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A Q T E S O L V   R E S U L T S

Version 2.01

Developed by Glenn M. Duffield

02/13/97
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TEST DESCRIPTION

```
Data set........... KRRFFM.DAT
Output file........ KRRFFM.OUT
Data set title..... KRRFFM SLUG TEST

Units of Measurement
   Length.......... ft
   Time............ d

Test Well Data
   Initial displacement in well..... 3.675
   Radius of well casing............ 0.0833
   Radius of wellbore............... 0.25
   Aquifer saturated thickness...... 32.2
   Well screen length............... 15
   Static height of water in well... 32.2
   Gravel pack porosity............. 0
   Effective well casing radius..... 0.0833
   Effective wellbore radius........ 0.25
   Log(Re/Rw)....................... 3.62
   Constants A, B and C............. 0.000 ,  0.000,  2.989
   No. of observations.............. 42
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ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

```
           Estimate          Std. Error
   K  =   5.7213E+000 +/-   6.2012E-002 ft/d
   y0 =   3.2089E+000 +/-   4.0835E-002 ft
```

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals..... 42
Number of estimated parameters.... 2
Degrees of freedom..... 40
Residual mean..... 0.04577
Residual standard deviation..... 0.1143
Residual variance..... 0.01307

Model Residuals:

Time	Observed	Calculated	Residual	Weight
2.3E-005	3.08	2.7422	0.3378	1
3.5E-005	2.76	2.5263	0.23368	1
4.6E-005	2.52	2.3434	0.17661	1
5.8E-005	2.21	2.1589	0.051089	1
6.9E-005	2.08	2.0026	0.077411	1
8.1E-005	1.92	1.8449	0.075063	1
9.3E-005	1.75	1.6997	0.050305	1
0.000104	1.6	1.5766	0.023376	1
0.000116	1.47	1.4525	0.017495	1
0.000127	1.35	1.3473	0.002668	10
0.000139	1.24	1.2413	-0.001264	10
0.00015	1.15	1.1514	-0.0013867	10
0.000162	1.05	1.0607	-0.010744	10
0.000174	0.97	0.97724	-0.0072378	10
0.000185	0.9	0.90648	-0.0064781	10
0.000197	0.83	0.83512	-0.0051161	10
0.000208	0.76	0.77465	-0.014647	10
0.00022	0.71	0.71366	-0.0036635	10
0.000231	0.66	0.66199	-0.0019886	10
0.000289	0.45	0.44538	0.0046174	10
