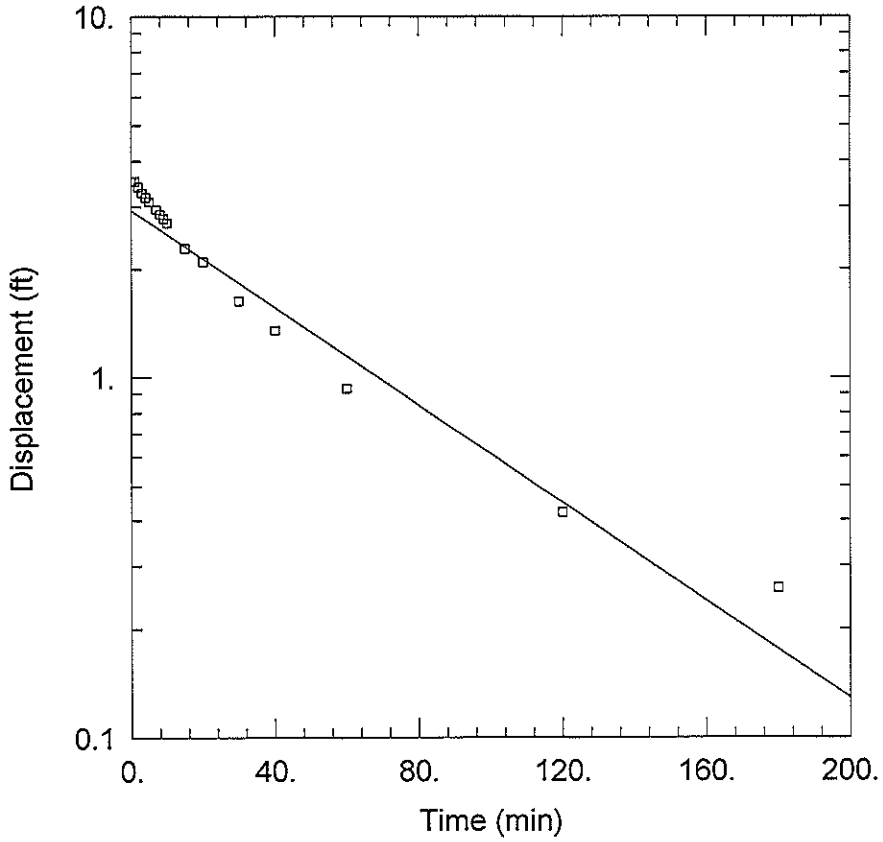
SLUG TEST DATA RECORD

MONITOR WELL # _____		GW7	MONITOR WELL #_____		GW5
WELL RADIUS:		0.333	WELL RADIUS:		0.333
CASING RADIUS:		0.083	CASING RADIUS:		0.083
SCREEN LENGTH:		10	SCREEN LENGTH:		10
SATURATED THICKNESS:		14.57	SATURATED THICKNESS:		28.16
Seconds	DRAWDOWN	STATIC LEVEL	Seconds	DRAWDOWN	STATIC LEVEL
0.00	0.00	18.67	0.00	0.00	11.12
15.00	18.67		15.00	-3.78	14.9
30.00	18.67		30.00	-3.63	14.75
45.00	-2.53	21.2	45.00	-3.57	14.69
60.00	-3.52	22.19	60.00	-3.47	14.59
120.00	-3.40	22.07	120.00	-3.20	14.32
180.00	-3.27	21.94	180.00	-2.96	14.08
240.00	-3.18	21.85	240.00	-2.74	13.86
300.00	-3.09	21.76	300.00	-2.55	13.67
360.00	#VALUE!	X	360.00	-2.39	13.51
420.00	-2.94	21.61	420.00	-2.24	13.36
480.00	-2.85	21.52	480.00	-2.12	13.24
540.00	-2.77	21.44	540.00	-1.98	13.1
600.00	-2.69	21.36	600.00	-1.88	13
900.00	-2.29	20.96	900.00	-1.47	12.59
1200.00	-2.00	20.67	1200.00	-1.18	12.3
1500.00	#VALUE!	X	1500.00	#VALUE!	X
1800.00	-1.63	20.3	1800.00	-0.82	11.94
2100.00	#VALUE!	X	2100.00	#VALUE!	X
2400.00	-1.35	20.02	2400.00	-0.58	11.7
2700.00	#VALUE!	X	2700.00	#VALUE!	X
3000.00	#VALUE!	X	3000.00	#VALUE!	X
3300.00	#VALUE!	X	3300.00	#VALUE!	X
3600.00	-0.93	19.6	3600.00	-0.42	11.54
4200.00	#VALUE!	X	4200.00	#VALUE!	X
4800.00	#VALUE!	X	4800.00	#VALUE!	X
5400.00	#VALUE!	X	5400.00	#VALUE!	X
6000.00	#VALUE!	X	6000.00	#VALUE!	X
6600.00	-0.42	19.09	6600.00	#VALUE!	X
7200.00	-0.26	18.93	7200.00	-0.17	11.29

