



Final Preliminary Assessment/Site Inspection Report

**Additional and Uncharacterized Sites Operable Unit
Crab Orchard National Wildlife Refuge NPL Site
Marion, Illinois (Williamson County)**

June 2003

This Final PA/SI Report is identical to the
"Draft-Final" Report issued in September 2001.

VOLUME XII

Appendices A through C

18124-1/1-L



00053978

TABLE OF CONTENTS

VOLUME XII

Appendix A	Boring Logs
Appendix B	Monitoring Well Construction Diagrams
Appendix C	Slug Test Data

**APPENDIX A
BORING LOGS AND TEST PIT LOGS**

WELLS	PAGE NUMBERS
SHALLOW WELLS	
OA2B-W01	A-1 TO A-4
OA2B-W02	A-5 TO A-7
OA2B-W03	A-8 TO A-10
OA2D-W01	A-11 TO A-13
OA2D-W02	A-14 TO A-17
OA2D-W03	A-18 TO A-20
OA2D-W04	A-21 TO A-24
OA2D-W05	A-25 TO A-27
OA2D-W06	A-28 TO A-30
OA2F-W01	A-31 TO A-33
OA2F-W02	A-34 TO A-36
OA2F-W03	A-37 TO A-39
OA2P-W01	A-40 TO A-43
OA2P-W02	A-44 TO A-47
OA2P-W03	A-48 TO A-51
OA2P-W04	A-52 TO A-55
OA2P-W05	A-56 TO A-58
OA2P-W06	A-59 TO A-61
OA4E-W01	A-62 TO A-65
OA4E-W02	A-66 TO A-68
OA4E-W03	A-69 TO A-72
OA8S-W01	A-73 TO A-76
OA8S-W02	A-77 TO A-80
OA8S-W03	A-81 TO A-84
OA8S-W04	A-85 TO A-87
OA8S-W05	A-88 TO A-92
OA8S-W06	A-93 TO A-96
OA09-W01	A-97 TO A-100
A11A-W01	A-101 TO A-102
A11A-W02	A-103 TO A-104
A11H-W01	A-105 TO A-106
A11P-W01	A-107 TO A-108
A11S-W01	A-109 TO A-110
A11S-W02	A-111 TO A-112
A11S-W03	A-113 TO A-114
A11S-W04	A-115 TO A-116
OA12-W01	A-117 TO A-118
OA12-W02	A-119 TO A-120
0001-W01	A-121 TO A-124

WELLS	PAGE NUMBERS
BEDROCK WELLS	
BDRK-001	A-125 TO A-130
BDRK-002	A-131 TO A-140
BDRK-003	A-141 TO A-152
BDRK-004	A-153 TO A-159
BDRK-005	A-160 TO A-163
BDRK-005d	A-164 TO A-177
BDRK-006	A-178 TO A-185
BDRK-007	A-186 TO A-193
BDRK-008	A-194 TO A-200
BDRK-009I	A-201 TO A-204
BDRK-009d	A-205 TO A-214
BDRK-010	A-215 TO A-224
BDRK-011	A-225 TO A-231
TEST PITS	
OA2R-001	A-232
OA4W-001	A-233
OA07-029	A-234
OA07-030	A-235
OA8S-031	A-236
OA10-001	A-237
OA10-002	A-238
A11H-021	A-239
A11H-028	A-240
A11H-061	A-241
A11N-030	A-242
A11N-031	A-243
OA12-008	A-244
OA12-010	A-245
OA12-013	A-246
OA12-015	A-247
OA12-018	A-248
OA12-029	A-249
OA12-035	A-250
OA12-035b	A-251
OA12-064	A-252
OA12-071	A-253
OA12-093	A-254
OA12-099	A-255
OA12-100	A-256
0069-001	A-257
0069-012	A-258
0069-013	A-259
0109-001	A-260
0109-002	A-261
0107-001	A-262

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
OA 2B-W01

1. COMPANY NAME
WRS

2. DRILL SUBCONTRACTOR
PITULIP ENVIRONMENTAL

SHEET SHEETS
1 OF 4

3. PROJECT
CRAB ORCHARD

4. LOCATION
MADISON, ILLINOIS

5. NAME OF DRILLER
JERRY BIGNALL

6. MANUFACTURER'S DESIGNATION OF DRILL
CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8. HOLE LOCATION
HRET 2B

- CME 75
- 8' LOW CONTINUOUS COLT
BARREL CME SAMPLER

9. SURFACE ELEVATION
426.38'

12. OVERBURDEN THICKNESS

10. DATE STARTED
3-28-00
SETUP @ 1:30

11. DATE COMPLETED
3-29-00

13. DEPTH DRILLED INTO ROCK

15. DEPTH GROUNDWATER ENCOUNTERED
14-18' sampler down 19'

14. TOTAL DEPTH OF HOLE
24'

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES
NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES
NA

20. SAMPLES FOR CHEMICAL ANALYSIS

VOC

METALS

OTHER (SPECIFY)
USNA

OTHER (SPECIFY)
EXP

OTHER (SPECIFY)
PETN

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)
OA 2B-W04

23. SIGNATURE OF INSPECTOR
E. J. Hirsch

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT
CRAB ORCHARD AUS OU

HOLE NO.
OA 2B-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2B-W01
SHEET 2 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW/COUNT (ft)	REMARKS (ft)
	0	Medium stiff, moist, brown, low plastic silty clay TOPSOIL with grass roots	BZ/HS	0A2B-W01	SS-0X		TOPSOIL
	1	Stiff, moist, light brown to brown, low plastic, silty CLAY (CL) with brownish yellow hematite staining		0A2B-W01	SS-01		LOESS
	2					48"/48"	
	3		0/0.9				
	4	Grading with dark brown nodules					
	5	Becoming brown/brownish yellow mottled	0/1.0	0A2B-W01	SS-05		
	6					60"/60"	
	7						
	8		0/1.0				
	9						
	10		0/1.2				

PROJECT Crab Orchard AUS OU

HOLE NO 0A2B-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2B-W01

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET 3 OF 4 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLW COURT Recovery (ft)	REMARKS (ft)
	11	Becoming gray/brownish yellow mottled	BZ/HS				
	12		9/0.8			60"/60"	
	13						
	14						
	15	Stiff, moist, gray/brownish yellow mottled, low plastic silty CLAY (CL) with trace fine rounded gravel					TILL
	16	Stiff, moist, brown, high plastic, silty CLAY (CH) with fine to medium rounded gravel	9/0.6			60"/60"	
	17						
	18		9/0.7				
	19						∇ ATD
	20			0A2B-W01-SS-20			

PROJECT Crab Orchard AUS OU

HOLE NO. 0A2B-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2B-W01

PROJECT

Crab Orchard AUS OU

INSPECTOR

Eric Fritsch

SHEET

SHEETS

4 OF 4

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	"BLOW-COUNT" (ft)	REMARKS (ft)
			BZ/HS			Recovery	
21		Grading to hard					
22			0/0.9			60"/60"	
23							
24		Hard, slightly moist, brownish yellow, sandy CLAY (CL)					BOB @ 24' bgs
25							
26							
27							
28							
29							
30							

PROJECT

Crab Orchard AUS OU

HOLE NO

0A2B-W01

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2B-W02	
1. COMPANY NAME LRS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL ENVIRONMENTAL		SHEET 1 OF 3 SHEETS	
3. PROJECT CRAB ORCAMP AUS ON			4. LOCATION MARION, ILLINOIS		
5. NAME OF DRILLER BOBBY BIGNALL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION AREA 2B			
- CME 75		9. SURFACE ELEVATION 434.19			
- 5' CME SPIN BARREL		10. DATE STARTED 3-28-00 9:25am		11. DATE COMPLETED 3-28-00 11:45am	
- SAMPLER		15. DEPTH GROUNDWATER ENCOUNTERED 6 1/2 ft loss - saturated/very moist soil (m)			
12. OVERBURDEN THICKNESS			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
13. DEPTH DRILLED INTO ROCK			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
14. TOTAL DEPTH OF HOLE 19' 6 1/2"			18. GEOTECHNICAL SAMPLES NONE		
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES None	
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC	METALS	OTHER (SPECIFY) TEXAMS	OTHER (SPECIFY) BNA
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			0A2B-W02	23. SIGNATURE OF INSPECTOR Eve Hirsch	

LOCATION SKETCH/COMMENTS

SCALE:

A-5

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2B-W02

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET

2 OF 3 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
	1	Stiff, brown, low plastic, silty clay FILL with grass roots	BZ/H5	0A2B-W02	SS-0X	30 1/4"	FILL
		with white crushed gravel		0A2B-W02	SS-01		
	2	Loose, slightly moist, light brown, clayey SILT (ML)				36 1/16"	LOESS
	3	Medium stiff, slightly moist, light gray to light brown, low plastic silty CLAY (CL)	0/0.2				
	4	Grading with brownish yellow hematite staining					
	5	Becoming soft	0/0.5	0A2B-W02	SS-05	36 1/16"	ATD
	6						
	7			0A2B-W02	SS-7.5		
	8		0/0.7			36 1/16"	
	9	Stiff, moist, brownish yellow/gray, low plastic silty CLAY (CL) with fine rounded gravel	0/0.6				
	10						TILL

PROJECT Crab Orchard AUS OU

HOLE NO 0A2B-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2B-W02
 SHEET **3** OF **3** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	11		BZ/HS				
	12					60"/60"	
	13						
	14	Grading very stiff	0/0.8				
	15					60"/60"	
	16						
	17						
	18						
	19		0/0.8				
	20						BOB @ 19' bgs

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2B-W02**

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URS			2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			0A2B-W03		
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION MARION ILLINOIS			SHEET 1 OF 3 SHEETS		
5. NAME OF DRILLER JERRY BIGNALL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5' CME SPLIT BARREL CONTINUOUS SAMPLER			8. HOLE LOCATION AREA 2B					
12. OVERBURDEN THICKNESS			9. SURFACE ELEVATION 435.43					
13. DEPTH DRILLED INTO ROCK			10. DATE STARTED 3-27-00 14:55			11. DATE COMPLETED 3-28-00		
14. TOTAL DEPTH OF HOLE 19' bgs			15. DEPTH GROUNDWATER ENCOUNTERED 9' bgs			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 4.5 / 15 hrs		
18. GEOTECHNICAL SAMPLES None			19. TOTAL NUMBER OF CORE BOXES			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
20. SAMPLES FOR CHEMICAL ANALYSIS 4 samples			DISTURBED	UNDISTURBED	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
22. DISPOSITION OF HOLE			BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
				0A2B-W03		[Signature]		
LOCATION SKETCH/COMMENTS						SCALE:		
<div style="border: 1px dashed black; height: 400px; width: 100%;"></div>								
PROJECT CRAB ORCHARD AUS ON						HOLE NO. 0A2B-W03		

A-8

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2B-W03
 SHEET **2** OF **3**

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g) Reedberg	REMARKS (h)
	1	Stiff, moist, dark brown, low plastic, silty clay FILL with grass roots and dark gray staining	HS/BZ	0A2B-W03-	SS-0X		FILL
		with concrete fragments		0A2B-W03-	SS-01		
	2	Medium stiff to stiff, moist, brown, low plastic silty CLAY (CL)	0.7/0				LOESS
	3						
	4						
	5	with little gray mottling	2.3/0	0A2B-W03-	SS-05		15 hours after drilling
	6						
	7		177/0				Appears stained with petroleum odor
	8	Becoming soft to medium stiff with gray					
	9	Becoming very soft, very moist	285/0				ATD
	10			0A2B-W03-	SS-10		

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2B-W03**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0AQB-W03
 SHEET **3** OF **3** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SCOW COUNT (ft)	REMARKS (ft)
	11	Firm to soft, moist, brown/gray mottled, high plastic, silty CLAY (CH)				Recovery	TILL
	12	Soft, wet zone (3")					
	13		265/0				
	14	Becoming soft, very moist with trace fine gravel					
	15		9.7/0				
	16	Becoming stiff, slightly moist					
	17		0/0				
	18						
	19						BOB @ 19' bgs
	20						

PROJECT

HOLE NO

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2D-W01	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES		SHEET SHEETS 1 OF 3	
3. PROJECT CRAB ORCHARD AUS 04		4. LOCATION MARIION ILLINOIS			
5. NAME OF DRILLER JERRY BIGNALL		6. MANUFACTURER'S DESIGNATION OF DRILL CME 75			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5 FOOT CME SPLIT BOREHOLE CONTINUOUS		8. HOLE LOCATION AREA 2D		9. SURFACE ELEVATION 436.43	
12. OVERBURDEN THICKNESS		10. DATE STARTED 3-29-00 17:40		11. DATE COMPLETED 3-29-00	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED 7ft 6 in			
14. TOTAL DEPTH OF HOLE 19'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS		19. TOTAL NUMBER OF CORE BOXES None		21. TOTAL CORE RECOVERY %	
		VOC + Heavy Metals		OTHER (SPECIFY) EXP + NG	
		METALS		OTHER (SPECIFY) PETROLEUMS	
		OTHER (SPECIFY) Ben		OTHER (SPECIFY) CYANIDE	
22. DISPOSITION OF HOLE		BACKFILLED		23. SIGNATURE OF INSPECTOR	
		MONITORING WELL		TCL BNA 1	
		0A2D-W01			

LOCATION SKETCH/COMMENTS MOCA SCALE:

PROJECT CRAB ORCHARD AUS 04	HOLE NO. 0A2D-W01
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HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

HOLE NUMBER
0A2D-W01
SHEET
2 OF 3 SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	SECURE POINT (g)	REMARKS (h)
		Medium stiff, moist, brown, low plastic, silty clay TOPSOIL with grass roots	BZ/HS	0A2D-W01-	SS-0X	Recovery	TOPSOIL
	1	Stiff, moist, light brown to brown, low plastic, silty CLAY (CL) with brownish yellow hematite staining		0A2D-W01-	SS-01		LOESS
	2					48"/48"	
	3		0/4.2				
	4	Becoming soft with increasing silt					
	5	Becoming brown/brownish yellow mottled	0/8.0	0A2D-W01-	SS-03		
	6					60"/60"	
	7	3" very moist zone with increased silt					
	8	Becoming stiff gray/brownish yellow mottled	0/6.1	0A2D-W01-	SS-08		
	9	Grading with dark brown very moist zone (2")					
	10						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2D-W01**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W01
SHEET 3 OF 3 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (a)	DEPTH (a)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	"BOREFOOT" RECOVERY (g)	REMARKS (h)
	11	Very stiff, moist, gray with brownish yellow mottling, high plastic, silty CLAY (CH) with few rounded fine to medium gravels	0/20.4			60% /60%	TILL
	12						
	13	Grading with dark brown silty nodules	0/32			36% /60%	
	14						
	15	Very hard, dry, brownish yellow silty SHALE					
	16						
	17	Very hard, dry, brownish yellow shaley CLAY (SH)	9/326				
	18						
	19						BOB @ 19' bgs
	20						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2D-W01

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

AUS-0A2D-W02

1 COMPANY NAME

VRS

2 DRILLING SUBCONTRACTOR

Philip Environmental

SHEET

1 OF

SHEETS

34

3 PROJECT

Crab Orchard AUS OU

4 LOCATION

Crab Orchard Wildlife Refuge

Marion IL

5 NAME OF DRILLER

Jerry Bignall

6 MANUFACTURE'S DESIGNATION OF DRILL

CME 75-TSS D50

7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

4 1/2" ID 8 1/2" OD

8 HOLE LOCATION

Area 2b

5' long continuous split barrel sampler

9 SURFACE ELEVATION

435.85

10 DATE STARTED

4-12-00

11 DATE COMPLETED

4-12-00

12 OVERBURDEN THICKNESS

15 DEPTH GROUNDWATER ENCOUNTERED

11.3 bgs (cm) 10.3 Ft bgs

13 DEPTH DRILLED INTO ROCK

16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING

14 TOTAL DEPTH OF HOLE

20' bgs

17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18 GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19 TOTAL NUMBER OF CORE

NA

20 SAMPLES FOR CHEMICAL

4-5' VOC
6"-1'+QA Split

METALS (bottom)

0-6"+QA Split

OTHER (SPECIFY)

perchlorates
0-6"+QA Split

OTHER (SPECIFY)

Cyanides
0-6"+QA Split

OTHER (SPECIFY)

TCL DNAs + MCA
0-6"+QA Split

21. TOTAL CORE RECOVERY

NA %

22 DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

SE2D-W02

Explosives + NA
0-6"+QA Split

23. SIGNATURE OF INSPECTOR

Jiffy Anorel d

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT

Crab Orchard AUS OU

HOLE

AUS-0A2D-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
DAAD-W02
SHEET 2 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Tiffany Swoveland

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	RECOVERY (g)	REMARKS (h)
		Soft, moist, dark brown silty clay TOPSOIL with roots	BZ/AS	DAAD-W02-SS-01		Recovery	TOPSOIL
	1	Stiff, moist, brown and gray mottled silty CLAY (CL) with hematite staining		DAAD-W02-SS-01			LOESS
	2	Grades with iron nodules				48" / 100"	
	3	Grades with more hematite staining					
	4						No recovery
	5	Grades to medium stiff		DAAD-W02-SS-05			
	6					60" / 100"	
	7						
	8						
	9						
	10	Medium stiff, moist, brown and gray, low plastic silty CLAY (CL) with some hematite staining and some gravel					TILL

PROJECT Crab Orchard AUS OU

HOLE NO DAAD-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W02

PROJECT *Crab Orchard AUS 0U*

INSPECTOR *Tiffany Snowland*

SHEET *3* OF *4* SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	RECOVERY (ft)	REMARKS (ft)
	11	Becomes wet Grades stiff, moist	BZ/HS			Recovery	▽
	12			0A2D-W02-SS-12	SS-12	60"/60"	
	14	Grades hard					
	15	Grades brown Grades dry with shale fragments and trace of sand					
	17					60"/60"	
	18						
	19						
	20						

PROJECT *Crab Orchard AUS 0U*

HOLE NO *0A2D-W02*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W02
 SHEET **4** OF **4** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Tiffany Swoveland**

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (1)	REMARKS (4)	REMARKS (4)
	21					Recovery	BOB @ 20' logs
	22						

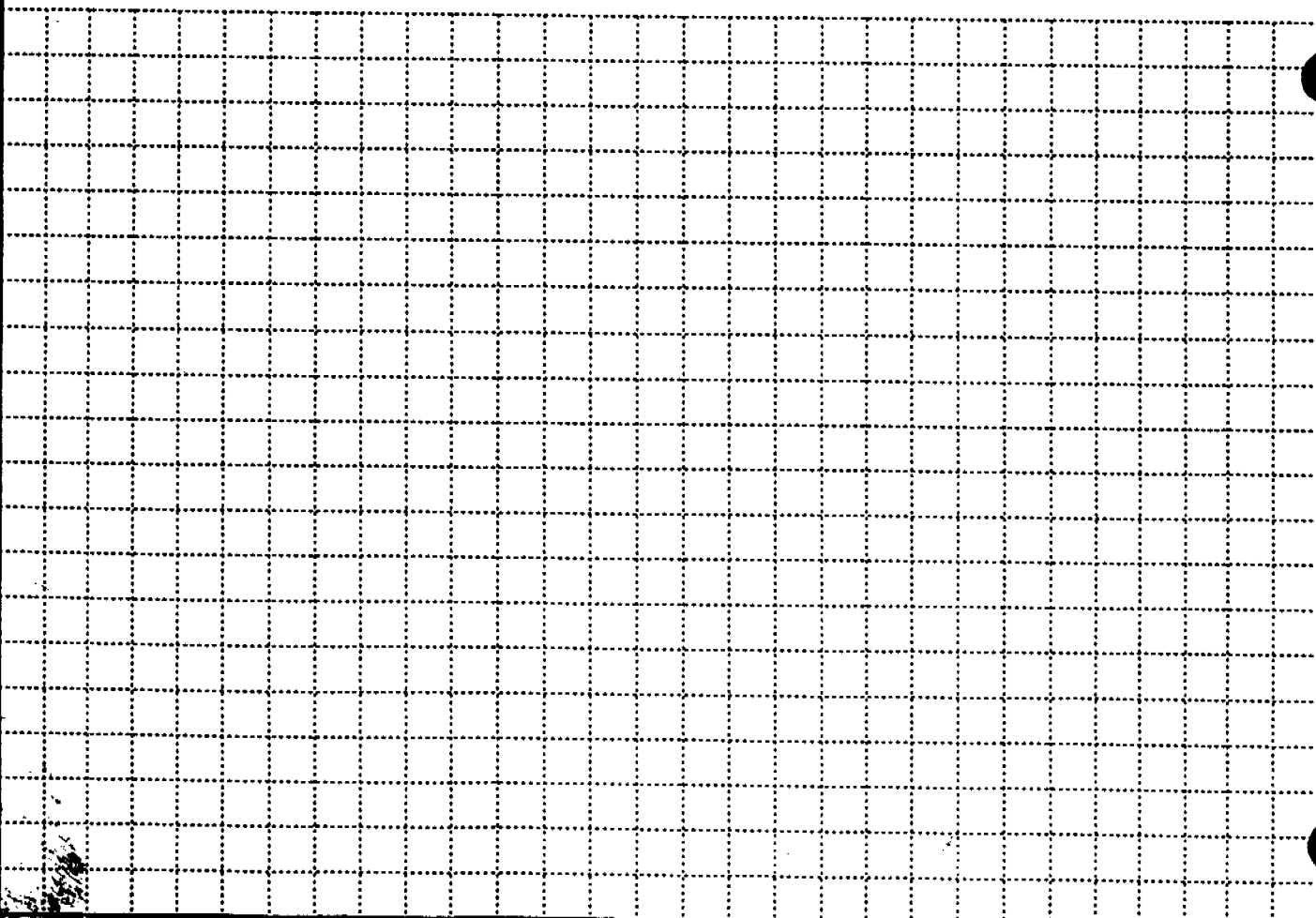
PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2D-W02**

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2D-W03	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES		SHEET 1 OF 3	
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION MARION, ILLINOIS		
5. NAME OF DRILLER JERRY BIGNALL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION AREA 2D		9. SURFACE ELEVATION 435.92	
- CME 75		- 5' CME CONTINUOUS, SPLIT		10. DATE STARTED 3-30-00 / 7:55 am	
- BARREL SAMPLER				11. DATE COMPLETED 3-30-00 11:25	
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED 20' Very moist @ 9' bss		
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
14. TOTAL DEPTH OF HOLE 19' bss			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES NONE	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC X w/ Phosphorus	METALS X	OTHER (SPECIFY) BMT	OTHER (SPECIFY) ESP
		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	OTHER (SPECIFY) PERC/WATER
22. DISPOSITION OF HOLE		0A2D-W03		21. SIGNATURE OF INSPECTOR <i>[Signature]</i>	

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB ORCHARD AUS ON	HOLE NO. 0A2D-W03
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A-18

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Eric Fritsch*

HOLE NUMBER
0A2D-W03
SHEET *2* OF *3* SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLW-SQFT (4)	REMARKS (4)
		TOPSOIL					TOPSOIL
	1	Stiff, moist, brown, low plastic silty CLAY (CL) with grass roots	BZ/HS	0A2D-W03	SS-0X	Recovery	LOESS
	2	Grading with brownish yellow staining around root hole with no roots	0/0.1			40"/48"	
	3						
	4						
	5	Becoming brown to gray with brownish yellow hematite staining	0/1.2	0A2D-W03	SS-05		
	6					60"/60"	
	7		0/13.2				
	8						
	9	Soft, very moist, gray with brownish yellow becoming wet SILT (ML)					∇ ATD
	10	Soft, moist, brownish yellow sandy CLAY (CL)	0/23.8	0A2D-W03	SS-10		TILL

PROJECT *Crab Orchard AUS OU*

HOLE NO *0A2D-W03*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W03

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET 3 OF 3 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SCOUR/SPRINKL. (ft)	REMARKS (ft)
	11	with few rounded gravel	BZ/H5			Recovery	TILL
	12	Becoming medium stiff, very moist	0/24.1			60"/60"	
	13	Stiff, slightly moist, brown, high plastic, silty CLAY(CH) with few rounded gravels					
	14						
	15	with little gray mottling	0/11.1			60"/60"	
	16	Getting hard					
	17		0/13.4				
	18						
	19						BOB @ 19' bgs
	20						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2D-W03

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER AVS-0A2D-WP4	
1. COMPANY NAME VRS		2. DRILLING SUBCONTRACTOR Philip Environmental		SHEET 1 OF 4 SHEETS	
3. PROJECT Crab Orchard AVS OU			4. LOCATION Crab Orchard Wildlife Refuge Marion, IL		
5. NAME OF DRILLER Jerry Bignall			8. MANUFACTURE'S DESIGNATION OF DRILL CME 75^{TSS} D50		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/2" ID 8 1/2" OD HSA		8. HOLE LOCATION Area 2 D		9. SURFACE ELEVATION 434.65	
5' long CME continuous split barrel sampler		10. DATE STARTED 4-12-00 0830		11. DATE COMPLETED 4-12-00	
12. OVERBURDEN THICKNESS -		15. DEPTH GROUNDWATER ENCOUNTERED 14.5' bgs			
13. DEPTH DRILLED INTO ROCK -		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING			
14. TOTAL DEPTH OF HOLE 20'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE NA		20. SAMPLES FOR CHEMICAL 4 locations			
VOC 5-6"		METALS 0-6"+DVP		OTHER (SPECIFY) Explosives + NG	
6"-1"+DVP		0-6"+DVP		Perchlorates	
BACKFILLED		MONITORING WELL		OTHER (SPECIFY) Cyanide	
22. DISPOSITION OF HOLE 0A2D-WP4		23. SIGNATURE OF INSPECTOR <i>J. Bignall</i>		21. TOTAL CORE RECOVERY NA %	
LOCATION SKETCH/COMMENTS					
SCALE:					
PROJECT Crab Orchard AVS OU				HOLE 0A2D-WP4	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W04
SHEET 2 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Tiffany Swoveland

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	RECOVERY (G)	REMARKS (H)
		Medium stiff, moist, dark brown, silty clay TOP SOIL with roots and gravel	BZ/HS	0A2D-W04-DWP	SS-0X	Recovery	TOPSOIL
	1	Stiff, moist, low plastic, brown silty CLAY (CL) with gravel and hematite staining		0A2D-W04-DWP	SS-01		LOESS
	2		0/0.4			24"/100"	No recovery 2'-5'
	3						
	4						
	6						
	6	Grades soft with brown and gray mottling and without gravel	0/0.3	0A2D-W04	SS-06		
	7	Grades to stiff				36"/100"	
	8						No recovery 8'-10'
	9						
	10		0/0				

PROJECT Crab Orchard AUS OU

HOLE NO 0A2D-W04

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W04
SHEET
3 of 4 SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Tiffany Swoveland**

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	"SLOW COUNT" RECOVERY (G)	REMARKS (H)
	11		BZ/AS				
	12		0/0.5			60"/160"	
	13						
	14	Stiff, moist, brown and gray, low plastic silty CLAY (CL) with some gravel					TILL
	15	Grades wet and soft					ATD
	16	Grades with iron nodules		0A2D-W04-SS-16			
	17	Grades with shale fragments				48"/160"	
	18						
	19	SHALE: soft, gray with sand					No recovery 19'-20'
	20						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2D-W04**

HTRW DRILLING LOG		DISTRICT			HOLE NUMBER	
1. COMPANY NAME WCS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES			OAZD-W005	
3. PROJECT CRAB ORCHARD AUS OU		4. LOCATION MARION, ILLINOIS			SHEET 1 OF 3	
5. NAME OF DRILLER JERRY BIGNALL		6. MANUFACTURER'S DESIGNATION OF DRILL CME 75				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5' LONG CONTINUOUS SPUR BARREL CME SAMPLER		8. HOLE LOCATION ALCO 20				
		9. SURFACE ELEVATION 432.37				
		10. DATE STARTED 3-30-00	13630	11. DATE COMPLETED 3-30-00	15:45 PM	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED 9' bgs				
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 19' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES NONE		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC X	METALS X	OTHER (SPECIFY) BMT	OTHER (SPECIFY) EXP	OTHER (SPECIFY) NG
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY) OAZD-W005	21. SIGNATURE OF INSPECTOR PERCHLORATE	
LOCATION SKETCH/COMMENTS		SCALE:				
PROJECT CRAB ORCHARD AUS OU					HOLE NO. OAZD-W005	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W05
 SHEET **2** OF **3** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (4)	DEPTH (5)	DESCRIPTION OF MATERIALS (6)	FIELD SCREENING RESULTS (7)	GEOTECH SAMPLE OR CORE BOX NO. (8)	ANALYTICAL SAMPLE NO. (9)	REMARKS (10)
	1	Very soft, very moist, brown, low plastic, silty clay TOPSOIL with grass roots	BZ/AS	0A2D-W05-SS-0X		TOPSOIL
	2	Stiff, slightly moist, brown with brownish yellow hematite staining, low plastic, silty CLAY (CL)		0A2D-W05-SS-01		
	3		D/O			40"/48" LOESS
	4	Becoming moist, gray with streaks of yellowish red hematite staining				
	5		D/O	0A2D-W05-SS-05		60"/60"
	6					
	7		D/O			
	8	Grading very stiff				
	9	Becoming very soft, wet				▽ ATD
	10		D/O	0A2D-W05-SS-10		

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2D-W05**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W05
SHEET 3 OF 3 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	DOWN-COUNT Recovery (G)	REMARKS (H)
	11	Becoming stiff to very stiff, moist	BZ/HS				
	12					60"/60"	
	13		9/0				
	14	Very stiff, moist, gray, high plastic, silty CLAY (CH) with trace rounded gravel and brownish yellow hematite staining streaks					TILL
	15	Medium stiff, moist, brown/gray mottled sandy CLAY (CL-CH)	9/0				
	16	Stiff to hard, slightly moist, brown gray mottled, high plastic, silty CLAY (CH) with fine rounded gravels				60"/60"	
	17						
	18		9/0				
	19						
	20						BOB @ 19' bgs

PROJECT Crab Orchard AUS OU

HOLE NO 0A2D-W05

HTRW DRILLING LOG		DISTRICT				HOLE NUMBER	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES				OAZD-W06	
3. PROJECT CRAB ORCHARD AUS ON		4. LOCATION MARION, ILLINOIS				SHEET 1 OF 3	
5. NAME OF DRILLER JERRY BIGNALL		6. MANUFACTURER'S DESIGNATION OF DRILL CME 75					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5' LONG CME CONTINUOUS SPLIT BARREL SAMPLER		8. HOLE LOCATION AREA 2D					
		9. SURFACE ELEVATION 435.54					
		10. DATE STARTED 5-31-00 / 8:00		11. DATE COMPLETED			
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED VERY MOIST ZONE @ 14' bgs					
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 19' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES NONE	
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC None	METALS None	OTHER (SPECIFY) CYANIDE	OTHER (SPECIFY) PVA	OTHER (SPECIFY) Explosives None	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
		OAZD-W06	PETRA WATTS				
LOCATION SKETCH/COMMENTS						SCALE:	
PROJECT CRAB ORCHARD AUS - ON						HOLE NO. OAZD - W06	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2D-W06
SHEET 2 OF 3 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEO TECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	SCORING (4)	REMARKS (4)
		Stiff, moist, dark brown, silty clay TOPSOIL with gravel	BZ/H5	0A2D-W06-	SS-0X	Recovery	TOPSOIL
	1	Stiff, moist, brown, low plastic silty CLAY (CL)		0A2D-W06-	SS-01		LOESS
	2					36"/48"	
	3						
	4	Grading with brownish yellow hematite staining	71.3				
	5			0A2D-W06-	SS-05		
	6					60"/60"	
	7						
	8		91.3				
	9						
	10						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2D-W06

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2D-W06

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

SHEET

3 of 3

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
			BZ/AS			Rest very	
	11	Stiff, moist, brown/brownish yellow/grey mottled, high plastic, silty CLAY (CH) with few rounded gravels and dark brown nodules	9/1.2			60"/100"	TILL
	12						
	13						
	14	Becomes wet with more silt	0/1.2				∇ ATD
	15	Becomes very stiff, slightly moist		0A2D-W06-SS-13			
	16						
	17	SHALE: Hard, dry, brown/brownish yellow mottled, clayey	0/0.8				
	18						
	19						Very Hard Drilling
	20						BOB @ 19' bgs

PROJECT

HOLE NO

HTRW DRILLING LOG

DISTRICT

0A2F-W01

1. COMPANY NAME

URS

2. DRILL/SUBCONTRACTOR

PHILIP ENVIRONMENTAL SERVICES

HOLE NUMBER

0A2F-W01

3. PROJECT

CRAB ORCHARD AUS 04

SHEET SHEETS

1 OF 3

5. NAME OF DRILLER

JERRY DIGNELL

4. LOCATION

MADISON ILLINOIS

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

- CME 75
- 5' CONT. CME
CONTINUOUS SPLIT BARREL
SAMPLER

6. MANUFACTURER'S DESIGNATION OF DRILL

8. HOLE LOCATION

AREA 2F

9. SURFACE ELEVATION

432.41

12. OVERBURDEN THICKNESS

10. DATE STARTED

4-3-00 / 7:55am

11. DATE COMPLETED

4-3-00 / 10:30

13. DEPTH DRILLED INTO ROCK

15. DEPTH GROUNDWATER ENCOUNTERED

9.2ft bgs

14. TOTAL DEPTH OF HOLE

18.8' bgs (AUGER RETURN)

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

NONE

20. SAMPLES FOR CHEMICAL ANALYSIS

CRAB 4

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

[Signature]

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT

CRAB ORCHARD AUS 04

HOLE NO.

0A2F-W01

ENG FORM 5056-R, AUG 94

(Proponent: CECW-F)

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2F-W01

SHEET SHEETS

2 OF 3

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	SHOWN COUNT (4)	REMARKS (4)
		White crushed limestone FILL	BZ/AS	0A2F-W01-	SS-0X	Retaltery	FILL
		Dark brown gravel, coke, coal, FILL		0A2F-W01-	SS-01		
	1	Stiff, moist, brownish yellow, low plastic silty CLAY (CL)				36" / 48"	LOESS
	2						
	3		0/0				
	4	With increased amount of silt					
	5	Becoming very stiff with brown vertical streaks of silt		0A2F-W01-	SS-05		
	6		0/0			60" / 60"	
	7						
	8	With dark brown nodules (organics)					TILL
		Stiff, moist, brownish yellow silty CLAY (CL?) with few rounded gravels					
	9		0/0				VATD
		Soft, wet, brownish yellow, low plastic clayey SILT to silty CLAY (ML-CL) with rounded gravel		0A2F-W01-	SS-10		

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2F-W01**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2F-W01

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET 3 OF 3 SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	SECURETY (g) Recovery	REMARKS (h)
	11		BZ/HS				TILL
	12	Becoming moist with yellowish red hematite staining	0/0			60"/60"	
	13						
	14	Grading very stiff, no reddish brown staining					
	15	Stiff to hard, moist, brown to brownish yellow, high plastic silty CLAY (CR) with few medium rounded gravels	0/0				
	16					60"/60"	
	17						
	18		0.5				Very Hard Drilling
	19						Auger refusal @ 18.8'
	20						BOB @ 18.8' bgs

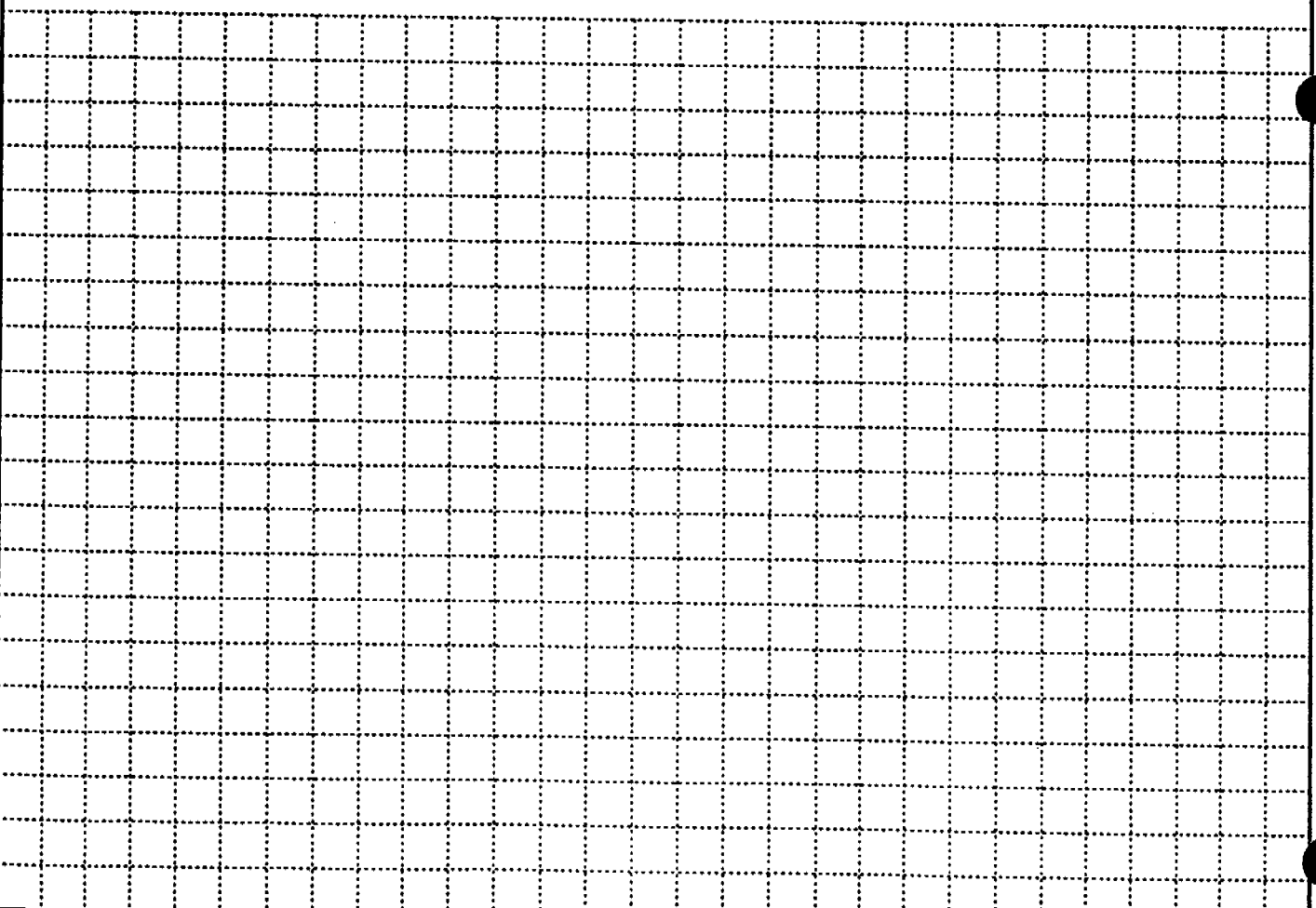
PROJECT Crab Orchard AUS OU

HOLE NO 0A2F-W01

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2F-W02	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR Pitt IP Environmental Svcs.		SHEET SHEETS 1 of 3	
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION MARION ILLINOIS		
5. NAME OF DRILLER JERRY BILMOR			6. MANUFACTURER'S DESIGNATION OF DRILL CMG 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT CMG 75 5 foot Luger CMG CONTINUOUS SPIN BARREL SAMPLER		8. HOLE LOCATION AREA 2F		9. SURFACE ELEVATION 431.45	
12. OVERBURDEN THICKNESS		10. DATE STARTED 4-3-00/10:45		11. DATE COMPLETED 4-3-00/12:30	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED 14' bgs		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 19' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES None		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES None	
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. SIGNATURE OF INSPECTOR [Signature]
			0A2F-W02		

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB ORCHARD AUS ON	HOLE NO. 0A2F-W02
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2F-W02

PROJECT Crab Orchard AUS 02

INSPECTOR Eric Fritsch

SHEET SHEETS
2 of 3

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW-COUNT (g)	REMARKS (h)
	0	Stiff, moist, brown, low plasticity silty clay TOPSOIL with grass roots	BZ/AS	0A2F-W02	SS-0X	Recovery	TOPSOIL
	1	Medium stiff, moist, brown, low plasticity silty CLAY (CL)		0A2F-W02	SS-01		LOESS
	2						
	3		0/0			48"/48"	
	4	Becoming stiff brown-brownish yellow mottled					
	5			0A2F-W02	SS-05		
	6		0/0.2				
	7					60"/60"	
	8						
	9	Grading with dark brown nodules (organics)	0/0.7				
	10						

PROJECT Crab Orchard AUS 02

HOLE NO 0A2F-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2F-W02
SHEET 3 of 3 SHEETS

PROJECT Crab Orchard Ausou

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEO TECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
			B2/AS			Red	
	11						
	12		0/2.2			60"/60"	
	13						
	14	Grading soft, wet, increased silt					ATD
	15	Very stiff to hard, slightly moist, brown, high plasticity silty CLAY (CH) with few rounded gravels	0/25	0A2F-W02-SS-15			TILL
	16					60"/60"	
	17						
	18	Grading with vertical streaks of gray silty clay, stiff	0/31				
	19						
	20						BOB @ 19' bgs

PROJECT

HOLE NO

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2F-W03	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES		SHEET 1 OF 3	
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION MARION, ILLINOIS		
5. NAME OF DRILLER JERRY BICHELL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION		9. SURFACE ELEVATION	
- CME 75		AREA 2F		431.49	
- 5 FOOT CME CONTINUOUS SPLIT BARREL SAMPLERS		10. DATE STARTED 4-3-00/14:55		11. DATE COMPLETED 4-3-00/16:30	
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED 12' bgs (Very moist to wet Sand) CN		
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
14. TOTAL DEPTH OF HOLE 19'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES NONE	
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		[Signature]

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT CRAB ORCHARD AUS ON	HOLE NO. 0A2F-W03
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2F-W03

PROJECT
Crab Orchard AUS OU

INSPECTOR
Eric Fritsch

SHEET 2 OF 3 SHEETS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEO TECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW-COUNT (G)	REMARKS (H)
		Moist, brown, silty clay FILL with white crushed rock and grass-roots	BZ/HS	0A2F-W03-DUP	SS-0X	Rec. Every	FILL
	1	Stiff, moist, brown, low plasticity, silty CLAY (CL) w/brownish yellow hematite staining		0A2F-W03	SS-01		LOESS
	2					36 1/48"	
	3	Grading very moist, soft	0/0				
	4						
	5	Becoming stiff brownish yellow/brown mottled		0A2F-W03	SS-05		
	6		0/0			60 1/100"	
	7						
	8						
	9		0/0				
	10						

PROJECT
Crab Orchard AUS OU

HOLE NO
0A2F-W03

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2F-W03
 SHEET **3** OF **3** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	11	Stiff, moist, brownish yellow, high plasticity silty CLAY (CH) w/ fine rounded gravel				Recovery	TILL
	12	Soft silt layer, wet (~3")	0/0			60% 160"	ATD
	13						
	14						
	15		0/0	0A2F-W03-SS-15			
	16	Hard, dry, brown to light brown siltstone				50% 160"	
	17	?					
	18		0/0				
	19	Grading to yellowish red					
	20						BOB @ 19' bgs

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2F-W03**

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
OAZP-W01

1. COMPANY NAME
WRS

2. DRILL SUBCONTRACTOR
PITNEY ENVIRONMENTAL SERVICES

SHEET SHEET
1 OF 4

3. PROJECT
CRAB orchard AUS on

4. LOCATION
MARION ILLINOIS

5. NAME OF DRILLER

5. MANUFACTURER'S DESIGNATION OF DRILL
CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT
- CME 75
- 5" CME CONTINUOUS
SPLIT BARREL
SAMPLERS

8. HOLE LOCATION
AREA 2P

9. SURFACE ELEVATION
426.36

12. OVERBURDEN THICKNESS

10. DATE STARTED
4-5-00 / 7:50 AM

11. DATE COMPLETED
4-5-00 / 11:30 AM

13. DEPTH DRILLED INTO ROCK

15. DEPTH GROUNDWATER ENCOUNTERED
14.1' bgs

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE
24' bgs

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES
NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES
NONE

20. SAMPLES FOR CHEMICAL ANALYSIS

VOC

METALS + NC

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT
CRAB orchard AUS on

HOLE NO.
OAZP-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2P-W01

SHEET

2 OF 4

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (4)	DEPTH (2)	DESCRIPTION OF MATERIALS (3)	FIELD SCREENING RESULTS (6)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (5)	SLOW-SOILAT Recovery (7)	REMARKS (8)
	0	Soft, moist, brown, silty clay TOPSOIL with gravel and grass roots	BZ/HS	0A2P-W01	SS-0X		TOPSOIL
	1	Stiff, moist, brown, low plastic, silty CLAY (CL)		0A2P-W01	SS-01		LOESS
	2					36"/48"	
	3		9/0.7				
	4	With yellowish red hematite staining					
	4	Without hematite staining					
	5			0A2P-W01	SS-05		
	6		0/1.6			60"/60"	
	7						
	8	Grading with gray					
	9		0/1.5				
	10						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2P-W01

A-41

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OARP-W01
SHEET 3 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	REMARKS (ft)
			BZ/HS			
	11	Becoming brownish yellow/gray mottled with dark brown streaks				
	12		9/1.6			60"/60"
	13	Stiff, moist, brownish yellow with little gray silty CLAY (CL) with trace fine rounded gravel				TILL
	14	Soft, wet, brownish yellow/gray mottled, clayey SILT (ML)				▽ ATD
	15	Soft, wet, brownish yellow/gray mottled sandy silty CLAY (CL)	9/1.3			
	16	Becoming moist				60"/60"
	17			OARP-W01-SS-17		
	18	Very stiff, slightly moist, brownish yellow to brown, high plastic silty CLAY (CH) with fine rounded gravels	9/1.4			
	19					
	20					

PROJECT Crab Orchard AUS OU

HOLE NO OARP-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A2P-W01

SHEET SHEETS

4 OF 4

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW-COUNT (ft)	REMARKS (ft)
	21	Grading with gray vertical streaks	BZ/AS 0/1.9.			Recovery 60"/60"	
	22						
	23						
	24		0/1.1				Bob @ 24' logs
	25						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2P-W01

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

1 COMPANY NAME
URS

2 DRILL SUBCONTRACTOR
PHILIP ENVIRONMENTAL SERVICES

GA2P-W02

SHEET **1** OF **4**

3 PROJECT
CRAB ORCHARD

4 LOCATION

5 NAME OF DRILLER
JERRY BIGNALL

6 MANUFACTURER'S DESIGNATION OF DRILL
CME 75

7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

- CME 75
- 5' LONG CME
CONTINUOUS SPLIT
BARREL SAMPLER

8 HOLE LOCATION
AREA 2P

9 SURFACE ELEVATION
425.76

10 DATE STARTED
4-5-00/12:20pm

11 DATE COMPLETED
4-5-00/4:45pm

12 OVERBURDEN THICKNESS

15 DEPTH GROUNDWATER ENCOUNTERED
14' bgs

13 DEPTH DRILLED INTO ROCK

16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14 TOTAL DEPTH OF HOLE
22' bgs

17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18 GEOTECHNICAL SAMPLES
NONE

DISTURBED

UNDISTURBED

19 TOTAL NUMBER OF CORE BOXES
NONE

20 SAMPLES FOR CHEMICAL ANALYSIS

YOC

METALS TAG

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21 TOTAL CORE RECOVERY %

22 DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23 SIGNATURE OF INSPECTOR
[Signature]

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT
CRAB ORCHARD AUS on

HOLE NO.
GA2P-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

HOLE NUMBER
0A2P-W02

SHEET **2** OF **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SLOW-CORRE- (ft)	REMARKS (ft)
	1	Brown, moist, silty clay TOPSOIL with gravel	BZ/AS	0A2P-W02	SS-0X	Recovery	TOPSOIL
	1	Stiff, moist, brown, low plastic silty CLAY (CL)		0A2P-W02	SS-01		LOESS
	2					48"/48"	
	3		0/1				
	4	Becoming brownish yellow with little brown					
	5			0A2P-W02	SS-05		
	6		0/1.3			60"/60"	
	7						
	8	Grading with greater amount of brown mottling					
	9	Loose, very moist, friable zone (2-4")	0/1.3				
	10	Becoming gray with brownish yellow hematite staining					

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2P-W02**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Eric Fritsch*

HOLE NUMBER
0A2P-W02

SHEET *3* OF *4* SHEETS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW-COUNT (G)	REMARKS (H)
	11	With dark brown vertical streaks	<i>BZ/HS</i>			<i>Recovery</i>	
	12		<i>0/1.1</i>			<i>60"/60"</i>	
	13						
	14	Stiff, moist, brownish yellow mottling, low plastic, silty CLAY (CL) with fine rounded gravel Becoming soft, wet					<i>▽ TILL ATD</i>
	15	Very stiff, moist, brownish yellow and gray mottled, high plastic, silty CLAY (CH)	<i>0/1.1</i>	<i>0A2P-W02-SS-15</i>		<i>60"/60"</i>	
	16						
	17						
	18		<i>0/1.3</i>				
	19						
	20						

PROJECT *Crab Orchard AUS OU*

HOLE NO *0A2P-W02*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2P-W02

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET 4 OF 4 SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLOW-COUNT (4)	REMARKS (4)
		Soft, wet, brownish yellow sandy CLAY (SC)				Recovery	
	21	Very stiff, moist, brownish yellow, high plastic, silty CLAY (CH) with few fine rounded gravels	9/1.3			36"/36"	
	22						BOB @ 22' logs
	23						
	24						
	25						

PROJECT Crab Orchard AUS OU

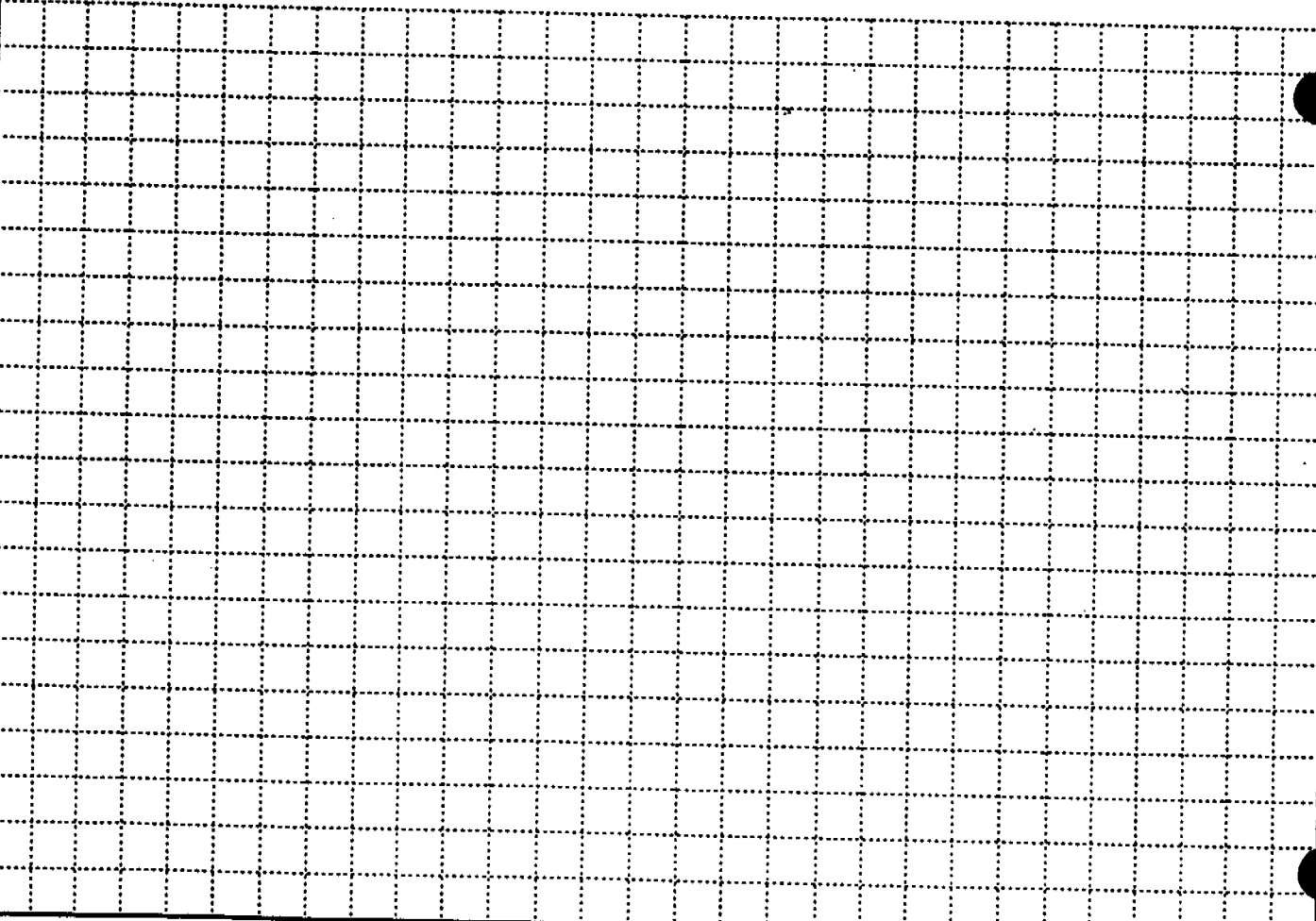
HOLE NO 0A2P-W02

HTRW DRILLING LOG

1. COMPANY NAME WRS		DISTRICT		HOLE NUMBER 0A2P-w	
3. PROJECT CRAB ORCUT RD AUS ON		2. DRILL SUBCONTRACTOR PITCIP ENVIRONMENTAL SVCS		SHEET SHEET of 4	
5. NAME OF DRILLER JERRY BIGNALL			4. LOCATION		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5 Foot Long CME CONTINUOUS SPLIT BARREL SAMPLER			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
12. OVERBURDEN THICKNESS			8. HOLE LOCATION AGLETA 2P		
13. DEPTH DRILLED INTO ROCK			9. SURFACE ELEVATION 424.36		
14. TOTAL DEPTH OF HOLE 24' bgs			10. DATE STARTED 4-4-00 14:30		11. DATE COMPLETED 4-4-00
18. GEOTECHNICAL SAMPLES NONE			15. DEPTH GROUNDWATER ENCOUNTERED 15' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
20. SAMPLES FOR CHEMICAL ANALYSIS		DISTURBED		UNDISTURBED	
22. DISPOSITION OF HOLE		VOC		METALS	
		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
		BACKFILLED		MONITORING WELL	
		<input type="checkbox"/>		<input type="checkbox"/>	
		0A2P-w03		19. TOTAL NUMBER OF CORE BOXES NONE	
				OTHER (SPECIFY)	
				OTHER (SPECIFY)	
				OTHER (SPECIFY)	
				21. TOTAL CORE RECOVERY %	
				21. SIGNATURE OF SUPERVISOR 	

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB ORCUT RD AUS ON	HOLE NO. 0A2P-w03
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HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS 00**

INSPECTOR **Eric Fritsch**

HOLE NUMBER
0A2P-W03

SHEET SHEETS
2 OF 4

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW-COUNT Recovery (ft)	REMARKS (ft)
	1	Brown, silty clay TOPSOIL w/roots Stiff, moist, brown, low plastic, silty CLAY (CL) with brownish yellow hematite staining	BZ/H5	0A2P-W03-	SS-0X		TOPSOIL
	2			0A2P-W03-	SS-01		LOESS
	3		0/0			40"/48"	
	4						
	5			0A2P-W03-	SS-05		
	6		0/42.7			60"/60"	
	7						
	8						
	9	Grading with dark brown vertical streaks (organics)	0/				
	10		1/163.5				

PROJECT **Crab Orchard AUS 00**

HOLE NO **0A2P-W03**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2P-W03
 SHEET SHEETS
3 of 4

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
			BZ/HS			Recovery	
11							
12		Stiff, moist, brownish yellow/brown mottled silty CLAY (CL) with fine to medium rounded gravel	0/575			60"/60"	TILL
13							
14							
15		Loose, wet, brownish yellow, clayey, fine grained SAND (SC)	0/180				ATD
16						60"/60"	
17		Stiff, brownish yellow with gray vertical streaks silty CLAY (CL) with fine rounded gravels					
18				0A2P-W03-SS-18			
19			0/327				
		Wet, brownish yellow clayey SAND (SC)					
20							

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2P-W03**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2P-W03

PROJECT Crab Orchard AUSOU


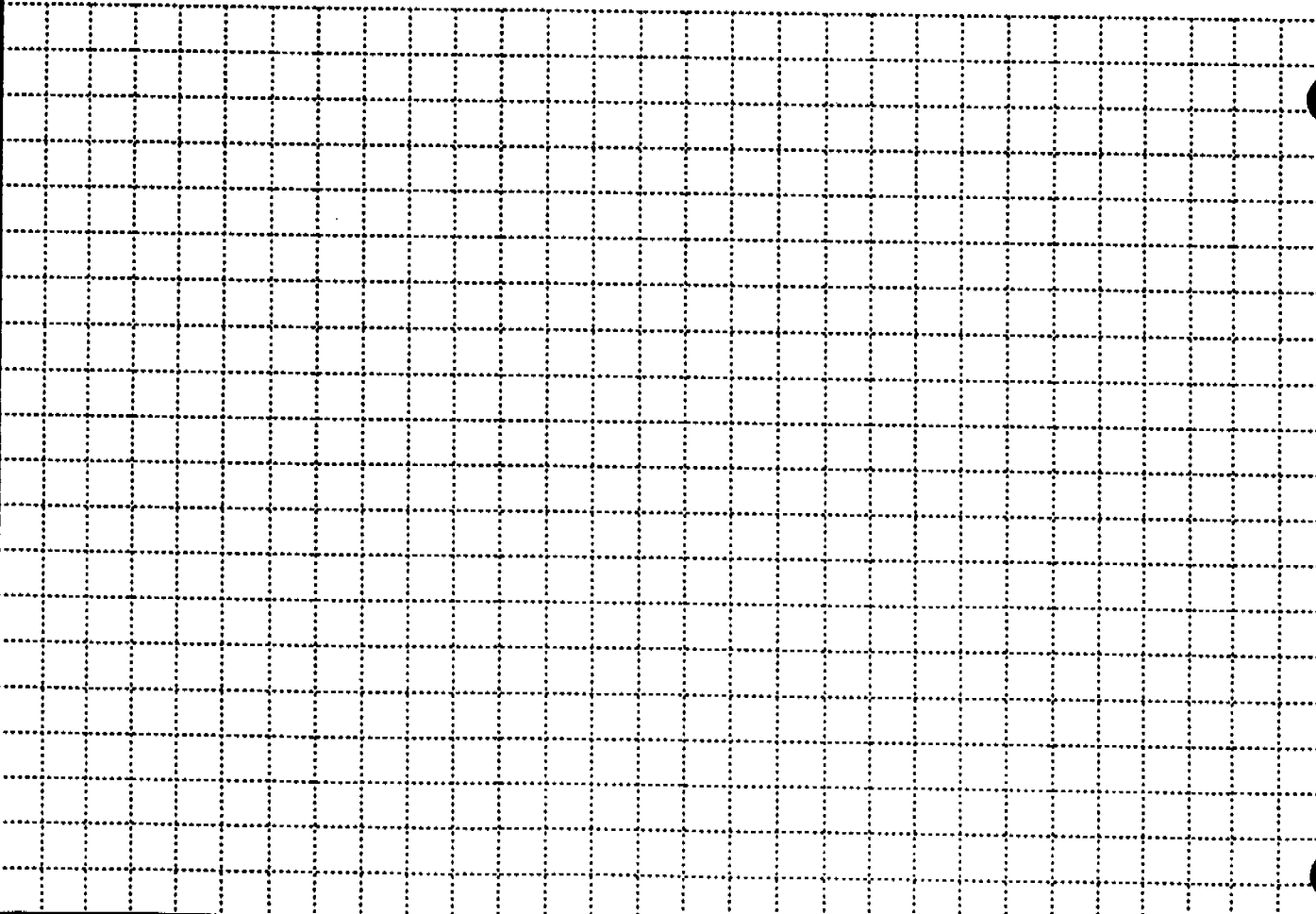
INSPECTOR Eric Fritsch

SHEET 4 OF 4 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	RECORDS RECOVERED (ft)	REMARKS (ft)
	21	Very stiff, moist, brownish yellow, high plastic, silty CLAY (CH) with few fine to medium rounded gravels	BZ/H5 0/102.8			Red Very 60"/60"	
	22						
	23						
	24		9/412				BOB @ 24' bgs
	25						

PROJECT

HOLE NO

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0AR2P-W04	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SVCS		SHEET SHEET 1 OF 4	
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION MARION, IL 62451		
5. NAME OF DRILLER JERRY BIGNALL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - S'LOW CME CONTINUED SPLIT BARREL Sampler		8. HOLE LOCATION AREA 2P		9. SURFACE ELEVATION 425.50	
12. OVERBURDEN THICKNESS		10. DATE STARTED 4-4-00 / 11:07		11. DATE COMPLETED 4-4-00 / 13:00	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED 14.5' bgs		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 24' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES None		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES None		20. SAMPLES FOR CHEMICAL ANALYSIS 9		21. TOTAL CORE RECOVERY % NA	
		VOC <input checked="" type="checkbox"/>		METALS (INCL) <input checked="" type="checkbox"/>	
		OTHER (SPECIFY) DNA		OTHER (SPECIFY) EXP	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		<input type="checkbox"/>		<input checked="" type="checkbox"/>	
		OTHER (SPECIFY) 0AR2P-W04		23. SIGNATURE OF INSPECTOR 	
LOCATION SKETCH/COMMENTS					
SCALE:					
					
PROJECT CRAB ORCHARD AUS ON				HOLE NO. 0AR2P-W04	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OA2P-W04

SHEET 2 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	RECOVERY (ft)	REMARKS (ft)
	0	Stiff, moist, brown, silty clay TOPSOIL with grass roots and gravel	BZ/HS	OA2P-W04	SS-0X	Recovery	TOPSOIL
	1	Medium stiff, slightly moist, brown with light brown, low plastic, silty CLAY(CL)		OA2P-W04	SS-01		LOESS
	2					36"/48"	
	3	With increased silt content (0.5ft thick)	0/0				
	4	Grading with brownish yellow hematite staining					
	5	With band of increased amounts of silt		OA2P-W04	SS-05		
	6	More silt (1" seam)	0/0			60"/60"	
	7						
	8	More silt (1" seam)					
	9	Grading stiff with dark brown nodules, no silt seams	0/0				
	10						

PROJECT Crab Orchard AUS OU

HOLE NO OA2P-W04

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OASP-W04
SHEET 3 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (b)	GEOTECH SAMPLE OR CORE BOX NO. (d)	ANALYTICAL SAMPLE NO. (i)	BLOW COUNT Recovery	REMARKS (f)
	11		BZ/HS				
	12	Stiff, moist, brownish yellow/brown mottled, high plastic, silty CLAY (CH) with dark brown vertical streaks (organics) and few rounded gravels				60"/60"	TILL
	13	Grading without dark brown streaks					
	14						
	15	Soft, wet, brownish yellow sandy SILT (ML)					ATD
	15	Stiff, moist, brownish yellow, silty CLAY (CL) with few fine rounded gravel	0%				
	16	Soft, very moist to wet, brownish yellow clayey SILT (ML)				60"/60"	
	17	Stiff, moist, brownish yellow, silty CLAY (CL) with fine to medium rounded gravel	0%				
	18	Soft, very moist to wet, brownish yellow, clayey SILT (ML)					
	19	Grading with more clay					
	20	Medium stiff to stiff, moist, brown/brownish yellow silty CLAY (CL) with few fine rounded gravels					

PROJECT Crab Orchard AUS OU

HOLE NO OASP-W04

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2P-W04

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

SHEET 4 OF 4 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	'RECOVERY' (ft)	REMARKS (ft)
	21	Very stiff, moist, brown/ brownish yellow mottled, high plastic, silty CLAY (CH) with few fine rounded gravels	BZ/ HS			Recovery	
	22					60"/60"	
	23						
	24		0/0				
	25						BOB @ 24' logs
	26						
	27						
	28						
	29						
	30						

PROJECT Crab Orchard AUS OU

HOLE NO 0A2P-W04

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER 0A2P-W05	
1. COMPANY NAME WPS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES		SHEET 1 of 3	
3. PROJECT CRAB ORCUTARD AUS ON			4. LOCATION MARION ILLINOIS		
5. NAME OF DRILLER JERRY BIGNALL			6. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - 5' LONG CME CUTTING - SPLIT BARREL SAMPLER		8. HOLE LOCATION AREA 2P		9. SURFACE ELEVATION 425.63	
12. OVERBURDEN THICKNESS		10. DATE STARTED 4-6-00 / 7:45		11. DATE COMPLETED 4-6-00 / 10:15	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED 12' bgs		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 19' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES None		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES None		20. SAMPLES FOR CHEMICAL ANALYSIS			
21. TOTAL CORE RECOVERY		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		0A2P-W05		23. SIGNATURE OF INSPECTOR	

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT CRAB ORCUTARD AUS ON	HOLE NO. 0A2P-W05
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A-56

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A2P-W05
 SHEET **2** OF **3** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	DIAMETER (ft)	REMARKS (ft)
	1	White crushed gravel FILL	BZ/H5	NO SAMPLING		Recovery	FILL Could not sample because gravel plugged up sampler. Moved and re-drilled.
	2	Stiff, moist, brown, low plastic, silty CLAY (CL)		0A2P-W05-SS-1.5			LOESS
	3			0A2P-W05-SS-02		36"/36"	
	4		0/0.9				
	5	Soft, slightly moist, brown, clayey silt (ML)					
	6	Stiff, moist, brownish yellow, low plastic, silty CLAY (CL)		0A2P-W05-SS-05			
	7		0/1.3			60"/60"	
	8	Grading with dark brown vertical streaks (organics)					
	9	Stiff, moist, brownish yellow, silty CLAY (CL) with few fine to medium rounded gravels	0/1.3				TILL
	10						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A2P-W05**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Eric Fritsch*

HOLE NUMBER
0A2P-W05

SHEET *3* SHEETS
3 OF 3

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	FLOW/SLURRY Recovery (4)	REMARKS (4)
	11		<i>BZ/HS</i>				<i>TILL</i>
	12	<i>Loose, wet, brownish yellow, well graded fine SAND (SW)</i>	<i>0/1.2</i>			<i>60"/100"</i>	<i>ATD</i>
	13	<i>Stiff, moist, brownish yellow, silty CLAY (CL) with fine rounded gravels</i>					
	14	<i>Loose, wet, brownish yellow, well graded fine SAND (SW)</i>					
	15	<i>Stiff, moist, brownish yellow, low plastic silty CLAY (CL) with few fine to medium rounded gravels</i>	<i>0/1.4</i>				
	16	<i>Loose, wet, brownish yellow, well graded fine SAND (SW)</i>		<i>0A2P-W05</i>	<i>SS-16</i>	<i>50"/100"</i>	
	17						
	18		<i>0/1.5</i>				
	19	<i>Wet, brown, clayey GRAVEL (GC)</i>					
	20						<i>BOB @ 19' bgs</i>

PROJECT *Crab Orchard AUS OU*

HOLE NO *0A2P-W05*

HTRW DRILLING LOG		DISTRICT			HOLE NUMBER	
1. COMPANY NAME WRS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL SERVICES			OAZP-WOL	
3. PROJECT CRAB ORCHARD AUS ON		4. LOCATION MARION, ILLINOIS			SHEET 1 OF 3	
5. NAME OF DRILLER JERRY SIGMALL		6. MANUFACTURER'S DESIGNATION OF DRILL CME 75				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT - CME 75 - S' CME CONTINUOUS SPLIT BARREL SAMPLER		8. HOLE LOCATION AZETA 2P			9. SURFACE ELEVATION 424.92	
12. OVERBURDEN THICKNESS		10. DATE STARTED 4-4-00 / 7:45am		11. DATE COMPLETED 4-4-00 / 10:00		
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED 9' 14.5' 18' bgs		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 8.2' bgs 2 hrs after drilling		
14. TOTAL DEPTH OF HOLE 19' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES NONE		
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC <input checked="" type="checkbox"/>	METALS <input checked="" type="checkbox"/>	OTHER (SPECIFY) FSDW/URS + NG	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
				23. SIGNATURE OF INSPECTOR <i>(Signature)</i>		
LOCATION SKETCH/COMMENTS				SCALE:		
PROJECT CRAB ORCHARD AUS ON				HOLE NO. OAZP-WOL		

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AU Sou**

INSPECTOR **Eric Fritsch**

HOLE NUMBER **0A2P-W06**

SHEET **2** OF **3** SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	SCOUR/DEPTH (4)	REMARKS (4)
		Moist, brown, silty clay and gravel FILL with grass roots	BZ/HS	0A2P-W06	SS-0X	Reactive	FILL/TOP SOIL
	1	Stiff, moist, brown, low plastic, silty CLAY (CL)		0A2P-W06	SS-01		LOESS
	2					40"/48"	
	3		0/0				
	4	Grading with brownish yellow					
	5			0A2P-W06	SS-05		
	6		0/0			60"/60"	
	7						
	8						
	9	Soft, wet layer from 9.0 to 9.2 ft	0/0				▽ ATD
	10			0A2P-W06	SS-10		

PROJECT **Crab Orchard AU Sou**

HOLE NO **0A2P-W06**

A-60

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OAR2P-W06
SHEET 3 OF 3 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	FLOW-SOILS (ft)	REMARKS (ft)
	11	Very moist zone	Bz/H5			Recovery	LOESS
	12	With gray vertical streaks	0/0			60"/60"	
	13						
	14						
	15	Soft, wet SILT layer from 14.5 to 14.7 ft	0/0				
	16	Stiff, moist, brownish yellow gray mottled silty CLAY (CL) with few fine rounded gravels				60"/60"	TILL
	17						
	18	Soft, wet clayey SILT layer from 17.9 to 18.1 ft.	0/0				
	19						BOB @ 19' bgs
	20						

PROJECT Crab Orchard AUS OU

HOLE NO OAR2P-W06

A-61

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
0A4E-W01

1. COMPANY NAME
URS

2. DRILL SUBCONTRACTOR
PHILIP ENVIRONMENTAL SERVICES

SHEET SHEET
1 of 4

3. PROJECT
CRAS ORCHARD AUS ON

4. LOCATION
MARION, ILLINOIS

5. NAME OF DRILLER
Jerry Blume

6. MANUFACTURER'S DESIGNATION OF DRILL
CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8. HOLE LOCATION
AREA 4E

CME 75
- 5' long CME
CONTINUOUS SPLIT
BARREL SAMPLER

9. SURFACE ELEVATION
443.52

10. DATE STARTED
4-7-00 / 7:45

11. DATE COMPLETED
4-7-00 / 10:00

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED
14.5' bgs

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE
24' bgs

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES
NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES
NONE

20. SAMPLES FOR CHEMICAL ANALYSIS
4

VOC

METALS

OTHER (SPECIFY)
EXPLOSIVE

OTHER (SPECIFY)
PAH

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR
[Signature]

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT
CRAS ORCHARD AUS ON

HOLE NO.
0A4E-W01

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

HOLE NUMBER **0A4E-W01**

SHEET **2** OF **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEO TECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	RECOVERY (ft)	REMARKS (ft)
	1	Stiff, moist, brown, silty clay FILL with grass roots	BZ/HS	0A4E-W01	SS-0X	36"/48"	FILL
	2	White crushed gravel and red brick FILL					
	2	Stiff, moist, brown low plastic silty CLAY (CL)		0A4E-W01	SS-02	60"/100"	LOESS
	3		0/0.2				
	4	With brownish yellow hematite staining					
	5			0A4E-W01	SS-05		
	6		0/0.0				
	7	Grading to gray with yellowish red hematite staining					
	8						
	9		0/0.0				
	10	Grading to brown					

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A4E-W01**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

HOLE NUMBER
0A4E-W01
SHEET **3** OF **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	RECOVERY (ft)	REMARKS (ft)
			BZ/HS			60"/60"	
11	11	Stiff, moist, gray, silty CLAY (CL) with fine rounded gravel and bands of brownish yellow hematite staining					TILL
12	12						
13	13	Grading to brownish yellow/gray mottled					
14	14						
15	15	Becoming soft, wet with some gray Becoming stiff with fine to medium rounded gravels	0/0	0A4E-W01-SS-15		60"/60"	▽ ATD
16	16						
17	17						
18	18	Grading to brown					
19	19		0/0				
20	20						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A4E-W01**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A4E-W01
SHEET 4 OF 4 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
	21	Becoming soft, gray	BZ/H5				TILL
	22	Hard, slightly moist, high plastic, silty CLAY(CH) with fine to medium rounded gravel				60"/60"	
	23		0/0				
	24						BOB @ 24' bgs
	25						

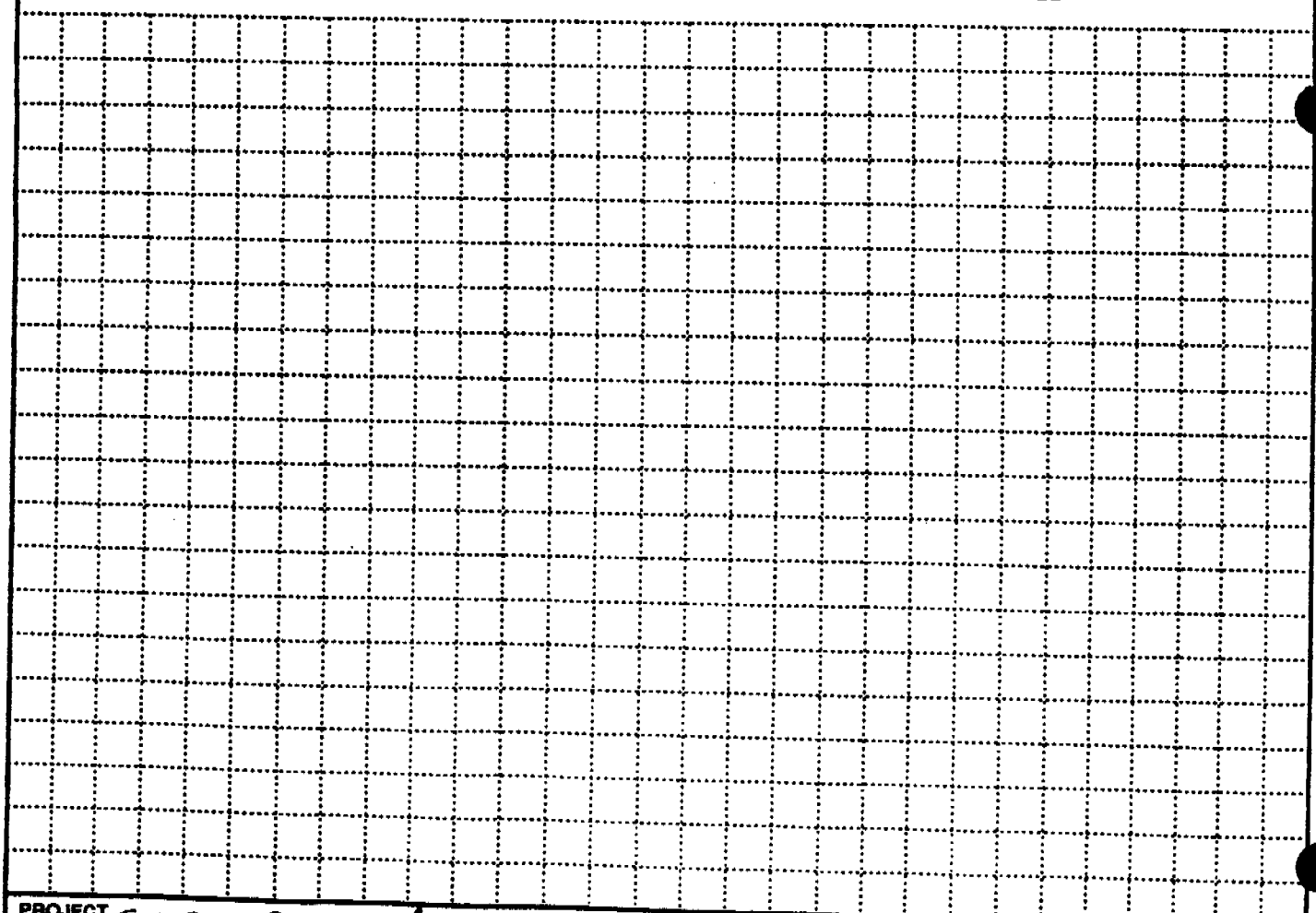
PROJECT Crab Orchard AUS OU

HOLE NO 0A4E-W01

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER	
1. COMPANY NAME WRS		2. DRILL SUBCONTRACTOR PHILIP Environmental Services		044E-W02	
3. PROJECT CRAB Orchard AUS on		4. LOCATION MARLOW 14610013		SHEET 1 of 3	
5. NAME OF DRILLER Jerry Bignall		6. MANUFACTURER'S DESIGNATION OF DRILL CMERS			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT CMERS 5 Foot core GME Continous Split Barrel Sampler		8. HOLE LOCATION ALEX 4			
		9. SURFACE ELEVATION 443.55			
		10. DATE STARTED 4-6-00/15:00		11. DATE COMPLETED 4-6-00/17:00	
12. OVERBURDEN THICKNESS		13. DEPTH DRILLED INTO ROCK		14. TOTAL DEPTH OF HOLE 91.0 ft	
				15. DEPTH GROUNDWATER ENCOUNTERED 9' bgs	
				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED	
				19. TOTAL NUMBER OF CORE BOXES NONE	
20. SAMPLES FOR CHEMICAL ANALYSIS 4		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		21. SIGNATURE OF INSPECTOR	
		044E-W02			

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB Orchard AUS on	HOLE NO. 044E-W02
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A4E-W02
SHEET 2 OF 3 SHEETS

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW-COUNT (ft)	REMARKS (ft)
	1	White, crushed gravel FILL	BZ/AS	0A4E-W02	SS-0X	Recovery	FILL
	2	Stiff, moist, brown, low plastic silty CLAY (CL)		0A4E-W02	SS-02	36"/36"	LOESS
	3	Becoming medium stiff, gray with brownish yellow hematite staining	0/0.9				
	4						
	5			0A4E-W02	SS-05		
	6		0/18.3			60"/60"	
	7						
	8						
	9	Becoming soft, wet	0/20.5				∇ ATD
	10			0A4E-W02	SS-10		

PROJECT Crab Orchard AUS OU

HOLE NO 0A4E-W02

ENG FORM 5056A-R, AUG 94

A-67

(Proponent: CECW-EG)

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

HOLE NUMBER
0A4E-W02

SHEET
3 OF **3** SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	SHOWPOINT Recovery (4)	REMARKS (4)
	11	Becoming stiff brownish yellow/gray mottled	BZ/HS				
	12	Very stiff, slightly moist, brownish yellow/gray mottled silty CLAY (CL) with few fine rounded gravels	9/11.6			60"/60"	TILL
	13						
	14						
	15	Grading to predominantly gray with more silt	9/10.6				
	16	Very stiff, moist, brownish yellow, high plastic silty CLAY (CH) with few rounded gravels				60"/60"	
	17						
	18	Loose, wet, brownish yellow, fine clayey SAND (Sc) with more fine rounded gravels	9/3.2				
	19						
	20						BOB@19' bgs

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A4E-W02**

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
044E-W031. COMPANY NAME
URS2. DRILL SUBCONTRACTOR
PHILIP Governmental Services

SHEET 1 of 4 SHEETS

3. PROJECT
CRAB Orchard AUS on4. LOCATION
MARION, ILLINOIS5. NAME OF DRILLER
TERRY SIGNAL6. MANUFACTURER'S DESIGNATION OF DRILL
CME 757. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT
- CME 75
- 5' Long CME CONTINUOUS
- SPLIT BARREL SAMPLER

8. HOLE LOCATION

9. SURFACE ELEVATION
441.5110. DATE STARTED
4-6-0011. DATE COMPLETED
4-6-00 / 11:38

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED
14' 05"

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE
23.5' 05"

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES
NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES
NONE20. SAMPLES FOR CHEMICAL ANALYSIS
4

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

044E-W03

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT
CRAB ORCHARD AUS onHOLE NO.
044E-W03

ENG FORM 5056-R, AUG 94

(Prepared: CECW-EG)

A-69

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Eric Fritsch*

HOLE NUMBER
0A4E-W03

SHEET *2* OF *4* SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLM/BLM/BLM- Recovery (ft)	REMARKS (ft)
	0	Moist, brown, silty clay FILL with grass roots and gravel	<i>BZ/HS</i>				<i>FILL/TOPSOIL</i>
	0.5	White crushed gravel FILL					
	1	Stiff, moist, brown, low plastic silty CLAY (CL)				<i>36"/48"</i>	<i>LOESS</i>
	2						
	3	Grading very soft, very moist	<i>0/0.9</i>				
	4						
	5	Becoming stiff, brownish yellow					
	6					<i>60"/60"</i>	
	7						
	8						
	9		<i>0/1.2</i>				
	10						

PROJECT *Crab Orchard AUS OU*

HOLE NO *0A4E-W03*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OA4E-W03
 SHEET 3 OF 4 SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Eric Fritsch**

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	% RECOVERY	REMARKS (4)
	11		BZ/HS				
	12	Grading with dark brown vertical bands of staining (organics)		OA4E-W03-SS-12		60%/60"	
	13	Stiff, moist, brown/brownish yellow, high plastic, silty CLAY (CH) with few fine rounded gravels					TILL
	14	Soft, wet, brownish yellow silty CLAY (CL) with medium rounded gravels Becoming stiff with little gray nodules having more silt	0/1.0				∇ ATD
	15						
	16						
	17	0.2 ft layer of very moist to wet brownish yellow sandy CLAY (CS)					
	18	0.1 ft layer of very moist to wet brownish yellow sandy CLAY (CS)		OA4E-W03-SS-18			
	19	Grading very stiff, brown	0/1.3				
	20						

PROJECT **Crab Orchard AUS OU**

HOLE NO **OA4E-W03**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT Crab Orchard AUS OU

