

# OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
1	36.7	3350.	.1000E-04	.1000E-04
3	11.7	3950.	.1046E-04	.2644E-03
5	1.16	6731.	.1204E-04	.1852E-02
7	.405	6967.	.1211E-04	.7984E-02
9	.390	6950.	.1210E-04	.1025E-01
11	.389	6942.	.1211E-04	.1060E-01

*CPI old 1 HM 178*

TERMINATION DUE TO PARAMETER CONVERGENCE

## FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
11	.389	6938.	.1212E-04	.1060E-01

## FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	1.000	.0000	.0000

DO YOU WANT A SENSITIVITY ANALYSIS ? (Y/N)

*T = 51, 896 gpc/ft*

*S = 1.212 x 10<sup>-5</sup>*

*K/p = 1.06 day<sup>-1</sup>*

## SENSITIVITY ANALYSIS

### TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	6938.	6885.	6990.
STORTIVITY	.1212E-04	0.0000	0.3578E-01
SPEC_LEAK	.1060E-01	0.0000	1131.

TO CONTINUE ENTER "RETURN"

# OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
1	.117	6938.	.1212E-04	.1060E-01
3	.336E-01	6940.	.1212E-04	.2579E-01
7	.335E-01	8359.	.1180E-04	.2347E-01
9	.317E-01	8359.	.1180E-04	.2007E-01
11	.317E-01	8359.	.1180E-04	.2046E-01

*CPI obs 2 HM 153*

TERMINATION DUE TO PARAMETER CONVERGENCE

## FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
11	.317E-01	8359.	.1180E-04	.2046E-01

*T = 62,525 gpd/ft*

*S = 1.18 x 10<sup>-5</sup>*

## FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	.0000	1.000	.0000

*K<sub>b</sub>' = 2.046 day<sup>-1</sup>*

DO YOU WANT A SENSITIVITY ANALYSIS ? (Y/N)