SLUG TEST DATA RECORD

MONITOR WELL # _____		GW8A	MONITOR WELL #_____		GW8B
WELL RADIUS:		0.333	WELL RADIUS:		0.333
CASING RADIUS:		0.083	CASING RADIUS:		0.083
SCREEN LENGTH:		10	SCREEN LENGTH:		5
SATURATED THICKNESS:		64.64	SATURATED THICKNESS:		47
Seconds	DRAWDOWN	STATIC LEVEL	Seconds	DRAWDOWN	STATIC LEVEL
0.00	0.00	7.81	0.00	0.00	26.00
15.00	#VALUE!	X	15.00	#VALUE!	X
30.00	-0.06	7.87	30.00	-0.83	26.83
45.00	-0.02	7.83	45.00	#VALUE!	X
60.00	#VALUE!	X	60.00	-0.69	26.69
120.00	-0.01	7.82	120.00	-0.60	26.6
180.00	-0.05	7.86	180.00	-0.56	26.56
240.00	-0.06	7.87	240.00	-0.54	26.54
300.00	-0.05	7.86	300.00	-0.53	26.53
360.00	-0.04	7.85	360.00	-0.52	26.52
420.00	-0.04	7.85	420.00	-0.49	26.49
480.00	-0.04	7.85	480.00	-0.46	26.46
540.00	-0.03	7.84	540.00	-0.44	26.44
600.00	-0.03	7.84	600.00	-0.42	26.42
900.00	-0.02	7.83	900.00	-0.32	26.32
1200.00	0.00	7.81	1200.00	-0.28	26.28
1500.00	0.00	7.81	1500.00	-0.16	26.16
1800.00	0.00	7.81	1800.00	-0.09	26.09
2100.00	#VALUE!	X	2100.00	#VALUE!	X
2400.00	#VALUE!	X	2400.00	0.04	25.96
2700.00	0.00	7.81	2700.00	#VALUE!	X
3000.00	#VALUE!	X	3000.00	#VALUE!	X
3300.00	#VALUE!	X	3300.00	#VALUE!	X
3600.00	-0.01	7.82	3600.00	0.25	25.75
4200.00	#VALUE!	X	4200.00	#VALUE!	X
4800.00	#VALUE!	X	4800.00	#VALUE!	X
5400.00	#VALUE!	X	5400.00	#VALUE!	X
6000.00	#VALUE!	X	6000.00	#VALUE!	X
6600.00	0.00	7.81	6600.00	#VALUE!	X
7200.00	#VALUE!	X	7200.00	0.40	25.6



WELL TEST ANALYSIS

Data Set: K:\...\GW7_01202008.aqt
Date: 01/22/09 Time: 14:35:29

PROJECT INFORMATION

Company: DEFFENBAUGH INDUSTRIES
Client: INDUSTRIAL SERVICE COMPANY
Project: ISC-KC
Location: 1633 S. MARSH AVE.
Test Well: GW-7
Test Date: 5/21/96

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.609E-5 cm/sec
y0 = 2.923 ft

AQUIFER DATA

Saturated Thickness: 25. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-7)

Initial Displacement: 3.52 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.0833 ft

Static Water Column Height: 6. ft
Screen Length: 10. ft
Well Radius: 0.3333 ft
Gravel Pack Porosity: 0.2

Data Set: K:\ENV\QUALITY ANALYTICAL SERVICES\site\50657\Data\Disks from Mick Cossairt\Disk #1\AQTESOLV\jb01202008\GW7_01202008.a
Date: 01/22/09
Time: 14:35:44

