' 10", 39'-T.D. 7' 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G. Top of Casing Elevation: 920.47

Drill Date: 12/16/02-12/17/02

Ground Elevation: 920.77

Sheet: 2 of 2

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-19

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		
		Asphalt and road bedding		
		Brown, moist, silty CLAY, with chert		
		Red-brown, mod stiff, moist, CLAY with chert	0	
20		Gray CHERT with red clay.		
		Gray DOLOMITE with trace white chert	0	
40				
		Brown, low porosity, DOLOMITE with trace white/gray chert	0	
60				
			0	
80				
		Gray-tan, DOLOMITE, sucrosic texture, with trace chert. Soft from 117' to 135'.	0	
100				
			0	
120				
			0	

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-22' 10", 22'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G. Top of Casing Elevation: 936.53

Drill Date: 12/09/02-12/11/02

Ground Elevation: 936.88

Sheet: 1 of 2

SECOR

INTERNATIONAL INCORPORATED

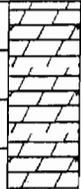
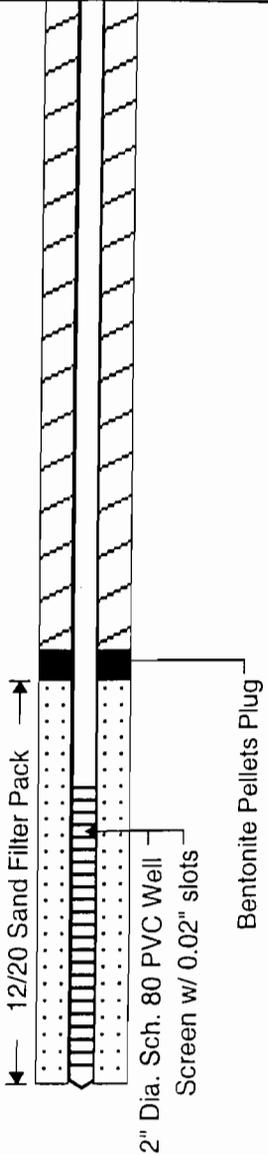
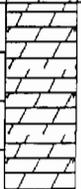
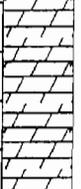
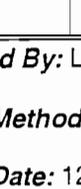
Log of Borehole: MW-19

Project No.: 61UN.02007.0004

Project: Former Hulett Lagoon

Client: UTC-Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140		Dark gray, dense, DOLOMITE	0	 <p>12/20 Sand Filter Pack</p> <p>2" Dia. Sch. 80 PVC Well</p> <p>Screen w/ 0.02" slots</p> <p>Bentonite Pellets Plug</p>
160		Gray-tan, sucrosic texture, DOLOMITE, with some gray-white chert	0	
180			0	
200			0	
220			0	
240				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-22' 10", 22'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G. **Top of Casing Elevation:** 936.53

Drill Date: 12/09/02-12/11/02

Ground Elevation: 936.88

Sheet: 2 of 2

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-20

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		
0 - 38		Red-brown, moist, CLAY with light gray and white chert fragments	0	 <p>8" Diameter Surface Casing</p> <p>Bentonite Pellets Plug</p> <p>2" Dia. Sch. 80 PVC Casing</p> <p>Bentonite Slurry Grout</p> <p>Cement</p>
38 - 52		Gray-tan DOLOMITE		
52 - 61		52'-61' Fractured and broken Light gray-dark gray CHERT with some tan dolomite	0	
61 - 108		Gray-tan DOLOMITE, sucrosic texture, with some chert, chalky at 85'	0	
108 - 120		White CHERT, with brown dolomite	0	

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-45' 10", 45'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G Top of Casing Elevation: 995.375'

Drill Date: 06/02/03-06/03/03

Ground Elevation: 995.665'

Sheet: 1 of 3

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-20

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
260			0	<p> Bentonite Slurry Grout 2" Dia. Sch. 80 PVC Casing 12/20 Sand Filter Pack 2" Dia. Sch. 80 PVC Well Screen w/ 0.02" slots Bentonite Pellets Plug </p>
280		Gray-white CHERT with some tan dolomite	0	
300		Gray-tan DOLOMITE, some sucrosic, some gray chert	0	
340			0	
360				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-45" 10", 45"-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G Top of Casing Elevation: 995.375'

Drill Date: 06/02/03-06/03/03

Ground Elevation: 995.665'

Sheet: 3 of 3

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-20

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140		Brown-tan DOLOMITE with white-gray chert	0	<p>Bentonite Slurry Grout</p> <p>2" Dia. Sch. 80 PVC Casing</p>
160		Gray DOLOMITE, sucrosic, with trace chert	0	
180		Gray-tan DOLOMITE with gray-white chert	0	
200		Tan DOLOMITE with gray chert	0	
220		Gray-tan DOLOMITE with some gray-white chert	0	
240				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-45' 10", 45'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G

Top of Casing Elevation: 995.375'

Drill Date: 06/02/03-06/03/03

Ground Elevation: 995.665'

Sheet: 2 of 3

SECOR

INTERNATIONAL INCORPORATED

Log of Borehole: MW-21

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		<p>8" Diameter Surface Casing</p> <p>Cement</p> <p>Bentonite Slurry Grout</p> <p>2" Dia. Sch. 80 PVC Casing</p>
0-15		Red CLAY with black and white chert		
15-25		Broken, tan, buff DOLOMITE and white and gray chert and red CLAY	0	
25-40		Tan, buff, DOLOMITE with trace white-gray chert		
40-55		Brown DOLOMITE with gray-white chert		
55-75		Brown-tan DOLOMITE with trace gray chert	0	
75-95		White DOLOMITE with trace chert		
95-120		Brown-tan, sucrosic, DOLOMITE, some chert	0	

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-30' 10", 30'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G. Top of Casing Elevation: 916.111'

Drill Date: 06/16/03-06/07/03

Ground Elevation: 916.411'

Sheet: 1 of 2

SECOR

INTERNATIONAL INCORPORATED

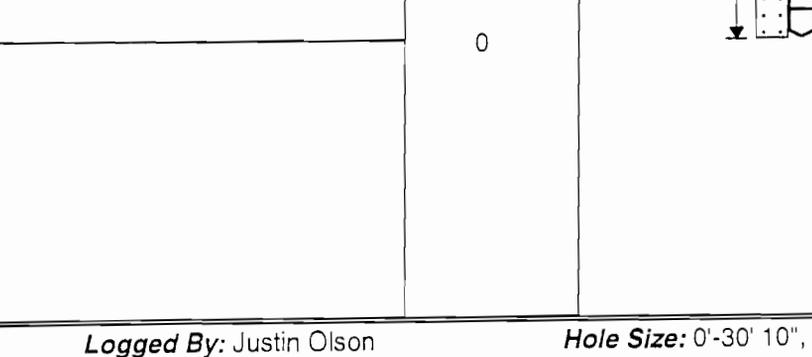
Log of Borehole: MW-21

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140			0	
160		Gray with some tan, sucrosic, DOLOMITE, trace chert	0	
180			0	
200			0	
220			0	
240				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-30' 10", 30'-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO. R.G. Top of Casing Elevation: 916.111'

Drill Date: 06/16/03-06/07/03

Ground Elevation: 916.411'

Sheet: 2 of 2

SECOR

INTERNATIONAL INCORPORATED

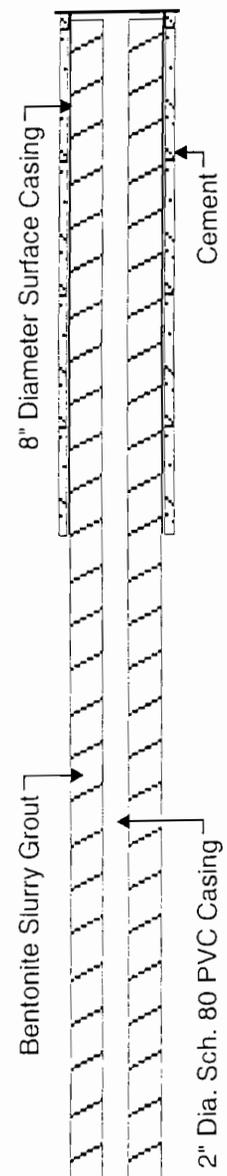
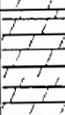
Log of Borehole: MW-22

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
0		Ground Surface		
0 - 45		Red-brown, CLAY with chert fragments	0	 <p>8" Diameter Surface Casing</p> <p>Cement</p> <p>Bentonite Slurry Grout</p> <p>2" Dia. Sch. 80 PVC Casing</p>
45 - 70		Tan DOLOMITE with white chert	0	
70 - 115		Gray-tan DOLOMITE with white-gray chert	0	
115 - 125		Gray-tan DOLOMITE with some gray chert, clay/shale zones at 115'-125'	0	

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-55' 10", 55-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO, R.G. Top of Casing Elevation: 960.154

Drill Date: 06/07/03-06/11/03

Ground Elevation: 960.354

Sheet: 1 of 3

SECOR

INTERNATIONAL INCORPORATED

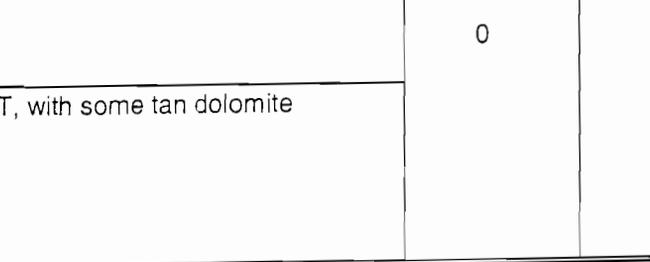
Log of Borehole: MW-22

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
140			0	
160			0	
180			0	
200		Gray, sucrosic, DOLOMITE with trace white chert		
220		Gray-white CHERT, with some tan dolomite	0	
240				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-55' 10", 55-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO, R.G. Top of Casing Elevation: 960.154

Drill Date: 06/07/03-06/11/03

Ground Elevation: 960.354

Sheet: 2 of 3

SECOR

INTERNATIONAL INCORPORATED

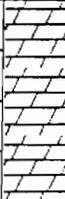
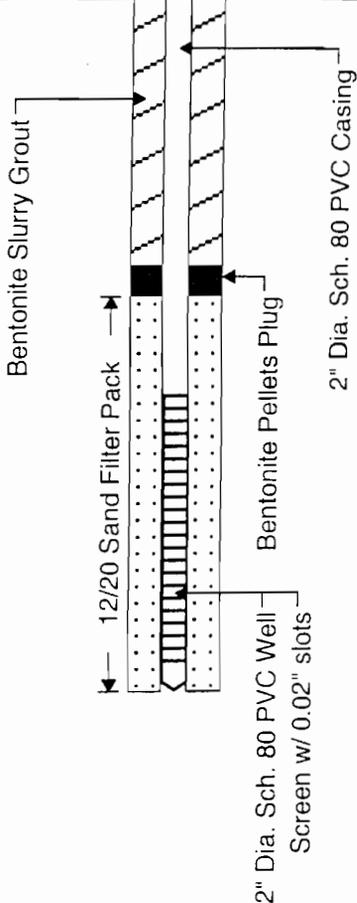
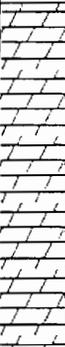
Log of Borehole: MW-22

Project No.: 61UN.03001

Project: Hulett Lagoon

Client: UTC- Camdenton

Location: Camdenton, MO

SAMPLE		SUBSURFACE PROFILE	DATA	COMMENTS
Depth, ft.	Symbol	Lithologic Description	PID (ppm)	Well Completion Details
260		Gray-tan DOLOMITE with trace gray chert	0	 <p>Bentonite Slurry Grout</p> <p>12/20 Sand Filter Pack</p> <p>Bentonite Pellets Plug</p> <p>2" Dia. Sch. 80 PVC Well Screen w/ 0.02" slots</p> <p>2" Dia. Sch. 80 PVC Casing</p>
		Light brown, SANDSTONE		
280		Gray with some tan, DOLOMITE, trace free calcite	0	
300				
320				
340				
360				

Drilled By: Layne Western

Logged By: Justin Olson

Hole Size: 0'-55' 10", 55-TD 7 7/8"

Drill Method: Air Rotary

Checked By: Mark Densmore, MO, R.G. Top of Casing Elevation: 960.154

Drill Date: 06/07/03-06/11/03

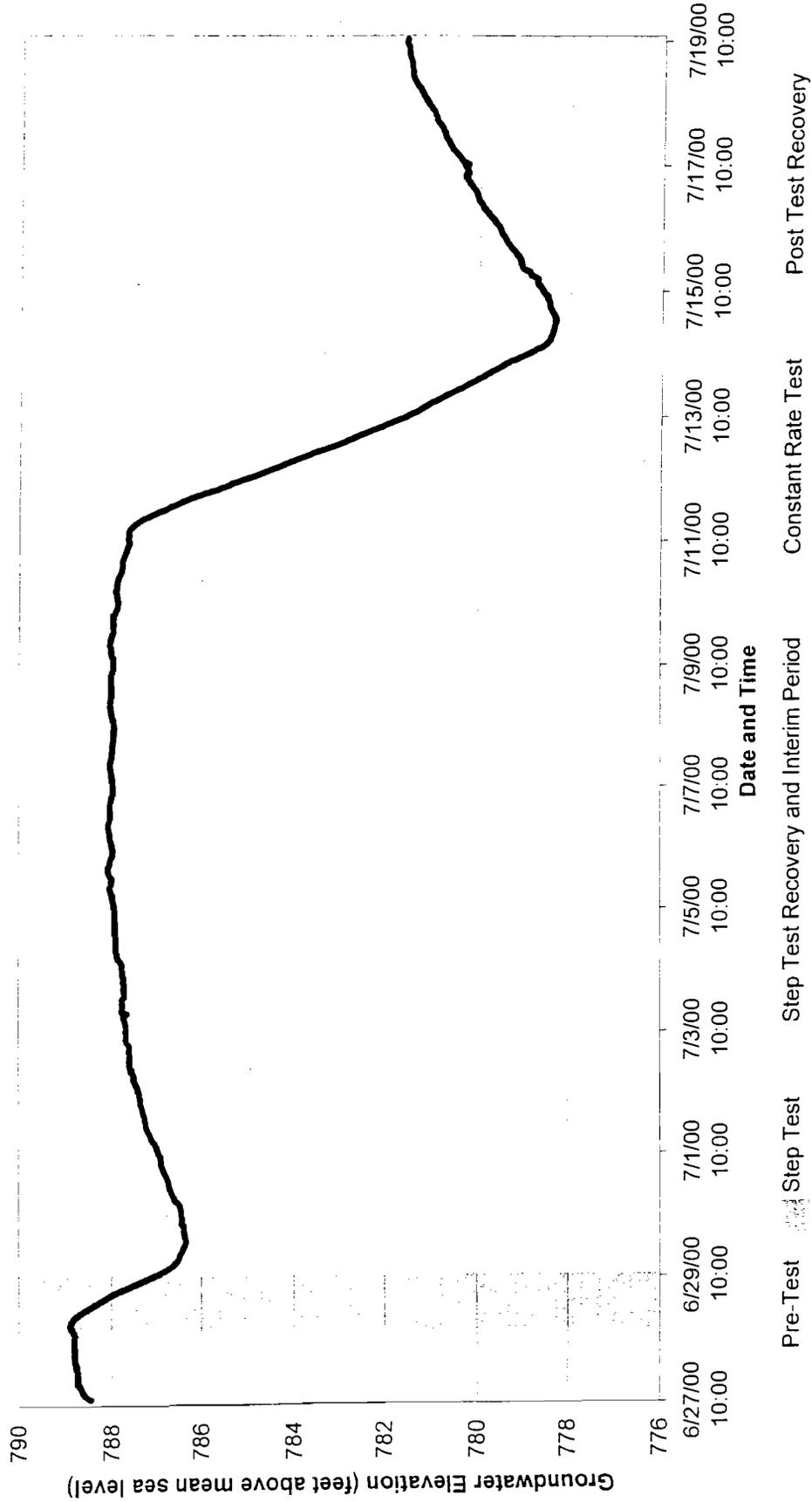
Ground Elevation: 960.354

Sheet: 3 of 3

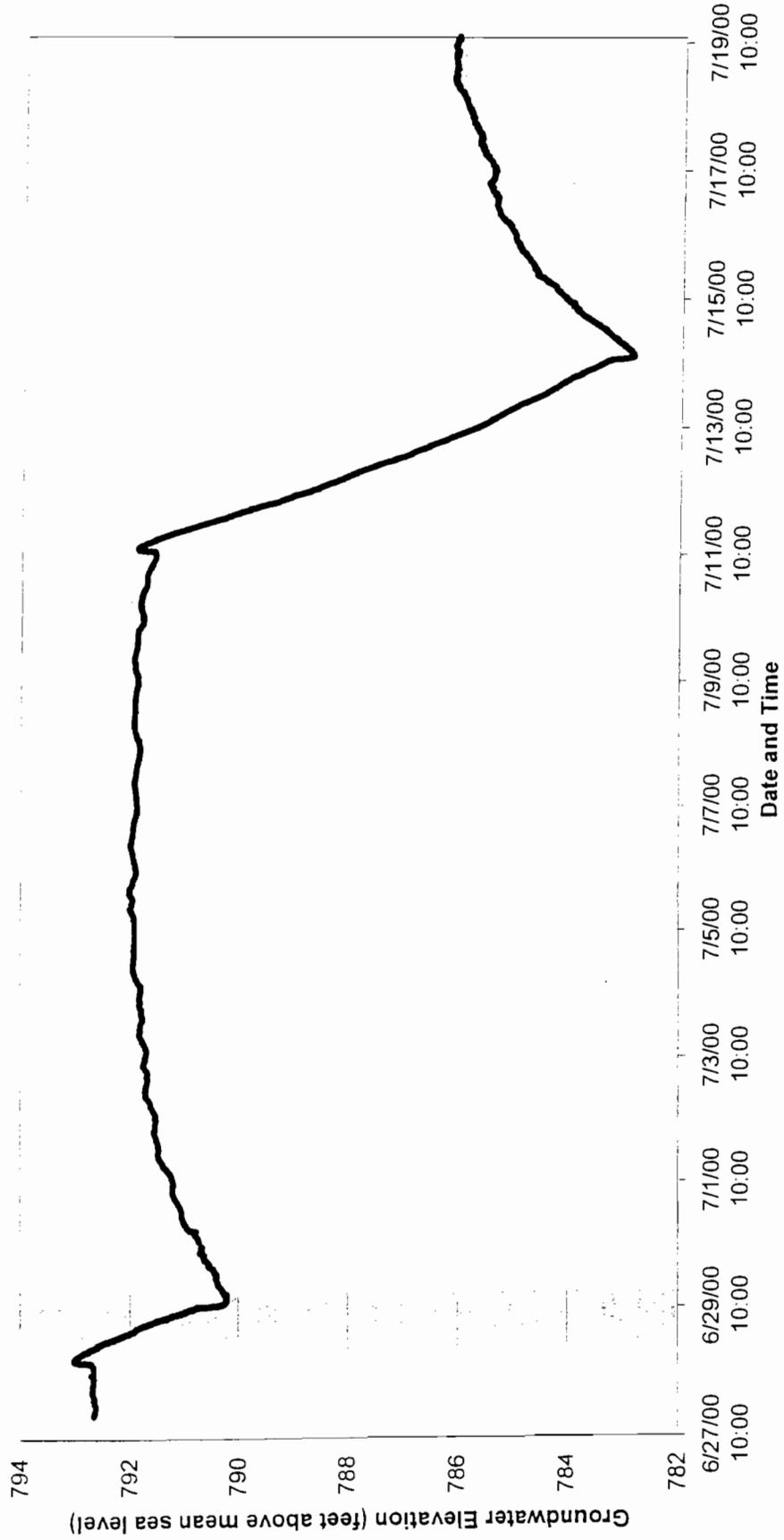
APPENDIX B
AQUIFER TEST HYDROGRAPHS
Remedial Investigation Summary Report
Former Hulett Lagoon
Camdenton, Missouri
SECOR Project No.: 61UN.03001
November 24, 2003

APPENDIX B
PHASE I AQUIFER RESPONSE HYDROGRAPHS

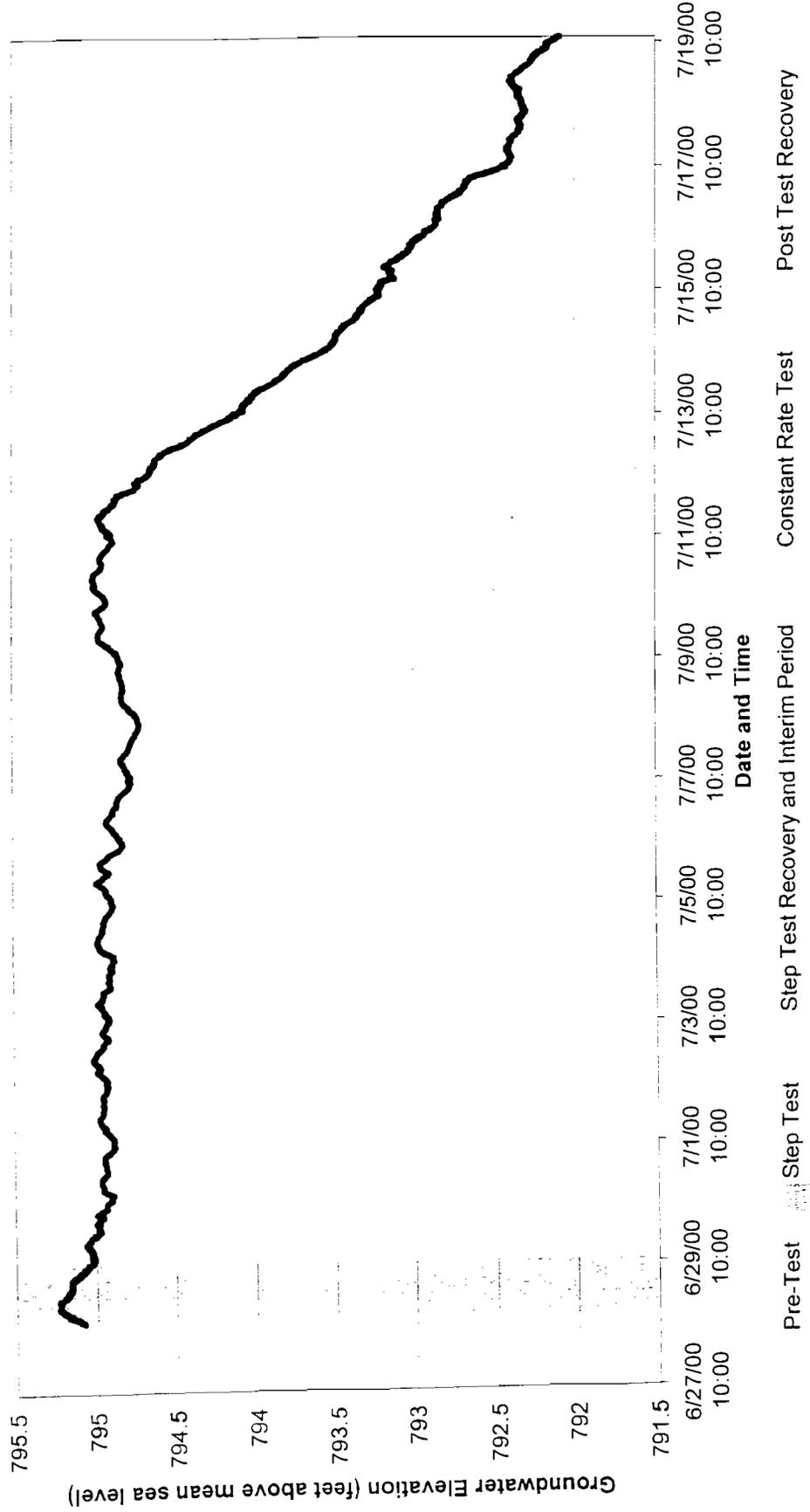
MW-1
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



