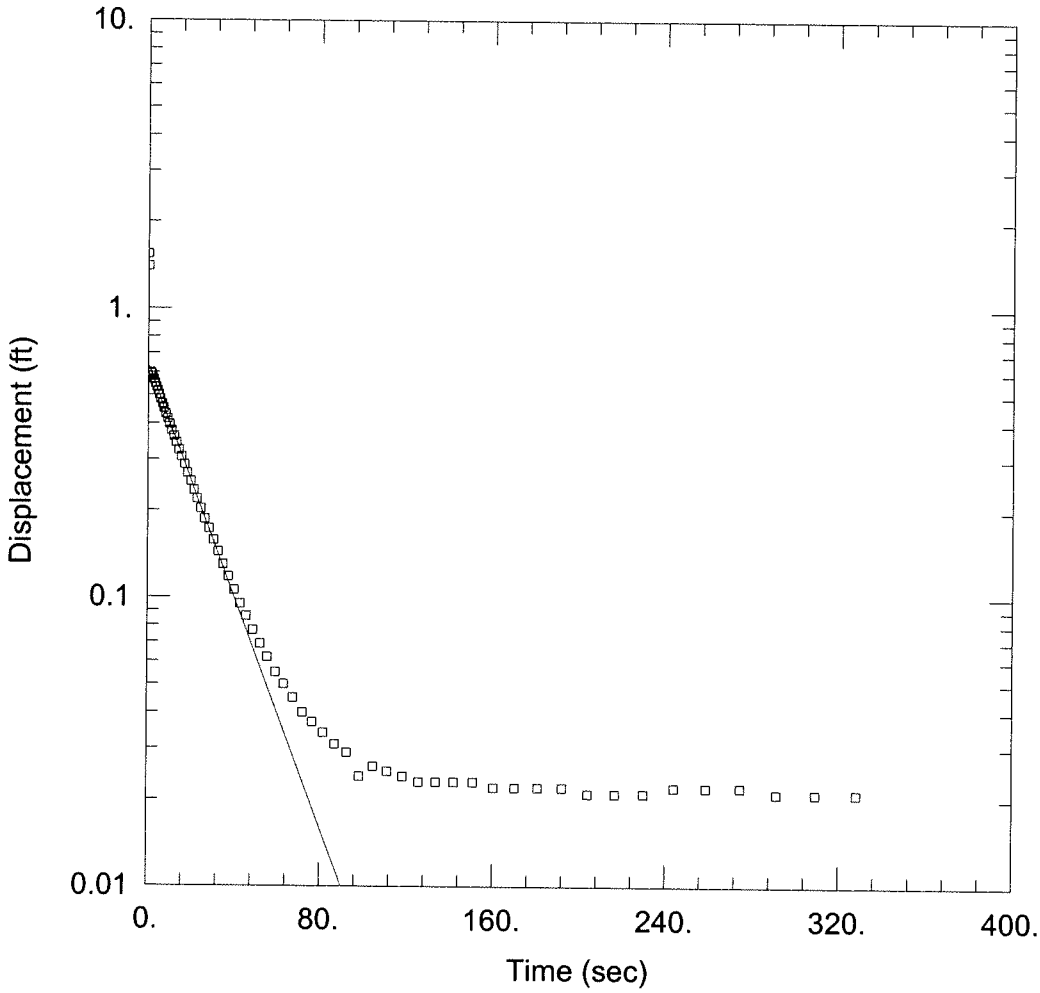
APPENDIX H

SINGLE WELL RESPONSE TEST DATA



MW-18A FALLING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18A Falling.aqt
Date: 02/16/07 Time: 13:53:43

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18A
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 130. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.544 ft
Total Well Penetration Depth: 80. ft
Casing Radius: 0.083 ft
Static Water Column Height: 80. ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.003959 ft/min
Solution Method: Bouwer-Rice
y0 = 0.6406 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18A Falling.aqt
Title: MW-18A Falling
Date: 02/16/07
Time: 13:53:54

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18A

AQUIFER DATA

Saturated Thickness: 130. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: New Well

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.544 ft
Static Water Column Height: 80. ft
Casing Radius: 0.083 ft
Well Radius: 0.083 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 80. ft