0.000347	0.32	0.29965	0.020349	10
0.000405	0.23	0.2016	0.028396	10
0.000463	0.17	0.13564	0.034362	10
0.000521	0.13	0.091257	0.038743	1
0.000579	0.1	0.061397	0.038603	1
0.000637	0.08	0.041308	0.038692	1
0.000694	0.06	0.027982	0.032018	1
0.000752	0.05	0.018826	0.031174	1
0.00081	0.05	0.012666	0.037334	1
0.000868	0.04	0.0085217	0.031478	1
0.000926	0.04	0.0057334	0.034267	1
0.000984	0.04	0.0038574	0.036143	1
0.001042	0.03	0.0025952	0.027405	1
0.0011	0.03	0.0017461	0.028254	1
0.001157	0.02	0.0011828	0.018817	1
0.001215	0.02	0.00079578	0.019204	1
0.001273	0.02	0.0005354	0.019465	1
0.001331	0.02	0.00036021	0.01964	1
0.001389	0.02	0.00024235	0.019758	1
0.001736	0.01	2.2631E-005	0.0099774	1
0.002083	0.01	2.1133E-006	0.0099979	1
0.002431	0.01	1.96E-007	0.0099998	1

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RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
           Estimate
   K  =   5.7213E+000 ft/d
   y0 =   3.2089E+000 ft

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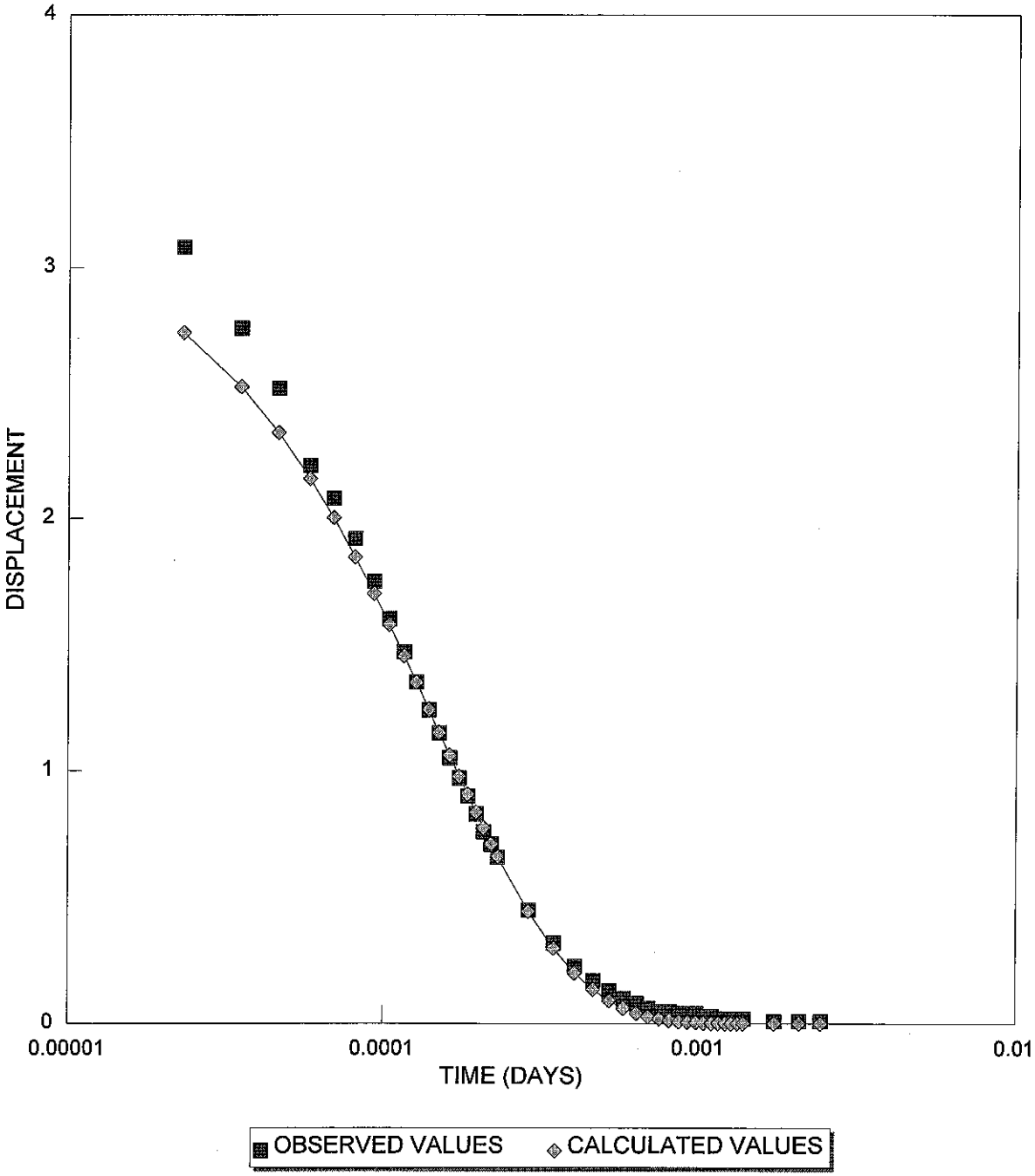
KRRFFM SLUG TEST RESLUTS

K = 5.7212 ft/d yo = 3.208



	KRRFFM SLUG TEST DATA			
ELAPSED TIME (MIN)	HERMIT LEVEL	ELPASED TIME (DAYS)	RAWDOWN	WEIGHT
0.000000	16.69	0.000000	2.03	1
0.003300	16.36	0.000002	2.36	1
0.006600	15.79	0.000005	2.93	1
0.009900	16.30	0.000007	2.42	1
0.013300	16.06	0.000009	2.66	1
0.016600	15.89	0.000012	2.83	1
0.020000	16.31	0.000014	2.41	1
0.023300	15.69	0.000016	3.03	1
0.026600	15.42	0.000018	3.30	1
0.030000	15.41	0.000021	3.31	1
0.033300	15.64	0.000023	3.08	1
0.050000	15.96	0.000035	2.76	1
0.066600	16.20	0.000046	2.52	1
0.083300	16.51	0.000058	2.21	1
0.100000	16.64	0.000069	2.08	1
0.116600	16.80	0.000081	1.92	1
0.133300	16.97	0.000093	1.75	1
0.150000	17.12	0.000104	1.60	1
0.166600	17.25	0.000116	1.47	1
0.183300	17.37	0.000127	1.35	1
0.200000	17.48	0.000139	1.24	1
0.216600	17.57	0.000150	1.15	1
0.233300	17.67	0.000162	1.05	1
0.250000	17.75	0.000174	0.97	1
0.266600	17.82	0.000185	0.90	1
0.283300	17.89	0.000197	0.83	1
0.300000	17.96	0.000208	0.76	1
0.316600	18.01	0.000220	0.71	1
0.333300	18.06	0.000231	0.66	1