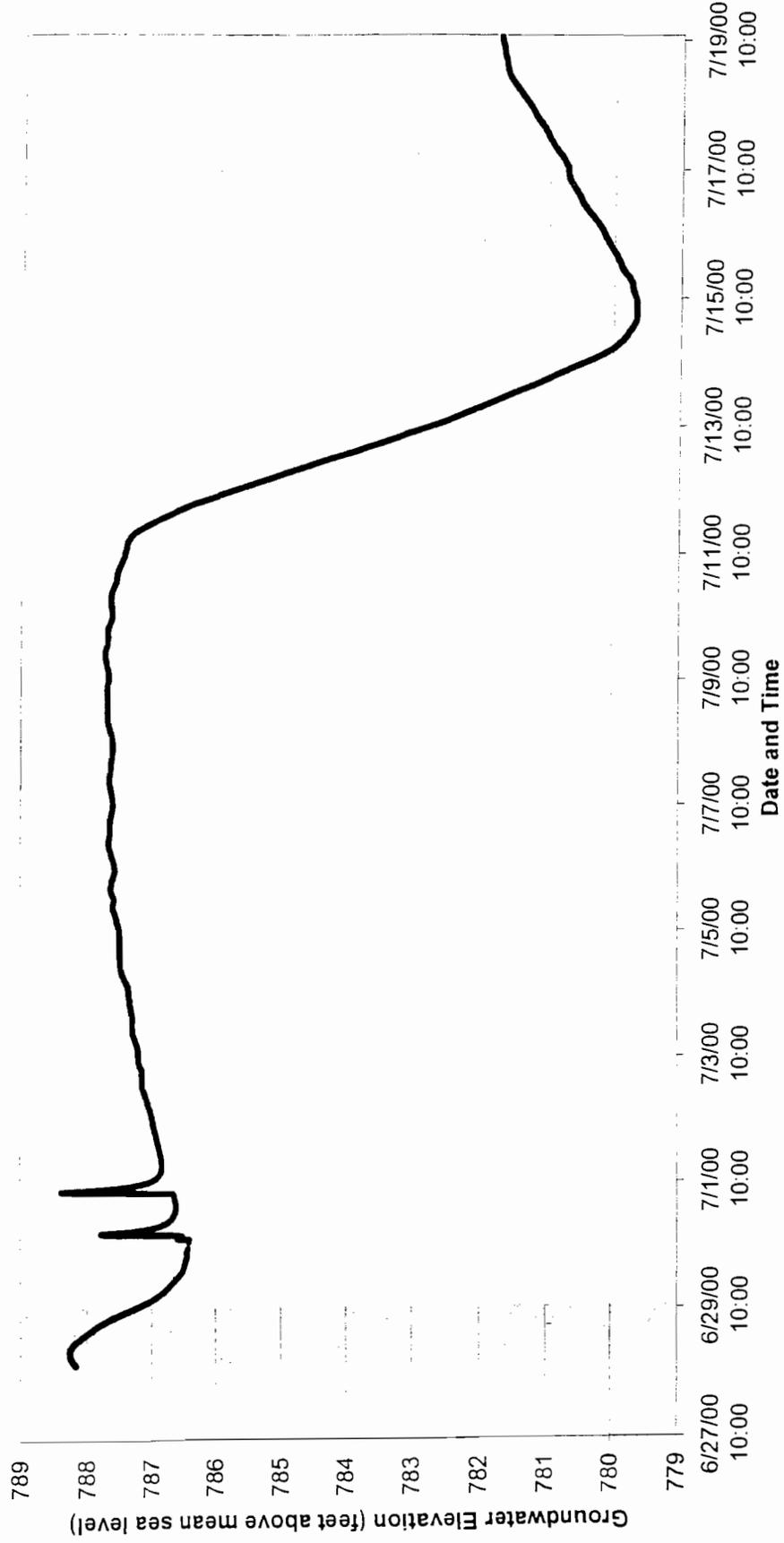
MW-2
 Groundwater Elevation vs. Time
 Phase I Aquifer Test
 June 26 through July 19, 2000
 Hamilton Sunstrand - Camdenton
 Camdenton, Missouri



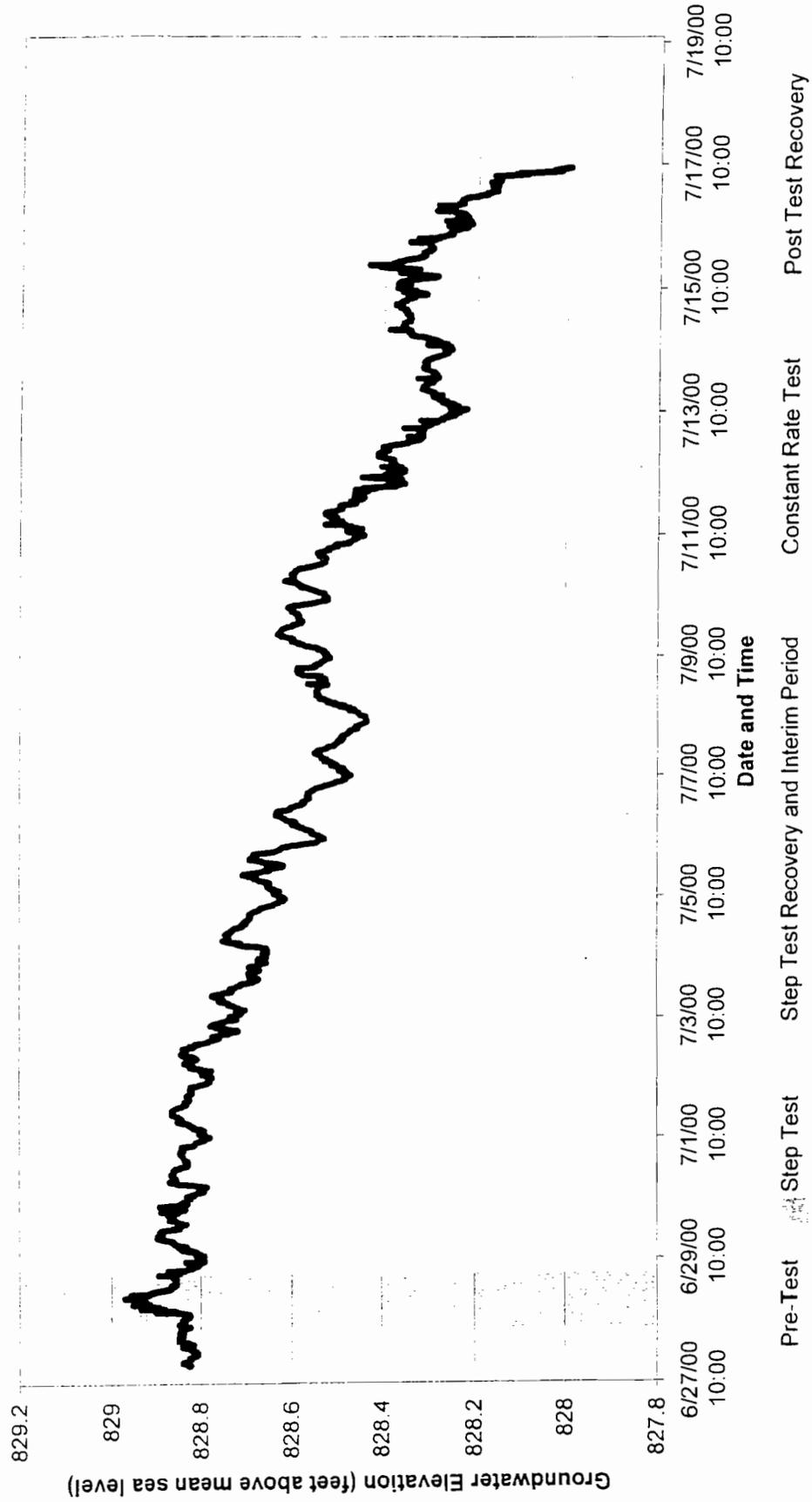
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Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



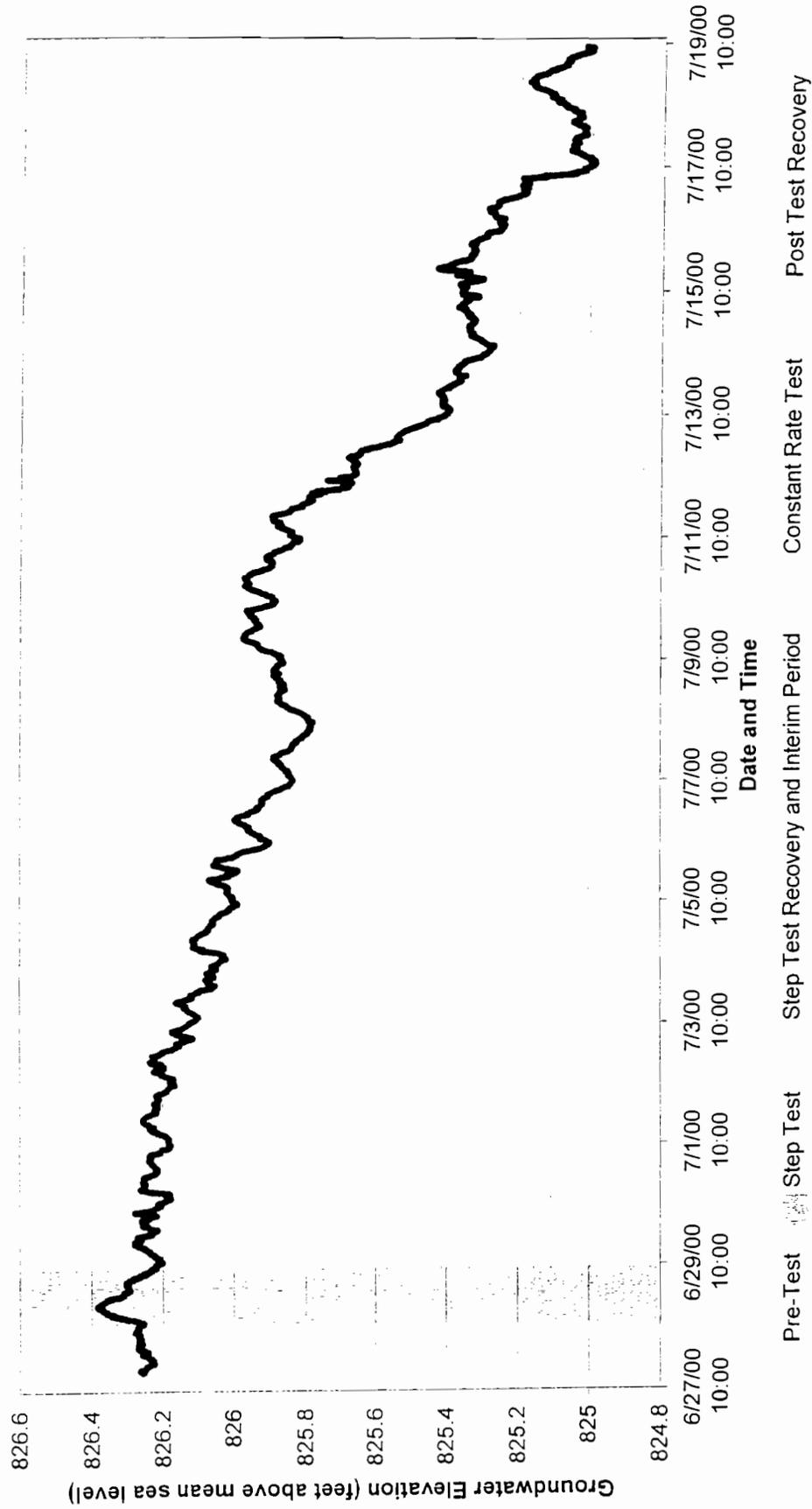
MW-4
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



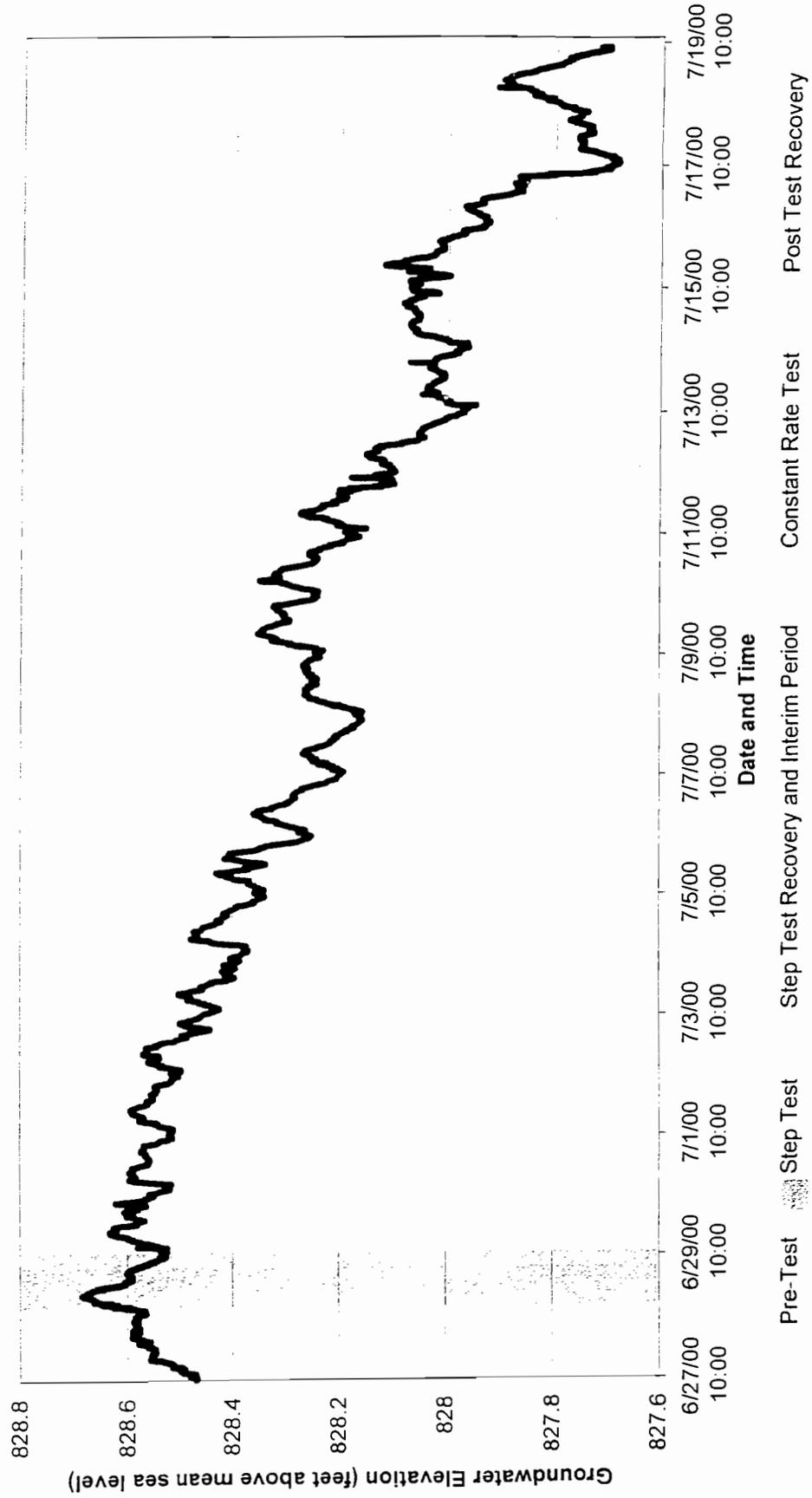
MW-5
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



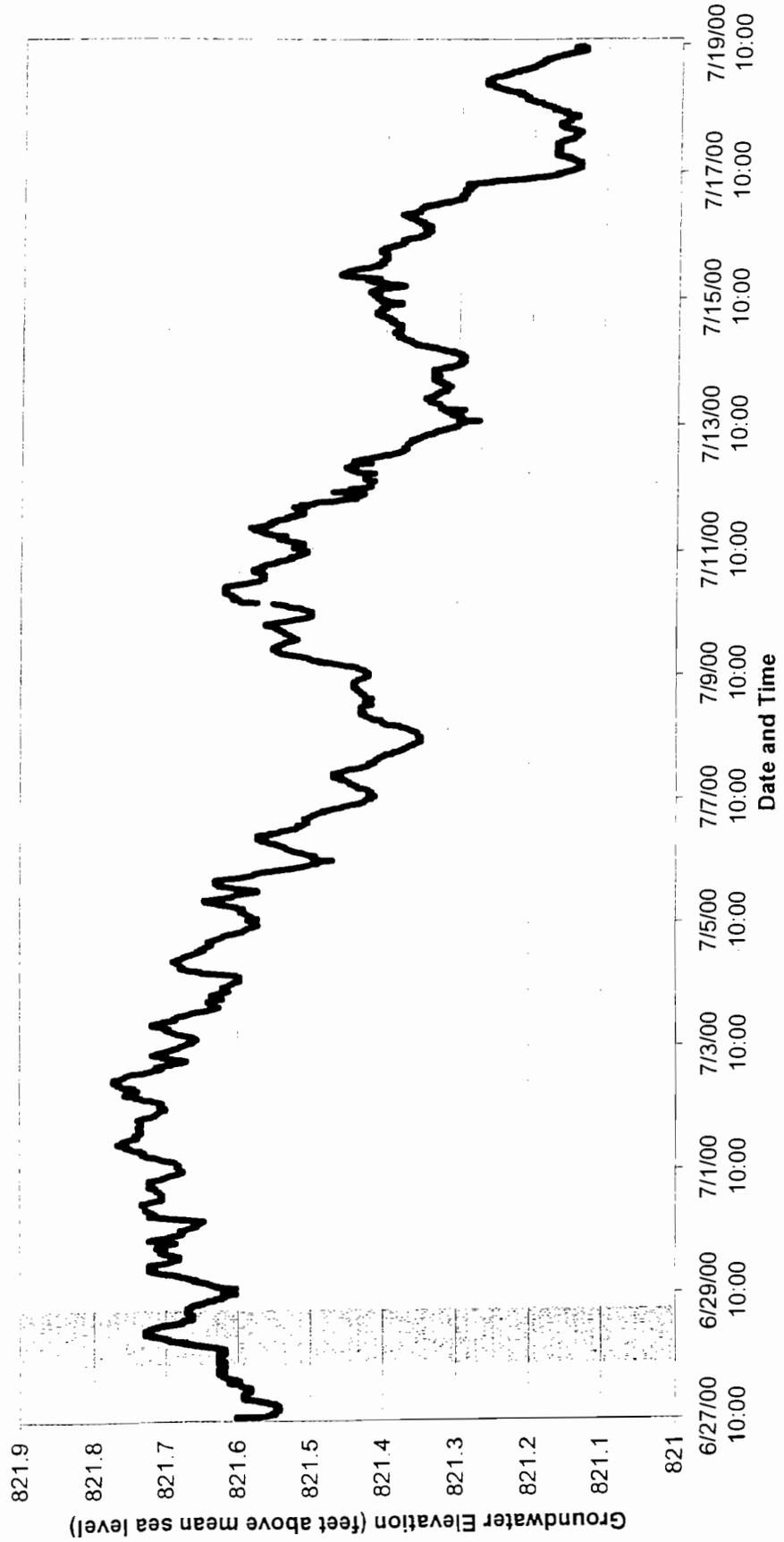
MW-7
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



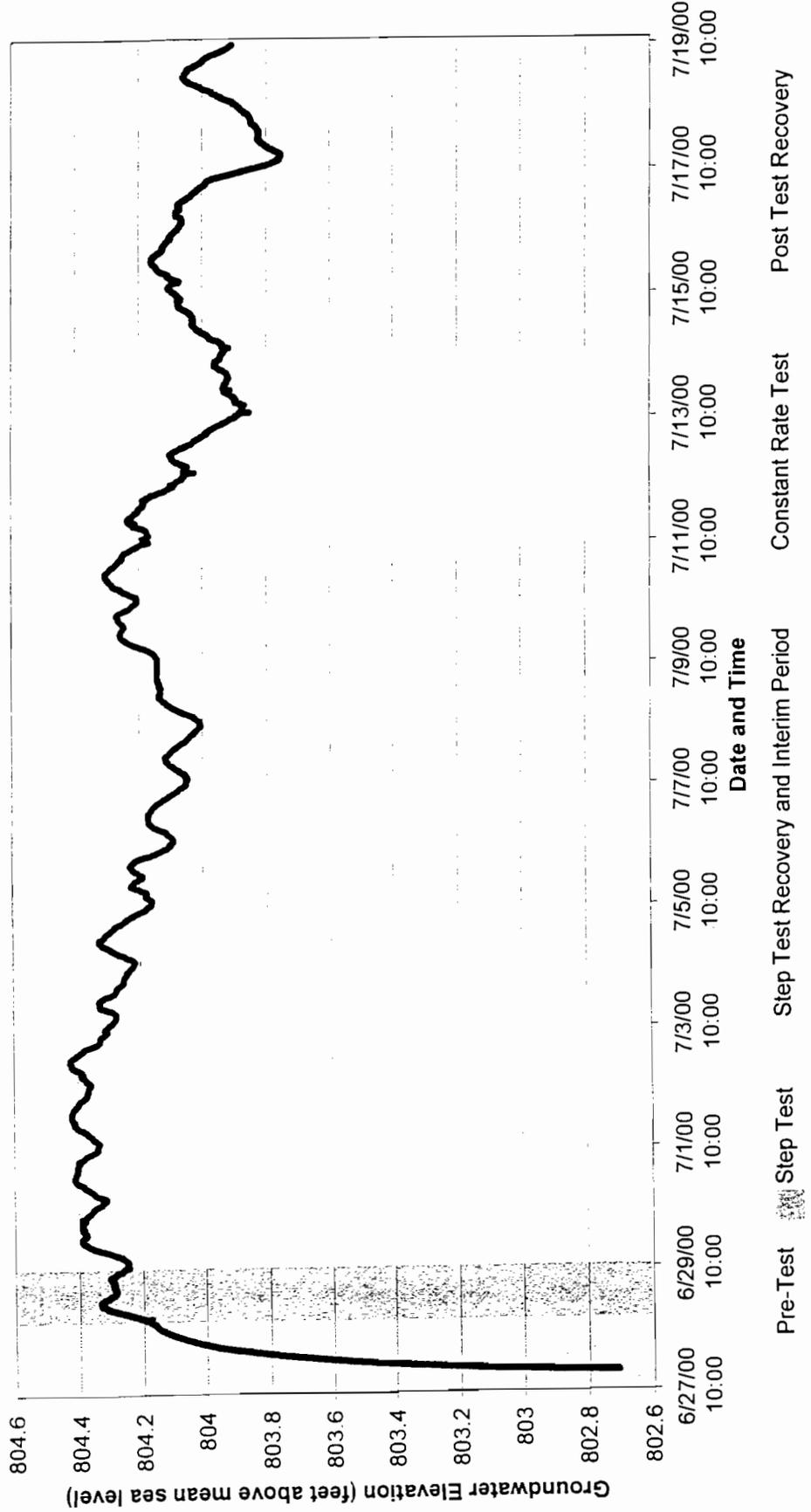
MW-8
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri



MW-9
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri

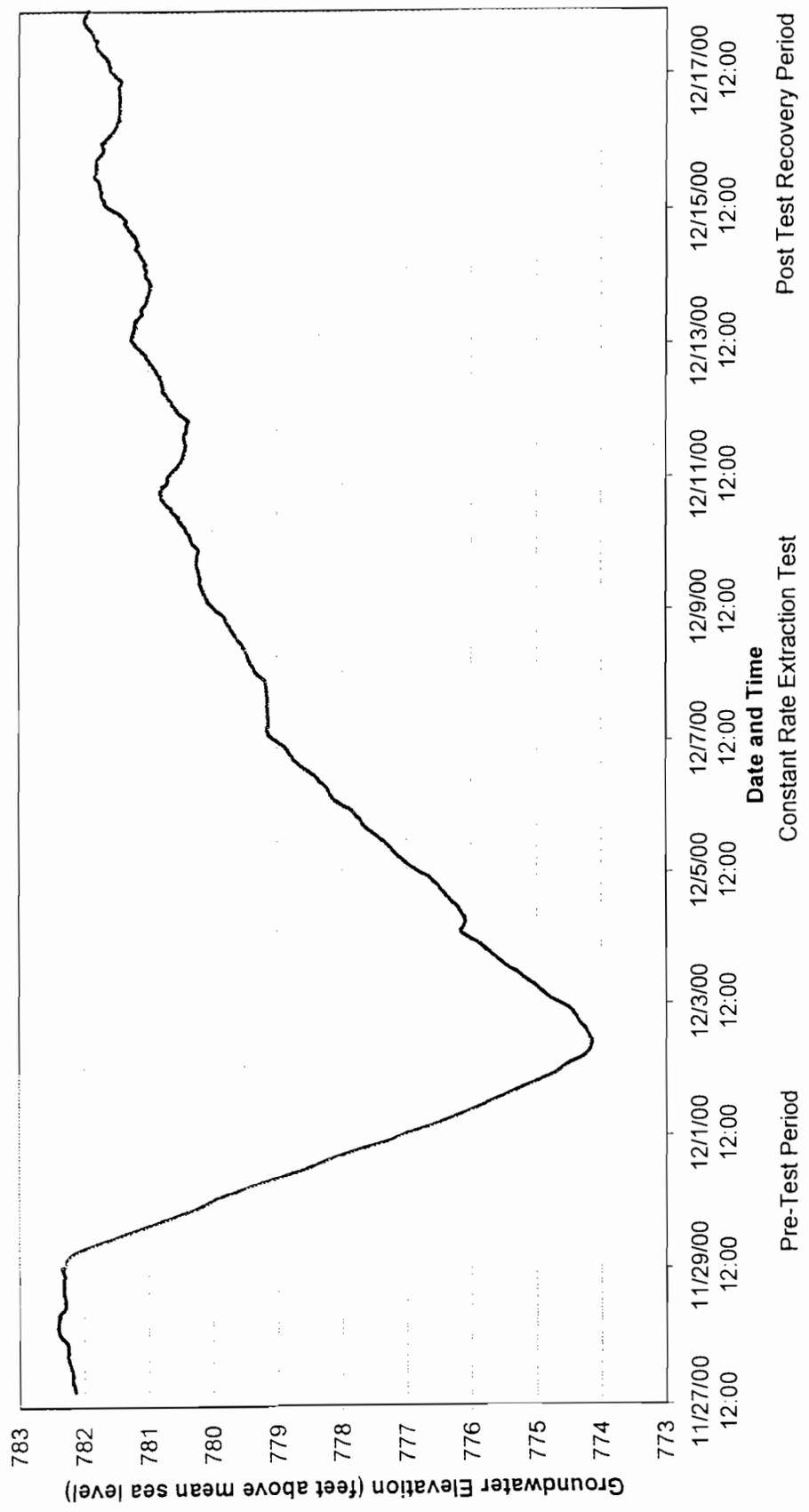


MW-11
Groundwater Elevation vs. Time
Phase I Aquifer Test
June 26 through July 19, 2000
Hamilton Sunstrand - Camdenton
Camdenton, Missouri