No. of Observations: 68

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.544	43.	0.095
0.4	1.4	45.9	0.086
1.3	0.599	49.	0.077
1.7	0.593	52.3	0.069
2.2	0.581	55.8	0.062
2.8	0.567	59.5	0.055
3.3	0.549	63.4	0.05
3.9	0.534	67.6	0.045
4.6	0.517	72.	0.04
5.2	0.502	76.7	0.037
5.9	0.486	81.7	0.034
6.7	0.467	87.	0.031
7.5	0.451	92.6	0.029
8.3	0.432	98.5	0.024
9.2	0.415	104.8	0.026
10.1	0.398	111.4	0.025
11.1	0.378	118.4	0.024
12.2	0.361	125.9	0.023
13.3	0.343	133.8	0.023
14.5	0.323	142.2	0.023
15.7	0.306	151.1	0.023
17.1	0.288	160.5	0.022
18.5	0.269	170.5	0.022
20.	0.252	181.1	0.022
21.5	0.235	192.3	0.022
23.1	0.219	204.2	0.021
24.8	0.203	216.8	0.021
26.6	0.187	230.1	0.021
28.5	0.173	244.2	0.022
30.6	0.158	259.1	0.022
32.8	0.144	274.9	0.022

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
35.1	0.13	291.7	0.021
37.6	0.118	309.5	0.021
40.2	0.106	328.3	0.021

SOLUTION

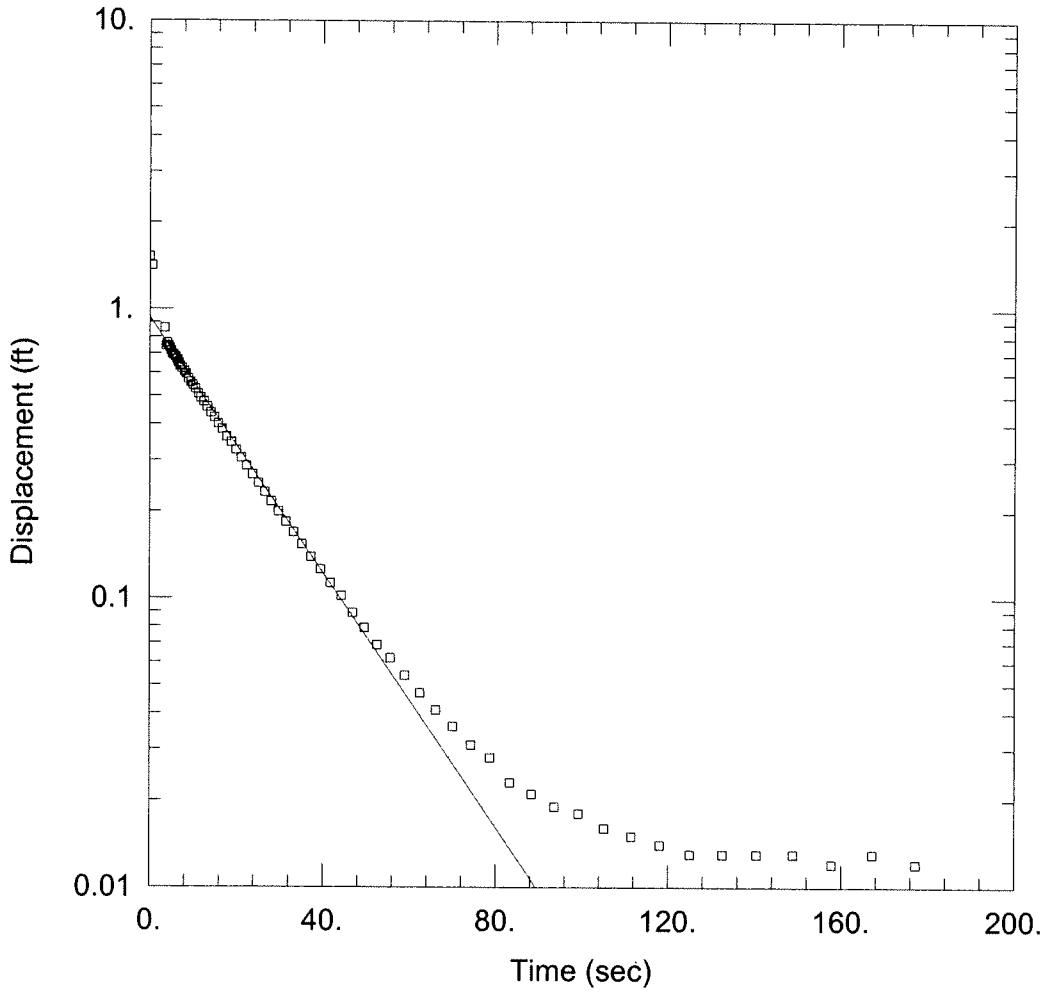
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.153