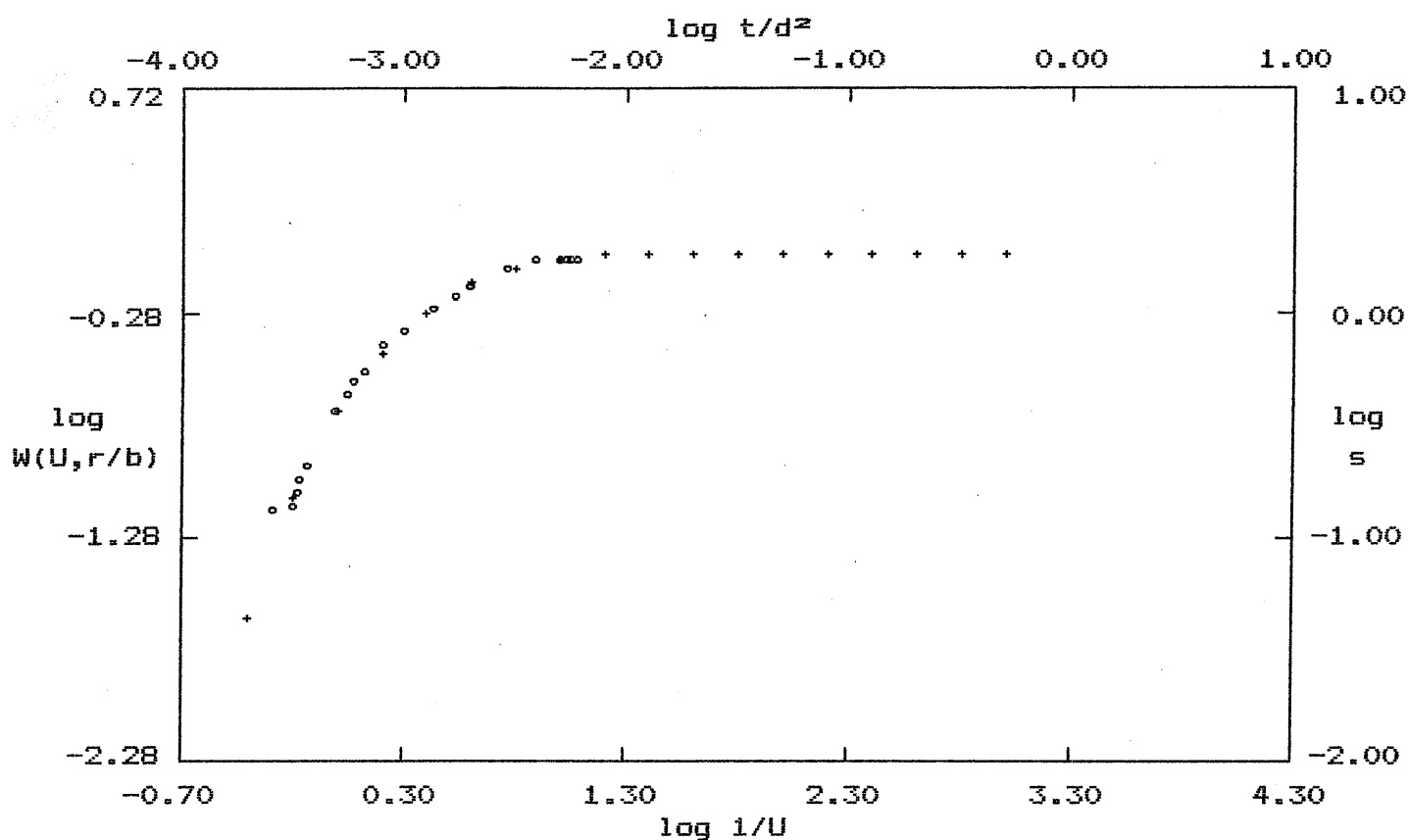
## SENSITIVITY ANALYSIS

### TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	8359.	5663.	0.1105E+05
STORTIVITY	.1180E-04	0.0000	0.9526E-01
SPEC_LEAK	.2045E-01	0.0000	3009.

TO CONTINUE ENTER "RETURN"