INSPECTOR Eric Fritsch

HOLE NUMBER 0A4E-W03

SHEET 4 OF 4 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW-COUNT (ft)	REMARKS (ft)
	21	Becoming slightly moist, brownish yellow	BZ/AS				
	22		0/1.5				
	23						
	23.5	<u>Brownish yellow sandstone</u>	0/1.2	0A4E-W03-SS-24			Auger refusal @ 23.5 ft
	24						BOB @ 23.5' Dgs
	25						

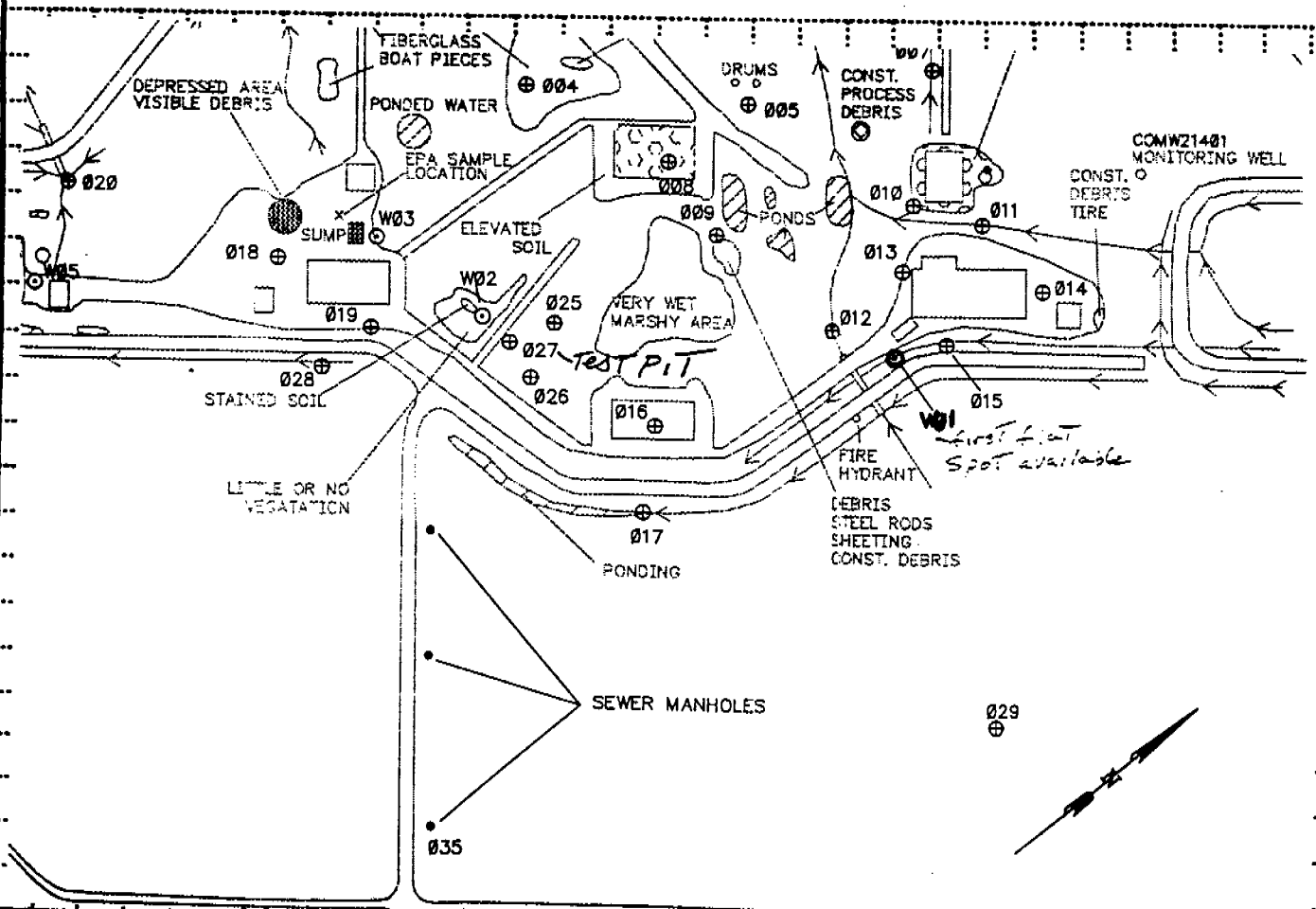
PROJECT Crab Orchard AUS OU

HOLE NO 0A4E-W03

HTRW DRILLING LOG		DISTRICT	HOLE NUMBER <i>AUS-088-491</i>
1. COMPANY NAME <i>URS</i>		2. DRILL SUBCONTRACTOR <i>Philip Environmental</i>	
3. PROJECT <i>Crab Orchard AUS OU</i>		4. LOCATION <i>Crab Orchard Wildlife Refuge, Marine, IL</i>	
5. NAME OF DRILLER <i>Jerry Bignall</i>		6. MANUFACTURER'S DESIGNATION OF DRILL <i>CME 75-TS D50 District</i>	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <i>4 1/2" ID 8 1/2" OD HSA 5' long continuous split barrel sampler</i>		8. HOLE LOCATION <i>Area 8 South</i>	
12. OVERBURDEN THICKNESS		10. DATE STARTED <i>4-14-00</i>	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED <i>4-14-00</i>	
14. TOTAL DEPTH OF HOLE <i>155 # 20' logs</i>		15. DEPTH TO WATER ENCOUNTERED <i>15' ATD</i>	
16. GEOTECHNICAL SAMPLES <i>NONE</i>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. DISTURBED		19. UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS <i>3</i>		21. TOTAL CORE RECOVERY <i>NA</i>	
22. DISPOSITION OF HOLE <i>BACKFILLED</i>		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 200'



PROJECT *Crab Orchard AUS OU*
 ENG FORM 8056-R, AUG 94

HOLE NO.
AUS-088-491

A-73

(Prepared: CECW-ER)

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Tiffany Swoveland**

HOLE NUMBER **0A85-W01**

SHEET **2** of **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT	REMARKS (ft)
		Medium stiff, moist, dark brown, silty clay TOPSOIL with rootlets and gravel	BZ/HS	0A85-W01	SS-0X	Recovered	TOPSOIL/FILL
	1	Medium stiff, moist, brown and gray, mottled silty CLAY (CL) with hematite staining					LOESS
	2					60"/60"	
	3		0/0.0				
	4	Grades to gray with less hematite staining					
	5			0A85-W01 +QA	SS-05 Split		
	6	Grades soft	0/0.0				
	7	Grades hard with more hematite staining				60"/60"	
	8						
	9		0/0.0				
	10						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A85-W01**

A-74

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A85-W01
 SHEET **3** OF **4** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Tiffany Snoveland**

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEO TECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLOW COUNT (4)	REMARKS (4)
	11		BZ/HS				
	12		0/0.0			60"/60"	
	13	Hard, moist, brown and gray mottled silty CLAY (CL) with hematite staining with fine gravel					TILL
	14						
	15	Soft, wet, brown and gray mottled clayey SILT (ML) with trace of sand	0/0.0				▽ ATD
	16	Medium stiff, moist, brown and gray mottled silty CLAY (CL) with trace of sand					
	17	Grades to hard				52"/60"	
	18	Grades to medium stiff with more sand	0/0.0	0A85-W01-	SS-18		
	19						
	20						

PROJECT **Crab Orchard AUS OU**

HOLE NO **0A85-W01**

HTRW DRILLING LOG (CONTINUATION SHEET)

PROJECT *Crab Orchard AUSOU*

INSPECTOR *Tiffany Snowland*

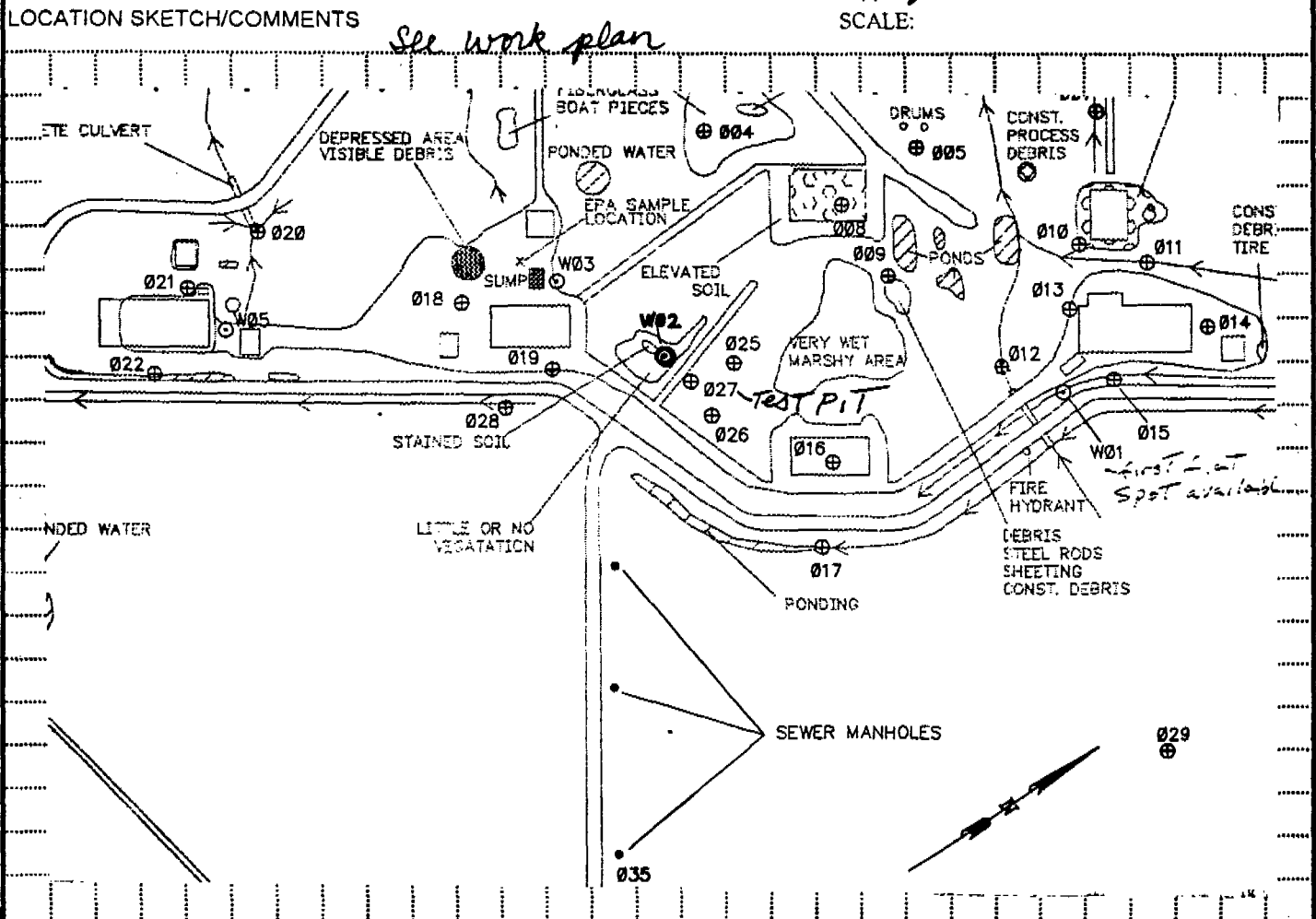
HOLE NUMBER *0A85-W01*
SHEET *4* OF *4* SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SLOW-SOUP RECOVERY	REMARKS (ft)
	21		BZ/HS				BOB @ 20' bags
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						

PROJECT *Crab Orchard AUSOU*

HOLE NO *0A85-W01*

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER AUS-0ABS-wp2	
1 COMPANY NAME URS		2 DRILLING SUBCONTRACTOR Philip Environmental		SHEET 1 OF 4 SHEETS	
3 PROJECT Crab Orchard AUS-OU			4 LOCATION Crab Orchard Wildlife Refuge Marion, IL		
5 NAME OF DRILLER Jerry Bignall			6 MANUFACTURE'S DESIGNATION OF DRILL CME 75 D50		
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/2" ID 8 1/2" OD HSA Continuous 5' long barrel sampler split			8 HOLE LOCATION Area 8 South		
			9 SURFACE ELEVATION 435.72		
12 OVERBURDEN THICKNESS —			10. DATE STARTED 4/11/00		
13 DEPTH DRILLED INTO ROCK —			11. DATE COMPLETED 4/11/00		
14 TOTAL DEPTH OF HOLE 24'			15 DEPTH GROUNDWATER ENCOUNTERED 13.5' & 18' bgs		
16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING			17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18 GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
None				NA	
20. SAMPLES FOR CHEMICAL		VOC		METALS	
3 Sample location		4-5' BAT		0-6"	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		DABS-wp2			
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		Explosives-0-6"		BNA-0-6"	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
				21. TOTAL CORE RECOVERY NA %	
				23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	



PROJECT Crab Orchard AUS OU	HOLE 0ABS-wp2
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A-77

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUSOU**

INSPECTOR **Tiffany Snoweland**

HOLE NUMBER **0A85-W02**

SHEET **2** of **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
		Soft, moist, dark brown FILL with gravel and rootlets	B2/HS	0A85-W02	SS0X	Redden	FILL
	1	Stiff, moist, gray silty CLAY (CL) with hematite staining					LOESS
	2	with more hematite staining				38"/48"	
	3		9/0.0				
	4						
	5			0A85-W02	SS-05		
	6		9/0.0				
	7	with less hematite staining				60"/60"	
	8						
	9		9/0.0				
	10						

PROJECT **Crab Orchard AUSOU**

HOLE NO **0A85-W02**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
OAS-W02

PROJECT *Crab Orchard AUSOU*

INSPECTOR *Tiffany Swoveland*

SHEET 3 OF 4 SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	SCORING/RECOVERY (g)	REMARKS (h)
	11		BZHS			Recovery	
	12	With hematite staining and iron nodules	90.0			57"/60"	
	13						
	14	Wet, brown SAND(SP)					ATD TILL
	15	Stiff, moist, gray, silty CLAY(CL) with some fine sand	90.0				
	16					50"/60"	
	17						
	18	Soft, wet, gray sandy SILT(MI)	90.0				
	19						
	20	Grades to brown					

PROJECT *Crab Orchard AUSOU*

HOLE NO *OAS-W02*

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUSOU**

INSPECTOR **Tiffany Swoveland**

HOLE NUMBER
OARS-W02
SHEET **4** OF **4** SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLOWCOUNT (4)	REMARKS (4)
		Becoming clayey with hematite staining	BZ/H5			Recovery	
	21	without hematite staining				5 1/100"	
	22	Stiff, moist, brown silty CLAY (CL)	0/0.0				
		Stiff, wet, brown, clayey SILT (ML) with sand					
	23	Hard, moist, brown silty CLAY (CL) with sand and hematite staining		OARS-W02	SS-23		
	24						BOB @ 24' bgs
	25						

PROJECT **Crab Orchard AUSOU**

HOLE NO **OARS-W02**

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

1. COMPANY NAME

URS

2. DRILL SUBCONTRACTOR

Philip Environmental

SHEET SHEETS

1 of 4

3. PROJECT

Crab Orchard AUS OU

4. LOCATION

Marion, IL

5. NAME OF DRILLER

Jerry Bignall

6. MANUFACTURER'S DESIGNATION OF DRILL

CME 75 D50

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

5 feet long CME
Continuous Split
Barrel Sampler

8. HOLE LOCATION

Area 8 South

9. SURFACE ELEVATION

438.40

12. OVERBURDEN THICKNESS

13. DEPTH DRILLED INTO ROCK

14. TOTAL DEPTH OF HOLE

24'

10. DATE STARTED

13-20-95 4-10-00

11. DATE COMPLETED

4/13/00

15. DEPTH OF GROUNDWATER ENCOUNTERED

16.5 bgs

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

None

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

NA

20. SAMPLES FOR CHEMICAL ANALYSIS

3 locations

VOC

4-5' & BGT

OTHER (SPECIFY)

Explosives bgs

OTHER (SPECIFY)

TCR BARS 0-6" + MS/MSD

OTHER (SPECIFY)

0-6" + MS/MSD

OTHER (SPECIFY)

0-6" + MS/MSD

21. TOTAL CORE RECOVERY

NA

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

DABS-W03

OTHER (SPECIFY)

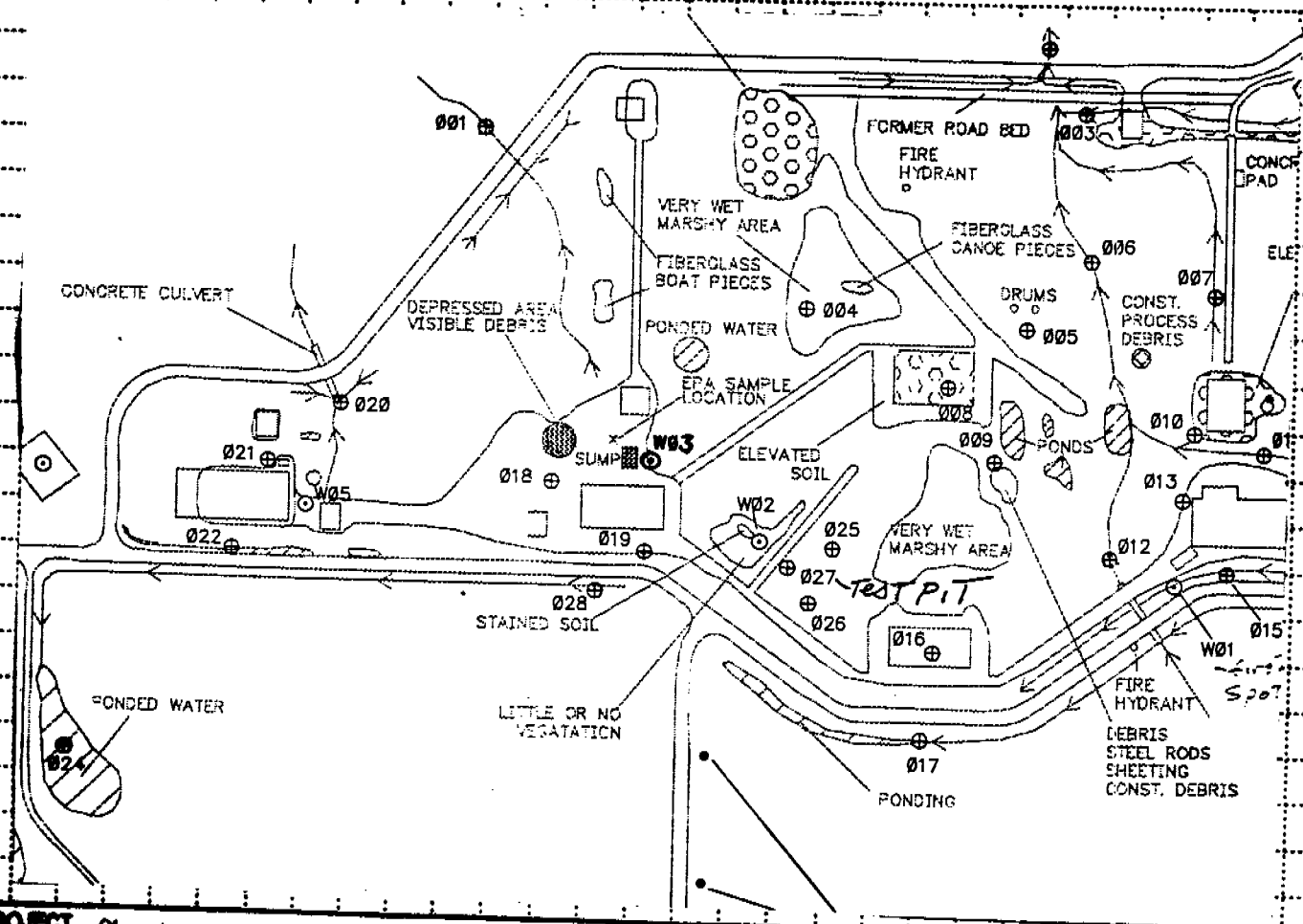
MONITORING WELL

23. SIGNATURE OF INSPECTOR

Jerry Bignall

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT Crab Orchard AUS OU

HOLE NO. AUS-DABS-W03

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT Crab Orchard AUS ON INSPECTOR Tiffany Snoweland HOLE NUMBER OA85-W03
 SHEET 2 OF 4 SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLOW COUNT (4)	REMARKS (4)
	1	Soft, moist, brown, silty clay FILL with rootlets With brick and gravel	BZ/HS	OA85-W03 +MS/MSD	SS-0X	Recovery	TOPSOIL
	2	Stiff, moist, brown and gray mottled silty CLAY (C)				41"/48"	LOESS
	3	Grading with iron nodules	0/2.9				
	4						
	5			OA85-W03 +MS/MSD	SS-05		
	6		0/4.1			60"/100"	
	7						
	8						
	9		0/2.6				
	10						

PROJECT Crab Orchard AUS ON HOLE NO OA85-W02

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
DA85-W03
SHEET
3 of 4

PROJECT **Crab Orchard AUS OU**

INSPECTOR **Tiffany Swovelord**

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SLOW-SOAK	REMARKS (ft)
	11		BZ/H5			Recovery	
	12		0/4.4			60"/60"	
	13						
	14						
	15	Stiff, moist, brown and gray mottled silty CLAY (CL) with hematite staining and with sand	0/4.4				TILL
	16	Loose, wet, brown, fine to medium SAND (SP) with hematite staining				48"/60"	▽ ATD
	17	Grades brown and light gray mottled Grades light gray					
	18	Grades with coarse grains and pebbles 1" black sand seam	0/4.1				
	19	Grades brown Medium stiff, moist, brown to light gray silty CLAY (CL)					
	20	Soft, wet, brown, fine to medium SAND (SP) with trace coarse					

PROJECT **Crab Orchard AUS OU**

HOLE NO **DA85-W03**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A85-W03

PROJECT *Crab Orchard AUS ou*

INSPECTOR *Tiffany Snowland*

SHEET SHEETS
4 of 4

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	SLOW-SOAK RECOVERY (4)	REMARKS (4)
			BZ/HS				
	21	Stiff, moist, brown silty CLAY (CL)	Q/3.3	0A85-W03	SS-21		
	22	Stiff, moist, brown clayey SILT (ML)					30" /60"
	23						
	24						
	25						BOB@24' bgs

PROJECT *Crab Orchard AUS ou*

HOLE NO *0A85-W03*

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

1. COMPANY NAME

URS

2. DRILL SUBCONTRACTOR

Philip Environmental

AUS-0485-WP4

SHEET OF SHEETS

3. PROJECT

Crab Orchard AUS OU

4. LOCATION

Marion, IL

6. NAME OF DRILLER

Jerry Bignall

6. MANUFACTURER'S DESIGNATION OF DRILL

CME 75 SS D50

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

CME-75

8. HOLE LOCATION

Area 8 South

5 feet long CME
continuous split
Barrel Sampler

9. SURFACE ELEVATION

4.32-69

12. OVERBURDEN THICKNESS

10. DATE STARTED

14:00 4/10/00

11. DATE COMPLETED

4/10/00

13. DEPTH DRILLED INTO ROCK

15. DEPTH GROUNDWATER ENCOUNTERED

18.5'

14. TOTAL DEPTH OF HOLE

19'

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

NA

20. SAMPLES FOR CHEMICAL ANALYSIS

3

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERED

NA

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

Exp + NA
cont + 4-5', 18-19'

SCALE:

PROJECT

Crab Orchard AUS OU

HOLE NO.

AUS-0485-WP4

ENG FORM 5056-R, AUG 94

A-85

HTRW DRILLING LOG (CONTINUATION SHEET)

PROJECT *Crab Orchard AUSOU*

INSPECTOR *Tiffany Swovelord*

HOLE NUMBER *0A85-W04*
SHEET *2* OF *3* SHEETS

GLYV. (1)	DEPTH (2)	DESCRIPTION OF MATERIALS (3)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (5)	ANALYTICAL SAMPLE NO. (6)	REMARKS (7)
	1	Loose, black sand and gravel FILL	BZ/HS	0A85-W04- + DUP	SS-0X	Recovery FILL
	2	Stiff, slightly moist, brown, low plastic, silty CLAY (CL) with root traces				48" 48" LOESS
	3		0/1.7			
	4	Grading to very stiff				
	5			0A85-W04- + DUP	SS-05	
	6	Grading with hematite staining nodules and gray mottling	0/0.9			60" 60"
	7					
	8					
	9		0/2.9			
	10					

PROJECT *Crab Orchard AUSOU*

HOLE NO *0A85-W04*

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUSOU*

INSPECTOR *Tiffany Swovelant*

HOLE NUMBER
OA85-W04
SHEET *3* SHEETS
3 OF 3

ELEV. (4)	DEPTH (5)	DESCRIPTION OF MATERIALS (6)	FIELD SCREENING RESULTS (8)	GEOTECH SAMPLE OR CORE BOX NO. (9)	ANALYTICAL SAMPLE NO. (10)	REMARKS (11)
	11					
	12	Very stiff, moist, brown, low plastic, silty CLAY (CL) with some sand and some hematite staining	0/2.5			54" / 60" Recovery
	13					TILL
	14	Wet, brown, fine to medium SAND (SP) with silt Without silt				
	15		0/2.5			50" / 60"
	16					
	17					
	18	Grades to tan	0/2.9			
	19	Soft, wet, brown SILT (ML)		OA85-W04-SS-19		▽ ATD
	19	Stiff, moist, brown and gray mottled silty CLAY (CL) with sand				BOB @ 19' bgs
	20					

PROJECT *Crab Orchard AUSOU*

HOLE NO *OA85-W04*

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

1 COMPANY NAME

URS

2 DRILLING SUBCONTRACTOR

Philip Environmental

AUS-OABS-W05

SHEET

1 OF

SHEETS

45

3 PROJECT

Crab Orchard AUS OU

4 LOCATION

Crab Orchard Wildlife Refuge

Marion, IL

5 NAME OF DRILLER

Jerry Bignall

6 MANUFACTURE'S DESIGNATION OF DRILL

CME 75

7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

4 1/2" ID 8 1/2" OD HSA

8 HOLE LOCATION

Area 8 South

5' long continuous split-barrel sampler

9 SURFACE ELEVATION

438.141

10. DATE STARTED

4/13/00 7:38

11. DATE COMPLETED

4/13/00

12 OVERBURDEN THICKNESS

-

15 DEPTH GROUNDWATER ENCOUNTERED

20.5'

13 DEPTH DRILLED INTO ROCK

-

16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING

26.5' After 1 hour

14 TOTAL DEPTH OF HOLE

35' bgs

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19 TOTAL NUMBER OF CORE

NA

20 SAMPLES FOR CHEMICAL

VOC

METALS + heavy

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY

4-5' BGT

0-6"

EXPOSURES

0-6"

TCL BNAS

0-6"

NA %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

OABS-W05

Jerry Bignall

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT

Crab Orchard AUS OU

HOLE

AUS-OABS-W05

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A85-W05

PROJECT
Crab Orchard AUS OU

INSPECTOR
Tiffany Swoveland

SHEET
2 of 5

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BURROUGHS RECOVERY (ft)	REMARKS (ft)
	1	Soft, moist, brown, silty clay TOPSOIL with rootlets Becoming stiff, with concrete fragments	BZ/H5	0A85-W05-	SS-0X	Recovery	TOPSOIL
	2	Stiff, moist, brown, silty CLAY (CL) with hematite staining and iron nodules				48"/100"	LOESS
	3		0/4.1				
	4	Grading medium stiff and without hematite staining					
	5	Grades soft		0A85-W05-	SS-05		
	6		0/4.4				
	7	Grades to stiff				60"/100"	
	8	Grades with hematite staining					
	9		0/4.8				
	10						

PROJECT
Crab Orchard AUS OU

HOLE NO
0A85.W05

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
DARS-W05
SHEET 3 of 5 SHEETS

PROJECT Crab Orchard AUSAOU

INSPECTOR Tiffany Snoweland

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	SWELL-SHIFT Recovery	REMARKS (ft)
	11		BZ/HS				
	12	Grades with a lot of hematite staining	Q/4.8			60"/100"	
	13						
	14	Medium stiff, moist, brown, silty CLAY (CL) with sand and with hematite staining					TILL
	15	Grades to light gray and brown mottled	Q/5.2				
	16	Grades to light gray					
	17	Grades to light gray and brown mottled				48"/100"	
	18	Moist, brown, fine to medium SAND (SP) with trace of clay, trace of coarse and hematite staining	Q/5.2				
	19						
	20						

PROJECT Crab Orchard AUSAOU

HOLE NO DARS-W05

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **Crab Orchard AUSOU**

INSPECTOR **Tiffany Snoweland**

HOLE NUMBER **OA85-W05**

SHEET **4** OF **5** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	GROUNDWATER (ft)	REMARKS (ft)
	21	Becomes wet and without hematite staining	BZ/H5			Recovery	▽ ATD
	22		0/5.2			48" / 60"	
	23						
	24	Grades without coarse grains	0/5.2				
	25						
	26	Grades with coarse grains					
	27					50" / 60"	▽ 1hr. ATD
	28						
	29			OA85-W05-SS-29			
	30						

PROJECT **Crab Orchard AUSOU**

HOLE NO **OA85-W05**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A85-W05
 SHEET **5** OF **5** SHEETS

PROJECT **Crab Orchard AUSOU**

INSPECTOR **Tiffany Swoveland**

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	REMARKS (ft)	REMARKS (ft)
	31		BZ/ HS			Recovery	
	32					50" / 160"	
	33						
	34						
	35						BOB @ 35' bgs
	36						

PROJECT **Crab Orchard AUSOU**

HOLE NO **0A85-W05**

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
0A85-W06
SHEET **1** SHEETS
4

1. COMPANY NAME

URS

2. DRILL SUBCONTRACTOR

Phillip Environmental

3. PROJECT

Crab Orchard AUS 04

4. LOCATION

Marion IL

5. NAME OF DRILLER

Nery Bignall

6. MANUFACTURER'S DESIGNATION OF DRILL

CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

CME 75

8. HOLE LOCATION

Area 8 S

5' long CME

9. SURFACE ELEVATION

435.95

Continuous Split Barrel samples

10. DATE STARTED

4-10-00/0920

11. DATE COMPLETED

4/10/00

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

10

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

24'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

None

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

None

20. SAMPLES FOR CHEMICAL ANALYSIS

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY

4 samples (includes Dop)

2-12, 16-18, 22-24

10-12, 16-18, 22-24

PAH 2-12, 16-18, 22-24

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

0A85-W06

Steve J. Sheroff

SCALE:

LOCATION SKETCH/COMMENTS

PROJECT

Crab Orchard AUS04

HOLE NO.

0A85-W06

ENG FORM 5056-R, AUG 94

A-93

HTRW DRILLING LOG (CONTINUATION SHEET)

PROJECT **Crab Orchard AUSOU**

INSPECTOR **Steven J Shroff**

HOLE NUMBER **0A85-W06**
SHEET **2** OF **4** SHEETS

ELEV. (4)	DEPTH (4)	DESCRIPTION OF MATERIALS (4)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (4)	BLISS/BOONE (4)	REMARKS (4)
	1	Moist, brown, silty clay FILL with fine to coarse gravel	BZHS			Recovery	FILL
	2					3 3/48"	
	3		0/NA				
	4						LOESS
	5	Medium stiff, moist, brown and gray mottled silty CLAY (CL)	2.1/0.0				
	6					54 1/100"	
	7						
	8						
	9		2.1/0.0				
	10						

PROJECT **Crab Orchard AUSOU**

HOLE NO **0A85-W06**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUSOU*

INSPECTOR *Steven J. Shroff*

HOLE NUMBER *DA85-W06*

SHEET *3* OF *4* SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	REMARKS (ft)
	11	Grades with fine sand				LOESS
	12			DA85-W06 +DLP	SS-12	52" /60"
	13	Grades with black hematite staining	2.5 /0.0			
	14					
	15	Medium stiff, moist, brown and gray mottled, low plastic, silty CLAY (CL) with some medium sand				TILL
	16					55" /60"
	17		2.5 /0.0			
	18	Soft, wet, gray sandy SILT (ML) with black hematite staining		DA85-W06	SS-18	▽ ATD
	19					
	20	Very stiff, moist, brown and gray silty CLAY (CL) with fine to coarse sand and fine gravel				

PROJECT *Crab Orchard AUSOU*

HOLE NO *DA85-W06*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
0A85-W06

PROJECT Crab Orchard AUSOU

INSPECTOR Steven J. Shroff

SHEET 4 OF 4 SHEETS

ELEV. (4)	DEPTH (3)	DESCRIPTION OF MATERIALS (6)	FIELD SCREENING RESULTS (4)	GEOTECH SAMPLE OR CORE BOX NO. (4)	ANALYTICAL SAMPLE NO. (1)	BLOW COUNT RECOVERY (1)	REMARKS (4)
	21		2.1/0.0			60" 160'	TILL
	22						
	23						
	24			0A85-W06-SS-24			BOB @ 24' bgs
	25						

PROJECT Crab Orchard AUSOU

HOLE NO 0A85-W06

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER AUS-0A09-WP1	
1 COMPANY NAME URS		2 DRILLING SUBCONTRACTOR Philip Environmental		SHEET OF SHEETS 1 OF 4	
3 PROJECT Crab Orchard AUS OU			4 LOCATION Crab Orchard Wildlife Refuge Marion, IL		
5 NAME OF DRILLER Jerry Bignall			6 MANUFACTURE'S DESIGNATION OF DRILL CME 75TS D50		
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8 HOLE LOCATION		9 SURFACE ELEVATION	
CME 75 4 3/4" ID 8 3/4" OD HSA		Area 9		423.71	
12 OVERBURDEN THICKNESS —			10 DATE STARTED 4/11/00 14:35		
13 DEPTH DRILLED INTO ROCK —			11 DATE COMPLETED 4/11/00		
14 TOTAL DEPTH OF HOLE 25'			15 DEPTH GROUNDWATER ENCOUNTERED ~ 20.5' bgs		
18 GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE		17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
NONE		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL		VOC		METALS	
3 locations		4-5' BGT		0-6" DUP	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
				0A09-WP1	
				OTHER (SPECIFY) perchlorates 0-6" + DUP	
				OTHER (SPECIFY) TCL 20/16 0-6" + DUP	
				OTHER (SPECIFY) Explosives 0-6" + DUP, 4-5'	
				21. TOTAL CORE RECOVERY NA%	
				23. SIGNATURE OF INSPECTOR J. Hayward	

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT Crab Orchard AUS OU	HOLE AUS-0A09-WP1
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
AVS-0A09-WP1
 SHEET **2** OF **4**

PROJECT **Crab Orchard AVS OU**

INSPECTOR **Tiffany Swoveland**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		TOPSOIL Dk. Brown silty CLAY w/ rootlets, moist, soft	B2/HS				Topsoil (Perchlorates, Metall boron, PNAS, EXP/LOSSES)
	1	CL Gray silty CLAY with hematite staining, moist, stiff			-DX +DVP		LOESS
	2						
	3		%			48" 601	
	4						
	5	grades brown and gray mottled			-OS		(VOC + hexane, Explosives)
	6	grades with iron nodules	%				
	7					60" 60"	
	8						
	9		%				

PROJECT **Crab Orchard AVS OU**

HOLE NO. **AVS-0A09-WP1**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
 AKS-0A09-wd1
 SHEET 3 OF 4 SHEETS

PROJECT *Crab Orchard AVS 0U*

INSPECTOR *Tiffany Swoveland*

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	11		<i>Bz/HS</i>				
	12		<i>%</i>			<i>60"</i> <i>60"</i>	
	13						
	14						
	15		<i>%</i>				
	16						
	17						
	18	<i>3" silt seam, Gray, moist, soft</i>	<i>%</i>			<i>60"</i> <i>60"</i>	
	19						

PROJECT *Crab Orchard AVS 0U*

HOLE NO. *AKS-0A09-wd1*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
AUS-0A09-W01
SHEET 4 OF 4

PROJECT
Crab Orchard AUS 0U

INSPECTOR
Tiffany Swobeland

SLEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT	REMARKS (ft)
		No Recovery	B2/HS			recovery	ATD
	21		0/0				
	22	CL Brown & Gray mottled silty CLAY, med. stiff, moist				43/60	
	23				-22.5		(VOC + hexane)
	24		0/0				
	25						E.O.B. @ 25' MW 0A09-W01 screen 25'-15' bgs
	26						
	27						
	28						
	29						

PROJECT
Crab Orchard AUS 0U

HOLE NO.
AUS-0A09-W01

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER A11A-W01		
1. COMPANY NAME URS GWC			2. DRILL SUBCONTRACTOR CITESA PEAKE GEOSYSTEMS			SHEET SHEETS 1 of 2		
3. PROJECT CRAB ORCHARD AUS ON				4. LOCATION CRAB ORCHARD WILDLIFE REFUGE				
5. NAME OF DRILLER BOB JORDAN				6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE 857				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4 ID / 7 1/4 OD H.S.A. 5' CMC CONT. SAMPLER			8. HOLE LOCATION AREA 11a			9. SURFACE ELEVATION 434.55		
12. OVERBURDEN THICKNESS			10. DATE STARTED 3/21/00			11. DATE COMPLETED 3/21/00		
13. DEPTH DRILLED INTO ROCK			15. DEPTH GROUNDWATER ENCOUNTERED 19' ATD			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 12' @ 3.5 hrs		
14. TOTAL DEPTH OF HOLE 20'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) 14.5' @ 30 min					
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS 4 SAMPLES		VOC X	METALS X	OTHER (SPECIFY) PAH	OTHER (SPECIFY) EXPLOSIVES	OTHER (SPECIFY) NITRO	21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACK-FILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>Timothy [Signature]</i>			
22. DISPOSITION OF HOLE				A11A-W01				
LOCATION SKETCH/COMMENTS								SCALE:
PROJECT CRAB ORCHARD AUS ON						HOLE NO. A11A-W01		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
A11A-W01

PROJECT
CRAB ORCHARD AUSOU

INSPECTOR
T. Hicks

SHEET SHEETS
2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) PPM	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	TAN, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL) W/ ORGANICS	HS = 2.2	AUS-A11A-W01-SS-0X			START 0800 BG = 0 ppm BZ = 0-1 ppm
	2	GRAY, WET, SOFT, SILTY LOW PLASTIC CLAY (CL/ML) (LOESS) W/ SOME IRON STAINING	HS = 0 ppm	AUS-A11A-W01-SS-02			
	3					PP = 3.0	
	4	↓ BECOMING MOIST + MED. STIFF (LOESS)	HS = 0 ppm	AUS-A11A-W01-SS-05		PP = 4.5	
	5						
	6					PP = 2.0	
	7						
	8	SAME	HS = 0 ppm			PP = 2.0	
	9						
	10					PP = 2.0	
	11	SAME					
	12						↓ @ 3.5 hrs
	13					PP = 3.5	
	14		HS = 0 ppm				
	15					PP = 2.0	
	16					PP = 2.0	
	17						
	18	SAME					
	19		HS = 0 ppm	AUS-A11A-W01-SS-20			↓ ATD BOB 20 FT

PROJECT

HOLE NO.

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER	
1. COMPANY NAME URSGLC			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			A11A-W02	
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDUFE REFUGE				
5. NAME OF DRILLER Bob Jordan			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4 ID / 7 1/4" OD HSA			8. HOLE LOCATION AREA 11a				
S' CME CONT. SAMPLER			9. SURFACE ELEVATION 437.42				
12. OVERBURDEN THICKNESS —			10. DATE STARTED 3/22/00		11. DATE COMPLETED 3/22/00		
13. DEPTH DRILLED INTO ROCK —			15. DEPTH GROUNDWATER ENCOUNTERED 16 FT ATD				
14. TOTAL DEPTH OF HOLE 20'			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 5.8 FT @ 1 HR				
18. GEOTECHNICAL SAMPLES NONE			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES —
20. SAMPLES FOR CHEMICAL ANALYSIS 4 SAMPLES		VOC X	METALS X	OTHER (SPECIFY) BNA	OTHER (SPECIFY) EXPLOSIVES	OTHER (SPECIFY) NITROGLYCERIN	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY) A11A-W02	23. SIGNATURE OF INSPECTOR <i>Anthony [Signature]</i>		
LOCATION SKETCH/COMMENTS							SCALE:
PROJECT CRAB ORCHARD AUS 04						HOLE NO. A11A-W02	

HTRW DRILLING LOG (CONTINUATION SHEET)							HOLE NUMBER
PROJECT				INSPECTOR			A11A - W02
CRAB ORCHARD AUS				T. Hicks			SHEET SHEETS 2 of 2
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) PPM	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BROWN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (FILL) WITH ORGANICS	0.8	AUS-A11A	W02-SS-0X		START = 0730 B0 = ND B2 = ND
	2	GRAY, MOIST, LOOSE LOAMY SILT / SILTY LOW PLASTIC CLAY (ML/CL) (LOESS)	1.2	AUS-A	11A - W02-SS-02		
	3	W/ IRON STAINING TR. SAND (M-F)					RECOVERY 36/60
	4						
	5		2.2	AUS-A	11A - W02-SS-05		
	6	BLACK SEDIMENT LAYER					
	7	GRAY, MOIST, LOOSE/MED. DENSE SILTY LOW PLASTIC CLAY (CL) (LOESS)					
	8	W/ IRON STAINING + TR. SAND (FINE)					REC. 60/60
	9		1.2				
	10						
	11	↓ BECOMING MED. STIFF/ STIFF W/ V. SMALL TR. OF SAND (MED.)					
	12						REC. 60/60
	13						
	14		6.3				
	15	↓ BECOMING MED. STIFF					
	16						↓ ATD
	17						
	18						REC. 60/60
	19		1.8	AUS-A11A	W02-SS-19		
	20	BOB 20 FT					

PROJECT CRAB ORCHARD AUS-04

HOLE NO. A11A - W02

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URS GWLC			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			A11H-401		
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE			SHEET SHEETS 1 OF 2		
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4" ID / 7 1/4 OD			8. HOLE LOCATION AREA 11 H					
5' CME CONT. SAMPLER			9. SURFACE ELEVATION 441.90					
12. OVERBURDEN THICKNESS —			10. DATE STARTED 3/23/00			11. DATE COMPLETED 3/23/00		
13. DEPTH DRILLED INTO ROCK —			15. DEPTH GROUNDWATER ENCOUNTERED 16 FT					
14. TOTAL DEPTH OF HOLE 20.0 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 18 FT @ 30 min					
18. GEOTECHNICAL SAMPLES —			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
19. TOTAL NUMBER OF CORE BOXES —			DISTURBED —			UNDISTURBED —		
20. SAMPLES FOR CHEMICAL ANALYSIS 4 SAMPLES			VOC X			METALS X		
22. DISPOSITION OF HOLE —			BACKFILLED —			MONITORING WELL X		
			OTHER (SPECIFY) PAH'S			OTHER (SPECIFY) EXPLOSIVES		
			OTHER (SPECIFY) —			OTHER (SPECIFY) NITRO		
			OTHER (SPECIFY) —			21. TOTAL CORE RECOVERY % —		
			OTHER (SPECIFY) —			23. SIGNATURE OF INSPECTOR Timothy Hubbs		
LOCATION SKETCH/COMMENTS								
SCALE:								
PROJECT CRAB ORCHARD AUS 04						HOLE NO. A11H-401		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
A11H-W01
SHEET SHEETS
2 OF 2

PROJECT
CRAB ORCHARD AUS 04

INSPECTOR
T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) PPM	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	2" MINUS ROCK + BLDG. DEBRIS FRAG.	4.9	A4S-A11H-W01-SS	-0X		START - 0750 B6 - 0.1 PPM B3 - 0.1 PPM
	2	TAN/GRAY, MOIST, SOFT SILTY LOW PLASTIC CLAY WITH 2" ROCK (CL) (FILL)	8.7	A4S-A11H-W01-SS	-02		REC. 20/24
	3						
	4	GRAY, DRY, LOOSE CLAYEY SILT (ML) (LOESS) W/ IRON DEPOSITS	4.6	A4S-A11H-W01-SS	-05		REC. 24/24
	5					PP-1.5	
	6	GRAY, MOIST, SOFT SILTY MED. PLASTIC CLAY (CL) (LOESS) W/ IRON STAINING					
	7	↓ INCREASE IN SILT				PP-2.5	
	8	MED./LOW PLASTIC (CL)					REC. 60/60
	9	↓ BECOMING STIFF	7.7			PP-4.5	
	10	↓ DECREASE IN SILT					
	11	MED. PLASTIC (CL) (LOESS)				PP-3.0	
	12						
	13					PP-2.5	REC. 60/60
	14		3.6				
	15	SAME				PP-2.5	
	16					PP-2.0	
	17						
	18	GRAY, WET, MED. DENSE SILT (MH) TH. CLAY	4.2	A4S-A11H-W01-SS	-1B		REC. 60/60
	19	GRAY, MOIST, STIFF, SILTY MED. PLASTIC CLAY (CL) (LOESS)					
	20					PP-2.0	Bob 20.0 FT

PROJECT
CRAB ORCHARD AUS 04

HOLE NO.
A11H-W01

HTRW DRILLING LOG		DISTRICT			HOLE NUMBER	
1. COMPANY NAME YRS GWC		2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			A11P-W01	
3. PROJECT CRAB ORCHARD AUS 04		4. LOCATION CRAB ORCHARD WILDFIRE REFUGE				
5. NAME OF DRILLER BOB JORDAN		6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4 ID / 7 1/4 OD		8. HOLE LOCATION AREA 11 P				
5' CMG CONT. SAMPLER		9. SURFACE ELEVATION 435.04				
12. OVERBURDEN THICKNESS —		10. DATE STARTED 3/22/00		11. DATE COMPLETED 3/22/00		
13. DEPTH DRILLED INTO ROCK —		15. DEPTH GROUNDWATER ENCOUNTERED 12 FT				
14. TOTAL DEPTH OF HOLE 18.2 FT bsp		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 16 FT @ 30 min.				
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS 4 SAMPLES		VOC X	METALS X	OTHER (SPECIFY) EXPLOSIVES	OTHER (SPECIFY) NITRO...	OTHER (SPECIFY) BNA
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL X	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>Timothy Hub</i>	
LOCATION SKETCH/COMMENTS						
SCALE:						
PROJECT CRAB ORCHARD AUS 04					HOLE NO A11P-W01	

HTRW DRILLING LOG (CONTINUATION SHEET)							HOLE NUMBER A11P-W01
PROJECT CRAB ORCHARD AUS 04			INSPECTOR T. HICKS				SHEET SHEETS 2 OF 2
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) PPM	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BROWN, MOIST, SOFT SILTY CLAY, LOW PLASTIC (CL) W/ORGANICS (FILL)	0 PPM	AUS-A11P-W01-SS-0X			START - 1350 B2 - ND B6 - ND
	2	POSSIBLE CAST TNT FLAKES	0 PPM	AUS-A11P	W01-SS-01		
	3	CONC. RUBBLE					
	4	GRAY, MOIST, STIFF MED. PLASTIC CLAY (CL) SOME SILT (LOESS) W/IRON STAINING					REC. 36/60
	5						
	6		2.9	AUS-A11P-W01-SS-06 AND AUS-A11P-W01-SS-51			REC 60/60
	7	↘ BECOMING LOW PLASTIC SILTY CLAY (CL)(LOESS) W/IRON STAINING					
	8						
	9						REC. 60/60
	10						
	11						REC. 60/60
	12	TAN/BLACK, WET, LOOSE SILTY C-F SAND (SM)		AUS-A11P-W01-SS-13			
	13						REC. 48/48
	14	GRAY, MOIST, MED. STIFF SILTY LOW PLASTIC CLAY (CL)(LOESS) W/IRON STAINING					
	15						REC. 48/48
	16						
	17						
	18						
	19						REC. 48/48
	20	BOB @ 19.0 FT					

PROJECT CRAB ORCHARD AUS 04	HOLE NO. A11P - W01
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HTRW DRILLING LOG			DISTRICT			HOLE NUMBER A115-1-01		
1. COMPANY NAME URS6WC			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			SHEET SHEETS 1 OF 2		
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE					
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 5/8" CME CONT. SAMPLER			8. HOLE LOCATION A115-1-01					
			9. SURFACE ELEVATION 435.70					
			10. DATE STARTED 3/27/00			11. DATE COMPLETED 3/27/00		
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED 18F+ ATD					
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 14F+ @ 1/2 HR					
14. TOTAL DEPTH OF HOLE 19.6 F bsp			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
4			X	X	EXPLOSIVES	BVA	TAL METALS	
22. DISPOSITION OF HOLE			BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>Smithy Hicks</i>		
				X				

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT CRAB ORCHARD AUS ON	HOLE NO. A115-1-01
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

A115-W01

PROJECT

CRAB ORCHARD AUS 04

INSPECTOR

T. Hicks

SHEET SHEETS

2 of 2

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BROWN, MOIST, SOFT SILTY LOW PLASTIC CLAY W/ ORGANICS (FIL)	ND	AUS-A115-	W01-SS-0X		START - 0810 B1 - ND B2 - ND
	2	LAM/BROWN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (LOESS) W/ IRON STAINING	1.0	AUS-A115-	W01-SS-02		
	3						REC 60/60
	4						
	5						
	6						REC. 50/60
	7	↓ BECOMING MORE SILTY (CL/ML)					
	8	(LOESS)	1.5				
	9			AUS-A115-	W01-SS-10		
	10		2.1	AUS-A115-	W01-SS-10		
	11						REC. 60/60
	12	↓ SAME (LOESS)					
	13						
	14						REC 60/60
	15						
	16						
	17						
	18						REC 60/60
	19	SAME (LOESS)					
	20		4.9	AUS-A115-	W01-SS-20		Bob 20.0 FT

PROJECT

CRAB ORCHARD AUS 04

HOLE NO.

A115-W01

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URSGUY			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			A115-W02		
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE			SHEET 1 OF 2 SHEETS		
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 5 FT CME CONT SAMPLER			8. HOLE LOCATION A115-W02					
			9. SURFACE ELEVATION 436.61					
			10. DATE STARTED 3/27/00			11. DATE COMPLETED 3/27/00		
12. OVERBURDEN THICKNESS —			15. DEPTH GROUNDWATER ENCOUNTERED 18 FT ATD					
13. DEPTH DRILLED INTO ROCK —			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 10 FT @ 1/2 HR					
14. TOTAL DEPTH OF HOLE 20.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES			DISTURBED			UNDISTURBED		
19. TOTAL NUMBER OF CORE BOXES								
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC			METALS		
4			X			X		
			OTHER (SPECIFY)			OTHER (SPECIFY)		
			PAH			EXPLOSIVES TAL METALS		
22. DISPOSITION OF HOLE			BACKFILLED			MONITORING WELL		
						OTHER (SPECIFY)		
			X			23. SIGNATURE OF INSPECTOR		
						Timothy Debb		
LOCATION SKETCH/COMMENTS						SCALE:		
PROJECT CRAB ORCHARD AUS-04						HOLE NO. A115-W02		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
A115-W02
SHEET 2 OF SHEETS

PROJECT
CRAB ORCHARD AUS 04

INSPECTOR
TIM HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BROWN, MOIST, SOFT SILTY, LOW PLASTIC CLAY (CL) (FILL) W/ ORGANICS					REC. 50/60
	2						
	3						
	4						
	5						
	6	↓ STRONG SOLVENT ODOR					REC. 60/60
	7						
	8						
	9	GRAY, MOIST, SOFT SILTY, LOW PLASTIC CLAY (CL) (LOESS) W/ IRON STAINING					REC. 60/60
	10						
	11						
	12						
	13						
	14	↓ W/ 3-6" SILT SEAMS					REC. 60/60
	15						
	16						
	17	SAME (CL) (LOESS)					REC. 60/60
	18						
	19						
	20						BOB. 20 FT

PROJECT
CRAB ORCHARD AUS 04

HOLE NO.
A115-W02

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URS			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			A115-W03		
3. PROJECT CRAB ORCHARD AHS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE			SHEET SHEETS 1 OF 2		
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4" ID / 7 1/2" OD H.S.A. 5 FT CME CONT. SAMPLER			8. HOLE LOCATION A115-W03					
			9. SURFACE ELEVATION 438.19					
12. OVERBURDEN THICKNESS			10. DATE STARTED 3/28/00			11. DATE COMPLETED 3/28/00		
13. DEPTH DRILLED INTO ROCK			15. DEPTH GROUNDWATER ENCOUNTERED NONE					
14. TOTAL DEPTH OF HOLE 18.1 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 18 FT @ 1 HR					
18. GEOTECHNICAL SAMPLES NONE			19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS 4			DISTURBED			UNDISTURBED		
22. DISPOSITION OF HOLE			VOC			METALS		
			X			X		
			BACKFILLED			MONITORING WELL		
						OTHER (SPECIFY) PAH		
						OTHER (SPECIFY) EXPLUS.		
						OTHER (SPECIFY) METALS		
						21. TOTAL CORE RECOVERY %		
						23. SIGNATURE OF INSPECTOR Timothy Hicks		
LOCATION SKETCH/COMMENTS								
SCALE:								
PROJECT CRAB ORCHARD AHS 04						HOLE NO. A115-W03		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
A115-403
SHEET 2 OF 3 SHEETS

PROJECT CLAB ORCHARD AUSOU

INSPECTOR T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BRKEN COAL, CINDERS, 1" ROCK ETC. (6")	ND				START - BG - ND BZ - ND
	2	TAN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL)(FILL)					
	3	BKN/TAN MOTTLED, SOFT SILTY LOW PLASTIC CLAY (CL)(LOESS)					
	4		ND				REC. 60/60
	5						
	6						
	7						
	8		ND				REC. 60/60
	9						
	10	↓ BECOMING GRAY	ND	AUS-A115-403-SS-12 AND (GR)			REC.
	11						
	12		ND				60/60
	13	↓ BECOMING MED. STIFF					
	14						
	15		ND				REC. 36/36
	16						
	17	BKN / MED. STIFF, SANDY CLAY (CL)	ND	AUS-A115-403-SS-18			
	18	WEATHERED SANDSTONE					
	19	BOB - 18 FT					AUGER REFUSAL 18.1 FT LIFT NR OFF GRND.

PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER	
1. COMPANY NAME URS GWC		2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS		A115-W04	
3. PROJECT CRAB ORCHARD AUS OU		4. LOCATION CRAB ORCHARD WILDLIFE REFUGE		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER BOB JORDAN		6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/2" ID / 7 1/4" OD HSA 5' CME CONT. SAMPLER		8. HOLE LOCATION AREA 11 S		9. SURFACE ELEVATION 4335.16	
12. OVERBURDEN THICKNESS —		10. DATE STARTED 3/28/00		11. DATE COMPLETED 3/28/00	
13. DEPTH DRILLED INTO ROCK —		15. DEPTH GROUNDWATER ENCOUNTERED 13 FT ATD		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 9.5' bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS 7 SAMPLES		VOC X		METALS X	
22. DISPOSITION OF HOLE BACKFILLED		MONITORING WELL X		OTHER (SPECIFY) BNA'S	
				21. TOTAL CORE RECOVERY %	
				23. SIGNATURE OF INSPECTOR <i>Clayton Hicks</i>	
LOCATION SKETCH/COMMENTS					
SCALE:					
PROJECT				HOLE NO. A115-W04	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
A115-W04
SHEET 2 OF 2

PROJECT
CRAB ORCHARD AUS ON

INSPECTOR
T. HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BROWN/BLACK, MOIST, SOFT LOW PLASTIC CLAY (CL)(FI) W/ ORGANICS	ND	AUS-A115-	W04-	SS-0X M5/M55	START 0753
	2	BROWN/GRAY, MOIST, SOFT SILTY, LOW PLASTIC CLAY (CL)(FI)	ND	AUS-A115-	W04-	SS-02 M5/M55	TOO WINDY 20 MPH
	3						
	4						REC 60/60
	5	GRAY, MOIST, LOOSE CLAYEY SILT (ML) TR. FINE SAND (LOESS)	ND	AUS-A115-	W04-	SS-05	
	6	W/ IRON STAINING					
	7						
	8						REC. 60/60
	9						
	10						
	11	↓ SAME LOESS					REC. 60/60
	12						
	13	↓ W/ WET SILTY SEAMS (MIT)					ATD
	14						
	15						
	16						REC
	17						
	18						60/60
	19	BROWN, MOIST/WET, SOFT SANDY LOW PLASTIC CLAY (CL)					BIB 20FT
	20						

PROJECT
CRAB ORCHARD AUS ON

HOLE NO.
A115-W04

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URSGLC			2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS			0A12-W01		
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE			SHEET 1 OF 2 SHEETS		
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B57					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4 1/4 ID / 7 1/4 OD 5' CME CONT. SAMPLER			8. HOLE LOCATION AREA 12					
			9. SURFACE ELEVATION 453.45					
12. OVERBURDEN THICKNESS			10. DATE STARTED 3/23/00			11. DATE COMPLETED 3/23/00		
13. DEPTH DRILLED INTO ROCK			15. DEPTH GROUNDWATER ENCOUNTERED 14 FT @ ATD			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 12 FT @ 16 HRS		
14. TOTAL DEPTH OF HOLE 19.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS 4 SAMPLES		VOC	METALS	OTHER (SPECIFY) BNA	OTHER (SPECIFY) EXPLOSIVES	OTHER (SPECIFY) PERCHLORATE	21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR Timothy Hicks			
LOCATION SKETCH/COMMENTS						SCALE:		
PROJECT CRAB ORCHARD AUS 04						HOLE NO. 0A12-W01		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A12-W01

SHEET SHEETS

2 OF 2

PROJECT

CRAB ORCHARD AUS 04

INSPECTOR

T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (PPM)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
		ORGANIC BLACK PEAT	5.3	AUS-0A12	W01-SS-0X	(M/S/MSD)	START - 1310 BG - ND BE - ND
	1	BROWN, MOIST, SOFT LOW PLASTIC SILTY CLAY W/ TR. MED. GRAVEL (CL)(FILL)					
	2		9.0	AUS-0A12	W01-SS-02		REC. 50/60
	3						
	4	GRAY, MOIST, LOOSE/MED. DENSE CLAYEY SILT (ML)(LOESS) SOME IRON STAINING					
	5						REC. 60/60
	6						
	7	↓ BECOMING DRY					
	8		14.0				
	9						REC. 60/60
	10						
	11						
	12						REC. 60/60
	13	GRAY/TAN, MOIST, MED. STIFF SILTY LOW PLASTIC CLAY (CL)(LOESS) W/ IRON STAINING	9.7				
	14						↓ ATD
	15						REC. 48/48
	16	TAN, MOIST, STIFF SILTY LOW PLASTIC CLAY (CL)(TILL)	7.0	AUS-0A12	W01-SS-17		
	17	TR. GRAVEL					
	18	↓ SANDSTONE/LIMESTONE COBBLES					REFUSAL
	19						
	20	BOB 19.0 FT					

PROJECT

CRAB ORCHARD AUS 04

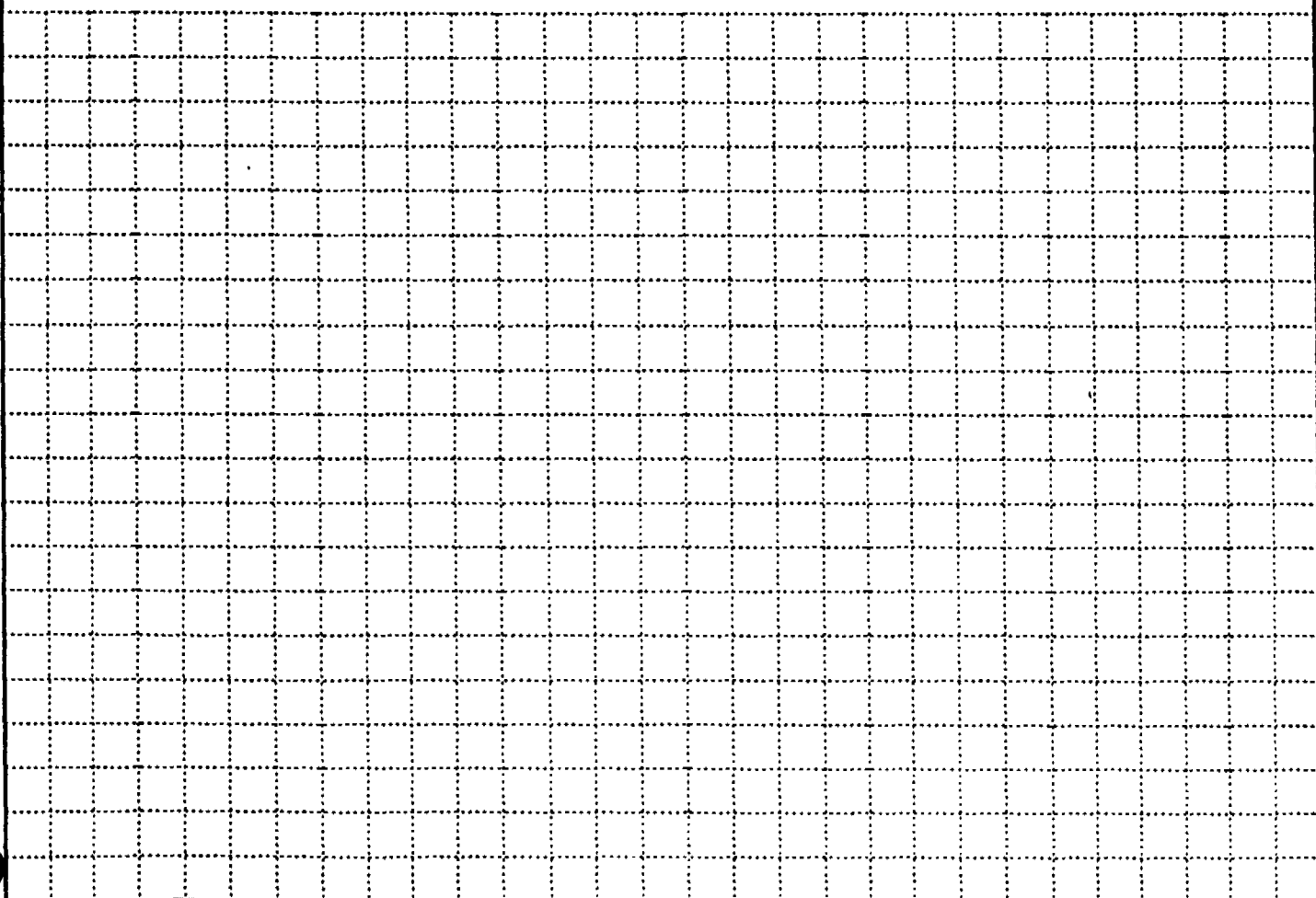
HOLE NO.

0A12 - W01

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER CA12-W02	
1. COMPANY NAME WRSGWC		2. DRILL SUBCONTRACTOR CHESAPEAKE GEOSYSTEMS		SHEET SHEETS 1 of 2	
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE		
5. NAME OF DRILLER BOB JORDAN			6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B.57		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION AREA 12		9. SURFACE ELEVATION 445.88	
4 1/4" ID / 7 1/4" OD #5A		10. DATE STARTED 3/24/00		11. DATE COMPLETED 3/24/00	
SPT CME CONT. SAMPLER		12. OVERBURDEN THICKNESS —		15. DEPTH GROUNDWATER ENCOUNTERED 10.3 FT @ ATT	
13. DEPTH DRILLED INTO ROCK —		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 20.1 ft bgs		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED —		UNDISTURBED —	
19. TOTAL NUMBER OF CORE BOXES —		20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
4 SAMPLES		VOC X		METALS X	
22. DISPOSITION OF HOLE		OTHER (SPECIFY) BVA		OTHER (SPECIFY) EXPLOSIVES PERCHLORATES	
BACKFILLED		MONITORING WELL X		OTHER (SPECIFY)	
		21. SIGNATURE OF INSPECTOR <i>Anthony Hicks</i>			

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB ORCHARD AUS 04	HOLE NO. CA12-W02
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

0A12-W02

PROJECT

CRAB ORCHARD AUS 04

INSPECTOR

T. HICKS

SHEET SHEETS

2 OF

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d) PPM	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BROWN, MOIST, SOFT, SILTY LOW PLASTIC CLAY W/ ORGANICS (CL)(FILL)	7.3	AUS-0A12-W02-SS-01 WS1-SS		OK OK	START - 1020 B0 - ND B2 - ND
	2	GRAY, MOIST, DENSE CLAYEY SILT (ML)(LOESS) W/ IRON STAINING + TAN SILT SEAMS TR. ORGANICS		ASIS-0A12-W02-SS-02 AUS-0A12-WS1-SS-02			REC 56/60
	3					PP-3.5	
	4						
	5				AUS-0A12-W02-SS-05 AUS-0A12-W02-SS-05(OA)		
	6						
	7	↓ BECOMING DRY				PP-4.0	
	8						REC 60/60
	9						
	10						
	11						
	12					PP-3.0	
	13	GRAY, MOIST, MED. STIFF SILTY LOW PLASTIC CLAY (CL)(LOESS)					REC. 60/60
	14						ATD
	15						
	16					PP > 4.5	
	17	TAN, MOIST, STIFF, SILTY LOW PLASTIC CLAY TR. C-F SAND (CL)(FILL)					REC 60/60
	18						
	19						
	20	GRAY, WET SANDY CLAY LOW PLASTIC W/ SOME SILT (CL)		AUS-0A12-W02-SS-20			BOB 20.0 FT

PROJECT

CRAB ORCHARD AUS04

HOLE NO.

0A12-W02

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

1. COMPANY NAME

URS

2. DRILL SUBCONTRACTOR

Philip Environment

AKS-0001-W01

3. PROJECT

Crab Orchard AUS OU

4. LOCATION

Crab Orchard Wildlife Refuge, Marion
Area 0001 - Fire Station 15 IL

SHEET 7 OF 13

5. NAME OF DRILLER

Jerry Bignall

6. MANUFACTURER'S DESIGNATION OF DRILL

TS-CME 75 Deitic D50

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

4 1/2" ID 8 1/2" OD HSA

8. HOLE LOCATION

Area 0001 Fire Station

5' long continuous split barrel sample

9. SURFACE ELEVATION

428 43

12. OVERLIDEN THICKNESS

13. DEPTH DRILLED INTO ROCK

14. TOTAL DEPTH OF HOLE

23'

10. DATE STARTED

1100 4-14-00

11. DATE COMPLETED

4-14-00

15. DEPTH GROUNDWATER ENCOUNTERED

22.5'

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOLOGICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

NA

20. SAMPLES FOR CHEMICAL ANALYSIS

2

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY

NA

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

Jerry Bignall

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT

Crab Orchard AUS OU

ENG FORM 5056-R, AUG 84

HOLE NO.

AUS-0001-W01

A-121

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
AUS-0001-W4

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Tiffany Surreland*

SHEET 2 OF 4

SLEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
	1	FILL Black cinders, brick pieces, gravel w/ silty CLAY, soft, moist	BZ/HS			problem	FILL
	2	CL Gray & B Brown & Gray mottled, silty CLAY w/ iron nodules, moist, stiff w/ hematite staining				55" 60"	LOESS
	3	grades gray w/ hematite staining w/ cinders TSS	0/0				
	4	grades brown & gray mottled w/ cinders					
	5						
	6		0/0		-05 +DVP		(VOC+hexane, PAH's)
	7					55" 60"	
	8						
	9		0/0				
	10						

PROJECT *Crab Orchard AUS OU*

HOLE NO. AUS-0001-W4

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT *Crab Orchard AUS OU*

INSPECTOR *Tiffany Swoveland*

HOLE NUMBER
AUS-0001-W01
SHEET *3* OF *4*

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT recovery	REMARKS (ft)
	11	<i>grades brown w/ gravel & sm. pebbles</i>	<i>BZ/HS</i>				
	12		<i>%</i>			<i>58"</i>	<i>TILL</i>
	13						
	14	<i>grades hard</i>					
	15		<i>%</i>				
	16						
	17					<i>60"</i>	
	18	<i>ASH Black ash</i>	<i>%</i>			<i>60"</i>	
	19	<i>CL v Gray silty CLAY w/ black staining, hard, moist</i>					
	20						

PROJECT *Crab Orchard AUS OU*

HOLE NO. *AUS-0001-W01*

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
AUS-0001-wd1

SHEET 4 OF 4

PROJECT Crab Orchard

INSPECTOR Tiffany Swoveland

SLEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEOTECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW-COUNT (ft)	REMARKS (ft)
		grades brownish yellow	BE/HS				
	21						
	22	grades med. stiff grades brown w/ trace of sand	%			30" 36"	
	23	LIMESTONE SANDSTONE Brown & gray LIMESTONE					ATD refusal @ 23'
	24						E.O.B. @ 23' monitoring well AUS-0001-wd1 Screen 23'-13' bgs
	25						
	26						
	27						
	28						
	29						
	30						

PROJECT Crab Orchard AUS OU

HOLE NO. AUS-0001-wd1

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER	
1. COMPANY NAME URS			2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			BDRK-001	
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE			SHEET SHEETS 1 OF 6	
5. NAME OF DRILLER DAN GOTTO			6. MANUFACTURER'S DESIGNATION OF DRILL SCHRAMM				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 8 3/4" TRICONE ROTARY BIT 4 1/4" RODS			8. HOLE LOCATION				
12. OVERBURDEN THICKNESS 23.0 FT			9. SURFACE ELEVATION 413.49				
13. DEPTH DRILLED INTO ROCK 69.3 FT			10. DATE STARTED 5/31/00			11. DATE COMPLETED 6/1/00	
14. TOTAL DEPTH OF HOLE 92.3 FT			15. DEPTH GROUNDWATER ENCOUNTERED				
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS NONE		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE BACKFILLED		MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR Timothy Hicks			
LOCATION SKETCH/COMMENTS			SCALE				
[Large grid area for sketch and comments]							
PROJECT						HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BRK-001
SHEET SHEETS
2 OF 6

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BRN, SILTY L PLASTIC CLAY (CL) (FILL)					
	2						
	3						
	4	BRN/GRAY, SOFT, SILT TR. CLAY (ML) (LOESS)					
	5						
	6						
	7	BRN, SOFT L PLASTIC CLAY W/SOME SILT + TR. C SAND - F. GRAVEL (CL) (TILL)					
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						



PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-001
SHEET 3 OF 6 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	21	SAME					
	22	↓ BECOMING GRAY					
	23						
	24		GRAY, SOFT, SHALE				
	25						
	26						
	27						
	28						
	29						
	30		↓ BECOMING DARK GRAY / BLACK				
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
RDRK-291
SHEET 4 OF 6 SHEETS

PROJECT CLAB ORCHARD

INSPECTOR T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	41	DRK GRAY/BLACK SHALE W/TR. BLACK COAL					
	42						
	43	GRAY, SHALE W/TR.					
	44	H. PLASTIC GRAY CLAY					
	45						
	46						
	47						
	48						
	49						
	50						
	51						
	52						
	53						
	54		GRAY, SOFT, SHALE W/SOME LT. GRAY SANDSTONE				
	55						
	56						
	57	LT. GRAY, SOFT, WEATHERED SANDSTONE					
	58						
	59						
	60						

PROJECT _____

HOLE NO. _____

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

HOLE NUMBER

BDK-001

SHEET SHEETS

5 of 6

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61	SAME					
	62						
	63	GRAM, HARD, SHALE					
	64						
	65						
	66	GRAM, HARD, SHALE W/SOME LT. GRAM SANDSTONE					
	67						
	68						
	69						
	70						
	71						
	72						
	73						
	74						
	75						
	76						
	77	↘ w/TR. COAL					
	78						
	79						
	80	LT. GRAM, HARD, SANDSTONE					

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BD2K-001


PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
6 OF 6

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	LT. GRAY, HARD, SANDSTONE 					
	82						
	83						
	84						
	85						
	86						
	87						
	88						
	89						
	90						
	91						
	92						
	93						
	94	BOB @ 93.3 FT					
	95						
	96						
	97						
	98						
	99						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

BDRK-002

1. COMPANY NAME

URS

2 DRILL SUBCONTRACTOR

PHILIP ENVIRONMENTAL

SHEET SHEETS

1 of 10

3. PROJECT

CRAB ORCHARD AYS ON

4. LOCATION

5. NAME OF DRILLER

DAN GOTTO

6. MANUFACTURER'S DESIGNATION OF DRILL

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8 3/4" TR-CONE ROTARY BIT

8. HOLE LOCATION

BDRK-002

9. SURFACE ELEVATION

431.26

10. DATE STARTED

5/22/00

11. DATE COMPLETED

5/22/00

12. OVERBURDEN THICKNESS

33.0 FT

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

130.0 FT

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

163.0 FT

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

NONE

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

X

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT

HOLE NO.

HTRW DRILLING LOG (CONTINUATION SHEET)

PROJECT **CRAB ORCHARD** INSPECTOR **T. Hicks** HOLE NUMBER **BDK-002**
 SHEET **2** OF **10** SHEETS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	GRAY, SOFT, WET, SILT TR CLAY (ML) (LOESS)					
	2						
	3						
	4						
	5				TOC		
	6						
	7						
	8						
	9	TRN, SOFT, SILTY CLAY W/TR. C. SAND - F. GRAVEL (CL) (TILL)					
	10						
	11						
	12						
	13		↓ BECOMING STIFF				
	14						
	15						
	16		↓ BECOMING SOFT				
	17		SILTY CLAY/CLAY SILT (CL/ML)				
	18						
	19						
	20						

PROJECT _____ HOLE NO. _____

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-002

PROJECT

CLAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
3 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	TAN, STIFF, SILTY MED. PLASTIC CLAY					
	22	W/TR. F. GRAVEL (CU)					
	23	↓ BECOMING SOFT					
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33	BRN / GRAY SILTY LOW PLASTIC CLAY					
	34	W/ SOME GRAY SHALE					
	35	SOFT, GRAY, SHALE					
	36	↓ BECOMING DRK. GRAY					
	37	DRY					
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-002

PROJECT

CRAB ORCHARD

INSPECTOR

J. Hicks

SHEET SHEETS
4 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
41		DARK HARD, GRAY, SHALE					
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57		LT. GRAY H. PLASTIC CLAY					
58		W/ SHALE					
59							
60							

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDNK-002

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
5 OF 10

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	61	SAME					
	62						
	63	LT. GRAY SHALE W/ SOME COAL					
	64						
	65	GRAY, H. PLASTIC CLAY W/ SOME SANDSTONE					
	66						
	67						
	68	LT. GRAY, SANDSTONE M-F GRAINED					
	69						
	70						
	71						
	72						
	73						
	74						
	75						
	76						
	77						
	78						
	79						
	80						

NOTE: NO WATER
PRODUCTION

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDNL-002
SHEET 6 OF 10 SHEETS

PROJECT
CLAB ORCHARD

INSPECTOR
T. HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	81	LT. GRAY, SANDSTONE HARD M-F GRAINED					
	82						
	83						
	84						
	85						
	86						
	87						
	88						
	89						
	90						
	91						
	92						
	93						
	94						
	95						
	96						
	97						
	98	GRAY SHALE W/ TR. SANDSTONE					
	99	GRAY SHALE W/ TR. COAL					
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-002
SHEET 7 OF 10 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	101	GRAY SHALE W/TR. COAL					
	102						
	103						
	104						
	105	LT. GRAY, SOFT SANDSTONE					
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114						
	115	GRAY SOFT SHALE					
	116						
	117						
	118						
	119						
	120						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-002



PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
8 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	121	GRAY, SOFT, SHALE 					
	122						
	123						
	124						
	125						
	126						
	127						
	128						
	129						
	130						
	131						
	132						
	133						
	134						
	135						
	136	SHALE GRAY W/TR. COAL 					
	137						
	138						
	139						
	140						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-002
SHEET
9 OF **10** SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	141	SAME					
	142	LT. GRAY SANDSTONE W/TL. SHALE					
	143						
	144						
	145						
	146						
	147						
	148						
	149						
	150	LT. GRAY, HARD, SANDSTONE					
	151						
	152						
	153						
	154						
	155		↙ BECOMING FRAC.				
	156						
	157						
	158						
	159						
	160						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDrk-002

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

SHEET SHEETS
10 of 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	161	SAME					
	162						
	163	B.O.B. 163.0 FT					
	164						
	165						

PROJECT

HOLE NO.

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER
BDRK-003
SHEET SHEETS
1 OF 12

1. COMPANY NAME
URS Greiner Woodward Clyde

2. DRILL SUBCONTRACTOR
Phillips

3. PROJECT
Crab Orchard AUS OU

4. LOCATION

5. NAME OF DRILLER
Dan Grotto

6. MANUFACTURER'S DESIGNATION OF DRILL

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8. HOLE LOCATION

9. SURFACE ELEVATION
420.18

10. DATE STARTED
5-18-00

11. DATE COMPLETED

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE
133 ft bgs

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES
none

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS
none

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT **Crab Orchard AUS OU**

HOLE NO. **BDRK-003**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT
Crab Orchard AUS OU

INSPECTOR
R. Mallisee

SHEET SHEETS
2 of 12

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	Stiff, light brown, low plastic, moist, silty clay (CL) w/trace iron staining					Low
	2						
	3						
	4						
	5						
	6	Stiffy Gray, medium to high plastic, moist clay (CH) w/trace coarse grained sand and fine-gravel					Glacial Till
	7						
	8						
	9						

PROJECT
Crab Orchard AUS OU

HOLE NO.
BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT
Crab Orchard AUS OU

INSPECTOR
R. Mallis

SHEET 3 of 12 SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	11	(Same as Above) Stiff, Gray, medium to high plastic, CLAYCH, w/trace coarse-grained sand and fine-gravel grades to light reddish brown, mottled w/ brown					Glacial Till NOTE: Due to water injected during drilling moisture content cannot be determined
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						

PROJECT
Crab Orchard AUS OU

HOLE NO. BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT
Crab Orchard AUS OU

INSPECTOR
R. Mallisee

SHEET SHEETS
4 of 12

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	(same as above) STIFF, light reddish brown/brown, mottled, medium to high plastic, CLAY (CH)					Glacial Till
	22	STIFF, brown, low to medium plastic, silty CLAY (CL) w/ some coarse-grained sand and fine-gravel.					Glacial Till out wash
	23						
	24						
	25						
	26						
	27						
	28						
	29	grades to light reddish brown, w/ iron staining medium to high plastic, CLAY (CH)					

PROJECT
Crab Orchard AUS OU

HOLE NO.
BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003
SHEET SHEETS
5 of 12

PROJECT
Crab Orchard AUS OU

INSPECTOR
R. Mallison

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	31	(Same as Above) Soft, light reddish brown, medium to high plastic, CLAY (CH) w/ some coarse-grained sand and fine-gravel, and iron staining					Glacial Till
	32						
	33						
	34						
	35						
	36						
	37	Soft, Black, low plastic, Silt (ML)					Weathered State Glacial Till
	38	Soft, light reddish brown, medium to high plastic, CLAY (CH) w/ some coarse-grained sand and fine-gravel, iron staining					
	39						

PROJECT
Crab Orchard AUS OU

HOLE NO.
BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT

Crab Orchard AUS OU

INSPECTOR

R. Malliser

SHEET SHEETS
6 of 12

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
		<i>SHALE: Hard, Black, fissile</i>					<i>Bedrock</i>
	<i>41</i>						
	<i>42</i>						
	<i>43</i>						
	<i>44</i>						
	<i>45</i>						
	<i>46</i>						
	<i>47</i>						
	<i>48</i>						
	<i>49</i>						

PROJECT

Crab Orchard AUS OU

HOLE NO.

BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT
Crab Orchard AUS OU

INSPECTOR
R. Mallison

SHEET SHEETS
7 OF

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		<i>SHALE: Hard, Black, fissile</i>					
	<i>51</i>						
	<i>52</i>						
	<i>53</i>						
	<i>54</i>						
	<i>55</i>						
	<i>56</i>						
	<i>57</i>						
	<i>58</i>						
	<i>59</i>						

PROJECT
Crab Orchard AUS OU

HOLE NO.
BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003

PROJECT

Crab Orchard AUS OU

INSPECTOR

R. MALISEE H. Hicks

SHEET 8 OF 12 SHEETS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	61	SAM 8					
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69						

PROJECT

Crab Orchard AUS OU

HOLE NO.

BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003
SHEET SHEETS
9 OF 12

PROJECT **Crab Orchard AUS OU**

INSPECTOR **T. Hicks**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	71	same					
	72						
	73						
	74						
	75	SOFT, GRAM. WEATHERED SANDSTONE					
	76	W/ BLACK SHALE SEAMS					
	77						
	78	↓ BECOMING HARD LT. GRAM WEATHERED SANDSTONE					
	79						

PROJECT **Crab Orchard AUS OU**

HOLE NO. **BDRK-003**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-003

PROJECT

Crab Orchard AUS OU

INSPECTOR

T. Hicks

SHEET SHEETS

10 of 12

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		<i>LT. GRAY, HARD, SANDSTONE</i>					
	<i>81</i>						
	<i>82</i>						
	<i>83</i>						
	<i>84</i>						
	<i>85</i>						
	<i>86</i>						
	<i>87</i>						
	<i>88</i>						
	<i>89</i>						

PROJECT

Crab Orchard AUS OU

HOLE NO.

