

Neuman Analysis

$Q = 460 \text{ gpm}$   
 $r = 25'$   
 $b = 120'$   
 $\beta = .004$

$\checkmark t = 1 \text{ min} \quad t_s = 410 \checkmark$   
 $\checkmark s = 1 \text{ ft} \quad s_d = 25 \checkmark$

$$T = \frac{114.6 Q s_d}{s}$$

$$= \frac{(114.6)(460)(25)}{1}$$

$$= 1,317,900 \text{ GPD/FT} \checkmark$$

$$S = \frac{T t}{2693 r^2 t_s}$$

$$= \frac{(1317900)(1)}{(2693)(25^2)(410)}$$

$$= 1.91 \times 10^{-3} \checkmark$$

$$K_h = T/b$$

$$= 1317900/120$$

$$= 10,982 \text{ GPD/FT}^2 \checkmark$$

$$K_d = \beta b^2 / r^2$$

$$= \frac{(.004)(120^2)}{(25^2)}$$

$$= .092 \checkmark$$

$$K_v = K_h K_d$$

$$= (10982)(.092)$$

$$= 1012.1 \text{ GPD/FT}^2 \checkmark$$

Tegueta Wellfield #2 APT Well D1-2

Streetsova Analysis

$t = 375$   
 $s = 3.6$

$w = 1$   
 $\theta = 10^4$

$Q = 460$   
 $r = 25$   
 $b = 120$   
 $l' = .6$   
 $y' = .6$   
 $\rho' = .5$

$$T = \frac{wQ}{4\pi l's} \times 1440$$
$$= \frac{(1)(460)}{(4)(\pi)(.6)(3.6)} \times 1440$$
$$= 16.94 \times 1440 = 24,403$$

small r

$$s = \frac{4Tt}{\sigma r^2}$$
$$= \frac{(4)(16.94)(375)}{(10^4)(25^2)}$$
$$= 4.06 \times 10^{-3}$$

$$K_h = 24403/120$$
$$= 203.36$$

$$\rho = \rho' b$$
$$= (.5)(120)$$
$$= 60$$

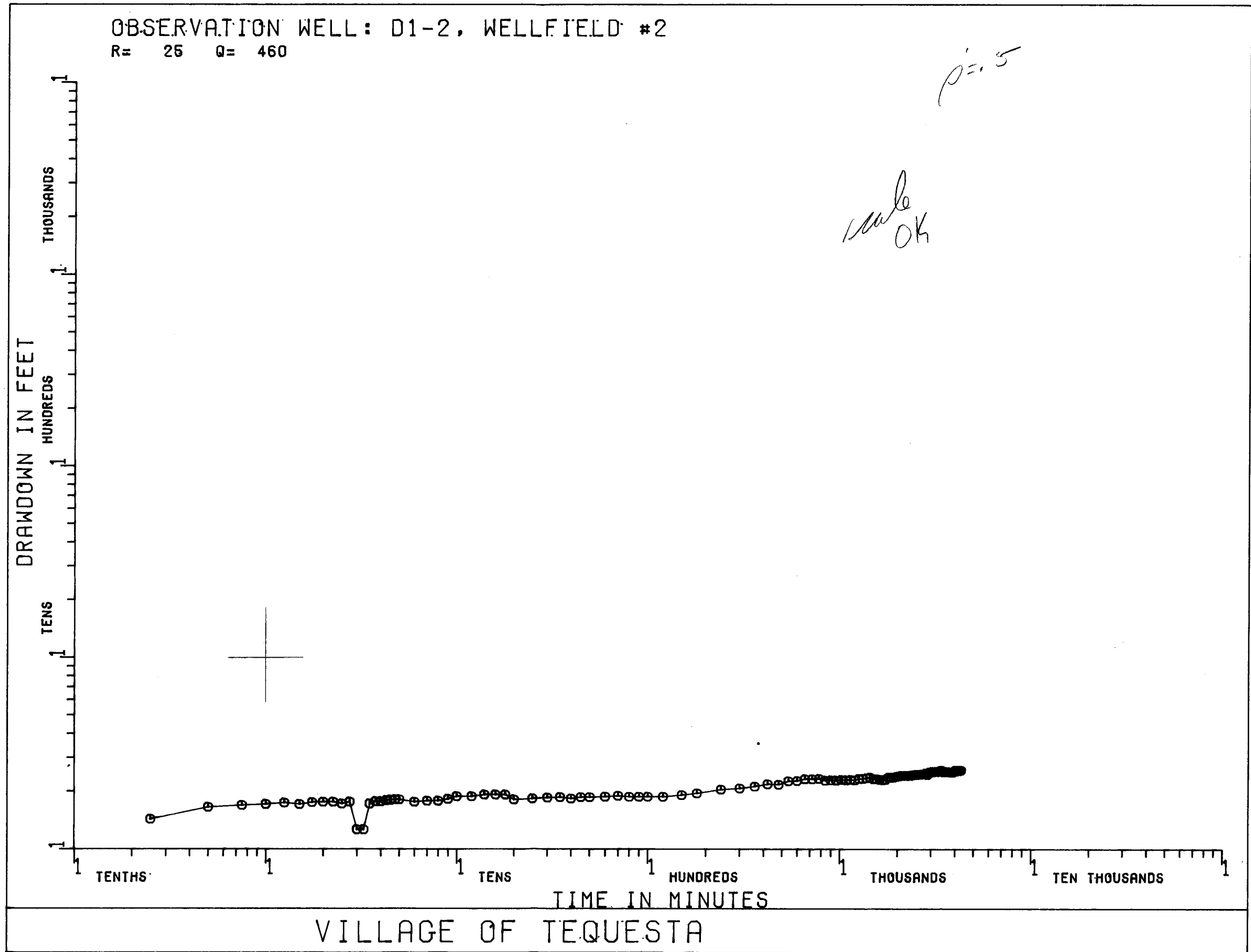
$$\rho = \sqrt{K_v/K_h} \quad \sigma$$

$$\frac{60}{25} = \sqrt{K_v/K_h}$$

$$K_v/K_h = 5.76$$

$$K_v = (K_h)(K_v/K_h)$$
$$= (203.36)(5.76)$$
$$= 1171.35$$

WMD TAPENO 6153 PLOT NO 0050  
USER NO NELMS DATE 86/04/24 TIME 16:23



Request APT

Well D1-5

Neuman Analysis

$$z = 1 \quad z_s = 24 \checkmark$$

$$s = 1 \quad s_d = 5.6$$

$$Q = 217 \text{ gpm}$$

$$r = 24 \text{ ft}$$

$$b = 120'$$

$$\beta = .2$$

$$T = \frac{114.6 Q s_d}{s}$$

$$= \frac{(114.6)(217)(5.6)}{1}$$

$$= 139,262 \text{ gpd/ft}$$

match questionable  
??

$$s = \frac{Tt}{2693 r^2 t_s}$$

$$= \frac{(139,262)(1)}{(2693)(24^2)(24)}$$

$$= 3.7 \times 10^{-3}$$

$$S_y = \frac{C_2 Tt}{r^2 t_s}$$

$$= \frac{.1337(139,262)(1)}{(24)^2 (6.024)}$$

$$= \frac{18619}{13824}$$

$$= 1347$$

$$h_h = T/b$$

$$= 139262/120$$

$$= 1161$$

$$k_d = \beta b^2 / r^2$$

$$= \frac{(0.2)(120^2)}{(24^2)}$$

$$= 5??$$

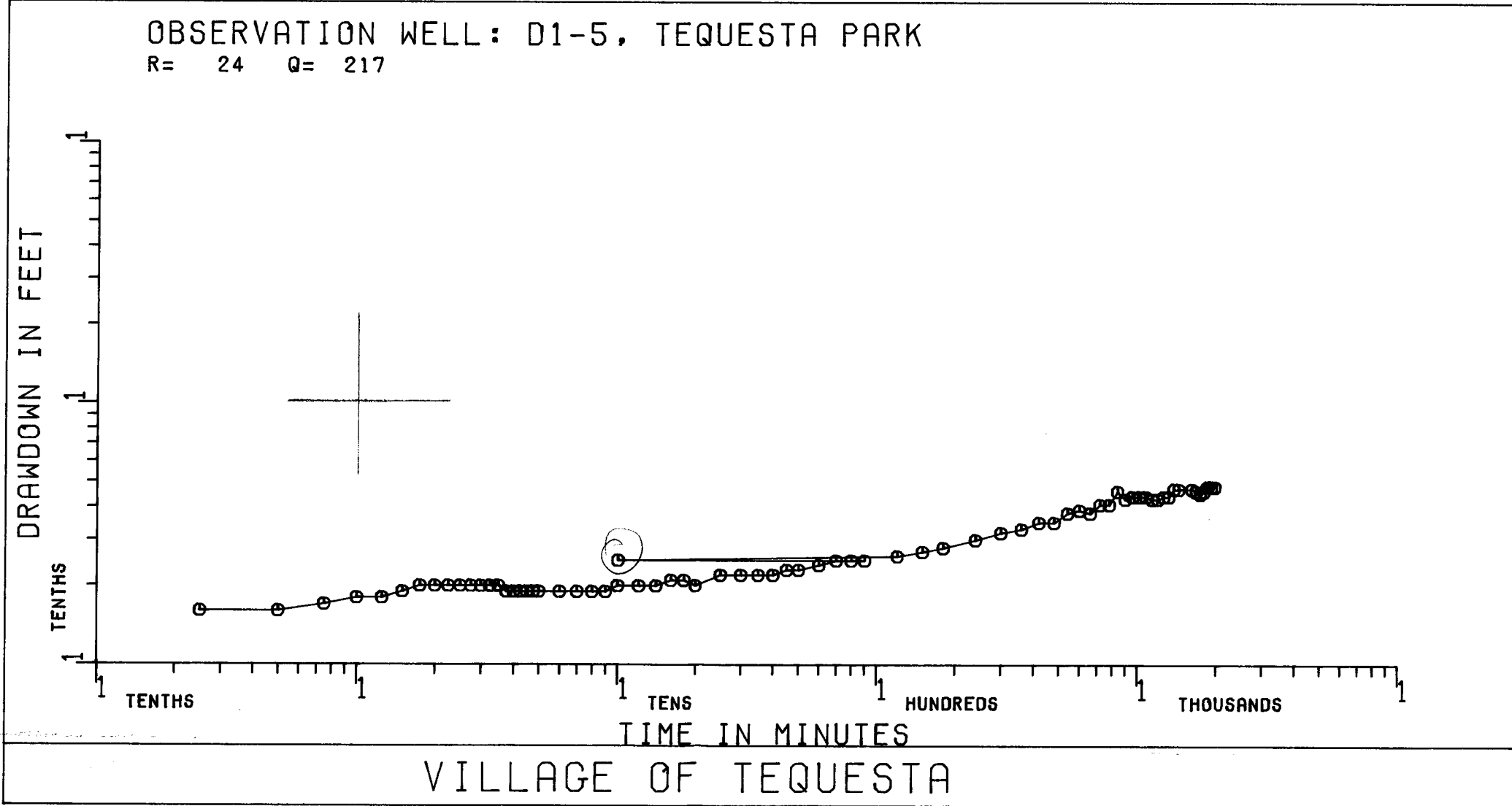
42-381 50 SHEETS 5 SQUARE  
42-382 100 SHEETS 5 SQUARE  
42-383 200 SHEETS 5 SQUARE  
42-384 300 SHEETS 5 SQUARE  
42-385 400 SHEETS 5 SQUARE  
42-386 500 SHEETS 5 SQUARE  
42-387 600 SHEETS 5 SQUARE  
42-388 700 SHEETS 5 SQUARE  
42-389 800 SHEETS 5 SQUARE  
42-390 900 SHEETS 5 SQUARE  
42-391 1000 SHEETS 5 SQUARE



WMD

TAPENO 6265 PLOT NO 0349  
USER NO NELMS DATE 86/05/05

TIME 12:52



Tequesta Wellfield #2 APT Well 52-2

Streetsova Analysis

$t = 1050$      $W = 1$   
 $S = .28$      $\theta = 10^{\circ}$

$Q = 460 \text{ gpm}$   
 $r = 103'$   
 $b = 120'$   
 $\rho' = .6$   
 $\rho = .6$   
 $\rho' = .3$

$T = \frac{WQ}{4\pi \rho' S} \times 1440$

$= \frac{(1)(460)}{(4)(\pi)(.6)(.28)} \times 1440$

$= 217.89 \times 1440 = 313,763$

$S = \frac{4Tt}{\sigma r^2}$

$= \frac{(4)(217.89)(1050)}{(104)(103^2)}$

$= 8.6 \times 10^{-3}$

$K_h = \frac{T}{b}$   
 $= 313763 / 120$   
 $= 2614.7$

$\rho = \rho' b$   
 $= (.3)(120)$   
 $= 36$

$\rho = \sqrt{K_u / K_h} r$

$\frac{36}{120} = \sqrt{K_u / K_h}$

$K_u / K_h = .09$

$K_u = (K_h)(K_u / K_h)$   
 $= (2614.7)(.9)$   
 $= 2353$

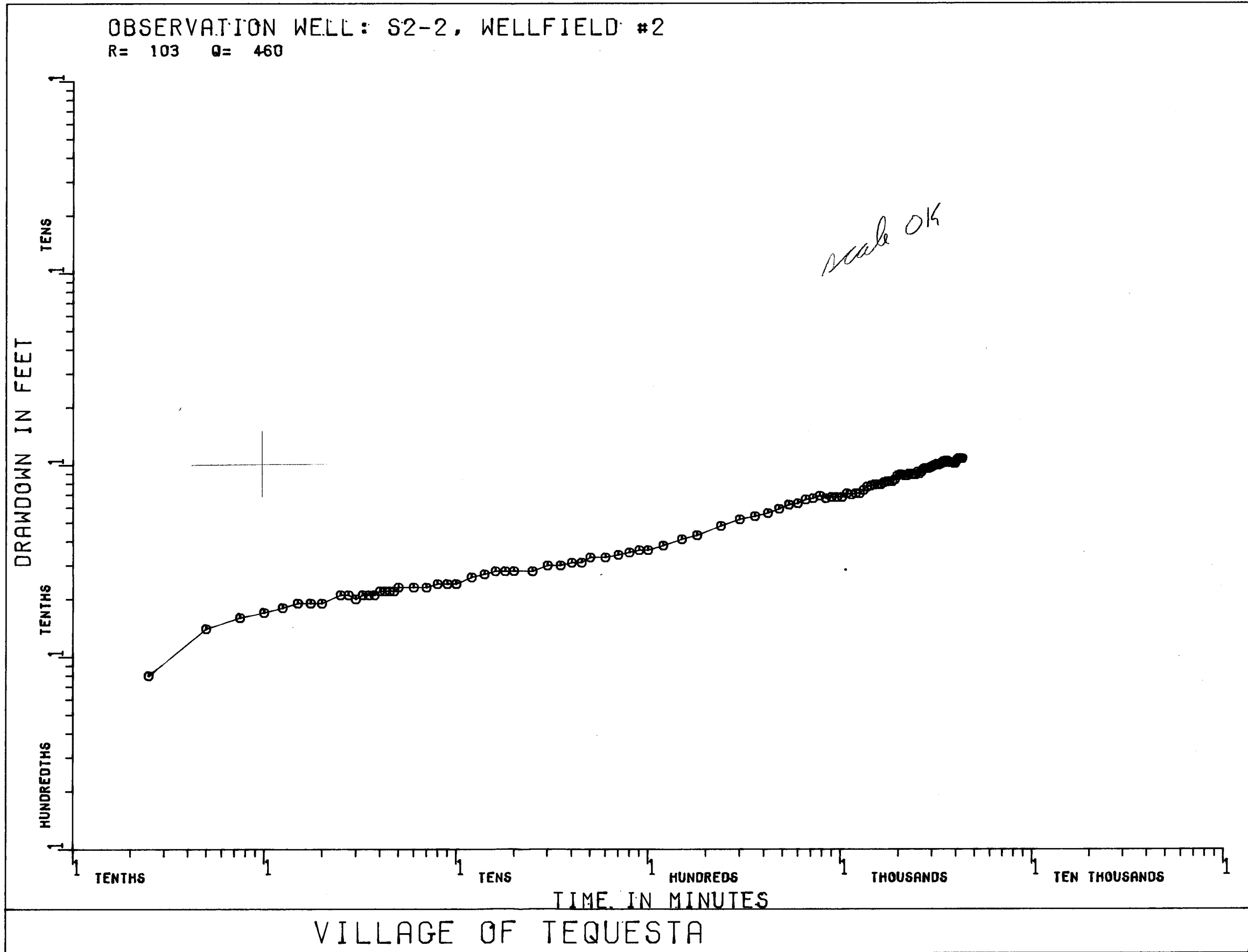
42,381 50 SHEETS 5 SQUARE  
42,382 100 SHEETS 5 SQUARE  
42,383 200 SHEETS 5 SQUARE  
MADE IN U.S.A.



