

APT

CCRO-9

x = 326863  
y = 815339

CCRO-9A

x = 326863  
y = 815410

CCRO-9B

x = 326863  
y = 816039

AQUIFER TEST REPORT  
LOWER HAWTHORN AQUIFER  
CAPE CORAL, FLORIDA

APRIL, 1983

~~PRELIMINARY DRAFT~~  
~~SUBJECT TO REVISION~~

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INTRODUCTION

This groundwater hydrology well test is sponsored by the Utilities Department of the city of Cape Coral, Florida to better determine the yield characteristics of the lower Hawthorn aquifer in the vicinity of the Reverse Osmosis plant.

Scope

This report represents a summary and analysis of data from the test pumping of Well RO 9 in Cape Coral Reverse Osmosis wellfield. This pumping test occurred during the period of March 28 until April 7, 1983. Water level observations were precautiously made on March 7 and 8, 1983. This well will supply feed water to a Reverse Osmosis treatment plant located in Cape Coral.

Acknowledgment

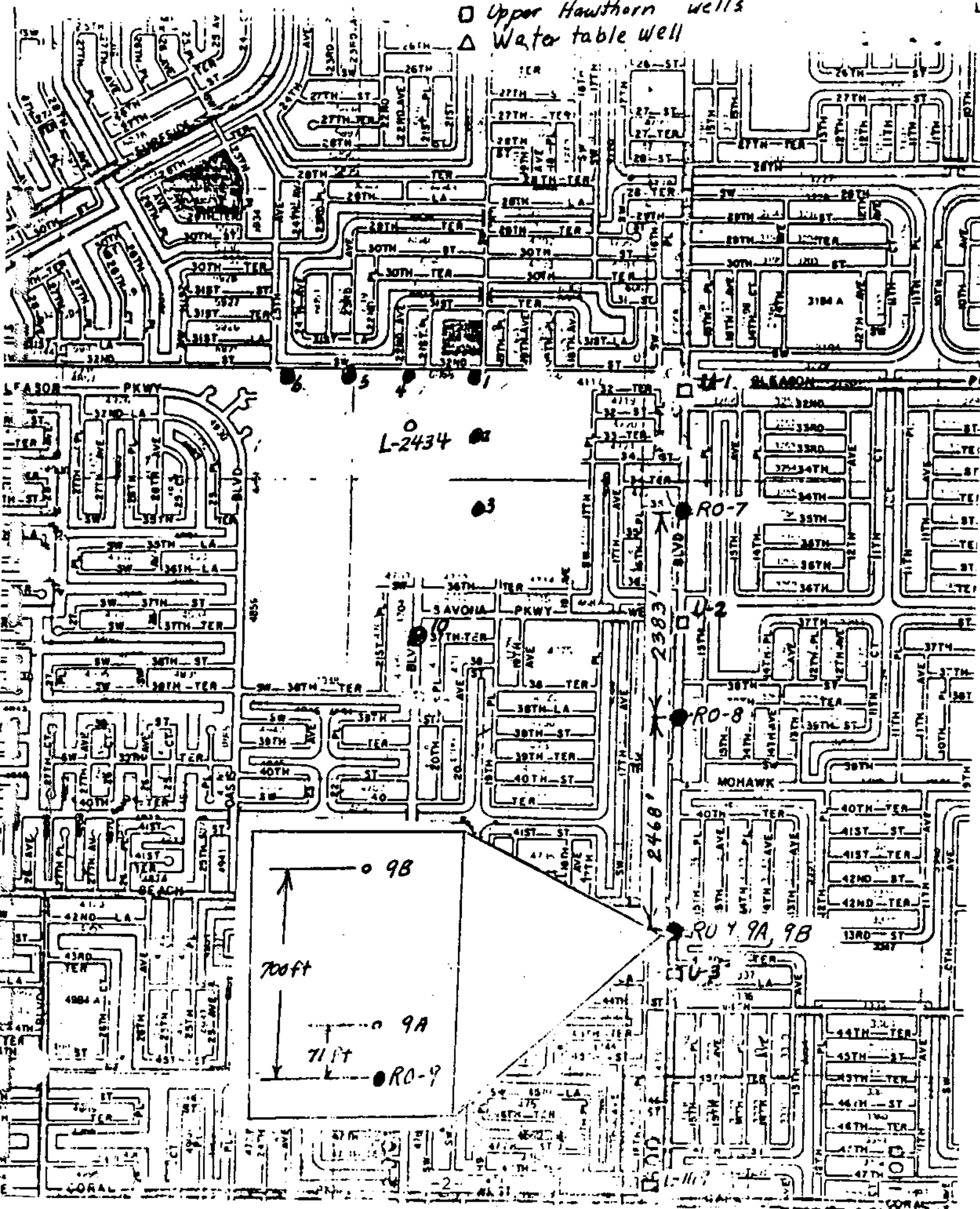
The data collection was made by Durward H. Boggess, hydrologist and retiree from the U.S. Geological Survey. Analysis of data was made by the Hydrology Division, Layne-Western Company, Inc. The project was under the direction of Howard Needles Tammen and Bergendoff of Cape Coral, Florida.

Location of Wells

The wellfield providing water for the Reverse Osmosis plant is located in the southwest quadrant of the city limits of Cape Coral. As indicated in Figure 1, Well RO 9 is the southernmost well of the Reverse Osmosis wellfield. For the purpose of this test, two (2) observation wells (Wells 9A and 9B) were constructed to the north of Well RO 9. Well 9A is 70 feet from Well RO 9 and Well 9B is 700 feet from Well RO 9. Also during the test, Wells RO 7 and RO 8 were used as observation wells. The producing zone of the Reverse Osmosis wellfield is the lower Hawthorn aquifer. Well RO 9 is further described as being located near the center of the west side of the NW  $\frac{1}{4}$  of Section 10, Township 45 South, Range 23 East, in Lee County, Florida.

Figure 1 - Cape Coral RO. Wellfield

- Lower Hawthorn wells
- Upper Hawthorn wells
- △ Water table well



## Description of Aquifers

The lower Hawthorn and Suwannee aquifers are both artesian. They contain water which is not potable due to the presence of dissolved solids. The water is not treatable to potable water standards by conventional softening processes. Water is not taken from aquifers deeper than the Suwannee because they are known to contain more highly mineralized water than the Suwannee aquifer. Although the well yield can be increased by drilling into the Suwannee aquifer, the mineral content also increases with depth. Therefore most water is taken from the lower Hawthorn aquifer.

The lower Hawthorn aquifer consists of sandy limestone in the lower part of the Hawthorn formation and upper part of the Tampa limestone. It extends from approximately 350 feet below land surface to 700 feet. The Suwannee formation begins at about 750 feet below land surface. The top 100 feet or so of this formation consists of a dense limestone or clay which serves to divide the Suwannee aquifer and the lower Hawthorn aquifer. The water producing portion of the Suwannee formation begins at about 800 feet and may extend to deeper than 1,000 feet. The lower Hawthorn and the Suwannee aquifers are both under sufficient artesian pressure to produce free flowing wells at land surface. This information is illustrated in Figure 2.

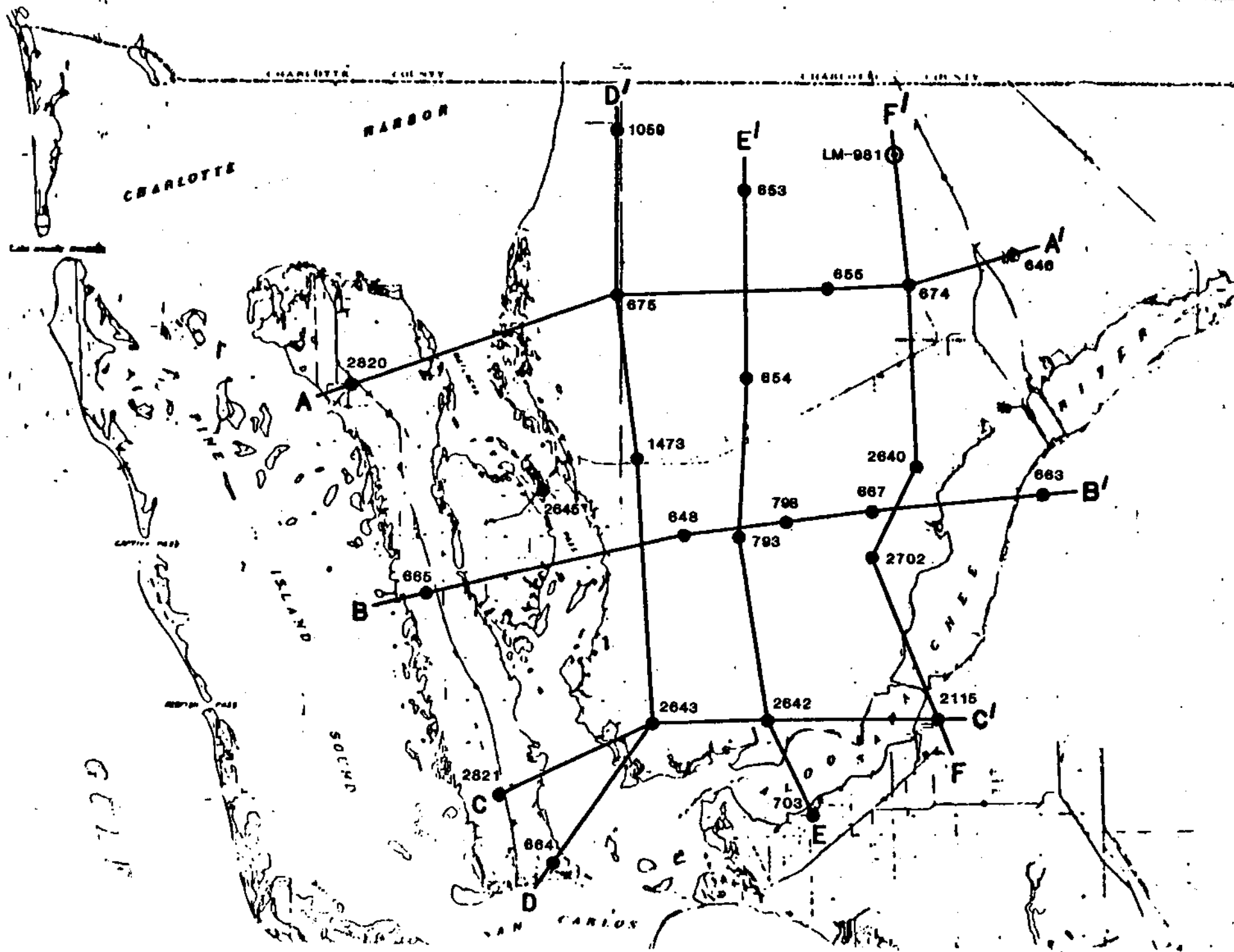
Although most wells in the Reverse Osmosis wellfield do not penetrate into the Suwannee aquifer, leakage from the Suwannee aquifer into the lower Hawthorn aquifer may occur. The data from the RO 9 pumping test will be evaluated to determine the leakage coefficient between the two aquifers.

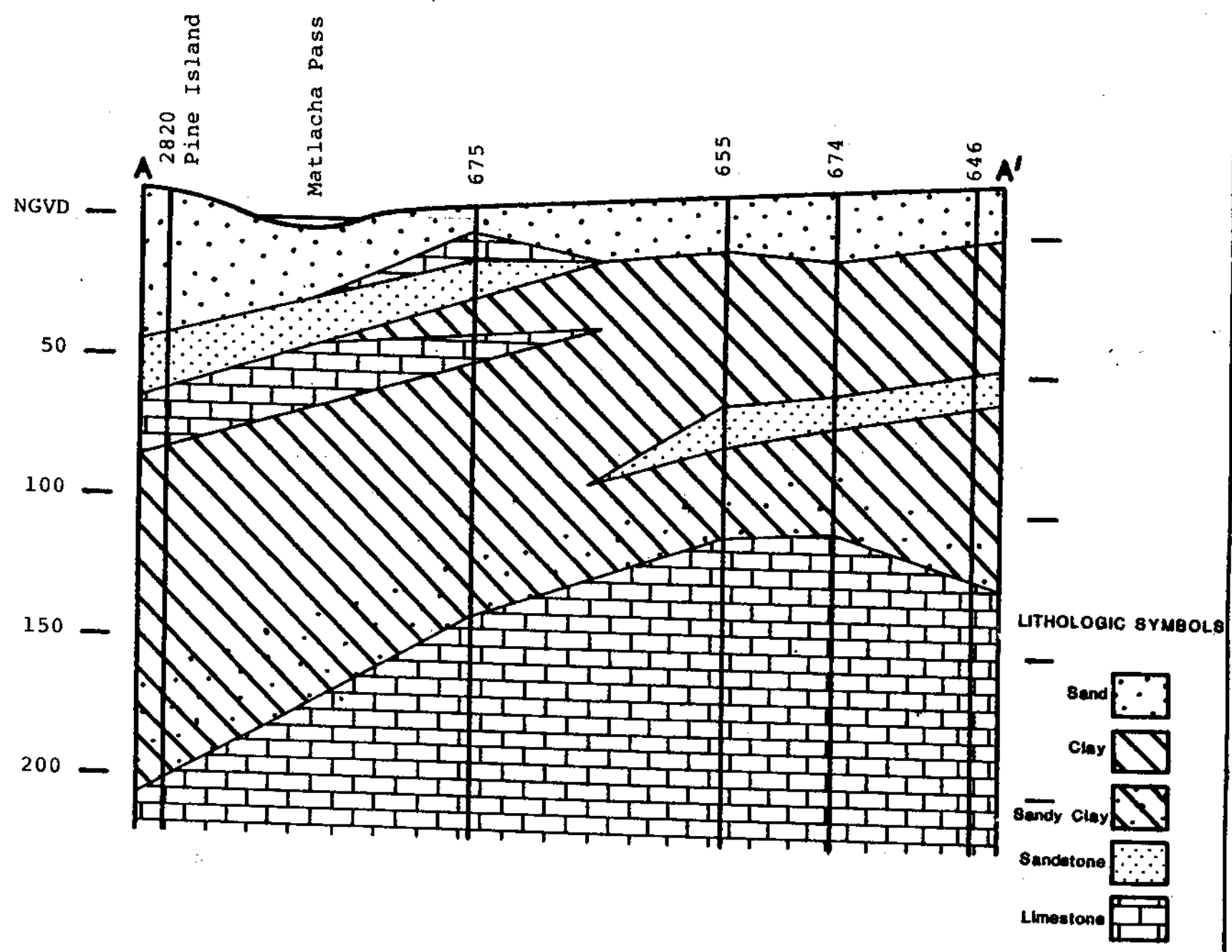
## Description of Wells

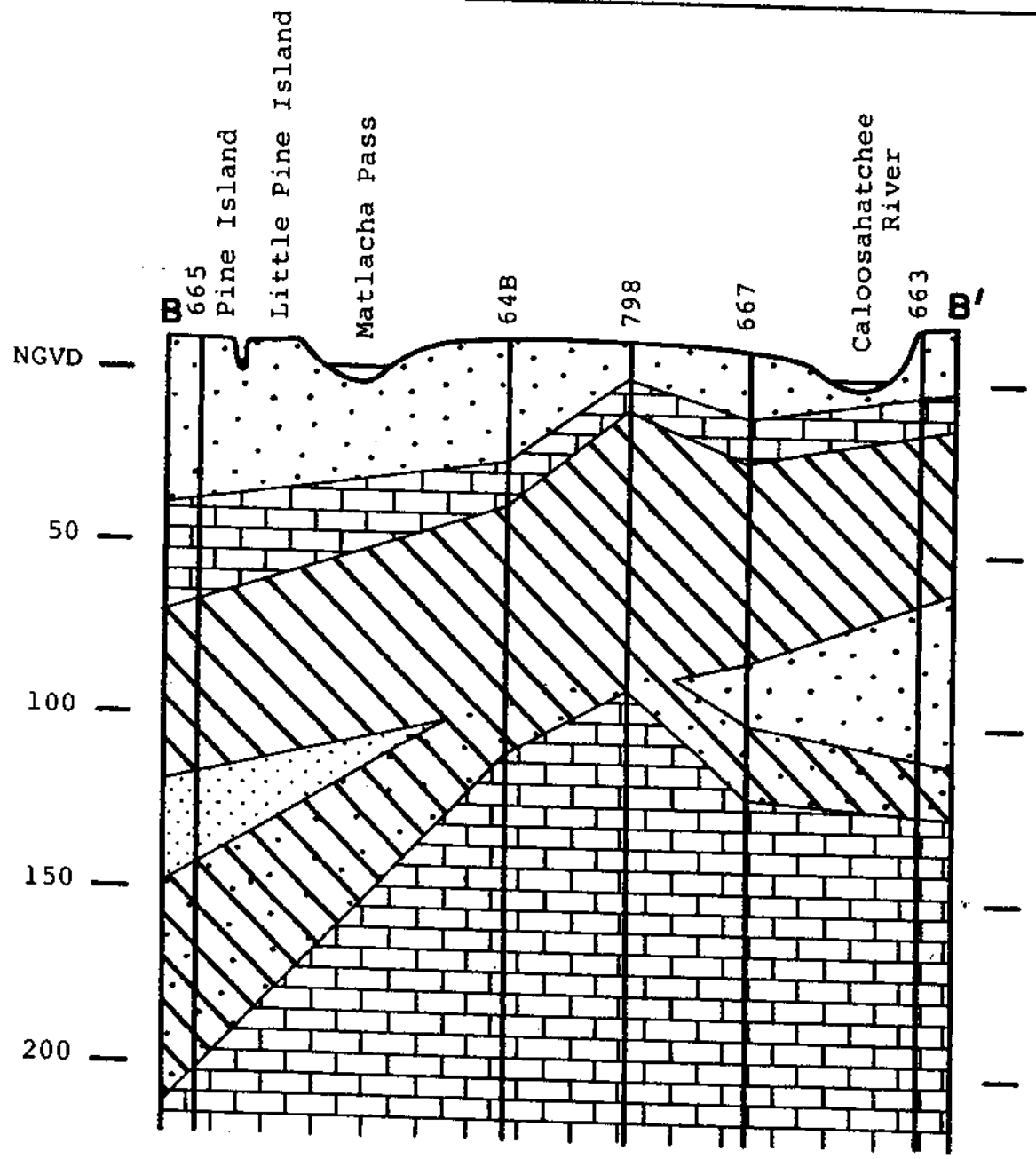
Well RO 9 is a 12-inch diameter well drilled to a depth of approximately 750 feet. This well is cased and cement grouted to a depth of 350 feet. This well, as are the other Reverse Osmosis wells, is an open hole limestone rock well extending through the whole depth of the lower Hawthorn aquifer. Observation wells 9A and 9B were similarly constructed except that they have a 4-inch diameter casing.

A summary of the driller's logs for RO Well 9 is given in Table 1. Additional well log data is given in Appendix I of the report.

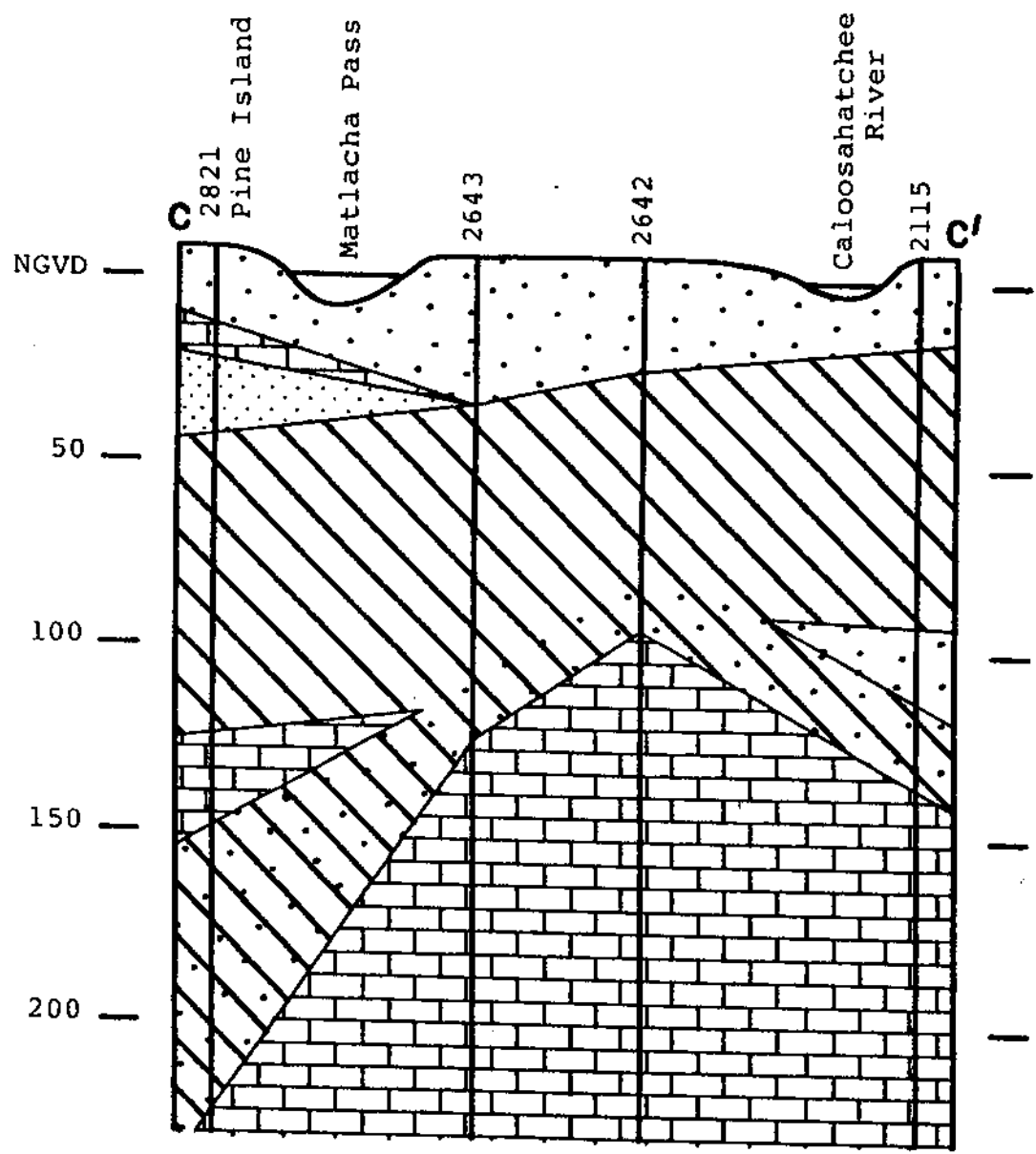
Figure 2 - LOCATION OF GEOLOGIC CROSS SECTION

