APT ANALYSIS

SITE: Monreve Ranch APT

727050
986500

Section 25 Township 39 S Range 40 E

REPORT: SFWMD Test

GEOLOGIC DATA: pg. ____, _____

WELL NUMBER OF WELL DESCRIBED: _____

DEPTH (LSD)	LITHOLOGY
0-7	Sand, fine to coarse, frosted, organics, 4-7' silty
7-10	sandstone, low perm, silty, micritic, mod. induration
10-20	Shells, w/ sandstone, poss. high permeab., minor sand
20-30	sand, yellow gray, med to coarse, shell 30%
30-74	interbedded shell, limestone/sandstone
74-80	sandstone, low perm, silty, poorly indurated
80-85	Sand, green gray, low perm., micro to fine, micrite 20%
85-100	limestone, yellow gray, low perm, poor indur., 40% loose shell
100-111	shells, 10% micrite, 10% sand
111-124	limestone, light olive gray, low perm, poor indur, 45% micrite, 30% sand, shells
124-132	sand, olive gray, micro to fine, low perm., 15% micrite, 5% silt, 3% phosp. sand

Producing zone interval: 10-70' (lsd) _____ (msl) elev ≈ 22'

Aquifer name: _____

Static Water Level at the site is approximately 20' ft. msl.

WELL DESCRIPTIONS:

Well	Diam. (in)	Total Depth	Cased Depth	Scr/Open Interval	Slot Size	Radius	Max Drawdown
PW	6"	70	30	30-70	.020	0	29.61'
1D	2	70	30	30-70	.020	49.3	5.43'
2S	2	10	5	5-10	.020	99.5	2.68'
2D	2	70	30	30-70	.020	99.8	3.78
3D	2	70	30	30-70	.020	150	3.24

INFLUENCING FACTORS:

none

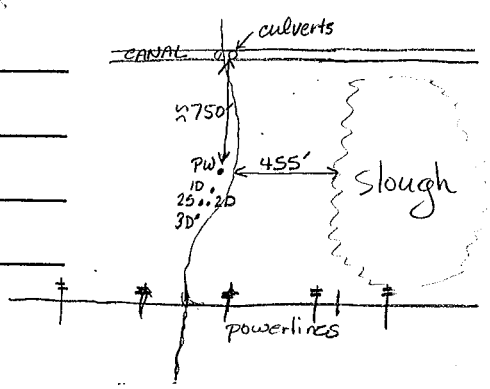
APT: pg. _____

Started: Dec 4, 1989 1700 (5:00 PM)

Duration: 4320 min = 72 hours

Discharge: 136 gpm

Recovery: 720 min = 12 hours



Comments:

1) no rain, clear, cold

Pump set at 40' below TOC (10' into screened interval)

2) Tried pumping @ 160' - pump pulled air & rate fluctuated wildly

3) _____

CONSULTANT'S ANALYSIS: pg. _____

Method: Neuman

Results:

Well	Transmissivity (GPD/FT)	S or Sy	Leakance ( )
1D-1	8425	4.00×10^{-4}	
2D	11,132	3.8×10^{-4}	
3D	22,265	1.98×10^{-4}	
2S	26,416	1.27×10^{-3}	

Comments: _____

Method: Cooper

Results:

Well	Transmissivity (GPD/FT)	S or Sy	Leakance (K'/b') $days^{-1}$
1D-1	6361	4.9×10^{-4}	.054
2D-2	14,167	3.89×10^{-4}	.0076
3D-2	22,264	1.98×10^{-4}	.0013

Comments: _____

Method: Recovery

Results:

Well	Transmissivity (GPD/FT)	S or Sy	Leakance ( )
1D1	28,723		
2D2	24,259		
3D2	30,687		

Comments: _____

REANALYSIS:

Method: _____

Results:

Well	Transmissivity (GPD/FT)	S or Sy	Leakance ( )

Comments: _____

Method: _____

Results:

Well	Transmissivity (GPD/FT)	S or Sy	Leakance ( )

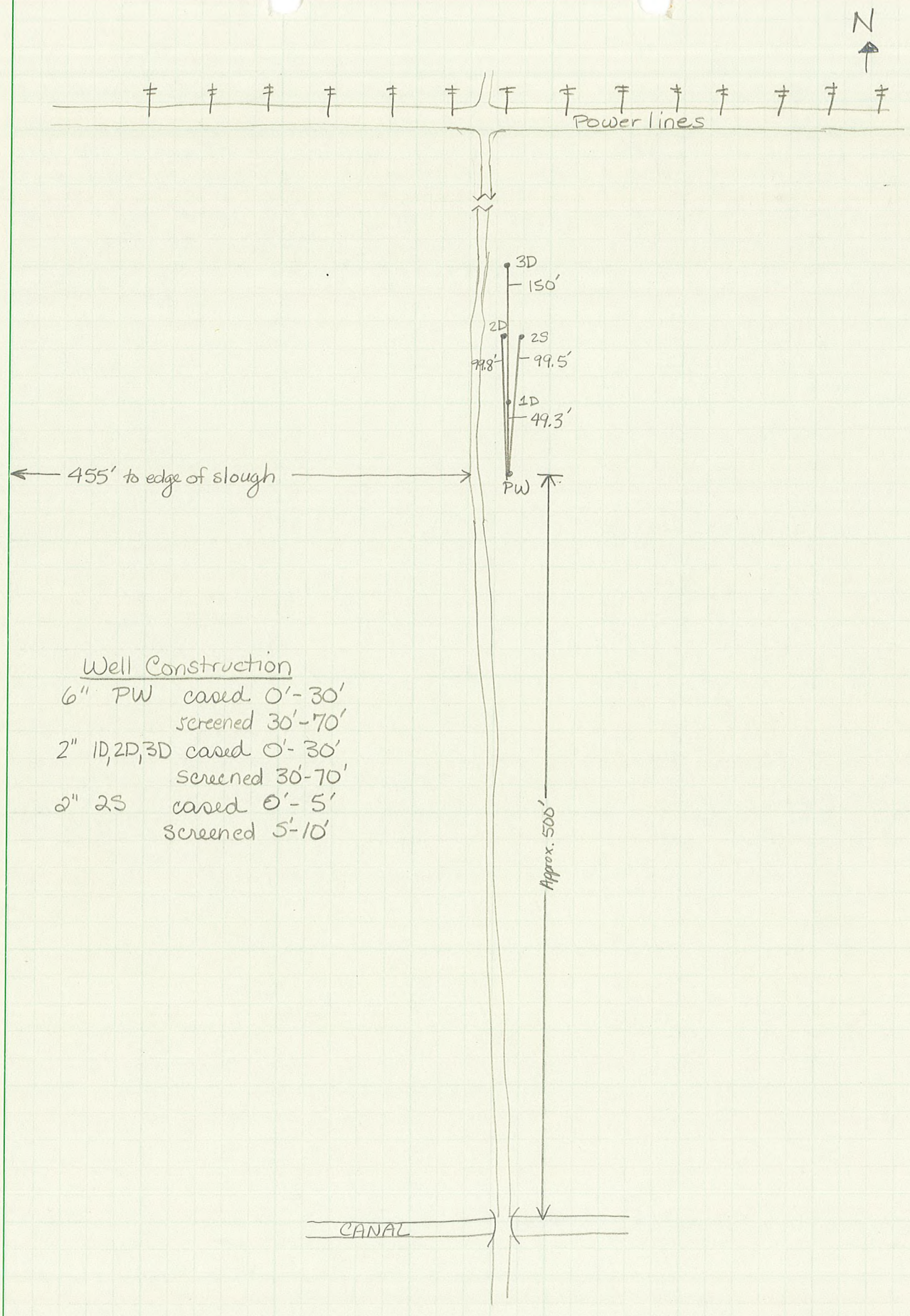
Comments: _____

RECOMMENDED VALUES:

Transmissivity (GPD/FT)	Specific Yield or Storage	Leakance

REFERENCES:

Monreve Ranch APT



Well Construction

6" PW cased 0'-30'
screened 30'-70'

2" 1D, 2D, 3D cased 0'-30'
screened 30'-70'

2" 2S cased 0'-5'
screened 5'-10'

Neuman

$T = \frac{114.6 Q W(u_{A,B})}{s} = \frac{114.6(136)(1)}{1.9} = 8203$ gpd/ft

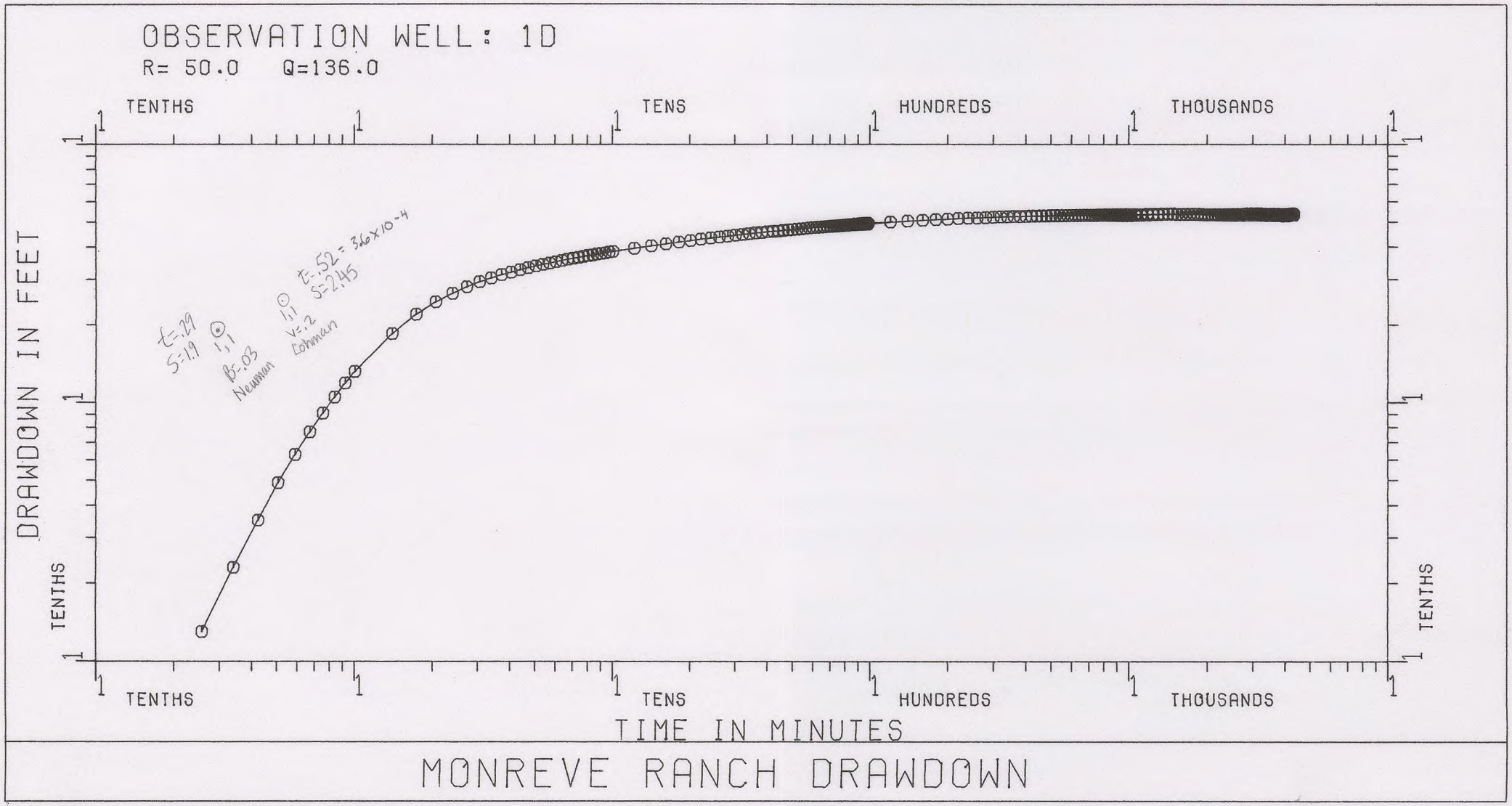
$S = \frac{T t}{2693 r^2 \left(\frac{1}{u_A}\right)} = \frac{8203(.29)}{2693(50^2)(1)} = 3.53 \times 10^{-4}$

Cooper

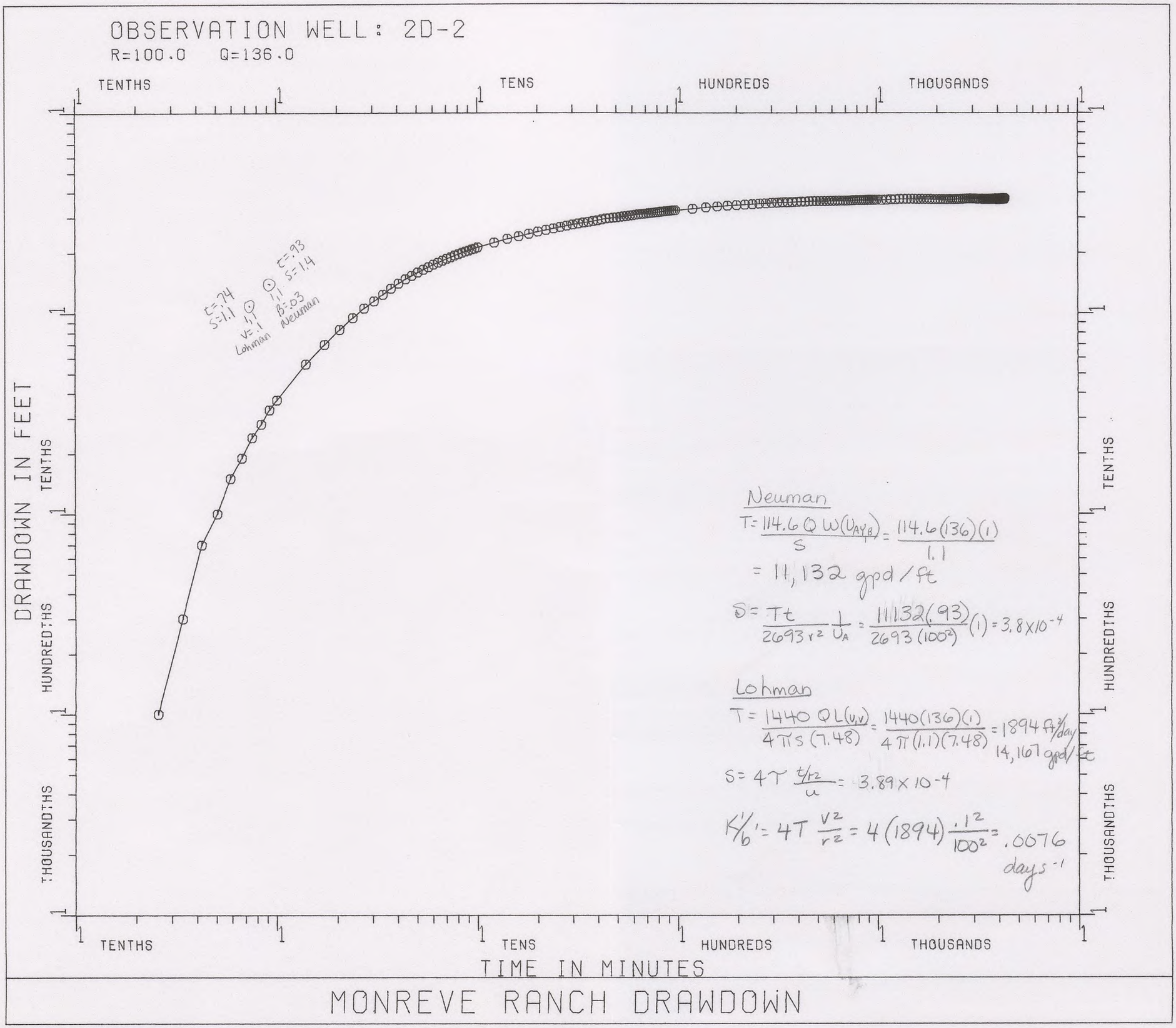
$T = \frac{1440 Q L(u,v)}{4\pi s (7.48)} = \frac{1440(136)(1)}{4\pi(2.45)(7.48)} = 850$ ft²/day
6361 gpd/ft