WMD

TAPENO 6153 PLOT NO 002-1  
USER: NO NELMS DATE 86/04/24 TIME 16:22

$\rho' = .3$



Neuman Analysis

$\checkmark t = 1 \text{ min}$      $\checkmark S_d = 1.1$   
 $\checkmark s = 1 \text{ ft}$      $\checkmark t_s = 3.3$

$Q = 460 \text{ gpm}$   
 $r = 194'$   
 $b = 120'$   
 $\beta = .4$

$T = \frac{114.6 Q S_d}{s}$

$= \frac{(114.6)(460)(1.1)}{1}$

$= 57,988 \text{ GPD/FT} \checkmark$

$S = \frac{T t}{2693 r^2 t_s}$

$= \frac{(57988)(1)}{(2693)(194^2)(3.3)}$

$1.7 \times 10^{-4} \checkmark$

$S_y = \frac{C_2 T t}{r^2 t_y}$

$= \frac{.337(57988)(1)}{(194^2)(.033)}$

$= \frac{7753}{1242}$

$= 6.2$

*match very questionable*

$K_h = \frac{T}{b}$   
 $= \frac{57988}{120}$

$= 483.2 \text{ GPD/FT}^2 \checkmark$

$K_d = \beta b^2 / r^2$

$= \frac{(.4)(120^2)}{194^2}$

$= .15 \checkmark$

$K_2 = K_h K_d$   
 $= (483.2)(.15)$

$= 73.9 \text{ GPD/FT}^2 \checkmark$

Poor Match (1)



Streltsova Analysis

$t = 4900$        $W = 1$   
 $s = 1.1$        $\sigma = 10^4$

$$T = \frac{WQ}{4\pi l' s} \times 1440$$

$$= \frac{(1)(460)}{(4)(\pi)(.6)(1.1)} \times 1440$$

$= 55.46 \times 1440 = 79,867$

$$S = \frac{4Tt}{\sigma r^2}$$

$$= \frac{(4)(55.46)(4900)}{(10^4)(194^2)}$$

$= 2.9 \times 10^{-3}$

$$K_h = T/b$$

$$= 79867/120$$

$$= 665.6$$

$$K_v = (K_h)(K_u/K_h)$$

$$= (665.6)(.86)$$

$$= 573.0$$

$Q = 460 \text{ gpm}$   
 $r = 194'$   
 $b = 120'$   
 $l' = .6$   
 $s = .6$   
 $\rho' = 1.5 ?$

*match extremely questionable*

$$\rho = \rho' h$$

$$= (1.5)(120)$$

$$= 180$$

$$\rho = \sqrt{K_u/K_h} r$$

$$\frac{180}{194} = \sqrt{K_u/K_h}$$

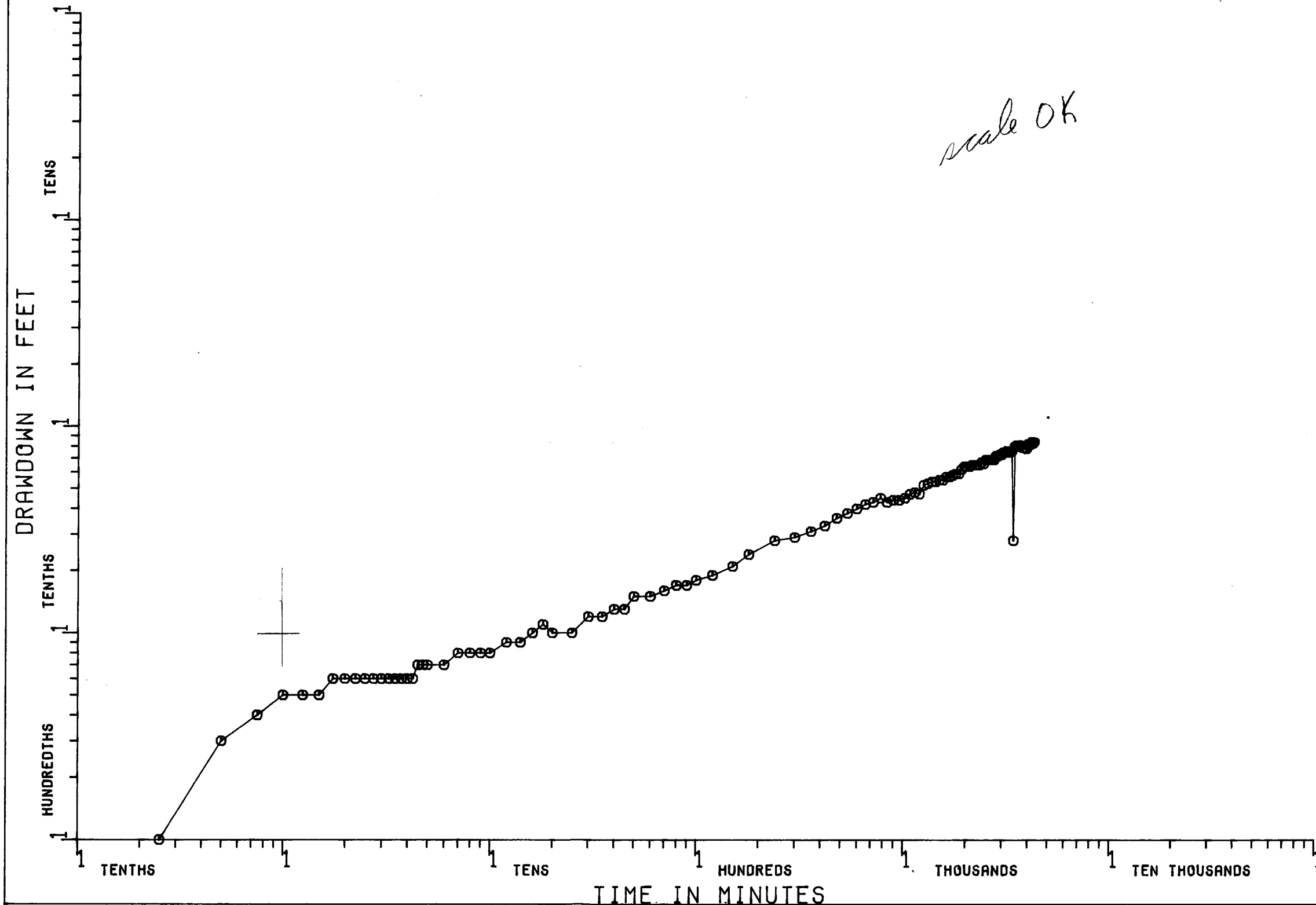
$$K_u/K_h = .86$$

WMD

TAPENO 6153 PLOT NO 0047  
USER NO NELMS DATE 86/04/24 TIME 16:23

$\rho = 1.5$

OBSERVATION WELL: S3-2, WELLFIELD #2  
R= 194 Q= 460



VILLAGE OF TEQUESTA

Tequesta Wellfield 2 A PT Well 52-2

Neuman Analysis

$$\begin{aligned} \checkmark t &= 1 \text{ min} & \checkmark S_d &= 22 \\ \checkmark s &= 1 \text{ ft} & \checkmark t_s &= 100 \end{aligned}$$

$$\begin{aligned} Q &= 460 \text{ gpm} \\ r &= 103' \\ b &= 120' \\ \beta &= .001 \end{aligned}$$

$$T = \frac{114.6 Q S_d}{s}$$

$$= \frac{(114.6)(460)(22)}{1}$$

$$= 1,159,752 \text{ GPD/FT} \checkmark \quad (155,047 \text{ FT}^2/\text{DAY})$$