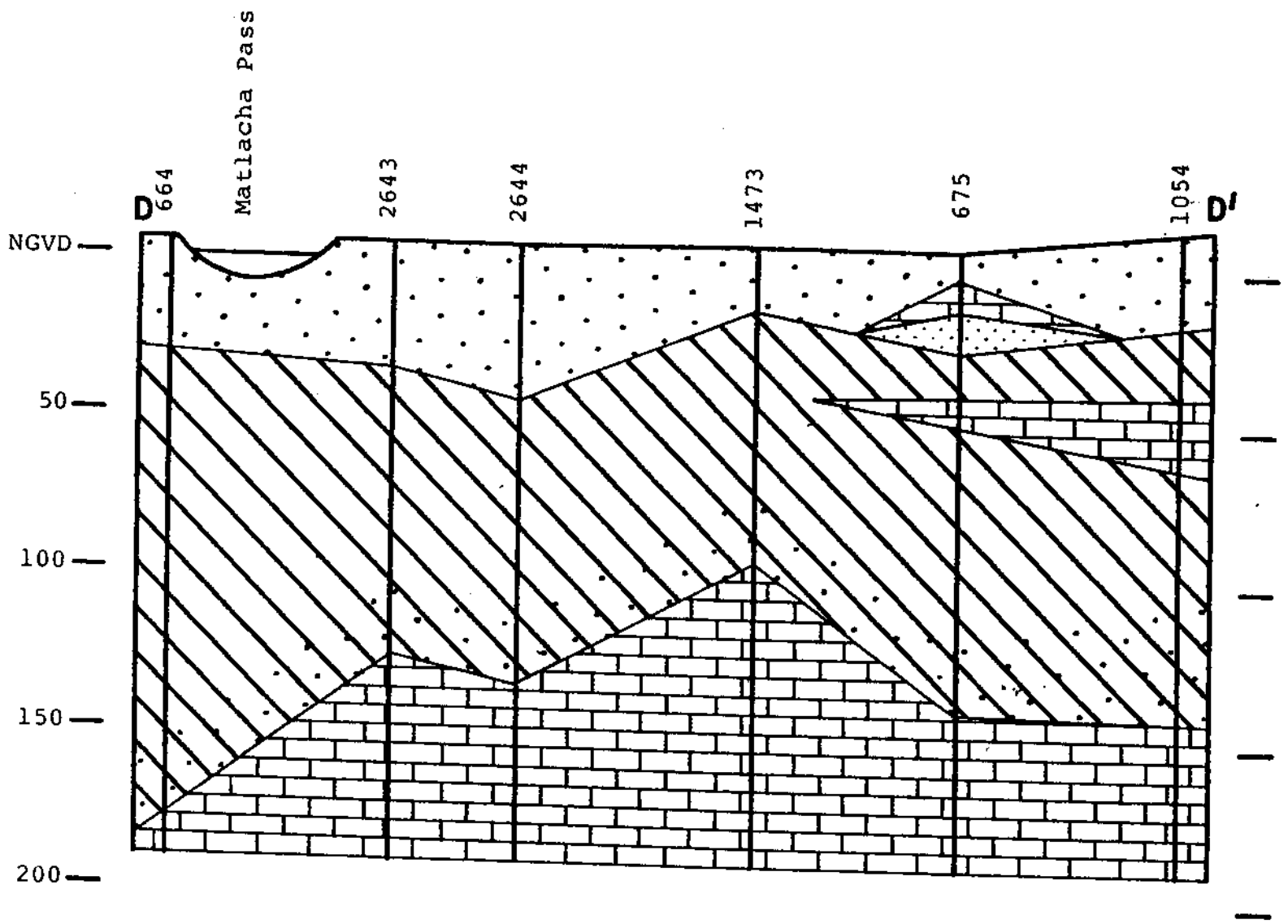


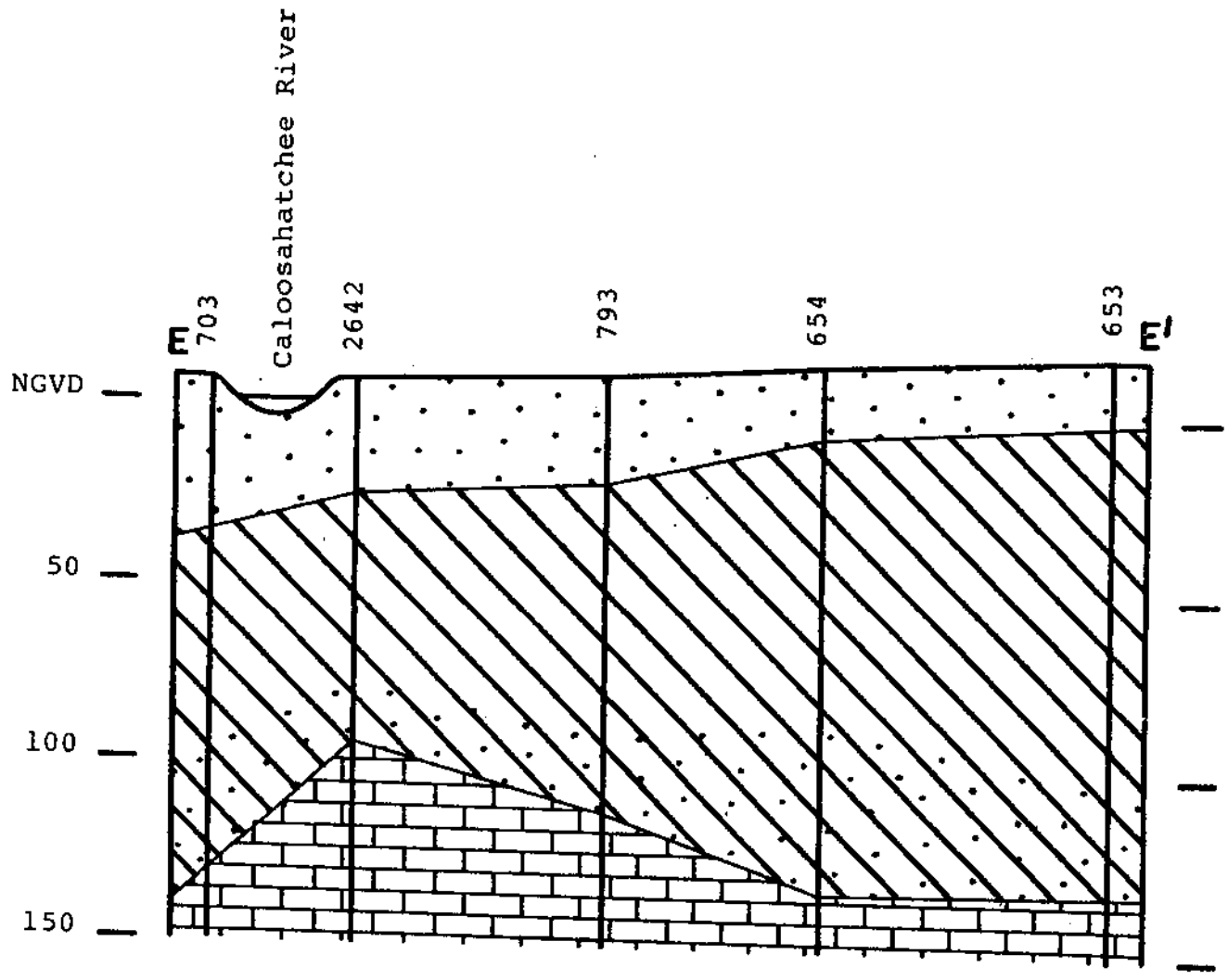












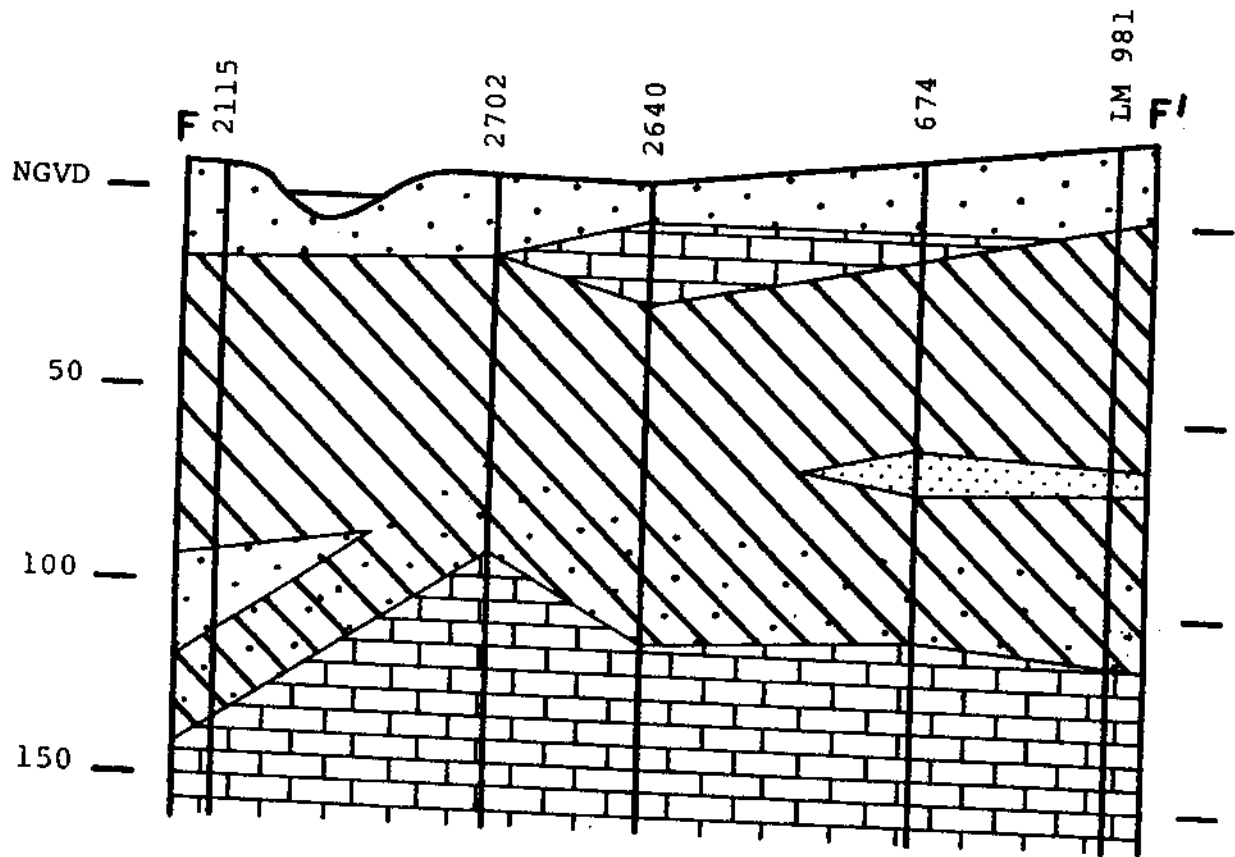


TABLE 1  
 DRILLER'S WELL LOG SUMMARIZED  
 R.O. WELL #9

Driller set 33 feet of 20-inch black steel surface casing from 3 feet above ground to 30 feet below ground. The well casing consisted of 353 feet of 12-inch diameter PVC Schedule 40 material set from 3 feet above ground level to 350 feet below the ground. Use 14.5 sacks of 94 lb grout amount with 5% bentonite.

<u>Depth</u>		<u>Formation</u>	<u>Thickness</u> Feet
<u>From</u>	<u>To</u>		
0	20	Sand, Shell with Rock	20
20	35	Shell and mud, Thick	15
35	40	Green Clay	5
40	50	White Rock, Clay and Shell	10
50	90	Green Clay	40
90	100	Green Clay w/rock, Phosphate	10
100	105	Brown Shell w/rock Phosphate	5
105	180	Limestone	75
180	200	Green Clay	20
200	295	Limestone	95
295	330	Clay	35
330	390	Limestone	60
390	445	Limestone w/clay	55
445	490	Limestone	45
490	500	Gray Limestone	10
500	505	Limestone w/clay	5
505	510	White to Green Clay	5
510	520	Limestone	10
520	525	Gray Clay	5
525	530	White Clay	5
530	535	Green Clay w/limestone	5
535	540	White Clay and Limestone	5
540	545	Tan Limestone	5
545	550	White Clay w/limestone	5
550	570	Limestone w/clay	20
570	580	Tan Limestone	10
580	605	Brown Limestone	25
605	610	White Limestone	5
610	705	Brown Limestone	95
705	755	Clay	50

## PUMPING TEST

An attempt was made to start the pumping tests on March 4 and again on March 11, 1983, but was discontinued after several hours each time because the rate could not be maintained. The information on these tests, although limited value, is included in Appendix II. The third start using a lower pumping rate, began on March 28 with continuous pumping of Well RO 9 until April 7, 1983. Recovery measurements were then made thru April 8, 1983.

$$Q = 746 \text{ gpm}$$

There were numerous problems prior to and during the tests. The most serious of which were related to highly unusual weather patterns, which resulted in about 19.5 inches of rain and strong gusty winds. This caused several delays from early February to the actual start of the test. This threat continued during the entire test period.

Table 2 gives the description of wells at or near the Cape Coral RO plant. Listed are the wells giving both the City number and the U.S.G.S. file number, the depth, aquifer unit or units, and other details. Table 3 gives the rainfall occurrence for February, March, and part of April, 1983.

During the course of this test, Wells RO 1, 2, 4, and 6 were being pumped to provide water to the Reverse Osmosis plant. These wells were pumped at a constant level for several weeks prior to and during the test. This was done in an attempt to stabilize the water level elevations throughout the area. However, it appears from results of the test that the pumping level within the Reverse Osmosis wellfield changed during the course of the test. This change in pumping rate effected the drawdown of Observation well L-2434, which is a permanent U.S.G.S. monitoring station. The drawdown in this well was registered as being 3 feet during the course of the test. This value would seem excessive considering the other observed well drawdowns. This apparent change in the pumping rates in the wellfield would also tend to effect the drawdown in Wells RO 7 and RO 8. Therefore, for the purpose of this data analysis, Wells RO 7 and RO 8 were not considered as fully responsive to the pumping of RO 9 well, but were used as backup for the results of the other tests.

Table 2

DESCRIPTION OF WELLS AT OR NEAR THE CAPE CORAL RO PLANT

Well City	Number USGS	Depth (Ft.)	Aquifer	Casing		Alt. of Land Sur. (NGVD)	Alt. of MP Above Land Sur.	Sp. Cap (gpm/ft)	Use of Well
				Depth(ft)	Diam(in)				
RO 1	L-2113	900	LH-SU	362	10	7	2.3	86	Prod.
RO 2	L-2249	745	LH	362	12	6	1.8	50	"
RO 3	L-2250	685	LH	347	12	6	---	102	"
RO 4	L-2251	705	LH	345	12	6	---	34	"
RO 5	L-2272	700	LH	350	12	6	---	28	"
RO 6	L-2273	765	LH	345	12	6	---	17	"
RO 7	---	---	---	Reported same as RO 9	---	---	---	---	"
RO 8	---	---	---	Reported same as RO 9	---	---	2.3	---	"
RO 9A	---	748	LH	350	12	8	2.5	---	"
RO 9B	---	737	LH	347	4	8	2.4	---	"
RO 10	---	750	LH	350	4	8	2.5	---	Obs.
---	L-2434	755	LH	350	12	8	1.9	---	Obs.
U 1	---	700	LH	353	4	7.03	---	---	Prod.
U 2	---	270	UH	106	8	8	3.1	---	Obs.
U 3	---	265	UH	107	8	8	2.1	---	Prod.
---	L-581	---	---	Reported same as U 1	---	---	2.3	---	Prod.
---	L-1119	174	UH	---	8	9.92	2.2	---	---
---	L-2644	224	UH	42	2	---	3.0	---	Obs.
---	L-1136	178	UH	128	4	7.51	2.1	---	Obs.
---	---	13	WT	---	4	9.71	3.2	---	Obs.
---	---	---	---	---	---	---	2.6	---	Obs.

LH - Lower Hawthorn

SU - Suwannee

UH - Upper Hawthorn

WT - Water Table

CAPE CORAL RO PLANT

Table 3

RAINFALL RECORDS FROM THE CAPE CORAL  
REVERSE OSMOSIS PLANT

	<u>February</u>	1983 <u>March</u>	<u>April</u>
1	---	.03	---
2	2.1	---	.05
3	---	---	---
4	---	---	---
5	---	---	---
6	1.25	---	---
7	.4	1.07	---
8	---	.79	---
9	---	---	.03
10	.5	.27	1.25
11	---	.10	.30
12	.82	---	---
13	2.06	---	---
14	---	---	---
15	---	.23	---
16	.8	.32	---
17	.13	1.33	---
18	---	---	---
19	.8	---	---
20	---	---	---
21	---	.22	---
22	---	---	---
23	---	---	---
24	---	2.00	---
25	---	---	---
26	---	---	---
27	2.17	.05	---
28	1.04	.05	---
29	---	---	---
30	---	---	---
31	---	---	---
Total	12.07	7.43	



## AQUIFER ANALYSIS

Analyzing extensive test data is very difficult to fully understand the many changes occurring in the system. The early to middle portion of the data, usually from 5 to 1,500 minutes elapsed time, reflects the formation conditions in the vicinity of the well for the depth and thickness penetrated by the well and observation wells. This computed value of transmissivity is usually the lowest number obtained from the data and should be used for the evaluation of well performance. From 1,000 minutes to more than 10,000 minutes in elapsed time, the aquifer test data reflects factors occurring to the aquifer, such as boundaries, both leakage infiltration and barrier conditions, atmospheric pressure changes and pumpage of other wells at the plant. In reviewing the many drawdown plots, shown in Figures 3 thru 10, the above variations and changes are apparent.

Some of the raw data consisting of re<sup>o</sup>order charts and Barograph charts are given in Appendix II. There was a fluctuation of water levels of about 0.05 feet daily in the records. Since this was consistent, numbers were selected for the tables that represented the best fit. The variation in pressure was observed on the Barograph records attached in Appendix II.

Shown in Table 4 is the listing of various values of the formation coefficients calculated from the data. The **time versus drawdown data**, collected during the course of this test, was plotted on semilog graphs and log-log graphs for each of these three wells. The transmissivities and coefficient of storativities were calculated from these graphs. The plots of Wells RO 9 and 9A, shown in Figures 4 and 5, indicate a formation transmissivity of approximately 35,000 gpd/ft of aquifer for the early part of the test. The plots of Well 9B indicated a much higher transmissivity of about 100,000 gpd/ft. The values of coefficient of storativity were approximately 0.003. These values are similar to the values documented for Wells RO 1 thru RO 6.

Using the values of 35,000 gpd/ft for transmissivity and 0.003 for storativity, the theoretical specific capacity of the well is 17.7 gpm/ft of drawdown. This compares nearly exactly with the observed specific capacity of 17.8 gpm/ft.

Using a transmissivity of 35,000 and the actual drawdown of Well RO 9, a distance-drawdown semilog plot would indicate a radius of influence of about 3,000 feet. At this radius of influence, Wells RO 7 and L 2434 should not be affected by pumpage of Well RO 9 at 746 gpm. This would confirm that other factors influenced the drawdown of Wells RO 8 and RO 7 during the test.

TABLE 4 - SUMMARY OF FORMATION COEFFICIENTS

<u>Semilog Plot</u>	<u>T Early</u>	<u>T Later</u>	<u>S</u>
Well RO 9	35,200	75,750	---
9A	37,870	93,780	.00023
9B	106,450	180,700	.0002
Well RO 8	---	174,300	.0011
Well RO 7	---	166,900	.00053
9A to 9B	24,660	Distance-Drawdown	
RO 9 to 9B	34,250	Distance-Drawdown	
<u>Log-Log Plot</u>	<u>T</u>	<u>S</u>	<u>P'</u>
Well RO 9	34,600	.0054	.035
9A	38,000	.0016	.050
9B	93,000	.002	.017

T's are expressed in gpd/ft, S values are dimensionless, and leakage (P') given in gpd/ft<sup>2</sup>.

The aquifer's leakage factor was calculated using Walton's solution for transient condition, leaky aquifers. The leakage factor was determined to be 0.0335 gpd/ft<sup>2</sup>. Assuming that all water to Well RO 9 was supplied by leakage from the Suwannee aquifer, then a circular area with a radius of 3,200 feet would be required to replenish the daily withdrawal of Well RO 9. This value closely agrees with the radius of influence from the distance-drawdown plot.

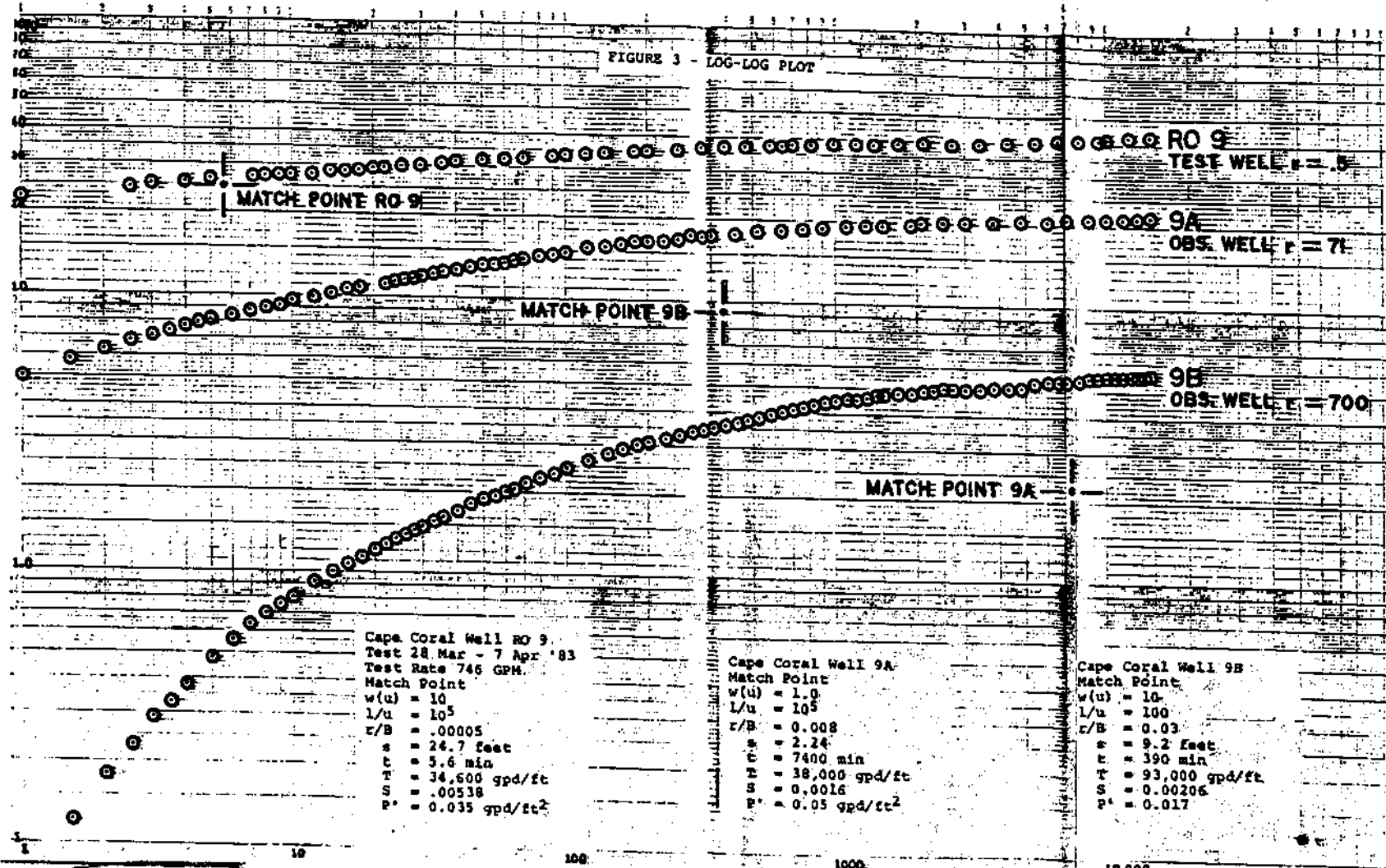
It should be noted on the log-log plot, attached as Figure 3, that the vertical leakage rate appeared to decrease as the drawdown decreased further from the test pumping well.

In Table 5, listed are miscellaneous measurements in other Cape Coral wells in both the water table and upper Hawthorn aquifers during the test. The effect of these water level changes may have had some effect on the lower Hawthorn aquifer especially as noted in L-2434.

Figure 11 gives the water level hydrograph for L-2434, located at the Reverse Osmosis plant, reflecting the water level in the lower Hawthorn aquifer.

Figure 12 gives the water level hydrograph during the test for upper Hawthorn Observation well L-581.

FIGURE 3 - LOG-LOG PLOT



Cape Coral Well RO 9  
 Test 28 Mar - 7 Apr '83  
 Test Rate 745 GPM.  
 Match Point  
 $w(u) = 10$   
 $l/u = 10^5$   
 $r/B = .00005$   
 $s = 24.7$  feet  
 $t = 5.6$  min  
 $T = 34,600$  gpd/ft  
 $S = .00538$   
 $P = 0.035$  gpd/ft<sup>2</sup>

Cape Coral Well 9A  
 Match Point  
 $w(u) = 1.0$   
 $l/u = 10^5$   
 $r/B = 0.008$   
 $s = 2.24$   
 $t = 7400$  min  
 $T = 38,000$  gpd/ft  
 $S = 0.0016$   
 $P = 0.05$  gpd/ft<sup>2</sup>

Cape Coral Well 9B  
 Match Point  
 $w(u) = 10$   
 $l/u = 100$   
 $r/B = 0.03$   
 $s = 9.2$  feet  
 $t = 390$  min  
 $T = 93,000$  gpd/ft  
 $S = 0.00206$   
 $P = 0.017$

Page 1 of 2

## AQUIFER TEST DRAWDOWN

NAME Cape Coral

DATE 3-28-83

LOCATION \_\_\_\_\_

WELL NO. Pumped Well RO-9

JOB NO. OR 737

Meas. Point 2.4 ft. above LDS

Top plate of well

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL FROM MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS Pumping Rate
	S.W.L.				
0829	0	+14.64	0		
0900	1.0	- 8.24	22.88		
	2.5	9.92	24.56		
	3.0	10.45	25.09		
	4.0	11.01	25.65		
	5.0	11.38	26.02		
	6.0	11.70	26.34		
	7.3	12.29	26.93		
	8.0	12.53	27.17		
	9.0	12.79	27.43		
	10.0	12.94	27.58		
	12.0	13.32	27.96		
	14.0	13.66	28.30		
	16.0	14.04	28.68		
	18.0	14.37	29.01		
	20.0	14.59	29.23		
	22.0	14.84	29.48		
	24.0	15.02	29.66		
	26.0	15.23	29.87		
	28.0	15.41	30.05		
	30.0	15.54	30.18		
	33.0	16.01	30.65		
	36.0	16.27	30.91		
0940	40.0	16.52	31.16		
0945	45	16.88	31.52		
	50	17.14	31.78		
	55	17.39	32.03		
1000	60	17.62	32.26		770
	65	17.86	32.50		
	70	18.01	32.65		
	80	18.33	32.97		
	90	18.71	33.35		
	100	19.03	33.67		
	120	19.47	34.11		
	140	19.85	34.49		
	160	20.12	34.76		
1200	180	20.39	35.03		746
1220	200	20.60	35.24		
1250	230	20.84	35.48		
1320	260	21.07	35.71		
1350	290	21.44	36.08		
1420	320	21.60	36.24		
1450	350	21.76	36.40		753
1530	390	21.93	36.57		
1610	430	22.06	36.70		
1550	470	22.44	37.08		
1740	520	22.62	37.26		756
1841	581	22.82	37.46		
1940	640	22.96	37.60		
2000	660				

HOURLY

AQUIFER TEST  
DRAWDOWN

AME Cape Coral

DATE 3-28 thru 4-1-83

LOCATION \_\_\_\_\_

WELL NO. Pumped Well RO-9 JOB NO. OR 737

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL FROM MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS Pumping Rate
	S.W.L.		Static +14.64		
2040	700	23.15	37.79		
2140	760	23.29	37.93		
2240	820	23.44	38.08		
2400	900	23.60	38.24		
3-29-83					
0140	1000	23.72	38.36		
0320	1100	23.84	38.48		
0500	1200	23.98	38.62		
0640	1300	24.09	38.73		
0800	1380				752
0820	1400	24.18	38.82		
1000	1500	24.33	38.97		755
1320	1700	24.54	39.18		750
1640	1900	24.62	39.26		
2000	2100	24.74	39.38		
3-30-83					
0205	2465	24.97	39.61		
0600	2700	25.01	39.65		
1100	3000	25.11	39.75		743
1740	3400	25.15	39.79		742
3-31-83					
0020	3800	25.34	39.98		748
0840	4300	25.35	39.99		745
1700	4800	25.55	40.19		740
4-1-83					
0300	5400	25.72	40.36		739
1300	6000	25.84	40.48		741
2300	6600	25.94	40.58		748
4-2-83					
0900	7200	25.95	40.59		748
2100	7920	26.08	40.72		740
4-3-83					
0830	8610	26.25	40.89		748
2100	9360	26.29	40.93		747
4-4-83					
0900	10,080	26.41	41.05		747
2100	10,800	26.51	41.15		741
4-5-83					
0900	11,520	26.53	41.17		738
2100	12,240	27.07	41.71		750
4-6-83					
0900	12,960	27.04	41.68		752
2100	13,680	27.10	41.74		751
4-7-83					
0750	14,330	27.16	41.80		
900	14,400	27.12	41.76		
0905	14,405				751
$32,045,900 - 21,298,300 / 14405 = 746 \text{ gpm}$ 746 gpm average rate for test period					

**AQUIFER TEST  
RECOVERY**

NAME Cape Coral DATE 4-7-83

LOCATION \_\_\_\_\_ WELL NO. RO 9 JOB NO. OR 737

Meas. Point 2.4 ft. above LSD Top plate of well

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.I.			PWL -27.12	
0750		-27.16			
0900	0	-27.12			
0905	0	+ 1.04		28.16	pump off
0909	4				
0910	5	1.51		28.63	
	6	1.91		29.03	
	7	2.28		29.40	
	8	2.58		29.70	
	9	2.86		29.98	
0915	10	3.10		30.22	
	12	3.54		30.66	
	14	3.89		31.01	
	16	4.21		31.33	
	18	4.51		31.63	
0925	20	4.77		31.89	
	22	4.99		32.11	
	24	5.21		32.33	
	26	5.41		32.53	
	28	5.60		32.72	
0935	30	5.78		32.90	
	33	6.02		33.14	
	36	6.24		33.36	
0945	40	6.53		33.65	
	45	6.82		33.94	
	50	7.10		34.22	
0955	55	7.33		34.45	
0960	60	7.56		34.68	
0965	65	7.77		34.89	
	70	7.96		35.08	
	80	8.27		35.39	
1035	90	8.55		35.67	
	100	8.81		35.93	
1105	120	9.22		36.34	
	140	9.56		36.68	
	160	9.84		36.96	
1205	180	10.08		37.20	
1225	200	10.28		37.40	
1255	230	10.56		37.68	
1325	260	10.79		37.91	
1355	290	10.99		38.11	
1425	320	11.16		38.28	
1455	350	11.31		38.43	
1535	390	11.48		38.60	
1615	430	11.63		38.75	
1655	470	11.76		38.88	
1745	520	11.89		39.01	
1845	580	12.04		39.16	
1945	640	12.12		39.24	
2045	700	12.22		39.34	
2145	760	12.33		39.45	

HOURLY





TIME-DRAWDOWN SEMI-LOG PLOT

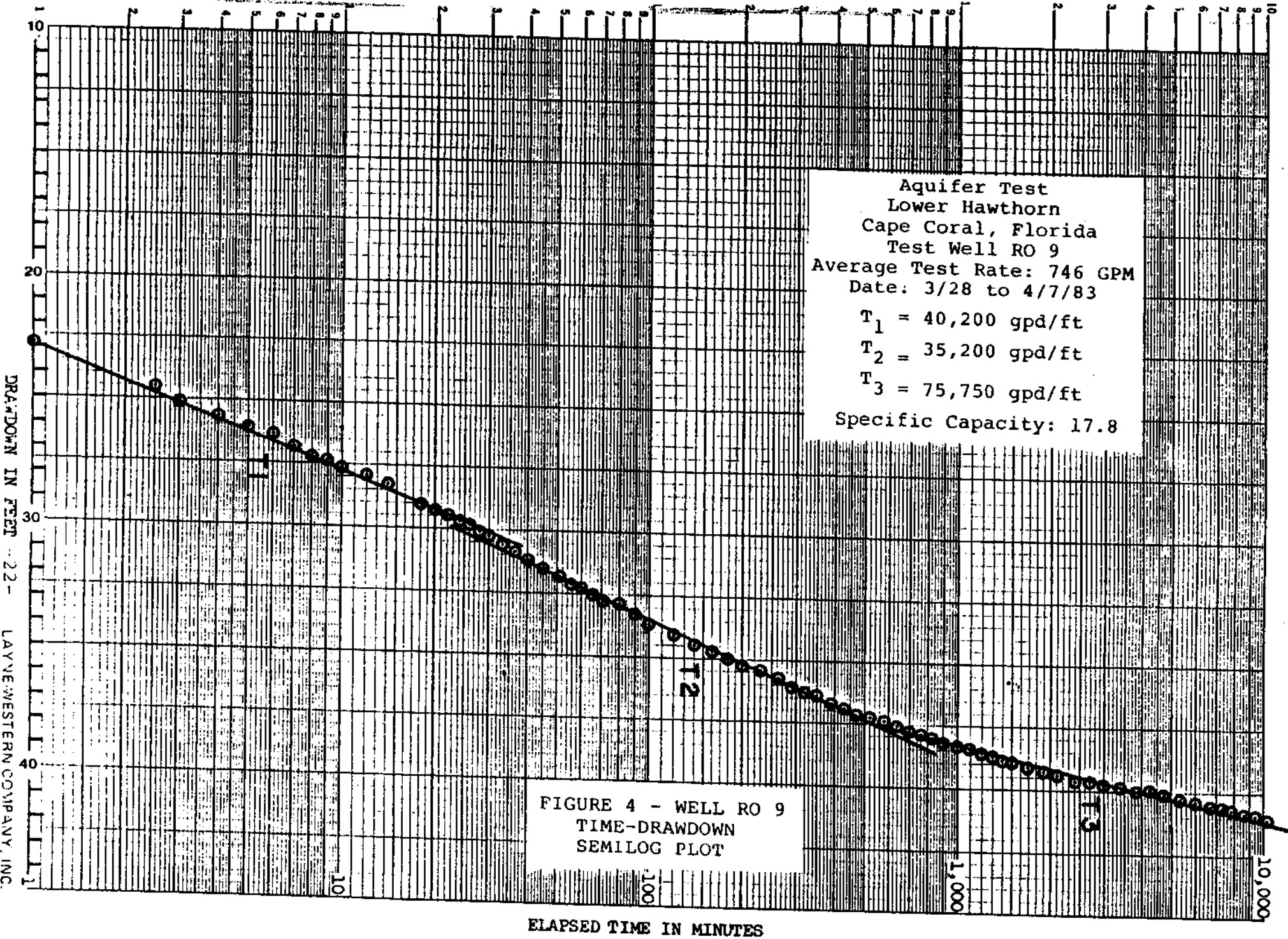


FIGURE 4 - WELL RO 9  
 TIME-DRAWDOWN  
 SEMILOG PLOT

DRAWDOWN IN FEET - 22 -  
 LAYNE-WESTERN COMPANY, INC.