BDRK-003

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-003
SHEET **11** OF **12** SHEETS

PROJECT **Crab Orchard AUS OU**

INSPECTOR **T. Hicks**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	91	LT. GRAY, HARD, SANDSTONE					
	92						
	93						
	94						
	95						
	96						
	97						
	98						
	99						

PROJECT **Crab Orchard AUS OU**

HOLE NO. **BDRK-003**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-003
 SHEET
12 OF **12** SHEETS

PROJECT

INSPECTOR

T. Hicks

ELEV. (4)	DEPTH (5)	DESCRIPTION OF MATERIALS (6)	FIELD SCREENING RESULTS (8)	GEO TECH SAMPLE OR CORE BOX NO. (9)	ANALYTICAL SAMPLE NO. (1)	BLOW COUNT (10)	REMARKS (7)
	101	LT. GRAY, HARD, SANDSTONE					
	102						
	103	BLACK, SOFT, SHALE					
	104	W/ C-F GRAVEL					
	105						
	106						
	107						
	108						
	109						
	110						
	111	GRAY, SANDSTONE, HARD					
	112						
	113						
	114	BLACK, SOFT, SHALE					
	115	W/ SANDSTONE FRAG.					
	116						
	117						
	118						
	119						
	120	LT. GRAY, HARD, SANDSTONE					

PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER BDNK-004		
1 COMPANY NAME URS		2 DRILL SUBCONTRACTOR PHILIP ENVIRON.		SHEET SHEETS 1 of 7		
3 PROJECT CLAB ORCHARD			4 LOCATION			
5 NAME OF DRILLER DAN GOTTO			6 MANUFACTURER'S DESIGNATION OF DRILL			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8 HOLE LOCATION		9. SURFACE ELEVATION 427.06		
8 3/4" TRI-CONE ROLLER BIT 4 1/4" RODS		10. DATE STARTED 5/19/00		11. DATE COMPLETED 5/19/00		
12. OVERBURDEN THICKNESS 28 FT			15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK 85 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 113 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)
22 DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY	
—			X		23. SIGNATURE OF INSPECTOR	

LOCATION SKETCH/COMMENTS

SCALE:

PROJECT	HOLE NO.
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
 BDRK-009
 SHEET 2 of 7 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BRN, SOFT, SILTY LP CLAY w/ 1/2" rock (CL) (FILL)					
	2						
	3						
	4	BRN, MOIST, SOFT SILT w/ SOME CLAY (ML) (LOESS)					
	5						
	6						
	7	BRN, MOIST, SOFT M PLASTIC CLAY w/ TR. SILT + m-f GRAVEL (CL) (TILL)					
	8						
	9						
	10						
	11	7 BECOMING TAN & STIFF					
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
 BDKK-001
 SHEET 3 OF 7

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (4)	DEPTH (5)	DESCRIPTION OF MATERIALS (6)	FIELD SCREENING RESULTS (8)	GEOTECH SAMPLE OR CORE BOX NO. (7)	ANALYTICAL SAMPLE NO. (9)	BLOW COUNT (10)	REMARKS (11)
	21	TAN, M. PLASTIC, SOFT CLAY W/TR. SILT & M-F GRAVEL					
	22						
	23						
	24						
	25						
	26						
	27						
	28	BRN, SOFT, SHALE ↓ BECOMING GRAY					
	29						
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-004
SHEET **4** OF **7** SHEETS

PROJECT

CLAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	41	GRAY, SOFT, SHALE					
	42	BLACK COAL					
	43						
	44	LT. GRAY SANDSTONE W/ BLACK SHALE BEAMS					
	45						
	46						
	47						
	48						
	49	LT. GRAY, SOFT, SANDSTONE					
	50						
	51						
	52						
	53	LT. BLACK, SOFT, SHALES					
	54						
	55						
	56						
	57						
	58						
	59						
	60						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-004

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS

5 OF 7

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	61	BLACK, SOFT, SHALE					
	62						
	63						
	64						
	65						
	66	BLACK COAL					
	67	H. PLASTIC, GRAY CLAY W/GRAY SHALE					
	68	+ BLACK COAL					
	69						
	70						
	71						
	72						
	73						
	74						
	75						
	76						
	77						
	78						
	79	LT. GRAY, H. PLASTIC CLAY					
	80						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-004
SHEET 6 OF 7 SHEETS

PROJECT

CLAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	LT. GRAY, SOFT, SHALE					
	82						
	83						
	84	TAN, LIMESTONE					
	85						
	86	LT. GRAY SHALE					
	87						
	88						
	89	GRAY SANDSTONE W/ H. PLASTIC CLAY SEAMS					
	90						
	91						
	92						
	93						
	94	LT. GRAY SANDSTONE					
	95						
	96						
	97						
	98						
	99						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-004
SHEET 7 OF 7 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	101	LT. GRAY, SANDSTONE					
	102						
	103						
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113	BOB @ 113.0 FT					
	114						
	115						

PROJECT

HOLE NO.

HTRW DRILLING LOG

DISTRICT

HOLE NUMBER

BDRK-0057

1. COMPANY NAME

URS

2. DRILL SUBCONTRACTOR

Philip Environmental

SHEET

OF 4

3. PROJECT

CRAB ORCHARD AUS 04

4. LOCATION

Morton JI

5. NAME OF DRILLER

DAN GOTTO

6. MANUFACTURER'S DESIGNATION OF DRILL

SCHRAM T660

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

7" CASING
6 7/8" TRI CONE BIT
4 1/4" RODS

8. HOLE LOCATION

9. SURFACE ELEVATION

10. DATE STARTED

6/12/00

11. DATE COMPLETED

6/20/00

12. OVERBURDEN THICKNESS

50 Ft

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

0 Ft

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

50 Ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NONE

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

NONE

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

2"

23. SIGNATURE OF INSPECTOR

Timothy Jenkins

SCALE:

LOCATION SKETCH/COMMENTS

PROJECT

CRAB ORCHARD AUS 04

HOLE NO.

BDRK-0057E

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **CRAB ORCHARD** INSPECTOR **Kim Jinkerson** HOLE NUMBER **BDRK-005I**
 SHEET **2** OF **4** SHEETS

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BAN, SOFT, SILTY CLAY W/TR. ± 2" ROCK (FILL)					
	2	TANNISH BROWN, SOFT SILT W/ TR CLAY (LOESS) (ML)					
	3						
	4						
	5						
	6						
	7						
	8	TANNISH BROWN SOFT LOW PLASTIC CLAY W/ TRACE OF ROUNDED GRAVEL (TILL)					
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18	↘ w/ SOME F. SAND					
	19						
	20						

PROJECT _____ HOLE NO. **BDRK-005I**

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT

CRAB ORCHARD

INSPECTOR

Kim Jinkerson

HOLE NUMBER

BDRK-0051

SHEET SHEETS

3 of 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	21	TANNISH BROWN SOFT LPCLAY w/ GRAVEL AND SOME FSAND					
	22	BECOMING STIFF ↘					
	23						
	24						
	25						
	26						
	27						
	28						
	29	↘ BECOMING GRAY					
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

CRAB ORCHARD

HOLE NO.

BDRK-0051

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BOKK-005I
SHEET 4 OF 4 SHEETS

PROJECT CRAB ORCHARD

INSPECTOR TIM JINKETSAU

ELEV. (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (ft)	GEO TECH SAMPLE OR CORE BOX NO. (ft)	ANALYTICAL SAMPLE NO. (ft)	BLOW COUNT (ft)	REMARKS (ft)
41		VERY LOOSE DARK GRAY, WET C-F GRAVEL W/ SOME C SAND					
43							
44							
45		SOFT DARK GRAY MED PLASTIC SELT (ML)					
46							
47							
48							
49							
50		BOB @ 50'					

PROJECT CRAB ORCHARD

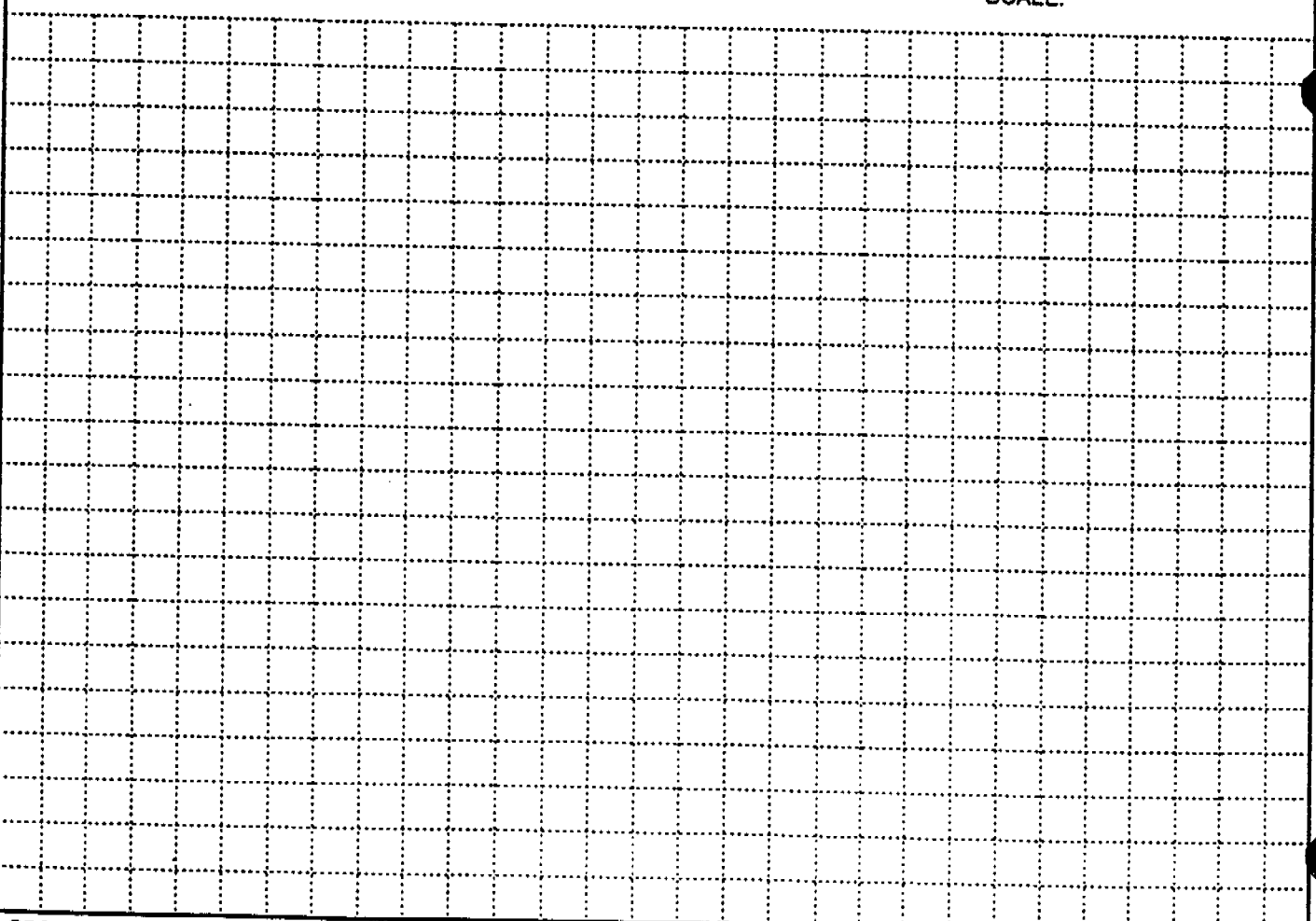
HOLE NO. BOKK-005I

HTRW DRILLING LOG

1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL		HOLE NUMBER BDLK-005	
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION MARION IL		
5. NAME OF DRILLER DAN GOTTO			6. MANUFACTURER'S DESIGNATION OF DRILL SCHRAMM T660		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION			
7" CASING		9. SURFACE ELEVATION			
6 7/8 TRLI-CONE ROTARY BIT		10. DATE STARTED 6/6/00		11. DATE COMPLETED 6/7/00	
4 1/4 RODS		15. DEPTH GROUNDWATER ENCOUNTERED			
12. OVERBURDEN THICKNESS 28.0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
13. DEPTH DRILLED INTO ROCK 193.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
14. TOTAL DEPTH OF HOLE 241.0 FT					
18. GEOTECHNICAL SAMPLES NONE		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS NONE		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		2"			

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT

HOLE NO.

BDLK-005d

A-164

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRV-005d
SHEET 2 OF 14 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BRN, SOFT, SILTY LOW PLASTIC CLAY (CL) (TOPSOIL)					
	2						
	3		REDDISH BRN, SOFT SILT W/TR. CLAY (ML) (LOESS)				
	4						
	5						
	6						
	7						
	8						
	9		REDDISH BRN, SOFT, SILTY LOW PLASTIC CLAY W/TR. F. GRAVEL (CL) (TILL)				
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19	↓ SOME C-F SAND					
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)


HOLE NUMBER
BDEK-005d
SHEET *3* OF *14* SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	<i>REDDISH BRN, MED. STIFF, SILTY LOW PLASTIC CLAY W/SOME C-F SAND - F. GRAVEL</i>					
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30		<i>↓ BECOMING GRAY MED. PLASTIC CLAY (CL/CH)</i>				
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.



HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDEK-005
SHEET SHEETS
2 of 14

PROJECT
CLAB ORCHARD

INSPECTOR
T. HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	41	SAME - CLAY (C/CH) 					
	42						
	43						
	44						
	45						
	46						
	47						
	48	DRY GRAM, SOFT, SHALE W/SOME CLAY					
	49						
	50						
	51	GRAM, HIGH PLASTIC, CLAY W/TR. C-F GRAVEL 					
	52						
	53						
	54						
	55						
	56						
	57						
	58						
	59						
	60						

PROJECT

HOLE NO.


HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-005d
 SHEET **5** OF **14**

PROJECT **CRAB ORCHARD**

INSPECTOR **T. Hicks**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61	SAME - GLAY W/ GRAVEL 					
	62						
	63						
	64						
	65						
	66						
	67	DRK GLAY, SHALE W/ SOME COAL					
	68						
	69	GLAY, HARD, SHALE					
	70	LT. GLAY, SHALE					
	71						
	72						
	73						
	74						
	75						
	76	BLACK, SHALE W/ TR. LT. GLAY SANDSTONE					
	77						
	78						
	79						
	80						

PROJECT

HOLE NO.

T-168

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-005d
SHEET SHEETS
6 OF 14

PROJECT

CLAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	SAME - BLACK, SHALE w/TR. LT. GRAY SANDSTONE					
	82						
	83						
	84						
	85						
	86						
	87						
	88						
	89						
	90						
	91	GRAY, SOFT, SHALE					
	92						
	93						
	94						
	95						
	96						
	97						
	98						
	99						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDLY-005d
SHEET SHEETS
7 of 14

PROJECT

CLAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		SAME					
	101	GRAY, SOFT, SHALE					
	102						
	103						
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114						
	115						
	116						
	117						
	118	↓ BECOMING BLACK & HARD					
	119						
	120						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDX-005d

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS

8 of 14

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	121	SAME - SHALE					
	122						
	123	GRAY, SOFT SHALE W/SOME M-F SAND					
	124						
	125						
	126						
	127	LT. GRAY SANDSTONE					
	128						
	129						
	130						
	131						
	132						
	133						
	134						
	135						
	136						
	137						
	138						
	139						
	140						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
 BDAK-005d
 SHEET 9 OF 14 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	141	GRAM, H. PLASTIC CLAY					
	142						
	143						
	144	GRAM, HARD, SHALE					
	145						
	146	LT. GRAM SANDSTONE					
	147						
	148						
	149						
	150						
	151						
	152						
	153						
	154						
	155						
	156						
	157						
	158						
	159						
	160						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDR-005

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS

10 OF 14

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	161	GRAY, SOFT, SHALE					
	162						
	163						
	164	LT. GRAY, HARD, SANDSTONE					
	165						
	166						
	167						
	168						
	169						
	170						
	171	DRK GRAY, HARD, SHALE					
	172						
	173						
	174						
	175						
	176						
	177						
	178						
	179						
	180						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDK-005

PROJECT


CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS

11 OF 14

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	181	<p>SAME DARK GRAY, HARD, SHALES</p> 					
	182						
	183						
	184						
	185						
	186						
	187						
	188						
	189						
	190						
	191						
	192						
	193						
	194						
	195						
	196						
	197						
	198						
	199						
	200						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-005

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
12 OF 14

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		SAME - SHALE					
201							
202		LT. GRAY, HARD, SANDSTONE					
203							
204							
205							
206							
207							
208							
209							
210							
211							
212							
213							
214							
215							
216							
217							
218							
219							
220							

NOTE: NO
WATER PRODUCTION
CONT. TO DRILL

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRX-005


PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
13 OF 14

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	221	<p>SAME - LT. GRAY, HARD SANDSTONE</p> 					<p>NOTE: NO WATER PRODUCTION CONT. TO DRILL</p>
	222						
	223						
	224						
	225						
	226						
	227						
	228						
	229						
	230						
	231						
	232						
	233						
	234						
	235						
	236						
	237						
	238						
	239						
	240						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-005 d

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
14 OF 14

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	241	SAME - SANDSTONE					
	242	BOB @ 241.0					
	243						
	244						
	245						
	246						
	247						
	248						
	249						
	250						

PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL		BDRK-006	
3. PROJECT CRAB ORCHARD		4. LOCATION		SHEET 1 of 8 SHEETS	
5. NAME OF DRILLER DAN GOTTO		6. MANUFACTURER'S DESIGNATION OF DRILL SCHRAMM			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 8 3/4 TRI-CONE ROLLER BIT 4 1/4" RODS		8. HOLE LOCATION		9. SURFACE ELEVATION 408.0?	
12. OVERBURDEN THICKNESS 34.0 FT		10. DATE STARTED 5/21/00		11. DATE COMPLETED 5/21/00	
13. DEPTH DRILLED INTO ROCK 98.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED		18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 132.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS 2 SAMPLES		VOC		METALS	
22. DISPOSITION OF HOLE BACKFILLED		MONITORING WELL		OTHER (SPECIFY) 2"	
				19. TOTAL NUMBER OF CORE BOXES	
				21. TOTAL CORE RECOVERY %	
				23. SIGNATURE OF INSPECTOR	
LOCATION SKETCH/COMMENTS				SCALE:	
PROJECT				HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-006

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

SHEET SHEETS
2 of 8

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	BLOW COUNT (G)	REMARKS (H)
	1	BLACK ORGANIC PEAT w/ 2" MINUS ROCK					
	2	BRN/GRAY, SOFT, DRY SILT (ML)					
	3	TR. CLAY (LOESS)					
	4				TOC		
	5						
	6						
	7	BRN, MOIST, SOFT SILT L PLASTIC CLAY					
	8	w/ TR. FINE GRAVEL (GL) (TILL)			TOC		
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDAL-006
 SHEET **3** OF **8** SHEETS

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	SAME					
	22	↓ BECOMING V. SOFT, WET					
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32	↓ BECOMING GRAY H. PLASTIC					
	33						
	34						— BEDROCK
	35	LT. GRAY, SOFT, SANDSTONE W/TR.					
	36	GRAY SHALE					
	37	TAN SANDSTONE W/ SOME H. PLASTIC CLAY					
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-006
SHEET SHEETS
4 OF 8

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	BLOW COUNT (G)	REMARKS (H)
	41	BRN/GRAY SANDSTONE					
	42	↓ BECOMING GRAY					
	43						
	44						
	45						
	46						
	47						
	48						
	49						
	50	LT. GRAY SANDSTONE					
	51	W/SOME SANDY MED. PLASTIC CLAY					
	52						
	53	LT GRAY SANDSTONE					
	54						
	55						
	56						
	57						
	58						
	59						
	60						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-006

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
5 OF 8

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO (f)	BLOW COUNT (g)	REMARKS (h)
	61	SOME ↓					
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69	BLACK COAL W/ SOME LT. GRAY SANDSTONE					
	70						
	71						
	72						
	73	LT. GRAY SANDSTONE W/ SOME H. PLASTIC CLAY					
	74						
	75	↓					
	76						
	77						
	78						
	79						
	80						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDEK-006
SHEET 6 OF 8 SHEETS

PROJECT
CRAB ORCHARD

INSPECTOR
T. HICKS

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEO TECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	81	SAME					
	82	LT. GRAY SANDSTONE					
	83	W/ SOME H. PLASTIC					
	84	CLAY					
	85						
	86						
	87						
	88						
	89						
	90						
	91						
	92						
	93						
	94						
	95						
	96						
	97	BLACK COAL					
	98						
	99	LT. GRAY SANDSTONE					
	100						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-006

SHEET SHEETS
7 OF 8

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	101	LT. GRAY SANDSTONE					
	102						
	103						
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112		LT. GRAY SANDSTONE W/ TR. BLACK SHALE				
	113	LT. GRAY SANDSTONE					
	114	LT. GRAY SANDSTONE					
	115						
	116						
	117						
	118						
	119						
	120						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-006

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

SHEET SHEETS
8 OF 8

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	BLOW COUNT (G)	REMARKS (H)
	121	LT. GRAY SANDSTONE					
	122						
	123						
	124						
	125						
	126						
	127						
	128						
	129						
	130						
	131						
	132		BOB @ 132.0 FT				
	133						
	134						
	135						

PROJECT

HOLE NO

HTRW DRILLING LOG		DISTRICT			HOLE NUMBER	
1. COMPANY NAME URS CORP.		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			BDRK-007	
3. PROJECT CRAB ORCHARD		4. LOCATION BEDROCK WELL # 007				
5. NAME OF DRILLER DAN GOTTO		6. MANUFACTURER'S DESIGNATION OF DRILL				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 3/4" COLLAR BIT 4 1/2" RODS		8. HOLE LOCATION BDRK - 007				
		9. SURFACE ELEVATION 437.17				
		10. DATE STARTED 5/15/00		11. DATE COMPLETED 5/15/00		
12. OVERBURDEN THICKNESS 28.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED				
13. DEPTH DRILLED INTO ROCK 55' (SHALE → COAL) / 40.5' SANDSTONE WEATHERED		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 123.5 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES N/A		DISTURBED —		UNDISTURBED —		19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS 2		VOC	METALS	OTHER (SPECIFY) TOC	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR	
LOCATION SKETCH/COMMENTS				SCALE:		
PROJECT					HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDX-007
SHEET 2 OF 8 SHEETS

PROJECT
CLAB ORCHARD

INSPECTOR
T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1						START -14
	2	BRN/GRAY SILT TR. CLAY (LOESS)					
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12	BRN/GRAY SILTY CLAY TR. FINE GRAVEL/C. SAND (TILL)					
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-007

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
3 OF 8

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21						
	22						
	23						
	24						
	25						
	26	TAN GRAY ^{M-F} SANDY CLAY (RESIDUAL)					
	27						
	28	BRN SHALE WEATHERED					
	29						
	30	↓ BECOMING REDISH BROWN					
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						
PROJECT						HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-007
SHEET SHEETS
4 OF 8

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	41						
	42						
	43						
	44	BLACK COAL w/ WEATHERED SHALE					
	45						
	46						
	47						
	48						
	49	GRAY SOFT WEATHERED SANDSTONE					
	50						
	51						
	52						
	53						
	54						
	55						
	56						
	57						
	58						
	59						
	60						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-007
SHEET 5 OF 8 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61	GRAN V. SOFT WEATHERED SANDSTONE					
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69						
	70						
	71						
	72						
	73	SAME					
	74						
	75						
	76						
	77						
	78						
	79						
	80						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
 BDRK-007
 SHEET 6 OF 8 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	GRAY / WHITE WEATHERED SOFT SANDSTONE					
	82	WITHIN CLAY SEAMS					
	83						
	84						
	85						
	86						
	87						
	88						
	89						
	90						
	91						
	92						
	93						
	94						
	95						
	96						
	97						
	98						
	99						
	100	✓					

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-007
 SHEET **7** OF **8** SHEETS

PROJECT
CRAB ORCHARD

INSPECTOR
T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	101	GRAY/WHITE SOFT WEATHERED SANDSTONE					
	102						
	103						
	104						
	105						
	106	YELLOWISH BRN, MED. PLASTIC CLAY W/ SOME ^{M-F} SAND (CL)					
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114	LT. GRAY HARD SANDSTONE FRACTURED					
	115						
	116						
	117						
	118						
	119						
	120						

— PRODUCING
 WATER

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-007
SHEET 8 OF 8 SHEETS

PROJECT
CRAB ORCHARD

INSPECTOR
T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	121	TAN, HARD SANDSTONE					
	122						
	123						
	124	BOB 123.5 FT					
	125						

PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT			HOLE NUMBER	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			BDLK-008	
3. PROJECT CLAB ORCHARD				4. LOCATION		
5. NAME OF DRILLER DAN GOTTO				6. MANUFACTURER'S DESIGNATION OF DRILL		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION		9. SURFACE ELEVATION		
8 3/4" TRI-CONE ROLLER BIT 4 1/4" RODS				428.99		
12. OVERBURDEN THICKNESS 33.0 FT		10. DATE STARTED 5/20/00		11. DATE COMPLETED 5/20/00		
13. DEPTH DRILLED INTO ROCK 80.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
14. TOTAL DEPTH OF HOLE 113.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
X			X		23. SIGNATURE OF INSPECTOR	
LOCATION SKETCH/COMMENTS				SCALE:		
PROJECT					HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-008

PROJECT
CRAB ORCHARD

INSPECTOR
T. HICKS

SHEET SHEETS
2 of 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BLACK ORGANIC PEAT					
	2	ORG. BLEN., SOFT CLAYEY SILT (ML)(LOESS)					
	3						
	4						
	5						
	6						
	7						
	8	↙ MOIST, DECREASE IN CLAY CONTENT					
	9						
	10						
	11						
	12						
	13						
	14	TAN, MOIST, SOFT SILTY L. PLASTIC CLAY					
	15	W/ TR. FINE GRAVEL					
	16	(CL)(TILL)					
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-008

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS

3 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	SAME					
	22						
	23	↓ BECOMING STIFF					
	24						
	25						
	26						
	27						
	28	↓ BECOMING MED.					
	29	PLASTIC W/ SOME					
	30	FINE SAND ↓ BECOMING GRAY					
	31	GRAY, STIFF, HIGH PLASTIC CLAY W/ SOME SHALE					
	32						
	33						
	34	GRAY, SOFT, SHALE					
	35						
	36	GRAY, STIFF, HIGH PLASTIC CLAY					
	37						
	38						
	39	RED, WEATHERED SANDSTONE					
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-008


PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
4 OF 7

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	41	BECOMING LT. GRAY/RED					
	42						
	43						
	44						
	45						
	46						
	47						
	48						
	49						
	50						
	51						
	52						
	53						
	54						
	55						
	56						
	57						
	58	BECOMING LT. GRAY W/ IRON STAINING					
	59						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-008

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
5 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61						
	62						
	63	↓ BECOMING					
	64	LT. GRAY SANDSTONE					
	65	W/ COAL DEPOSITS					
	66						
	67						
	68	↓ BECOMING REDISH BRN.					
	69						
	70	↓ WITHOUT COAL					
	71	DEPOSITS					
	72						
	73						
	74						
	75						
	76						
	77						
	78						
	79						
	80						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BD/44-208

PROJECT
CRAB ORCHARD

INSPECTOR
T. HICKS

SHEET
6 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	SAME					
	82						
	83						
	84	LT. GRAY SANDSTONE W/SOME COAL					
	85						
	86						
	87						
	88						
	89	LT. GRAY SANDSTONE W/SOME DDK GRAY SHALES					
	90						
	91						
	92						
	93						
	94						
	95						
	96	BLACK SANDSTONE					
	97	↓ BECOMING GRAY					
	98						
	99						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BD2K-008

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
7 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	101	GRAY SANDSTONE					
	102						
	103						
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113	BOB @ 113.0 FT					
	114						
	115						

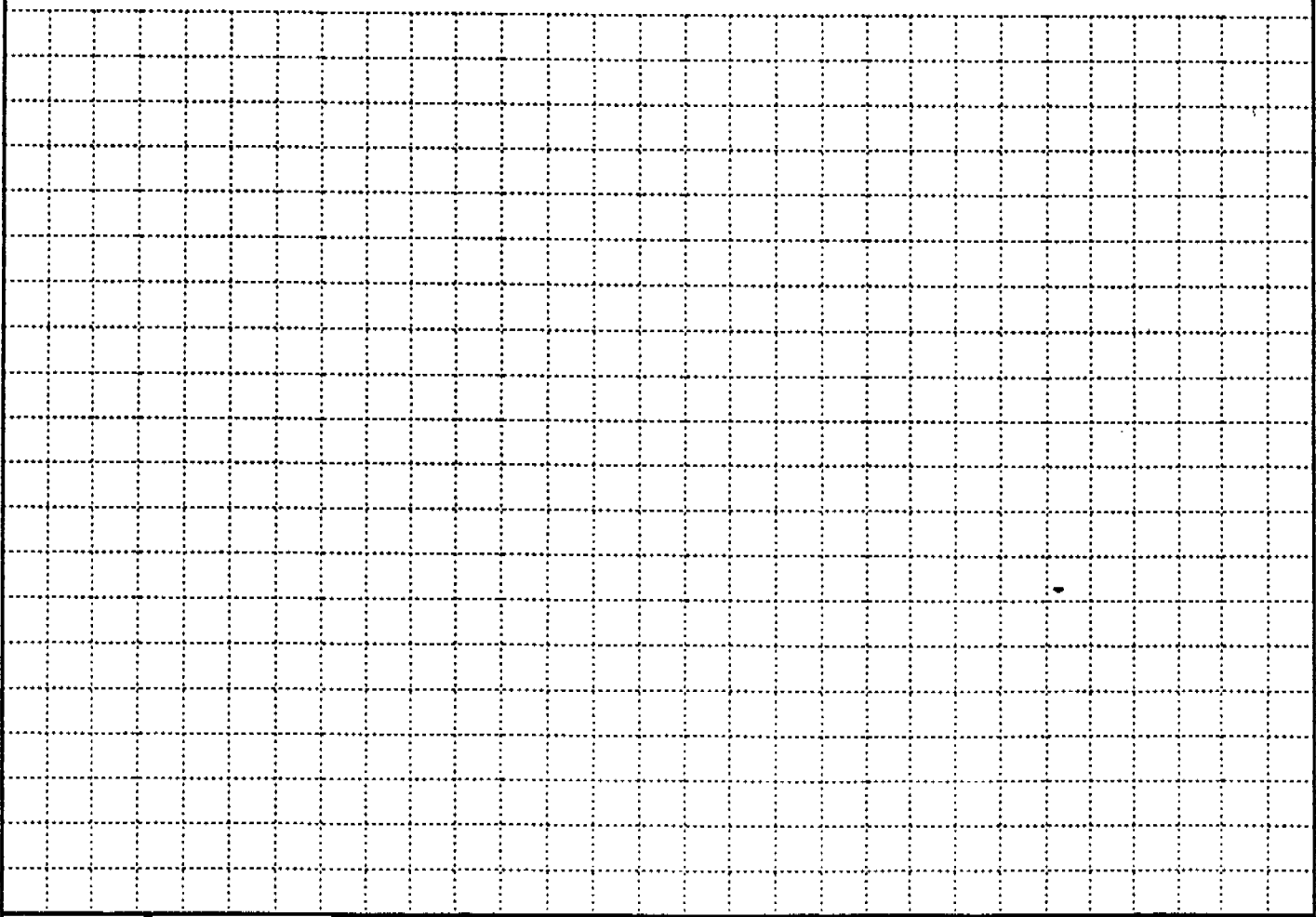
PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER BDRK-009+	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL		SHEET 1 OF 4	
3. PROJECT CRAB ORCHARD AUS 04		4. LOCATION Merion IL			
5. NAME OF DRILLER DAN Gotto		6. MANUFACTURER'S DESIGNATION OF DRILL Schramm T660			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 7" CASING 6 7/8" tri cone bit 4 1/4" rods		8. HOLE LOCATION			
		9. SURFACE ELEVATION			
		10. DATE STARTED 6/23/00		11. DATE COMPLETED 6/23/00	
12. OVERBURDEN THICKNESS 53		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK 0		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 53		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES None		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS None		21. TOTAL CORE RECOVERY %	
		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR	
		2'			

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT Crab Orchard Aus 04	HOLE NO. BDRK-009+
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A-201

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BURK-002

PROJECT

CRAB ORCHARD AUSCH

INSPECTOR

Kim Linkerson

SHEET

2 of **4** SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BRN WET SOFT CLAY w/ ROCK (FLL)					
	2	BRN SOFT SILT w/ trace of CLAY (ML) (LOESS)					
	3						
	4						
	5						
	6	BRN MOIST SOFT SILT & CLAY (CL)					
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

A-202

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-002
SHEET **3** OF **4** SHEETS

PROJECT **CRAB ORCHARD AUSA**

INSPECTOR **Kevin Junkerson**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	BRN MOIST SANDY CLAY (CL)					
	22						
	23						
	24						
	25						
	26	BRN, STIFF Med Plastic CLAY w/ gravel trace LOOSE C-F					
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

80440091
SHEET 4 OF 4 SHEETS

PROJECT

CRAB ORCHARD AUSEU

INSPECTOR

Tom Jensen

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	41	WET, SOFT, GRAY CLAY w/ gravel and C-F SAND					
	42						
	43						
	44						
	45						
	46						
	47						
	48						
	49						
	50						
	51						
	52						
	53	----- BECOMING SHALE Bob @ 53'					

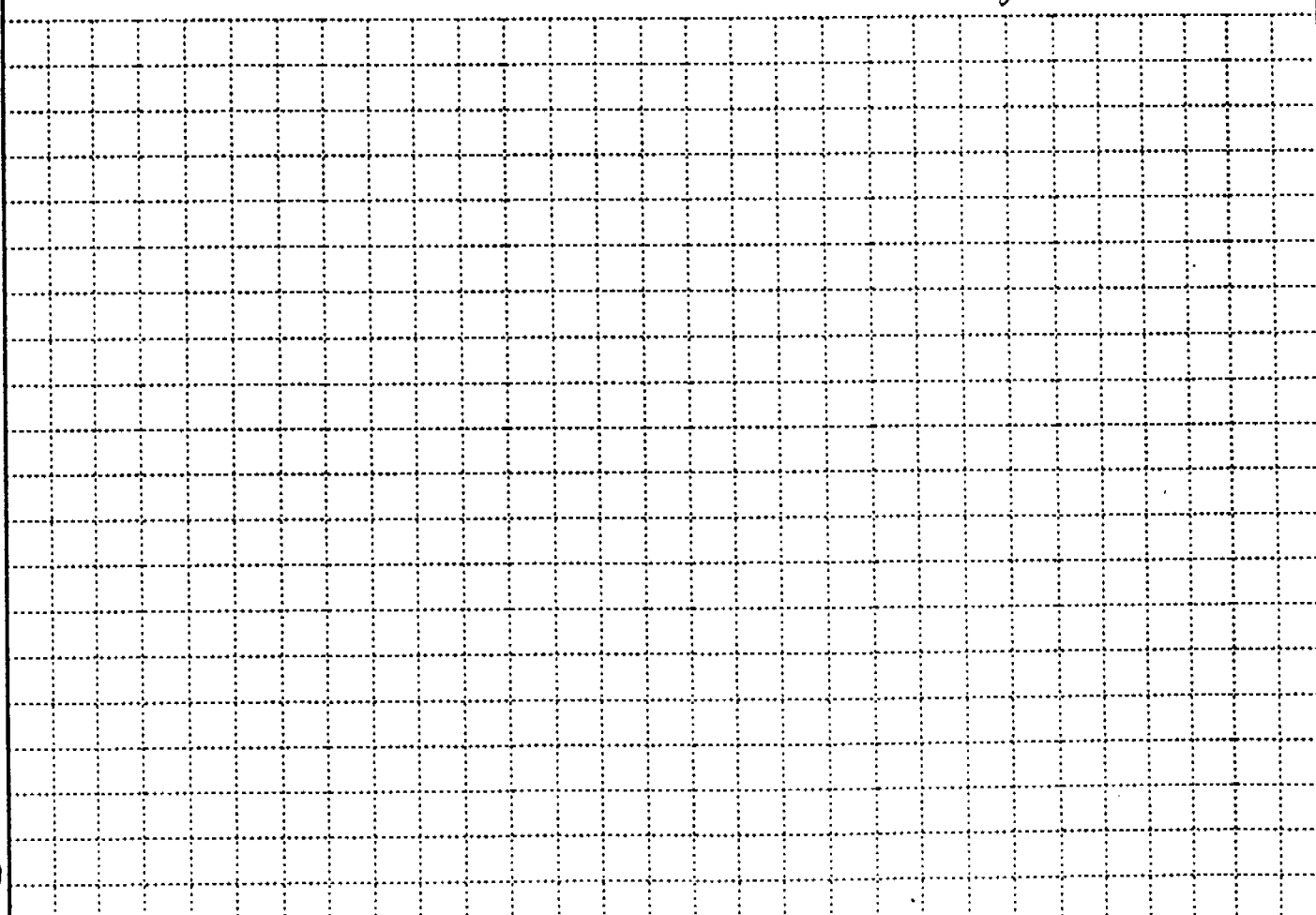
PROJECT

HOLE NO.

HTRW DRILLING LOG		DISTRICT		HOLE NUMBER BDRK-009	
1. COMPANY NAME URS		2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL		SHEET 1 SHEETS OF 10	
3. PROJECT CRAB ORCHARD AUS 04			4. LOCATION Marion IL		
5. NAME OF DRILLER DAN GOTTO			6. MANUFACTURER'S DESIGNATION OF DRILL Schramm T660		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION		9. SURFACE ELEVATION	
7" Casings					
6 7/8" Trip cone Bit					
4 1/4" Rods					
12. OVERBURDEN THICKNESS 44'		15. DEPTH GROUNDWATER ENCOUNTERED		10. DATE STARTED 6/21/00	
13. DEPTH DRILLED INTO ROCK 107'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		11. DATE COMPLETED 6/22/00	
14. TOTAL DEPTH OF HOLE 151'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NONE		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS NONE		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			2"		23. SIGNATURE OF INSPECTOR <i>Jim Johnson</i>

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT CRAB-ORCHARD-AUS 04	HOLE NO. BDRK-009
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HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **CRAB ORCHARD AUS 04**

INSPECTOR **Thom Jinkerson**

HOLE NUMBER **BORL-009d**
SHEET **2** OF **10** SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BROWN, WET, SOFT SILTY CLAY w/ GRAVEL (CL)(FILL)					
	2	BROWN, SOFT SILT w/ TRACE OF CLAY (ML) (LOESS)					
	3						
	4						
	5						
	6	BROWN, STIFF, SANDY, CLAY MED PLASTIC TR GRAVEL SAND (CL) (TILL)					
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						

↓ BECOMING MORE SANDY

PROJECT **CRAB ORCHARD AUS-04**

HOLE NO. **BORL-009d**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-0094

PROJECT

CRAB ORCHARD AUSOY

INSPECTOR

Kim Jankerson

SHEET SHEETS

3 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	20	BROWN, STIFF SANDY CLAY MED PLASTIC (CL) w/ gravel & SAND					
	21						
	22						
	23	↓ BECOMING MORE STIFF					
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33		GRAY, STIFF CLAY w/ gravel ↓ LOOSE				
	34						
	35						
	36						
	37						
	38						
	39						

PROJECT

HOLE NO.


HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
B-10K-009
SHEET 4 OF 10 SHEETS

PROJECT **CRAB ORCHARD AISCU**

INSPECTOR **Kim Anderson**

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	39	GRAY STIFF CLAY w/ gravel					
	40						
	41						
	42						
	43						
	44						
	45	Highly weathered Gray SHALE, some clay w/ gravel					@ ±44.5' WATER
	46						
	47						
	48						
	49	GRAY HIGHLY WEATHERED SHALE with gravel and SHALE FRAGMENTS					
	50						
	51						
	52						
	53	↓ BECOMING DARK GRAY less gravel					@ 53' No water
	54						
	55						
	56						
	57						
	58						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
B/DK-00092
SHEET *5* OF *10* SHEETS

PROJECT *CRAB ORCHARD AUSTON*

INSPECTOR *Kim Jinkerson*

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	58	<p><i>SAME AS ABOVE DARK GRAY weathered SHALE AND CLAY w/ some gravel (SP)</i></p>					
	59						
	60						
	61						
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69						
	70						
	71						
	72						
	73						
	74						
	75						
	76						
	77						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

PROJECT **CRAB ORCHARD AUS 04**

INSPECTOR **Kim Anluen**

HOLE NUMBER
BOKK009d
SHEET **6** OF **10** SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEO TECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	77	SAME AS ABOVE					
	78						
	79						
	80	DARK GRAY slightly weathered shale (platy)					
	81						
	82						
	83						
	84						
	85						
	86						
	87						
	88						
	89						
	90						
	91	Light Gray Hard Shale AND Light Gray Sandstone STRINGERS					
	92						
	93						
	94						
	95						
	96						

PROJECT

HOLE NO.


HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BRK-009D
SHEET *7* OF *10* SHEETS

PROJECT *CRAB ORCHARD AL504*

INSPECTOR *Kim Jankerson*

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	96	BLACK COAL SEAM					
	97	HARD DARK GRAY SHALE					
	98						
	99						
	100						
	101						
	102						
	103	LIGHT GRAY HARD SHALE AND LIGHT GRAY SANDSTONE					<i>x 60/40</i>
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114						
	115						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

PR-009d

PROJECT

CRAB ORCHARD AVENUE

INSPECTOR


Sam Jinkerson

SHEET

8 OF 10

SHEETS

10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	115	<p><i>SAME AS ABOVE</i> <i>LIGHT GRAY SHALE AND</i> <i>SANDSTONE</i></p> 					
	116						
	117						
	118						
	119						
	120						
	121						
	122						
	123						
	124						
	125						
	126						
	127						
	128						
	129						
	130						
	131						
	132						
	133						
	134						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
62-092
SHEET *9* OF *10* SHEETS

PROJECT *CRAB ORCHARD AUS 04*

INSPECTOR *Kim Jinkerson*

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		<i>SAME AS ABOVE</i>					
	<i>131</i>	<i>LIGHT GRAY SHALE</i>					
	<i>132</i>	<i>AND LIGHT GRAY Sandstones</i>					
	<i>133</i>						
	<i>134</i>						
	<i>135</i>						
	<i>136</i>						
	<i>137</i>						
	<i>138</i>						
	<i>139</i>						
	<i>140</i>						
	<i>141</i>						
	<i>142</i>						
	<i>143</i>						
	<i>144</i>						
	<i>145</i>						
	<i>146</i>						
	<i>147</i>						
	<i>148</i>						
	<i>149</i>						
	<i>150</i>						

PROJECT

HOLE NO.

HTRW DRILLING LOG (CONTINUATION SHEET)							HOLE NUMBER BCK-009	
PROJECT URAB ORCHARD A15 04			INSPECTOR Kim Jinkerson				SHEET 10	SHEETS OF 10
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)	
	150	SAME AS ABOVE						
	151	Bob 151 ft						
PROJECT						HOLE NO.		

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER							
1. COMPANY NAME URS			2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			BDR12-010							
3. PROJECT CRAB ORCHARD AUS ON			4. LOCATION CRAB ORCHARD WILDLIFE REFUGE										
5. NAME OF DRILLER DAN GOTO			6. MANUFACTURER'S DESIGNATION OF DRILL SCM AMM										
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			8. HOLE LOCATION										
8 3/4" TRI-CONE ROTARY BIT 4 1/2" RODS			9. SURFACE ELEVATION 463.28										
12. OVERBURDEN THICKNESS 23.0 FT			10. DATE STARTED 5/30/00		11. DATE COMPLETED 5/30/00								
13. DEPTH DRILLED INTO ROCK 143.2 FT			15. DEPTH GROUNDWATER ENCOUNTERED										
14. TOTAL DEPTH OF HOLE 143.2 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED										
18. GEOTECHNICAL SAMPLES NONE			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES						
20. SAMPLES FOR CHEMICAL ANALYSIS NONE			VOC		METALS		OTHER (SPECIFY)						
22. DISPOSITION OF HOLE			BACKFILLED		MONITORING WELL		OTHER (SPECIFY)						
			2"		21. SIGNATURE OF INSPECTOR L. MATHIAS HICHO								
LOCATION SKETCH/COMMENTS						SCALE							
PROJECT						HOLE NO.							

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-910
SHEET SHEETS
2 OF 10

PROJECT
CRAB ORCHARD

INSPECTOR
T. Hicks

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	BLOW COUNT (G)	REMARKS (H)
	1	BKN. MOIST, SOFT SILT W/TL. CLAY (ML) (LOESS) ↓ BECOMING BKN/GRAN					
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11	TAN, MOIST, SOFT SILT CLAY W/TL. C. SAND → F. GRAVEL (C) (SILT) ↓ BECOMING W/SOME SILT, STIFF					
	12						
	13						
	14						
	15						
	16						
	17						
	18	↓ BECOMING REDDISH BKN MED. PLASTIC					
	19						
	20						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-010

PROJECT

CRAR ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
2 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	↓ BECOMING TAN SILT LP CLAY					
	22						
	23						
	24	RED, WEATHERED SANDSTONE W/CLAY GRAY SEAMS					
	25						
	26	↓ BECOMING WHITE SANDSTONE W/CLAY STAINING					
	27						
	28						
	29						
	30	↓ BECOMING RED					
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-010

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
4 of 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	41	SAME					
	42						
	43	GRAY: A PLASTIC CLAY W/TR. RED. SANDSTONE					
	44						
	45	RED SHALE					
	46						
	47	RED, WEATHERED, SOFT SANDSTONE					
	48						
	49						
	50						
	51						
	52						
	53						
	54						
	55						
	56		↓ BECOMING TAN				
	57						
	58						
	59						
	60						

PROJECT

HOLE NO

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-010

PROJECT


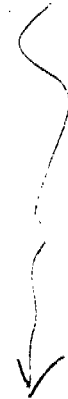
CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS

5 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61	<p>SAME</p> 					<p>NO WATER PRODUCTION</p>
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69						
	70						
	71						
	72						
	73		↓ BECOMING HARD				
	74						
	75						
	76						
	77						
	78						
	79						
	80						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-010
 SHEET **6** OF **10** SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	SAME					
	82						
	83	↓ BECOMING RED					
	84						
	85						
	86	DRY, GRAY, SHALE					
	87						
	88						
	89						
	90						
	91						
	92						
	93						
	94						
	95	LT. GRAY, SANDSTONE					
	96						
	97						
	98						
	99						
	100						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-010

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS

7 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		LT. GRAY, SANDSTONE					
	101	WTR. GRAY SHALE					
	102	LT. GRAY, SANDSTONE, HARD					
	103						
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114						
	115						
	116						
	117						
	118						
	119						
	120						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-CVO
SHEET 9 OF 10 SHEETS

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	121	LT. GRAY, HARD, SANDSTONE					
	122						
	123						
	124						
	125						
	126						Producing ± 2 gpm
	127						
	128						
	129						
	130						
	131						
	132						
	133						
	134						
	135						
	136						
	137						
	138						
	139						
	140						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-010

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
9 OF 10

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	141	LT. GRAY, HARD, SANDSTONE					
	142						
	143						
	144						
	145						
	146						
	147	TAN, SOFT, LP CLAY SEAM W/ LT. GRAY SANDSTONE					
	148						
	149	LT. GRAY, HARD, SANDSTONE					
	150						
	151						
	152						
	153						
	154						
	155						
	156						
	157						
	158						
	159						
	160						

PROJECT

HOLE NO.

HTRW DRILLING LOG (CONTINUATION SHEET)							HOLE NUMBER
PROJECT				INSPECTOR			SHEET SHEETS
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	161	LT. GRAY, HARD, SANDSTONE					
	162						
	163						
	164	BOB @ 163.2 FT					
	165						
	166						
	167						
	168						
	169						
	170						
PROJECT						HOLE NO.	

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URS			2. DRILL SUBCONTRACTOR PHILIP ENVIRONMENTAL			HOLE NUMBER BDAK-011		
3. PROJECT CARR ORCHARD AVE 04			4. LOCATION MARION, IL			SHEET SHEETS 1 of 7		
5. NAME OF DRILLER DAN GOTTO			6. MANUFACTURER'S DESIGNATION OF DRILL SCHLAMM T660					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			8. HOLE LOCATION					
" 8 3/4 TRI-CONE ROTARY BT 4 1/2" RODS			9. SURFACE ELEVATION					
12. OVERBURDEN THICKNESS 23.0 FT			10. DATE STARTED 6/1/00			11. DATE COMPLETED 6/1/00		
13. DEPTH DRILLED INTO ROCK 80.0 FT			15. DEPTH GROUNDWATER ENCOUNTERED					
14. TOTAL DEPTH OF HOLE 103.0 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			18. GEOTECHNICAL SAMPLES			19. TOTAL NUMBER OF CORE BOXES		
NONE			DISTURBED			UNDISTURBED		
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC			METALS		
NONE						OTHER (SPECIFY)		
22. DISPOSITION OF HOLE			BACKFILLED			MONITORING WELL		
			2			OTHER (SPECIFY)		
						21. SIGNATURE OF INSPECTOR Jennifer Hicks		
LOCATION SKETCH/COMMENTS						SCALE: 0		
PROJECT						HOLE NO.		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDRK-011

PROJECT

CRAB ORCHARD

INSPECTOR

T. Hicks

SHEET SHEETS
2 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	BRN, SILTY LOW PLASTIC CLAY (CL) (TOPSOIL)					
	2	TAN/GRAY, SOFT, MOIST SILT W/TR. CLAY					
	3	(ML) (LOESS)					
	4						
	5						
	6						
	7	BRN, MOIST, SOFT, SILTY LOW PLASTIC CLAY W/ C. SAND - F. GRAVEL					
	8	(CL) (TILL)					
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-011


PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
3 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	21	BRN, MOIST, SOFT, SANDY CLAY LOW PLASTIC W/ML. GRAVEL (CL)					
	22						
	23						
	24	TAN, HARD, SANDSTONE WEATHERED					
	25						
	26						
	27	↓ BECOMING REDDISH BRN					
	28	↓ BECOMING CLAYEY SANDSTONE					
	29						
	30						
	31	TAN, HARD, WEATHERED SANDSTONE					
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDLK-011
SHEET 9 OF 9 SHEETS

PROJECT CRAB ORCHARD

INSPECTOR T. HICKS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	41	↓ BECOMING RED					
	42						
	43	↓ BECOMING REDDISH					
	44	LT. BROWN					
	45						
	46						
	47	GRAY, SOFT, SHALE					
	48	↓ BECOMING HARD, DRY					
	49						
	50						
	51						
	52						
	53						
	54						
	55						
	56						
	57						
	58						
	59						
	60						

PROJECT

HOLE NO.

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDK-011

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS

5 of 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	61	<p>SAME - SHALE</p>					
	62						
	63						
	64						
	65						
	66						
	67						
	68						
	69						
	70						
	71						
	72						
	73						
	74	<p>↓ BECOMING W/TR. SANDSTONE</p>					
	75						
	76	<p>LT. GRAY, HARD, SANDSTONE</p>					
	77						
	78	<p>↓ W/TR. BLACK SHALE</p>					
	79						
	80	<p>DRK GRAY SHALE</p>					

PROJECT	HOLE NO.
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HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

BDRK-011

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS

6 OF 7

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	81	SAME - SHALE					
	82	↓					
	83						
	84						
	85	DRK GRAY SHALE + LT. GRAY SANDSTONE					
	86	LT. GRAY SANDSTONE					
	87						
	88						
	89						
	90						
	91						
	92						
	93	↓ BECOMING TANNISH GRAY					
	94						
	95						
	96						
	97						
	98	↓ w/TL M-F GRAVEL					
	99						
	100						
PROJECT						HOLE NO.	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
BDK-011

PROJECT

CRAB ORCHARD

INSPECTOR

T. HICKS

SHEET SHEETS
7 OF 7

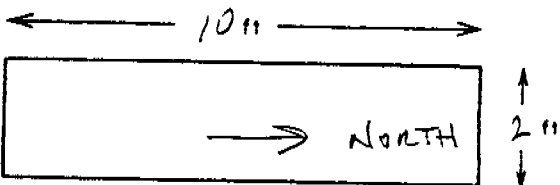
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	101	SAME - SANDSTONE ↓					
	102						
	103	BOB @ 103.0 FT 02 6/1/00					
	104						
	105						
	106						
	107						
	108						
	109						
	110						

PROJECT

HOLE NO.

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A2R-001

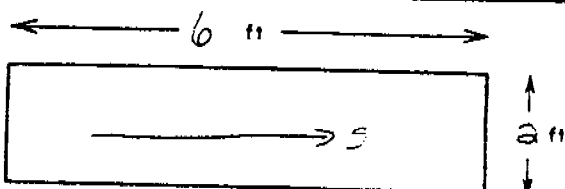
PROJECT NAME CRAB ORCHARD AUS 04		PROJECT NO. 2320000026.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE		ELEVATION	DATUM
STATION AREA 2 R		DATE STARTED 4/18/00	DATE FINISHED 4/18/00
EXCAVATING CONTRACTOR HFA		COMPLETION DEPTH 10.0 FT	ROCK DEPTH
EXCAVATING EQUIPMENT KOMATSU BACKHOE		NO. SAMPLES	DIST.
PLAN DIMENSIONS 		WATER LEVEL	FIRST
		WCC PERSONNEL T. Hicks & K. JINKELSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO	LOC	TYPE	
1		GRAY, WET, SOFT SILT TR. CLAY (ML)(LOESS)	1				↓ AT DIGGING
2		↓ BECOMING SAT.	2				
3		GRAY, MOIST, SOFT, SILT W/ SOME TR. CLAY & IRON STAINING (ML)(LOESS)	3				
4			4				
5		↓ BECOMING DRY	5				AUS-0A2R-001-SS-05
6			6				
7			7				
8		↓ BECOMING MOIST	8				
9			9				
10		BOP @ 10.0 FT	10				AUS-0A2R-001-SS-10
11			11				NOTE: COLLECTED
12			12				AUS-0A2R-001-GW-00
13			13				

A-732

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-OR4W-001

PROJECT NAME <u>CAB-ORCHARD AUS-04</u>		PROJECT NO. <u>232000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CAB ORCHARD WILDLIFE REFUGE</u>		ELEVATION	DATUM
STATION <u>0A4W</u>		DATE STARTED <u>4/17/00</u>	DATE FINISHED <u>4/17/00</u>
EXCAVATING CONTRACTOR <u>HFA</u>		COMPLETION DEPTH <u>5.0 FT</u>	ROCK DEPTH
EXCAVATING EQUIPMENT <u>KOMATSU BACK HOE</u>		WCC PERSONNEL <u>T. HECKS & K. JINKERSON</u>	
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		STIFF, MOIST, GRAY AND TAN SILT w/SOME CLAY (ML) (LOESS)	1				
2		↓ BECOMING DRY AND HARD	2				<u>AUS-OR4W-001-SS-05</u>
3			3				
4			4				
5		B.O.T - 5.0 FT	5				<u>AUS-OR4W-001-SS-05</u>
6			6				
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

91-233

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A07-029

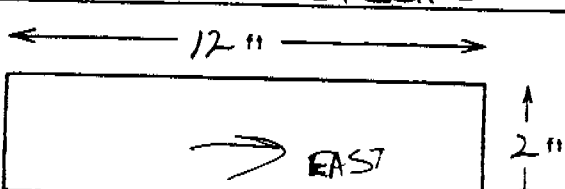
PROJECT NAME CRAB ORCHARD AUS 04		PROJECT NO. 2320000026.00	SHEET 1 OF 1
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 0A07	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/14/00	DATE FINISHED 4/14/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 12.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS + K. JANKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG	TYPE	USC OF ROCK CLASS	
1		BRN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (FILL) W/ ORGANICS ↓ BECOMING LT. BLACK	1				AUS-0A07-029-SS-0X (MS / MSD)
2			2				AUS-0A07-029-SS-01 (MS / MSD)
3			3				
4		LT GRAY/BRN, MOIST, SOFT SILT W/ TR. CLAY (ML) (LOESS)	4				
5			5				AUS-0A07-029-SS-05
6		↓ BECOMING DRY	6				
7			7				
8		↓ BECOMING MOIST	8				
9			9				
10			10				AUS-0A07-029-SS-10
11			11				
12			12				
13		BOP @ 12.0 FT	13				

A-234

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0A07-030

PROJECT NAME CRAB ORCHARD AUS ON		PROJECT NO. 2320000026.00	SHEET <u> </u> OF <u> </u>
LOCATION CRAB ORCHARD WILDLIFE		ELEVATION	DATUM
STATION AREA 7		DATE STARTED 4/17/00	DATE FINISHED 4/17/00
EXCAVATING CONTRACTOR HFA		COMPLETION DEPTH 11.5 FT	ROCK DEPTH
EXCAVATING EQUIPMENT KOMATSU BACKHOE		NO. SAMPLES	DIST.
PLAN DIMENSIONS 		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS + K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC OR ROCK CLASS	
1		BRN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (FILL) w/ SOME ORGANICS	1				30 Aus-0A07-029-SS-0X
2			2				30 Aus-0A07-029-SS-02 AND Aus-0A07-501-SS-02
3		LT. GRAY/BRN, MOIST, MED STIFF SILT w/ SOME CLAY (ML)(LOESS)	3				
4			4				30 Aus-0A07-029-SS-05 AND Aus-0A07-501-SS-05
5			5				
6		↓ BECOMING DRY, STIFF w/TR. CLAY (ML)(LOESS)	6				Aus-0A07-029-SS-06 30
7			7				
8		↓ BECOMING MOIST, SOFT, CLAYEY SILT/SILTY CLAY (ML/CL)	8				
9			9				
10			10				
11		BOP @ 11.5 FT	11				
12			12				
13			13				

A-235

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-OABS-031

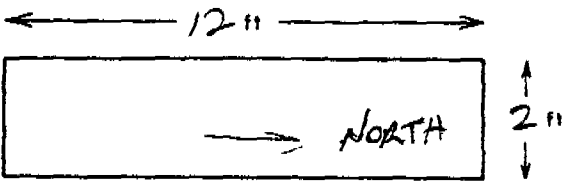
PROJECT NAME <u>CRAB ORCHARD AUS-04</u>		PROJECT NO. <u>332000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE REFUGE</u>	STATION <u>AREA - 85</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>	DATE STARTED <u>4/17/00</u>	DATE FINISHED <u>4/17/00</u>	
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>	COMPLETION DEPTH <u>8.0 FT</u>	ROCK DEPTH	
PLAN DIMENSIONS <div style="text-align: center;"> </div>	NO. SAMPLES	DIST.	
	WATER LEVEL	FIRST	
	WCC PERSONNEL <u>T. HICKS & K. JERKESON</u>		

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		GRAY, MOIST, SOFT, SILT w/ SOME CLAY AND DEBRIS (BRN/STEEL) (ML) (FILL)	1				
2		GRAY, MOIST, SOFT, SILT w/ SOME CLAY (ML) (FILL)	2				
3			3				
4			4				AUS-OABS-031-SS-05
5		GRAY AND TAN, MOIST, SOFT, SILT w/ IRON STRAINING AND SOME CLAY (ML) (LOESS)	5				
6			6				
7			7				
8		B.O.T. = 8.0 FT	8				AUS-OABS-031-SS-08
9			9				
10			10				
11			11				
12			12				
13			13				

A-736

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0A10-001

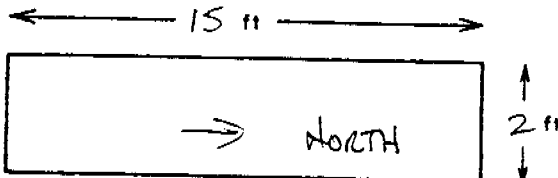
PROJECT NAME CRAB ORCHARD Aus OU		PROJECT NO. 23 20000026.00	SHEET L OF L
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 10	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/13/00	DATE FINISHED 4/13/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 12.5 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. Hicks + K. JAKENSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG.	TYPE	USC or ROCK CLASS	
1		GRAY, MOIST, SOFT CLAYEY SILT (ML)(FI) W/SURFACE DEBRIS	1				Aus-0A10-001-SS-0X Aus-0A10-501-SS-0X
2		BLACK, MOIST, BURNT MATL. (METAL, GLASS, ETC.) (FI)	2				Aus-0A10-001-SS-02 AND Aus-0A10-501-SS-02
3		TAN/GRAY, MOIST, SOFT SILT W/TR. CLAY (ML) + IRON STAINING (LOESS)	3				
4		SWEET/PESTICIDE ODOR	4				
5			5				Aus-0A10-001-SS-05
6		↓ BECOMING DRY, MED. STIFF	6				Aus-0A10-001-SS-06
7			7				
8			8				
9			9				
10		SAME	10				
11			11				
12			12				
13		BOP @ 12.5 FT	13				

A-237

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0A10-002

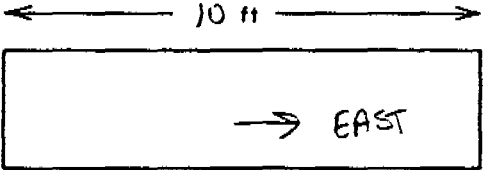
PROJECT NAME <u>CRAB ORCHARD Aus On</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WINDUFE</u>		ELEVATION <u>AREA 10</u>	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/13/00</u>	DATE FINISHED <u>4/13/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. Hicks + K. Jankerson</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		GRAY, MOIST, SOFT, CLAYEY SILT (ML)(FILL) w/BLACK ASH + BURNT DEBRIS (MOSTLY METAL)	1				<u>Aus-0A10-002-SS-0X</u> <u>Aus-0A10-002-SS-0X(2A)</u>
2		TAN/GRAY, MOIST, SOFT SILT w/ TR. CLAY + IRON STAINING (ML)(LOESS)	2				<u>Aus-0A10-002-SS-02</u> <u>AND</u> <u>Aus-0A10-002-SS-02(2A)</u>
3			3				
4		SWEET/PESTICIDE ODOR	4				
5			5				<u>Aus-0A10-002-SS-05</u>
6		↓ BECOMING DRY, MED STIFF	6				
7			7				<u>Aus-0A10-002-SS-07</u>
8			8				
9			9				
10			10				
11			11				
12			12				
13		BOP @ 12.0 FT	13				

A-238

URS GREINER WOODWARD CLYDE

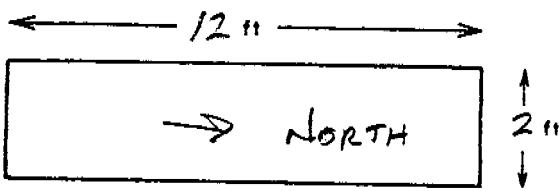
Log of Test Pit # Aus-A11H-021

PROJECT NAME CRAB ORCHARD WILDLIFE AUS OU	PROJECT NO. 2320000216.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 11 H	ELEVATION
EXCAVATING CONTRACTOR HFA	DATE STARTED 4/11/00	DATE FINISHED 4/11/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE	COMPLETION DEPTH 7.0 FT	ROCK DEPTH
PLAN DIMENSIONS <div style="text-align: center;">  </div>	NO. SAMPLES 	DIST.
	WATER LEVEL 	FIRST
	WCC PERSONNEL T. HICKS & K. JENKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC OF ROCK CLASS	
1		BKN, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL) W/ ORGANICS	1				
2		GRAY, MOIST, LOOSE CLAYEY SILT (ML) (LOESS) W/ IRON STAINING	2				
3			3				
4			4				
5		↓ BECOMING WET	5				Aus-A11H-021-SS-05 AND Aus-A11H-501-SS-05 → ATD
6			6				
7			7				Aus-A11H-021-SS-07
8		BOP @ 7.0 FT	8				
9			9				
10			10				
11			11				
12			12				
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # A45-A11H-028

PROJECT NAME <u>CRAB ORCHARD AUS ON</u>		PROJECT NO. <u>232000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>		ELEVATION	DATUM
STATION <u>AREA 11 H</u>		DATE STARTED <u>4/12/00</u>	DATE FINISHED <u>4/12/00</u>
EXCAVATING CONTRACTOR <u>HFA</u>		COMPLETION DEPTH <u>12 FT BGS</u>	ROCK DEPTH
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		WCC PERSONNEL <u>T. HICKS + K. JINKELSON</u>	
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft
			SAMPLES
			NO. LOC. TYPE USC OF ROCK CLASS
1		← CONC. SLAB	
2		← OPEN SUMP	
3		TAN/GRAY, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL)(FILL) W/ ORGANICS + IRON STAINING	0 6"
4			1'
5			2'
6		↓ NO ORGANICS	4'
7			5'
8			
9			
10		↓ BECOMING OLIVE GREEN	
11		○ 6" ID CLAY PIPE	
12		BOP 12.0 FT	
13			UNSAFE CONDITIONS

A-240

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-A11H-061

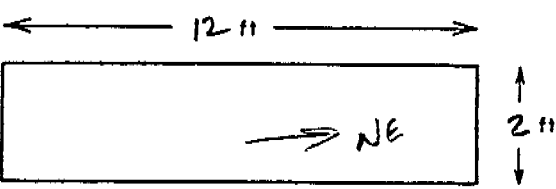
PROJECT NAME CRAB ORCHARD WILDLIFE	PROJECT NO. 232000026-00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	ELEVATION	DATUM
STATION AREA 11 H	DATE STARTED 4/11/00	DATE FINISHED 4/11/00
EXCAVATING CONTRACTOR HFA	COMPLETION DEPTH 8.0 FT	ROCK DEPTH
EXCAVATING EQUIPMENT KOMATSU BACKHOE	NO. SAMPLES DIST.	
PLAN DIMENSIONS 	WATER LEVEL FIRST	
	WCC PERSONNEL	
	T. HICKS & K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG	TYPE	USC OR ROCK CLASS	
1		B/LN, MOIST, SOFT SILTY CLAY LOW PLASTIC (CL) (FILL) W/ WOOD DEBRIS	1				AUS-A11H-061-SS-0X
2			2				AUS-A11H-061-SS-02
3		2" MINUS ROCK W/LITTLE FINES	3				
4			4				▽ AT DIGGING
5			5				AUS-A11H-061-SS-05 AND AUS-A11H-061-SS-05 (QA)
6		ORANGE BROWN, WET, MED. STIFF LOW PLASTIC CLAY (CL)	6				AUS-A11H-061-SS-07
7			7				
8		BOP @ 8.0 FT	8				NOTE: AUS-A11H-061-GW-00 AND AUS-A11H-502-GW-00 WERE COLLECTED.
9			9				
10			10				
11			11				
12			12				
13			13				

A-241

URS GREINER WOODWARD CLYDE

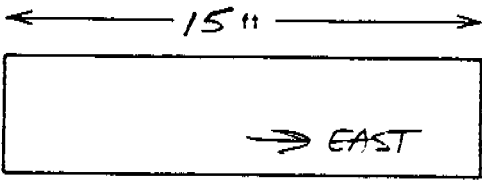
Log of Test Pit # Aus-A11N-030

PROJECT NAME <u>CRAB ORCHARD AUS ON</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 11 N</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/11/00</u>	DATE FINISHED <u>4/11/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. Hicks & K. SINKERSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOC.	TYPE	
1		BAN. MOIST, SOFT, SILTY L. PLASTIC CLAY (CL)(FIW) W/Organics	1				
		ROCK & BLACK ASH MATL.					
2		RED/GRAY, MOIST, SOFT SILT	2				
		TR CLAY & IRON STAINING					
3		(ML)	3				
		(LOESS)					
4			4				
5		↓ BECOMING DRY	5				Aus-A11N-030-SS-05 AND Aus-A11N-501-SS-05
6			6				
7			7				
8			8				
9			9				
10			10				Aus-A11N-030-SS-10
11		LT. T. W./GRAY, MOIST LOW PLASTIC CLAY W/ TR. F. SAND & SILT	11				
		(CL)(RESIDUAL)					
12		WHITE, WEATHERED SANDSTONE	12				
		BOP @ 12.0 FT					
13			13				

URS GREINER WOODWARD CLYDE

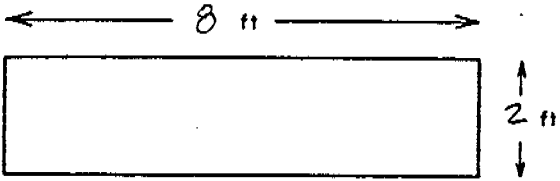
Log of Test Pit # AUS-A11N-031

PROJECT NAME CRAB ORCHARD AUS 011		PROJECT NO. 232000002600	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE AREA 11 N		ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/12/00	DATE FINISHED 4/12/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 10.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS + K. JENSEN	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC	TYPE	USC or ROCK CLASS	
1		BRN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (FILL) W/ METAL DEBRIS	1				
2			2				
3			3				
4		GRAY/BRN, MOIST, LOOSE CLAYEY SILT (ML) (LOESS)	4				
5			5				AUS-A11N-031-SS-05 AND AUS-A11N-031-SS-05 (GA)
6			6				
7			7				
8			8				AUS-A11N-031-SS-06 AND AUS-A11N-031-SS-06 (MS/RS)
9		DRG./BRN, MOIST, MED. STIFF, SANDY LOW PLASTIC CLAY (CL) (RESIDUAL)	9				
10		WHITE WEATHERED SANDSTONE	10				
11		BOP @ 10.0 FT	11				
12			12				
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # A45-0A12-008

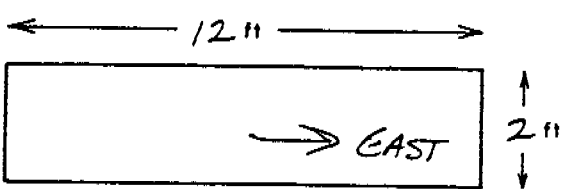
PROJECT NAME CRAB ORCHARD WILDLIFE AUS 01		PROJECT NO. 2320000026 00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION ABEA12	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/5/00	DATE FINISHED 4/5/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. NICKS & K. JENKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		SOFT, BROWN, SOFT, SILTY LOW PLASTIC CLAY (CL)(FIW)	1				A45-0A12-008-SS-01
2		SAME WITH BLACK BURNT MATERIAL (GLASS, METAL, BRICK, ETC.)	2				A45-0A12-008-SS-02
3			3				A45-0A12-008-SS-03
4		GRAY, WET, LOOSE CLAYEY SILT W/ ORGANICS (ML)(LOESS)	4				▽ AT DIGGING
5			5				A45-0A12-008-SS-05
6		BOP 5.0 FT	6				NOTE: ALSO COLLECTED A45-0A12-008-GW-00 FROM PIT
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

A-244

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0A12-010

PROJECT NAME CRAB ORCHARD WILDLIFE		PROJECT NO. AUS 01		SHEET <u>1</u> OF <u>1</u>	
LOCATION CRAB ORCHARD WILDLIFE		STATION AREA 12		ELEVATION 23.20000 26.0	
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/4/00		DATE FINISHED 4/5/00	
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 3.0 FT		ROCK DEPTH	
PLAN DIMENSIONS 		NO. SAMPLES		DIST.	
		WATER LEVEL		FIRST	
		WCC PERSONNEL T. HICKS + K. JINKERSON			

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		3" BLACK ORGANIC PEAT	1				AUS-0A12-501-SS-0X
2		GRAY/BROWN, SOFT, WET, SILTY LOW PLASTIC CLAY (CL) (FILL) w/ METAL DEBRIS FRAG.	2				AUS-0A12-010-SS-0X AUS-0A12-010-SS-02 AUS-0A12-501-SS-02
3			3				AUS-0A12-010-SS-03
4		BOP @ 3.0 FT	4				NOTE: COLLECTED AUS-0A12-010-6W-00
5			5				
6			6				
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-013

PROJECT NAME <u>CRAB ORCHARD WILDLIFE AUS 01</u>		PROJECT NO. <u>2320000 26.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/5/00</u>	DATE FINISHED <u>4/5/00</u>
EXCAVATING EQUIPMENT <u>KO MATSU BACKHOE</u>		COMPLETION DEPTH <u>5.0</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS & K. JENKELSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC OF ROCK CLASS	
1		3" <u>tan, moist, soft silty low plastic clay (CL) (fill)</u>	1				<u>AUS-0A12-013-SS-01</u>
2		<u>black, metal frags, glass debris etc. (BURN PIT)</u>	2				<u>AUS-0A12-013-SS-02</u>
3		<u>gray/brown, moist, soft silty low plastic clay (CL) (fill)</u>	3				<u>AUS-0A12-013-SS-03</u>
4		<u>gray, wet, soft silty low plastic clay (CL/ML) (loess)</u>	4				<u>AT DIGGING</u>
5		<u>BOP 5.0 FT</u>	5				<u>AUS-0A12-013-SS-05</u>
6			6				<u>* NOTE WATER SAMPLES AUS-0A12-013-GW-00</u>
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-015

PROJECT NAME CRAB ORCHARD WILDLIFE AUS OU		PROJECT NO. 2320000026.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 13	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/10/00	DATE FINISHED 4/10/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 11.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS + K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOG.	USC or ROCK CLASS	
1		2" ORGANIC PEAT LT. GRAY, MOIST, SOFT, SILT W/ TR. CLAY (ML) (LOESS)	1				AUS-0A12-015-SS-0X
2		2" GRAY, MOIST, SOFT SILTY CLAY/ CLAYEY SILT (CL/ML) (LOESS) WITH SOME ORGANIC STAINING	2				AUS-0A12-015-SS-0Z AND AUS-0A12-015-SS-0Z (QA)
3			3				
4			4				
5			5				AUS-0A12-015-SS-0S AND AUS-0A12-503-SS-0S
6			6				
7		DLK. GRAY, MOIST, MED. DENSE SILT (MH/ML) (LOESS) TR. CLAY	7				
8			8				
9			9				
10		↓ BECOMING WET	10				
11			11				AUS-0A12-015-SS-11
12			12				NOTE: AUS-0A12-015-GW-00 WAS COLLECTED
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-010

PROJECT NAME <u>C RAB ORCHARD WILDLIFE AUS 010</u>		PROJECT NO. <u>23200000 26.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>C RAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/10/00</u>	DATE FINISHED <u>4/10/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS & K. JINKELSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOG	TYPE	
		LOW PLASTIC					
		<u>BKN, MOIST, SOFT SILTY CLAY (CL) (FIL)</u>					<u>AUS-0A12-018-SS-0X</u>
		<u>BLACK, ASH MATL. MIXED WITH 2" STONE</u>					
1		<u>TAN, MOIST, LOOSE CLAYEY SILT</u>	1				<u>AUS-0A12-018-SS-02</u>
2		<u>W/ IRON STAINING (ML) (LOESS)</u>	2				<u>AND</u> <u>AUS-0A12-505-SS-02</u>
3			3				
4			4				
5		<u>↓ BECOMING LT. GRAY</u>	5				<u>AUS-0A12-018-SS-05</u>
6		<u>WITH LESS CLAY CONTENT</u>	6				<u>AUS-0A12-018-SS-05 (MS)</u>
7		<u>(ML) (LOESS)</u>	7				<u>AUS-0A12-018-SS-05 (MSD)</u>
8		<u>→ 2" SEAM OF WET SILT</u>	8				<u>↓ AT DIGGING</u>
9		<u>↓ SAME AS @ 5FT</u>	9				<u>AUS-0A12-018-SS-08</u>
10			10				<u>NOTE: COLLECTED</u>
11			11				<u>AUS-0A12-018-GW-00</u>
12			12				
13		<u>BOP @ 13.0 FT</u>	13				

A-248

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-029

PROJECT NAME CRAB ORCHARD WILDLIFE AUS 01		PROJECT NO. 232000026.00	SHEET 1 OF 1
LOCATION CRAB ORCHARD WILDLIFE AREA 12		ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/3/00	DATE FINISHED 4/3/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 12.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS & K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		TAN, SOFT, MOIST SATY CLAY (CL) (FIU) W/ DEBRIS	1				AUS-0A12-029-SS-01
2		BLACK, MOIST, LOOSE BURNT MATL. & ROCK 32"	2				AUS-0A12-029-SS-02
3		GRAY, MOIST, SOFT CLAYEY SILT W/ IRON STAINING (ML) (LOESS)	3				
4			4				
5		↓ BECOMING OLIVE GREEN! LESS CLAY CONTENT	5				AUS-0A12-029-SS-05
6			6				
7		↓ BECOMING MED. STIFF	7				
8			8				
9			9				
10			10				
11			11				
12			12				AUS-0A12-029-SS-12
13		BOP @ 12.0 FT	13				NOTE NO WATER SAMPLE COLLECTED

URS GREINER WOODWARD CLYDE

Log of Test Pit # AM3-0A12-035

PROJECT NAME CRAB ORCHARD WILDLIFE AUS 04		PROJECT NO. 232000026.00	SHEET <u>1</u> OF <u>1</u>	
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 12	ELEVATION	DATUM	
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/3/00	DATE FINISHED 4/3/00	
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 6 FT	ROCK DEPTH _____	
PLAN DIMENSIONS 		NO. SAMPLES	DIST.	
		WATER LEVEL	FIRST	
		WCC PERSONNEL T. HICKS & K. JINKERSON		

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG	TYPE	USC or ROCK CLASS	
1		BRN. MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL) WITH BLDG. DEBRIS	1				SAMPLES WERE NOT SUBMITTED TO LAB
2			2				
3			3				
4			4				
5			5				
6			6				
		CONC. SLAB					
		BOP @ 6.0 FT					
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

URS GREINER WOODWARD CLYDE

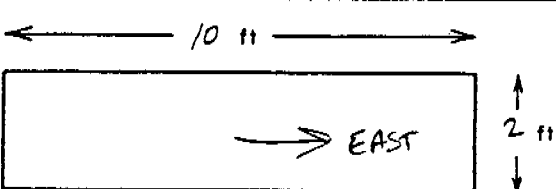
Log of Test Pit # Aus-0A12-035b

PROJECT NAME CRAB ORCHARD WILDLIFE	PROJECT NO. 23200002600	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AUS 00	ELEVATION 23200002600
EXCAVATING CONTRACTOR HFA	DATE STARTED 4/6/00	DATE FINISHED 4/6/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE	COMPLETION DEPTH 13.0 FT	ROCK DEPTH
PLAN DIMENSIONS <div style="text-align: center;"> </div>	NO. SAMPLES	DIST.
	WATER LEVEL	FIRST
	WCC PERSONNEL T. HICKS & K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC OF ROCK CLASS	
1		BROWN/BLACK, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) W/ BURNT DEBRIS (FILL)	1				AUS-0A12-035-SS-0X
2			2				AUS-0A12-035-SS-02
3		↓ WITHOUT DEBRIS	3				
4			4				
5		GRAY, DRY, DENSE SILT W/ SOME CLAY & IRON STAINING (ML) (LOESS)	5				AUS-0A12-035-SS-05 AUS-0A12-035-SS-05(A)
6		↓ W/ GRAY, WET, LOOSE ^{THIN} SILT SEAMS (ML/MH)	6				
7			7				
8			8				
9			9				
10			10				
11		GRAY, MOIST, FIRM, SILTY LOW PLASTIC CLAY (CL) (LOESS) W/ SOME IRON STAINING + TR. FINE SAND	11				
12			12				
13		GRAY/TAN, MOIST, FIRM SILTY MED. PLASTIC CLAY (CL) (TILL) W/ TR. C-F SAND & LIMESTONE LOBBLES	13				AUS-0A12-035-SS-13 BOD - 13.0 FT

URS GREINER WOODWARD CLYDE

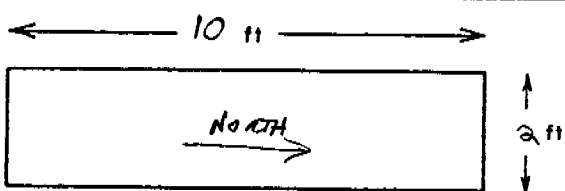
Log of Test Pit # AUS-0A12-064

PROJECT NAME <u>CRAB ORCHARD WILDLIFE AUS 04</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/7/00</u>	DATE FINISHED <u>4/7/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS & K. JINVERSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
		TAN, MOIST, LOOSE SILTY SEDIMENT W/ ORGANICS					AUS-0A12-064-SS-01
1		GRAY, WET, LOOSE CLAYEY SILT W/ ORGANICS + IRON STAINING (ML) (LOESS)	1				
2			2				AUS-0A12-064-SS-02
3		↓ BECOMING DRY, MED. DENSE	3				
4			4				
5			5				AUS-0A12-064-SS-03
6		↓ DECREASE IN CLAY CONTENT	6				
7			7				
8			8				
9		↓ BECOMING DENSE	9				
10			10				
11			11				
12			12				AUS-0A12-064-SS-12
13		BOP @ 12.0 FT	13				PIT IS DRY

URS GREINER WOODWARD CLYDE

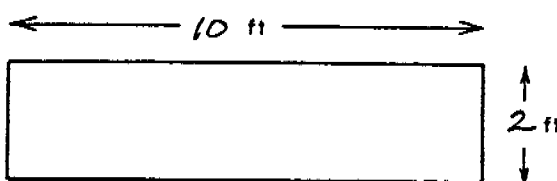
Log of Test Pit # AUS-0A12-071

PROJECT NAME <u>CRAB ORCHARD WILDLIFE AUS ON</u>		PROJECT NO. <u>232000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4-4-00</u>	DATE FINISHED <u>4-4-00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH <u>—</u>
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS + K. JINKELSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC OF ROCK CLASS	
1		<u>ORGANIC BLACK PEAT 3"</u>	1				<u>AUS-0A12-071-SS-0X</u>
2		<u>BROWN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL) (FILL) W/ ORGANICS</u>	2				
3			3				
4		<u>CLAY, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL/ML) (LOESS) W/ IRON STAINING</u>	4				<u>AUS-0A12-071-SS-05</u>
5			5				
6		<u>↓ BECOMING DRY</u>	6				
7			7				
8			8				
9			9				
10		<u>↓ INCREASE IN IRON STAINING</u>	10				
11			11				<u>↓ AT DIGGING SOUTH SIDE OF PIT</u>
12		<u>BoP - 120 FT</u>	12				<u>AUS-0A12-071-SS-BWT</u>
13			13				

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-093

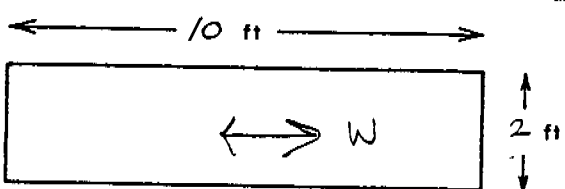
PROJECT NAME CRAB ORCHARD WILDLIFE AUS 04		PROJECT NO. 232000026.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 12	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/4/00	DATE FINISHED 4/6/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS & K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOC.	TYPE	
1		2" BROWN, MOIST, SOFT, SILTY L. PLASTIC CLAY (CL) (FILL)	1				
		BLACK BURNT DEBRIS (METAL, GLASS, ETC.)					
2		BROWN, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL)	2				
3		GRAY, WET, LOOSE SILT (ML) (LOESS) TR. CLAY	3				▽
4		W/ IRON STAINING	4				
5		↓ BECOMING MOIST W/ SOME CLAY	5				
6		BOP 5.25 FT	6				
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