$$S = \frac{T t}{2693 r^2 t_s}$$

$$= \frac{(1159752)(1)}{(2693)(103^2)(100)}$$

$$= 4.06 \times 10^{-4} \checkmark$$

$$K_h = T/b$$

$$= 1157952/120$$

$$= 9649.6 \text{ GPD/FT}^2 \checkmark \quad (1290 \text{ FT/DAY})$$

$$K_d = \beta \frac{b^2}{r^2}$$

$$= \frac{(.001)(120^2)}{(103^2)}$$

$$= .001 \checkmark$$

$$K_z = K_h K_d$$

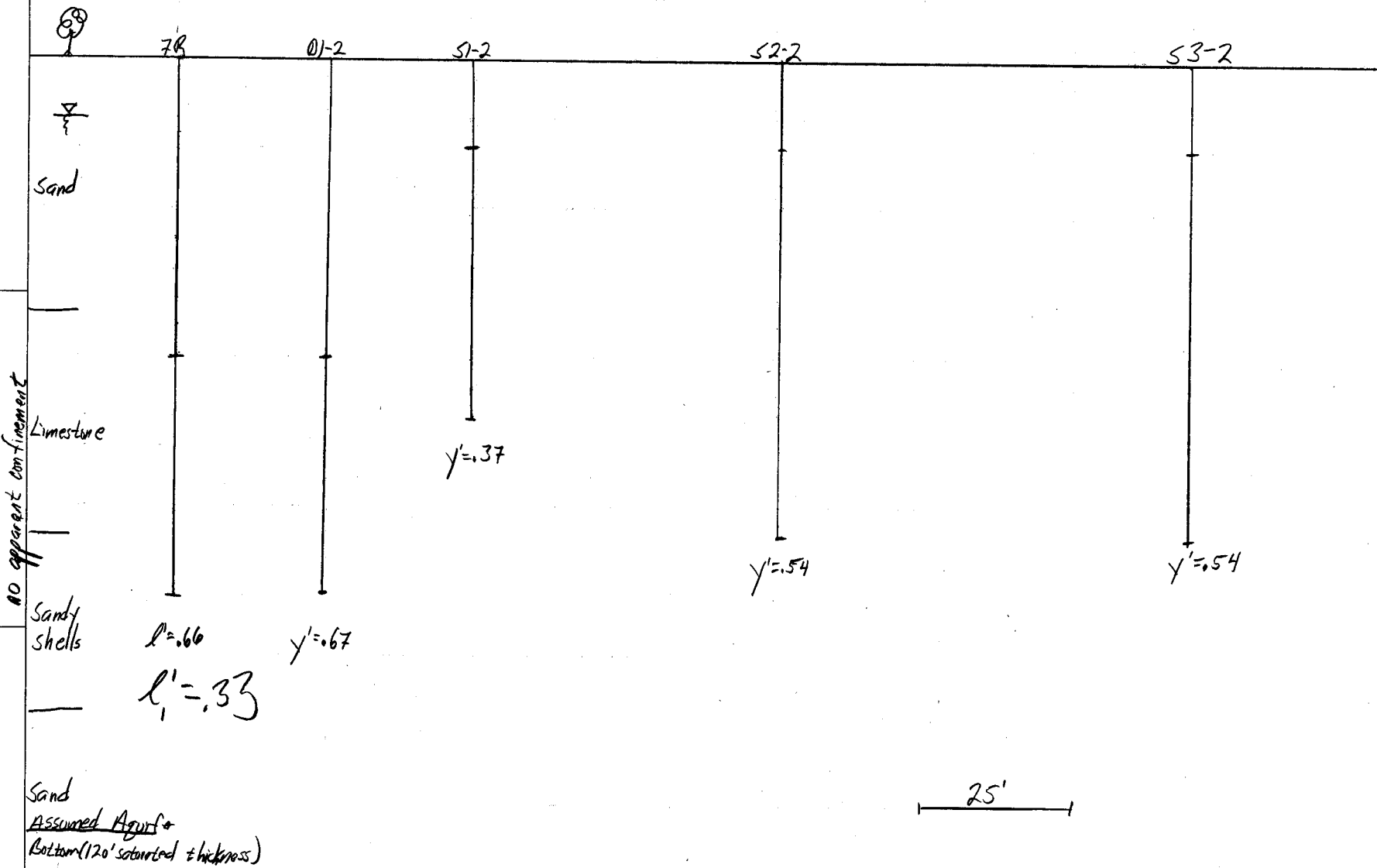
$$= (9649.6)(.0013)$$

$$= 13.09 \text{ GPD/FT}^2 \checkmark \quad (1.75 \text{ FT/DAY})$$

Poor Match (1) Points after 10 min. didn't fit, curve never leveled

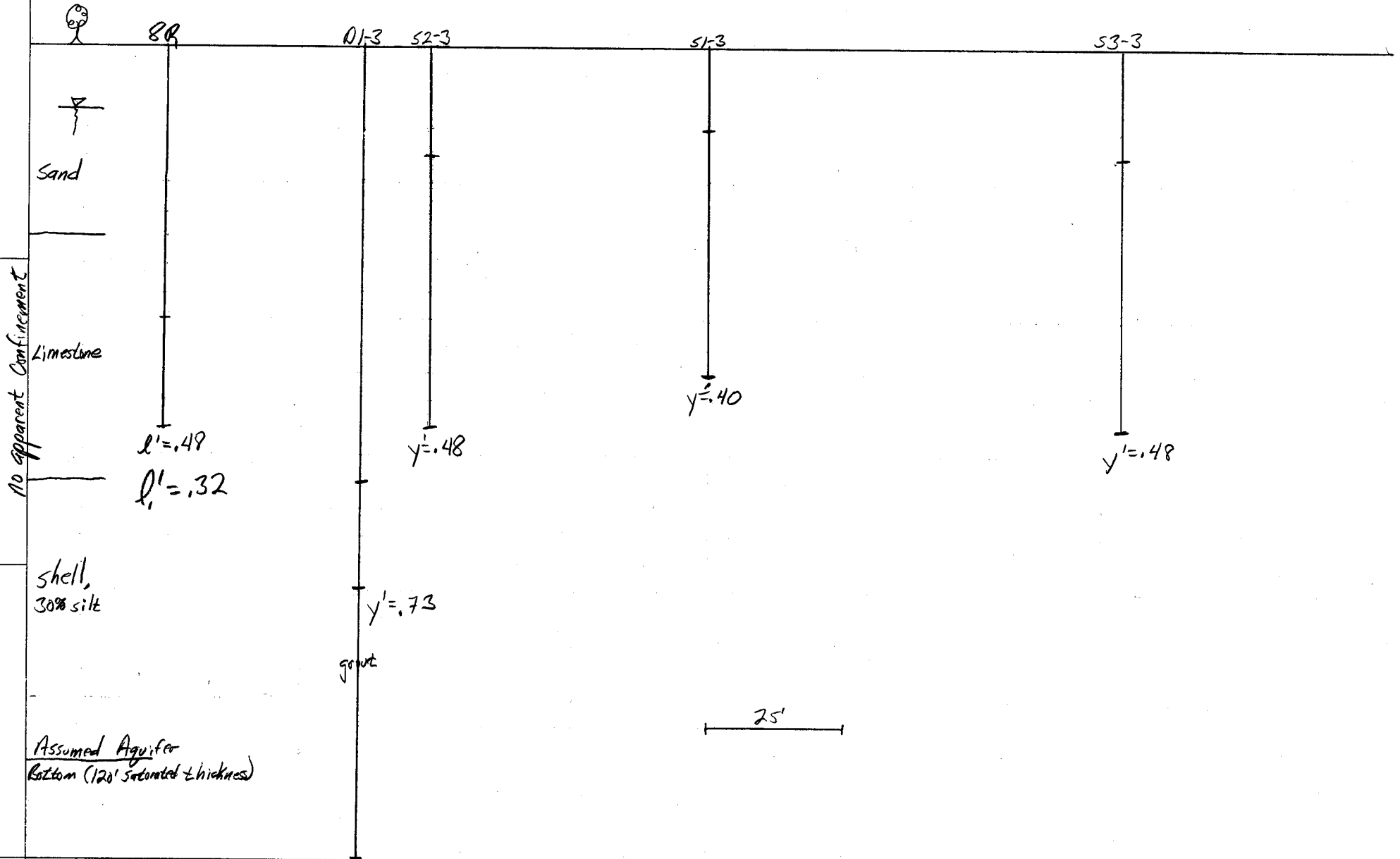
# Tequesta APT - Wellfield #2

$Q = 450 \text{ gpm}$     $t = 72 \text{ hours}$



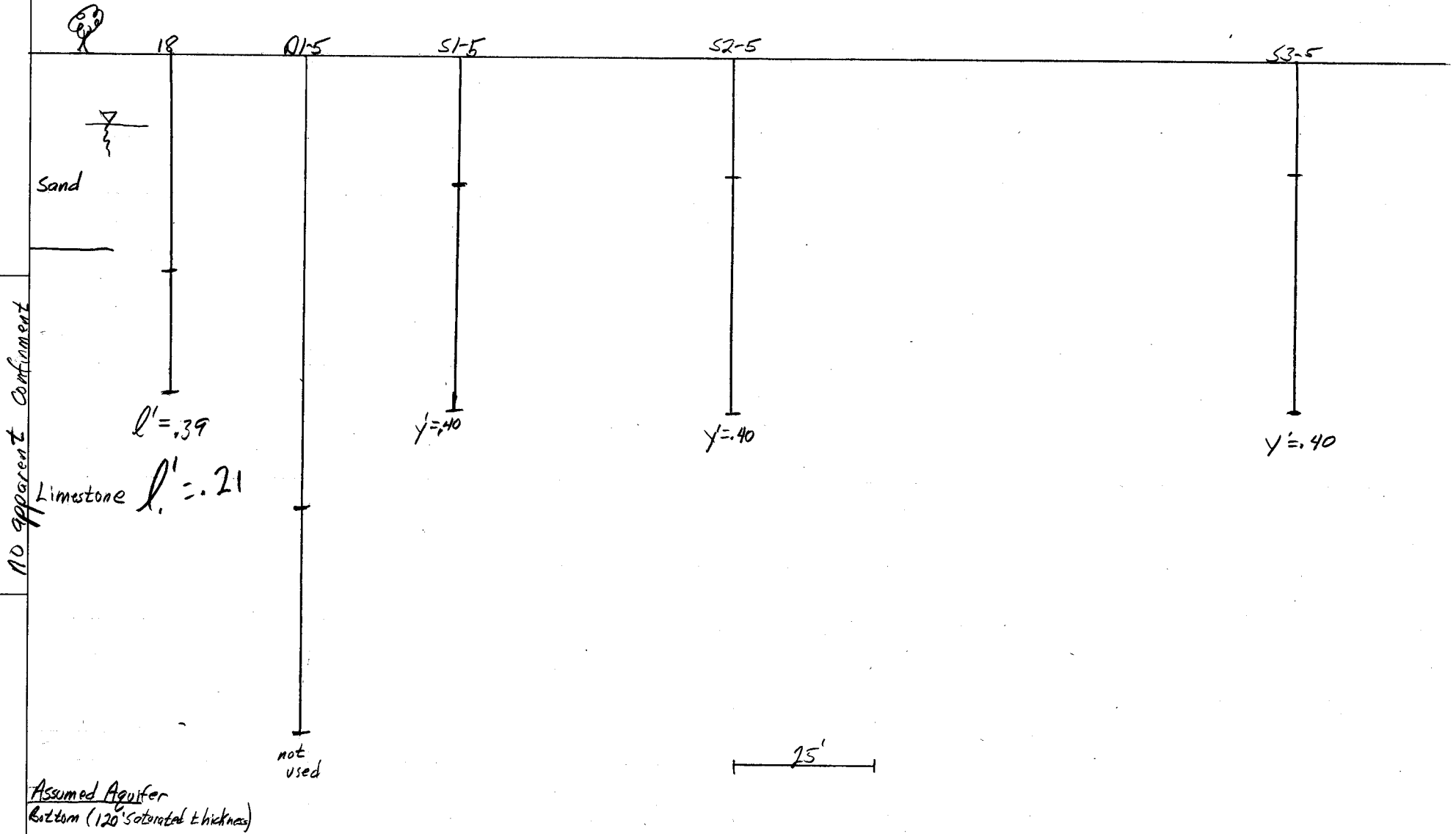
# Tegusta APT. Wellfield #3

$Q = 460 \text{ gpm}$      $t = 72 \text{ hours}$



Tegesta APT - Wellfield #5

Q = 218 GPM, t = 36 hours



NO apparent confinement

Sand

Limestone  $l' = .21$

not used

25'

Assumed Aquifer Bottom (120' saturated thickness)

Teguesta

BOULTON TO NEUMAN

Wellfield 2 Obs. Well S1-2

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 48.5 FT  
TRANSMISSIVITY = 290957 GPD/FT  
SPECIFIC YIELD = .02  
ALPHA = 0  
r/B = .2

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1454.785 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 235.069 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .1615833 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 2 Obs. Well S2-2

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 103 FT  
TRANSMISSIVITY = 361187 GPD/FT  
SPECIFIC YIELD = .06  
ALPHA = 0  
r/B = .6

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1805.935 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 674.8705 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .3736959 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 2 Obs. Well S3-2

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 194.5 FT  
TRANSMISSIVITY = 402863 GPD/FT  
SPECIFIC YIELD = .07  
ALPHA = 0  
r/B = 1.5

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 2014.315 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 1523.493 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .756333 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 2 Obs. Well D1-2

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 25 FT  
TRANSMISSIVITY = 133263 GPD/FT  
SPECIFIC YIELD = .3  
ALPHA = 0  
r/B = .1

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 666.315 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 93.28747 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .1400051 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 3 Obs. Well S1-3

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 100.4 FT  
TRANSMISSIVITY = 766090 GPD/FT  
SPECIFIC YIELD = .011  
ALPHA = 0  
r/B = .4

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 3830.45 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 632.348 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .1650845 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 3 Obs. Well S2-3

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 49.5 FT  
TRANSMISSIVITY = 362900 GPD/FT  
SPECIFIC YIELD = .03  
ALPHA = 0  
r/B = .1

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1814.5 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 64.7993 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = 3.571193E-02 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 3 Obs Well S3-3

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 177.45 FT  
TRANSMISSIVITY = 756042 GPD/FT  
SPECIFIC YIELD = .31  
ALPHA = 0  
r/B = 1

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 3780.21 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 1428.513 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .3778924 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 3 Obs. Well D1-3

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 37.8 FT  
TRANSMISSIVITY = 435480 GPD/FT  
SPECIFIC YIELD = .41  
ALPHA = 0  
r/B = .1

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 2177.4 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 133.3455 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .0612407 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN



INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 51.5 FT  
TRANSMISSIVITY = 227116 GPD/FT  
SPECIFIC YIELD = .17  
ALPHA = 0  
r/B = .4

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1135.58 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 712.4871 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .6274213 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 5 Obs. Well S2-5

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 99.8 FT  
TRANSMISSIVITY = 185058 GPD/FT  
SPECIFIC YIELD = .17  
ALPHA = 0  
r/B = 1

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 925.29 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 1105.445 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = 1.194701 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

Wellfield 5 Obs. Well S3-5

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 194.7 FT  
TRANSMISSIVITY = 297414 GPD/FT  
SPECIFIC YIELD = .2  
ALPHA = 0  
r/B = 1.5

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1487.07 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 1122.411 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = .75478 (GPD/FT<sup>2</sup>)

BOULTON TO NEUMAN

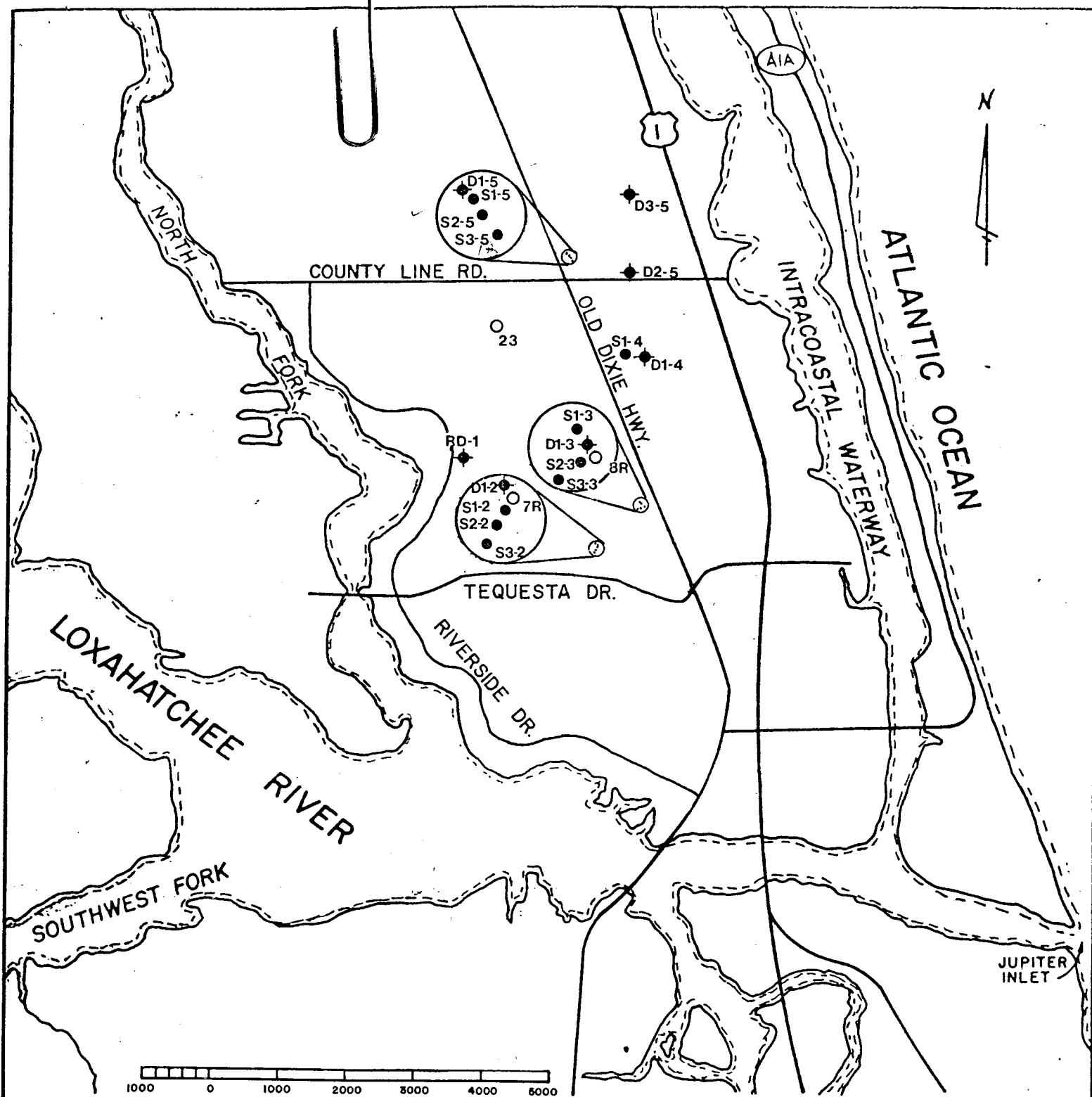
Wellfield 5 Obs. Well D1-5

INPUT DATA:

AQUIFER THICKNESS = 200 FT  
DISTANCE PUMP WELL TO OBS WELL = 23.8 FT  
TRANSMISSIVITY = 390356 GPD/FT  
SPECIFIC YIELD = .25  
ALPHA = 0  
r/B = .3

RESULTS:

HORIZONTAL HYDRAULIC CONDUCTIVITY = 1951.78 (GPD/FT<sup>2</sup>)  
VERTICAL HYDRAULIC CONDUCTIVITY = 3103.338 (GPD/FT<sup>2</sup>)  
ANISOTROPY RATIO = 1.590004 (GPD/FT<sup>2</sup>)



LEGEND

- TEST SUPPLY WELL
- ◆ DEEP OBSERVATION WELL
- SHALLOW OBSERVATION WELL

OBSERVATION AND TEST SUPPLY

WELL LOCATIONS

GEE & JENSON ENGINEERS-ARCHITECTS-PLANNERS, INC.  
 WEST PALM BEACH, FLORIDA



TABLE 4.2

TEST SUPPLY WELL CONSTRUCTION DATA  
VILLAGE OF TEQUESTA

Location	Well No.	Casing Diameter (in.)	Cased Interval (ft.)	Screen Diameter (in.)	Screened Interval (ft.)	Total Depth (ft.)	Date Constructed
Wellfield No. 2	7R	16(Outer) <sup>1</sup> 10(Inner) <sup>2</sup>	0-50	8	50-90 <sup>3</sup>	90	6/17/80 to 6/28/80
Wellfield No. 3	8R	16(Outer) <sup>1</sup> 10(Inner) <sup>2</sup>	0-50	8	50-70 <sup>3</sup>	70	7/22/80 to 7/30/80
West End of Wingo Street	23	16(Outer) <sup>1</sup> 10(Inner) <sup>2</sup>	0-45	8	45-70 <sup>3</sup>	70	3/2/81 to 3/16/81

- 1 Steel
- 2 Schedule 40 PVC
- 3 #100 Slot Schedule 40 PVC

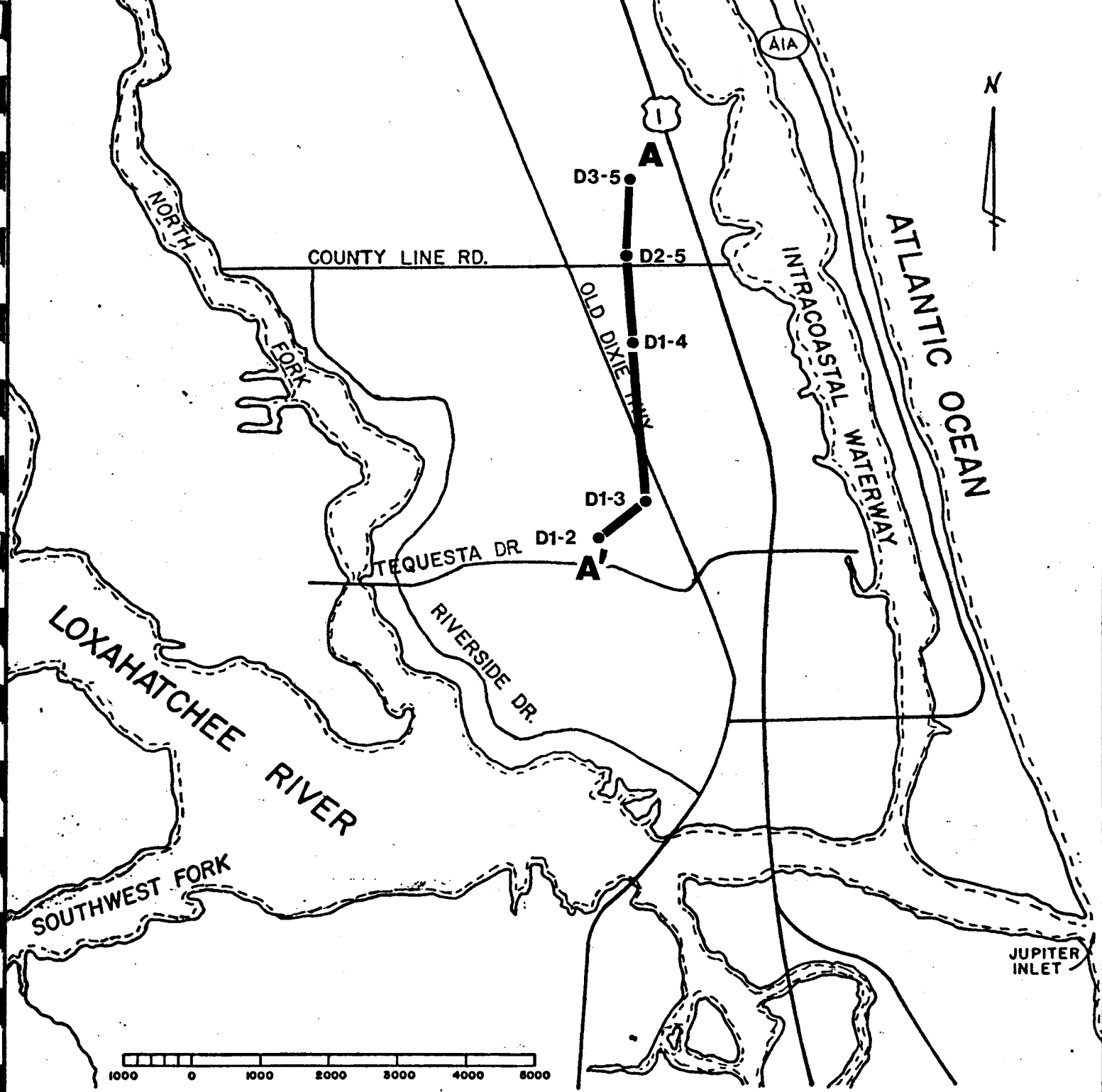
Wellfield 2, Well 7R  
T = 352,000 gpd/ft  
S = 0.05

Wellfield 3, Well 8R and Well 23  
T = 762,000 gpd/ft  
S = 0.02

Wellfield 5, Well 18  
T = 237,000 gpd/ft  
S = 0.18

Transmissivity values appear to increase northward in response to a higher average water table and greater aquifer thickness. The significantly lower transmissivity observed in Wellfield 5 is primarily a result of the shallow penetration (35 feet) into the aquifer of the pumped well. Transmissivity is a function of aquifer thickness. Presuming an available aquifer thickness of 120 feet for this area, as indicated by test data, a fully penetrating well would produce transmissivity values nearly triple (700,000 gpd/ft) those calculated for Well 18 (237,000 gpd/ft).