PROJECT INFORMATION

Company: DEFFENBAUGH INDUSTRIES
Client: INDUSTRIAL SERVICE COMPANY
Project: ISC-KC
Location: 1633 S. MARSH AVE.
Test Date: 5/21/96
Test Well: GW-7

AQUIFER DATA

Saturated Thickness: 25. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: GW-7

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

Initial Displacement: 3.52 ft
Static Water Column Height: 6. ft
Casing Radius: 0.0833 ft
Well Radius: 0.3333 ft
Well Skin Radius: 0.3333 ft
Screen Length: 10. ft
Total Well Penetration Depth: 14. ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1666 ft
Gravel Pack Porosity: 0.2

No. of Observations: 17

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	0.	7.	2.94	30.	1.63
1.	3.52	8.	2.85	40.	1.35
2.	3.4	9.	2.77	60.	0.93
3.	3.27	10.	2.69	120.	0.42
4.	3.18	15.	2.29	180.	0.26
5.	3.09	20.	2.1		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.369

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.609E-5	cm/sec
y0	2.923	ft

T = K*b = 0.01988 cm^2/sec

Data Set: C:\Documents and Settings\lturner\Desktop\QAS SLUG TESTS\GW5 Unconfined Bouwer-Rice.aqt
Title: GW5 Slug Test
Date: 03/12/13
Time: 15:03:07

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Well: GW5

AQUIFER DATA

Saturated Thickness: 28.16 ft
Anisotropy Ratio (Kz/Kr): 0.001

SLUG TEST WELL DATA

Test Well: GW5

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

Initial Displacement: 3.78 ft
Static Water Column Height: 6.38 ft
Casing Radius: 0.0833 ft
Well Radius: 0.333 ft
Well Skin Radius: 0.635 ft
Screen Length: 10. ft
Total Well Penetration Depth: 16.12 ft

No. of Observations: 20

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.	420.	2.24
15.	3.78	480.	2.12
30.	3.63	540.	1.98
45.	3.57	600.	1.88
60.	3.47	900.	1.47
120.	3.2	1200.	1.18
180.	2.96	1800.	0.82
240.	2.74	2400.	0.58
300.	2.55	3600.	0.42
360.	2.39	7200.	0.17

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 5.642

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	6.738E-5	cm/sec
y0	3.699	ft

T = K*b = 0.05783 cm²/sec

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	7.188E-5	2.35E-5	+/- 4.938E-5	3.058	cm/sec
y0	3.334	0.3687	+/- 0.7746	9.042	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