ELAPSED TIME IN MINUTES

AQUIFER TEST  
DRAWDOWN

NAME Cape Coral

DATE 3-28-83

LOCATION \_\_\_\_\_

WELL NO. 9A

JOB NO. OR 737

Meas. Point 2.5ft. above LSD      Top of cap

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	SWL.		Static WL +14.64		
0828	0	+14.64	0		
	0.25	11.15	3.49		
	0.50	10.42	4.22		
	0.75	9.85	4.79		
	1.00	9.58	5.06		
	1.50	8.78	5.86		
	2.00	8.28	6.36		
	2.5	7.87	6.77		
	3.00	7.52	7.12		
	3.50	7.23	7.41		
	4.00	6.98	7.66		
	4.50	6.75	7.89		
	5.00	6.55	8.09		
	6.00	6.20	8.44		
	7.00	5.82	8.82		
	8.00	5.58	9.06		
	9.00	5.33	9.31		
	10.00	5.12	9.52		
	12.00	4.75	9.89		
	14.00	4.43	10.21		
	16.00	4.13	10.51		
	18.00	3.83	10.81		
	20.00	3.59	11.05		
	22.00	3.38	11.26		
	24.00	3.18	11.46		
	26.00	2.99	11.65		
	28.00	2.83	11.81		
	30.00	2.67	11.97		
	33.00	2.42	12.22		
	36.00	2.18	12.46		
	40.00	1.93	12.71		
	45.00	1.63	13.01		
	50.00	1.38	13.26		
	55.00	1.13	13.51		
1000	60.00	0.93	13.71		
1005	65.00	0.72	13.92		
1010	70.00	0.55	14.09		
1020	80.00	0.23	14.41		
1030	90.00	-0.06	14.58		
1040	100.00	-0.31	14.89		
1100	120.00	-0.73	15.47		
1120	140.00	-1.07	15.71		
1141	161.00	-1.37	16.01		
1201	180.00	-1.60	16.24		
1221	204.00	-1.80	16.44		
1252	232.00	-2.04	16.68		
1321	261.00	-2.24	16.88		
1351	391.00	-2.48	17.12		
1421	321.00	-2.64	17.28		
1451	351.00	-2.78	17.42		

AQUIFER TEST  
DRAWDOWN

NAME Cape Coral

DATE 3-28-83

LOCATION -

WELL NO. 9A

JOB NO. OR 737

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.		Static +14.64		
1531	391.00	-2.93	17.57		
1611	431.00	-3.08	17.72		
1651	471.00	-3.28	17.92		
1741	521.00	-3.43	18.07		
1844	584.00	-3.61	18.25		
1942	642.00	-3.75	18.39		
2043	703.00	-3.92	18.56		
2142	762.00	-4.06	18.70		
2241	821	-4.17	18.81		
3-29-83					
0002	902.00	-4.32	18.96		
0146	1006.00	-4.45	19.09		
0323	1103.00	-4.56	19.20		
0502	1202.00	-4.64	19.28		
0642	1302.00	-4.76	19.40		
0821	1401.00	-4.86	19.50		
1002	1502	-4.98	19.62		
1322	1702.00	-5.13	19.77		
1645	1905.00	-5.18	19.82		
2003	2103.00	-5.29	19.93		
-30-83					
0210	2470.00	-5.49	20.13		
0603	2703.00	-5.52	20.16		
1101	3001.00	-5.64	20.28		
1743	3403.00	-5.64	20.28		
3-31-83					
0842	4302.00	-5.80	20.44		
1702	4802.00	-5.96	20.60		
4-1-83					
0303	5403.00	-6.14	20.78		
1303	6003.00	-6.27	20.91		
2303	6603.00	-6.33	20.97		
4-2-83					
0902	7202.00	-6.37	21.01		
2103	7923.00	-6.44	21.08		
4-3-83					
0825	8605.00	-6.55	21.19		
2102	9362.00	-6.63	21.27		
4-4-83					
0902	10,082.00	-6.70	21.34		
2102	10,802.00	-6.77	21.41		
4-5-83					
0902	11,522.00	-6.81	21.45		
2102	12,242.00	-7.03	21.67		
6-83					
02	12,962.00	-7.05	21.69		
2102	13,682.00	-7.09	21.73		
4-7-83					
0755	14,335.00	-7.11	21.75		
0900	14,400.00	-7.13	21.77		

Page 1 of 2

## AQUIFER TEST RECOVERY

NAME Cape Coral

DATE 4-7, 8-83

LOCATION \_\_\_\_\_

WELL NO. 9A

JOB NO. OR 737

Meas. Point 2.5 ft. above LSD Top of cap

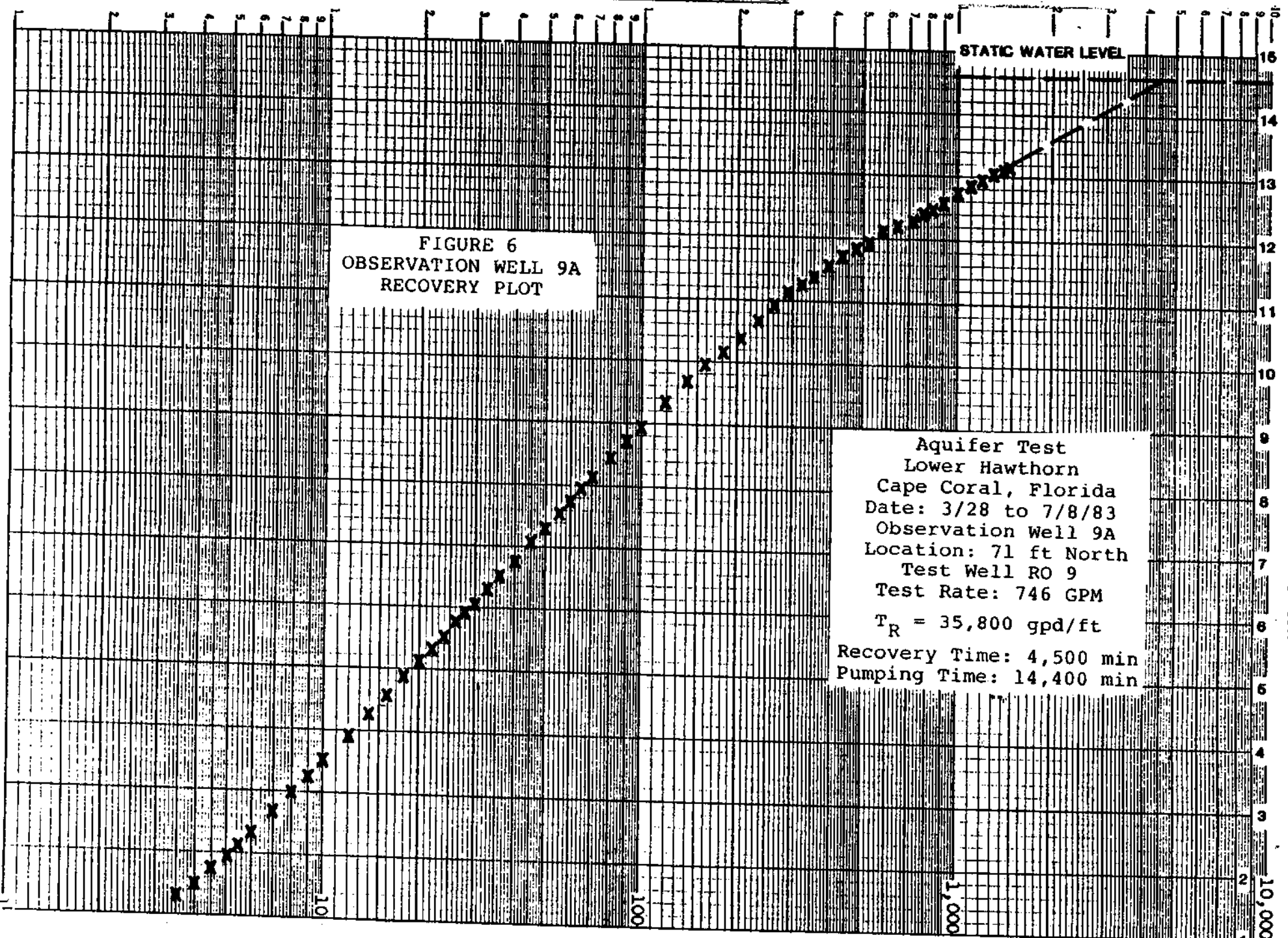
TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY IN FEET	REMARKS
	S.W.L.			PWL -7.13	
0755		-7.11			
0900		-7.13			
0905	Pump Off				
	.24	-2.00		5.13	
	1.59	at tube top= +0.10'		7.23	
	3.00	+0.99		8.12	
	3.50	1.29		8.42	
	4.00	1.51		8.64	
	4.50	1.75		8.88	
	5.00	1.97		9.10	
	5.50	2.16		9.29	
	6.00	2.36		9.49	
	7.00	2.68		9.81	
	8.00	3.01		10.14	
	9.00	3.25		10.38	
	10.00	3.49		10.62	
	12.00	3.90		11.03	
	14.00	4.26		11.39	
	16.00	4.57		11.70	
	18.00	4.85		11.98	
	20.00	5.09		12.22	
	22.00	5.32		12.45	
	24.00	5.53		12.66	
	26.00	5.72		12.85	
	28.00	5.90		13.03	
	30.00	6.05		13.18	
	33.00	6.29		13.42	
	36.00	6.50		13.63	
	40.00	6.75		13.88	
	45.00	7.04		14.17	
	50.00	7.31		14.44	
	55.00	7.54		14.67	
	60.00	7.74		14.87	
	65.00	7.94		15.07	
	70.00	8.12		15.25	
	80.00	8.43		15.56	
	90.00	8.69		15.82	
	100.00	8.93		16.06	
	120.00	9.34		16.47	
	140.00	9.67		16.80	
	160.00	9.94		17.07	
	180.00	10.16		17.29	
	202.00	10.39		17.52	
	232.00	10.64		17.77	
1327	262.00	10.87		18.00	
57	292.00	11.07		18.20	
1426	321.00	11.24		18.37	
1457	352.00	11.38		18.51	
1537	392.00	11.55		18.68	
1617	432.00	11.70		18.83	



TIME-DRAWDOWN SEMI-LOG PLOT

FIGURE 6  
OBSERVATION WELL 9A  
RECOVERY PLOT

Aquifer Test  
Lower Hawthorn  
Cape Coral, Florida  
Date: 3/28 to 7/8/83  
Observation Well 9A  
Location: 71 ft North  
Test Well RO 9  
Test Rate: 746 GPM  
 $T_R = 35,800$  gpd/ft  
Recovery Time: 4,500 min  
Pumping Time: 14,400 min



ELAPSED TIME IN MINUTES

WATER LEVEL ABOVE MEASURING POINT

**AQUIFER TEST  
DRAWDOWN**

NAME Cape Coral

DATE 3-28-83

LOCATION \_\_\_\_\_

WELL NO. 9B

JOB NO. OR 737

Meas. Point 1.9 ft. above LSD

Former top of cap

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL FROM MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.				
0800	0	+14.90			
0858	0	14.88			
	15 Sec.	14.87	0.01		
	30 Sec.	14.85	0.03		
	45 Sec.	14.83	0.05		
	1.0	14.80	0.08		
	1.5	14.76	0.12		
	2.0	14.70	0.18		
	2.5	14.65	0.23		
	3.0	14.59	0.29		
	3.5	14.55	0.33		
	4.0	14.50	0.38		
	4.5	14.45	0.43		
	5.0	14.40	0.48		
	6.0	14.32	0.56		
	7.0	14.25	0.63		
	8.0	14.18	0.70		
	9.07	14.12	0.76		
	10.0	14.07	0.81		
	12.0	13.97	0.91		
	14.0	13.88	1.00		
	16.0	13.80	1.08		
	18.0	13.73	1.15		
	20.0	13.67	1.21		
	22.0	13.60	1.28		
	24.0	13.54	1.34		
	26.0	13.49	1.39		
	38.0	13.44	1.44		
	30.0	13.39	1.49		
	33.0	13.32	1.56		
	36.0	13.26	1.62		
	40.0	13.18	1.70		
	45.0	13.08	1.80		
	50.0	13.00	1.88		
	55.0	12.93	1.95		
	60.0	12.85	2.03		
	65.0	12.79	2.09		
	70.0	12.72	2.16		
	80.0	12.61	2.27		
	90.0	12.50	2.38		
	100.0	12.41	2.47		
	120.0	12.25	2.63		
1124	144.0	12.08	2.80		
1143	163.0	11.96	2.92		
1202	182.0	11.86	3.02		
1222	202.0	11.78	3.10		
1253	233.0	11.67	3.21		
1322	262.0	11.57	3.31		
1353	293.0	11.49	3.39		
1423	323.0	11.42	3.46		

HOURLY

AQUIFER TEST  
DRAWDOWN

NAME Cape Coral DATE 3-28, 29, 30-83

LOCATION \_\_\_\_\_ WELL NO. 9B JOB NO. OR 737

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL FROM MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.		Static +14.90		
1453	353.0	11.35	3.53		
1533	393.0	11.27	3.61		
1613	433.0	11.20	3.68		
1653	463.0	11.12	3.76		
1743	523.0	11.04	3.84		
1847	587.0	10.94	3.96		
1944	644.0	10.84	4.06		
2045	705.0	10.74	4.16		
2144	764.0	10.66	4.24		
2243	823.0	10.59	4.31		
3-29-83					
0005	905.0	10.49	4.41		
0148	1008.0	10.42	4.48		
0326	1106.0	10.38	4.52		
0506	1206.0	10.33	4.57		
0644	1304.0	10.26	4.64		
0824	1404.0	10.20	4.70		
1-04	1504.0	10.13	4.77		
1324	1704.0	10.07	4.83		
1649	1909.0	10.07	4.83		
2006	2106.0	9.98	4.92		
3-30-83					
0215	2475.0	9.86	5.04		
0604	2704.0	9.86	5.04		
1104	3004.0	9.82	5.08		
1745	3405.0	9.89	5.01		
3-31-83					
0026	3806.0	9.79	5.11		
0845	4305.0	9.82	5.08		
1704	4804.0	9.74	5.16		
4-1-83					
0305	5405.0	9.57	5.33		
1305	6005.0	9.49	5.41		
2306	6606.0	9.47	5.43		
4-2-83					
0904	7204.0	9.47	5.43		
2105	7925.0	9.42	5.48		
4-3-83					
0835	8615.0	9.33	5.57		
2104	9364.0	9.27	5.63		
4-4-83					
0906	10,086.0	9.21	5.69		
2106	10,806.0	9.19	5.71		
4-5-83					
0904	11,524.0	9.17	5.73		
105	12,245.0	9.13	5.77		
4-6-83					
0905	12,965.0	9.11	5.79		
2104	13,684	9.09	5.81		

HOURLY





**AQUIFER TEST  
RECOVERY**

NAME Cape Coral

DATE 4-7-83

LOCATION \_\_\_\_\_

WELL NO. 9B

JOB NO. OR 737

Meas. Point 1.9 ft above LSD

Former top of cap

Kreidt - HNTB

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY IN FEET	REMARKS
0758	S.W.L.	+9.08		PWL +9.08	
0900	0	9.08			
0905	Pump Off .25	9.08		0	
	.50	9.09		0.01	
	.75	9.10		0.02	
	1.00	9.11		0.03	
	1.50	9.15		0.07	
	2.00	9.19		0.11	
	2.50	9.21		0.13	
	3.00	9.25		0.17	
	3.50	9.30		0.22	
	4.00	9.34		0.26	
	4.50	9.38		0.30	
	5.00	9.41		0.33	
	6.00	9.48		0.40	
	7.00	9.54		0.46	
	8.00	9.60		0.52	
	9.00	9.65		0.57	
	10.00	9.70		0.62	
	12.00	9.80		0.72	
	14.00	9.88		0.80	
	16.00	9.96		0.88	
	18.00	10.03		0.95	
	20.00	10.09		1.01	
	22.00	10.15		1.07	
	24.00	10.21		1.13	
	26.00	10.26		1.18	
	28.00	10.31		1.23	
	30.00	10.36		1.28	
	33.00	10.43		1.35	
	36.00	10.49		1.41	
	40.00	10.57		1.49	
	45.00	10.67		1.59	
	50.00	10.76		1.68	
	55.00	10.84		1.76	
	60.00	10.91		1.83	
	65.00	10.98		1.90	
	70.00	11.06		1.98	
	80.00	11.17		2.09	
	90.00	11.29		2.21	
	100.00	11.39		2.31	
	120.00	11.58		2.50	
	140.00	11.74		2.66	
	160.00	11.88		2.80	
	180.00	12.00		2.92	
	200.00	12.11		3.03	
1257	232.00	12.28		3.20	
1329	264.00	12.41		3.33	
1358	293.00	12.52		3.44	
1428	323.00	12.63		3.55	



TIME-DRAWDOWN SEMI-LOG PLOT

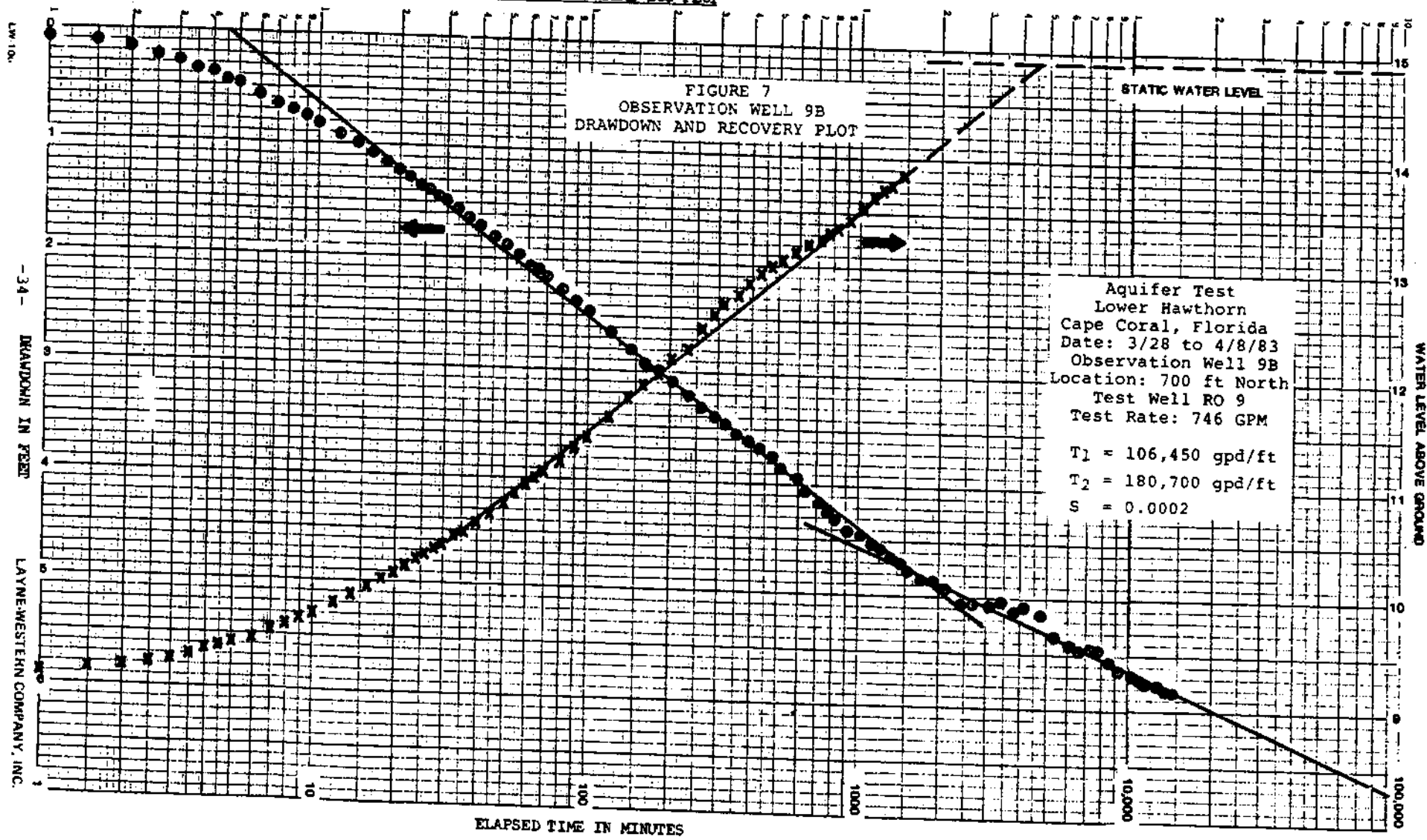


FIGURE 7  
OBSERVATION WELL 9B  
DRAWDOWN AND RECOVERY PLOT

Aquifer Test  
Lower Hawthorn  
Cape Coral, Florida  
Date: 3/28 to 4/8/83  
Observation Well 9B  
Location: 700 ft North  
Test Well RO 9  
Test Rate: 746 GPM  
  
 $T_1 = 106,450$  gpd/ft  
 $T_2 = 180,700$  gpd/ft  
 $S = 0.0002$

LW 10A

-34- DRAWDOWN IN FEET

LAYNE-WESTERN COMPANY, INC.

ELAPSED TIME IN MINUTES

WATER LEVEL ABOVE GROUND

AQUIFER TEST  
DRAWDOWN

NAME Cape Coral

DATE 3-28-83

LOCATION \_\_\_\_\_

WELL NO. RO-8

JOB NO. OR 737

Meas. Point 2.5 ft. above lsd

Top plate of well

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS Pumping Rate
	S.W.L.				
0813	0	16.21	0		
	1	16.21	0		
	5	16.21	0		
	10	16.21	0		
	18	16.21	0		
	20	16.20	.01		
	22	16.20	.01		
	24	16.20			
	26	16.20			
	28	16.19	.02		
	30	16.19			
	33	16.19			
	36	16.18	.03		
	40	16.18			
	45	16.17	.04		
	50	16.16	.05		
	55	16.15	.06		
	60	16.15			
	65	16.14	.07		
	70	16.13	.08		
	80	16.11	.10		
	90	16.11			
	100	16.10	.11		
	120	16.08	.13		
	140	16.05	.16		
	160	16.01	.20		
	180	16.00	.21		
	205	15.94	.27		
	236	15.92	.29		
	260	15.94	.27		
	290	15.92	.29		
	320	15.91	.30		
	350	15.88	.33		
	390	15.87	.34		
	430	15.83	.38		
	470	15.80	.41		
1746	526	15.72	.49		
1850	590	15.69	.52		
1950	650	15.62	.59		
2051	711	15.56	.65		
2151	771	15.49	.72		
2251	831	15.43	.78		
3-29-83					
0013	913	15.38	.83		38 1/2" = 765gpm
0156	1016	15.33	.88		38 1/2" = 765gpm
0335	1115	15.28	.93		38 1/2" = 765gpm
0515	1215	15.25	.96		38 1/2" = 765gpm
0652	1312	15.19	1.02		38 1/2" = 765gpm
0826	1406	15.16	1.05		
1006	1506	15.08	1.13		

Page 1 of 1

**AQUIFER TEST  
DRAWDOWN**

**NAME** Cape Coral

**DATE** 3-28,29,30-83

**LOCATION** \_\_\_\_\_

**WELL NO.** RO 8

**JOB NO.** OR 737

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.		Static 16.21		
1327	1707	15.05	1.16		
1651	1911	15.04	1.17		
2010	2110	14.97	1.24		
3-30-83					
0218	2478	14.83	1.38		
0610	2710	14.83	1.38		
1107	3007	14.79	1.42		
1750	3410	14.85	1.36		
3-31-83					
0850	4310	14.78	1.43		
1708	4808	14.69	1.52		
4-1-83					
0308	5408	14.54	1.67		
1315	6015	14.46	1.75		
2309	6609	14.44	1.77		
4-2-83					
0906	7206	14.44	1.77		
2107	7927	14.39	1.82		
4-3-83					
0840	8620	14.32	1.89		
2107	9367	14.26	1.95		
4-4-83					
0928	10,108	14.21	2.00		
2110	10,810	14.19	2.02		
4-5-83					
0915	11,535	14.19	2.02		
2108	12,248	14.18	2.03		
4-6-83					
0907	12,967	14.18	2.03		
2108	13,688	14.17	2.04		
4-7-83					
0757	14,337	14.18	2.03		
0900	14,400	14.18	2.03		

AQUIFER TEST  
RECOVERY

AME Cape Coral DATE 4-7-83

LOCATION \_\_\_\_\_ WELL NO. RO-8 JOB NO. OR 737

Meas. Point 2.5 ft. above LSD

Top plate of well

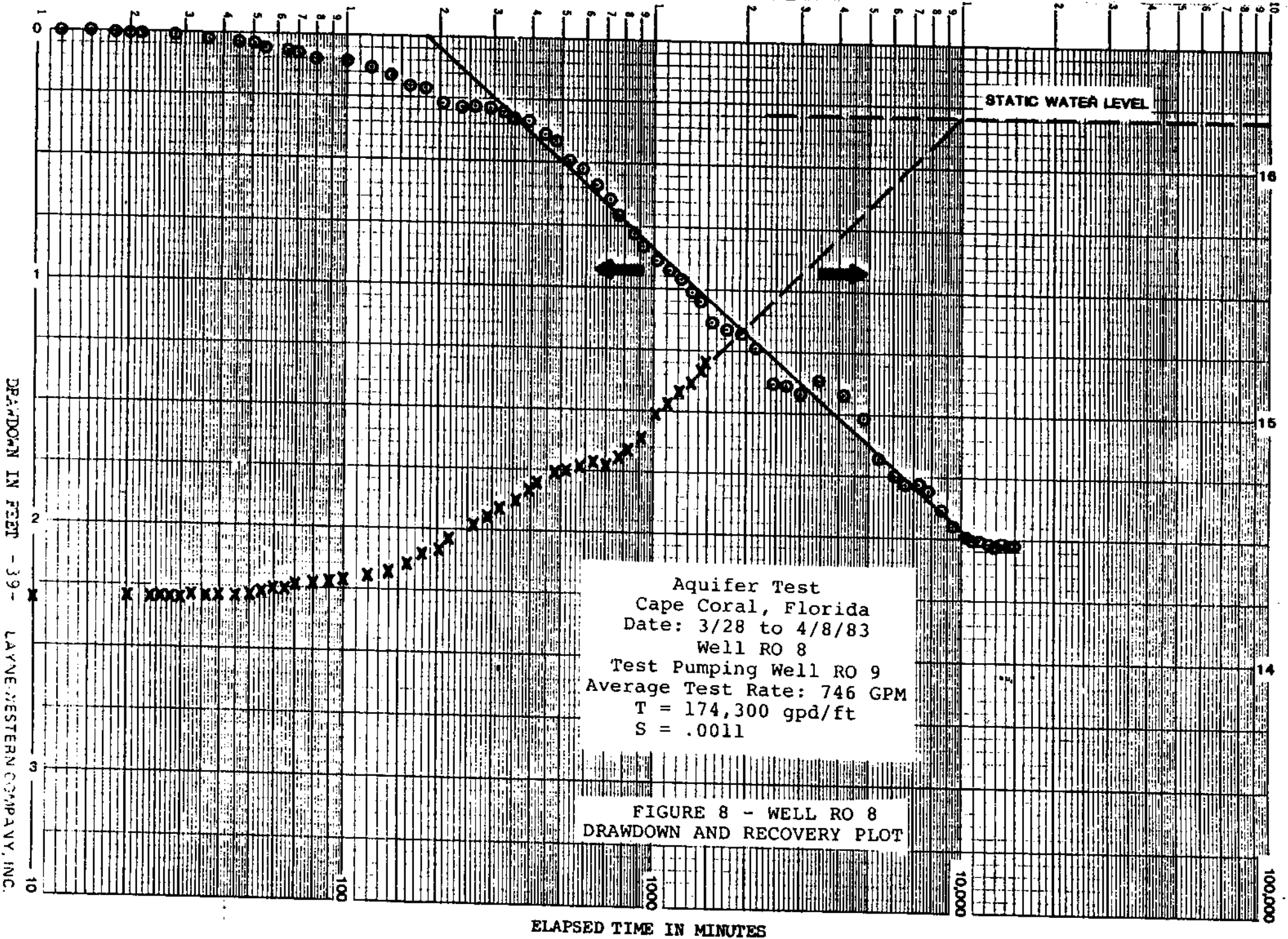
TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.			PWL 14.18	
0900	0	14.18		0	
	1	14.18		0	
	2	14.18		0	
	4	14.18		0	
	6	14.18		0	
	8	14.18		0	
	10	14.18		0	
	20	14.19		.01	
	22	14.19		.01	
24	24	14.19			
	26	14.20		.02	
	28	14.20			
	30	14.20			
	33	14.21		.03	
	36	14.21			
	40	14.21			
	45	14.21			
	50	14.22		.04	
	55	14.23		.05	
	60	14.24		.06	
	65	14.24			
	70	14.25		.07	
	80	14.26		.08	
	90	14.27		.09	
	100	14.28		.10	
	120	14.30		.12	
	140	14.33		.15	
	160	14.35		.17	
	180	14.39		.21	
	202	14.41		.23	
1259	234	14.46		.28	
1331	266	14.51		.33	
1401	296	14.55		.37	
1431	326	14.58		.40	
1502	357	14.62		.44	
1541	396	14.66		.48	
1622	437	14.68		.50	
1701	476	14.72		.54	
1751	526	14.74		.56	
1851	586	14.76		.58	
2000	655	14.77		.59	
2054	709	14.76		.58	
2153	768	14.80		.62	
2253	828	14.83		.65	
4-8-83					
0113	908	14.88		.70	
0152	1007	14.97		.79	
0332	1107	15.03		.85	
0512	1207	15.08		.90	
0650	1305	15.11		.93	

0





TIME-DRAWDOWN SEMI-LOG PLOT



Aquifer Test  
 Cape Coral, Florida  
 Date: 3/28 to 4/8/83  
 Well RO 8  
 Test Pumping Well RO 9  
 Average Test Rate: 746 GPM  
 $T = 174,300 \text{ gpd/ft}$   
 $S = .0011$

FIGURE 8 - WELL RO 8  
 DRAWDOWN AND RECOVERY PLOT

DRAWDOWN IN FEET - 39 - LAYNE WESTERN COMPANY, INC.