Raw Data Available

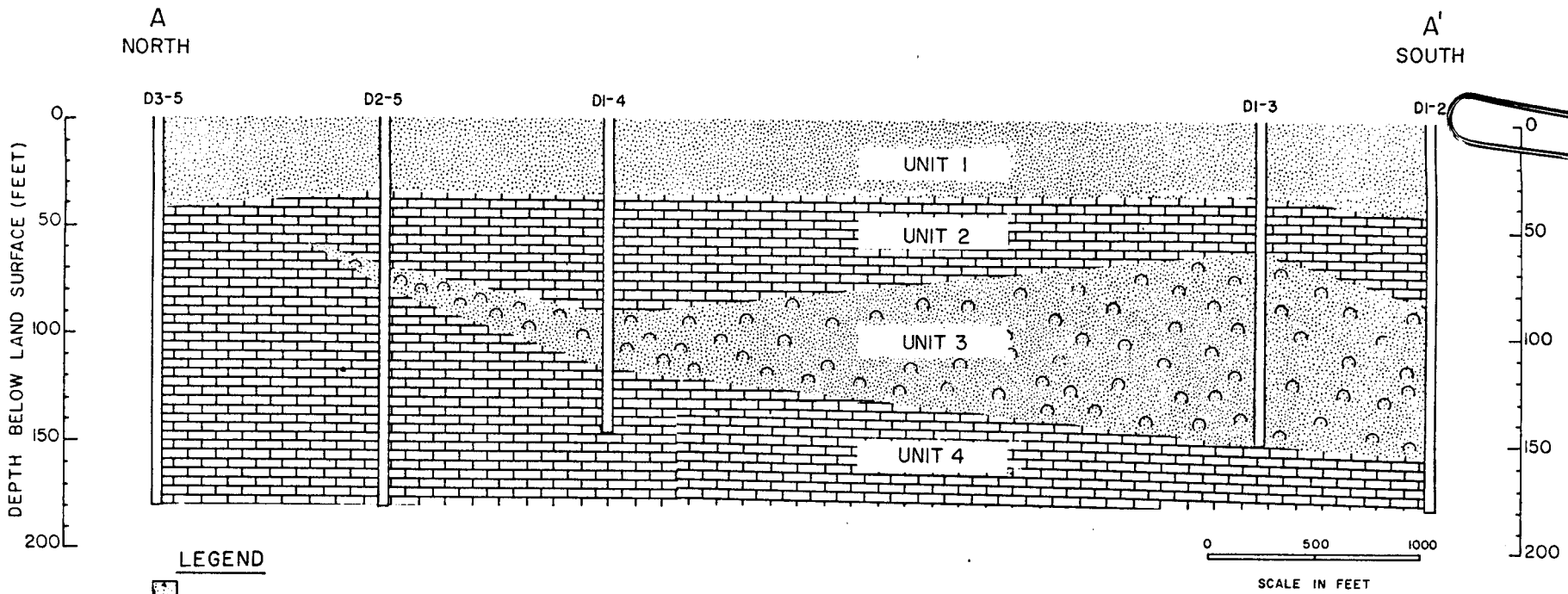


LEGEND

● DEEP OBSERVATION WELL

LOCATION OF LITHOLOGIC CROSS-SECTION

GEE & JENSON ENGINEERS-ARCHITECTS-PLANNERS, INC.  
WEST PALM BEACH, FLORIDA



- LEGEND**
- 1 SAND
  - 2 LIMESTONE
  - 3 SAND AND SHELL
  - 4 LIMESTONE

**LITHOLOGIC CROSS-SECTION**

GEE & JENSON ENGINEERS-ARCHITECTS-PLANNERS, INC.  
 WEST PALM BEACH, FLORIDA

78-224

FIGURE 52

PB103



TABLE 6.1

WELL CONSTRUCTION DATA FOR AQUIFER TEST GROUPS  
VILLAGE OF TEQUESTA

<u>Location</u>	<u>Well No.</u>	<u>Casing Diameter (in.)</u>	<u>Cased Interval (ft.)</u>	<u>Screen Diameter (in.)</u>	<u>Screened Interval (ft.)</u>	<u>Total Depth (ft.)</u>	<u>Distance from Pumped Well (ft.)</u>
Wellfield No. 2	7R	16(Outer) 10(Inner)	0-50(Outer) 0-50(Inner)	8	50-90	90	0.0
	S1-2	2	0-15	2	15-58	58	48.5
	S2-2	2	0-15	2	15-79	79	103.0
	S3-2	2	0-15	2	15-80	80	194.4
	D1-2	2	0-50	2	50-180	89 <sup>1</sup>	25.0
Wellfield No. 3	8R	16(Outer) 10(Inner)	0-50(Outer) 0-50(Outer)	8	50-70	70	0.0
	S1-3	2	0-15	2	15-60	60	100.3
	S2-3	2	0-20	2	20-70	70	49.5
	S3-3	2	0-20	2	20-70	70	177.4
	D1-3	2	0-80	2	80-151	97 <sup>2</sup>	37.8
Wellfield No. 5	18	6	0-38	6	38-60	60	0.0
	S1-5	2	0-23	2	23-63	63	51.5
	S2-5	2	0-22	2	22-62	62	99.8
	S3-5	2	0-20	2	20-60	60	194.7
	D1-5	2	0-80	2	80-120	120	23.8

<sup>1</sup> Grouted to 89 feet on July 7, 1980

<sup>2</sup> Grouted to 97 feet on August 20, 1980

TABLE 6.2

SUMMARY OF AQUIFER PARAMETERS<sup>1</sup>  
VILLAGE OF TEQUESTA

Well 7R Wellfield 2	Q=457 gpm	TRANSMISSIVITY (gpd/ft.)		STORAGE COEFFICIENT	
		Early Time	Late Time	Early Time	Late Time
D1-2 (r=25 ft.)		<sup>2</sup>	133,263 <sup>3</sup>	<sup>2</sup>	0.30
S1-2 (r=48.5 ft.)		308,072	290,957	1.4 x 10 <sup>-3</sup>	0.02
S2-2 (r=103 ft.)		402,863	361,187	1.4 x 10 <sup>-3</sup>	0.06
S3-2 (r=194.5 ft.)		374,087	<u>402,863</u>	1.4 x 10 <sup>-3</sup>	<u>0.07</u>
			351,669		0.05
Well 8R					
Wellfield 3	Q=950 gpm				
S2-3 (r=49.5 ft.)		<sup>2</sup>	362,900 <sup>3</sup>	<sup>2</sup>	0.03
S1-3 (r=100.35 ft.)		<sup>2</sup>	766,090	<sup>2</sup>	0.01
S3-3 (r=177.45 ft.)		745,685	<u>756,042</u>	9.9 x 10 <sup>-4</sup>	<u>0.03</u> ^
			761,066		0.02
Well 18					
Wellfield 5	Q=218 gpm				
S1-5 (r=51.5 ft.)		227,116	227,116	9.8 x 10 <sup>-3</sup>	0.17
S2-5 (r=99.8 ft.)		<sup>2</sup>	185,058	<sup>2</sup>	0.17
S3-5 (r=194.7 ft.)		<sup>2</sup>	<u>297,414</u>	<sup>2</sup>	<u>0.20</u>
			237,196		0.18

<sup>1</sup> Results obtained using Boulton Method of Analysis

<sup>2</sup> Field data could not be curve-matched.

<sup>3</sup> Not used in computing average values.

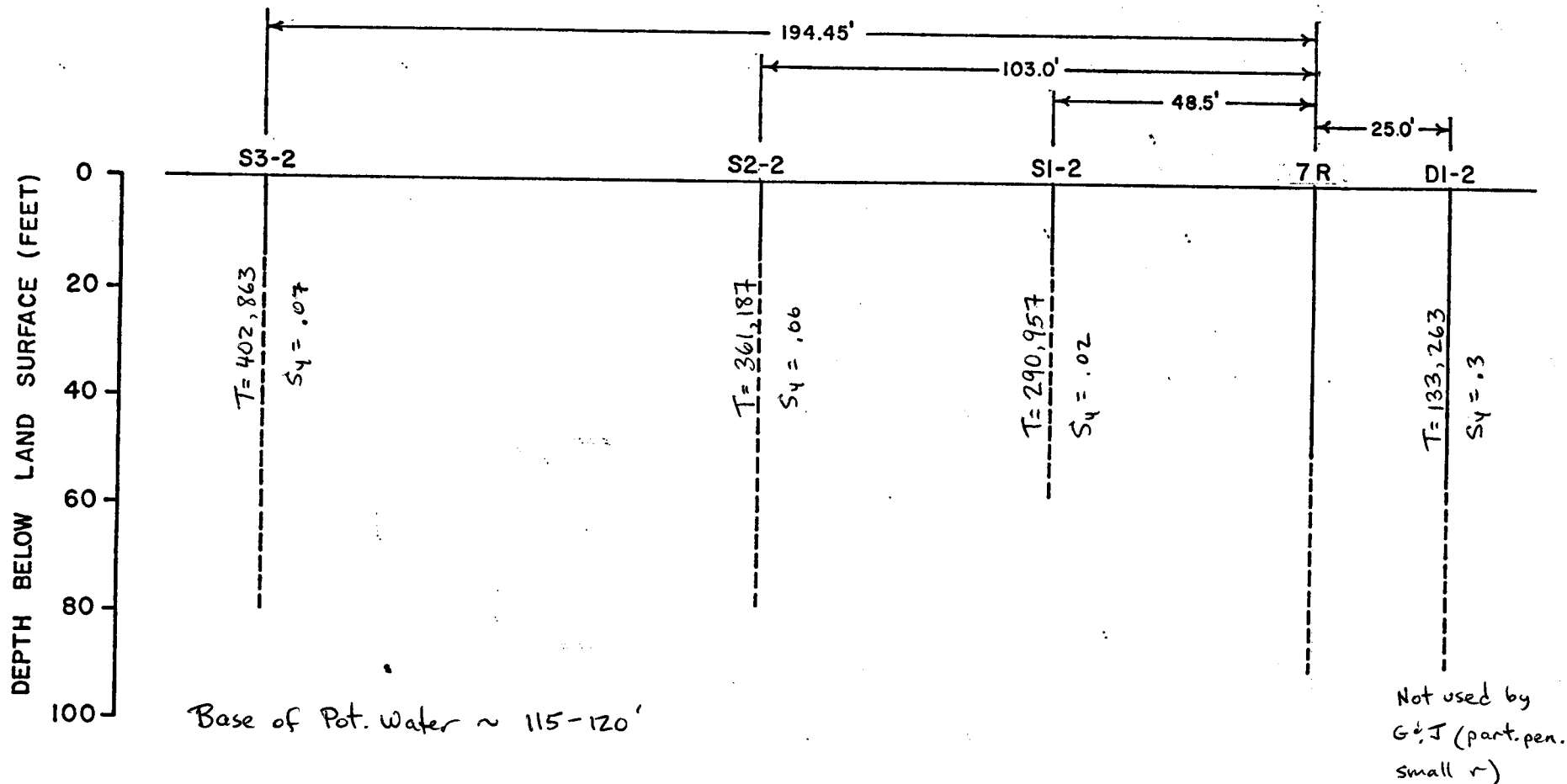


TABLE 6.6  
SUMMARY OF SPECIFIC CAPACITY TEST DATA  
VILLAGE OF TEQUESTA

<u>Well No.</u>	<u>Discharge gpm</u>	<u>Drawdown (ft.)</u>	<u>Specific Capacity (gpm/ft)</u>	<u>Duration of Test (min.)</u>	<u>Screened Interval (ft.)</u>	<u>Slot Size</u>	<u>Transmissivity (gpd/ft)</u>
7R	457	9.02	50	4,320	40	100	352,000
8R	950	20.77	46	4,380	20	100	762,000
18	218	10.16	21 <sup>1</sup>	2,160	25	20	237,000
23	855	14.40	59	300	25	100	<sup>2</sup>

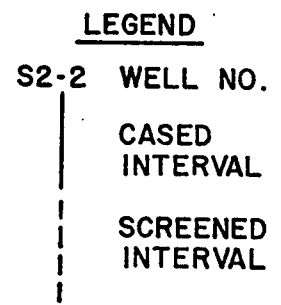
<sup>1</sup> Specific capacity of Well 18 is anomalously low due to method of well construction. (Slot size and diameter of screen)

<sup>2</sup> Comparing pumping rate, screened interval and specific capacity indicates the transmissivity of Well 23 is in the same range or greater than Well 8R (762,000 gpd/ft).



Boulton Analysis

$\bar{T} = 352,000$  GPD/FT  
 $\bar{S} = .05$



T = GPD/FT

**TEQUESTA**  
**WELL FIELD 2**  
**AQUIFER TEST WELL CONFIGURATION**  
 Q = 457 g.p.m.  
 72 hour test

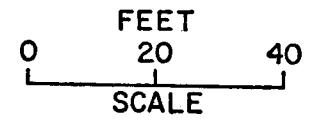
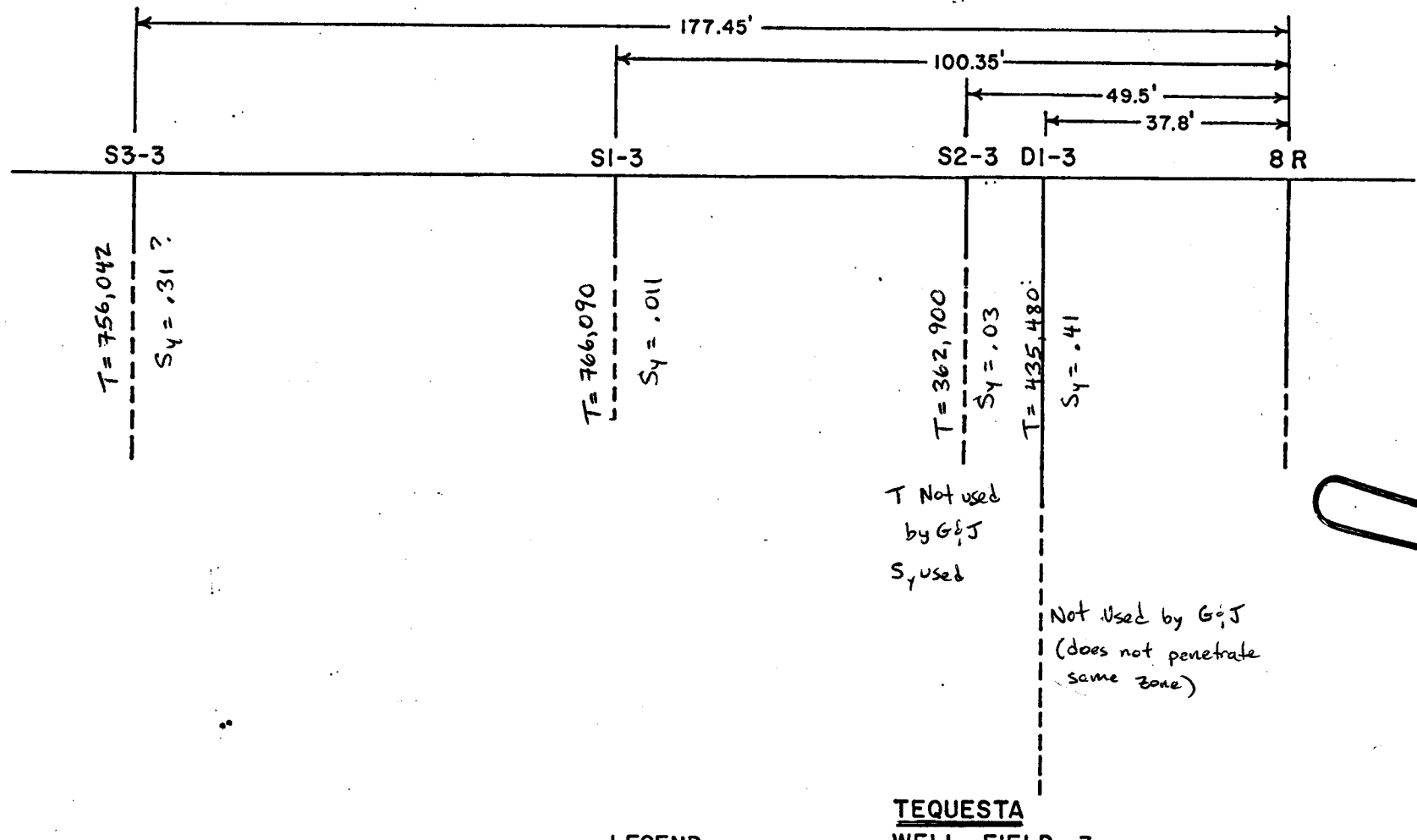


FIGURE 6.1

DEPTH BELOW LAND SURFACE (FEET)

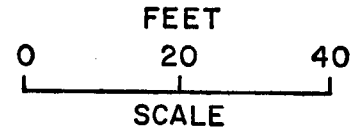
0  
20  
40  
60  
80  
100  
120  
140  
160