T = K*b = 0.06169 cm^2/sec

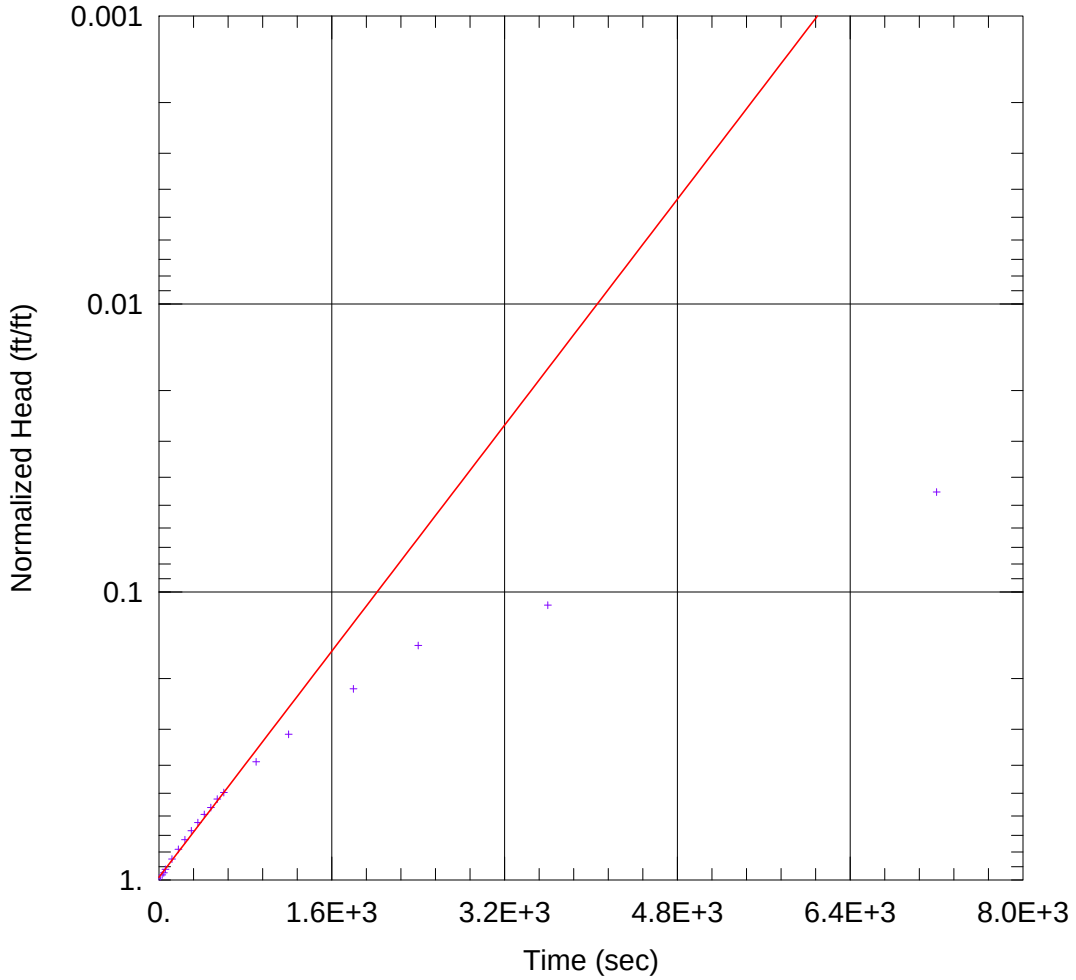
Parameter Correlations

	K	y0
K	1.00	0.63
y0	0.63	1.00

Residual Statistics

for weighted residuals

Sum of Squares. . . . . 13.22 ft^2
Variance . . . . . 0.7345 ft^2
Std. Deviation . . . . . 0.857 ft
Mean . . . . . 0.138 ft
No. of Residuals 20
No. of Estimates 2



GW5 SLUG TEST

Data Set: C:\...\GW5 Unconfined Bouwer-Rice.aqt
Date: 03/12/13 Time: 14:56:48

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Well: GW5

AQUIFER DATA

Saturated Thickness: 28.16 ft Anisotropy Ratio (Kz/Kr): 0.001

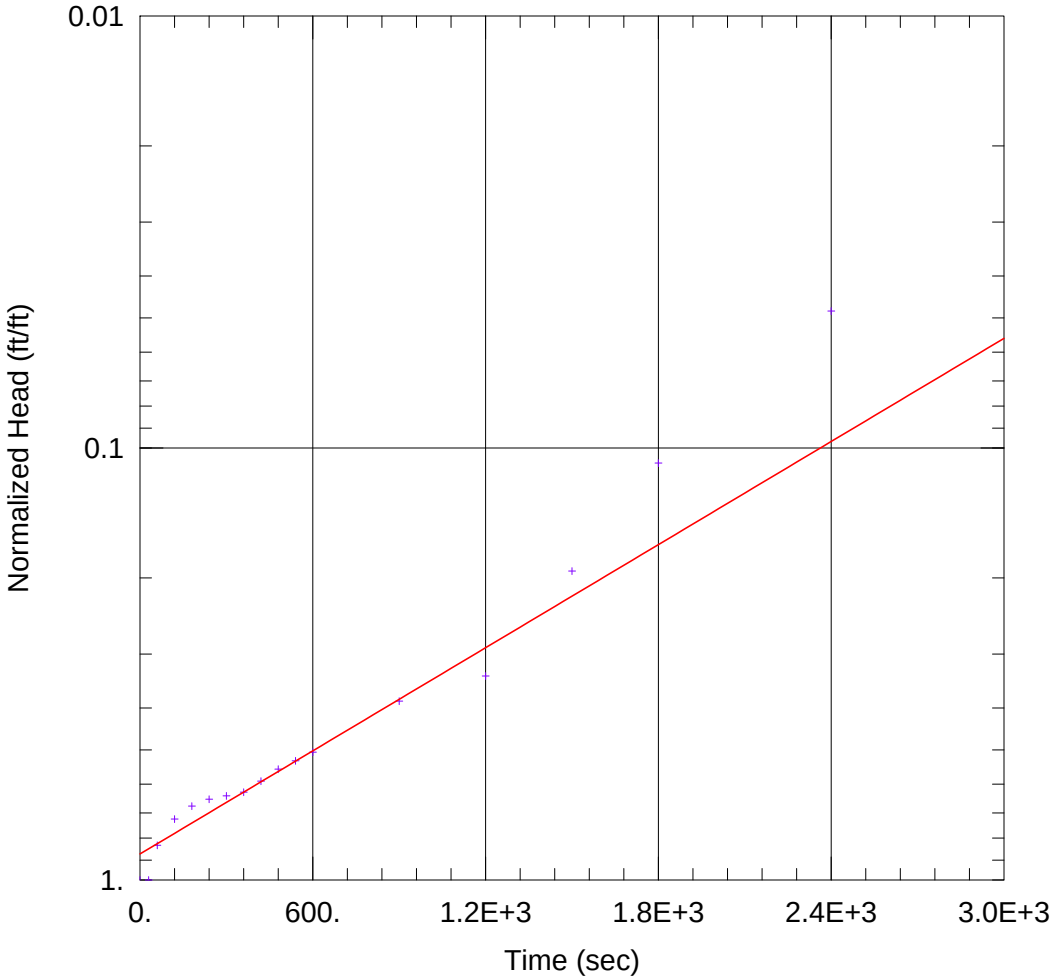
WELL DATA (GW5)