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.003959	ft/min
y0	0.6406	ft

K = 0.002011 cm/sec
T = T*b = 0.5146 ft^2/min (7.968 sq. cm/sec)



MW-18A RISING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18A Rising.aqt
Date: 02/16/07 Time: 13:54:08

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18A
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 130. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.519 ft
Total Well Penetration Depth: 80. ft
Casing Radius: 0.083 ft
Static Water Column Height: 80. ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.00436 ft/min
y0 = 0.9373 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18A Rising.aqt
Title: MW-18A Rising
Date: 02/16/07
Time: 13:54:15

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18A

AQUIFER DATA

Saturated Thickness: 130. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: New Well

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.519 ft
Static Water Column Height: 80. ft
Casing Radius: 0.083 ft
Well Radius: 0.083 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 80. ft

No. of Observations: 70

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.519	25.2	0.25
0.6	1.416	26.7	0.233
3.6	0.858	28.2	0.216
3.9	0.745	29.8	0.2
4.2	0.762	31.5	0.184
4.5	0.747	33.3	0.169
4.8	0.732	35.2	0.154
5.1	0.715	37.3	0.139
5.4	0.698	39.5	0.126
5.7	0.691	41.8	0.113
6.	0.682	44.3	0.102
6.4	0.667	46.9	0.089
6.7	0.649	49.7	0.079
7.1	0.633	52.6	0.069
7.5	0.622	55.7	0.062
8.	0.608	59.	0.054
8.4	0.595	62.5	0.047
8.9	0.573	66.2	0.041
9.5	0.558	70.1	0.036
10.	0.544	74.3	0.031
10.6	0.53	78.7	0.028
11.3	0.508	83.4	0.023
11.9	0.493	88.4	0.021
12.6	0.478	93.7	0.019
13.4	0.459	99.3	0.018
14.2	0.438	105.2	0.016
15.	0.422	111.5	0.015
15.9	0.402	118.1	0.014
16.8	0.385	125.1	0.013
17.8	0.362	132.6	0.013
18.9	0.346	140.5	0.013

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
20.	0.326	148.9	0.013
21.2	0.306	157.8	0.012
22.4	0.287	167.2	0.013
23.8	0.268	177.2	0.012

