APPENDIX K
FIELD HYDRAULIC CONDUCTIVITY TEST DATA

July 1986 Hydraulic Conductivity Test Data (2014 FR)

September 1986 Hydraulic Conductivity Test Data (2014 FR)

2002 - 2003 Hydraulic Conductivity Test Data (2014 FR)

February 2019 Hydraulic Conductivity Test Data

July 1986 Hydraulic Conductivity Test Data

(From 2014 FR)

AYRES ASSOCIATES

COEFFICIENT OF PERMEABILITY (Constant Head, ~~Falling Head~~)

Project EAU CLAIRE Co. SEVEN MILE Ck. Job No. 4731.98

Location of Project SECTOR 2, TB-45, S-2, 10 ft depth

Description of Soil SAND, w/ a little Silt

Tested by WEG/LR Date of Testing 8/1/85

Sample Dimensions: Diam. 6.3 cm; Area _____ cm²; Ht. 4.2 cm

Wt. soil + pan Init. _____ g

Wt.soil + pan Final _____ g

Wt. of Sample 237.4 g

Vol. _____ cm³

Unit wt. _____ kN/m³

Constant Head

Test data *Test data used*

Test No.	t, s	Q, cm³	T, °C	Test No.	t, s	Q, cm³	T, °C
1							
2							
3							
4							
				Average[a]			

$k_T = QL/Aht =$ _____

$= 2.9 \times 10^{-3}$ cm/s

$\eta_T/\eta_{20} =$ 1.00

$k_{20} = k_T\eta_T/\eta_{20} =$ 2.9×10^{-3} cm/s (AVE.)

~~*Falling Head*~~

Standpipe = [burette, other (specify)] _____

Area of standpipe, $a =$ _____ cm²

Test data[b] INFLOW OUTFLOW *Test data used*

Test no.	h_1, cm	h_2, cm	t, s	Q_{in}, cm³	Q_{out}, cm³	T, °C	Test no.	h_1, cm	h_2, cm	t, s	Q
1	19.5	18.8	300		9.3	20°	5	23.9	18.8	300	40.8
2	19.9	↓	300		6.1	↓					
3	21.2	↓	360		14.8	↓					
4	22.3	↓	300		23.7	↓					
							Average				

$\eta_T/\eta_{20} =$ _____

$k_T = \frac{aL}{At} \ln h_1/h_2 =$ _____ = _____ cm/sec

$k_{20} = k_T\eta_T/\eta_{20} =$ _____ = _____ cm/sec

[a]Use averaged values only if there is a small difference in test temperature, say, 1–2°C.

[b]This test can be considerably simplified by using the same values of h_1 and h_2 each time, otherwise you cannot average these values regardless of T.

AYRES ASSOCIATES

COEFFICIENT OF PERMEABILITY (Constant Head, ~~Falling Head~~)

Project EAU CLAIRE CO. SECTOR 2 Job No. 4731.00

Location of Project SEVEN MILE CREEK - SECTOR 2

Description of Soil MT. SIMON SANDSTONE - DH-23B CORE - 52½ ft.±

Tested by WFG Date of Testing 5/22/86

Sample Dimensions: Diam. 5.308 cm; Area 22.124 cm²; Ht. 7.629 cm

Wt. soil + pan Init. _____ g

Wt.soil + pan Final _____ g

Wt. of Sample 321.07 g

Vol. 168.78 cm³

Unit wt. 1.90 g/cc

Constant Head

Test data *Test data used*

Test No.	t, s	Q, cm³	T, °C	Test No.	t, s	Q, cm³	T, °C
1							
2							
3							
4							
				Average[a]			

$k_T = QL/Aht =$ _____

$\eta_T/\eta_{20} =$ 1.106

$= 5.79 \times 10^{-3}$ cm/s $k_{20} = k_T\eta_T/\eta_{20} = 6.4 \times 10^{-3}$ cm/s AVE.

~~Falling Head~~

Standpipe = [burette, other (specify)] _____

Area of standpipe, $a =$ _____ cm²

Test data[b] $H_{OUT} = 13.8$ cm *Test data used*

Test no.	h_{IN} cm	Δh, cm	t, s	Q_{in}, cm³	Q_{out}, cm³	T, °C	Test no.	h_1, cm	h_2, cm	t, s	T, °C
1	15.8	2.0	420		16	16					
2	16.8	3.0	390		20	↓					
3	17.8	4.0	270		17	↓					
4	18.8	5.0	180		13.5	↓					
							Average				

$\eta_T/\eta_{20} =$ _____

$k_T = \frac{aL}{At} \ln h_1/h_2 =$ _____ = _____ cm/sec

$k_{20} = k_T\eta_T/\eta_{20} =$ _____ = _____ cm/sec

[a]Use averaged values only if there is a small difference in test temperature, say, 1–2°C.

[b]This test can be considerably simplified by using the same values of h_1 and h_2 each time, otherwise you cannot average these values regardless of T.

HYDRAULIC CONDUCTIVITY
DATA & COMPUTATIONS

IN-FIELD TEST COMPUTATIONS:

From the Hvorslev Method, solve the equation:

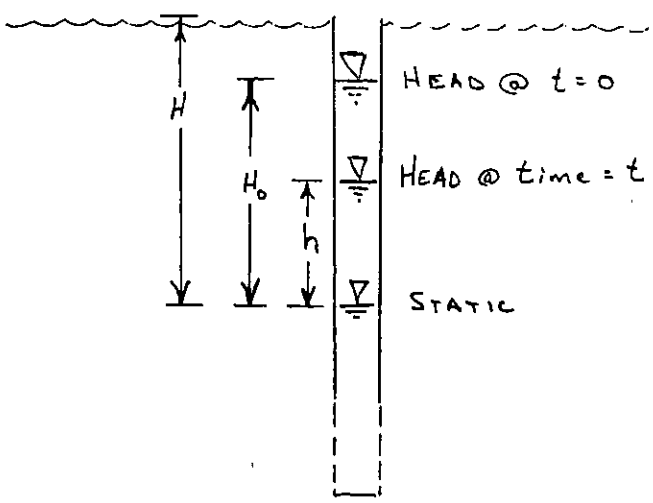
$$K = \frac{r^2 \ln(L/R)}{2 T_0 L}$$

where:
r = well pipe radius
R = screened interval radius
T_0 = basic time lag
L = screened interval length

The basic time lag is related to the normalized head by the expression: $\frac{H-h}{H-H_0} = e^{-t/T_0}$

When $\frac{H-h}{H-H_0} = 0.37$ then $T_0 = t$ and T_0 can be interpolated from the data.

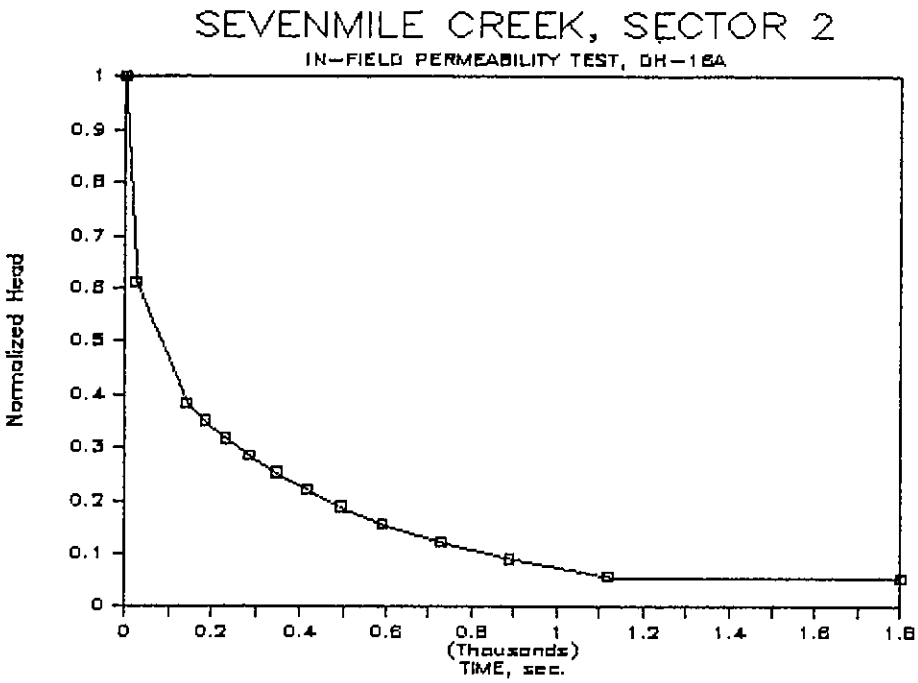
"Normalized Head" is defined as $\frac{H-h}{H-H_0}$ where the various heads are as shown below:

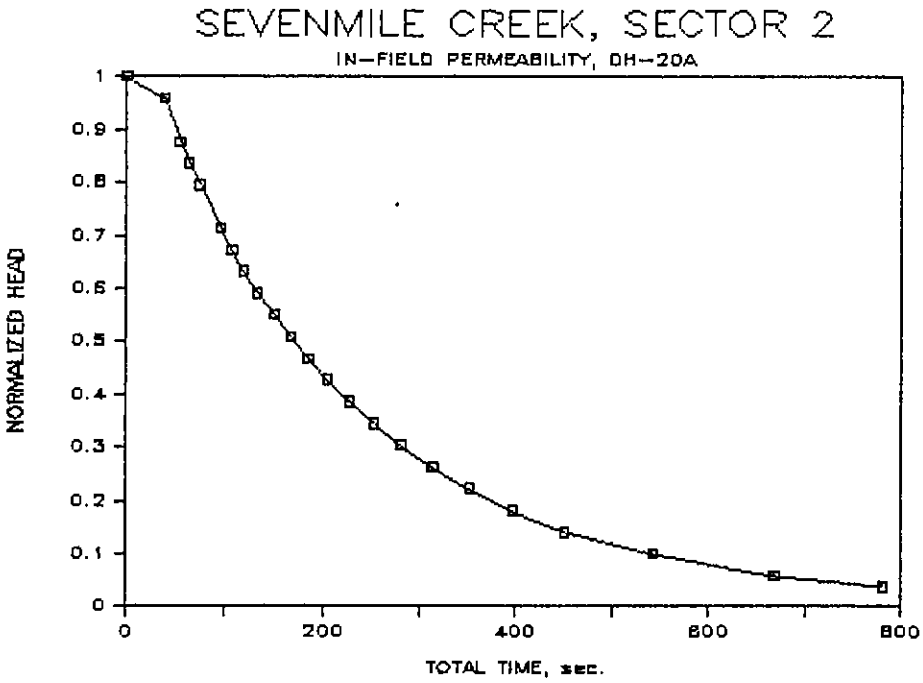


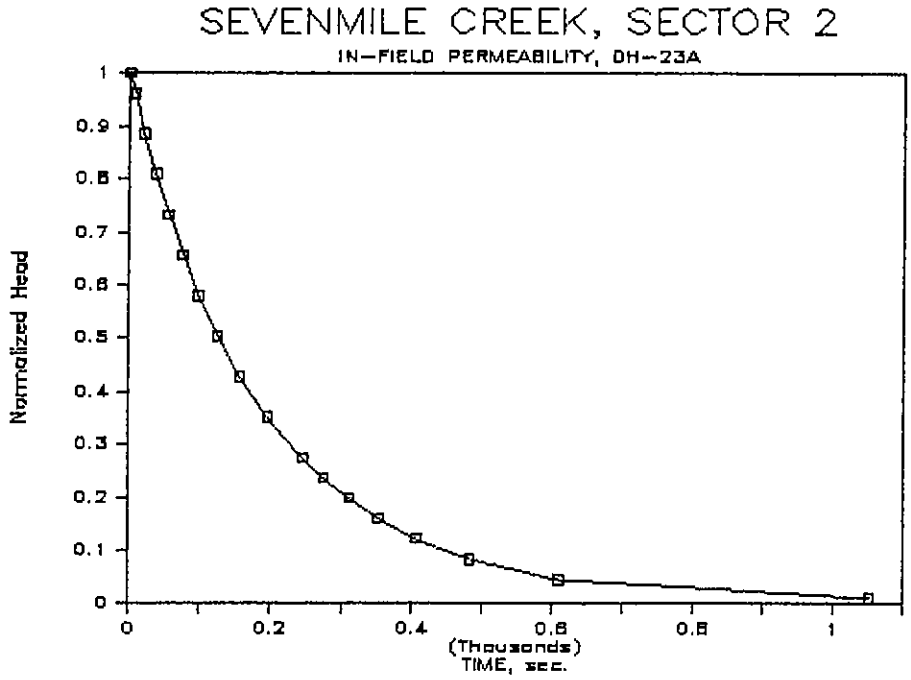
Project No.	Remarks	Computation by WFG	Date 6/12/86
Project Name SEVEN MILE CREEK, SECTOR 2		Checked by	Date
Title/Item HYDRAULIC CONDUCTIVITY DATA & COMPUTATIONS		Sheet 1	Of

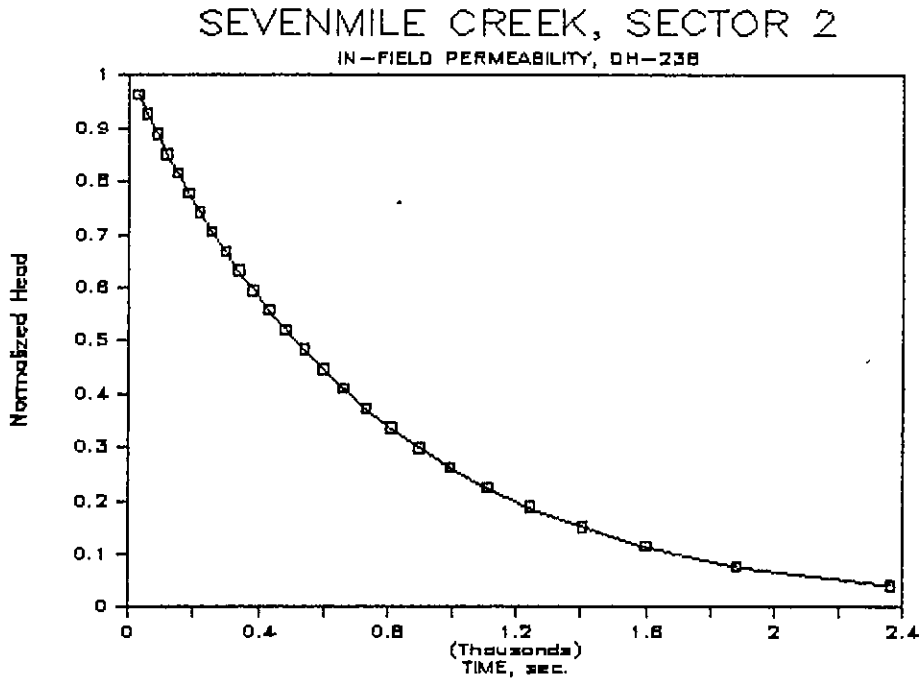
WELL NO.	TEST ELEV.	STAT. WTR. DEPTH	HEAD DEPTH	NORM HEAD	TIME, min.	TIME, sec.	TOT. TIME, sec.
DH-23A	838-841	39.190	13.000	1.000	0	0	0
			14.000	0.962	0	7	7
			16.000	0.885	0	20	20
			18.000	0.809	0	37	37
			20.000	0.733	0	55	55
			22.000	0.656	1	15	75
			24.000	0.580	1	37	97
			26.000	0.504	2	4	124
			28.000	0.427	2	36	156
			30.000	0.351	3	15	195
			32.000	0.275	4	5	245
			33.000	0.236	4	36	276
			34.000	0.198	5	12	312
			35.000	0.160	5	54	354
			36.000	0.122	6	48	408
			37.000	0.084	8	4	484
			38.000	0.045	10	10	610
			38.900	0.011	17	30	1050
DH-23B	818-821	40.120	13.000	1.000	0	0	0
			14.000	0.963	0	26	26
			15.000	0.926	0	54	54
			16.000	0.889	1	23	83
			17.000	0.853	1	53	113
			18.000	0.816	2	26	146
			19.000	0.779	3	0	180
			20.000	0.742	3	35	215
			21.000	0.705	4	13	253
			22.000	0.668	4	54	294
			23.000	0.631	5	36	336
			24.000	0.594	6	21	381
			25.000	0.558	7	9	429
			26.000	0.521	8	1	481
			27.000	0.484	8	57	537
			28.000	0.447	9	57	597
			29.000	0.410	11	1	661
			30.000	0.373	12	11	731
			31.000	0.336	13	30	810
			32.000	0.299	14	56	896
			33.000	0.263	16	34	994
			34.000	0.226	18	27	1107
			35.000	0.189	20	41	1241
			36.000	0.152	23	22	1402
			37.000	0.115	26	39	1599
			38.000	0.078	31	22	1882
			39.000	0.041	39	21	2361

WELL NO.	TEST ELEV.	STAT. WTR. DEPTH	HEAD DEPTH	NORM HEAD	TIME, min.	TIME, sec.	TOT. TIME, sec.
DH-16A	821-824	52.810	22.000	1.000	0.000	0.000	0
			34.000	0.611	0.000	24.000	24
			41.000	0.383	2.000	21.000	141
			42.000	0.351	3.000	4.000	184
			43.000	0.318	3.000	51.000	231
			44.000	0.286	4.000	45.000	285
			45.000	0.253	5.000	46.000	346
			46.000	0.221	6.000	56.000	416
			47.000	0.189	8.000	16.000	496
			48.000	0.156	9.000	50.000	590
			49.000	0.124	12.000	8.000	728
			50.000	0.091	14.000	50.000	890
			51.000	0.059	18.000	41.000	1121
			51.100	0.056	30.000	0.000	1800
DH-20A		34.43	10	1.00	0	0	0
			11	0.96	0	39	39
			13	0.88	0	54	54
			14	0.84	1	3	63
			15	0.80	1	15	75
			17	0.71	1	37	97
			18	0.67	1	48	108
			19	0.63	2	0	120
			20	0.59	2	14	134
			21	0.55	2	30	150
			22	0.51	2	47	167
			23	0.47	3	5	185
			24	0.43	3	25	205
			25	0.39	3	47	227
			26	0.35	4	12	252
			27	0.30	4	40	280
			28	0.26	5	13	313
			29	0.22	5	51	351
			30	0.18	6	37	397
			31	0.14	7	31	451
			32	0.10	9	2	542
			33	0.06	11	8	668
			33.5	0.04	13	1	781


SEVENMILE CREEK, SECTOR 2
IN-FIELD PERMEABILITY TEST, DH-16A
Normalized Head
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
(Thousands)
TIME, sec.


SEVENMILE CREEK, SECTOR 2
IN-FIELD PERMEABILITY, DH-20A
NORMALIZED HEAD
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
200
400
600
800
TOTAL TIME, sec.


SEVENMILE CREEK, SECTOR 2
IN-FIELD PERMEABILITY, DH-23A
Normalized Head
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.2
0.4
0.6
0.8
1
(Thousands)
TIME, sec.


SEVENMILE CREEK, SECTOR 2
IN-FIELD PERMEABILITY, DH-23B
Normalized Head
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.4
0.8
1.2
1.6
2
2.4
(Thousands)
TIME, sec.

Design Computations

AYRES ASSOCIATES

FIELD FALLING HEAD DATA

TB-45:

DEPTH	TRIAL #1 TIME	TRIAL #2 TIME	TRIAL #3 TIME	TRIAL #4 TIME
10 ft	START			
15 ft		START	START	START
20 ft	34 sec	25 sec	14 sec	16 sec
25 ft			67 sec	69 sec

2" I.D. PVC to 27 ft.
3 ft, 0.010" slotted screen -27 → 30 ft.

TRIAL #3:

$K_{20'-25'} = 3.1 \times 10^{-3}$ cm/sec
$K_{15-25'} = 4.1 \times 10^{-3}$ cm/sec
> $K_{AVE} = 3.6 \times 10^{-3}$ cm/sec

DH-22A:

DEPTH	TRIAL # 1	2	3	4
0'	0	0	0	0
5'	5 sec	5 sec	5 sec	4 sec
10'				
15'	16 sec	20 sec	20 sec	20.5 sec

20 ft 2" I.D. PVC casing
3 ft. 2" I.D. PVC 0.010" slot screen

TRIAL #2:

$K_{5-15} = 2.7 \times 10^{-2}$ cm/sec
$K_{0-15} = 2.4 \times 10^{-2}$ cm/sec
> 2.6×10^{-2} cm/sec

Project No. 4731.00	Remarks	Computation by WFG	Date
Project Name SEVEN MILE CREEK - SECTOR 2		Checked by	Date
Title/Item		Sheet 1	Of 2

DH-23B:

Depth to Water, ft.	Elapsed Time, sec.
21.5	0
21.9	255
22.0	300
22.1	398
22.2	513
22.3	640
22.4	870
22.55	1110

Casing is 4" steel to 22.5 ft depth w/ 2 ft ± stick-up
Open at bottom only.

$$K = \frac{2\pi R}{11(t_2-t_1)} \ln\left(\frac{h_2}{h_1}\right)^{*} = \frac{2\pi \; 2*2.54}{11\,(1110)} \ln\left(\frac{2.75}{1.70}\right)$$

$$= 1.3 \times 10^{-3} \text{ cm/sec}$$

* Reference: Cedergren, "Seepage, Drainage & Flownets" Wiley, 1967

Equation for TB-45 & DH-22A

$$K = \frac{R^2}{2L(t_2-t_1)} \ln(L/R) \ln(h_1/h_2) \quad \text{for } L/R > 8 \; *$$

where L = slotted screen length
R = Well radius

Project No. 4731.00	Remarks	Computation by WFG	Date
Project Name Seven Mile Creek - Sector 2		Checked by	Date
Title/Item		Sheet 2	Of 2

September 1986 Hydraulic Conductivity Test Data

(From 2014 FR)

Formulas used for permeability calculations unless otherwise noted.

CONSTANT HEAD	VARIABLE HEAD
$k_v' = \dfrac{4 \cdot q \cdot \left(\dfrac{\pi}{11} \cdot \dfrac{k_v'}{k_v} \cdot \dfrac{D}{m} + L\right)}{\pi \cdot D^2 \cdot H_s}$	$k_v' = \dfrac{d^2 \cdot \left(\dfrac{\pi}{11} \cdot \dfrac{k_v'}{k_v} \cdot \dfrac{D}{m} + L\right)}{D^2 \cdot (t_2 - t_1)} \ln \dfrac{H_1}{H_2}$ $k_v = \dfrac{\dfrac{\pi}{11} \cdot \dfrac{D}{m} + L}{t_2 - t_1} \ln \dfrac{H_1}{H_2}$ for $\begin{cases} k_v' = k_v \\ d = D \end{cases}$

Notation
D = Diam, intake, sample (cm)
d = Diameter, standpipe (cm)
L = Length, intake, sample (cm)
H_s = Constant piez. head (cm)
H_1 = Piez. head for $t = t_1$ (cm)
H_2 = Piez. head for $t = t_2$ (cm)
q = Flow of water (cm³/sec)
t = Time (sec)
T = Basic time lag (sec)
k_v' = Vert. perm. casing (cm/sec)
k_v = Vert. perm. ground (cm/sec)
k_h = Horz. perm. ground (cm/sec)
k_m = Mean coeff. perm. (cm/sec)
m = Transformation ratio
$k_m = \sqrt{k_h \cdot k_v}$ $\quad m = \sqrt{k_h/k_v}$ $\ln = \log_e = 2.3 \log_{10}$

ASSUMPTIONS

Soil at intake, infinite depth, and directional isotropy (k_v and k_h constant). No disturbance, segregation, swelling, or consolidation of soil. No sedimentation or leakage. No air or gas in soil, well point, or pipe. Hydraulic losses in pipes, well point, or filter negligible.

Fig. 19.4 Formulas for determination of permeability (From Hvorslev, 1949).

Design Computations

AYRES ASSOCIATES

DH-10A

Static water level = 53.18 ft (deep)

TRIAL #1

Depth To WATER	Time Since Start, sec	Calculated Permeability *
50'	14 sec	3.61×10^{-4} ft/sec
53'	47 sec	(1.1×10^{-2} cm/sec)

TRIAL #2

Depth To Water	Time, sec.	
50'	0	3.97×10^{-4} ft/sec
53'	30	(1.2×10^{-2} cm/sec)

* $$K = \frac{r^2 \ln(L/R)}{2L(t_2 - t_1)} \ln\left(\frac{h_1}{h_2}\right)$$

Where: L = screen length
R = Well radius
r = Screen radius
h_1, t_1 = head at time t_1
h_2, t_2 = head at time t_2

Project No.	Remarks	Computation by WFG	Date
Project Name EAU CLAIRE CO. SEYMOUR CK. SEC. 2		Checked by	Date
Title/Item DH-10A Field Permeability Test 5/22/86		Sheet. 1	Of 1

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

FALLING HEAD PERMEAMETER DATA

Lt. Compacted Soil Sample (L) = 3.4 cm.