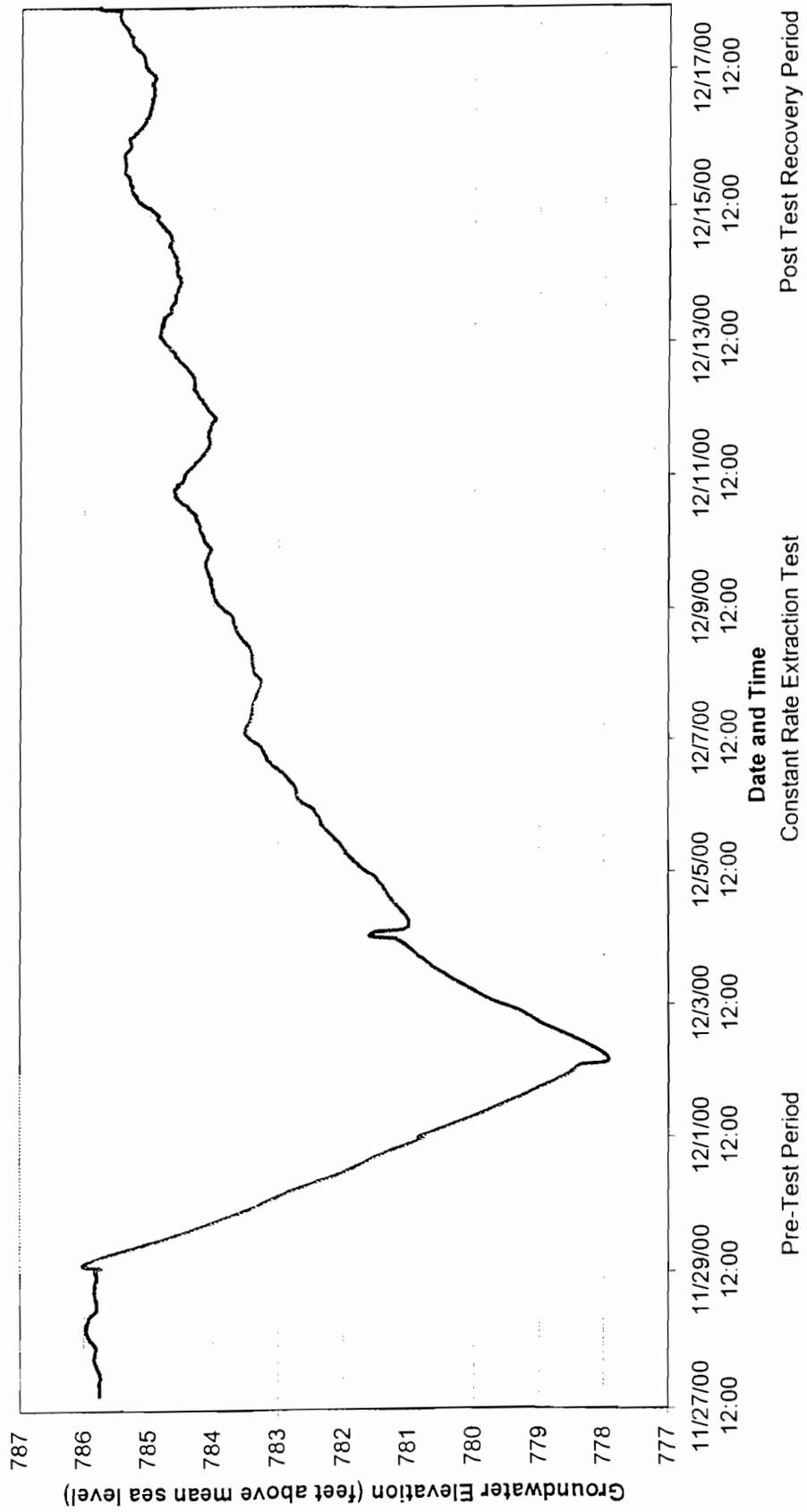


APPENDIX B
PHASE II AQUIFER RESPONSE HYDROGRAPHS

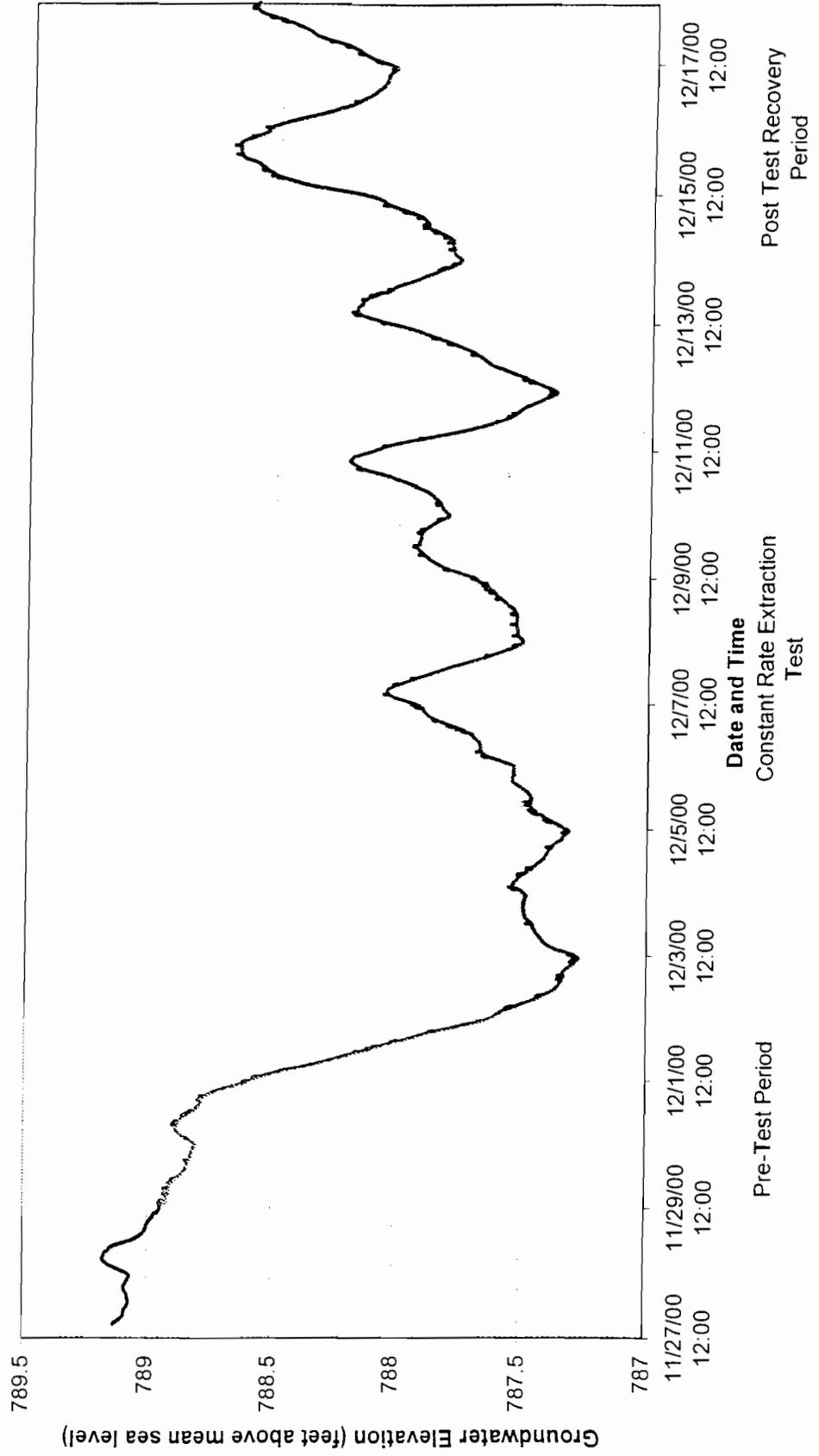
MW-1
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



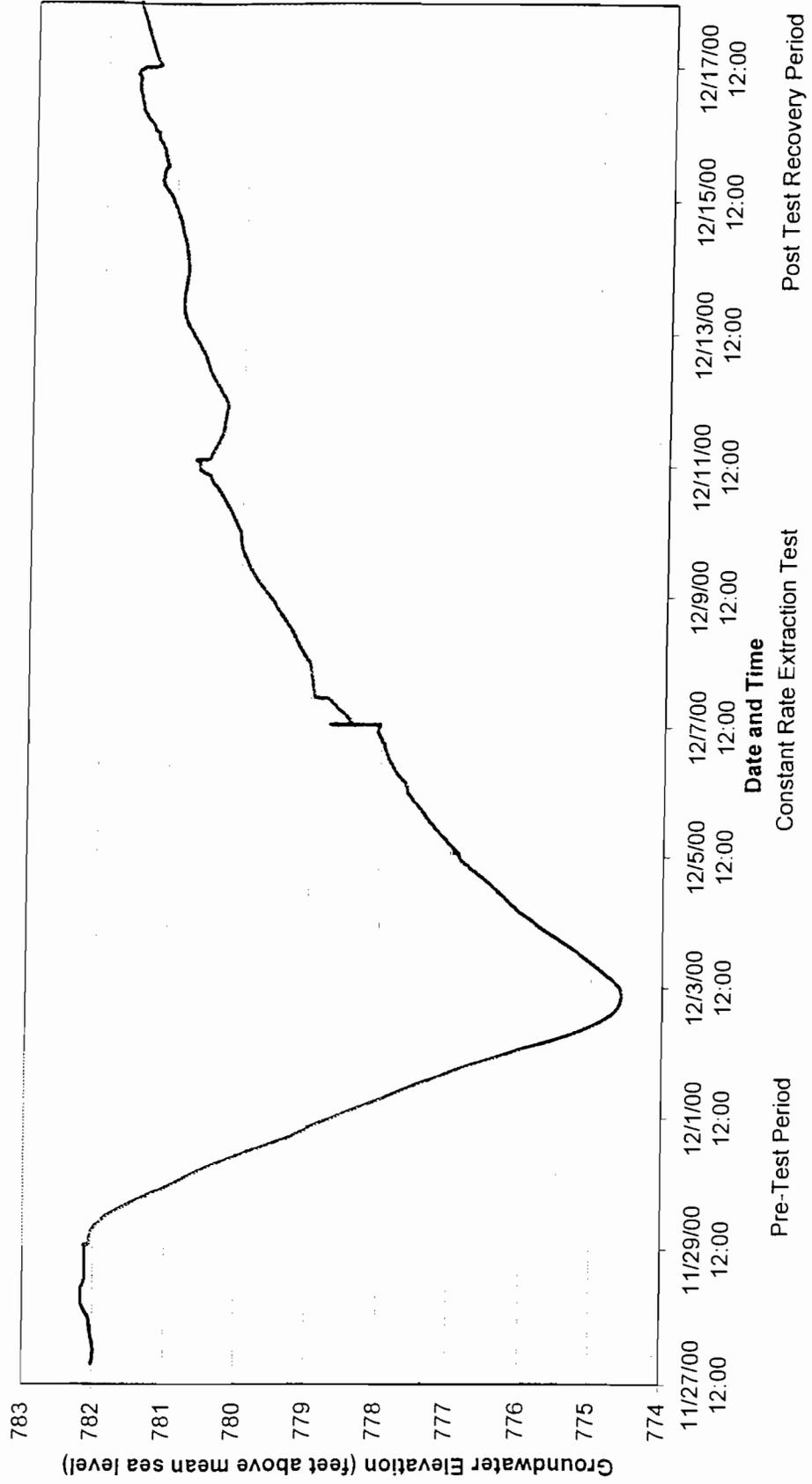
MW-2
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



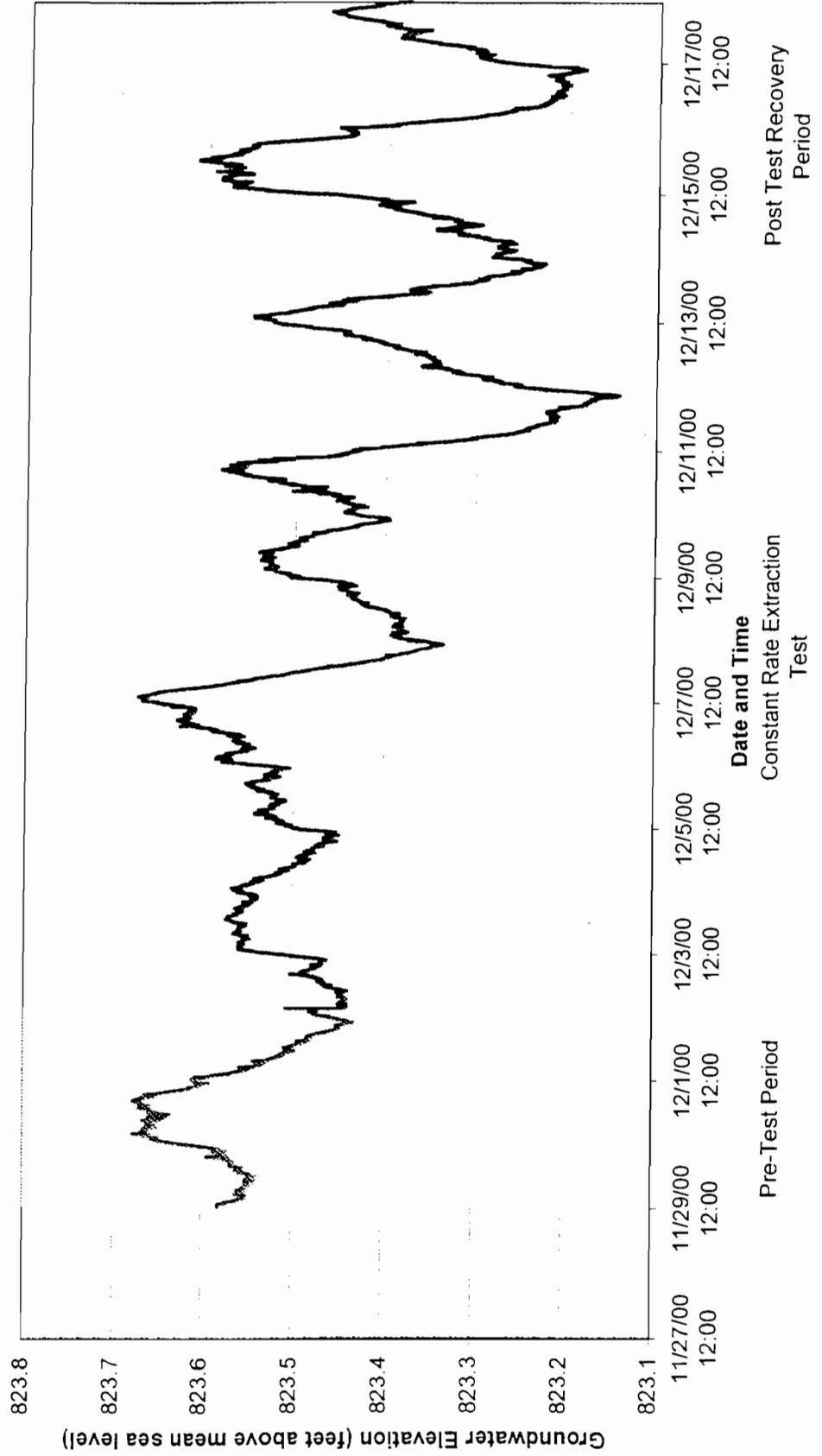
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Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



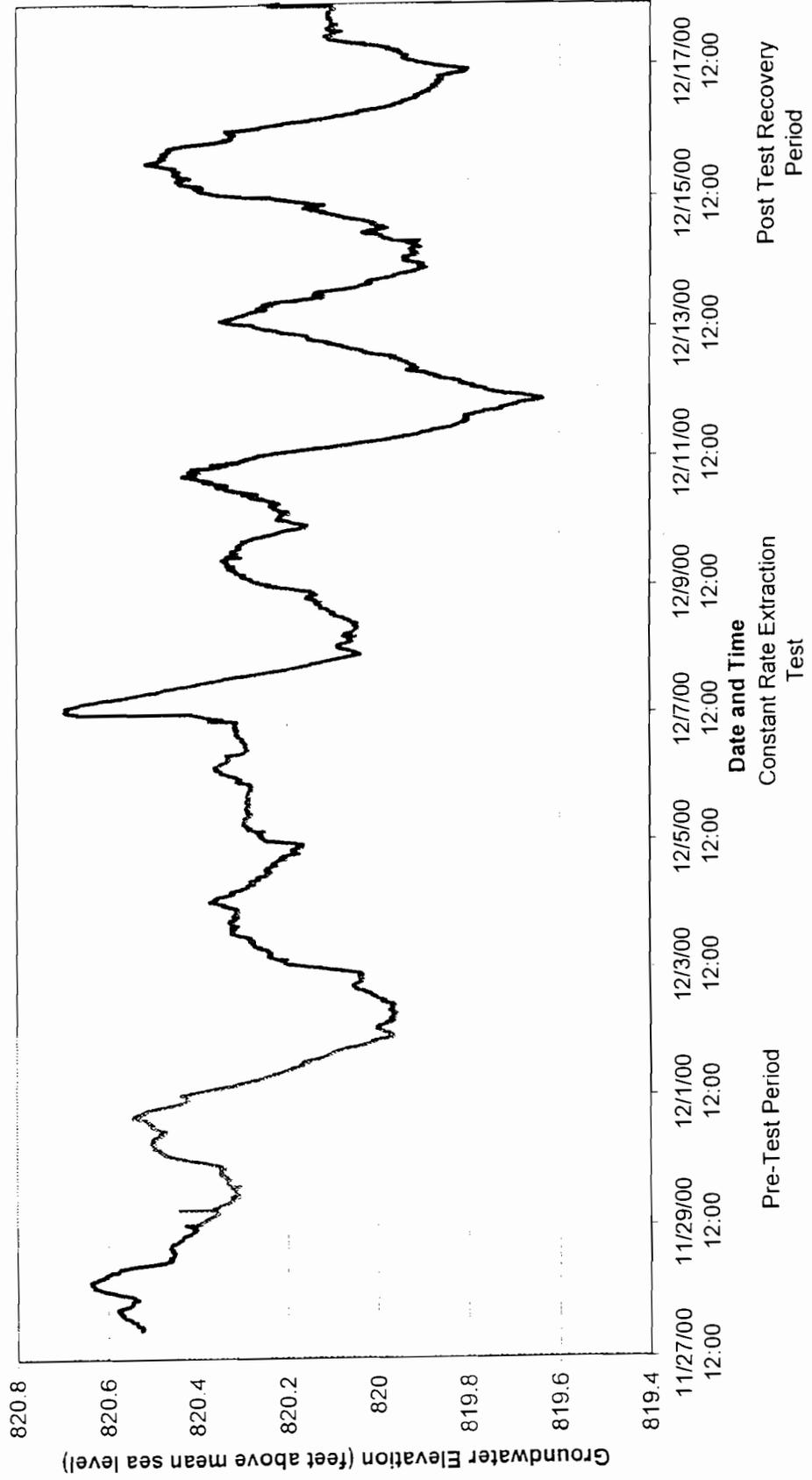
MW-4
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



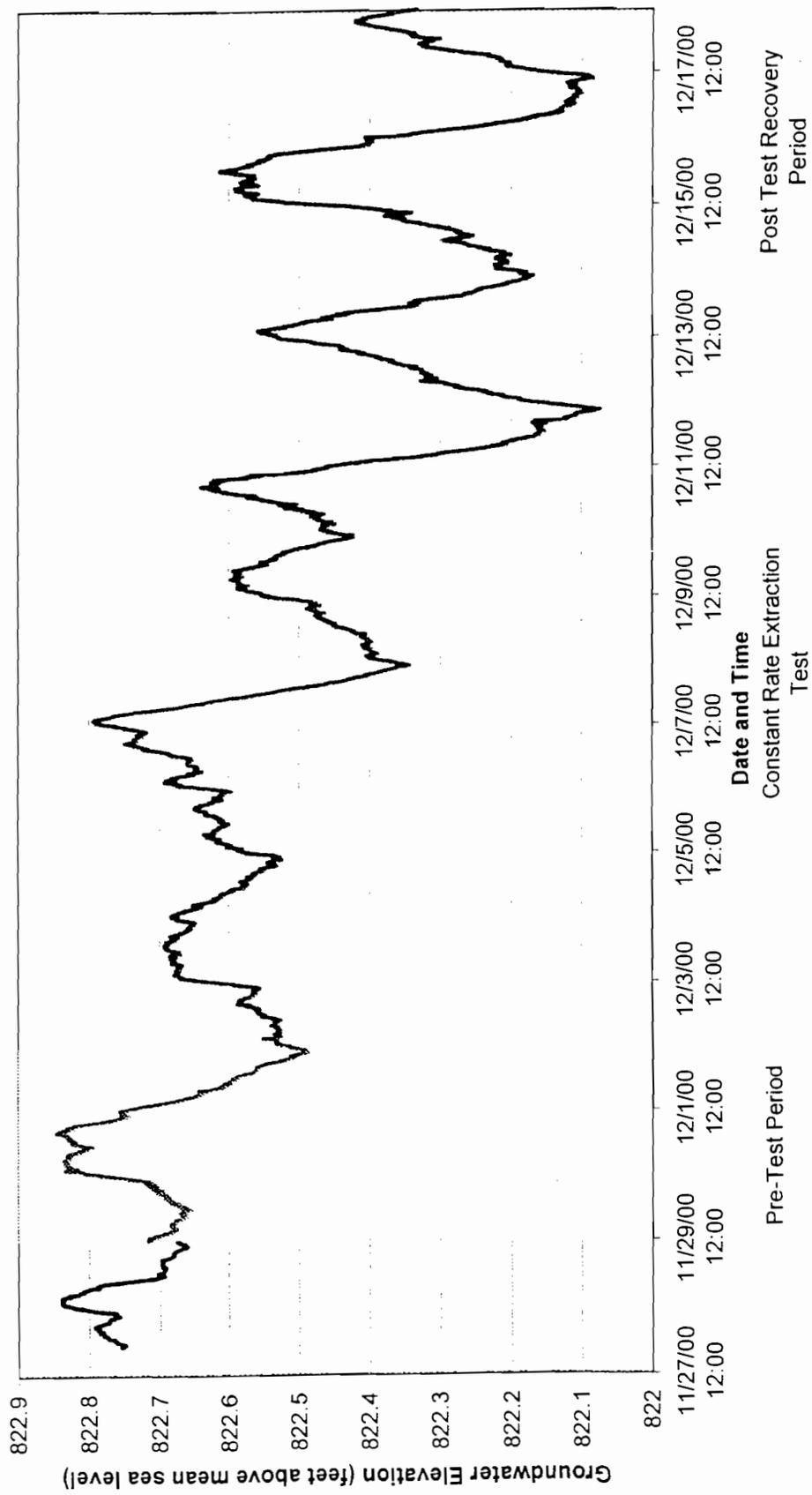
MW-5
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



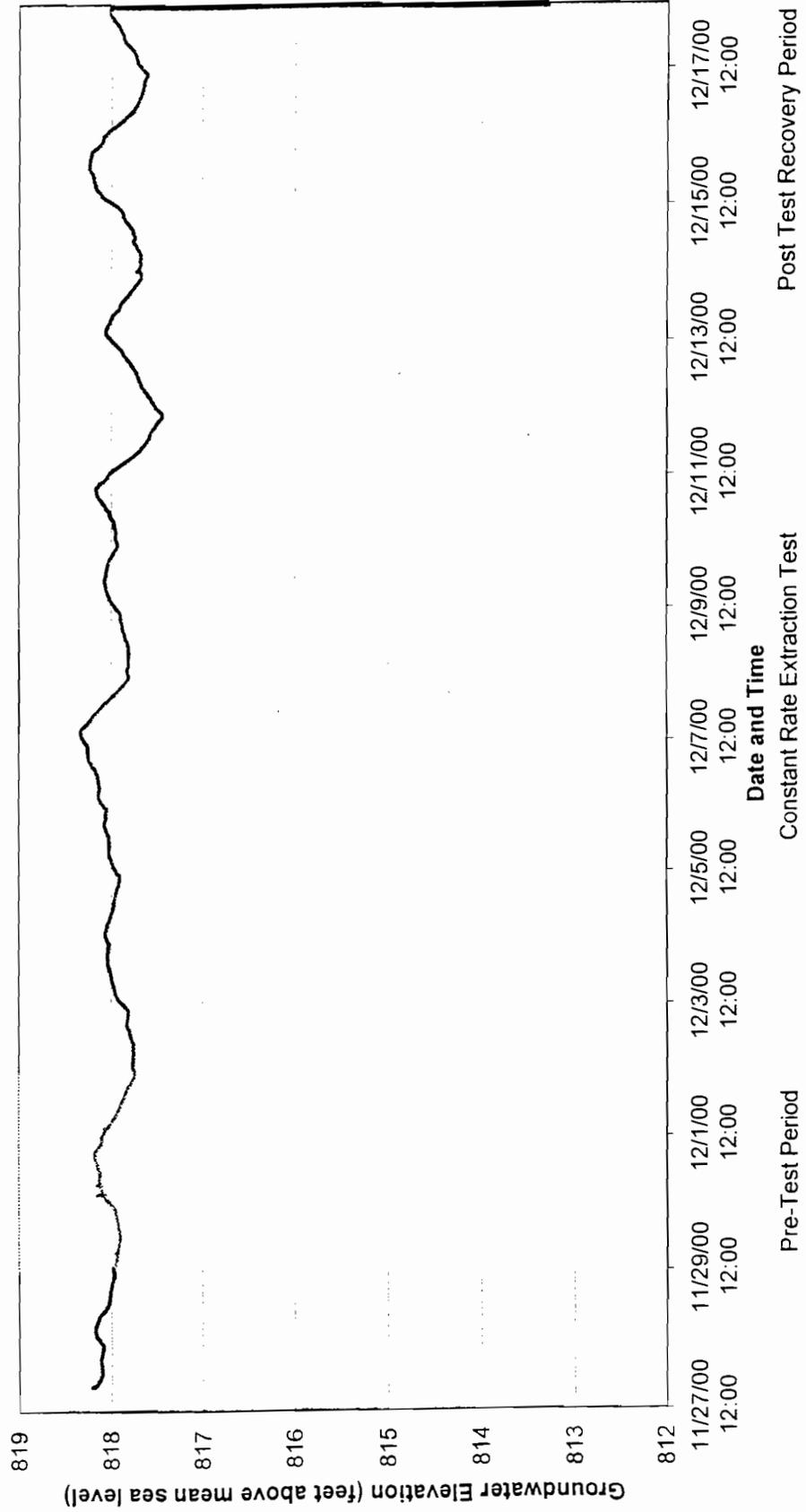
MW-7
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