A-254

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-099

PROJECT NAME <u>CRAB ORCHARD WILDLIFE AUS 04</u>		PROJECT NO. <u>2320000086.0</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>		ELEVATION	DATUM
STATION <u>AREA 12</u>		DATE STARTED <u>4/6/00</u>	DATE FINISHED <u>4/6/00</u>
EXCAVATING CONTRACTOR <u>HFA</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		WCC PERSONNEL <u>T. HICKS & K. JINKELSON</u>	
PLAN DIMENSIONS 		NO. SAMPLES	
		DIST.	
		WATER LEVEL	
		FIRST	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOG	TYPE	
1		BRN, DRY, SOFT SILTY L. PLASTIC CLAY WITH ORGANICS (CL)(GIL)	1				AUS-0A12-099-SS-01
2		2" ROCK BLACK, DRY, LOOSE, BURNT MATL.	2				AUS-0A12-099-SS-02
3		BRN, DRY, SOFT SILTY, L. PLASTIC CLAY (CL)(GIL)	3				NOTE: DUP. WAS TAKEN FOR DIOXIN @ 2 FT
4		GRAY, DRY, MED. DENSE, SILT TR. CLAY (ML)(LOESS)	4				AUS-0A12-099-SS-05
5			5				AND AUS-0A12-502-SS-05
6		↓ BECOMING DENSE	6				
7			7				
8			8				
9		↓ BECOMING MOIST	9				
10			10				
11			11				
12			12				AUS-0A12-099-SS-12
13		BOP @ 12.0 FT	13				

81-255

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0A12-100

PROJECT NAME CRAB ORCHARD WILDLIFE AUS 0A		PROJECT NO. 2320000026.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 12	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/7/00	DATE FINISHED 4/7/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 14.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS & K. JENKERSON	

DEPTH SCALE ft.	ELEV.	DESCRIPTION	DEPTH SCALE ft.	SAMPLES			REMARKS
				NO. LOG	TYPE	USC OF ROCK CLASS	
		TOP SOIL					
1		GRAY, MOIST, LOOSE, SILT w/ SOME CLAY / ORGANICS / IRON STAINING (ML) (LOESS)	1				AUS-0A12-100-SS-0X
2			2				AUS-0A12-100-SS-02
3			3				
4		GRAY, DRY, MED. DENSE SILT TR. CLAY / IRON STAINING (ML) (LOESS)	4				AUS-0A12-100-SS-05 AND
5			5				AUS-0A12-504-SS-05
6			6				
7		↓ BECOMING DENSE w/ INCREASE IN IRON STAINING	7				
8			8				
9			9				
10			10				
11		GRAY, MOIST, MED. STIFF SILTY LOW PLASTIC CLAY (CL) (TILL) TR. C-F SAND	11				
12		↓ BECOMING WET	12				
13		BOP @ 14.0 FT	13				AUS-0A12-100-SS-1X

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0069-001

PROJECT NAME CRAB ORCHARD WILDLIFE AUS ON		PROJECT NO. 2320000026.00	SHEET <u>1</u> OF <u>1</u>
LOCATION CRAB ORCHARD WILDLIFE	STATION AREA 12	ELEVATION	DATUM
EXCAVATING CONTRACTOR HFA		DATE STARTED 4/3/00	DATE FINISHED 4/3/00
EXCAVATING EQUIPMENT KOMATSU BACKHOE		COMPLETION DEPTH 12.0 FT	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL T. HICKS & K. JINKERSON	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		BAN, DRY, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL) W/EMPTY DRUMS PARTIALLY BURIED ALSO OTHER METAL DEBRIS ↓ WITHOUT DEBRIS	1				AUS-0069-001-SS-0X & F-12-2069-001-SS-0X(MS/MSD)
2			2				
3			3				
4			4				
5		GRAY, MOIST, MED. DENSE CLAYEY SILT (ML) (LOESS) W/IRON STAINING ↓ BECOMING DRY	5				AUS-0069-001-SS-05
6			6				
7			7				
8			8				
9			9				
10		↓ BECOMING DENSE	10				AUS-0069-001-SS-12
11			11				
12			12				
13		BCP @ 12.0 FT	13				

X-257

URS GREINER WOODWARD CLYDE

Log of Test Pit # AYS-0069-012

PROJECT NAME <u>CHAB ORCHARD WILDLIFE AUS ON</u>		PROJECT NO. <u>03200002 h. 00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CHAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/3/00</u>	DATE FINISHED <u>4/3/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>5 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS + K. JENKERSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG.	TYPE	USC OF ROCK CLASS	
1		BKN, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL) (FILL)	1				AYS-0069-012-SS-02 AND AYS-0069-012-SS-02(0A)
2		BLACK, MOIST, SOFT SILTY LOW PLASTIC CLAY AND BURNT DEBRIS (METAL, GLASS, BRICK, ETC.) (FILL)	2				
3		GRAY, MOIST, LOOSE, SILT TL. CLAY (MH) (LOESS)	3				AYS-0069-012-SS-03
4		↓ BECOMING WET W/ INCREASE IN CLAY (ML) (LOESS)	4				▽ AT DIGGING
5		BOP @ 5.0 FT	5				AYS-0069-012-SS-05
6			6				NOTE: SAMPLE AYS-0069-012-GW-00 WAS COLLECTED
7			7				
8			8				
9			9				
10			10				
11			11				
12			12				
13			13				

A-258

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0069-013

PROJECT NAME <u>CRAB ORCHARD WILDLIFE AUS ON</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 12</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>3/31/00</u>	DATE FINISHED <u>3/31/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS & K. JINKERSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOC.	TYPE	USC or ROCK CLASS	
1		BROWN, MOIST, SOFT, SILTY LOW PLASTIC CLAY (CL)(FILL)	1				AUS-0069-013-SS-0X
2		GRAY, DRY, MED. DENSE SILT (ML) (LOESS) WITH SOME CLAY AND IRON STAINING	2				
3			3				AUS-0069-013-SS-03
4			4				
5			5				
6		↓ SAME INCREASE IN CLAY (ML) (LOESS)	6				
7			7				
8			8				
9		↓ BECOMING MOIST	9				
10			10				
11			11				▽ AT DIGGING
12			12				AUS-0069-013-SS-12
13		BOP @ 12.0 FT	13				NOTE: SAMPLE AUS-0069-013-GW-00 WAS COLLECTED

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0109-001

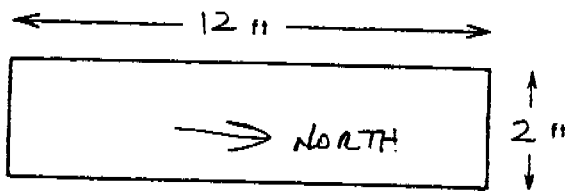
PROJECT NAME <u>CRAB ORCHARD AUS ON</u>		PROJECT NO. <u>232000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>	STATION <u>AREA 109</u>	ELEVATION	DATUM
EXCAVATING CONTRACTOR <u>HFA</u>		DATE STARTED <u>4/13/00</u>	DATE FINISHED <u>4/13/00</u>
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. Hicks + K. J. JENSEN</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO.	LOC.	TYPE USC or ROCK CLASS	
1		TAN, MOIST, SOFT SILTY CLAY LOW PLASTIC (CL)(FILL)(TOPSOIL)	1				Aus-0109-001-55-0X Aus-0109-501-55-0X
2		GRAY/TAN, MOIST SOFT CLAYEY SILT W/TR. IRON STAINING (ML)(LOESS)	2				
3			3				
4			4				
5		↓ BECOMING DRY, MED. STIFF	5				Aus-0109-001-55-05 AND Aus-0109-501-55-05
6			6				
7			7				
8			8				
9		REDISH/BRN, MOIST, MED. STIFF SILTY LOW PLASTIC CLAY TR. F SAND (CL)(TILL)	9				↓ BITING
10		THIN EMBEDDED SILT SEAMS	10				Aus-0109-001-55-10
11			11				
12			12				
13		BOP @ 12.0 FT	13				

A-260

URS GREINER WOODWARD CLYDE

Log of Test Pit # Aus-0109-002

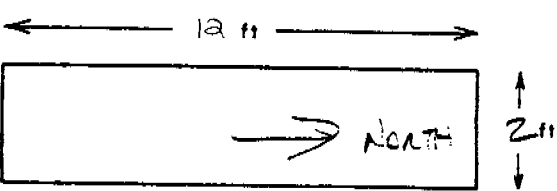
PROJECT NAME <u>CRAB ORCHARD Aus 01</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>		ELEVATION	DATUM
STATION <u>AREA 109</u>		DATE STARTED <u>4/13/00</u>	DATE FINISHED <u>4/13/00</u>
EXCAVATING CONTRACTOR <u>HFA</u>		COMPLETION DEPTH <u>10.0 FT</u>	ROCK DEPTH
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		WCC PERSONNEL <u>T. HICKS + K. JINKERSON</u>	
PLAN DIMENSIONS 		NO. SAMPLES	DIST.
		WATER LEVEL	FIRST

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG	TYPE	USC or ROCK CLASS	
1		TAN, MOIST, SOFT SILTY LOW PLASTIC CLAY (CL)(FILL)(TOPSOIL)	1				<u>Aus-0109-002-SS-01</u> <u>Aus-0109-002-SS-02(A)</u>
2		GRAY/TAN, MOIST, SOFT SILT W/SOME CLAY + IRON STAINING (ML)(LOESS)	2				
3			3				
4		↓ BECOMING DRY, MED. STIFF	4				
5			5				<u>Aus-0109-002-SS-05</u> AND <u>Aus-0109-002-SS-05(A)</u>
6			6				
7			7				
8		RED/BAN, MOIST, MED. STIFF, SILTY	8				↓ <u>ATD 16.215</u>
9		LOW PLASTIC CLAY W/TR. F SAND (CL)(TILL)	9				
10			10				<u>Aus-0109-002-SS-10</u>
11		BOP @ 10.0 FT	11				NOTE: NO WATER SAMPLE COLLECTED
12			12				
13			13				

A-261

URS GREINER WOODWARD CLYDE

Log of Test Pit # AUS-0107-001

PROJECT NAME <u>CRAB ORCHARD AUS ON</u>		PROJECT NO. <u>2320000026.00</u>	SHEET <u>1</u> OF <u>1</u>
LOCATION <u>CRAB ORCHARD WILDLIFE</u>		ELEVATION	DATUM
STATION <u>AREA 107</u>		DATE STARTED <u>4/14/00</u>	DATE FINISHED <u>4/14/00</u>
EXCAVATING CONTRACTOR <u>HFA</u>		COMPLETION DEPTH <u>12.0 FT</u>	ROCK DEPTH
EXCAVATING EQUIPMENT <u>KOMATSU BACKHOE</u>		NO. SAMPLES	DIST.
PLAN DIMENSIONS 		WATER LEVEL	FIRST
		WCC PERSONNEL <u>T. HICKS + K. JINKERSON</u>	

DEPTH SCALE ft	ELEV.	DESCRIPTION	DEPTH SCALE ft	SAMPLES			REMARKS
				NO. LOG	TYPE	USC OF ROCK CLASS	
1		TAN, DRY, LOOSE 2" MINUS ROCK w/ TR. SILT + CLAY (FILL)	1				AUS-0107-001-SS-0X AUS-0107-501-SS-0X
2		LT. GRAY, DRY, MED. STIFF SILT w/ TR. CLAY (ML) (LOOSE) ↓ SAME w/ IRON STAINING	2				AUS-0107-001-SS-02 AND AUS-0107-501-SS-02
3			3				
4			4				
5			5				
6			6				
7			7				
8			8				
9		↓ BECOMING MOIST	9				
10			10				AUS-0107-001-SS-10
11			11				
12			12				
13		BOP @ 12.0 FT	13				

A-262

**APPENDIX B
MONITORING WELL LOGS**

WELLS	PAGE NUMBERS
SHALLOW WELLS	
OA2B-W01	B-1
OA2B-W02	B-2
OA2B-W03	B-3
OA2D-W01	B-4
OA2D-W02	B-5
OA2D-W03	B-6
OA2D-W04	B-7
OA2D-W05	B-8
OA2D-W06	B-9
OA2F-W01	B-10
OA2F-W02	B-11
OA2F-W03	B-12
OA2P-W01	B-13
OA2P-W02	B-14
OA2P-W03	B-15
OA2P-W04	B-16
OA2P-W05	B-17
OA2P-W06	B-18
OA4E-W01	B-19
OA4E-W02	B-20
OA4E-W03	B-21
OA8S-W01	B-22
OA8S-W02	B-23
OA8S-W03	B-24
OA8S-W04	B-25
OA8S-W05	B-26
OA8S-W06	B-27
OA09-W01	B-28
A11A-W01	B-29
A11A-W02	B-30
A11H-W01	B-31
A11P-W01	B-32
A11S-W01	B-33
A11S-W02	B-34
A11S-W03	B-35
A11S-W04	B-36
OA12-W01	B-37
OA12-W02	B-38
0001-W01	B-39

WELLS	PAGE NUMBERS
BEDROCK WELLS	
BDRK-001	B-40
BDRK-002	B-41
BDRK-003	B-42
BDRK-004	B-43
BDRK-005I	B-44
BDRK-005d	B-45
BDRK-006	B-46
BDRK-007	B-47
BDRK-008	B-48
BDRK-009I	B-49
BDRK-009d	B-50
BDRK-010	B-51
BDRK-011	B-52

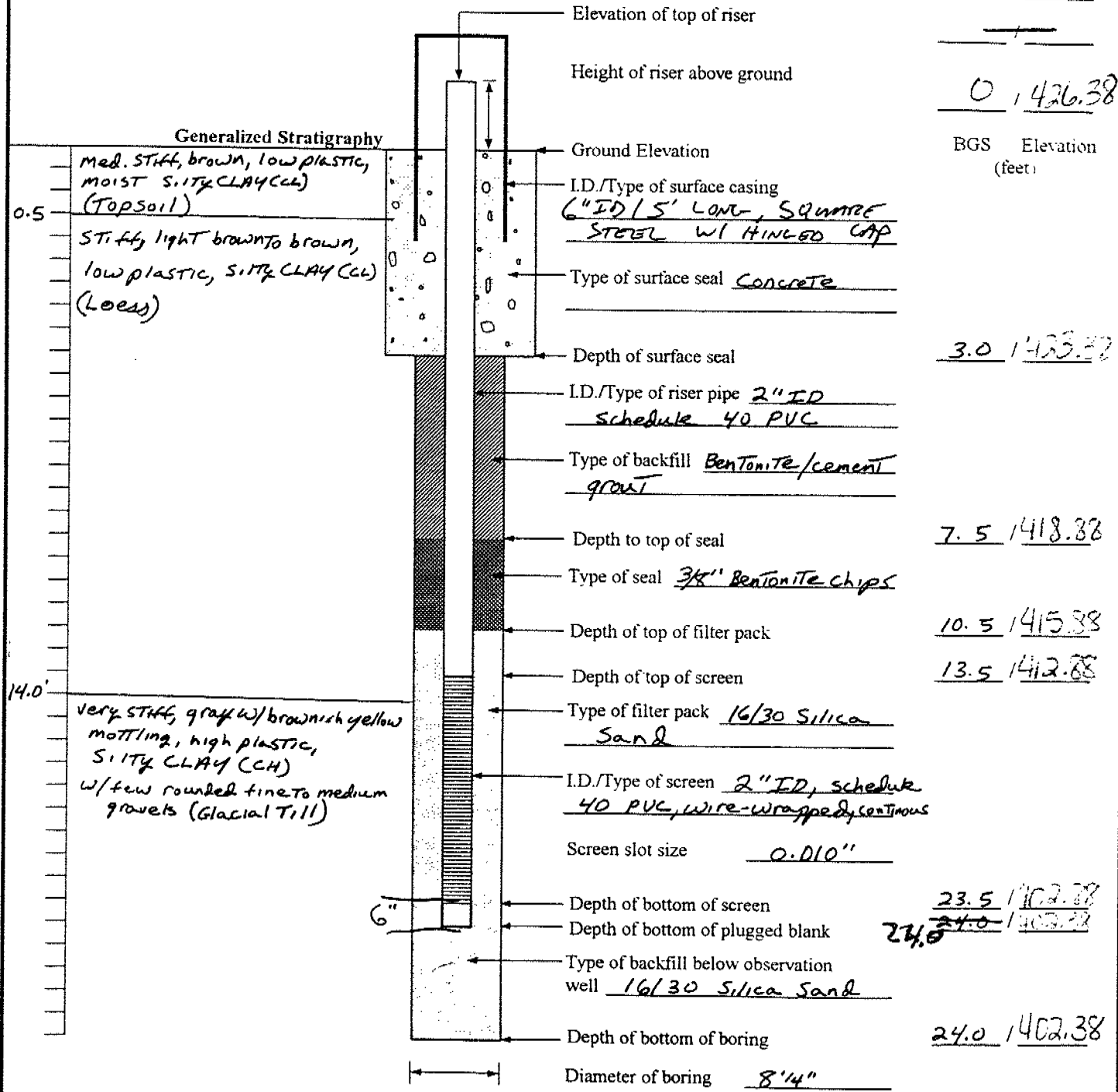
MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS 00
 Location Marion, IL
 Installed By Philip Environmental Services
 Inspected By Eric Fritsch
 Method of Installation 4 1/4" ID / 8 1/4" OD HSAs
 Remarks 5 gallons of potable water was used to hydrate the bentonite seal
The seal was hydrated in 1 foot lifts.

Piez./Well No. 0A2B-W01
 Project No. 23-20000026.00
 Date 3-29-00 Time 1025

AGS Elevation
 (feet)
2.561 1438.94

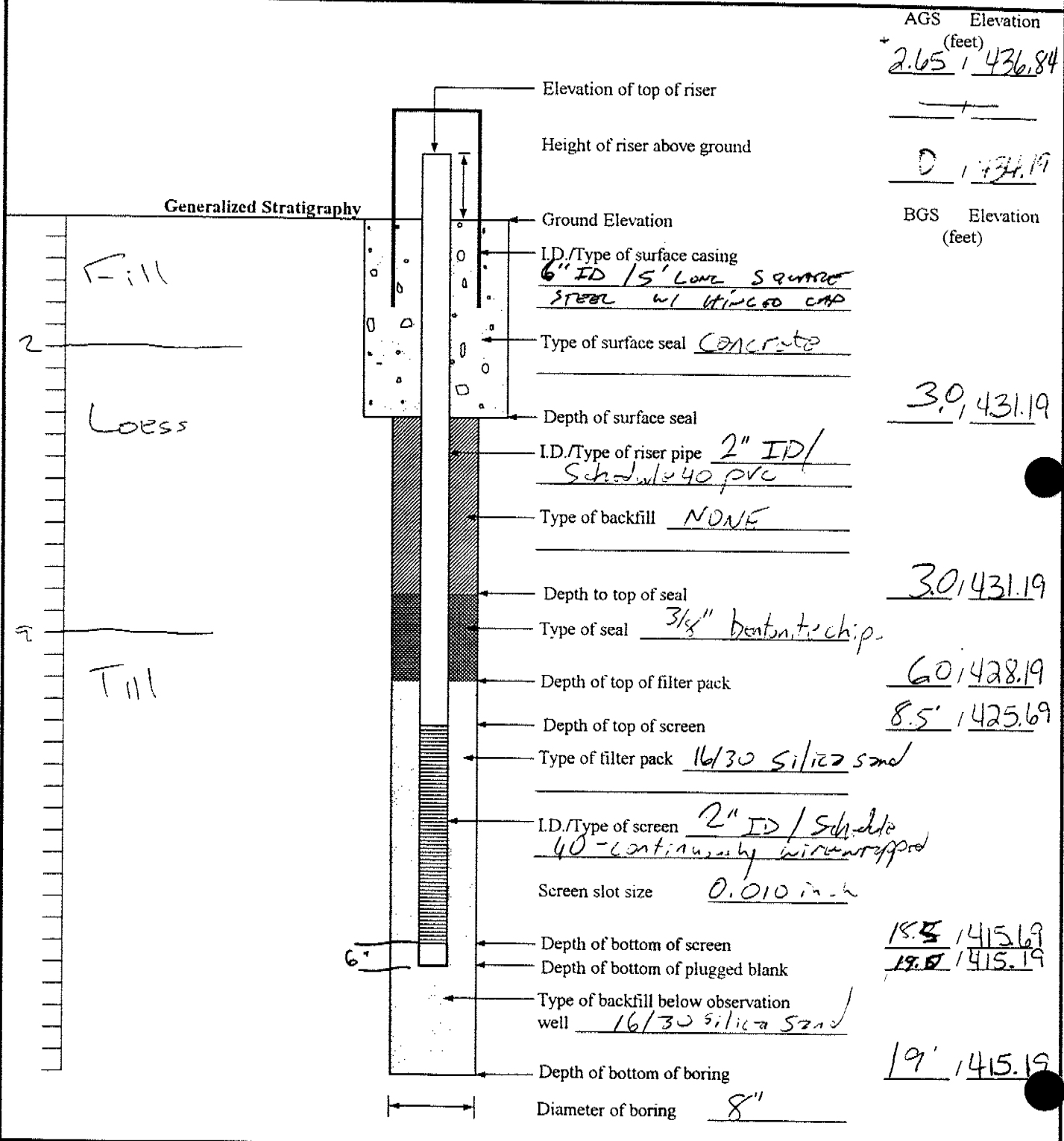
BGS Elevation
 (feet)



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB Orchard Ave Dr
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FELTSCH
 Method of Installation 4 1/4" ID x 8 1/4" OD ASA
 Remarks 5 GALLONS OF POTABLE WATER USED TO HYDRATE THE
SOIL. SOIL INSTALLED IN 1 FOOT LIFTS

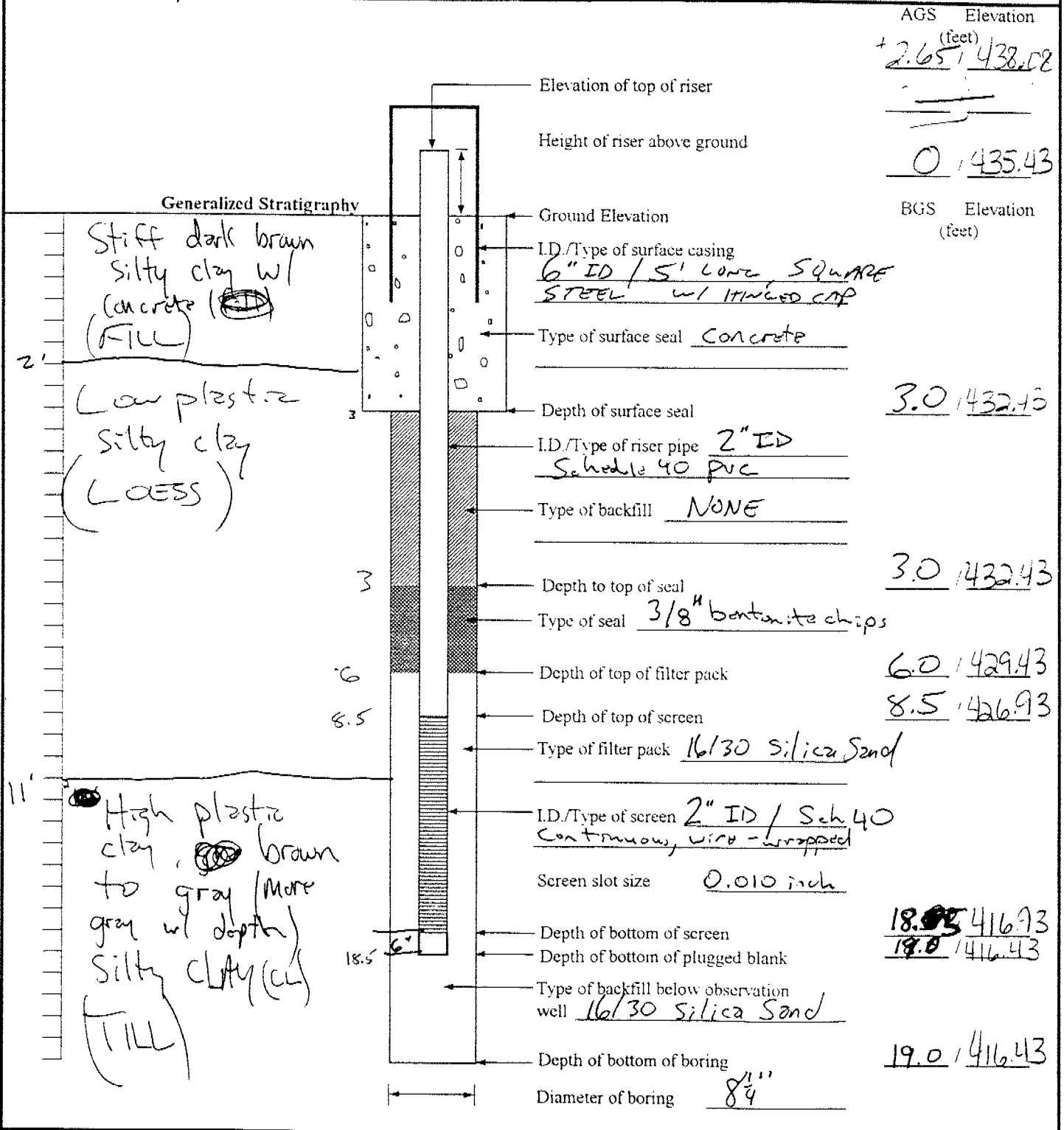
Piez./Well No. 0A2B-W02
 Project No. 23-2000026.00
 Date 3-28-00 Time _____



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB OCEANIC AUS-01
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL
 Inspected By ERIC FRITSCH
 Method of Installation POUR SAND THROUGH ANNUMAN
 Remarks SPACE BETWEEN PVC & ANNUMAN
5 gallons of potable water used to hydrate bentonite
chips. SEAL INFORMED IN 1 FOOT LIFTS

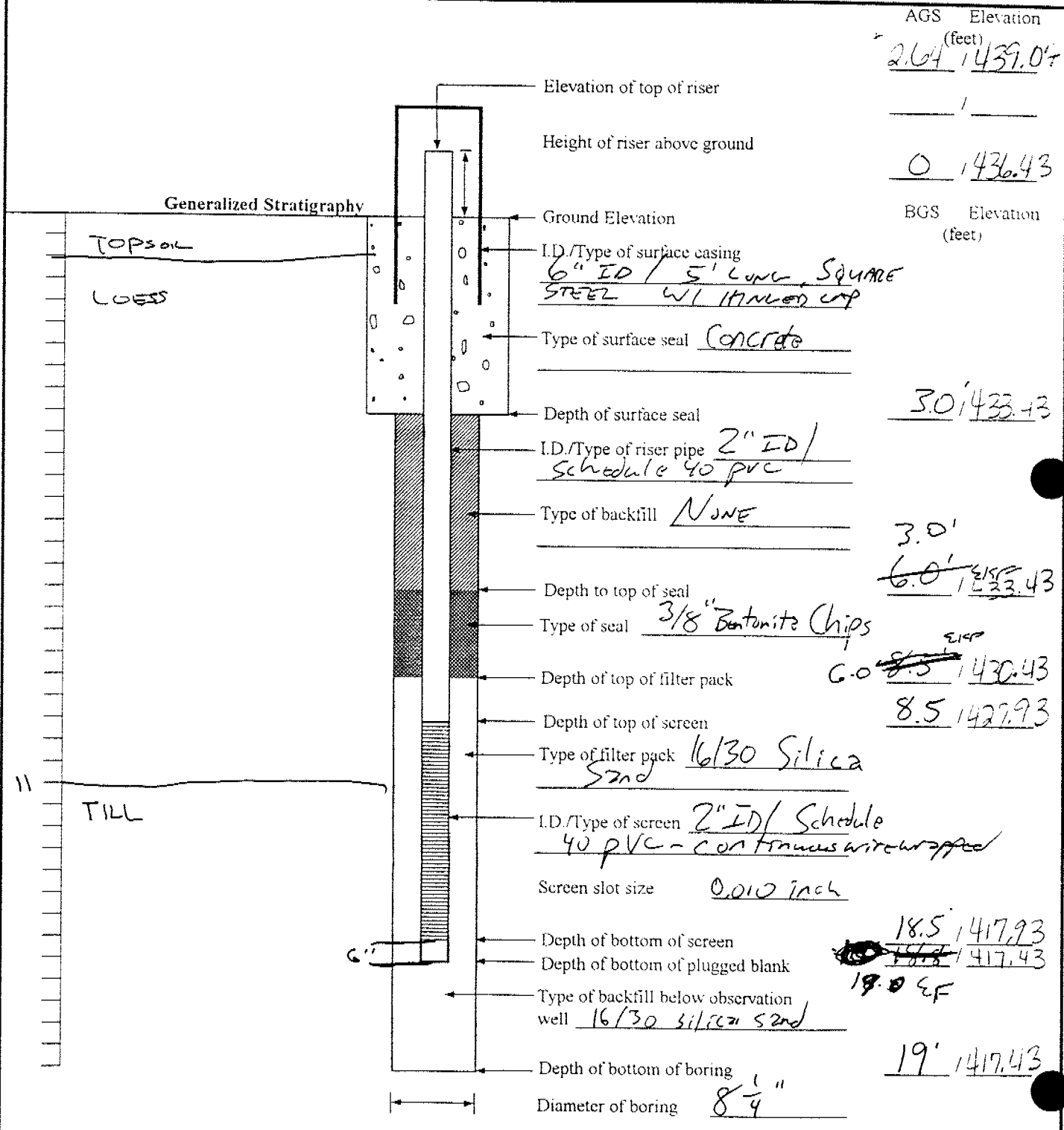
Piez./Well No. OA2B-W03
 Project No. _____
 Date 3-27-00 Time 16:20



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MARION ILLINOIS
 Installed By ERIC FRITZ
 Inspected By ERIC FRITZ
 Method of Installation 4" ID x 8'4" OD HSA
 Remarks 5 gallons of potable water used during installation
SEAL INSTALLED IN 1-Foot LIFTS

Piez./Well No. 0A2D-W01
 Project No. _____
 Date 3-29-00 Time 3:00

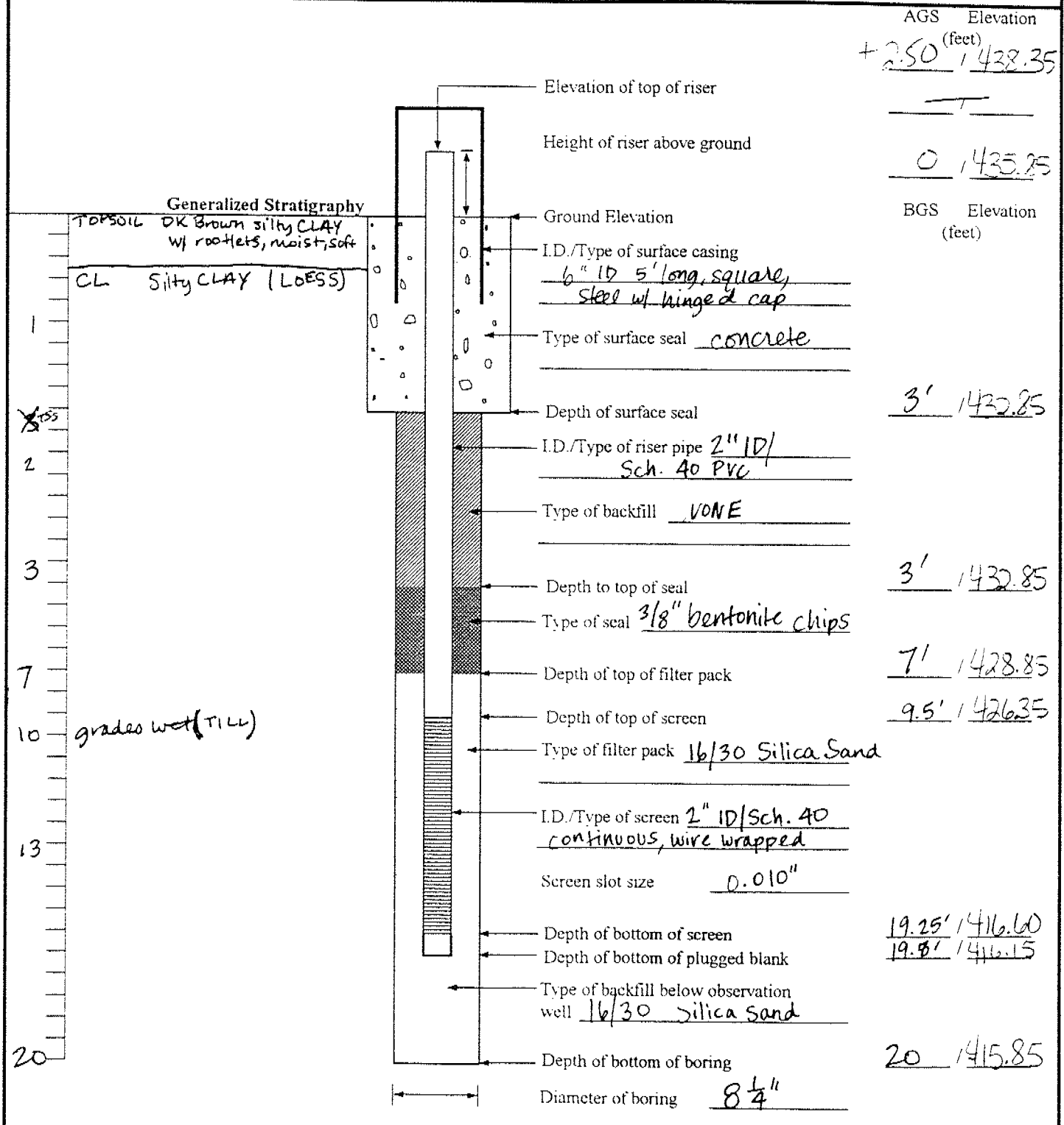


B-4

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard ~~IS~~ AVS-OU
 Location Crab Orchard Wildlife Refuge Marion, IL
 Installed By ~~FF~~ Philip Environmental
 Inspected By Tiffany Snoveland
 Method of Installation 4 1/4" ID 8 FTSS 8 1/4" OD HSA
 Remarks 3 gallons of water added during installation by driller

Piez./Well No. AUS-0AZD-wp2
 Project No. 23-200000 26.00
 Date 4-12-00 Time 12:40

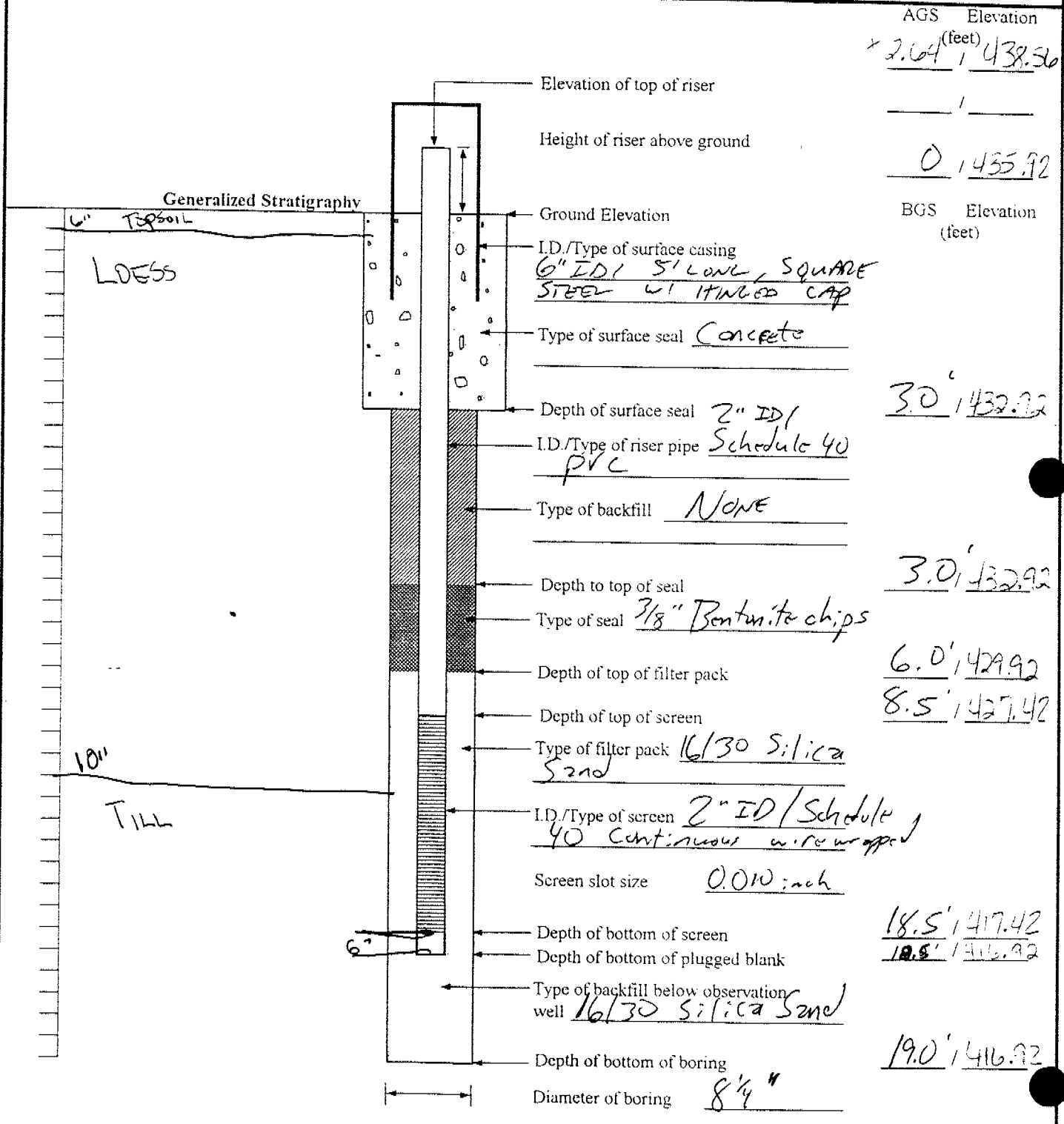


B-5

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS OU
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FR. FRUIT
 Method of Installation 4 1/4" ID x 8 1/4" OD TFS
 Remarks 5 GALLONS OF POTABLE WATER USED TO HYDRATE THE SEAL
SEAL WAS HYDRATED IN 1-FOOT LIFTS

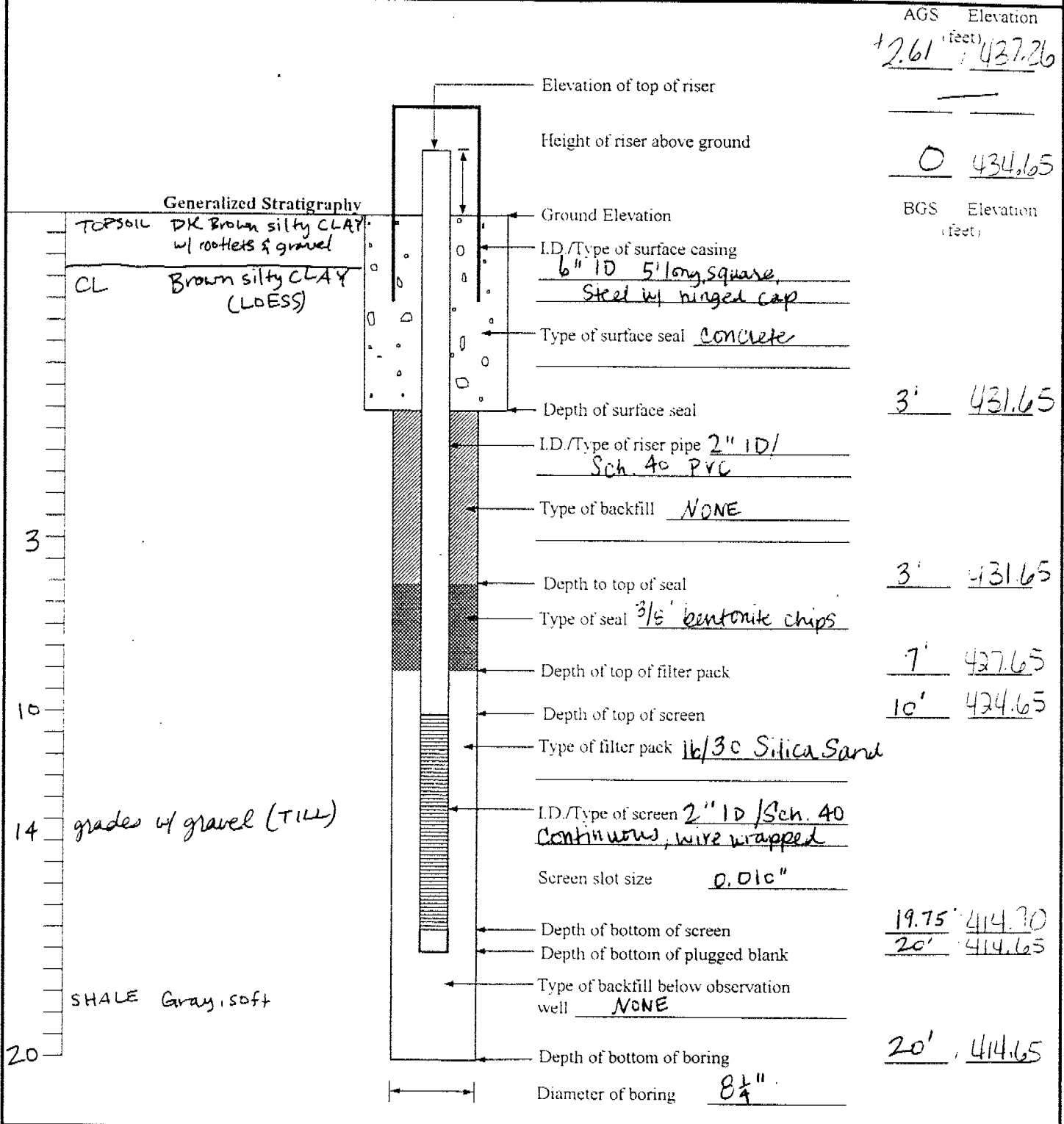
Piez./Well No. QAZD-W03
 Project No. 23-2000026.00
 Date 3-30-00 Time 11:25



MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AVS 0U
 Location Crab Orchard Wildlife Refuge Marion, IL
 Installed By Philip Environmental
 Inspected By Tiffany Swovel and
 Method of Installation 4 1/4" ID 8 1/4" OD HSA
 Remarks 4 gallons of water introduced during installation

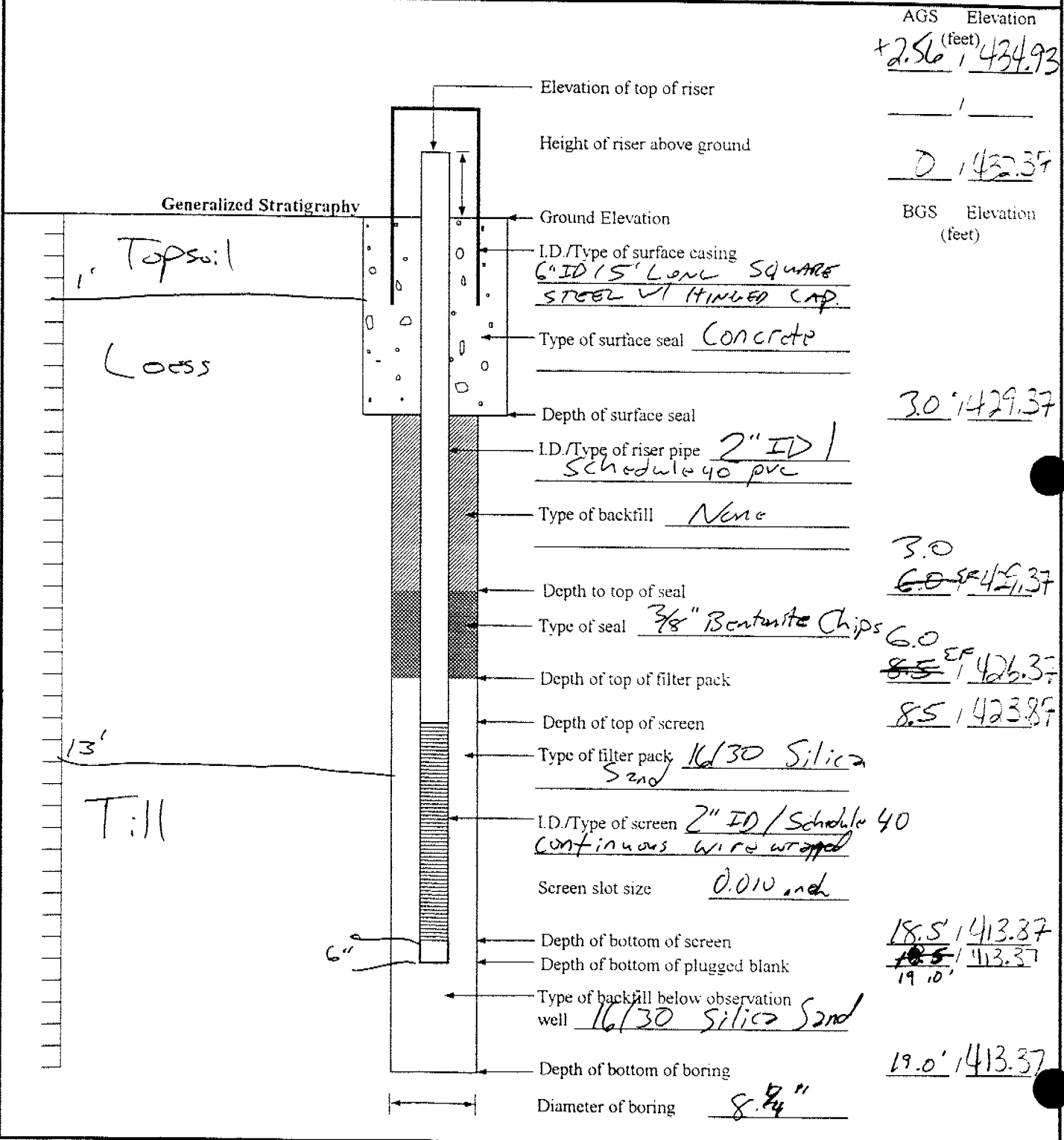
Piez./Well No. AVS-0AZD-wp4
 Project No. 23-20000026.00
 Date 4-12-00 Time 0830



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MARION, ILLINOIS
 Installed By DITLIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZCH
 Method of Installation 4 1/4" ID x 8 1/4" OD
 Remarks 5 GALLONS OF POTASSIUM WATER USED TO HYDRATE SEAL
SEAL INSTALLED W/ 1-FOOT LIFTS

Piez./Well No. 0A2D-W005
 Project No. 23-2000026.00
 Date 3-30-00 Time 3:45

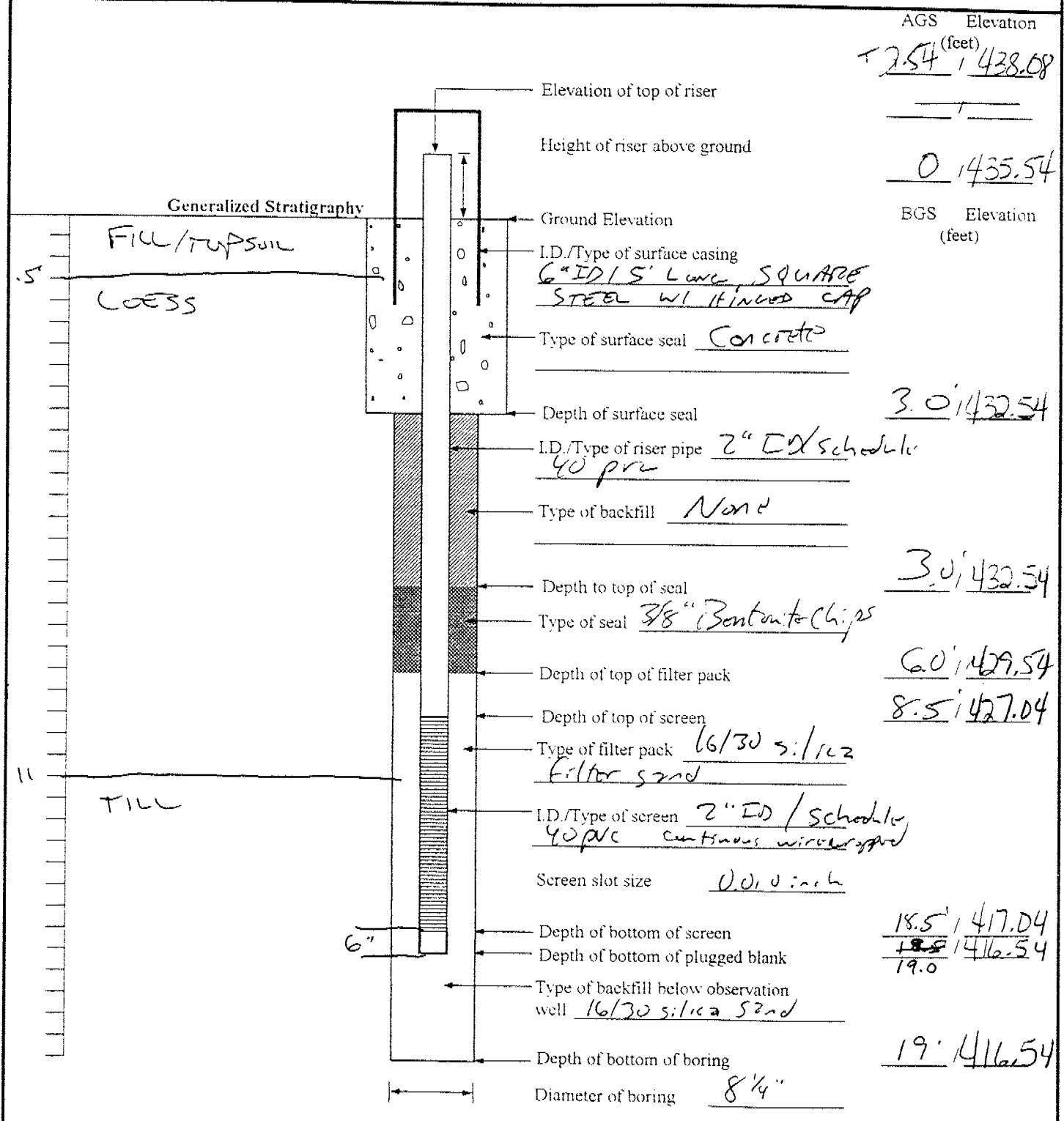


B-8

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB Orchard Aus On
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZCH
 Method of Installation 4 1/4 ID x 8 1/4 OD HSA
 Remarks 5 COLUMNS OR POTABLE WATER USED TO HYDRATE SEAL
SEAL INSTALLED IN 1-FOOT LIFTS

Piez./Well No. OA 2D-W06
 Project No. 23-20000026.00
 Date 3-31-00 Time _____

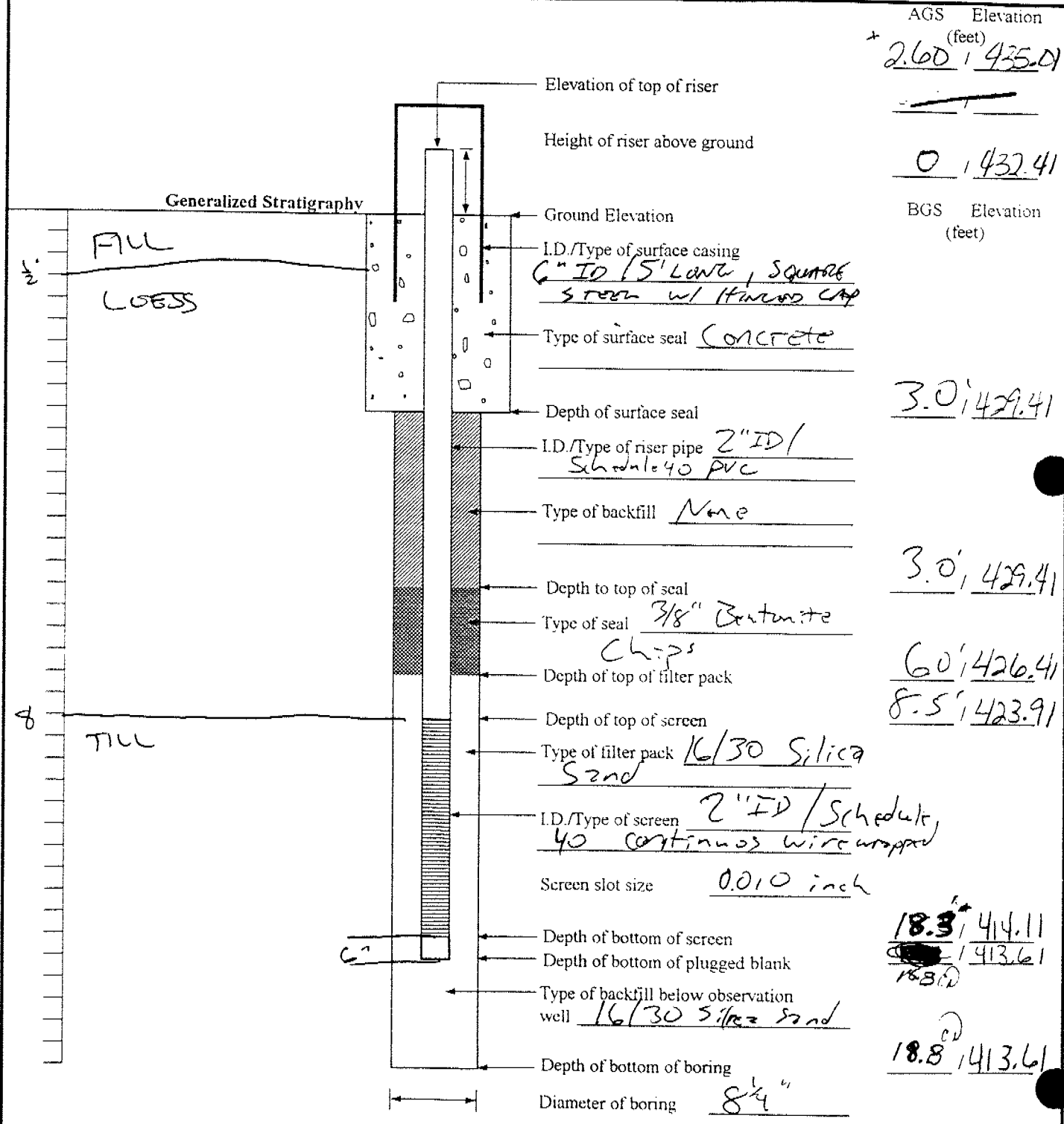


B-9

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS OIL
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZCO
 Method of Installation 4 1/4" ID x 8 1/4" OD HSA
 Remarks 5 GALLONS OF POTABLE WATER USED TO CYPARATE TUBE SEAL
SEAL INSTALLED IN 1-FOOT LIFTS

Piez./Well No. 0A2F-W01
 Project No. 23-2000026.00
 Date 3-4-00 Time 10:30
4-3-00

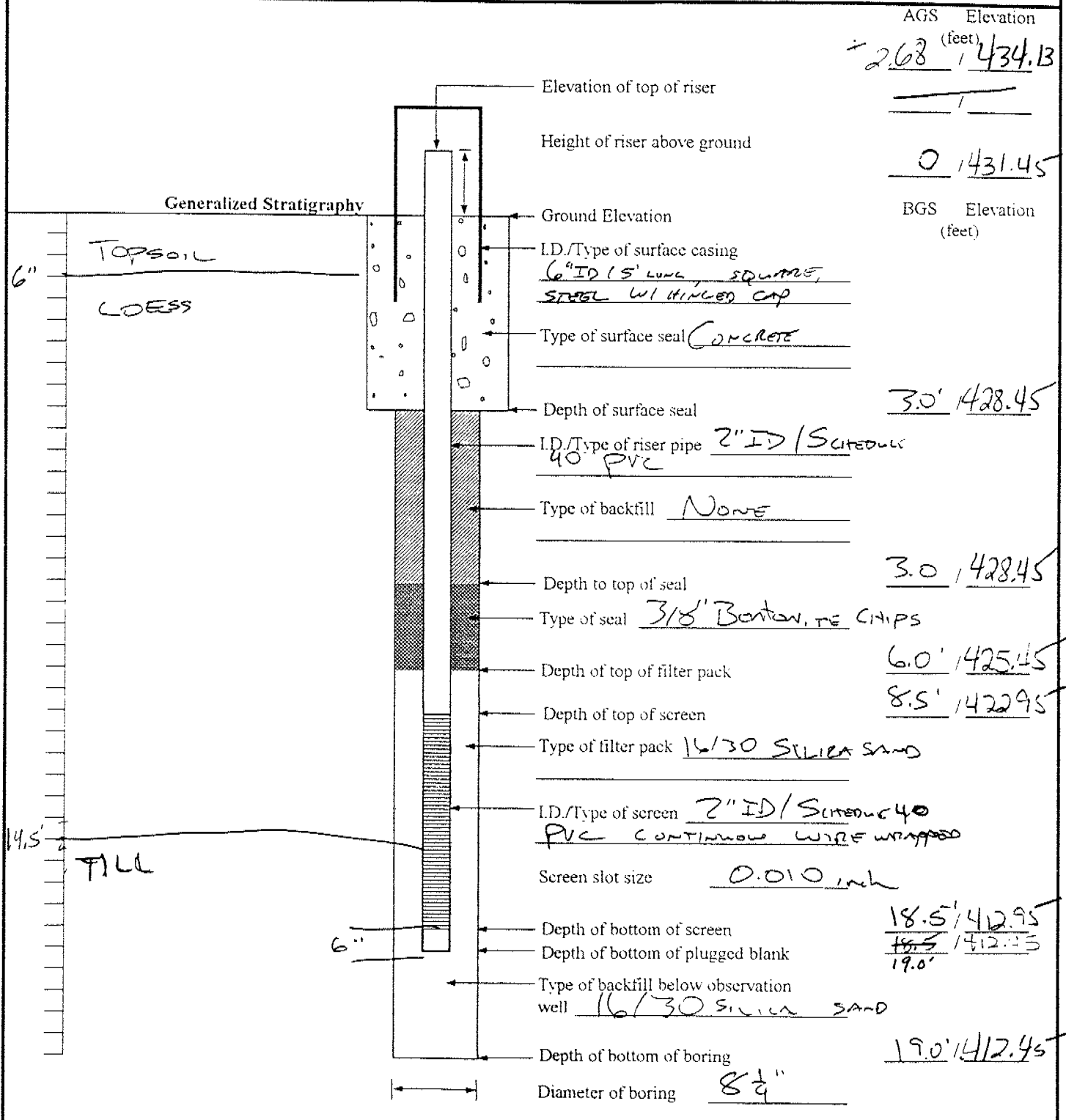


B-10

MONITORING WELL CONSTRUCTION LOG

Project Name CRASS ORCHARD AUS - OU
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITSCHE
 Method of Installation 4 1/4" ID x 8 1/4" OD HSA
 Remarks S. CALLONS POTABLE WATER USED TO HYDRATE SEAL
SEAL INSTALLED TO 1-FEET DEPT.

Piez./Well No. 0A2F-W02
 Project No. 23-2000026.00
 Date 4-3-00 Time 12:30

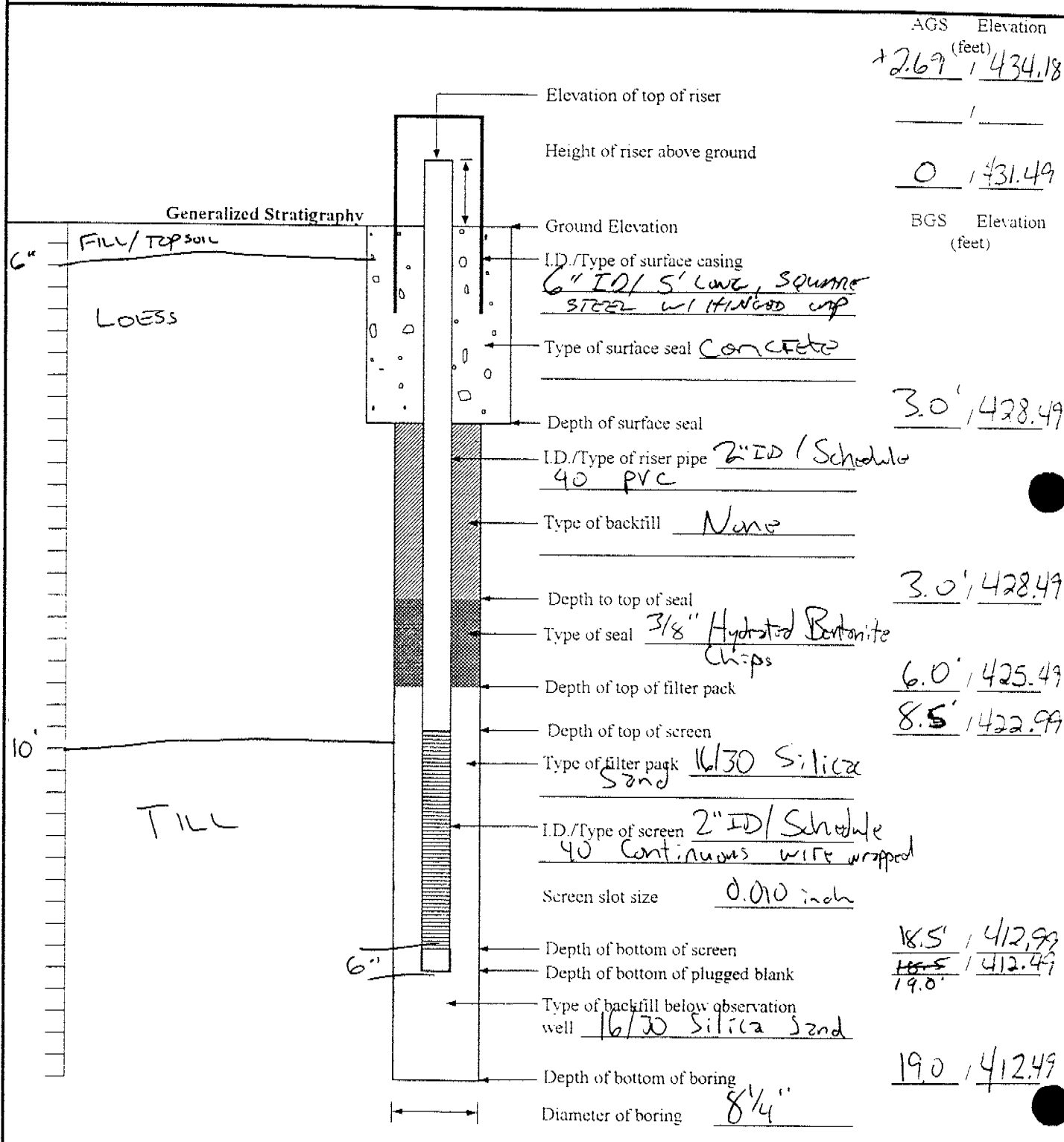


B-11

MONITORING WELL CONSTRUCTION LOG

Project Name Grass Orchard AHS on
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZELT
 Method of Installation 4" ID x 8" OD HSA
 Remarks 5 GALLONS OF POTABLE WATER USED TO HYDRATE SEAL
SEAL INSTALLED IN 1-FOOT LIFTS.

Piez./Well No. AZF-W03
 Project No. 23-2000026.00
 Date 4-3-00 Time 16:30

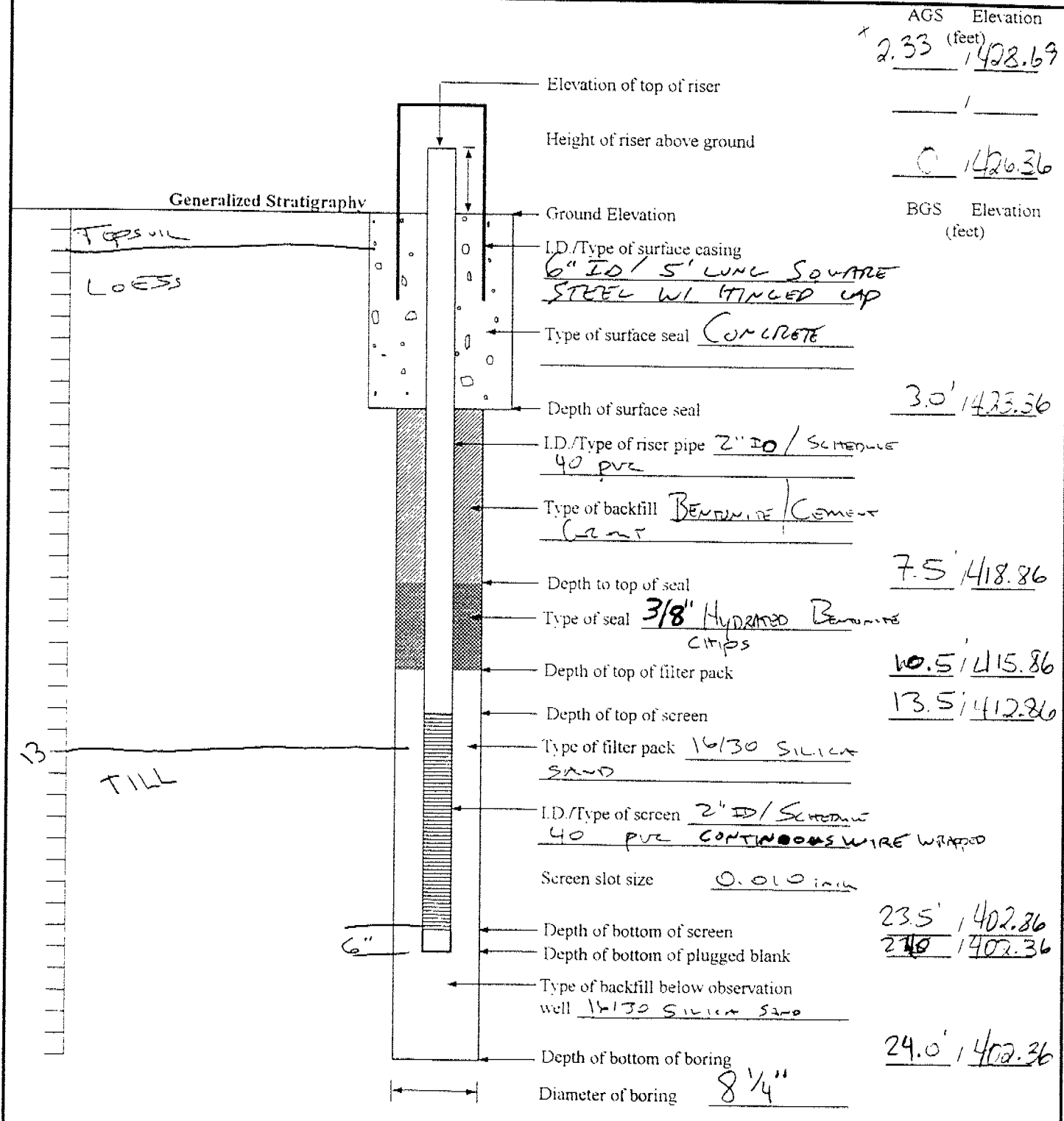


B-12

MONITORING WELL CONSTRUCTION LOG

Project Name CRAP ORCINVED AUS ON
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRISCH
 Method of Installation 4 1/4" ID x 8 1/4" OD
 Remarks 5 GALLONS OF POTABLE WATER USED TO HYDRATE SOIL
SEAL INSTALLED IN 1-FOOT LIFTS

Piez./Well No. 0A2P-W01
 Project No. 23-2000026.00
 Date 4-5-00 Time 11:30

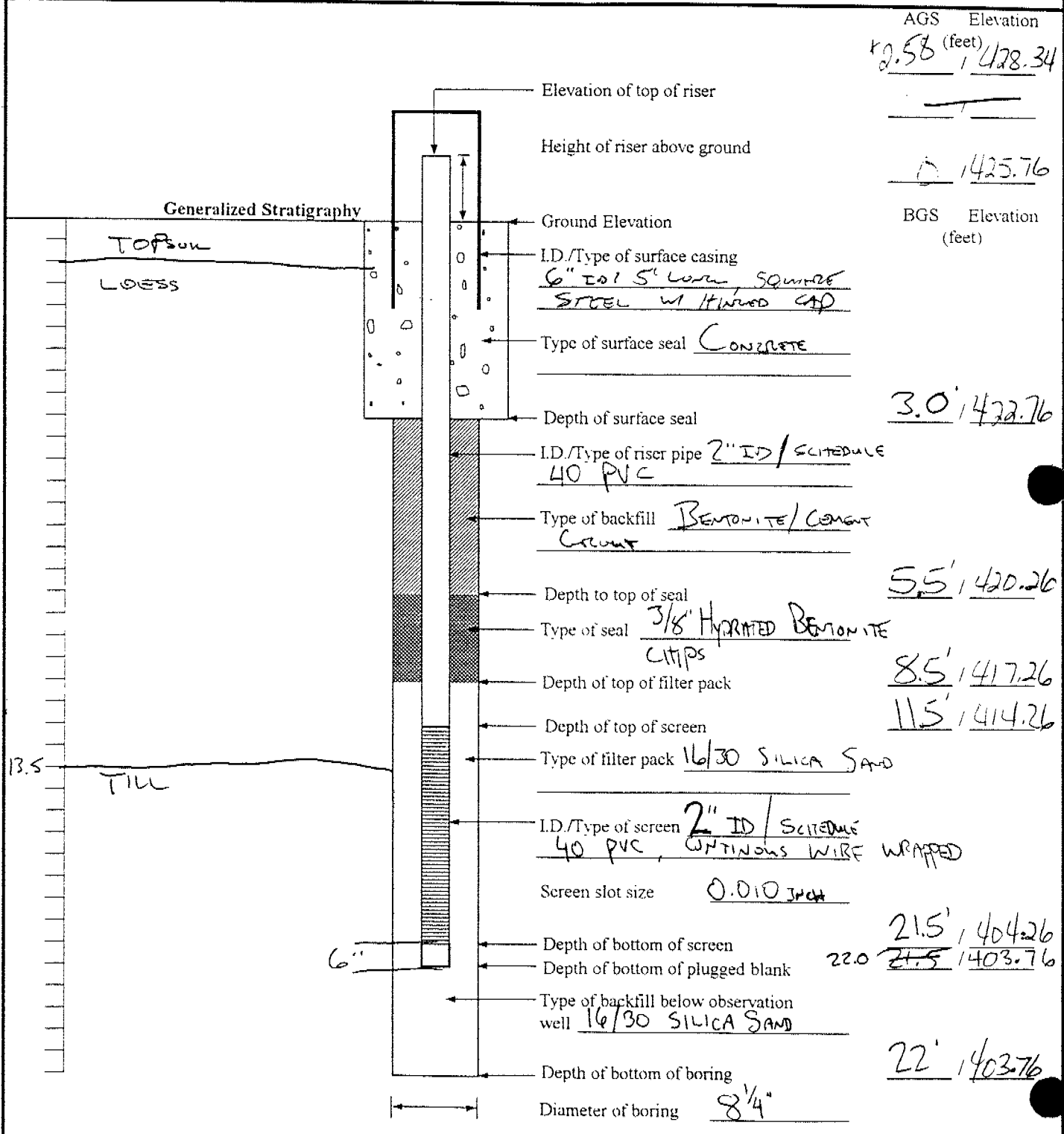


B-13

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZELT
 Method of Installation 4 1/4" ID X 8 1/4" OD HSA
 Remarks 5 Gallons of portable water was to hydrate the seal
seal installed in 1 foot layer

Piez./Well No. QAZP-W02
 Project No. 23-20000026.00
 Date 4-5-00 Time 4:45pm



B-14

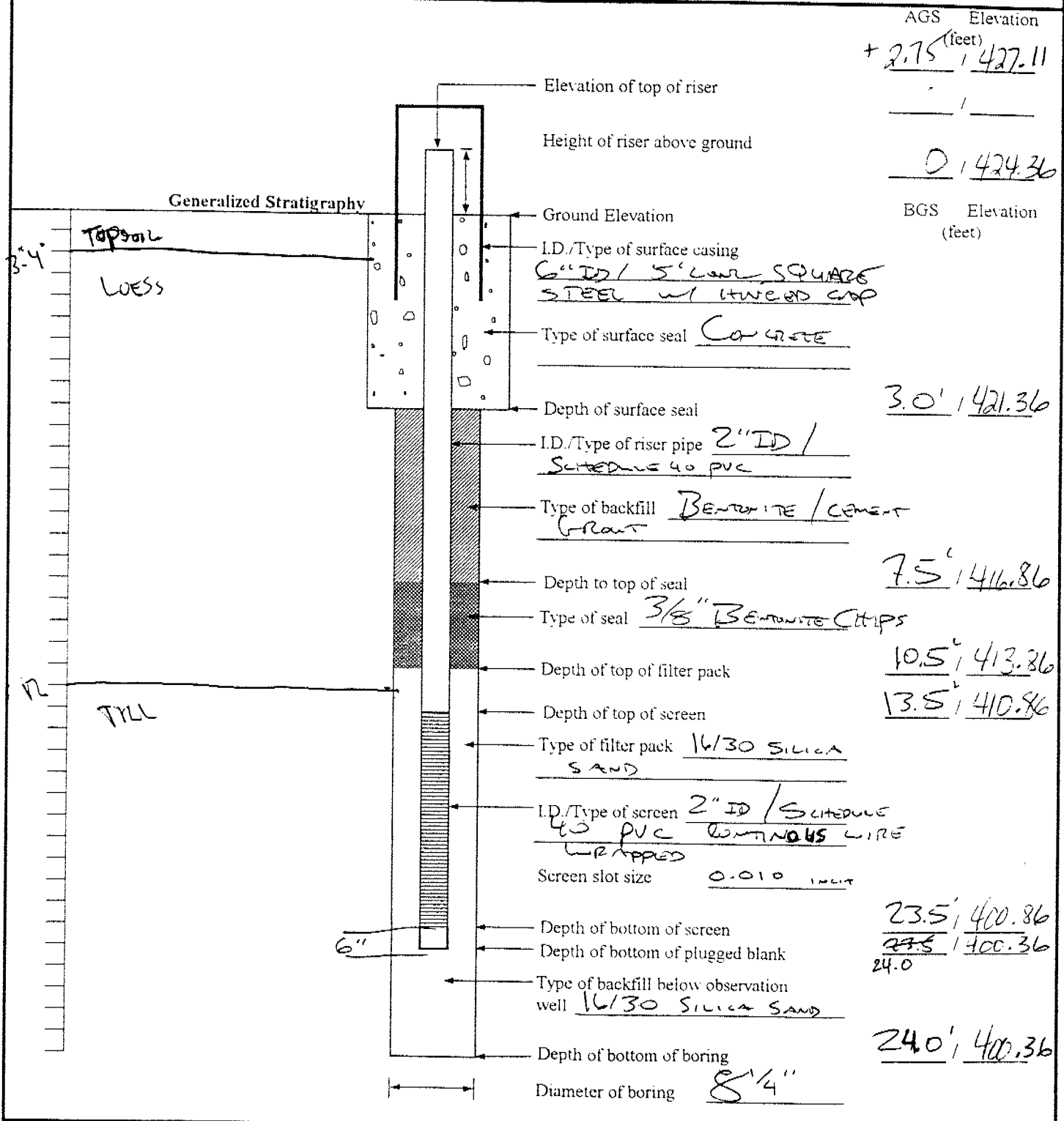
MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MASON, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITSCHE
 Method of Installation 44" ID x 8'4" OD HSA
 Remarks 5-GALLONS OF POTABLE WATER USED TO HYDRATE SEAL
SEAL INSTALLED IN 1' FOOT LIFTS

Piez./Well No. 0A2P-W03
 Project No. 23-2000026.00
 Date 4-4-00 Time _____

AGS Elevation
 + 2.75 (feet)
1427.11

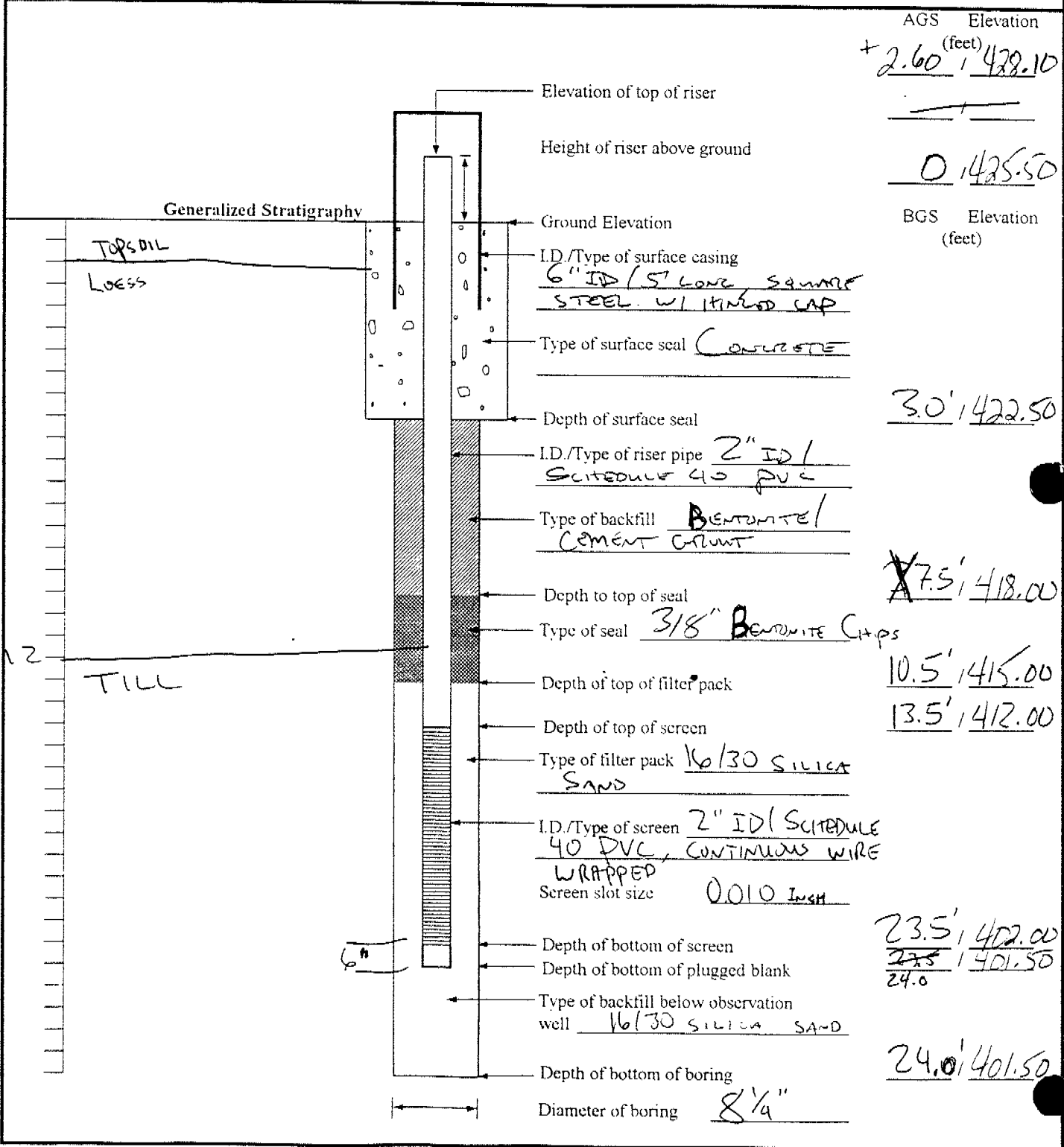
BGS Elevation
 (feet)



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB Orchard Aus On
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRUTSCH
 Method of Installation 4 1/2" x 8 1/4" OD HSA
 Remarks S-COLUMNS OF POTABLE WATER USED TO HYDRATE THE SEAL. SEAL INSTALLED IN 1-FOOT LIFTS

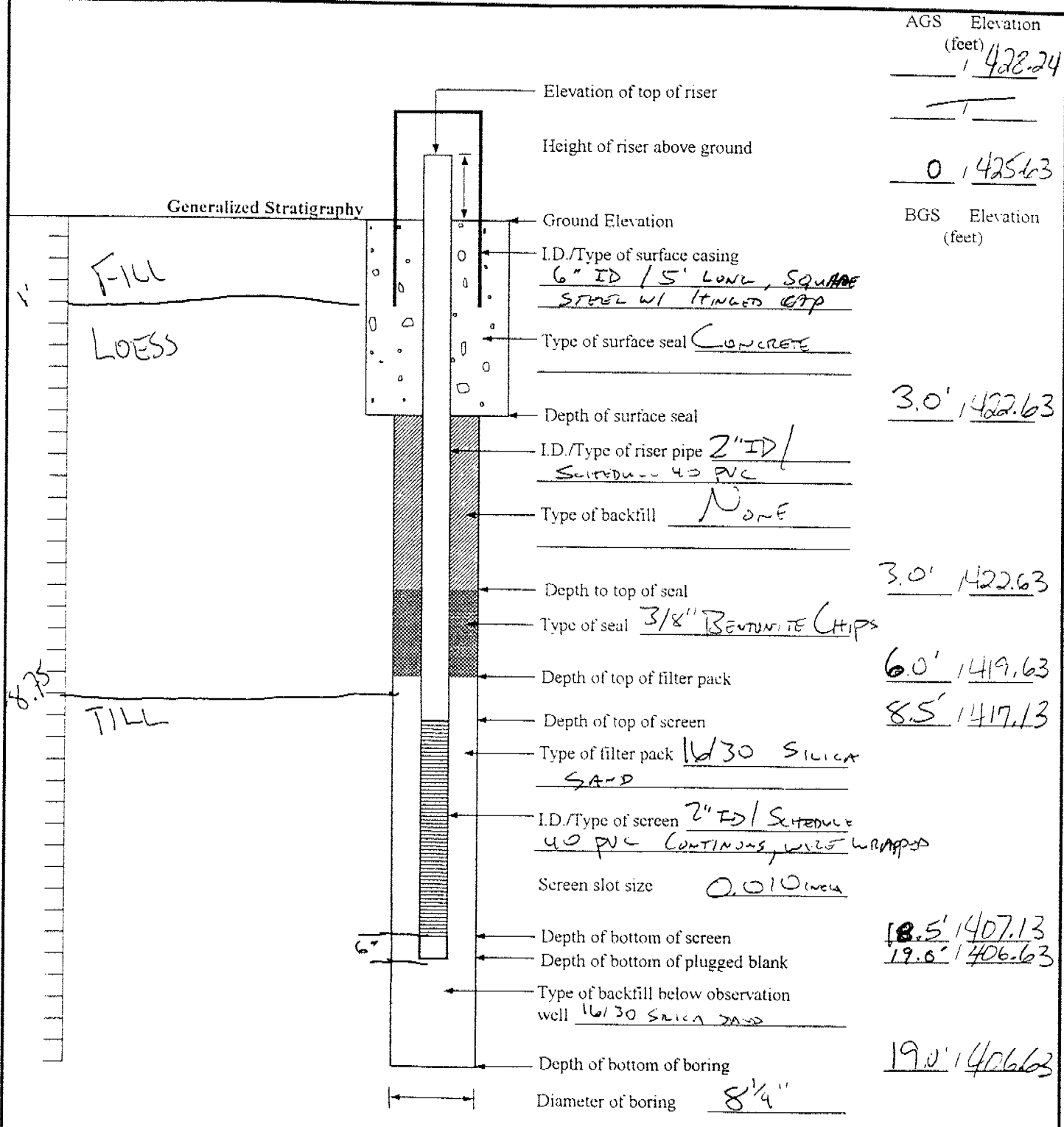
Piez./Well No. 0A2P-W04
 Project No. 23-2000026.00
 Date 4-4-00 Time 13:00