$S = 4T \frac{t/r^2}{u} = 4(850) = 4.9 \times 10^{-4}$

$K'/b' = 4T \frac{v^2}{r^2} = 4(850) \frac{.2^2}{50^2} = .0544$ days^{-1}



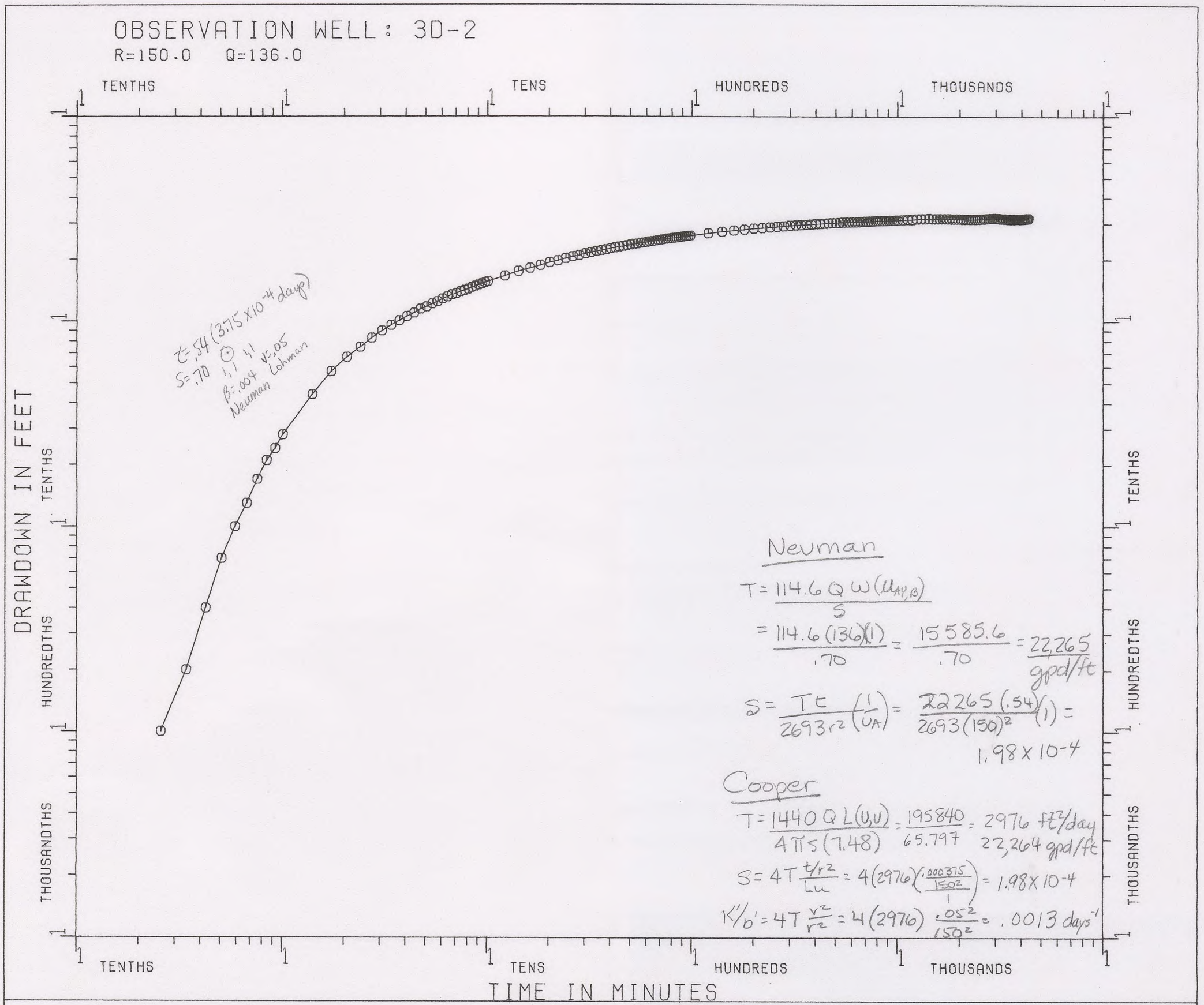
MONREVE RANCH DRAWDOWN



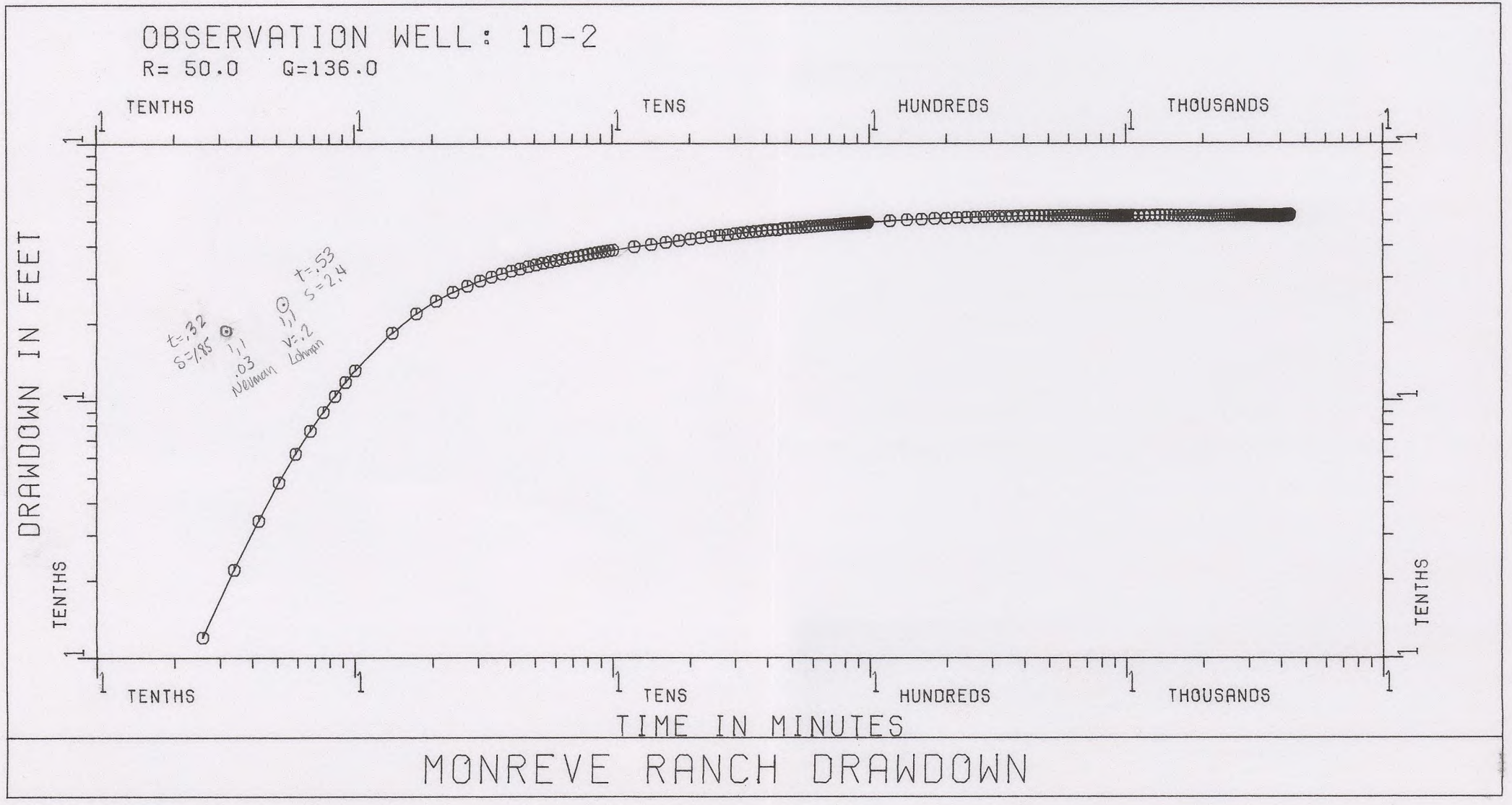
MONREVE RANCH DRAWDOWN

OBSERVATION WELL: 3D-2

R=150.0 Q=136.0



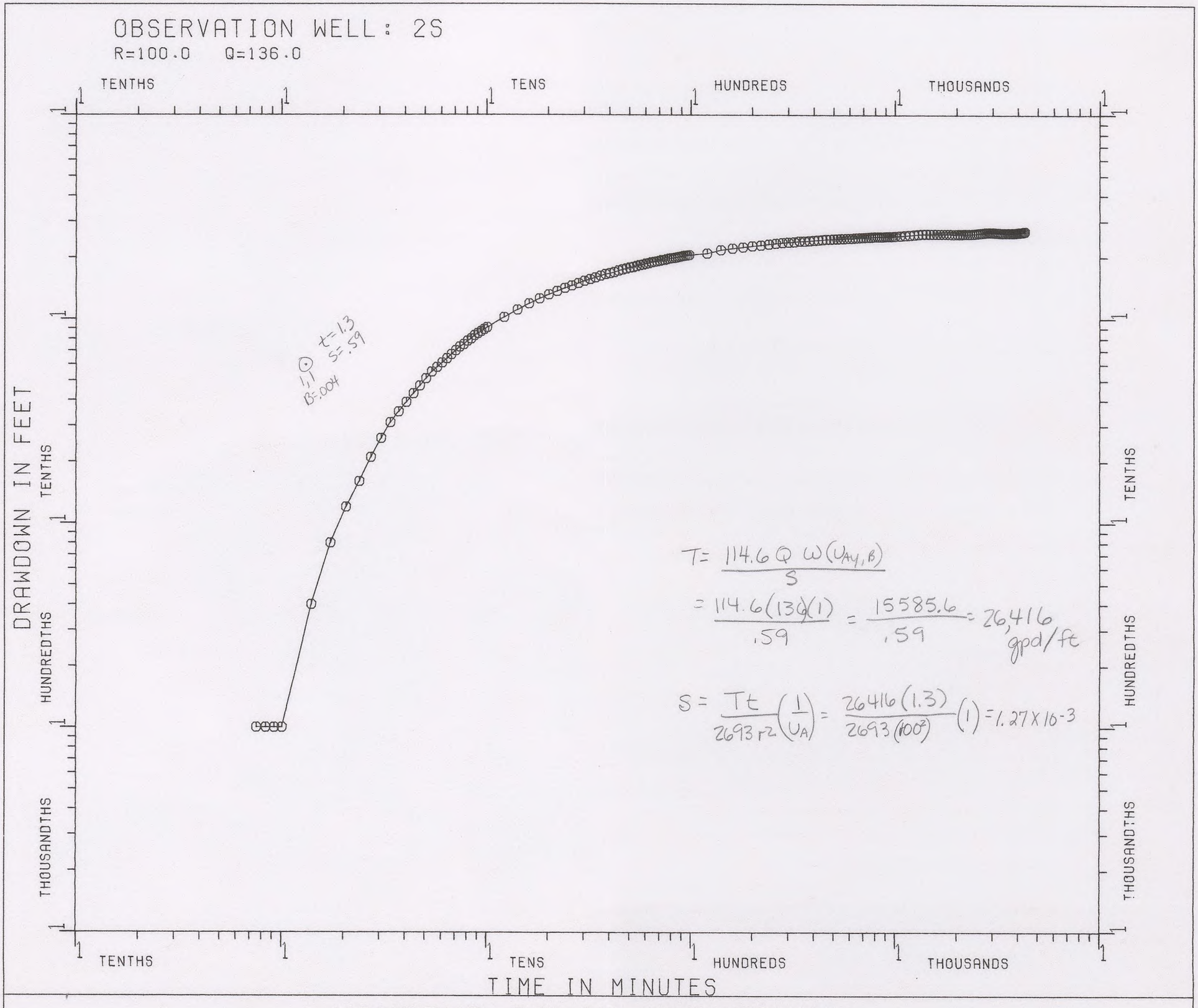
MONREVE RANCH DRAWDOWN



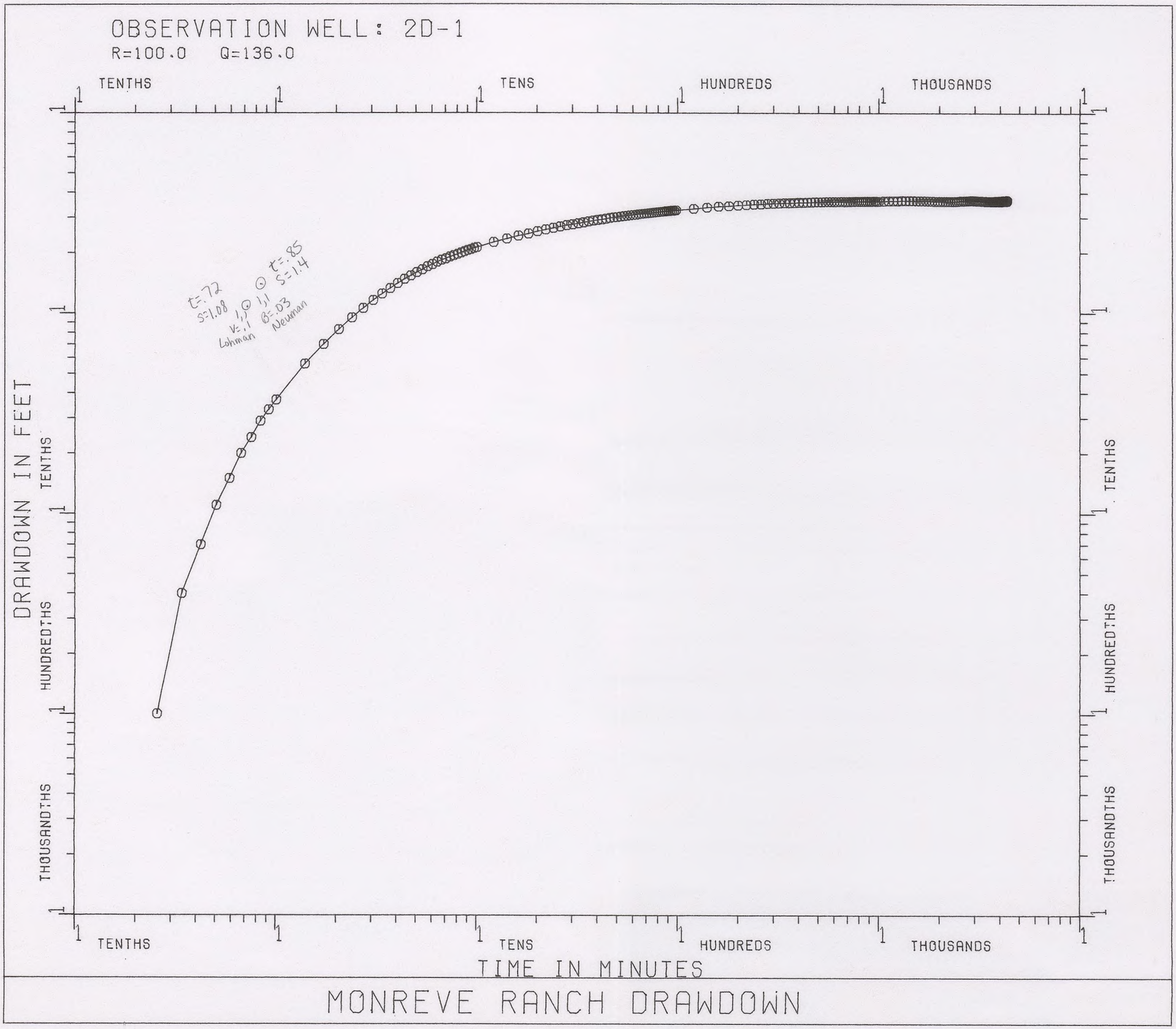
MONREVE RANCH DRAWDOWN

OBSERVATION WELL: 2S

R=100.0 Q=136.0



MONREVE RANCH DRAWDOWN



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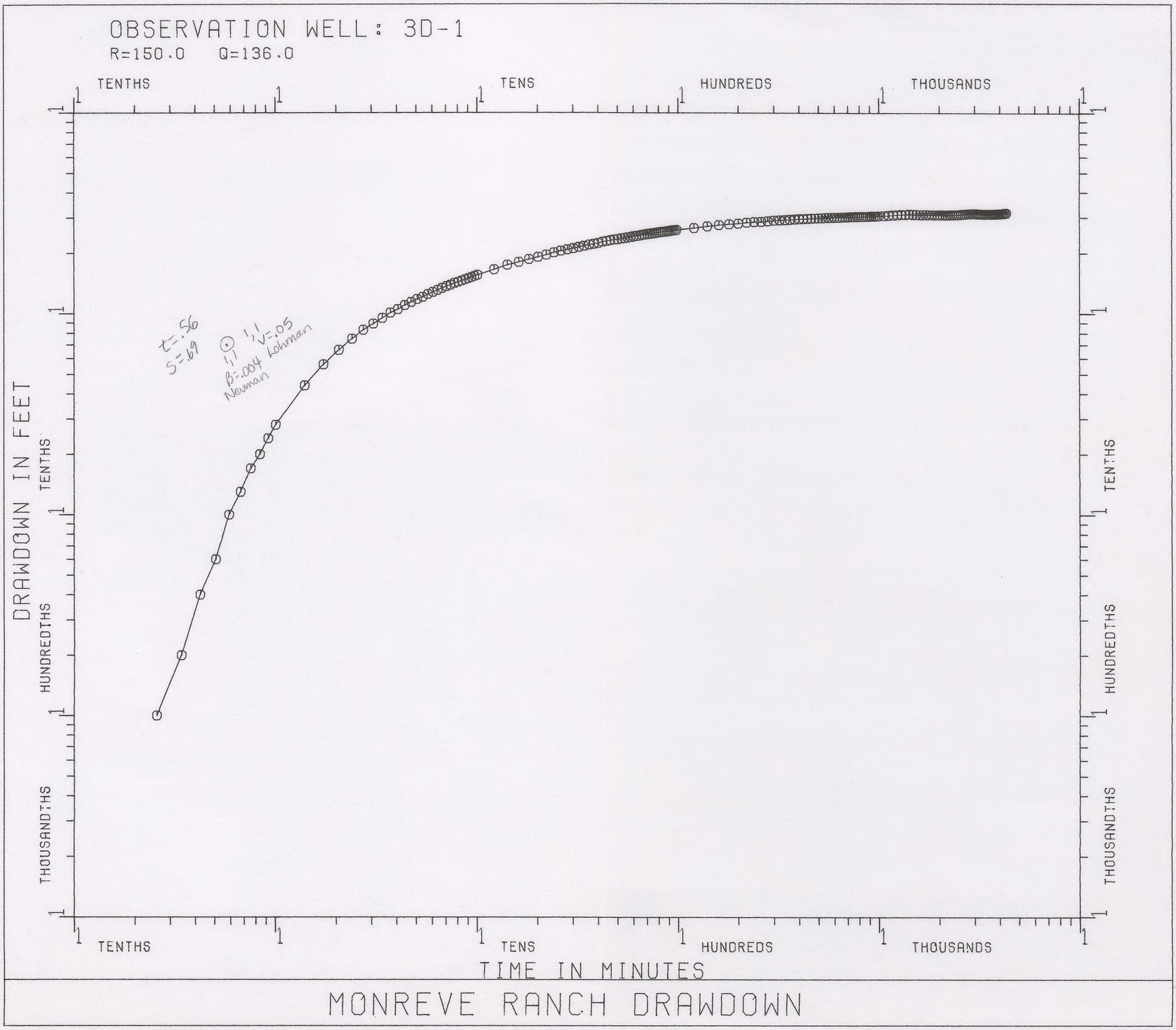