WATER LEVEL ABOVE GROUND

ELAPSED TIME IN MINUTES

**AQUIFER TEST  
DRAWDOWN**

NAME Cape Coral DATE 3-28-83

LOCATION Background wells

LOCATION RO-1,2,4 and 6 pumping WELL NO. RO-7 JOB NO. OR 737

Meas. Point 2.3 ft. above LSD Top plate of well

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.		Static 15.71		
0819	0	15.71	0		
0900	15 sec	15.71	0		
	30 sec	15.71	0		
	45 sec	15.71	0		
	1.0	15.71	0		
	1.5	15.71	0		
	2.0	15.71	0		
	2.5	15.71	0		
	3.0	15.71	0		
	3.5	15.71	0		
	4.0	15.71	0		
	5.0	15.71	0		
	6.0	15.71	0		
	7.0	15.71	0		
	8.0	15.71	0		
	9.0	15.71	0		
	10.0	15.71	0		
	12.0	15.71	0		
	14.0	15.71	0		
	16.0	15.71	0		
	18.0	15.71	0		
	20.0	15.71	0		
	22.0	15.71	0		
	24.0	15.71	0		
	26.0	15.71	0		
	28.0	15.71	0		
	30.0	15.70	.01		
	33.0	15.70	0		
	36.0	15.70	0		
	40.0	15.70	0		
	45.0	15.70	0		
	50.0	15.70	0		
	55.0	15.70	0		
1000	50.0	15.69	.02		
	65.0	15.69	0		
	70.0	15.69	0		
	80.0	15.68	.03		
	90.0	15.68	0		
	100.0	15.67	.04		
1100	120.0	15.66	.05		
	140.0	15.64	.07		
	160.0	15.63	.08		
	180.0	15.62	.09		
	206.0	15.61	.10		
	239.0	15.61	0		
	260.0	15.60	.11		
	290.0	15.59	.12		
	320.0	15.58	.13		
	350.0	15.57	.14		
	390.0	15.56	.15		

Page 2 of 2

**AQUIFER TEST  
DRAWDOWN**

NAME Cape Coral DATE 3-28,29,30-83

LOCATION \_\_\_\_\_ WELL NO. RO-7 JOB NO. OR 737

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.				
	430	15.55	.16		
	470	15.53	.18		
1749	529	15.50	.21		
1853	593	15.45	.26		
1947	647	15.39	.32		
2049	709	15.34	.37		
2148	768	15.19	.42		
2247	847	15.23	.48		
3-29-83					
0009	909	15.17	.54		
0154	1014	15.13	.58		
0330	1110	15.12	.59		
0511	1211	15.09	.62		
0648	1308	15.04	.67		
0828	1408	14.99	.72		
1008	1508	14.93	.78		
1330	1710	14.89	.82		
1655	1915	14.88	.83		
2014	2114	14.82	.89		
3-30-83					
0220	2480	14.69	1.02		
0610	2710	14.69	1.02		
1114	3014	14.66	1.05		
1752	3412	14.70	1.01		
3-31-83					
0035	3815	14.60	1.11		
0853	4313	14.62	1.09		
1710	4810	14.52	1.19		
4-1-83					
0311	5411	14.37	1.34		
1324	6024	14.28	1.43		
2313	6613	14.26	1.45		
4-2-83					
0915	7215	14.25	1.46		
2111	7931	14.20	1.51		
4-3-82					
0845	8625	14.13	1.58		
2110	9370	14.06	1.65		
4-4-83					
0936	10,116	14.02	1.69		
2112	10,812	14.00	1.71		
4-5-83					
0926	11,546	13.99	1.72		
2112	12,252	13.98	1.73		
4-6-83					
914	12,974	13.99	1.72		
2111	13,691	13.97	1.74		
4-7-83					
0745		13.99	1.72		
0900	14,400	13.99	1.72		

AQUIFER TEST  
RECOVERYNAME Cape CoralDATE 4-7-83

LOCATION \_\_\_\_\_

WELL NO. RO-7JOB NO. OR 737

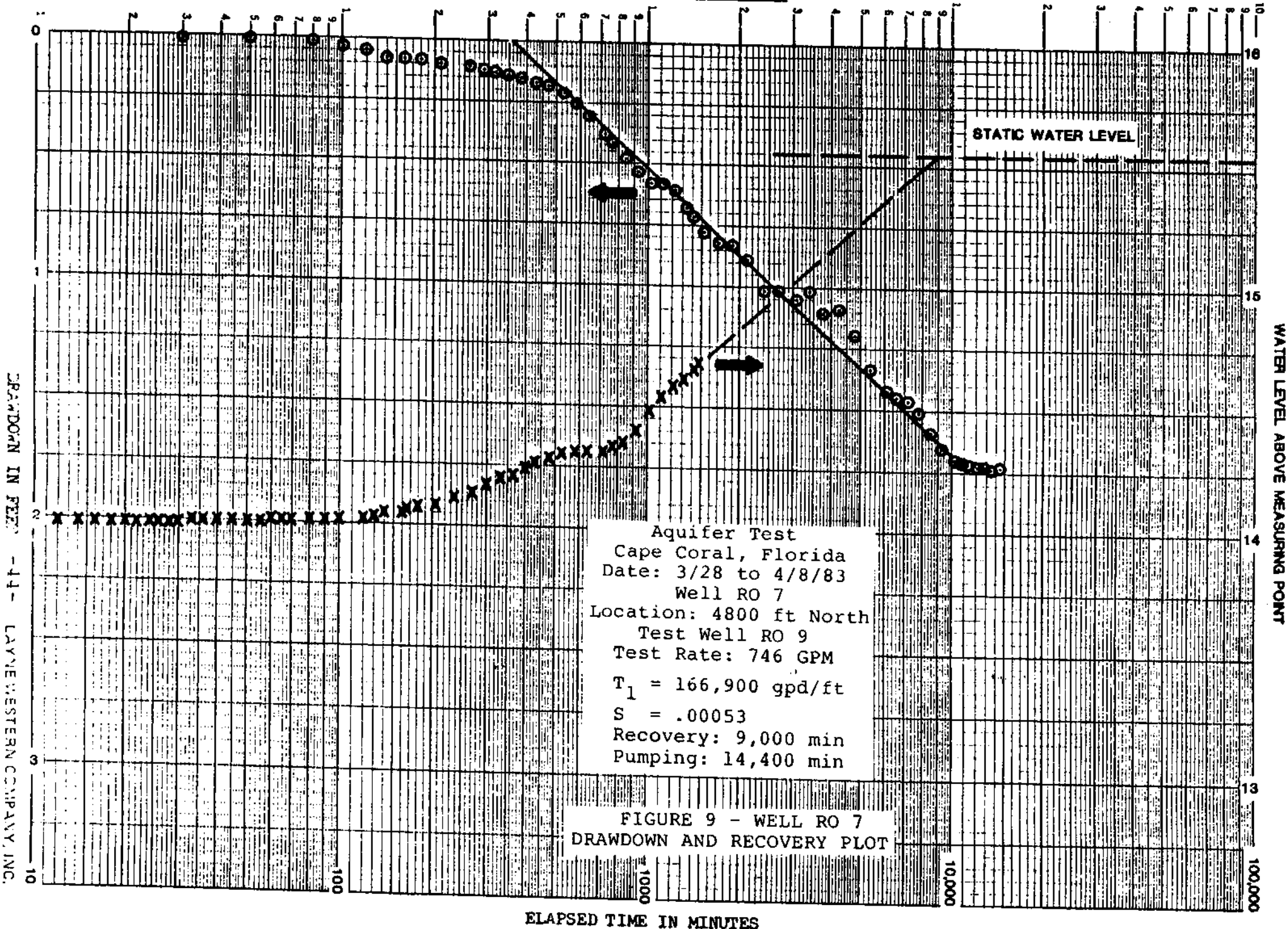
Meas. Point 2.3ft above LSD

Top plate of well

TIME OF DAY	ELAPSED TIME IN MINUTES	WATER LEVEL ABOVE MS PT	DRAWDOWN IN FEET	RECOVERY	REMARKS
	S.W.L.			PWL 13.99	
0745	0	13.99		0	
0900	0	13.99		0	
-0906	1	13.99		0	
	1.5	13.99		0	
	2.0	13.99		0	
	2.5	13.99		0	
	3.0	13.99		0	
	3.5	13.99		0	
	4.0	13.99		0	
	4.5	13.99		0	
	5.0	13.99		0	
	6.0	13.99		0	
	7.0	13.99		0	
	8.0	13.99		0	
	9.0	13.99		0	
0915	10.0	13.99		0	
	12.0	13.99		0	
	14.0	13.99		0	
	16.0	13.99		0	
	18.0	13.99		0	
	20.0	13.99		0	
	22.0	13.99		0	
	24.0	13.99		0	
	26.0	13.99		0	
	28.0	13.99		0	
	30.0	13.99		0	
	33.0	14.00		.01	
	36.0	14.00		.01	
	40.0	14.00		.01	
	45.0	14.00		.01	
	50.0	14.00		.01	
	55.0	14.00		.01	
	60.0	14.01		.02	
	65.0	14.01		.02	
	70.0	14.01		.02	
	80.0	14.01		.02	
	90.0	14.02		.03	
	100.0	14.02		.03	
	120.0	14.03		.04	
	130.0	14.04		.05	
	140.0	14.05		.06	
	160.0	14.05		.06	
	165.0	14.06		.07	
	180.0	14.07		.08	
	205.0	14.08		.09	
300	235.0	14.11		.12	
1334	269.0	14.14		.15	
1404	299.0	14.17		.18	
1433	328.0	14.19		.20	
1504	359.0	14.21		.22	



TIME-DRAWDOWN SEMI-LOG PLOT

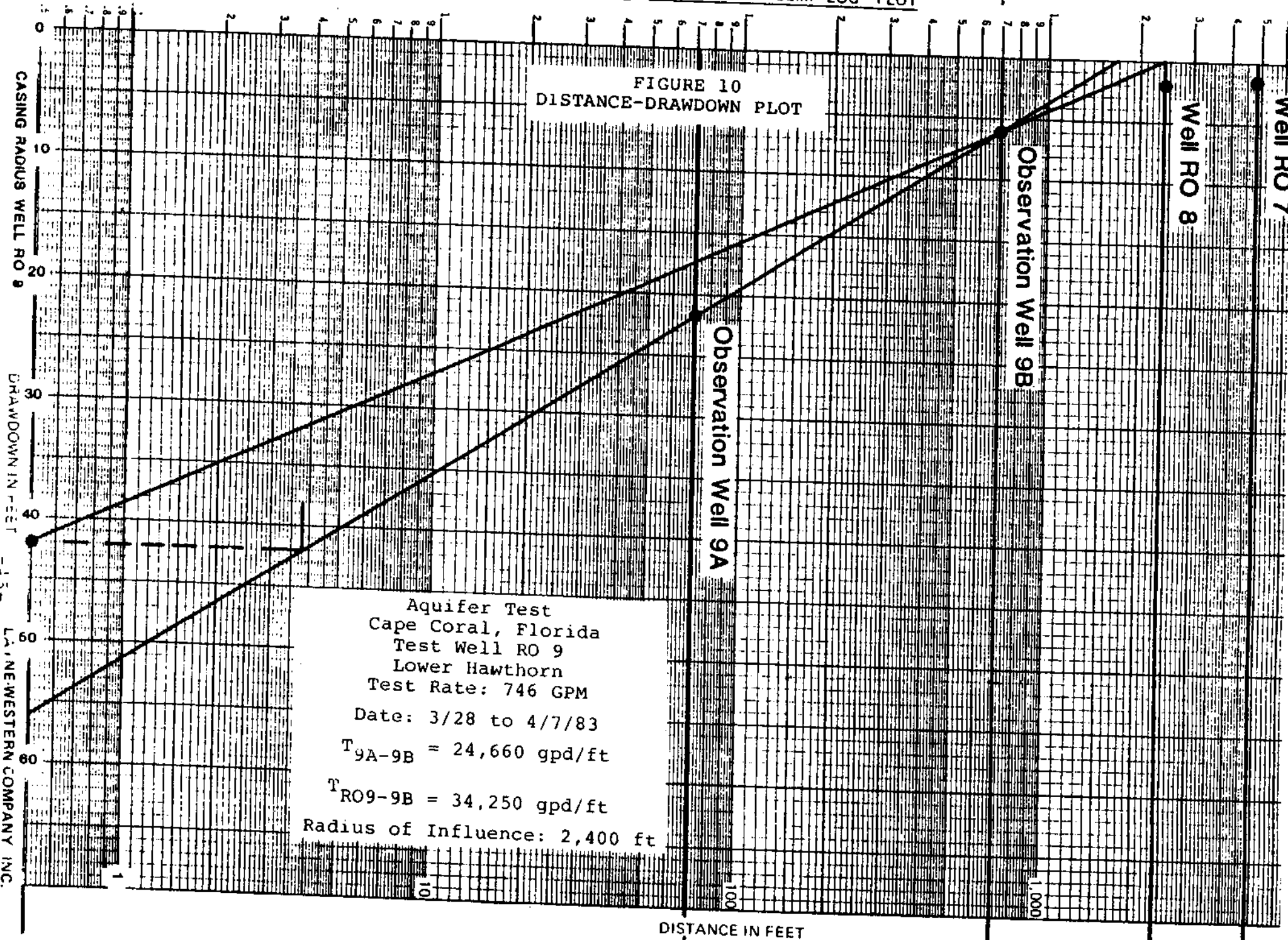


Aquifer Test  
 Cape Coral, Florida  
 Date: 3/28 to 4/8/83  
 Well RO 7  
 Location: 4800 ft North  
 Test Well RO 9  
 Test Rate: 746 GPM  
 $T_1 = 166,900 \text{ gpd/ft}$   
 $S = .00053$   
 Recovery: 9,000 min  
 Pumping: 14,400 min

FIGURE 9 - WELL RO 7  
 DRAWDOWN AND RECOVERY PLOT

DISTA -DRAWDOWN SEMI-LOG PLOT

FIGURE 10  
DISTANCE-DRAWDOWN PLOT



Aquifer Test  
 Cape Coral, Florida  
 Test Well RO 9  
 Lower Hawthorn  
 Test Rate: 746 GPM  
 Date: 3/28 to 4/7/83  
 $T_{9A-9B} = 24,660$  gpd/ft  
 $T_{RO9-9B} = 34,250$  gpd/ft  
 Radius of Influence: 2,400 ft

LAINE-WESTERN COMPANY INC.

CELLULOSE WATER LEVEL MEASUREMENTS UNDER THE CAPZ CORN REVERSE OSMOSIS PLANT, AQUIFERS: WT-Water Table; LH-Lower Hawthorn; UH-Upper Hawthorn. All measurements in feet referred to land surface datum.

TABLE 5

Well No.	Aquifer	1983																	
		2-11	2-15	2-18	2-22	2-25	3-1	3-3	3-4	3-6	3-8	3-9	3-10	3-11	3-15	3-18	3-21	3-22	
L-1136	WT	4.94	4.23	4.29	4.70	4.94	4.14		4.57		3.81			4.33		4.39		4.81	
U-1	UH	19.60	18.94	17.77	15.85	15.15	14.32		13.83		13.14			13.41		13.22		13.72	
U-2	UH	18.60	16.49	15.44	14.20	13.68	12.82		12.35		11.93			11.80		11.47		11.60	
U-3	UH	13.51	12.57	11.99	11.14	10.69	9.99		9.65		9.21			9.00		8.44		8.44	
L-581	UH	27.89	25.87	24.22	22.62	21.98	20.78		20.16		19.73			21.73		21.15		21.80	
L-1119	UH	13.61	12.05	11.99	11.15	10.79	10.02		9.72		9.48			9.15		8.42		8.49	
L-2614	UH	2.14	1.94	1.72	1.34	1.05	0.56		0.55		0.08			+ .02	+ .30	+ .43		+ .29	
80-7	LH	+13.65	+9.08	+14.45	+14.75	+14.89	+15.03	+14.84	+14.86	+15.04	+14.58	+14.16	+13.83	+14.27	+14.06		+17.58	+17.49	
80-8	LH	+14.64	+14.65	+15.34	+15.62	+15.76	+16.18	+15.69	+15.74	+15.96	+15.60	+15.20	+14.92	+15.20		+16.92		+18.27	
90-9	LH	+11.36	+13.17	+13.84	+14.04	+14.16	+14.22	+14.08	+14.14	+14.43	+13.70	+13.24	+12.96	+13.53		-17.48	+16.79	+17.15	
9A	LH	+12.76	+13.21	+13.89	+14.10	+14.17	+14.30		+14.38	+14.51	+13.76			+13.60	+13.52	-1.11		+16.78	
9C	LH	+11.84	+12.53	+13.29	+13.45	+13.55	+13.63	+13.27	+13.59	+13.89	+13.16	+12.69	+12.88	+12.98	+12.98	+11.80	+16.67	+16.49	
L-2484	LH	-10.22	-4.61	-3.61	-3.66	-3.39	-3.72		-3.80	-4.92				-10.37	-7.90	-5.01	+ .84	+1.96	+1.81



TABLE 5 con t

Well No	3-23	3-24	3-27	3-28	3-29	3-30	3-31	4-1	1983 4-2	4-3	4-4	4-5	4-6	4-7	4-8
L-1136			4.56		4.49		4.56					4.99		5.26	5.12
U-1			13.95		14.12	14.19	14.16	14.38	14.59	14.99	15.49	15.95	16.30	16.63	16.76
U-2			11.55	11.51	11.64	11.73	11.71	11.99	12.14	12.30	12.62	12.87	13.13	13.56	13.80
U-3			8.08	7.98	8.11	8.16	8.11	8.29	8.29	8.37	8.57	8.73	9.09	9.34	9.43
L-581			22.29		23.01		23.56								
L-1119			8.13		8.18	8.22	8.20	8.33	8.33	8.44	8.67	27.13 8.95		27.08 9.29	
L-2644			+ .43		+ .40		+ .55			+ .47		1.40		+ .30	+ .28
R0-7	+17.61	+18.08	+17.88												
R0-8	+18.37	+18.88	+18.62												
R0-9	+16.87	+17.18	+16.96	<i>See aquifer test data</i>											
9A	+16.92		+17.06												
9B	+16.58	+17.02	+16.68												
L-2094		+2.38			+1.15		+ .22							- .52	- .46

- of -

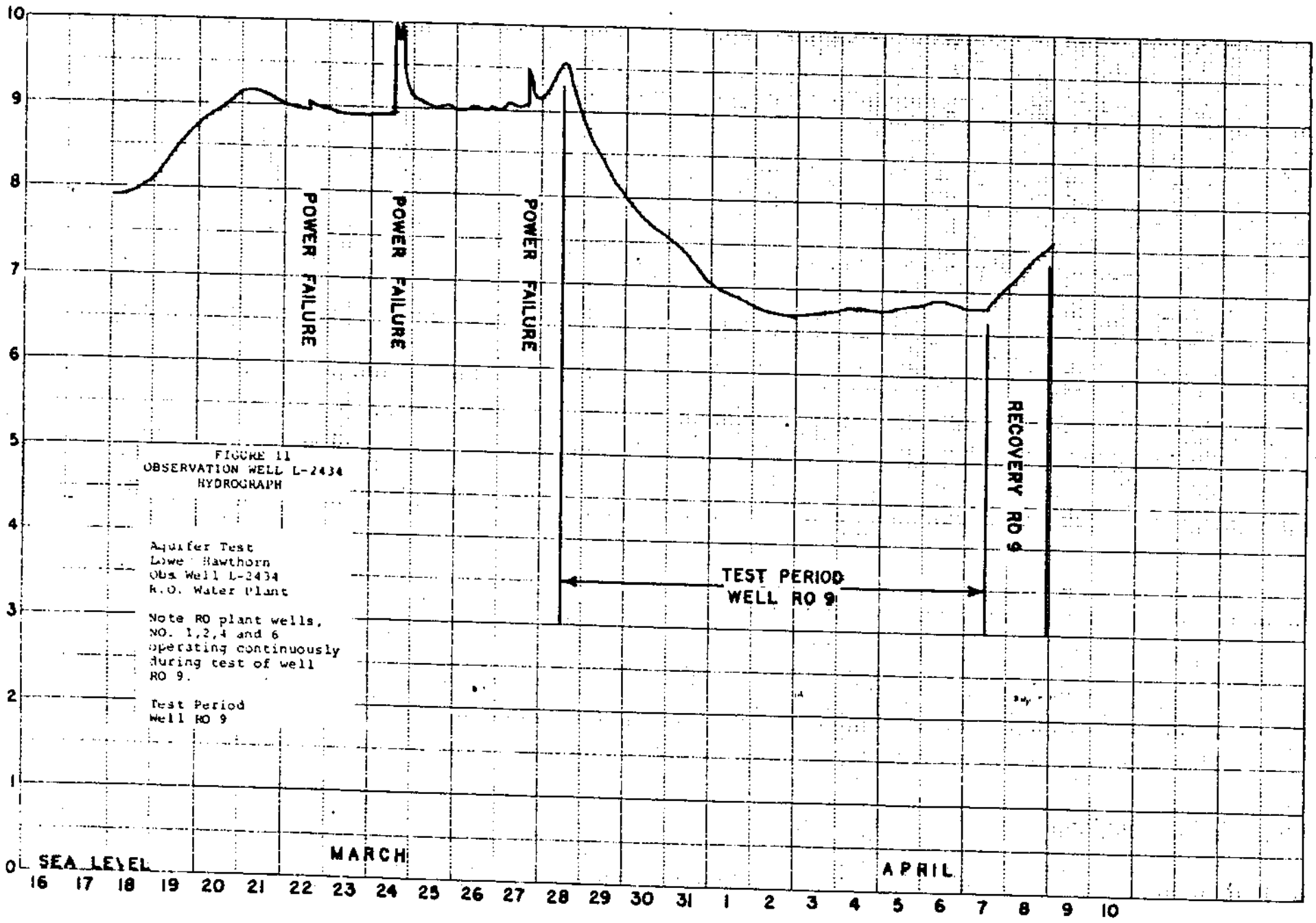


FIGURE 11  
OBSERVATION WELL L-2434  
HYDROGRAPH

Aquifer Test  
Lowe Hawthorn  
Obs Well L-2434  
R.O. Water Plant

Note RO plant wells,  
NO. 1,2,4 and 6  
operating continuously  
during test of well  
RO 9.

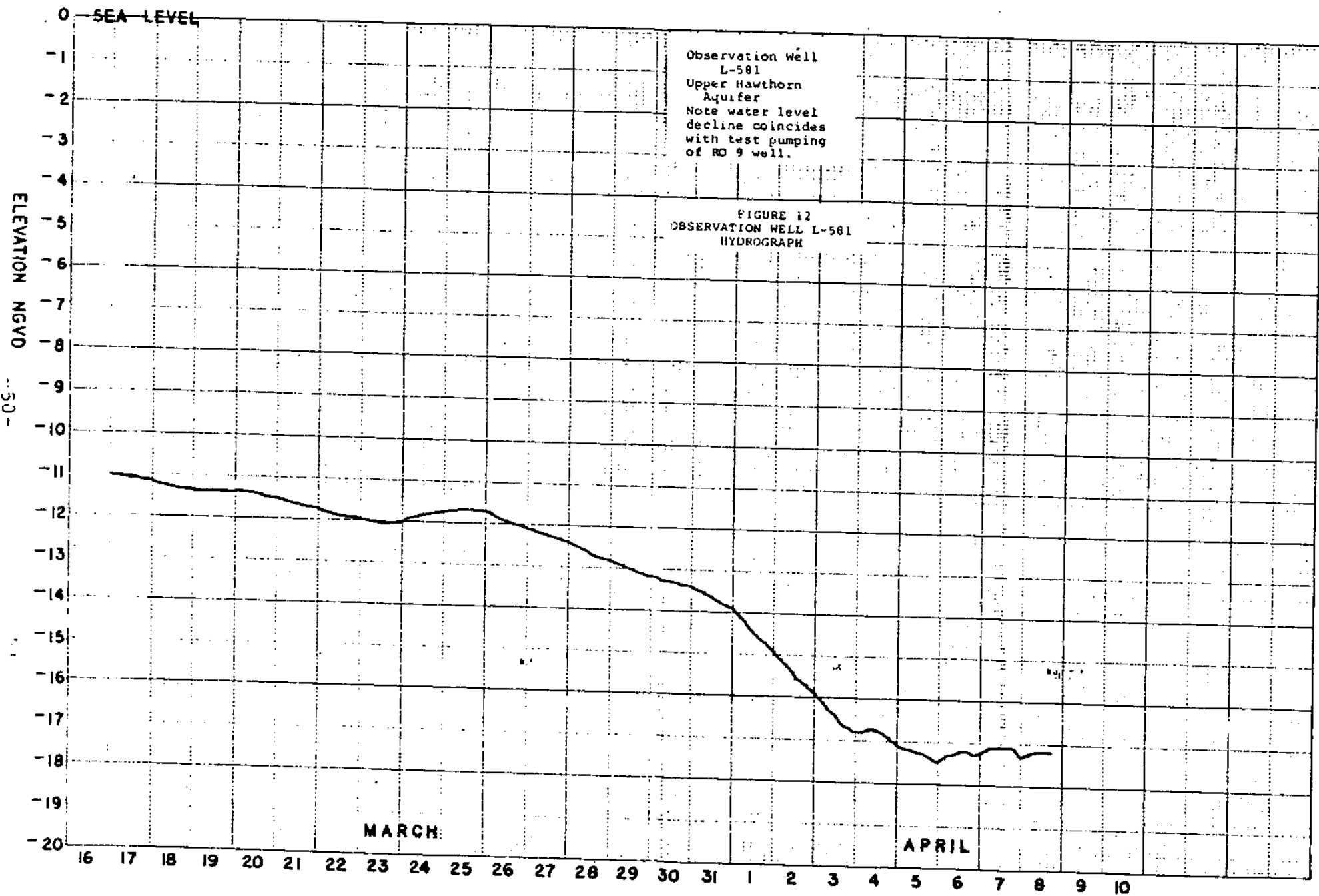
Test Period  
Well RO 9

SEA LEVEL

MARCH

APRIL

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10



-50-

## SUMMARY AND CONCLUSIONS

A pumping test was run utilizing the southernmost well of the Cape Coral Reverse Osmosis plant, designated Well RO 9. These wells are flowing artesian wells with above ground static water levels.

The Cape Coral area overlies a geologic anticline as depicted by the upper surface of the lower Hawthorn aquifer shown in the geologic cross sections.

Two (2) attempts were made to start the long-term pumping test on Well RO 9 in both February and early March. Weather conditions interfered with the operation as well as failure to hold a constant pumping rate. Third start for the long-term pumping test was commenced on March 28, and continued with recovery measurements thru April 8, 1983.

The test well, RO 9, was pumped at an average rate of 746 gpm for 14,400 minutes. Recovery was then observed for 24 hours following pumping.

In analyzing the data, various values of transmissivity were derived. It has been found from experience that the early portion of the data more accurately reflect the true formation characteristics in the vicinity of the well. Long-term transmissivity values represent leakage to the aquifer system and boundary effects. It is therefore concluded that the value that best represents the transmissivity of the formation is 35,000 gpd/ft. The value that best represents the coefficient of storativity for the long-term test is 0.003. The higher values of transmissivity derived from the data indicates substantial leakage to the upper Hawthorn formation.

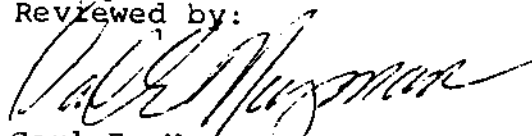
Leakage factor calculated that best represents the conditions in the vicinity of the well, was 0.0335 gpd/ft<sup>2</sup>.

The observed specific capacity of the well was 17.8 <sup>gpm</sup> ~~gpd~~/ft. The calculated theoretical specific capacity was 17.7 gpm/ft for an apparent well efficiency of 99%.