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZSCH
 Method of Installation 4 1/4" ID x 8 1/4" OD HSA
 Remarks SEALERS OF POTASSIUM WATER WAS USED TO HYDRATE THE
SEM. THE SEM WAS HYDRATED IN 1 ROW WATERS

Piez./Well No. 0A2P-W05
 Project No. 23-2000026.00
 Date 4.6.20 Time 10:15

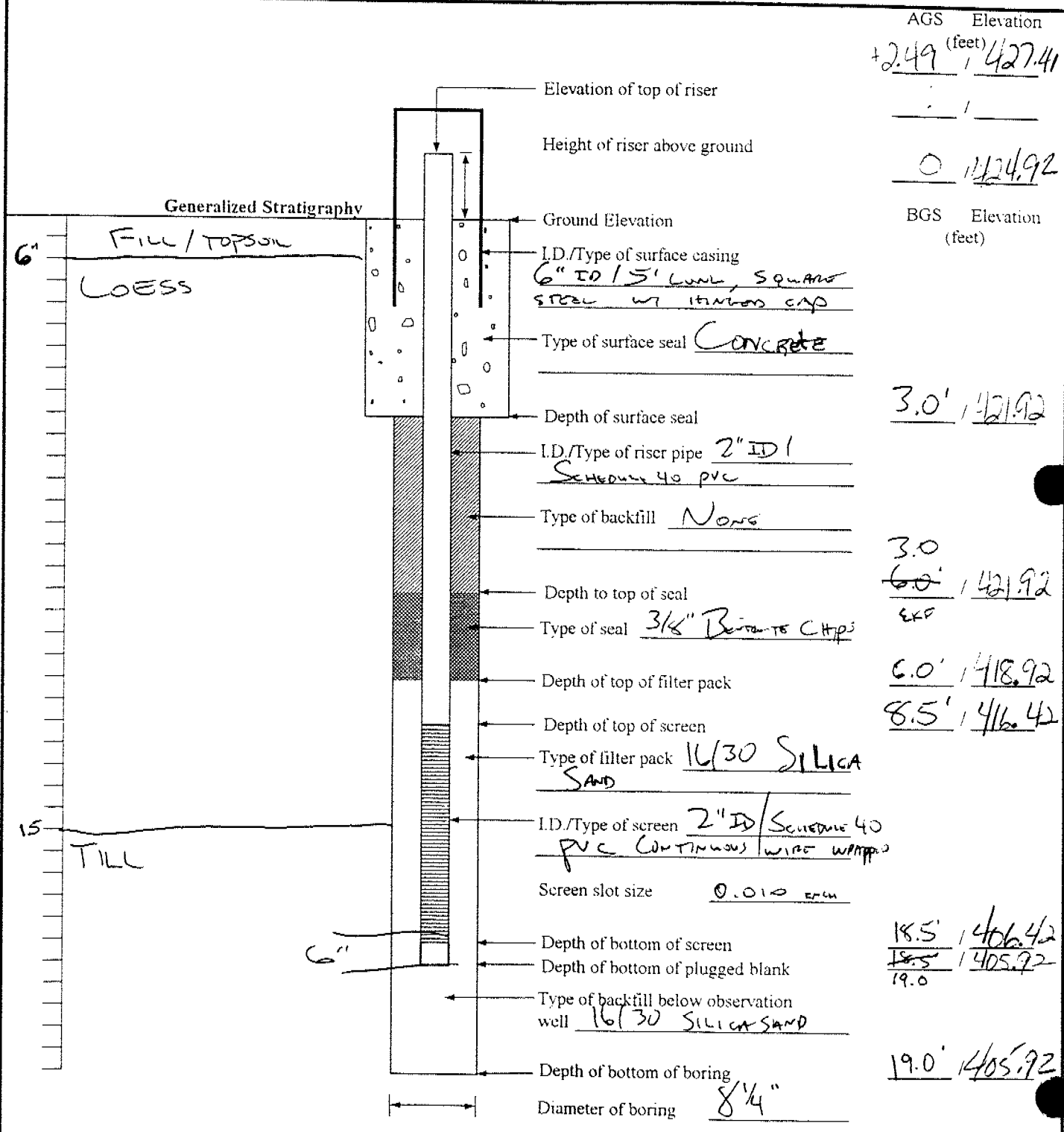


B-17

MONITORING WELL CONSTRUCTION LOG

Project Name Craig Orchard Area
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZSEN
 Method of Installation 4 1/4" ID x 8 1/2" OD HSA
 Remarks 5' COLLARS OF POTENTIAL WATER LOSS TO HYDRATE TITE SEAL, SEAL INSTALLED IN 1-FOOT COLLARS

Piez./Well No. 0A2P-W06
 Project No. 23-2000026.00
 Date 4-4-00 Time 10:00

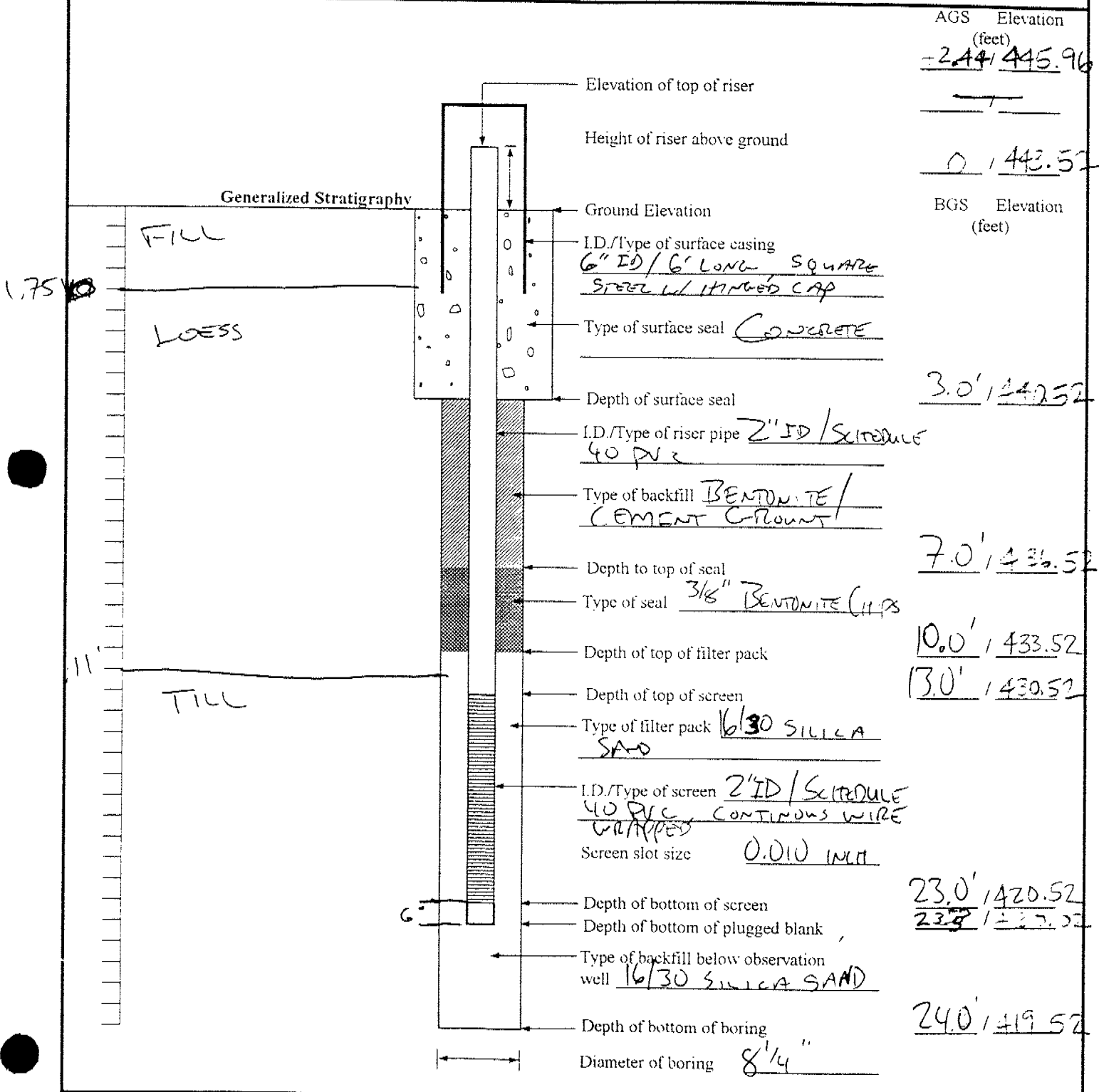


B-18

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD Ams on
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By AM FRITZ
 Method of Installation 4 1/2" ID x 8 1/2" OD HSA
 Remarks 5-gallons of portable water was used to hydrate the seal. The seal was hydrated in 1-foot lifts

Piez./Well No. 04E-W01
 Project No. 23-2000026-00
 Date 4-7-00 Time 10:00

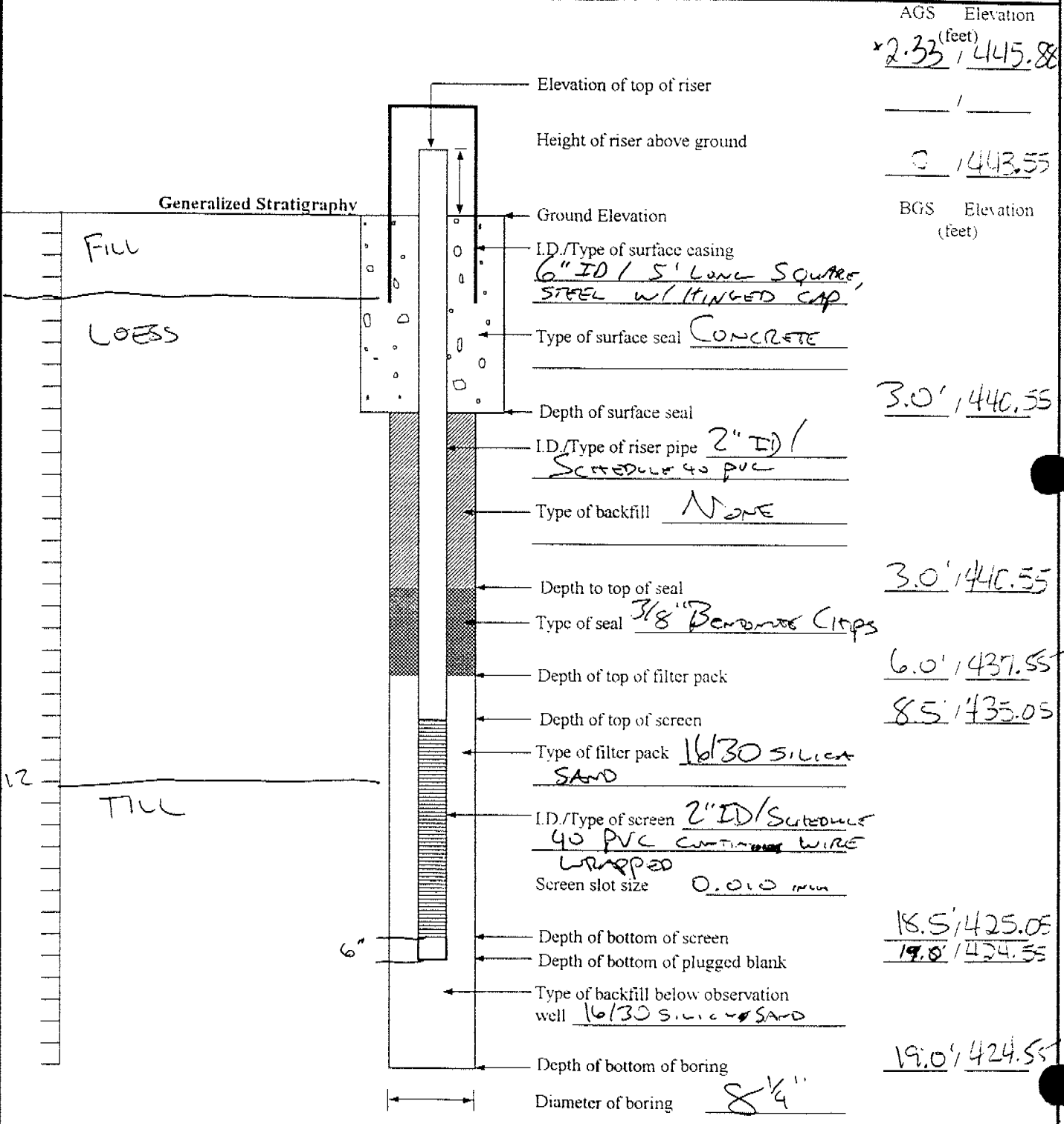


B-19

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location MARION, ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITSCH
 Method of Installation 4 1/4" ID x 8 1/4" OD HSA
 Remarks 5-GALLONS OF POTABLE WATER USED TO HYDRATE THE SOIL. BENTONITE HYDRATED IN 1 FEET LIFTS

Piez./Well No. 04E-W02
 Project No. 23-2000526.00
 Date 4-6-00 Time 19:00

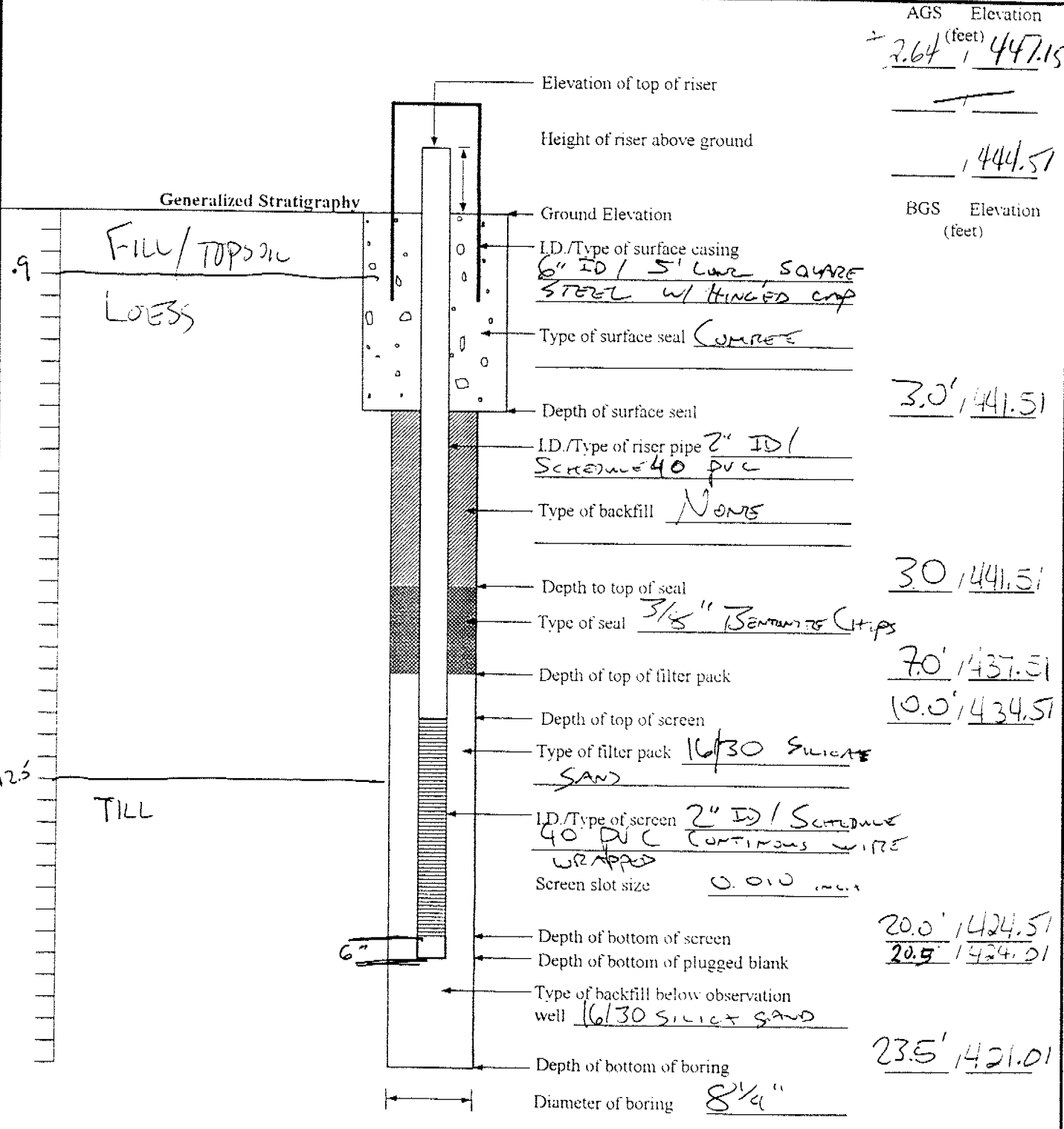


B-20

MONITORING WELL CONSTRUCTION LOG

Project Name CRAS Orchard AUS ON
 Location MARION ILLINOIS
 Installed By PHILIP ENVIRONMENTAL SERVICES
 Inspected By ERIC FRITZ
 Method of Installation 4 1/2" ID x 8 1/2" OD HSA
 Remarks 5 GALLONS OF POTABLE WATER WERE USED TO HYDRATE THE SEAL. SEAL WAS INSTALLED IN 1-Foot LIFTS

Piez./Well No. DALE-W03
 Project No. 23-200002600
 Date 4-6-00 Time 14:38

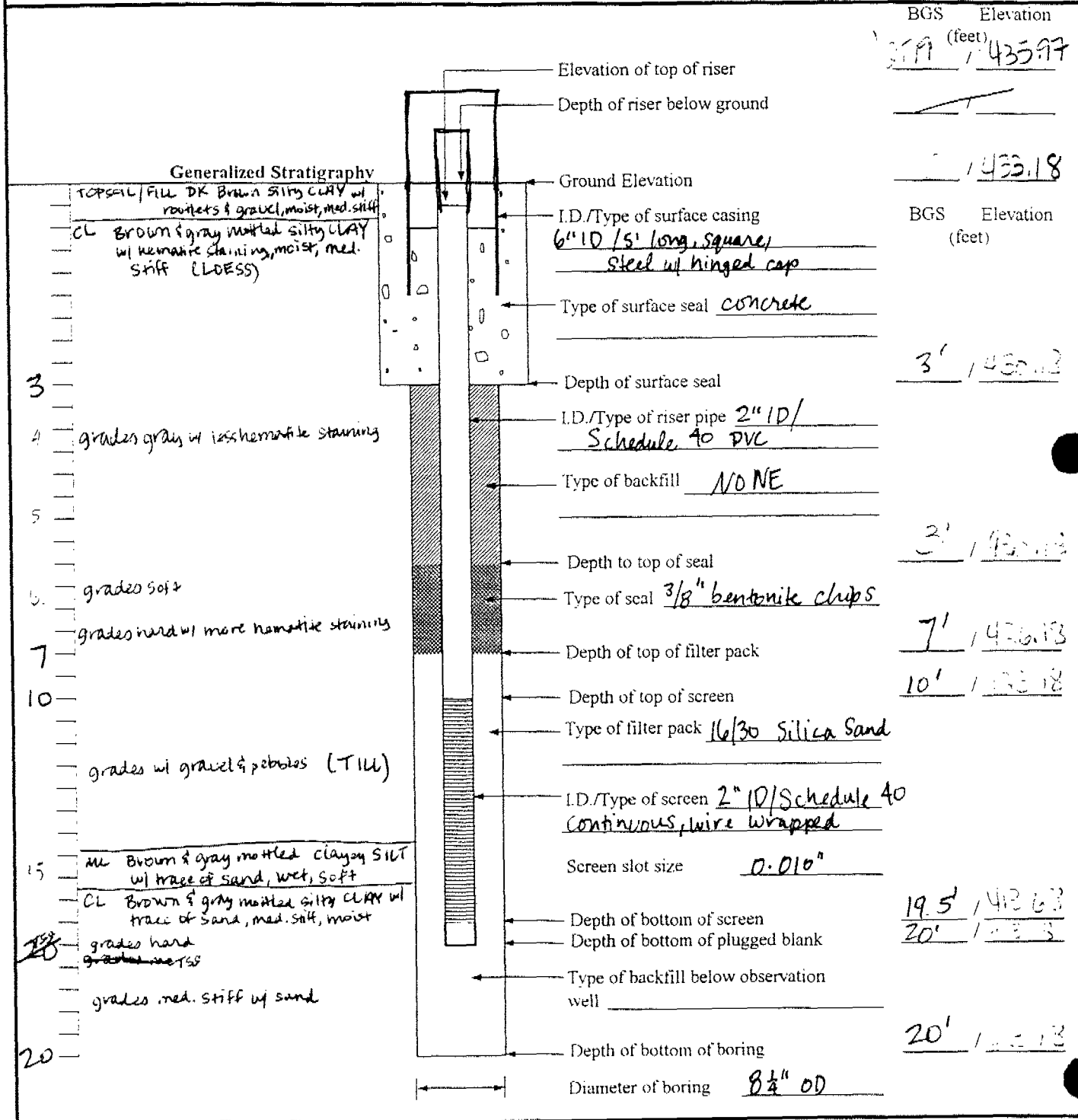


B-21

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS 00
 Location Crab Orchard Wildlife Refuge Marion, IL
 Installed By Philip Environmental
 Inspected By Tiffany Swoveland
 Method of Installation 4 1/4" ID 8 1/4" OD HSAs
 Remarks 4 gallons of water introduced

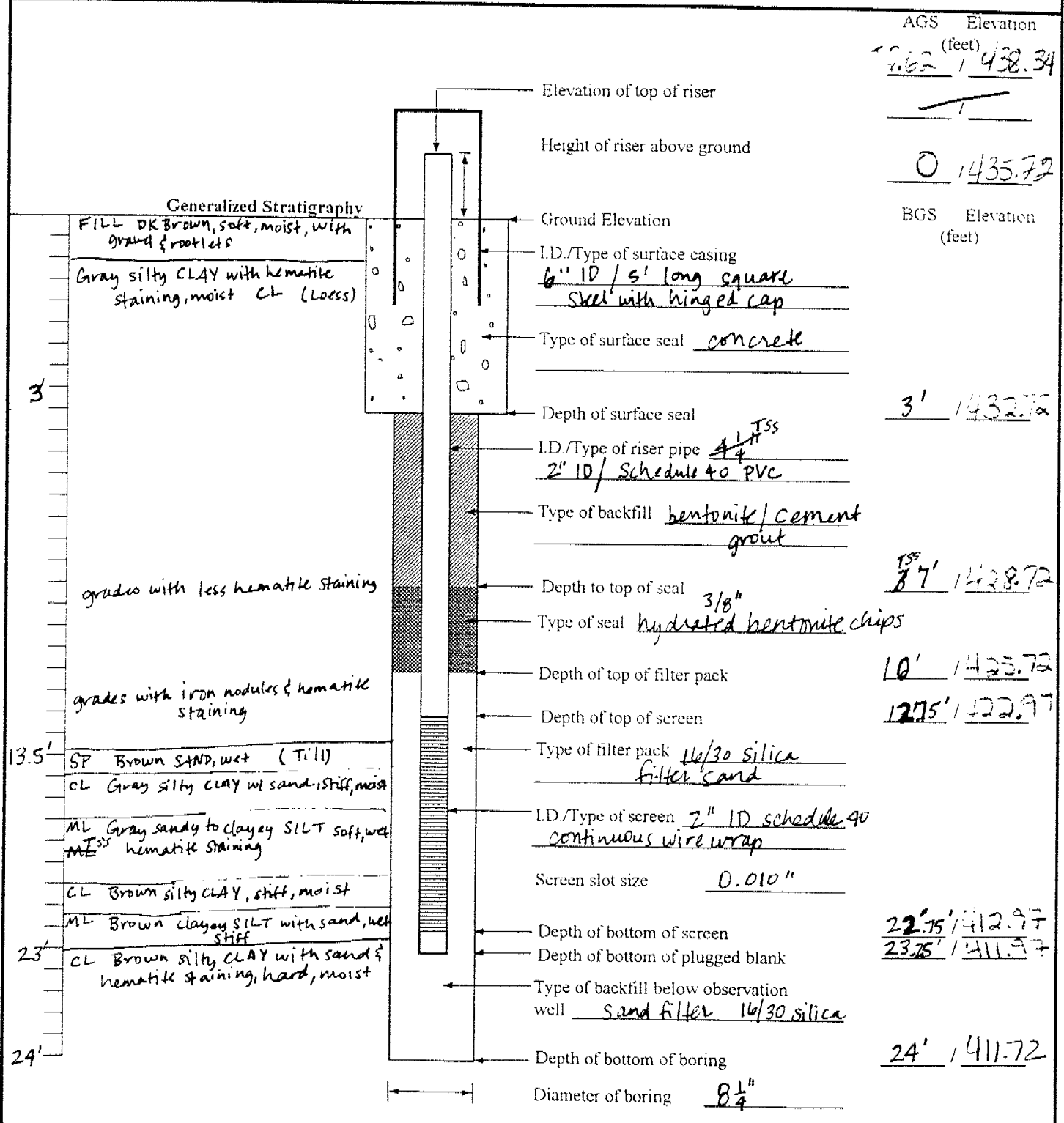
Piez./Well No. AUS-0ABS-W01
 Project No. 23-2000026.00
 Date 4/19/00 Time 0730



MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS 00
 Location Crab Orchard Wildlife Refuge
 Installed By Philip Environmental
 Inspected By Tiffany Someland
 Method of Installation 4 1/2" ID 8 1/4" OD HSAs
 Remarks _____

Piez./Well No. 0AGS-1002
 Project No. _____
 Date 4-11-00 Time 0758

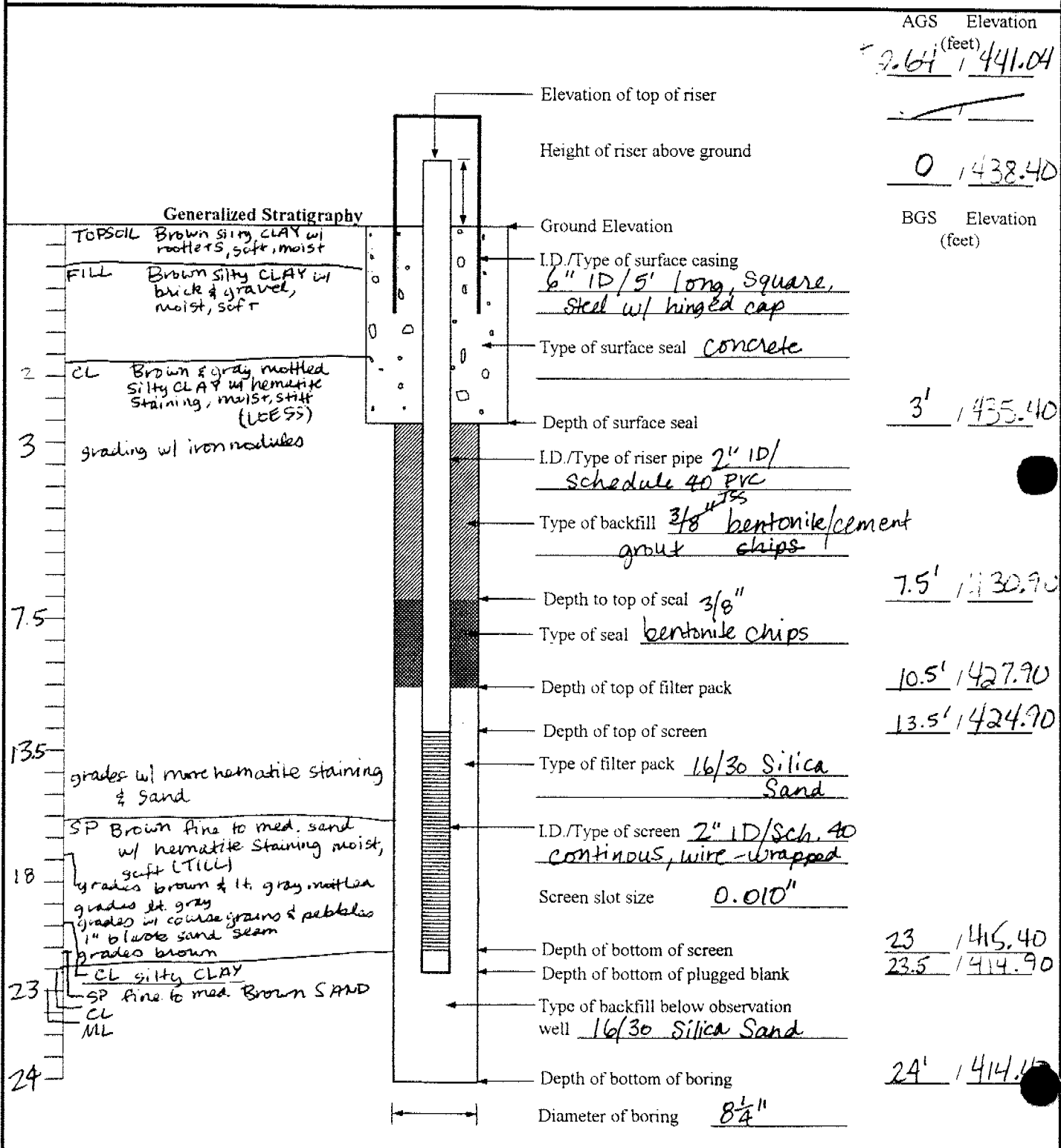


MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS OU
 Location Crab Orchard Wildlife Refuge Marion, IL
 Installed By Jessy B. W. Philip Environmental
 Inspected By Tiffany Summeland
 Method of Installation 4" ID 8 1/4" OD HSA

Piez./Well No. AUS-0A8S-WP-3
 Project No. 23-20000026.00
 Date 4/17/00 Time 1508

Remarks * 6.5 gallons of water used during installation

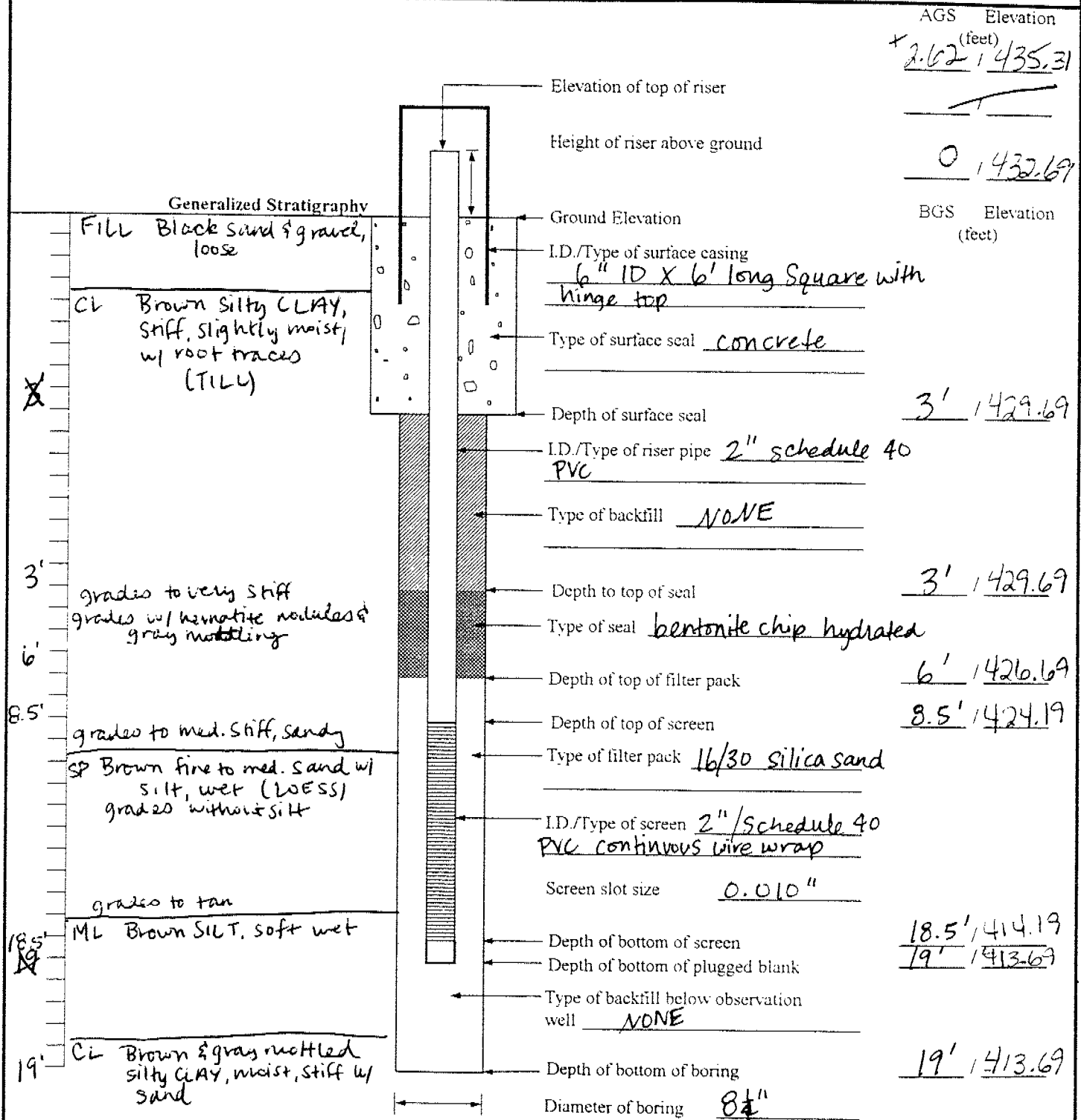


B-24

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS-00
 Location Area B South
 Installed By Philip Environmental
 Inspected By Tiffany Swoveland
 Method of Installation 4 1/4" ID & 8 1/4" OD HSA
 Remarks hydrated bentonite seal, 5 gallons of water used for seal

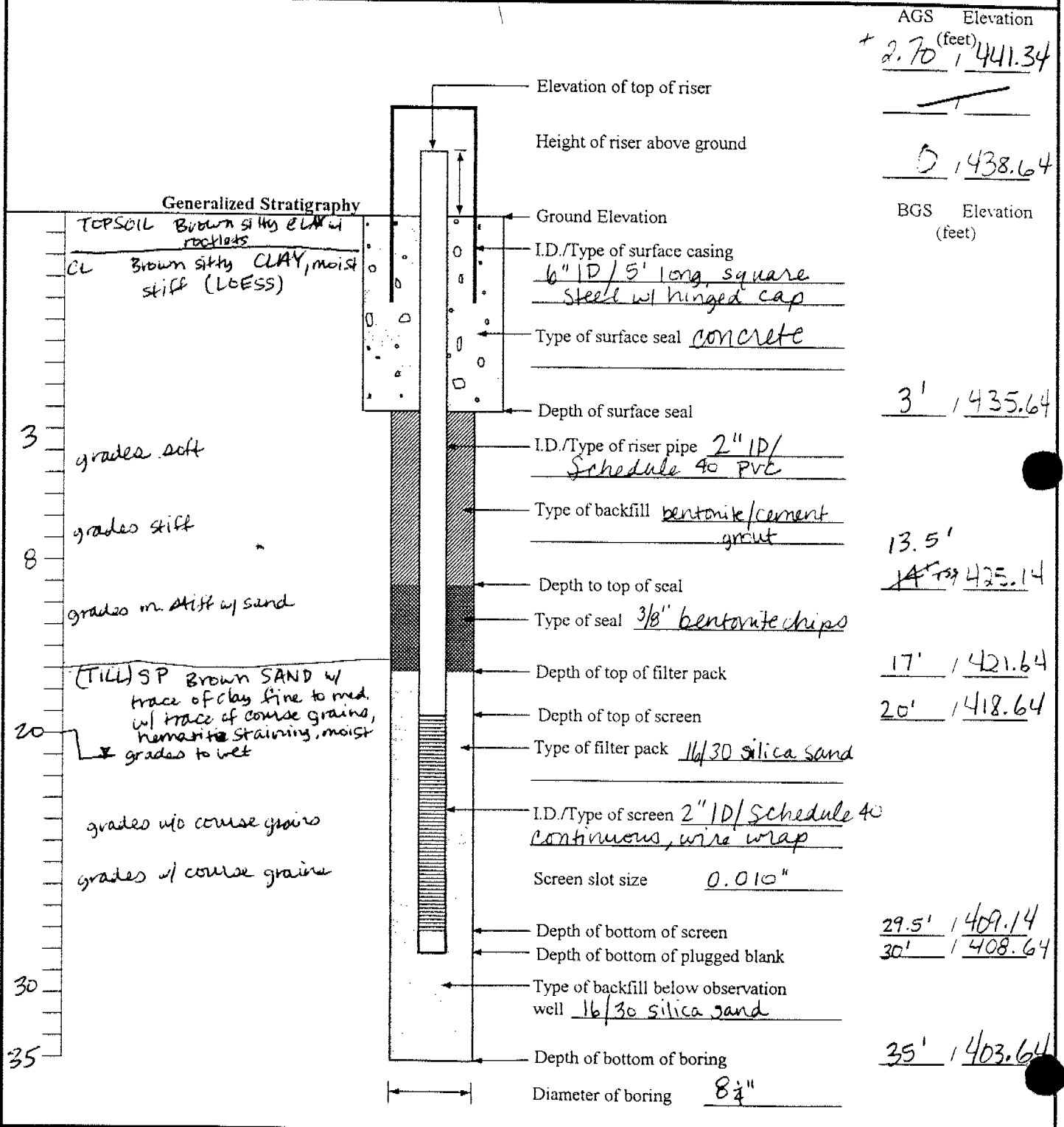
Piez./Well No. AUS-0485-W04
 Project No. 23-2000026-00
 Date 4-10-00 Time 14:00



MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AVS 00
 Location Crab Orchard Wildlife Refuge Marion, IL
 Installed By Philip Environmental
 Inspected By Tiffany Swaveland
 Method of Installation, 4 1/4" ID 8 1/4" OD HSA
 Remarks 5 gallons of water was used by driller during installation

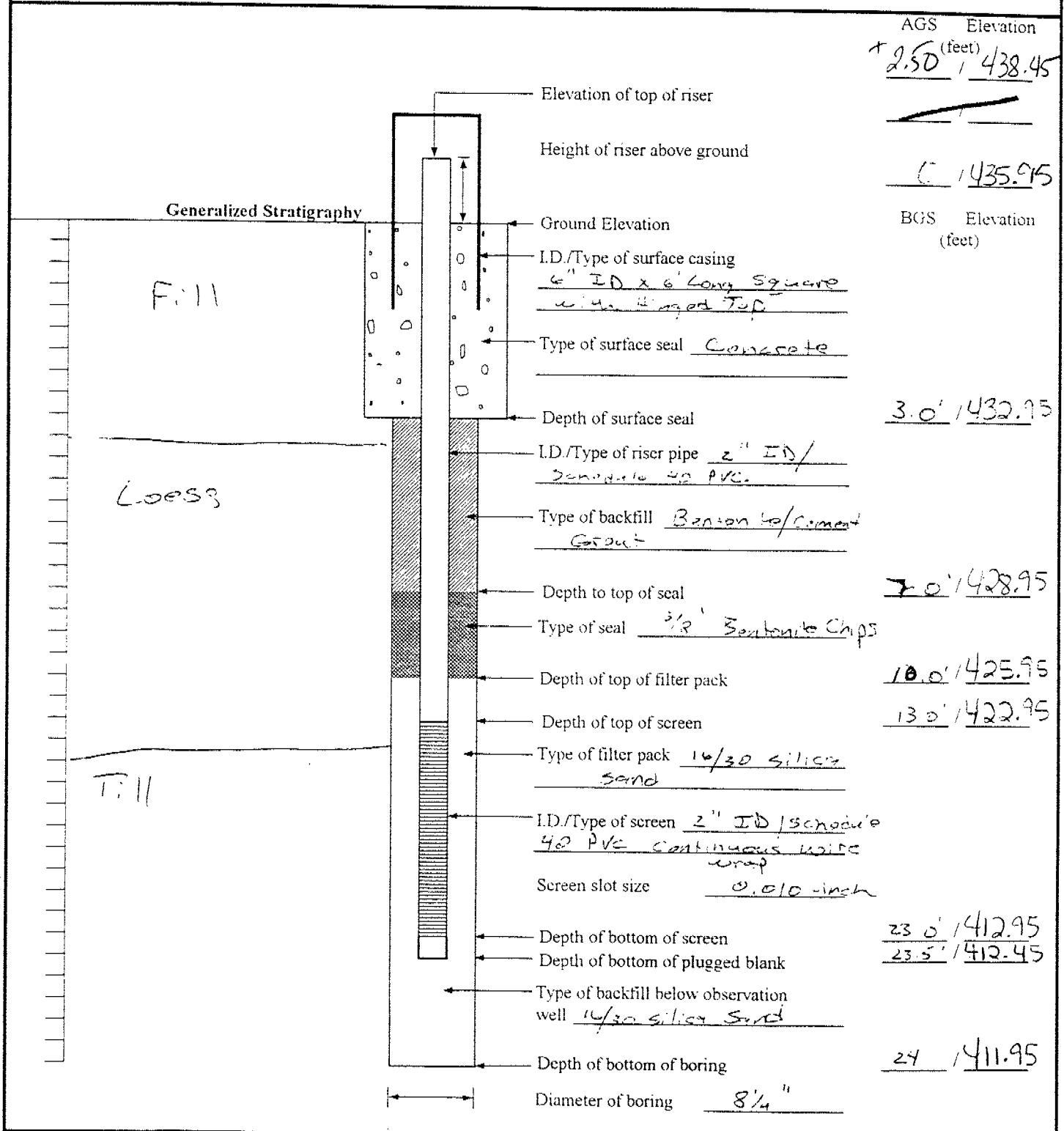
Piez./Well No. AVS-0495-wp5
 Project No. 23-20000026.00
 Date 4/13/00 Time 7:38



MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard ALUOU
 Location Marion, IA
 Installed By Phillip Environmental Services
 Inspected By Steven J. Shroff
 Method of Installation 4 1/4" ID and 5 1/4" OD ASA
 Remarks 5 gallons of potable water used to hydrate bentonite seal

Piez./Well No. 0A05-406
 Project No. 23-2000026-00
 Date 4/10/00 Time 0942

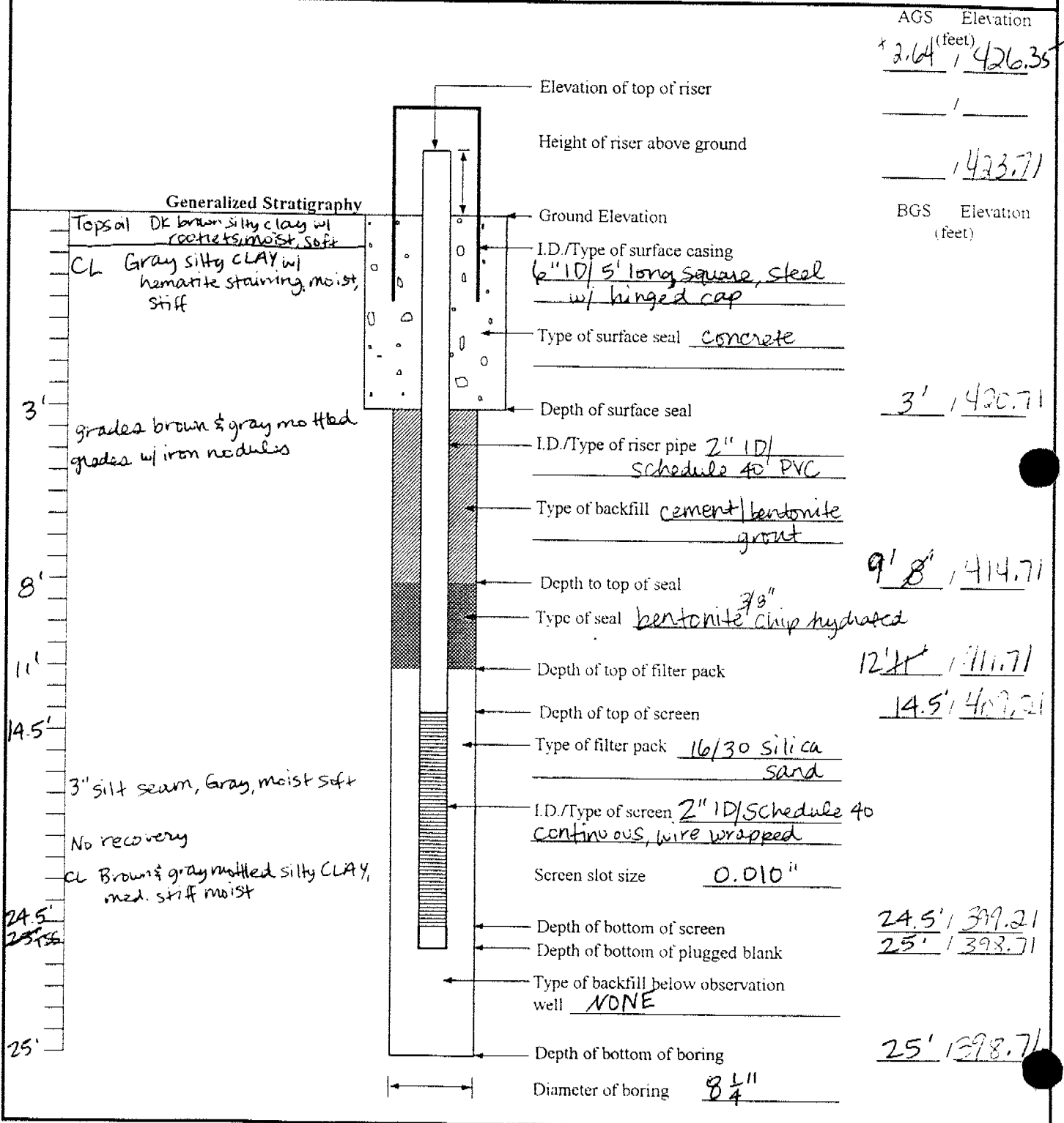


B-27

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS. 0U
 Location Crab Orchard Wildlife Refuge
 Installed By Philip Environmental
 Inspected By Tiffany Swoveland
 Method of Installation 4 1/4" ID / 8 1/2" OD HSAS
 Remarks 2.5-3 gallons of water put in well by driller

Piez./Well No. AUS-0A09-W01
 Project No. 23-20000026.00
 Date 4/11/00 Time 14:35

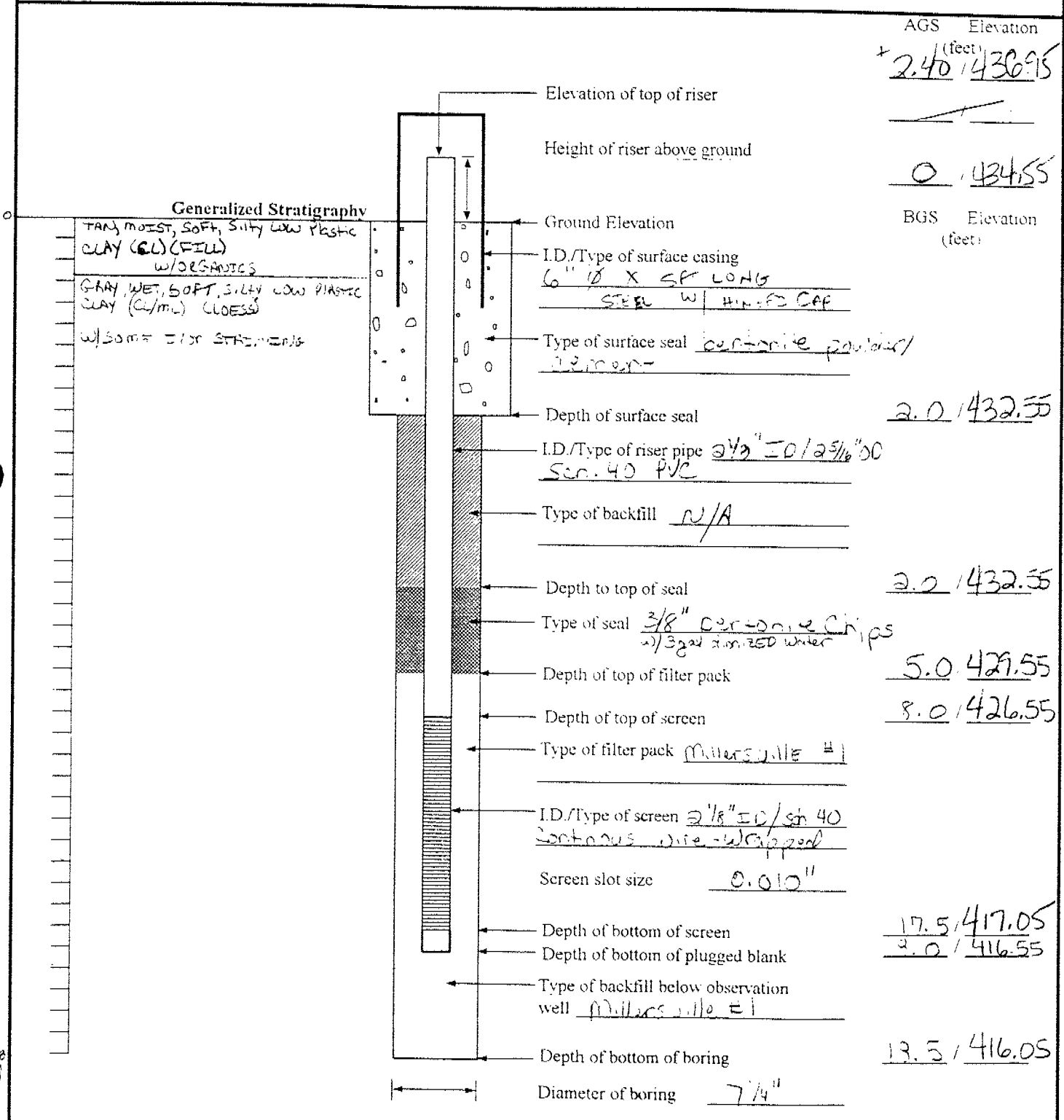


B-28

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AUS 04
 Location Crab Orchard Wildlife Refuge
 Installed By Chesapeake Geosystems
 Inspected By Tim Hicks
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

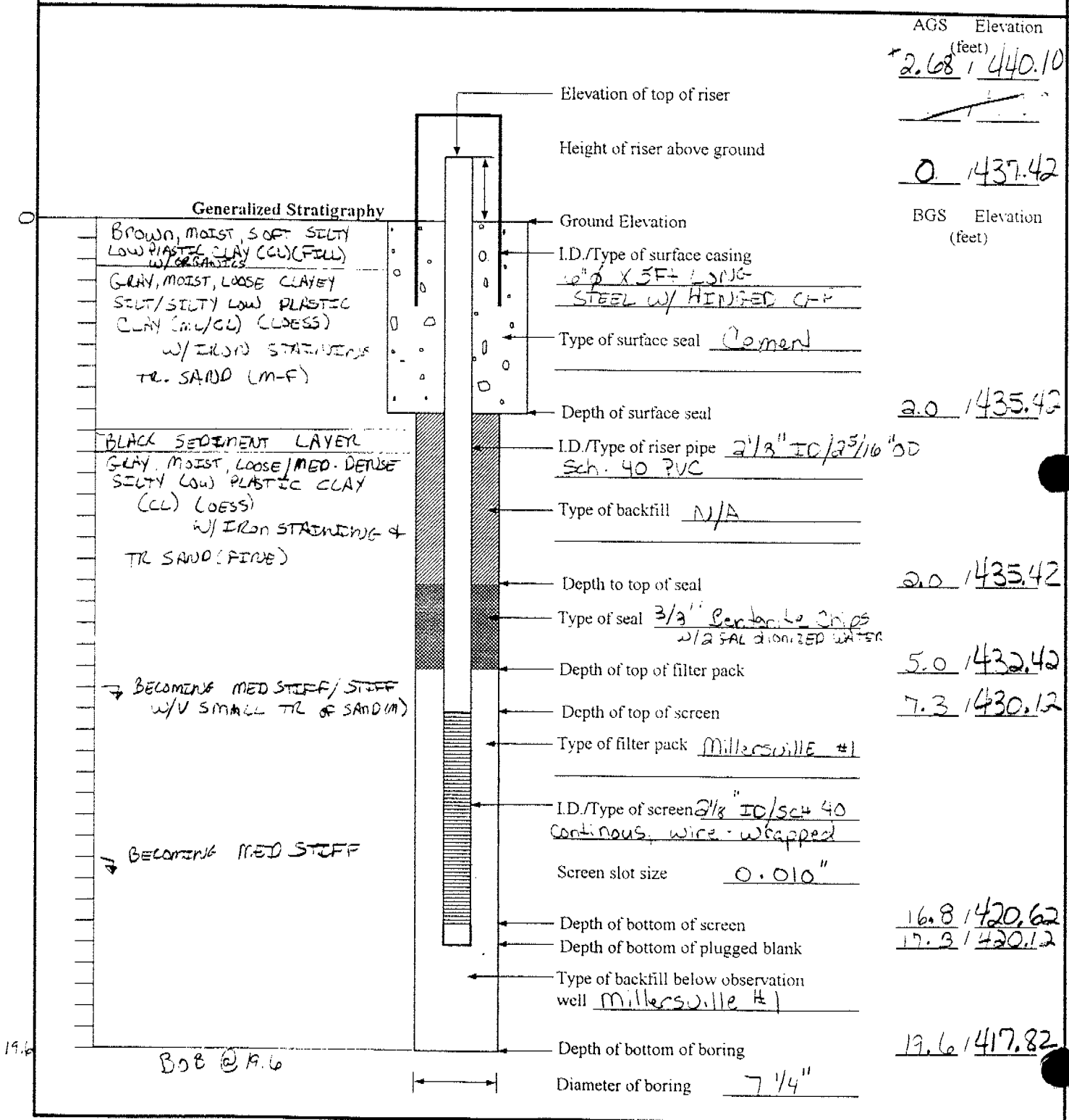
Piez./Well No. A11A - W01
 Project No. 2320000026.00
 Date 3/21/00 Time 1415



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By TIM HICKS
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

Piez./Well No. A11A-W02
 Project No. 2320000026.00
 Date 3/22/00 Time 10:05

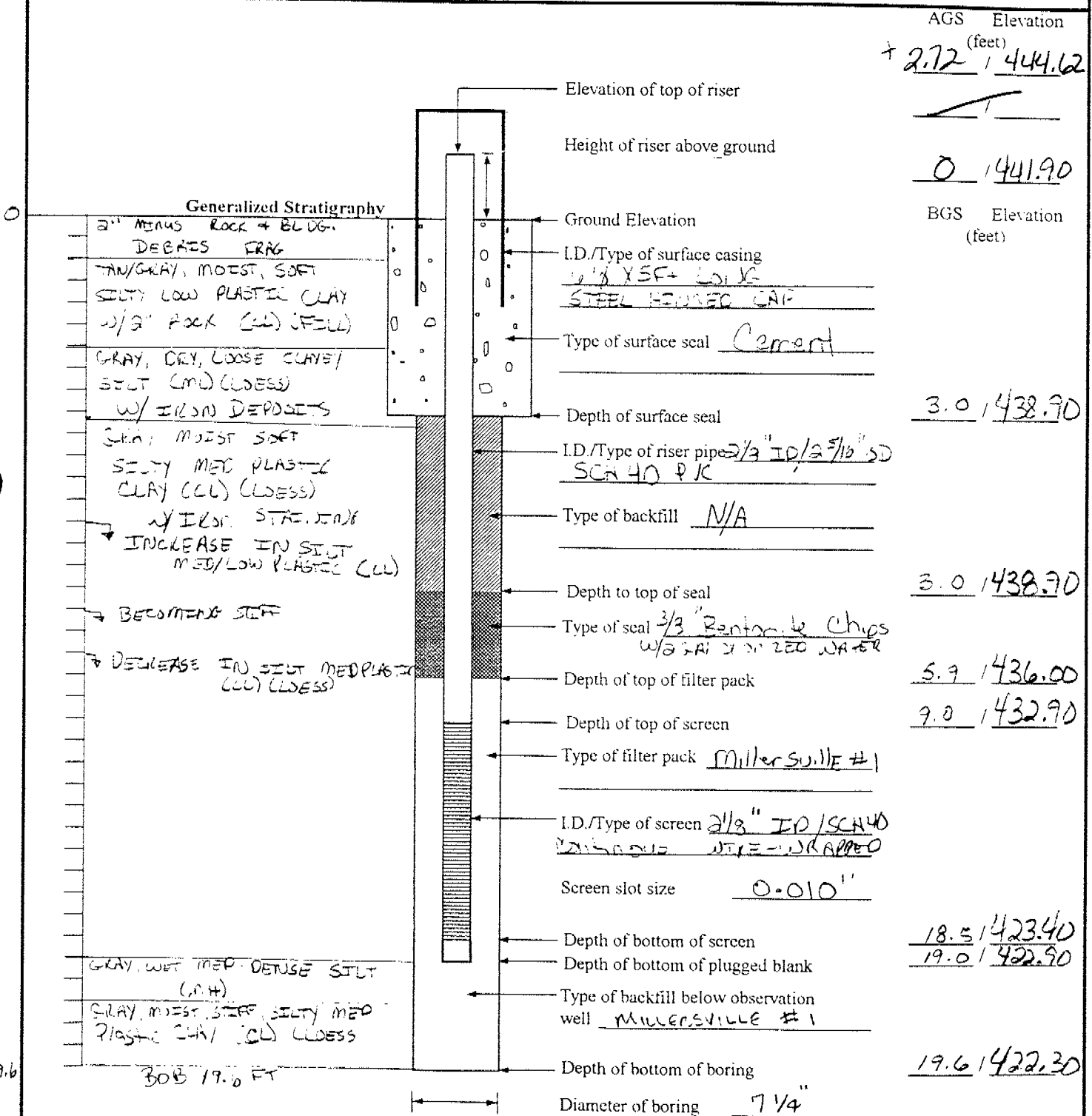


B-30

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS ON
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By T. HICKS / K. JINKELSON
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

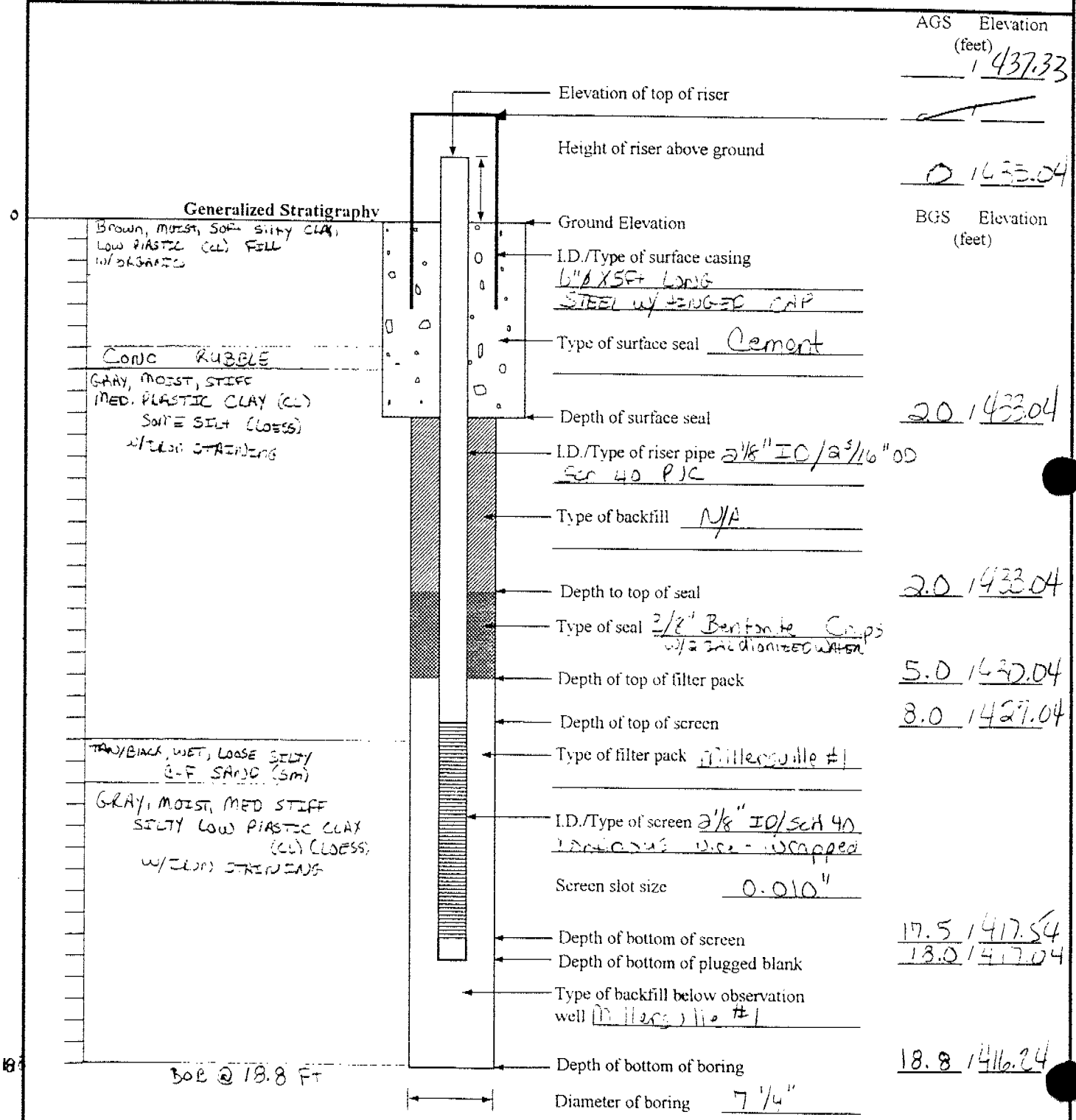
Piez./Well No. A11H - W01
 Project No. 2320000026.00
 Date 3/23/00 Time 0955



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUC ON
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CAESA PEAKE GEOSYSTEMS
 Inspected By T. HICKS / K. JINKERSON
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

Piez./Well No. AMS-211P-W01
 Project No. 2320000026.00
 Date 3/22/00 Time 1543

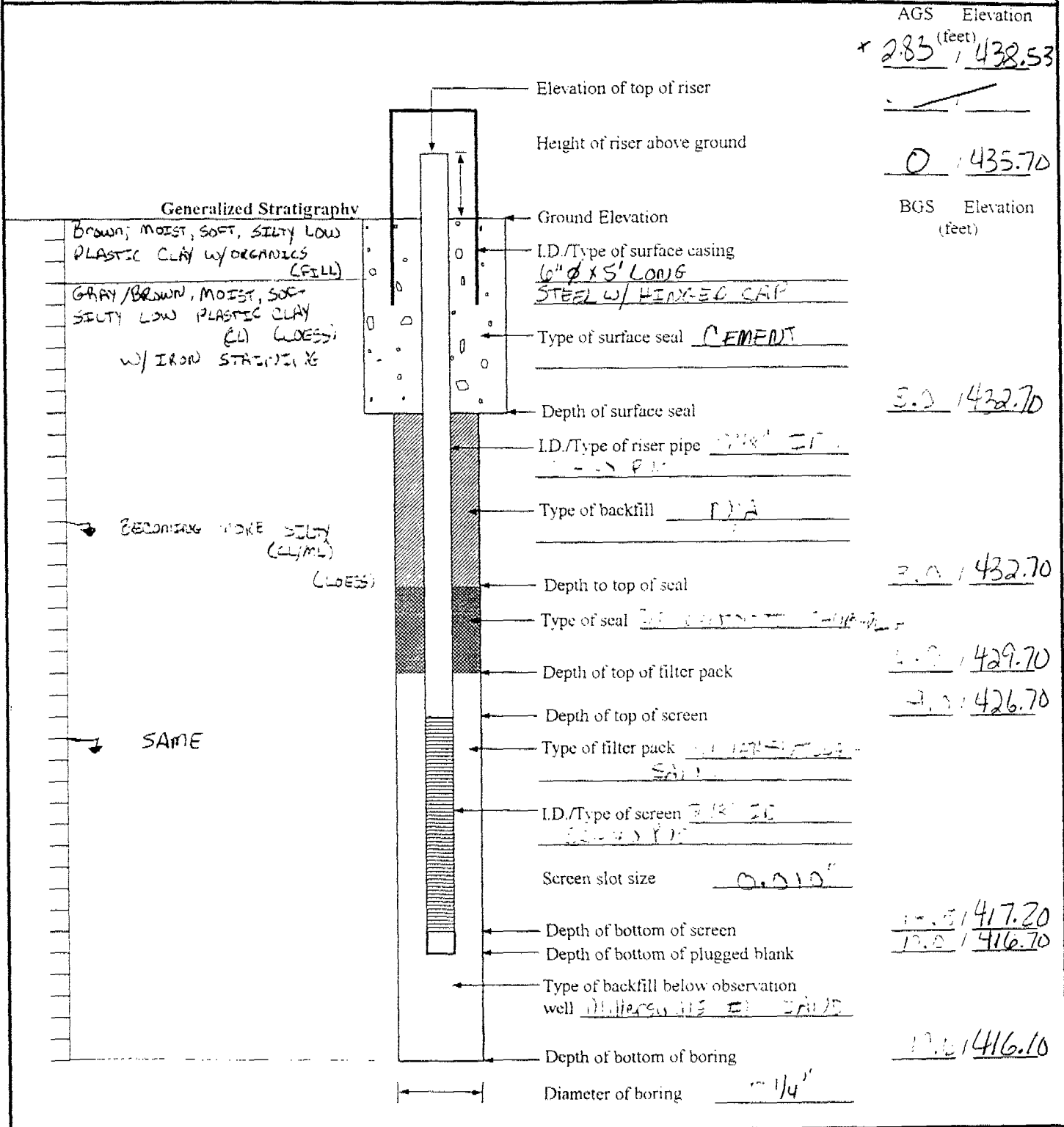


B-32

MONITORING WELL CONSTRUCTION LOG

Project Name CAAB ORCHARD AUS 04
 Location AUS-A115-W01
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By TIM HICKS / KIM JIMKERSON
 Method of Installation 4 1/4" ID / 7 1/4" O.D. HSA
 Remarks _____

Piez./Well No. A115-W01
 Project No. 2320000026.00
 Date 3/27/00 Time 0915

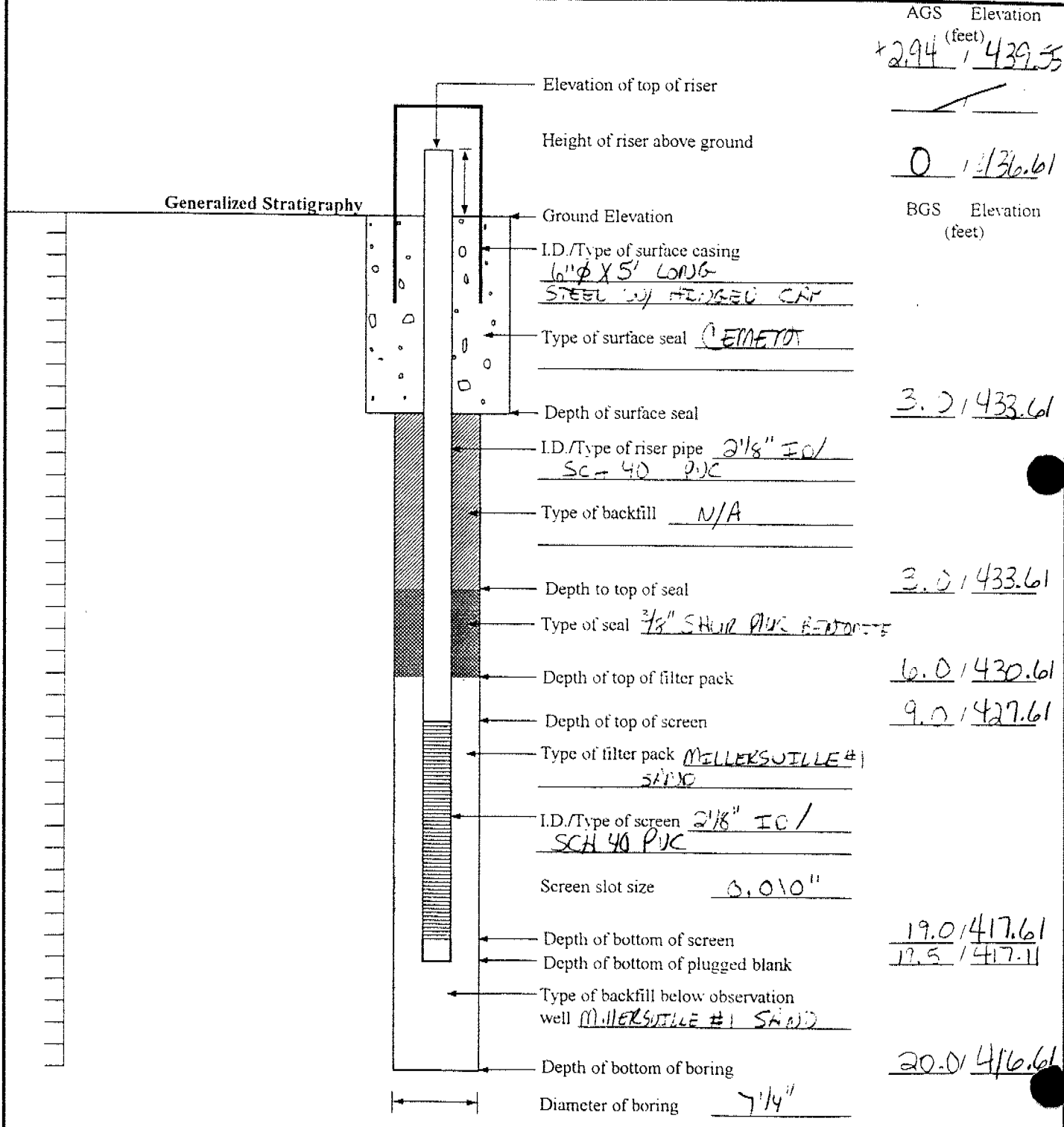


B-33

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 5U
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By TIM HICKS / KEM JENKINSON
 Method of Installation 7/4" ID / 7/4" OD HSA
 Remarks _____

Piez./Well No. A15-W02
 Project No. 2320000026.00
 Date 3/27/00 Time 14:00



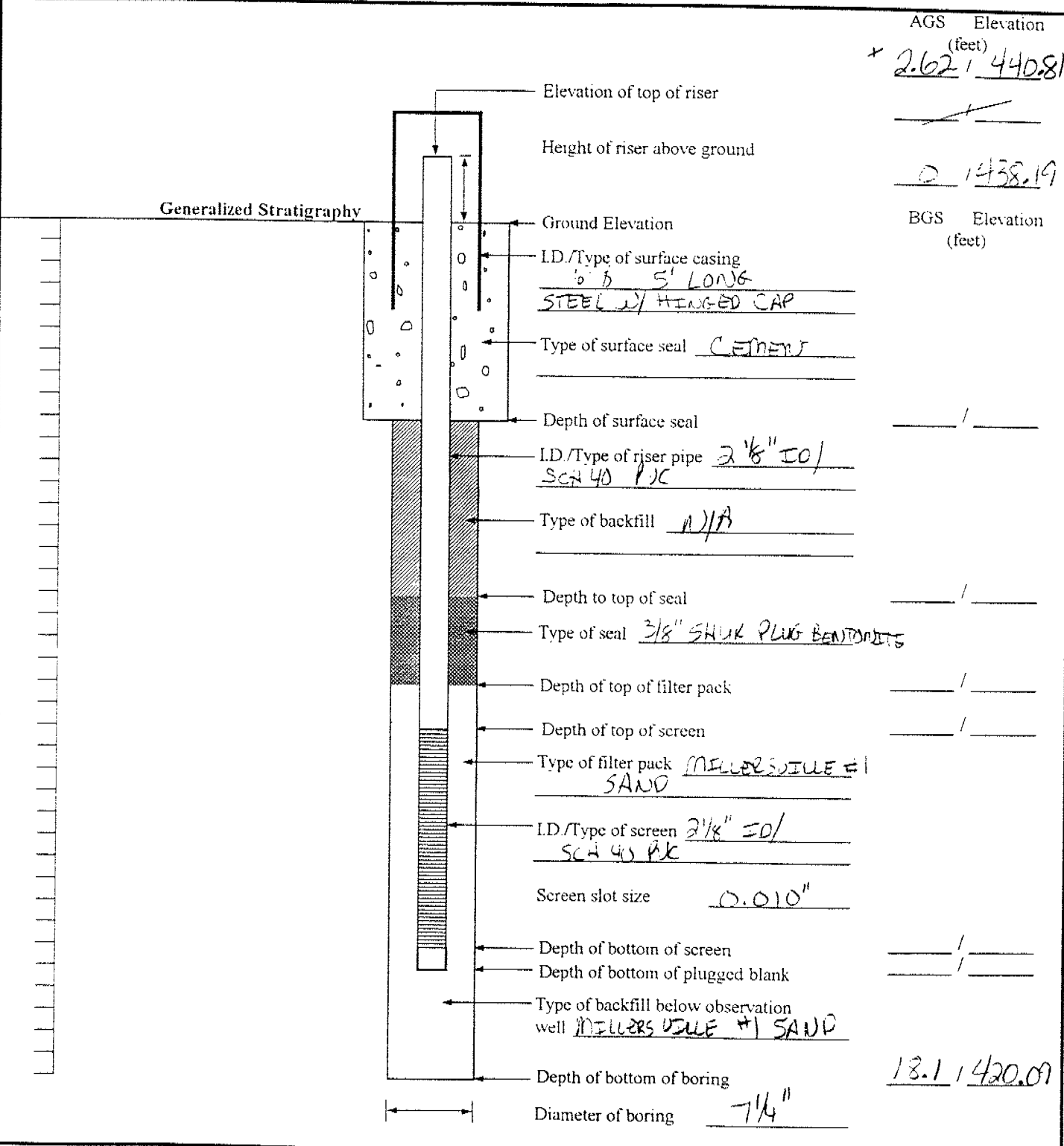
B-34

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS-04
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHECAPENKE GEOSYSTEMS
 Inspected By TIM HICKS / KIM JENKERSON
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA

Piez./Well No. A115-W03
 Project No. 2320000036.00
 Date 3/30/00 Time _____

Remarks _____

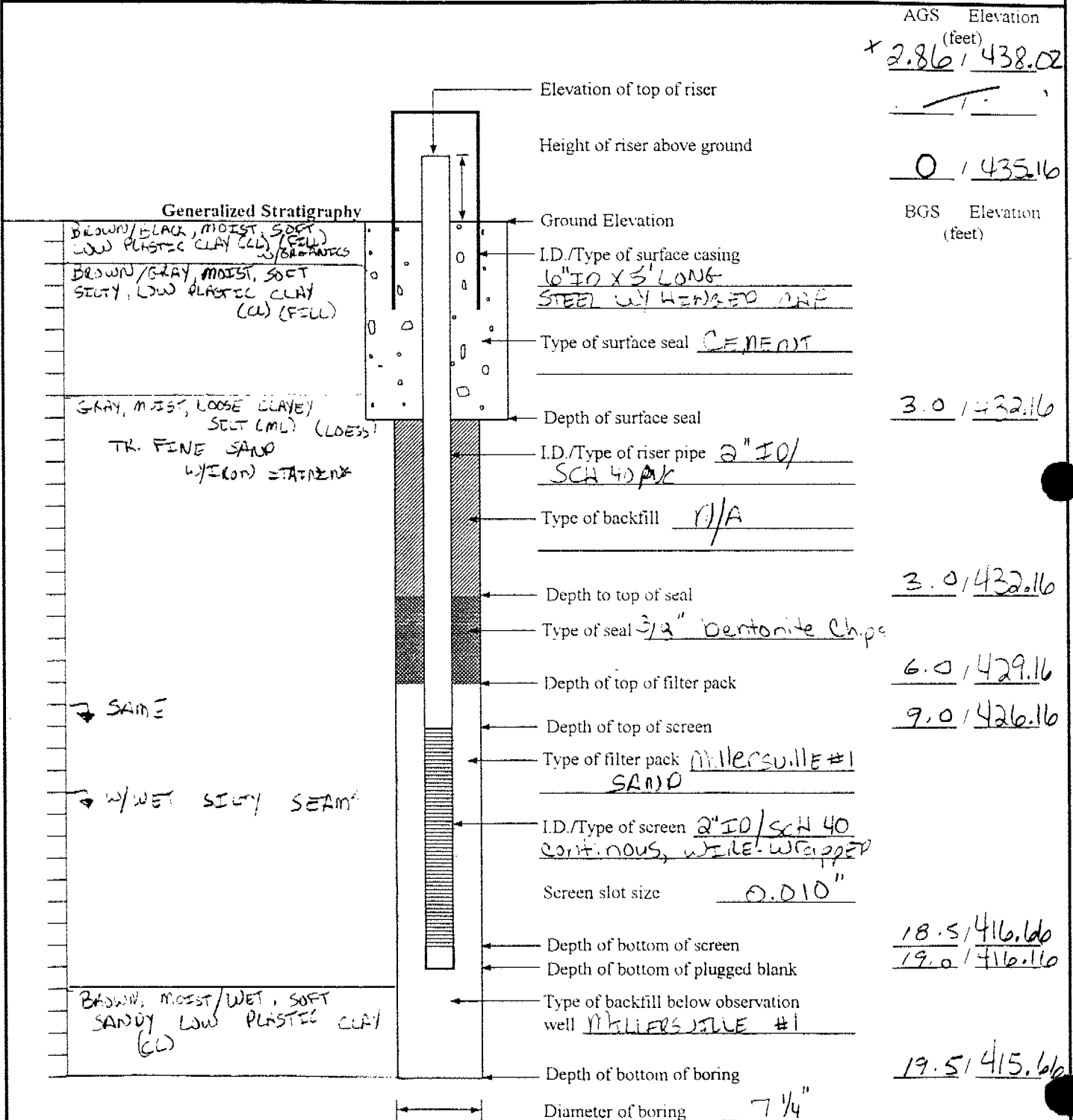


B-35

MONITORING WELL CONSTRUCTION LOG

Project Name CABORCHARD AUS OU
 Location CABORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By TIM HICKS/ KIM SIMPSON
 Method of Installation 4 1/4" ID / 7 7/8" OD HSA
 Remarks _____

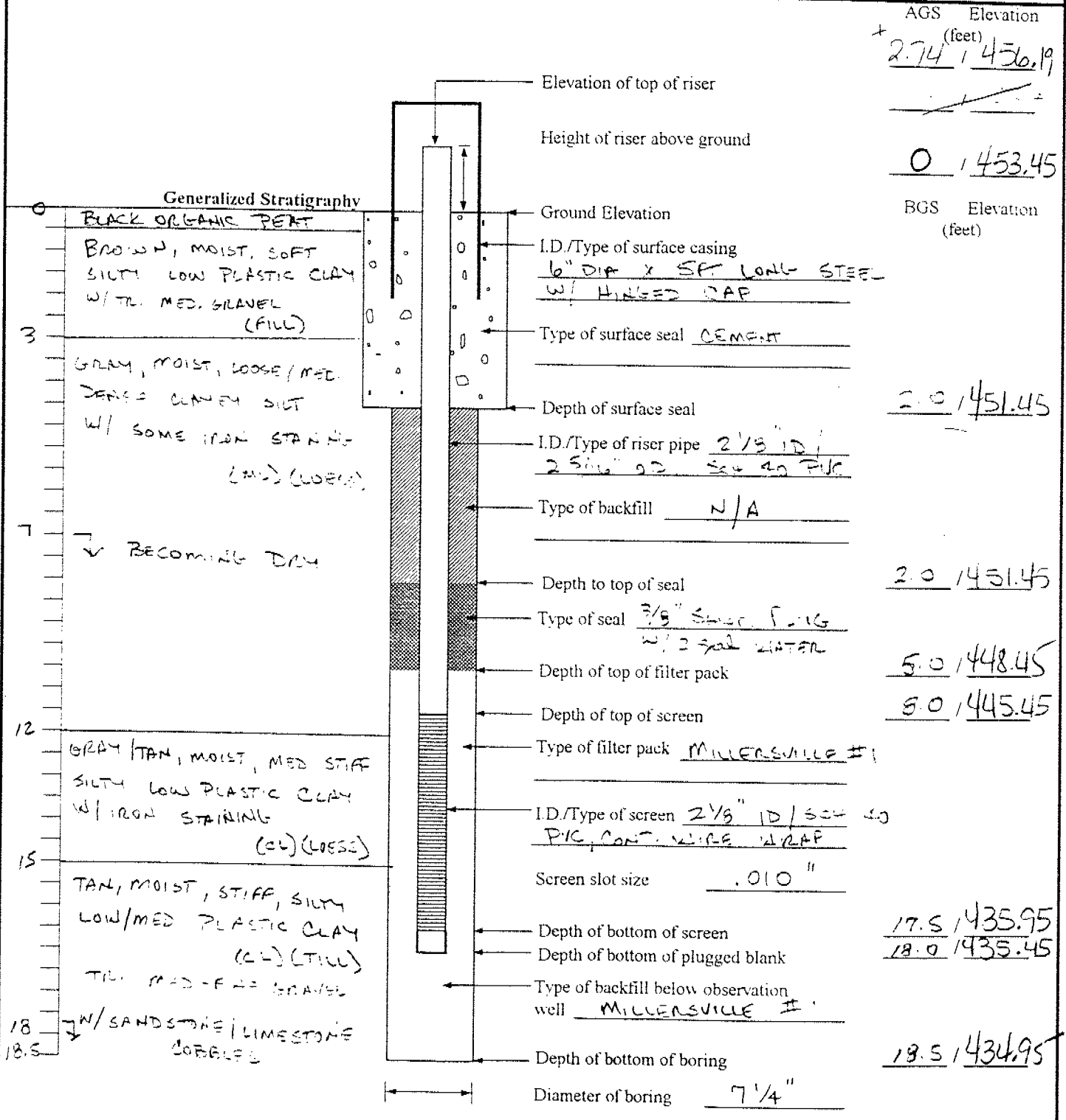
Piez./Well No. A115-40.4
 Project No. 2320000026.00
 Date 3/28/00 Time 0922