Initial Displacement: 3.78 ft Static Water Column Height: 6.38 ft
Total Well Penetration Depth: 16.12 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.738E-5 cm/sec y0 = 3.699 ft



GW8B SLUG TEST

Data Set: C:\Documents and Settings\lturner\Desktop\QAS SLUG TESTS\GW8B Confined Bouwer-Rice.aqt
Date: 03/12/13 Time: 16:13:36

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Well: GW8B
Test Date: 01/22/2009

AQUIFER DATA

Saturated Thickness: 39.53 ft
Anisotropy Ratio (Kz/Kr): 0.001

WELL DATA (GW8B)

Initial Displacement: 0.83 ft
Total Well Penetration Depth: 39.53 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.53 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.0001245 cm/sec
y0 = 0.7229 ft

Data Set: C:\Documents and Settings\lturner\Desktop\QAS SLUG TESTS\GW8B Confined Bouwer-Rice.aqt
Title: GW8B Slug Test
Date: 03/12/13
Time: 16:13:54

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Date: 01/22/2009
Test Well: GW8B

AQUIFER DATA

Saturated Thickness: 39.53 ft
Anisotropy Ratio (Kz/Kr): 0.001

SLUG TEST WELL DATA

Test Well: GW8B

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

Initial Displacement: 0.83 ft
Static Water Column Height: 46.53 ft
Casing Radius: 0.0833 ft
Well Radius: 0.333 ft
Well Skin Radius: 0.635 ft
Screen Length: 5. ft
Total Well Penetration Depth: 39.53 ft

No. of Observations: 16

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
30.	0.83	480.	0.46
60.	0.69	540.	0.44
120.	0.6	600.	0.42
180.	0.56	900.	0.32
240.	0.54	1200.	0.28
300.	0.53	1500.	0.16
360.	0.52	1800.	0.09
420.	0.49	2400.	0.04