SOLUTION

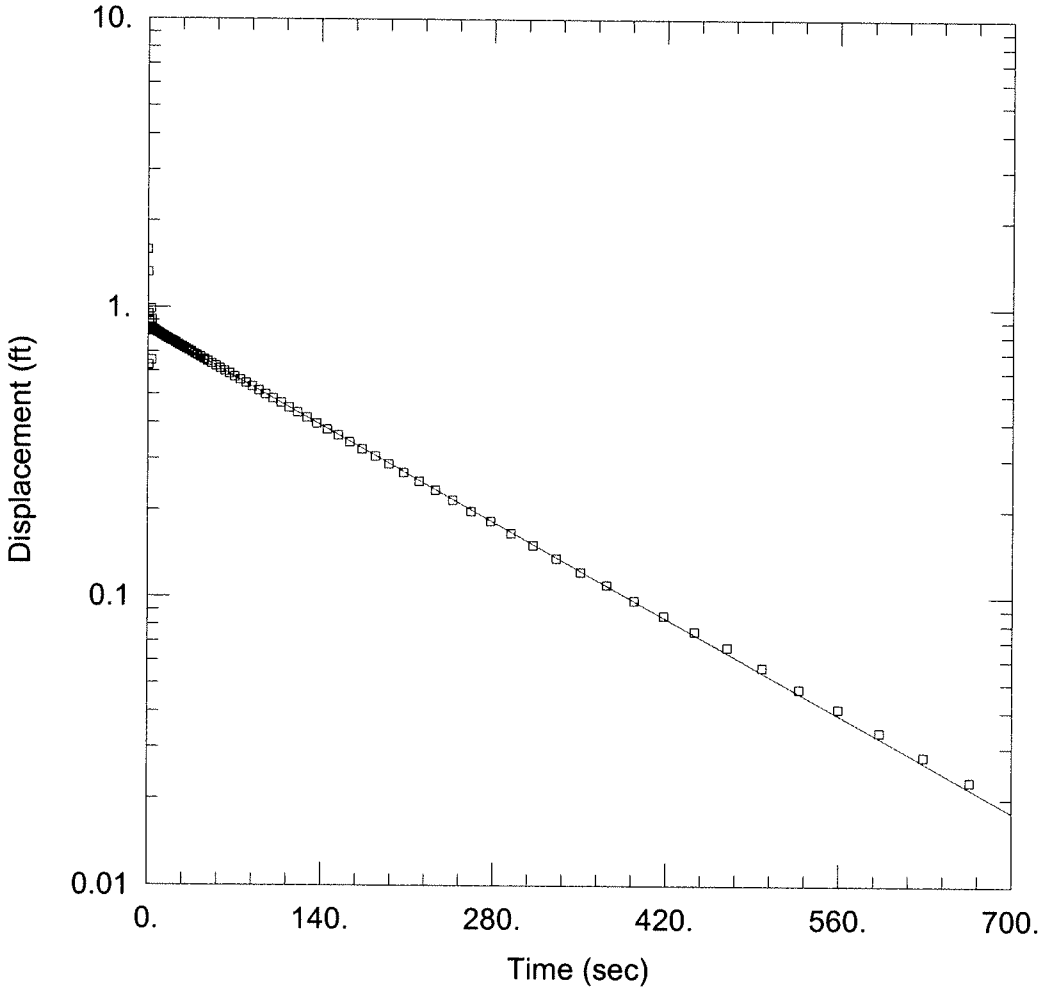
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.153

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.00436	ft/min
y0	0.9373	ft

K = 0.002215 cm/sec
T = T*b = 0.5668 ft^2/min (8.777 sq. cm/sec)



MW-18B FALLING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18B Falling.aqt
Date: 02/16/07 Time: 13:54:33

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18B
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18B)

Initial Displacement: 1.587 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 156. ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0004251 ft/min
y0 = 0.8478 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18B Falling.aqt
Title: MW-18B Falling
Date: 02/16/07
Time: 13:54:41

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18B

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-18B

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.587 ft
Static Water Column Height: 156. ft
Casing Radius: 0.083 ft
Well Radius: 0.083 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 30. ft

No. of Observations: 90

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.587	48.7	0.65
0.3	1.323	51.8	0.639
0.6	0.947	55.1	0.627
0.9	0.63	58.6	0.614
1.2	0.843	62.3	0.602
1.5	0.895	66.2	0.589
1.8	0.84	70.4	0.575
2.1	0.85	74.8	0.562
2.5	0.848	79.5	0.547
2.8	0.986	84.5	0.532
3.2	0.655	89.8	0.516
3.6	0.906	95.4	0.501
4.1	0.841	101.3	0.484
4.5	0.838	107.6	0.468
5.	0.837	114.2	0.451
5.6	0.834	121.2	0.434
6.1	0.828	128.7	0.416
6.7	0.826	136.6	0.398
7.4	0.823	145.	0.379
8.	0.819	153.9	0.362
8.7	0.815	163.3	0.343
9.5	0.812	173.3	0.324
10.3	0.809	183.9	0.306
11.1	0.804	195.1	0.288
12.	0.8	207.	0.269
12.9	0.795	219.6	0.251
13.9	0.791	232.9	0.234
15.	0.785	247.	0.216
16.1	0.781	261.9	0.198
17.3	0.775	277.7	0.183
18.5	0.77	294.5	0.166

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
19.9	0.765	312.3	0.151
21.3	0.759	331.1	0.136
22.8	0.752	351.	0.122
24.3	0.745	372.1	0.11
25.9	0.736	394.5	0.097
27.6	0.731	418.2	0.086
29.4	0.724	443.3	0.076
31.3	0.716	469.9	0.067
33.4	0.708	498.1	0.057
35.6	0.7	528.	0.048
37.9	0.69	559.6	0.041
40.4	0.68	593.1	0.034
43.	0.671	628.6	0.028
45.8	0.66	666.2	0.023