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AHS ON
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEOSYSTEMS
 Inspected By T. WICKS / K. J. ANDERSON
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

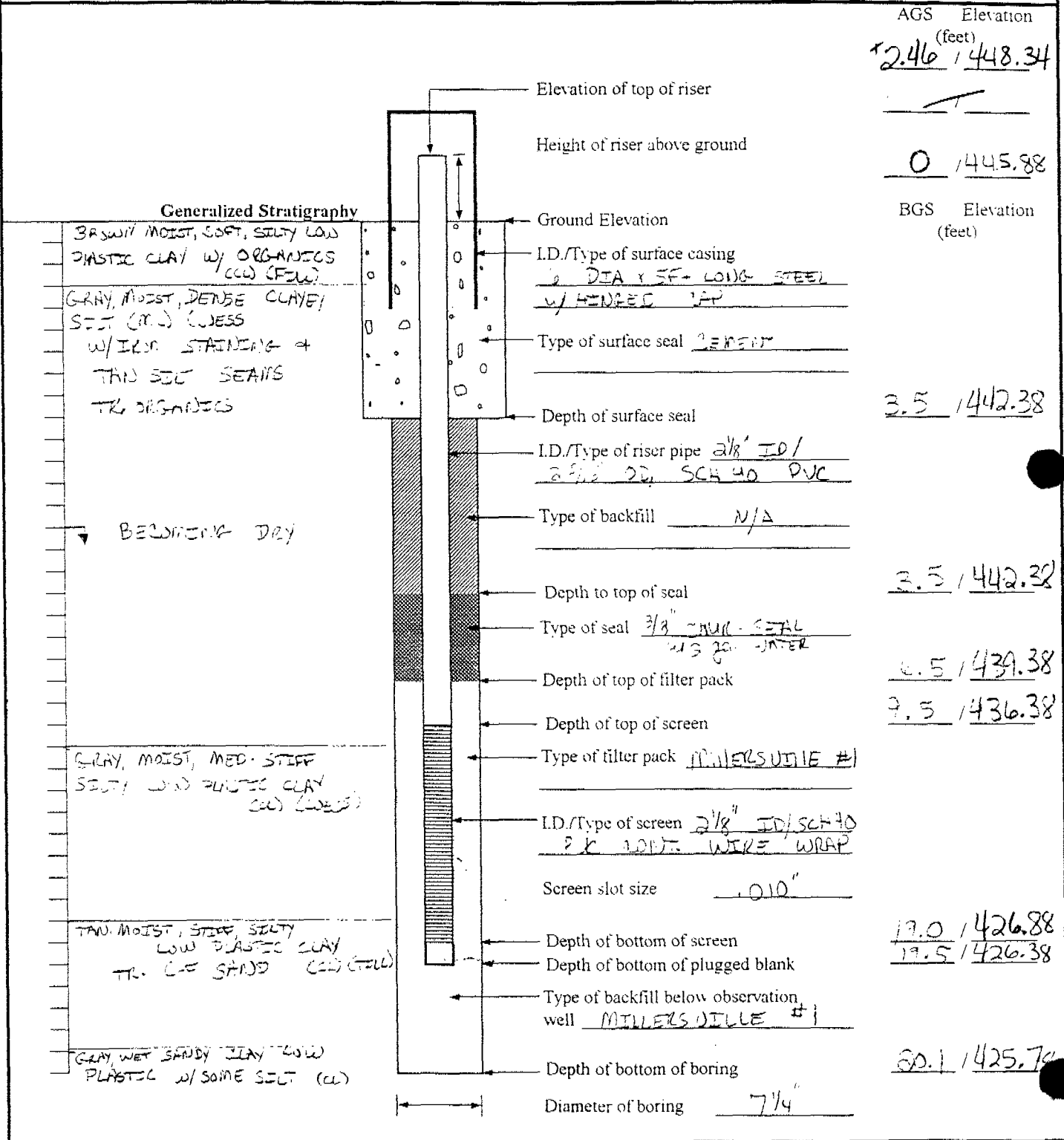
Piez./Well No. OA12-W01
 Project No. 2320000026.00
 Date 3/24/00 Time 0745



MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS OU
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By CHESAPEAKE GEDSYSTEMS
 Inspected By T HICKS / KIM JINKERSON
 Method of Installation 4 1/4" ID / 7 1/4" OD HSA
 Remarks _____

Piez./Well No. OA12-W02
 Project No. 8320000036.00
 Date 3/24/00 Time 12:35

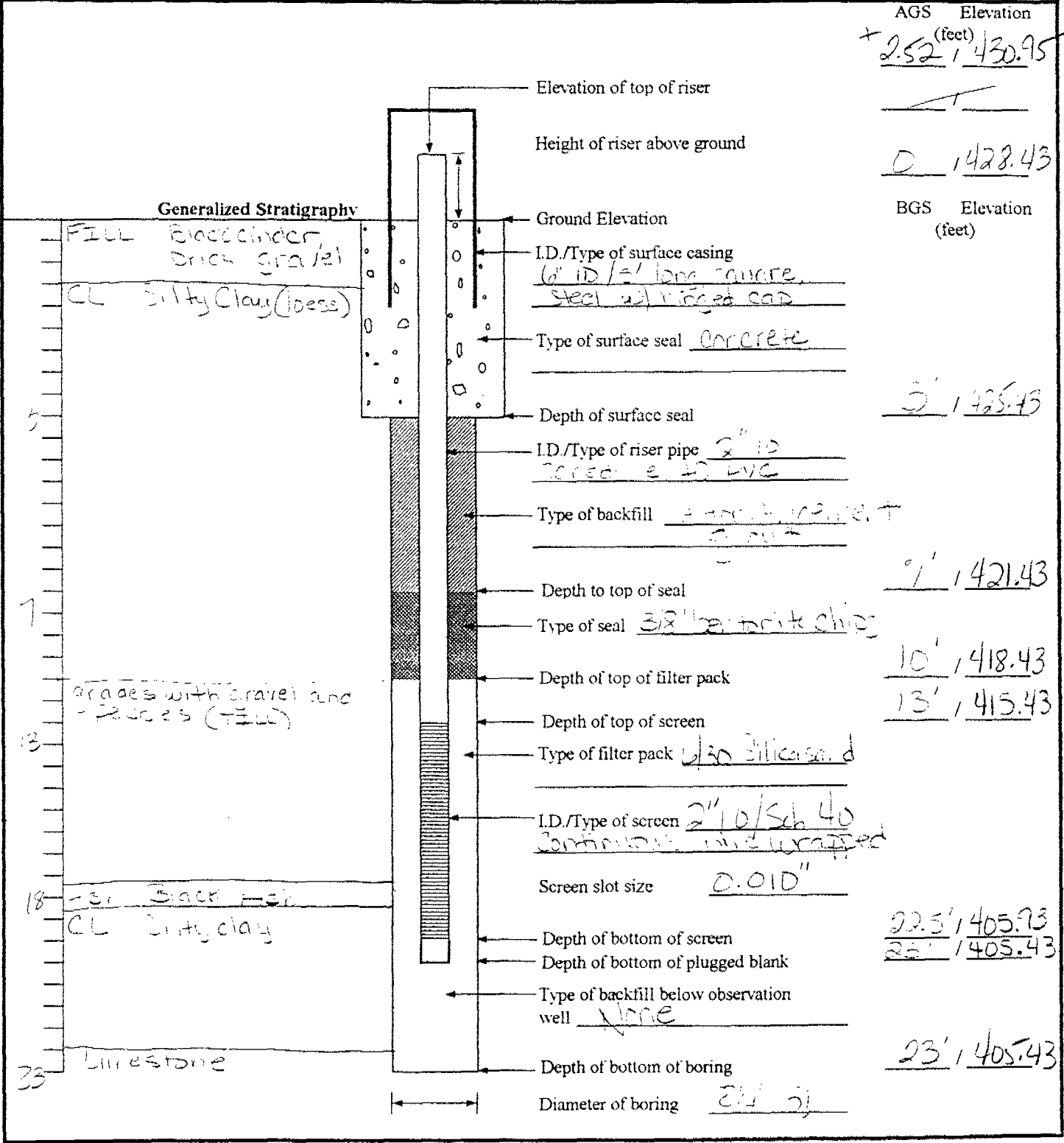


B-38

MONITORING WELL CONSTRUCTION LOG

Project Name Crab Orchard AHS OU
 Location Crab Orchard National Wildlife Refuge
 Installed By Hillip Environmental
 Inspected By Tiffany Swoveland
 Method of Installation 4 1/4" ID 8 1/4" OD HSAs 5' cont sampler
 Remarks 7 gallons of water used during well installation

Piez./Well No. AHS-0001-1W01
 Project No. 23-2000210.00
 Date 4-14-00 Time _____

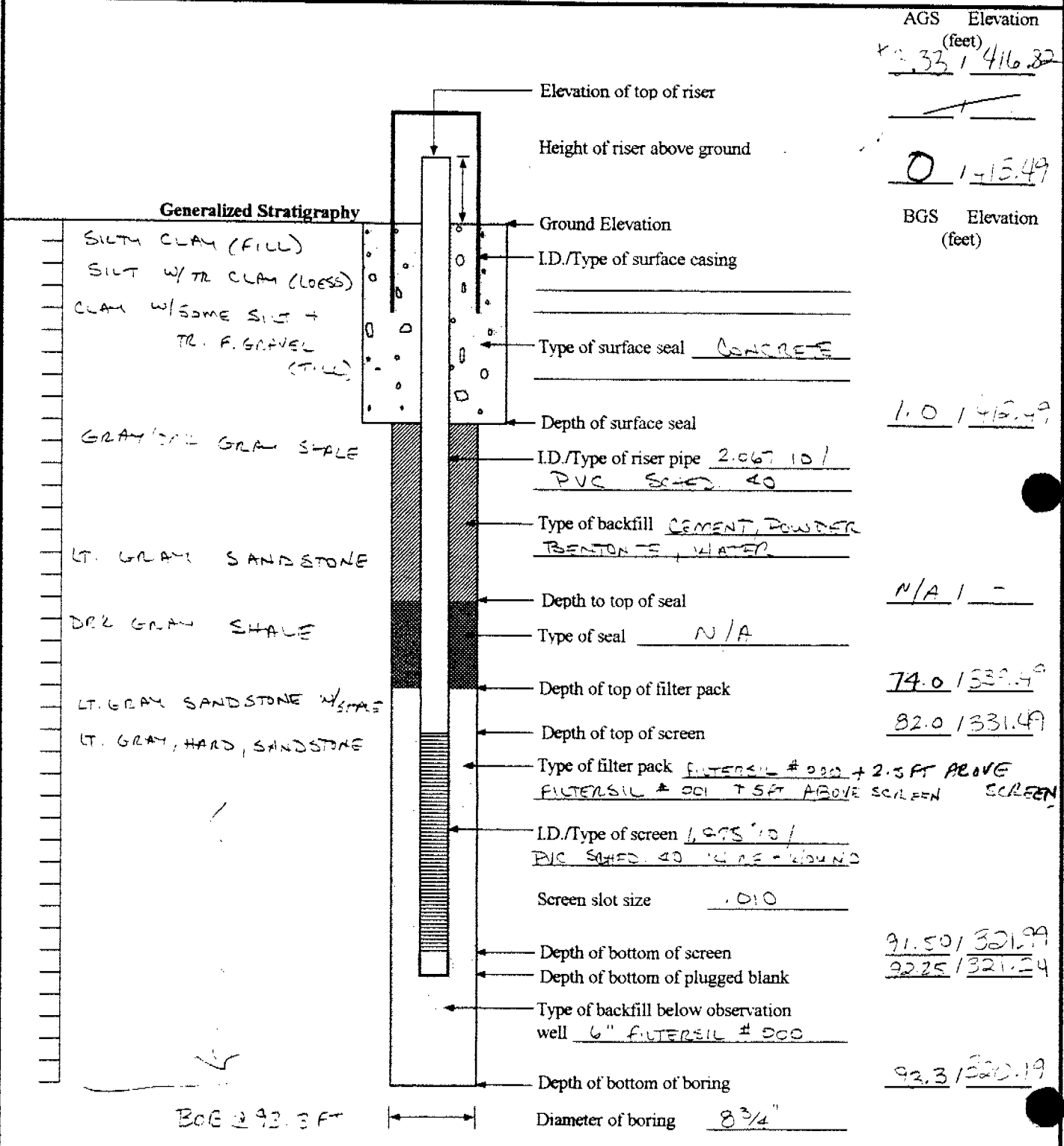


B-39

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 01
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GOTTO)
 Inspected By URS (TIM HICKS)
 Method of Installation 8 3/4 TRI-CONE / AIR ROTARY
 Remarks _____

Piez/Well No. BDMK-001
 Project No. 2320000026.00
 Date 6/1/00 Time 0940

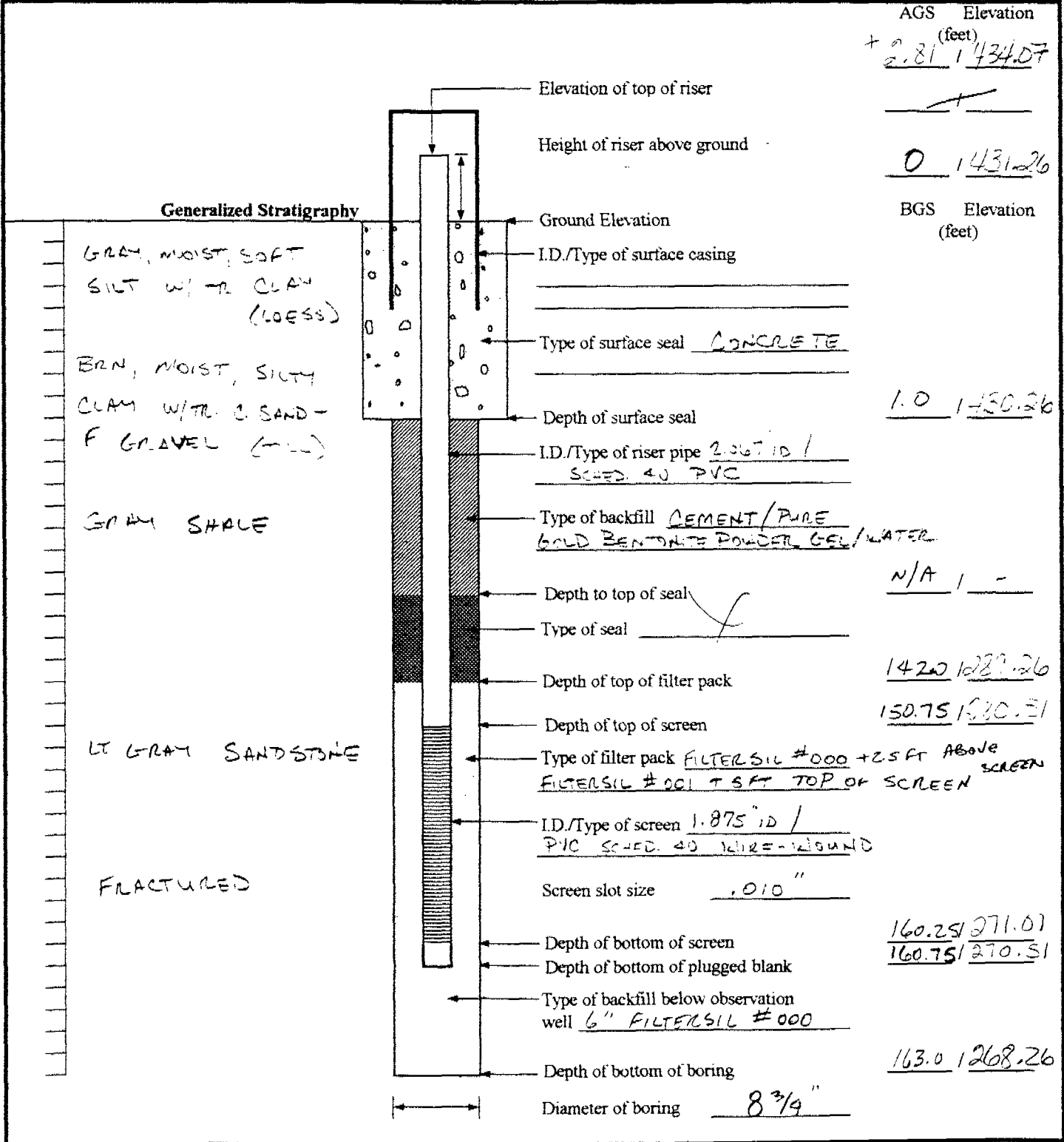


B-40

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS OU
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GOOT)
 Inspected By URS (T. HICKS)
 Method of Installation 2 3/4" TRI-CONE / AIR ROTARY
 Remarks _____

Piez./Well No. BDRK-002
 Project No. 2320000026.00
 Date 5/22/00 Time 1340

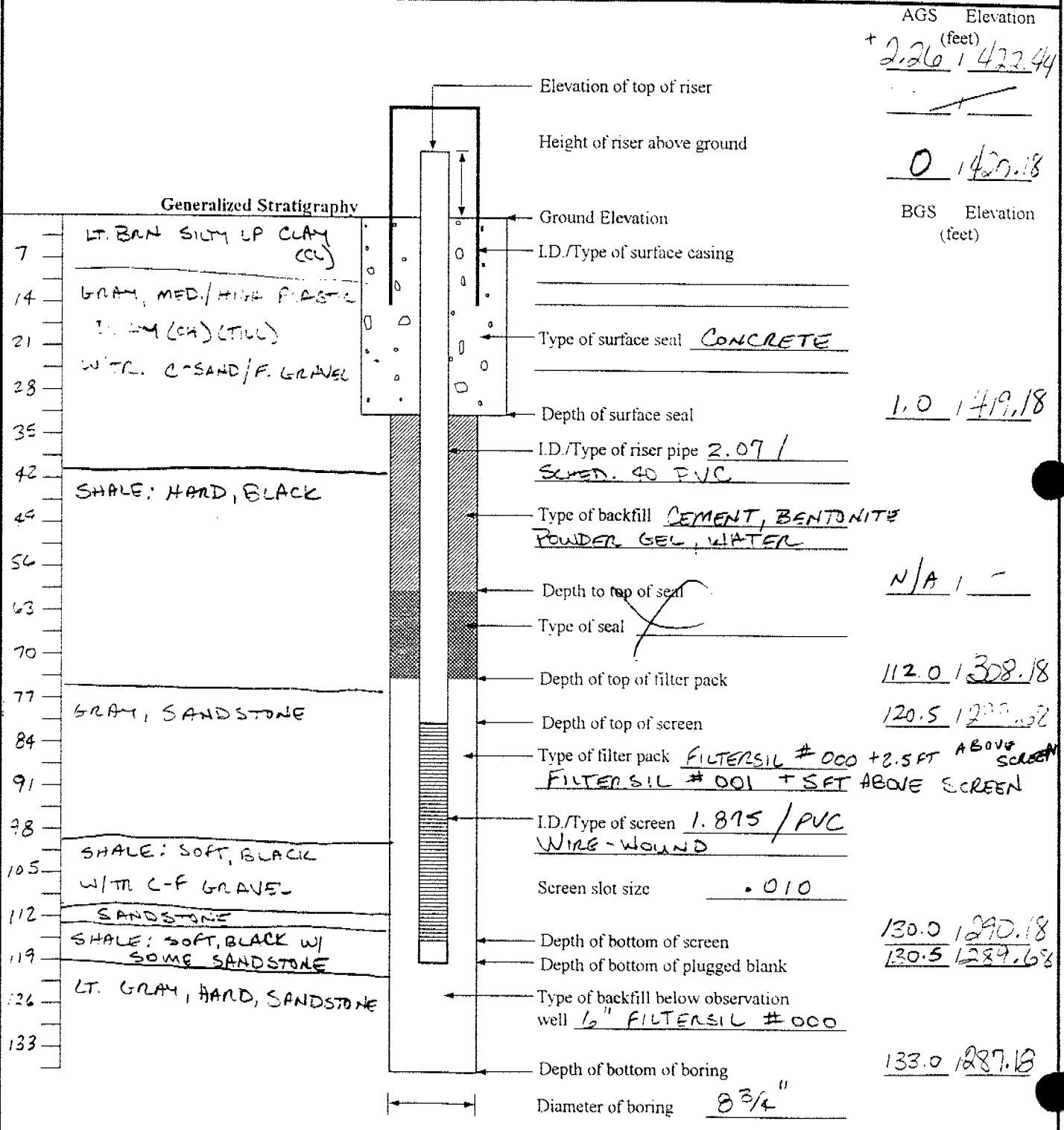


B-41

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 04
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GORTO)
 Inspected By URS (T. HICKS)
 Method of Installation AIR ROTARY DRILLING
 Remarks _____

Piez./Well No. BDRK - 003
 Project No. 23200000 26.00
 Date 5/18/00 Time 1700



B-42

MONITORING WELL CONSTRUCTION LOG

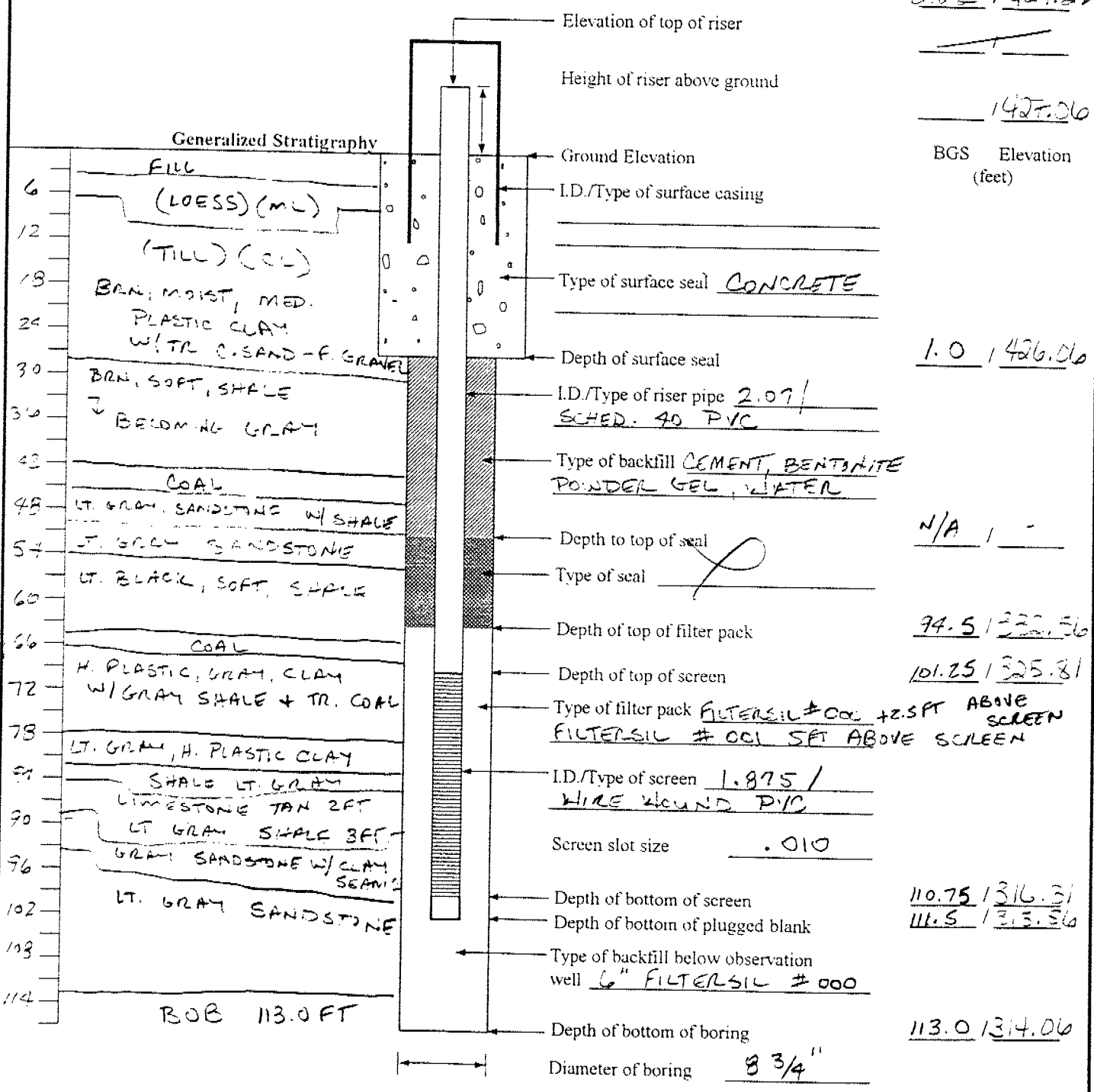
Project Name CLAB ORCHARD AUS 04
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GOTTO)
 Inspected By WLS (T. HICKS)
 Method of Installation AIR ROTARY DRILLING
 Remarks _____

Piez./Well No. BDK - 004
 Project No. 2320000026.00
 Date 5/19/00 Time 1345

AGS Elevation
 (feet)
+2.23 1429.23

Height of riser above ground
1427.06

BGS Elevation
 (feet)
1.0 1426.06

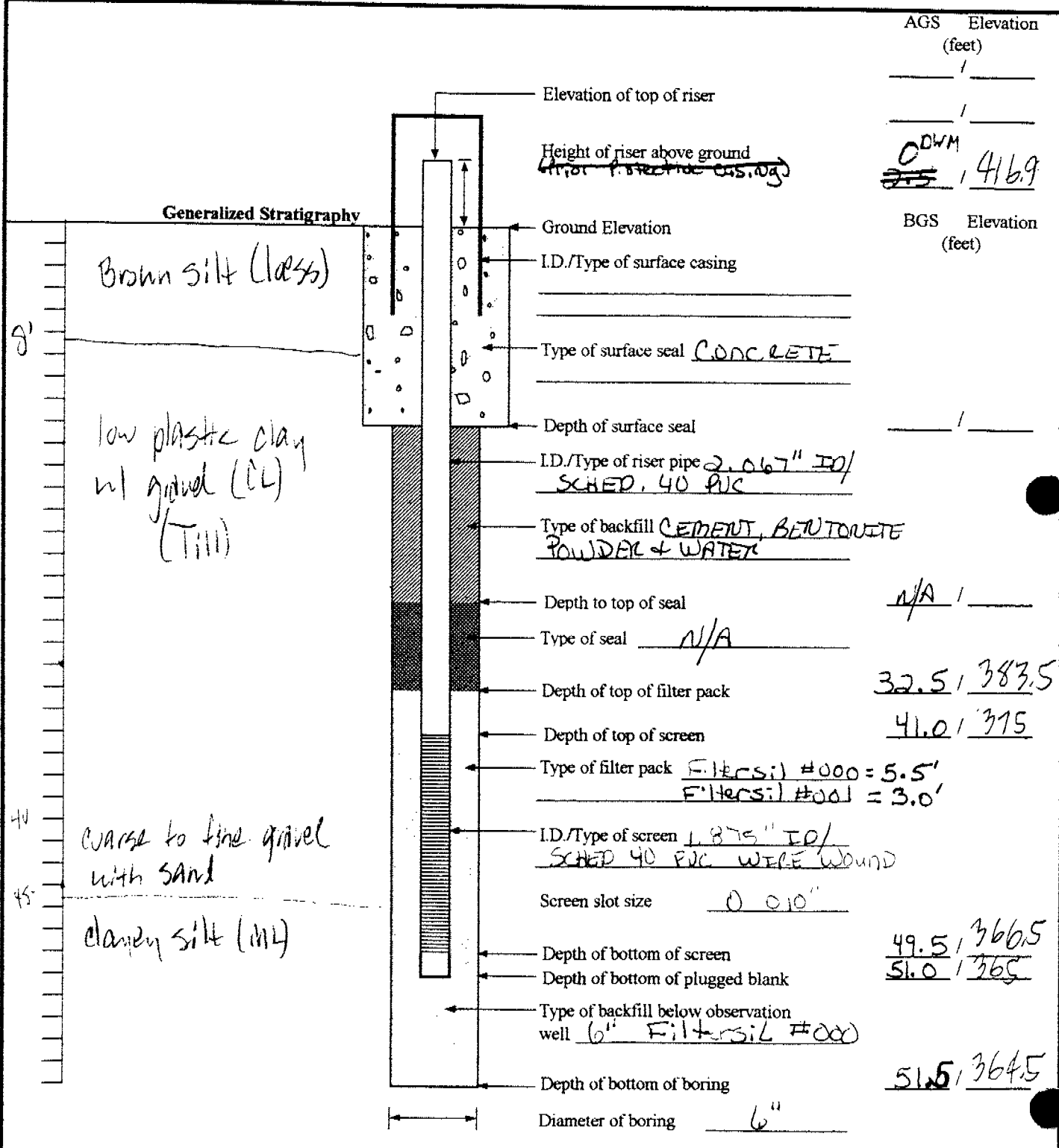


B-43

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AHS 04
 Location CRAB ORCHARD WILDLIFE REFUGE
 Installed By PHILIP DRILLING (DAN OTTO)
 Inspected By Kim Sinkerson
 Method of Installation _____
 Remarks WELL INSTALLATION COMPLETED 6/20/00

Piez./Well No. BALU-005T
 Project No. 232000026.00
 Date 6/20/00 Time _____



B-44

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AHS ON
 Location CRAB ORCHARD EEPUMB
 Installed By PHILIP DRILLING (DAN OTTO)
 Inspected By TEM HECKS
 Method of Installation _____
 Remarks _____

Well No. BOLK-005 d
 Project No. 232000026.00
 Date _____ Time _____

AGS Elevation (feet)

_____ / _____

Elevation of top of riser

Height of riser above ground

~~(Pipes to PROTECTIVE casing)~~ DOWN 5.0 1416

Generalized Stratigraphy

BGS Elevation (feet)

Ground Elevation

I.D./Type of surface casing

Type of surface seal CONCRETE

Depth of surface seal

1.0 1415

I.D./Type of riser pipe 2.067" ID / SCHED. 40 PVC

Type of backfill CEMENT, BENTONITE POWDER + WATER

Depth to top of seal

N/A 1

Type of seal N/A

Depth of top of filter pack

203.65 212

Depth of top of screen

229.01 187

Type of filter pack FILTERSIL # 000 = 30.6 FT
FILTERSIL # 001 = 5.0 FT

I.D./Type of screen 1.875" ID / SCHED. 40 PVC 14MIL-ROUND

Screen slot size 0.010"

Depth of bottom of screen

238.51 177

Depth of bottom of plugged blank

239.25 177

Type of backfill below observation well 6" FILTERSIL # 000

Depth of bottom of boring

246.01 175

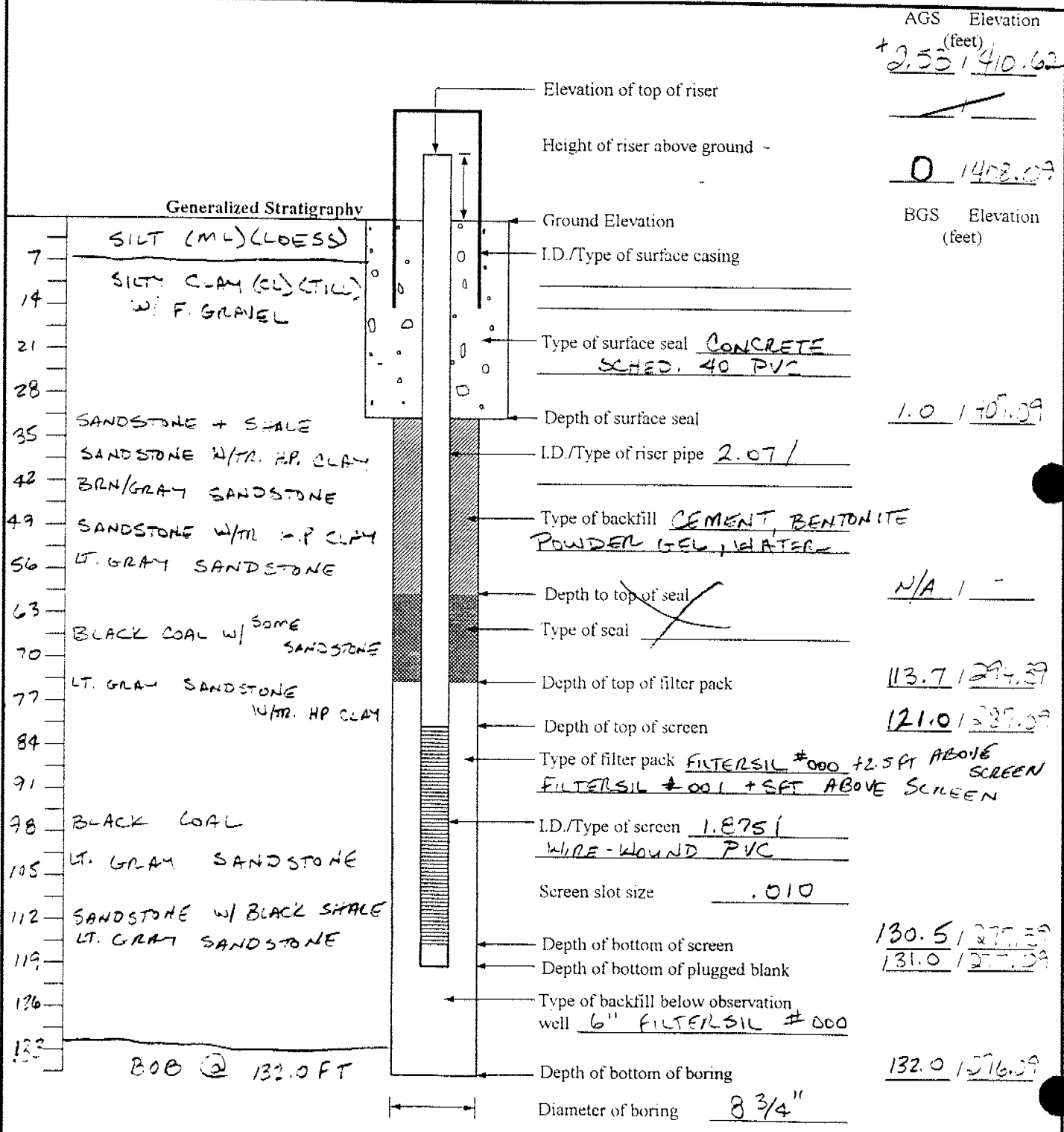
Diameter of boring 6.0"

B-45

MONITORING WELL CONSTRUCTION LOG

Project Name CLAB ORCHARD AUG 01
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GOTT)
 Inspected By URS (T. HICKS)
 Method of Installation AIR ROTARY DRILLING
 Remarks _____

Piez./Well No. BDRK-006
 Project No. 23200000 26.00
 Date 5/21/00 Time 1210

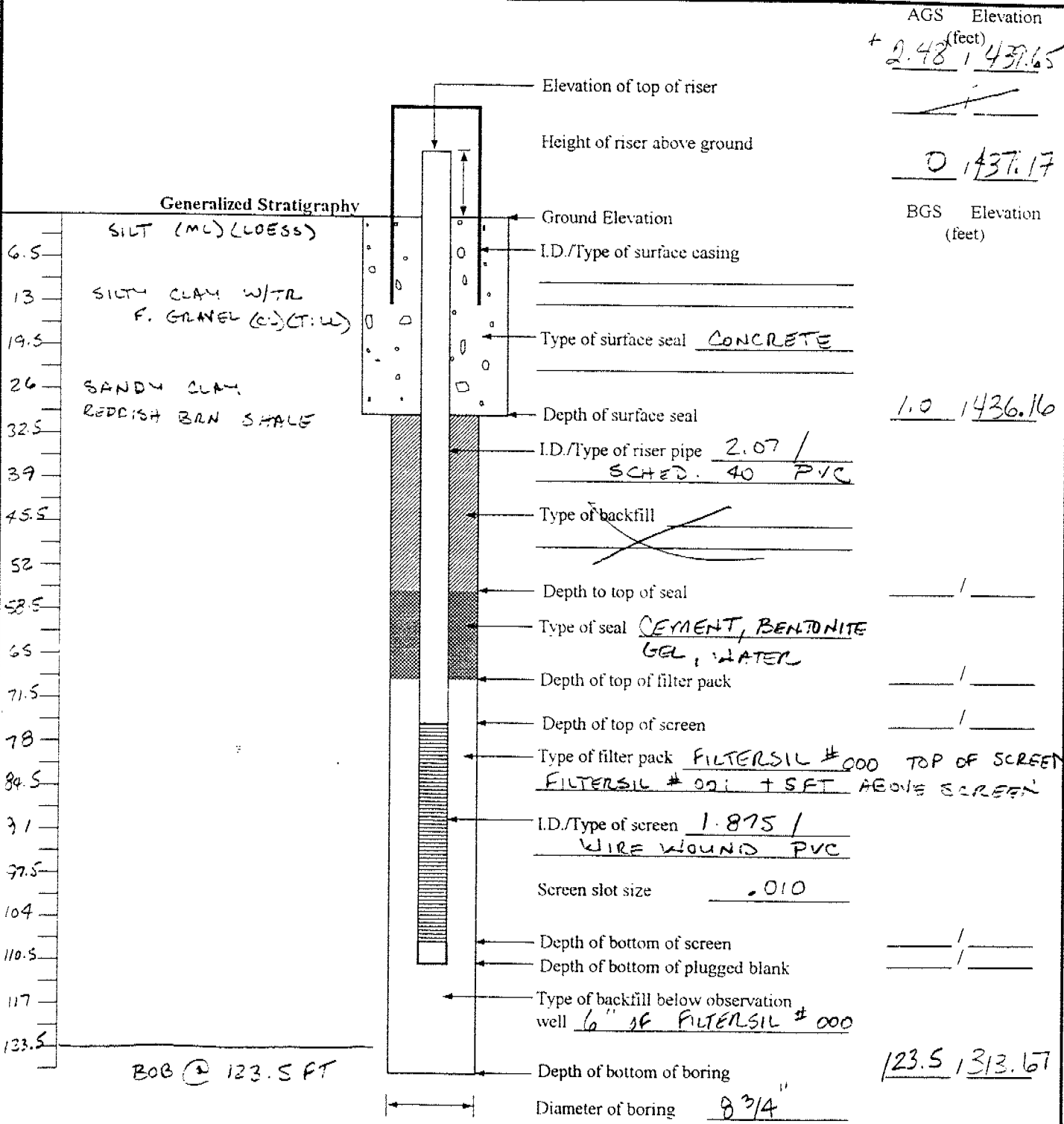


B-46

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 01
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL
 Inspected By T. HICKS (URS)
 Method of Installation AIR ROTARY DRILLING
 Remarks _____

Piez./Well No. BDRK-007
 Project No. 2320000026.00
 Date _____ Time _____

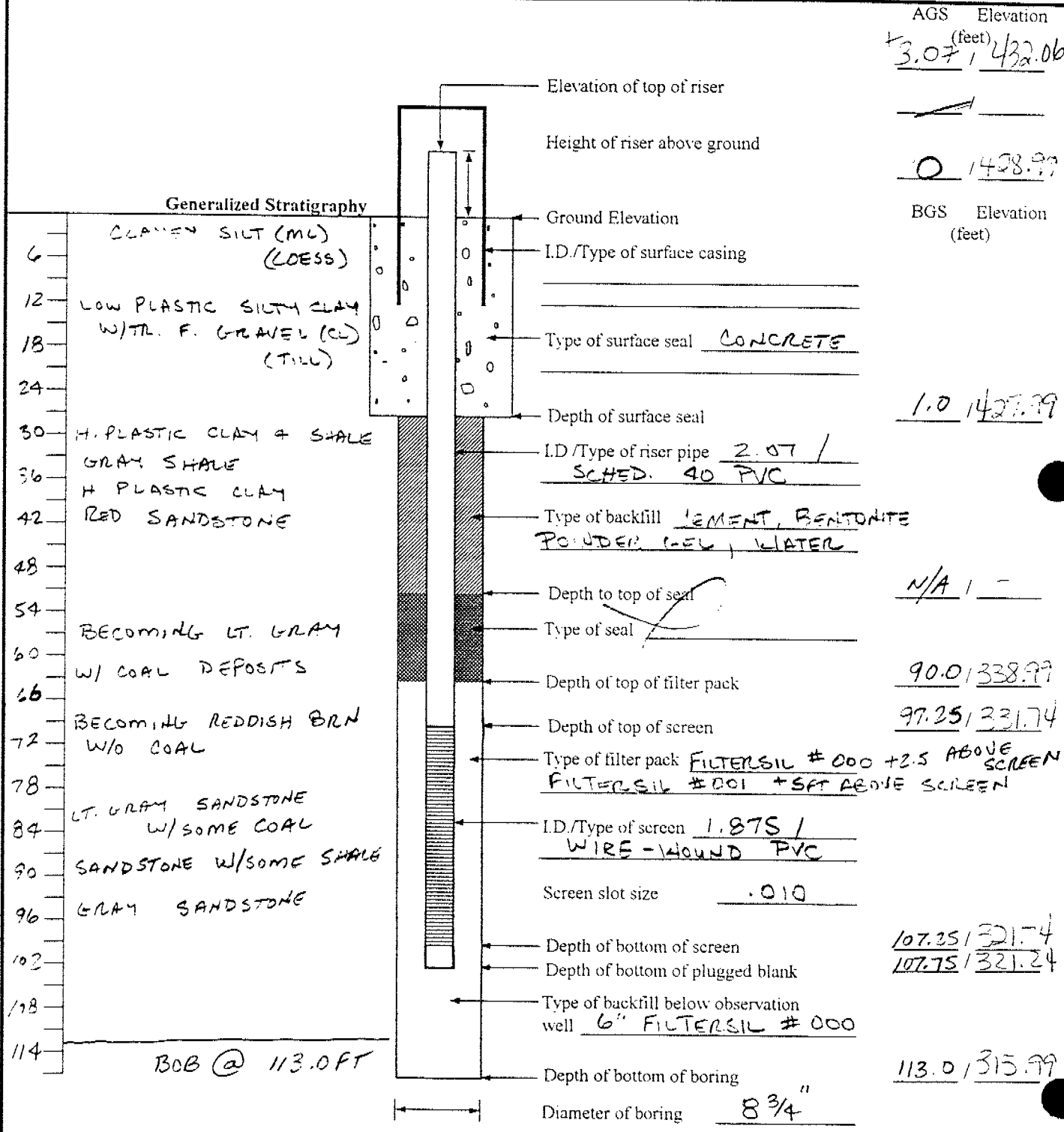


B-47

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 04
 Location MARION, IL
 Installed By PHILIP ENVIRONMENTAL (DAN GOTTO)
 Inspected By URS (T. HICKS)
 Method of Installation AIR ROTARY DRILLING
 Remarks _____

Piez./Well No. BDRK-008
 Project No. 2320000026.00
 Date 5/20/00 Time 1435



B-48

MONITORING WELL CONSTRUCTION LOG

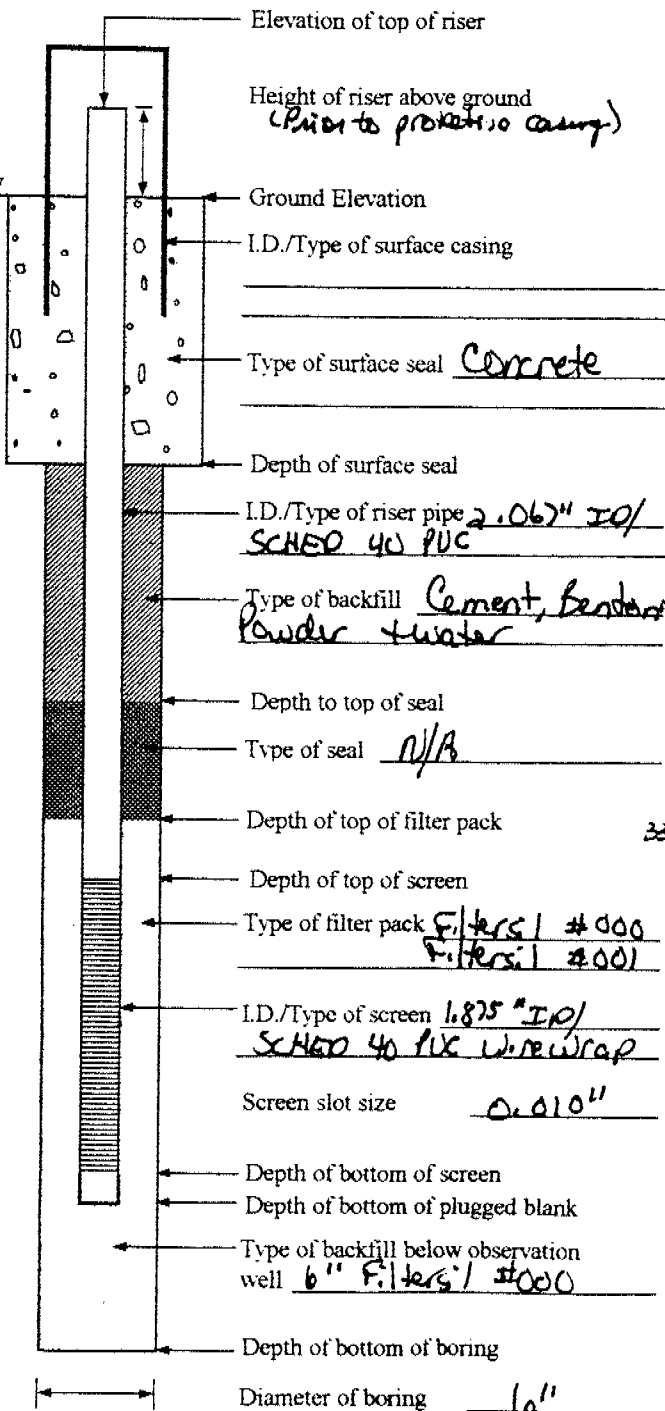
Project Name CRAB ORCHARD A15 04
 Location CRAB ORCHARD WETLANDS REFUGE
 Installed By PHILIP ENVIRONMENTAL
 Inspected By Kim Junkerson
 Method of Installation _____
 Remarks _____

Piez./Well No. BORK-009T
 Project No. 232 00000.26.00
 Date 6/23/00 Time _____

AGS Elevation (feet)

BGS Elevation (feet)

Generalized Stratigraphy



Elevation of top of riser _____

Height of riser above ground
(Prior to protection casing) 0, 451.25

Ground Elevation _____

I.D./Type of surface casing _____

Type of surface seal Concrete

Depth of surface seal _____

I.D./Type of riser pipe 2.067" ID / SCHED 40 PVC

Type of backfill Cement, bentonite powder + water

Depth to top of seal N/A

Type of seal N/A

Depth of top of filter pack 38.8, 412

Depth of top of screen 42.5, 409

Type of filter pack Filters: #000 ~~5'~~ 3.7'
Filters: #001 5'

I.D./Type of screen 1.875" ID / SCHED 40 PVC Wirewrap

Screen slot size 0.010"

Depth of bottom of screen 52.0, 399

Depth of bottom of plugged blank 50.5, 399

Type of backfill below observation well 6" Filters: #000

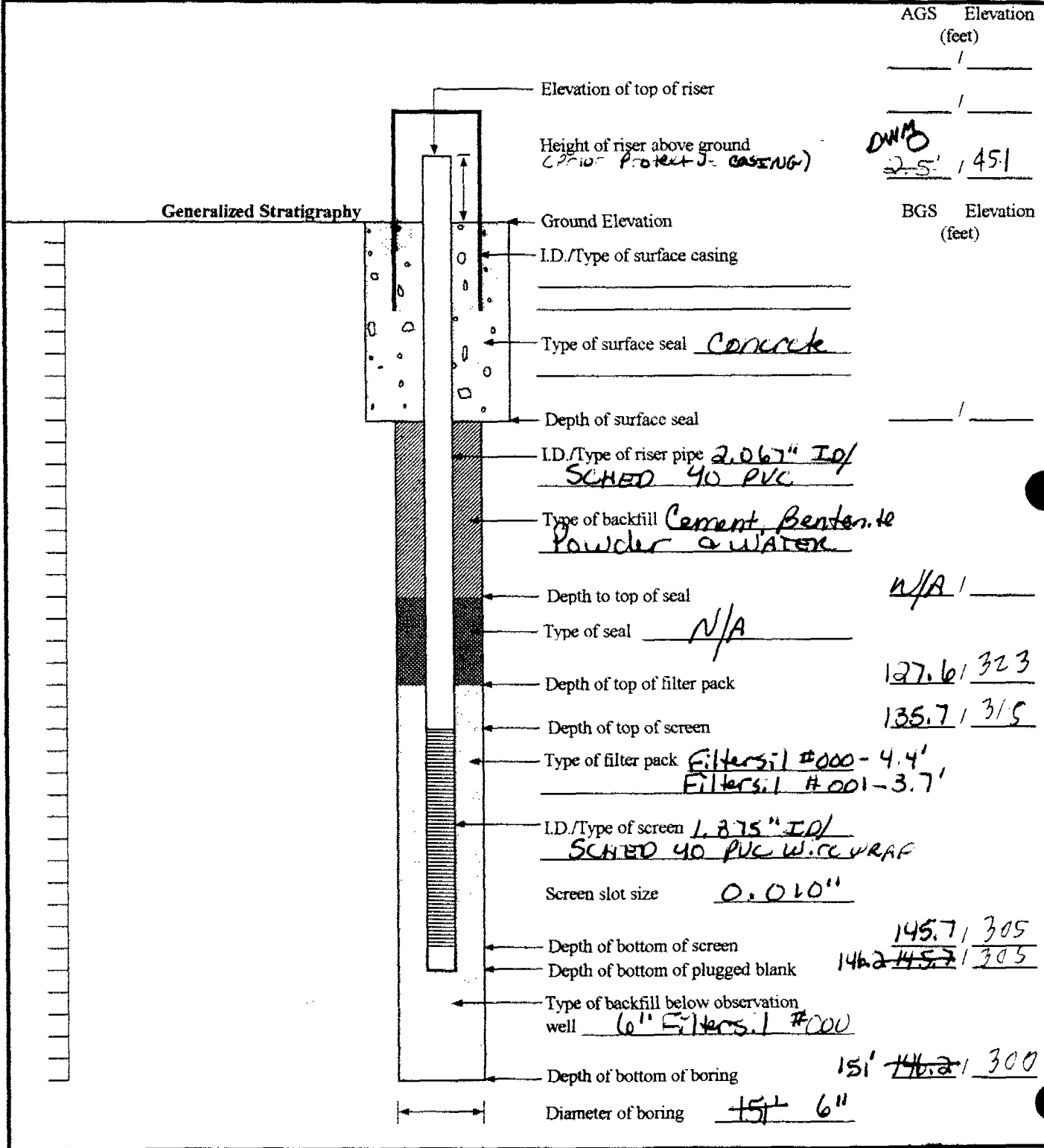
Depth of bottom of boring 53.0, 398

Diameter of boring 6"

B-49

MONITORING WELL CONSTRUCTION LOG

Project Name C LAB ORCHARD AUS OU Piez./Well No. BDRK-009D
 Location C LAB ORCHARD WILDLEEF REFUGE Project No. 23200002600
 Installed By PHILIP ENVIRONMENTAL (KARL G + D) Date 6/22/08 Time _____
 Inspected By Kim Jensen
 Method of Installation _____
 Remarks _____

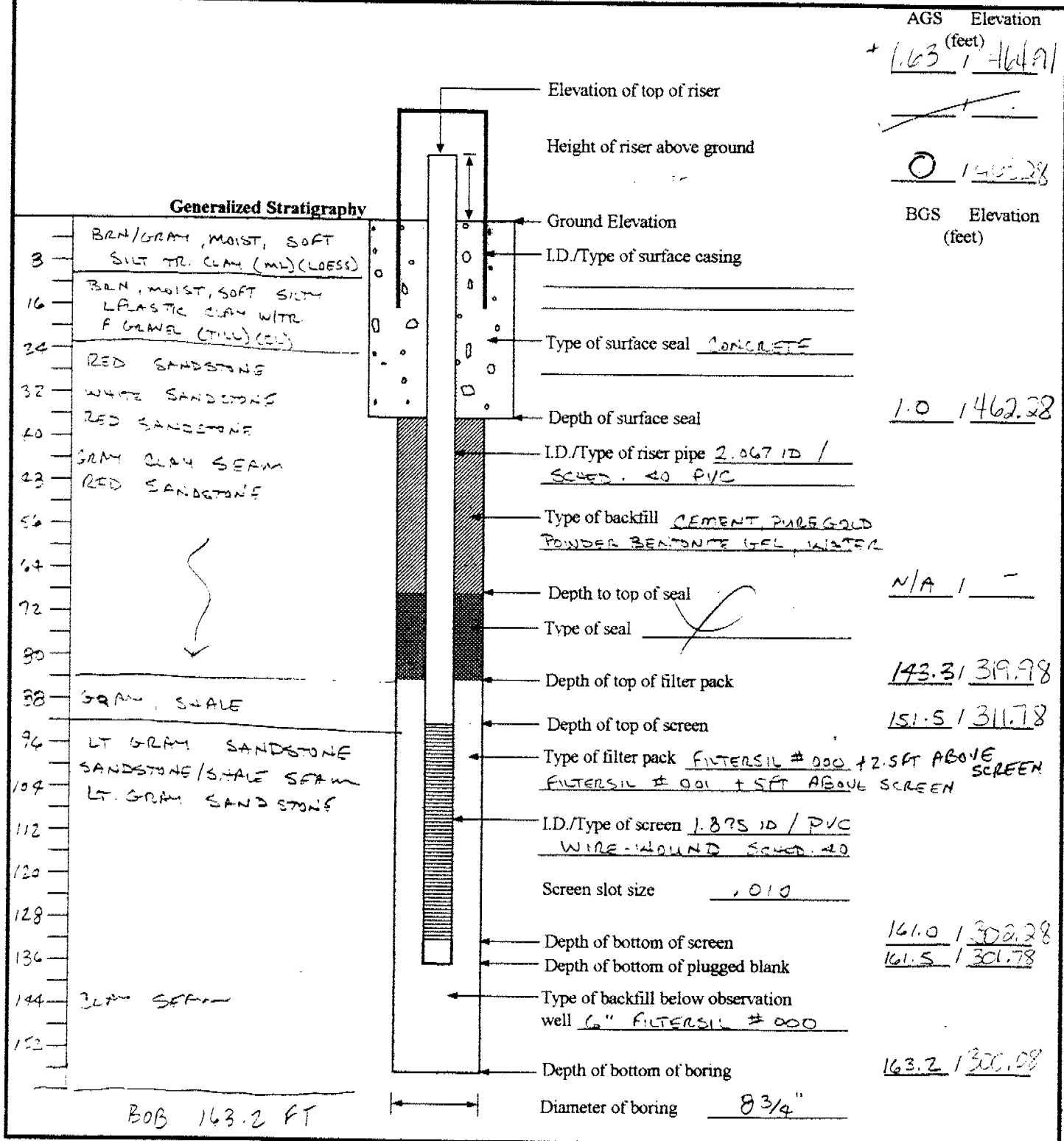


B-50

MONITORING WELL CONSTRUCTION LOG

Project Name CRAB ORCHARD AUS 04
Location MANION, IL
Installed By PHILIP ENVIRONMENTAL (DAN GOTTS)
Inspected By URS (TIM HICKS)
Method of Installation 8 3/4" TR: - CONE / AIR ROTARY
Remarks _____

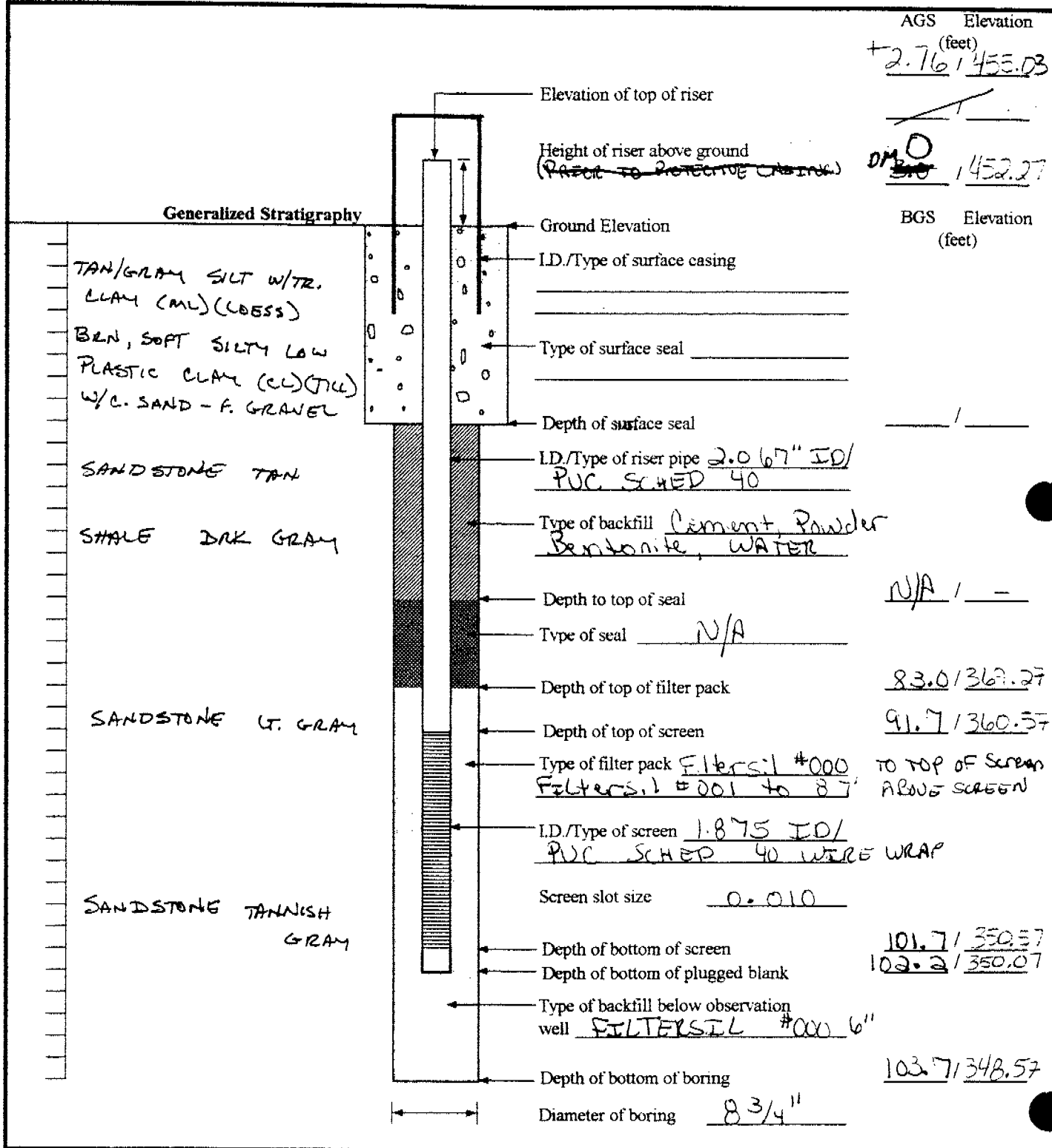
Piez./Well No. BDR2-010
Project No. 2220000026.00
Date 5/30/00 **Time** 1500



MONITORING WELL CONSTRUCTION LOG

Project Name CBAB ORCHARDS AUS ON
 Location MORION IL
 Installed By PHILLIPS DRILLING (DAN GOTTO)
 Inspected By WRS (KIM JOHNSON / JEM HECK)
 Method of Installation 8 3/4" TRF-CONE / AIR ROTARY
 Remarks _____

Piez./Well No. BDRK-011
 Project No. 232000026.00
 Date 6/5/00 Time 1400



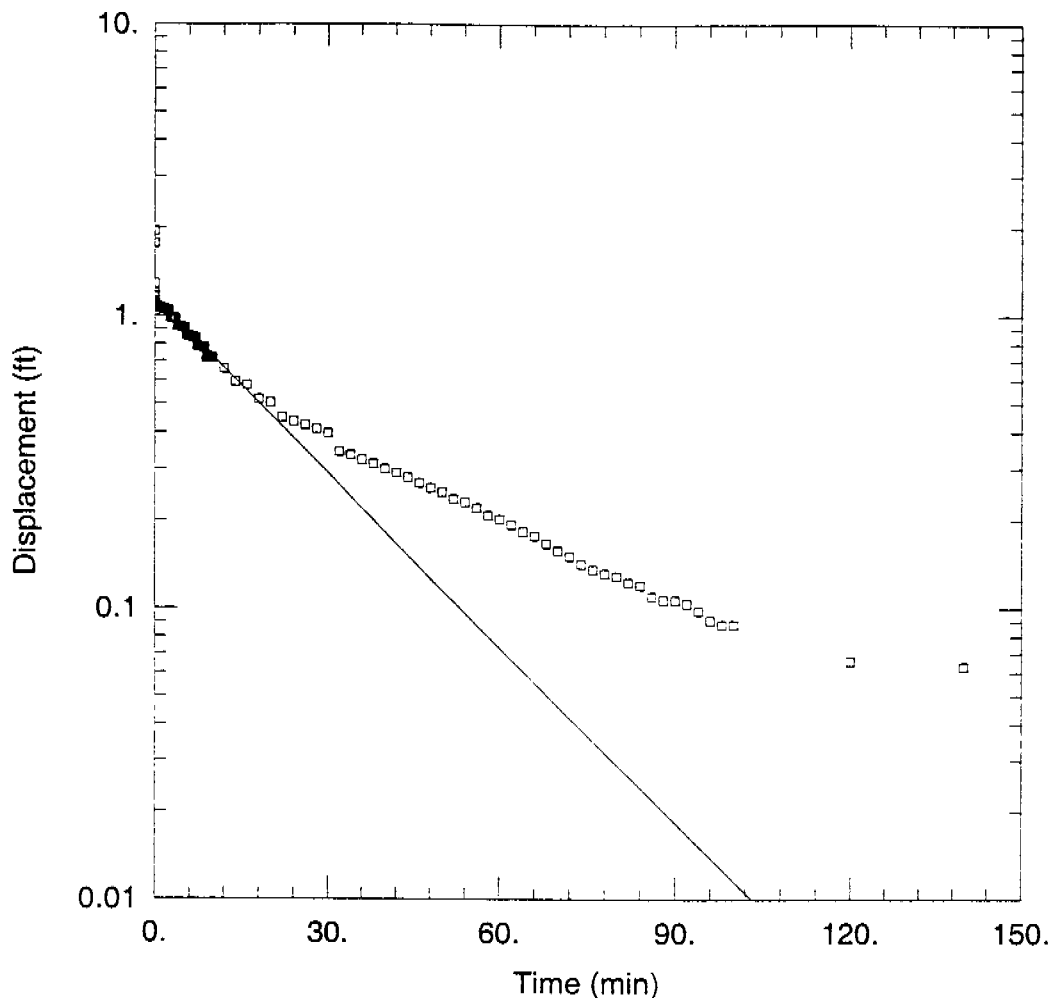
B-52

**APPENDIX C
SLUG TEST DATA**

WELLS	PAGE NUMBERS
SHALLOW WELLS	
OA2B-W01	C-1
OA2B-W02	C-2
OA2B-W03	C-3
OA2D-W01	C-4
OA2D-W02	C-5
OA2D-W03	C-6
OA2D-W04	C-7
OA2D-W05	C-8
OA2D-W06	C-9
OA2F-W01	C-10
OA2F-W02	C-11
OA2F-W03	C-12
OA2P-W01	C-13
OA2P-W02	C-14
OA2P-W03	C-15
OA2P-W04	C-16
OA2P-W05	C-17
OA2P-W06	C-18
OA4E-W01	C-19
OA4E-W02	C-20
OA4E-W03	C-21
OA8S-W01	C-22
OA8S-W02	C-23
OA8S-W03	C-24
OA8S-W04	C-25
OA8S-W06	C-26
OA09-W01	C-27
A11A-W01	C-28
A11A-W02	C-29
A11H-W01	C-30
A11S-W01	C-31
A11S-W02	C-32
A11S-W03	C-33
A11S-W03	C-34
A11S-W04	C-35
A11P-W01	C-36
OA12-W01	C-37
OA12-W02	C-38
0001-W01	C-39

WELLS	PAGE NUMBERS
BEDROCK WELLS	
BDRK-MW-1	C-40
BDRK-MW-2	C-41
BDRK-MW-3	C-42
BDRK-MW-5I	C-43
BDRK-MW-5D	C-44
BDRK-MW-6	C-45
BDRK-MW-7	C-46
BDRK-MW-8	C-47
BDRK-MW-9I	C-48
BDRK-MW-9D	C-49
BDRK-MW-10	C-50
BDRK-MW-11	C-51

C-1



OA2B-W01

Data Set: C:\slug\crab orchard\DT\2B-1.aqt
Date: 06/19/00

Time: 11:15:57

PROJECT INFORMATION

Company: URS Corporation
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: OA2B-W01
Test Date: 06-05-00

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OA2B-W01)

Initial Displacement: 1.945 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

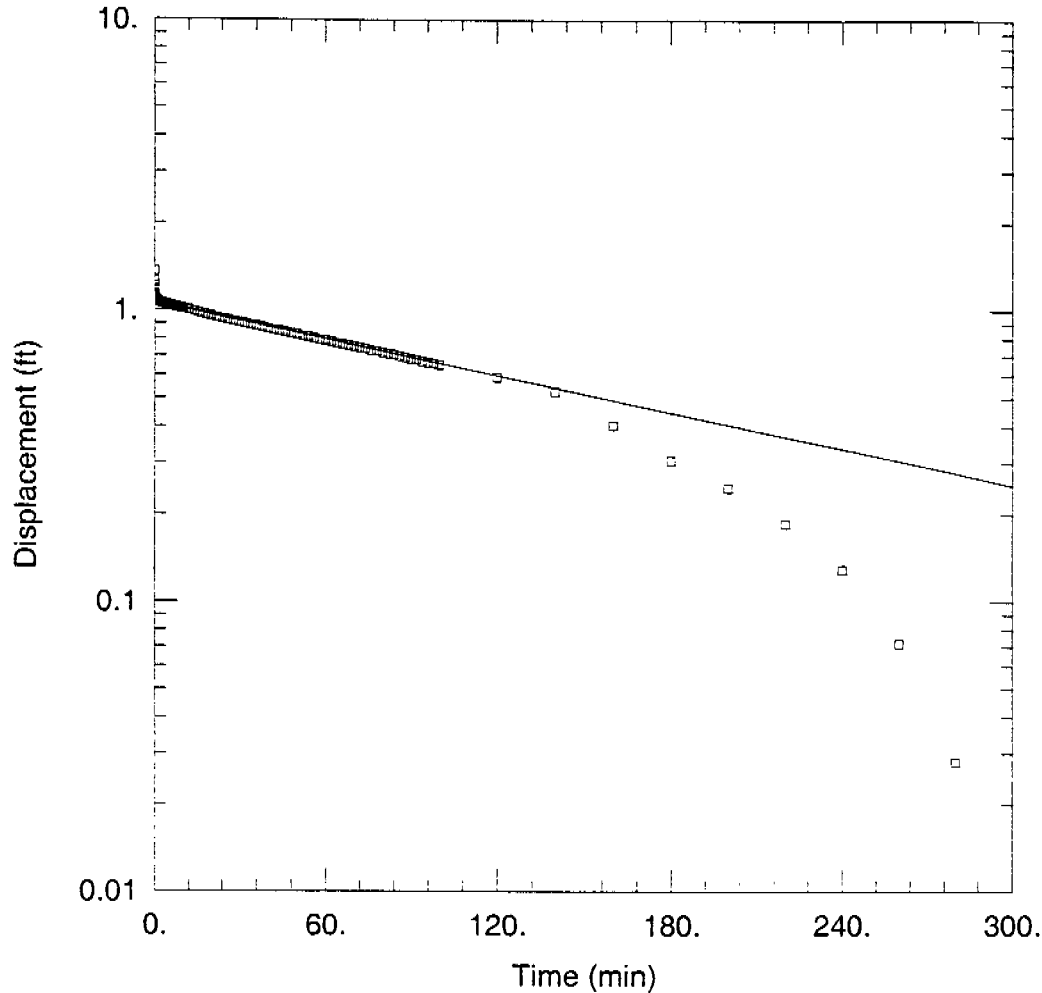
Water Column Height: 19.75 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 4.572E-05 ft/min

Solution Method: Bower-Rice
y0 = 1.158 ft

C-2



OA2B-W02

Data Set:
Date: 06/02/00

Time: 07:56:10

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2B-W02
Test Date: 2/24/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 1.362 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

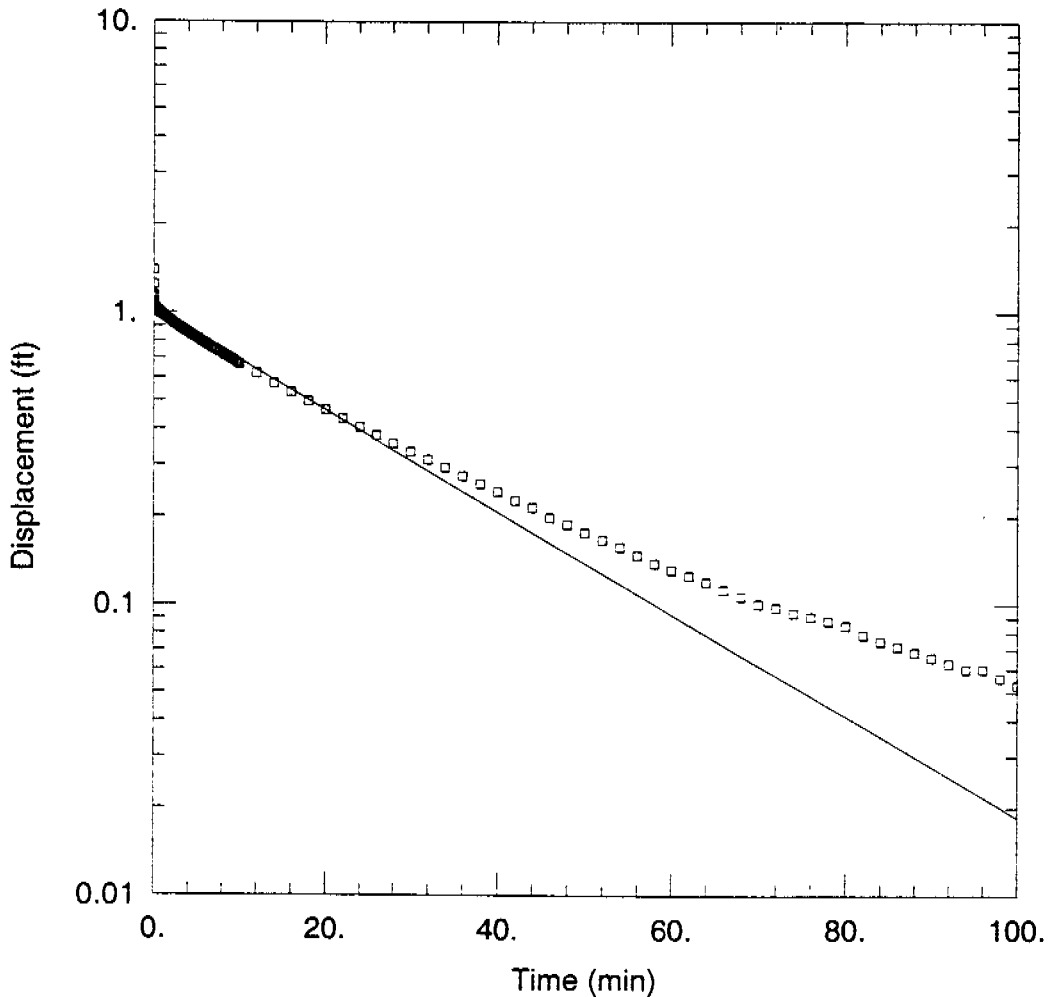
Water Column Height: 16.76 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 4.633E-06 ft/min

Solution Method: Bower-Rice
y0 = 1.066 ft

C-3



OA2B-W03

Data Set: C:\slug\crab orchard\DT\2B-3.aqt

Date: 06/05/00

Time: 11:25:18

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crad Orchard

Test Well: OA2B-W03

Test Date: 5/24/00

AQUIFER DATA

Saturated Thickness: 15. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 1.394 ft

Water Column Height: 14.24 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

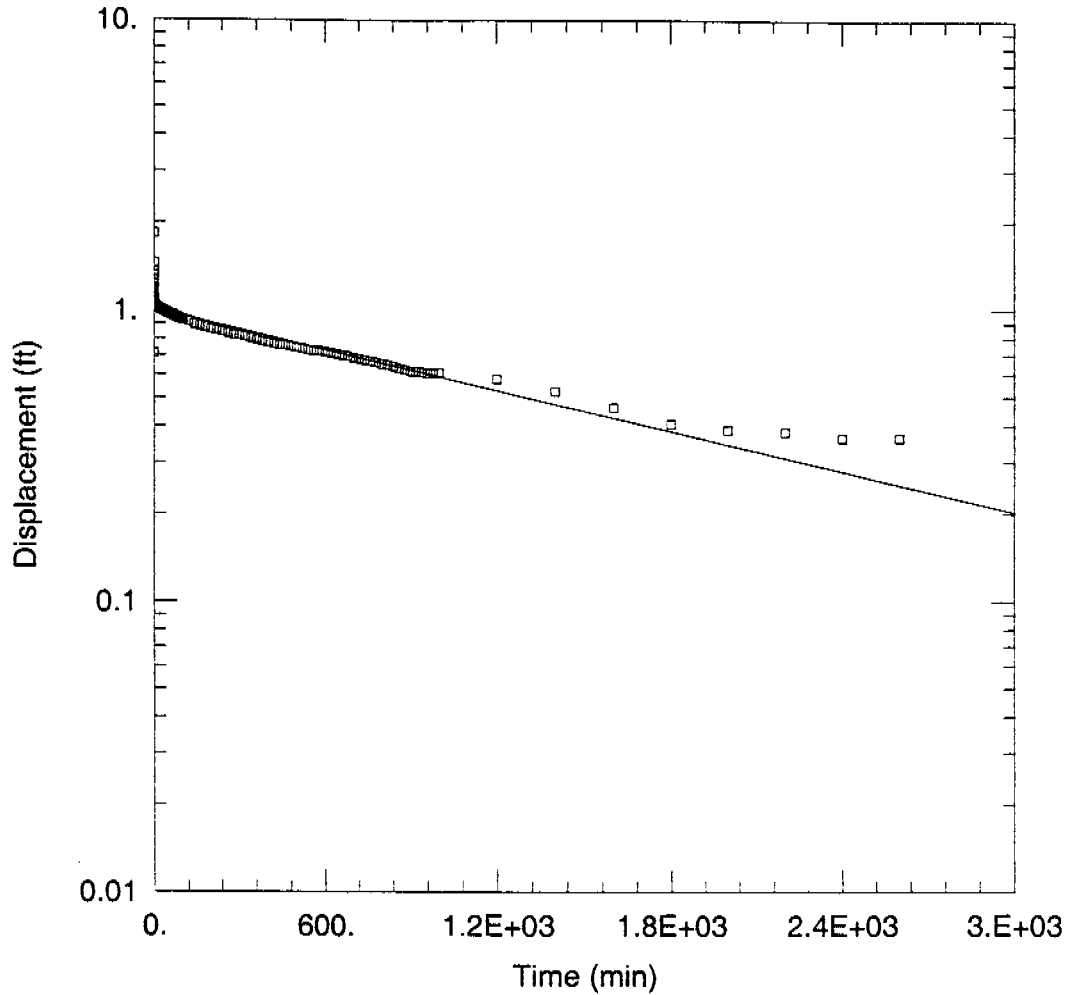
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 3.597E-05 ft/min

y0 = 1.037 ft

C-4



OA2D-W01

Data Set:

Date: 06/05/00

Time: 14:46:21

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2D-W01

Test Date: 5/31/00

AQUIFER DATA

Saturated Thickness: 16. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 1.831 ft

Water Column Height: 15.47 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

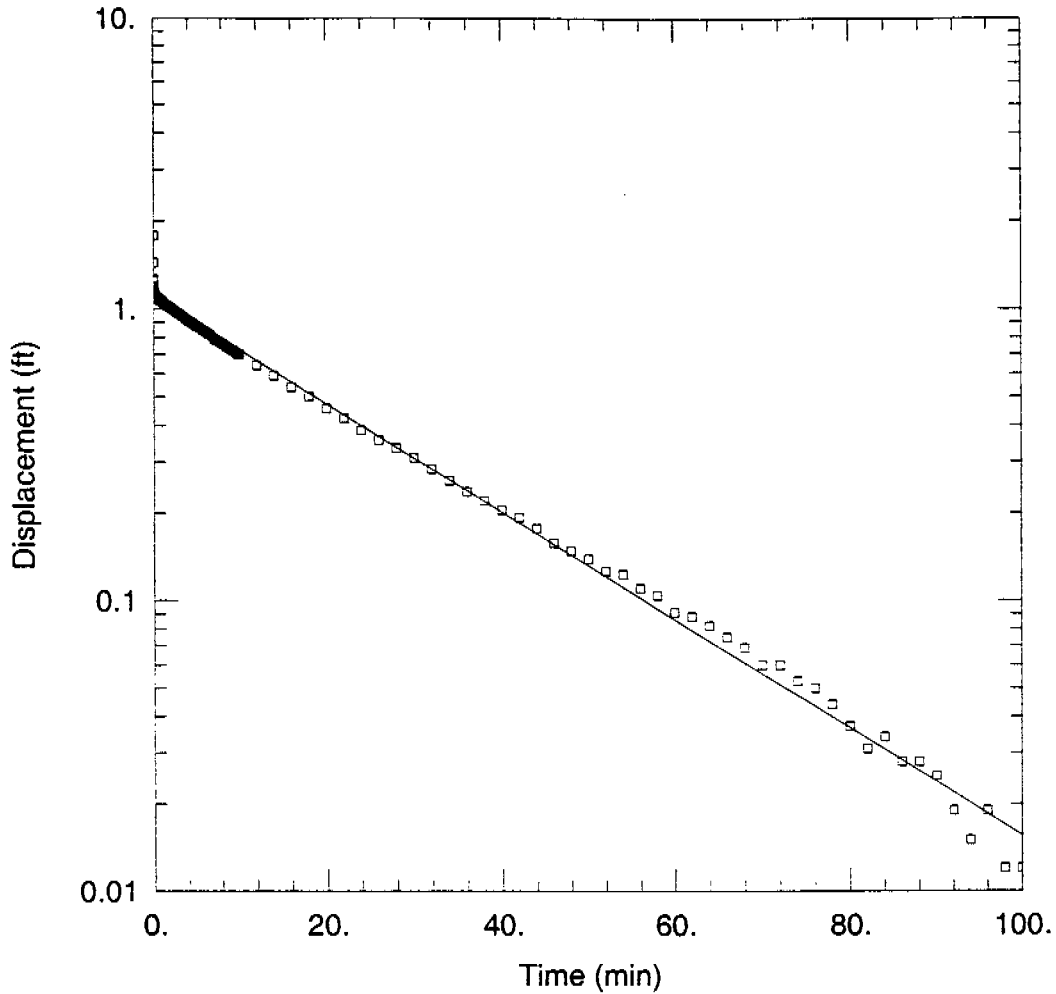
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 4.947E-07 ft/min

y0 = 1.014 ft

C-5



OA2D-W02

Data Set:
Date: 06/05/00

Time: 14:35:01

PROJECT INFORMATION

Company: URS
Client: US FISH & WIKDKIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2D-W02
Test Date: 5/31/00

AQUIFER DATA

Saturated Thickness: 19. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 1.781 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

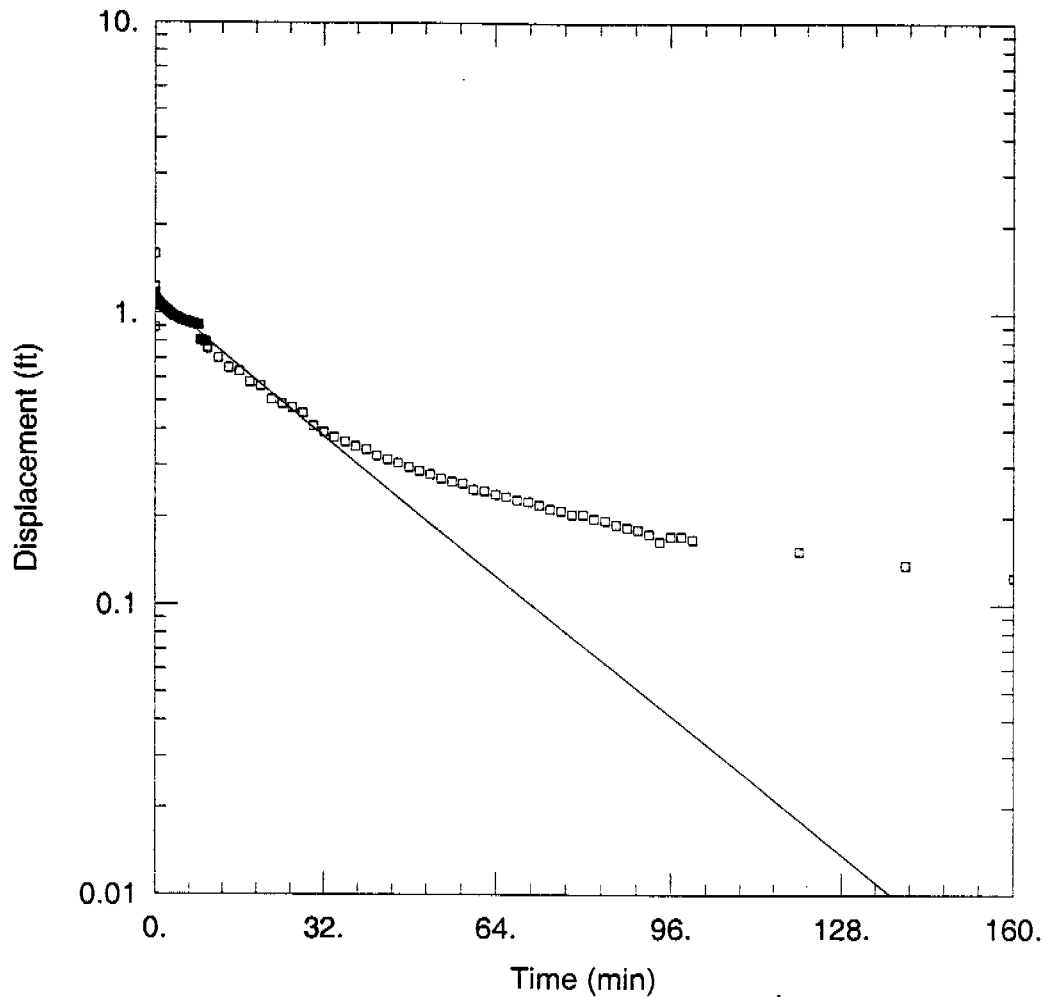
Water Column Height: 18.61 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 4.12E-05 ft/min

Solution Method: Bouwer-Rice
y0 = 1.114 ft

C-6



OA2D-W03

Data Set:

Date: 06/05/00

Time: 14:31:38

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2D-W03

Test Date: 5/30/00

AQUIFER DATA

Saturated Thickness: 16. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 1.591 ft

Water Column Height: 15.92 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

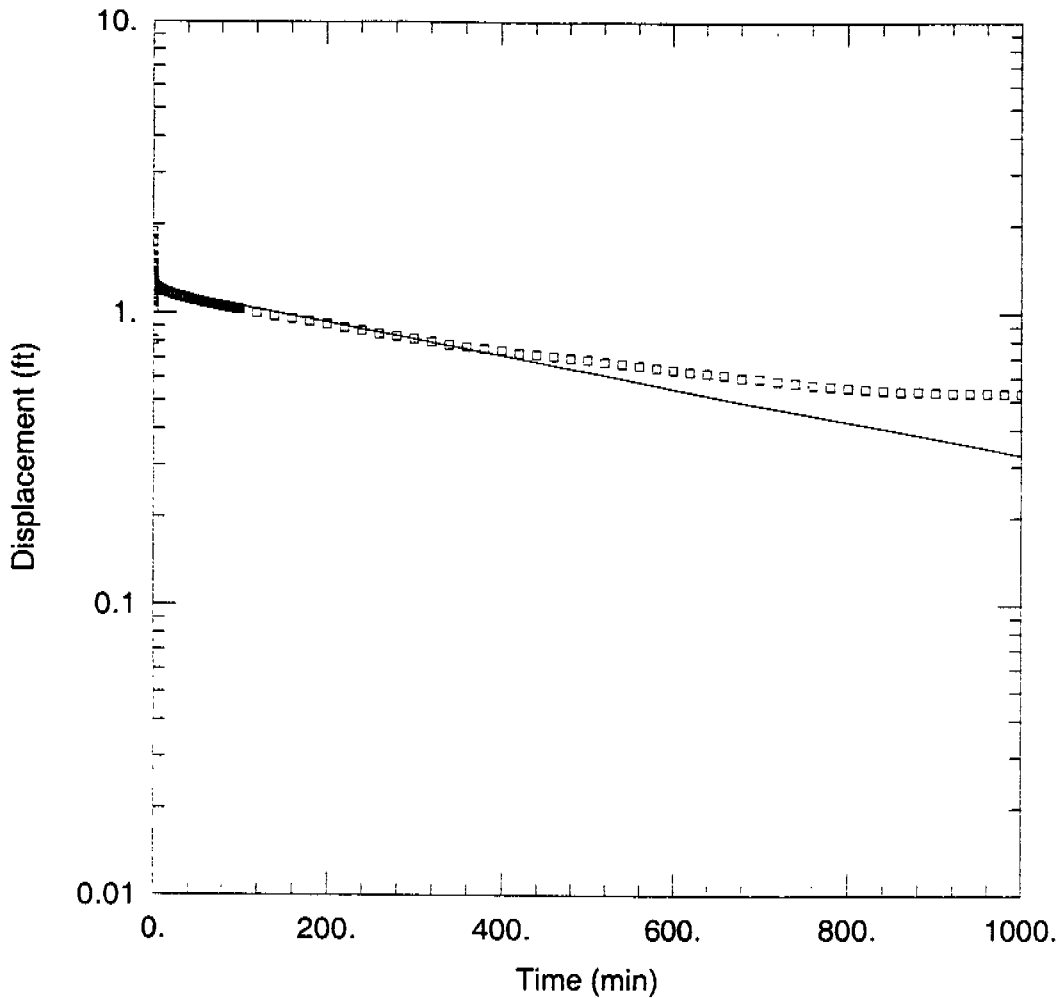
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 3.429E-05 ft/min

y0 = 1.144 ft

C-7



OA2D-W04

Data Set:
Date: 06/05/00

Time: 14:51:11

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2D-W04
Test Date: 5/31/00

AQUIFER DATA

Saturated Thickness: 18. ft Anisotropy Ratio (Kz/Kr): 1.