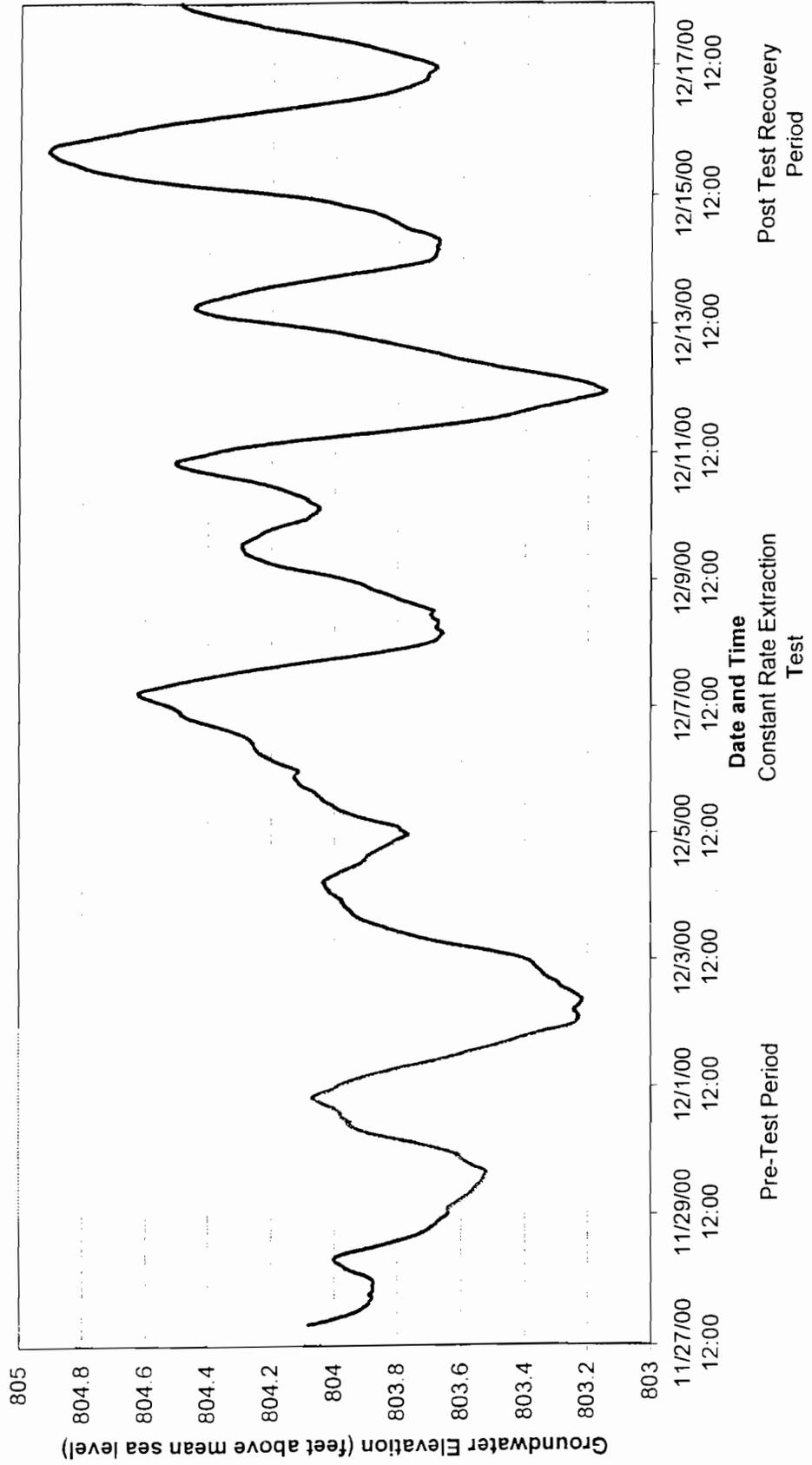
MW-8
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



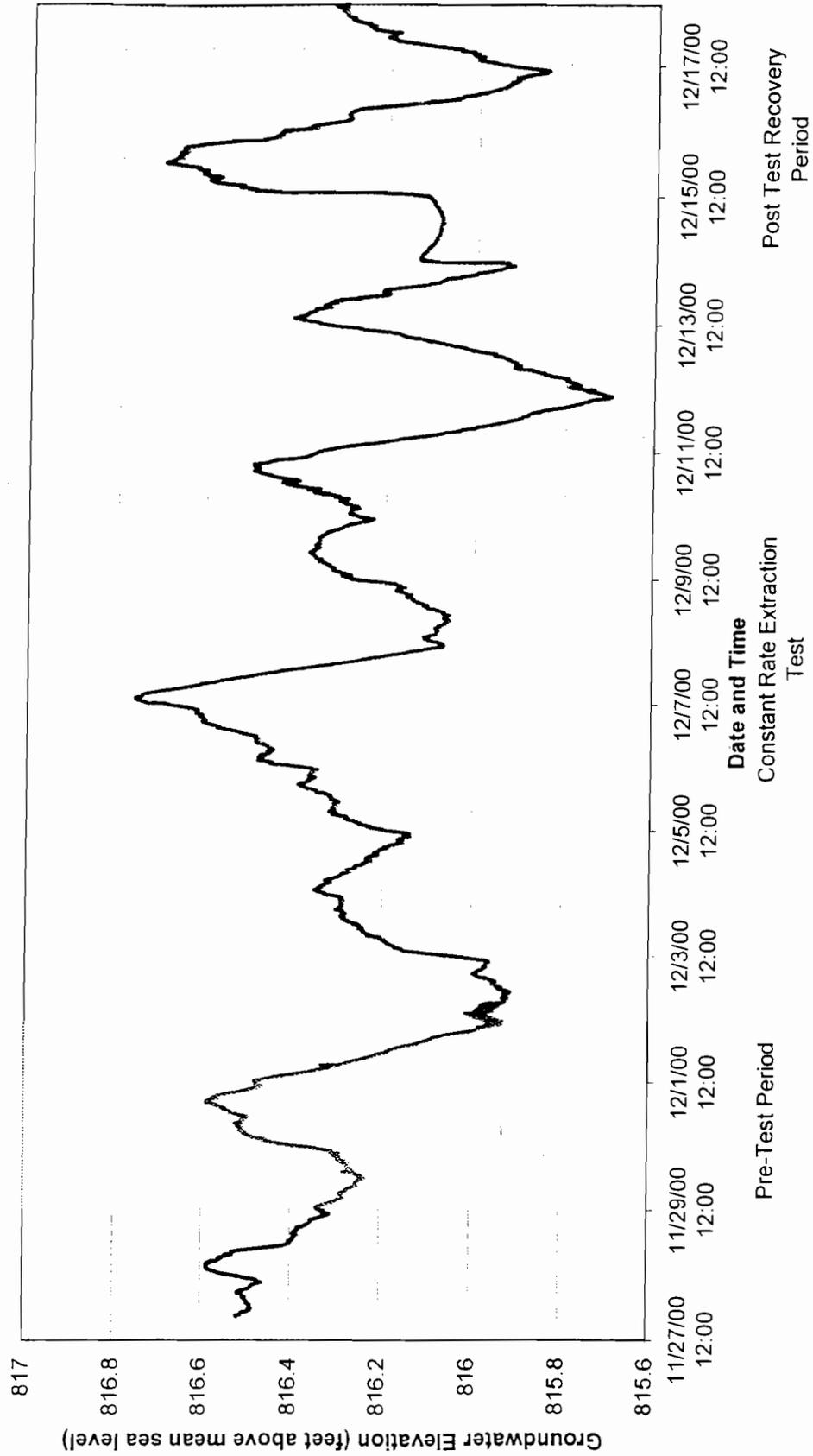
MW-9
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



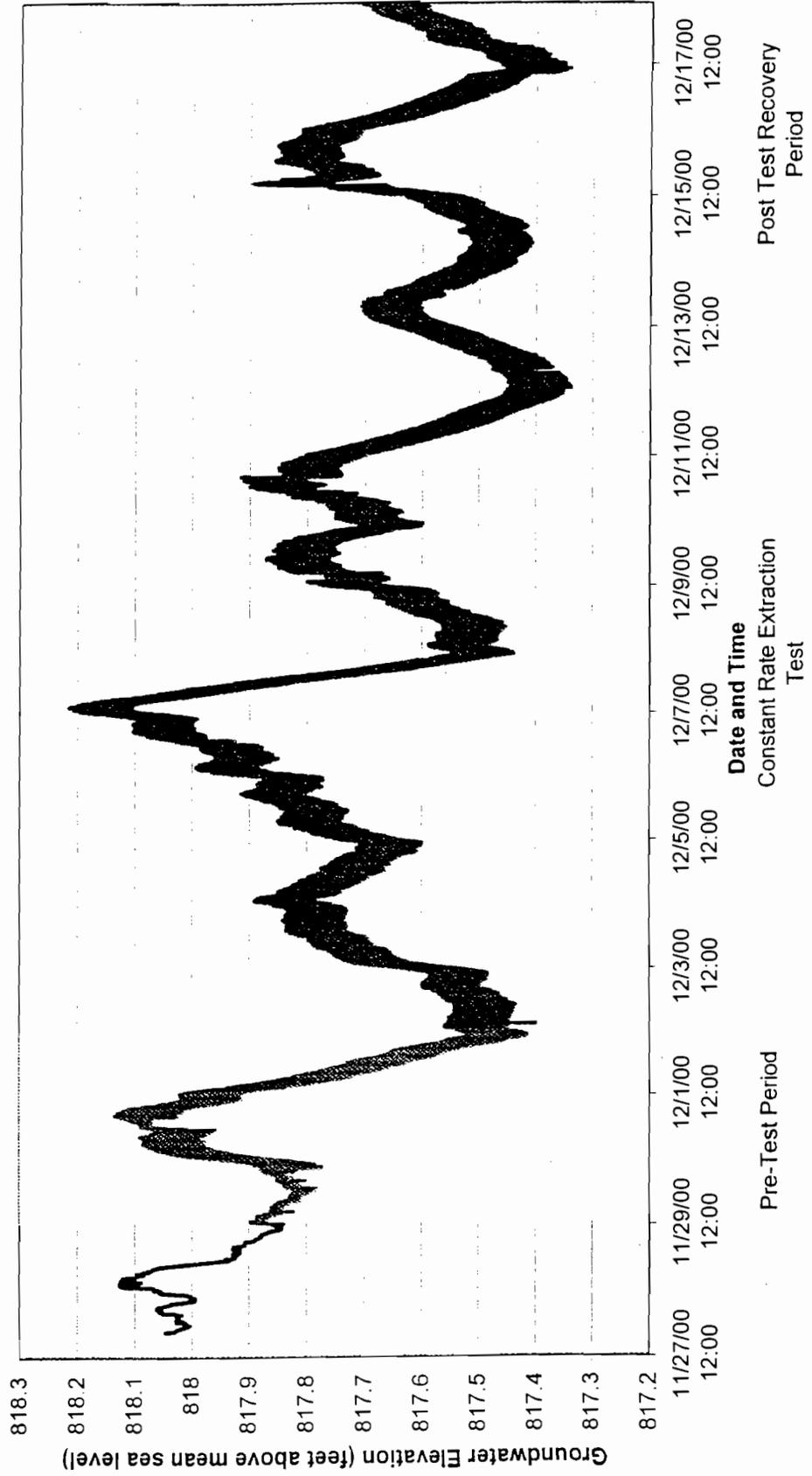
MW-11
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



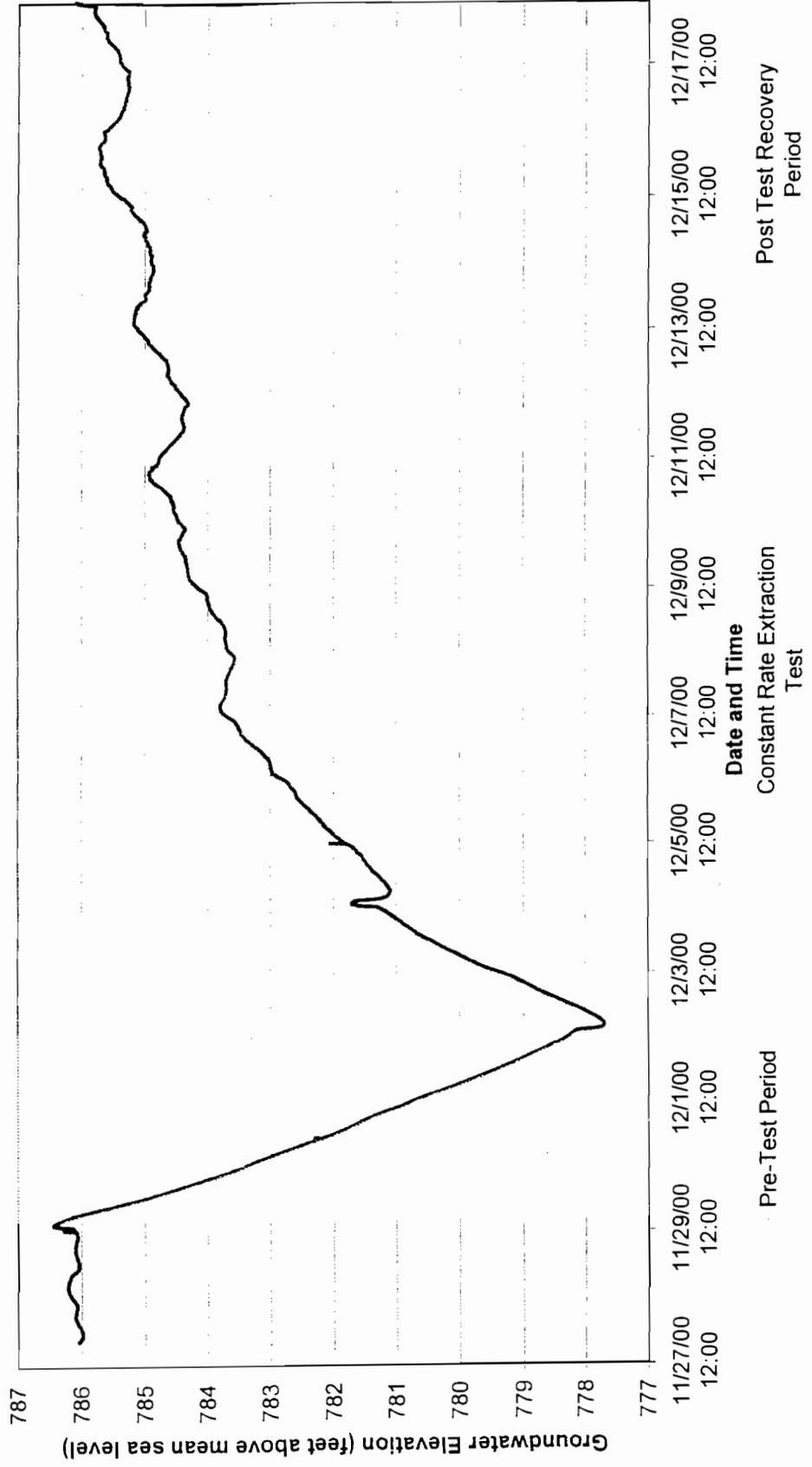
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Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



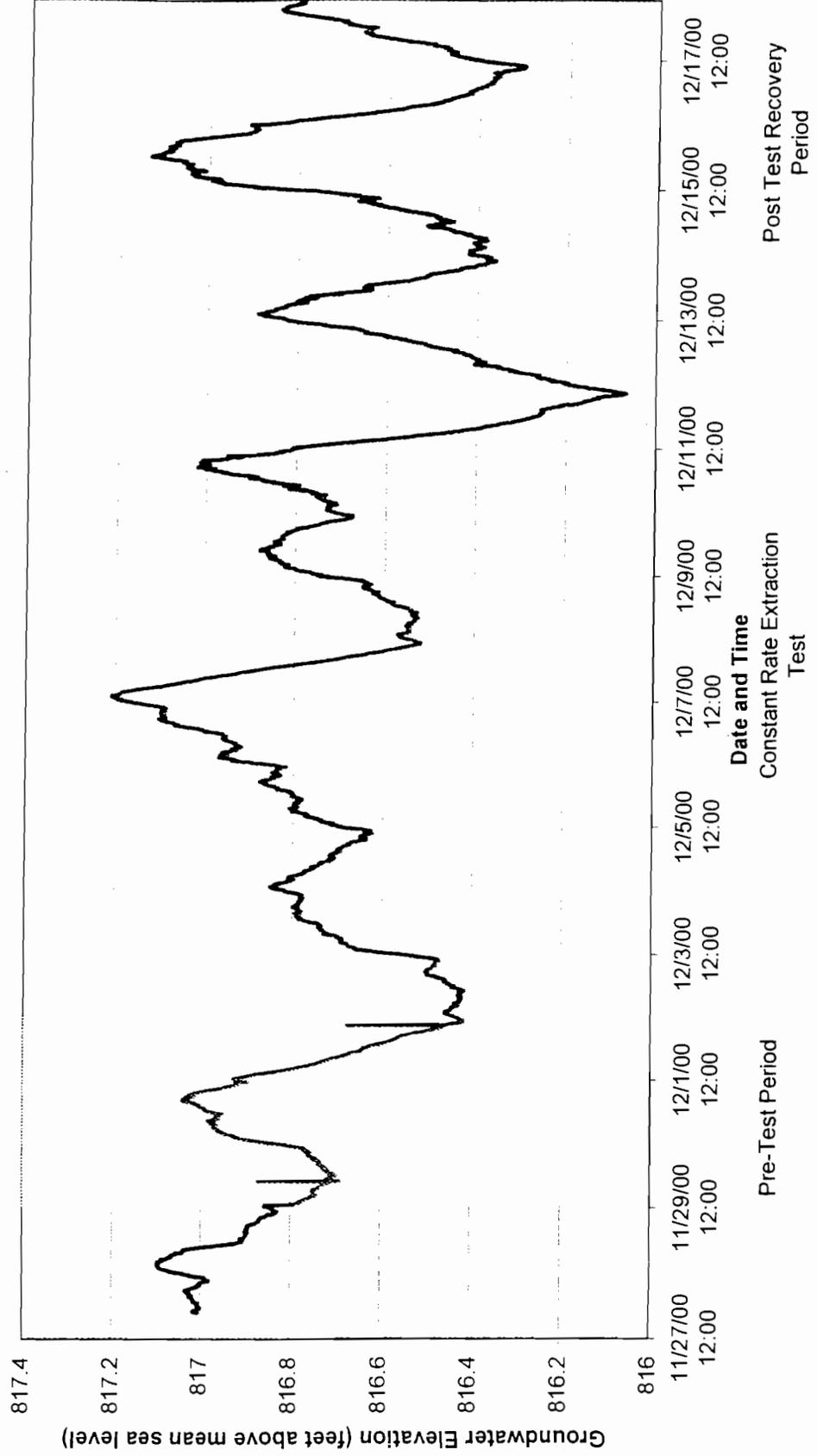
MW-13
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



MW-14
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri

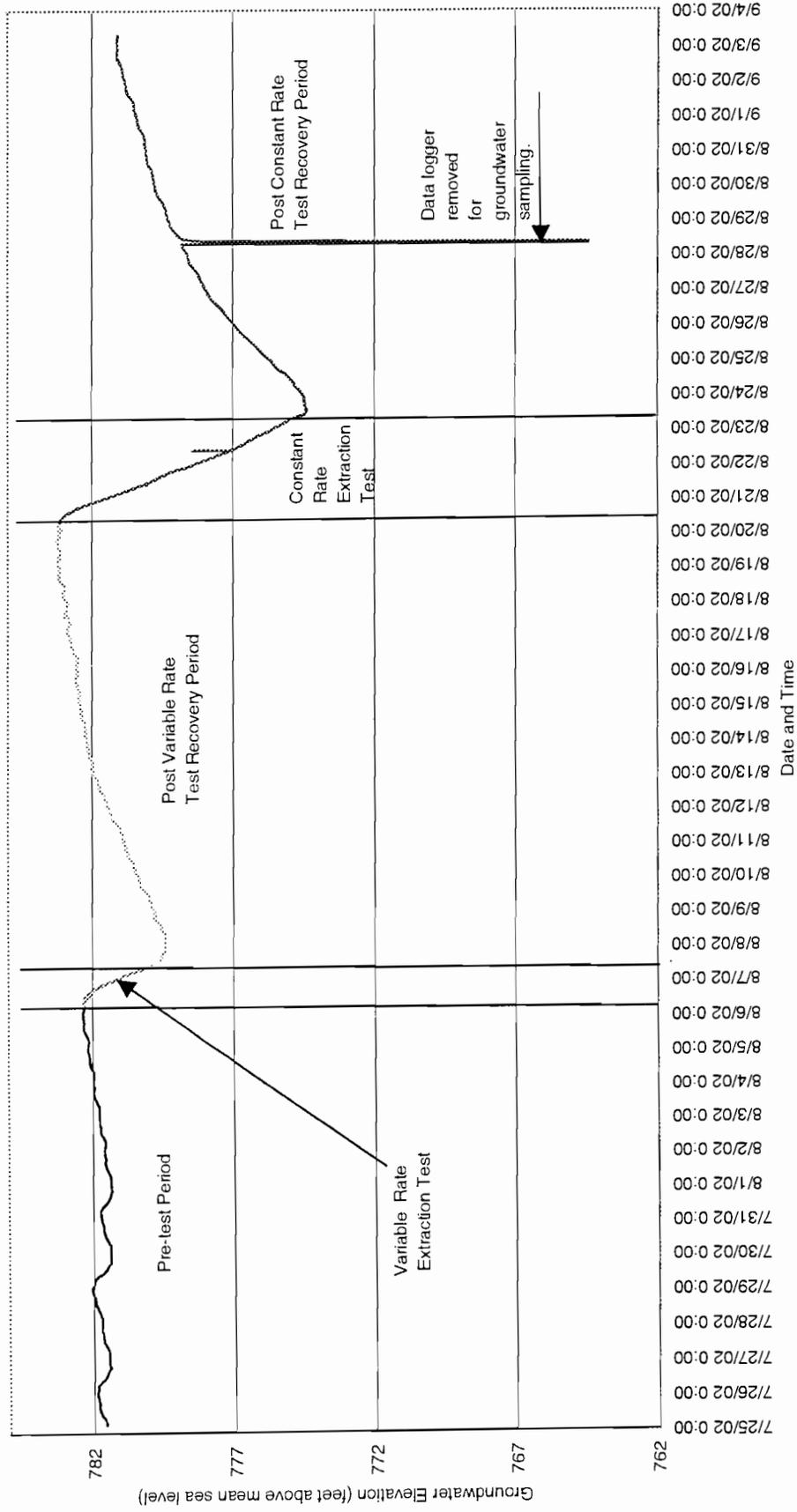


MW-15
Groundwater Elevation vs. Time
Phase II Aquifer Test
November 27 through December 18, 2000
HS - Camdenton
Camdenton, Missouri