SOLUTION

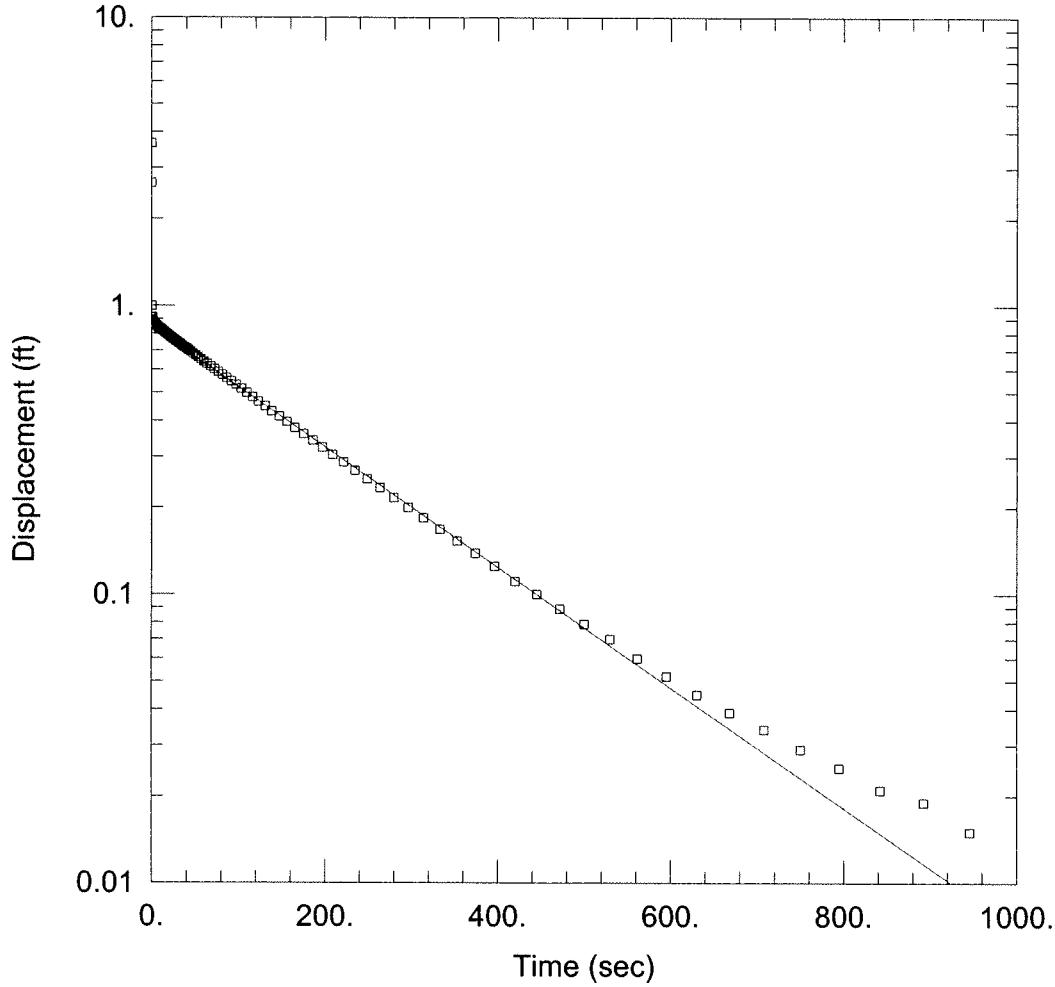
Slug Test
Aquifer Model: Confined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.739

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0004251	ft/min
y0	0.8478	ft

K = 0.0002159 cm/sec
T = T*b = 0.04251 ft²/min (0.6581 sq. cm/sec)



MW-18B RISING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18B Rising.aqt
Date: 02/16/07 Time: 13:55:02

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18B
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18B)

Initial Displacement: 3.65 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 156. ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0003712 ft/min
y0 = 0.8481 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18B Rising.aqt
Title: MW-18B Rising
Date: 02/16/07
Time: 13:55:08

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18B

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-18B

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 3.65 ft
Static Water Column Height: 156. ft
Casing Radius: 0.083 ft
Well Radius: 0.083 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 30. ft