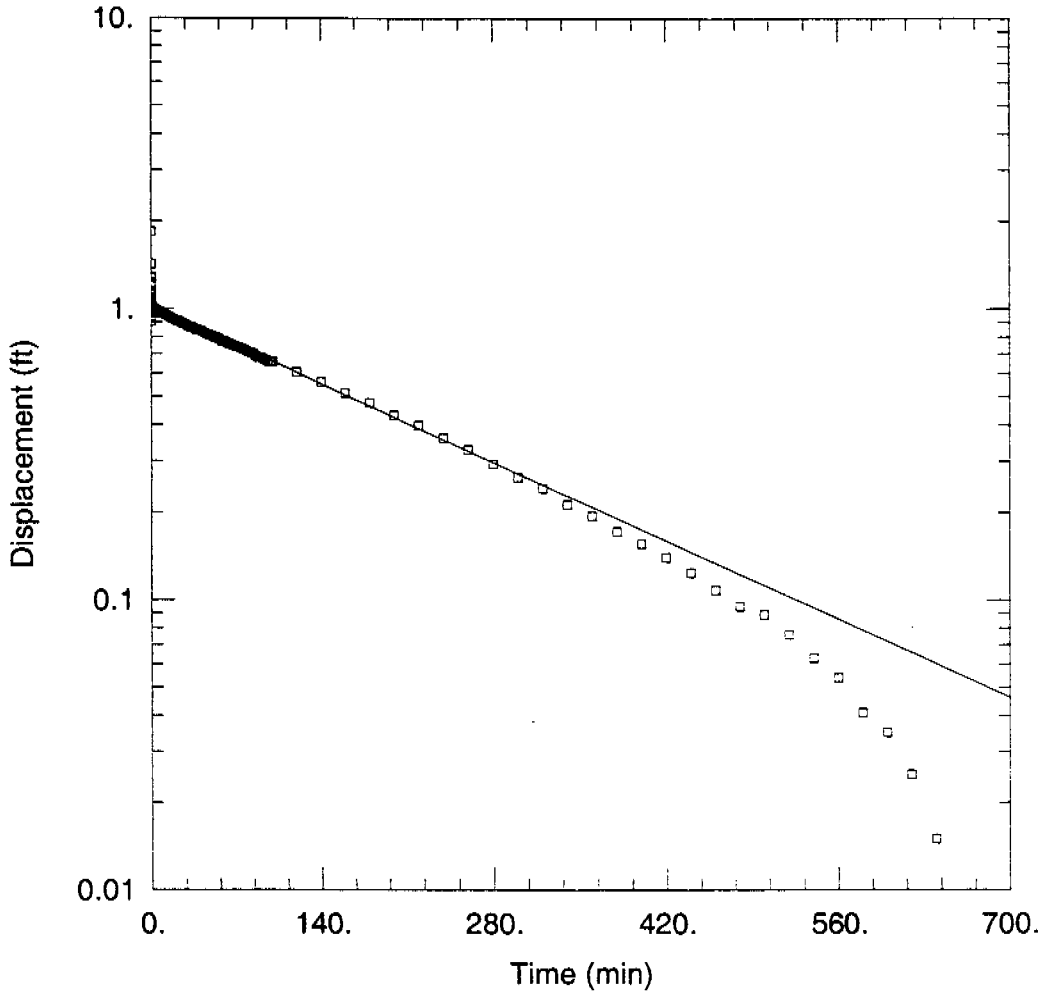
WELL DATA (W04)

Initial Displacement: 1.879 ft Water Column Height: 17.95 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.356E-06 ft/min y0 = 1.21 ft

C-8



OA2D-W05

Data Set:
Date: 06/05/00

Time: 14:18:12

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2D-W05
Test Date: 5/30/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W05)

Initial Displacement: 1.841 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

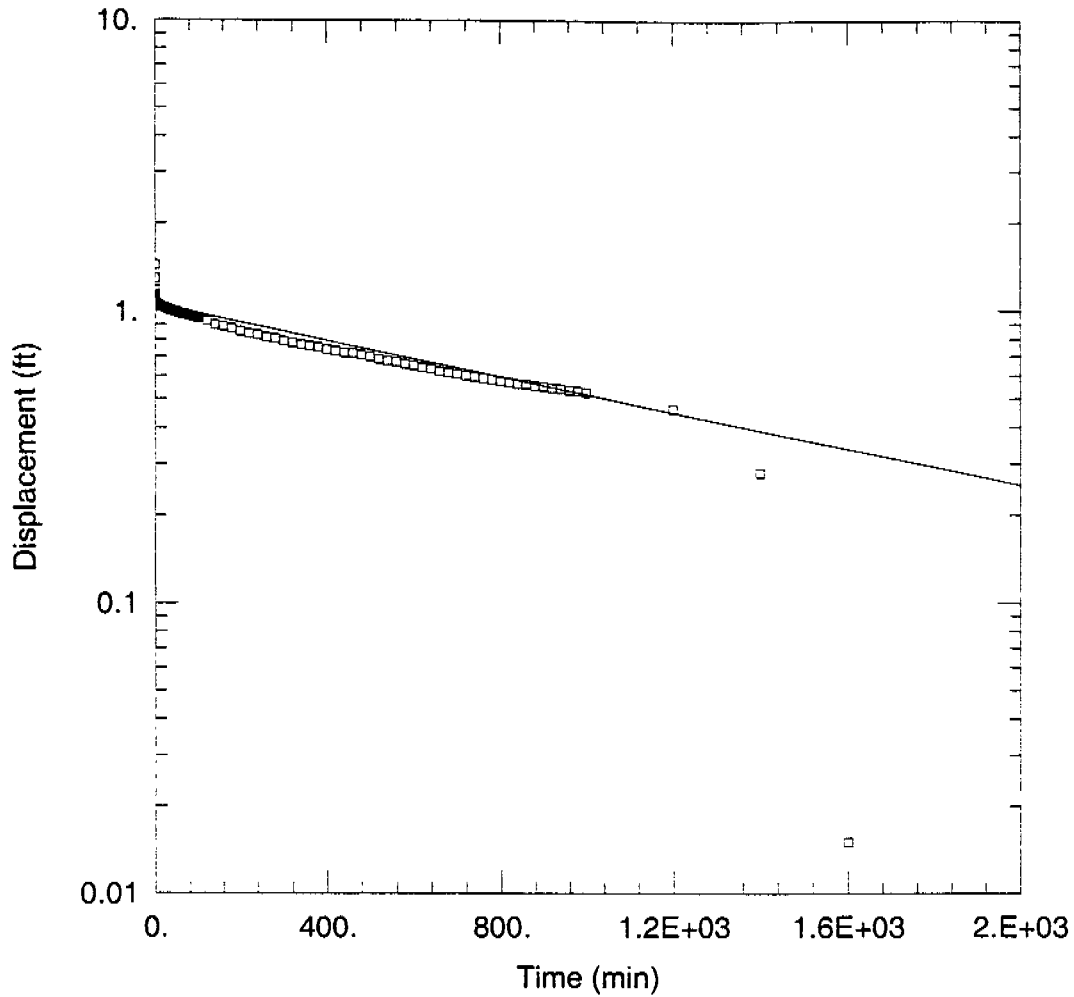
Water Column Height: 17.75 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 4.455E-06 ft/min

Solution Method: Bower-Rice
y0 = 1.026 ft

c-9



OA2D-W06

Data Set: C:\slug\crab orchard\DT\2D-6.aqt

Date: 06/05/00

Time: 14:26:38

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2D-W06

Test Date: 5/30/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W06)

Initial Displacement: 1.439 ft

Water Column Height: 16.8 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

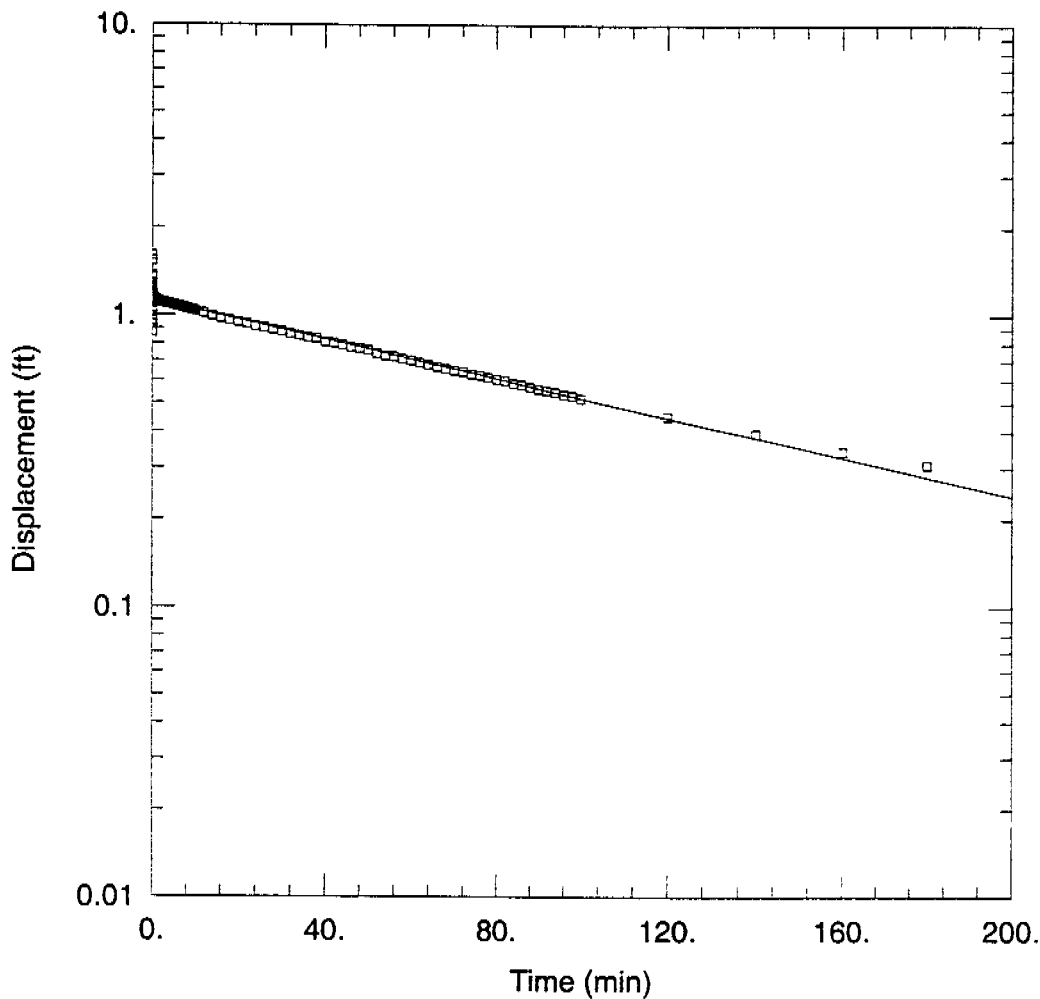
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 6.934E-07 ft/min

y0 = 1.059 ft

C-10



OA2F-W01

Data Set:

Date: 06/05/00

Time: 11:38:06

PROJECT INFORMATION

Company: URS

Client: IS FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2F-W01

Test Date: 5/25/00

AQUIFER DATA

Saturated Thickness: 15. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 1.599 ft

Water Column Height: 14.75 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

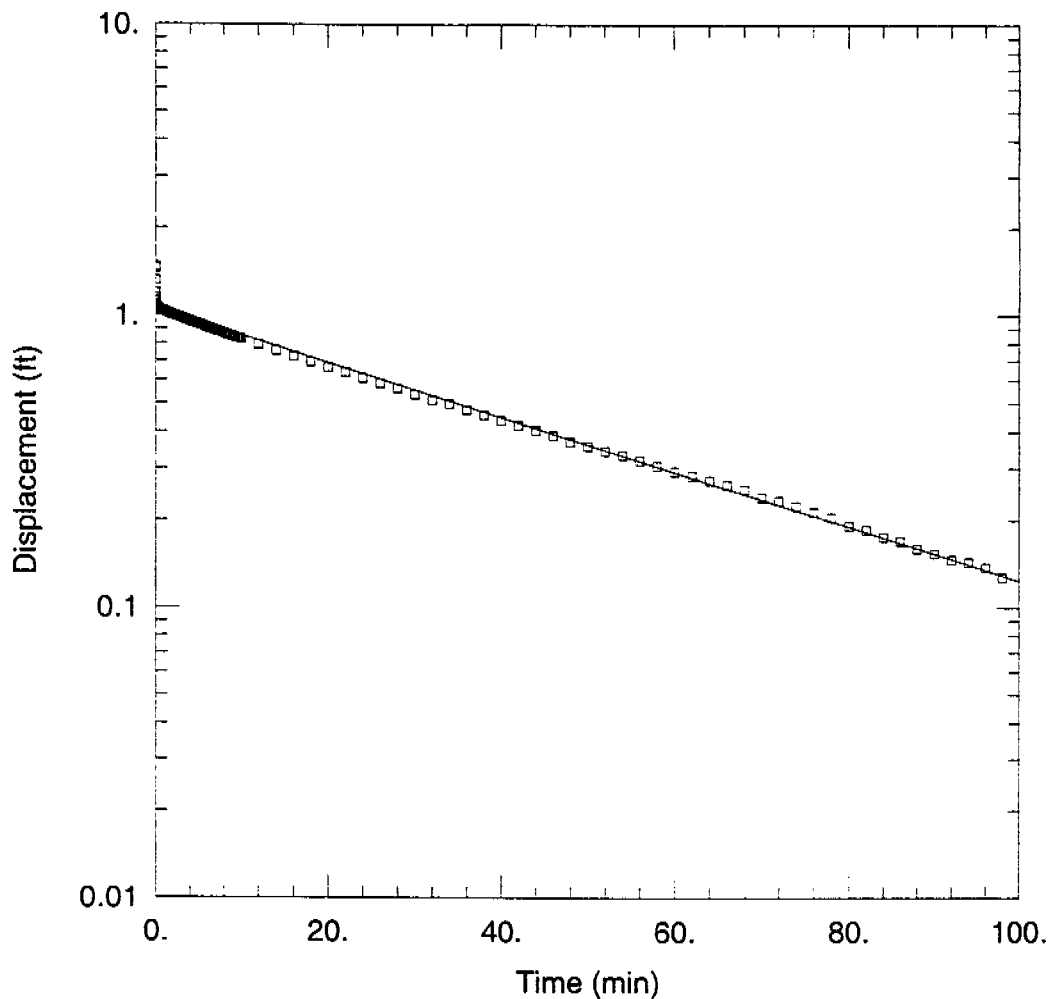
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 7.282E-06 ft/min

y0 = 1.136 ft

C-11



OA2F-W02

Data Set: C:\slug\crab orchard\DT\2F-2.aqt

Date: 06/05/00

Time: 11:34:23

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2F-W02

Test Date: 5/25/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 1.471 ft

Water Column Height: 16.75 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

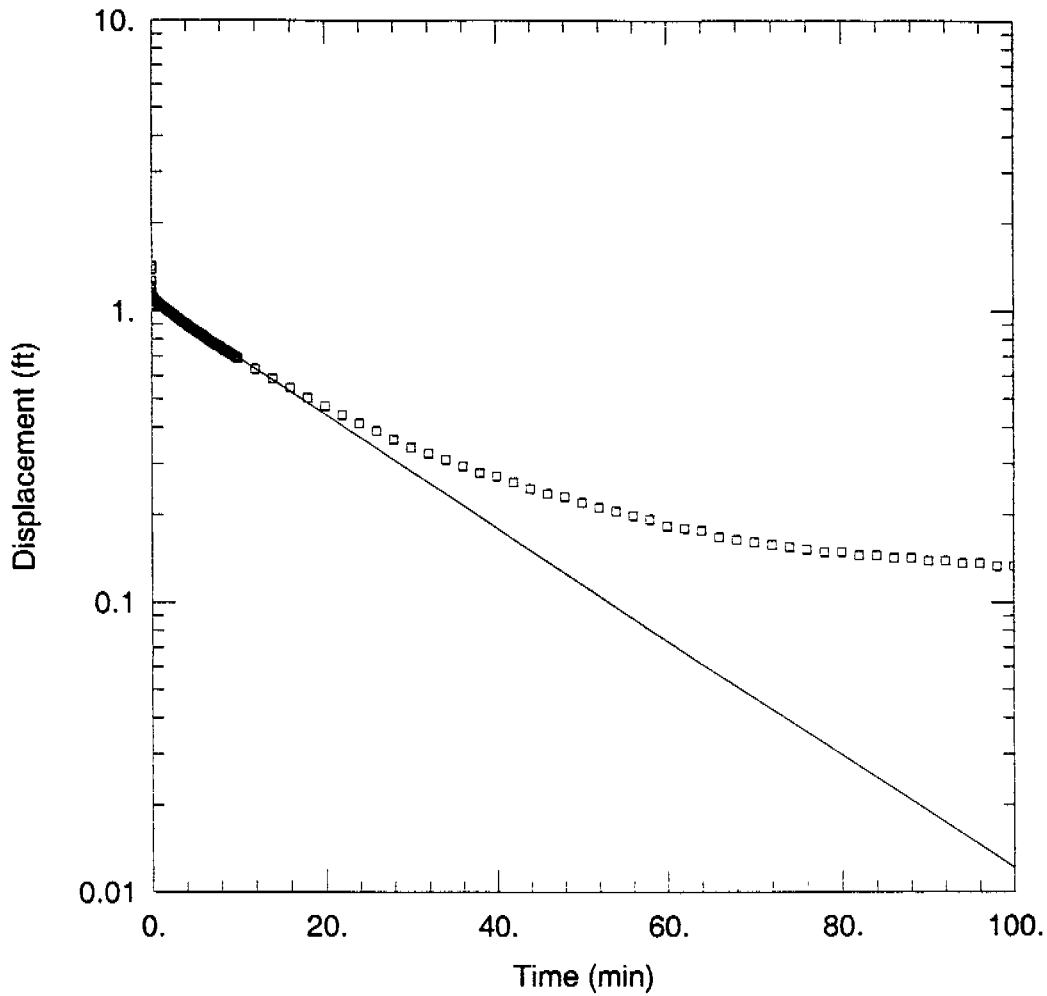
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 2.067E-05 ft/min

y0 = 1.06 ft

C-12



OA2F-W03

Data Set:

Date: 06/05/00

Time: 11:43:36

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2F-W03

Test Date: 2/25/00

AQUIFER DATA

Saturated Thickness: 16. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 1.42 ft

Water Column Height: 15.71 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

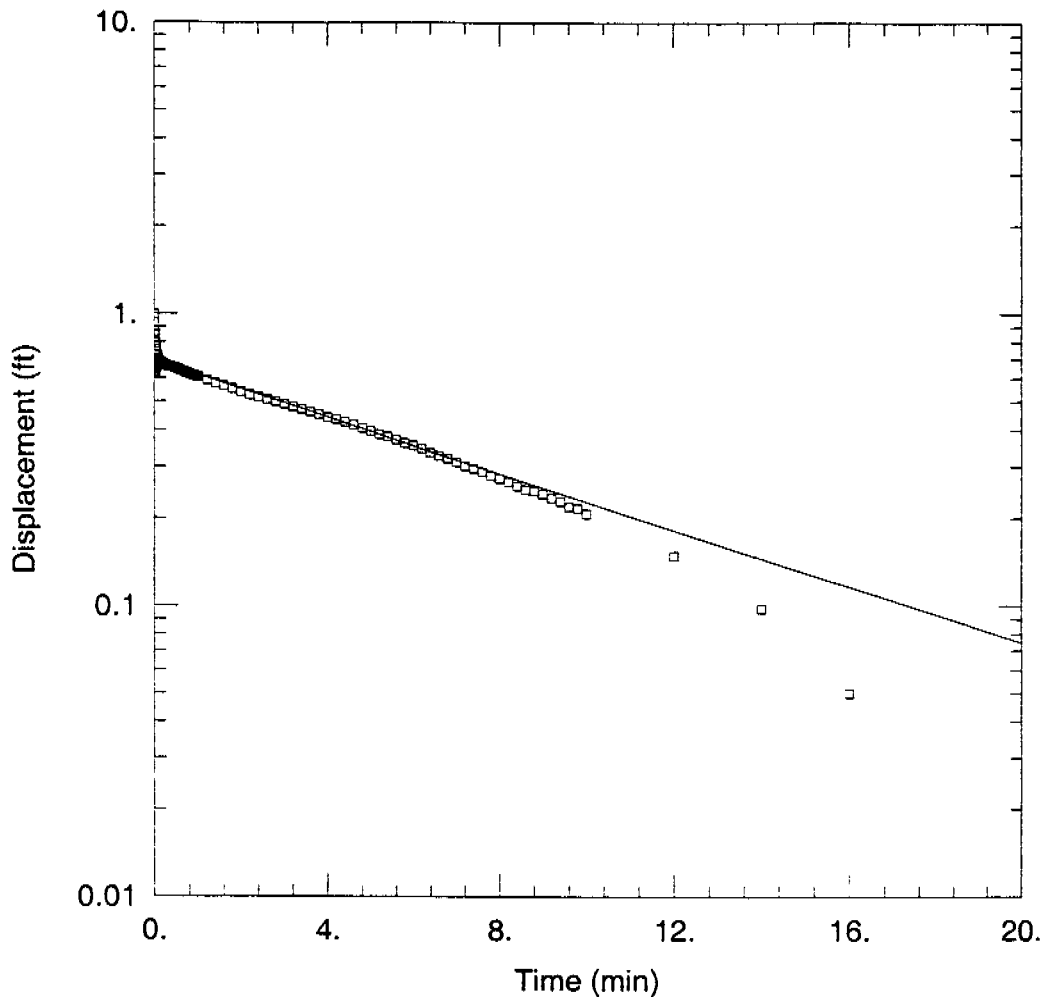
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 4.248E-05 ft/min

y0 = 1.093 ft

C-13



OA2P-W01

Data Set: C:\slug\crab orchard\DT\2P-1.aqt

Date: 06/05/00

Time: 11:22:12

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFEE

Project: 2320000026.00

Test Location: Ceab Orchard

Test Well: OA2P-W01

Test Date: 5/24/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 0.993 ft

Water Column Height: 16.09 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

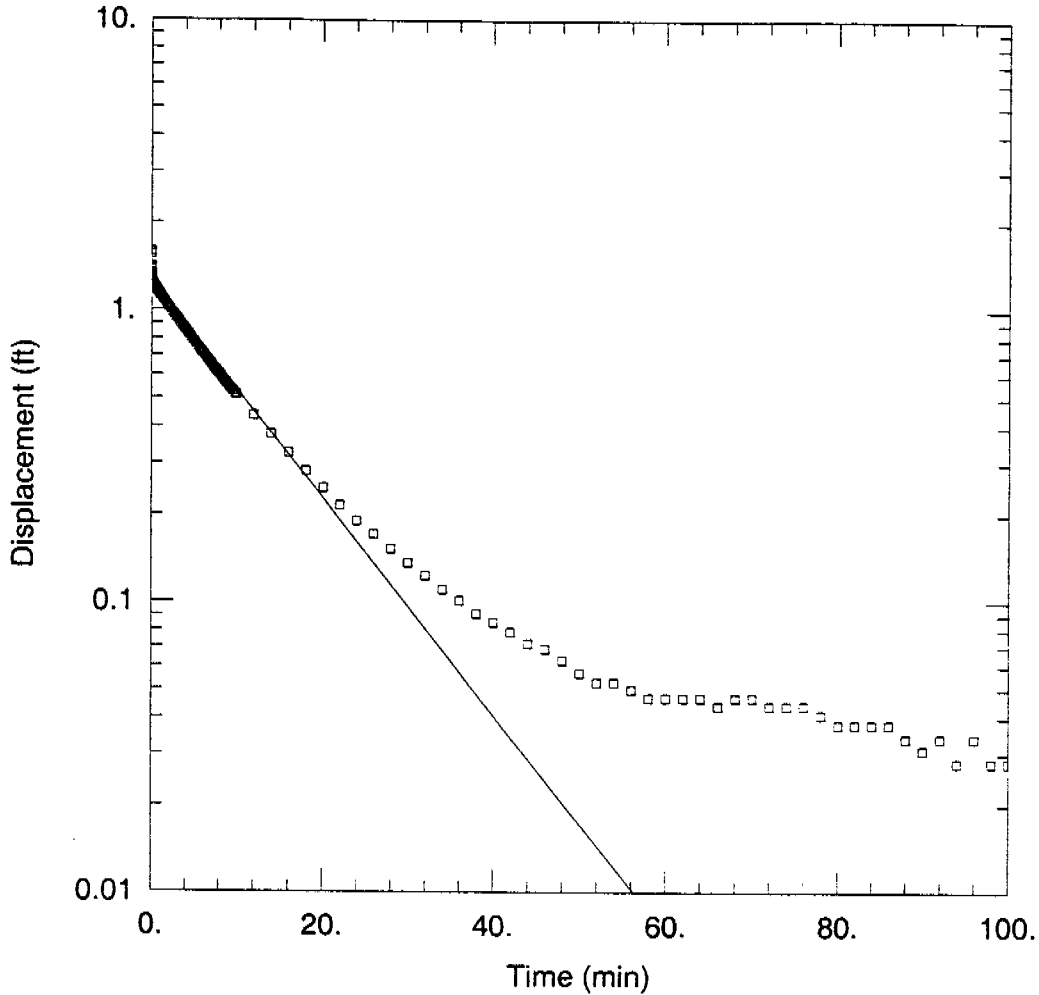
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0001014 ft/min

y0 = 0.6932 ft

C-14



OA2P-W02

Data Set: C:\slug\crab orchard\DT\2P-2.aqt

Date: 06/05/00

Time: 11:18:11

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2P-W02

Test Date: 5/25/00

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 1.581 ft

Water Column Height: 19.2 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

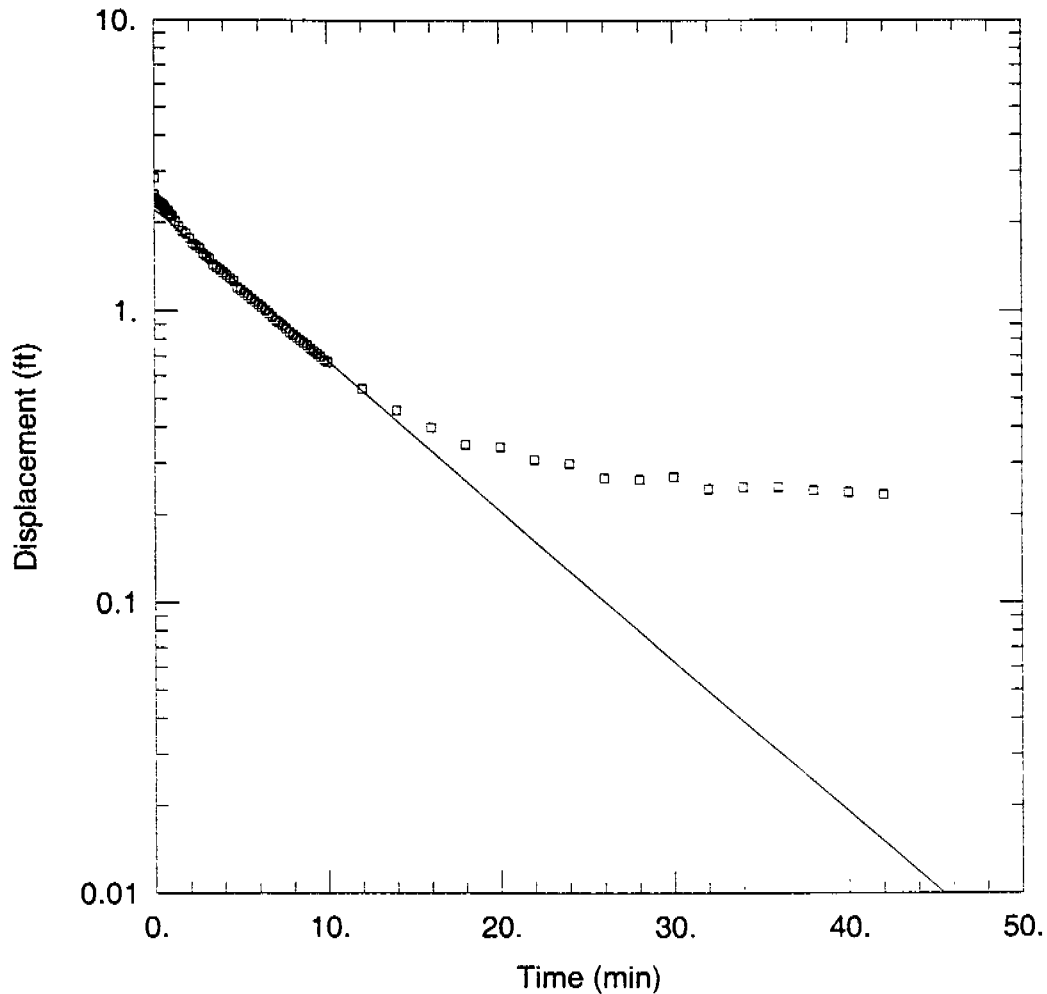
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 8.133E-05 ft/min

y0 = 1.271 ft

C-15



OA2P-W03

Data Set: C:\slug\crab orchard\DT\2P-3.aqt
Date: 06/05/00

Time: 11:27:08

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2P-W03
Test Date: 5/25/00

AQUIFER DATA

Saturated Thickness: 21. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 2.851 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

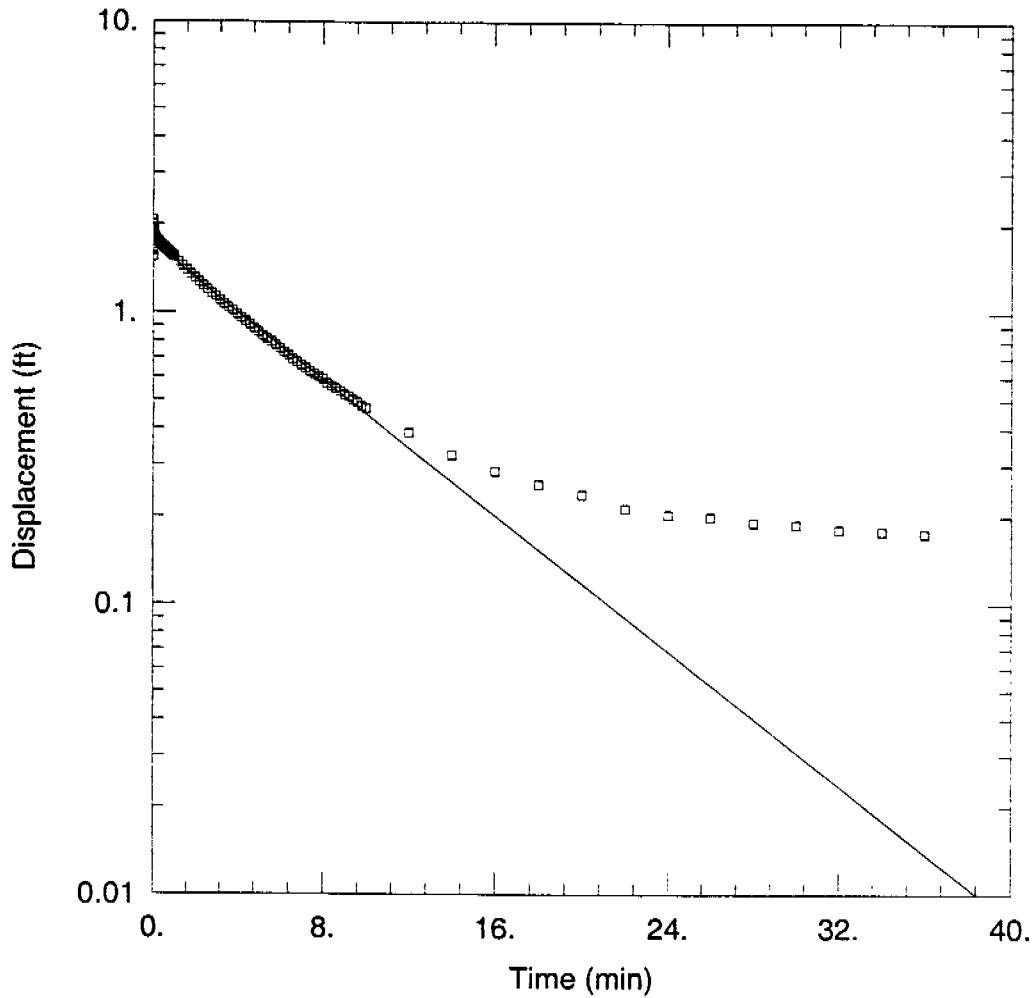
Water Column Height: 20.8 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.0001201 ft/min

Solution Method: Bower-Rice
y0 = 2.217 ft

c-16



OA2P-W04

Data Set: C:\slug\crab orchard\DT\2P-4.aqt

Date: 06/05/00

Time: 11:20:59

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2P-W04

Test Date: 5/24/00

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (W04)

Initial Displacement: 2.067 ft

Water Column Height: 19.51 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

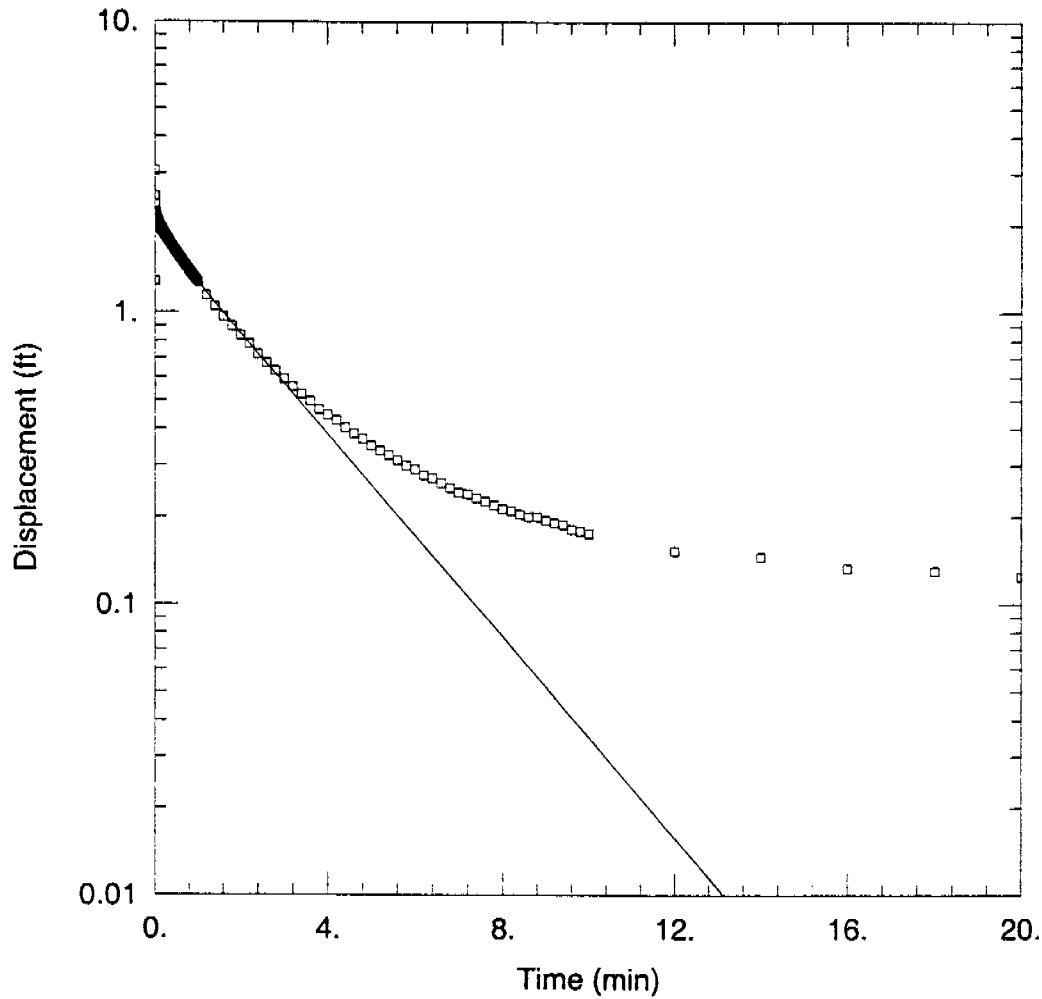
Aquifer Model: Unconfined

Solution Method: Bower-Rice

$K = 0.0001293$ ft/min

$y_0 = 1.715$ ft

C-17



OA2P-W05

Data Set: C:\slug\crab orchard\DT\2P-5.aqt

Date: 06/05/00

Time: 11:24:13

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA2P-W05

Test Date: 5/24/00

AQUIFER DATA

Saturated Thickness: 16. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 3.065 ft

Water Column Height: 15.69 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

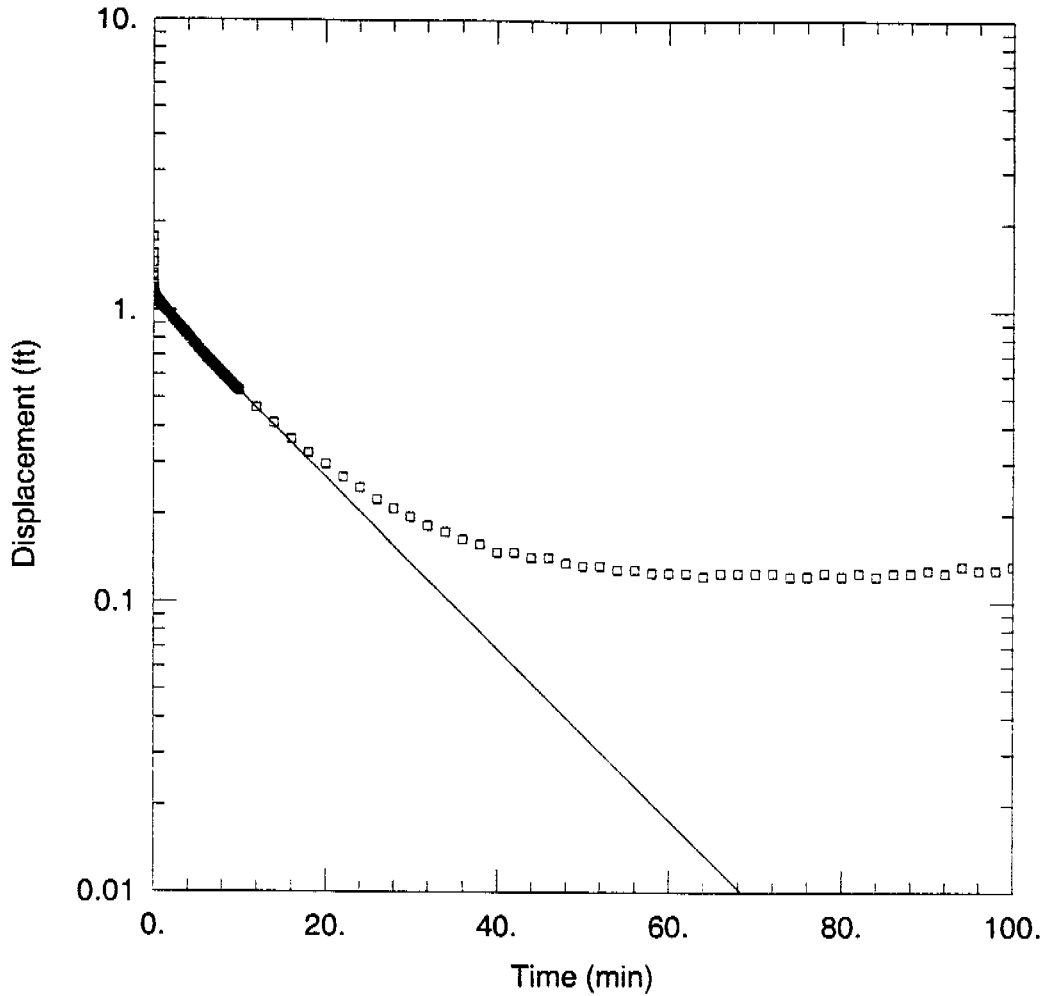
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 0.0003754 ft/min

y0 = 1.89 ft

C-18



OA2P-W06

Data Set: C:\slug\crab orchard\DT2P-6.aqt
Date: 06/05/00

Time: 11:26:36

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA2P-W06
Test Date: 2/25/00

AQUIFER DATA

Saturated Thickness: 14. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W06)

Initial Displacement: 1.772 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 13.9 ft
Wellbore Radius: 0.333 ft

SOLUTION

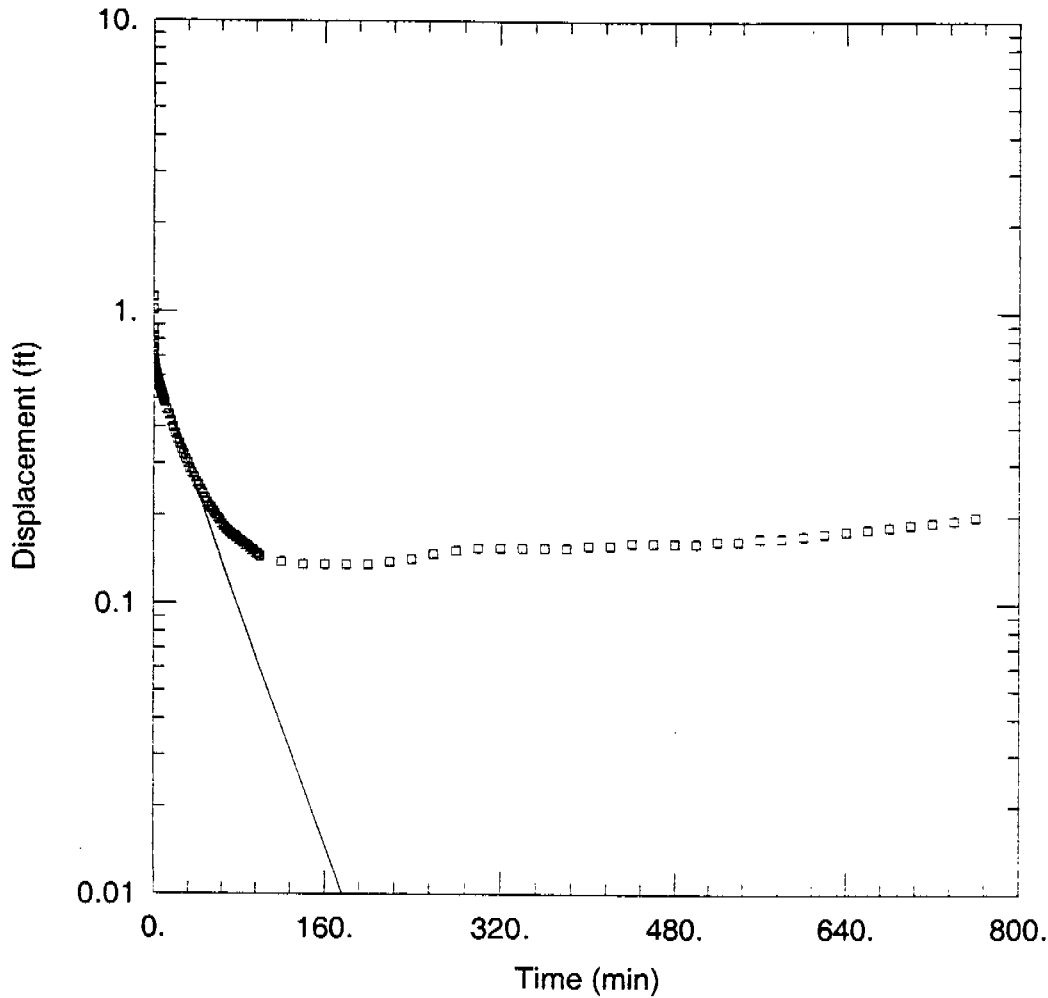
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 6.501E-05 ft/min

y0 = 1.049 ft

C-19



OA4E-W01

Data Set:

Date: 06/05/00

Time: 16:00:19

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 232000026.00

Test Location: Crab Orchard

Test Well: OA4E-W01

Test Date: 6/1/00

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 1.122 ft

Water Column Height: 19.84 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

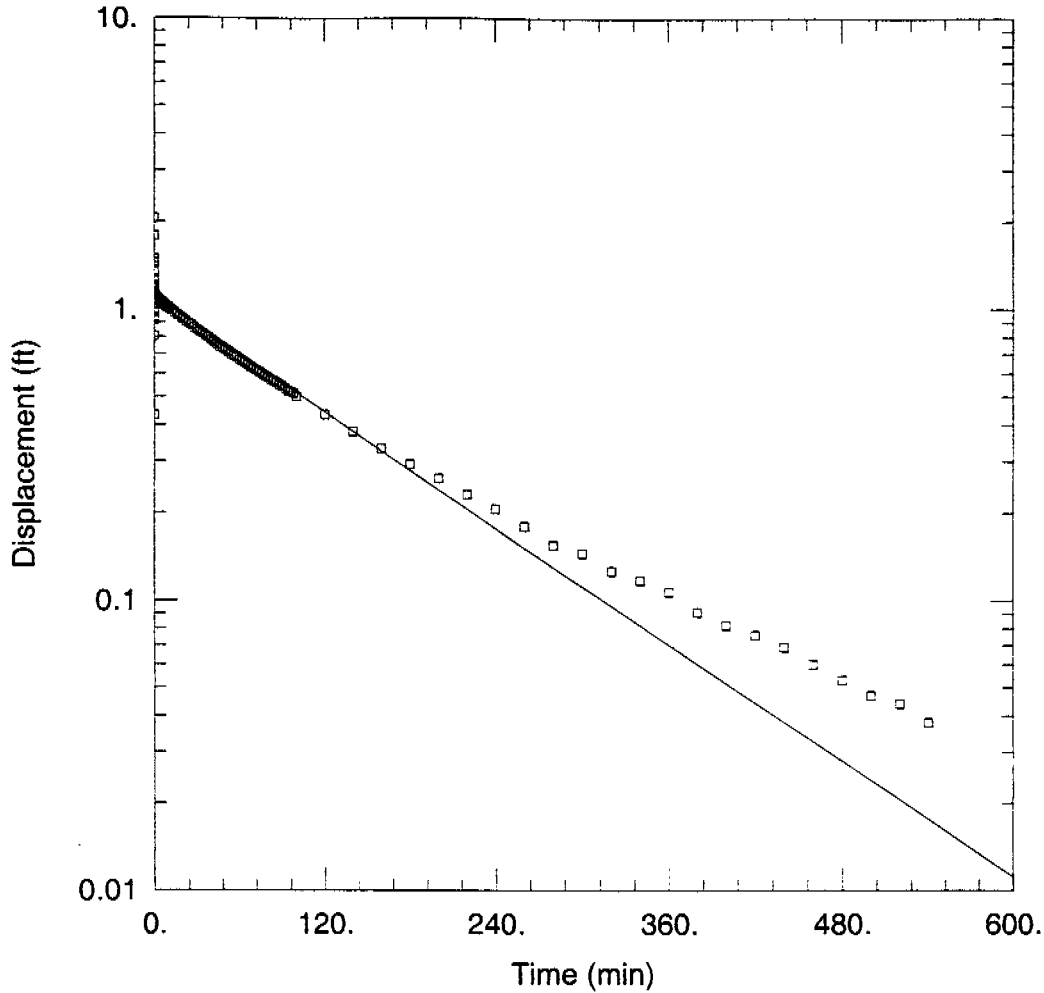
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 2.379E-05 ft/min

y0 = 0.6351 ft

C-20



OA4E-W02

Data Set:

Date: 06/05/00

Time: 15:35:10

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA4E-W02

Test Date: 6/1/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W02)

Initial Displacement: 2.05 ft

Water Column Height: 16.25 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

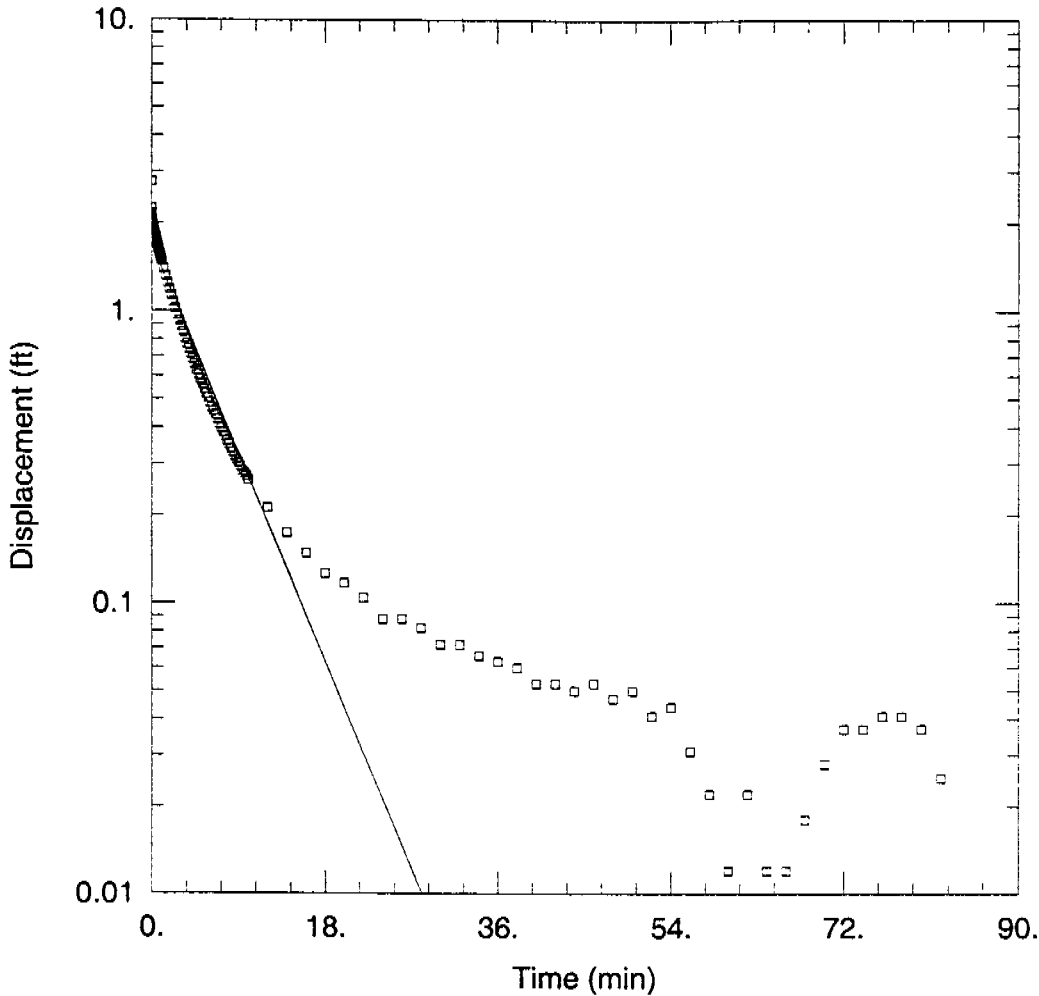
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 7.049E-06 ft/min

y0 = 1.115 ft

C-21



OA4E-W03

Data Set:
Date: 06/05/00

Time: 15:43:59

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA4E-W03
Test Date: 6/1/00

AQUIFER DATA

Saturated Thickness: 18. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 2.777 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 17.71 ft
Wellbore Radius: 0.333 ft

SOLUTION

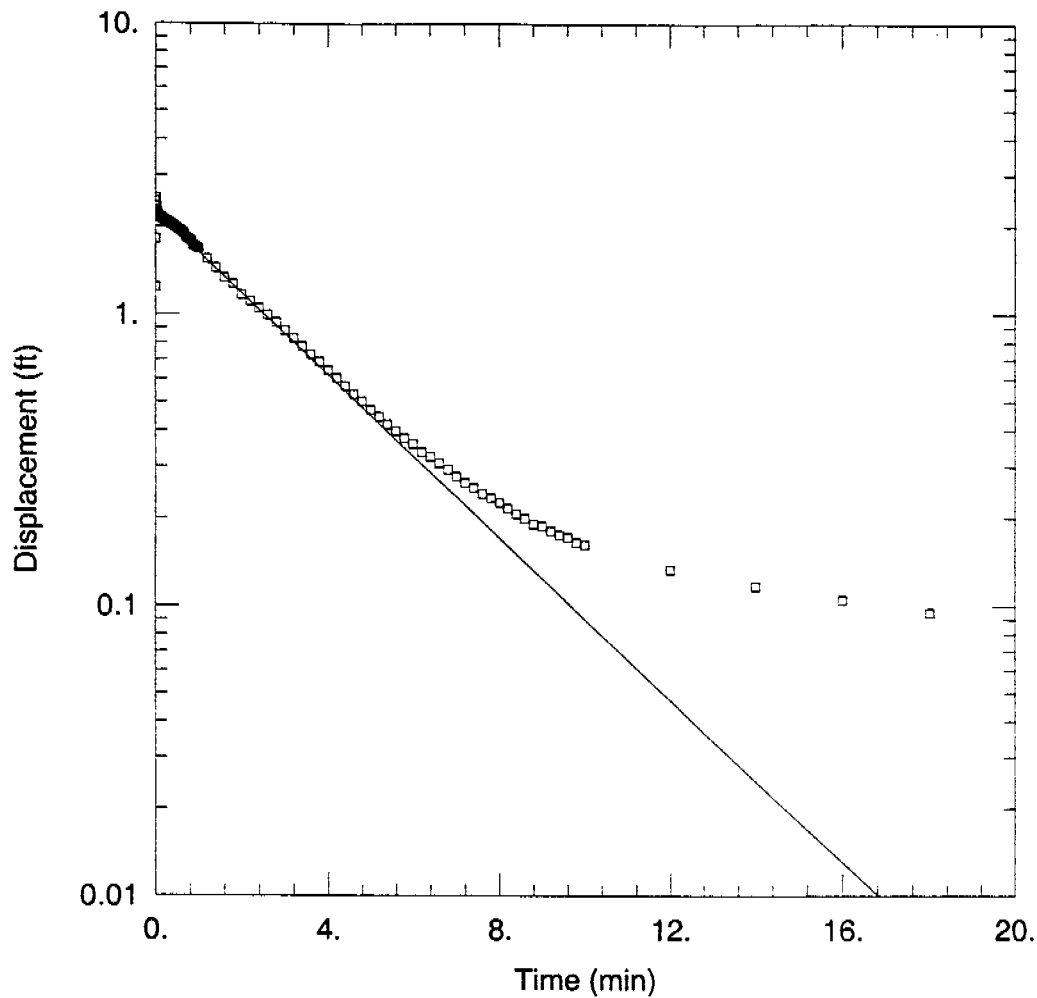
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0001765 ft/min

y0 = 1.691 ft

C-22



OA8S-W01 RETEST

Data Set: C:\slug\crab orchard\DT\8-W1R.aqt

Date: 06/05/00

Time: 11:19:09

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA8S-W01

Test Date: 5/29/00

AQUIFER DATA

Saturated Thickness: 20 ft

Anisotropy Ratio (Kz/Kr): 1

WELL DATA (W01)

Initial Displacement: 2.446 ft

Water Column Height: 19.52 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10 ft

SOLUTION

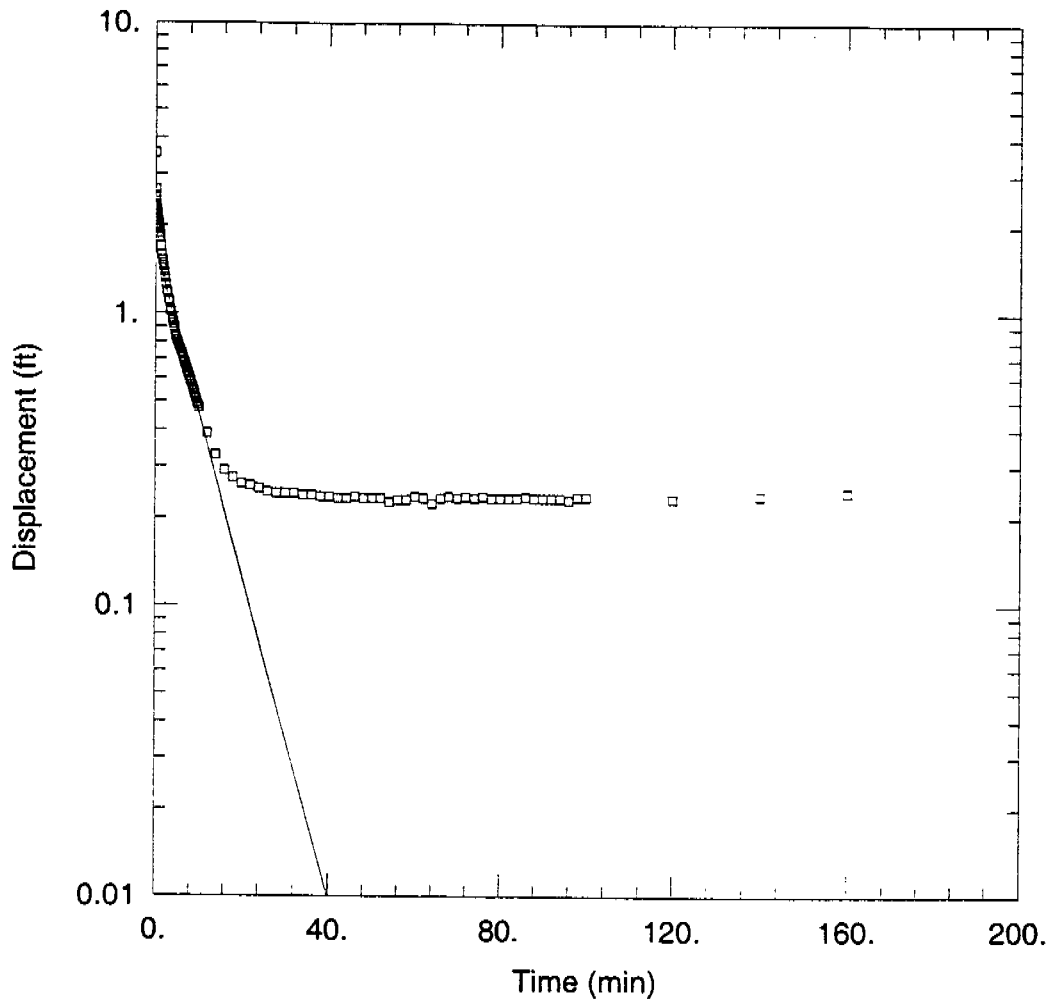
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 0.000311 ft/min

y0 = 2.252 ft

C-23



OA8S-W02

Data Set:

Date: 06/05/00

Time: 15:56:01

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA8S-W02

Test Date: 6/1/00

AQUIFER DATA

Saturated Thickness: 21 ft

Anisotropy Ratio (K_z/K_r): 1

WELL DATA (W02)

Initial Displacement: 3.542 ft

Water Column Height: 20.02 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10 ft

SOLUTION

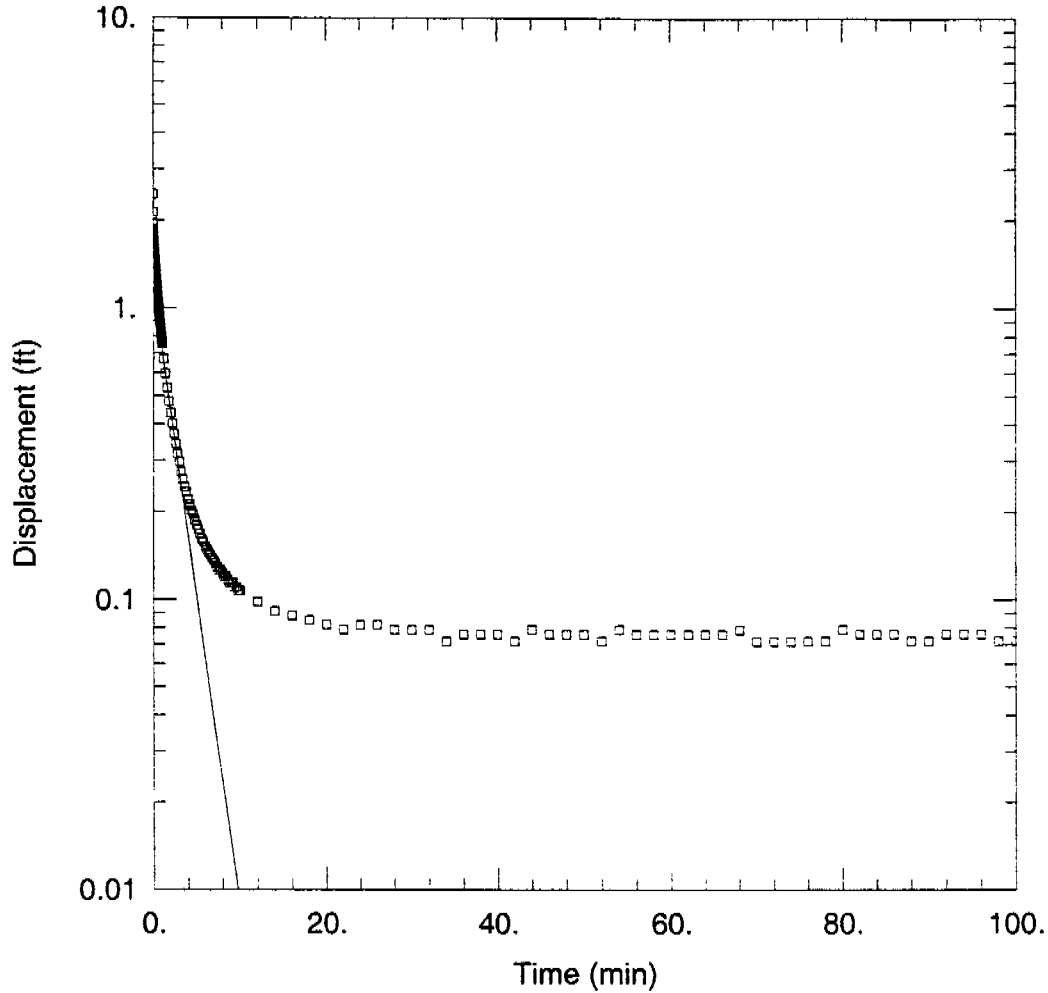
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.0001213$ ft/min

$y_0 = 1.67$ ft

C-24



OA8S-W03

Data Set:

Date: 06/05/00

Time: 16:04:30

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: OA8S-W03

Test Date: 6/2/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W03)

Initial Displacement: 2.456 ft

Water Column Height: 16.89 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

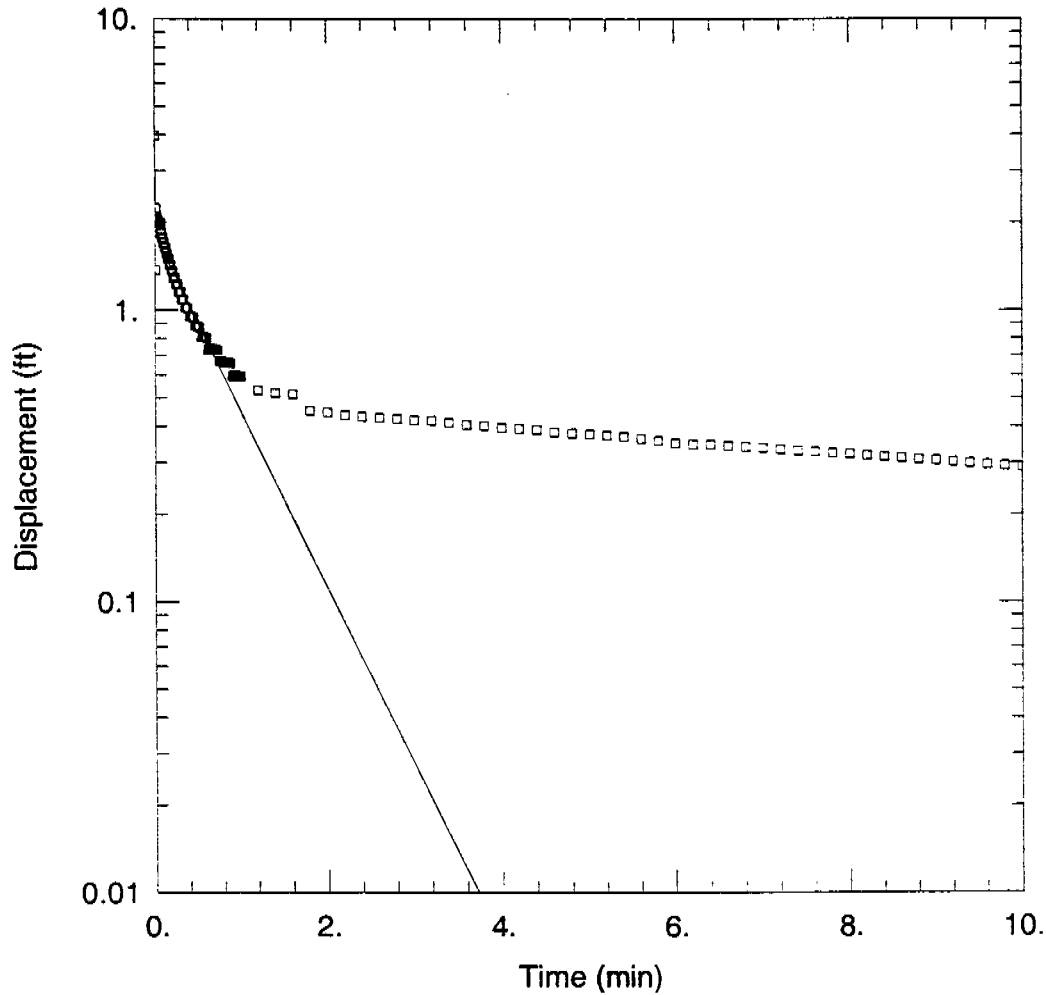
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0004861 ft/min

y0 = 1.189 ft

C-25



OA8S-W04 RETEST

Data Set: C:\slug\crab orchard\DT\new\8S-4r.aqt

Date: 06/19/00

Time: 13:21:59

PROJECT INFORMATION

Company: URS

Client: US Fish and Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: OA8S-W04

Test Date: 06-07-00

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OA8S-W04)

Initial Displacement: 3.965 ft

Water Column Height: 12.84 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

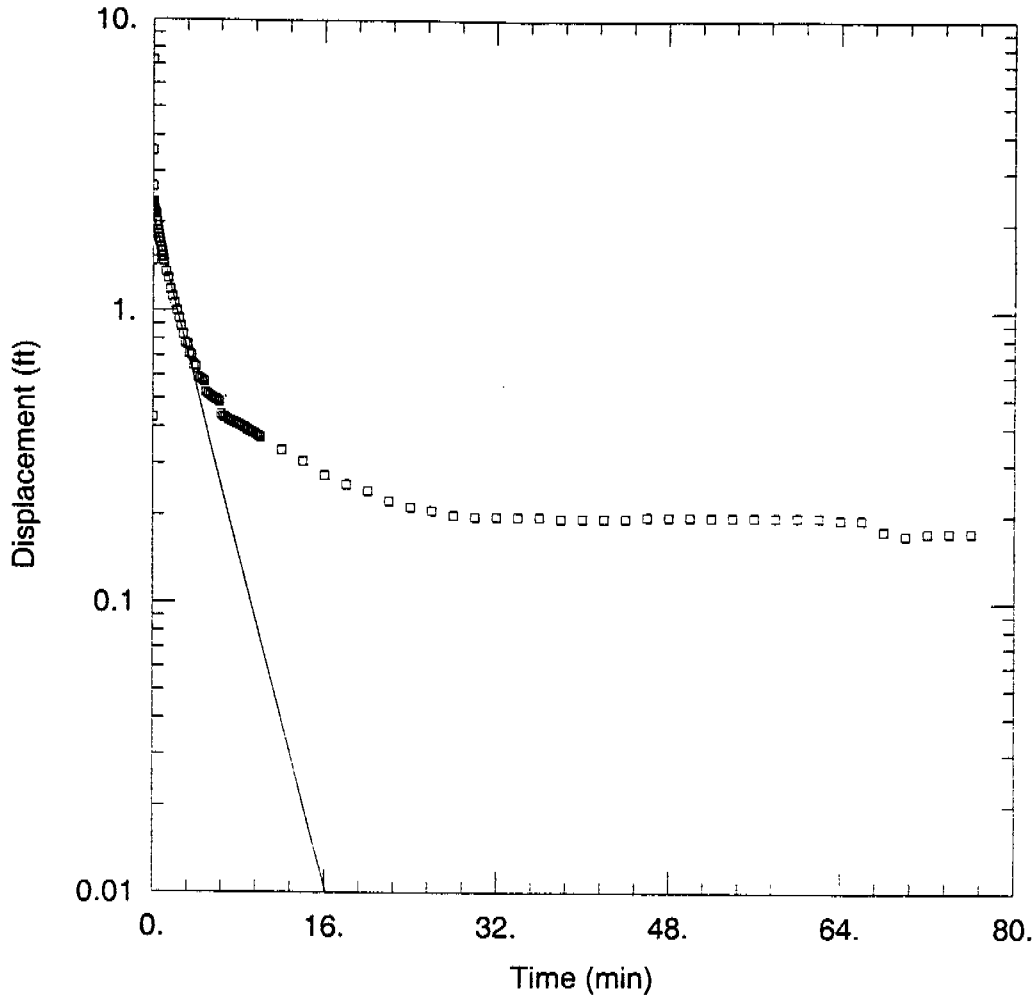
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.001289 ft/min

y0 = 1.815 ft

C-26



OA8S-W06

Data Set:
Date: 06/05/00

Time: 16:11:17

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: OA8S-W06
Test Date: 6/2/00

AQUIFER DATA

Saturated Thickness: 17. ft Anisotropy Ratio (Kz/Kr): 1.