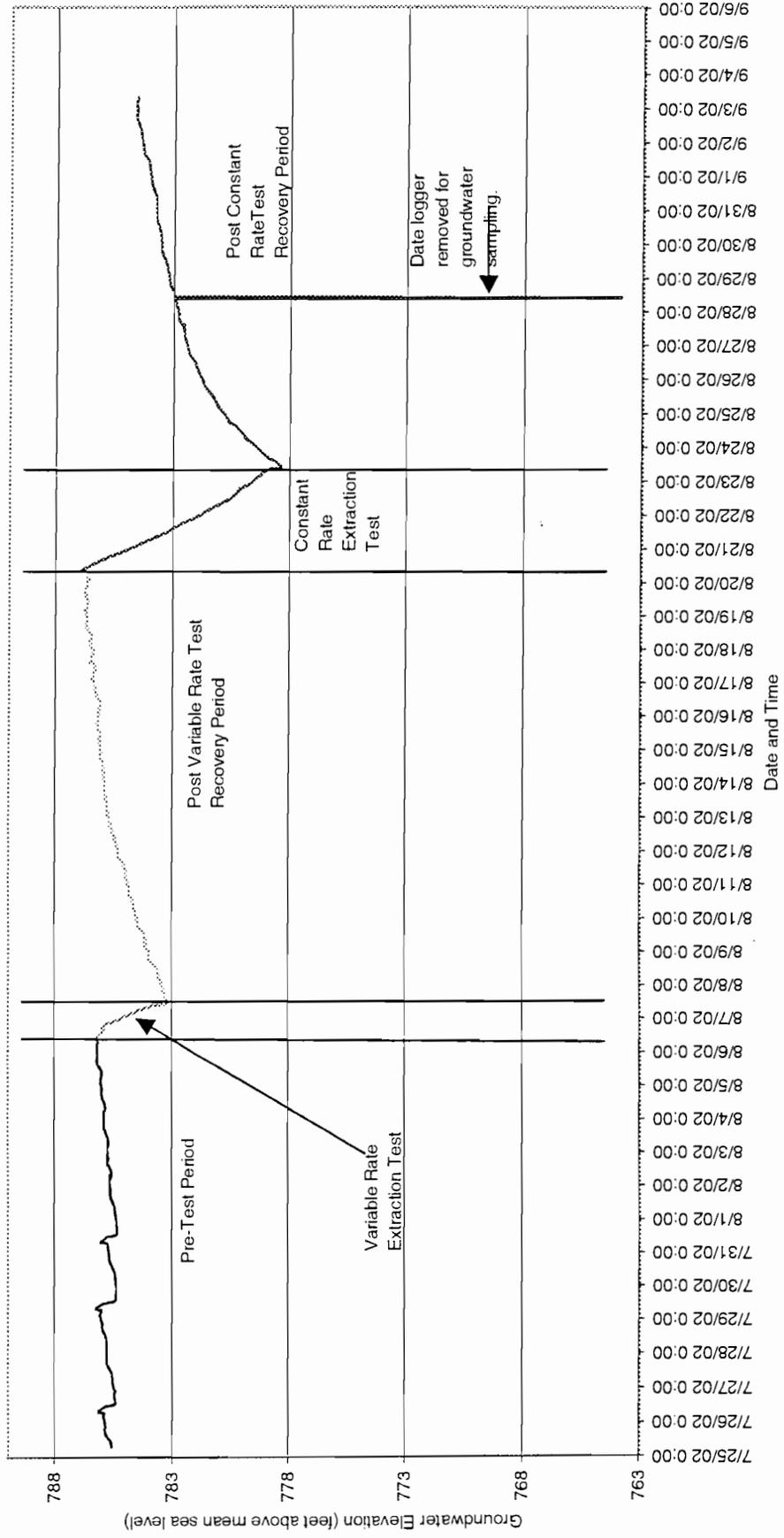
APPENDIX B
PHASE III AQUIFER RESPONSE HYDROGRAPHS
AUGUST 2002 AQUIFER TEST

MW-1
 Groundwater Elevation vs. Time
 Phase III Aquifer Test
 July 25-September 3, 2002
 UTC-Camdenton
 Camdenton, Missouri



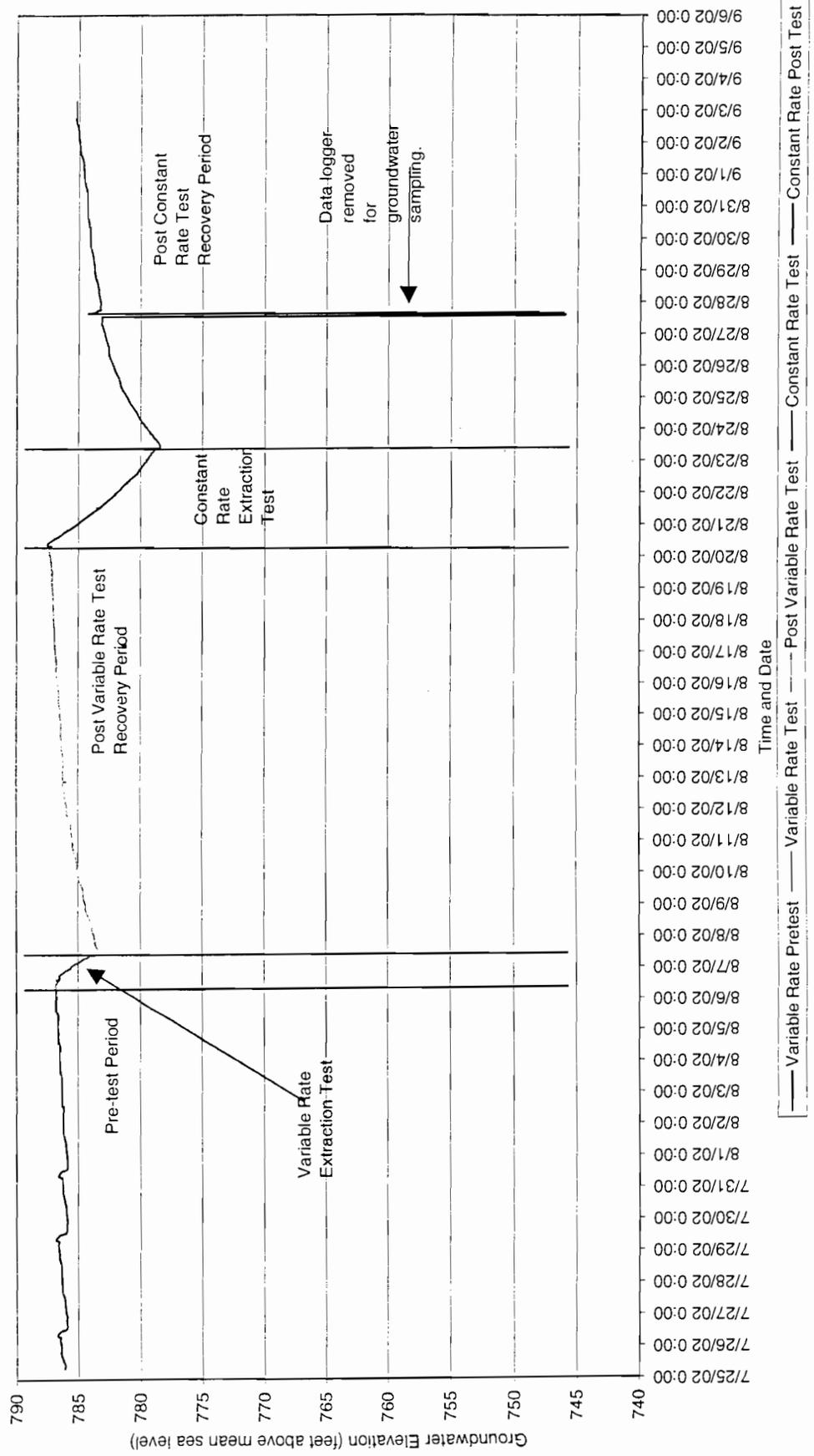
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MW-2
 Groundwater Elevation vs. Time
 Phase III Aquifer Test
 July 25-September 3, 2002
 UTC-Camdenton
 Camdenton, Missouri

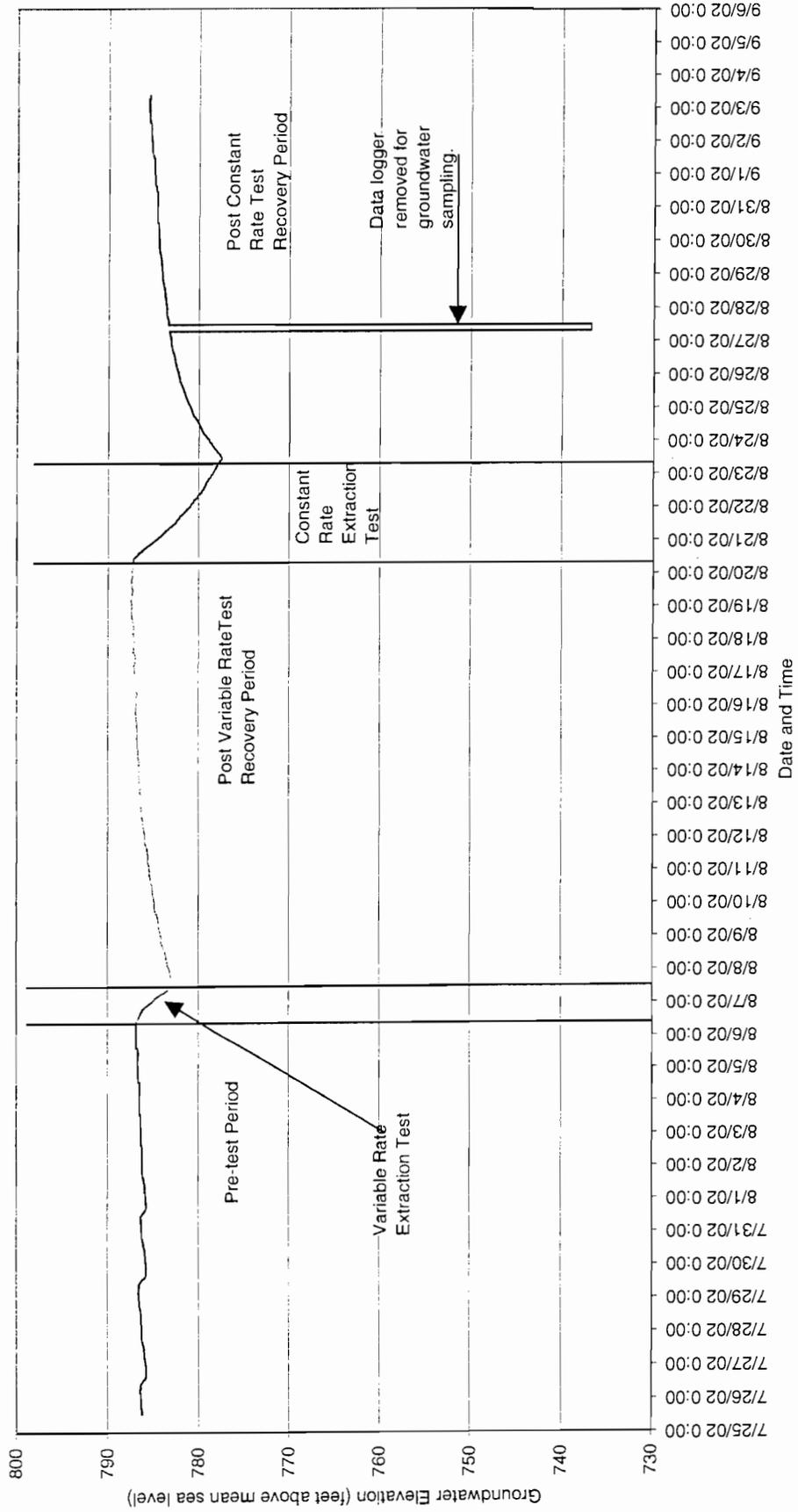


Variable Rate Pretest Variable Rate Test Post Variable Rate Test Constant Rate Test Constant Rate Post Test

MW-14
 Groundwater Elevation vs. Time
 Phase III Aquifer Test
 July 25-September 3, 2002
 UTC-Camdenton
 Camdenton, Missouri

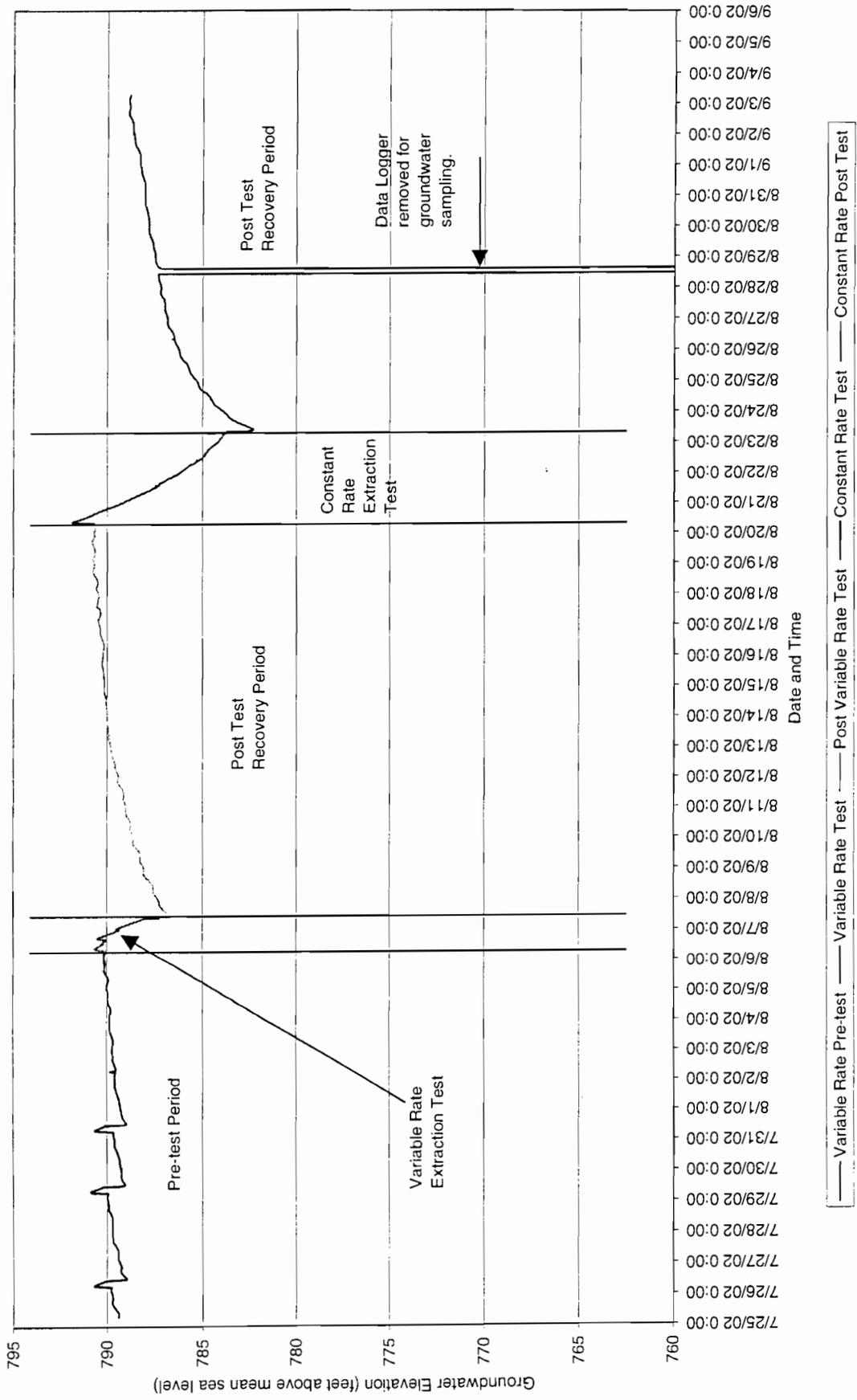


MW-16
 Groundwater Elevation vs. Time
 Phase III Aquifer Test
 July 25-September 3, 2002
 UTC-Camdenton
 Camdenton, Missouri



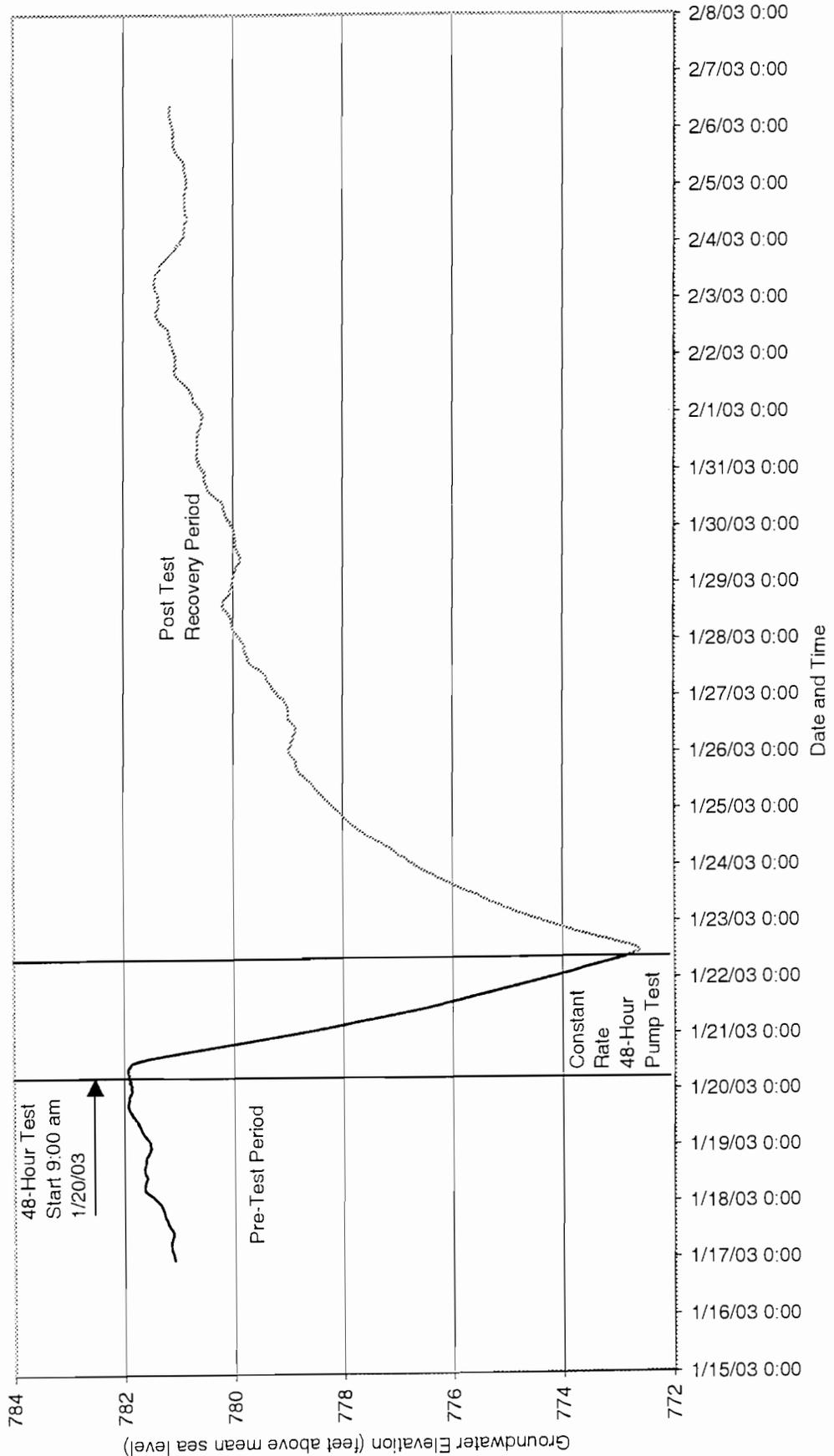
— Variable Rate Pretest — Variable Rate Test — Post Variable Rate Test — Constant Rate Test — Constant Rate Post Test

MW-17
 Groundwater Elevation vs. Time
 Phase III Aquifer Test
 July 25-September 3, 2002
 UTC-Camdenton
 Camdenton, Missouri



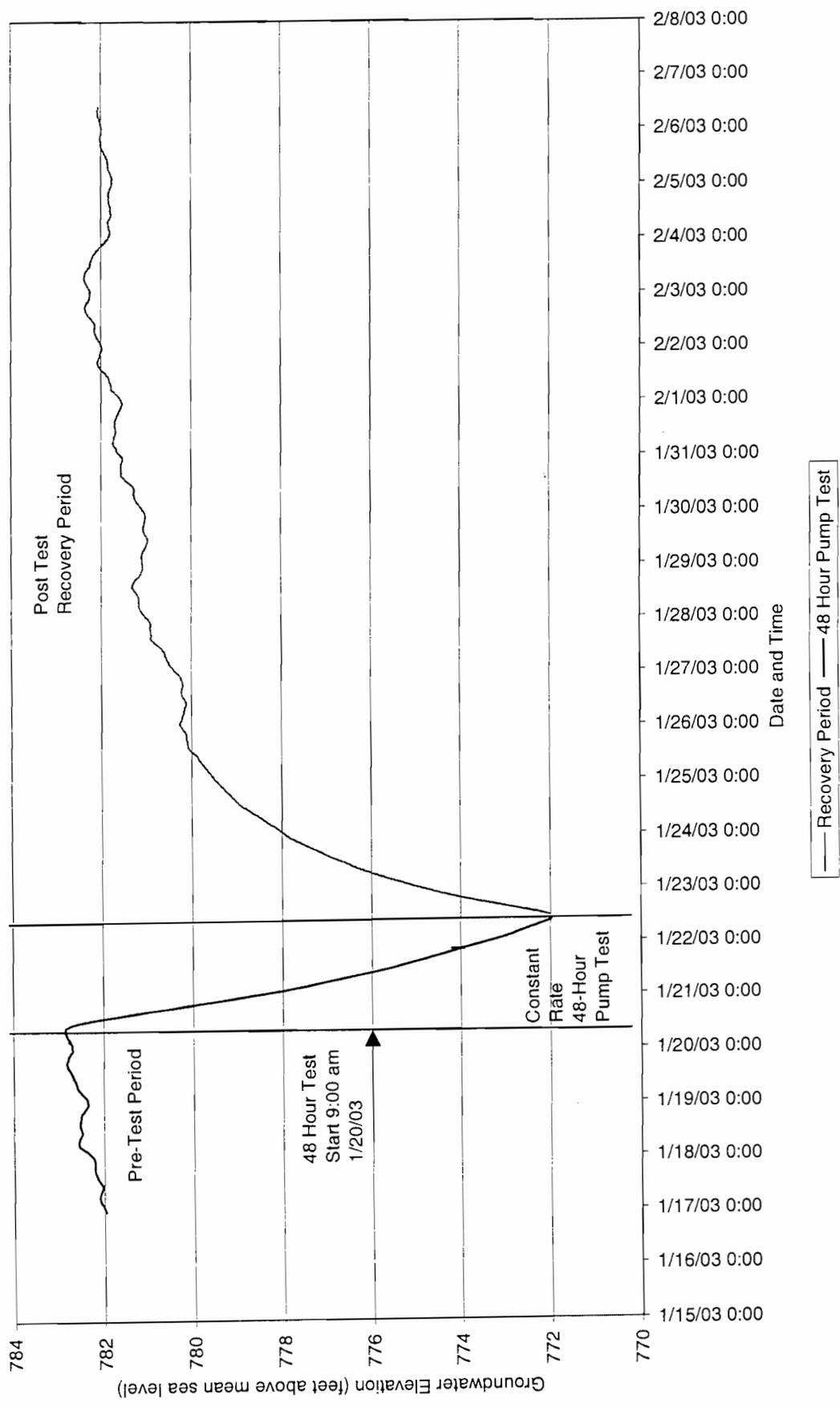
APPENDIX B
PHASE III AQUIFER RESPONSE HYDROGRAPHS
JANUARY 2003 AQUIFER TEST

MW-18
Groundwater Elevation vs. Time
48-Hour Constant Rate Test
January 17-February 6, 2003
UTC- Camdenton
Camdenton, Missouri



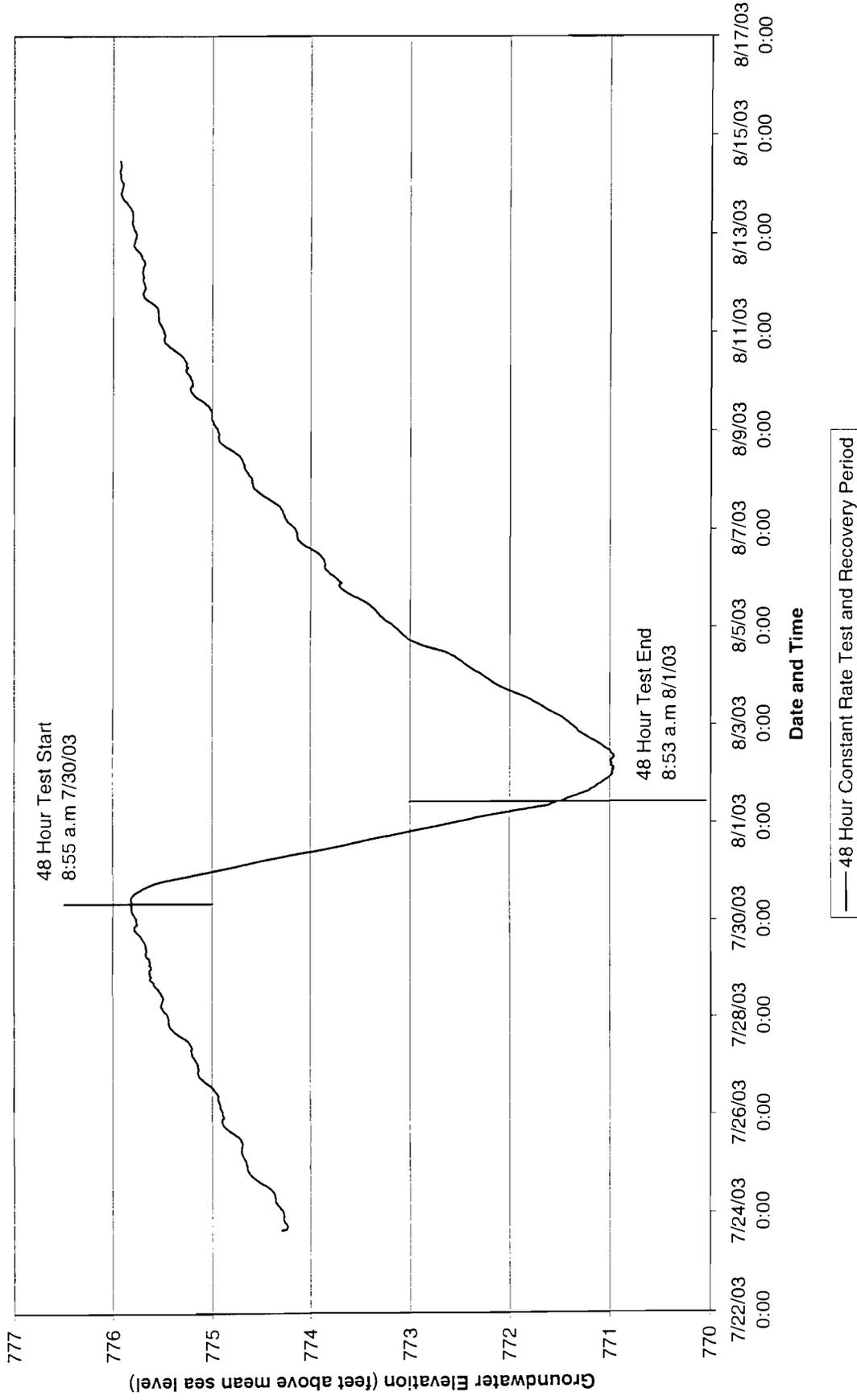
— 48 Hour Constant Rate Test Recovery Period