No. of Observations: 103

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	3.65	50.8	0.673
0.3	2.662	53.9	0.663
0.6	0.998	57.2	0.652
0.9	0.913	60.7	0.64
1.2	0.91	64.4	0.628
1.5	0.895	68.3	0.616
1.8	0.888	72.5	0.603
2.1	0.886	76.9	0.59
2.4	0.879	81.6	0.576
2.7	0.875	86.6	0.562
3.	0.87	91.9	0.547
3.3	0.873	97.5	0.532
3.6	0.869	103.4	0.516
3.9	0.863	109.7	0.499
4.2	0.864	116.3	0.483
4.6	0.862	123.3	0.466
4.9	0.857	130.8	0.449
5.3	0.855	138.7	0.432
5.7	0.853	147.1	0.414
6.2	0.852	156.	0.397
6.6	0.849	165.4	0.378
7.1	0.845	175.4	0.36
7.7	0.844	186.	0.342
8.2	0.839	197.2	0.323
8.8	0.839	209.1	0.305
9.5	0.834	221.7	0.287
10.1	0.833	235.	0.269
10.8	0.828	249.1	0.251
11.6	0.827	264.	0.234
12.4	0.824	279.8	0.216
13.2	0.82	296.6	0.2

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
14.1	0.814	314.4	0.184
15.	0.813	333.2	0.168
16.	0.806	353.1	0.153
17.1	0.801	374.2	0.139
18.2	0.796	396.6	0.125
19.4	0.793	420.3	0.111
20.6	0.787	445.4	0.1
22.	0.781	472.	0.089
23.4	0.776	500.2	0.079
24.9	0.768	530.1	0.07
26.4	0.763	561.7	0.06
28.	0.756	595.2	0.052
29.7	0.75	630.7	0.045
31.5	0.743	668.3	0.039
33.4	0.736	708.1	0.034
35.5	0.728	750.3	0.029
37.7	0.719	795.	0.025
40.	0.711	842.4	0.021
42.5	0.702	892.6	0.019
45.1	0.693	945.7	0.015
47.9	0.683		

SOLUTION

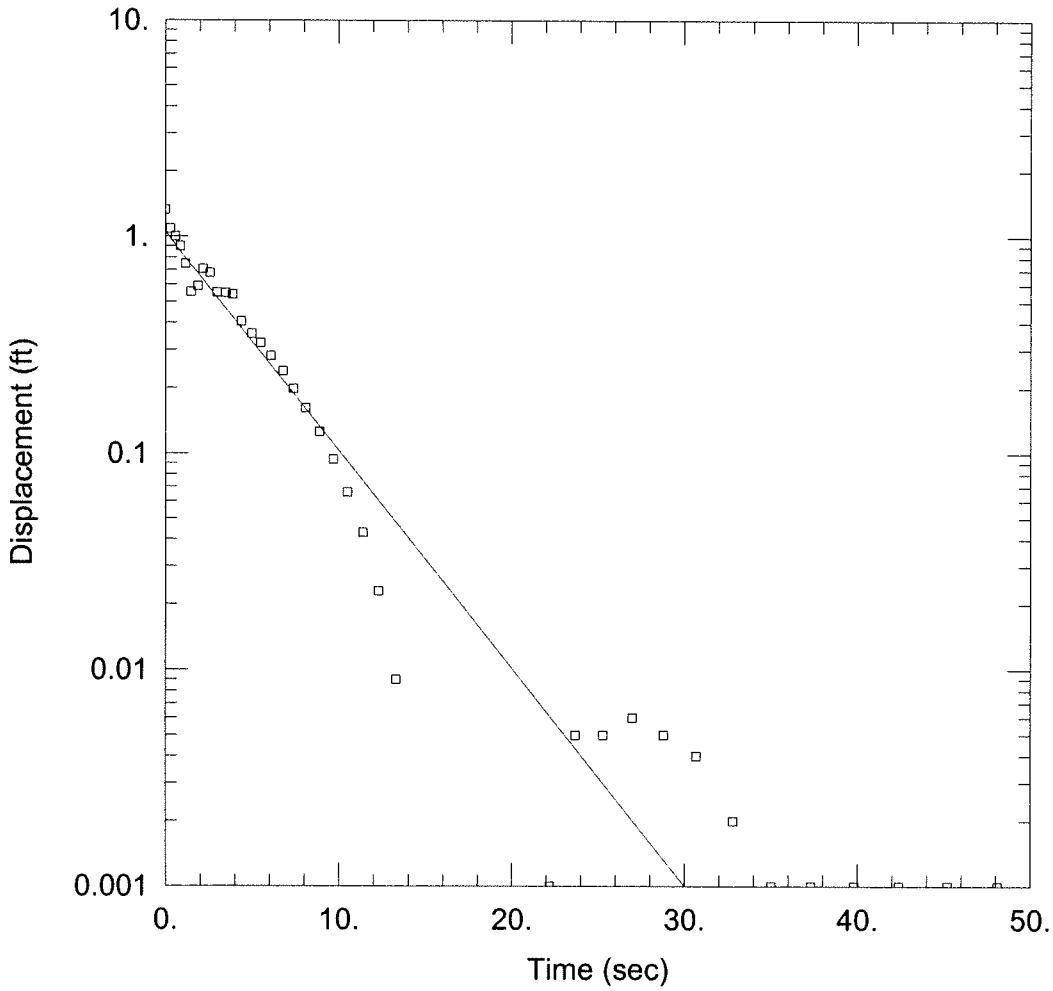
Slug Test
Aquifer Model: Confined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.739