Prepared by:

James O. Smith, Jr.  
Hydrologist

Reviewed by:

  
Carl E. Nuzman, P.E.  
Hydrology Division Manager

JOS:CEN:drj

APPENDIX I  
WELL COMPLETION REPORTS

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

OWNER: CITY OF PALM BEACH

Well Name: \_\_\_\_\_ Well No.: \_\_\_\_\_  
 Number: \_\_\_\_\_ Street: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Area Code: \_\_\_\_\_ Phone Number: \_\_\_\_\_ Zip Code: \_\_\_\_\_

WELL LOCATION:  
 Section: \_\_\_\_\_ of Section \_\_\_\_\_  
 Township: \_\_\_\_\_ Range: \_\_\_\_\_  
 Longitude: \_\_\_\_\_  
 Latitude: \_\_\_\_\_  
 Location in Section: \_\_\_\_\_  
 Number: \_\_\_\_\_ Street/Road: \_\_\_\_\_  
 Lot No.: \_\_\_\_\_ Sub-division: \_\_\_\_\_  
 City: \_\_\_\_\_ County: \_\_\_\_\_

OWNER WELL NUMBER OR NAME: \_\_\_\_\_  
 DRILL METHOD:  Rotary  Cable Tool  Air  Auger  
 Other

SURFACE CASING, CASING, AND LINER MATERIAL:

Start Dia. (in.)	Size	End Dia. (in.)	From (ft.)	To (ft.)	Schedule No.	Joint #
20"	Steel	12"	0	30	40	1
			30	48		
			48	125		

GROUT:  None  Neat Grout  Other  
 Type and Percent of Aggregate and Grout Volume or Number of 90 lb. Bags  
14.5 WITH 5% AGGREGATE

FINISH:  Open Hole  Perforated or Slotted Casing  Gravel Pack  
 Sandpack or Screen Attached to Well Casing  Sandpack or Screen  
 Filterpack with Filter Inside Casing or Filter Material

Sandpack/Screen Material

Dia. (in.)	Size	From (ft.)	To (ft.)

QUALITY TEST:  None  Record  Chemical  
 Date: \_\_\_\_\_  
 By:  Health Dept.  JQS  Other  
 Clear  Colored  Sulphur  Salty  Hazy  Other  
 Conductance (Micro-mhos/cm): \_\_\_\_\_ Chloride: 71000  
 Turbidity: \_\_\_\_\_ pH: \_\_\_\_\_ Temp: \_\_\_\_\_  
 Well Disinfected:  No  Yes (Date): \_\_\_\_\_

WELL TEST: by:  Manual Flow  GPM  Anhyd  
 Slug  Permeation Pump  Test Pump  None  
 Discharge Measured By:  Meter  Estimated  Current Meter  
 Orifice  Triangulation  Venturi  Volumetric  Other  
 Measured Static Water Level: \_\_\_\_\_ Ft.  
 Measured Pumping Water Level: \_\_\_\_\_ Ft.  
 Altitude: \_\_\_\_\_ Feet ASL  \_\_\_\_\_ GPM  
 Specific Capacity: \_\_\_\_\_ GPM/Ft. of Drawdown  
 Measuring Pt. (Optional): \_\_\_\_\_  
 Which is:  Pt.  Above  Below Land Surface  
 Elevation of Measuring Pt.: \_\_\_\_\_ Ft.  Above  Below NSL

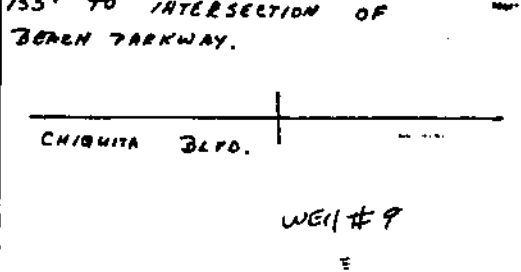
WELL EQUIPMENT:  Open  Cased  Valved  
 Permeation Pump  Test Pump  
 Type Pump:  Centrifugal  Cylinder  Air  Submersible  
 Turbine  Other  
 Power:  Diesel  Electric  Gasoline  Other  
 Horsepower: \_\_\_\_\_ Capacity: \_\_\_\_\_ GPM  
 Inlet/Outlet Depth: \_\_\_\_\_ Ft.

TYPE OF WORK:  New Construction  Repair  
 Drilling  Plugging  
 Other  
 PERMIT NUMBER:  
WW-36-53278  
#9 L.H.  
 WELL NUMBER: \_\_\_\_\_

TYPE OF WELL:  Open Well  Test Well  Recharge  Drilled  
 Water Casing  Observation  Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply  
 Other

SKETCH LOCATION OF WELL - in relation to local landmarks, giving distance and if not from nearest road, road or other reference point



GEOPHYSICAL LOGS Type \_\_\_\_\_

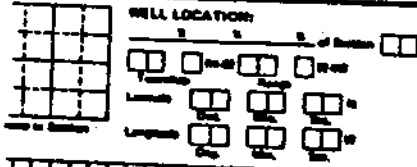
WELL LOG

Bore Hole (in.)	Casing Size (in.)	Depth (ft.)		Description
		From	To	
		0	5	SAND SHELL SURFACE ROCK
		5	10	SAND SHELL
		10	15	SAND SHELL GRAY ROCK
		15	20	SAND SHELL GRAY ROCK AND
		20	25	SHELL MUD
		25	30	MUD THICK
195		30	35	MUD THICK
		35	40	GREEN CLAY
		40	45	WHITE ROCK CLAY
		45	50	WHITE ROCK SHELL
		50	55	GREEN CLAY
		55	60	GREEN CLAY
		60	65	GREEN CLAY
		65	70	GREEN CLAY SHELL
		70	75	GREEN CLAY
		75	80	GREEN CLAY
		80	85	GREEN CLAY
		85	90	GREEN CLAY
		90	95	GREEN CLAY ROCK PHOSPHAT
		95	100	GREEN CLAY ROCK PHOSPHAT
		100	105	SHELL BROWN ROCK PHOSPHAT
		105	110	LIMESTONE
		110	115	LIMESTONE SHELL
		115	120	LIMESTONE SHELL
		120	125	LIMESTONE SHELL
		125	130	LIMESTONE SHELL

Test Depth: 750 Ft. Productive Zone Measured:  Sand  Shell  
 Broken Shell  Limestone  Other  
 Top of Productive Zone: 930 Bottom of Productive Zone: 750  
 Drill Cuttings Sent to Bureau of Geology  
 License No. 15109 Henry J. Kouskousian Paul  
 State of Florida 15 20 19 1970  
 Completion Date \_\_\_\_\_

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

WELL NO. [ ]  
 [ ]  
 [ ]  
 [ ]  
 City [ ]  
 State [ ]  
 Zip Code [ ]  
 Phone Number [ ]



Number [ ]  
 Name [ ]  
 Lot No. [ ]  
 Subdivision [ ]  
 City [ ]  
 County [ ]

OWNER WELL NUMBER OR NAME: [ ]

WELL METHOD:  Rotary  Cable Test  Jet  Auger  
 Other [ ]

WELL CASING, CASING, AND LINER MATERIAL.

Start Depth (ft.)	End Depth (ft.)	Material	From (ft.)	To (ft.)	Remarks
0	130	4" Galv. Steel			
130	135	4" Galv. Steel			
135	140	4" Galv. Steel			
140	145	4" Galv. Steel			
145	150	4" Galv. Steel			
150	155	4" Galv. Steel			
155	160	4" Galv. Steel			
160	165	4" Galv. Steel			
165	170	4" Galv. Steel			
170	175	4" Galv. Steel			
175	180	4" Galv. Steel			
180	185	4" Galv. Steel			
185	190	4" Galv. Steel			
190	195	4" Galv. Steel			
195	200	4" Galv. Steel			
200	205	4" Galv. Steel			
205	210	4" Galv. Steel			
210	215	4" Galv. Steel			
215	220	4" Galv. Steel			
220	225	4" Galv. Steel			
225	230	4" Galv. Steel			
230	235	4" Galv. Steel			
235	240	4" Galv. Steel			
240	245	4" Galv. Steel			
245	250	4" Galv. Steel			
250	255	4" Galv. Steel			
255	260	4" Galv. Steel			

SCREEN:  Standard  Slotted  Wellpoint  Other  
 C - Threaded and Coupled, TCW - Threaded, Coupled, and Welded,  
 T - Slotted, S - Slotted PVC, O - Other

FOOT:  None  None Current  Other  
 No and Purpose of Additions and Great Values or Number of 0.1 ft. Starts

NOTE:  Open Hole  Perforated or Slotted Casing  Ground Pump  
 Temporary or Screen Attached to Steel Casing  Screen or Screen  
 Attached with Particle Inside Casing or Other Material

Screen/Screen Material	Depth (ft.)	Start (ft.)	From (ft.)	To (ft.)

Other Foot: [ ]

QUALITY TEST:  None  Barium  Chloride  
 Sulfate  Lead  Other  
 Date [ ]

Other Tests: [ ]

WELL TEST: by  Natural Flow  G.P.M.  Surft  
 Bottom  Permeability Pump  Test Pump  None  
 Pump Measured by  Bottom  Electrical  Current Meter  
 Device  Turbine  Venturi  Volumetric  Other

Initial Depth Water Level [ ] [ ] - [ ] [ ] ft.  
 Initial Pumping Water Level [ ] [ ] - [ ] [ ] ft.  
 or [ ] [ ] ft. or [ ] [ ] G.P.M.  
 Well Capacity [ ] [ ] G.P.M./ft. of Drawdown

Starting Pt. Identified: [ ]  
 or [ ] [ ] ft.  Above  Below  Land Surface  
 Point of Measuring Pt. - [ ] [ ] ft.  Above  Below  MSL

WELL EQUIPMENT:  Case  Casing  Valve  
 Permanent Pump  Temporary Pump  
 or Pump  Overhaul  Overhaul  Jet  Submersible  
 Turbine  Other

or:  Diesel  Electric  Gasoline  Other  
 Motor [ ]  
 Capacity [ ]  
 Horsepower [ ]

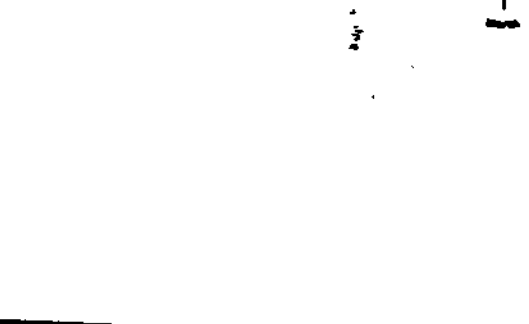
Production Depth [ ]  
 or [ ]  
 Capacity [ ]  
 Horsepower [ ]

R FORM 11-1 122 (2B)

TYPE OF WELL:  Water Well  Test Well  Recovery  Overhaul  
 Mining Operation  Observation  Other  
 WELL NUMBER [ ]

WELL TYPE:  Domestic  Irrigation  Industrial  L.L.M.  Public Utility  
 Other

SKETCH LOCATION OF WELL in relation to local landmarks, showing distance and direction from nearest road, canal, or other reference point.



GEOPHYSICAL LOG: Type [ ]

Open Hole (ft.)	Casing (ft.)	Depth (ft.)	Interval		Remarks
			From	To	
		130-135			LIME STONE
		135-140			" "
		140-145			" "
		145-150			" "
		150-155			" "
		155-160			" "
		160-165			" "
		165-170			LIME STONE CLAY
		170-175			" "
		175-180			" "
		180-185			GREEN CLAY
		185-190			" "
		190-195			" "
		195-200			" "
		200-205			LIME STONE
		205-210			" "
		210-215			LIME STONE CLAY
		215-220			" "
		220-225			" "
		225-230			" "
		230-235			" "
		235-240			" "
		240-245			" "
		245-250			" "
		250-255			" "
		255-260			LIME STONE

Total Depth [ ]  
 Producing Zone Interval: [ ]  
 Screened  Unscreened  Other

Top of Producing Zone [ ]  
 Depth of Producing Zone [ ]  
 Over Casing Part to Bureau of Geology

Well No. [ ]  
 Water Well Contractor's Signature [ ]  
 Date [ ]  
 Other Signature [ ]

**STATE OF ILLINOIS  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT**

WELL NO.

City  State  Zip

WELL LOCATION:

N. of Section  S. of Section

Township  Range

Latitude  N.  S.

Longitude  W.  E.

Section  Street/Road

Lot No.  Subdivision

City  County

OTHER WELL NUMBER OR NAME:

BILL METHOD:  Rotary  Cable Tool  Jet  Auger

WELL CASING, CASING, AND LINER MATERIAL:

Start Dia (in)	End Dia (in)	Depth (ft)	Material	Other
1	2	3	4	5

WELL SERVICE:

C = Threaded and Coupled, TCB = Threaded, Coupled, and Threaded, T = Threaded, S = Sanded PVC, O = Other

INLET:  Hole  Plug Cement  Other

At and Percent of Address and Gross Volume in Number of 94 qt. Sacks

From SP1 to SP2

WELL SERVICE MATERIAL:

Dia. (in)	Start (ft)	End (ft)	Material

Other:  Seal  Grout  Other

QUALITY TEST:  None  Barium Chloride  Other

Chem:  Calcium  Barium  Iron  Other

CELL TEST, for:  Normal Flow  G.P.M.  Anhyd

Rate:  Permeable Flow  Test Pump  None

Flow Measured by:  Scale  Estimated  Current Meter

Orifice:  Temporary  Venturi  Venturi  Other

Initial Static Water Level  -  Ft.

Initial Pumping Water Level  -  Ft.

at  Hours at  G.P.M.

with Capacity  G.P.M. at  Ft. of Drawdown

WELL EQUIPMENT:  Open  Cased  Wired

Permeable Pump:  Temporary Pump

as Pump:  Centrifugal  Cylinder  Jet  Submersible

Turbine:  Other

at  G.P.M.  Barometer  Gasline  Other

Volume  Capacity  G.P.M.

Installation Depth  Ft.

RD FORM 97-1.122 (20)

PLANNING NUMBER:

WELL NUMBER:

TYPE OF WELL:  New Well  Test Well  Recharge  Drilling

Other  Observation  Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply

Other

SKETCH LOCATION OF WELL in relation to local landmarks, showing distance and direction from nearest road, road, or other reference point.

GEOPHYSICAL LOGS: Type:  Test

Well No.	From (ft)	To (ft)	Depth (ft)		Description
			From	To	
	260	265			LINE STONE
	265	270			" "
	270	275			" "
	275	280			MUDDY LINE STONE
	280	285			" "
	285	290			" "
	290	295			" "
	295	300			STIFF CLAY
	300	305			" "
	305	310			" "
	310	315			" "
	315	320			" "
	320	325			" "
	325	330			" "
	330	335			LINE STONE
	335	340			" "
	340	345			" "
	345	350			" "
	350	355			LINE STONE
	355	360			" "
	360	365			LINE STONE CLAY
	365	370			" "
	370	375			" "
	375	380			" "
	380	385			" "
	385	390			" "



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

WELL NO:

Well Name:  Well Depth:  (feet)

Number:  Section:

City:  State:

Phone Number:  Zip Code:

WELL LOCATION:

of Section

Latitude:

Longitude:

Number:

Well Name:

City:

County:

WELL NUMBER OR NAME:

WELL METHOD:  Reverse  Cable Tool  Jet  Auger

FACE CASING, CASING, AND LINER MATERIAL:

Section No.	From (ft)	To (ft)	Material	Remarks
1	0	10	Galv. Steel	
2	10	20	PVC	
3	20	30	Steel	
4	30	40	Steel	
5	40	50	Steel	
6	50	60	Steel	
7	60	70	Steel	
8	70	80	Steel	
9	80	90	Steel	
10	90	100	Steel	

Notes Observed:

- Throat and Coupling, TCM - Throat, Coupling, and Mandrel.

- Mandrel, M - Screen (PVC), O - Other

DATE:  Month  Year

Address and Phone of Address and Grant Volume or Number of Well Section

From (ft)  To (ft)

IBI:  Open Well  Performed on Existing Casing  Great Post supports or Screen Attached to steel Casing  Sandstone or Screen coated with Plastic Inside Casing (Plastic Material)

Face/Casing Material

Section No.	From (ft)	To (ft)	Material
1	0	10	Galv. Steel
2	10	20	PVC
3	20	30	Steel
4	30	40	Steel
5	40	50	Steel
6	50	60	Steel
7	60	70	Steel
8	70	80	Steel
9	80	90	Steel
10	90	100	Steel

WELL TEST:  Open  Reverse  Chemical

Pressure Control:  Manual  Other

Well Completion:  Open  Screen  Other

TEST, by:  Manual Pump  GPM  Aps

or  Permeability Pump  Test Pump  Meter

or  Measured by:  Surface  Estimated  Corrosion Meter

or  Testimony  Visual  Measurement  Other

of Depth Water Level  -  -  Ft.

of Pumping Water Level  -  -  Ft.

Capacity  GPM/PL of Production

or PL (Estimated):  PL  Above  Below Load Surface

or of Measuring Pt. -  Ft.  Above  Below MBL

EQUIPMENT:  Open  Closed  Valve

or  Well Pump  Test Pump

or  Centrifugal  Cylinder  Jet  Submersible

or  Other

or  Diesel  Electric  Gasoline  Other

or  Capacity  GPM/PL

or  Depth  Ft.

DATE 11-1-1981

TYPE OF WELL:  Water Well  Test Well  Production  Storage

Water Treatment  Observation  Other

LINE:  Concrete  Asphalt  Metal  Limestone  Public Utility

Other

SKETCH LOCATION OF WELL in relation to local landmarks, giving distance and direction from nearest town, road, or other reference point.

GEOPHYSICAL LOGS: Yes  No

WELL LOG

Casing Section No.	Depth (ft)		Description
	From	To	
	390	395	LIME STONE - CLAY
	395	400	"
	400	405	"
	405	410	"
	410	415	"
	415	420	"
	420	425	"
	425	430	"
	430	435	"
	435	440	"
	440	445	"
	445	450	LIME STONE - SOME CLAY
	450	455	"
	455	460	"
	460	465	" SOFT
	465	470	"
	470	475	"
	475	480	"
	480	485	"
	485	490	LIME STONE SOFT
	490	495	GRAY LIME STONE
	495	500	LIME STONE
	500	505	LIME STONE CLAY
	505	510	CLAY WHITE + GREY
	510	515	LIME STONE
	515	520	"

Total Depth  Ft. Producing Zone Material:  Sand  Gravel

Gravel Sand  Limestone  Other

Top of Producing Zone  Ft. Bottom of Producing Zone  Ft.

Open Casing Set to Bottom of Casing

Water Well Contractor's Signature  Florida

Completion Date  Driller Signature



DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

**OWNER:**

Last Name First Name Initial  
 Number Street  
 City State Zip Code  
 Phone Number Zip Code

**WELL LOCATION:**

Section Township Range  
 Longitude Latitude  
 Easting Northing

Number Street  
 Lot No Sublot  
 City County

OTHER WELL NUMBER OR NAME: \_\_\_\_\_

**WELL METHOD:**  Recovery  Core Test  Test  Auger  
 Other \_\_\_\_\_

**UPPER CASING, CASING, AND LINER MATERIAL:**

Start Depth	End Depth	Material	Notes
0	10	4" Steel	
10	20	2" PVC	

Notes:  Thruflow and Coupled,  TCS - Thruflow, Coupled, and Sealed,  Sealed,  Sealed SPVC,  Other

**OUT:**  None  Non Conical  Other \_\_\_\_\_

**NAME:**  Open Hole  Performed in Shotted Casing  Grout Plug Sealed at Surface Attached to Well Casing  Sealed or Screen placed with Filter Inside Casing (Indicate Material)

**QUALITY TEST:**  None  Seismic  Chemical  Other \_\_\_\_\_

Other:  None  LUGS  Other \_\_\_\_\_

Flow:  General  Surface  Seep  Specific  Other \_\_\_\_\_

Flow:  None  Yes  Temp  No

**WELL TEST:** by:  Manual Flow  G.P.M.  Another  
 Surface Pump  Test Pump  None  
 Charge Released By:  Surface  Elevated  Current Meter  
 Control:  Temperature  Volume  Volumetric  Other \_\_\_\_\_

Initial Stand Still Level [ ] - [ ] Ft.  
 Final Pumping Stand Still Level [ ] - [ ] Ft.  
 or [ ] in. at [ ] G.P.M.  
 well Capacity [ ] G.P.A./Ft. of Drawdown

Standing Pk. (Optional):  
 at [ ] Ft.  Above  Below Lead Surface  
 when at Standing Pk. = [ ] Ft.  Above  Below O.S.

**WELL EQUIPMENT:**  None  Conical  Screen  
 Permanent Pump  Temporary Pump  
 Air Pump:  Conventional  Cylinder  Air  Submersible  
 Turbine  Other \_\_\_\_\_

or:  Diesel  Electric  Gasoline  Other \_\_\_\_\_  
 Capacity [ ] G.P.M.  
 Production Speed [ ] Ft.

FORM 11-1 (22 1991)

**TYPE OF WELL:**  Water Well  Test Well  Pumping  Discharge  
 Flood Control  Observation  Other \_\_\_\_\_

**USE:**  Domestic  Irrigation  Industrial  Livestock  Public Supply  
 Other \_\_\_\_\_

**SKETCH LOCATION OF WELL:** In relation to local landmarks, street address and flow logs (not shown here), road or other reference points.

**WELL NUMBER:** \_\_\_\_\_

**GEOPHYSICAL LOGS:** Yes \_\_\_\_\_ No \_\_\_\_\_

Well No.	Casing No.	Depth (ft.)		Description
		From	To	
650	655			LIME STONE BROWN
655	660			" "
660	665			" "
665	670			" "
670	675			" "
675	680			" "
680	685			" "
685	690			" "
690	695			" "
695	700			" "
700	705			" "
705	710			CLAY
710	715			" "
715	720			" "
720	725			" "
725	730			" "
730	735			" "
735	740			" "
740	745			" "
745	750			" "
750	755			" "

Total Depth [ ] Ft. Producing Zone Depth:  None  Shallow  
 Surface Well  Conventional  Other \_\_\_\_\_

Top of Producing Zone [ ] Ft. Bottom of Producing Zone [ ] Ft.  
 Direct Coring Done to Bottom of Casing

License No. \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Date \_\_\_\_\_

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

OWNER: 2177Y OF CAPE CORAL  
 Lot Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Initial: \_\_\_\_\_  
 Number: \_\_\_\_\_ Street: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Area Code: \_\_\_\_\_ Phone Number: \_\_\_\_\_ Zip Code: \_\_\_\_\_

WELL LOCATION:  
 % of Section: \_\_\_\_\_  
 Township: \_\_\_\_\_ Range: \_\_\_\_\_  
 Longitude: \_\_\_\_\_  
 Latitude: \_\_\_\_\_

Number: \_\_\_\_\_ Street/Highway: \_\_\_\_\_  
 Lot No. Subdivision: \_\_\_\_\_  
 City: \_\_\_\_\_ County: \_\_\_\_\_

OWNER WELL NUMBER OR NAME: \_\_\_\_\_

DRILL METHOD:  Rotary  Cable Tool  Jet  Auger  Other

SURFACE CASING, CASING, AND LINER MATERIAL

Start Depth (ft)	Start Date	End Depth (ft)	From (ft)	To (ft)	Schedule No.	Notes
20'		12'	5	30		
			6.3	390	40	18

1 - Outside Material: W.S.  
 \* TC - Threaded and Coupled, TCM - Threaded, Coupled, and Welded,  
 W - Welded, B - Bonded (PVC) O - Other

DROUT:  None  Near Current  Other

Flow and Porosity of Adjacent and Great Volume or Number of 50 lb. Bags

From (ft)	To (ft)
17.5 WITH 3% BENTONITE	+3 350'

FINISH:  Open Hole  Perforated or Slotted Casing  Gravel Pack  
 Sandbags or Screen Attached to Well Casing  Sandbags or Screen  
 Fabricated with Filter Leads Casing (Filter Material)

Sandbags/Screen Material	Dis (in)	Slot Size (in)	From (ft)	To (ft)
--------------------------	----------	----------------	-----------	---------

Other Finish: \_\_\_\_\_

QUALITY TEST  None  Barium  Chloride  Other

By:  Health Dept.  DES  Other

Clear  Colored  Turbid  Silty  Iron  Other

Conductivity (Microhm) \_\_\_\_\_ Ohm-cm 71000

Hardness \_\_\_\_\_ pH \_\_\_\_\_ Total \_\_\_\_\_

Water Discharged  No  Yes

WELL TEST, by:  Natural Flow  GPM  Lbs

Sucker  Permanent Pump  Test Pump  None

Overhaul Measured By:  Sucker  Estimated  Corrosion Meter

Orifice  Transducer  Venturi  Volumetric  Other

Measured Static Water Level \_\_\_\_\_ ft.

Measured Pumping Water Level \_\_\_\_\_ ft.

Area \_\_\_\_\_ Hours As \_\_\_\_\_ GPM

Specific Capacity \_\_\_\_\_ GPM/ft of Drawdown

Measuring Pt. (Depth) \_\_\_\_\_

Height \_\_\_\_\_ ft.  Above  Below Land Surface

Elevation of Measuring Pt. \_\_\_\_\_ ft.  Above  Below MSL

WELL EQUIPMENT:  Open  Capped  Valved

Permanent Pump  Temporary Pump

Type Pump:  Centrifugal  Vertical  Jet  Submersible

Turbine  Other

Power:  Diesel  Electric  Gasoline  Other

Manufacturer \_\_\_\_\_ Capacity \_\_\_\_\_ GPM

Installation Date \_\_\_\_\_

TYPE OF WORK:  New Construction  Repair  Deepening  Plugging  Other

PERMIT NUMBER:  
WW # 10  
WW-36-53279

L.H. 1111

TYPE OF WELL:  Water Well  Test Well  Monitoring  Drainage  Waste Disposal  Observation  Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Use  Other

SKETCH LOCATION OF WELL in relation to local landmarks, zoning districts and other features shown on official records maps

496' to intersection of Aqualinda Blvd.  
3rd lane  
well #10

496' to intersection of Aqualinda Blvd + Lanora Pkwy.

AQUALINDA BLVD.

GEOPHYSICAL LOGS Type \_\_\_\_\_ By \_\_\_\_\_

Date (M/D)	Casing Size (in)	Depth (ft)		Description
		From	To	
28		0	5	SAND SHELL SURFACE ROCK
		5	10	SAND SHELL
		10	15	SAND SHELL GRAY ROCK
		15	20	SAND SHELL GRAY ROCK M.
		20	25	SHELL MUD
		25	30	MUD THICK
		30	35	MUD THICK
		35	40	GREEN CLAY
		40	45	WHITE ROCK CLAY
		45	50	WHITE ROCK SHELL
		50	55	GREEN CLAY
		55	60	GREEN CLAY
		60	65	GREEN CLAY
		65	70	GREEN CLAY SHELL
		70	75	GREEN CLAY
75	80	GREEN CLAY		
80	85	GREEN CLAY		
85	90	GREEN CLAY		
90	95	GREEN CLAY ROCK PHOSPH.		
95	100	GREEN CLAY ROCK PHOSPH.		
100	105	SHELL BROWN ROCK THICK		
105	110	LIMESTONE		
110	115	LIMESTONE SHELL		
115	120	LIMESTONE SHELL		
120	125	LIMESTONE SHELL		
125	130	LIMESTONE SHELL		

Total Depth: 750 ft. Producing Zone Material:  Sand  Shell

Broken Shell  Limestone  Other

Top of Producing Zone: 350 ft. Bottom of Producing Zone: 750 ft.

Drill Cuttings Sent to Bureau of Geology

WSP Harvey Louca Pres  
 License No. \_\_\_\_\_ Signature \_\_\_\_\_  
13 20 713 WSP  
 Completion Date \_\_\_\_\_

STATE OF CALIFORNIA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
**WELL COMPLETION REPORT**

WELL NO.

Well Name:  /  /  /

Street:

City:  State:

Phone Number:  Zip Code:

**WELL LOCATION:**

Section:  of Section

Township:  Range:

Latitude:  Longitude:

Section:  of Section

Township:  Range:

Latitude:  Longitude:

Water Right No.:

Well No.:

Subdivision:

City:  County:

OWNER WELL NUMBER OR NAME:

**BILL METHOD:**  Rotary  Cable Tool  Jet  Auger  
Other:

**PIPE CASING, CASING, AND LINER MATERIAL**

Depth (ft.)	From (ft.)	To (ft.)	Material	Notes
130	135		LINE STONE	
135	140		" "	
140	145		" "	
145	150		" "	
150	155		" "	
155	160		" "	
160	165		" "	
165	170		LIME STONE CLAY	
170	175		" "	
175	180		" "	
180	185		GREEN CLAY	
185	190		" "	
190	195		" "	
195	200		" "	
200	205		LINE STONE	
205	210		" "	
210	215		LINE STONE CLAY	
215	220		" "	
220	225		" "	
225	230		" "	
230	235		" "	
235	240		" "	
240	245		" "	
245	250		" "	
250	255		" "	
255	260		LINE STONE	

Remarks:

C = Threaded and Coupled, TCB = Threaded, Coupled, and Banded,  
S = Slotted, B = Banded (PVC), D = Other

**INLET:**  None  Root Control  Other

Address and Parcel of Address and Grant Volume or Number of B.L. Entry

From (ft.) To (ft.)