Cross Sectional Area Sample (A) X

Volume of Soil Sample (V) = (L x A)

Wt. of Moist Sample + Cylinder (W_{mc})

Wt. of Plexiglass Cylinder (W_{cyl}) -

Wt. of Moist Sample (W_m) = ($W_{mc} - W_{cyl}$)

Wt. of Dry Sample (W_d) = 386.9-

Dry Density of Compacted Soil (γ_d) ($W_d \div V$)

Original Moisture Cont. @ Compaction (m_c) $\left(\frac{W_m - W_d}{W_d}\right)$

Time Required for Saturation Under Vacuum After Initial 30 Minute Evacuation

panel-8

Burette Reading at Start 0 0 - 0

Burette Reading at Finish 30.1 cc 5 cc 15.0

Flow Velocity

Time at Start 3:00 3:33 4:35

Time at Finish 3:30 4:33 5:26

Time 2:26

Initial Water Height (h_o) 89.5 cm 89.5 89.5

Final Water Height (h_f) 71.3 58.6 62.2

Drop

Project: E.C. Landfill - Seymour Job No:

Boring No: DH-1 Depth: 20' Sample No: 8

Date: 2-19-76 Tested By: S. Hanson

$K = 2.1 \times 10^{-5}$

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

CONSTANT HEAD PERMEAMETER DATA
ASTM D-2434

#2

Ht. Compacted Soil Sample (L) = 2.25 in. = 5.7cm use 2.1 = 5.3cm

Cross Sectional Area Sample (A) = 31.65 sq cm

Volume of Soil Sample (V) = _____

Wt. of Dry Sample (W_d) = _____

Dry Density of Sample $\left(\left(\frac{W_d}{V}\right) = \gamma_d\right)$ = _____

Time Required for Saturation Under Vacuum = 15 min

Ht. of Hydraulic Head (h) = 438

L-5

Time	Elapsed Time	Water Volume(Q)	Coef. of Perm. $\left(K = \frac{QL}{Ath}\right)$
~~2:57:00~~	~~3 min~~	~~173cc~~	
~~3:00:30~~	~~5 min~~	~~233cc~~	
3:18:00	5 min	202cc	
3:40:00	325 sec	199cc	
3:55:00	300 sec	181cc	
4:06:00	300 sec	181cc	2.5×10^{-3}

Project: E.C. Landfill - Seymour Site Job No: _____

Boring No: DH-1 Depth: ~~40~~ 35 Sample No: 13

Date: 2-20-76 Tested By: S. Hanson

REF. ELEV. = 920.3

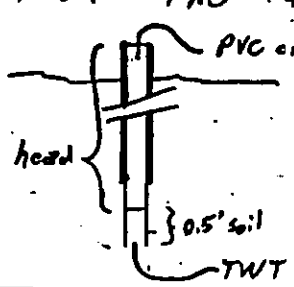
DESIGN COMPUTATIONS

WEN AYRES & Associates

Eau Claire Landfill - Sevenmile Ck. site

Field Permeability test Data · 6-2-76

Location	Test Depth	Test Elev	Soil Type	Volumn	Drop	Time	Head (ft)
TB ~~AB~~-5	31.0'	864.0		240 ml		86 min	32.0
					1.0 ft	870 min	32.0 - 31.0
TB ~~AB~~-11	15.0'	885.3		240 ml		65 min	17.0
				240 ml		65 min	17.0
					1.0 ft	215 min	17.0 - 16.0
					3.3 ft	1421 min	17.0 13.7
TB ~~AB~~-14	11.5'	895.6		20,000 ml		80 min	13.5
				20,000 ml		89 min	13.5
					8.6 ft	135 min	~~13.5 - 4.9~~
TB ~~AB~~-26	8.5'	902.4		240 ml		4.2 min	10.8
				240 ml		4.0 min	10.8
				240 ml		4.2 min	10.8
					2.75 ft	30 min	10.8 - ~~8.05~~
					4.9 ft	112 min	10.8 - 5.9
					5.6	1204 min	10.8 - 5.2
TB ~~AB~~-21	19.0'	~~894.2~~		240 ml		4.5 min	21.8
				240 ml		4.5 min	21.8
				240 ml		4.5 min	21.8
					11.0	1112 min	21.8 - 10.8
TB ~~AB~~-21	17.0'	902.2		240	0.96 ft	1111 min.	11.8 - 10.84



PVC crossect area $= \frac{\pi 2^2}{4} = 3.1416 \text{ in}^2$

TWT crossect area $= \frac{\pi 1\frac{7}{8}}{4} = 2.7612 \text{ in}^2$

PROJECT NO. F290	REMARKS	COMPUTATIONS BY J. Hansom	DATE 6-3-76
PROJECT NAME		CHECKED BY	DATE
TITLE/ITEM		SHEET 1	OF 5

F290

7.25
12.8

Sevenmile site - Field Permeability Calcs

$$\frac{4 \times q \times \left(\frac{\pi}{11} \times \frac{D}{m} + L\right)}{\pi \times D^2 \times H_c}$$ for constant head

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AB-5 (trial #1)

$$\frac{4 \times \frac{240}{5160} \times \left(\frac{\pi}{11} \times \frac{4.7625}{1} + 15.24\right)}{\pi \times 4.7625^2 \times 975.4} = K_v = \frac{0.18605 \times 16.60017}{69503.01}$$

$$\frac{3.08840}{69503.01} = 0.0000444 = K_v = 4.4 \times 10^{-5}$$

TB-11 ~~AB~~ 11 (Trials 1+2)

$$\frac{4 \times \frac{240}{3900} \times \left(\frac{\pi}{11} \times \frac{4.7625}{1} + 15.24\right)}{\pi \times 4.7625^2 \times 518.16} = \frac{66.40068 \times \frac{240}{3900}}{71.256 \times 518.16} =$$

$$\frac{4.08619}{36924.8} = 0.0001106 = K_v = 1.1 \times 10^{-4}$$

TB-14 ~~AB~~-14 (Trial #1)

$$\frac{66.40068 \times \frac{20000}{4800}}{71.256 \times 411.5} = \frac{276.689}{29320.1} = 0.009436 = K_v = 9.4 \times 10^{-3}$$

→ 46.689

TB-26 ~~AB~~-26 (Trials 1+3)

$$\frac{66.4 \times \frac{240}{252}}{71.256 \times 329.2} = \frac{63.23809}{23456.34} = 0.002696 = K_v = 2.7 \times 10^{-3}$$

TB-21 ~~AB~~-21 D = 19.0 (Trials 1,2+3)

$$\frac{66.4 \times \frac{240}{270}}{71.256 \times 669.5} = \frac{59.0222}{47347.046} = 0.001247 = K_v = 1.2 \times 10^{-3}$$

PROJECT NO.	REMARKS	COMPUTATIONS BY S.H.	DATE 6/3/76
PROJECT NAME		CHECKED BY	DATE
TITLE/ITEM		SHEET 2	OF 5

DESIGN COMPUTATIONS

WEN AYRES & Associates

Sevenmile Site - Field Permeability Calcs

$$K_V = \frac{d^2 \times \left(\frac{\pi}{11} \times \frac{D}{1} + L\right)}{D^2 \times (t_2 - t_1)} \ln \frac{H_1}{H_2}$$ for Variable Head

---

AB-5

$$\frac{5.08^2 \times \left(\frac{\pi}{11} \times \frac{4.7625}{1} + 15.24\right)}{4.7625^2 \times 52200} \ln \frac{975.4}{944.9} = \frac{25.81 \times 76.6}{22.681 \times 52200}$$

Trial 2

$$\frac{428.386}{1183969} \times \ln 1.032278 = 0.0003618 \times 0.03127 = K_V = 1.1 \times 10^{-5}$$

TB-11 ~~AB~~ 11

$$\frac{428.386}{22.681 \times 12900} \times \ln \frac{518.16}{487.68} = \frac{428.386}{292584.9} \times \ln 1.0625$$

Trial 3

$$0.001464 \times 0.06062 = 0.0000887 = K_V = 8.9 \times 10^{-5}$$

Trial 4

$$\frac{428.386}{22.681 \times 85260} \times \ln \frac{518.16}{417.58} = \frac{428.386}{1933782} \times \ln 1.240864$$

$$.0002215 \times 0.2158 = 0.0000477 = K_V = 4.8 \times 10^{-5}$$

TB-14 ~~AB~~-14

$$\frac{428.386}{22.681 \times 8100} \times \ln \frac{411.48}{149.352} = \frac{428.386}{183716.1} \times \ln 2.755102$$

Trial 3

$$0.002332 \times 1.01336476 = 0.002363 = K_V = 2.3 \times 10^{-5}$$

TB-26 ~~AB~~-26

Trial 4

$$\frac{428.386}{22.681 \times 1800} \times \ln \frac{329.18}{245.36} = \frac{428.386}{40825.8} \times \ln 1.3416367$$

$$0.010493 \times 0.29389 = 0.003084 = K_V = 3.1 \times 10^{-3}$$

PROJECT NO.	REMARKS	COMPUTATIONS BY S.H.	DATE 6/3/76
PROJECT NAME		CHECKED BY	DATE
TITLE/ITEM		SHEET 3	OF 5

Sevenmile Site - Field Perm Calc
For Variable Head (Cont.)

TB-21
~~AB~~-21
Depth = 11.0 ft
Trial 1

$$\frac{428.386}{22681 \times 66660} \times \ln \frac{359.664}{330.403} = \frac{428.386}{1511915.4} \times \ln 1.08856$$

$$0.0002833 \times 0.084857 = K_V = 2.4 \times 10^{-5}$$

TB-21
~~AB~~-21
Depth = 19.0 ft
Trial 4

$$\frac{428.386}{22.681 \times 66720} \times \ln \frac{664.464}{329.184} = \frac{428.386}{1513276} \times \ln 2.01852$$

$$0.000283 \times 0.7023646 = K_V = 2.0 \times 10^{-4}$$

PROJECT NO.	REMARKS	COMPUTATIONS BY SCH	DATE
PROJECT NAME		CHECKED BY	DATE
TITLE/ITEM		SHEET 4	OF 5

DESIGN COMPUTATIONS

OWEN AYRES & Associates

Sevenmile Site Field Permeability Results

2" TWT Head

Location	Depth	Elev	K (by constant head) cm/sec	K (by Falling head)	
AB 5	31.0	864.0	4.1×10^{-5}	~~1.1×10^{-5}~~	
AB 11	15.0	885.3	1.1×10^{-4}	8.9×10^{-5}	agrees
				4.8×10^{-5}	
AB 14	11.5	895.6	9.1×10^{-3}	2.3×10^{-3}	
AB 21	11.0	902.2		2.4×10^{-5}	
AB 21	19.0	899.2	1.2×10^{-3}	2.0×10^{-4}	
AB 26	8.5	902.4	2.7×10^{-3}	3.1×10^{-3}	agrees

Lab Permeabilities

lt, clayey sandy	AB-21-1	4-7	TWT			59%	3.5×10^{-6}
ty Sd	AB-12-9	16-17	TWT				1.6×10^{-6}
ty Sd SM	AB-9-10	32'	TWT			18%	3.0×10^{-5}
and SM	~~AB~~ TB-13-3	10-13	Remolded		1.1×10^{-3}	15%	
nd SP	~~AB~~ TB-24-4	13	TWT		6.1×10^{-3}	3%	
lt, clayey ML	AB-5-2	31-32	TWT			88%	2.5×10^{-6}
lt, clayey sdy	AB-14-2	10-13	TWT			76%	2.5×10^{-7}
d SP	DH-1-12(13)	35	C	Rem		3%	2.4×10^{-3}
lt ML	DH-3-3	7.5	F	Rem		92%	1.1×10^{-7} 1.1×10^{-6}
sd SM	DH-1-8	20	F	Rem		38%	2.1×10^{-5}
sd SM	DH-3-7	17.5	F	Rem		40%	7.4×10^{-7}
d SM	DH-6-6	15	C	Rem		25%	1.9×10^{-4}

PROJECT NO.	REMARKS	COMPUTATIONS BY SCA	DATE
PROJECT NAME		CHECKED BY	DATE
TITLE/ITEM		SHEET 5 OF 5	

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

CONSTANT HEAD PERMEAMETER DATA
ASTM D-2434

R.M.

Ht. Compacted Soil Sample (L) = 4.76 CM

Cross Sectional Area Sample (A) = 31.66 CM^2

Volume of Soil Sample (V) = 150.8 CM^3

Wt. of Dry Sample (W_d) = 237.3

Dry Density of Sample $\left(\left(\frac{W_d}{V}\right) = \gamma_d\right)$ = 1.57 g/cc = 98.2 LB/FT^3

Time Required for Saturation Under Vacuum = 5 MIN

Ht. of Hydraulic Head (h) = 31.75 CM

Time	Elapsed Time	Water Volume (Q)	Coef. of Perm. $\left(K = \frac{QL}{Ath}\right)$
	5 MIN	69.5 ML	1.1×10^{-3}
	5 MIN	69.5 ML	1.1×10^{-3}

Project: Seymore Land Fill Job No: 261

Boring No: TB-13 Depth: 10-13 Sample No: 3

Date: 6-3-76 Tested By: J. Strigel

262.9
25.2

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

FALLING HEAD PERMEAMETER DATA

und

Lt. Compacted Soil Sample (L) = 5.4 cm

Cross Sectional Area Sample (A) x 31.65 cm^2

Volume of Soil Sample (V) = 170.8 cm^3 (L x A)

Wt. of Moist Sample + Cylinder (W_{mc}) 522.7 gm.

Wt. of Plexiglass Cylinder (W_{cyl}) - 167.1

Wt. of Moist Sample (W_m) = 355.6 ($W_{mc} - W_{cyl}$)

Wt. of Dry Sample (W_d) = 285.3

γ_w 2.08 g/cc : 130.0 lb/ft3

Dry Density of Compacted Soil (γ_d) 1.67 g/cc : 104.3 lb/ft3 ($W_d \div V$)

Original Moisture Cont. @ Compaction (m_c) 24.6% $\left(\frac{W_m - W_d}{W_d}\right)$

5-21 2.5×10^{-7}

Time Required for Saturation Under Vacuum After Initial 30 Minute Evacuation

Burette Reading at Start	0			
Burette Reading at Finish	26.0			
Flow Velocity	26.0			
Time at Start	6-4-76 5:00			
Time at Finish	6-7-76 7:30			
Time	225,000 sec			
Initial Water Height (h_o)	85.41			
Final Water Height (h_f)	69.85			
Drop	15.56			

Project: Seymour Job No: 261

Boring No: B-14 Depth: 10-13 Sample No: 14-2

Date: 6-2-76 Tested By: J. Strickel

Seymore Land Fill 6-8-76 J.S

$$K = \left[\frac{QL}{(13.76+)(\Delta h)}\right] \log_{10} \frac{h_0}{h_1}$$

5-2

$$K = \left[\frac{97.2 \cdot 8.89}{(13.76 \cdot 225000)\ 54.29}\right] \log_{10} \frac{81.28}{26.99}$$

$$K = \left(\frac{864.11}{1.680818400}\right) .1479$$

$$K = 2.5 \times 10^{-6}$$

TB-14 14-2

SAMPLE 2

$$K = \frac{26.0 \cdot 5.4}{(13.76 \cdot 225,000)(15.56)} \log_{10} \frac{85.41}{69.85}$$

$$K = \frac{140.4}{48173760} .0873$$

$$K = 2.5 \times 10^{-7}$$

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

CONSTANT HEAD PERMEAMETER DATA
ASTM D-2434

und.

Ht. Compacted Soil Sample (L) = 7.3cm

Cross Sectional Area Sample (A) = Diam. = 7.3

Volume of Soil Sample (V) = _____

Wt. of Dry Sample (W_d) = _____

Dry Density of Sample $\left(\left(\frac{W_d}{V}\right) = \gamma_d\right)$ = _____

Time Required for Saturation Under Vacuum = 10 min ±

Ht. of Hydraulic Head (h) = $\frac{59.0}{-15.7}$ 43.3 cm.

Time	Elapsed Time	Water Volume(Q)	Coef. of Perm. $\left(K = \frac{QL}{Ath}\right)$
3:05	begin		
3:15	120 sec	157 ml	
	120 sec	151 ml	
	120 sec	143 ml	
	120 sec	140 ml	
	120 sec	138 ml	
4:00	120 sec	103 ml Air Bubble in hose	
4:03	120 sec	148 ml	6.6×10^{-3}
	120	137 ml	6.1×10^{-3}
	120 sec	130	5.7×10^{-3}

Project: EC Land fill Sevenmile Ck. Site Job No: 261

Boring No: ~~#B~~ TB-24 Depth: 13' Sample No: 4

Date: 5-26-76 Tested By: S. Hanson

Sand, Brn M-F, (TWT samp) Pan L-10

Sey "The Land Fill" D.S. 6-4-76

$$K = \frac{QL}{31.65\ th}$$

13-3

$$K = \frac{69.5 \cdot 4.76}{31.65 \cdot 300 \cdot 31.75}$$

$$K = \frac{330.82}{301466}$$

$$K = 1.1 \times 10^{-3}$$

TB-24

24-4₁

$$K = \frac{148 \cdot 7.3}{31.65 \cdot 120 \cdot 43.3}$$

$$K = 6.6 \times 10^{-3}$$

24-4₂

$$K = \frac{137 \cdot 7.3}{31.65 \cdot 120 \cdot 43.3}$$

$$K = 6.1 \times 10^{-3}$$

24-4₃

$$K = \frac{130 \cdot 7.3}{31.65 \cdot 120 \cdot 43.3}$$

$$K = 5.7 \times 10^{-3}$$

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

5-21

FALLING HEAD PERMEAMETER DATA

in 2:30pm 5-28

TWT sample cut into plexiglass Cyl., Room #3

Lt. Compacted Soil Sample (L) = 7.0 cm

Cross Sectional Area Sample (A) x 31.66 cm²

Volume of Soil Sample (V) = 221.7 cm³ (L x A)

Wt. of Moist Sample + Cylinder (W_{mc}) —

Wt. of Plexiglass Cylinder (W_{cyl}) —

Wt. of ~~Moist~~ DRY Sample (W_m) = 406.9 ($W_{mc} - W_{cyl}$)

Wt. of Dry Sample (W_d) = 406.9

Dry Density of Compacted Soil (γ_d) 1.84 g/cc = 114.6 LB/FT³ ($W_d \div V$)

Original Moisture Cont. @ Compaction (m_c) — $\frac{(W_m - W_d)}{W_d}$

1.6×10^{-6}

Time Required for Saturation Under Vacuum After Initial 30 Minute Evacuation

Burette Reading at Start	0			
Burette Reading at Finish	39.3 cc			
Flow Velocity	39.3 cc			
Time at Start	6-2-76 12:45			
Time at Finish	1:30 6-3			
Time	67,500 sec			
Initial Water Height (h_o)	40.33 cm			
Final Water Height (h_f)	26.99			
Drop	23.34			

Project: E.C. Landfill - Sevenmile Site Job No: 296

Boring No: TB-12 Depth: 16-17' Sample No: 4

Date: 5-28-76 Tested By: S. Hanson

interbedded silt + silty sand

433.1
26.2

GEOTECHNICAL ENGINEERING DIVISION

Owen Ayres and Associates

FALLING HEAD PERMEAMETER DATA

und.

Lt. Compacted Soil Sample (L) = 2.875 IN = 7.30 CM

Cross Sectional Area Sample (A) X 4.90 IN² = 31.66

Volume of Soil Sample (V) = 14.11 IN³ = 231.2 (L x A)

Wt. of Moist Sample + Cylinder (W_{mc}) 637.0

Wt. of Plexiglass Cylinder (W_{cyl}) - 163.6

Wt. of Moist Sample (W_m) = 473.4 ($W_{mc} - W_{cyl}$)

Wt. of Dry Sample (W_d) = 398.0

γ_w = 2.04 g/cc = 127.8 LB/FT³

Dry Density of Compacted Soil (γ_d) 1.72 g/cc = 107.5 LB/FT³ ($W_d \div V$)

Original Moisture Cont. @ Compaction (m_c) 18.9% $\left(\frac{W_m - W_d}{W_d}\right)$

5-7

Time Required for Saturation Under Vacuum After Initial 30 Minute Evacuation 3.5 X 10⁻⁶

Burette Reading at Start	0.0			
Burette Reading at Finish	74.4 cc			
Flow Velocity	74.4 cc			
Time at Start	6-3-76 2:05			
Time at Finish	6-4-76 7:30			
Time	69,900 sec			
Initial Water Height (h_o)	93.98 cm			
Final Water Height (h_f)	49.85 cm			
Drop	44.13 cm			

Project: Seymour Job No: 261

Boring No: TB-21 Depth: 4-7 Sample No: 21-1

Date: 6-2-76 Tested By: J.S.

Seymo Land Fill J.S. 2-4-76

$$K = \left[\frac{QL}{(13.76t)(\Delta h)}\right]\left[\log_{10}\frac{h_0}{h_1}\right]$$

TB-21
21-1

$$K = \frac{74.4 \cdot 7.30}{(13.76 \cdot 69{,}900)(44.13)} \quad \log_{10}\frac{93.98}{49.85}$$

$$K = \frac{543.1}{42483766.0} \quad .275$$

$$K = 3.5 \times 10^{-6}$$

TB-12
12-4

$$K = \frac{39.3 \cdot 7.0}{(13.76 \cdot 67500)(23.34)} \quad \log_{10}\frac{90.33}{66.99}$$

$$K = \frac{275.1}{21678192} \quad .1298$$

$$K = 1.6E \times 10^{-6}$$

4-10

$$K = \frac{27.0 \cdot 6.99}{(13.76 \cdot 2700)(15.08)} \quad \log_{10}\frac{81.28}{66.20}$$

$$K = \frac{188.7}{560252} = .0891$$

$$K = 3.0 \times 10^{-5}$$

2002 - 2003 Hydraulic Conductivity Test Data

(From 2014 FR)

TABLE 7
ONYX SEVEN MILE CREEK LANDFILL--SECTOR 2 HORIZONTAL AND VERTICAL EXPANSION HYDRAULIC CONDUCTIVITY VALUES

Well Id.	Test No.	Aquifer	Date of Test	K (ft/min)	K (ft/day)	K (cm/sec)
39	Run 2	S & G	12/16/2002	1.28E-02	18.36	6.48E-03
39A	Run 2	SS	12/16/2002	2.85E-03	4.11	1.45E-03
40	Run 2	SS	12/16/2002	7.69E-03	11.07	3.91E-03
41	Run 2	S & G	12/18/2002	3.38E-02	48.72	1.72E-02
43	Run 2	S & G	1/17/2003	1.24E-02	17.87	6.31E-03
43A	Run 2	S & G	1/17/2003	1.37E-02	19.70	6.95E-03
44	Run 2	S & G	12/16/2002	9.71E-03	13.98	4.93E-03
44A	Run 2	SS	12/16/2002	1.20E-02	17.28	6.10E-03
45	Run 2	S & G	1/17/2003	2.33E-02	33.57	1.18E-02
46	Run 2	SS	1/17/2003	1.56E-04	0.22	7.93E-05
46A	Run 2	SS	12/17/2002	6.11E-03	8.80	3.11E-03
47	Run 2	SS	2/17/2003	1.31E-02	18.91	6.67E-03
47A	Run 2	SS	2/17/2003	5.59E-03	8.05	2.84E-03
48	Run 2	S & G	12/17/2002	3.53E-03	5.09	1.80E-03
49	Run 2	SS	12/18/2002	6.28E-03	9.05	3.19E-03
49A	Run 2	SS	12/18/2002	2.56E-03	3.68	1.30E-03
50	Run 2	S & G	12/17/2002	4.26E-03	6.13	2.16E-03

SS = Sandstone aquifer
S & G = Sand and gravel aquifer

Geometric Mean (SS)- 2.06E-03 cm/sec
Geometric Mean (S & G)- 5.70E-03 cm/sec

End of Table 7

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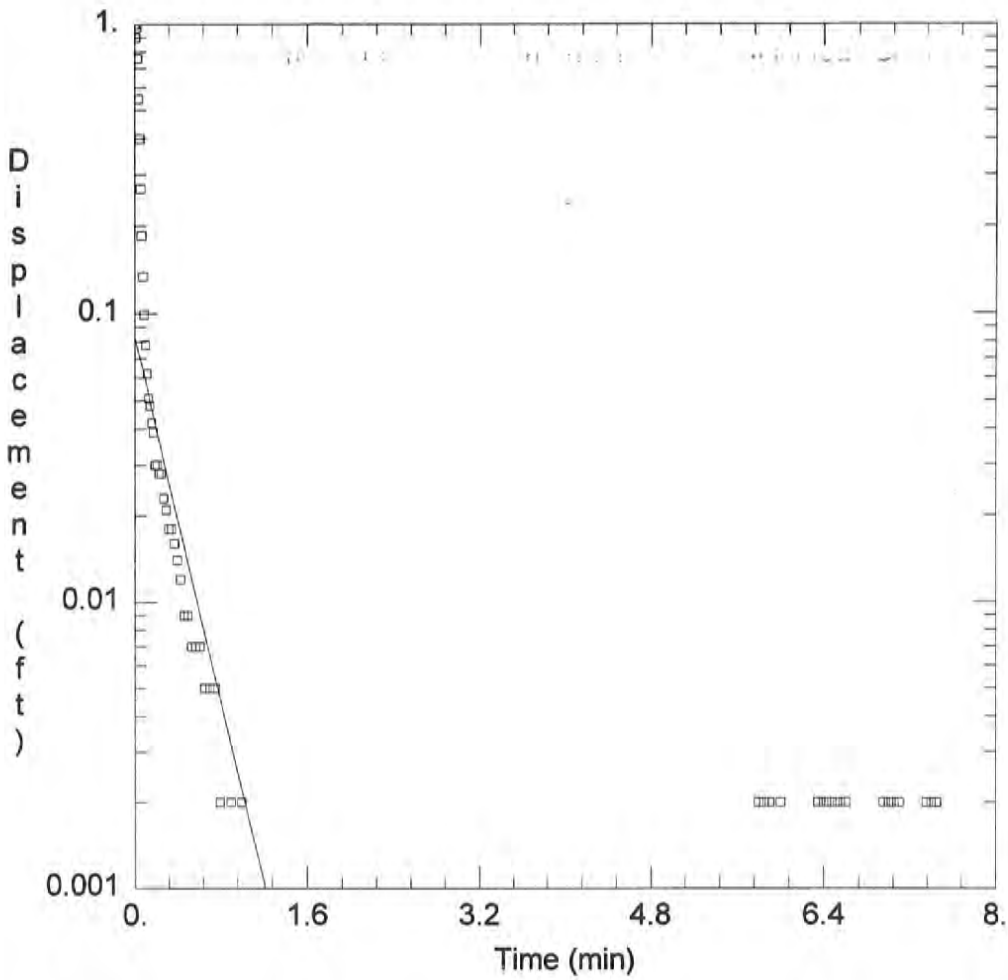


DH-39 RUN 2

Data Set: A:\DH-39 Run 2.aqt
Date: 01/07/03 Time: 13:15:44

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-39
Test Date: 12/6/02

AQUIFER DATA

Saturated Thickness: 75. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-39)

Initial Displacement: 1. ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 5.6 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-39 Run 2.aqt
Title: DH-39 Run 2
Date: 01/07/03
Time: 13:15:51

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/6/02
Test Well: DH-39

AQUIFER DATA

Saturated Thickness: 75. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1. ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 5.6 ft
Gravel Pack Porosity: 0.3

No. of observations: 54

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0073	0.897	0.4958	0.009
0.0152	0.971	0.5325	0.007
0.0235	0.757	0.5708	0.007
0.0323	0.547	0.6125	0.007
0.0417	0.399	0.6558	0.005
0.0515	0.268	0.7025	0.005
0.062	0.185	0.7508	0.005
0.073	0.134	0.8008	0.002
0.0847	0.099	0.9008	0.002
0.0972	0.078	1.001	0.002
0.1103	0.062	5.801	0.002
0.1243	0.051	5.851	0.002
0.1392	0.048	5.901	0.002
0.1548	0.042	6.001	0.002
0.1715	0.039	6.351	0.002
0.1892	0.03	6.401	0.002
0.2078	0.03	6.451	0.002
0.2277	0.028	6.501	0.002
0.2487	0.028	6.551	0.002
0.2708	0.023	6.601	0.002
0.2943	0.021	6.951	0.002
0.3192	0.018	7.001	0.002
0.3442	0.018	7.051	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3708	0.016	7.101	0.002
0.3992	0.014	7.351	0.002
0.4292	0.012	7.401	0.002
0.4608	0.009	7.451	0.002