*Boulton Analysis*  
 $\bar{T} = 760,000 \text{ GPD/FT}$   
 $S_y = .026$

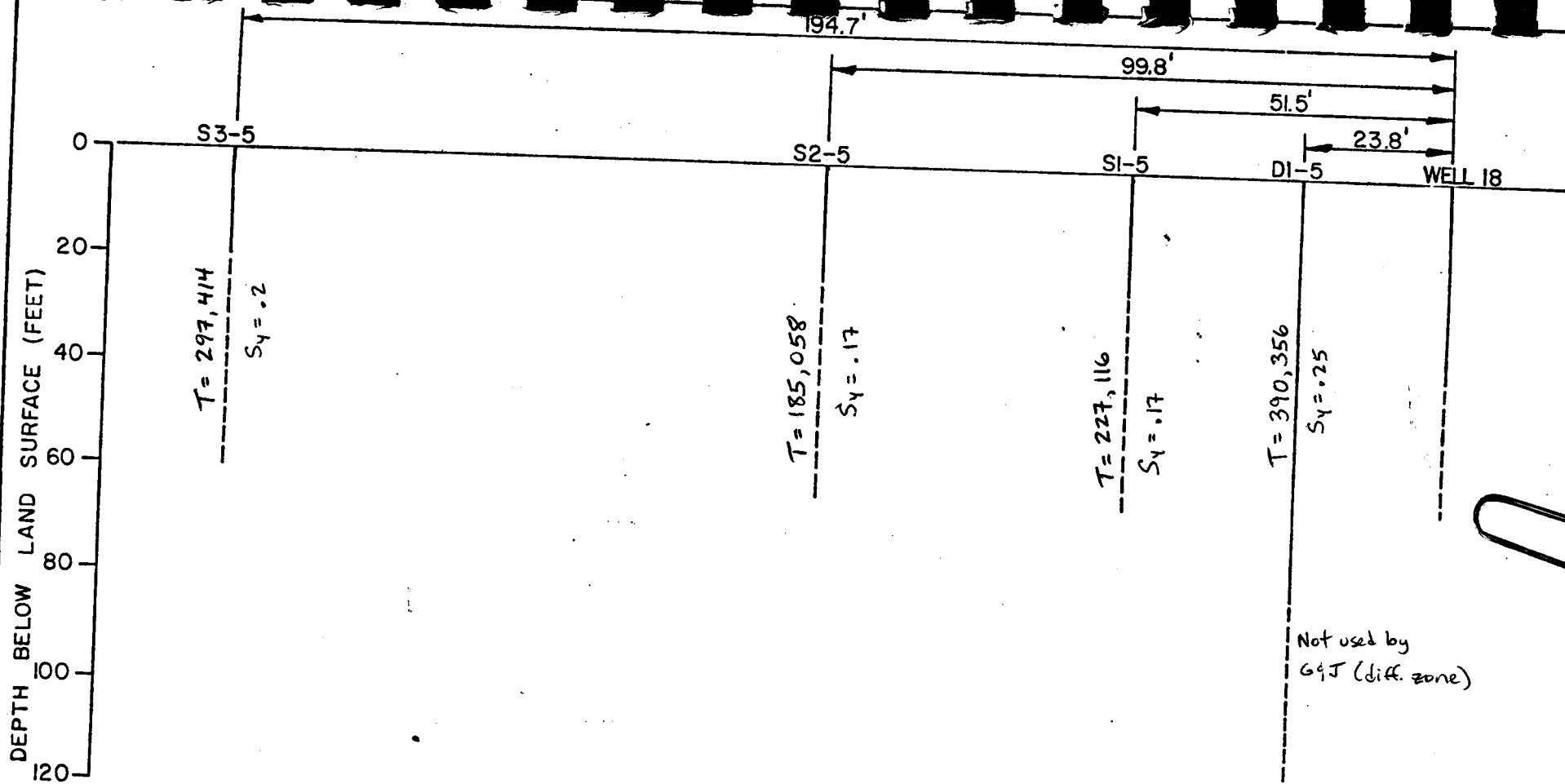
**LEGEND**  
 S2-3 WELL NO.  
 ——— CASED INTERVAL  
 - - - SCREENED INTERVAL  
 T = GPD/FT

**TEQUESTA**  
**WELL FIELD 3**  
**AQUIFER TEST WELL CONFIGURATION**  
 $Q = 950 \text{ g.p.m.}$   
 74 hour test



*Not Used by G&J  
 (does not penetrate same zone)*

FIGURE 68



Boulton Analysis  
 $T = 237,000 \text{ GPD/FT}$   
 $S_y = .18$

**LEGEND**  
 S2-5 WELL NO.  
 CASED INTERVAL  
 SCREENED INTERVAL  
 $T = \text{GPD/FT}$

**WELLFIELD 5**  
**AQUIFER TEST WELL CONFIGURATION**  
 $Q = 218 \text{ g.p.m.}$   
 36 hour test  
 FEET  
 0 20 40  
 SCALE

FIGURE 615

JOB NO. 78-224

GEE & JENSON ENGINEERS-ARCHITECTS-PLANNERS, INC.  
 WEST PALM BEACH, FLORIDA



WELL CONSTRUCTION

Well No. 7R
Driller: Drilling Services Inc.
Samples: Cuttings X, Core
Casing: Depth 0-50 feet
Diameter Inner: 10 inch, Outer: 16 inch
Material Inner: PVC Schedule 40, Outer: Steel Casing

Location: Wellfield No. 2
Recorded by: RW
Date Drilled: 7/22/80 to 7/30/80
Screen: Depth 50-90 feet
Diameter 8 inch
Material 100 slot telescopic PVC

DEPTH BELOW LAND SURFACE (FEET)

LITHOLOGY DESCRIPTION

- 0-5 Sand: silica, white, medium to fine grained subrounded to subangular, unconsolidated.
5-25 Sand: silica, white and orange-brown, medium to fine grained, subrounded to subangular, with shell fragments, color getting lighter with depth, unconsolidated.
25-35 Sand: silica, white to light tan, fine to very fine grained, subrounded to subangular, unconsolidated.
35-41 Sand: silica, white to light tan, fine grained, subrounded to subangular, with shell fragments, unconsolidated.
41-83 Limestone: biosparite, white, gray and tan, coarse to fine grained, with shell fragments.
83-90 Shell: fragmental, light to dark gray, 50 percent. Sand: silica, fine to medium grained, subrounded to subangular, unconsolidated, 50 percent.



WELL CONSTRUCTION

Well No. <u>8R</u>	Location: <u>Wellfield No. 3</u>
Driller: <u>Drilling Services, Inc.</u>	Recorded by: <u>RW</u>
Samples: Cuttings <u>X</u> , Core <u>      </u>	Date Drilled: <u>6/17/80 to 6/28/80</u>
Casing: Depth <u>0-50 feet</u>	Screen: Depth <u>50-70 feet</u>
Diameter <u>Outer: 16 inch</u>	Diameter <u>8 inch</u>
<u>Inner: 10 inch</u>	
Material <u>Outer: Steel Casing</u>	Material <u>100 slot telescopic</u>
<u>Inner: PVC Schedule 40</u>	<u>PVC</u>

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

0-8	Sand: silica, white and gray, medium to fine grained subangular to subrounded, unconsolidated.
8-39	Sand: silica, white and tan, medium to fine grained, subrounded to subangular, unconsolidated.
39-70	Limestone: biosparite, trace of sand, coarse to fine grained with shell fragment, hard and soft layers.



WELL CONSTRUCTION

Well No. D1-4 Location: Wellfield No. 4  
 Driller: Drilling Services Inc. Recorded by: JE  
 Samples: Cuttings X, Core \_\_\_\_\_ Date Drilled: 5/16/80  
 Casing: Depth 0-80 feet Screen: Depth 80-145 feet  
 Diameter 2 inch Diameter 2 inch  
 Material Schedule 40 PVC Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

0-7 Sand: silica, white, very fine to medium grained, rounded to subrounded, trace very fine heavy minerals, unconsolidated.

7-36 Sand: silica, light orange-brown (iron stain), very fine to coarse grained, predominantly fine to medium grained, rounded to subrounded, trace of very fine heavy minerals, in upper 10 feet thin beds of orange silty sand, slightly cemented, unconsolidated.

36-42 Limestone: biosparite, very light brown to tan, abundant silica sand, trace shell fragments and oolites, weathered zone, consolidated, poorly lithified.

42-57 Limestone: biointrasparite, very light brown-gray, abundant shell and oolites, well lithified to poorly lithified in 0.5 to 1 foot seams.

57-73 Limestone: biosparite, dolomitic, dark brown, large shell fragments, trace silica, well lithified.

73-80 Limestone: biosparite, very light brownish gray, shells and oolites, sandy, well lithified to poorly lithified in 0.5 to 1.0 foot seams.

80-90 Limestone: biosparite, light grayish brown to light brownish gray, cemented shell and fragments, well lithified to friable, 80 percent.

Shell: unconsolidated, fine to medium grained whole and fragmental pelecypods, 20 percent.



WELL CONSTRUCTION

Well No. D1-4 (Cont'd) Location: Wellfield No. 4  
Driller: Drilling Services, Inc. Recorded by: JE  
Samples: Cuttings X, Core \_\_\_\_\_ Date Drilled: 5/16/80  
Casing: Depth 0-80 feet Screen: Depth 80-145 feet  
Diameter 2 inch Diameter 2 inch  
Material Schedule 40 PVC Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

90-110 Shell: fragmental and whole shell (pelecypod, Turitella sp. and Oliva sp. gastropod, 50 percent.  
Sand: silica, light gray, very fine to medium grained, rounded to subrounded, trace of heavy minerals, trace of calcareous silty clay, 50 percent.

110-115 Shell and Sand: same as 90-110, but with a trace of poorly lithified biosparite and minor gray-green soft silty clay.

115-125 Limestone: biomicrite, light brownish gray to light brown, trace of heavy minerals present, unconsolidated shells and shell fragments, trace of very fine to medium grained silica sand, well lithified to poorly lithified thin seams.

125-130 Limestone: same as 115-125, but with an increase in silica sand.

130-135 Shell and Sand: same as 90-110.

135-137 Silty Clay: dark green, soft, trace of sand to pebble sized phosphatic shell and particles, unconsolidated.

137-146 Limestone: light gray brown, possibly dolomitic, honeycombed, trace of dark green clay, lithified to poorly lithified.





WELL CONSTRUCTION

Well No. D1-5
Driller: Drilling Services Inc.
Samples: Cuttings X, Core
Casing: Depth 0-80 feet
Diameter 2 inch
Material Schedule 40 PVC

Location: Wellfield No. 5
Recorded by: JE
Date Drilled: 5/13/80
Screen: Depth 80-120 feet
Diameter 2 inch
Material 40 Slot PVC

DEPTH BELOW LAND SURFACE (FEET)

LITHOLOGY DESCRIPTION

- 0-7 Sand: silica, white, very fine to coarse grained, rounded to subrounded, trace heavy minerals, unconsolidated.
7-35 Sand: silica, light brown-orange (iron-stain), very fine to coarse, rounded to subrounded, trace heavy minerals, thin layers dark orange silty sand, slightly cemented in upper part, medium to coarse grained near bottom, unconsolidated.
35-57 Limestone: biosparite, very light brown cream, uniform cuttings, abundant silica sand and shell fragments, lithified.
57-65 Limestone: biosparite, very light brown cream, very fine to 10 mm pelecypod fragments, well lithified.
65-85 Limestone: biointrasparite, very light tan, abundant interbedded silica, inclusions of gray-green silty clay, abundant shell fragments, lithified.
85-90 Limestone: as 65-85 feet, but with 20-30 percent biomicrite, gray, dense, fine grained.
90-115 Limestone: biointrasparite, very light tan, interbedded silica, partial dolomite replacement, poorly lithified, 50 percent.
Limestone: biointramicrite, gray, very fine grained, poorly lithified, 50 percent.
115-120 Limestone: micrite, brown, fossiliferous, porous, dolomitic, abundant pelecypod fragments, trace of silica, lithified.



WELL CONSTRUCTION

Well No. D2-5  
 Driller: Drilling Services Inc.  
 Samples: Cuttings X, Core \_\_\_\_\_  
 Casing: Depth 0-40 feet  
           Diameter 2 inch  
           Material Schedule 40 PVC

Location: Wellfield No. 5  
 Recorded by: RW  
 Date Drilled: 7/17/80  
 Screen: Depth 40-180 feet  
           Diameter 2 inch  
           Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

- 0-15 Sand: silica, yellow, medium to fine grained, subangular to subrounded, unconsolidated.
- 15-33 Sand: silica, white and brown, medium to fine grained, subangular to subrounded, unconsolidated.
- 33-70 Limestone: biosparite, tan and white, sand coarse to fine grained, subangular to subrounded, trace of shell fragments, lithified.
- 70-79 Sand: silica, white and brown, medium to silt grained, subangular to subrounded, abundant shell fragments, unconsolidated.
- 79-100 Limestone: biointrasparite, gray-brown and white, with silica sand layers, medium to silt grained, with abundant shell fragments, lithified.
- 100-110 Limestone: biointrasparite, dark brown to gray and white, with shell and shell fragments, abundant silica sand, with medium to silt sized grains, hard and soft layers, lithified to consolidated.
- 110-115 Limestone: biointrasparite, tan, soft, abundant fine grained unconsolidated silica sand, poorly lithified.
- 115-138 Limestone: biointrasparite, brown to tan, trace of silica sand and shell fragments, lithified.
- 138-145 Limestone: biointrasparite, dark gray to tan, trace of silica sand and tan silty clay, lithified.



WELL CONSTRUCTION

Well No. D2-5 (Cont'd) Location: Wellfield No. 5  
Driller: Drilling Services Inc. Recorded by: RW  
Samples: Cuttings X, Core \_\_\_\_\_ Date Drilled: 7/17/80  
Casing: Depth 0-40 feet Screen: Depth 40-180 feet  
Diameter 2 inch Diameter 2 inch  
Material Schedule 40 PVC Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

145-170 Limestone: biointrasparite, tan to gray, lithified,  
50 percent.  
Sand: silica, coarse to silt sized grains, sub-  
angular to subrounded, 20 percent.

145-170 Shell: fragmental and whole, 30 percent.

170-180 Limestone: biointrasparite, tan, lithified,  
50 percent.  
Shell: fragmental and whole, with abundant silica  
sand, 50 percent.

WELL CONSTRUCTION

Well No. <u>D3-5</u>	Location: <u>Wellfield No. 5</u>
Driller: <u>Drilling Services Inc.</u>	Recorded by: <u>RW</u>
Samples: Cuttings <u>X</u> , Core <u></u>	Date Drilled: <u>8/25/80</u>
Casing: Depth <u>0-100 feet</u>	Screen: Depth <u>100-178 feet</u>
Diameter <u>2 inch</u>	Diameter <u>2 inch</u>
Material <u>Schedule 40 PVC</u>	Material <u>40 Slot PVC</u>

DEPTH BELOW  
LAND SURFACE  
(FEET)LITHOLOGY DESCRIPTION

0-25	Sand: silica, light brownish orange, fine to very fine grained, subangular to angular, unconsolidated.
25-42	Sand: silica, light brownish orange, medium to fine grained, subrounded to rounded, trace of white and brown shell fragments, unconsolidated.
42-70	Limestone: biosparite, tan, trace of white shell fragments, well lithified.
70-105	Limestone: biointrasparite, light brown abundant very fine grained shell fragments, trace of fine grained silica, possible dolomitization, well lithified.
105-120	Limestone: biointrasparite, very light tan, abundant white fine grained shell fragments, trace of fine grained silica sand, well lithified.
120-130	Limestone: biointrasparite, light gray, with abundant fragmented white and tan pelecypods, trace of fine grained phosphate, lithified.
130-140	Sand: carbonate, very light gray, very fine to silt sized grains, unconsolidated.
140-170	Limestone: biointrasparite, gray, friable and very sandy, with white pelecypod fragments, abundant fine grained silica, abundant phosphate particles, consolidated.
170-180	Limestone: Same as 140-170, but with abundant gray silty clay, consolidated.



WELL CONSTRUCTION

Well No. RD-1  
Driller: Drilling Services, Inc.  
Samples: Cuttings X, Core \_\_\_\_\_  
Casing: Depth 0-20 feet  
Diameter 2 inch  
Material Schedule 40 PVC

Location: Tequesta (Riverside Drive)  
Recorded by: RW  
Date Drilled: 8/27/80  
Screen: Depth 20-178.5 feet  
Diameter 2 inch  
Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

0-30 Sand: silica, light brown, fine to very fine grained, angular to subrounded, unconsolidated.

30-35 Limestone: sorted biosparite, very light brown, abundant pelecypods, well lithified.

35-65 Shell: white, whole and fragmental pelecypods, abundant large well-rounded pelecypod fragments, unconsolidated, 70 percent.

65-70 Sand: silica, very light brown, fine to very fine grained, unconsolidated, 30 percent.

70-95 Limestone: unsorted biosparite, light gray, lithified.