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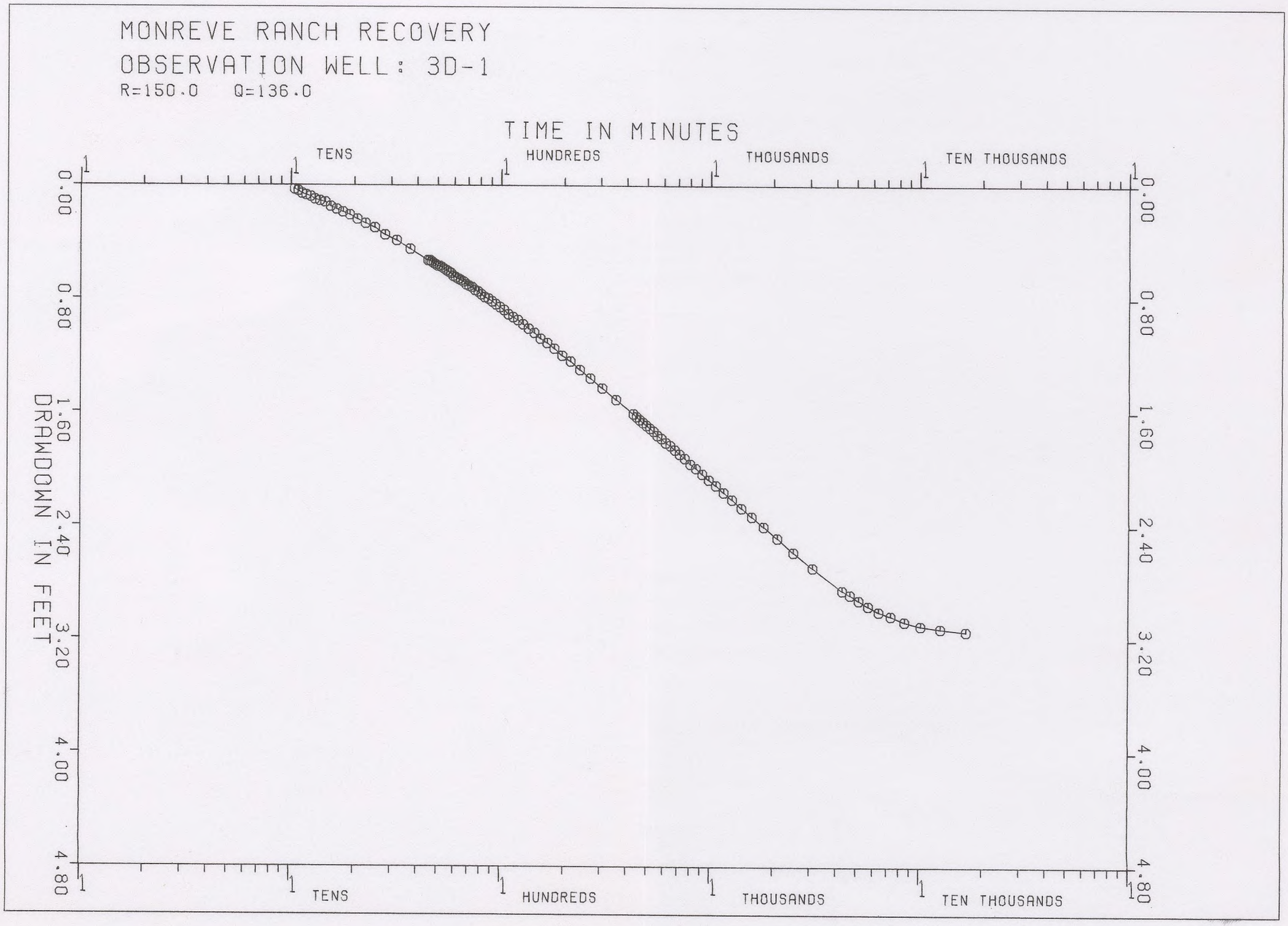
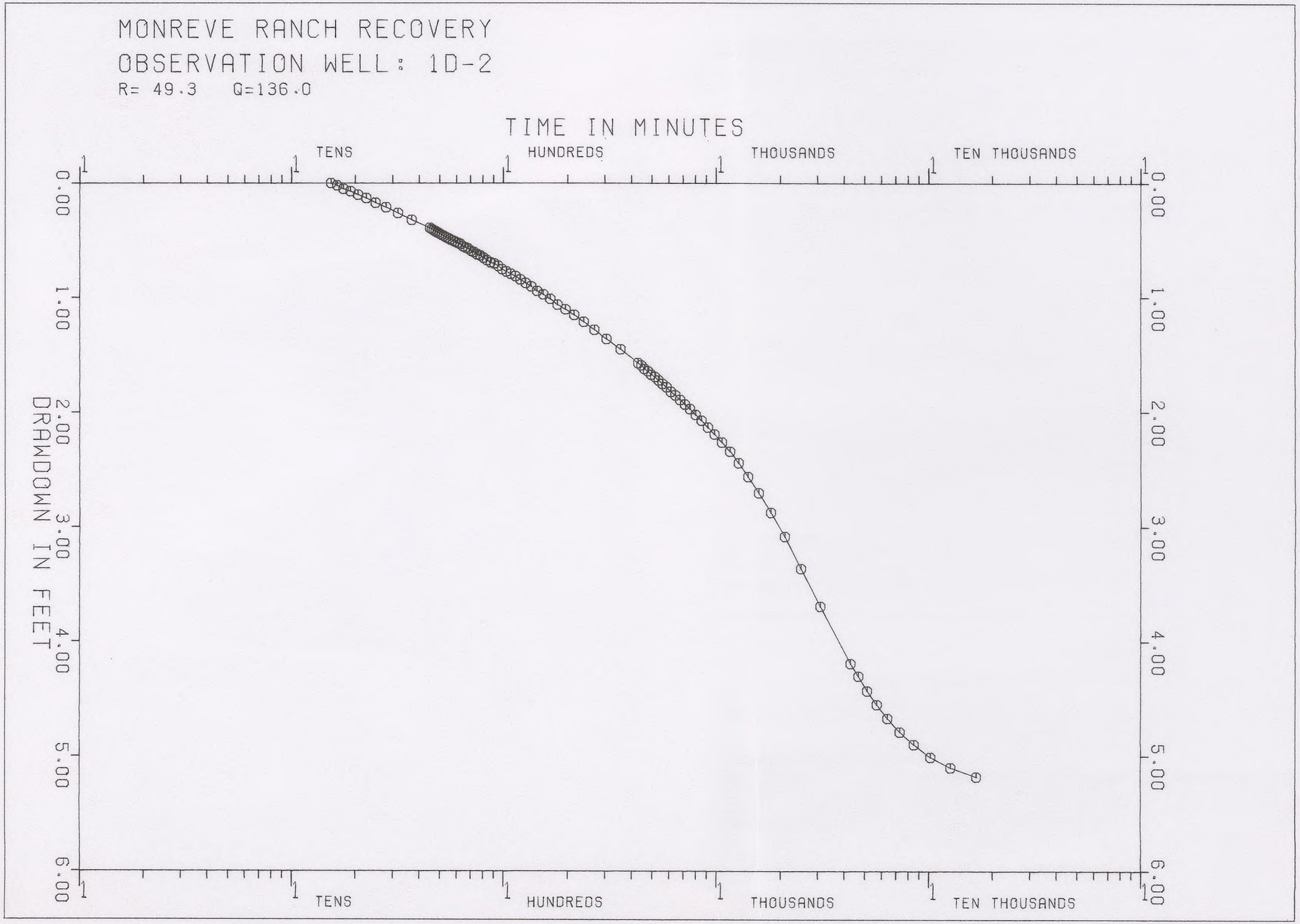

MONREVE RANCH RECOVERY
OBSERVATION WELL: 3D-1
R=150.0 Q=136.0
TIME IN MINUTES
TENS
HUNDREDS
THOUSANDS
TEN THOUSANDS
DRAWDOWN IN FEET
0.00
0.80
1.60
2.40
3.20
4.00
4.80