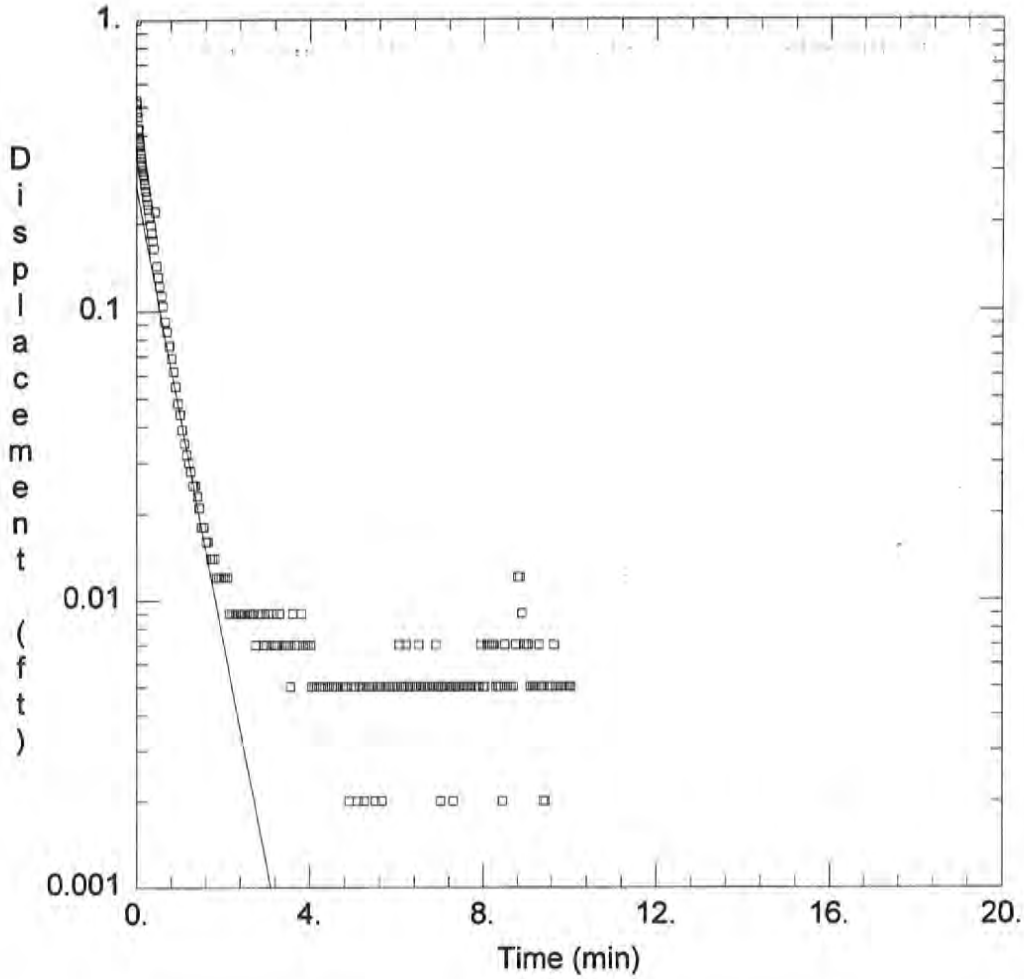
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.01275	ft/min
y0	0.08268	ft



DH-39A RUN 2

Data Set: A:\DH-39A Run 2.aqt
Date: 01/07/03 Time: 13:16:06

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-39A
Test Date: 12/16/02

AQUIFER DATA

Saturated Thickness: 75. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-39A)

Initial Displacement: 1. ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 26.8 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-39A Run 2.aqt
Title: DH-39A Run 2
Date: 01/07/03
Time: 13:16:12

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/16/02
Test Well: DH-39A

AQUIFER DATA

Saturated Thickness: 75. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1. ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 26.8 ft
Gravel Pack Porosity: 0.3

No. of observations: 221

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.007	0.526	4.608	0.005
0.0143	0.514	4.658	0.005
0.0222	0.482	4.708	0.005
0.0305	0.464	4.758	0.005
0.0393	0.42	4.808	0.005
0.0487	0.422	4.858	0.005
0.0585	0.394	4.908	0.002
0.069	0.383	4.958	0.005
0.08	0.376	5.008	0.005
0.0917	0.367	5.058	0.005
0.1042	0.348	5.108	0.002
0.1173	0.334	5.158	0.005
0.1313	0.318	5.208	0.005
0.1462	0.304	5.258	0.002
0.1618	0.295	5.308	0.005
0.1785	0.284	5.358	0.005
0.1962	0.272	5.408	0.005
0.2148	0.258	5.458	0.005
0.2347	0.247	5.508	0.002
0.2557	0.233	5.558	0.005
0.2778	0.224	5.608	0.005
0.3013	0.21	5.658	0.002
0.3262	0.198	5.708	0.005

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3512	0.185	5.758	0.005
0.3778	0.175	5.808	0.005
0.4062	0.164	5.858	0.005
0.4362	0.219	5.908	0.005
0.4678	0.143	5.958	0.005
0.5028	0.131	6.008	0.005
0.5395	0.122	6.058	0.007
0.5778	0.113	6.108	0.005
0.6195	0.104	6.158	0.005
0.6628	0.092	6.208	0.007
0.7095	0.085	6.258	0.005
0.7578	0.076	6.308	0.005
0.8078	0.069	6.358	0.005
0.8578	0.062	6.408	0.005
0.9078	0.055	6.458	0.005
0.9578	0.048	6.508	0.007
1.008	0.044	6.558	0.005
1.058	0.039	6.608	0.005
1.108	0.035	6.658	0.005
1.158	0.032	6.708	0.005
1.208	0.03	6.758	0.005
1.258	0.028	6.808	0.005
1.308	0.025	6.858	0.005
1.358	0.025	6.908	0.007
1.408	0.023	6.958	0.005
1.458	0.021	7.008	0.002
1.508	0.018	7.058	0.005
1.558	0.018	7.108	0.005
1.608	0.016	7.158	0.005
1.658	0.016	7.208	0.005
1.708	0.014	7.258	0.005
1.758	0.014	7.308	0.002
1.808	0.014	7.358	0.005
1.858	0.012	7.408	0.005
1.908	0.012	7.458	0.005
1.958	0.012	7.508	0.005
2.008	0.012	7.558	0.005
2.058	0.012	7.608	0.005
2.108	0.012	7.658	0.005
2.158	0.009	7.708	0.005
2.208	0.009	7.758	0.005
2.258	0.009	7.808	0.005
2.308	0.009	7.858	0.005
2.358	0.009	7.908	0.005
2.408	0.009	7.958	0.007
2.458	0.009	8.008	0.005
2.508	0.009	8.058	0.005
2.558	0.009	8.108	0.007
2.608	0.009	8.158	0.007
2.658	0.009	8.208	0.007
2.708	0.009	8.258	0.007
2.758	0.007	8.308	0.005
2.808	0.009	8.358	0.005
2.858	0.009	8.408	0.005
2.908	0.009	8.458	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.958	0.007	8.508	0.007
3.008	0.007	8.558	0.005
3.058	0.009	8.608	0.005
3.108	0.007	8.658	0.005
3.158	0.009	8.708	0.005
3.208	0.007	8.758	0.007
3.258	0.007	8.808	0.012
3.308	0.009	8.858	0.012
3.358	0.007	8.908	0.009
3.408	0.007	8.958	0.007
3.458	0.007	9.008	0.007
3.508	0.007	9.058	0.007
3.558	0.005	9.108	0.005
3.608	0.009	9.158	0.005
3.658	0.007	9.208	0.005
3.708	0.007	9.258	0.005
3.758	0.007	9.308	0.007
3.808	0.009	9.358	0.005
3.858	0.007	9.408	0.002
3.908	0.007	9.458	0.002
3.958	0.007	9.508	0.005
4.008	0.007	9.558	0.005
4.058	0.005	9.608	0.005
4.108	0.005	9.658	0.007
4.158	0.005	9.708	0.005
4.208	0.005	9.758	0.005
4.258	0.005	9.808	0.005
4.308	0.005	9.858	0.005
4.358	0.005	9.908	0.005
4.408	0.005	9.958	0.005
4.458	0.005	10.01	0.005
4.508	0.005	10.06	0.005
4.558	0.005		

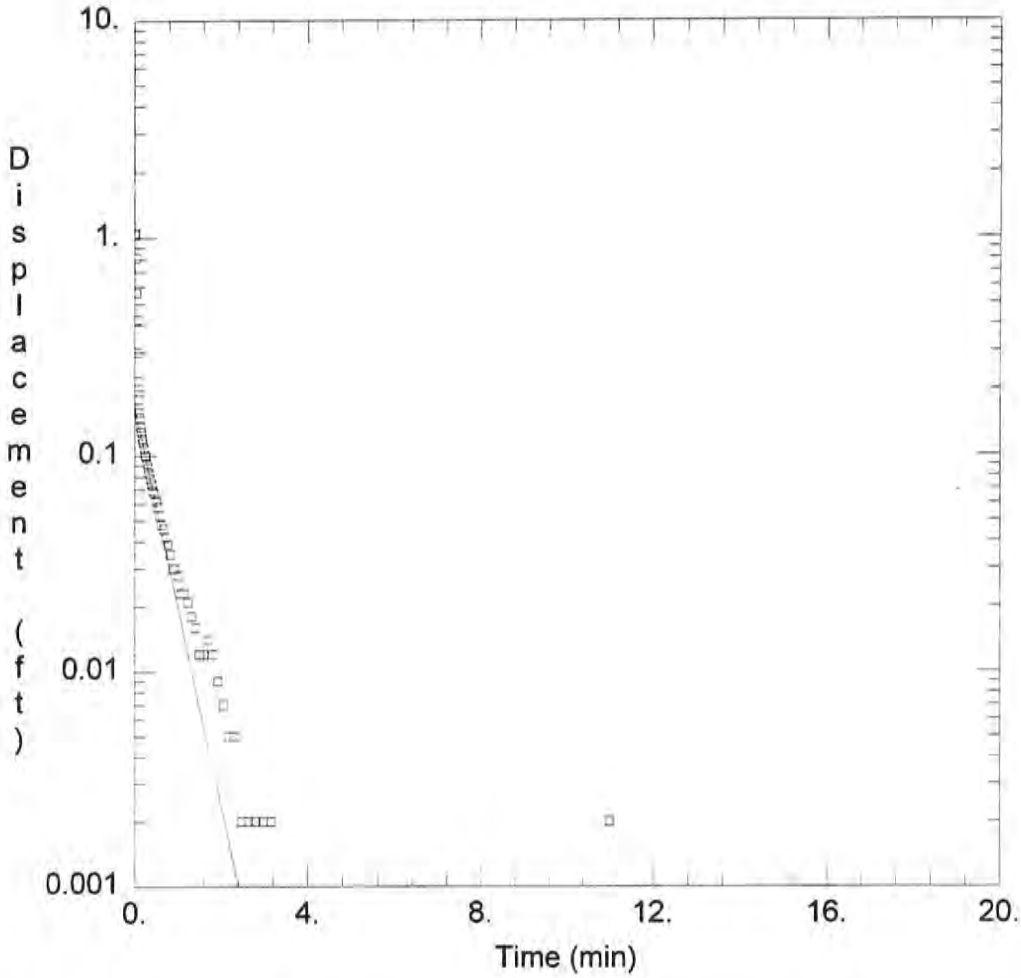
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.002853	ft/min
y0	0.2651	ft



DH-40 RUN 2

Data Set: A:\DH-40 Run 2.aqt
Date: 02/17/03 Time: 11:22:24

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-40
Test Date: 12/16/02

AQUIFER DATA

Saturated Thickness: 75. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-40)

Initial Displacement: 1.054 ft Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft Well Skin Radius: 0.33 ft
Screen Length: 10. ft Total Well Penetration Depth: 6.16 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-40 Run 2.aqt
Title: DH-40 Run 2
Date: 02/17/03
Time: 11:22:29

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx-Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/16/02
Test Well: DH-40

AQUIFER DATA

Saturated Thickness: 75. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.054 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 6.16 ft
Gravel Pack Porosity: 0.3

No. of observations: 54

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0094	1.036	0.6235	0.048
0.0192	1.054	0.6702	0.046
0.0297	0.814	0.7185	0.042
0.0407	0.563	0.7702	0.039
0.0524	0.424	0.8252	0.035
0.0649	0.3	0.8835	0.03
0.078	0.221	0.9452	0.03
0.092	0.182	1.01	0.028
0.1069	0.159	1.08	0.023
0.1225	0.15	1.154	0.023
0.1392	0.136	1.232	0.021
0.1569	0.129	1.315	0.018
0.1755	0.12	1.404	0.016
0.1954	0.115	1.497	0.012
0.2164	0.108	1.595	0.012
0.2385	0.101	1.7	0.014
0.262	0.099	1.81	0.012
0.2869	0.092	1.927	0.009
0.3119	0.088	2.052	0.007
0.3385	0.083	2.184	0.005
0.3669	0.078	2.324	0.005
0.3969	0.074	2.472	0.002
0.4285	0.069	2.628	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.4635	0.067	2.795	0.002
0.5002	0.062	2.972	0.002
0.5385	0.058	3.159	0.002
0.5802	0.053	11.01	0.002

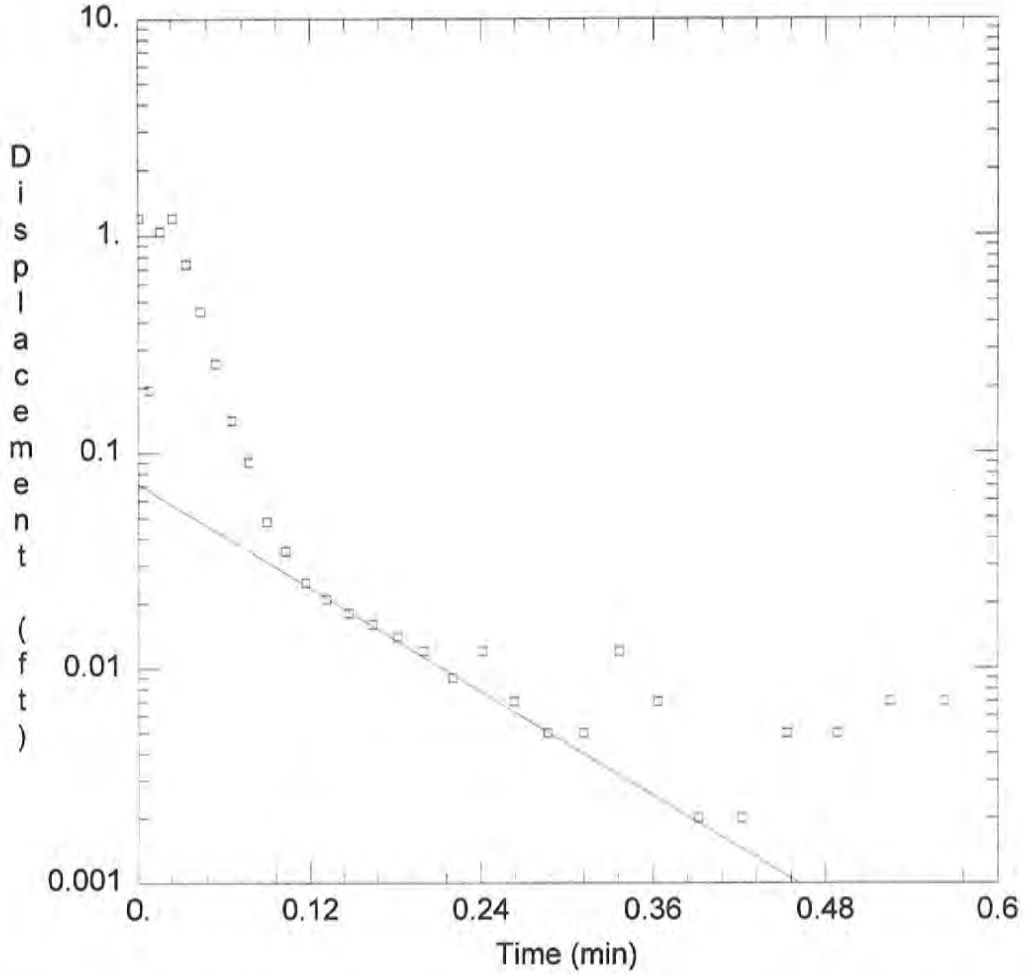
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.007687	ft/min
y0	0.1671	ft



DH-41 RUN 2

Data Set: A:\DH-41 Run 2.aqt
Date: 03/07/03 Time: 09:36:41

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-41
Test Date: 12/18/02

AQUIFER DATA

Saturated Thickness: 78.97 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-41)

Initial Displacement: 1.202 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 6.52 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-41 Run 2.aqt
Title: DH-41 Run 2
Date: 03/07/03
Time: 09:38:59

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/18/02
Test Well: DH-41

AQUIFER DATA

Saturated Thickness: 78.97 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.202 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 6.52 ft
Gravel Pack Porosity: 0.3

No. of observations: 29

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0079	0.194	0.2005	0.012
0.0162	1.043	0.2204	0.009
0.025	1.202	0.2414	0.012
0.0344	0.74	0.2635	0.007
0.0442	0.447	0.287	0.005
0.0547	0.258	0.3119	0.005
0.0657	0.141	0.3369	0.012
0.0774	0.09	0.3635	0.007
0.0899	0.048	0.3919	0.002
0.103	0.035	0.4219	0.002
0.117	0.025	0.4535	0.005
0.1319	0.021	0.4885	0.005
0.1475	0.018	0.5252	0.007
0.1642	0.016	0.5635	0.007
0.1819	0.014		

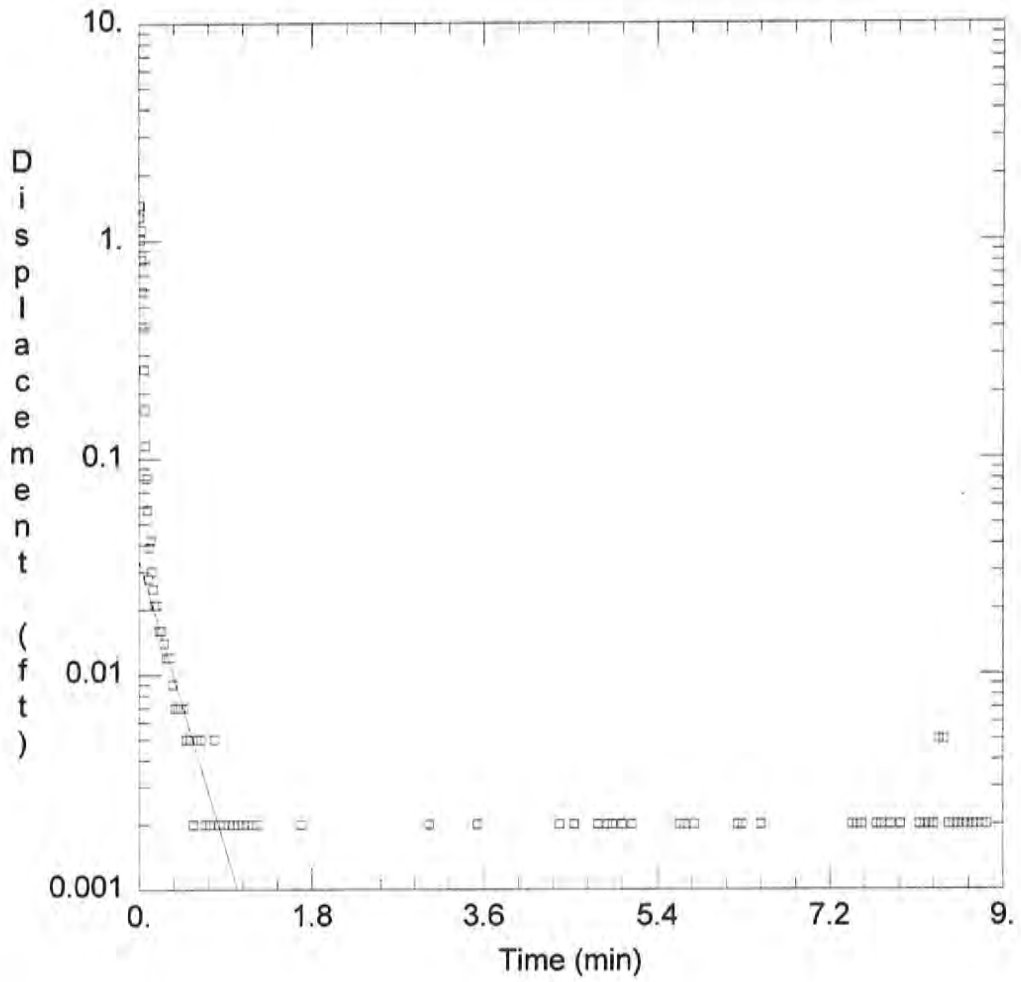
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.03383	ft/min
y0	0.07185	ft



DH-43 RUN 2

Data Set: A:\DH-43 Run 2.aqt
Date: 02/04/03 Time: 13:36:27

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-43
Test Date: 1/17/03

AQUIFER DATA

Saturated Thickness: 81.08 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-43)

Initial Displacement: 1.446 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 6.43 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-43 Run 2.aqt
Title: DH-43 Run 2
Date: 02/04/03
Time: 13:36:34

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 1/17/03
Test Well: DH-43

AQUIFER DATA

Saturated Thickness: 81.08 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.446 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 6.43 ft
Gravel Pack Porosity: 0.3

No. of observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	1.28	1.036	0.002
0.01	1.446	1.086	0.002
0.0158	1.015	1.136	0.002
0.022	1.121	1.186	0.002
0.0285	0.819	1.236	0.002
0.0355	0.586	1.686	0.002
0.0428	0.404	3.036	0.002
0.0507	0.258	3.536	0.002
0.059	0.168	4.386	0.002
0.0678	0.115	4.536	0.002
0.0772	0.081	4.786	0.002
0.087	0.058	4.886	0.002
0.0975	0.028	4.936	0.002
0.1085	0.039	5.036	0.002
0.1202	0.042	5.136	0.002
0.1327	0.03	5.636	0.002
0.1458	0.025	5.686	0.002
0.1598	0.021	5.786	0.002
0.1747	0.021	6.236	0.002
0.1903	0.021	6.286	0.002
0.207	0.016	6.486	0.002
0.2247	0.016	7.436	0.002
0.2433	0.016	7.486	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2632	0.014	7.536	0.002
0.2842	0.012	7.686	0.002
0.3063	0.012	7.736	0.002
0.3298	0.012	7.836	0.002
0.3547	0.009	7.936	0.002
0.3797	0.007	8.136	0.002
0.4063	0.007	8.186	0.002
0.4347	0.007	8.236	0.002
0.4647	0.007	8.286	0.002
0.4963	0.005	8.336	0.005
0.5313	0.005	8.386	0.005
0.568	0.002	8.436	0.002
0.6063	0.005	8.486	0.002
0.648	0.005	8.536	0.002
0.6913	0.002	8.586	0.002
0.738	0.002	8.636	0.002
0.7863	0.005	8.686	0.002
0.8363	0.002	8.736	0.002
0.8863	0.002	8.786	0.002
0.9363	0.002	8.836	0.002
0.9863	0.002		

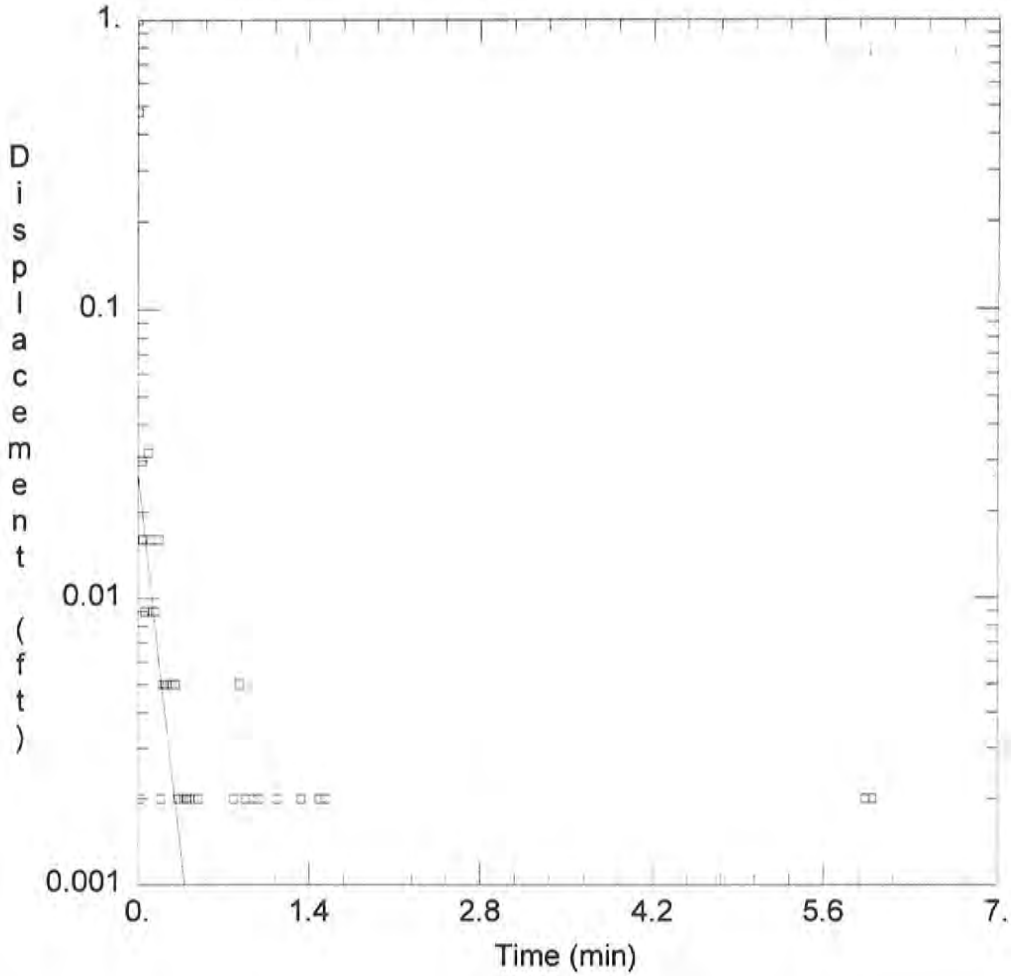
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.01241	ft/min
y0	0.03347	ft



DH-43A RUN 4

Data Set: A:\DH-43A Run 4.aqt
Date: 03/07/03 Time: 09:29:17

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-43A
Test Date: 1/17/03

AQUIFER DATA

Saturated Thickness: 81.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-43A)

Initial Displacement: 1. ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 29.2 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-43A Run 4.aqt
Title: DH-43A Run 4
Date: 03/07/03
Time: 09:29:23

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 1/17/03
Test Well: DH-43A

AQUIFER DATA

Saturated Thickness: 81.2 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1. ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 29.2 ft
Gravel Pack Porosity: 0.3

No. of observations: 36

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	0.475	0.3298	0.002
0.0158	0.002	0.3547	0.002
0.0355	0.03	0.3797	0.002
0.0428	0.016	0.4063	0.002
0.059	0.009	0.4347	0.002
0.0772	0.016	0.4647	0.002
0.087	0.032	0.4963	0.002
0.1085	0.016	0.7863	0.002
0.1202	0.009	0.8363	0.005
0.1458	0.009	0.8863	0.002
0.1747	0.016	0.9363	0.002
0.1903	0.002	0.9863	0.002
0.207	0.005	1.136	0.002
0.2247	0.005	1.336	0.002
0.2433	0.005	1.486	0.002
0.2632	0.005	1.536	0.002
0.2842	0.005	5.936	0.002
0.3063	0.005	5.986	0.002