95-110 Shell and Sand: same as 35-65 feet, but with thin biosparite limestone stringers, lithified.

110-120 Shell and Sand: same as 35-65 feet, but with shell fragments ranging in color from light brown to dark gray.

120-130 Sand: silica, very light gray, very fine to silt sized grains, abundant fine grained carbonates, unconsolidated.

130-140 Shell and Sand: same as 95-110 feet.

140-175 Sand: same as 110-120 feet, but with fine grained carbonates increasing to 25 percent.

175-180 Limestone: micrite, light gray to very light gray, trace of pelecypod fragments from 140-145 feet, poorly consolidated.

Silty Clay: light gray, poorly consolidated.



WELL CONSTRUCTION

Well No. S1-4 Location: Wellfield No. 4
Driller: Drilling Services Inc. Recorded by: RW
Samples: Cuttings X, Core Date Drilled: 6/17/80
Casing: Depth 0-15 feet Screen: Depth 15-65 feet
Diameter 2 inch Diameter 2 inch
Material Schedule 40 PVC Material 40 Slot PVC

DEPTH BELOW LAND SURFACE (FEET)

LITHOLOGY DESCRIPTION

- 0-10 Sand: silica, white, medium to fine grained, subangular to subrounded, unconsolidated.
10-32 Sand: silica, white, tan and orange, medium to fine grained, subangular to subrounded, unconsolidated.
32-50 Limestone: biosparite, white to tan, coarse to fine grained, subangular to subrounded, with white unconsolidated shell fragments, lithified.
50-60 Limestone: biosparite, gray to tan, medium to very fine grained, with shell fragments, lithified.
60-65 Limestone: biosparite, dark brown, trace tan silty clay, trace shell fragments, trace fine to medium grained silica sand, lithified.



WELL CONSTRUCTION

Well No. S3-3  
 Driller: Drilling Services Inc.  
 Samples: Cuttings X, Core \_\_\_\_\_  
 Casing: Depth 0-20 feet  
           Diameter 2 inch  
           Material PVC Schedule 40

Location: Wellfield No. 3  
 Recorded by: RW  
 Date Drilled: 7/31/80  
 Screen: Depth 20-70  
           Diameter 2 inch  
           Material 40 slot PVC

DEPTH BELOW  
 LAND SURFACE  
 (FEET)

LITHOLOGY DESCRIPTION

0-10	Sand: silica, white to light tan, medium to fine grained, subangular to subrounded with shell fragments, unconsolidated.
10-37	Sand: silica, white to brown, medium to fine grained, subangular to subrounded with shell fragments, unconsolidated.
37-70	Limestone: biospartie, sand coarse to fine grained, subangular to subrounded with shell fragments, hard and soft layers, very loosely cemented.



WELL CONSTRUCTION

Well No. S3-5 Location: Wellfield No. 5  
Driller: Drilling Services Inc. Recorded by: JE  
Samples: Cuttings X, Core \_\_\_\_\_ Date Drilled: 5/7/80  
Casing: Depth 0-20 feet Screen: Depth 20-60 feet  
Diameter 2 inch Diameter 2 inch  
Material Schedule 40 PVC Material 40 Slot PVC

DEPTH BELOW  
LAND SURFACE  
(FEET)

LITHOLOGY DESCRIPTION

0-8 Sand: silica, white, very fine to coarse grained, rounded to subrounded, trace heavy minerals, unconsolidated.

8-32 Sand: silica, light brownish orange (iron-stain) very fine to coarse grained, rounded to subrounded, trace heavy minerals, thin layers dark orange silty sand, slightly cemented in upper part, unconsolidated.

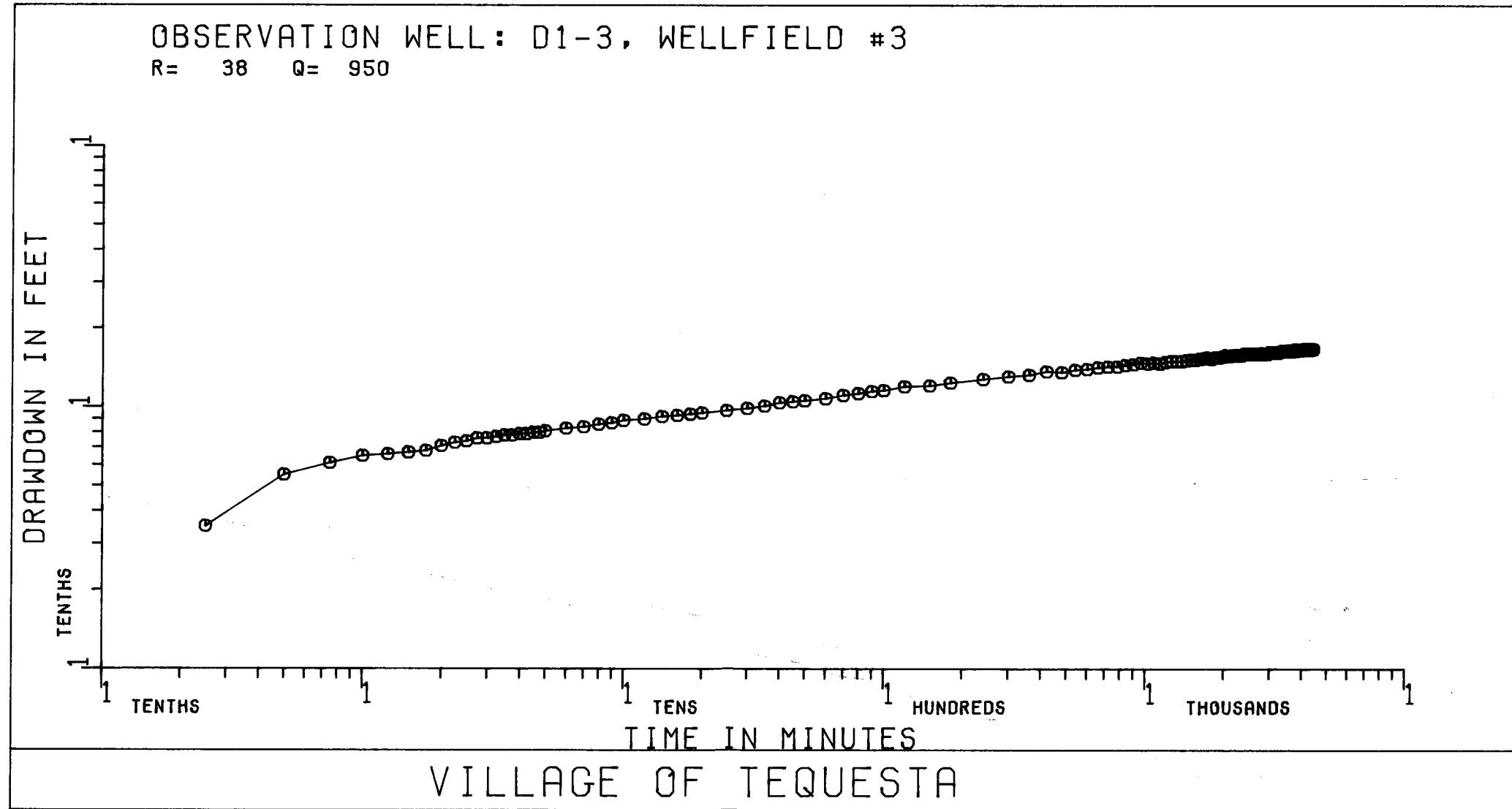
32-60 Limestone: biosparite, very light brown cream, uniform cuttings, trace of silica sand and shell fragments, well lithified.



WMD

TAPENO 6265 PLOT NO 0337  
USER NO NELMS DATE 86/05/05

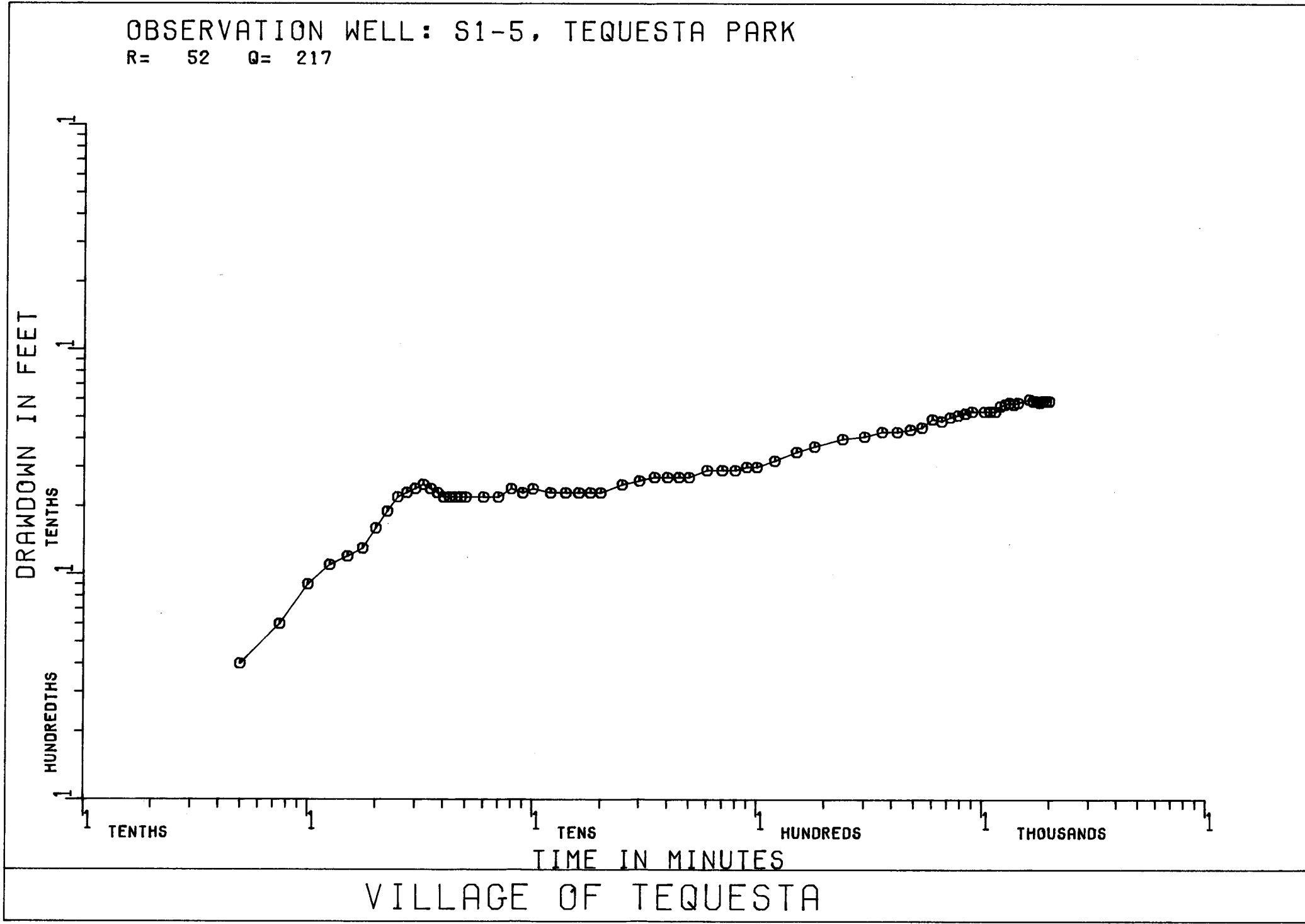
TIME 12:47



WMD

TAPENO 6265 PLOT NO 0352  
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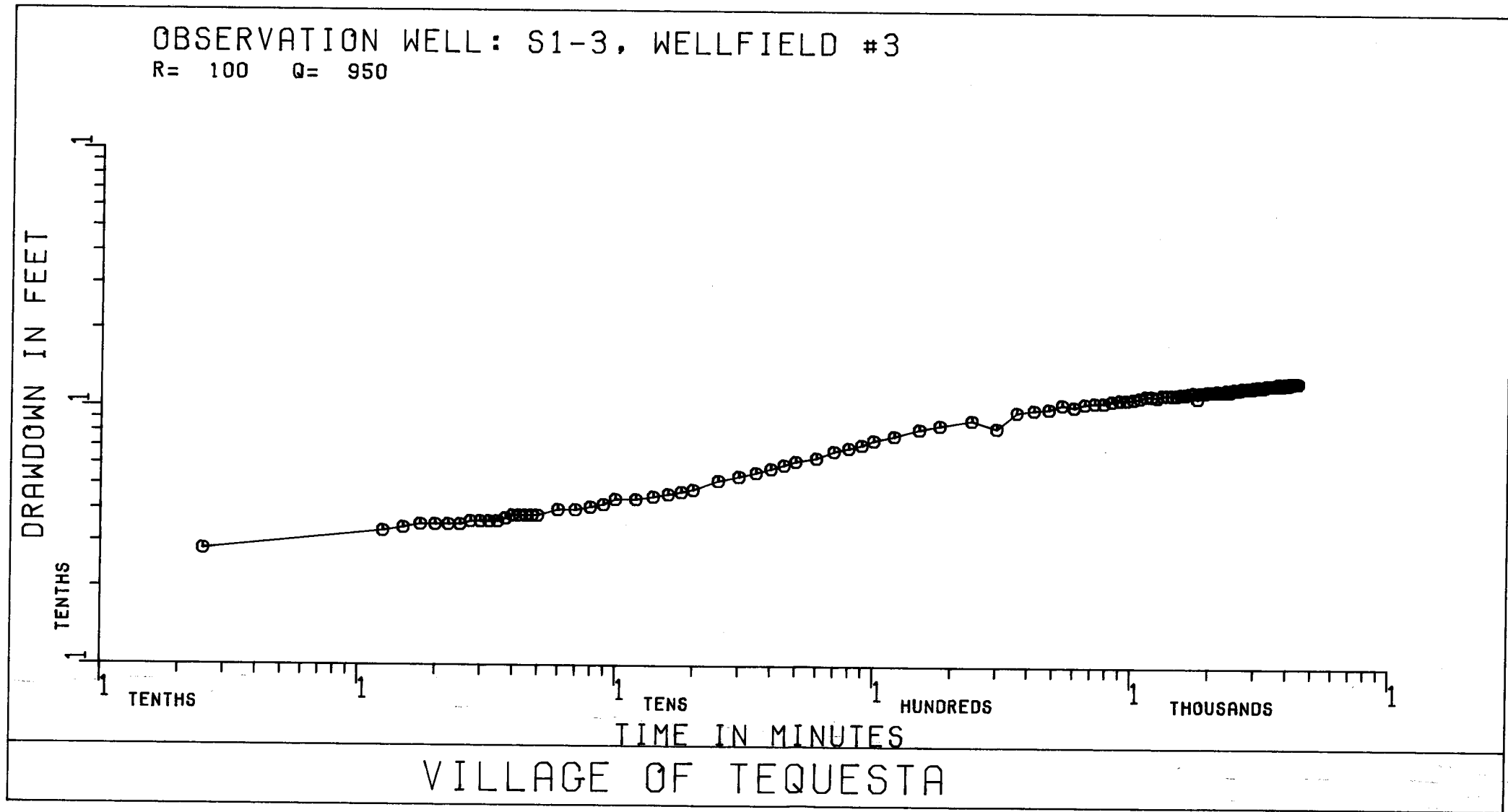
*ms marta*