SOLUTION

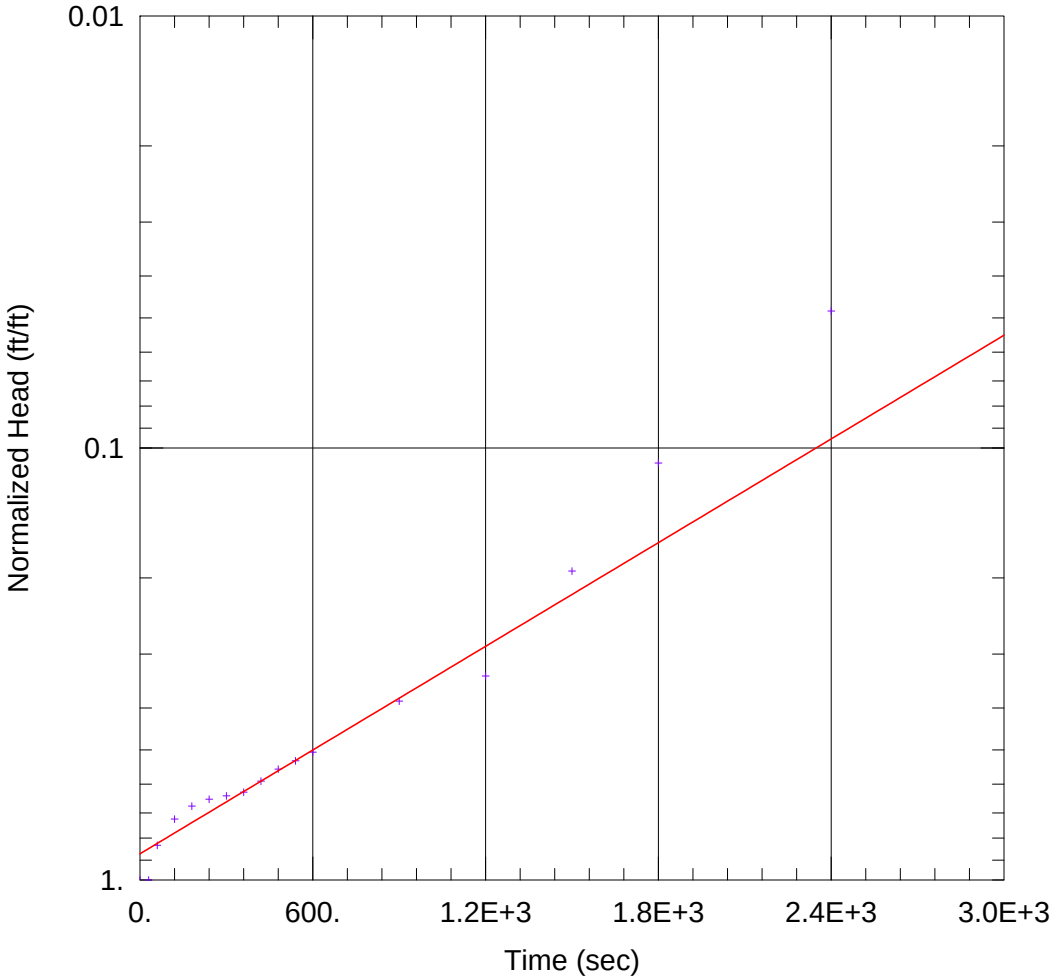
Slug Test
Aquifer Model: Confined
Solution Method: Bouwer-Rice
ln(Re/rw): 6.428

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0001245	cm/sec
y0	0.7229	ft

T = K*b = 0.15 cm²/sec



GW8B SLUG TEST

Data Set: C:\...\GW8B Unconfined Bouwer-Rice.aqt
Date: 03/12/13 Time: 16:13:00

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Well: GW8B
Test Date: 01/22/2009

AQUIFER DATA

Saturated Thickness: 46.53 ft
Anisotropy Ratio (Kz/Kr): 0.001

WELL DATA (GW8B)

Initial Displacement: 0.83 ft
Total Well Penetration Depth: 46.53 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.53 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0001274 cm/sec
y0 = 0.7219 ft

Data Set: C:\Documents and Settings\lturner\Desktop\QAS SLUG TESTS\GW8B Unconfined Bouwer-Rice.aqt
Title: GW8B Slug Test
Date: 03/12/13
Time: 16:13:12

PROJECT INFORMATION

Company: Burns & McDonnell Engineering
Client: Quality Analytical Services
Project: 62589
Location: Kansas City, MO
Test Date: 01/22/2009
Test Well: GW8B

AQUIFER DATA

Saturated Thickness: 46.53 ft
Anisotropy Ratio (Kz/Kr): 0.001

SLUG TEST WELL DATA

Test Well: GW8B

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

Initial Displacement: 0.83 ft
Static Water Column Height: 46.53 ft
Casing Radius: 0.0833 ft
Well Radius: 0.333 ft
Well Skin Radius: 0.635 ft
Screen Length: 5. ft
Total Well Penetration Depth: 46.53 ft

No. of Observations: 16

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
30.	0.83	480.	0.46
60.	0.69	540.	0.44
120.	0.6	600.	0.42
180.	0.56	900.	0.32
240.	0.54	1200.	0.28
300.	0.53	1500.	0.16
360.	0.52	1800.	0.09
420.	0.49	2400.	0.04

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 6.537

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0001274	cm/sec
y0	0.7219	ft

T = K*b = 0.1806 cm²/sec