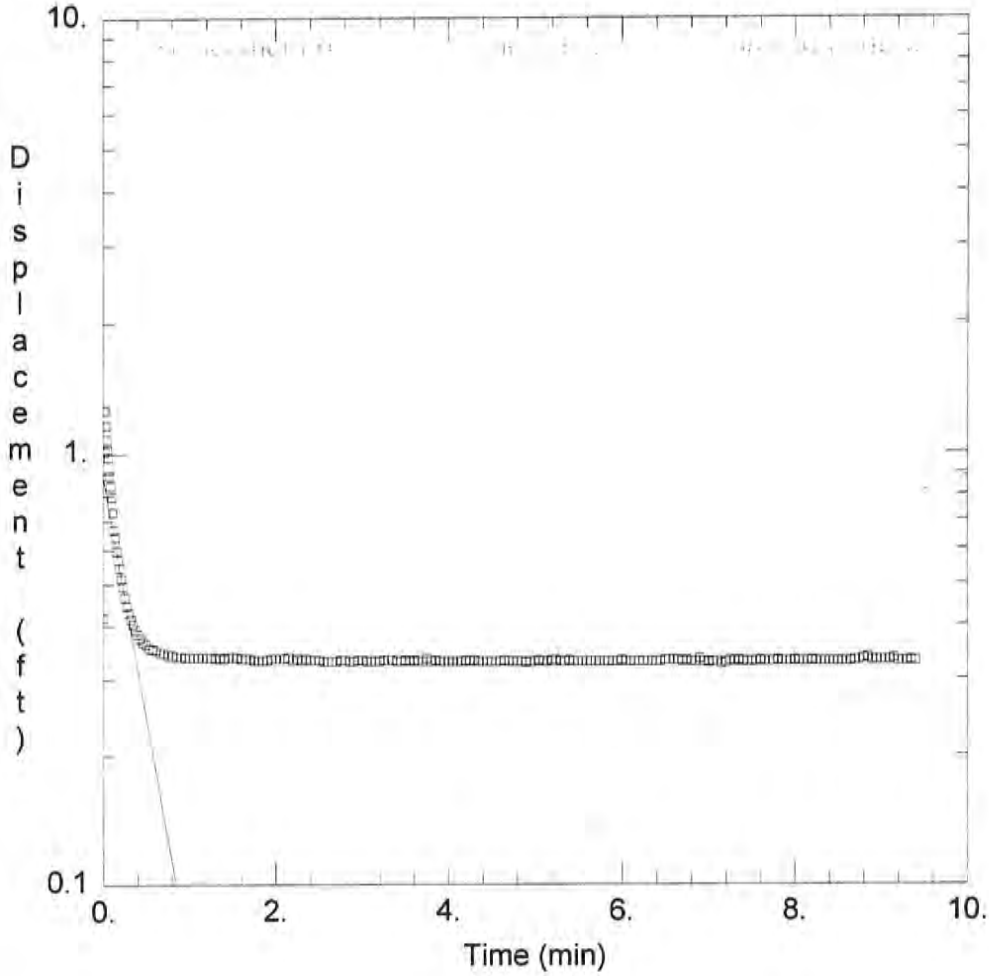
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.01368	ft/min
y0	0.02681	ft



DH-44 RUN 2

Data Set: A:\DH-44 Run 2.aqt
Date: 02/17/03 Time: 11:21:04

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-44
Test Date: 12/16/02

AQUIFER DATA

Saturated Thickness: 75. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-44)

Initial Displacement: 1.262 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 7.45 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-44 Run 2.aqt
Title: DH-44 Run 2
Date: 02/17/03
Time: 11:21:09

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/16/02
Test Well: DH-44

AQUIFER DATA

Saturated Thickness: 75. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.262 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 7.45 ft
Gravel Pack Porosity: 0.3

No. of observations: 207

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0073	0.418	4.301	0.332
0.0152	1.013	4.351	0.33
0.0235	1.262	4.401	0.33
0.0323	1.165	4.451	0.33
0.0417	1.08	4.501	0.33
0.0515	1.022	4.551	0.33
0.062	0.983	4.601	0.33
0.073	0.891	4.651	0.332
0.0847	0.844	4.701	0.33
0.0972	0.796	4.751	0.33
0.1103	0.734	4.801	0.33
0.1243	0.669	4.851	0.33
0.1392	0.644	4.901	0.328
0.1548	0.598	4.951	0.33
0.1715	0.57	5.001	0.33
0.1892	0.545	5.051	0.332
0.2078	0.515	5.101	0.33
0.2277	0.494	5.151	0.33
0.2487	0.466	5.201	0.332
0.2708	0.445	5.251	0.332
0.2943	0.429	5.301	0.33
0.3192	0.415	5.351	0.33
0.3442	0.404	5.401	0.332

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3708	0.392	5.451	0.33
0.3992	0.383	5.501	0.33
0.4292	0.374	5.551	0.33
0.4608	0.367	5.601	0.33
0.4958	0.362	5.651	0.33
0.5325	0.355	5.701	0.33
0.5708	0.353	5.751	0.33
0.6125	0.351	5.801	0.33
0.6558	0.346	5.851	0.33
0.7025	0.346	5.901	0.33
0.7508	0.342	5.951	0.33
0.8008	0.342	6.001	0.332
0.8508	0.339	6.051	0.33
0.9008	0.339	6.101	0.33
0.9508	0.337	6.151	0.33
1.001	0.337	6.201	0.33
1.051	0.337	6.251	0.33
1.101	0.337	6.301	0.33
1.151	0.337	6.351	0.33
1.201	0.337	6.401	0.33
1.251	0.337	6.451	0.33
1.301	0.335	6.501	0.332
1.351	0.337	6.551	0.332
1.401	0.335	6.601	0.332
1.451	0.337	6.651	0.332
1.501	0.337	6.701	0.33
1.551	0.337	6.751	0.332
1.601	0.335	6.801	0.33
1.651	0.335	6.851	0.33
1.701	0.335	6.901	0.335
1.751	0.332	6.951	0.33
1.801	0.332	7.001	0.328
1.851	0.332	7.051	0.33
1.901	0.332	7.101	0.33
1.951	0.335	7.151	0.325
2.001	0.335	7.201	0.328
2.051	0.335	7.251	0.332
2.101	0.335	7.301	0.33
2.151	0.337	7.351	0.332
2.201	0.332	7.401	0.33
2.251	0.335	7.451	0.33
2.301	0.332	7.501	0.33
2.351	0.335	7.551	0.33
2.401	0.332	7.601	0.332
2.451	0.332	7.651	0.33
2.501	0.332	7.701	0.33
2.551	0.33	7.751	0.33
2.601	0.33	7.801	0.332
2.651	0.33	7.851	0.33
2.701	0.33	7.901	0.33
2.751	0.332	7.951	0.33
2.801	0.332	8.001	0.332
2.851	0.33	8.051	0.33
2.901	0.33	8.101	0.33
2.951	0.332	8.151	0.33

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
3.001	0.332	8.201	0.332
3.051	0.33	8.251	0.33
3.101	0.33	8.301	0.33
3.151	0.33	8.351	0.33
3.201	0.33	8.401	0.33
3.251	0.332	8.451	0.33
3.301	0.332	8.501	0.33
3.351	0.332	8.551	0.33
3.401	0.33	8.601	0.33
3.451	0.33	8.651	0.33
3.501	0.332	8.701	0.332
3.551	0.33	8.751	0.332
3.601	0.332	8.801	0.335
3.651	0.33	8.851	0.337
3.701	0.33	8.901	0.332
3.751	0.335	8.951	0.332
3.801	0.33	9.001	0.332
3.851	0.332	9.051	0.332
3.901	0.33	9.101	0.332
3.951	0.33	9.151	0.335
4.001	0.33	9.201	0.33
4.051	0.33	9.251	0.33
4.101	0.33	9.301	0.33
4.151	0.33	9.351	0.332
4.201	0.332	9.401	0.33
4.251	0.33		

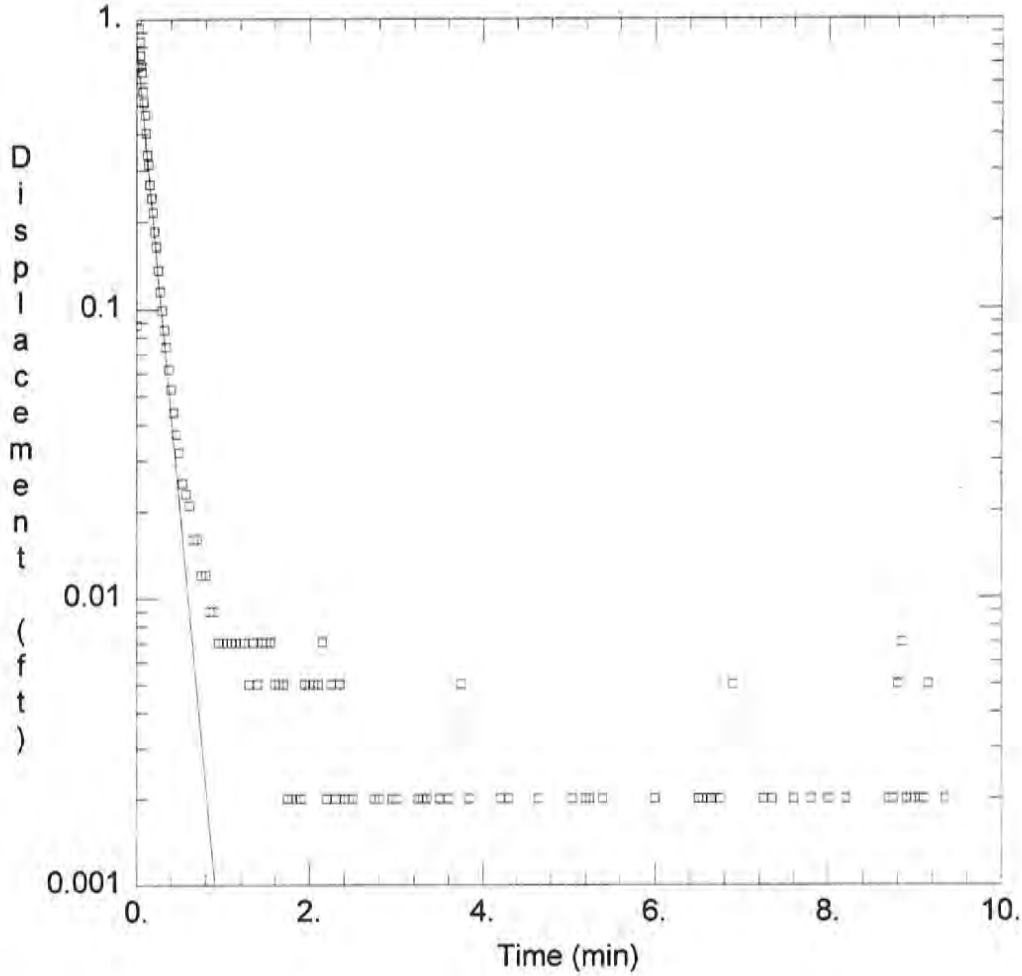
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.009706	ft/min
y0	0.8785	ft



DH-44A RUN 2

Data Set: A:\DH-44A Run 2.aqt
Date: 02/17/03 Time: 11:18:58

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-44A
Test Date: 12/16/02

AQUIFER DATA

Saturated Thickness: 77. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-44A)

Initial Displacement: 1. ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 32.37 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-44A Run 2.aqt
Title: DH-44A Run 2
Date: 02/17/03
Time: 11:19:04

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/16/02
Test Well: DH-44A

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1. ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 32.37 ft
Gravel Pack Porosity: 0.3

No. of observations: 111

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0073	0.088	1.901	0.002
0.0152	0.683	1.951	0.005
0.0235	0.932	2.001	0.005
0.0323	0.835	2.051	0.005
0.0417	0.75	2.101	0.005
0.0515	0.692	2.151	0.007
0.062	0.653	2.201	0.002
0.073	0.561	2.251	0.005
0.0847	0.514	2.301	0.002
0.0972	0.466	2.351	0.005
0.1103	0.404	2.401	0.002
0.1243	0.339	2.451	0.002
0.1392	0.314	2.501	0.002
0.1548	0.268	2.751	0.002
0.1715	0.24	2.801	0.002
0.1892	0.215	2.951	0.002
0.2078	0.185	3.001	0.002
0.2277	0.164	3.251	0.002
0.2487	0.136	3.301	0.002
0.2708	0.115	3.351	0.002
0.2943	0.099	3.501	0.002
0.3192	0.085	3.601	0.002
0.3442	0.074	3.751	0.005

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3708	0.062	3.851	0.002
0.3992	0.053	4.201	0.002
0.4292	0.044	4.301	0.002
0.4608	0.037	4.651	0.002
0.4958	0.032	5.051	0.002
0.5325	0.025	5.201	0.002
0.5708	0.023	5.251	0.002
0.6125	0.021	5.401	0.002
0.6558	0.016	6.001	0.002
0.7025	0.016	6.501	0.002
0.7508	0.012	6.551	0.002
0.8008	0.012	6.601	0.002
0.8508	0.009	6.651	0.002
0.9008	0.009	6.751	0.002
0.9508	0.007	6.901	0.005
1.001	0.007	7.251	0.002
1.051	0.007	7.351	0.002
1.101	0.007	7.601	0.002
1.151	0.007	7.801	0.002
1.201	0.007	8.001	0.002
1.251	0.007	8.201	0.002
1.301	0.005	8.701	0.002
1.351	0.007	8.751	0.002
1.401	0.005	8.801	0.005
1.451	0.007	8.851	0.007
1.501	0.007	8.901	0.002
1.551	0.007	8.951	0.002
1.601	0.005	9.001	0.002
1.651	0.005	9.051	0.002
1.701	0.005	9.101	0.002
1.751	0.002	9.151	0.005
1.801	0.002	9.351	0.002
1.851	0.002		

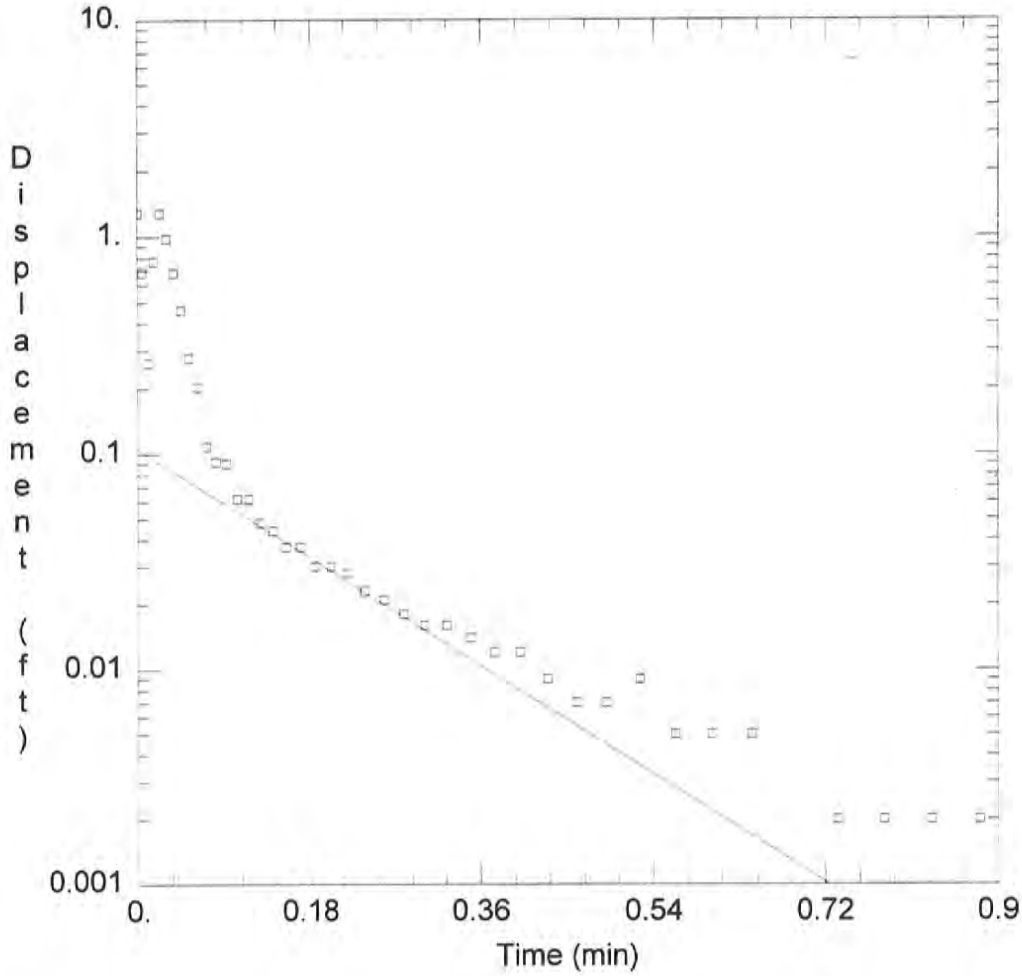
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.012	ft/min
y0	0.8139	ft



DH-45 RUN 2

Data Set: A:\DH-45 Run 2.aqt
Date: 02/17/03 Time: 11:16:34

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-45
Test Date: 1/17/03

AQUIFER DATA

Saturated Thickness: 84.09 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-45)

Initial Displacement: 1.28 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 6.34 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-45 Run 2.aqt
Title: DH-45 Run 2
Date: 02/17/03
Time: 11:16:47

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 1/17/03
Test Well: DH-45

AQUIFER DATA

Saturated Thickness: 84.09 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.28 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 6.34 ft
Gravel Pack Porosity: 0.3

No. of observations: 40

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	0.685	0.2197	0.028
0.0108	0.263	0.2383	0.023
0.017	0.77	0.2582	0.021
0.0235	1.28	0.2792	0.018
0.0305	0.978	0.3013	0.016
0.0378	0.683	0.3248	0.016
0.0457	0.459	0.3497	0.014
0.054	0.277	0.3747	0.012
0.0628	0.203	0.4013	0.012
0.0722	0.108	0.4297	0.009
0.082	0.092	0.4597	0.007
0.0925	0.09	0.4913	0.007
0.1035	0.062	0.5263	0.009
0.1152	0.062	0.563	0.005
0.1277	0.048	0.6013	0.005
0.1408	0.044	0.643	0.005
0.1548	0.037	0.733	0.002
0.1697	0.037	0.7813	0.002
0.1853	0.03	0.8313	0.002
0.202	0.03	0.8813	0.002

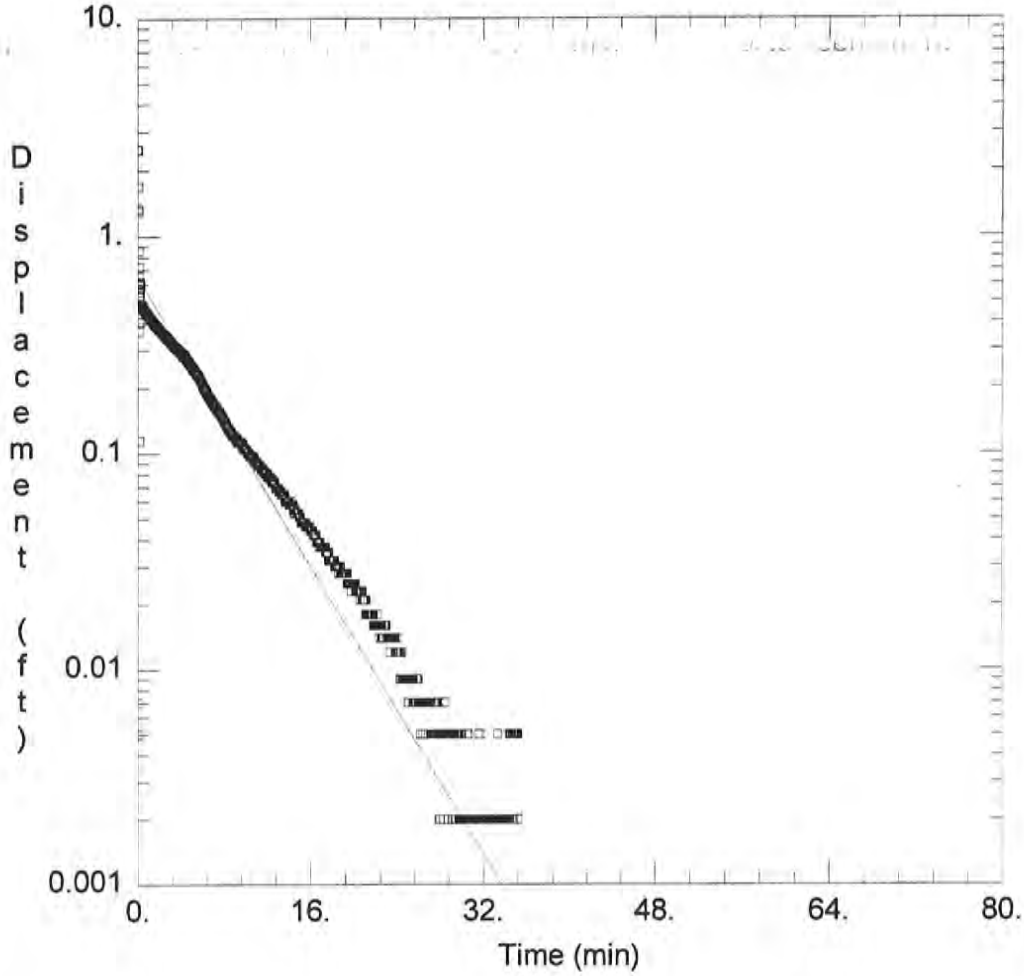
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.02331	ft/min
y0	0.1053	ft



DH-46 RUN 2

Data Set: A:\DH-46 Run 1.aqt
Date: 02/17/03 Time: 11:24:15

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-46
Test Date: 1/17/03

AQUIFER DATA

Saturated Thickness: 90.74 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-46)

Initial Displacement: 2.489 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 10.24 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-46 Run 1.aqt
Title: DH-46 Run 2
Date: 02/17/03
Time: 11:26:00

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 1/17/03
Test Well: DH-46

AQUIFER DATA

Saturated Thickness: 90.74 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.489 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 10.24 ft
Gravel Pack Porosity: 0.3

No. of observations: 731

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.06	0.005	16.93	0.037
0.065	0.007	16.98	0.039
0.075	2.489	17.03	0.037
0.08	1.691	17.08	0.037
0.085	1.34	17.13	0.037
0.09	1.303	17.18	0.037
0.095	0.858	17.23	0.037
0.1	0.471	17.28	0.037
0.1058	0.367	17.33	0.037
0.112	0.441	17.38	0.037
0.1185	0.655	17.43	0.035
0.1255	0.727	17.48	0.035
0.1328	0.611	17.53	0.035
0.1407	0.533	17.58	0.035
0.149	0.577	17.63	0.035
0.1578	0.484	17.68	0.035
0.1672	0.115	17.73	0.032
0.177	0.406	17.78	0.032
0.1875	0.471	17.83	0.032
0.1985	0.54	17.88	0.032
0.2102	0.62	17.93	0.032
0.2227	0.558	17.98	0.032
0.2358	0.443	18.03	0.032

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2498	0.473	18.08	0.032
0.2647	0.482	18.13	0.032
0.2803	0.602	18.18	0.032
0.297	0.404	18.23	0.032
0.3147	0.487	18.28	0.03
0.3333	0.489	18.33	0.03
0.3532	0.471	18.38	0.03
0.3742	0.466	18.43	0.03
0.3963	0.475	18.48	0.03
0.4198	0.471	18.53	0.03
0.4447	0.471	18.58	0.03
0.4697	0.473	18.63	0.028
0.4963	0.468	18.68	0.03
0.5247	0.466	18.73	0.028
0.5547	0.464	18.78	0.03
0.5863	0.461	18.83	0.028
0.6213	0.459	18.88	0.028
0.658	0.457	18.93	0.028
0.6963	0.454	18.98	0.028
0.738	0.452	19.03	0.028
0.7813	0.45	19.08	0.028
0.828	0.445	19.13	0.028
0.8763	0.443	19.18	0.028
0.9263	0.441	19.23	0.028
0.9763	0.436	19.28	0.028
1.026	0.431	19.33	0.028
1.076	0.427	19.38	0.028
1.126	0.424	19.43	0.025
1.176	0.42	19.48	0.025
1.226	0.418	19.53	0.025
1.276	0.413	19.58	0.025
1.326	0.411	19.63	0.025
1.376	0.408	19.68	0.025
1.426	0.406	19.73	0.025
1.476	0.401	19.78	0.023
1.526	0.397	19.83	0.025
1.576	0.394	19.88	0.025
1.626	0.392	19.93	0.025
1.676	0.392	19.98	0.025
1.726	0.388	20.03	0.025
1.776	0.388	20.08	0.025
1.826	0.385	20.13	0.025
1.876	0.381	20.18	0.023
1.926	0.378	20.23	0.023
1.976	0.376	20.28	0.023
2.026	0.374	20.33	0.023
2.076	0.371	20.38	0.023
2.126	0.369	20.43	0.023
2.176	0.367	20.48	0.023
2.226	0.362	20.53	0.023
2.276	0.362	20.58	0.021
2.326	0.36	20.63	0.023
2.376	0.355	20.68	0.023
2.426	0.355	20.73	0.023
2.476	0.351	20.78	0.021

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.526	0.351	20.83	0.021
2.576	0.348	20.88	0.021
2.626	0.346	20.93	0.021
2.676	0.344	20.98	0.021
2.726	0.341	21.03	0.021
2.776	0.339	21.08	0.021
2.826	0.337	21.13	0.018
2.876	0.337	21.18	0.018
2.926	0.334	21.23	0.018
2.976	0.332	21.28	0.018
3.026	0.332	21.33	0.018
3.076	0.328	21.38	0.018
3.126	0.325	21.43	0.018
3.176	0.323	21.48	0.018
3.226	0.321	21.53	0.018
3.276	0.318	21.58	0.018
3.326	0.316	21.63	0.018
3.376	0.314	21.68	0.018
3.426	0.311	21.73	0.018
3.476	0.311	21.78	0.018
3.526	0.309	21.83	0.016
3.576	0.309	21.88	0.016
3.626	0.304	21.93	0.016
3.676	0.307	21.98	0.016
3.726	0.304	22.03	0.016
3.776	0.302	22.08	0.018
3.826	0.3	22.13	0.016
3.876	0.298	22.18	0.016
3.926	0.295	22.23	0.016
3.976	0.295	22.28	0.016
4.026	0.293	22.33	0.016
4.076	0.291	22.38	0.014
4.126	0.288	22.43	0.016
4.176	0.286	22.48	0.016
4.226	0.281	22.53	0.014
4.276	0.284	22.58	0.016
4.326	0.288	22.63	0.014
4.376	0.286	22.68	0.014
4.426	0.279	22.73	0.014
4.476	0.277	22.78	0.016
4.526	0.274	22.83	0.016
4.576	0.27	22.88	0.014
4.626	0.27	22.93	0.016
4.676	0.268	22.98	0.016
4.726	0.265	23.03	0.014
4.776	0.263	23.08	0.014
4.826	0.261	23.13	0.014
4.876	0.258	23.18	0.014
4.926	0.256	23.23	0.014
4.976	0.256	23.28	0.014
5.026	0.251	23.33	0.014
5.076	0.249	23.38	0.012
5.126	0.249	23.43	0.014
5.176	0.245	23.48	0.014
5.226	0.242	23.53	0.014