**NOTE:**  Open Hole  Performed on Existing Casing  Great Pit  
Sampled or Section Attached to Well Casing  Sanitary or Sealed  
Insulated with Plastic Insulation Casing Jacket Material

Depth (ft.)	From (ft.)	To (ft.)	Material
130	135		LINE STONE
135	140		" "
140	145		" "
145	150		" "
150	155		" "
155	160		" "
160	165		" "
165	170		LIME STONE CLAY
170	175		" "
175	180		" "
180	185		GREEN CLAY
185	190		" "
190	195		" "
195	200		" "
200	205		LINE STONE
205	210		" "
210	215		LINE STONE CLAY
215	220		" "
220	225		" "
225	230		" "
230	235		" "
235	240		" "
240	245		" "
245	250		" "
250	255		" "
255	260		LINE STONE

**QUALITY TEST:**  None  Barium  Chloride  Sulfate

Clear:  Colored  Turbid  Milky  Brown  Other

Temperature (Surface):  (Depth):

**ELL TEST:**  None  0.5 ft.  1 ft.  2 ft.  3 ft.  4 ft.  5 ft.  6 ft.  7 ft.  8 ft.  9 ft.  10 ft.

Water Level:  ft. (Static) /  ft. (Pumping)

Well Capacity:  G.P.M. @  ft. drawdown

casing Pt. (Surface):  ft. (Depth):  ft.

**ELL EQUIPMENT:**  Open  Cased  Valved

Motor:  Electric  Gasoline  Other

Motor Horsepower:  H.P.

**TYPE OF WELL:**  New Construction  Repair  Drilling  Plugging  Other

PERMIT NUMBER:

WELL NUMBER:

**TYPE OF WELL:**  Water Well  Test Well  Pottery  Domestic  Irrigation  Geophysical  Other

**USE:**  Domestic  Irrigation  Industrial  Geophysical  Public Supply  Other

**SKETCH LOCATION OF WELL:** (Attach to front of report, showing distance and direction from nearest street, road, or other reference point)

**GEOPHYSICAL LOG:** Type:  By:

**WELL LOG**

Sonde Hole (ft.)	Casing Hole (ft.)	Depth (ft.)		Remarks (cuttings at 20 ft. or smaller intervals and changes in color, texture, and type of material. Note any specific features such as sand, silt, or other material if necessary.)
		From	To	
		130	135	LINE STONE
		135	140	" "
		140	145	" "
		145	150	" "
		150	155	" "
		155	160	" "
		160	165	" "
		165	170	LIME STONE CLAY
		170	175	" "
		175	180	" "
		180	185	GREEN CLAY
		185	190	" "
		190	195	" "
		195	200	" "
		200	205	LINE STONE
		205	210	" "
		210	215	LINE STONE CLAY
		215	220	" "
		220	225	" "
		225	230	" "
		230	235	" "
		235	240	" "
		240	245	" "
		245	250	" "
		250	255	" "
		255	260	LINE STONE

Total Depth:  ft. Producing Zone Material:  Sand  Silt  Clay

Top of Producing Zone:  ft. Bottom of Producing Zone:  ft.

Well Completion Date:

Water Well Commissioner's Signature:

Other Signature:

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

WELL NUMBER: [Grid]  
Lore Name: [Grid] First Name: [Grid] Initial: [Grid]  
Address: [Grid]  
City: [Grid] State: [Grid]  
Zip Code: [Grid]  
Phone Number: [Grid]

WELL LOCATION:  
County: [Grid]  
Section: [Grid] Range: [Grid] Twp: [Grid]  
Subsection: [Grid] Sec: [Grid]  
North: [Grid] East: [Grid]  
Longitudinal: [Grid] Latitudinal: [Grid]  
Number: [Grid]  
Lore No.: [Grid]  
City: [Grid] County: [Grid]

OWNER WELL NUMBER OR NAME: [Grid]

WELL METHOD:  Rotary  Case Test  Jet  Auger

PIPE CASING, CASING, AND LINER MATERIAL:

Line No. (ft.)	Start (ft.)	End (ft.)	Material	Remarks

Remarks Material:  
C - Threaded and Coupled, TEW - Threaded, Coupled, and Welded,  
V - Welded, B - Bonded (PVC), O - Other

OUTPUT:  None  None Current  Other  
at end of Section and Great Volume or Number of Gals. Sec'd  
From (ft.) To (ft.)

REMARKS:  Open Hole  Perforated or Bonded Casing  Gravel Pack  
Sandstone or Bentonite Annular Seal  Sandstone or Screen  
annular Seal Perforated Inside Casing (Specify Material)

Other Remarks:  
QUALITY TEST:  None  Barium  Chemical  
 Marsh Dept.  USGS  Other  
Color:  Clear  Slight  Dirty  Turb.  Other  
Temperature: [Grid] °C [Grid] °F  
Diameter: [Grid] in. [Grid] ft.

WELL TEST, by:  Natural Flow [Grid] G.P.M.  At-Well  
 Solor  Perforated Pump  Test Pump  Meter  
Change Measured By:  Solor  Standard  Corros Meter  
Order:  Temporary  Venturi  Venturi  Other  
Initial Static Water Level [Grid] Ft.  
Initial Pumping Water Level [Grid] Ft.  
Flow: [Grid] Meters  [Grid] G.P.M.  
Well Capacity [Grid] G.P.M./ft. of drawdown  
Working P.L. (Estimated):  
Static P.L. [Grid] Ft.  Above  Below Land Surface  
Values of Working P.L. = [Grid] Ft.  Above  Below MSL.

WELL EQUIPMENT:  Open  Capped  Valved  
 Permanent Pump  Temporary Pump  
Air Pump:  Centrifugal  Cylinder  Air  Submersible  
Type:  Other  
in  Brass  Therite  Cast-iron  Other  
Capacity [Grid] G.P.M.  
Manufacturer: [Grid] Ft.

R FORM 17-1 (12) (198)

TYPE OF WELL:  Water Well  Test Well  Airshaft  Casing  
 Mine Outcrop  Observation  Other  
USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply  
 Other  
WELL NUMBER: [Grid]

TYPE OF WELL:  Water Well  Test Well  Airshaft  Casing  
 Mine Outcrop  Observation  Other

SKETCH LOCATION OF WELL in relation to local landmarks, showing distance and direction from nearest town, road, or other reference datum.

GEOPHYSICAL LOGS:

Date	Well No.	Depth (ft.)	Remarks
		260	265 LIME STONE
		265	270 " "
		270	275 " "
		275	280 MUDDY LIME STONE
		280	285 " "
		285	290 " "
		290	295 " "
		295	300 STICKY CLAY
		300	305 " "
		305	310 " "
		310	315 " "
		315	320 " "
		320	325 " "
		325	330 " "
		330	335 LIME STONE
		335	340 " "
		340	345 " "
		345	350 " "
		350	355 LIME STONE
		355	360 " "
		360	365 LIME STONE CLAY
		365	370 " "
		370	375 " "
		375	380 " "
		380	385 " "
		385	390 " "

Total Depth [Grid] Ft.  Producing Zone Measured  Well  Shut  
 Broken Well  Unusable  Other  
Type of Producing Zone [Grid] Ft.  Screen of Producing Zone [Grid] Ft.  
 Drill Casing Seal to Surface of Quality  
Lore No. [Grid] Water Well Contractor's Signature [Grid]  
Completion Date [Grid] Other Signature [Grid]

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

OWNER: Last Name First Name Initial  
Address  
City State Zip Code  
Phone Number Fax Code

WELL LOCATION:  
Twp. of Section  
Range  
Section  
Latitude Longitude  
Elev. to Surface  
Well Number  
Lat. No. Longitude  
City County

OTHER WELL NUMBER OR NAME:  
WELL METHOD:  Recovery  Casing Test  Air  Other  
Date

SPACE CASING, CASING, AND LINER MATERIAL:

Start Depth (ft.)	End Depth (ft.)	Material	Thickness (ft.)	Remarks

Remarks:  Threaded and Coupled, TCR = Threaded, Coupled, and Riveted  
 Riveted, C = Riveted (SPVC), O = Other  
DUT:  None  None Current  Other

Address and Location of Ground Water or Number of G.U. Tests  
From (F.U.) To (U.G.)

TEST/STRAIN REPORT:

Test/Strain Report	Date	Start Depth (ft.)	End Depth (ft.)	From (F.U.)	To (U.G.)

City Test:  None  Surface  Chemical  
 Water Chem.  MMB  Other  
Date

Flow Measurement:  None  Other  
Date

TEST, No.:  Recovery Flow  G.P.M.  Air  
 Permeability Pump  Test Pump  Stand  
Tap Measured By:  Bell  Standard  Control Meter  
App:  Tripartite  Venturi  Venturi  Other

at Static Water Level  -  -  Ft.  
at Pumping Water Level  -  -  Ft.  
Flow at  G.P.M.  
Capacity  G.P.M. of Groundwater

at Pumping Water Level  -  -  Ft.  
Flow at  G.P.M.  
Capacity  G.P.M. of Groundwater

at Pumping Water Level  -  -  Ft.  
Flow at  G.P.M.  
Capacity  G.P.M. of Groundwater

EQUIPMENT:  Open  Cap and  Valve  
Screen Type:  Temporary Pump  
App:  Conduits  Casing  Air  Submersible  
Use:  Other

at Pumping Water Level  -  -  Ft.  
Flow at  G.P.M.  
Capacity  G.P.M. of Groundwater

at Pumping Water Level  -  -  Ft.  
Flow at  G.P.M.  
Capacity  G.P.M. of Groundwater

JRM 17-1-122 1288

TYPE OF WELL:  Water Supply  Other  
 Water Chemical  Observation  Other  
 Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply  
 Other

TYPE OF WELL:  Water Well  Test Well  Recovery  Drainage  
 Water Chemical  Observation  Other

Sketch Location of Well in relation to local landmarks, showing direction and distance from nearest town, road, or other reference point.

GEOPHYSICAL LOGS: Year: By:

WELL LOG

Depth (ft.)	Casing Size (in.)	Depth (ft.)		Remarks
		From	To	
390	395			LIME STONE - CLAY
395	400			" "
400	405			" "
405	410			" "
410	415			" "
415	420			" "
420	425			" "
425	430			" "
430	435			" "
435	440			" "
440	445			" "
445	450			LIME STONE - SOME CLAY
450	455			" "
455	460			" "
460	465			" " SOFT
465	470			" "
470	475			" "
475	480			" "
480	485			" "
485	490			LIME STONE SOFT
490	495			GRAY LIME STONE
495	500			LIME STONE
500	505			LIME STONE CLAY
505	510			CLAY WHITE + GREY
510	515			LIME STONE
515	520			" "

Total Depth  -  -  Ft. Producing Water Level  -  -  Ft.  
 Screen Start  Liner Start  Other

Top of Producing Zone  -  -  Ft. Bottom of Producing Zone  -  -  Ft.  
 Drill Casing End to Surface of Ground

Water Well Contractor's Signature  
Date

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
WELL COMPLETION REPORT

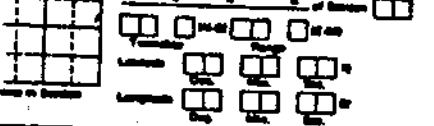
WELL #:

Last Name First Name Initial

Address Street

City State

Zip Code Phone Number Zip Code



Number Street/Road  
Lot No. Subdivision  
City County

OWNER WELL NUMBER OR NAME:

WELL METHOD:  Rotary  Cable Tool  Air  Auger

INTERFACE CASING, CASING, AND LINER MATERIAL:

Start Casing No.	Depth	End Casing No.	From	To	Equivalent	Joint*
Case	to	To	PVC	Other	(ft.)	(ft.)

Material:   
 C = Threaded and Coupled, TCS = Threaded, Coupled, and Sealed,   
 V = Welded, S = Standard PVC, O = Other

JOINT:  None  Non-Combed  Other

NEED:  Open Well  Performed in Closed Casing  Closed Park   
 Sandstone or Screen Attached to Well Casing  Sandstone or Screen   
 Attached with Plastic Inside Casing (Plastic Material)

Material/Screen Material	Depth (ft.)	Start	To
		Case No.	(ft.)

Other Fluid:

QUALITY TEST:  None  Barium  Chlorine  Other

Chlorine  Barium  Sulfur  Sulfide  Iron  Other

Hydrogen Sulfide  Other  Other

Flow  Other  Other

ALL TEST:  None  Natural Flow  G.P.M.  Other

Water  Potassium Permanganate  Test Pump  None

Other Material:  Sulfur  Iron  Other

Flow  Other  Other

Flow  Other  Other

Flow  Other  Other

Flow  Other  Other

Flow  Other  Other

TYPE OF WELLS:  Open Completion  Relief   
  Drilling  Plugging   
  Other

TYPE OF WELL:  Water Well  Test Well  Production  Drilling   
  Other  Observation  Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply   
  Other

SKETCH LOCATION OF WELL in reference to local landmarks, showing distance and direction from nearest town, road, or other reference points.

GEOPHYSICAL LOGS: Type: \_\_\_\_\_ By: \_\_\_\_\_

Start Depth (ft.)	Casing Size (in.)	Depth (ft.)		Remarks (depths of 20 ft. or smaller intervals and changes in color, grain-size and type of material and specific, including probable rock. Also additional tests if necessary.)
		From	To	
		520	525	GRAY CLAY
		525	530	WHITE & CLAY LIMESTONE
		530	535	GREEN CLAY LIMESTONE
		535	540	WHITE & CLAY LIMESTONE
		540	545	TAN LIMESTONE
		545	550	WHITE CLAY LIMESTONE
		550	555	LIMESTONE CLAY
		555	560	" "
		560	565	" "
		565	570	" "
		570	575	TAN LIMESTONE
		575	580	LIMESTONE
		580	585	BROWN LIMESTONE
		585	590	" "
		590	595	" "
		595	600	" "
		600	605	" "
		605	610	WHITE LIMESTONE
		610	615	LIMESTONE BROWN
		615	620	" "
		620	625	" "
		625	630	" "
		630	635	" "
		635	640	" "
		640	645	" "
		645	650	" "

Total Depth: \_\_\_\_\_ ft. Producing Zone Material:  Sand  Shell   
  Broken Shell  Limestone  Other:

Top of Producing Zone: \_\_\_\_\_ ft. Bottom of Producing Zone: \_\_\_\_\_ ft.   
  Drill Cuttings Same as Surface of Casing

Water Well Constructor's Signature \_\_\_\_\_   
 \_\_\_\_\_

Flow  Other  Other

I-11



**DEPARTMENT OF ENVIRONMENTAL REGULATION**  
**WELL COMPLETION REPORT**

WELL NO: [ ]

Location: [ ]

City: [ ]

State: [ ]

County: [ ]

Zip Code: [ ]

**WELL LOCATION**

N 1/2 S 1/2 E 1/4 Sec 15 T. 1 N. R. 15 E. S. 1/2 Sec 15

Township: [ ] [ ] [ ] [ ] Range: [ ] [ ] [ ] [ ]

Latitude: [ ]

Longitude: [ ]

Section: [ ]

Subdivision: [ ]

City: [ ]

County: [ ]

WELL NUMBER OR NAME: [ ]

WELL METHOD:  Reuse  Core Test  Jet  Auger  Other

**INTERFACE CASING, CASING, AND LINER MATERIAL**

Start Depth (ft)	End Depth (ft)	Material	From (ft)	To (ft)	Remarks
0	10	PVC Casing	0	10	
10	15		10	15	
15	20		15	20	
20	25		20	25	
25	30		25	30	

Material:  Cast Iron  Steel  Aluminum  PVC  Other

Remarks:  Thru  Cased  and  Rotted,  Other

IDENTITY:  Name  New Construction  Other

Notes:  Open Well  Perforated or Slotted Casing  Gravel Pack  Sandpack or Screen Attached to Well Casing  Sandpack or Screen Attached with Porous Plastic Casing  Porous Material

Material/Screen Material	Start Depth (ft)	End Depth (ft)	Remarks

Other Tests:  Name  Service  Other  Other

ACTIVITY TEST:  Name  Service  Other  Other

Date: [ ]

Cap:  Covered  Buried  Lorry  Open  Other

Water Measurement: [ ]

WELL TEST, by:  Natural Flow  S.P.M.  Other

Notes:  Permanent Pump  Test Pump  None

Flow Measured by:  Meter  Other  Current Meter

Other:  Temporary  Variable  Volume  Other

Initial Static Water Level: [ ] [ ] [ ] [ ] [ ] [ ] Ft.

Initial Pumping Water Level: [ ] [ ] [ ] [ ] [ ] [ ] Ft.

at [ ]

Flow Capacity: [ ]

Flowing P. (Estimated): [ ] [ ] [ ] [ ] [ ] [ ] Ft.

at [ ]

Water of Measuring P. = [ ] [ ] [ ] [ ] [ ] [ ] Ft.  Above  Below  Surface

WELL EQUIPMENT:  Open  Cased  Sealed

Permanent Pump:  Temporary Pump

or Pump:  Centrifugal  Cylinder  Jet  Submersible

Turbine:  Other

at [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

FD FORM 17-1, 122 (200)

TYPE OF WELL:  New Construction  Repair  Drilling  Plugging  Other

USE:  Domestic  Irrigation  Industrial  Livestock  Public Supply  Other

**BREXIT LOCATION OF WELL** in relation to local landmarks, giving distance and direction from nearest road, road, or other reference point.

DETAILED WELL LOG: [ ]

WELL LOG

Date Made (Mo.)	Casing Size (in.)	Depth (ft)		Remarks
		From	To	
		650	655	LIME STONE BROWN
		655	660	" "
		660	665	" "
		665	670	" "
		670	675	" "
		675	680	" "
		680	685	" "
		685	690	" "
		690	695	" "
		695	700	" "
		700	705	" "
		705	710	CLAY
		710	715	" "
		715	720	" "
		720	725	" "
		725	730	" "
		730	735	" "
		735	740	" "
		740	745	" "
		745	750	" "
		750	755	" "

Notes:  Open Well  Perforated or Slotted Casing  Gravel Pack  Sandpack or Screen Attached to Well Casing  Sandpack or Screen Attached with Porous Plastic Casing  Porous Material

Other Tests:  Name  Service  Other  Other

ACTIVITY TEST:  Name  Service  Other  Other

Date: [ ]

Cap:  Covered  Buried  Lorry  Open  Other

Water Measurement: [ ]

WELL TEST, by:  Natural Flow  S.P.M.  Other

Notes:  Permanent Pump  Test Pump  None

Flow Measured by:  Meter  Other  Current Meter

Other:  Temporary  Variable  Volume  Other

Initial Static Water Level: [ ] [ ] [ ] [ ] [ ] [ ] Ft.

Initial Pumping Water Level: [ ] [ ] [ ] [ ] [ ] [ ] Ft.

at [ ]

Flow Capacity: [ ]

Flowing P. (Estimated): [ ] [ ] [ ] [ ] [ ] [ ] Ft.

at [ ]

Water of Measuring P. = [ ] [ ] [ ] [ ] [ ] [ ] Ft.  Above  Below  Surface

WELL EQUIPMENT:  Open  Cased  Sealed

Permanent Pump:  Temporary Pump

or Pump:  Centrifugal  Cylinder  Jet  Submersible

Turbine:  Other

at [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

Flowing P. Capacity: [ ]

APPENDIX II  
SUMMARY OF TEST DATA FOR THE  
LOWER HAWTHORN AQUIFER AT CAPE CORAL

SUMMARY OF TEST DATA FOR THE  
LOWER HAWTHORN AQUIFER AT CAPE CORAL

1. Map showing the number and location of wells at or near the Cape Coral RO Plant.
2. Table 1 - Description of wells at or near the Cape Coral RO Plant.
3. Table 2 - Miscellaneous water level measurements from wells February 11 to April 8, 1983.
4. Table 3 - Rainfall at the Cape Coral RO Plant for February, March, April 1983.
5. Test 3 - Field data for drawdown in wells RO-7, 8, 9, 9A, and 9B for period March 28 to April 7, 1983.
6. Test 3 - Semi log plots of unadjusted field data for wells RO-7, 8, 9, 9A, and 9B (March 28 to April 7, 1983).
7. Test 3 - Field data for recovery in wells RO-7, 8, 9, 9A, and 9B for April 7-8, 1983.
8. Test 3 - Semi log plots of unadjusted field data for wells RO-7, 8, 9, 9A, and 9B (April 7-8, 1983).
9. Test 1 - Field data for drawdown in wells RO-7, 8, 9, 9A, and 9B on March 4, 1983.
10. Test 2 - Field data for drawdown in wells RO-7, 8, 9, 9A, and 9B on March 11, 1983.
11. Automatic recorder charts
  - A. Stevens Type F charts for wells 9B (February 17 to April 8, 1983), RO-7 (February 18 to April 8, 1983), and L-2644 (February 10 to April 8, 1983).
  - B. Stevens Type A 35 continuous charts for wells L-581 (March 17 to April 8, 1983) and L-2434 (March 18 to April 8, 1983).
  - C. Foxboro pressure recorder charts for well 9A (February 8 to April 8, 1983).
12. Barometer records
  - A. Page Field - FAA/FSS (February 9 to April 9, 1983).
  - B. Federal Building Fort Myers - NOAA (February 7 to April 8, 1983).

Durward H. Boggess, Hydrologist  
4312 South Pacific Circle  
North Fort Myers, Florida 33903

April 13, 1983

Mr. Vernon E. Lynch, P.E.  
Howard Needles Tammen & Bergendoff  
1105 Cape Coral Parkway  
Cape Coral, Florida 33904

Dear Vernon,


Forwarded are the records and other information collected during the tests conducted on the lower Hawthorn aquifer in the vicinity of the Cape Coral RO Plant. A summary of the information is also included.

Three aquifer tests were begun in March 1983. The first two tests on March 4 and March 11, were discontinued after several hours because the pumping rate could not be maintained. The information on these tests, although of limited value is included. The third test using a lower pumping rate, began on March 28 and was continued until April 7. The test was successfully completed on April 8 with the collection of recovery data.

There were numerous problems prior to and during the tests, the most serious of which were related to the highly unusual weather patterns which resulted in about 19.5 inches of rain and strong gusty winds. This caused several delays in starting the test and posed a threat during the entire test period.

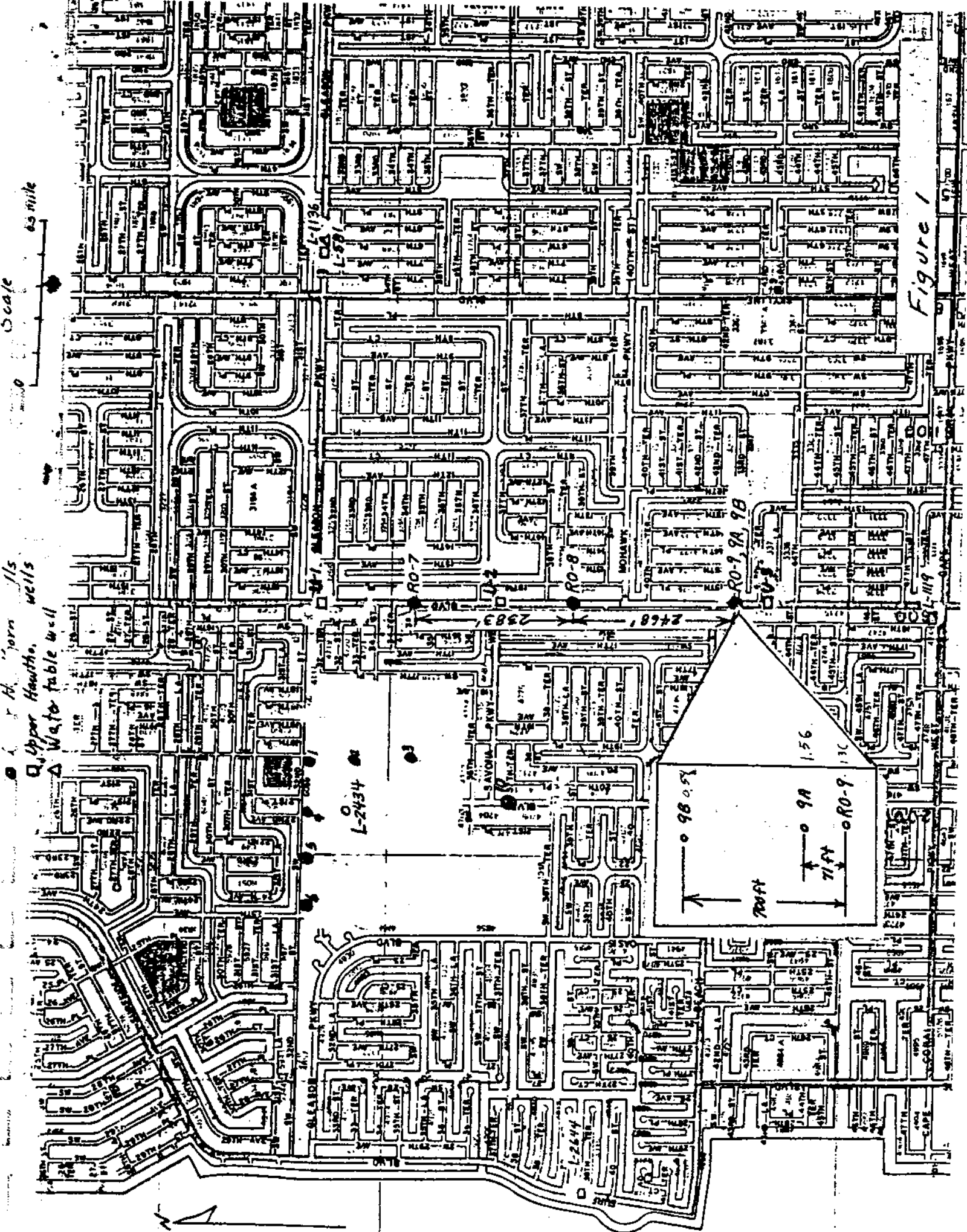
I greatly appreciate the support, assistance, and cooperation of all those who participated in the test.

Sincerely,

  
Durward H. Boggess

Enclosures

cc: Donald Kuyk



A) CHAINED  $\phi$  GLEASON & CHIQUITA TO  $\phi$  WELL U1 (NAIL  $\phi$  CAP IN PLACEMENT)

B) CHAINED  $\phi$  OF WELL TO  $\phi$  WELL

C) MONITOR WELL - 700.2' NORTH OF R.O. 9

D) MONITOR WELL - 712' NORTH OF R.O. 9



Well number	City	Depth (Ft)	Aquifer	Casing		Alt. of land sur. (NGVD)	Alt. of MP above land sur.	Sp. Cap. (gpm/ft)	Use of Well
				Depth (ft)	Diam (in)				
R0-1	L-2113	900	LH-5U	362	10	7	2.3	86	Prod.
R0-2	L-2299	745	LH	362	12	6	1.8	50	"
R0-3	L-2250	685	LH	347	12	6		102	"
R0-4	L-2251	705	LH	345	12	6	2.4	34	"
R0-5	L-2272	700	LH	350	12	6		28	"
R0-6	L-2273	765	LH	345	12	6		17	"
R0-7			Reported same as R0-9				2.3		"
R0-8			"	"	"	"	2.5		"
R0-9		748	LH	350	12	8	2.4		"
9A		737	LH	347	4	8	2.5		Obs.
9B		750	LH	350	4	8	1.9		Obs.
R0-10		755	LH	350	12	8			Prod.
	L-2494	700	LH	353	4	7.03	3.1		Obs.
U-1		270	UH	106	8	8	2.1		Prod.
U-2		265	UH	107	8	8	2.3		Prod.
U-3			Reported same as U-1			U-1	2.2		
	L-581	174	UH		8	9.92	3.0		Obs.
	L-1119	224	UH	42	2		2.1		Obs.
	L-2644	178	UH	128	4	7.51	3.2		Obs.
	L-1136	19	WT		4	9.71	2.6		Obs.

LH - Lower Hawthorn 5U - Suwannee  
 UH - Upper Hawthorn WT - Water table

OSMOSIS PLANT. AQUIFERS: WT-Water table; LH-Lower Hawthorn; UH-Upper Hawthorn. All measurements in feet referred to land surface datum.