MONREVE RANCH RECOVERY

OBSERVATION WELL: 1D-2

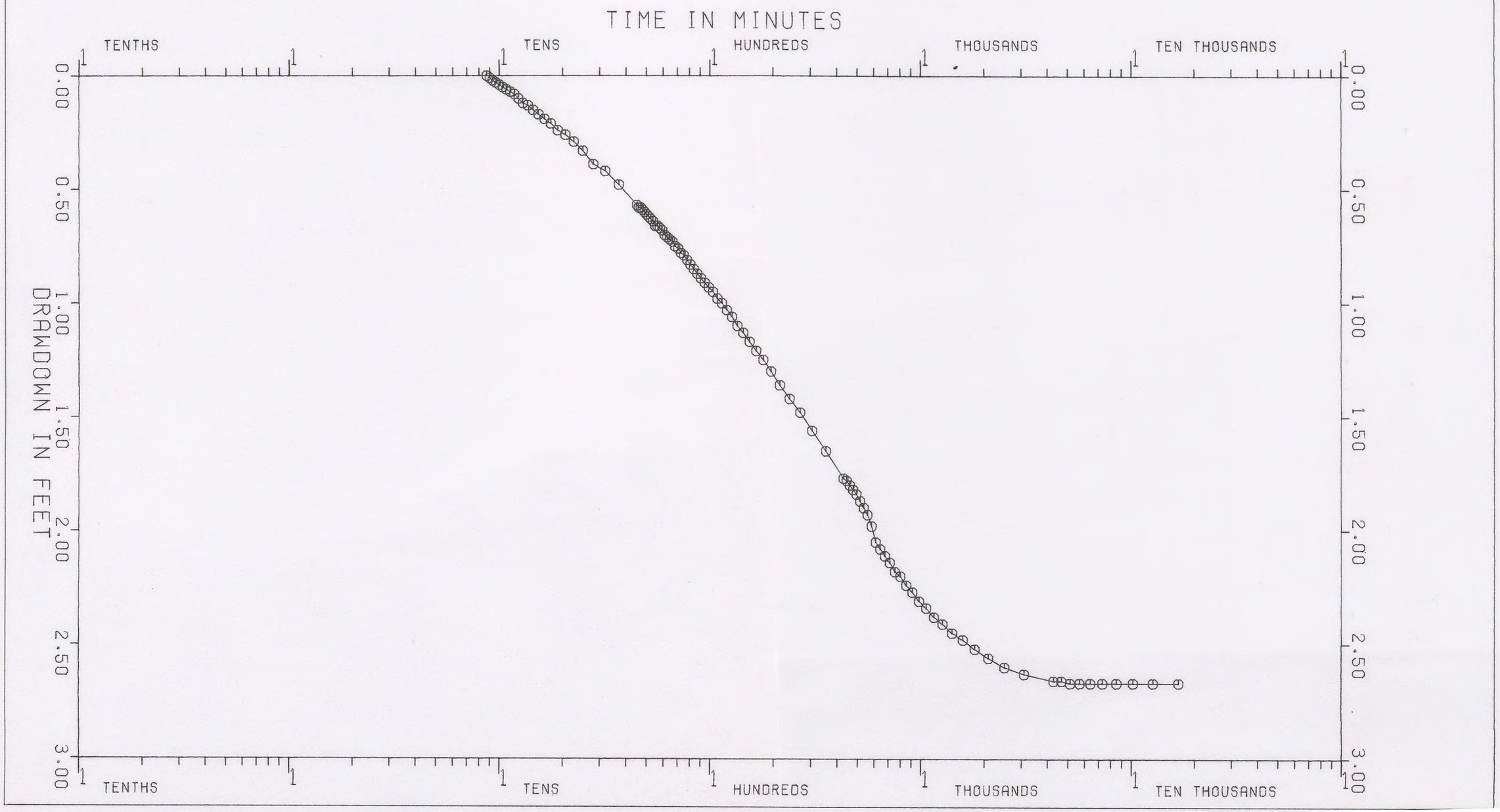
R= 49.3 Q=136.0



MONREVE RANCH RECOVERY

OBSERVATION WELL: 2S

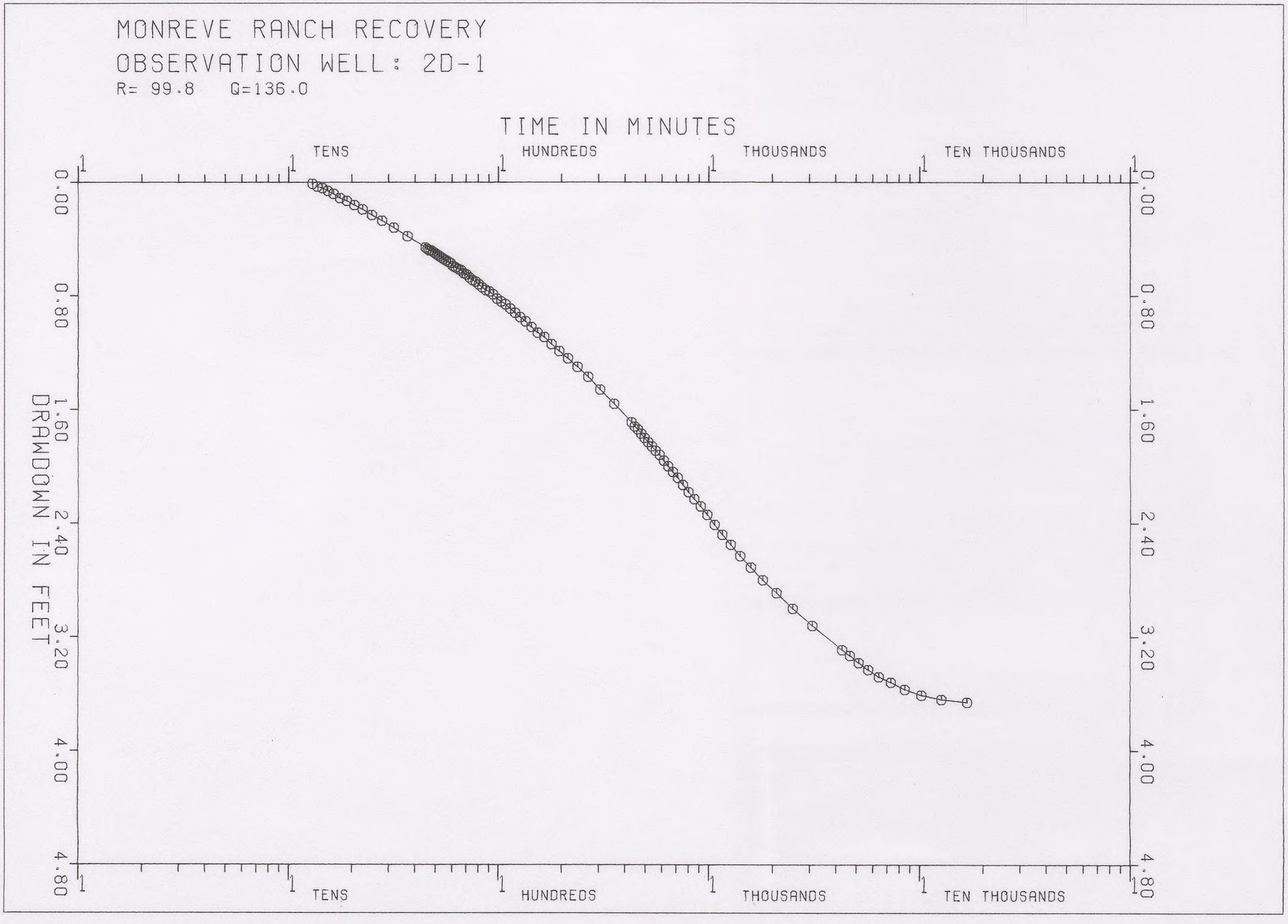
R= 99.5 Q=136.0



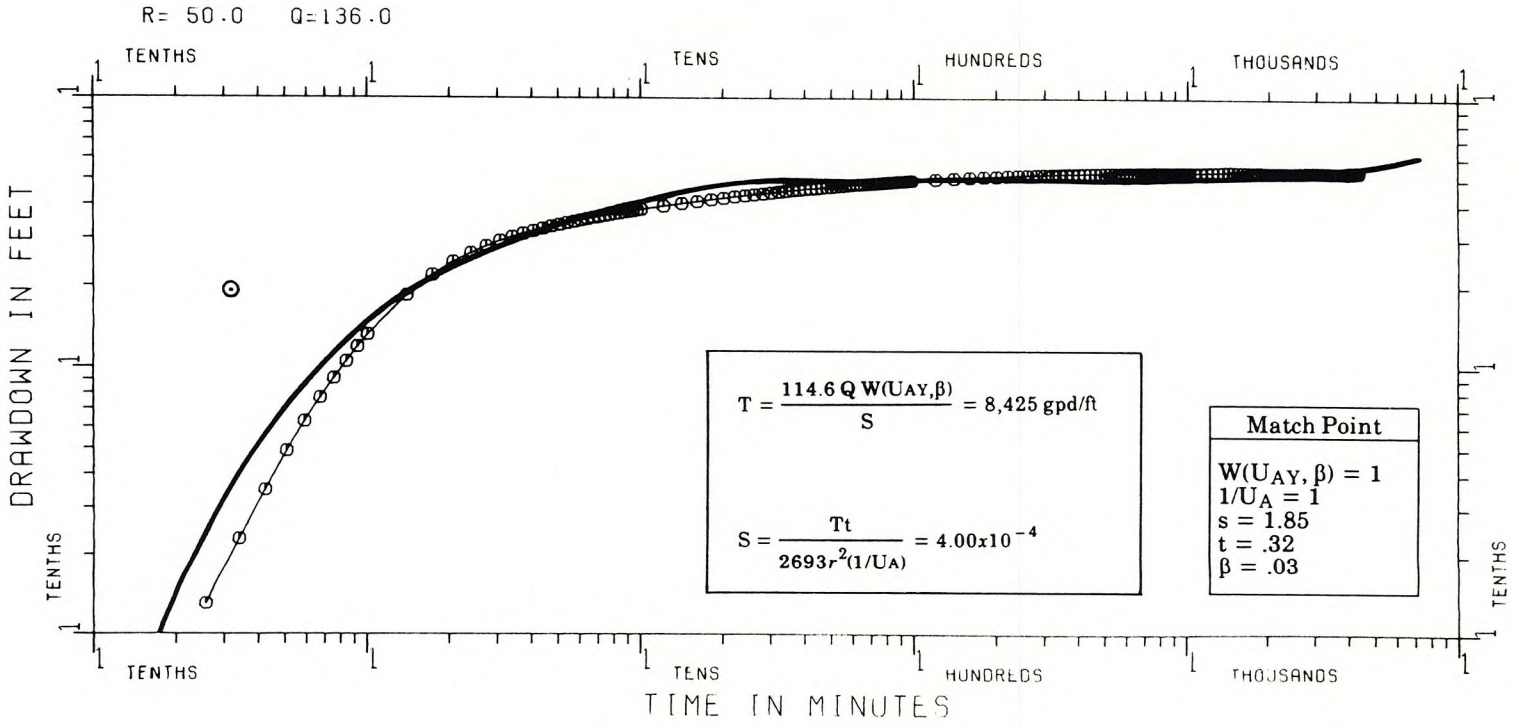
MONREVE RANCH RECOVERY

OBSERVATION WELL: 2D-1

R= 99.8 Q=136.0



OBSERVATION WELL: 1D

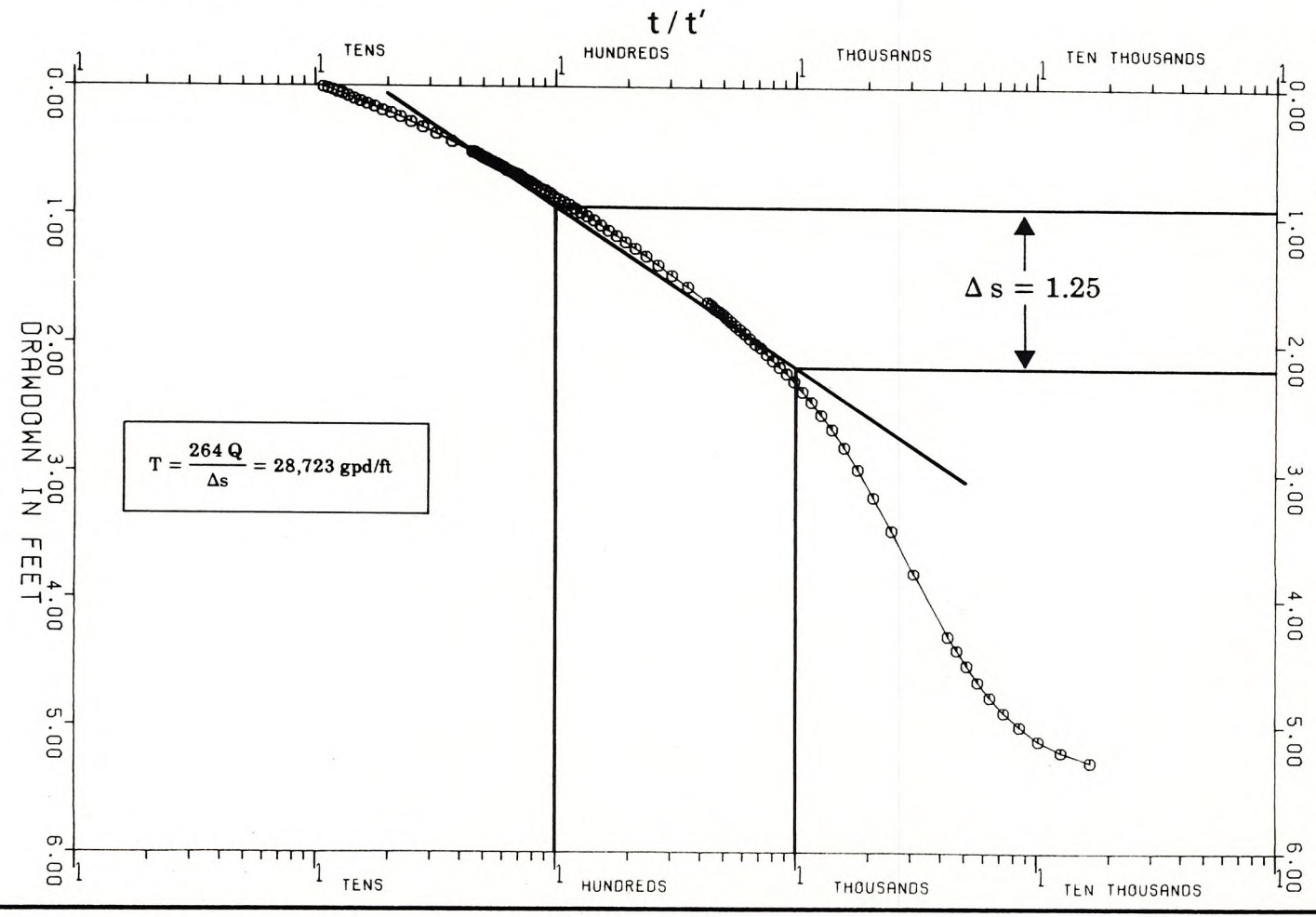


MONREVE RANCH DRAWDOWN

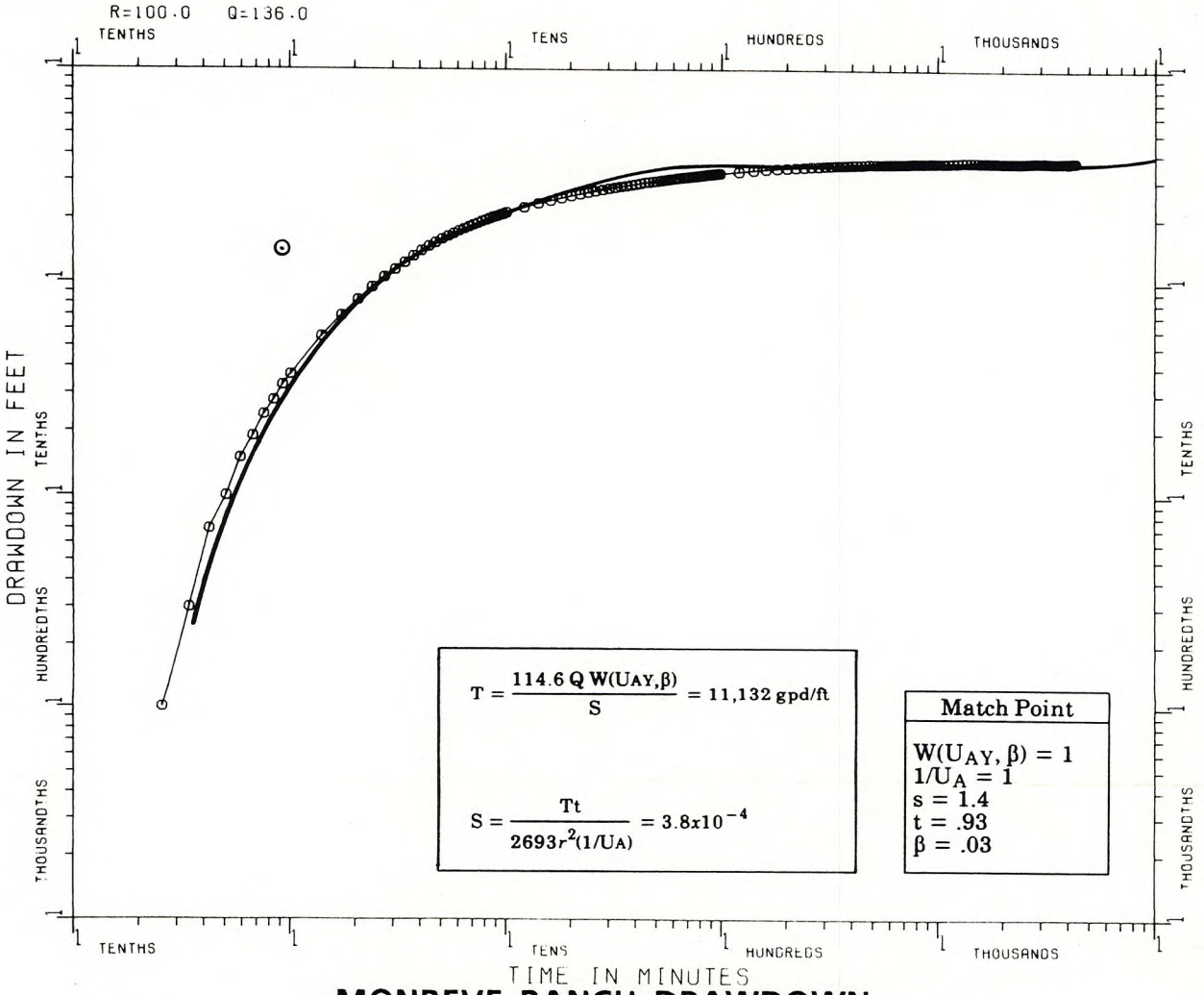
MONREVE RANCH RECOVERY

OBSERVATION WELL: 1D

R= 49.3 Q=136.0



OBSERVATION WELL: 2D



$$T = \frac{114.6\,Q\,W(U_{AY},\beta)}{S} = 11{,}132 \text{ gpd/ft}$$

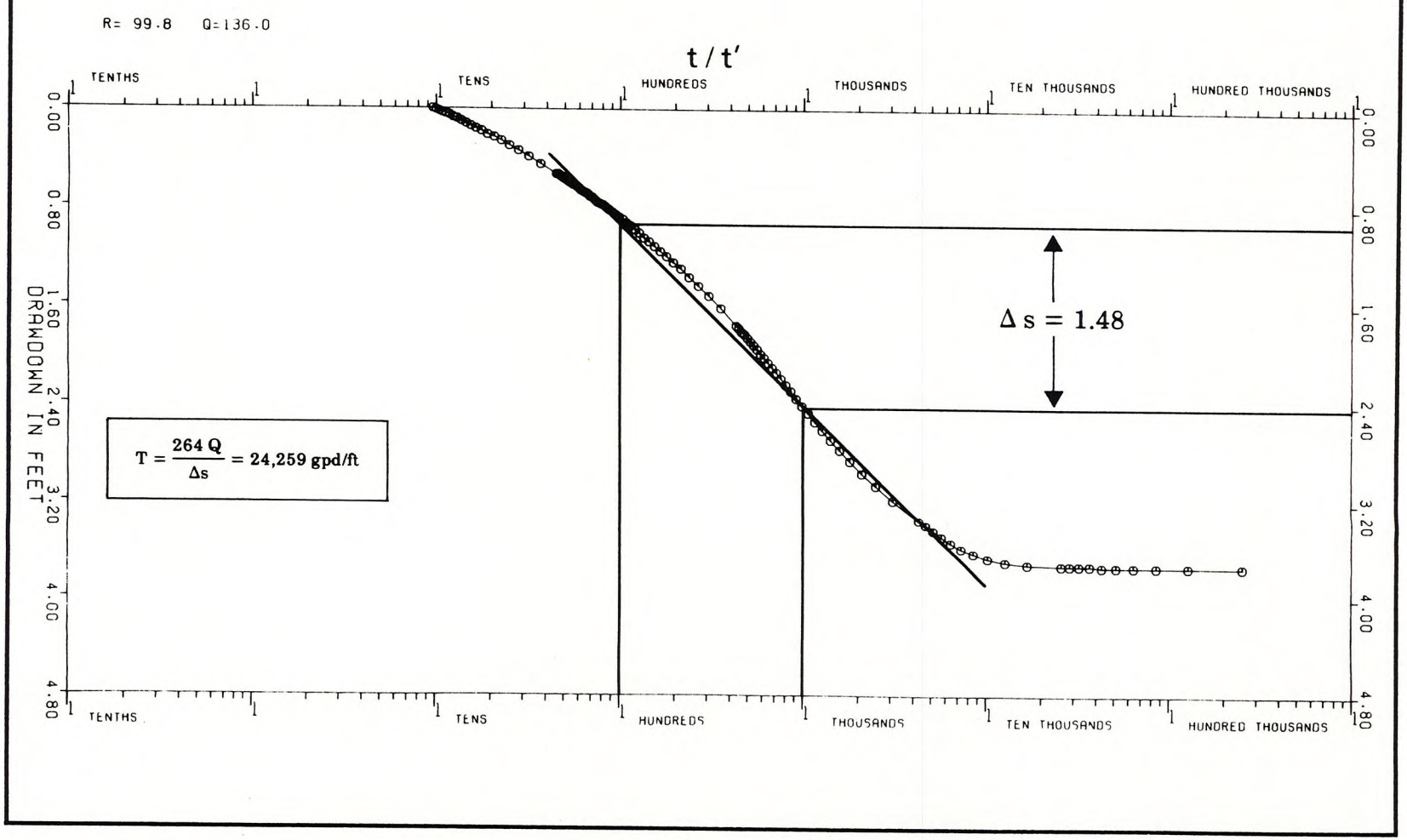
$$S = \frac{Tt}{2693r^2(1/U_A)} = 3.8\text{x}10^{-4}$$

Match Point
$W(U_{AY}, \beta) = 1$
$1/U_A = 1$
$s = 1.4$
$t = .93$
$\beta = .03$

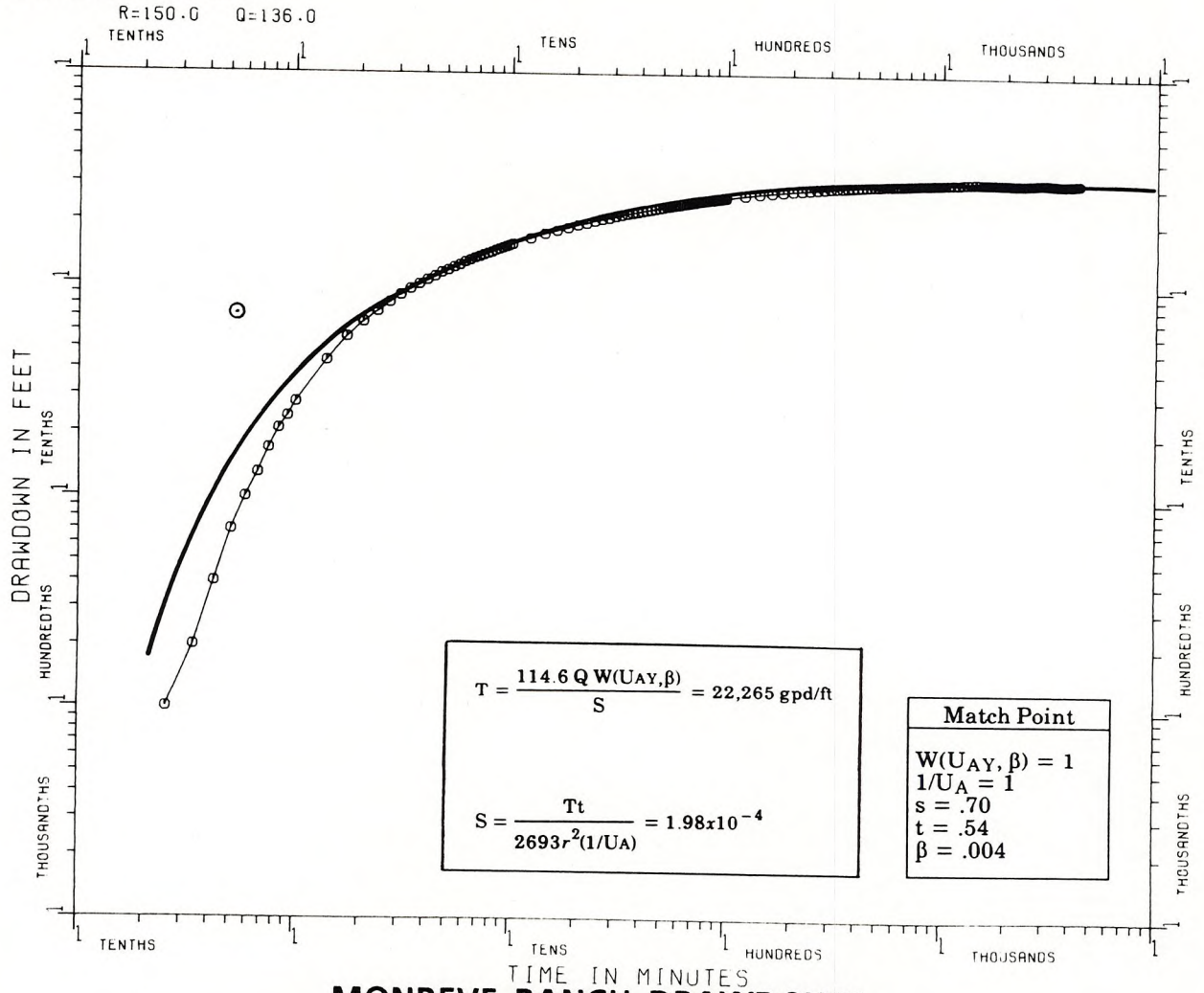
MONREVE RANCH DRAWDOWN

MONREVE RANCH RECOVERY

OBSERVATION WELL: 2D



OBSERVATION WELL: 3D

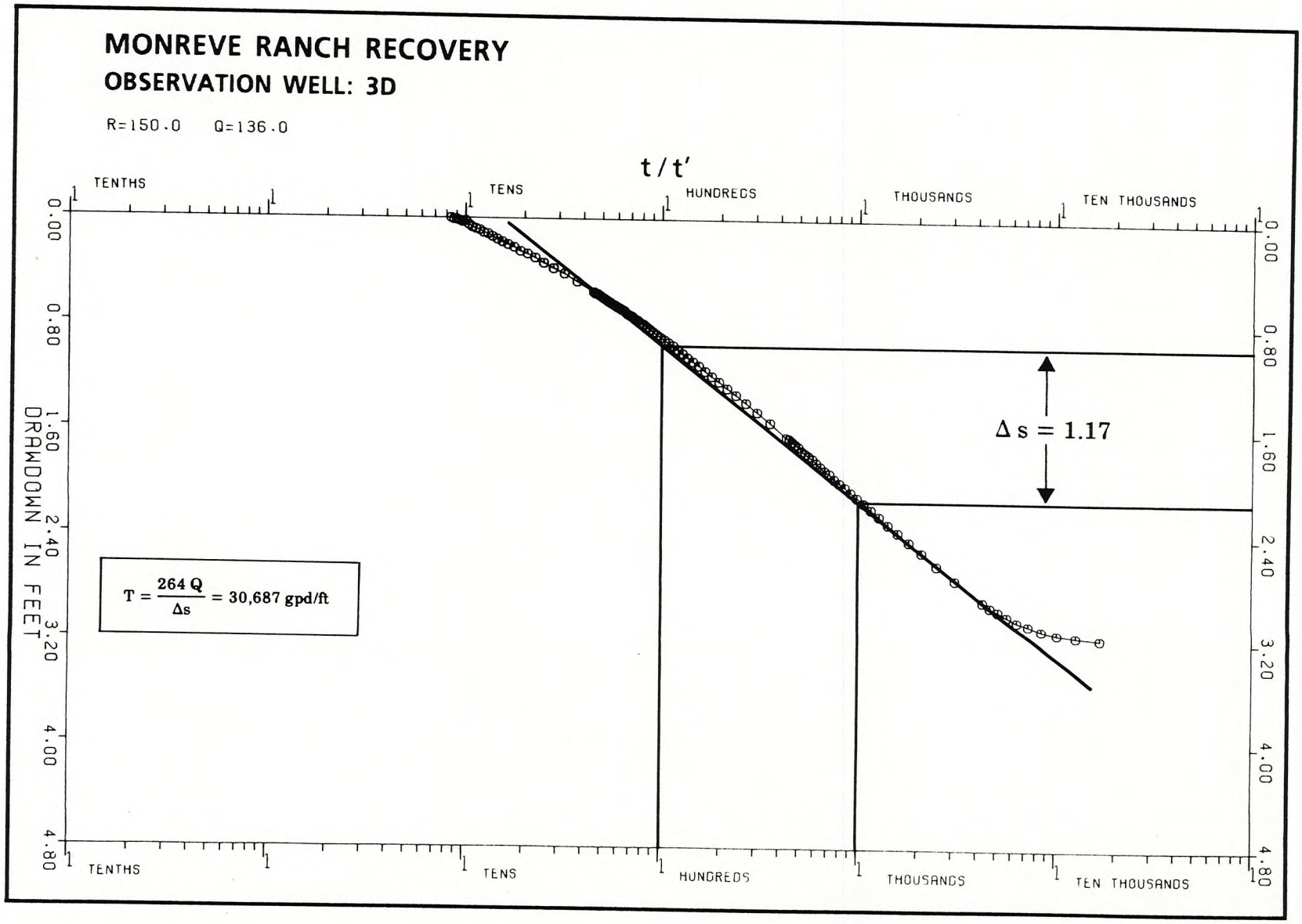


$$T = \frac{114.6\,Q\,W(U_{AY},\beta)}{S} = 22{,}265 \text{ gpd/ft}$$

$$S = \frac{Tt}{2693r^2(1/U_A)} = 1.98 \times 10^{-4}$$

Match Point
$W(U_{AY}, \beta) = 1$
$1/U_A = 1$
$s = .70$
$t = .54$
$\beta = .004$