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.276	0.242	23.58	0.014
5.326	0.242	23.63	0.014
5.376	0.238	23.68	0.014
5.426	0.235	23.73	0.014
5.476	0.233	23.78	0.014
5.526	0.233	23.83	0.014
5.576	0.231	23.88	0.012
5.626	0.228	23.93	0.012
5.676	0.228	23.98	0.014
5.726	0.224	24.03	0.012
5.776	0.221	24.08	0.012
5.826	0.219	24.13	0.012
5.876	0.215	24.18	0.012
5.926	0.215	24.23	0.012
5.976	0.21	24.28	0.009
6.026	0.208	24.33	0.012
6.076	0.203	24.38	0.009
6.126	0.203	24.43	0.012
6.176	0.201	24.48	0.009
6.226	0.198	24.53	0.009
6.276	0.198	24.58	0.009
6.326	0.194	24.63	0.009
6.376	0.194	24.68	0.009
6.426	0.191	24.73	0.009
6.476	0.187	24.78	0.009
6.526	0.187	24.83	0.009
6.576	0.185	24.88	0.009
6.626	0.182	24.93	0.009
6.676	0.18	24.98	0.009
6.726	0.18	25.03	0.007
6.776	0.178	25.08	0.009
6.826	0.175	25.13	0.009
6.876	0.175	25.18	0.009
6.926	0.173	25.23	0.009
6.976	0.171	25.28	0.009
7.026	0.168	25.33	0.009
7.076	0.168	25.38	0.007
7.126	0.166	25.43	0.009
7.176	0.164	25.48	0.009
7.226	0.164	25.53	0.007
7.276	0.164	25.58	0.007
7.326	0.164	25.63	0.007
7.376	0.159	25.68	0.007
7.426	0.159	25.73	0.007
7.476	0.157	25.78	0.009
7.526	0.157	25.83	0.007
7.576	0.155	25.88	0.009
7.626	0.155	25.93	0.007
7.676	0.152	25.98	0.009
7.726	0.152	26.03	0.007
7.776	0.15	26.08	0.007
7.826	0.148	26.13	0.007
7.876	0.148	26.18	0.005
7.926	0.145	26.23	0.007
7.976	0.145	26.28	0.007

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
8.026	0.141	26.33	0.007
8.076	0.141	26.38	0.005
8.126	0.141	26.43	0.007
8.176	0.138	26.48	0.007
8.226	0.136	26.53	0.007
8.276	0.134	26.58	0.007
8.326	0.131	26.63	0.007
8.376	0.131	26.68	0.005
8.426	0.131	26.73	0.007
8.476	0.129	26.78	0.007
8.526	0.127	26.83	0.007
8.576	0.127	26.88	0.007
8.626	0.127	26.93	0.007
8.676	0.125	26.98	0.007
8.726	0.125	27.03	0.007
8.776	0.122	27.08	0.007
8.826	0.122	27.13	0.005
8.876	0.122	27.18	0.007
8.926	0.12	27.23	0.005
8.976	0.12	27.28	0.005
9.026	0.12	27.33	0.005
9.076	0.118	27.38	0.007
9.126	0.115	27.43	0.005
9.176	0.118	27.48	0.007
9.226	0.118	27.53	0.005
9.276	0.113	27.58	0.007
9.326	0.113	27.63	0.005
9.376	0.113	27.68	0.005
9.426	0.115	27.73	0.007
9.476	0.113	27.78	0.005
9.526	0.113	27.83	0.007
9.576	0.113	27.88	0.005
9.626	0.111	27.93	0.002
9.676	0.111	27.98	0.005
9.726	0.111	28.03	0.002
9.776	0.106	28.08	0.005
9.826	0.106	28.13	0.005
9.876	0.106	28.18	0.005
9.926	0.106	28.23	0.005
9.976	0.104	28.28	0.005
10.03	0.104	28.33	0.002
10.08	0.104	28.38	0.005
10.13	0.104	28.43	0.007
10.18	0.101	28.48	0.005
10.23	0.101	28.53	0.005
10.28	0.101	28.58	0.005
10.33	0.099	28.63	0.005
10.38	0.099	28.68	0.005
10.43	0.097	28.73	0.005
10.48	0.097	28.78	0.002
10.53	0.097	28.83	0.005
10.58	0.097	28.88	0.005
10.63	0.097	28.93	0.005
10.68	0.095	28.98	0.005
10.73	0.097	29.03	0.005

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.78	0.095	29.08	0.005
10.83	0.092	29.13	0.005
10.88	0.092	29.18	0.002
10.93	0.092	29.23	0.005
10.98	0.092	29.28	0.005
11.03	0.09	29.33	0.005
11.08	0.09	29.38	0.002
11.13	0.088	29.43	0.002
11.18	0.09	29.48	0.005
11.23	0.088	29.53	0.005
11.28	0.088	29.58	0.005
11.33	0.088	29.63	0.005
11.38	0.088	29.68	0.005
11.43	0.085	29.73	0.002
11.48	0.085	29.78	0.002
11.53	0.085	29.83	0.002
11.58	0.083	29.88	0.002
11.63	0.085	29.93	0.005
11.68	0.083	29.98	0.005
11.73	0.083	30.03	0.002
11.78	0.081	30.08	0.002
11.83	0.081	30.13	0.002
11.88	0.081	30.18	0.002
11.93	0.081	30.23	0.002
11.98	0.081	30.28	0.002
12.03	0.078	30.33	0.002
12.08	0.078	30.38	0.002
12.13	0.078	30.43	0.002
12.18	0.078	30.48	0.005
12.23	0.078	30.53	0.002
12.28	0.078	30.58	0.002
12.33	0.076	30.63	0.005
12.38	0.076	30.68	0.002
12.43	0.074	30.73	0.002
12.48	0.076	30.78	0.002
12.53	0.074	30.83	0.002
12.58	0.074	30.88	0.002
12.63	0.074	30.93	0.002
12.68	0.074	30.98	0.002
12.73	0.072	31.03	0.002
12.78	0.069	31.08	0.002
12.83	0.069	31.13	0.002
12.88	0.069	31.18	0.002
12.93	0.069	31.23	0.002
12.98	0.069	31.28	0.002
13.03	0.069	31.33	0.002
13.08	0.067	31.38	0.002
13.13	0.067	31.43	0.002
13.18	0.067	31.48	0.002
13.23	0.067	31.53	0.005
13.28	0.065	31.58	0.002
13.33	0.067	31.63	0.002
13.38	0.065	31.68	0.002
13.43	0.065	31.73	0.005
13.48	0.065	31.78	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
13.53	0.065	31.83	0.002
13.58	0.065	31.88	0.002
13.63	0.062	31.93	0.002
13.68	0.06	31.98	0.002
13.73	0.062	32.03	0.002
13.78	0.06	32.08	0.002
13.83	0.06	32.13	0.002
13.88	0.06	32.18	0.002
13.93	0.06	32.23	0.002
13.98	0.06	32.28	0.002
14.03	0.058	32.33	0.002
14.08	0.058	32.43	0.002
14.13	0.058	32.48	0.002
14.18	0.06	32.58	0.002
14.23	0.058	32.63	0.002
14.28	0.058	32.68	0.002
14.33	0.058	32.73	0.002
14.38	0.058	32.78	0.002
14.43	0.055	32.83	0.002
14.48	0.055	32.88	0.002
14.53	0.053	32.93	0.002
14.58	0.055	32.98	0.002
14.63	0.053	33.03	0.002
14.68	0.055	33.08	0.002
14.73	0.053	33.13	0.002
14.78	0.053	33.18	0.002
14.83	0.053	33.23	0.002
14.88	0.053	33.28	0.002
14.93	0.053	33.33	0.005
14.98	0.051	33.38	0.002
15.03	0.051	33.43	0.002
15.08	0.051	33.48	0.002
15.13	0.048	33.53	0.002
15.18	0.048	33.58	0.002
15.23	0.048	33.63	0.002
15.28	0.048	33.68	0.002
15.33	0.048	33.73	0.002
15.38	0.048	33.78	0.002
15.43	0.048	33.83	0.002
15.48	0.048	33.88	0.002
15.53	0.048	33.93	0.002
15.58	0.046	33.98	0.002
15.63	0.046	34.03	0.002
15.68	0.046	34.08	0.002
15.73	0.046	34.13	0.002
15.78	0.046	34.18	0.002
15.83	0.046	34.23	0.002
15.88	0.046	34.28	0.002
15.93	0.046	34.33	0.002
15.98	0.044	34.38	0.002
16.03	0.044	34.43	0.005
16.08	0.044	34.48	0.005
16.13	0.044	34.53	0.005
16.18	0.044	34.58	0.005
16.23	0.044	34.63	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
16.28	0.042	34.68	0.005
16.33	0.042	34.73	0.005
16.38	0.042	34.78	0.002
16.43	0.042	34.83	0.005
16.48	0.042	34.88	0.005
16.53	0.042	34.93	0.005
16.58	0.039	34.98	0.005
16.63	0.039	35.03	0.005
16.68	0.039	35.08	0.005
16.73	0.039	35.13	0.005
16.78	0.039	35.18	0.002
16.83	0.037	35.21	0.005
16.88	0.039		

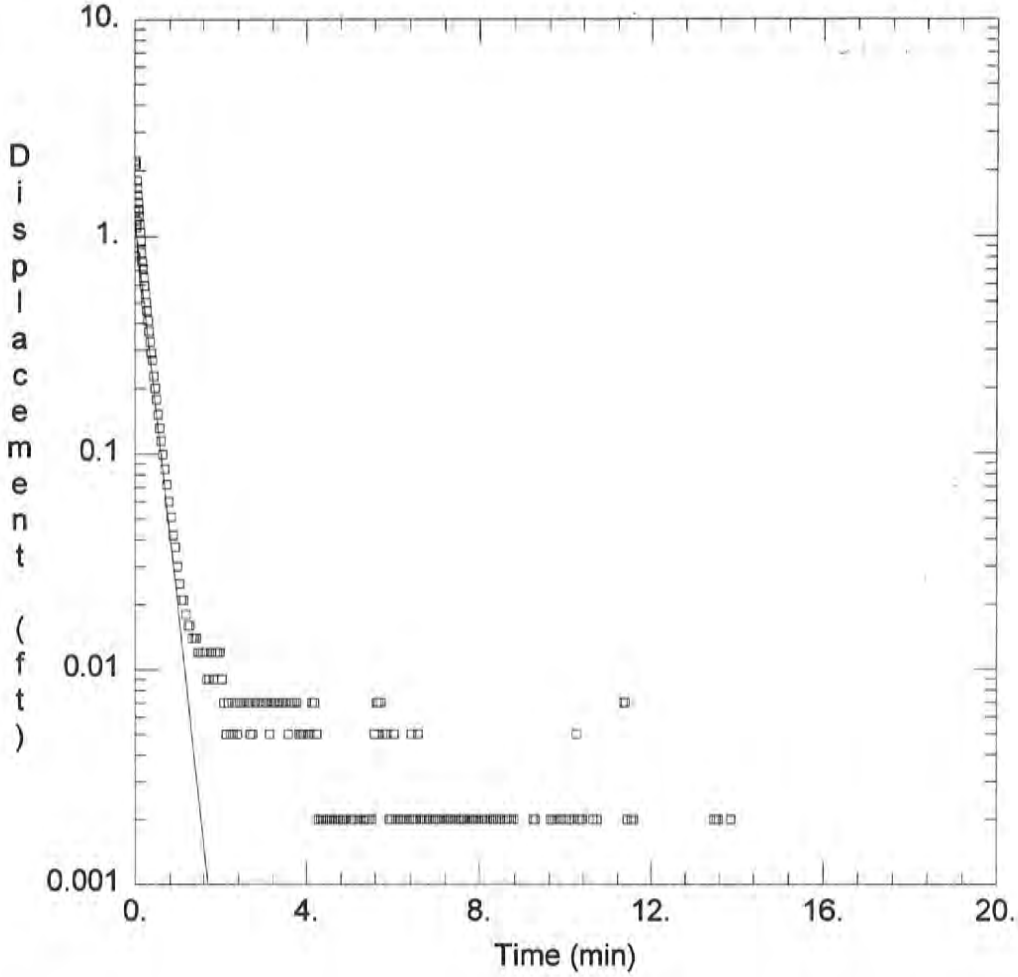
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.000156	ft/min
y0	0.6541	ft



DH-46A RUN 2

Data Set: A:\DH-46A Run 2.aqt
Date: 01/07/03 Time: 13:19:26

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-46A
Test Date: 12/17/02

AQUIFER DATA

Saturated Thickness: 70.77 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-46A)

Initial Displacement: 2.219 ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 15.67 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-46A Run 2.aqt
Title: DH-46A Run 2
Date: 01/07/03
Time: 13:19:31

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/17/02
Test Well: DH-46A

AQUIFER DATA

Saturated Thickness: 70.77 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.219 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 15.67 ft
Gravel Pack Porosity: 0.3

No. of observations: 219

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	1.301	4.381	0.002
0.0108	2.219	4.431	0.002
0.017	0.81	4.481	0.002
0.0235	2.141	4.531	0.002
0.0305	1.13	4.581	0.002
0.0378	1.1	4.631	0.002
0.0457	1.176	4.681	0.002
0.054	1.799	4.731	0.002
0.0628	1.665	4.781	0.002
0.0722	1.545	4.831	0.002
0.082	1.435	4.881	0.002
0.0925	1.336	4.931	0.002
0.1035	1.236	5.031	0.002
0.1152	1.137	5.081	0.002
0.1277	1.043	5.131	0.002
0.1408	0.957	5.181	0.002
0.1548	0.842	5.231	0.002
0.1697	0.768	5.281	0.002
0.1853	0.715	5.331	0.002
0.202	0.648	5.381	0.002
0.2197	0.595	5.431	0.002
0.2383	0.544	5.481	0.002
0.2582	0.498	5.531	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2792	0.457	5.581	0.005
0.3013	0.411	5.631	0.007
0.3248	0.367	5.681	0.007
0.3497	0.328	5.731	0.007
0.3747	0.291	5.781	0.005
0.4013	0.27	5.831	0.005
0.4297	0.228	5.881	0.005
0.4597	0.201	5.931	0.002
0.4913	0.178	5.981	0.002
0.5263	0.152	6.031	0.005
0.563	0.131	6.081	0.002
0.6013	0.115	6.131	0.002
0.643	0.099	6.181	0.002
0.6863	0.085	6.231	0.002
0.733	0.072	6.281	0.002
0.7813	0.06	6.331	0.002
0.8313	0.051	6.381	0.002
0.8813	0.042	6.431	0.005
0.9313	0.037	6.481	0.002
0.9813	0.03	6.531	0.002
1.031	0.025	6.581	0.005
1.081	0.021	6.631	0.002
1.131	0.021	6.681	0.002
1.181	0.018	6.731	0.002
1.231	0.016	6.781	0.002
1.281	0.016	6.831	0.002
1.331	0.014	6.981	0.002
1.381	0.014	7.031	0.002
1.431	0.014	7.081	0.002
1.481	0.012	7.131	0.002
1.531	0.012	7.181	0.002
1.581	0.012	7.231	0.002
1.631	0.012	7.281	0.002
1.681	0.009	7.331	0.002
1.731	0.009	7.381	0.002
1.781	0.012	7.431	0.002
1.831	0.009	7.481	0.002
1.881	0.012	7.531	0.002
1.931	0.012	7.581	0.002
1.981	0.012	7.631	0.002
2.031	0.009	7.681	0.002
2.081	0.007	7.731	0.002
2.131	0.005	7.781	0.002
2.181	0.007	7.831	0.002
2.231	0.005	7.881	0.002
2.281	0.005	7.931	0.002
2.331	0.007	7.981	0.002
2.381	0.005	8.031	0.002
2.431	0.007	8.081	0.002
2.481	0.007	8.131	0.002
2.531	0.007	8.181	0.002
2.581	0.007	8.231	0.002
2.631	0.007	8.281	0.002
2.681	0.005	8.331	0.002
2.731	0.005	8.481	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.781	0.007	8.581	0.002
2.831	0.007	8.631	0.002
2.881	0.007	8.681	0.002
2.931	0.007	8.731	0.002
2.981	0.007	8.781	0.002
3.031	0.007	9.231	0.002
3.081	0.007	9.281	0.002
3.131	0.005	9.631	0.002
3.181	0.007	9.681	0.002
3.231	0.007	9.731	0.002
3.281	0.007	9.781	0.002
3.331	0.007	9.831	0.002
3.381	0.007	9.881	0.002
3.431	0.007	10.08	0.002
3.481	0.007	10.13	0.002
3.531	0.007	10.18	0.002
3.581	0.005	10.23	0.005
3.631	0.007	10.28	0.002
3.681	0.007	10.33	0.002
3.731	0.007	10.38	0.002
3.781	0.007	10.63	0.002
3.831	0.005	10.73	0.002
3.881	0.005	11.33	0.007
3.931	0.005	11.38	0.007
3.981	0.005	11.43	0.002
4.031	0.005	11.53	0.002
4.081	0.005	11.58	0.002
4.131	0.007	13.48	0.002
4.181	0.007	13.53	0.002
4.231	0.005	13.58	0.002
4.281	0.002	13.88	0.002
4.331	0.002		

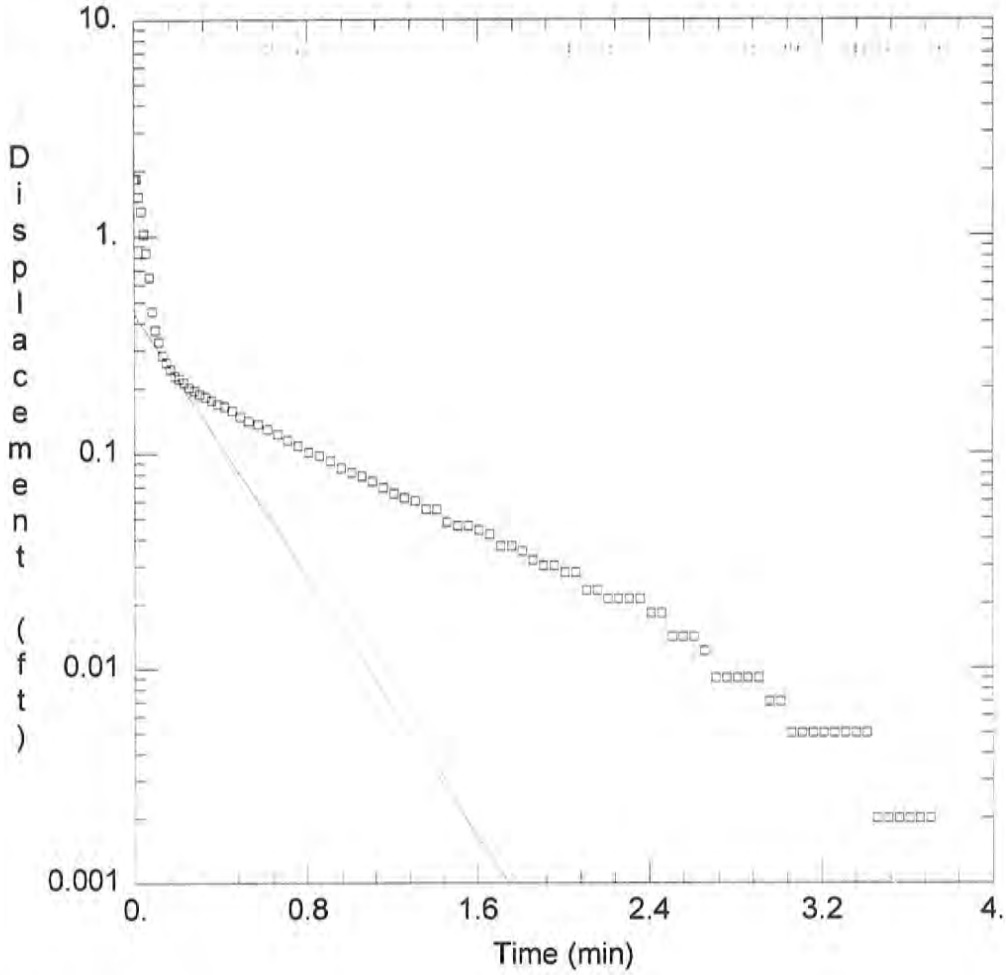
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.00611	ft/min
y0	1.174	ft



DH-47 RUN 2

Data Set: A:\DH-47 Run 2.aqt
Date: 10/08/03 Time: 08:35:10

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-47
Test Date: 12/17/02

AQUIFER DATA

Saturated Thickness: 50.86 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-47)

Initial Displacement: 1.839 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 6.98 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-47 Run 2.aqt
Title: DH-47 Run 2
Date: 10/08/03
Time: 08:35:20

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/17/02
Test Well: DH-47

AQUIFER DATA

Saturated Thickness: 50.86 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.839 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 6.98 ft
Gravel Pack Porosity: 0.3

No. of observations: 89

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0098	1.838	1.559	0.046
0.0203	1.52	1.609	0.044
0.0313	1.301	1.659	0.042
0.043	1.024	1.709	0.037
0.0555	0.84	1.759	0.037
0.0686	0.65	1.809	0.035
0.0826	0.452	1.859	0.032
0.0975	0.371	1.909	0.03
0.1131	0.328	1.959	0.03
0.1298	0.284	2.009	0.028
0.1475	0.263	2.059	0.028
0.1661	0.245	2.109	0.023
0.186	0.228	2.159	0.023
0.207	0.221	2.209	0.021
0.2291	0.212	2.259	0.021
0.2526	0.201	2.309	0.021
0.2775	0.194	2.359	0.021
0.3025	0.187	2.409	0.018
0.3291	0.182	2.459	0.018
0.3575	0.175	2.509	0.014
0.3875	0.168	2.559	0.014
0.4191	0.164	2.609	0.014
0.4541	0.157	2.659	0.012

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.4908	0.148	2.709	0.009
0.5291	0.141	2.759	0.009
0.5708	0.136	2.809	0.009
0.6141	0.129	2.859	0.009
0.6608	0.122	2.909	0.009
0.7091	0.115	2.959	0.007
0.7591	0.108	3.009	0.007
0.8091	0.101	3.059	0.005
0.8591	0.097	3.109	0.005
0.9091	0.092	3.159	0.005
0.9591	0.085	3.209	0.005
1.009	0.081	3.259	0.005
1.059	0.078	3.309	0.005
1.109	0.074	3.359	0.005
1.159	0.069	3.409	0.005
1.209	0.065	3.459	0.002
1.259	0.062	3.509	0.002
1.309	0.06	3.559	0.002
1.359	0.055	3.609	0.002
1.409	0.055	3.659	0.002
1.459	0.048	3.709	0.002
1.509	0.046		

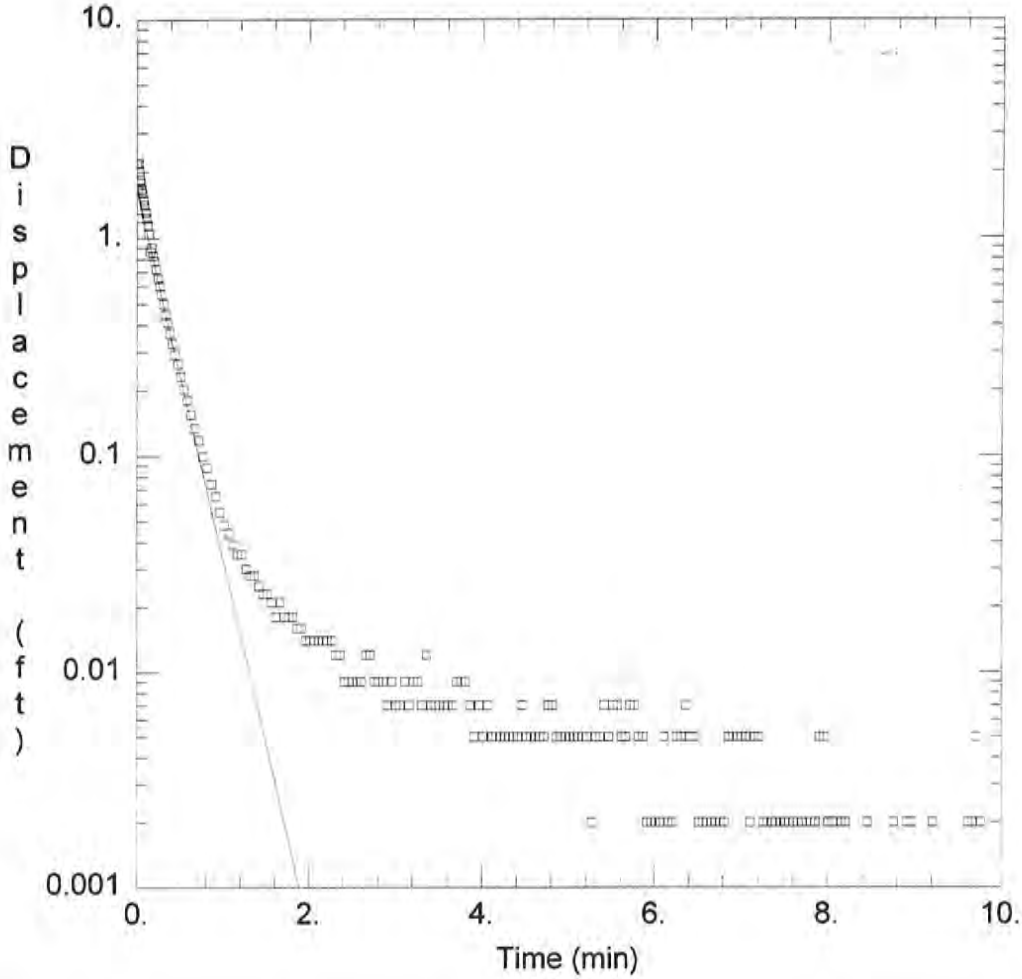
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.01313	ft/min
y0	0.441	ft



DH-47A RUN 2

Data Set: A:\DH-47A Run 2.aqt
Date: 02/17/03 Time: 11:12:23

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-47A
Test Date: 12/17/02

AQUIFER DATA

Saturated Thickness: 39.67 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-47A)

Initial Displacement: 2.182 ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3

Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 10.84 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