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003712	ft/min
y0	0.8481	ft

K = 0.0001886 cm/sec
T = T*b = 0.03712 ft^2/min (0.5748 sq. cm/sec)



MW-18L FALLING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18L Falling.aqt
Date: 02/16/07 Time: 13:55:20

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18L
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18L)

Initial Displacement: 1.323 ft
Total Well Penetration Depth: 101. ft
Casing Radius: 0.167 ft
Static Water Column Height: 235. ft
Screen Length: 18. ft
Well Radius: 0.146 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.05152 ft/min
y0 = 1.047 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18L Falling.aqt
Title: MW-18L Falling
Date: 02/16/07
Time: 13:55:31

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18L

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-18L

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.323 ft
Static Water Column Height: 235. ft
Casing Radius: 0.167 ft
Well Radius: 0.146 ft
Well Skin Radius: 0.146 ft
Screen Length: 18. ft
Total Well Penetration Depth: 101. ft

No. of Observations: 38

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.323	8.9	0.126
0.3	1.083	9.7	0.094
0.6	0.997	10.5	0.066
0.9	0.901	11.4	0.043
1.2	0.748	12.3	0.023
1.5	0.556	13.3	0.009
1.9	0.59	22.2	0.001
2.2	0.708	23.7	0.005
2.6	0.678	25.3	0.005
3.	0.551	27.	0.006
3.5	0.549	28.8	0.005
3.9	0.54	30.7	0.004
4.4	0.406	32.8	0.002
5.	0.356	35.	0.001
5.5	0.323	37.3	0.001
6.1	0.282	39.8	0.001
6.8	0.24	42.4	0.001
7.4	0.199	45.2	0.001
8.1	0.162	48.1	0.001