MONREVE RANCH DRAWDOWN


MONREVE RANCH RECOVERY
OBSERVATION WELL: 3D
R=150.0 Q=136.0
t / t'
TENTHS
TENS
HUNDREDS
THOUSANDS
TEN THOUSANDS
DRAWDOWN IN FEET
0.00
0.80
1.60
2.40
3.20
4.00
4.80
Δ s = 1.17
T = 264 Q / Δs = 30,687 gpd/ft

AQUIFER TEST DATA

Owner Monroe Ranch Address County Martin State

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstranti

Well No. (D Distance from pumping well Type of test Constant Rate Test No. 1

Measuring equipment Insitu

Time Data 1700

Pump on: Date 12/4/89 Time ~~1030~~ (t_0)

Pump off: Date 12/5/89 Time 1700 (t'_0)

Duration of aquifer test:

Pumping 30 hrs Recovery

Water Level Data

Static water level 5.59 5.83

Measuring point TOC

Elevation of measuring point

r = 49.3'

Comments on factors affecting test data

OK

1 # 4609

Scale = 9.992

range = 10 rising

2S# 1993 SF 10.11

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		HELD	WET	Water level measurement BTOC	Correction or Conversion	Water level	Water level change s or s'		
12/4	9:33	0				8	2.41	5.59				~~5.31~~	5.
12/4		16				12	1.21	10.79				~~5.52~~	
12/4	1:00	30				12	.96	11.04				5.31	5.52
		47				12	.72	11.28				5.53	
		59				12	.645	11.355				6.63	6.63
						TEST STOPPED							
12/4	1656	0				7	1.17	5.83			—		
	1715					11	1.17	9.23			4.0	4.04	4.04
	1730					11	.75	10.25			4.42	4.33	4.40
	1745					12	1.52	10.48			4.65	4.62	4.62
	1800					12	1.40	10.60			4.77	4.76	4.76
	1900					12	1.14	10.86			5.03	4.98	4.98
	1957					12	1.04	10.96			5.13	5.11	5.08
	2001					12	.98	11.02			5.19	5.18	5.15
	2105					12	.92	11.08			5.25	5.23	5.19
	2257					12	.89	11.11			5.28	5.26	5.20
	2356					12	.88	11.12			5.29	5.28	5.22
12/5	0054					12	.86	11.14			5.31	5.29	5.23
	0157					12	.85	11.15			5.32	5.30	5.23
	0256					12	.84	11.16			5.33	5.31	5.23
	0356					12	.84	11.16			5.33	5.32	5.23
	0500					12	.83	11.17			5.34	5.32	5.23
	0600					12	.81	11.19			5.36	5.33	5.23
	0650					12	.82	11.18			5.35	5.33	5.23
	0802					12	.82	11.18			5.35	5.33	5.22
	0859					12	.82	11.18			5.35	5.33	5.22
	1002					12	.82	11.18			5.35	5.34	5.22

AQUIFER TEST DATA

Owner Monreve Ranch Address ____ County ____ State ____

Date ____ Company performing test ____ Measured by ____

Well No. 1D Distance from pumping well ____ Type of test ____ Test No. ____

Measuring equipment ____

Time Data	Water Level Data		Comments on factors affecting test data
Pump on: Date 12/1/89 Time 1700 (t_o) Pump off: Date 12/-/89 Time 1700 (t_o') Duration of aquifer test: Pumping 72 hrs Recovery ____	Static water level 5.83 Measuring point TOC Elevation of measuring point ____	r = 49.3'	OK Insitu

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Add	Wet	Water level measurement	Correction or Conversion	Water level	ΔS Water level change s or s'			#1	#2
2/5	1104					12	.82	11.18			5.35			5.34	5.22
	1300					12	.81	11.19			5.36			5.35	5.23
	1502					12	.79	11.21			5.38				
	1657					12	.78	11.22			5.39			5.38	5.24
	[illegible]					12	.76	11.22			[illegible]			5.36	5.32
	2103					[illegible]	.79	11.21			5.38			[illegible]	[illegible]
	2313					12	.78	11.22			5.39				
2/6	0058					12	.78	11.22			5.39			5.35	5.22
	0256					12	.78	11.22			5.39			5.34	5.22
	0456					12	.78	11.22			5.39			5.34	5.21
	0655					12	.78	11.22			5.39			5.34	5.22
	0901					12	.79	11.21			5.38			5.33	5.22
	1103					12	.79	11.21			5.38			5.34	5.23
	1304					12	.78	11.22			5.39			5.34	5.23
	1459					12	.77	11.23			5.40			5.35	5.24
	1654					12	.76	11.24			5.41			5.36	5.25
	1857					12	.76	11.24			5.41			5.36	5.25
	2058					12	.76	11.24			5.41			5.35	5.24
	2303					12	.75	11.25			5.42			5.35	5.24
2/7	0052					12	.76	11.24			5.41			5.34	5.23
	0255					12	.76	11.24			5.41			5.34	5.23
	0454					12	.77	11.23			5.40			5.33	5.22
	0652					12	.77	11.23			5.40			5.33	5.23
	0900					12	.77	11.23			5.40			5.33	5.23
	1102					12	.79	11.21			5.38			5.31	5.22
	1301					12	.775	11.22			5.39			5.33	5.24
	1500					12	.76	11.24			5.41			5.35	5.26
	1652					12	.74	11.26			5.43			5.36	5.26

AQUIFER TEST DATA

Owner Monroe Ranch Address ____ County ____ State ____

Date ____ Company performing test ____ Measured by ____

Well No. ID Distance from pumping well ____ Type of test ____ Test No. ____

Measuring equipment Insitu / Tape

Time Data
Pump on: Date ____ Time ____ (t_1)
Pump off: Date ____ Time ____ (t'_2)
Duration of aquifer test:
Pumping ____ Recovery ____

Water Level Data
Static water level 5.83
Measuring point ____
Elevation of measuring point ____

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'				Water level measurement	Correction or Conversion	Water level	Water level change s or s'		
12/7	1700		BEGIN		RECOVERY								
	1713				8	.660						1.50	1.39
	1726				8	1.02						1.13	1.02
	1743				8	1.27						.87	.76
	1757				8	1.41						.74	.63
	1901				7	.72						.45	.33
	1959				7	.46						.30	.10
	2102				7	.96						.0	.06
	2257				7	1.02						.12	.01
	2314				7	1.17						.07	.06
	2356				7	1.12						#1 .02	#2 .09
2/8	0056				7	1.15						+.01	+.13
	0153				7	1.18						+.04	+.16
	0302				7	1.20						+.08	+.20
	0356				7	1.22						+.09	+.20
	0726				7	1.25	5.75				.08		

AQUIFER TEST DATA

Owner Monreve Ranch Address ____ County Martin State ____

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstranti

Well No. 25 Distance from pumping well ____ Type of test Constant Rate Test No. 1

Measuring equipment Insitu 10.5' deep

Time Data 1700

Pump on: Date 12/4/89 Time ~~1230~~ (t_i)

Pump off: Date 12/7/89 Time 1700 (t_f)

Duration of aquifer test:

Pumping 72 hrs Recovery ____

Water Level Data

Static water level ~~3.13~~ 4.87 ~~3.36~~

Measuring point ____

Elevation of measuring point ____

r = 99.5'

Comments on factors affecting test data

3S# 4492 SF 9.98

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Field	Wet	Water level measurement	Correction or Conversion	Water level	Δs Water level change s or s'	Insitu Δs	Insitu Diff	
		0										3		
12/4	1245					6	1.32					1.39		
	1300					6	.93					1.81		
	1317					6	.71					2.05		
	1331	60				6	.59					3.20		
						TEST STOPPED								
	1659	0				5	1.64	3.36			—			
	1715					5	.57	4.43			1.07			1.11
	1729					6	1.15	4.85			1.49			1.49
	1744					6	.91	5.09			1.73			1.71
	1754					6	.78	5.22			1.86			1.85
	1851					6	.5	5.50			2.14			2.10
	1954					7	1.35	5.65			2.29			2.24
	2058					7	1.3	5.70			2.34			2.32
	21					7	1.24	5.76			2.40			2.38
	2257					7	1.20	5.80			2.44			2.41
	2356					7	1.18	5.82			2.46			2.44
12/5	0055					7	1.16	5.84			2.48			2.46
	0157					7	1.13	5.87			2.51			2.48
	0257					7	1.13	5.87			2.51			2.49
	0357					7	1.11	5.89			2.53			2.50
	0500					7	1.11	5.89			2.53			2.52
	0600					7	1.09	5.91			2.55			2.53
	0650					7	1.09	5.91			2.55			2.53
	0800					7	1.09	5.91			2.55			2.54
	0857					7	1.09	5.91			2.55			2.54
	1002					7	1.08	5.92			2.56			2.55
	1103					7	1.08	5.92			2.56			2.56

AQUIFER TEST DATA

Owner ____ Address ____ County ____ State ____

Date ____ Company performing test ____ Measured by ____

Well No. 28 Distance from pumping well ____ Type of test ____ Test No. ____

Measuring equipment ____

Time Data
Pump on: Date 12/4/86 Time 1700 (t_1)
Pump off: Date 12/7/86 Time 1700 (t_2)
Duration of aquifer test:
Pumping 72 hrs Recovery ____

Water Level Data
Static water level 3.36
Measuring point ____
Elevation of measuring point ____

r = 99.5'

Comments on factors affecting test data: Insitu

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'	Heid	Wet	Water level measurement	Correction or Conversion	Water level	Water level change s or s'	Comments
12/5	1259				7	1.05	5.95			2.59	2.58
	1502				7	1.03	5.97			2.61	2.60
	1654				7	1.02	5.98			2.62	2.62
	1859				7	1.02	5.98			2.62	2.61
	2059				7	"	5.98			2.62	2.61
	2350				7	1.02	5.98			2.62	2.62
12/6	0059				7	1.03	5.97			2.61	2.60
	0257				7	1.01	5.99			2.63	2.61
	0456				7	1.01	5.99			2.63	2.61
	0656				7	1.02	5.98			2.62	2.62
	0900				7	1.02	5.98			2.62	2.62
	1102				7	1.01	5.99			2.63	2.63
	1302				7	1.01	5.99			2.63	2.64
	1457				7	.98	6.02			2.66	265
	1652				7	.98	6.02			2.66	2.66
	1855				7	.98	6.02			2.66	2.64
	2057				7	.98	6.02			2.66	2.65
	2302				7	.99	6.01			2.65	2.64
12/7	0053				7	.98	6.02			2.66	2.64
	0255				7	.98	6.02			2.66	2.64
	0455				7	.99	6.01			2.65	2.64
	0653				7	.99	6.01			2.65	2.64
	0859				7	.99	6.01			2.65	2.64
	1101				7	.99	6.01			2.65	2.65
	1300				7	.98	6.02			2.66	2.66
	1505				7	.97	6.03			2.67	2.67
	1652				7	.96	6.04			2.68	2.68

AQUIFER TEST DATA

Owner Monroe Ranch Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

Well No. 28 Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment _____

Time Data
Pump on: Date _____ Time _____ (t_1)
Pump off: Date _____ Time _____ (t'_1)
Duration of aquifer test:
Pumping _____ Recovery _____

Water Level Data
Static water level 3.36
Measuring point _____
Elevation of measuring point _____

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'				Water level measurement	Correction or Conversion	Water level	Water level change s or s'			Comments on factors affecting test data
12/7	1700	BEGIN	RECOVERY											
	1717					6	1.16							1.48
	1730					6	1.49							1.15
	1745					6	1.72							.93
	1800					6	1.87							.78
	1900					6	2.16							.51
	1957					5	1.51							.35
	2101					5	1.42							.24
	2206					5	1.49							.17
	2308					5	1.53							.12
	2357					5	1.58							.07
12/8	0057					5	1.61							.04
	0153					5	1.63							.01
	0302					5	1.70							.00
	0356					5	1.70							+.03
	0720					5	1.71							

AQUIFER TEST DATA

Owner Monreve Ranch Address County Martin State

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstrati

Well No. 2D Distance from pumping well Type of test Constant Rate Test No. 1

Measuring equipment Insitu 73.5

Time Data
Pump on: Date 12/4/89 Time ~~1250~~ 1300 (t_0)
Pump off: Date 12/7/89 Time 1700 (t_0)
Duration of aquifer test:
Pumping 72 hrs Recovery

Water Level Data
Static water level 7-1.25=5.75 5.95
Measuring point
Elevation of measuring point

r = 99.8'

Comments on factors affecting test data

~~#3# 710 SF 10.04~~
5 S# 2615 SF 10.08
4 S# 2247 SF 10.12

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Hold	Wet	Water level measurement	Correction or Conversion	Water level	Δs Water level change s or s'	Insitu		
12/4	1248					10	1.11					3.03	3.03	
	1302					10	.79					3.37	3.36	
	1318					10	.62					3.57	3.55	
	1332	60				10	.52					4.67		
						TEST STOPPED								
	1659					7	1.05	5.95			—			
	1716					9	.70	8.30			2.35		2.37	2.37
	1730					10	1.28	8.72			2.77		2.76	2.75
	1745					10	1.07	8.93			2.98		2.97	2.96
	1758					10	.96	9.04			3.09		3.07	3.07
	1759					10	.69	9.31			3.36		3.31	3.30
	1955					10	.58	9.42			3.47		3.43	3.42
	2059					10	.52	9.48			3.53		3.5	3.5
	2103					11	1.48	9.52			3.57		3.55	3.55
	2253					11	1.46	9.54			3.59		3.47	3.47
	2357					11	1.43	9.57			3.62		3.59	3.60
12/5	0056					11	1.41	9.59			3.64		3.61	3.61
	0158					11	1.41	9.59			3.64		3.62	3.62
	0257					11	1.39	9.61			3.66		3.62	3.63
	0357					11	1.38	9.62			3.67		3.63	3.64
	0500					11	1.37	9.63			3.68		3.63	3.64
	0601					11	1.37	9.63			3.68		3.64	3.66
	0651					11	1.36	9.64			3.69		3.64	3.66
	0800					11	1.36	9.64			3.69		3.64	3.67
	0856					11	1.36	9.64			3.69		3.64	3.67
	1001					11	1.35	9.65			3.70		3.65	3.67
	1102					11	1.34	9.66			3.71		3.66	3.68
	1258					11	1.33	9.67			3.72		3.66	3.69

AQUIFER TEST DATA

Owner Monroe Ranch Address ____ County ____ State ____

Date ____ Company performing test ____ Measured by ____

Well No. 2D Distance from pumping well ____ Type of test ____ Test No. ____

Measuring equipment ____

Time Data
Pump on: Date 12/4/24 Time 1755 (t)
Pump off: Date 12/7/24 Time 1700 (t')
Duration of aquifer test:
Pumping 72 hrs Recovery ____

Water Level Data
Static water level 5.95'
Measuring point ____
Elevation of measuring point ____

r = 99.8'

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Held	Wet	Water level measurement	Correction or Conversion	Water level	Δs Water level change s or s'		Insitu	
12/5	1501					11	1.31	9.69			3.74		3.68	3.71
	1655					11	1.30	9.70			3.75		3.67	3.71
	1901					11	1.30	9.70			3.75		3.67	3.70
	2102					11	1.31	9.69			3.74		3.66	3.70
	2201					11	1.31	9.69			3.74		3.66	3.70
12/6	0059					11	1.29	9.71			3.76		3.64	3.69
	0257					11	1.30	9.70			3.75		3.64	3.69
	0456					11	1.30	9.70			3.75		3.64	3.69
	0656					11	1.31	9.69			3.74		3.64	3.69
	0858					11	1.32	9.68			3.73		3.64	3.70
	1101					11	1.32	9.68			3.73		3.65	3.70
	1301					11	1.31	9.69			3.74		3.66	3.70
	1455					11	1.29	9.71			3.76		3.67	3.71
	1653					11	1.28	9.72			3.77		3.67	3.72
	1851					11	1.29	9.72			3.77		3.67	3.72
	2056					11	1.28	9.72			3.77		3.67	3.72
	2302					11	1.29	9.71			3.76		3.66	3.71
12/7	0053					11	1.31	9.69			3.74		3.64	3.70
	0255					11	1.31	9.69			3.74		3.64	3.70
	0455					11	1.31	9.69			3.74		3.64	3.70
	0653					11	1.31	9.69			3.74		3.64	3.70
	0858					11	1.30	9.70			3.75		3.65	3.71
	1059					11	1.30	9.70			3.75		3.66	3.72
	1259					11	1.29	9.71			3.76		3.66	3.72
	1503					11	1.28	9.72			3.77		3.66	3.72
	1652					11	1.27	9.73			3.78		3.67	3.74