Data Set: A:\DH-47A Run 2.aqt
Title: DH-47A Run 2
Date: 02/17/03
Time: 11:12:30

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/17/02
Test Well: DH-47A

AQUIFER DATA

Saturated Thickness: 39.67 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.182 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 10.84 ft
Gravel Pack Porosity: 0.3

No. of observations: 192

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0065	1.665	3.814	0.009
0.0135	1.234	3.864	0.007
0.0208	2.182	3.914	0.005
0.0287	2.025	3.964	0.007
0.037	1.848	4.014	0.005
0.0458	1.797	4.064	0.007
0.0552	1.67	4.114	0.005
0.065	1.603	4.164	0.005
0.0755	1.488	4.214	0.005
0.0865	1.414	4.264	0.005
0.0982	1.312	4.314	0.005
0.1107	1.229	4.364	0.005
0.1238	1.144	4.414	0.005
0.1378	1.045	4.464	0.007
0.1527	0.865	4.514	0.005
0.1683	0.9	4.564	0.005
0.185	0.83	4.614	0.005
0.2027	0.784	4.664	0.005
0.2213	0.722	4.714	0.005
0.2412	0.653	4.764	0.007
0.2622	0.604	4.814	0.007
0.2843	0.554	4.864	0.005
0.3078	0.501	4.914	0.005

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3327	0.447	4.964	0.005
0.3577	0.411	5.014	0.005
0.3843	0.367	5.064	0.005
0.4127	0.33	5.114	0.005
0.4427	0.293	5.164	0.005
0.4743	0.265	5.214	0.005
0.5093	0.233	5.264	0.002
0.546	0.203	5.314	0.005
0.5843	0.18	5.364	0.005
0.626	0.155	5.414	0.007
0.6693	0.134	5.464	0.005
0.716	0.118	5.514	0.007
0.7643	0.099	5.564	0.007
0.8143	0.088	5.614	0.005
0.8643	0.074	5.664	0.005
0.9143	0.065	5.714	0.007
0.9643	0.055	5.764	0.007
1.014	0.048	5.814	0.005
1.064	0.044	5.864	0.005
1.114	0.039	5.914	0.002
1.164	0.035	5.964	0.002
1.214	0.035	6.014	0.002
1.264	0.03	6.064	0.002
1.314	0.028	6.114	0.005
1.364	0.028	6.164	0.002
1.414	0.025	6.214	0.002
1.464	0.023	6.264	0.005
1.514	0.023	6.314	0.005
1.564	0.021	6.364	0.007
1.614	0.018	6.414	0.005
1.664	0.021	6.464	0.005
1.714	0.018	6.514	0.002
1.764	0.018	6.564	0.002
1.814	0.018	6.614	0.002
1.864	0.016	6.664	0.002
1.914	0.016	6.714	0.002
1.964	0.014	6.764	0.002
2.014	0.014	6.814	0.002
2.064	0.014	6.864	0.005
2.114	0.014	6.914	0.005
2.164	0.014	6.964	0.005
2.214	0.014	7.014	0.005
2.264	0.014	7.064	0.005
2.314	0.012	7.114	0.002
2.364	0.012	7.164	0.005
2.414	0.009	7.214	0.005
2.464	0.009	7.264	0.002
2.514	0.009	7.314	0.002
2.564	0.009	7.364	0.002
2.614	0.009	7.414	0.002
2.664	0.012	7.464	0.002
2.714	0.012	7.514	0.002
2.764	0.009	7.564	0.002
2.814	0.009	7.614	0.002
2.864	0.009	7.714	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.914	0.007	7.764	0.002
2.964	0.009	7.814	0.002
3.014	0.007	7.864	0.002
3.064	0.007	7.914	0.005
3.114	0.009	7.964	0.005
3.164	0.007	8.014	0.002
3.214	0.009	8.064	0.002
3.264	0.009	8.164	0.002
3.314	0.007	8.214	0.002
3.364	0.012	8.464	0.002
3.414	0.007	8.764	0.002
3.464	0.007	8.914	0.002
3.514	0.007	8.964	0.002
3.564	0.007	9.214	0.002
3.614	0.007	9.614	0.002
3.664	0.007	9.664	0.002
3.714	0.009	9.714	0.005
3.764	0.009	9.764	0.002

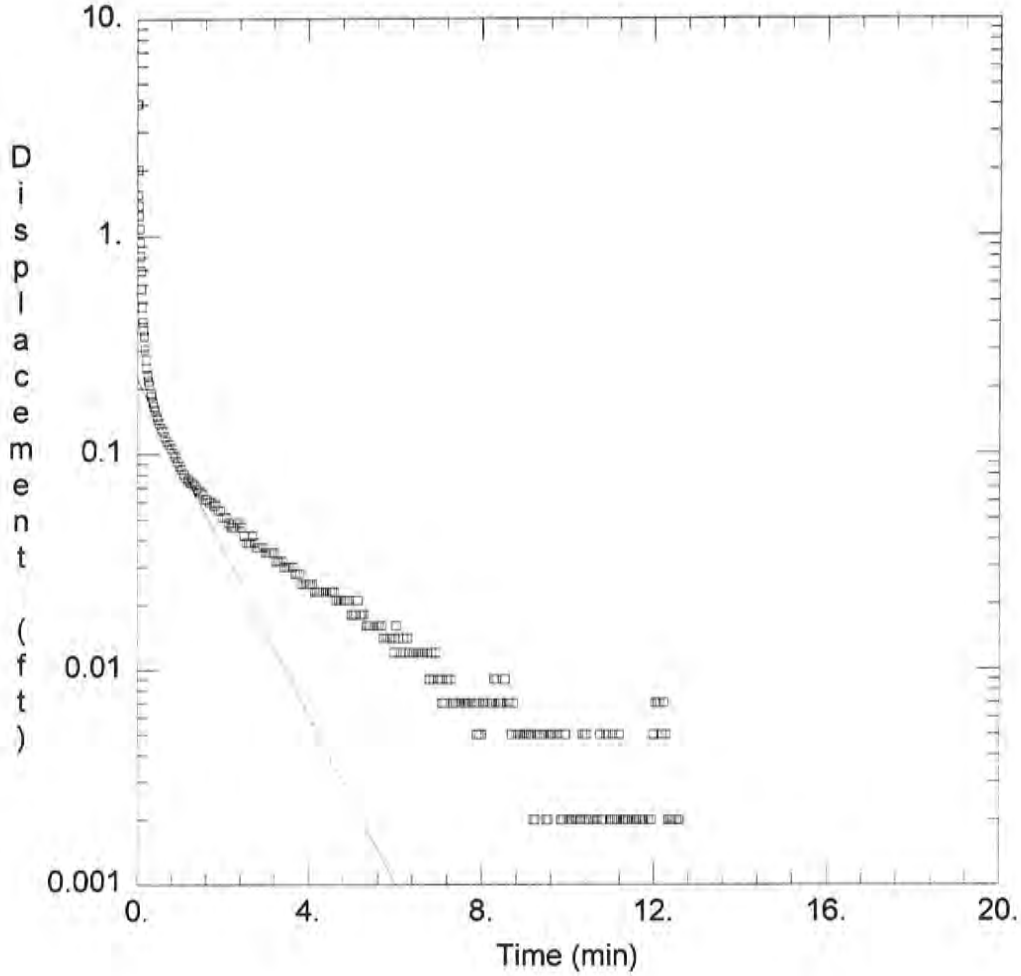
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.005587	ft/min
y0	1.65	ft



DH-48 RUN 2

Data Set: A:\DH-48 Run 2.aqt
Date: 10/08/03 Time: 08:33:23

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-48
Test Date: 12/17/02

AQUIFER DATA

Saturated Thickness: 99.82 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-48)

Initial Displacement: 4.025 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 9.42 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-48 Run 2.aqt
Title: DH-48 Run 2
Date: 10/08/03
Time: 08:33:31

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/17/02
Test Well: DH-48

AQUIFER DATA

Saturated Thickness: 99.82 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 4.025 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 9.42 ft
Gravel Pack Porosity: 0.3

No. of observations: 268

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0079	1.543	5.843	0.014
0.0162	4.025	5.894	0.014
0.025	2.018	5.944	0.014
0.0344	1.382	5.994	0.012
0.0442	1.241	6.043	0.016
0.0547	1.084	6.093	0.014
0.0657	0.939	6.144	0.012
0.0774	0.81	6.194	0.014
0.0899	0.694	6.244	0.012
0.103	0.574	6.293	0.014
0.117	0.475	6.343	0.012
0.1319	0.404	6.394	0.012
0.1475	0.371	6.444	0.012
0.1642	0.348	6.494	0.012
0.1819	0.304	6.543	0.012
0.2005	0.272	6.593	0.012
0.2204	0.249	6.644	0.012
0.2414	0.231	6.694	0.012
0.2635	0.217	6.744	0.012
0.287	0.208	6.793	0.009
0.3119	0.191	6.843	0.012
0.3369	0.185	6.894	0.009
0.3635	0.173	6.944	0.012

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3919	0.166	6.994	0.009
0.4219	0.159	7.043	0.009
0.4535	0.15	7.093	0.007
0.4885	0.145	7.144	0.007
0.5252	0.138	7.194	0.009
0.5635	0.131	7.244	0.009
0.6052	0.127	7.293	0.009
0.6485	0.12	7.343	0.007
0.6952	0.115	7.394	0.007
0.7435	0.111	7.444	0.007
0.7935	0.106	7.494	0.007
0.8435	0.101	7.543	0.007
0.8935	0.097	7.593	0.007
0.9435	0.092	7.644	0.007
0.9935	0.088	7.694	0.007
1.044	0.085	7.744	0.007
1.093	0.081	7.793	0.007
1.144	0.078	7.843	0.007
1.194	0.076	7.894	0.005
1.244	0.074	7.944	0.005
1.294	0.074	7.994	0.005
1.343	0.072	8.043	0.007
1.394	0.069	8.094	0.007
1.444	0.067	8.143	0.007
1.494	0.067	8.194	0.007
1.544	0.065	8.243	0.007
1.593	0.062	8.293	0.009
1.644	0.062	8.344	0.009
1.694	0.06	8.393	0.007
1.744	0.06	8.444	0.007
1.794	0.058	8.493	0.007
1.843	0.058	8.543	0.009
1.894	0.055	8.594	0.007
1.944	0.055	8.643	0.007
1.994	0.051	8.694	0.005
2.043	0.051	8.743	0.007
2.094	0.051	8.793	0.005
2.144	0.048	8.844	0.005
2.193	0.046	8.893	0.005
2.244	0.046	8.944	0.005
2.293	0.046	8.993	0.005
2.344	0.048	9.043	0.005
2.394	0.048	9.094	0.005
2.443	0.046	9.143	0.005
2.494	0.042	9.194	0.002
2.543	0.039	9.243	0.002
2.594	0.039	9.293	0.005
2.644	0.039	9.344	0.005
2.693	0.042	9.393	0.005
2.744	0.039	9.444	0.005
2.793	0.037	9.493	0.002
2.844	0.037	9.543	0.002
2.894	0.037	9.594	0.005
2.943	0.037	9.643	0.005
2.994	0.035	9.694	0.005

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
3.043	0.035	9.743	0.005
3.094	0.035	9.793	0.005
3.144	0.035	9.844	0.002
3.193	0.035	9.893	0.002
3.244	0.032	9.944	0.005
3.293	0.032	9.993	0.002
3.344	0.032	10.04	0.002
3.394	0.032	10.09	0.002
3.443	0.03	10.14	0.002
3.494	0.03	10.19	0.002
3.543	0.03	10.24	0.002
3.594	0.03	10.29	0.002
3.644	0.03	10.34	0.005
3.693	0.028	10.39	0.005
3.744	0.028	10.44	0.005
3.793	0.028	10.49	0.002
3.844	0.025	10.54	0.002
3.894	0.025	10.59	0.002
3.943	0.025	10.64	0.002
3.994	0.025	10.69	0.002
4.043	0.025	10.74	0.005
4.093	0.025	10.79	0.002
4.144	0.023	10.84	0.002
4.194	0.023	10.89	0.005
4.244	0.023	10.94	0.005
4.293	0.023	10.99	0.002
4.343	0.023	11.04	0.005
4.394	0.023	11.09	0.002
4.444	0.023	11.14	0.002
4.494	0.023	11.19	0.005
4.543	0.023	11.24	0.002
4.593	0.023	11.29	0.002
4.644	0.021	11.34	0.002
4.694	0.021	11.39	0.002
4.744	0.021	11.49	0.002
4.793	0.021	11.54	0.002
4.843	0.021	11.59	0.002
4.894	0.021	11.64	0.002
4.944	0.021	11.69	0.002
4.994	0.018	11.74	0.002
5.043	0.018	11.79	0.002
5.093	0.018	11.89	0.002
5.144	0.021	11.94	0.002
5.194	0.018	11.99	0.005
5.244	0.018	12.04	0.007
5.293	0.018	12.09	0.007
5.343	0.016	12.14	0.007
5.394	0.016	12.19	0.005
5.444	0.016	12.24	0.007
5.494	0.016	12.29	0.005
5.543	0.016	12.34	0.002
5.593	0.016	12.39	0.002
5.644	0.016	12.44	0.002
5.694	0.016	12.49	0.002
5.744	0.014	12.54	0.002

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.793	0.014	12.59	0.002

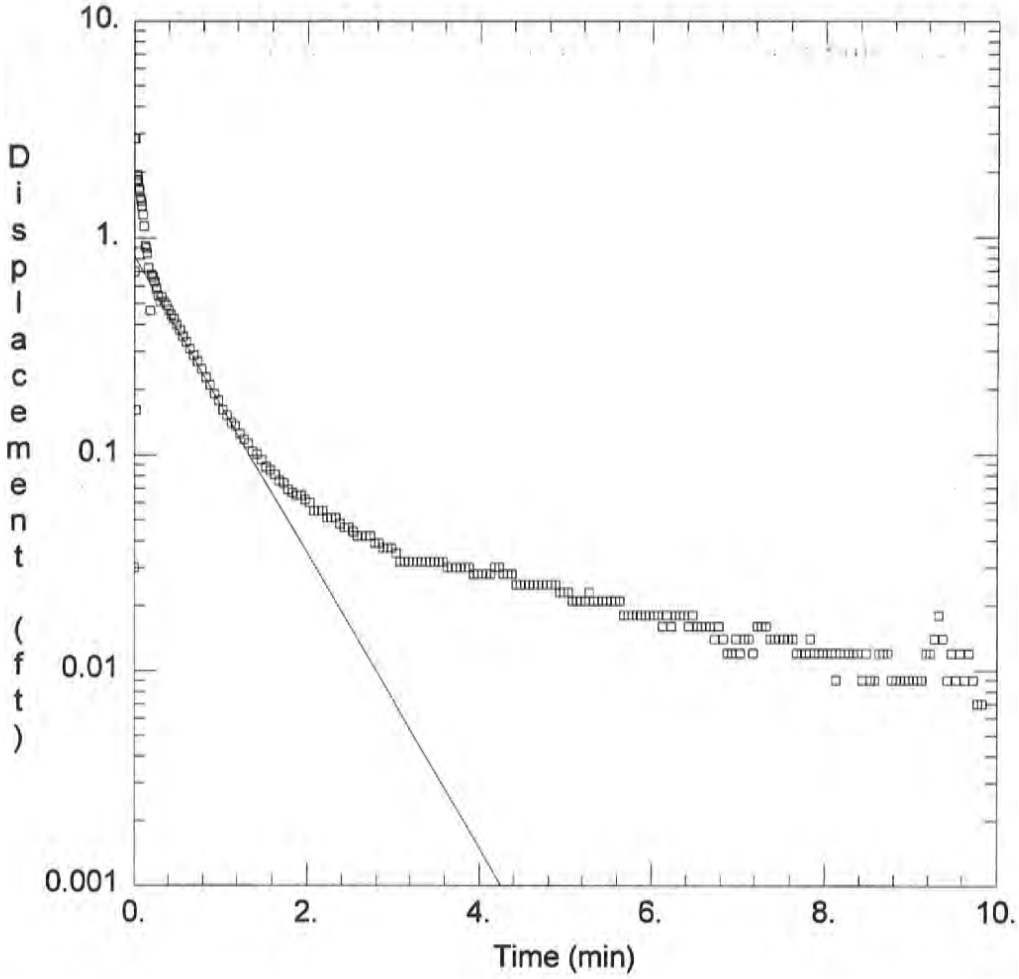
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.003532	ft/min
y0	0.2214	ft



DH-49 RUN 2

Data Set: A:\DH-49 Run 2.aqt
Date: 01/07/03 Time: 13:20:29

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-49
Test Date: 12/18/02

AQUIFER DATA

Saturated Thickness: 92.95 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-49)

Initial Displacement: 2.842 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 9.8 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-49 Run 2.aqt
Title: DH-49 Run 2
Date: 01/07/03
Time: 13:20:35

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/18/02
Test Well: DH-49

AQUIFER DATA

Saturated Thickness: 92.95 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.842 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 9.8 ft
Gravel Pack Porosity: 0.3

No. of observations: 220

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	0.03	4.381	0.028
0.0108	0.699	4.431	0.025
0.017	2.842	4.481	0.025
0.0235	0.161	4.531	0.025
0.0305	1.827	4.581	0.025
0.0378	1.938	4.631	0.025
0.0457	1.843	4.681	0.025
0.054	1.698	4.731	0.025
0.0628	1.649	4.781	0.025
0.0722	1.518	4.831	0.025
0.082	1.479	4.881	0.025
0.0925	1.4	4.931	0.023
0.1035	1.273	4.981	0.023
0.1152	1.13	5.031	0.023
0.1277	0.918	5.081	0.021
0.1408	0.897	5.131	0.021
0.1548	0.849	5.181	0.021
0.1697	0.727	5.231	0.021
0.1853	0.464	5.281	0.023
0.202	0.68	5.331	0.021
0.2197	0.662	5.381	0.021
0.2383	0.63	5.431	0.021
0.2582	0.586	5.481	0.021

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2792	0.544	5.531	0.021
0.3013	0.51	5.581	0.021
0.3248	0.535	5.631	0.021
0.3497	0.51	5.681	0.018
0.3747	0.491	5.731	0.018
0.4013	0.466	5.781	0.018
0.4297	0.443	5.831	0.018
0.4597	0.424	5.881	0.018
0.4913	0.399	5.931	0.018
0.5263	0.378	5.981	0.018
0.563	0.353	6.031	0.018
0.6013	0.332	6.081	0.018
0.643	0.309	6.131	0.016
0.6863	0.288	6.181	0.018
0.733	0.27	6.231	0.016
0.7813	0.249	6.281	0.018
0.8313	0.228	6.331	0.018
0.8813	0.21	6.381	0.018
0.9313	0.191	6.431	0.016
0.9813	0.178	6.481	0.018
1.031	0.161	6.531	0.016
1.081	0.152	6.581	0.016
1.131	0.141	6.631	0.016
1.181	0.136	6.681	0.016
1.231	0.125	6.731	0.014
1.281	0.118	6.781	0.016
1.331	0.113	6.831	0.014
1.381	0.104	6.881	0.012
1.431	0.101	6.931	0.012
1.481	0.095	6.981	0.014
1.531	0.088	7.031	0.012
1.581	0.085	7.081	0.014
1.631	0.081	7.131	0.014
1.681	0.076	7.181	0.012
1.731	0.074	7.231	0.016
1.781	0.069	7.281	0.016
1.831	0.067	7.331	0.016
1.881	0.065	7.381	0.014
1.931	0.065	7.431	0.014
1.981	0.062	7.481	0.014
2.031	0.06	7.531	0.014
2.081	0.055	7.581	0.014
2.131	0.055	7.631	0.014
2.181	0.055	7.681	0.012
2.231	0.051	7.731	0.012
2.281	0.051	7.781	0.012
2.331	0.051	7.831	0.014
2.381	0.048	7.881	0.012
2.431	0.046	7.931	0.012
2.481	0.046	7.981	0.012
2.531	0.044	8.031	0.012
2.581	0.042	8.081	0.012
2.631	0.042	8.131	0.009
2.681	0.042	8.181	0.012
2.731	0.042	8.231	0.012

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.781	0.039	8.281	0.012
2.831	0.039	8.331	0.012
2.881	0.037	8.381	0.012
2.931	0.037	8.431	0.009
2.981	0.037	8.481	0.012
3.031	0.035	8.531	0.009
3.081	0.032	8.581	0.009
3.131	0.032	8.631	0.012
3.181	0.032	8.681	0.012
3.231	0.032	8.731	0.012
3.281	0.032	8.781	0.009
3.331	0.032	8.831	0.009
3.381	0.032	8.881	0.009
3.431	0.032	8.931	0.009
3.481	0.032	8.981	0.009
3.531	0.032	9.031	0.009
3.581	0.032	9.081	0.009
3.631	0.03	9.131	0.009
3.681	0.03	9.181	0.012
3.731	0.03	9.231	0.012
3.781	0.03	9.281	0.014
3.831	0.03	9.331	0.018
3.881	0.03	9.381	0.014
3.931	0.028	9.431	0.009
3.981	0.028	9.481	0.012
4.031	0.028	9.531	0.009
4.081	0.028	9.581	0.012
4.131	0.028	9.631	0.009
4.181	0.03	9.681	0.012
4.231	0.03	9.731	0.009
4.281	0.028	9.781	0.007
4.331	0.028	9.831	0.007

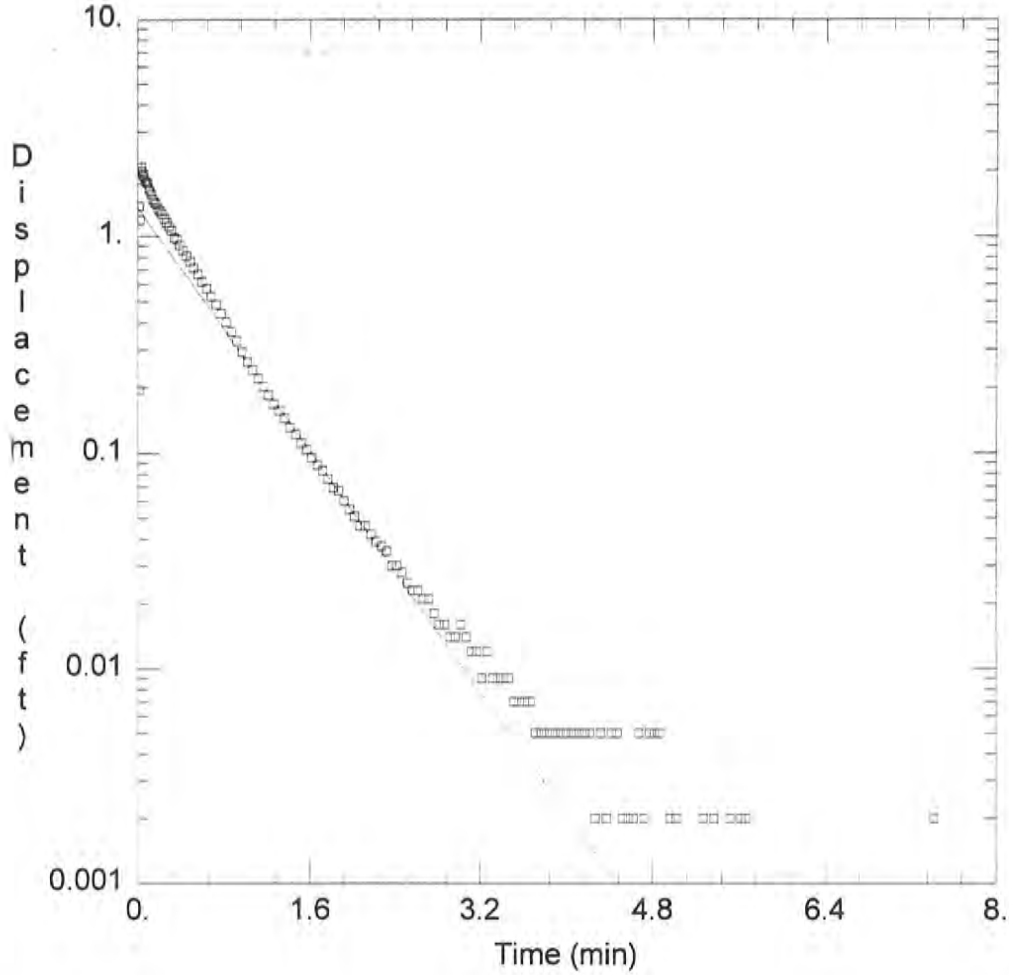
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.006282	ft/min
y0	0.828	ft



DH-49A RUN 2

Data Set: A:\DH-49A Run 2.aqt
Date: 10/08/03 Time: 08:32:01

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-49A
Test Date: 12/18/02

AQUIFER DATA

Saturated Thickness: 86.18 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-49A)

Initial Displacement: 2.071 ft
Wellbore Radius: 0.33 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 28.48 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-49A Run 2.aqt
Title: DH-49A Run 2
Date: 10/08/03
Time: 08:32:09

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/18/02
Test Well: DH-49A

AQUIFER DATA

Saturated Thickness: 86.18 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.071 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 5. ft
Total Well Penetration Depth: 28.48 ft
Gravel Pack Porosity: 0.3

No. of observations: 127

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0062	0.196	2.171	0.042
0.0127	1.372	2.22	0.039
0.0197	1.183	2.271	0.037
0.027	1.818	2.321	0.035
0.0349	2.071	2.37	0.03
0.0432	1.977	2.421	0.03
0.052	1.896	2.47	0.028
0.0614	1.864	2.521	0.025
0.0712	1.792	2.571	0.023
0.0817	1.767	2.62	0.023
0.0927	1.751	2.671	0.021
0.1044	1.656	2.72	0.021
0.1169	1.605	2.771	0.018
0.13	1.562	2.821	0.016
0.144	1.472	2.87	0.016
0.1589	1.428	2.921	0.014
0.1745	1.402	2.97	0.014
0.1912	1.338	3.021	0.016
0.2089	1.303	3.071	0.014
0.2275	1.264	3.12	0.012
0.2474	1.206	3.171	0.012
0.2684	1.151	3.22	0.009
0.2905	1.105	3.271	0.012

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.314	1.063	3.321	0.009
0.3389	0.983	3.37	0.009
0.3639	0.964	3.421	0.009
0.3905	0.911	3.47	0.009
0.4189	0.858	3.521	0.007
0.4489	0.81	3.571	0.007
0.4805	0.766	3.62	0.007
0.5155	0.715	3.671	0.007
0.5522	0.667	3.72	0.005
0.5905	0.618	3.771	0.005
0.6322	0.574	3.821	0.005
0.6755	0.528	3.87	0.005
0.7222	0.484	3.921	0.005
0.7705	0.441	3.97	0.005
0.8205	0.401	4.021	0.005
0.8705	0.364	4.071	0.005
0.9205	0.33	4.12	0.005
0.9705	0.293	4.17	0.005
1.021	0.263	4.221	0.005
1.071	0.242	4.271	0.002
1.121	0.221	4.321	0.005
1.171	0.203	4.37	0.002
1.22	0.185	4.42	0.005
1.271	0.168	4.471	0.005
1.321	0.157	4.521	0.002
1.371	0.145	4.571	0.002
1.421	0.131	4.62	0.002
1.47	0.122	4.67	0.005
1.521	0.111	4.721	0.002
1.571	0.104	4.771	0.005
1.621	0.095	4.821	0.005
1.671	0.088	4.87	0.005
1.72	0.083	4.971	0.002
1.771	0.076	5.021	0.002
1.821	0.069	5.271	0.002
1.871	0.067	5.37	0.002
1.921	0.06	5.521	0.002
1.97	0.055	5.62	0.002
2.021	0.051	5.67	0.002
2.071	0.046	7.42	0.002
2.12	0.046		