MW-19
Groundwater Elevation vs. Time
48-Hour Constant Rate Test
January 17-February 6, 2003
UTC- Camdenton
Camdenton, Missouri



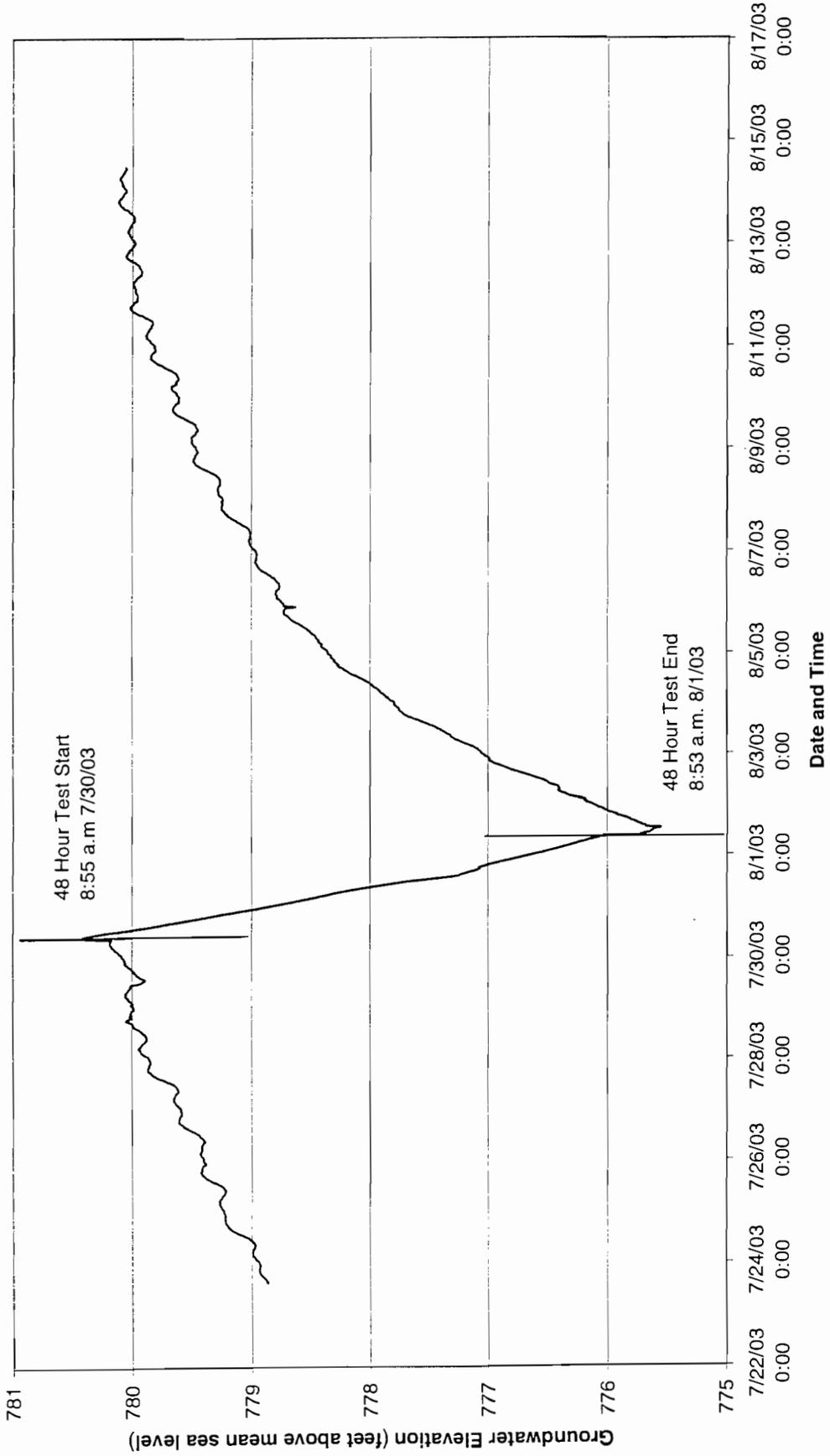
APPENDIX B
PHASE III AQUIFER RESPONSE HYDROGRAPHS
JULY - AUGUST 2003 AQUIFER TEST

MVv-1
 Groundwater Elevation vs. Time
 48 Hour Constant Rate Pump Test and Recovery Period
 7/30/03-8/14/03
 UTC- Camdenton
 Camdenton, Missouri



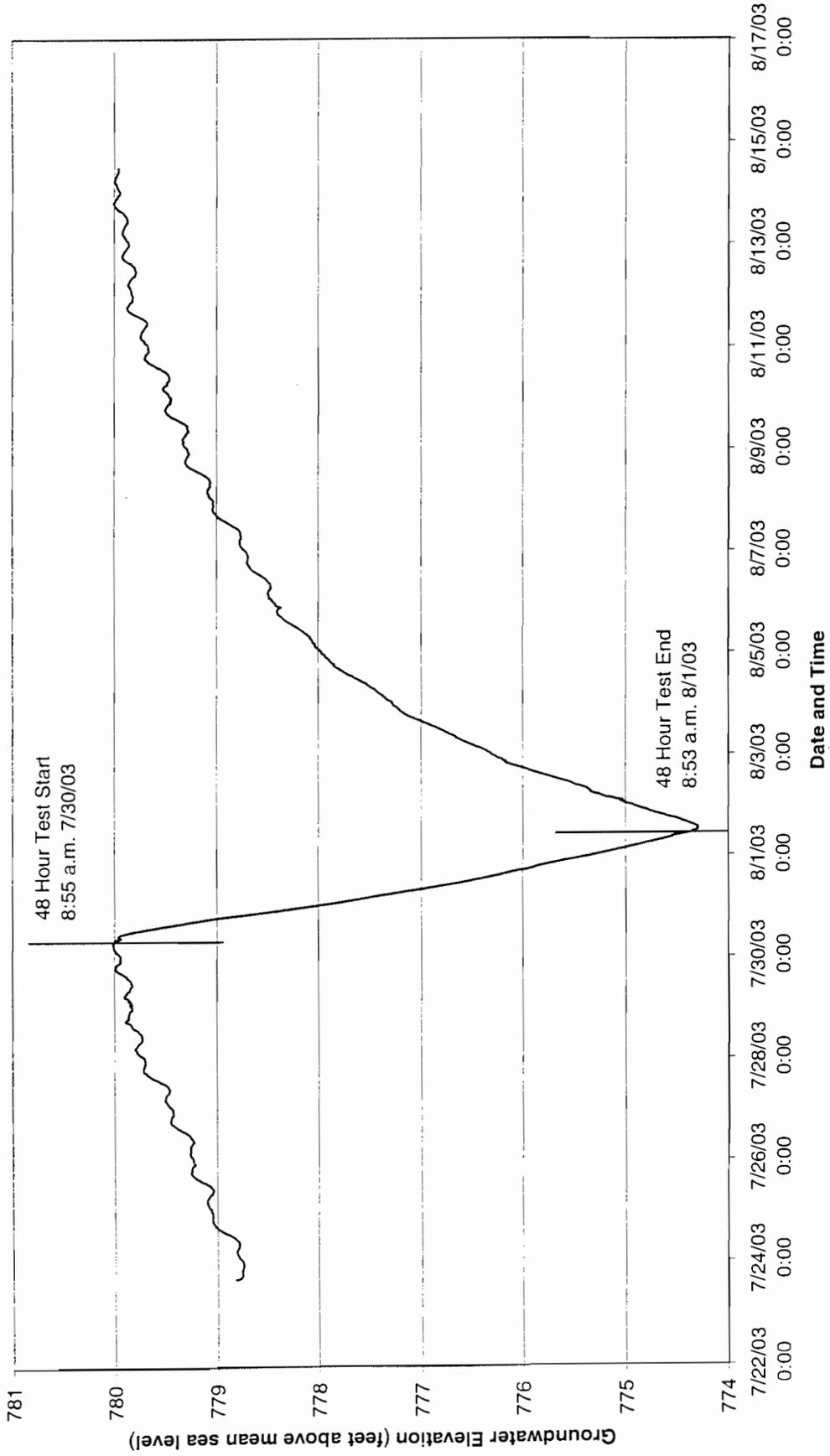
MV-14

Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenon
Camdenton, Missouri



— 48 Hour Constant Rate Test and Recovery Period

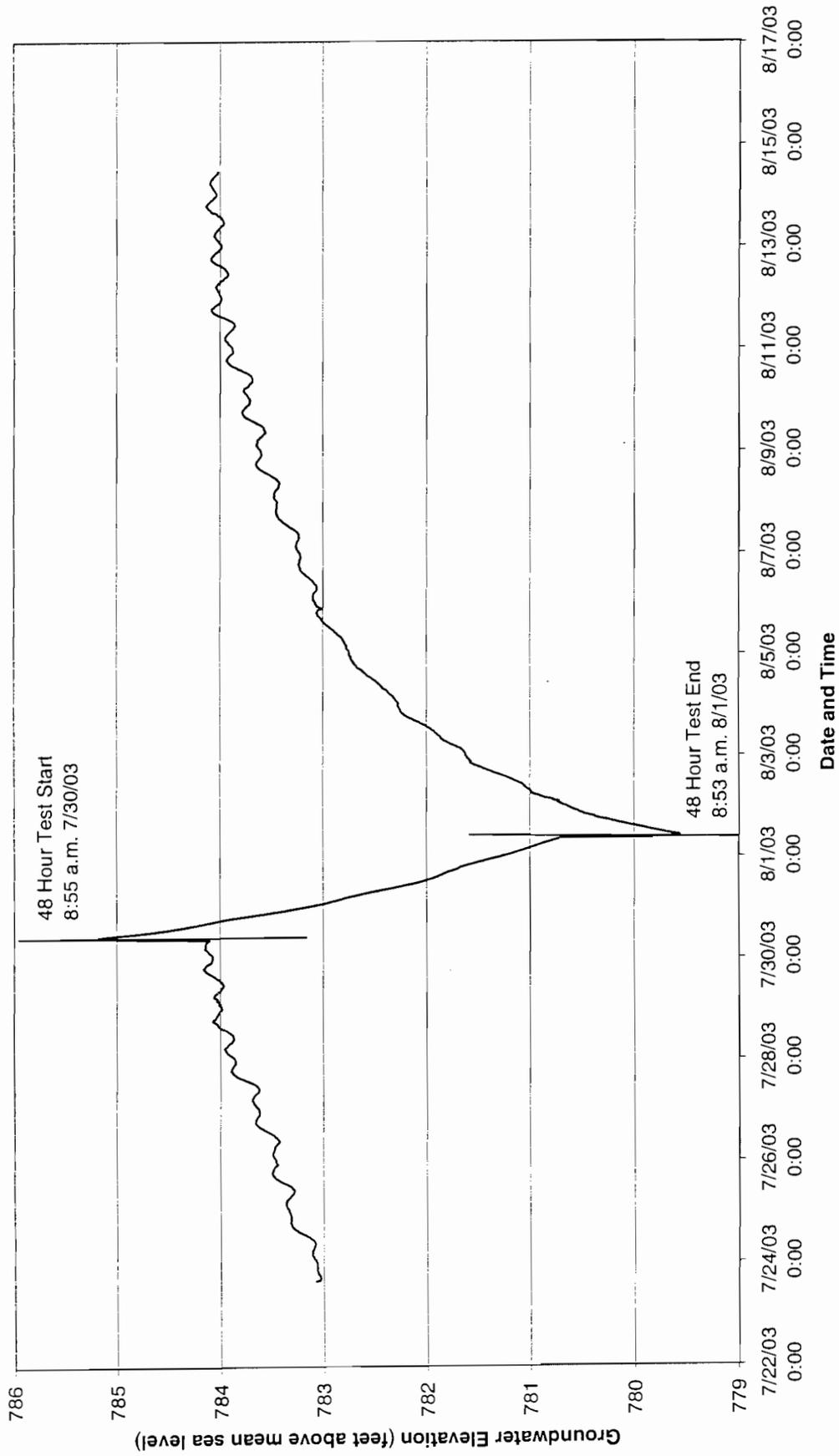
MVv-16
Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri



— 48 Hour Constant Rate Test and Recovery Period

MV 17

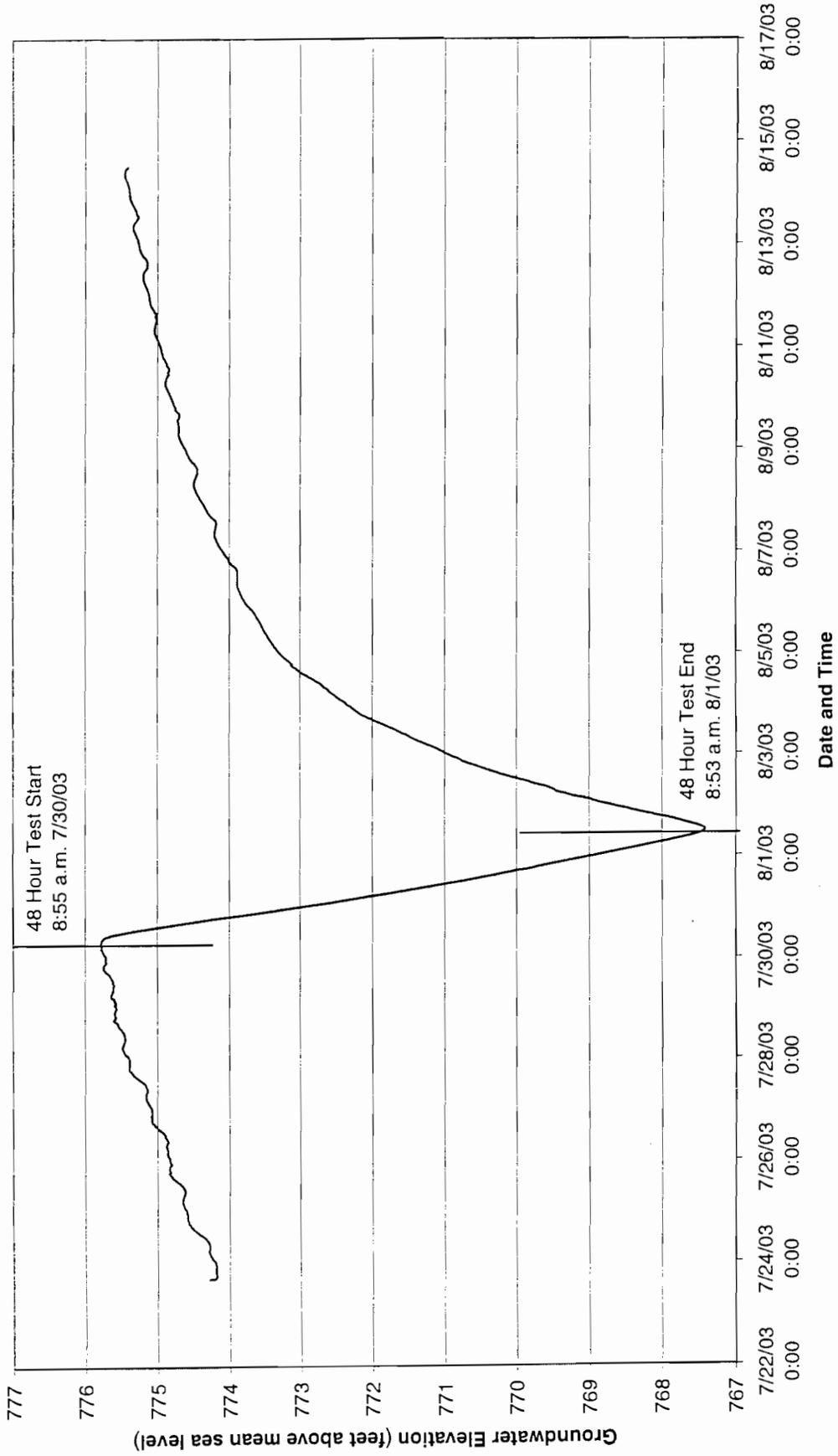
Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri



— 48 Hour Constant Rate Test and Recovery Period

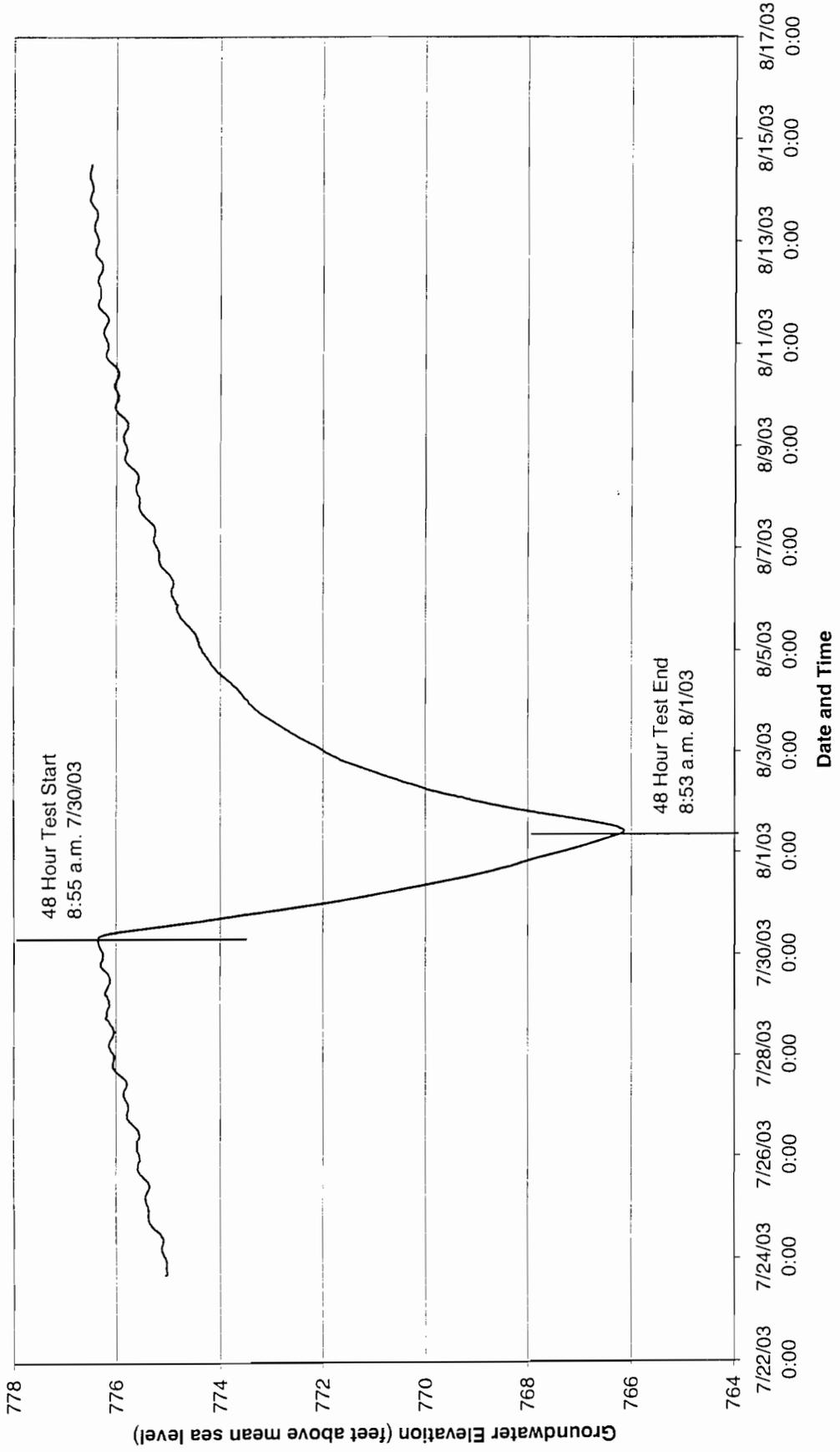
MV - i8

Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri



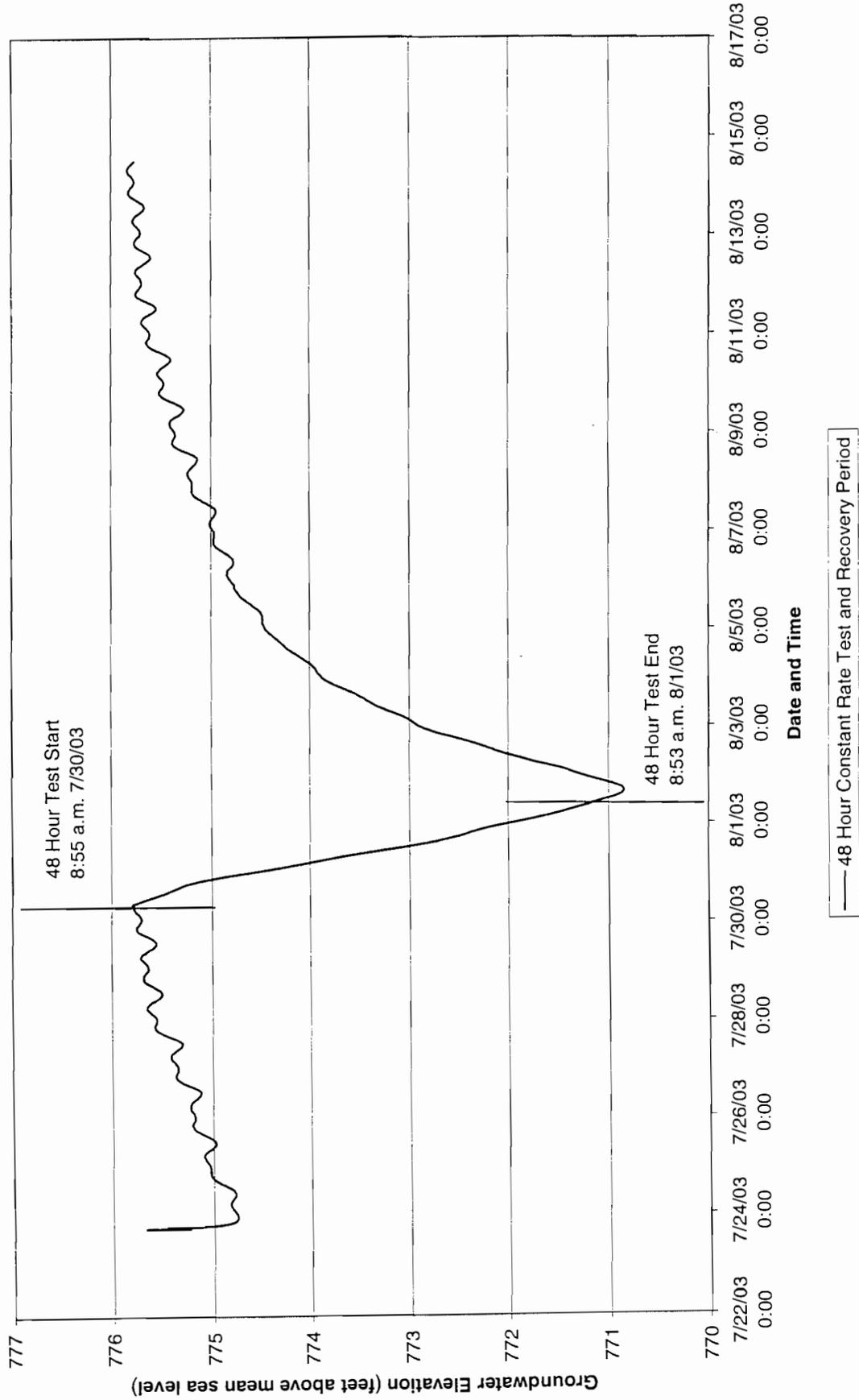
— 48 Hour Constant Rate Test and Recovery Period