AQUIFER TEST DATA

Owner Monreve Ranch Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

Well No. 2D Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment _____

Time Data
Pump on: Date _____ Time _____ (t_1)
Pump off: Date _____ Time _____ (t_2)
Duration of aquifer test:
Pumping _____ Recovery _____

Water Level Data
Static water level 5.95
Measuring point _____
Elevation of measuring point _____

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'				Water level measurement	Correction or Conversion	Water level	Water level change s or s'			
12/7	1708			BEGIN	RECOVERY									
	1716				9	1.52							1.42	1.48
	1729				8	.89							1.06	1.12
	1744				8	1.12							.83	.90
	1759				4	1.27							.69	.75
	1859				8	1.47							.39	.47
	1956				7	.71							.25	32
	2100				7	.80							.141	.21
	2205				7	.89							.07	.14
	2305				7	.94							.01	.07
	2353				7	.98							+.03	.04
12/8	0058				7	1.01							+.07	.01
	0153				7	1.06							+.10	+.02
	0305				7	1.09							+.13	+.05
	0356				7	1.09							+.14	+.06
	0720				7	1.12								

AQUIFER TEST DATA

Owner Monreve Ranch Address _____ County Martin State _____

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstrator

Well No. 3D Distance from pumping well _____ Type of test Constant Rate Test No. 1

Measuring equipment Insitu

Time Data (1700)
Pump on: Date 12/4/89 Time ~~1230~~ (t_i)
Pump off: Date 12/5/89 Time 1700 (t_f)
Duration of aquifer test:
Pumping 28 hrs Recovery _____

Water Level Data
Static water level ~~5.45~~ 5.63
Measuring point _____
Elevation of measuring point _____

r = 150'

Comments on factors affecting test data (6) (7)

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		held	Wet	Water level measurement (Tape)	Correction or Conversion	Water level	Water level change s or s'	Insitu		# 2157 Scale = 10.00 Range = 15 psi	209 10.02 6 m
12/1	945	0				7.0	1.55	5.45				0			
12/4	1250	20				9.0	1.12					2.30		2.32	
12/4	1304					9.	.85					2.58		2.61	
12/4	1319					9	.66					2.77		2.80	
	1332					9	.55					2.89		2.93	
						TEST STOPPED									OK
1700	0					7	1.37	5.63							
	1716					8	.56	7.44			1.81			1.77	1.78
	1731					9	1.20	7.80			2.17			2.11	2.12
	1744					9	1.01	7.99			2.36			2.30	2.32
	1758					9	.89	8.11			2.48			2.41	2.43
	1855					9	.65	8.35			2.72			2.65	2.68
	1953					9	.52	8.48			2.85			2.77	2.81
	2057					9	45	8.55			2.92			2.85	2.89
2100	~~1900~~					10	1.39	8.61			2.98			2.9	2.94
	2259					10	1.37	8.63			3.00			2.94	2.98
	2357					10	1.33	8.67			3.04			2.96	3.01
12/5	0056					10	1.32	8.68			3.05			2.98	3.03
	0158					10	1.31	8.69			3.06			3.00	3.05
	0258					10	1.28	8.72			3.09			3.01	3.07
	0357					10	1.27	8.73			3.10			3.02	3.08
	0501					10	1.26	8.74			3.11			3.03	3.09
	0601					10	1.26	8.74			3.11			3.04	3.11
	0651					10	1.26	8.74			3.11			3.04	3.11
	0758					10	1.24	8.76			3.13			3.05	3.12
	0855					10	1.24	8.76			3.13			3.05	3.12
	1000					10	1.24	8.76			3.13			3.06	3.13

AQUIFER TEST DATA

Owner _____ Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

Well No. 3D Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment _____

Time Data
Pump on: Date 12/4/84 Time 1700 (t₀)
Pump off: Date 12/7/84 Time 1706 (t')
Duration of aquifer test:
Pumping 72 hrs Recovery _____

Water Level Data
Static water level 5.63
Measuring point _____
Elevation of measuring point _____

r = 150'

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Hold	Wet	Water level measurement	Correction or Conversion	Water level	Water level change s or s'		Inside #6	Outside (Good) #7
12/5	1059					10	1.23	8.77			3.14		3.05	3.14
	1257					10	1.21	8.79			3.16		3.08	3.15
	1500					10	1.19	8.81			3.18		3.11	3.18
	1653					10	1.18	8.82			3.19		3.12	3.19
	1858					10	1.19	8.82			3.19		3.11	3.18
	2059					10	1.19	8.82			3.19		3.10	3.18
	2259					10	1.19	8.81			3.18		3.10	3.18
12/6	0100					10	1.19	8.81			3.18		3.09	3.17
	0257					10	1.19	8.81			3.18		3.09	3.16
	0457					10	1.19	8.81			3.18		3.09	3.16
	0656					10	1.19	8.81			3.18		3.10	3.17
	0857					10	1.19	8.81			3.18		3.10	3.16
	1100					10	1.18	8.82			3.19		3.11	3.17
	1300					10	1.17	8.83			3.20		3.12	3.18
	1453					10	1.16	8.84			3.21		3.13	3.19
	1651					10	1.14	8.86			3.23		3.14	3.20
	1852					10	1.14	8.86			3.23		3.14	3.20
	2055					10	1.14	8.86			3.23		3.13	3.19
	2300					10	1.15	8.85			3.22		3.13	3.18
12/7	0054					10	1.15	8.85			3.22		3.12	3.17
	0255					10	1.15	8.85			3.22		3.12	3.16
	0455					10	1.15	8.85			3.22		3.12	3.16
	0653					10	1.16	8.84			3.21		3.12	3.16
	0858					10	1.16	8.84			3.21		3.13	3.17
	1058					10	1.16	8.84			3.21		3.13	3.16
	1258					10	1.15	8.85			3.22		3.14	3.17
	1502					10	1.18	8.82			3.19		3.15	3.18
	1651					10	1.13	8.87			3.24			

AQUIFER TEST DATA

Owner Monreve Ranch Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

Well No. 3D Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment _____

Time Data
Pump on: Date _____ Time _____ (t_1)
Pump off: Date _____ Time _____ (t_2)
Duration of aquifer test:
Pumping _____ Recovery _____

Water Level Data
Static water level 5.63
Measuring point _____
Elevation of measuring point _____

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'			Water level measurement	Correction or Conversion	Water level	Water level change s or s'			Comments on factors affecting test data
12/7	1700			BEGIN RECOVERY									
	1715				9	1.85							1.413 1.416
	1728				9	2.20							1.10 1.40
	1743				8	1.41							.84 .90
	1758				8	1.55							.75 .76
	1857				7	.85							.46 .50
	1955				7	.99							.32 .35
	2059				7	1.09							.22 .25
	2203				7	1.13							.15 .18
	2301				7	1.21							.10 .12
	2358				7	1.26							.06 .08
12/8	0059				7	1.29							.02 .04
	0154				7	1.33							.00 .02
	0305				7	1.36							+.03 +.02
	0357				7	1.37							+.04 +.03
	0720				7	1.40							

AQUIFER TEST DATA

Owner Monreve Ranch Address ____ County Martin State ____

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstranti

Well No. PW [redacted] Distance from pumping well 0 Type of test Constant Rate Test No. 1

Measuring equipment ~~Insitu~~ Well Sounder

Time Data
Pump on: Date 12/4/89 Time ~~1930~~ 1700 (t_0)
Pump off: Date 12/7/89 Time 1700 (t_p)
Duration of aquifer test: Pumping 72 hrs Recovery ____

Water Level Data
Static water level ~~2.43~~ 3.0
Measuring point ____
Elevation of measuring point ____

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		BTOC		Water level measurement	Correction or Conversion	Water level	Water level change s or s'		
12/4	11:11	0				2.43'							
12/4	16					32.4							
	30					32.32							
	47					32.65							
12/4		59				32.27							
						TEST STOPPED							
	1700	0				3'					—		
	1708	5				31.10					28.1		
	1720					31.32					28.32		
	1729					31.71					28.71		
	1740					32.05					29.05		
	1759					32.12					29.12		
	1808					32.34					29.34		
	1955					32.40					29.40		
	~~2002~~					32.42					29.42		
	2107					32.47					29.47		
	2308					32.48					29.48		
12/5	~~0000~~ 0006					32.59					29.59		
	0104					32.40					29.40		
	0207					32.56					29.56		
	0305					32.47					29.47		
	0405					32.61					29.61		
	0508					32.46					29.46		
	0609					32.51					29.51		
	0657					32.51					29.51		
	0803					32.35					29.35		
	0900					32.33					29.33		
	1000					32.33					29.33		

AQUIFER TEST DATA

Owner Monreve Ranch Address ____ County ____ State ____

Date ____ Company performing test ____ Measured by ____

Well No. PW Distance from pumping well ____ Type of test ____ Test No. ____

Measuring equipment (Well Sounder)

Time Data
Pump on: Date 12/4/89 Time 1705 (t)
Pump off: Date 12/7/89 Time 1705 (t')
Duration of aquifer test:
Pumping 72 hrs Recovery ____

Water Level Data
Static water level 30'
Measuring point ____
Elevation of measuring point ____

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		BTOC		Water level measurement	Correction or Conversion	Water level	Water level change s or s'		
12/5	1105					32.28					29.28		
	1302					32.24					29.24		
	1505					32.26					29.26		
	1659					32.28					29.28		
	1911					32.27					29.27		
	2109					32.27					29.27		
	2341					32.27					29.27		
12/6	0100					32.30					29.30		
	0306					32.36					29.36		
	0504					32.34					29.34		
	0703					32.32					29.32		
	0904					32.16					29.16		
	1105					32.10					29.10		
	1305					32.08					29.08		
	1500					32.10					29.10		
	1656					32.12					29.12		
	1852					32.12					29.12		
	2059					32.14					29.14		
	2309					32.2					29.2		
12/7	0100					32.13					29.13		
	0302					32.23					29.23		
	0503					32.10					29.10		
	0700					32.13					29.13		
	0903					32.00					29.0		
	1103					31.91					28.91		
	1303					31.90					28.90		
	1501					31.90					28.90		
	1655					32.06					29.06		

AQUIFER TEST DATA

Owner Monreve Ranch Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

Well No. PW Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment Well Sounder

Time Data
Pump on: Date _____ Time _____ (t_1)
Pump off: Date _____ Time _____ (t'_1)
Duration of aquifer test:
Pumping _____ Recovery _____

Water Level Data
Static water level 3.0
Measuring point _____
Elevation of measuring point _____

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'				Water level measurement	Correction or Conversion	Water level	Water level change s or s'		
12/7	1700		BEGIN			RECOVERY							
	1714					4.20							
	1728					3.82							
	1745					3.59							
	1759					3.48							
	1903					3.20							
	2001					3.15							
	2101					3.0							
	2201					3.0							
	2306					2.95							
12/8	0009					2.84							
	0107					2.89							
	0726					2.82							

AQUIFER TEST DATA

Owner Monreve Ranch Address County Martin State

Date 12/4/89 Company performing test SFWMD Measured by Adams/Hopkins/Demonstranti

~~Well No.~~ Distance from pumping well Type of test Constant Rate Test No. 1

Measuring equipment Manometer / Staff Gauge / Flow Meter

Time Data
Pump on: Date 12/4/89 Time 1230 (1700) (t_1)
Pump off: Date 12/7/89 Time 1700 (t_2)
Duration of aquifer test:
Pumping 72hrs Recovery

Water Level Data
Static water level
Measuring point
Elevation of measuring point

r = 455' to slough west of PW

Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Manometer Inches	Manometer GPM	Water level measurement	Correction or Conversion	Water level	Water level change s or s'	Flow Meter GPM	Staff Gauge
12/4	1130	0				—	—					—	.18
12/4	1258					fluctuating, too much air							.20
	1315					" "						160	
						TEST STOPPED							
12/14	1705					17"	136						.18
	1720					17"	136						.18
	1734					17	136						.18
	1752					17	136					140	.2
	1906					"	136						"
	2002					"	136						"
	2004					"	136						.21
	2110					"	136						"
	2310					17"	136					140	.21
12/5	0012					17"	136					140	.22
	0110					17"	136						.22
	0212					17"	136						.22
	0309					17"	136						.22
	0410					17"	136					140	.22
	0511					17"	136						.22
	0614					17"	136					140	.22
	0700					17"	136						.22
	0805					17"	136						.21
	0900					17"	136						.20
	1000					17	136						.20
	1105					17	136						.20
	1300					17	136						.22
	1703					17"	"						.21
	1907					17	"						.21

AQUIFER TEST DATA

Owner _____ Address _____ County _____ State _____

Date _____ Company performing test _____ Measured by _____

~~Well No.~~ _____ Distance from pumping well _____ Type of test _____ Test No. _____

Measuring equipment Manometer / Flow meter / Staff Gauge

Time Data
Pump on: Date 12/4/89 Time 1700 (t_1)
Pump off: Date 12/7/89 Time 1700 (t_2)
Duration of aquifer test:
Pumping 72 hrs Recovery _____

Water Level Data
Static water level _____
Measuring point _____
Elevation of measuring point _____

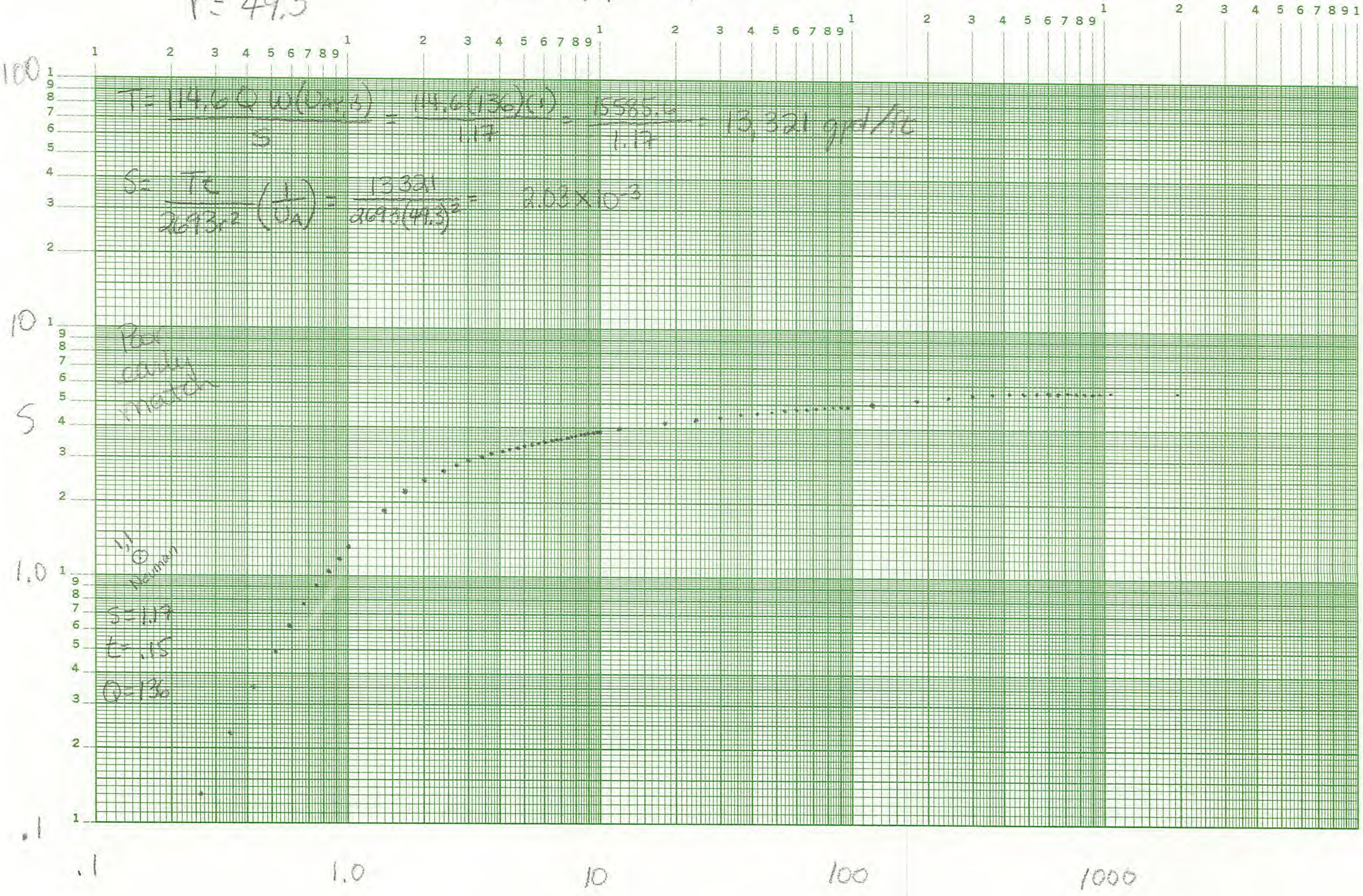
Comments on factors affecting test data

Date	Clock time	Time since pump started t	Time since pump stopped t'	t/t'		Manometer Inches	Manometer GPM	Water level measurement	Correction or Conversion	Water level	Water level change s or s'	Flow Meter		Staff Gauge
2111						17	136							.21
2307						11	11							11
12/6	0111					17"						140		.21
	0310					17"								.21
	0509					17								.21
	0707					17						140		.20
	0910					17								.20
	1110					17								.20
	1310					17								.22
	1505					16.75								.20
	1710					17								.20
	1902					17								.20
	2102					11								11
	2310					11								11
12/7	0103					17								.20
	0305					17								.20
	0506					17						140		.20
	0702					17								.20
	0905					17								.19
	1105					17								.18
	1305					16.75								.19
	1511					11								.19
	1655													