# PUMP TEST DATA



o - Data

+ - Type Curve

Confined Leaky:  $r/B = 0.90$

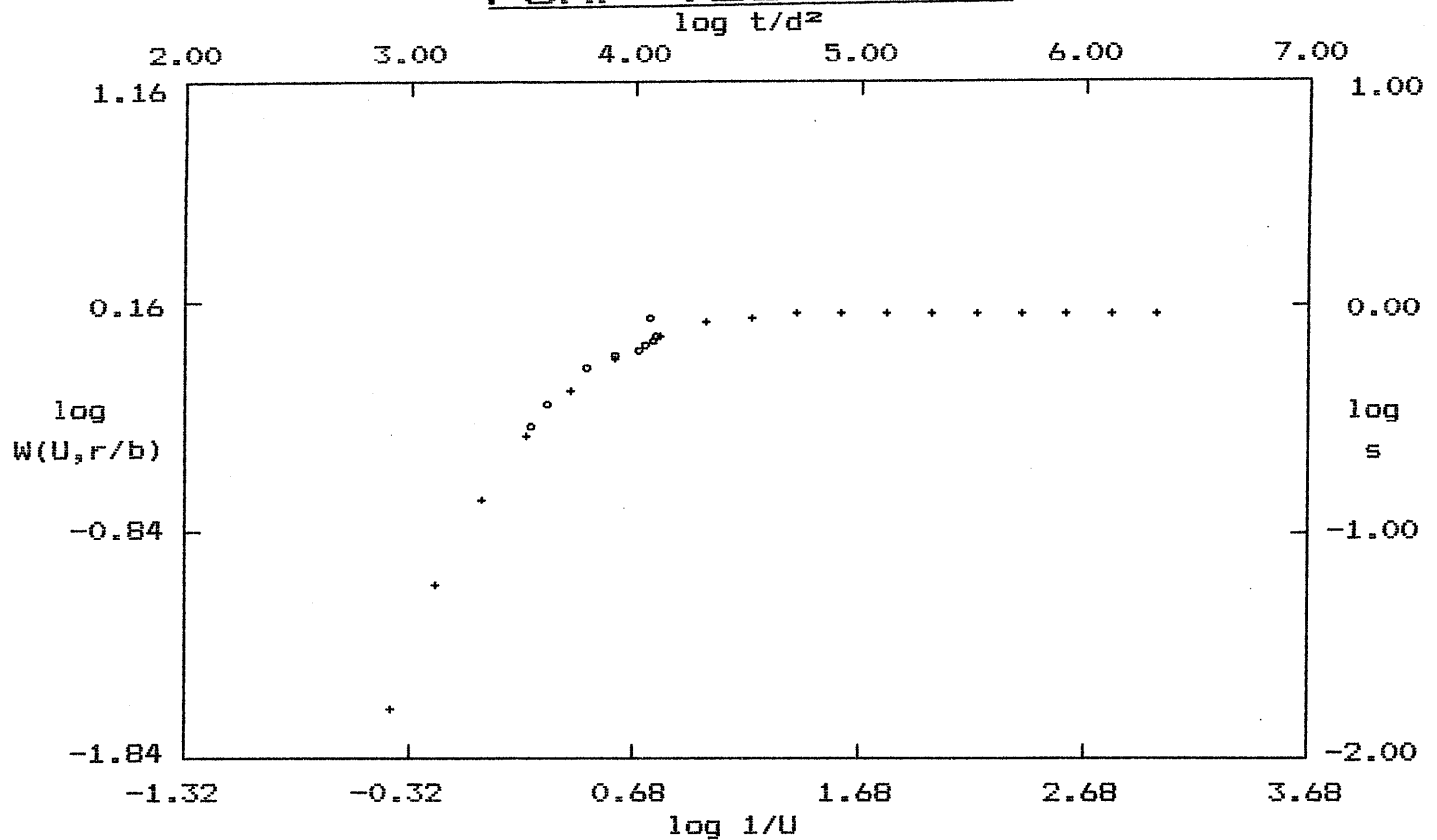
## SOLUTION

Transmissivity =  $1.396E+00$  ft.<sup>2</sup>/min. = 15,037 gpd/ft

Storativity =  $2.798E-03$

CPI obs 1 HM 178

# PUMP TEST DATA



o - Data

+ - Type Curve

Confined Leaky:  $r/B = 0.70$

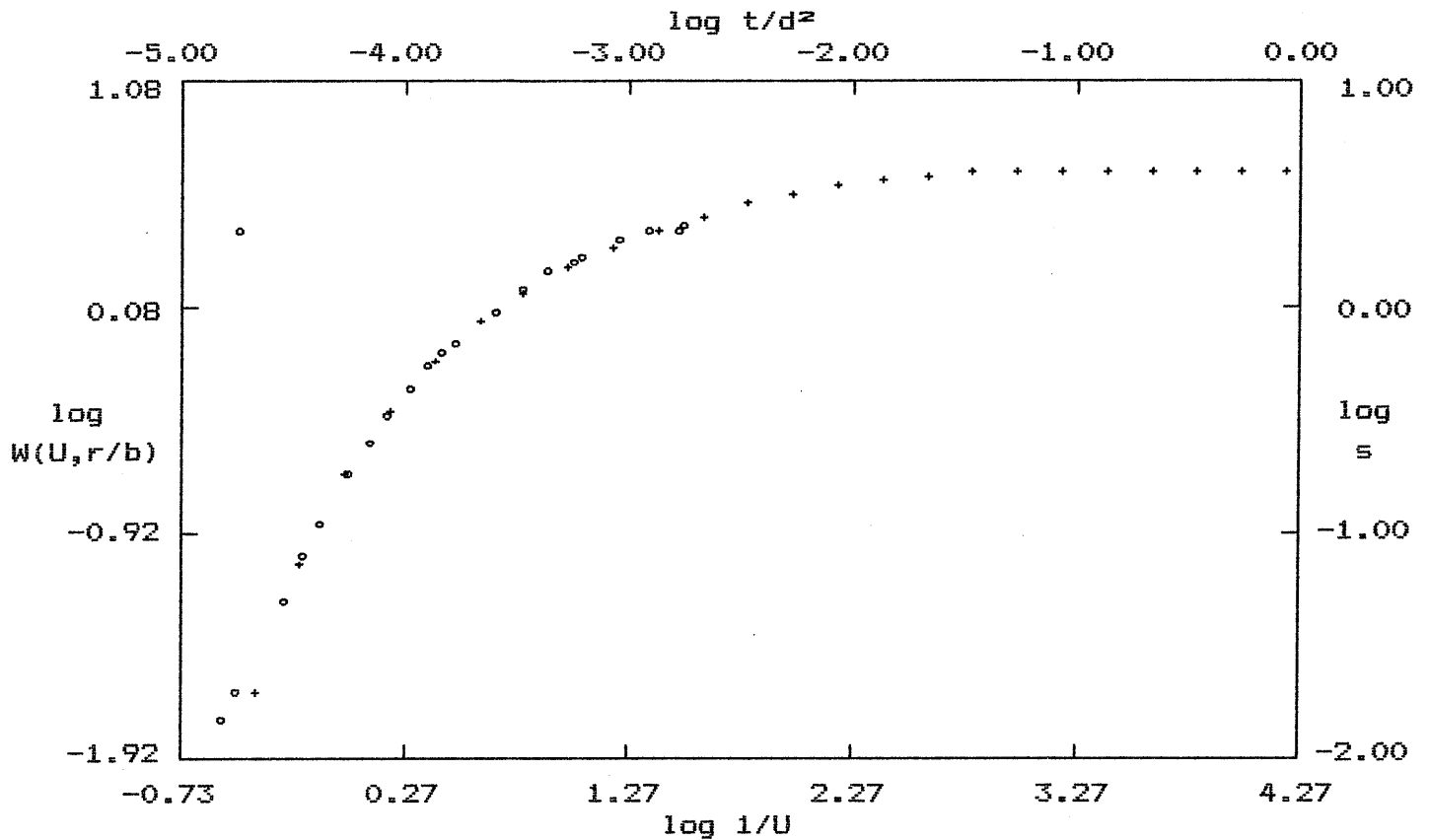
## SOLUTION

Transmissivity =  $3.844E+00$  ft.<sup>2</sup>/min. = 41,404 gpd/ft

Storativity =  $3.213E+04$

CPI 0602 HM133

# PUMP TEST DATA



o - Data

+ - Type Curve

Confined Leaky:  $r/B = 0.10$

## SOLUTION

Transmissivity =  $3.197E+00$  ft.<sup>2</sup>/min. = 34,436 gpd/ft

Storativity =  $6.868E-04$

CPI: 063 HM 179