MV-19
Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri

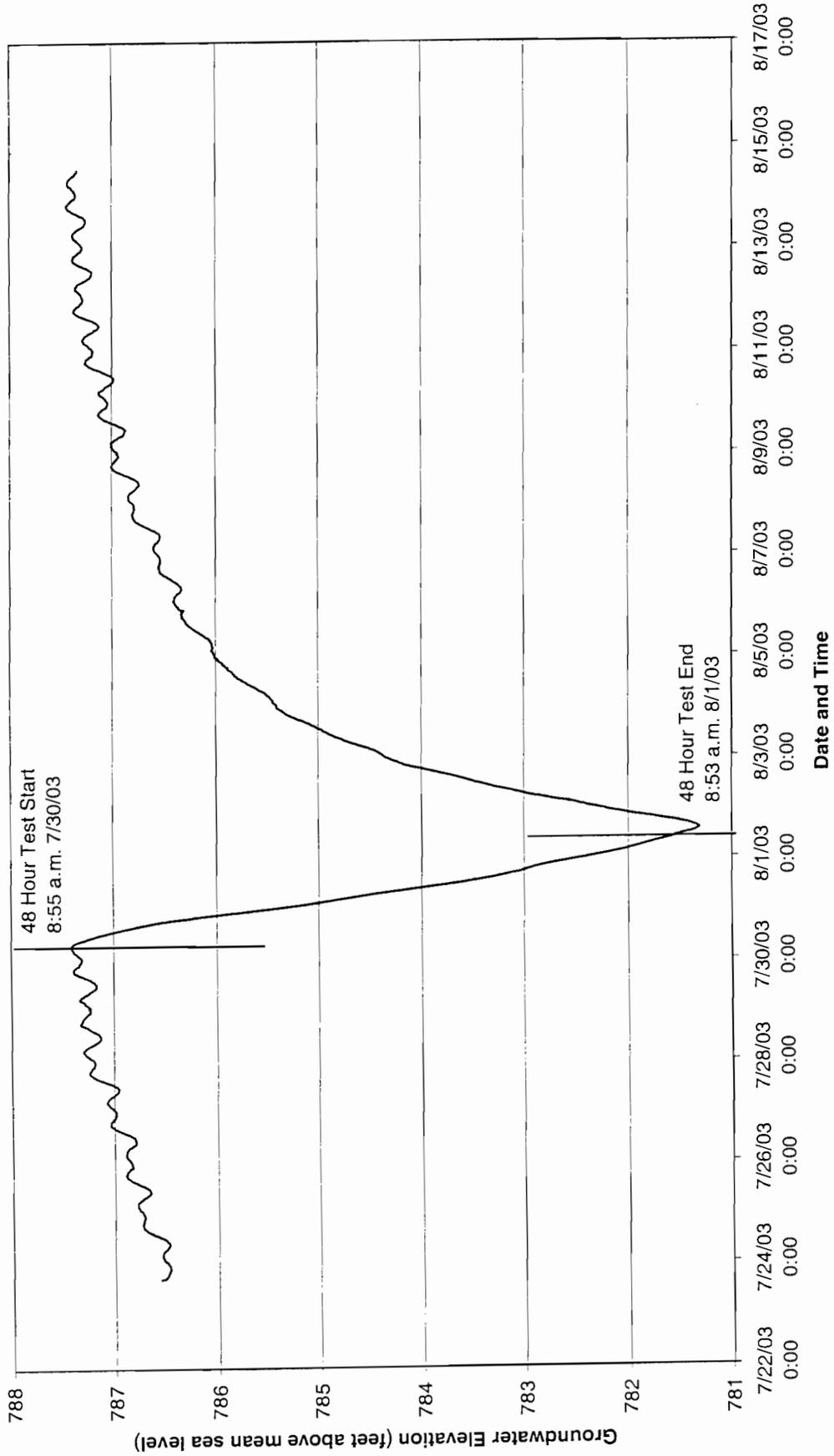


— 48 Hour Constant Rate Test and Recovery Period

Mv. 20
Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri



Mv. 21
Groundwater Elevation vs. Time
48 Hour Constant Rate Pump Test and Recovery Period
7/30/03-8/14/03
UTC- Camdenton
Camdenton, Missouri



— 48 Hour Constant Rate Test and Recovery Period

Mlv--22

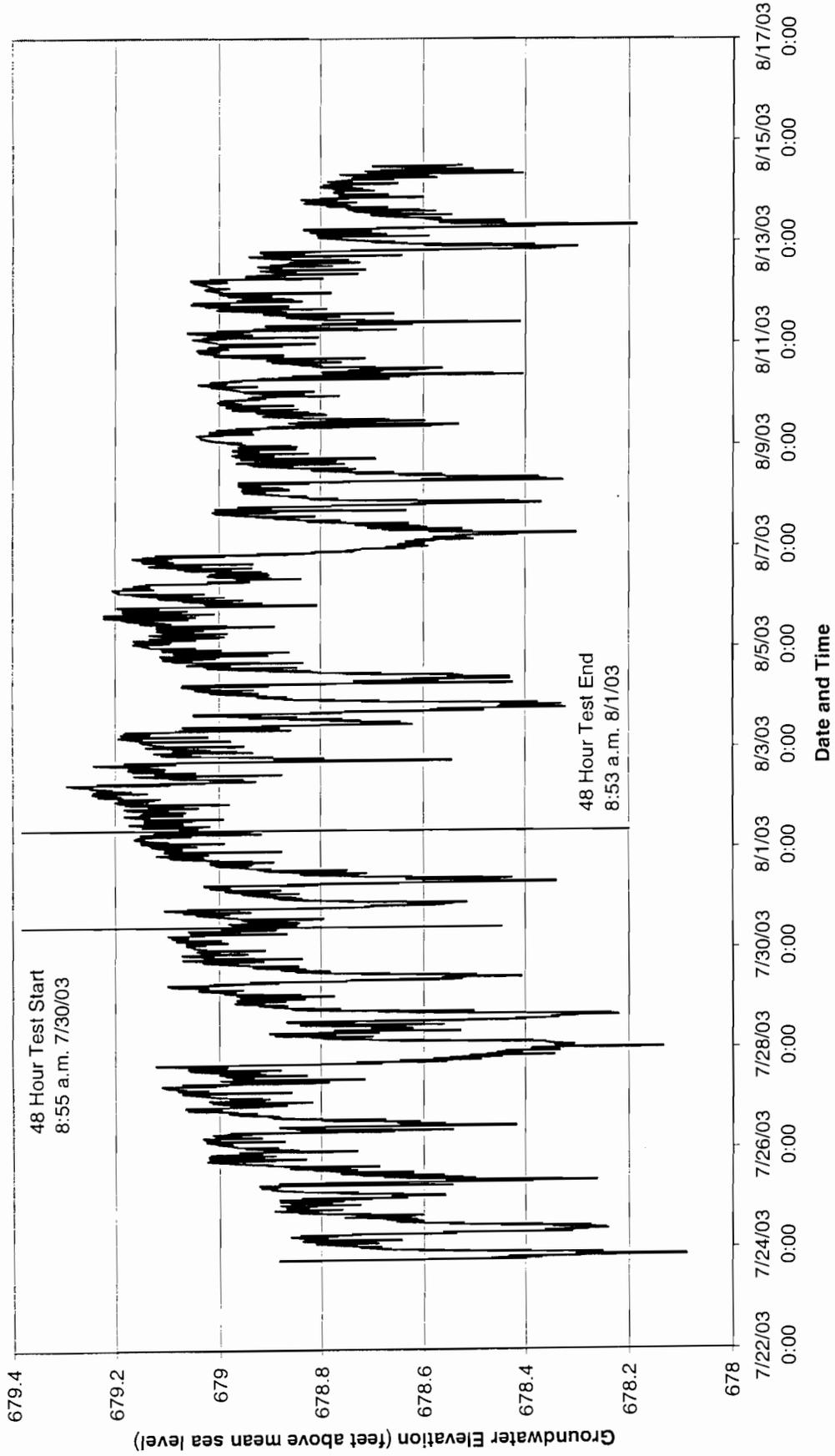
Groundwater Elevation vs. Time

48 Hour Constant Rate Pump Test and Recovery Period

7/30/03-8/14/03

UTC- Camdenton

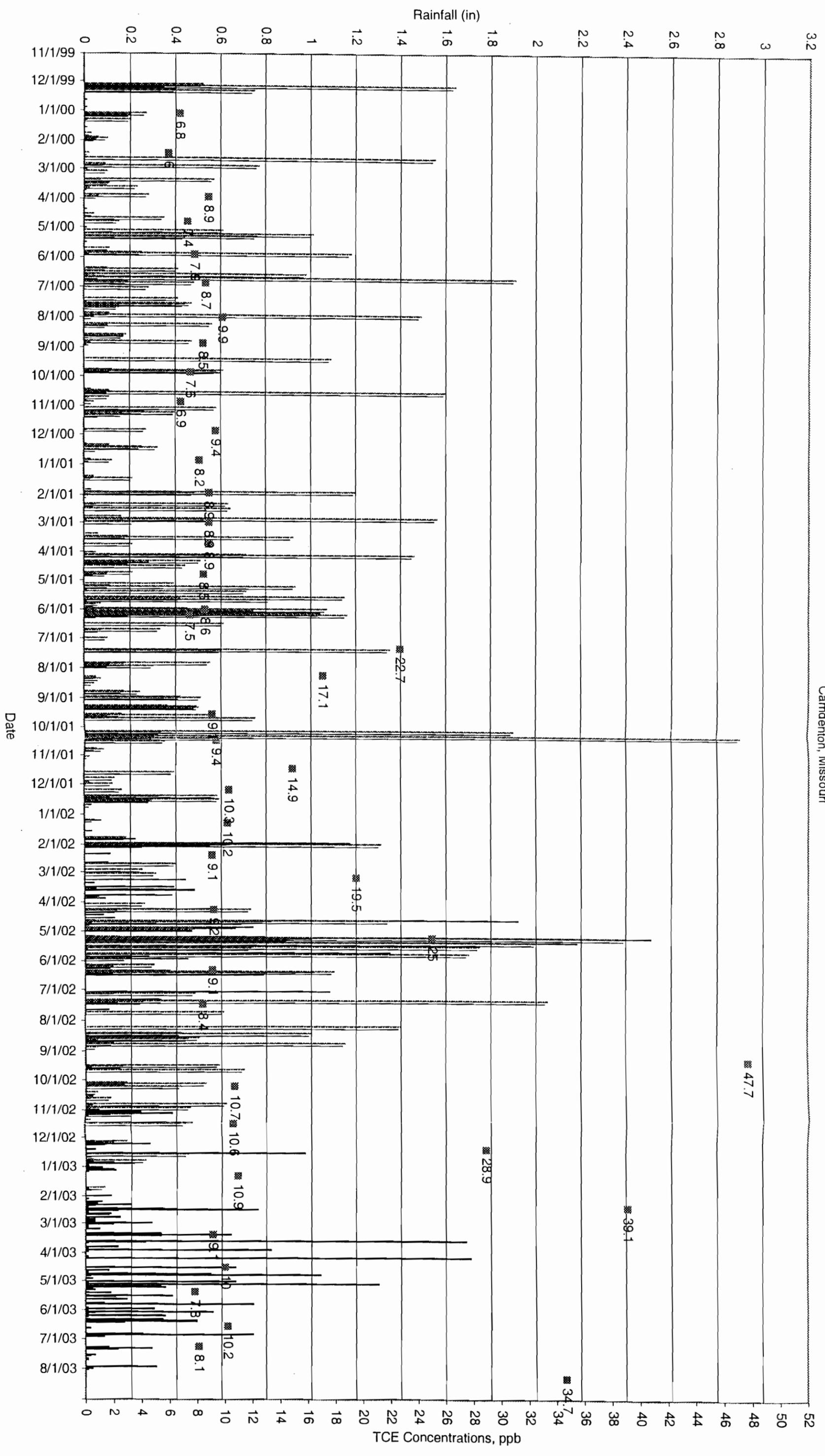
Camdenton, Missouri



— 48 Hour Constant Rate Test and Recovery Period

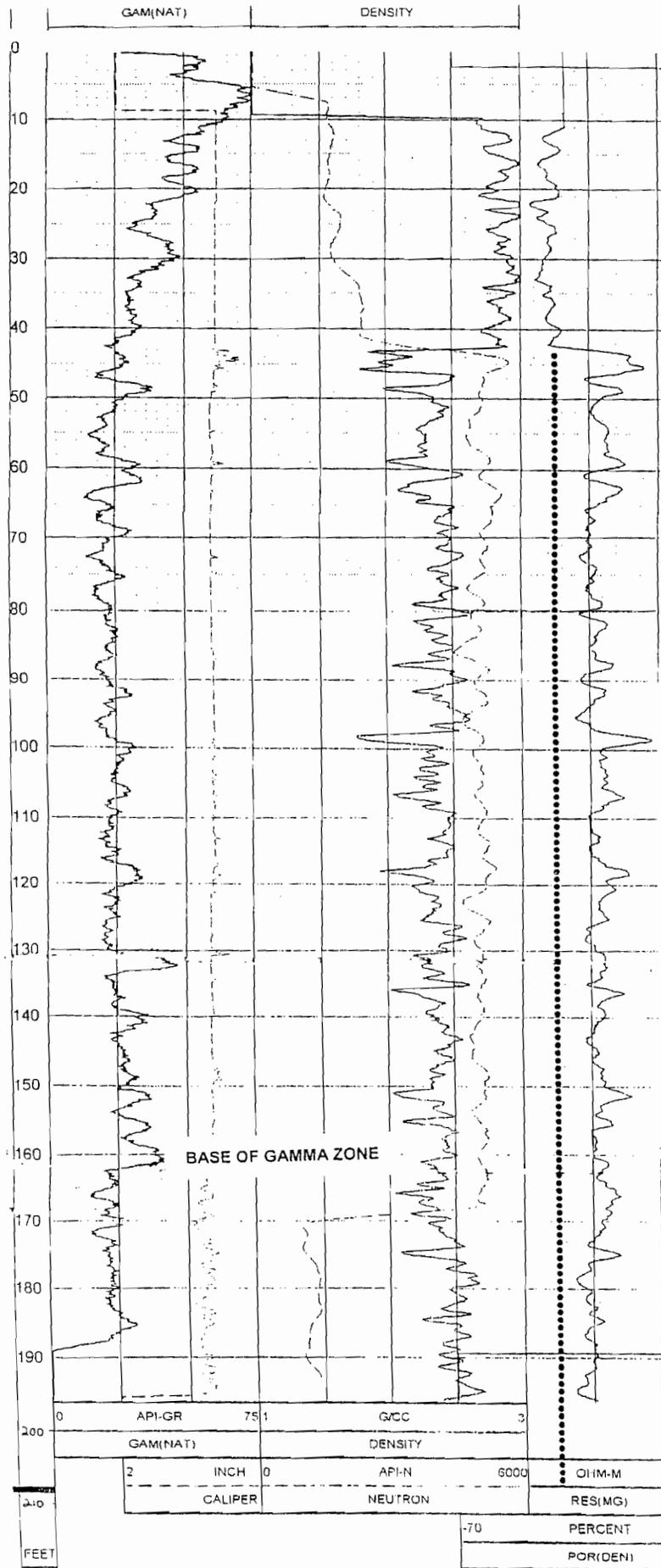
APPENDIX C
MULBERRY WELL AND RAINFALL DATA
Remedial Investigation Summary Report
Former Hulett Lagoon
Camdenton, Missouri
SECOR Project No.: 61UN.03001
November 24, 2003

Rainfall vs TCE Results of the Mulberry Well
 UTC- Camdenton
 Camdenton, Missouri

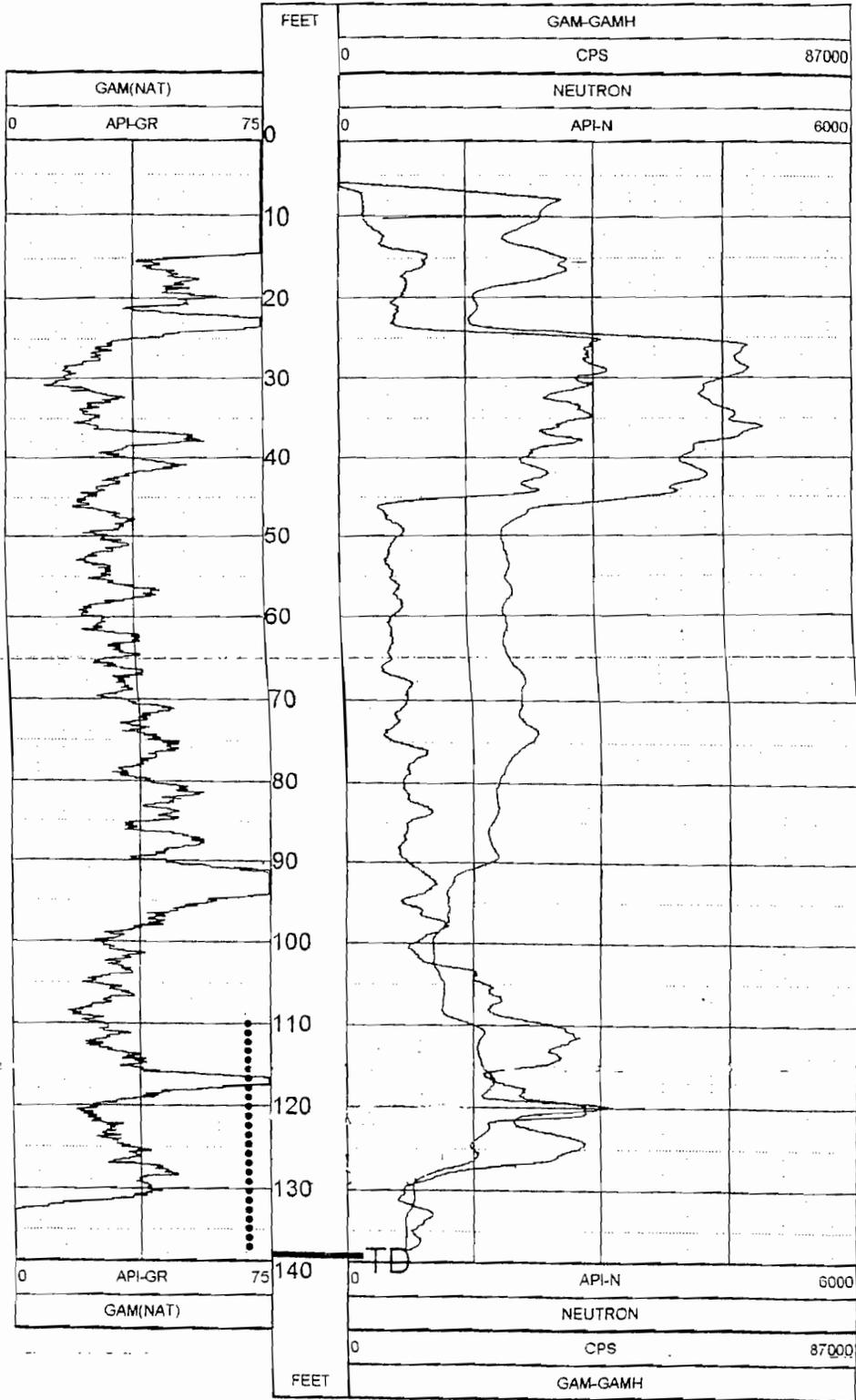


APPENDIX D
GEOPHYSICAL LOGS

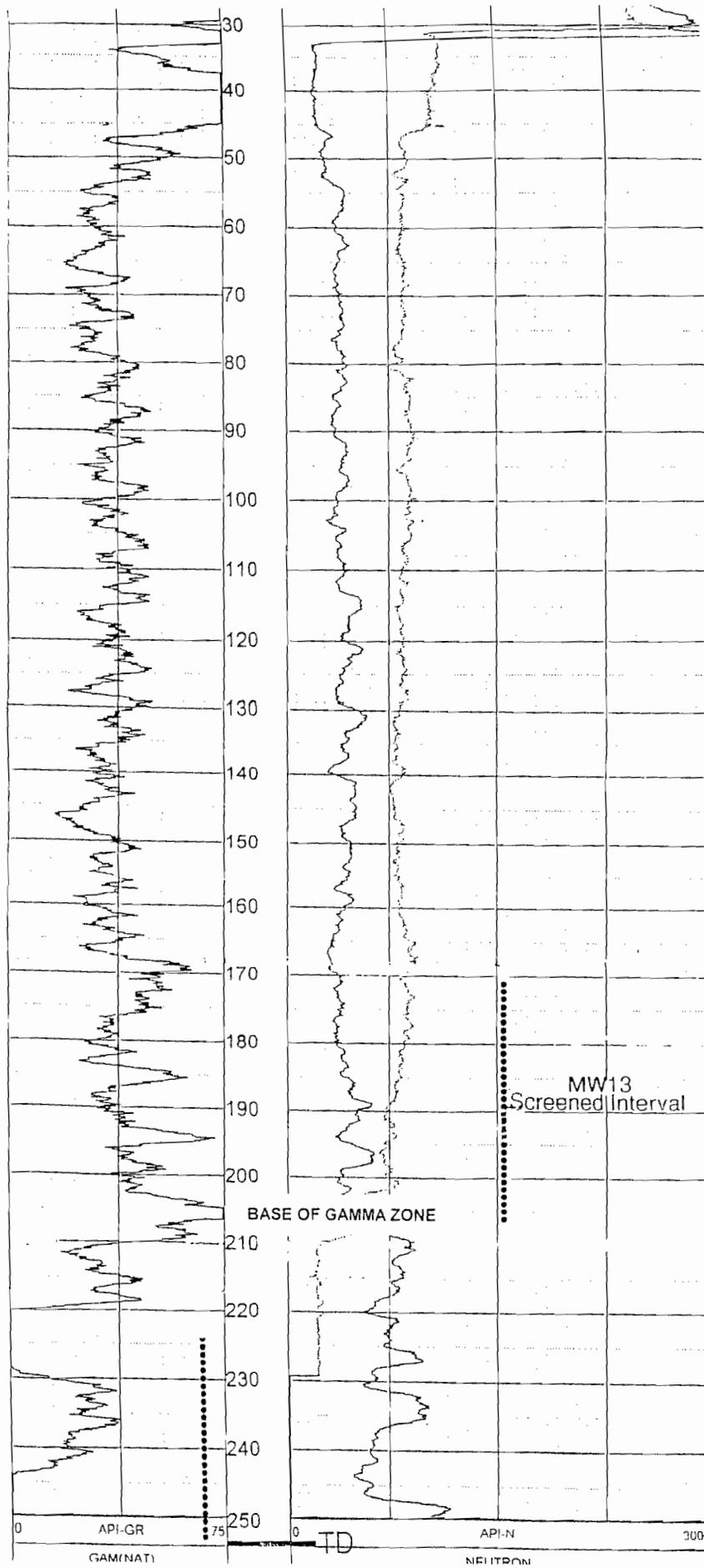
Remedial Investigation Summary Report
Former Hulett Lagoon
Camdenton, Missouri
SECOR Project No.: 61UN.03001
November 24, 2003



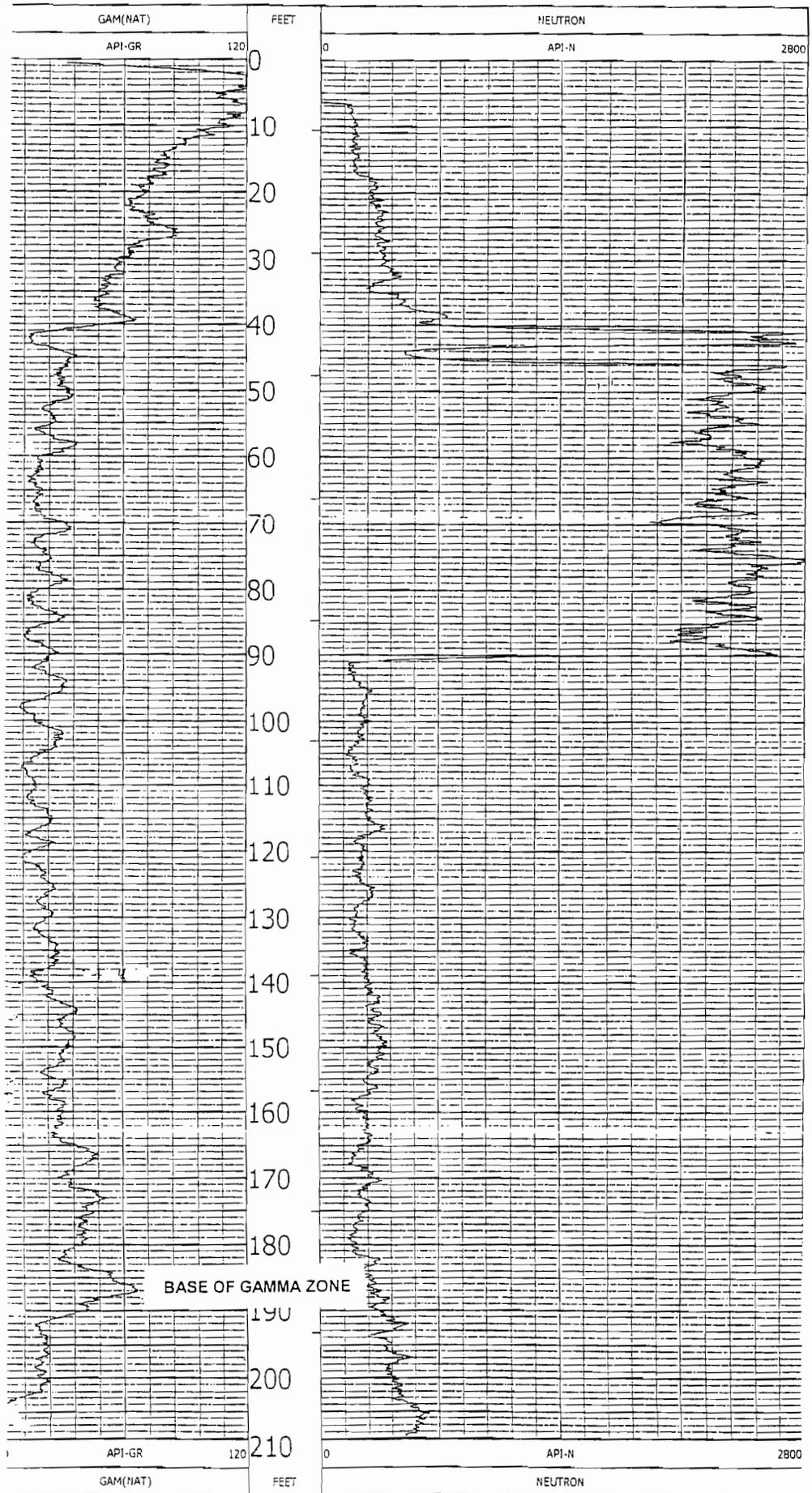
Well Number: MW-4
 Surface Elevation TOC: 950 amsl
 Logged During: Phase II