SOLUTION

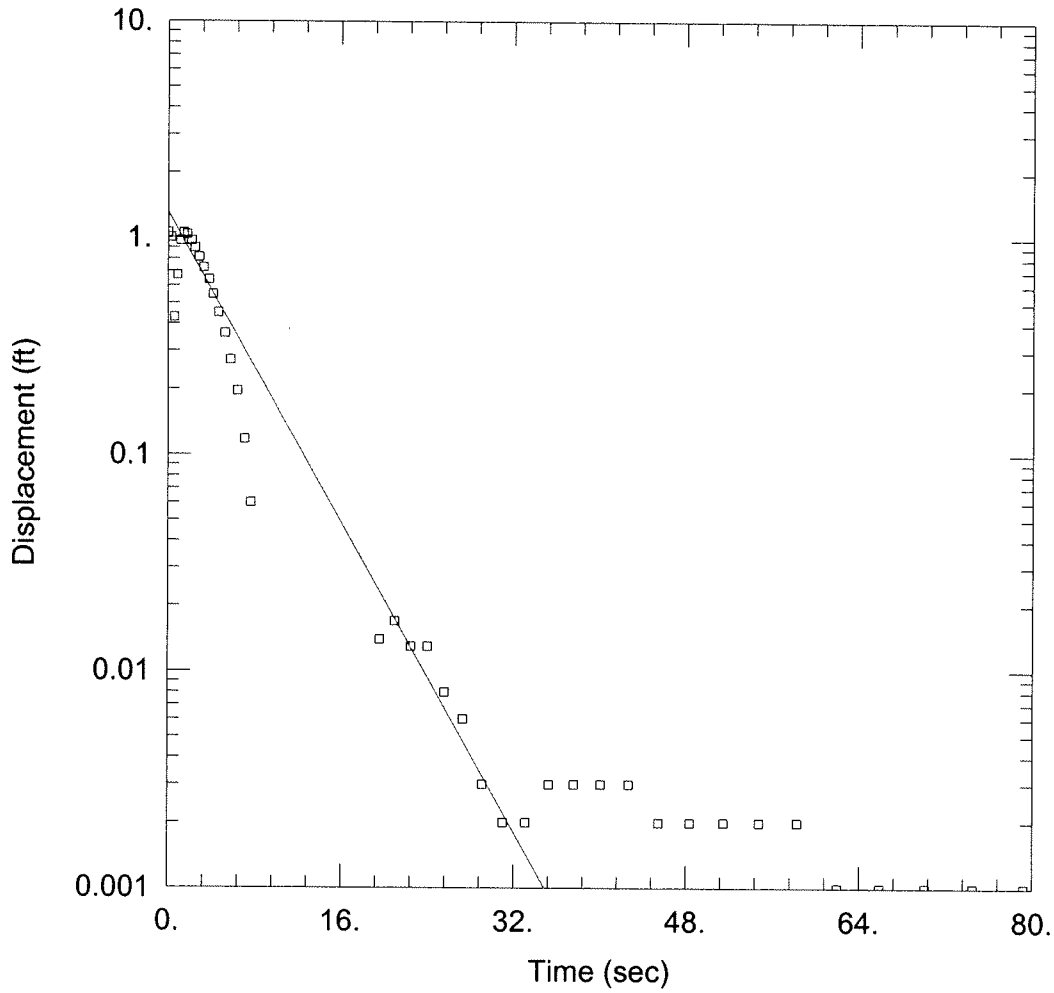
Slug Test
Aquifer Model: Confined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.785

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.05152	ft/min
y0	1.047	ft

K = 0.02617 cm/sec
T = T*b = 5.152 ft^2/min (79.78 sq. cm/sec)



MW-18L RISING

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18L Rising.aqt
Date: 02/16/07 Time: 13:55:50

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Well: MW-18L
Test Date: 12/21/06

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18L)

Initial Displacement: 1.054 ft
Total Well Penetration Depth: 101. ft
Casing Radius: 0.167 ft
Static Water Column Height: 235. ft
Screen Length: 18. ft
Well Radius: 0.146 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.04577 ft/min
y0 = 1.311 ft

Data Set: I:\Users\RAamot\Slug testing\2012\MW-18L Rising.aqt
Title: MW-18L Rising
Date: 02/16/07
Time: 13:55:59

PROJECT INFORMATION

Company: CRA
Project: 2012
Location: North Oaks
Test Date: 12/21/06
Test Well: MW-18L

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-18L

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.054 ft
Static Water Column Height: 235. ft
Casing Radius: 0.167 ft
Well Radius: 0.146 ft
Well Skin Radius: 0.146 ft
Screen Length: 18. ft
Total Well Penetration Depth: 101. ft

No. of Observations: 42

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.054	22.5	0.013
0.3	1.001	24.	0.013
0.6	0.428	25.6	0.008
0.9	0.671	27.3	0.006
1.2	0.969	29.1	0.003
1.5	1.052	31.	0.002
1.8	1.034	33.1	0.002
2.2	0.967	35.3	0.003
2.5	0.897	37.6	0.003
2.9	0.814	40.1	0.003
3.3	0.728	42.7	0.003
3.8	0.64	45.5	0.002
4.2	0.547	48.4	0.002
4.7	0.451	51.5	0.002
5.3	0.363	54.8	0.002
5.8	0.273	58.3	0.002
6.4	0.197	62.	0.001
7.1	0.118	65.9	0.001
7.7	0.06	70.1	0.001
19.6	0.014	74.5	0.001
21.	0.017	79.2	0.001

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.785

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.04577	ft/min
y0	1.311	ft

K = 0.02325 cm/sec
T = T*b = 4.577 ft²/min (70.87 sq. cm/sec)