WMD

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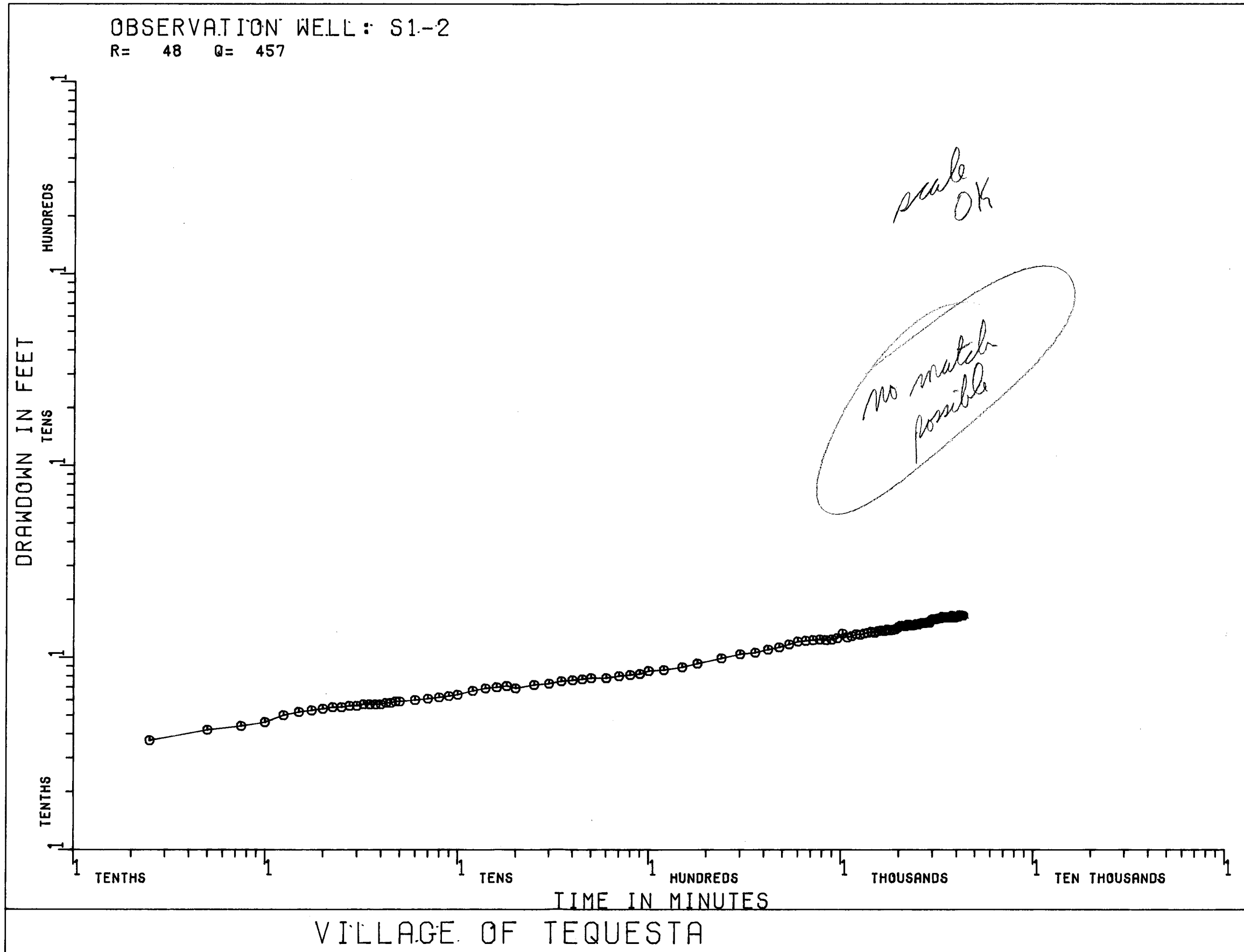
TIME 12:49



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WMD

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WMD

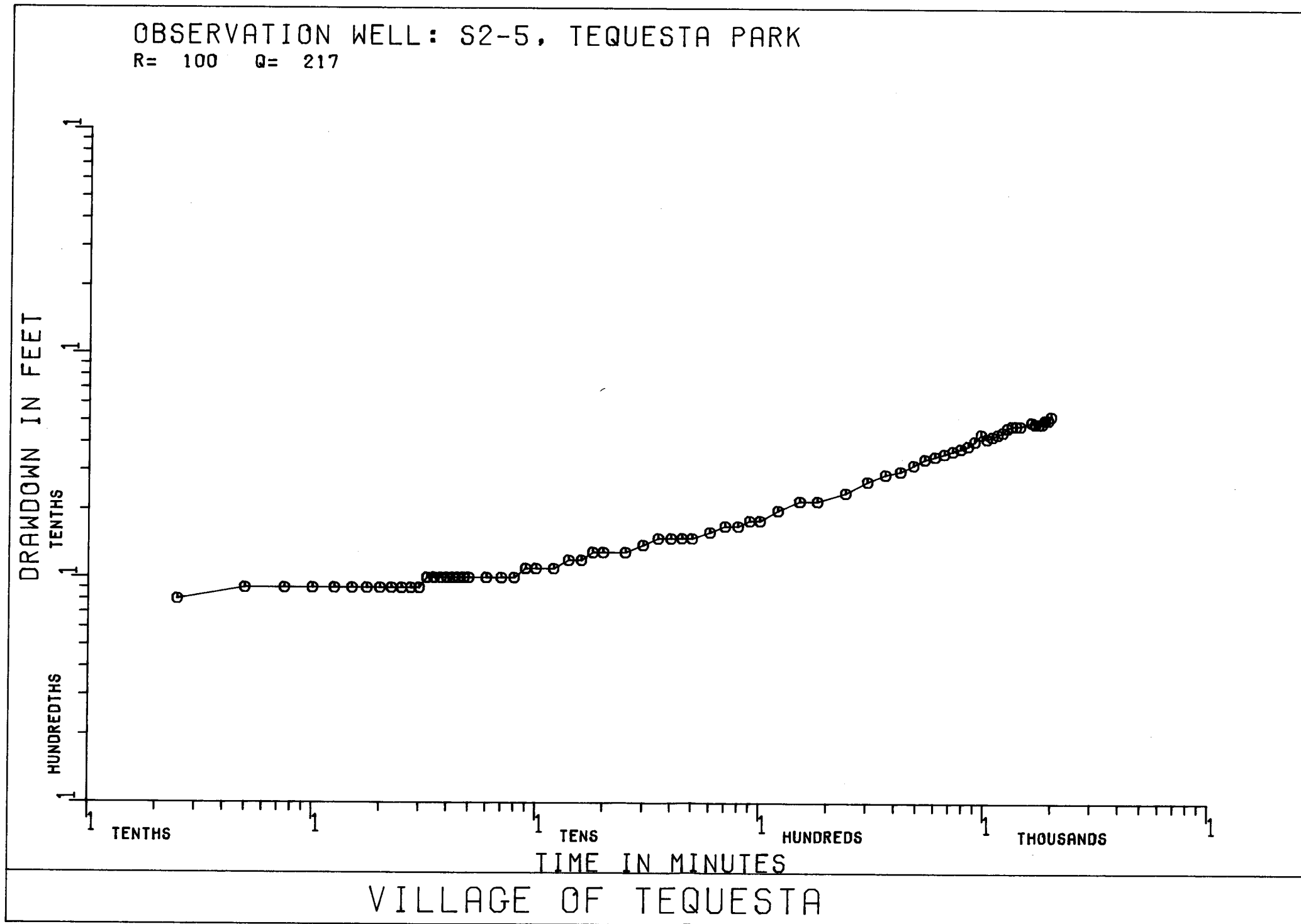
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PLOT NO 0355

DATE 86/05/05

TIME 12:52

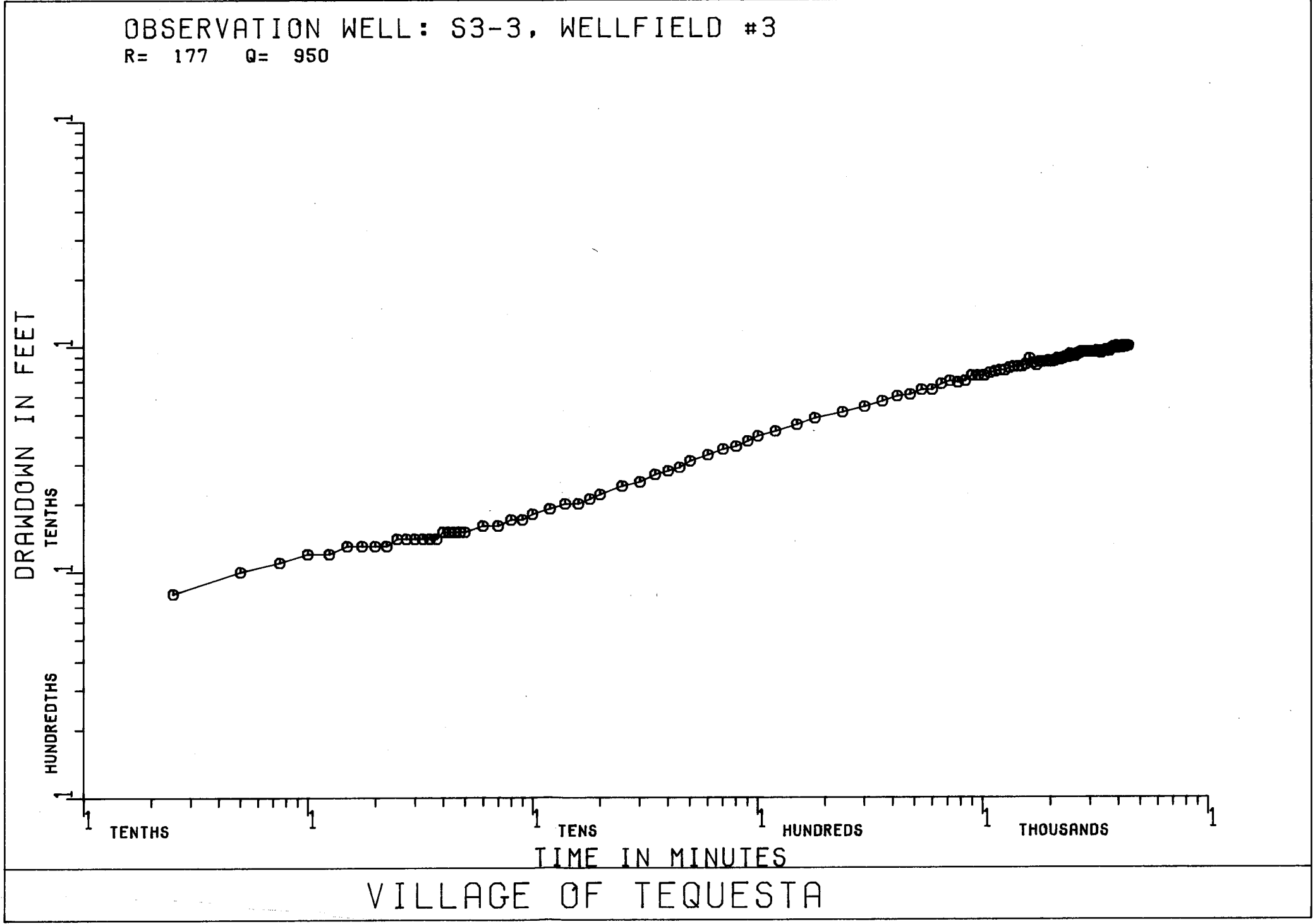
*ms*



WMD

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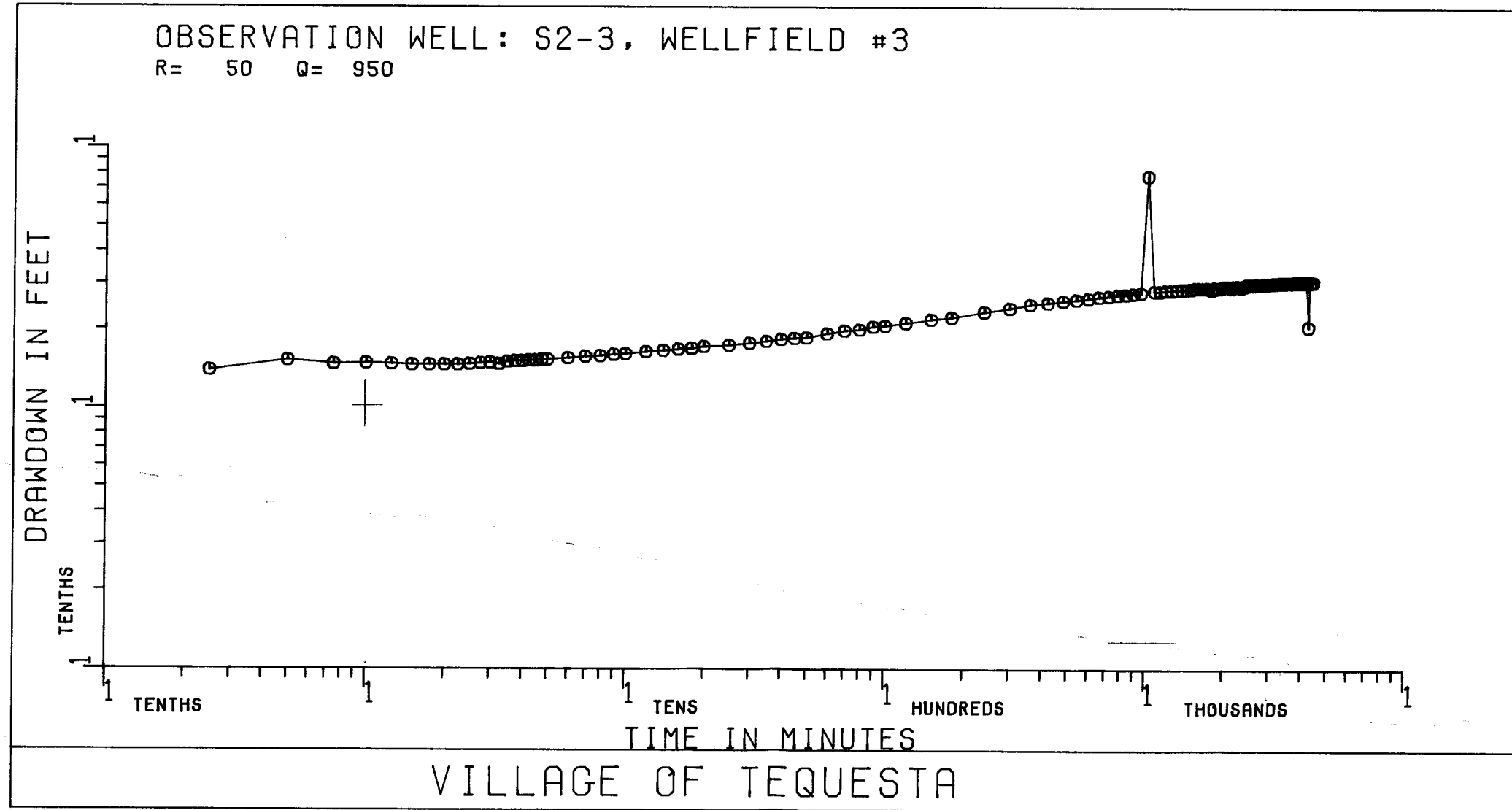
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WMD