46 7522

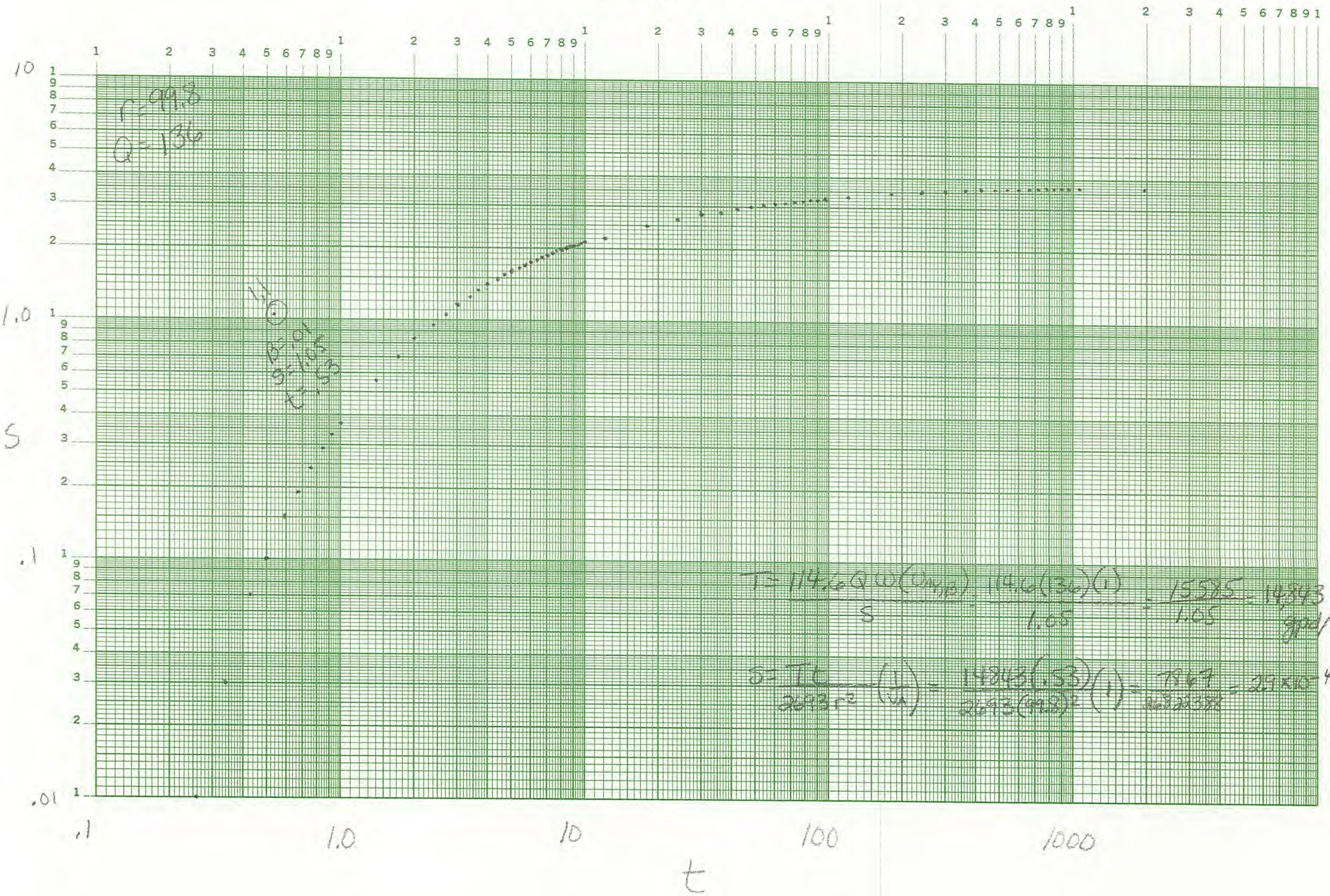
1D (Insitu Input # 1)

r = 49.3



46 7522

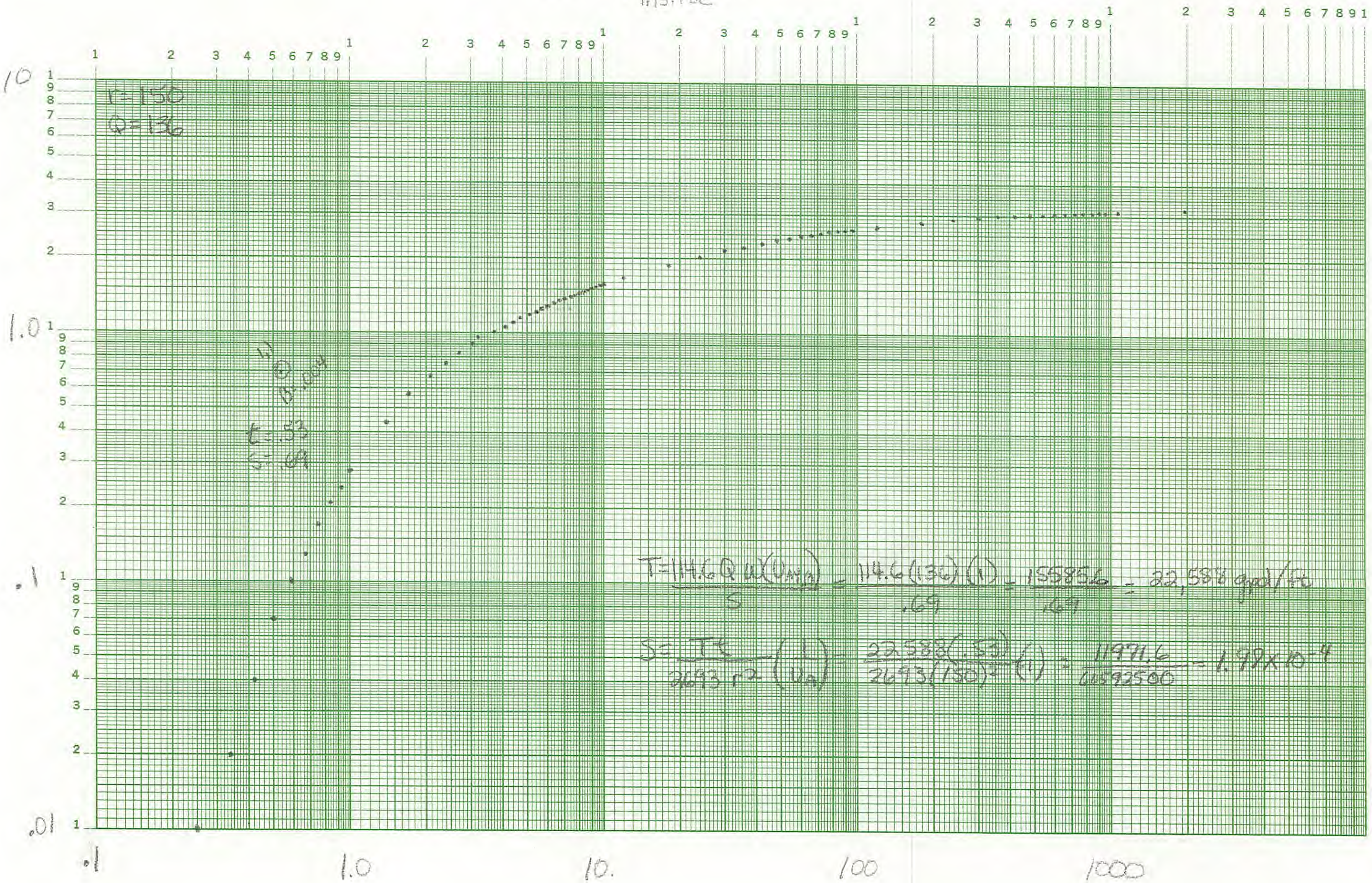
2D (Insitu Input #5)



$$T = \frac{114.6\,Q\,w(u)}{s} \qquad \frac{114.6(134)(1)}{1.65} = \frac{15525}{1.05} = 14843 \text{ gpd/ft}$$

$$S = \frac{Tt}{2693r^2}\left(\frac{1}{u}\right) = \frac{14843(.53)(1)}{2693(99.3)^2} = \frac{7867}{2632388} = 2.9\times10^{-4}$$

3D (Input 7)
Insitu



MOON REVE
RANCH

Well loss coeff.
$s = CQ^2$
$s_{drawdown\ due\ to\ well\ loss}$

PRODUCTION WELL

DISCHARGE vs gpm	TIME	DTW	s (ft)	s/Q
	0	SWL	-	
	5	15.34	12.24	
	6	15.54	12.44	
	7	15.55	12.45	
	8	15.62	12.52	
	9	15.62	12.52	
	10	15.7	12.6	
	12	15.7	12.6	
	13	15.8	12.7	
	14	15.78	12.68	
	16	15.87	12.77	
	18	15.85	12.75	
	19	15.83	12.73	
	21	15.94	12.84	
	22	15.95	12.85	
	25	16.05	12.95	
	30	16.03	12.93	1.48
85	7	20.51	17.41	
	10	20.54	17.44	
	12	20.54	17.44	
	15	20.56	17.46	
	16	20.58	17.48	
	18	20.54	17.44	
	20	20.59	17.49	
	25	20.74	17.64	1.55
95	5	22.37	19.27	
	6	22.38	19.28	
	8	22.36	19.26	
	9	22.36	19.26	
	11	22.37	19.27	1.52

s/Q vs Q

$Y = .01228X + 1.38$

Monroe Ranch 50' readings

Discharge

65 gpm
= 8.69 ft^3/min

85 = 11.36 ft^3/min

95 = 12.70 ft^3/min

TIME	DTW	s(ft)	s/Q
0	6.05		
1	6.72	.67	
2	7.29	1.24	
3	7.65	1.6	
5	7.79	1.74	
6	7.9	1.85	
8	7.95	1.9	
16	8.05	2	
14	8.18	2.13	
17	8.23	2.18	
20	8.25	2.2	
25	8.33	2.28	
30	8.37	2.32	.267 ft^2/min
1	8.61	2.56	
3	8.87	2.82	
5	8.95	2.9	
7	9.0	2.95	
10	9.05	3	
12	9.07	3.02	
15	9.1	3.05	
20	9.14	3.09	
25	9.18	3.13	.275
1	9.28	3.23	
3	9.37	3.32	
5	9.41	3.36	
7	9.44	3.39	
10	9.47	3.42	.269

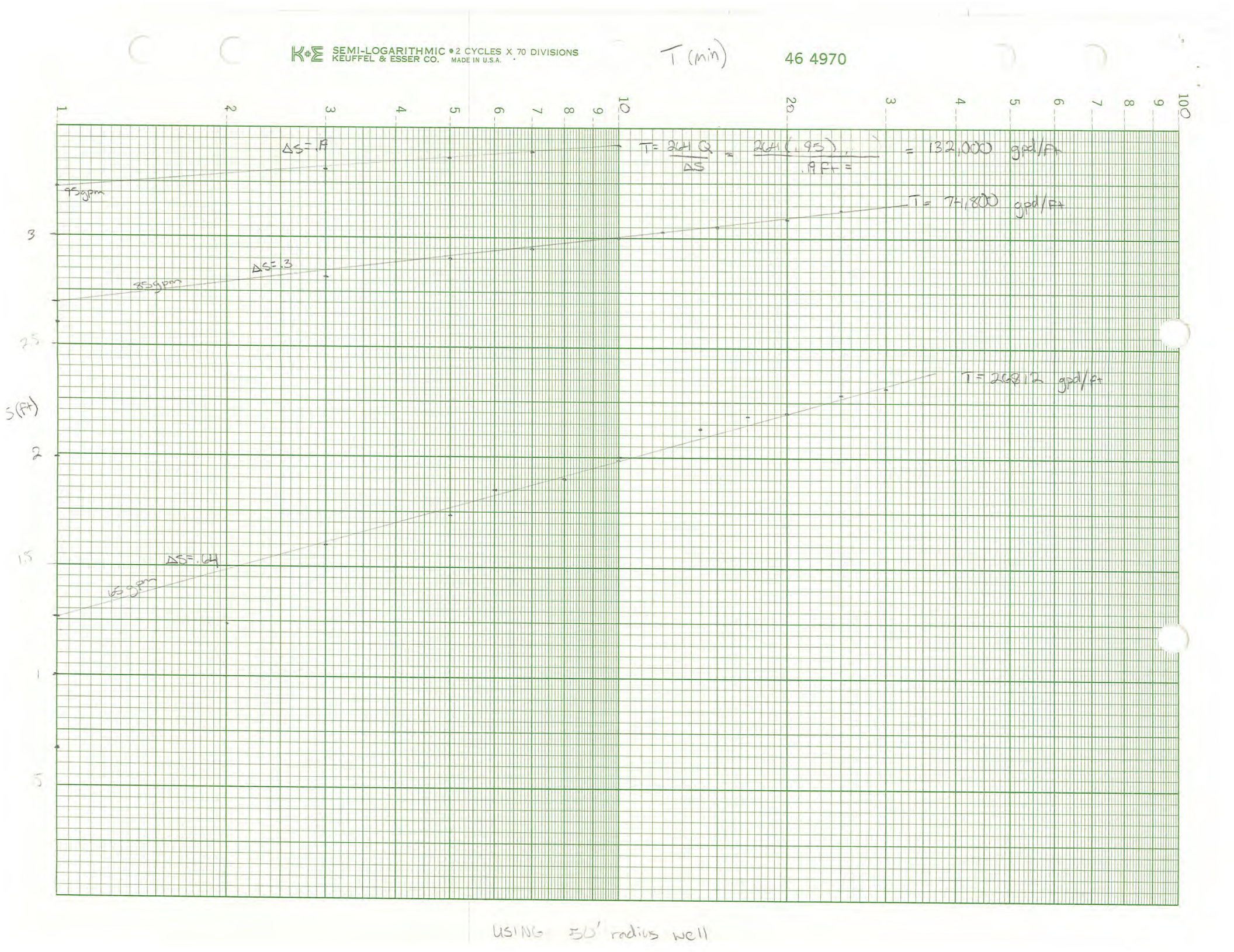
s/Q vs Q

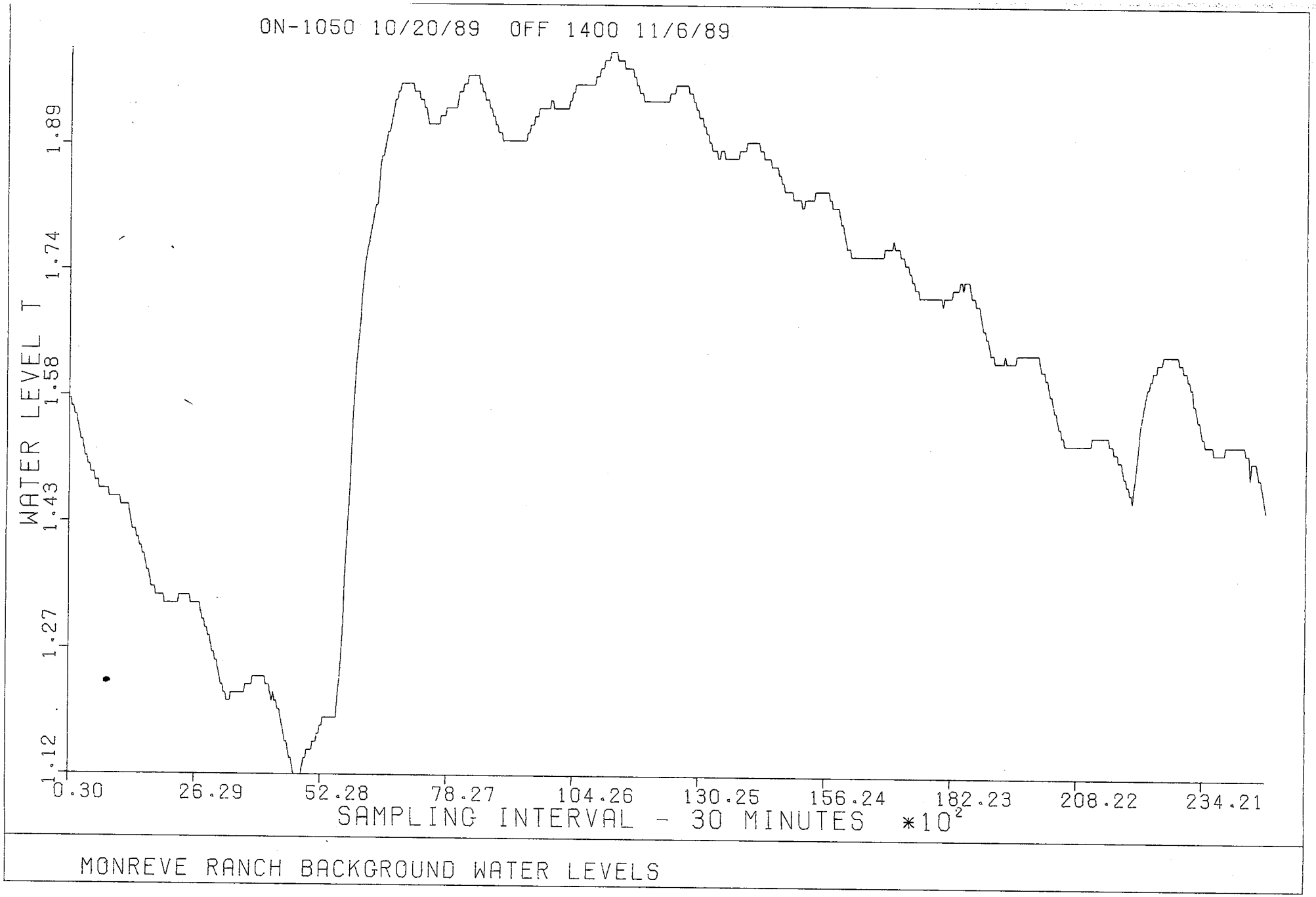
MONREVG
RANKIT
100' radius

Discharge	Time	DTW	S (Ft)	S/Q	
65	0	6.2			
	4	7.07	.97		
	6	7.21	1.11		
	8	7.32	1.22		
	10	7.39	1.29		
	12	7.44	1.34		
	14	7.49	1.39		
	16	7.53	1.43		
	18	7.58	1.48		
	20	7.6	1.5		
	25	7.64	1.54		
	28	7.69	1.59	.183	.024
85 (30)	35	7.99	1.89		
	37	8.06	1.96		
	39	8.11	2.01		
	41	8.13	2.03		
	44	8.17	2.07		
	50	8.23	2.13		
	53	8.26	2.16	.190	.025
95 (55)	59	8.38	2.28		
	61	8.41	2.31		
	63	8.43	2.33		
	65	8.45	2.35	.185	.025