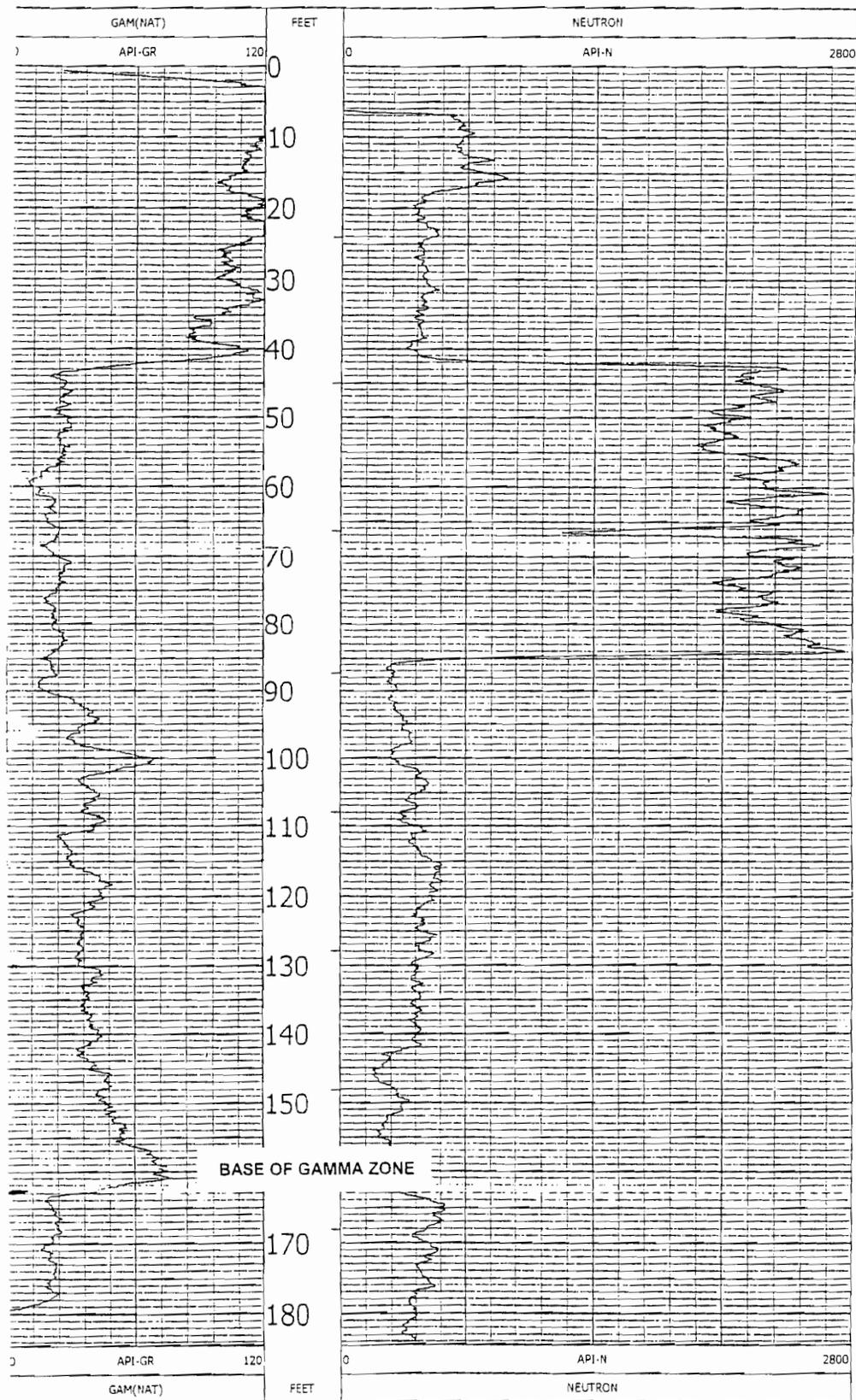
Well Number: MW-8
 Surface Elevation TOC: 950 amsl
 Logged During: Phase II



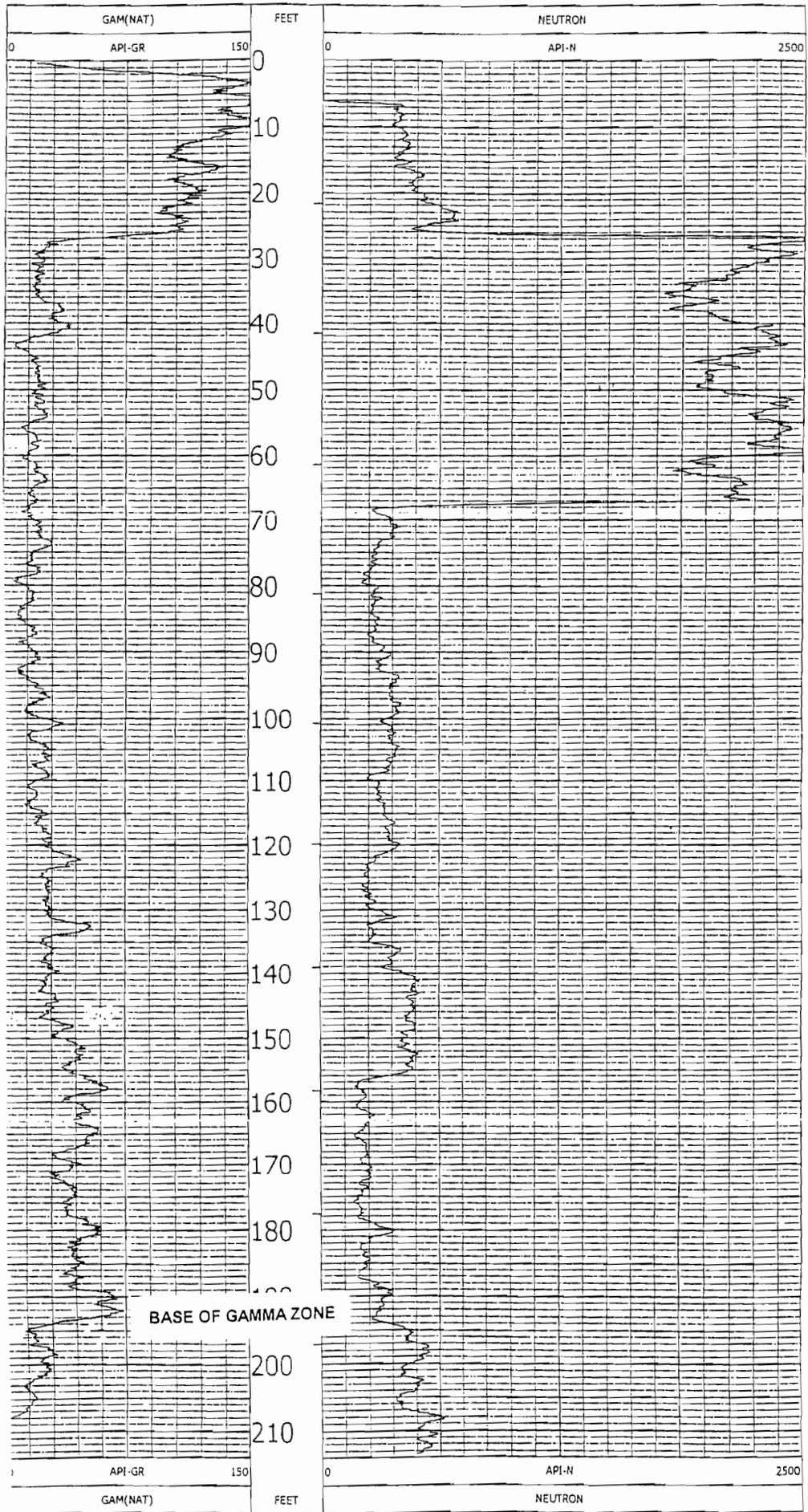
Well Number: MW-14
 Surface Elevation TOC: 995 amsl
 Logged During: Phase II



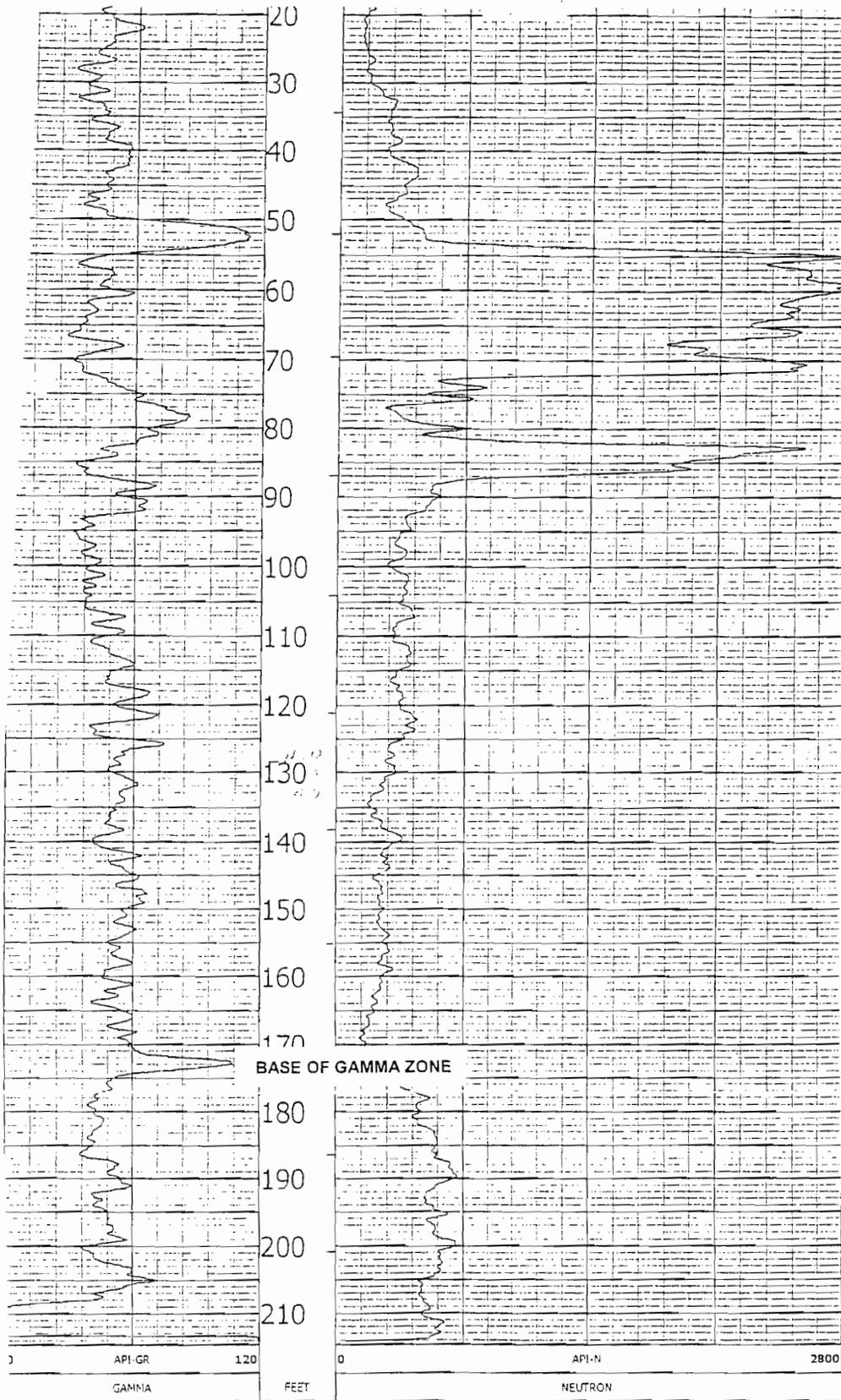
Well Number: MW-16
 Surface Elevation TOC: 936 amsl
 Logged During: Phase III



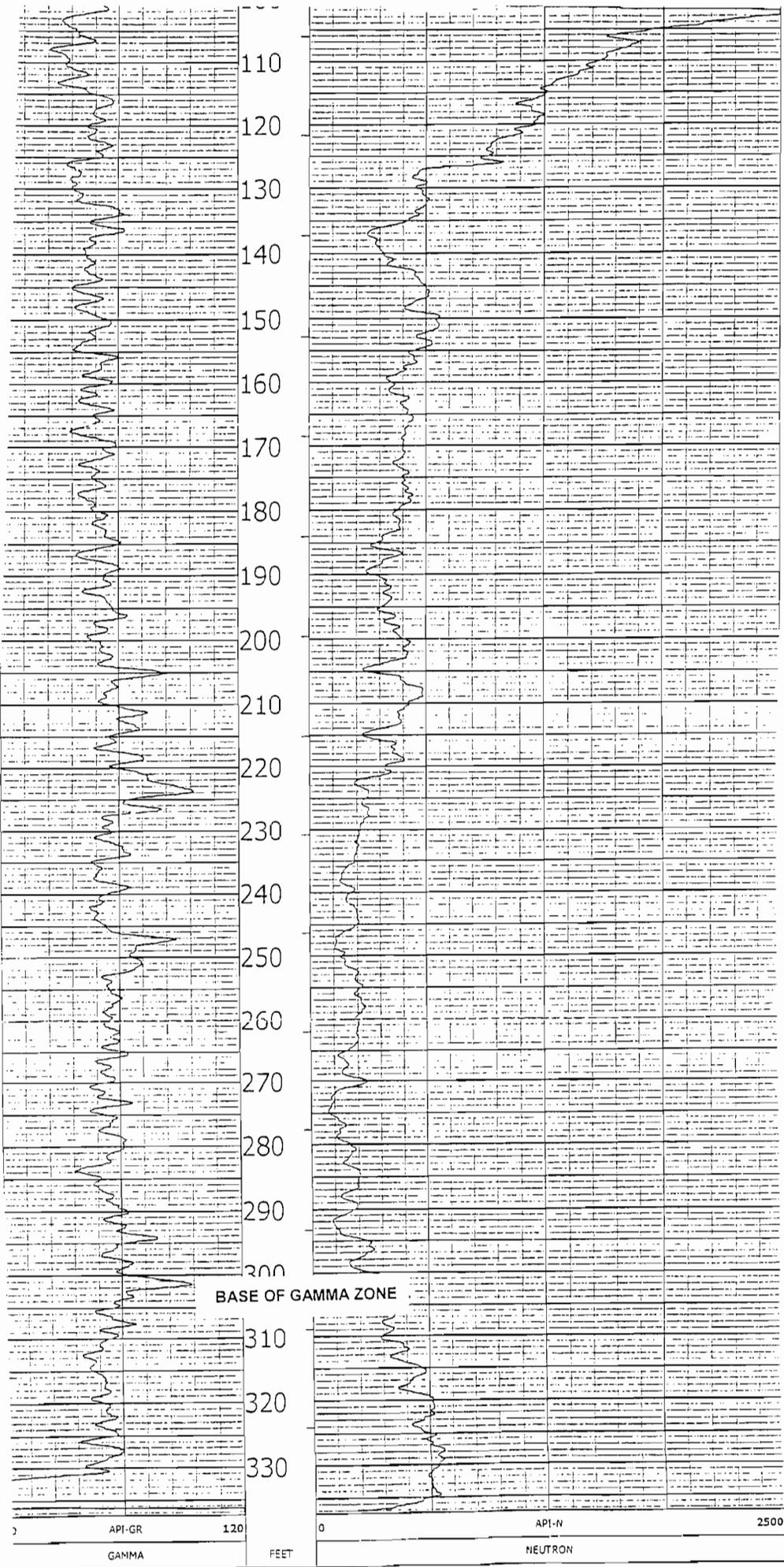
Well Number: MW-18
 Surface Elevation TOC: 920 amsl
 Logged During: Phase III



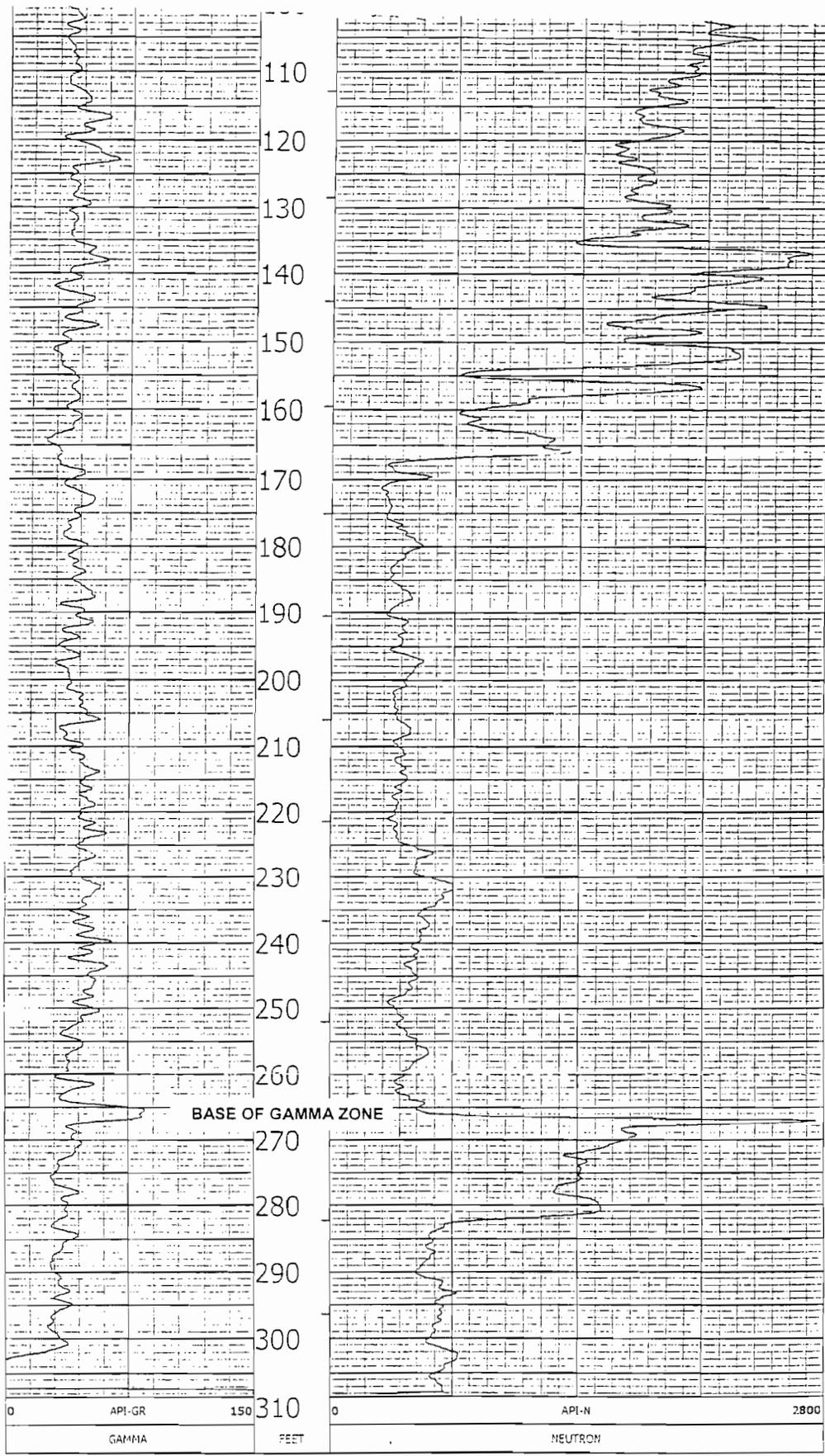
Well Number: MW-19
 Surface Elevation TOC: 936 amsl
 Logged During: Phase III



Well Number: MW-21
 Surface Elevation TOC: 916 amsl
 Logged During: Phase III



Well Number: MW-20
 Surface Elevation TOC: 995 amsl
 Logged During: Phase III



Well Number: MW-22
 Surface Elevation TOC: 960 amsl
 Logged During: Phase III

APPENDIX E
FRACTURE ORIENTATION SUMMARY

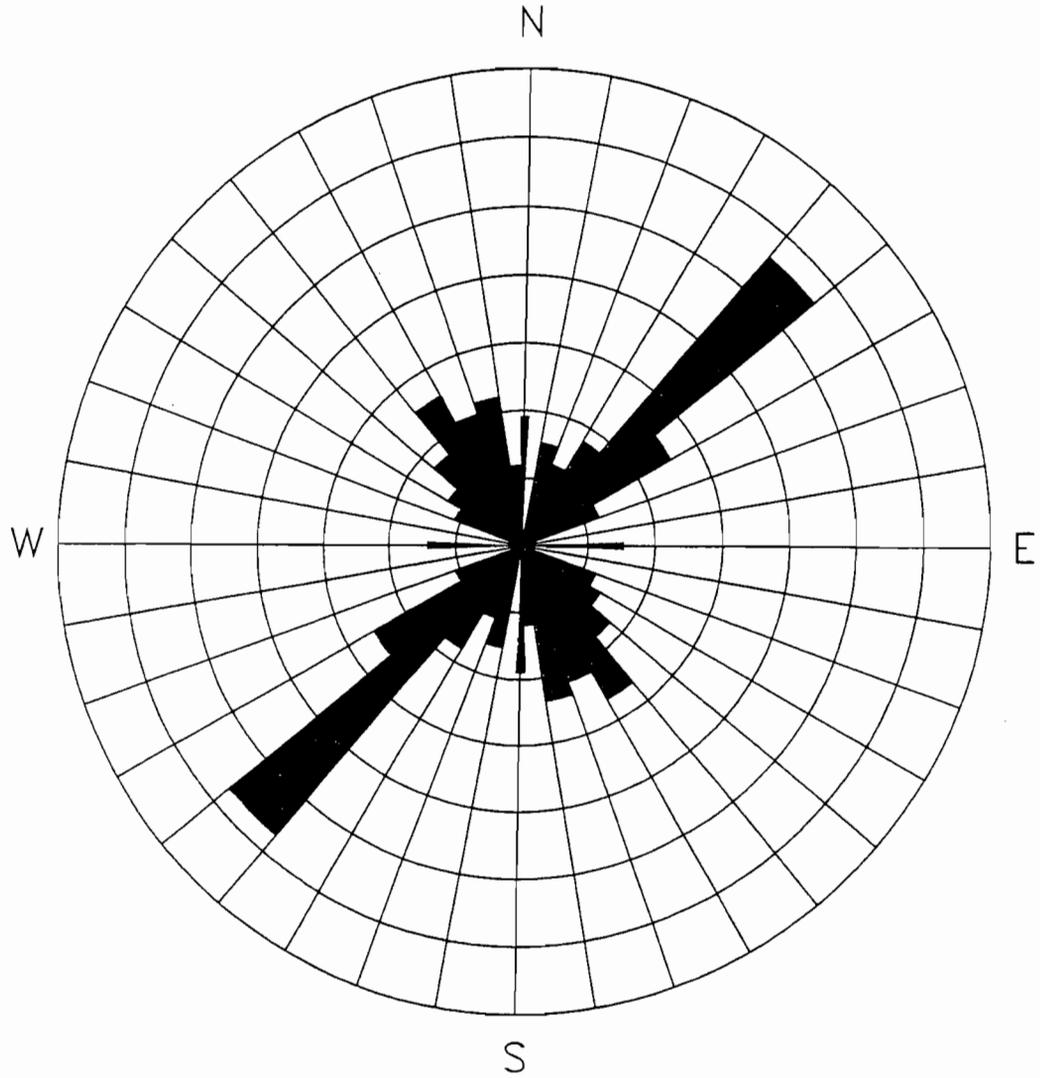
Remedial Investigation Summary Report

Former Hulett Lagoon

Camdenton, Missouri

SECOR Project No.: 61UN.03001

November 24, 2003



NOTE: CREATED FROM DATA COLLECTED DURING OUTCROP OBSERVATIONS OF MARCH 2003

DESIGNED BY: JTO

DRAWN BY: GLH

APPROVED BY: MGD

DATE: 3-19-03



FRACTURE DENSITY ROSE DIAGRAM

FORMER HULETT LAGOON
HAMILTON SUNSTRAND
CAMDENTON, MISSOURI

JOB NO. 61UN.03001.00

FIGURE 5