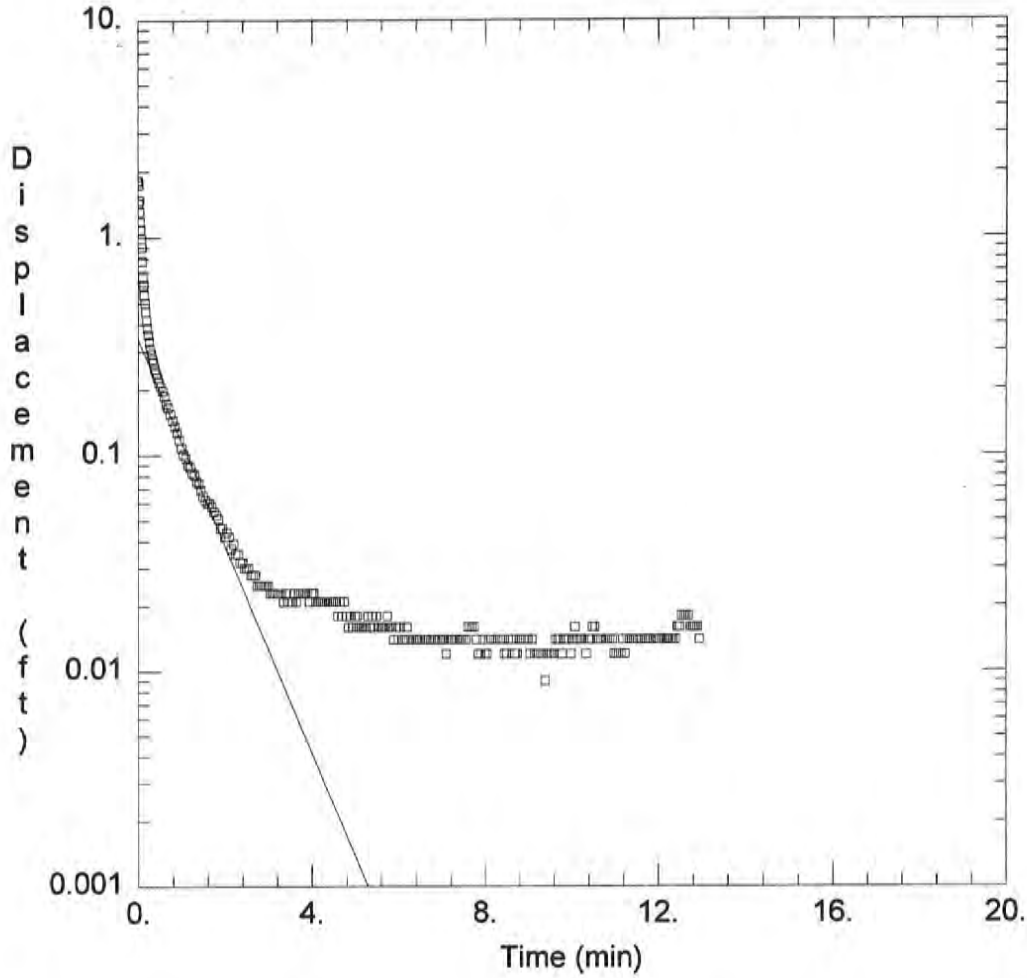
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.002559	ft/min
y0	1.35	ft



DH-50 RUN 2

Data Set: A:\DH-50 Run 2.aqt
Date: 01/07/03 Time: 13:21:10

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Test Location: Seven Mile Creek Landfill
Test Well: DH-50
Test Date: 12/17/02

AQUIFER DATA

Saturated Thickness: 100.6 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-50)

Initial Displacement: 1.815 ft
Wellbore Radius: 0.33 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.0876 ft
Well Skin Radius: 0.33 ft
Total Well Penetration Depth: 8.49 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Data Set: A:\DH-50 Run 2.aqt
Title: DH-50 Run 2
Date: 01/07/03
Time: 13:21:16

PROJECT INFORMATION

Company: Ayres Associates
Client: Onyx- Superior Services
Project: 10-1389.00
Location: Seven Mile Creek Landfill
Test Date: 12/17/02
Test Well: DH-50

AQUIFER DATA

Saturated Thickness: 100.6 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 1.815 ft
Casing Radius: 0.0876 ft
Wellbore Radius: 0.33 ft
Well Skin Radius: 0.33 ft
Screen Length: 10. ft
Total Well Penetration Depth: 8.49 ft
Gravel Pack Porosity: 0.3

No. of observations: 277

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0079	1.815	6.093	0.014
0.0162	1.435	6.144	0.014
0.025	1.746	6.194	0.016
0.0344	1.476	6.244	0.014
0.0442	1.315	6.293	0.014
0.0547	1.181	6.343	0.014
0.0657	1.091	6.394	0.014
0.0774	0.987	6.444	0.014
0.0899	0.904	6.494	0.014
0.103	0.78	6.543	0.014
0.117	0.657	6.593	0.014
0.1319	0.609	6.644	0.014
0.1475	0.547	6.694	0.014
0.1642	0.503	6.744	0.014
0.1819	0.459	6.793	0.014
0.2005	0.42	6.843	0.014
0.2204	0.385	6.894	0.014
0.2414	0.36	6.944	0.014
0.2635	0.334	6.994	0.014
0.287	0.311	7.043	0.014
0.3119	0.295	7.093	0.012
0.3369	0.279	7.144	0.014
0.3635	0.268	7.194	0.014

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3919	0.251	7.244	0.014
0.4219	0.24	7.293	0.014
0.4535	0.228	7.343	0.014
0.4885	0.217	7.394	0.014
0.5252	0.208	7.444	0.014
0.5635	0.198	7.494	0.014
0.6052	0.187	7.543	0.014
0.6485	0.173	7.593	0.016
0.6952	0.166	7.644	0.016
0.7435	0.155	7.694	0.016
0.7935	0.145	7.744	0.016
0.8435	0.136	7.793	0.014
0.8935	0.127	7.843	0.012
0.9435	0.118	7.894	0.012
0.9935	0.108	7.944	0.014
1.044	0.101	7.994	0.012
1.093	0.097	8.043	0.012
1.144	0.09	8.094	0.014
1.194	0.088	8.143	0.014
1.244	0.083	8.194	0.014
1.294	0.081	8.243	0.014
1.343	0.076	8.293	0.014
1.394	0.074	8.344	0.014
1.444	0.069	8.393	0.014
1.494	0.065	8.444	0.012
1.544	0.062	8.493	0.012
1.593	0.06	8.543	0.014
1.644	0.06	8.594	0.014
1.694	0.058	8.643	0.014
1.744	0.055	8.694	0.012
1.794	0.053	8.743	0.012
1.843	0.051	8.793	0.014
1.894	0.046	8.844	0.014
1.944	0.046	8.893	0.014
1.994	0.042	8.944	0.014
2.043	0.044	8.993	0.014
2.094	0.042	9.043	0.012
2.144	0.037	9.094	0.014
2.193	0.039	9.143	0.012
2.244	0.035	9.194	0.012
2.293	0.035	9.243	0.012
2.344	0.032	9.293	0.012
2.394	0.032	9.344	0.012
2.443	0.03	9.393	0.009
2.494	0.03	9.444	0.012
2.543	0.03	9.493	0.012
2.594	0.028	9.543	0.012
2.644	0.028	9.594	0.012
2.693	0.028	9.643	0.014
2.744	0.025	9.694	0.014
2.793	0.025	9.743	0.014
2.844	0.025	9.793	0.012
2.894	0.025	9.844	0.014
2.943	0.025	9.893	0.014
2.994	0.025	9.944	0.014

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
3.043	0.023	9.993	0.012
3.094	0.023	10.04	0.014
3.144	0.023	10.09	0.016
3.193	0.023	10.14	0.014
3.244	0.023	10.19	0.014
3.293	0.023	10.24	0.014
3.344	0.021	10.29	0.014
3.394	0.023	10.34	0.012
3.443	0.021	10.39	0.014
3.494	0.021	10.44	0.014
3.543	0.021	10.49	0.016
3.594	0.023	10.54	0.016
3.644	0.021	10.59	0.014
3.693	0.023	10.64	0.014
3.744	0.023	10.69	0.014
3.793	0.023	10.74	0.014
3.844	0.023	10.79	0.014
3.894	0.023	10.84	0.014
3.943	0.021	10.89	0.014
3.994	0.023	10.94	0.014
4.043	0.023	10.99	0.012
4.093	0.021	11.04	0.012
4.144	0.021	11.09	0.012
4.194	0.021	11.14	0.012
4.244	0.021	11.19	0.014
4.293	0.021	11.24	0.012
4.343	0.021	11.29	0.014
4.394	0.021	11.34	0.014
4.444	0.021	11.39	0.014
4.494	0.021	11.44	0.014
4.543	0.021	11.49	0.014
4.593	0.018	11.54	0.014
4.644	0.021	11.59	0.014
4.694	0.018	11.64	0.014
4.744	0.021	11.69	0.014
4.793	0.018	11.74	0.014
4.843	0.016	11.79	0.014
4.894	0.018	11.84	0.014
4.944	0.016	11.89	0.014
4.994	0.018	11.94	0.014
5.043	0.018	11.99	0.014
5.093	0.016	12.04	0.014
5.144	0.016	12.09	0.014
5.194	0.016	12.14	0.014
5.244	0.016	12.19	0.014
5.293	0.018	12.24	0.014
5.343	0.016	12.29	0.014
5.394	0.018	12.34	0.014
5.444	0.016	12.39	0.014
5.494	0.018	12.44	0.016
5.543	0.016	12.49	0.016
5.593	0.016	12.54	0.018
5.644	0.016	12.59	0.018
5.694	0.016	12.64	0.018
5.744	0.018	12.69	0.018

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.793	0.016	12.74	0.016
5.843	0.016	12.79	0.016
5.894	0.014	12.84	0.016
5.944	0.016	12.89	0.016
5.994	0.014	12.94	0.014
6.043	0.016		

SOLUTION

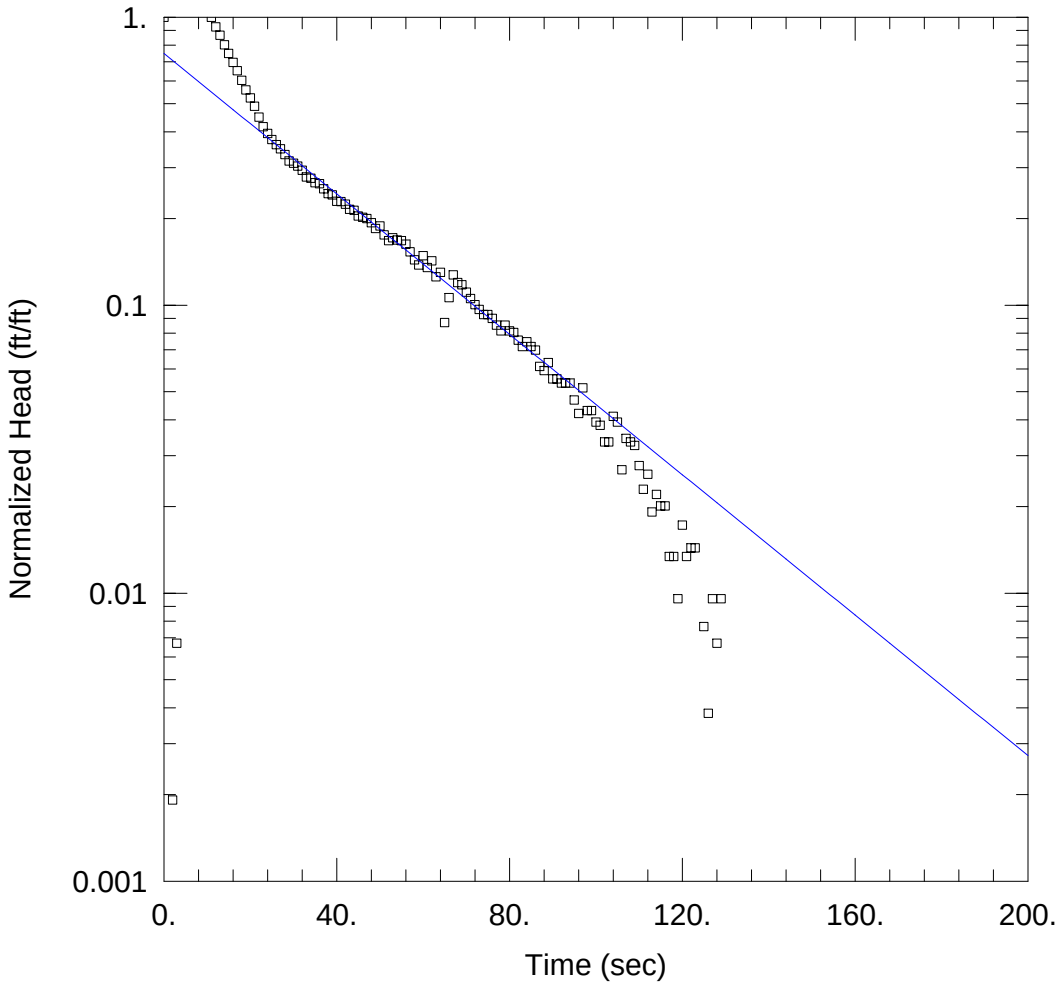
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.004258	ft/min
y0	0.346	ft

February 2019 Hydraulic Conductivity Test Data



WELL TEST ANALYSIS

Data Set: X:\...\DH-60 #1.aqt
Date: 02/11/19 Time: 15:26:59

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-60 #1
Test Date: 2/5/2019

AQUIFER DATA

Saturated Thickness: 16.3 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-60 #1)

Initial Displacement: 1.045 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.0854 ft
Static Water Column Height: 10.3 ft
Screen Length: 15. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0008341 cm/sec
y0 = 0.7816 ft

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ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/5/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-60

INITIAL DRAWDOWN
H(0) = 1.045 FT

SATURATED AQUIFER THICKNESS *
(b) = 16.30 FT

EFFECTIVE SCREEN LENGTH
(L) = 15 FT

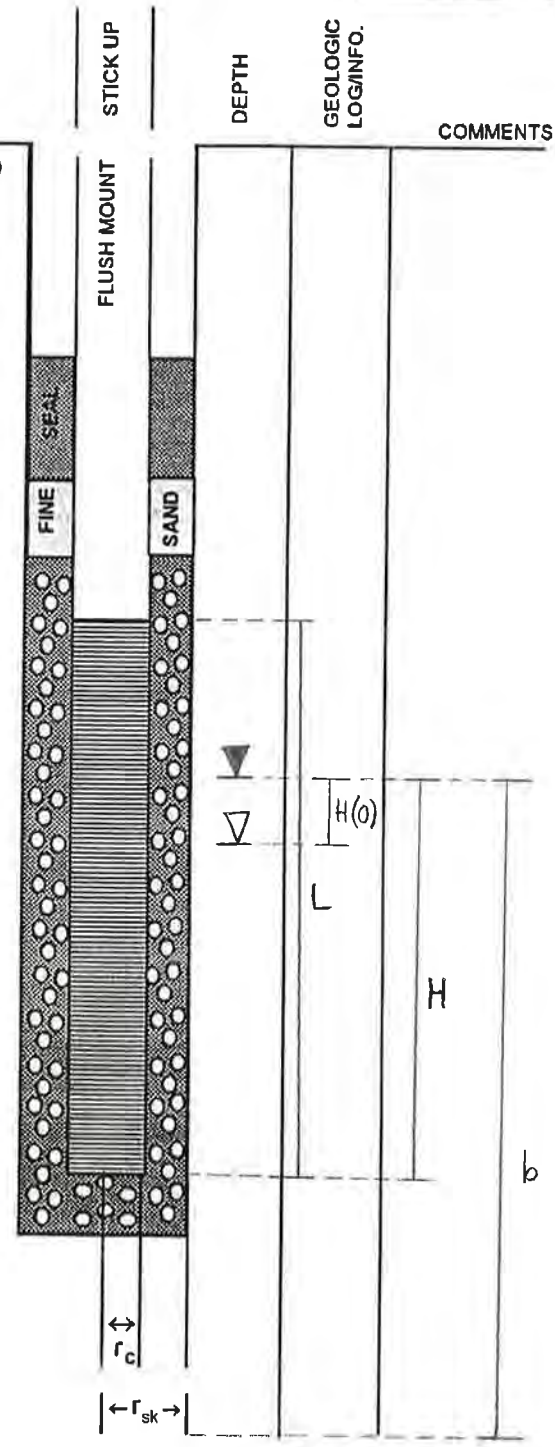
STATIC HEIGHT OF WATER
(H) = 10.30 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0854 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.2500 FT

FILTER PACK POROSITY
n(e) = 0.25



▼ STATIC WATER LEVEL = 49.70 FT

▽ WATER LEVEL AFTER INITIAL DRAWDOWN = 50.74 FT

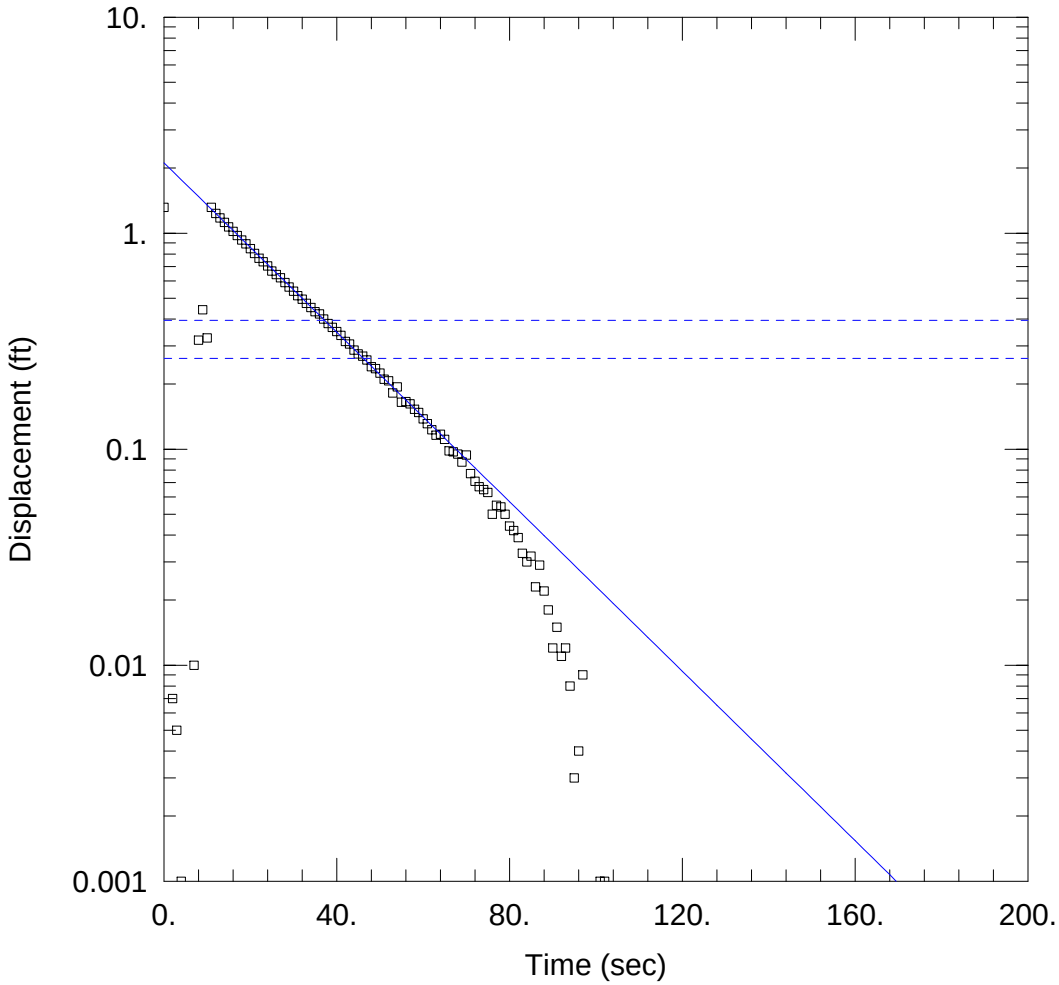
DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #1 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-60. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

_X_ YES ____ OTHER DEPTH BASED ON ADDITIONAL DATA



WELL TEST ANALYSIS

Data Set: X:\...\DH-60A #1.aqt
Date: 02/11/19 Time: 15:07:45

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-60A #1
Test Date: 2/5/2019

AQUIFER DATA

Saturated Thickness: 47.94 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-60A #1)

Initial Displacement: 1.317 ft
Total Well Penetration Depth: 41.94 ft
Casing Radius: 0.0796 ft
Static Water Column Height: 41.94 ft
Screen Length: 5. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.003502 cm/sec y0 = 2.118 ft

ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/5/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-60A

INITIAL DRAWDOWN
H(0) = 1.317 FT

SATURATED AQUIFER THICKNESS *
(b) = 47.94 FT

EFFECTIVE SCREEN LENGTH
(L) = 5 FT

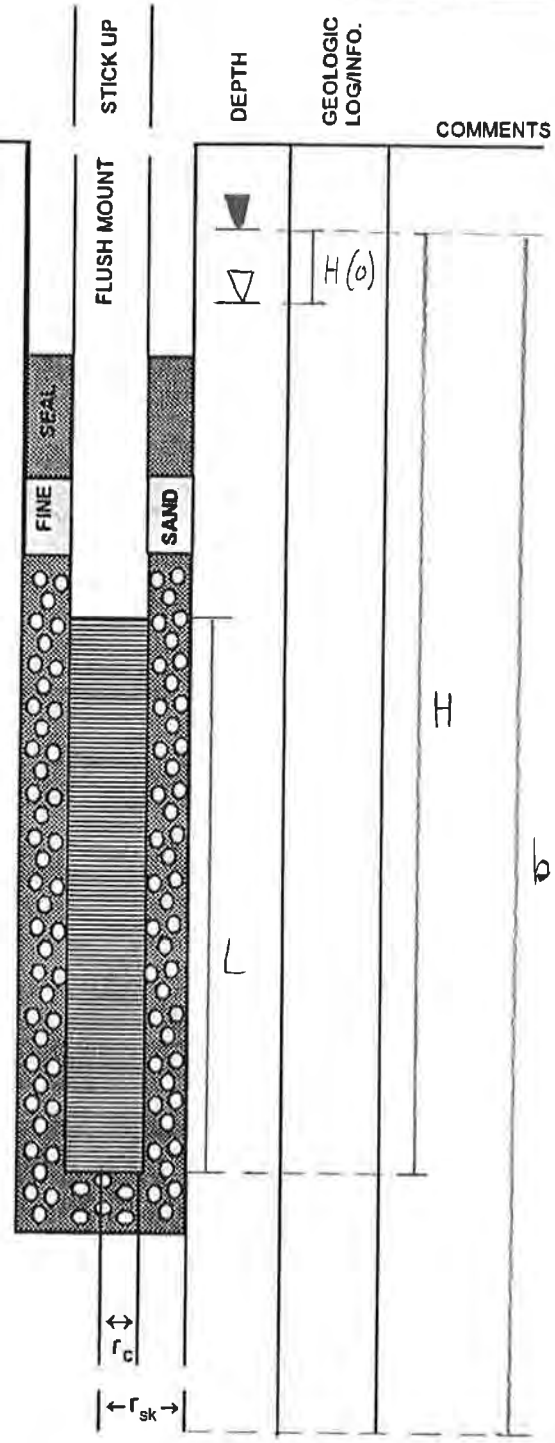
STATIC HEIGHT OF WATER
(H) = 41.94 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0796 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.2500 FT

FILTER PACK POROSITY
n(e) = 0.25



STATIC WATER LEVEL = 48.99 FT

WATER LEVEL AFTER INITIAL DRAWDOWN = 50.31 FT

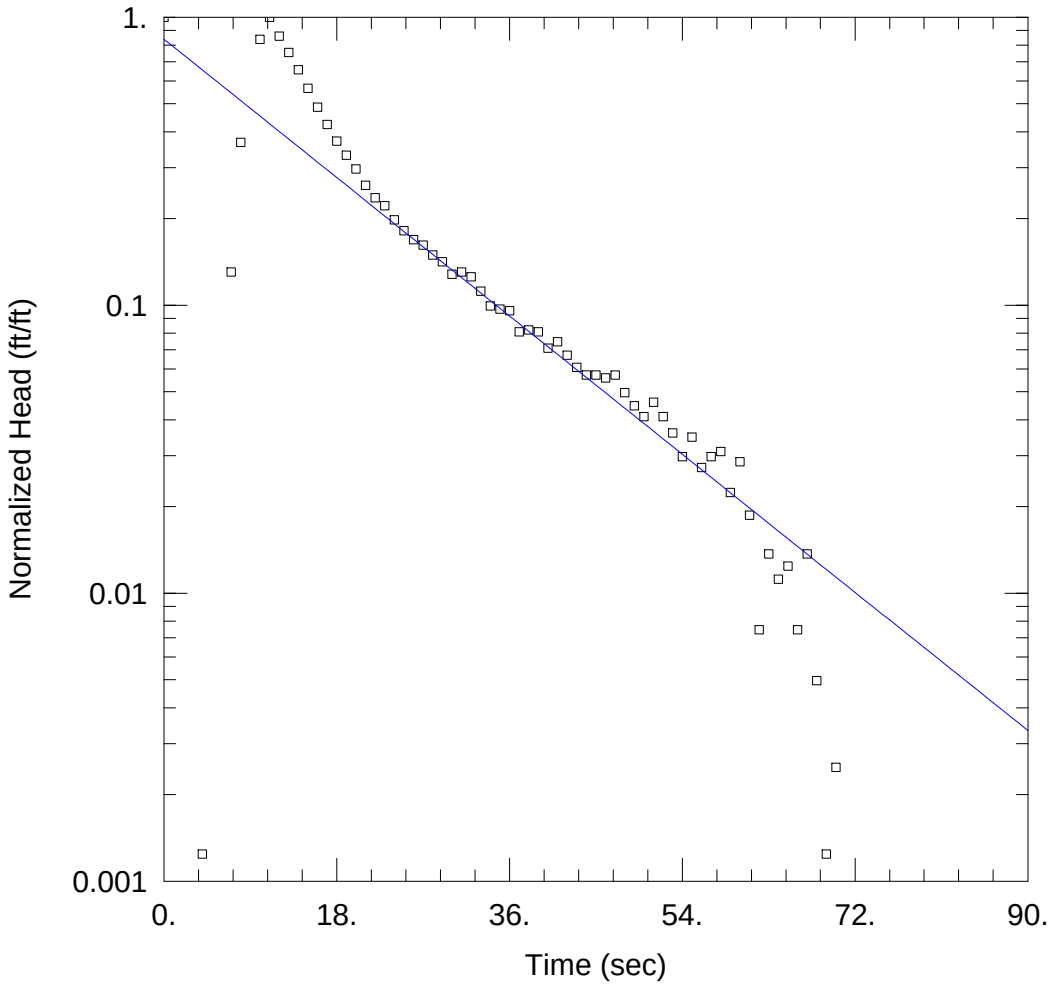
DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #1 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-60A. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