Well No.	Aquifer	2-11	2-15	2-18	2-22	2-25	3-1	3-3	1983	3-4	3-6	3-8	3-9	3-10	3-11	3-15	3-18	3-21	3-22
L-1136	WT	4.94	4.23	4.29	4.70	4.94	4.14	4.57				3.81			4.85		4.39		1.81
U-1	UH	19.60	18.94	17.77	15.85	15.15	14.32	13.83				13.14			13.41		13.22		13.72
U-2	UH	18.60	16.49	15.44	14.20	13.68	12.82	12.35				11.93			11.80		11.47		11.60
U-3	UH	13.51	12.57	11.99	11.14	10.69	9.99	9.65				9.21			9.00		8.44		8.44
L-501	UH	27.89	25.87	24.22	22.62	21.98	20.78	20.16				18.73			21.73		21.15		21.80
L-1119	UH	13.61	12.05	11.99	11.15	10.79	10.02	9.72				9.48			9.15		8.42		8.49
L-2640	UH	2.19	1.94	1.72	1.34	1.05	0.56	0.55				0.08			1.02	+ .30	+ .43		+ .29
RO-7	LH	+13.65	+9.08	+14.45	+14.75	+14.89	+15.03	+14.84	+14.86	+15.04	+15.04	+14.58	+14.16	+13.83	+14.27	+14.06		+17.58	+17.49
RO-8	LH	+14.64	+14.65	+15.34	+15.62	+15.76	+16.18	+15.69	+15.74	+15.92	+15.92	+15.60	+15.20	+14.92	+15.20		+16.92		+18.27
RO-9	LH	+11.36	+13.17	+13.84	+14.04	+14.16	+14.22	+14.08	+14.14	+14.43	+14.43	+13.70	+13.24	+12.96	+13.53		-17.48	+16.79	+17.15
9A	LH	+12.76	+13.21	+13.89	+14.10	+14.17	+14.30		+14.38	+14.51	+14.51	+13.76			+13.60	+13.52	-1.11		+16.70
9B	LH	+11.84	+12.53	+13.27	+13.45	+13.55	+13.63	+13.27	+13.59	+13.89	+13.89	+13.16	+12.69	+12.88	+12.98	+12.98	+11.80	+16.67	+16.49
L-2484	LH	-10.22	-4.61	-3.61	-3.66	-3.39	-3.72	-3.80	-4.92					-10.37	-7.90	-5.01	+ .84	+1.96	+1.81



Well No.	3-25	3-24	3-27	3-28	3-29	3-30	3-31	4-1	1983	4-2	4-3	4-4	4-5	4-6	4-7	4-8
L-1136			4.56		4.49		4.56			4-2			4.99	4-6	4-7	4-8
U-1			13.95		14.12	14.19	14.16	14.30	14.59	14.99		15.49	15.85	16.30	16.63	16.76
U-2			11.55	11.21	11.64	11.73	11.71	11.99	12.14	12.30		12.62	12.87	13.13	13.54	13.80
U-3			8.08	7.98	8.11	8.16	8.11	8.29	8.29	8.37	8.57		8.73	9.09	9.34	9.43
L-581			22.22		23.01		23.56						27.13		27.08	
L-1119			8.13		8.18	8.22	8.20	8.33	8.33	8.44	8.67		8.95	9.29	9.76	9.93
L-2644			+ .43		+ .40		+ .55			+ .47			+ .40		+ .50	+ .28
R0-7	+17.61	+18.05	+17.88													
R0-8	+18.37	+18.88	+18.62													
R0-9	+16.87	+17.18	+16.96													
9A	+16.92		+17.06													
9B	+16.56	+17.02	+16.68													
L-2434		+2.58			+1.15		+ .22						- .52		- .46	

See aquifer test data

Table 3.- RAINFALL RECORDS FROM THE CAPE CORAL  
REVERSE OSMOSIS PLANT

	1983											
	Feb.	Mar.	Apr.									
1		.03										
2	2.1		.05									
3												
4												
5												
6	1.25											
7	.4	1.07										
8		.79										
9			.03									
10	.5	.26	1.25									
11		.10	.30									
12	.82											
13	2.06											
14												
15		.23										
16	.8	.32										
17	.19	1.33										
18												
19	.8											
20												
21		.22										
22												
23												
24		2.00										
25												
26												
27	2.17	1.10										
28	1.04	.05										
29												
30												
31												
Total	12.07	7.43										

## AQUIFER TEST

## Drawdown

Pumped Well

Well No. RO-9Date 3-28-83 Location Cape CoralMeas. Point 2.4 ft above 15  
Top plate of well

Clock Time	Elapsed Time (Min.)	Water level referred to MP	Water Level	Drawdown in Feet	Pumping Rate Meter reading
0829	0	+14.64	+14.64	0	021298300
0900	Start				
0901	1.0	10 - 1.76	- 8.24	22.88	
	2.5	10 + .08	9.92	24.56	760 gpm
	3.0	10.45	10.45	25.09	
	4.0	11.01	11.01	25.65	
	5.0	11.38	11.38	26.02	
	6.0	11.70	11.70	26.34	
	7.25	12.29	12.29	26.93	
	8	12.53	12.53	27.17	
	9	12.79	12.79	27.43	
	10	12.94	12.94	27.58	
	12	13.32	13.32	27.96	
	14	13.66	13.66	28.30	
	16	14.04	14.04	28.68	
	18	14.37	14.37	29.01	
	20	14.59	14.59	29.23	
	22	14.84	14.84	29.48	
	24	15.02	15.02	29.66	
	26	15.23	15.23	29.87	
	28	15.41	15.41	30.05	
	30	15.54	15.54	30.18	
	33	16.01	16.01	30.65	
	36	16.27	16.27	30.91	
0940	40	16.52	16.52	31.16	

II-9

RO-9

Test 3

1

## AQUIFER TEST

Pumped Well

Well No. RO-9Date 5-28-83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
0945	45	16.88	31.52	
	50	17.14	31.78	
	55	17.39	32.03	
1000	60	17.62	32.26	21344500
	65	17.86	32.50	
	70	18.01	32.65	
	80	18.33	32.97	38 1/2 - 765 gpm
	90	18.71	33.35	
	100	19.03	33.67	
	120	19.47	34.11	
	140	19.85	34.49	213922 (124 min.)
	150	20.12	34.76	38 1/2" = 765 gpm
1200	180	20.39	35.03	21454 38 1/2" = 765 gpm
1220	200	20.60	35.24	38 1/2" = 765 gpm
1250	230	20.84	35.48	21472 38 1/2" = 765 gpm
1320	260	21.07	35.71	21495 38 1/2" = 765 gpm
1350	290	21.44	36.08	21517 38 1/2" = 765 gpm
1420	320	21.60	36.24	21540 38 1/2" = 765 gpm
1450	350	21.76	36.40	21562 38 1/2" = 765 gpm
1530	390	21.93	36.57	21592 38 1/2" = 765 gpm
1610	430	22.06	36.70	21623 38 1/2" = 765 gpm
1650	470	22.44	37.08	21653 38 1/2" = 765 gpm
1740	520	22.62	37.26	21690 38 1/2" = 765 gpm
1841	581	22.82	37.46	

AQUIFER TEST

Pumped Well

Well No. RO-9

Date 3-28-83 Location Cape Coral  
to 4-1-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet Static 114.64	Pumping Rate 212 983 00 Sta
1940	640	22.96	37.60	
2000	660			21795900 Me F
2040	700	23.15	37.79	7549pm
2140	760	23.29	37.93	
2240	820	23.44	38.08	38 1/2" (765 gpm)
2400	900	23.60	38.24	
0140	1000	23.72	38.36	38 1/2" = 765 gpm
0320	1100	23.94	38.73	38 1/2" = 765 gpm
0500	1200	23.93	38.63	38 1/2" = 765 gpm
0640	1300	24.08	38.73	38 1/2" = 765 gpm
0800	1380			Meter 022337700
0820	1400	24.18	38.82	
1000	1500	24.33	38.97	(7539pm) 022428300
1320	1700	24.54	39.18	(7539pm) 022578200
1640	1900	24.62	39.26	38 1/2" - 765 gpm
2000	2100	24.74	39.38	
0205	2465	24.97	39.61	
0600	2700	25.01	39.65	
1100	3000	25.11	39.75	23544100
1740	3400	25.15	39.79	(748 gpm) 23840700
0020	3800	25.34	39.98	24139800
0840	4300	25.35	39.99	24512200
1700	4800	25.55	40.19	24882000
0300	5400	25.72	40.36	25325600

AQUIFER TEST

Pumped Well

Well No. RO-9

Date 4-1-83 Location Cape Coral  
to 4-7-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet Static +14.64	Pumping Rate
1300	6000	-25.84	40.48	25,770,300
2300	6600	25.94	40.58	26,219,000
0900	7200	25.95	40.59	26,667,700
2100	7920	26.08	40.72	27,200,800
0830	8610	26.25	40.89	27,716,700
2100	9360	26.29	40.93	28,276,800
0900	10,080	26.41	41.05	28,814,700
2100	10,800	26.51	41.15	29,348,200
0900	11,520	26.53	41.17	29,879,300
2100	12,240	27.07	41.71	Adjust O 30,819,400
0900	12,960	27.04	41.68	30,861,100
2100	13,680	27.10	41.74	31,501,600
0750	14,330	27.16	41.80	
0900	14,400	27.12	41.76	
0905	14,405			32,045,900
$32,045,900 - 21,298,300 / 14,405 = 746.9$				
746 gpm Avg. Rate for Test Period				

AQUIFER TEST

Pumped Well

Well No.

RO-9

Date 4-1-83  
to 4-7-83

Location

Cape Coral

Meas. Point

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet Static +14.64	Pumping Rate
1300	6000	-25.84	40.48	25,770,300
2300	6600	25.94	40.58	26,219,000
0900	7200	25.95	40.59	26,667,700
2100	7920	26.08	40.72	27,200,800
0830	8610	26.25	40.89	27,716,700
2100	9360	26.29	40.93	28,276,800
0900	10,080	26.41	41.05	28,814,700
2100	10,800	26.51	41.15	29,348,200
0900	11,520	26.53	41.17	29,879,300
2100	12,240	27.07	41.71	Adj. 28,919,400
0900	12,960	27.04	41.68	30,861,100
2100	13,680	27.10	41.74	31,501,600
0750	14,330	27.16	41.80	
0900	14,400	27.12	41.76	
0905	14,405			32,045,900
$32,045,900 - 21,298,300 / 14,405 = 746.9 \text{ gpm}$				
746 gpm Avg. Rate for Test Period				

Date	Time	Meter Reading	Difference	Time (min.) elapsed		Pumping rate (gpm)
3-28-83	0900	21,298,300	0	0		
	1000	21,344,500	46,200	60	60	770
	1200	21,434,000	89,500	100	120	746
	1450	21,562,000	128,000	350	170	753
	1740	21,690,000	128,000	520	170	756
3-29	0800	22,337,700	541,800	1300	720	752
	1000	22,428,300	90,600	1500	120	755
	1320	22,578,200	149,900	1700	200	750
3-30	1100	23,544,100	965,900	3000	1300	743
	1740	23,840,700	296,600	3400	400	742
3-31	0020	24,139,800	299,100	3800	400	748
	0840	24,512,200	372,400	4300	500	745
	1700	24,882,000	369,800	4800	500	740
-1	0300	25,325,600	443,600	5400	600	739
	1300	25,770,300	444,700	6000	600	741
	2300	26,219,000	448,700	6600	600	748
4-2	0900	26,667,700	448,700	7200	600	748
	2100	27,200,800	533,100	7920	720	740
4-3	0830	27,716,700	515,900	8610	690	748
	2100	28,276,800	560,100	9360	750	747
4-4	0900	28,814,700	537,900	10,080	720	747
	2100	29,348,200	533,500	10,800	720	741
4-5	0900	29,879,300	531,100	11,520	720	738
	2100	30,419,400	540,100	12,240	720	750
4-6	0900	30,961,100	541,700	12,960	720	752
	2100	31,501,600	540,500	13,680	720	751
4-7	0905	32,045,900	544,300	14,405	725	751
Total	10,746,600 gal Average pumping rate = 746 gpm					



## AQUIFER TEST

## Recovery

Well No. RO-9Date 4-7-83 Location Cape CoralMeas. Point 2.4ft above 1st  
Top plate of well.

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet PWL -27.12	Pumping Rate
0750		-27.16		
0900	0	-27.12		
0905 0909	4	+1.04	28.16	Pump off
0910	5	1.51	28.63	
	6	1.91	29.03	
	7	2.28	29.40	
	8	2.58	29.70	
	9	2.86	29.98	
0915	10	3.10	30.22	
	12	3.54	30.66	
	14	3.89	31.01	
	16	4.21	31.33	
	18	4.51	31.63	
0925	20	4.77	31.89	
	22	4.99	32.11	
	24	5.21	32.33	
	26	5.41	32.53	
	28	5.60	32.72	
0935	30	5.78	32.90	
	33	6.02	33.14	
	36	6.24	33.36	
0945	40	6.53	33.65	
	45	6.82	33.94	
	50	7.10	34.32	

II-14

RO-9

Test 3 Rec 1

## AQUIFER TEST

Well No. RO-9Date 4-7-83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Recovery Drawdown in Feet PWL - 27.12	Pumping Rate
55	55		7.33	34.45	
60	60		7.56	34.68	
65	65		7.77	34.89	
	70		7.96	35.08	
	80		8.27	35.39	
1035	90		8.55	35.67	
	100		8.81	35.93	
1105	120		9.22	36.34	
	140		9.56	36.68	
	160		9.84	36.96	
1205	180		10.08	37.20	
1255	200		10.28	37.40	
1355	230		10.56	37.63	
1355	260		10.79	37.91	
1355	290		10.99	38.11	
1425	320		11.16	38.28	
1455	350		11.31	38.43	
1535	370		11.48	38.60	
1615	430		11.63	38.75	
1655	470		11.76	38.88	
1745	520		11.89	39.01	
1845	580		12.04	39.16	
1945	640		12.12	39.24	
2045	700		12.22	39.34	

II-15

RO-9

Test 3 Rec

2

## AQUIFER TEST

Well No. RO-9

Date 07-07-83 Location GIVE COZIL

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Tape Reading Held - Wet	Water Level	Recovery Drawdown in Feet <i>PNL - 27/12</i>	Pumping Rate
2145	760		12.33	<del>38.45</del>	
2245	820		12.42	39.54	
<small>(09-83)</small> 0005	900		12.54	39.66	
0145	1000		12.70	39.82	
0325	1100		12.83	39.95	
0505	1200		12.92	40.04	
0645	1300		12.99	40.11	
0825	1400		13.09	40.21	
0905	1440		13.13	40.25	

## AQUIFER TEST

## Drawdown

Well No. 9ADate 3-28-83 Location Cape Coral  
(GFR)Meas. Point 2.5ft above / so  
Top of cap

Clock Time	Elapsed Time (Min.)	Water level referred to MP	Water Level	Drawdown in Feet Static WL +14.64	Pumping Rate
0828	0	+14.64		0	
	0.25	+11.15 (above MP)		3.49	
	0.50	+10.42		4.22	
	0.75	+9.95		4.79	
	1.00	+9.50		5.06	
	1.5	+8.73		5.96	
	2	+8.28		6.36	
	2.5	+7.92		6.77	
	3	+7.52		7.12	
	3.5	+7.23		7.41	
	4	+6.93		7.71	
	4.5	+6.75		7.89	
	5	+6.55		8.07	
	6	+6.20		8.44	
	7	+5.82		8.82	
	8	+5.58		9.06	
	9	+5.33		9.31	
	10	+5.12		9.52	
	10	+4.75		9.89	
	12	+4.43		10.21	
	14	+4.13		10.51	
	16	+3.83		10.81	
	20	+3.59		11.05	
	25	+3.38		11.26	

AQUIFER TEST

Well No. 9A

Date 03-28-83 Location CHUDITA PUMP ST. E CORN  
(GFR)

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet Static +14.64	Pumping Rate
		+3.18'		11.46	
	20	+2.97		11.65	
	25	+2.33		11.31	
	30	+2.67		11.97	
	35	+2.42		12.22	
	36	+2.18		12.46	
	40	+1.73		12.71	
	45	+1.63		13.01	
	50	+1.38		13.26	
	55	+1.13		13.51	
1000	60	+0.93		13.71	
1005	65	+0.72		13.92	
1010	70	+0.55		14.09	
1020	80	+0.33		14.31	
1030	90	-0.06 <small>BELOW MP</small>	-0.06	14.53	
1050	100	1.00 - 0.69	-0.31	14.89	
1100	120	1.00 - 0.27	-0.73	15.47	
1120	140	2.00 - 0.93	-1.07	15.71	
1141	161	2.00 - 0.63 = 1.37	-1.37	16.01	
1200	180	2.00 - 0.40 = 1.60	-1.60	16.34	
1220	201	2.00 - 0.20 = 1.80	-1.80	16.44	
1252	232	3.00 - 0.96 = 2.04	-2.04	16.60	
1300	241	3.00 - 0.76 = 2.24	-2.24	16.80	
1310	251	3.00 - 0.52 = 2.48	-2.48	17.12	

AQUIFER TEST

Well No. 9A

Date 03-29-83 Location Cape Coral

Meas. Point \_\_\_\_\_

3-29-83  
3-30-83

Clock Time	Elapsed Time (Min.)		Water Level	Static + 14.64 Drawdown in Feet	Pumping Rate
		$3.00 - 0.52 = 2.48$		17.12	
1421	321	$3.00 - 0.36 = 2.64$	-2.64	17.28	
1451	351	$3.00 - 0.22 = 2.78$	-2.78	17.42	
1531	391	$3.00 - 0.07 = 2.93$	-2.93	17.57	
1611	431	$4.00 - 0.92 = 3.08$	-3.08	17.72	
1651	471	$4.00 - 0.72 = 3.28$	-3.28	17.92	
1741	521	$4.00 - 0.57 = 3.43$	-3.43	18.07	
1844	584	3.61	-3.61	18.25	
1942	642	3.75	-3.75	18.39	
2043	703	3.92	-3.92	18.56	
2142	762	4.06	-4.06	18.70	
2241	821	4.17	-4.17	18.81	
3-29 0002	902	4.32	-4.32	18.96	
0146	1006	$5.00 - 0.55 = 4.45$	-4.45	19.09	$30 \frac{1}{2} = 765 \text{ gpm}$
0323	1103	$5.00 - 0.44 = 4.56$	-4.56	19.20	$32 \frac{1}{2} = 755 \text{ gpm}$
0502	1202	$5.00 - 0.36 = 4.64$	-4.64	19.23	$39 \frac{1}{2} = 765 \text{ gpm}$
0642	1302	$5.00 - 0.24 = 4.76$	-4.76	19.40	$30 \frac{1}{2} = 765 \text{ gpm}$
0821	1401	4.86	-4.76	19.50	
1002	1502	4.98	-4.98	19.62	
1322	1702	5.13	-5.13	19.77	
1645	1905	5.18	-5.18	19.82	
2003	2103	5.29	-5.29	19.93	
3-30 0210	2470	5.49	-5.49	20.13	
0603	2703	5.52	-5.52	20.16	
1101	3001	5.64	-5.64	20.28	

AQUIFER TEST

Well No. 9A

Date 3-30-83 Location Cape Coral  
to 4-7-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet Stat + 14.64	Pumping Rate
1743	3403	- 5.64	20.28	
0024	3804	5.79	20.43	
0842	4302	5.80	20.44	
1702	4802	5.96	20.60	
0303	5403	6.14	20.78	
1303	6003	6.27	20.91	
2303	6603	6.33	20.97	
0902	7202	6.37	21.01	
2103	7923	6.44	21.08	
0825	8605	6.55	21.19	
2102	9362	6.63	21.27	
0902	10,082	6.70	21.34	
2102	10,802	6.77	21.41	
0902	11,522	6.81	21.45	
2102	12,242	7.03	21.67	
0902	12,962	7.05	21.69	
2102	13,682	7.09	21.73	
0755	14,335	7.11	21.75	
0900	14400	- 7.13	21.77	

AQUIFER TEST

Recovery

Well No. 9A

Date 4-7-03 Location Cape Coral

Meas. Point 2.5 ft. above 1. Top of cap

Clock Time	Elapsed Time (Min.)		Water Level	Recovery Drawdown in Feet PNL -7.13	Pumping Rate
0755			-7.11		
0900	-	2.00 - 0.87	-7.13		
0905	Pump off				
	24 sec	2+	-2.00	5.13	
	1:59	1:59 <small>AT TUBE @ TOP =</small>	<small>AT TUBE @ TOP =</small> +0.10'	7.23	
	3		+0.99	8.12	
	3 1/2		+1.29	8.42	
	4		+1.51	8.64	
	4 1/2		+1.75	8.88	
	5		+1.97	9.10	
	5 1/2		+2.16	9.29	
	6		+2.36	9.49	
	7		+2.63	9.81	
	8		+3.01	10.14	
	9		+3.25	10.38	
	10		+3.49	10.62	
	12		+3.70	11.03	
	14		+4.26	11.39	
	16		+4.57	11.70	
	18		+4.85	11.98	
	20		+5.09	12.22	
	22		+5.32	12.45	
	24		+5.53	12.66	
	26		-5.77	12.85	

9A II-21

Test 3 Rec

1



AQUIFER TEST

Recovery

Well No. 9A

Date 04-07-83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet P.W.L. -7.13	Pumping Rate
	20	+5.90	-13.03	
	30	+6.05	13.18	
	33	+6.29	13.42	
	36	+6.50	13.63	
	40	+6.75	13.88	
	45	+7.04	14.17	
	50	+7.31	14.44	
	55	+7.54	14.67	
	60	+7.74	14.87	
	65	+7.94	15.07	
	70	+8.12	15.25	
	80	+8.43	15.56	
	90	+8.69	15.82	
	100	+8.93	16.06	
	120	+9.34	16.47	
	140	+9.67	16.80	
	160	+9.94	17.07	
	180	+10.14	17.29	
	202	+10.39	17.52	
	332	+10.52	17.77	
1307	212	+10.81	18.00	
1357	202	+11.07	18.20	
1426	321	+11.24	18.37	
1457	352	+11.38	18.51	

9A II-22

Test 3 Rec

# RECOVERY

Well No. 94

Date 02-07-83 Location Cape Coral  
 to 4-8-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Tape Reading Held - Wet	Water Level	Recovery Drawdown in Feet PWL - 713	Pumping Rate
1537	392		+11.55	18.68	
1617	432		+11.70	18.83	
1657	472		+11.82	18.95	
1747	522		+11.92	19.05	
1846	581		+12.08	19.21	
1950	645		+12.16	19.29	
2048	703		+12.27	19.40	
2148	763		+12.37	19.50	
2248	823		+12.45	19.58	
2347	882		+12.57	19.70	
0147	1002		+12.73	19.86	
0327	1102		+12.86	19.99	
0507	1202		+12.96	20.09	
0646	1301		+13.02	20.15	
0827	1402		+13.11	20.24	
0909	1444		+13.16	20.29	

9A

II-23

Test 3 Rec

3

## AQUIFER TEST

## Draw down

Well No. 9BDate 3-28-83 Location Cape CoralMeas. Point 1.9 ft. above 1st  
Former top of cap

Clock Time	Elapsed Time (Min.)	Water level referred to MP	Water Level	Drawdown in Feet	Pumping Rate
0800	0	+14.90			
0858	0	+14.88			
	15 sec	+14.87		0.01	
	30 sec	+14.85		0.03	
	15 sec	+14.83		0.05	
	1 min	+14.80		0.08	
	1 1/2	+14.76		0.12	
	2	+14.70		0.18	
	2 1/2	+14.65		0.23	
	3	+14.59		0.29	
	3 1/2	+14.55		0.33	
	4	+14.50		0.38	
	4 1/2	+14.45		0.43	
	5	+14.40		0.48	
	6	+14.32		0.56	
	7	+14.25		0.63	
	8	+14.18		0.70	
	9:07	+14.12		0.78	
	10	+14.07		0.81	
	12	+13.97		0.91	
	14	+13.88		1.00	
	16	+13.80		1.08	
	18	+13.73		1.15	
	22	+13.67		1.21	

## AQUIFER TEST

Well No. 9BDate 3-28-83 Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
	22	+13.60	1.28	
	24	+13.54	1.34	
	26	+13.49	1.39	
	28	+13.44	1.44	
	30	+13.39	1.49	
	33	+13.32	1.56	
	36	+13.26	1.62	
	40	+13.18	1.70	
	45	+13.08	1.80	
	50	+13.00	1.88	
	55	+12.93	1.95	
	60	+12.85	2.03	
	65	+12.79	2.09	
	70	+12.72	2.16	
	80	+12.61	2.27	
	90	+12.50	2.38	
	100	+12.41	2.47	
	120	+12.25	2.63	
1124	144	+12.08	2.80	
1143	153	+11.96	2.72	
1202	182	+11.86	3.02	
1222	202	+11.78	3.10	
1253	233	+11.67	3.21	
1322	262	+11.57	3.31	

II-25

9B

Test 3

2

## AQUIFER TEST

Well No. 9BDate 03-28-83 Location Cape Corral  
3-29-83  
3-30-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Static + 14.90 Drawdown in Feet	Pumping Rate
1353	273		+ 11.49	3.39	
1423	323		+ 11.42	3.46	
1453	353		+ 11.35	3.53	
1533	393		+ 11.27	3.61	
1613	433		+ 11.20	3.68	
1653	473		+ 11.12	3.76	
1743	523		+ 11.04	3.84	
1847	587		+ 10.94	3.96	
1944	644		+ 10.84	4.06	
2045	705		+ 10.74	4.16	
2144	764		+ 10.66	4.24	
2243	823		+ 10.59	4.31	
0005	905		+ 10.49	4.41	
0148	1008		+ 10.42	4.48	$33\frac{1}{2} = 765 \text{ gpm}$
0326	1106		+ 10.38	4.52	$33\frac{1}{2} = 765 \text{ gpm}$
0502	1206		+ 10.33	4.57	$33\frac{1}{2} = 765 \text{ gpm}$
0644	1304		+ 10.26	4.64	$33\frac{1}{2} = 765 \text{ gpm}$
0824	1404		+ 10.20	4.70	
1004	1504		+ 10.13	4.77	
1324	1704		+ 10.07	4.83	
1649	1909		+ 10.07	4.83	
2006	2106		+ 9.98	4.92	
0215	2475		+ 9.86	5.04	
0604	2704		+ 9.86	5.04	

AQUIFER TEST

Well No. 98

Date 3-30-83 Location Cape Coral  
 to 4-7-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet Static +14.90	Pumping Rate
1104	3004		+9.82	5.08	
1745	3905		+9.89	5.01	
0026	3806		+9.79	5.11	
0845	4305		+9.82	5.08	
1704	4804		+9.74	5.16	
0305	5405		+9.57	5.33	
1305	6005		+9.49	5.41	
2306	6606		+9.47	5.43	
0904	7204		+9.47	5.43	
2105	7925		+9.42	5.48	
0835	8615		+9.33	5.57	
2104	9364		+9.27	5.63	
0906	10,086		+9.21	5.69	
2106	10,806		+9.19	5.71	
0904	11,524		+9.17	5.73	
2105	12,245		+9.13	5.77	
0905	12,965		+9.11	5.79	
2104	13,684		+9.09	5.81	
0758	14,338		+9.08	5.82	
0900	14,400		+9.08	5.82	

AQUIFER TEST

Recovery

Well No. 9B

Date 4-7-83 Location Cape Coral

Meas. Point 1.9 ft. above l. former top of  
KREIDT - HNTB

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet	Pumping Rate
			PWL +9.08	
0758		+9.08		
0900	0	+9.08		
0905	Pump off 1/4	9.08	0	
	2	9.09	0.01	
	3 1/2	9.10	.02	
	1	9.11	.03	
	1 1/2	9.15	.07	
	2	9.19	.11	
	2 1/2	9.21	.13	
	3	9.25	.17	
	3 1/2	9.30	.22	
	4	9.34	.26	
	4 1/2	9.38	.30	
	5	9.41	.33	
	5 1/2	9.48	.40	
	7	9.54	.46	
	8	9.60	.52	
	9	9.65	.57	
	10	9.70	.62	
	12	9.80	.72	
	14	9.85	.80	
	16	9.86	.88	
	18	9.95	.95	
	20	10.00	1.01	

AQUIFER TEST

Well No. 9B

Date 4-7-83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Recovery Drawdown in Feet PWL +9.08	Pumping Rate
	22		10.15	1.07	
	24		10.21	1.13	
	26		10.26	1.18	
	28		10.31	1.23	
	30		10.36	1.28	
	33		10.43	1.35	
	35		10.49	1.41	
	40		10.57	1.49	
	45		10.57	1.59	
	50		10.76	1.68	
	55		10.89	1.76	
	60		10.91	1.83	
	65		10.98	1.90	
	70		11.06	1.98	
	80		11.17	2.09	
	90		11.29	2.21	
	100		11.39	2.31	
	120		11.58	2.50	
	140		11.74	2.66	
	160		11.83	2.80	
	180		12.00	2.92	
	200		12.11	3.03	
1257	232		12.20	3.20	
1328	364		12.20	3.53	



# AQUIFER TEST

Well No. 9B

Date 04-07-33 Location Cape Coral  
RECOVERY

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet <i>PWL + 9.08</i>	Pumping Rate
1358	293	+12.52	3.44	
1428	323	+12.63	3.55	
1459	354	+12.71	3.63	
1539	394	+12.82	3.74	
1619	434	+12.90	3.82	
1659	474	+12.98	3.90	
1749	524	+13.05	3.97	
1848	583	+13.13	4.05	
1955	650	+13.20	4.12	
2051	706	+13.24	4.16	
2150	765	+13.30	4.22	
2250	825	+13.34	4.26	
2359	884	+13.43	4.35	
0029	904	+13.54	4.46	
0329	1104	+13.64	4.56	
0507	1204	+13.70	4.62	
0628	1303	+13.74	4.66	
0829	1404	+13.80	4.72	
0915	1450	+13.82	4.74	

AQUIFER TEST

# Drawdown

Well No. RO-8

Date 3-28-85 Location Cape Coral

Meas. Point 2.5 ft. above 15  
Top plate of well

Clock Time	Elapsed Time (Min.)	Water level referred to MP	Water Level	Drawdown in Feet	Pumping Rate
0813	0	+16.24		:	
8:57	—	+16.21 +13.21	+16.21 +16.21	0	
	1/4			0	
	1/2			0	
	3/4			0	
	1			0	
	1 1/2			0	
	2			0	
	2 1/2			0	
	3			0	
	3 1/2			0	
	4			0	
	4 1/2			0	
	5			0	
	6			0	
	7			0	
	8			0	
	9			0	
	10			0	
	12			0	
	14			0	
	16			0	
	18	+13.21	+16.21	0	
	20	+13.20	+16.20	0.01	

DRAW DOWN TO READINGS

AQUIFER TEST

Well No. R.O. # 8

Date 3-28-83 Location Cape Coral

Meas. Point \_\_\_\_\_

500  
400  
300  
200  
100  
0  
100  
200  
300  
400  
500  
600  
700  
800  
900  
1000  
1100  
1200  
1300  
1400  
1500  
1600  
1700  
1800  
1900  
2000  
2100  
2200  
2300  
2400  
2500  
2600  
2700  
2800  
2900  
3000  
3100  
3200  
3300  
3400  
3500  
3600  
3700  
3800  
3900  
4000  
4100  
4200  
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6800  
6900  
7000  
7100  
7200  
7300  
7400  
7500  
7600  
7700  
7800  
7900  
8000  
8100  
8200  
8300  
8400  
8500  
8600  
8700  
8800  
8900  
9000  
9100  
9200  
9300  
9400  
9500  
9600  
9700  
9800  
9900  
10000  
10100  
10200  
10300  
10400  
10500  
10600  
10700  
10800  
10900  
11000  
11100  
11200  
11300  
11400  
11500  
11600  
11700  
11800  
11900  
12000  
12100  
12200  
12300  
12400  
12500  
12600  
12700  
12800  
12900  
13000  
13100  
13200  
13300  
13400  
13500  
13600  
13700  
13800  
13900  
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14300  
14400  
14500  
14600  
14700  
14800  
14900  
15000  
15100  
15200  
15300  
15400  
15500  
15600  
15700  
15800  
15900  
16000  
16100  
16200  
16300  
16400  
16500  
16600  
16700  
16800  
16900  
17000  
17100  
17200  
17300  
17400  
17500  
17600  
17700  
17800  
17900  
18000  
18100  
18200  
18300  
18400  
18500  
18600  
18700  
18800  
18900  
19000  
19100  
19200  
19300  
19400  
19500  
19600  
19700  
19800  
19900  
20000

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet Static +16.21	Pumping Rate
	22	+13.20	+16.20	.01
	24	+13.20	+16.20	
	26	+13.20	+16.20	
	28	+13.19	+16.19	.02
	30	+13.19	+16.19	
	33	+13.19	+16.19	
	36	+13.18	+16.18	.03
	40	+13.18	+16.18	
	45	+13.17	+16.17	.04
	50	+13.16	+16.16	.05
	55	+13.15	+16.15	.06
	60	+13.15	+16.15	
	65	+13.14	+16.14	.07
	70	+13.13	+16.13	.08
	80	+13.11	+16.11	.10
	90	+13.11	+16.11	
	100	+13.10	+16.10	.11
	110	+13.08	+16.08	.13
	120	+13.05	+16.05	.16
	140	+13.01	+16.01	.20
	150	+13.00	+16.00	.21
5	155	+12.94	+15.94	.27
5 1/2	156	+12.92	+15.92	.29
2		+12.94	+15.94	.27

11:42 A.M.