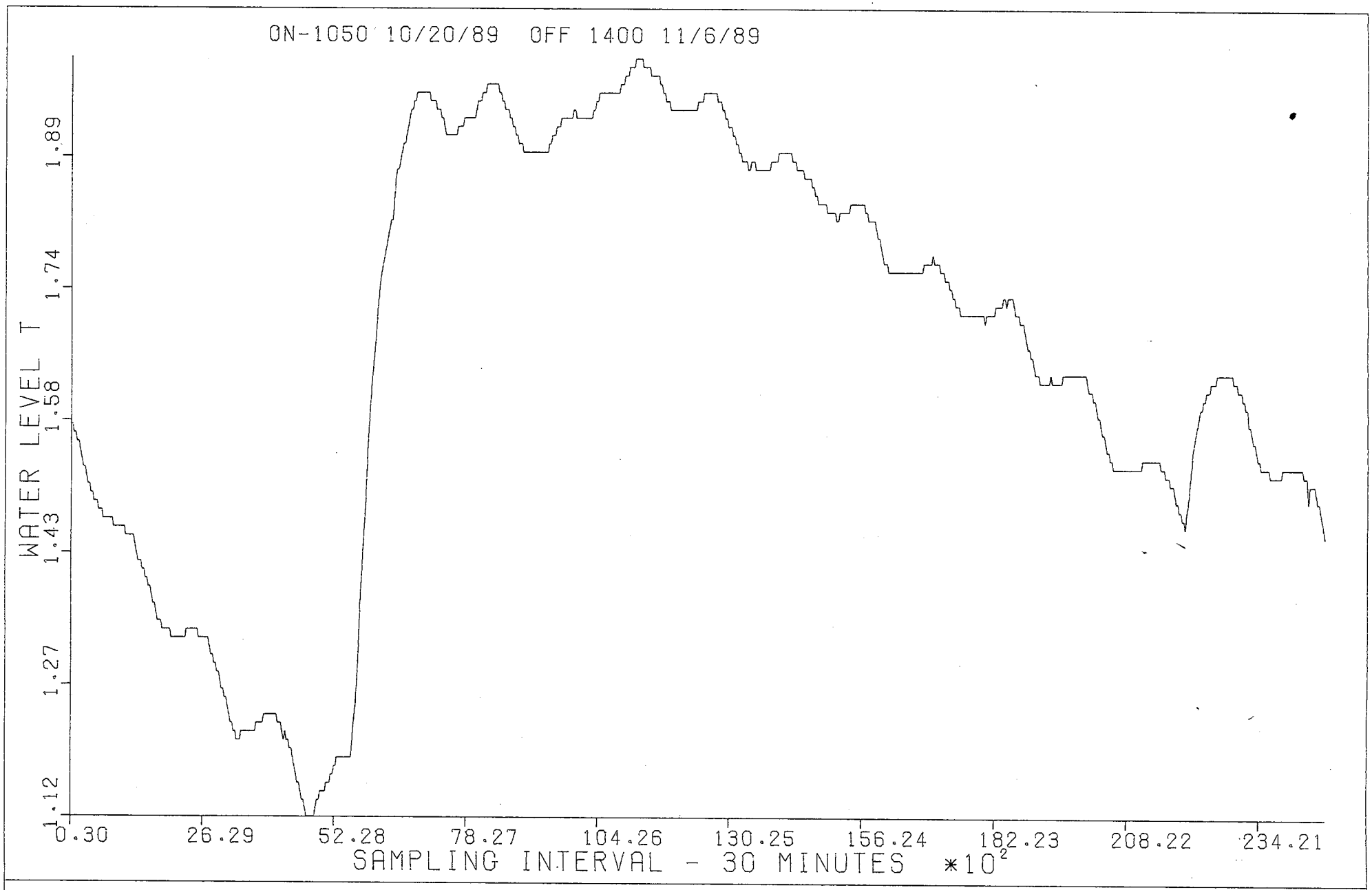
150'
RADIUS

DISCHARGE	TIME	DTW	s (ft)
	0	5.91	
65	5	6.59	.68
	7	6.67	.76
	9	6.74	.73
	11	6.8	.89
	13	6.85	.94
	15	6.89	.98
	17	6.92	1.01
	19	6.95	1.04
	26	7.01	1.1
	29	7.05	1.14
85 (30)	36	7.3	1.39
	38	7.33	1.42
	40	7.37	1.46
	42	7.39	1.48
	45	7.44	1.53
	51	7.49	1.58
	54	7.52	1.61
95 (55)	60	7.63	1.72
	62	7.65	1.74
	64	7.66	1.75

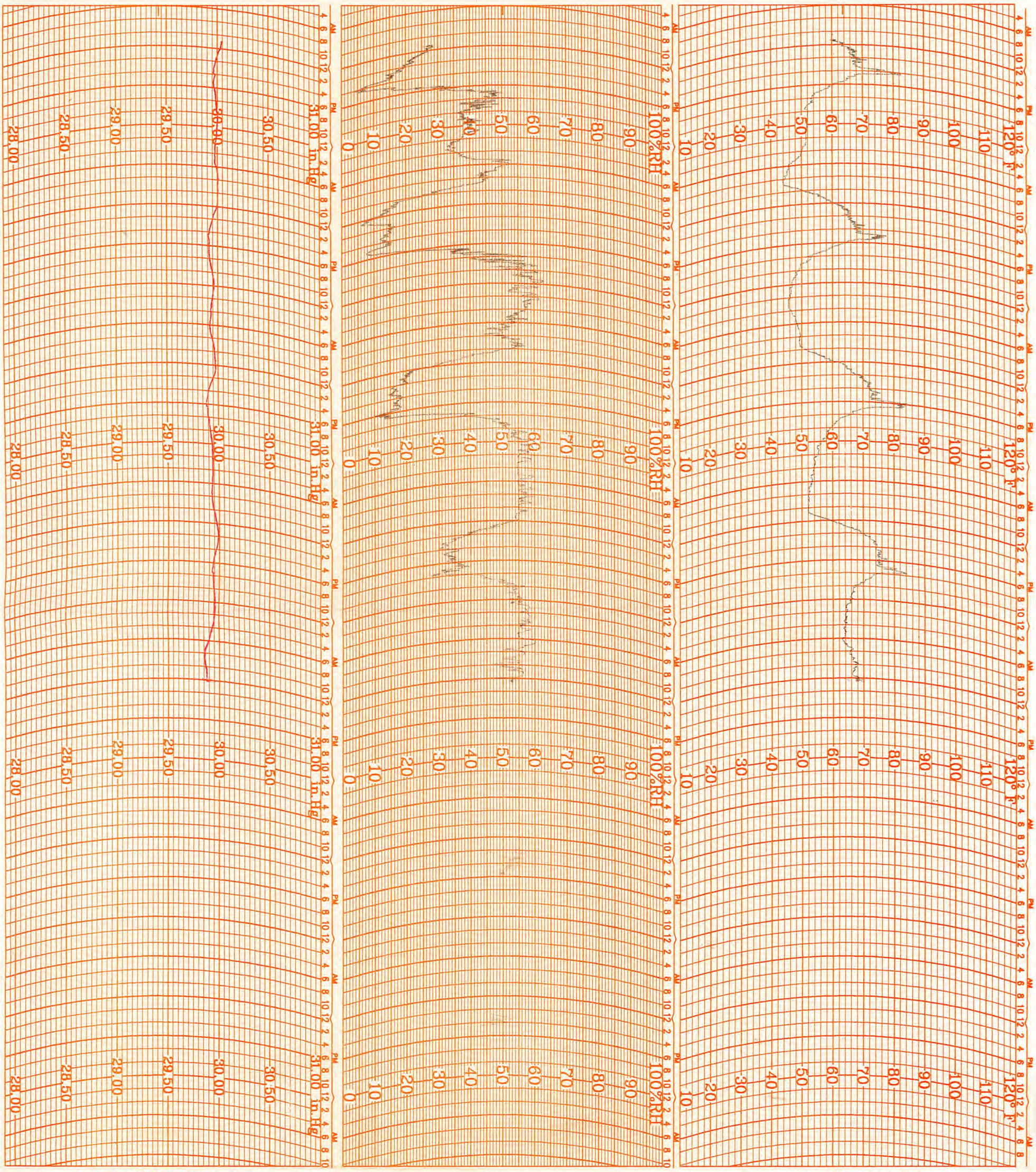

K&E SEMI-LOGARITHMIC • 2 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
T (min)
46 4970
ΔS=.8
95gpm
T= 2.64 Q / ΔS = 264(.95) / .8 Ft = = 132,000 gpd/Ft
T= 71,800 gpd/Ft
ΔS=.3
85gpm
T= 268.12 gpd/Ft
ΔS=.64
65gpm
S(Ft)
USING 30' radius well



MONREVE RANCH BACKGROUND WATER LEVELS



MONREVE RANCH BACKGROUND WATER LEVELS



WeatherMeasure
WEATHERtronics
Division of QUALIMETRICS, Inc.

P.O. BOX 41039
SACRAMENTO, CA 95841
PHONE: (916) 923-0055

METEOROGRAPH
7 DAY

CHART NO. 50104
ECN 2563
10/6/86

STATION Monroe Ranch DATE ON 12/4/89 DATE OFF 12/8/89

RESULTS

Step Drawdown Test

The step drawdown test data was analyzed and a specific capacity for each discharge rate was calculated. The results are as follows:

Step	Rate	Drawdown	Specific Capacity
1	65 gpm	12.93'	5.0 gpm/ft
2	85 gpm	17.64'	4.8 gpm/ft
3	95 gpm	19.27'	4.9 gpm/ft

Aquifer Performance Test

Two hydraulic coefficients, transmissivity and storage, were determined by analyzing the drawdown data collected from the APT. The following non-equilibrium, unconfined aquifer equations were used (Neuman, 1975):

$$T = \frac{114.6Q\,W(Uay,\beta)}{s} \qquad S = \frac{Tt}{2693r^2(1/Ua)}$$

Where
- T = Transmissivity in gpd/ft
- Q = Pumpage rate in gpm
- s = Drawdown in feet
- t = Time since pumping started in minutes
- r = Radial distance from pumping well in feet
- W(Uay,β) = well function

and Cooper's semi-confined, leaky aquifer type curves (Cooper, 1963)

$$T = \frac{1440\,Q\,L(u,v)}{4\pi s\,(7.48)} \qquad S = 4T\,\frac{t/r^2}{1/u}$$

where
- T = Transmissivity in ft^2/day
- Q = Pumpage in gpm
- s = Drawdown in feet
- t = Time since pumping started in hours
- r = Radial distance from pumping well in feet
- L(u,v) = well function
- 1/u = well function

The above equations assume the aquifer to be homogeneous, anisotropic (Neuman) or isotropic (Cooper), infinite in areal extent, of constant thickness, the production and observation wells having no storage capacity and the wells fully penetrating the aquifer.

When pumping is stopped, well and aquifer water levels rise toward their pre-pumping levels. The rate of recovery provides a means of calculating a transmissivity value for each monitor well. These values serve to check the calculations based on the drawdown data. The following equation was used (Driscoll, 1986):

$$T = \frac{264\,Q}{\Delta s'}$$

Where:
T = Transmissivity in gpd/ft
Q = pumpage rate in gpm
s' = residual drawdown in feet

The drawdown data for each observation well was plotted on log-log graph paper. These curves were then matched to type curves, the necessary values were determined and then entered in the equations. The recovery data was plotted on semi-log graph paper. A straight line was drawn through the points and a slope was determined which was entered in the equation. The plotted test data are presented in figures 4 through 9, with the calculation for transmissivity shown on each graph. Table 2 lists a summary of the calculated values. Average values of transmissivity and storage are: 14,100 gpd/ft and 3.4 X 10-4 respectively.

TABLE 2

SUMMARY OF AQUIFER CHARACTERISTICS

WELL NO.	METHOD (gpd/ft)	TRANSMISSIVITY COEFFICIENT	STORAGE
D	Neuman	8,425	4.0E-4
	Cooper	6,361	4.9E-4
	Recovery	28,723	
2D	Neuman	11,132	3.8E-4
	Cooper	14,167	3.9E-4
	Recovery	24,259	
3D	Neuman	22,265	1.98E-4
	Cooper	22,264	1.98E-4
	Recovery	30,687	

Water Quality

Referring to Table 1, none of the water quality parameters tested increased significantly from the beginning to the end of the test. Both total and dissolved iron values did increase slightly, but many of the other parameters actually decreased in concentration.

Step Drawdown Form

Permit number:_____ Application number:_____

Applicant's Name: Monroe Ranch

Project Name:_____

Project Location: Section:___ Township:___ Range:___

Weather Conditions: cloudy rainy

Test Operator:_____ Test Date: 9/19/89

Pump Characteristics: Power:___HP; Discharge Diameter: 3 IN

Production Well

Flow Meter Type:_____

Static water Level: 3.10 FT from the Top of Casing

1302

Discharge Rate (GPM)	Time (MIN)	Depth from Top of Casing to water Surface (FT)	Drawdown* (FT)	Chloride Conc. (MG/L)	Conductivity (MICROMHOS/CM)
65	5	17-1.66			
	6	17-1.46			
	7	16-.45			
	8	17-1.38			
	9	17-1.38			
	10	17-1.30			
	12	17-1.30			
	13	17-1.20			
	14	17-1.22			
	16	17-1.13			
	18	17-1.15			
	19	17-1.17			
	21	17-1.06			

95 GPM

45 23-2.44
46 23-2.42
48 23-2.46
50 23-2.41
55 23-2.26
60 24-1.63
61 24-1.62
63 24-1.64
64 24-1.64
66 24-1.63

* Drawdown is the static water level minus pumping level.

NOTE: Attach copy of well log and completion report.

22 17-1.05
25 17-.95 B-22
30 17-.97
85GPM 37 23-2.49
40 23-2.46
42 23-2.46

Step Drawdown Form

Permit number:_____ Application number:_____

Applicant's Name: Monreve Ranch

Project Name:_____

Project Location: Section:___ Township:___ Range:___

Weather Conditions: cloudy, rainy

Test Operator:_____ Test Date: 9/19/89

Pump Characteristics: Power:___HP; Discharge Diameter: 3 IN

Flow Meter Type:_____

Static water Level: 6.05 FT from the Top of Casing 1.95

Discharge Rate (GPM)	Time (MIN)	Depth from Top of Casing to water Surface (FT)	Drawdown* (FT)	Chloride Conc. (MG/L)	Conductivity (MICROMHOS/CM)
65	1				
	2				
	3				
	5				
	6				
	8				
	10				
	14				
	17				
	20				
	25				
	30				
85	1				

* Drawdown is the static water level minus pumping level.

NOTE: Attach copy of well log and completion report.

250' radius
monitor well

42y
.71
9 1.35
1.21
1.00
1.05
.85
.82
10 1.77
1.75
1.67
1.63
step
1.59

Step Drawdown Form

Permit number:_____ Application number:_____

Applicant's Name: Monroe Ranch

Project Name:_____

Project Location: Section:___ Township:___ Range:___

Weather Conditions: cloudy, rainy

Test Operator:_____ Test Date: 9/19/89

Pump Characteristics: Power:___HP; Discharge Diameter: 3 IN

Flow Meter Type:_____

Static water Level: 6.2 FT from the Top of Casing 8.0 - 1.8 = 6.2

100' radius monitor well

Discharge Rate (GPM)	Time (MIN)	Depth from Top of Casing to water Surface (FT)	Drawdown* (FT)	Chloride Conc. (MG/L)	Conductivity (MICROMHOS/CM)
65	4	8-.93			
	6	8-.79			
	8	8-.68			
	10	8-.61			
	12	8-.56			
	14	8-.51			
	16	8-.47			
	18	8-.42			
	20	8-.40			
	25	8-.36			
	28	8-.31			
85 (30 min)	35	9-1.01			
	37	9-.94			

* Drawdown is the static water level minus pumping level.

NOTE: Attach copy of well log and completion report.

39 9-.89
41 9-.87
44 9-.83
50 9-.77
53 9-.74

Step Drawdown Form

Permit number:_____ Application number:_____

Applicant's Name: Monroe Ranch

Project Name:_____

Project Location: Section:___ Township:___ Range:___

Weather Conditions: cloudy, rainy

Test Operator:_____ Test Date: 9/19/89

Pump Characteristics: Power:___HP; Discharge Diameter: 3 IN

Flow Meter Type:_____

Static water Level: 5.91 FT from the Top of Casing

7.98 - 2.07 = 5.91

Start 1:03

Discharge Rate (GPM)	Time (MIN)	Depth from Top of Casing to water Surface (FT)	Drawdown* (FT)	Chloride Conc. (MG/L)	Conductivity (MICROMHOS/CM)
65	5	8-1.41			
	7	8-1.33			
	9	8-1.26			
	11	8-1.20			
	13	8-1.15			
	15	8-1.11			
	17	8-1.08			
	19	8-1.05			
	26	8-.99			
	29	8-.95			
85 (30 min)	36	8-.70			
	38	8-.67			
	40	8-.63			
	42	8-.61			
	45	8-.56			
	51	8-.51			
	54	8-.48			

150' radius monitor well

* Drawdown is the static water level minus pumping level.

NOTE: Attach copy of well log and completion report.

8-22

MONREVE RANCH APT
WATER QUALITY TEST RESULTS
PRODUCTION WELL

Parameter Tested	Start of Test 12/4/89	End of Test 12/7/89
Sodium	19.9	15.96
Potassium	.79	.44
Calcium	86	58.5
Magnesium	3.8	2.35
Chloride	55.8	56.2
Sulfate	<2.0	<2.0
Total Alkalinity	280.8	274.1
Flouride	.175	.642
Silicon Dioxide	16.14	16.4
Total Dissolved Strontium	.89	.72
Total Iron	2.14	3.12
Total Dissolved Iron	<.05	.021
Total Dissolved Solids	435	431
Color (Units)	34	36
Lab Conduct. (umhos/cm)	604	665
Lab pH (Units)	6.86	7.29

Note: All results are given in mg/l unless otherwise specified.