X YES ____ OTHER DEPTH BASED ON ADDITIONAL DATA



WELL TEST ANALYSIS

Data Set: X:\...\DH-61 #1.aqt
Date: 02/11/19 Time: 16:07:27

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-61 #1
Test Date: 2/6/2019

AQUIFER DATA

Saturated Thickness: 14.72 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-61 #1)

Initial Displacement: 0.805 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.0854 ft
Static Water Column Height: 6.72 ft
Screen Length: 15. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.001957 cm/sec
y0 = 0.6744 ft

cornerstone
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ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/6/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-61

INITIAL DRAWDOWN
H(0) = 0.805 FT

SATURATED AQUIFER THICKNESS *
(b) = 14.72 FT

EFFECTIVE SCREEN LENGTH
(L) = 15 FT

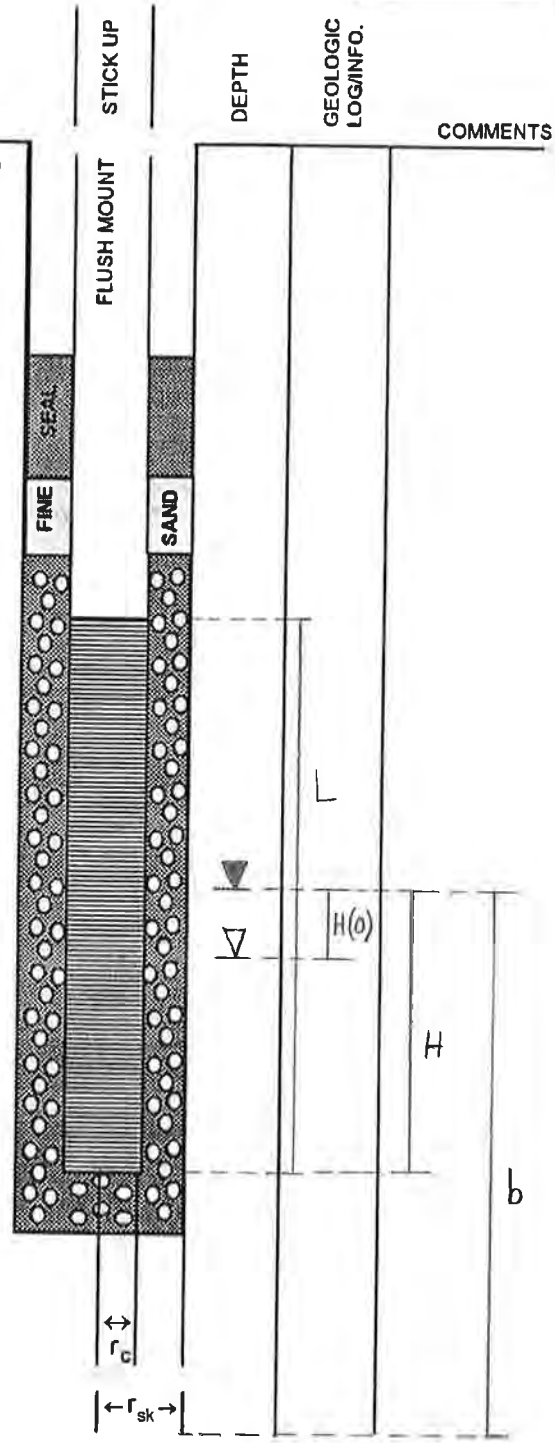
STATIC HEIGHT OF WATER
(H) = 6.72 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0854 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.2500 FT

FILTER PACK POROSITY
n(e) = 0.25



▼ STATIC WATER LEVEL = 52.49 FT

▽ WATER LEVEL AFTER INITIAL DRAWDOWN = 53.29 FT

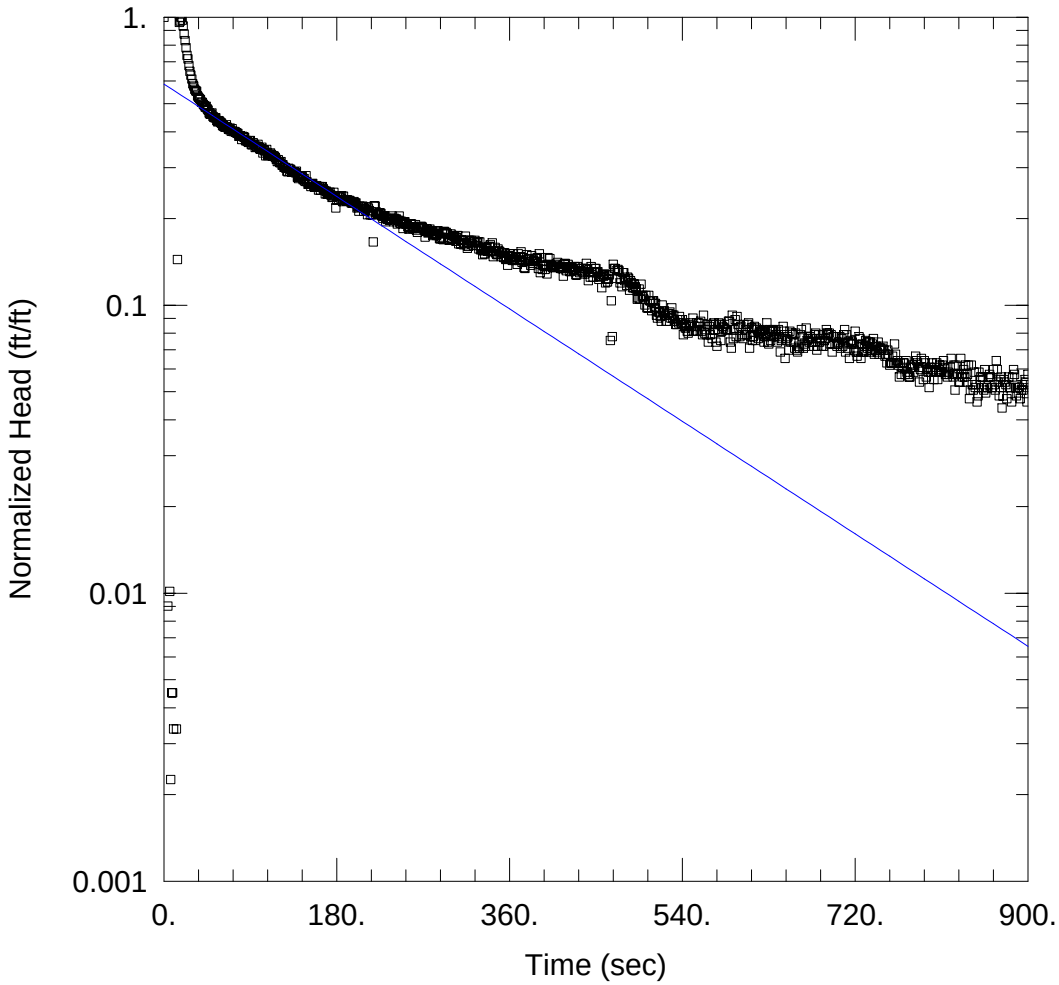
DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #1 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-61. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

X YES ____ OTHER DEPTH BASED ON ADDITIONAL DATA



WELL TEST ANALYSIS

Data Set: X:\...\DH-62 #3.aqt
Date: 02/12/19 Time: 09:22:44

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-62 #3
Test Date: 2/5/2019

AQUIFER DATA

Saturated Thickness: 15.67 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-62 #3)

Initial Displacement: 0.888 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.0854 ft
Static Water Column Height: 9.67 ft
Screen Length: 15. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0001507 cm/sec
y0 = 0.5201 ft

cornerstone
A TETRA TECH COMPANY

ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/5/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-62

INITIAL DRAWDOWN
H(0) = 0.888 FT

SATURATED AQUIFER THICKNESS *
(b) = 15.67 FT

EFFECTIVE SCREEN LENGTH
(L) = 15 FT

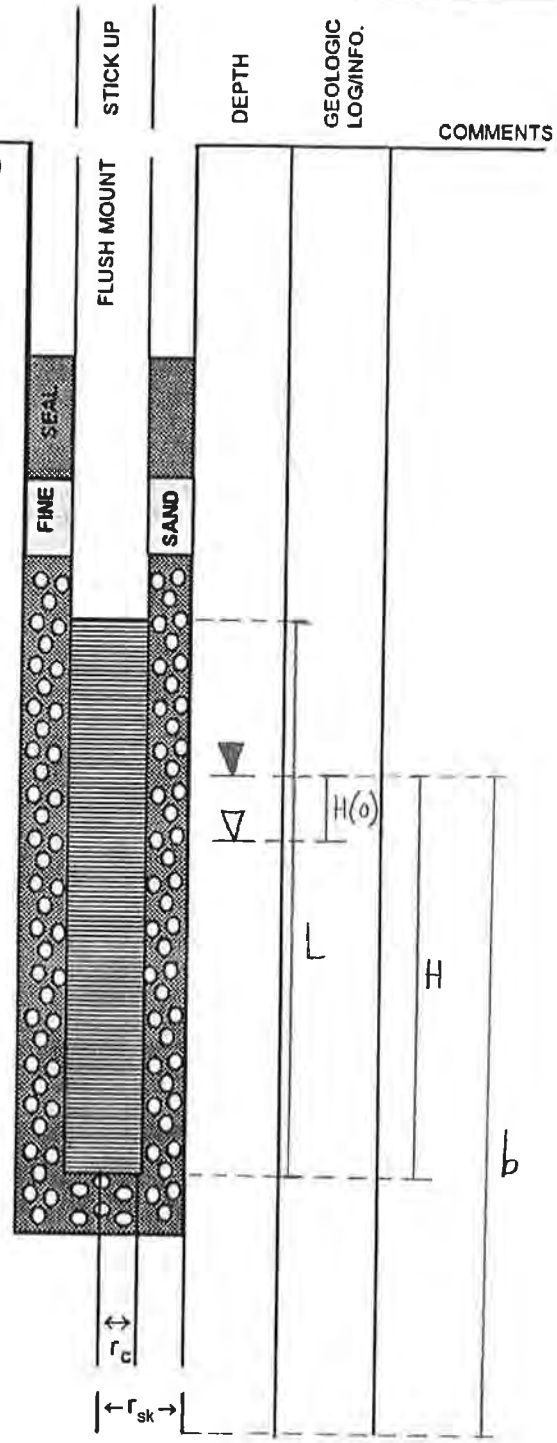
STATIC HEIGHT OF WATER
(H) = 9.67 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0854 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.2500 FT

FILTER PACK POROSITY
n(e) = 0.25



▼ STATIC WATER LEVEL = 49.43 FT

▽ WATER LEVEL AFTER INITIAL DRAWDOWN = 50.32 FT

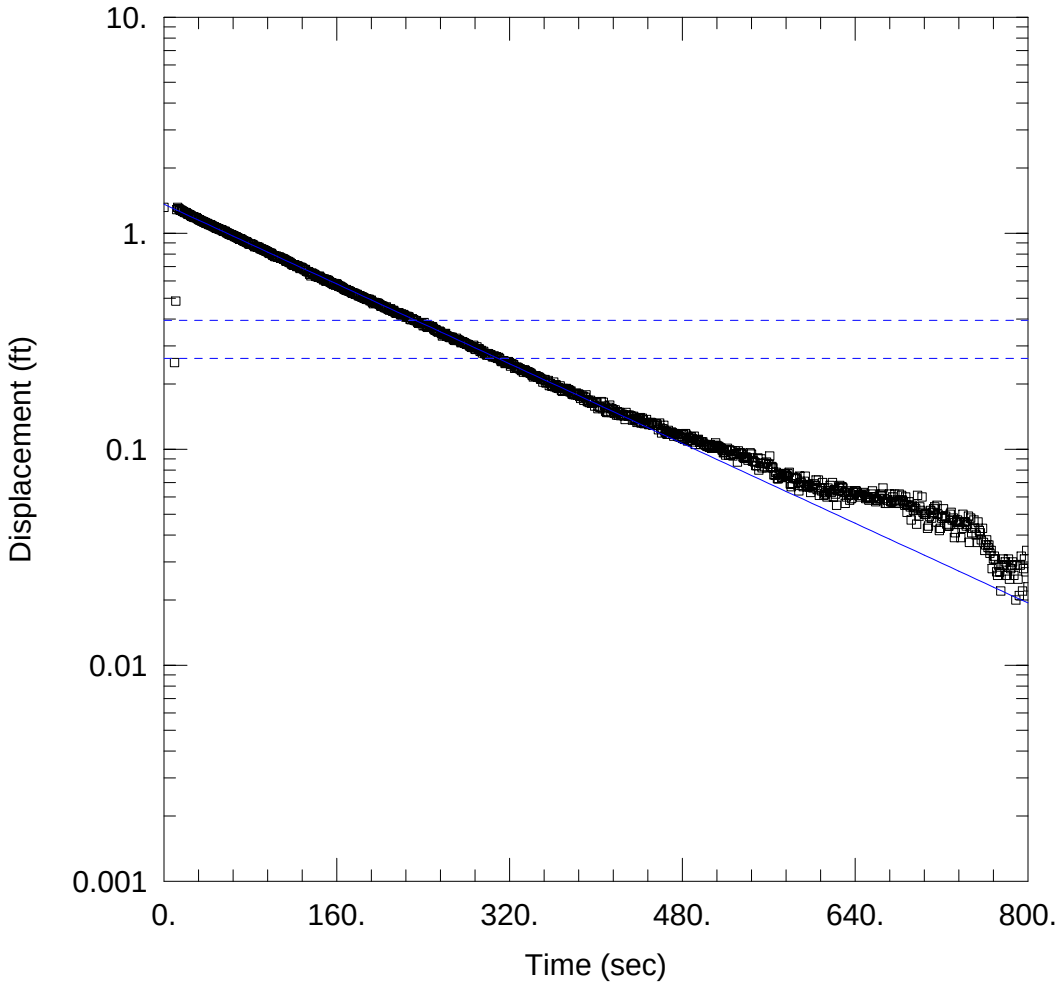
DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #3 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-62. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

X YES ____ OTHER DEPTH BASED ON ADDITIONAL DATA



WELL TEST ANALYSIS

Data Set: X:\...\DH-62A #1.aqt
Date: 02/11/19 Time: 16:27:40

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-62A #1
Test Date: 2/5/2019

AQUIFER DATA

Saturated Thickness: 44.9 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-62A #1)

Initial Displacement: 1.314 ft
Total Well Penetration Depth: 38.9 ft
Casing Radius: 0.0796 ft
Static Water Column Height: 38.9 ft
Screen Length: 5. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0004087 cm/sec y0 = 1.361 ft

cornerstone
A TETRA TECH COMPANY

ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/5/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-62A

GROUND SURFACE

(FIGURE IS NOT TO SCALE)

INITIAL DRAWDOWN
H(0) = 1.314 FT

SATURATED AQUIFER THICKNESS *
(b) = 44.90 FT

EFFECTIVE SCREEN LENGTH
(L) = 5 FT

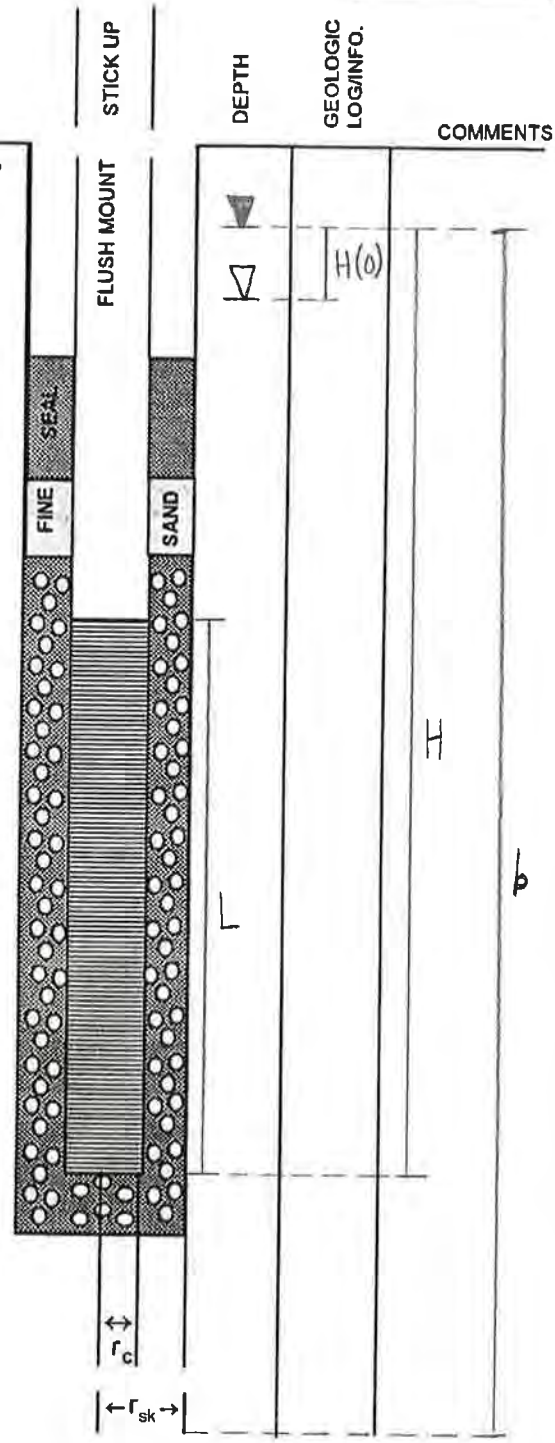
STATIC HEIGHT OF WATER
(H) = 38.90 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0796 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.3333 FT

FILTER PACK POROSITY
n(e) = 0.25



▼ STATIC WATER LEVEL = 49.40 FT

▽ WATER LEVEL AFTER INITIAL DRAWDOWN = 50.71 FT

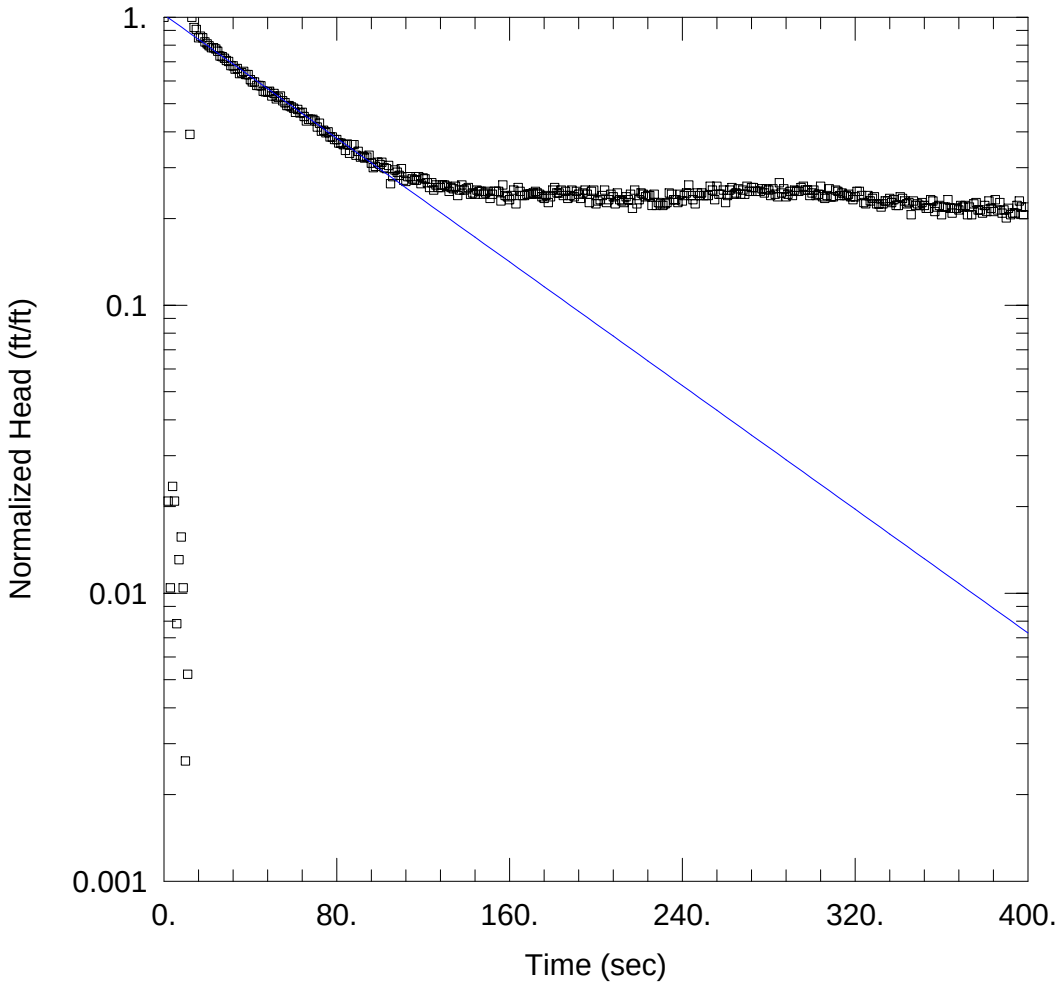
DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #1 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-62A. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

_X_ YES ___ OTHER DEPTH BASED ON ADDITIONAL DATA



WELL TEST ANALYSIS

Data Set: X:\...\DH-63 #1.aqt
Date: 02/12/19 Time: 09:37:01

PROJECT INFORMATION

Company: Cornerstone
Client: ADS SMCL
Project: 180720
Location: Eau Claire, WI
Test Well: DH-63 #1
Test Date: 2/6/2019

AQUIFER DATA

Saturated Thickness: 9.76 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-63 #1)

Initial Displacement: 0.383 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.0854 ft
Static Water Column Height: 3.76 ft
Screen Length: 15. ft
Well Radius: 0.0992 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0005826 cm/sec
y0 = 0.3908 ft

cornerstone
A TETRA TECH COMPANY

ANALYSIS - BOUWER AND RICE SINGLE-WELL RESPONSE TEST

PROJECT: SMCL - SEC. 2 NE EXP - FEASIBILITY

PREPARED BY: T. DAIGLE

☒ SLUG TEST ☐ BAILDOWN

PROJECT #: 180720

CHECKED BY: JMP

FIELD TEST DATE: 2/6/2019

FIELD TEST PERFORMED BY: L. SPECKETER

WELL NUMBER DH-63

INITIAL DRAWDOWN
H(0) = 0.383 FT

SATURATED AQUIFER THICKNESS *
(b) = 9.76 FT

EFFECTIVE SCREEN LENGTH
(L) = 15 FT

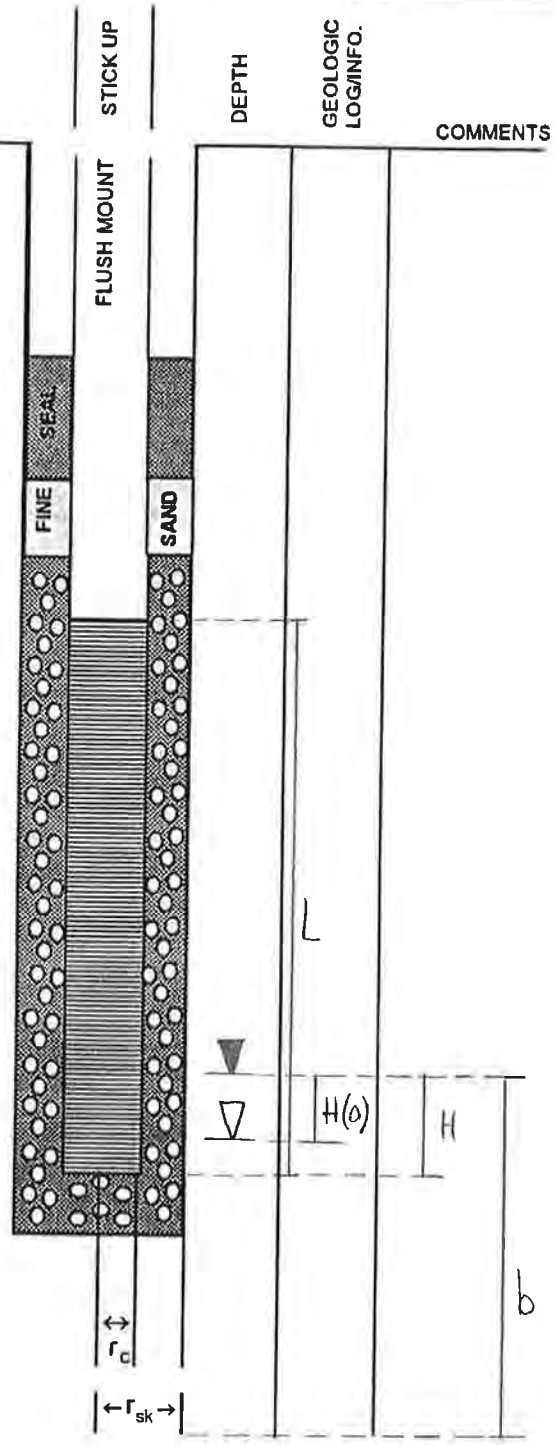
STATIC HEIGHT OF WATER
(H) = 3.76 FT

RADIUS OF WELL CASING (I.D.)
r_c = 0.0854 FT

RADIUS OF WELL (O.D.)
r_w = 0.0992 FT

RADIUS OF WELL SKIN (BOREHOLE)
r_{sk} = 0.2500 FT

FILTER PACK POROSITY
n(e) = 0 25



STATIC WATER LEVEL = 49.63 FT

WATER LEVEL AFTER INITIAL DRAWDOWN = 50.01 FT

DEPTH TO WATER MEASURED FROM TOP OF PVC CASING.

- ALL UNITS ARE IN FEET, UNLESS OTHERWISE NOTED.
- OTHER COMMENTS/ASSUMPTIONS:

TEST #1 (RISING HEAD) DATA WAS USED TO CALCULATE THE HYDRAULIC CONDUCTIVITY FOR DH-63. UNCONFINED AQUIFER.

* ASSUMES THAT THE AQUIFER EXTENDS AT LEAST 5 FEET BELOW THE END OF BORING:

_X_ YES ____ OTHER DEPTH BASED ON ADDITIONAL DATA