TAPENO 6265 PLOT NO 0340  
USER NO NELMS DATE 86/05/05

TIME 12:48



*no match*

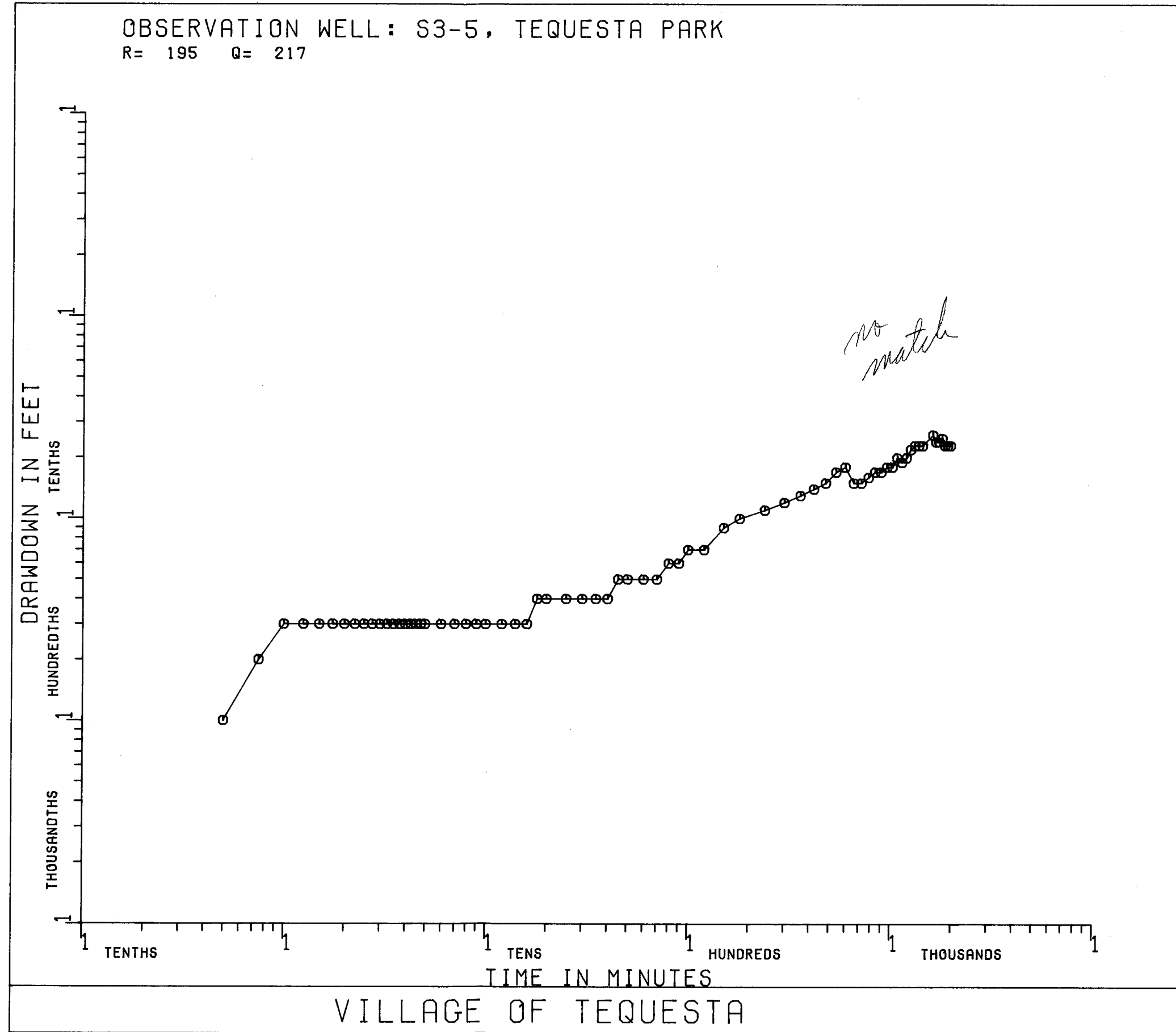
WMD

TAPENO 6265  
USER NO NELMS

PLOT NO 0316

DATE 86/05/05

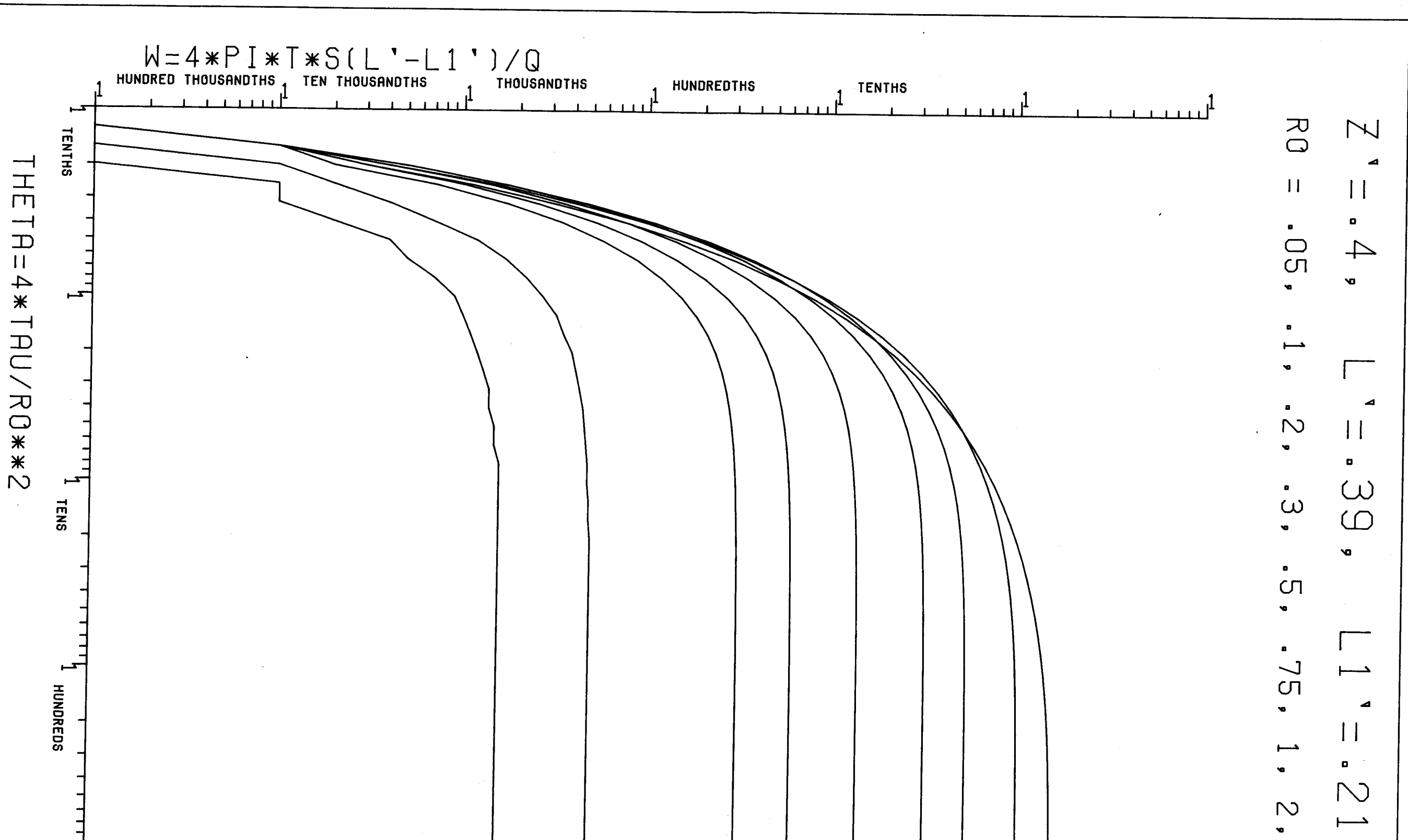
TIME 12:53





WMD

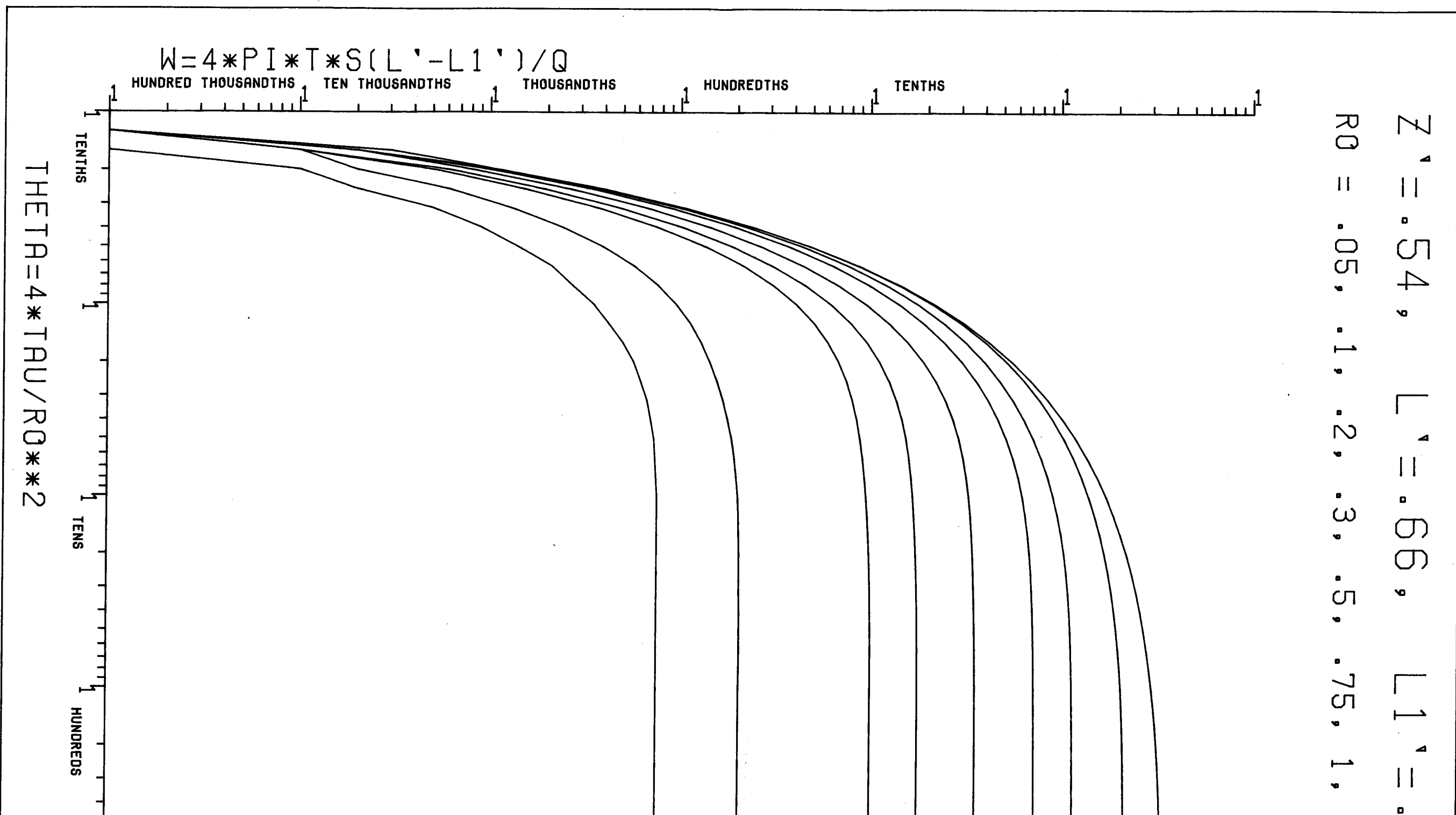
TAPENO 6265 PLOT NO 5000  
USER NO RICK-BO DATE 86/06/12 TIME 15:37



*for #5*

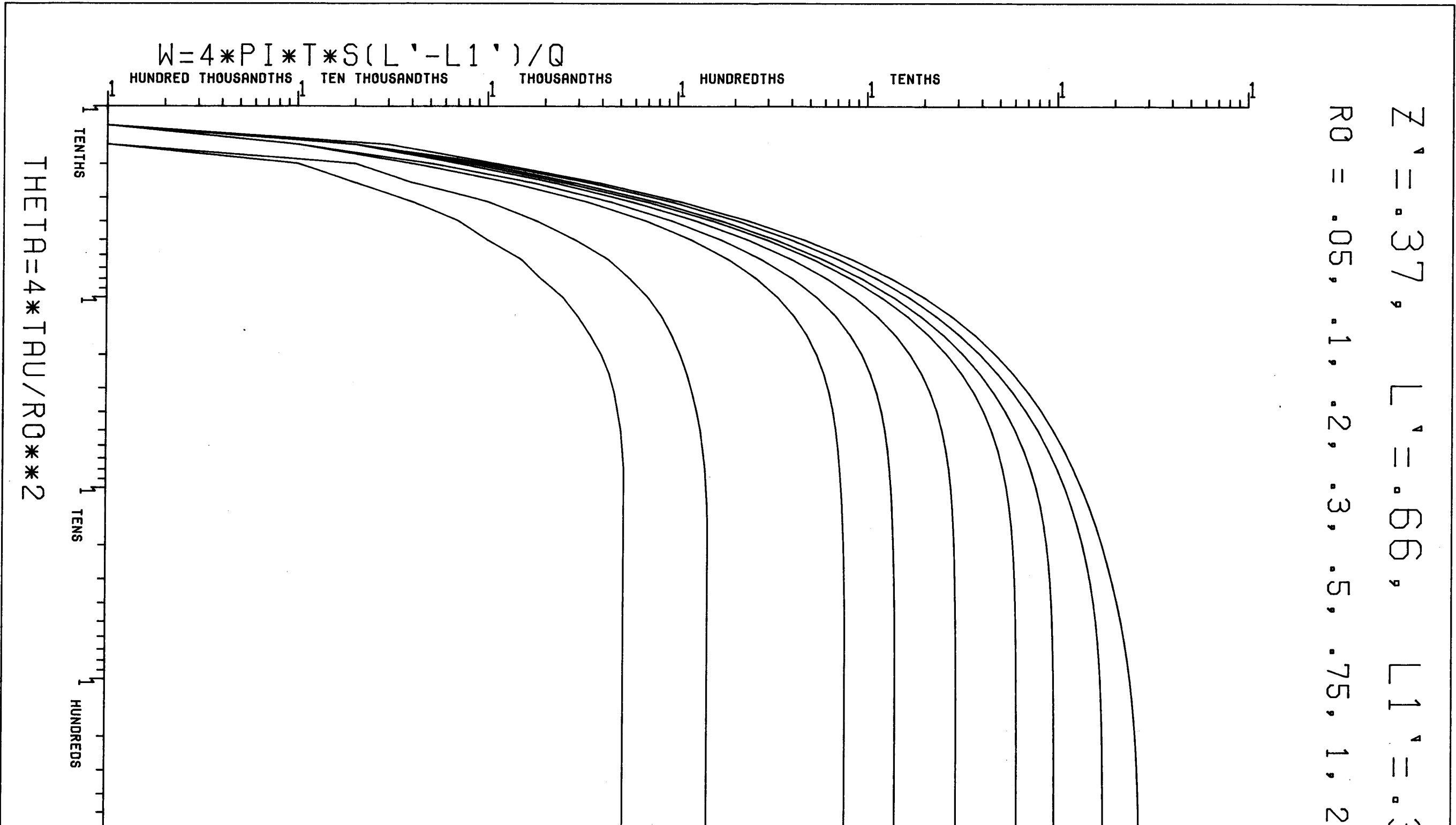
WMD

TAPENO 6265 PLOT NO 5006  
USER NO RICK-BO DATE 86/06/12 TIME 15:40



WMD

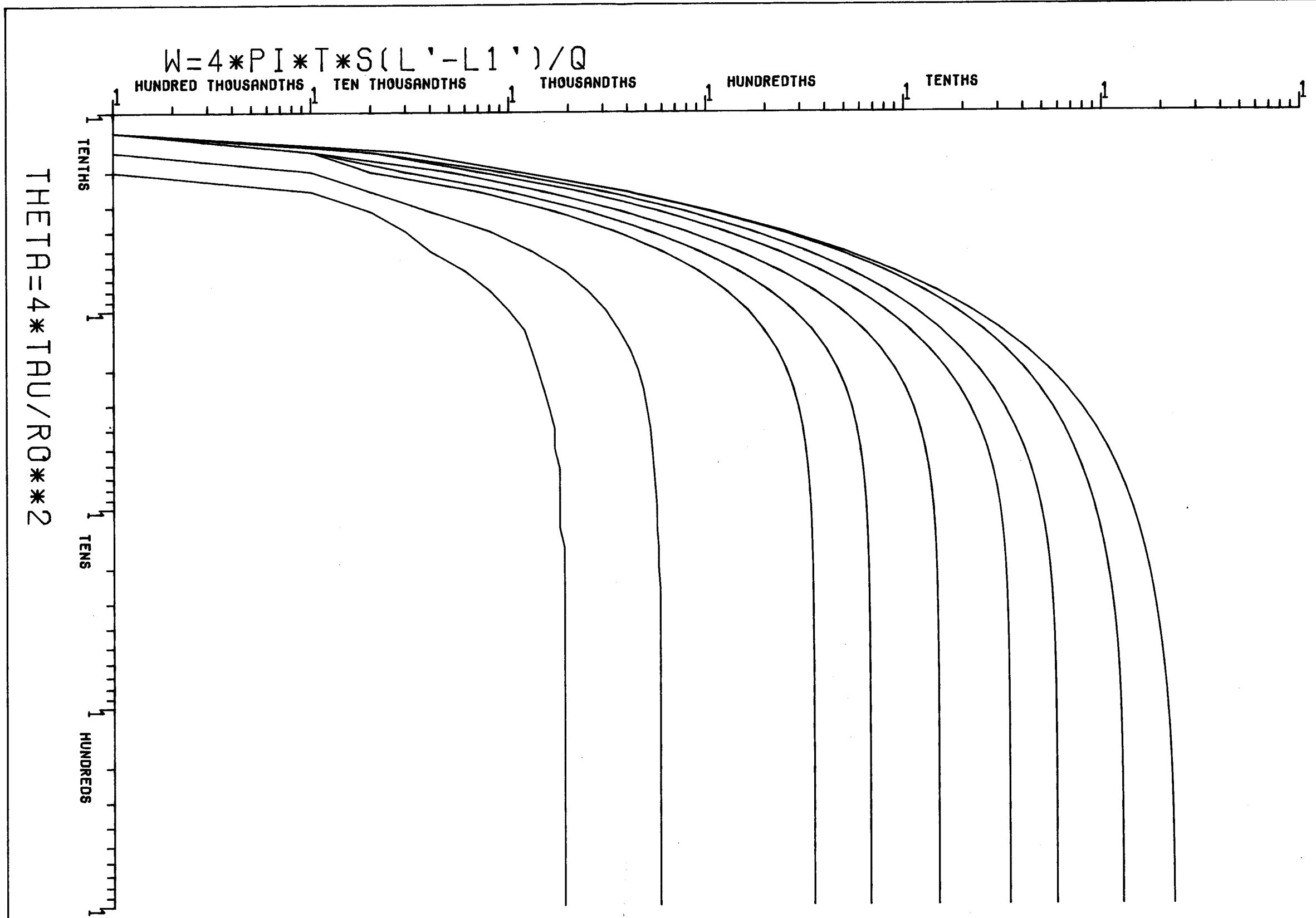
TAPENO 6265 PLOT NO 5003  
USER NO RICK-BO DATE 86/06/12 TIME 15:39



*For plot #2*

WMD

TAPENO 6404 PLOT NO 5051  
USER NO RICK-B0 DATE 86/06/12 TIME 15:35



$Z' = .4, L' = .48, L1' = .32$   
 $RQ = .05, .1, .2, .3, .5, .75, 1, 2, 3$

WMD

TAPENO 6404 PLOT NO 5045  
USER NO RICK-BO DATE 86/06/12 TIME 15:24