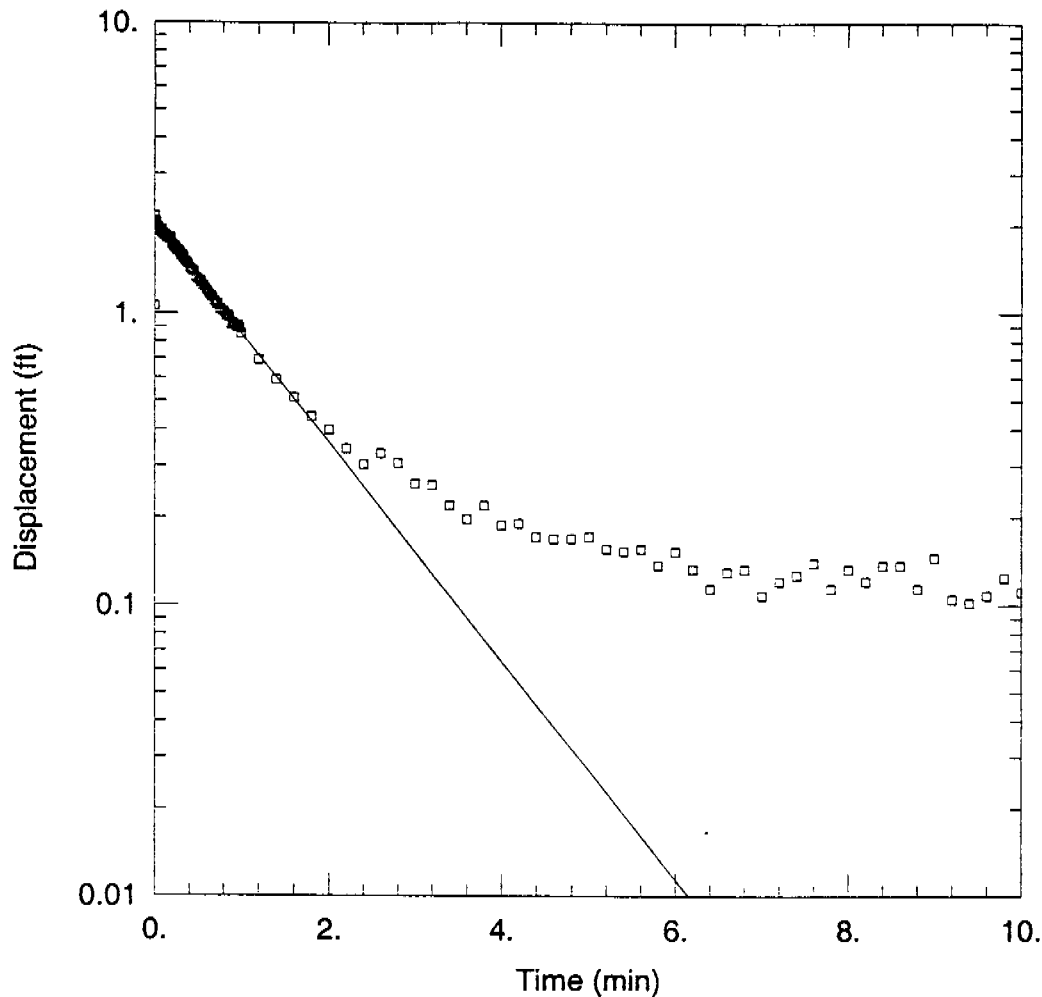
WELL DATA (W06)

Initial Displacement: 3.548 ft Water Column Height: 16.6 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0003124 ft/min y0 = 2.107 ft

C-27



AO9-W01

Data Set: C:\slug\crab orchard\DT\9-W1.aqt

Date: 06/05/00

Time: 11:29:12

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Date: 5/23/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 2.152 ft

Water Column Height: 16.03 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

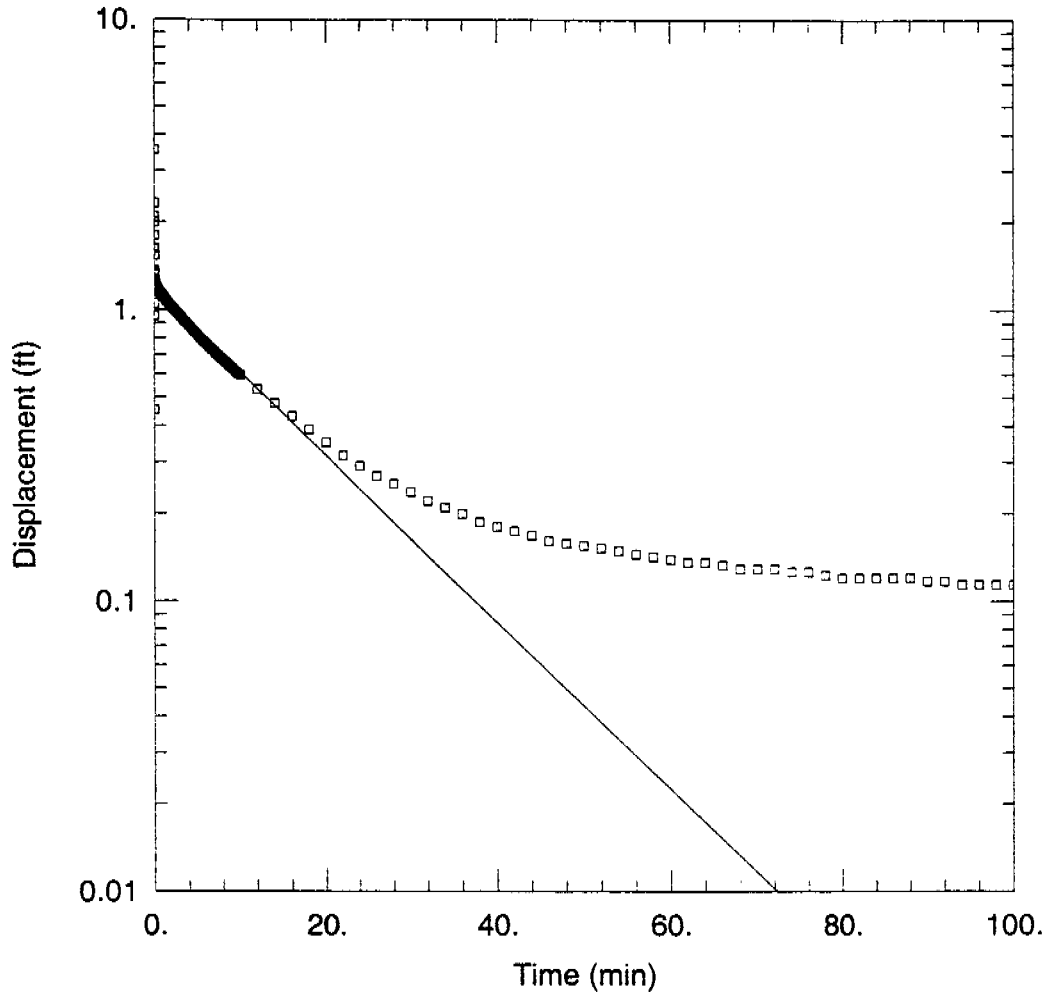
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 0.0007843 ft/min

y0 = 2.034 ft

C-28



A11A-W01

Data Set: C:\slug\crab orchard\DT\11A-1.aqt
Date: 06/19/00

Time: 12:00:32

PROJECT INFORMATION

Company: URS
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: A11A-W01
Test Date: 06-06-00

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11A-W01)

Initial Displacement: 3.54 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

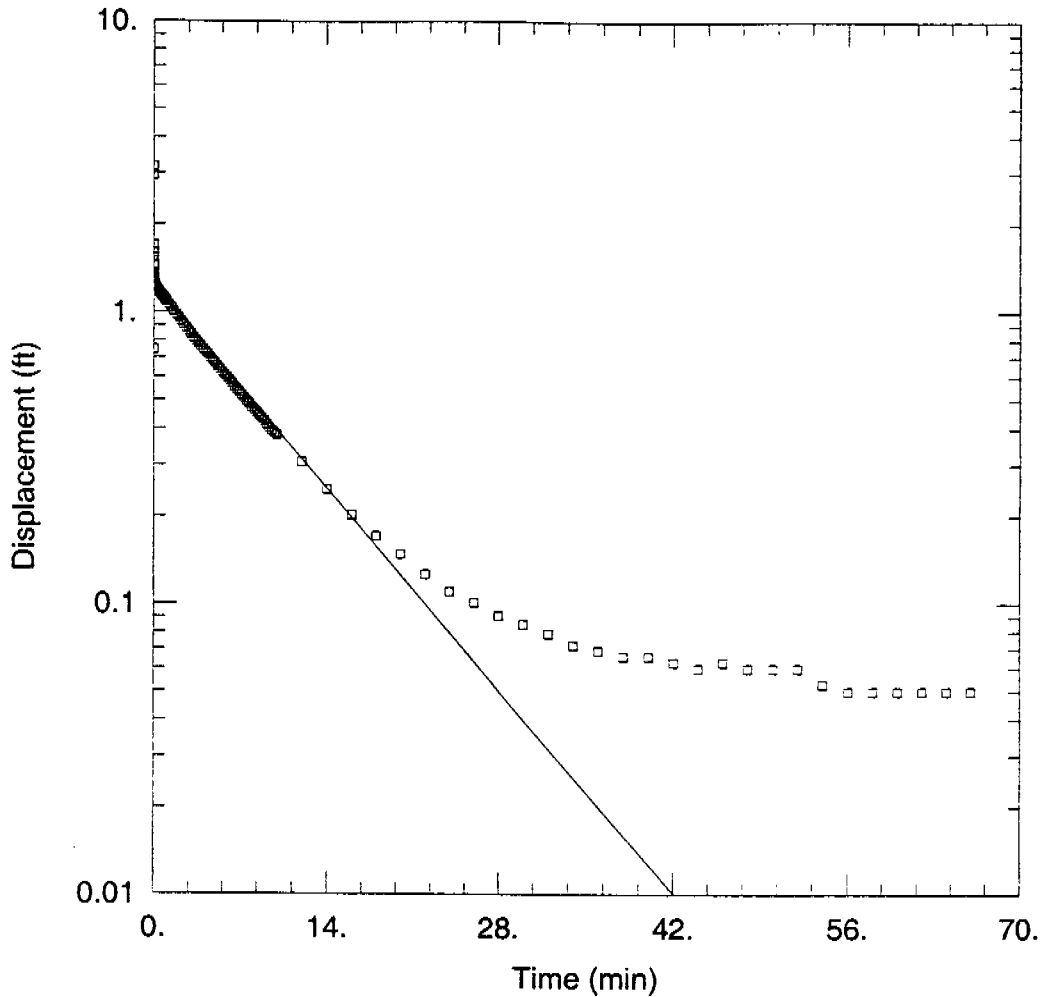
Water Column Height: 12.15 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 5.694E-05 ft/min

Solution Method: Bower-Rice
y0 = 1.186 ft

C-29



A11A-W02

Data Set: C:\slug\crab orchard\DT\11A-2.aqt

Date: 06/19/00

Time: 12:05:18

PROJECT INFORMATION

Company: URS

Client: US Fish and Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: A11A-W02

Test Date: 06-06-00

AQUIFER DATA

Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11A-W02)

Initial Displacement: 3.156 ft

Water Column Height: 10.79 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

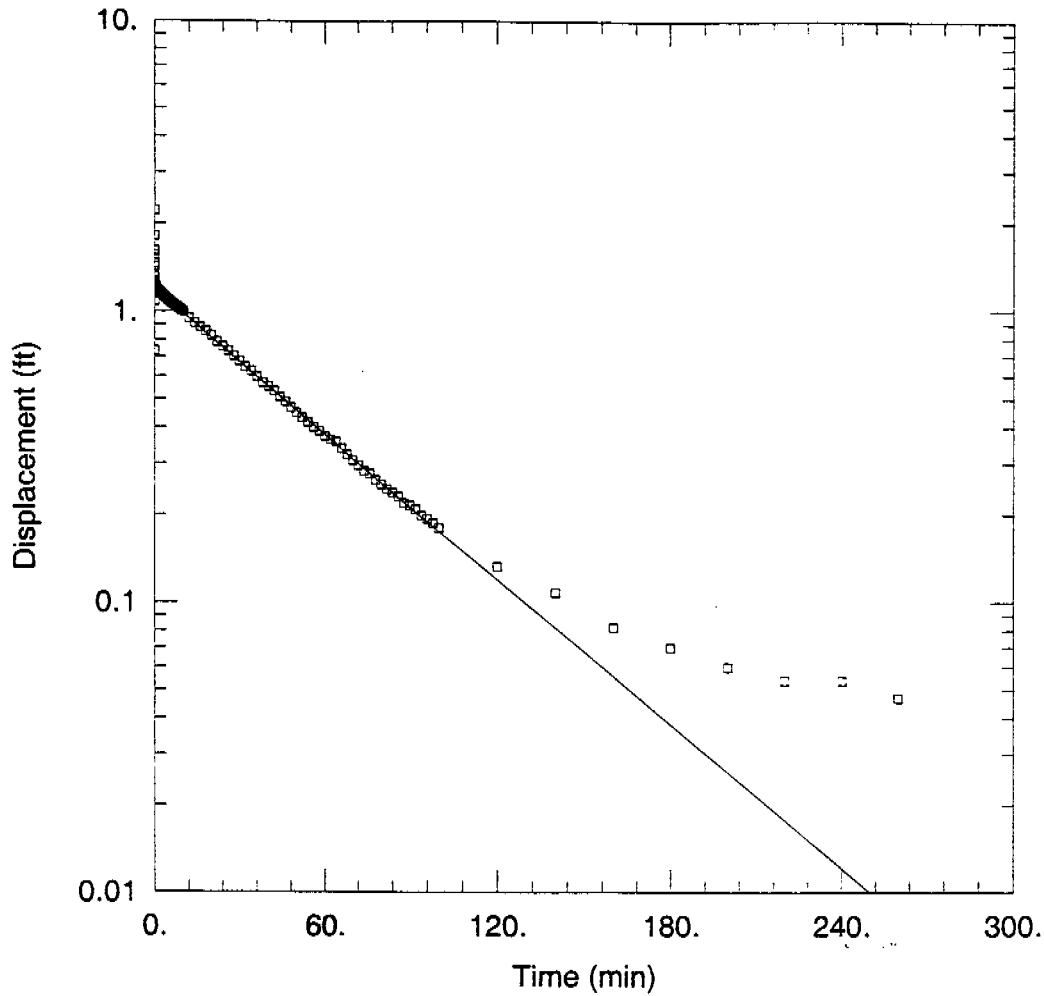
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0001008 ft/min

y0 = 1.243 ft

C-30



A11H-W01

Data Set: C:\slug\crab orchard\DT\11H-1.aqt
Date: 06/19/00

Time: 11:45:08

PROJECT INFORMATION

Company: URS
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: A11H-W01
Test Date: 06-06-00

AQUIFER DATA

Saturated Thickness: 16. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11H-W01)

Initial Displacement: 2.213 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

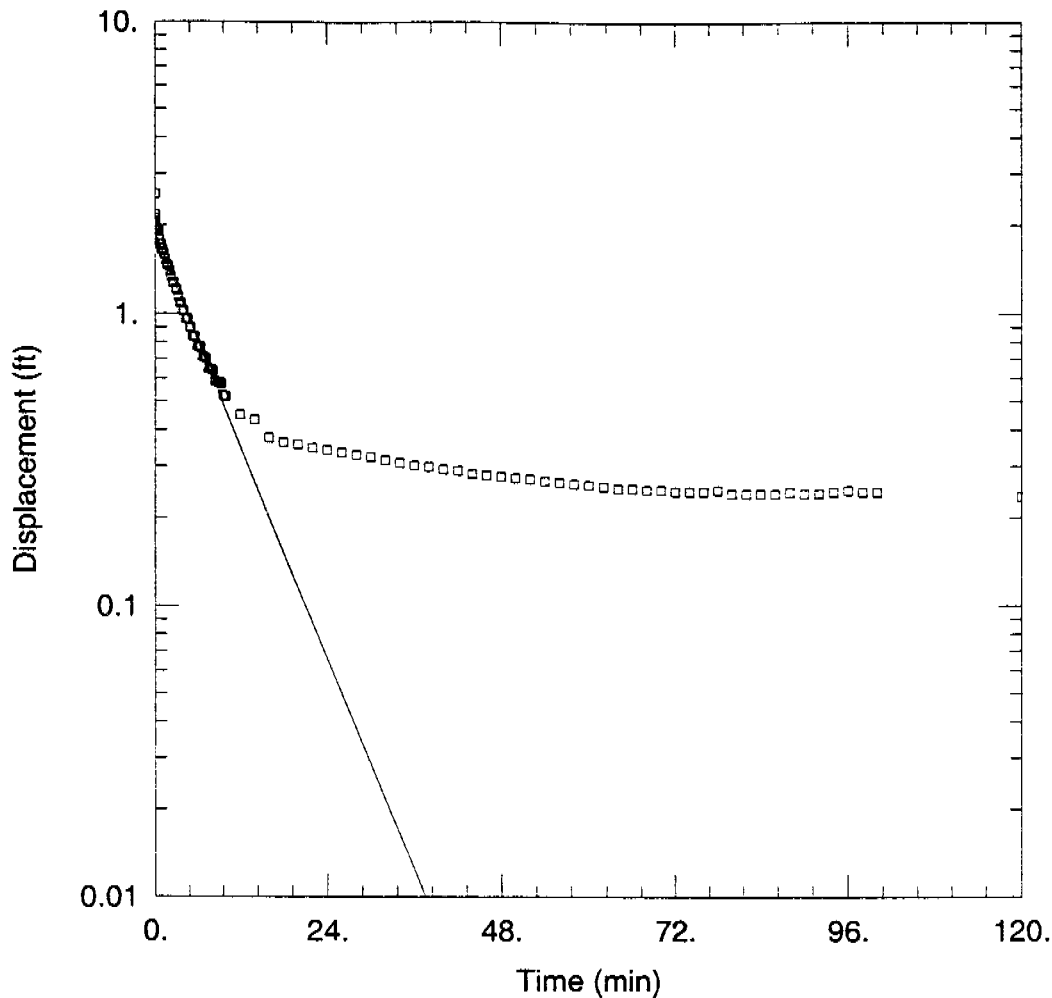
Water Column Height: 15.07 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 1.718E-05 ft/min

Solution Method: Bower-Rice
y0 = 1.192 ft

C-31



A11S-W01

Data Set: C:\slug\crab orchard\DT\11S-1.aqt
Date: 06/19/00

Time: 11:25:33

PROJECT INFORMATION

Company: URS
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: A11S-W01
Test Date: 06-05-00

AQUIFER DATA

Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11S-W01)

Initial Displacement: 2.558 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

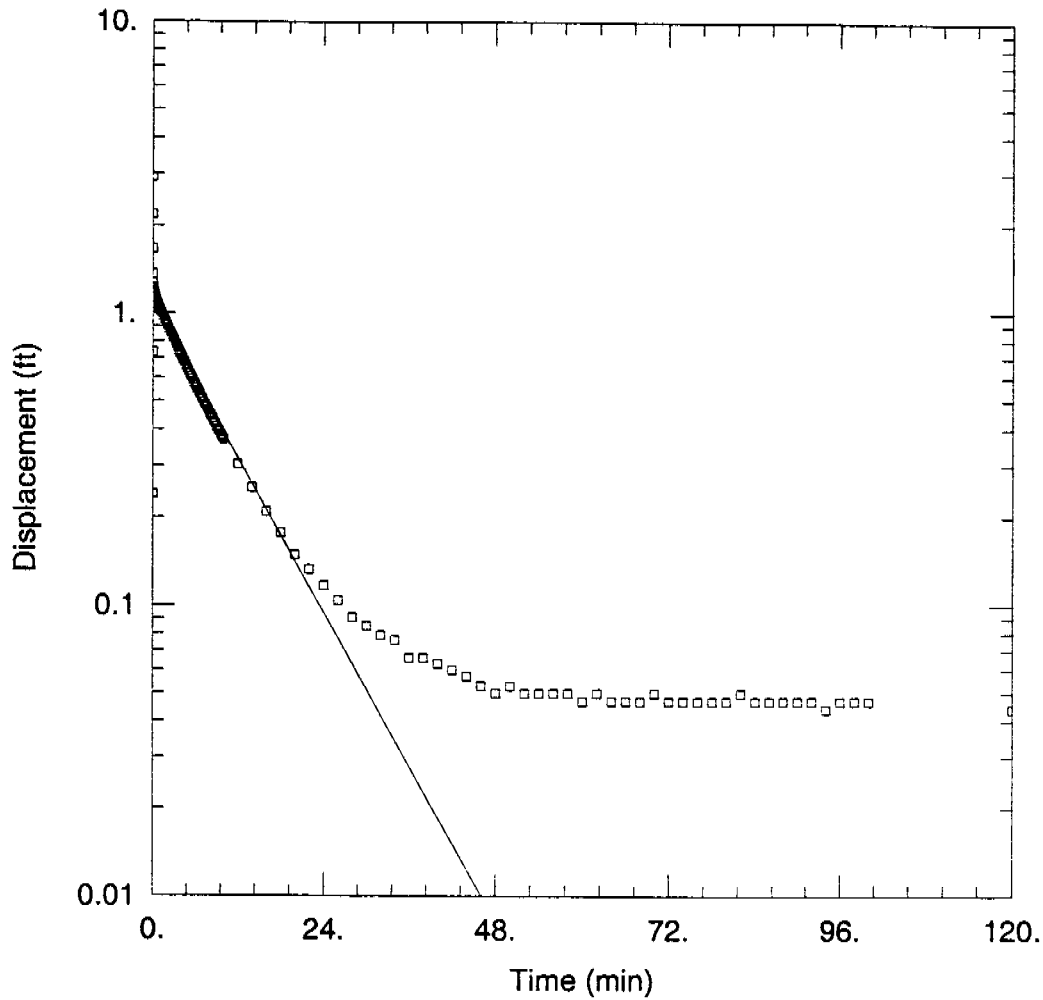
Water Column Height: 11.8 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.0001255 ft/min

Solution Method: Bouwer-Rice
y0 = 1.878 ft

C-32



A11S-W02

Data Set: C:\slug\crab orchard\DT\11S-2.aqt
Date: 06/19/00

Time: 11:39:15

PROJECT INFORMATION

Company: URS
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: A11S-W02
Test Date: 06-06-00

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11S-W02)

Initial Displacement: 2.935 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 12.57 ft
Wellbore Radius: 0.333 ft

SOLUTION

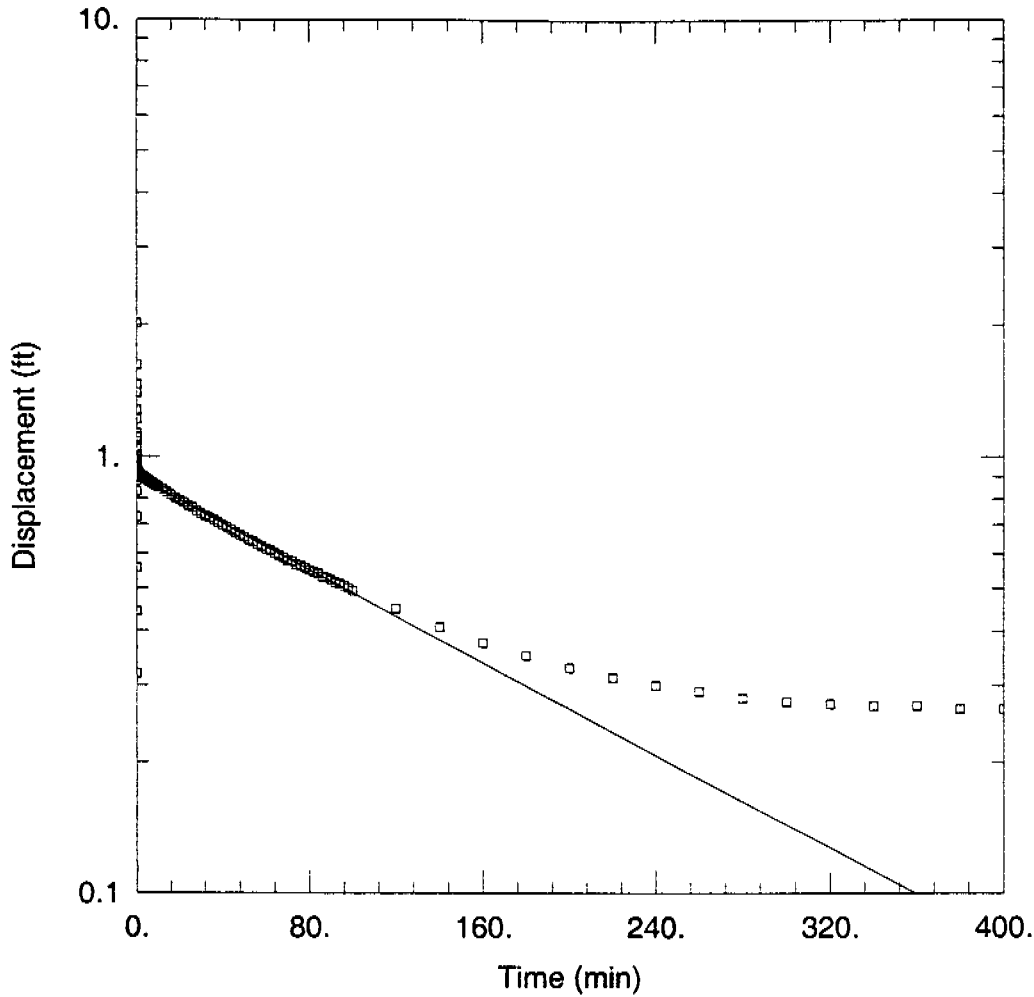
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 9.031E-05 ft/min

y0 = 1.086 ft

C-33



A11S-W03

Data Set: C:\slug\crab orchard\DT\11S-3.aqt

Date: 06/19/00

Time: 11:33:15

PROJECT INFORMATION

Company: URS

Client: US Fish and Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: A11S-W03

Test Date: 06-05-00

AQUIFER DATA

Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11S-W03)

Initial Displacement: 2.018 ft

Water Column Height: 10.43 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

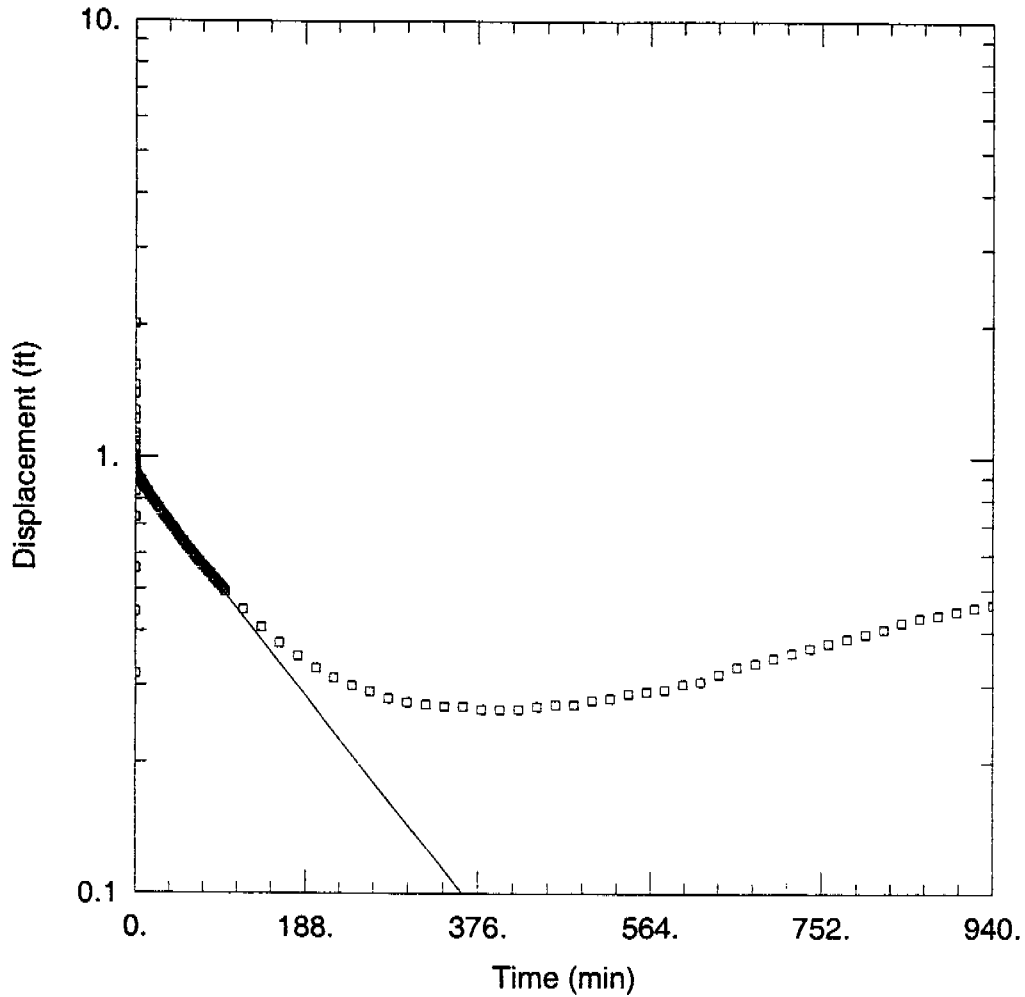
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 5.159E-06 ft/min

y0 = 0.8987 ft

C-34



A11S-W03

Data Set: C:\slug\crab orchard\DT\11S-3.aqt
Date: 06/19/00

Time: 14:52:45

PROJECT INFORMATION

Company: URS
Client: US Fish and Wildlife
Project: 232000002600
Test Location: Crab Orchard
Test Well: A11S-W03
Test Date: 06-05-00

AQUIFER DATA

Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11S-W03)

Initial Displacement: 2.018 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 10.43 ft
Wellbore Radius: 0.333 ft

SOLUTION

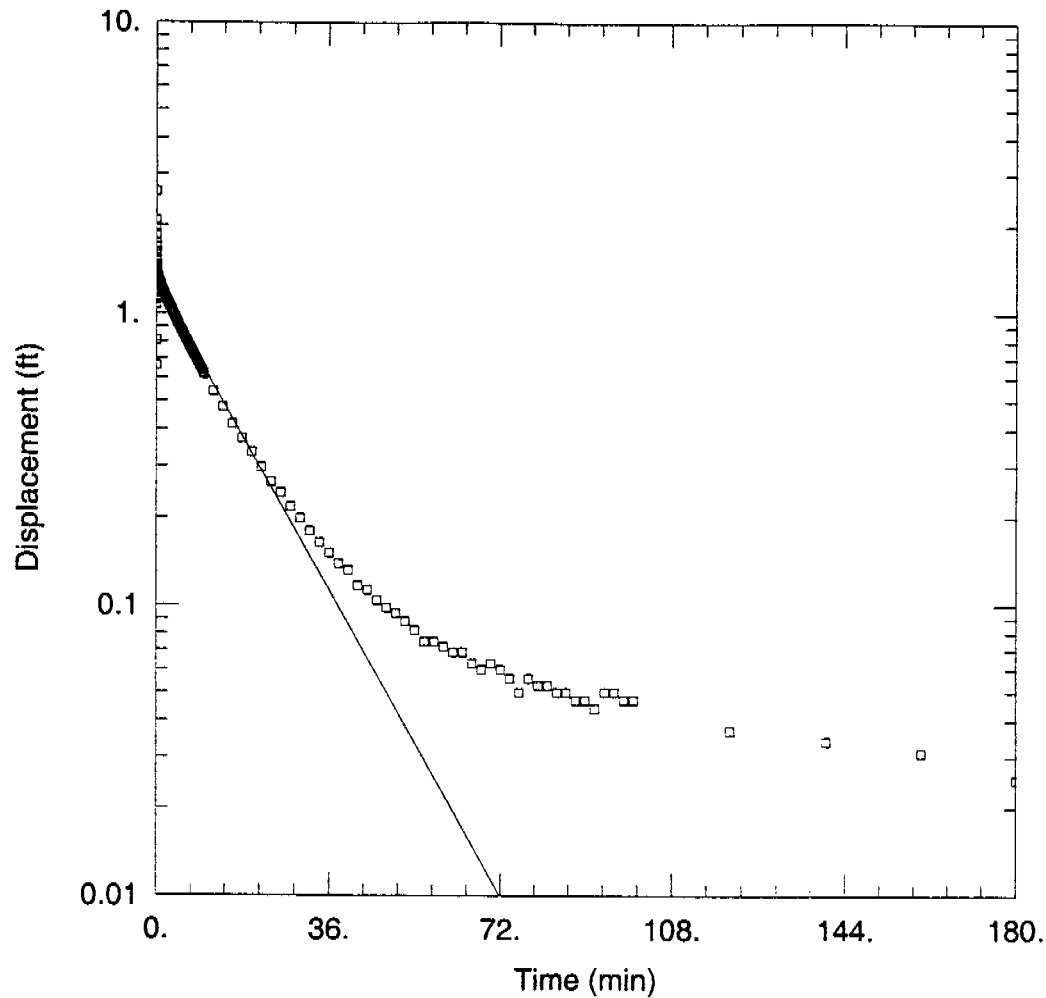
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 5.159E-06 ft/min

y0 = 0.8987 ft

C-36



A11P-W01

Data Set: C:\slug\crab orchard\DT\11P-1.aqt

Date: 06/19/00

Time: 11:55:40

PROJECT INFORMATION

Company: URS

Client: US Fish Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: A11P-W01

Test Date: 06-06-00

AQUIFER DATA

Saturated Thickness: 14. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A11P-W01)

Initial Displacement: 2.616 ft

Water Column Height: 13.77 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

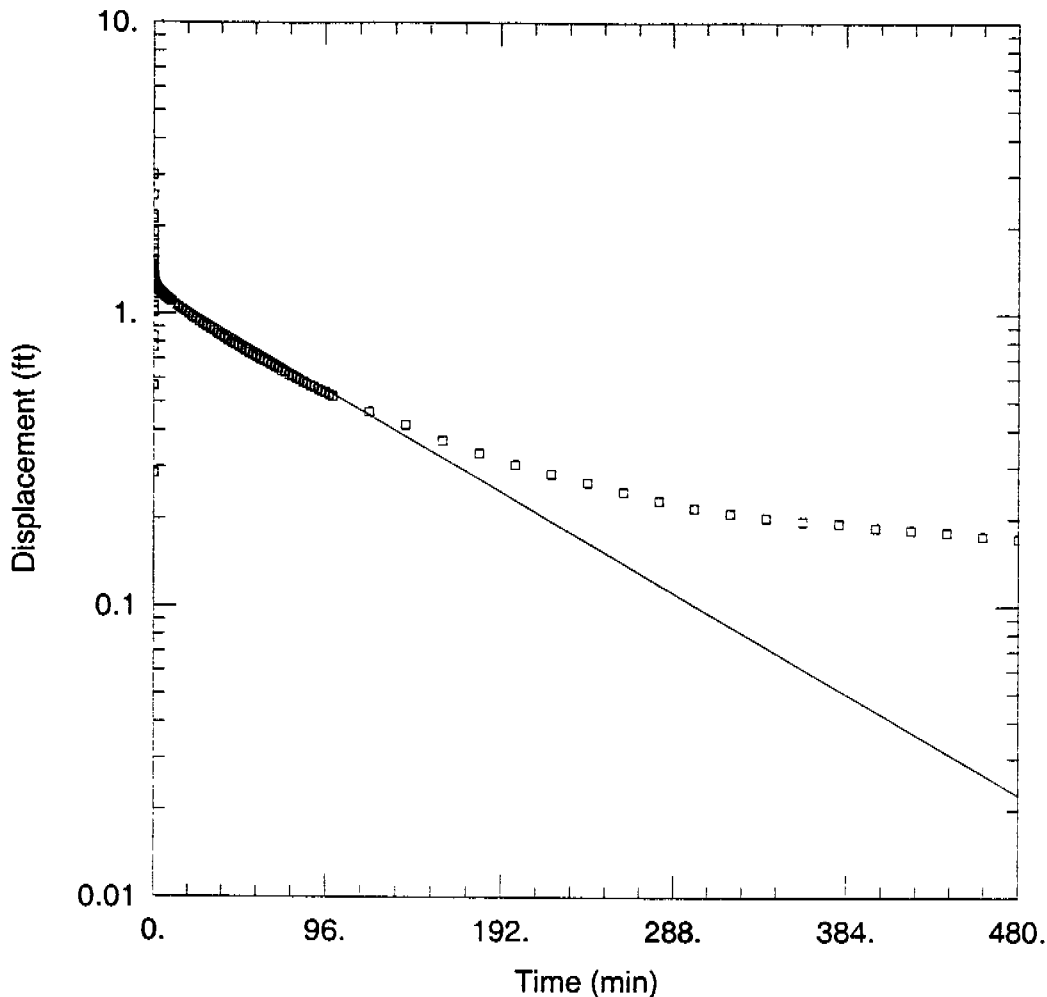
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 6.261E-05 ft/min

y0 = 1.29 ft

C-37



A12-W01

Data Set: C:\slug\crab orchard\DT\new\12-1.aqt

Date: 06/19/00

Time: 12:11:33

PROJECT INFORMATION

Company: URS

Client: US Fish and Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: A12-W01

Test Date: 06-07-00

AQUIFER DATA

Saturated Thickness: 14. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A12-W01)

Initial Displacement: 3.005 ft

Water Column Height: 13.14 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

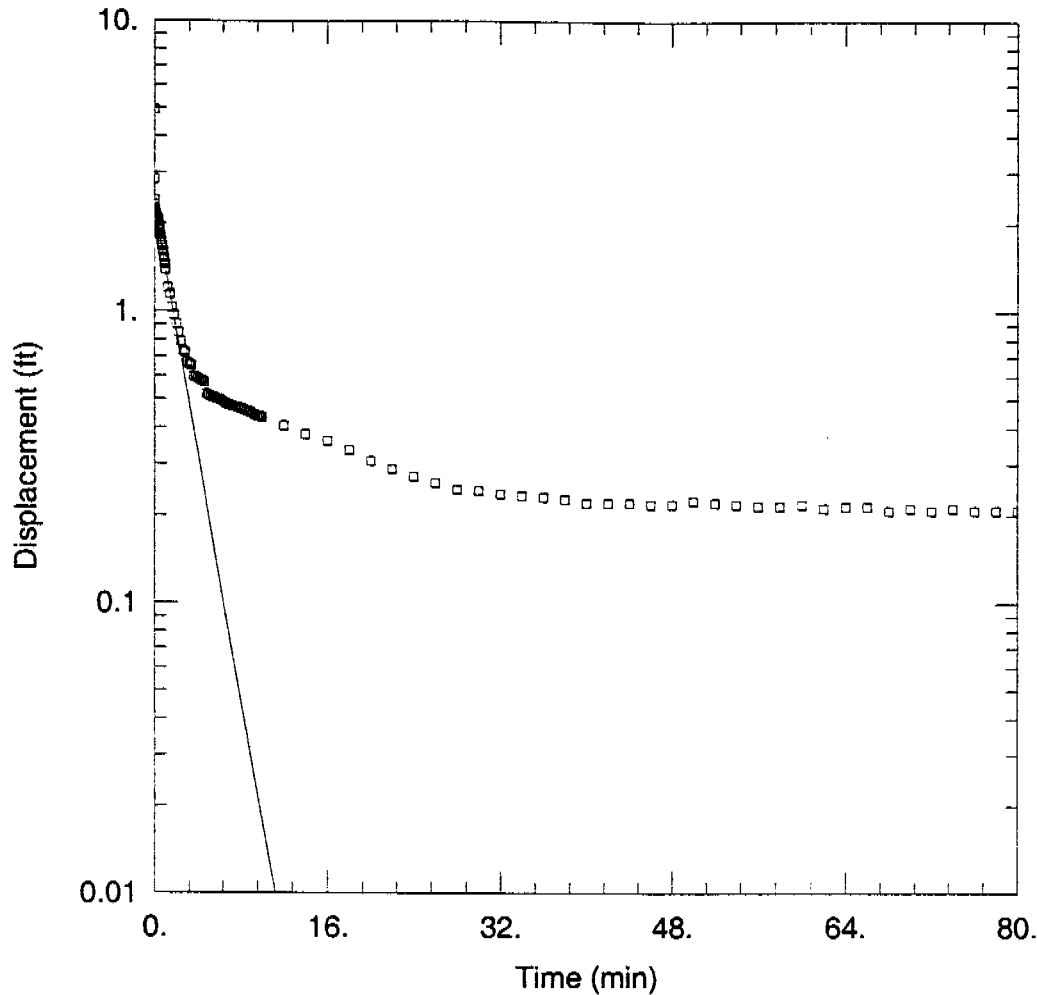
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 7.299E-06 ft/min

y0 = 1.229 ft

C-3P



A12-W02

Data Set: C:\slug\crab orchard\DT\new\12-2.aqt

Date: 06/19/00

Time: 13:17:36

PROJECT INFORMATION

Company: URS

Client: US Fish and Wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: A12-W02

Test Date: 06-07-00

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (A12-W02)

Initial Displacement: 4.943 ft

Water Column Height: 12.56 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

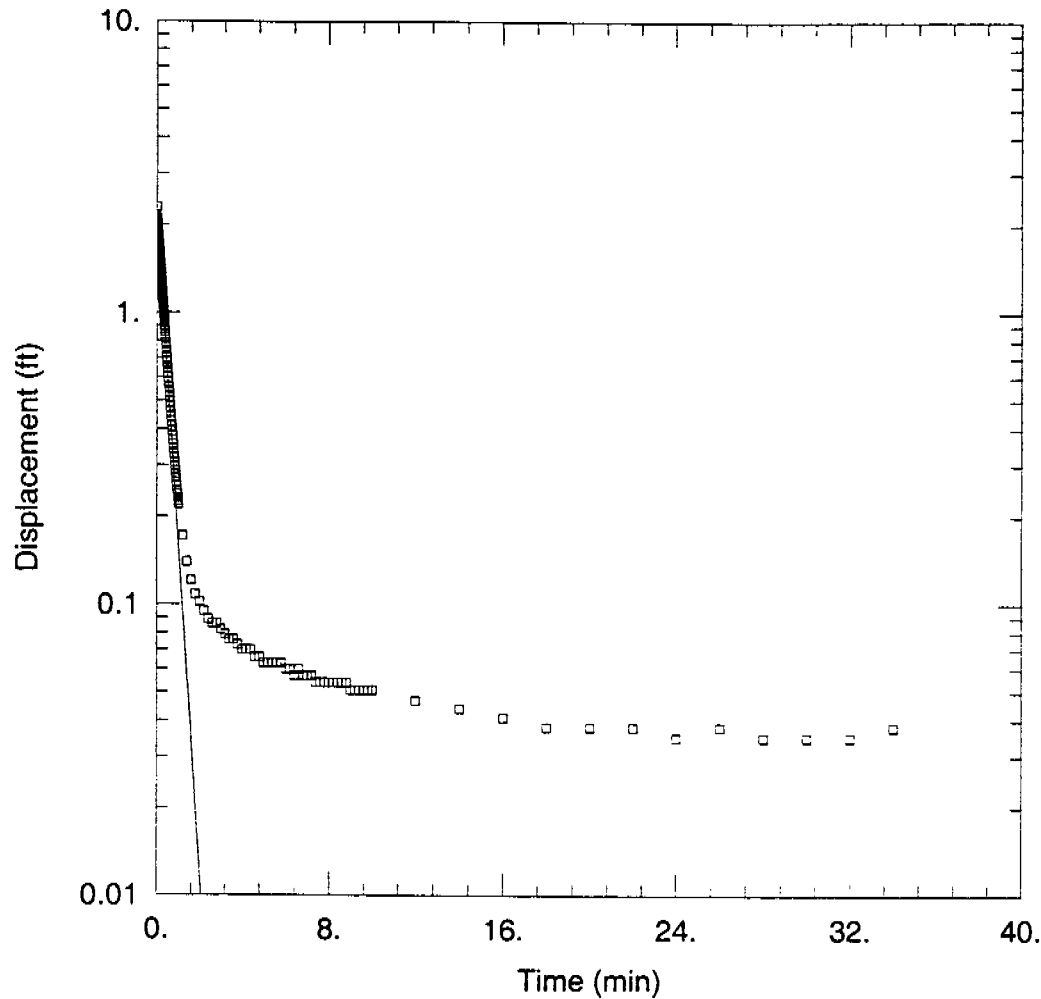
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 0.0004282 ft/min

y0 = 2.264 ft

C-39



AUS00001-W01

Data Set:

Date: 06/05/00

Time: 14:40:24

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: AUS00001-W01

Test Date: 5/31/00

AQUIFER DATA

Saturated Thickness: 17. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W01)

Initial Displacement: 2.293 ft

Water Column Height: 16.84 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

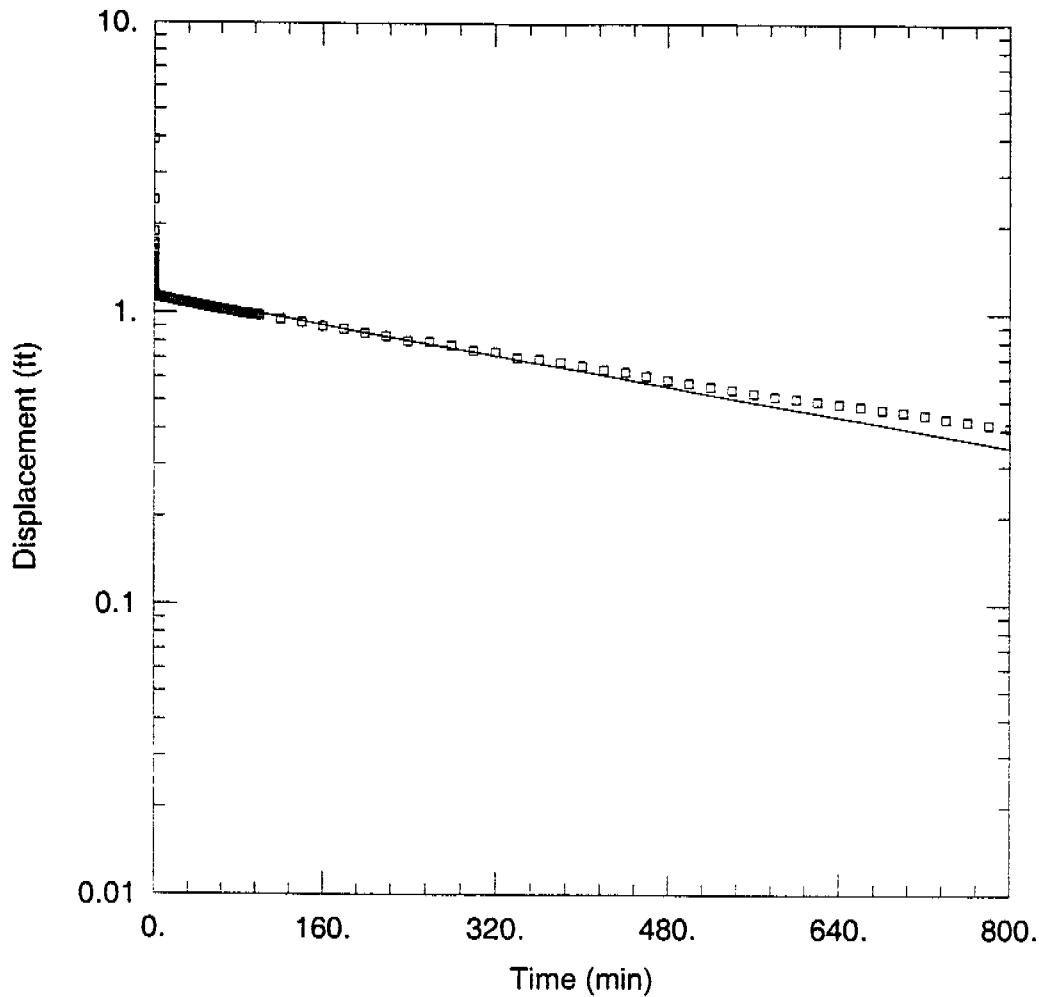
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.002535 ft/min

y0 = 2.196 ft

C-40



BEDROCK MW1

Data Set: C:\slug\crab orchard\DT\new\BDRK-1.aqt

Date: 07/31/00

Time: 10:47:55

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK1

Test Date: 7/5/00

AQUIFER DATA

Saturated Thickness: 85. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK1)

Initial Displacement: 3.923 ft

Water Column Height: 84.32 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

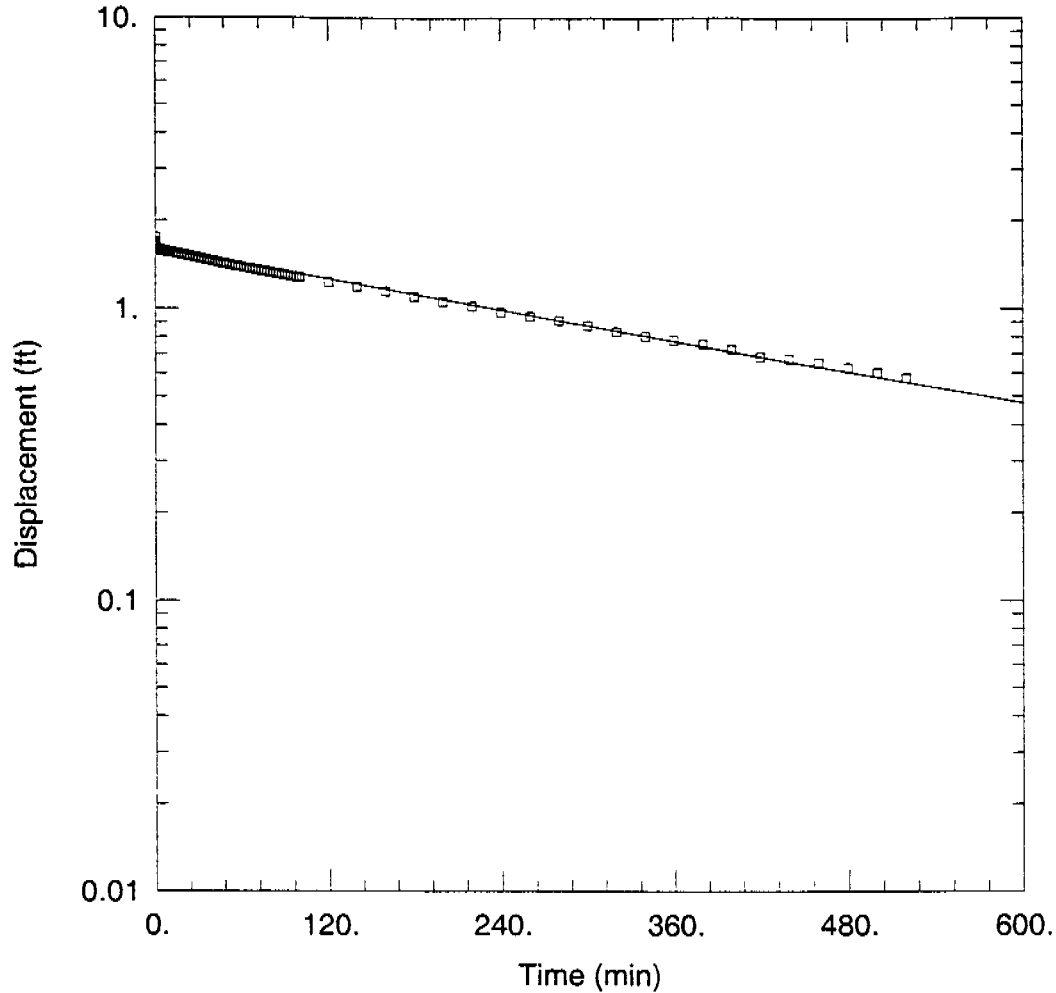
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 1.792E-06 ft/min

y0 = 1.159 ft

C-41



BEDROCK WELL MW2

Data Set: C:\slug\crab orchard\DT\new\BDRK2.aqt
Date: 07/31/00 Time: 11:05:09

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: BDRK-2
Test Date: 7/6/00

AQUIFER DATA

Saturated Thickness: 135. ft Anisotropy Ratio (Kz/Kr): 1.

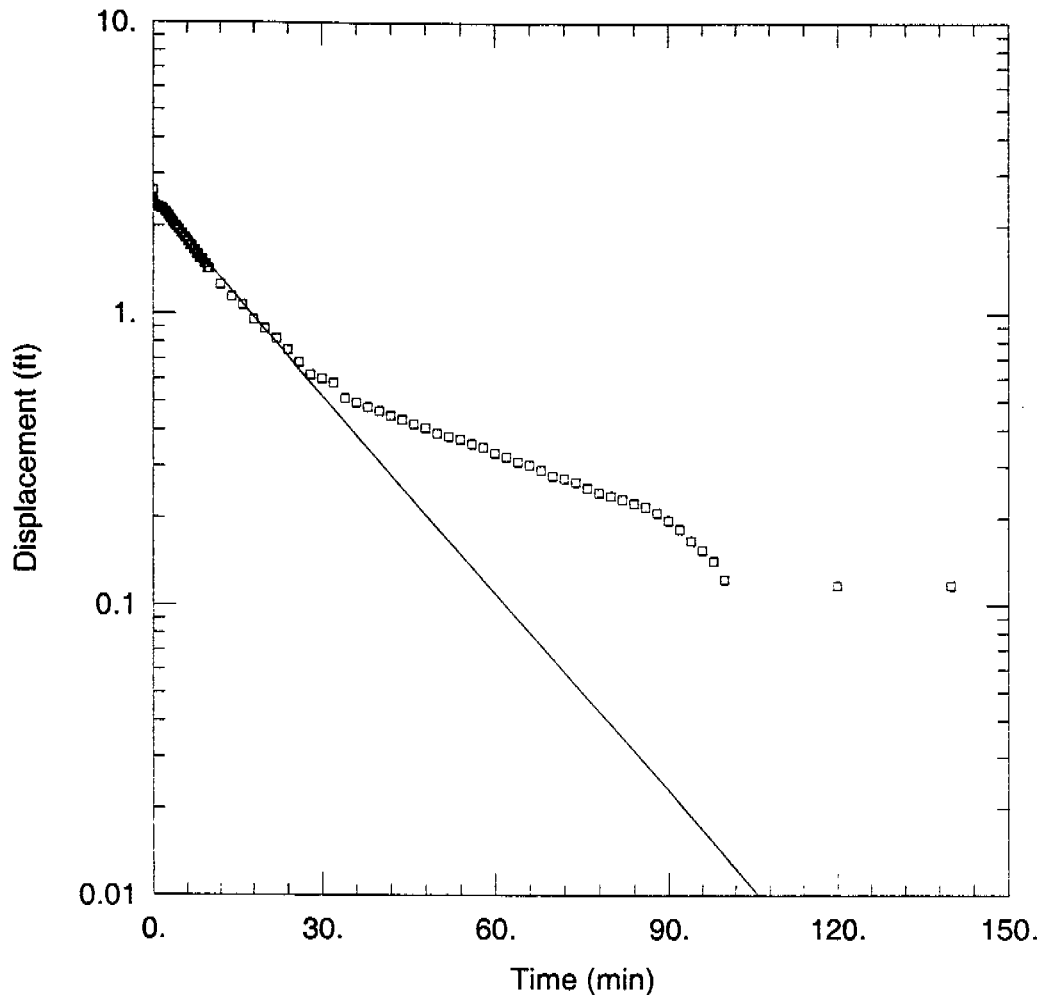
WELL DATA (BDRK2)

Initial Displacement: 1.751 ft Water Column Height: 134.8 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.708E-06 ft/min y0 = 1.607 ft

C-42



BEDROCK WELL MW3

Data Set: C:\slug\crab orchard\DT\new\BDRK3.aqt

Date: 07/31/00

Time: 11:11:31

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK3

Test Date: 6/26/00

AQUIFER DATA

Saturated Thickness: 123. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK3)

Initial Displacement: 2.638 ft

Water Column Height: 122.5 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

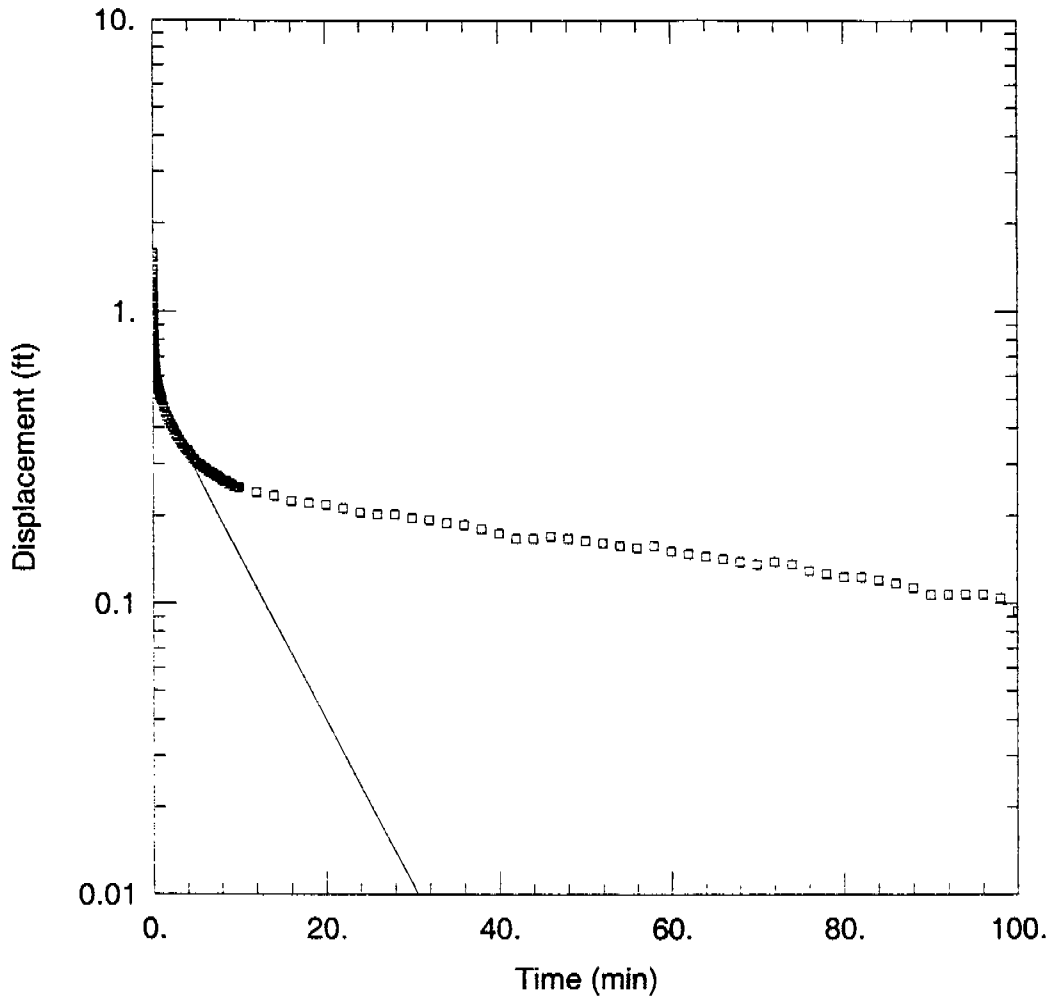
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 6.588E-05 ft/min

y0 = 2.489 ft

C-43



BEDROCK WELL MW5I

Data Set: C:\slug\crab orchard\DT\new\BDRK5I.aqt

Date: 07/31/00

Time: 16:35:12

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 232000026.00

Test Location: Crab Orchard

Test Well: BDRK5I

Test Date: 5/10/00

AQUIFER DATA

Saturated Thickness: 22. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK5I)

Initial Displacement: 1.569 ft

Casing Radius: 0.083 ft

Screen Length: 10. ft

Water Column Height: 21.77 ft

Wellbore Radius: 0.333 ft

SOLUTION

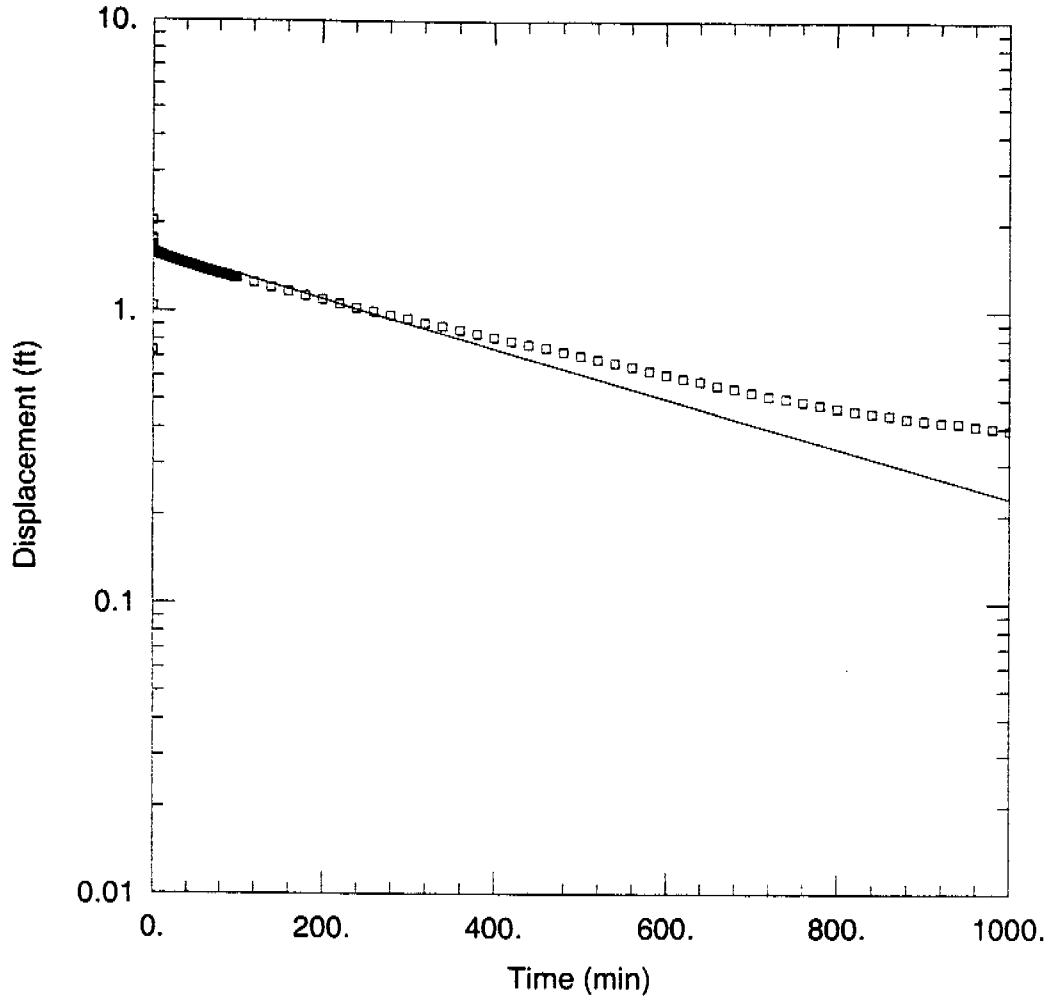
Aquifer Model: Unconfined

K = 0.0001321 ft/min

Solution Method: Bouwer-Rice

y0 = 0.5417 ft

C-44



BEDROCK WELL MW5D

Data Set: C:\slug\crab orchard\DT\new\BDRK5D.aqt

Date: 07/31/00

Time: 16:43:57

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK5D

Test Date: 1/10/00

AQUIFER DATA

Saturated Thickness: 228. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK5D)

Initial Displacement: 2.034 ft

Water Column Height: 227.6 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

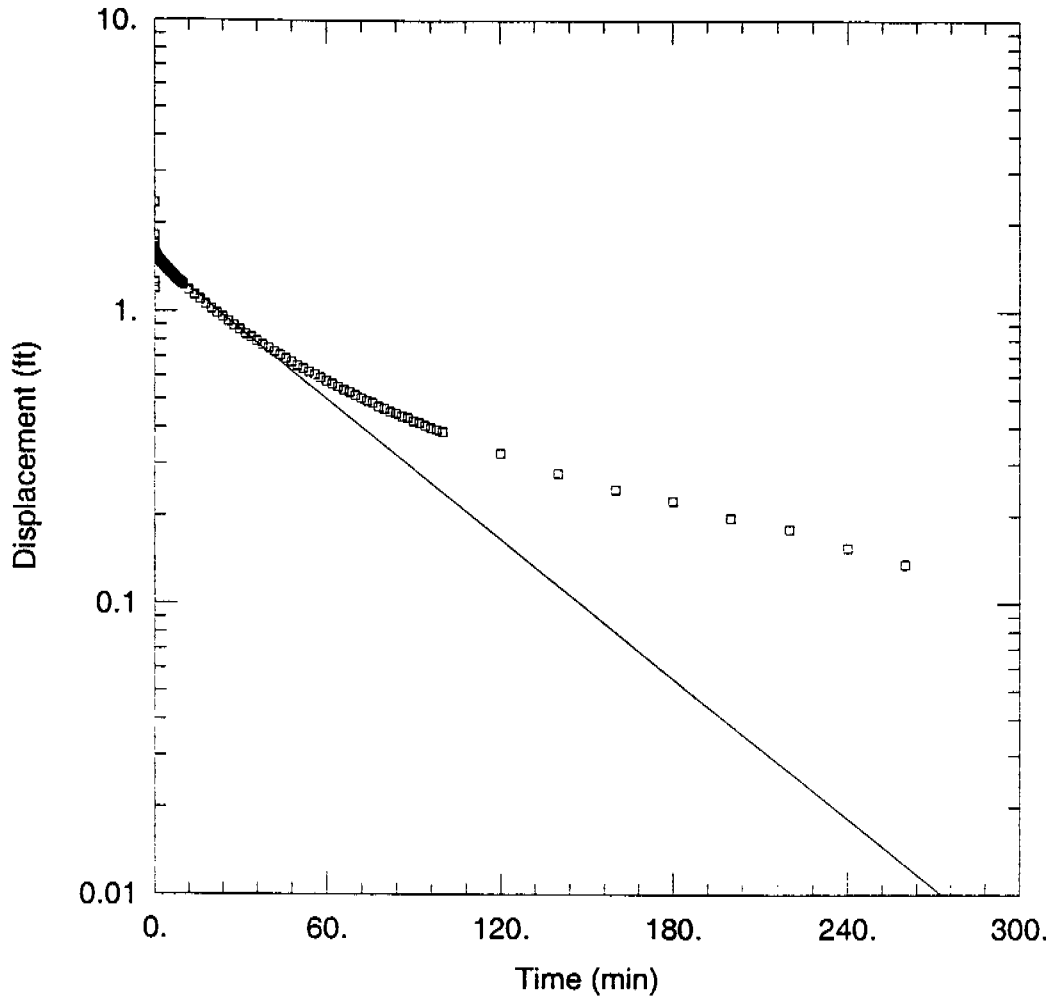
Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 2.662E-06 ft/min

y0 = 1.633 ft

C-45



BEDROCK WELL MW6

Data Set: C:\slug\crab orchard\DT\new\BDRK6.aqt
Date: 07/31/00 Time: 16:50:35

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 232000026.00
Test Location: Crab Orchard
Test Well: BDRK6
Test Date: 6/30/00

AQUIFER DATA

Saturated Thickness: 134. ft Anisotropy Ratio (Kz/Kr): 1.

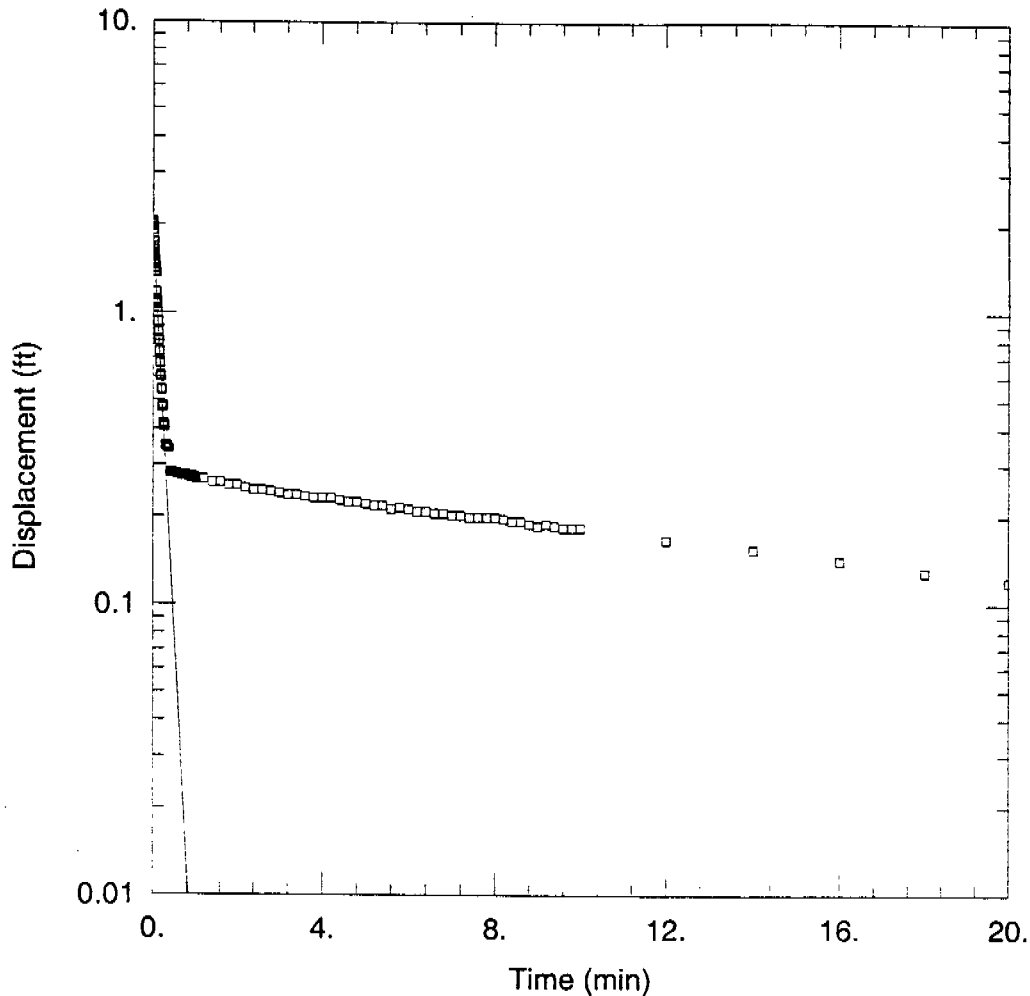
WELL DATA (BDRK6)

Initial Displacement: 2.347 ft Water Column Height: 133.4 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bower-Rice
K = 2.317E-05 ft/min y0 = 1.514 ft

C-46



BEDROCK WELL MW-7

Data Set: C:\slug\crab orchard\DT\BDRK7.aqt

Date: 08/01/00

Time: 10:45:34

PROJECT INFORMATION

Company: URS

Client: US Fish & wildlife

Project: 232000002600

Test Location: Crab Orchard

Test Well: BDRK_007

Test Date: 6/19/00

AQUIFER DATA

Saturated Thickness: 95. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK-007)

Initial Displacement: 2.044 ft

Water Column Height: 94.44 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

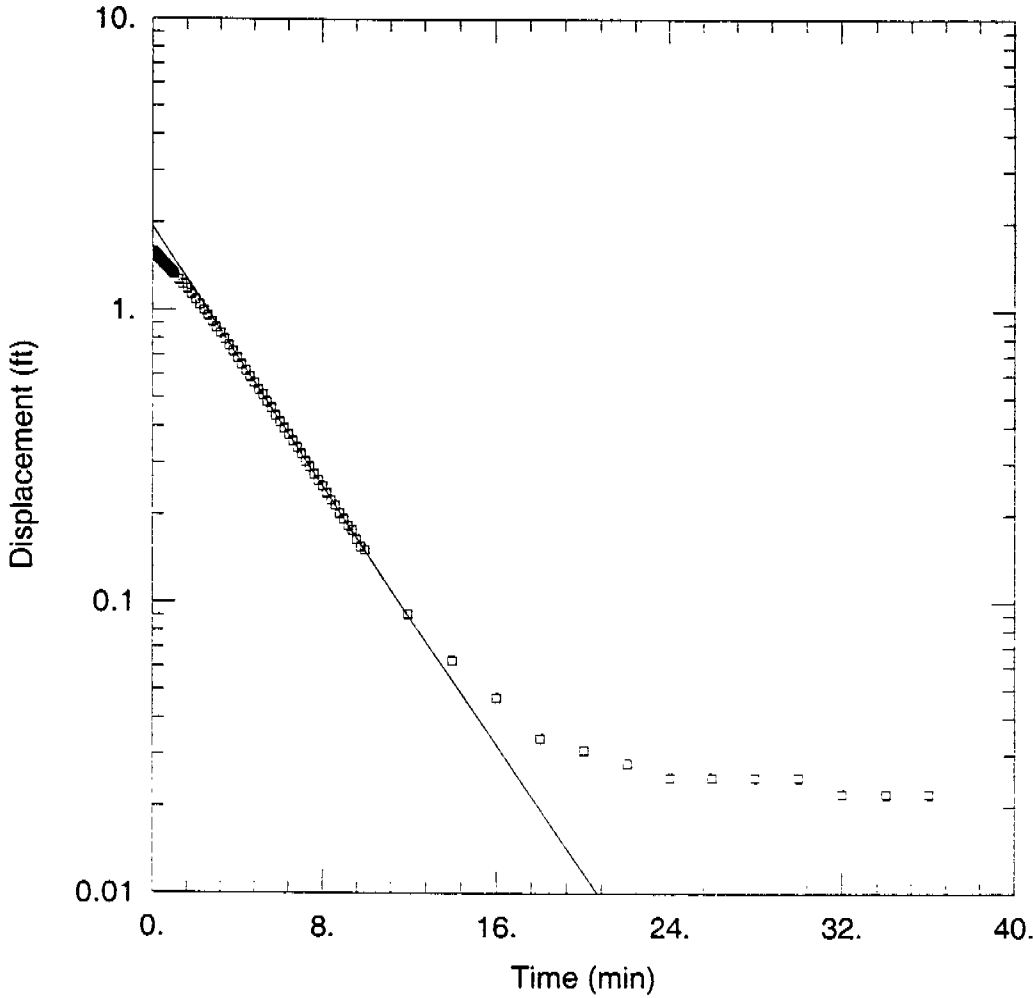
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.007692 ft/min

y0 = 1.868 ft

C-47



BEDROCK WELL MW8

Data Set: C:\slug\crab orchard\DT\new\BDRK8.aqt
Date: 08/01/00 Time: 10:54:50

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: BDRK-8
Test Date: 7/11/00

AQUIFER DATA

Saturated Thickness: 197. ft Anisotropy Ratio (Kz/Kr): 1.

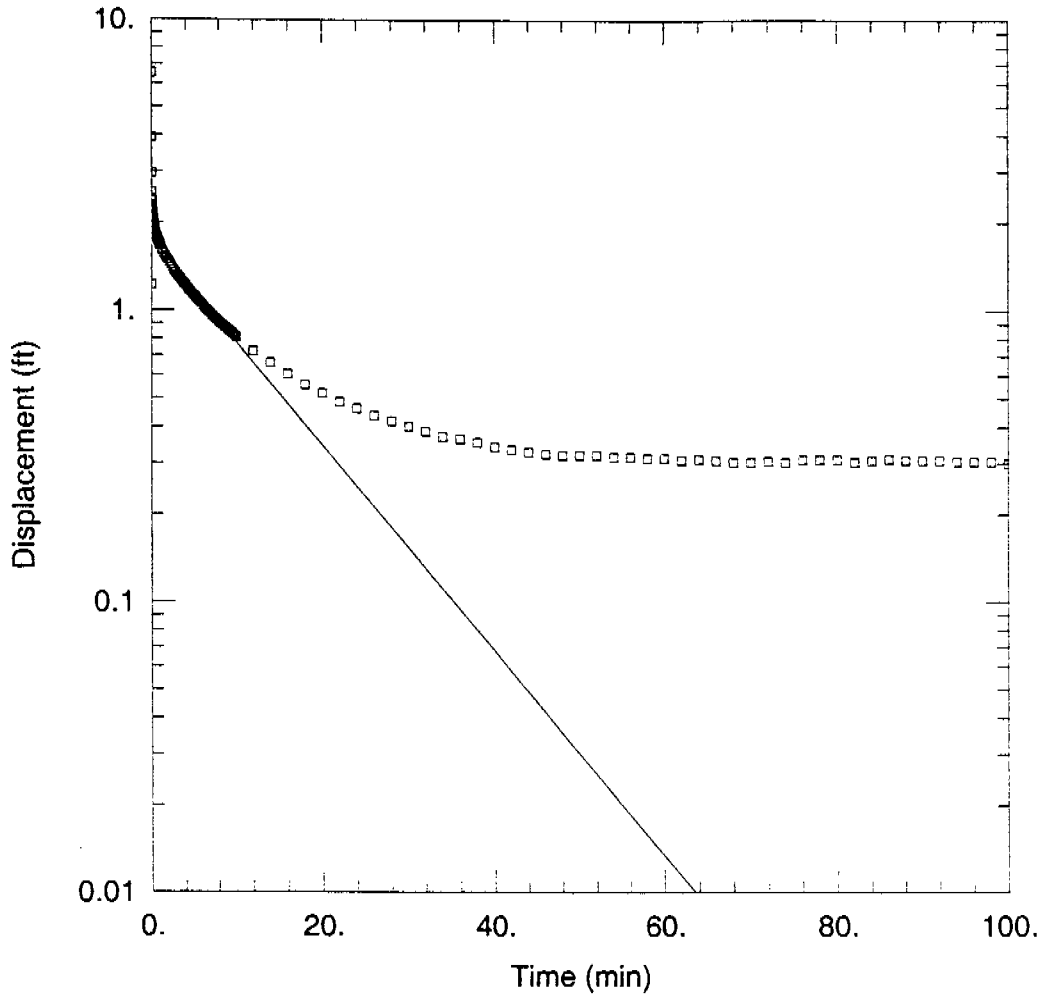
WELL DATA (BDRK-8)

Initial Displacement: 1.591 ft Water Column Height: 196.4 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bower-Rice
K = 0.0003352 ft/min y0 = 1.934 ft

C-48



BEDROCK WELL MW-9I

Data Set: C:\slug\crab orchard\DT\new\BDRK9I.aqt

Date: 08/01/00

Time: 11:26:23

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK-9I

Test Date: 7/7/00

AQUIFER DATA

Saturated Thickness: 41. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK-9I)

Initial Displacement: 6.531 ft

Water Column Height: 40.86 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

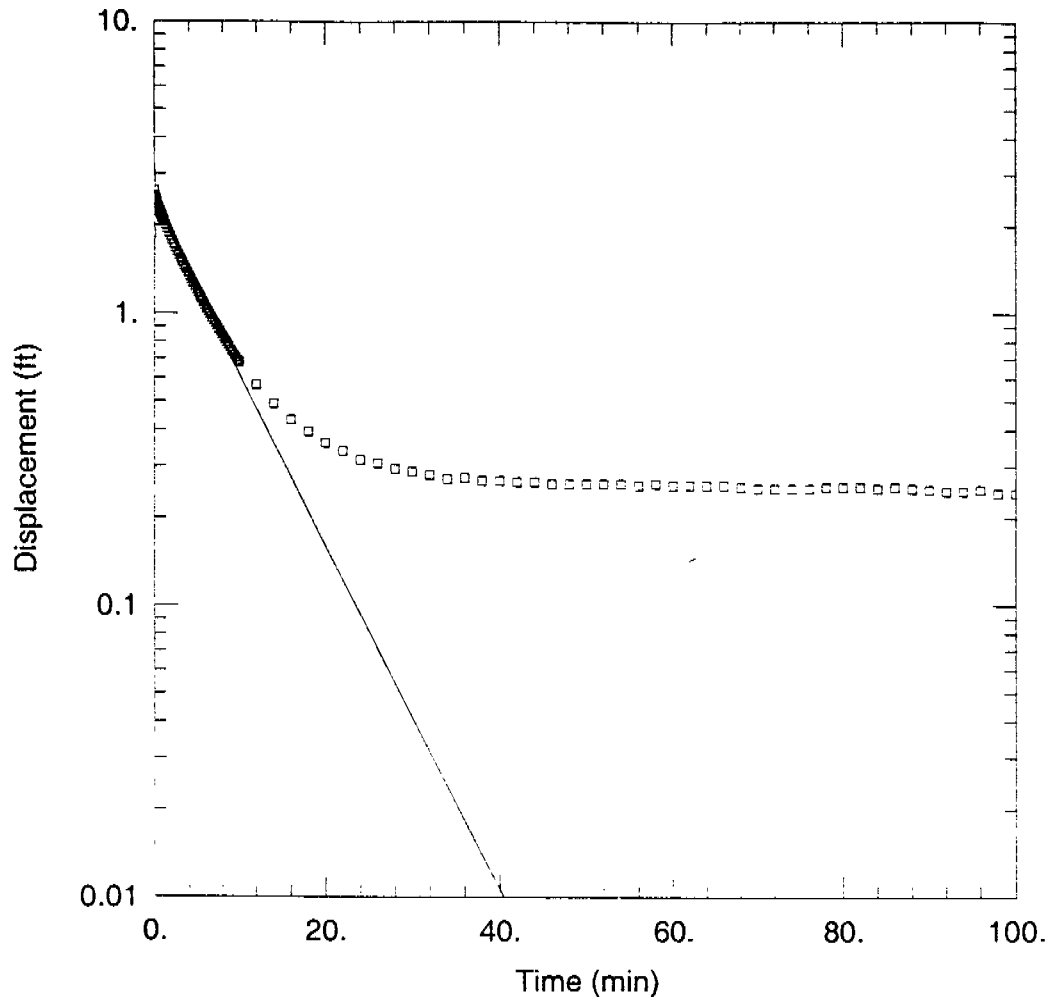
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 9.385E-05 ft/min

y0 = 1.762 ft

C-49



BEDROCK WELL MW9D

Data Set: C:\slug\crab orchard\DT\new\BDRK9D.aqt
Date: 08/01/00 Time: 10:13:07

PROJECT INFORMATION

Company: URS
Client: US FISH & WILDLIFE
Project: 2320000026.00
Test Location: Crab Orchard
Test Well: BDRK-9D
Test Date: 7/10/00

AQUIFER DATA

Saturated Thickness: 124. ft Anisotropy Ratio (Kz/Kr): 1.

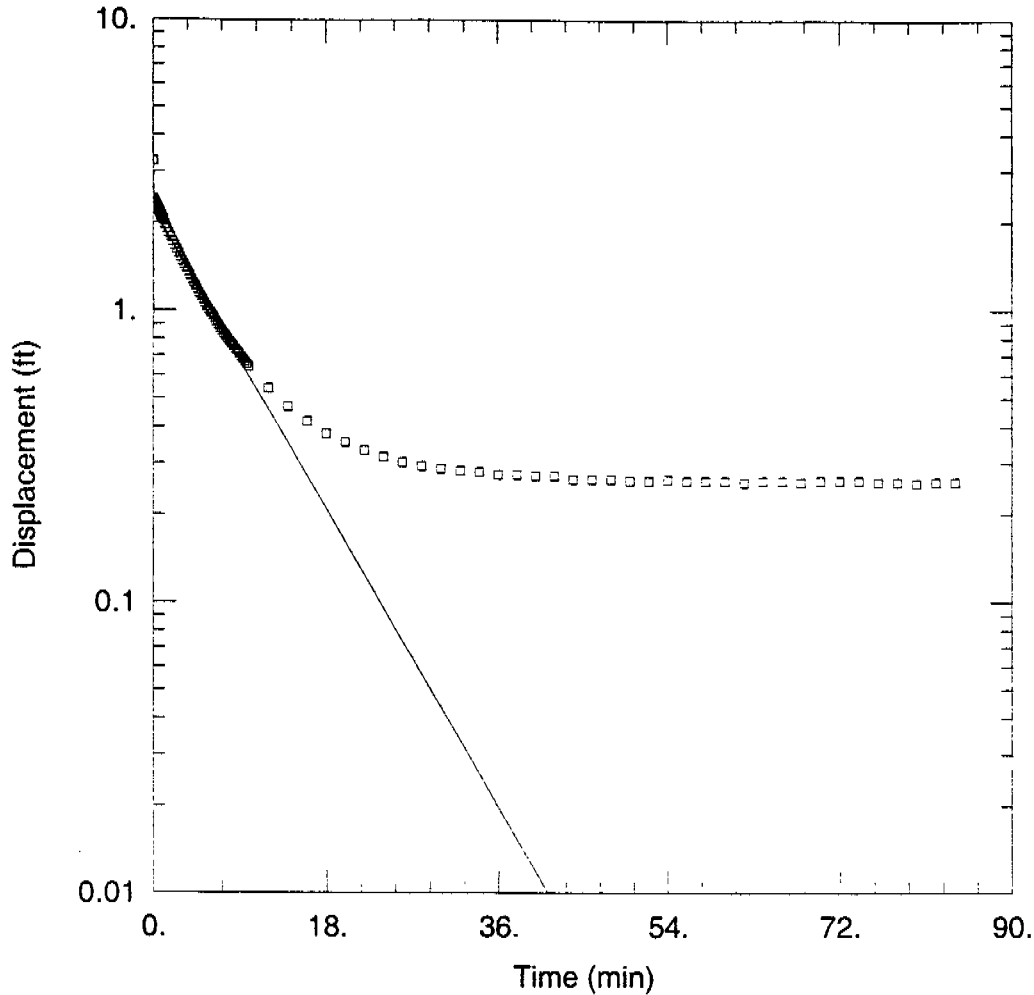
WELL DATA (BDRK-9D)

Initial Displacement: 2.637 ft Water Column Height: 123.8 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.333 ft
Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bower-Rice
K = 0.0001819 ft/min $y_0 =$ 2.416 ft

C-50



BEDROCK WELL MW-10

Data Set: C:\slug\crab orchard\DT\new\BDRK10.aqt

Date: 08/01/00

Time: 10:18:11

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK-10

Test Date: 7/11/00

AQUIFER DATA

Saturated Thickness: 126. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK-10)

Initial Displacement: 3.268 ft

Water Column Height: 125.9 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

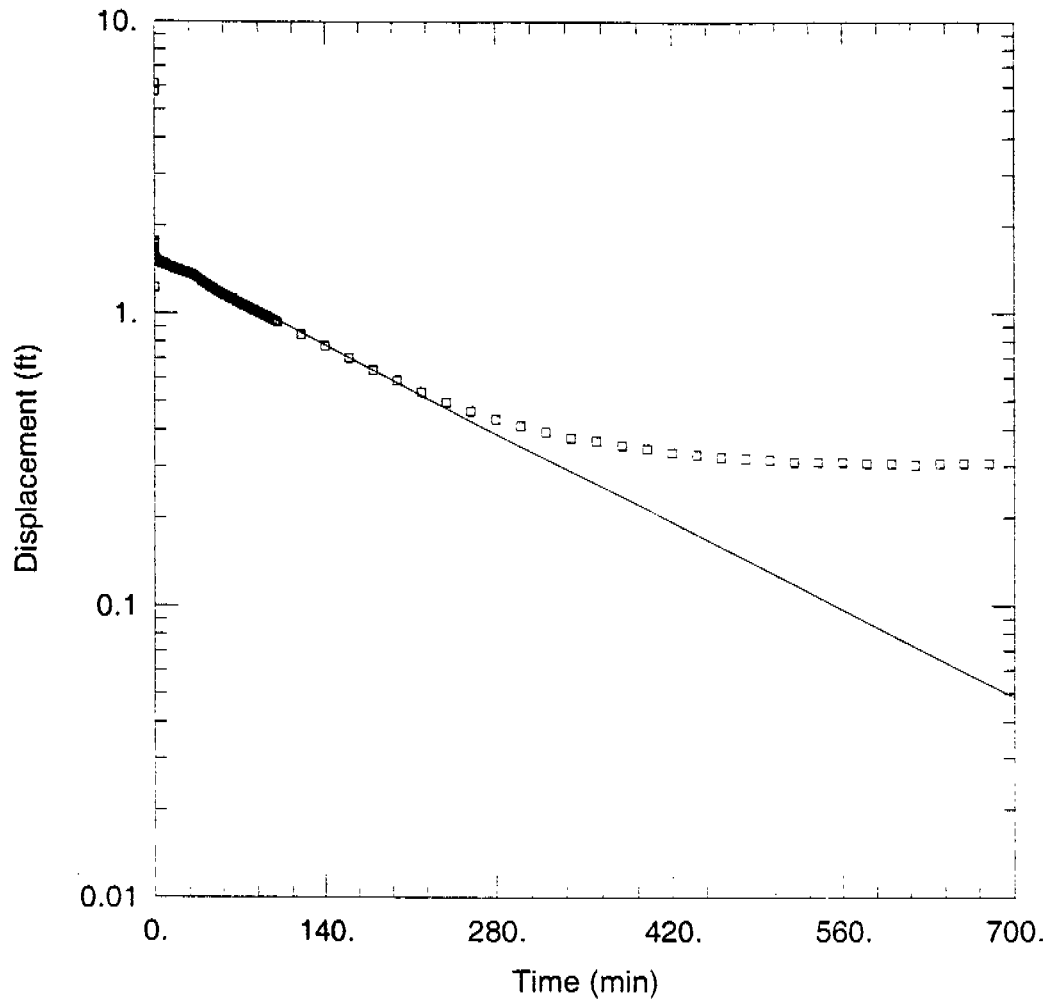
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0001789 ft/min

y0 = 2.214 ft

C-51



BEDROCK WELL MW-11

Data Set: C:\slug\crab orchard\DT\new\BDRK11.aqt

Date: 08/01/00

Time: 11:21:47

PROJECT INFORMATION

Company: URS

Client: US FISH & WILDLIFE

Project: 2320000026.00

Test Location: Crab Orchard

Test Well: BDRK-11

Test Date: 7/6/00

AQUIFER DATA

Saturated Thickness: 78. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BDRK-11)

Initial Displacement: 1.766 ft

Water Column Height: 77.35 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 5.839E-06 ft/min

y0 = 1.556 ft