0.416700	18.27	0.000289	0.45	1
0.500000	18.40	0.000347	0.32	1
0.583300	18.49	0.000405	0.23	1
0.666700	18.55	0.000463	0.17	1
0.750000	18.59	0.000521	0.13	1
0.833300	18.62	0.000579	0.10	1
0.916700	18.64	0.000637	0.08	1
1.000000	18.66	0.000694	0.06	1
1.083300	18.67	0.000752	0.05	1
1.166700	18.67	0.000810	0.05	1
1.250000	18.68	0.000868	0.04	1

	KRRFFM SLUG TEST DATA			
ELAPSED TIME (MIN)	HERMIT LEVEL	ELPASED TIME (DAYS)	RAWDOWN	WEIGHT
1.333300	18.68	0.000926	0.04	1
1.416600	18.68	0.000984	0.04	1
1.500000	18.69	0.001042	0.03	1
1.583300	18.69	0.001100	0.03	1
1.666700	18.70	0.001157	0.02	1
1.750000	18.70	0.001215	0.02	1
1.833300	18.70	0.001273	0.02	1
1.916700	18.70	0.001331	0.02	1
2.000000	18.70	0.001389	0.02	1
2.500000	18.71	0.001736	0.01	1
3.000000	18.71	0.002083	0.01	1
3.500000	18.71	0.002431	0.01	1
4.000000	18.72	0.002778	0.00	1
4.500000	18.72	0.003125	0.00	1
5.000000	18.72	0.003472	0.00	1
5.500000	18.72	0.003819	0.00	1
6.000000	18.72	0.004167	0.00	1
6.500000	18.72	0.004514	0.00	1
7.000000	18.72	0.004861	0.00	1
7.500000	18.72	0.005208	0.00	1
8.000000	18.72	0.005556	0.00	1
8.500000	18.72	0.005903	0.00	1
9.000000	18.72	0.006250	0.00	1
9.500000	18.72	0.006597	0.00	1
10.000000	18.72	0.006944	0.00	1
END				

	KRRFFM SLUG TEST DATA			
ELAPSED	HERMIT	ELPASED	RAWDOWN	WEIGHT
TIME	LEVEL	TIME		
(MIN)		(DAYS)		
This is the slug test data for well KRRFFM				
which is the far-field mid-depth well at Transect F.				
TD = 30 ft				
CD = 15 ft				
DTW = (7.3 -4.5) = 2.80 ft below land surface				
Rc = 1 in = 0.0833 ft				
Rw = 3 in = 0.250 ft				
screen length = 15 ft				
saturated thickness = H = (35.00 - 2.80) = 32.20 ft				
Static height of water in well = Lw = (35.00 - 2.80) = 32.20 ft				
Even though the well is 30 feet deep, it appears that the aqu				
depth of 35 feet. Therefore, a value of 35 feet was used to				
the values for H and Lw.				
Calculations for volume of slug				
Rs = 0.6 in = 0.05 ft				
Ls = 10.2 ft = lenght of slug				
Vs= 3.14 * Rs^2 * Ls				
Vs = 0.08007				
Calculations for H0				
H0 = Vs/(3.14 * Rc^2)				
Ho= 3.674939				

Bouwer Rice → Unconfined