12:02 PM

AQUIFER TEST

Well No. R.O. #8

Date 3-28-83 Location Cape Coral  
3-29-83  
3-30-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet Static + 16.21	Pumping Rate
1:12	270	12.92	+ 15.92	.29	
1:22	320	12.91	+ 15.91	.30	
1:32	350	12.88	+ 15.88	.33	
1:42	390	12.87	+ 15.87	.34	
1:52	430	12.83	+ 15.83	.38	
2:02	470	12.80	+ 15.80	.41	
1746	526	12.72	+ 15.72	.49	
1850	590	12.69	+ 15.69	.52	
1950	650	12.62	+ 15.62	.59	
2051	711	12.56	+ 15.56	.65	
2151	771	12.49	+ 15.49	.72	
2:251	831	12.43	+ 15.43	.76	
0013	913	12.38	+ 15.38	.83	30' = 7.5 gpm
0156	1016	12.33	+ 15.33	.88	30' = 7.5 gpm
0335	1115	12.28	+ 15.28	.93	30' = 7.5 gpm
05:5	1215	12.25	+ 15.25	.96	30' = 7.5 gpm
0552	1312	12.19	+ 15.19	1.02	30' = 7.5 gpm
0826	1406	12.16	+ 15.16	1.05	
1006	1506	12.08	+ 15.08	1.13	
1327	1707	12.05	+ 15.05	1.16	
1651	1911	12.04	+ 15.04	1.17	
2010	2110		+ 14.97	1.24	
0218	2478		+ 14.83	1.36	
0610	2710		+ 14.63	1.38	

READINGS

## AQUIFER TEST

Well No. RO-8Date 3-30-83 Location Cape Coral  
to 4-7-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Add 3ft. to reading	Water Level	Drawdown in Feet Static +16.21	Pumping Rate
3-30 1107	3007		+14.79	1.42	
1750	3410		+14.85	1.36	
3-31 0030	3810		+14.76	1.45	
0850	4310	+11.78	+14.78	1.43	
1708	4808		+14.69	1.52	
4-1 0308	5408		+14.54	1.67	
1315	6015		+14.46	1.75	
2309	6609		+14.44	1.77	
4-2 0906	7206		+14.44	1.77	
2107	7927		+14.39	1.82	
4-3 0840	8620	+11.32	+14.32	1.89	
2107	9367		+14.26	1.95	
4-4 0928	10,108		+14.21	2.00	
2110	10,810		+14.19	2.02	
4-5 0915	11,535		+14.19	2.02	
2108	12,248		+14.18	2.03	
4-6 0907	12,467		+14.18	2.03	
2108	13,688		+14.17	2.04	
4-7 0757	14,337		+14.18	2.03	
0900	14,400		+14.18	2.03	

II-34

RO-8

Test 3

4

AQUIFER TEST

Recovery

Well No. RO-8  
 Meas. Point 2.5 ft above top plate of well

Date 4-7-83 Location Cipe Coral

W<sup>m</sup> A. PARSONS/HNTB

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet PWL +14.18	Pumping Rate
0757		+14.18	0	
0900	0	14.18	}	
0905	Pump off 4	14.18		
	1/2	14.18		
	3/4	14.18		
	1	14.18		
	1 1/2	14.18		
	2	14.18		
	2 1/2	14.18		
	3	14.18		
	3 1/2	14.18		
	4	14.18		
	4 1/2	14.18		
	5	14.18		
	6	14.18		
	7	14.18		
	8	14.18		
	9	14.18		
	10	14.18		
	12	14.19	0.01	
	14	14.19	}	
	16	14.19		
	18	14.19		
	20	14.19		

AQUIFER TEST

Recovery

Well No. RO-8

Date 4-7-33 Location CAOC Coral

Meas. Point \_\_\_\_\_

W<sup>m</sup> A Parsons/HNTB

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet PWL +14.18	Pumping Rate
	22	14.19	.01	
	24	14.19		
	26	14.20	.02	
	28	14.20		
	30	14.20		
	33	14.21	.03	
	36	14.21		
	40	14.21		
	45	14.21		
	50	14.22	.04	
	55	14.23	.05	
	60   <sup>1</sup> / <sub>hr</sub>	14.24	.06	
	65   <sup>10</sup> / <sub>s</sub>	14.24		
	70   <sup>10</sup> / <sub>s</sub>	14.25	.07	
	80   <sup>20</sup> / <sub>s</sub>	14.26	.08	
	90   <sup>30</sup> / <sub>s</sub>	14.27	.09	
	100   <sup>40</sup> / <sub>s</sub>	14.28	.10	
	120 (2 <sup>1</sup> / <sub>hr</sub> )	14.30	.12	
	140 (2 <sup>20</sup> / <sub>s</sub> )	14.33	.15	
	160 (2 <sup>40</sup> / <sub>s</sub> )	14.35	.17	
	180 (3 <sup>15</sup> / <sub>s</sub> )	14.39	.21	
	2:2	14.41	.23	
1259	234	14.46	.28	
1331	246	14.51	.33	

## AQUIFER TEST

Well No. RO-8Date 04-07-83 Location Cape Coral

Meas. Point \_\_\_\_\_

to 4-8-83

Clock Time	Elapsed Time (Min.)		Water Level	Recovery Drawdown in Feet PWL +14.18	Pumping Rate
1401	296		+14.55	.37	
1431	326		+14.58	.40	
1502	357		+14.62	.44	
1541	396		+14.66	.48	
1622	437		+14.68	.50	
1701	476		+14.72	.54	
1751	526		+14.74	.56	
1851	586		+14.76	.58	
2000	655		+14.77	.59	
2054	709		+14.76	.58	
2153	768		+14.80	.62	
2253	828		+14.83	.65	
4-8 0013	903		+14.83	.70	
0152	1007		+14.97	.79	
0332	1107		+15.03	.85	
0512	1207		+15.08	.90	
0650	1305		+15.11	.93	
0832	1407		+15.17	.99	
0925	1460		+15.19	1.01	

RO-8 II-37

Test 3 Rec

3



## Drawdown

Well No. RO-7Date 3-28-83 Location Cape CoralMeas. Point 2.3 ft. above  
Top plate of well.

Background wells RO-1, 2, 4, and 6 pumping

Clock Time	Elapsed Time (Min.)	Water level referred to MP	Water Level	Drawdown in Feet Static +15.71	Pumping Rate
0819	0	+15.71		0	
0900	0	+15.71			
	15 sec	+15.71			
	30 sec	+15.71			
	45 sec	+15.71			
	1	+15.71			
	1½	+15.71			
	2	+15.71			
	2½	+15.71			
	3	+15.71			
	3½	+15.71			
	4	+15.71			
	5	+15.71			
	6	+15.71			
	7	+15.71			
	8	+15.71			
	9	+15.71			
	10	+15.71			
	12	+15.71			
	14	+15.71			
	16	+15.71			
	18	+15.71			
	20	+15.71			
	22	+15.71			
	24	+15.71			

II-33  
RO-7

Test 3

1

AQUIFER TEST

Well No. RO-7

Date 3-28-83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet <i>Static +15.71</i>	Pumping Rate
	26	+15.71	0	
	28	+15.71	0	
	30	+15.70	0.01	
	33	+15.70		
	36	+15.70		
	40	+15.70		
	45	+15.70		
	50	+15.70		
	55	+15.70		
1000	60	+15.69	.02	
	65	+15.69		
	70	+15.69		
	80	+15.68	.03	
	90	+15.68		
	100	+15.67	.04	
1100	120	+15.66	.05	
	140	+15.64 <i>11:22 A.M.</i>	.07	
	160	+15.63	.08	
	180	+15.62	.09	
	206	+15.61	.10	
	239	+15.61		
	260	+15.60	.11	
	290	+15.59	.12	
	320	+15.58	.13	

AQUIFER TEST

Well No. RO-7

Date 23-28-83 Location Cape Coral  
3-29-83  
3-30-83

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet <i>Static +15.71</i>	Pumping Rate
	350	+ 15.57		.14	
	390	+ 15.56		.15	
	430	+ 15.55		.16	
	470	+ 15.53		.18	
1749	529	+ 15.50		.21	
1853	593	+ 15.45		.26	
1947	647	+ 15.39		.32	
2049	709	+ 15.34		.37	
2148	768	+ 15.29		.42	
2247	827	+ 15.23		.48	
0009	909	+ 15.17		.54	30 1/2" = 765 gpm
0154	1014	+ 15.13		.58	38 1/2" = 765 gpm
0330	1110	+ 15.12		.59	33 1/2" = 765 gpm
0511	1211	+ 15.09		.62	32 1/2" = 765 gpm
0643	1308	+ 15.02		.67	38 1/2" = 765 gpm
0828	1408	+ 14.99		.72	
1008	1508	+ 14.93		.78	
1330	1710	+ 14.89		.82	
1655	1915	+ 14.88		.83	
2014	2114	+ 14.82		.89	
0220	2480	+ 14.69		1.02	
0610	2710	+ 14.69		1.02	
1114	3014	+ 14.66		1.05	
1752	3412	+ 14.70		1.01	

II-40  
 RO-7

Test 3

AQUIFER TEST

Well No. RO-7

Date 3-31-83 Location Cape Coral  
to 4-7-83

Meas. Point \_\_\_\_\_

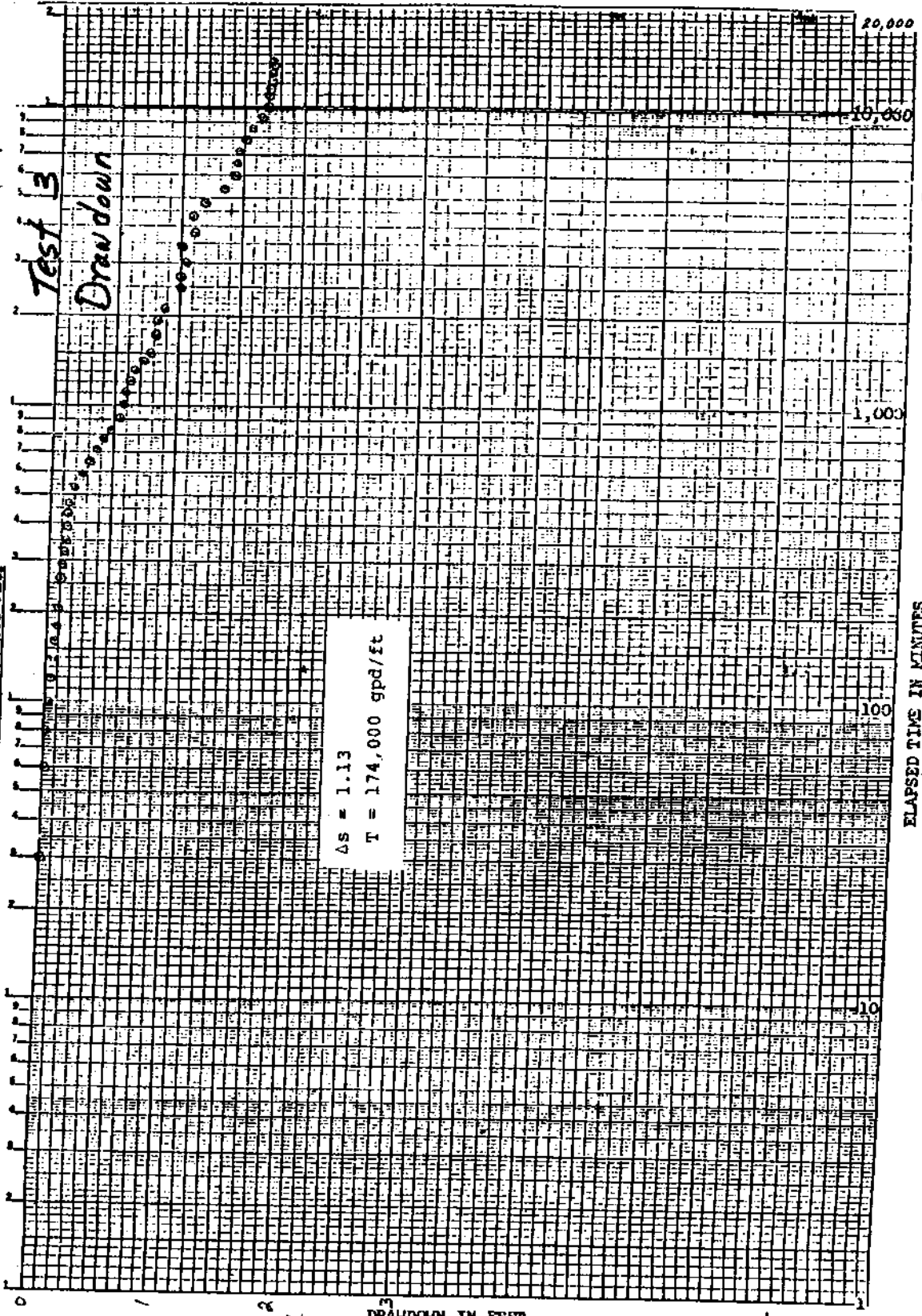
	Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet <i>Static +15.71</i>	Pumping Rate
3-31	0035	3815	+14.60	1.11	
	0853	4313	+14.62	1.09	
	1710	4810	+14.52	1.19	
4-1	0311	5411	+14.37	1.34	
	1324	6024	+14.28	1.43	
	2313	6613	+14.26	1.45	
4-2	0915	7215	+14.25	1.46	
	2111	7931	+14.20	1.51	
4-3	0845	8625	+14.13	1.58	
	2110	9370	+14.06	1.65	
4-4	0936	10,116	+14.02	1.69	
	2112	10,812	+14.00	1.71	
4-5	0926	11,546	+13.99	1.72	
	2112	12,252	+13.98	1.73	
4-6	0914	12,974	+13.99	1.72	
	2111	13,691	+13.97	1.74	
4-7	0745		+13.99	1.72	
	0900	14,400	+13.99	1.72	

R0-7

Test 3  
Draindown

R0-7

TIME-DRAINAGE SEMI-LOG PLOT



$\Delta S = 1.13$   
 $T = 174,000 \text{ gpd/ft}$

ELAPSED TIME IN MINUTES

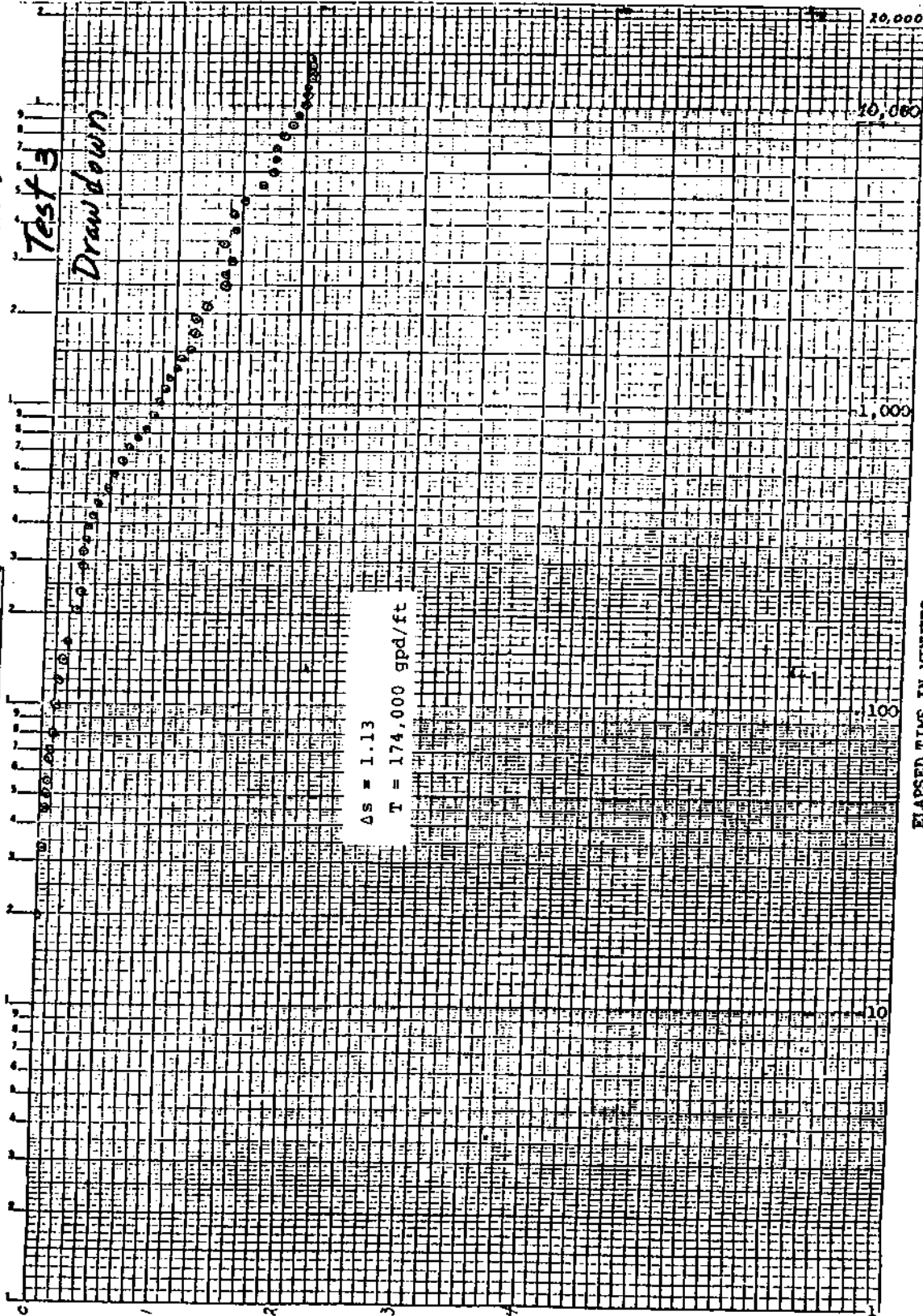
DRAWDOWN IN FEET  
II-42

TIME-DRAWDOWN SEMI-LOG PLOT

KO-8

Test 3  
Drawdown

RECOVERY IN FEET



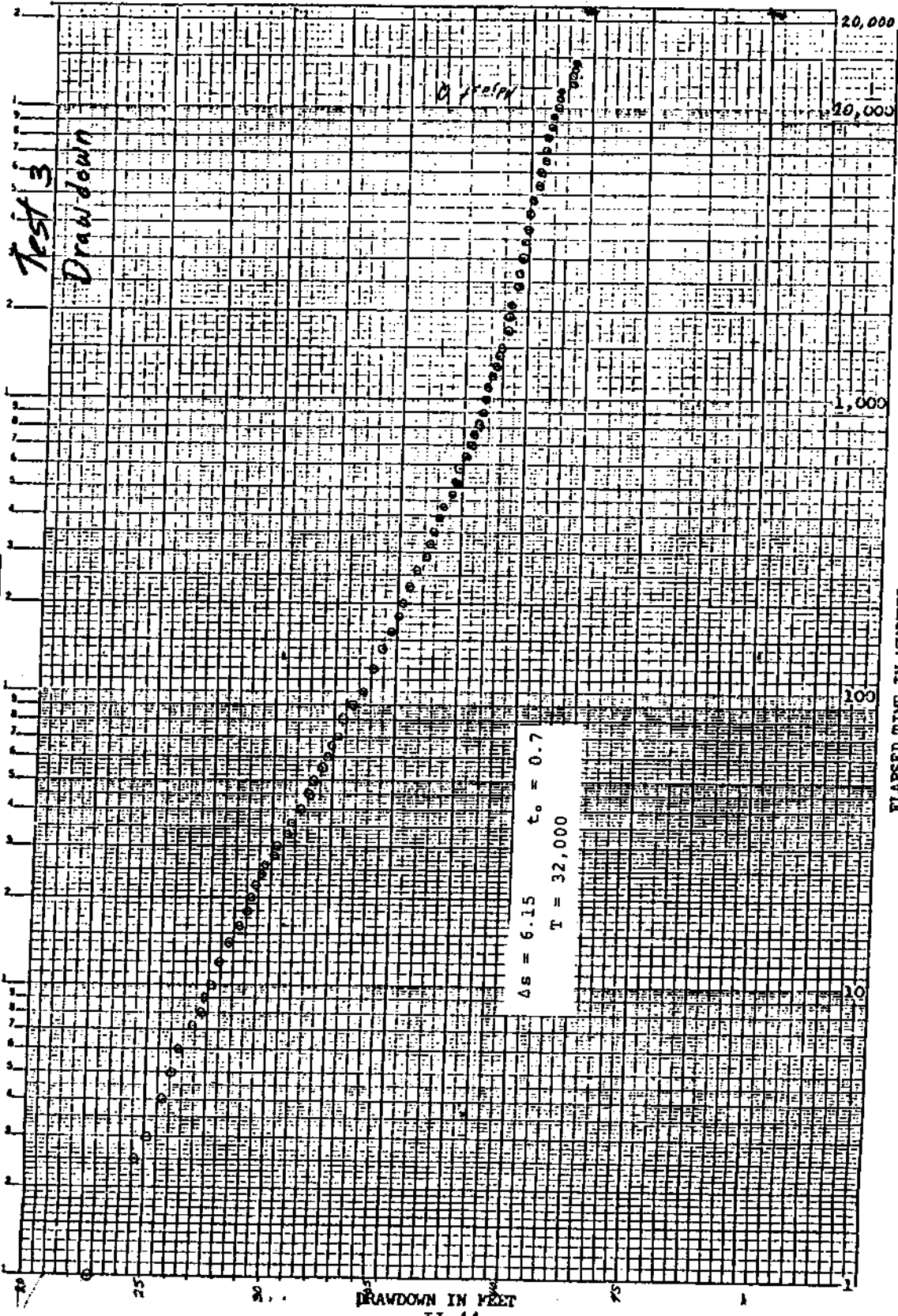
ELAPSED TIME IN MINUTES

DRAWDOWN IN FEET

RO-8

Rumped Well RO-9

TIME-DRAWDOWN SEMI-LOG PLOT



ELAPSED TIME IN MINUTES

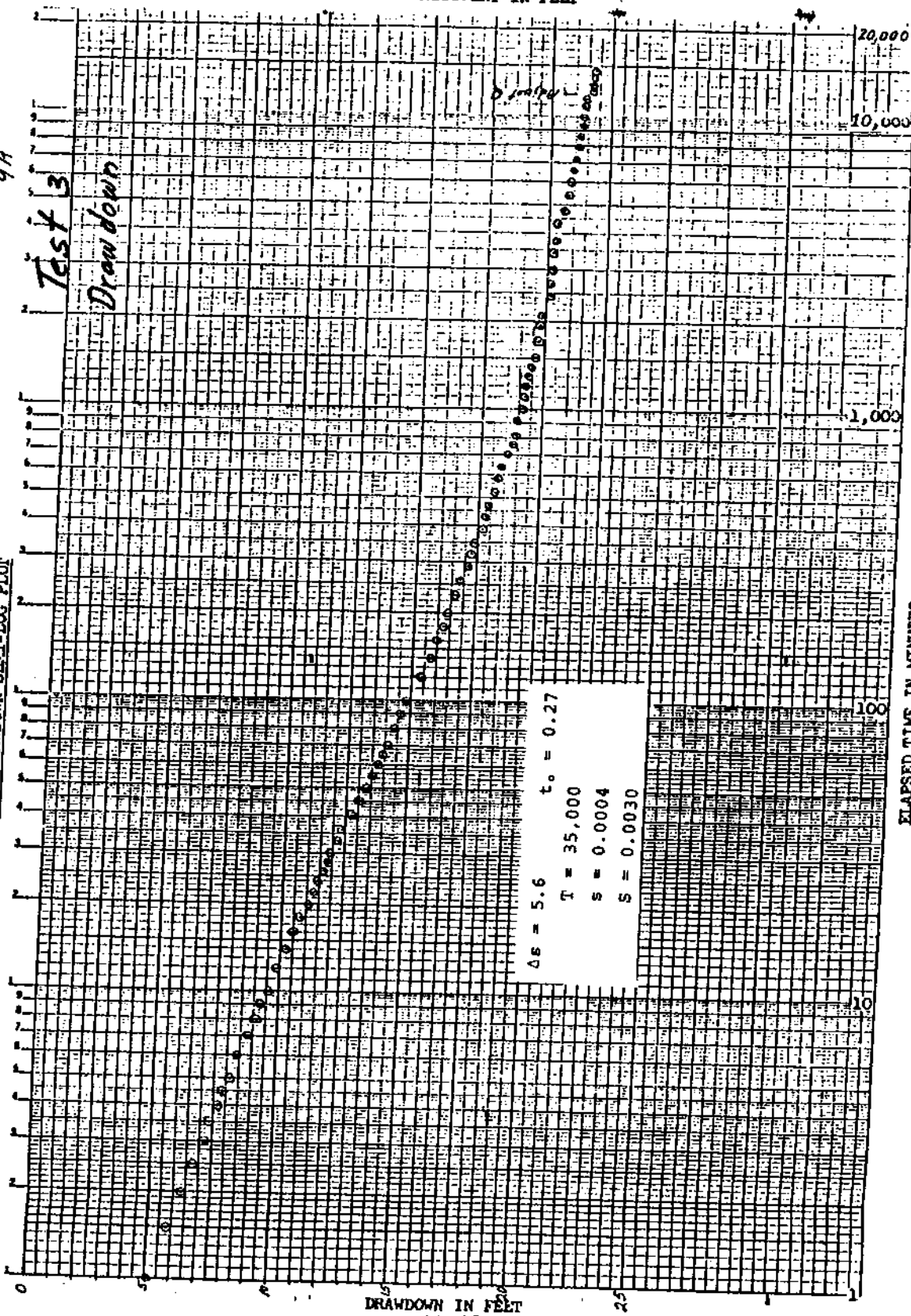
RO-9

9A

Test 3  
Drawdown

9A

TIME-DRAWDOWN SEMI-LOG PLOT



DRAWDOWN IN FEET  
II-45

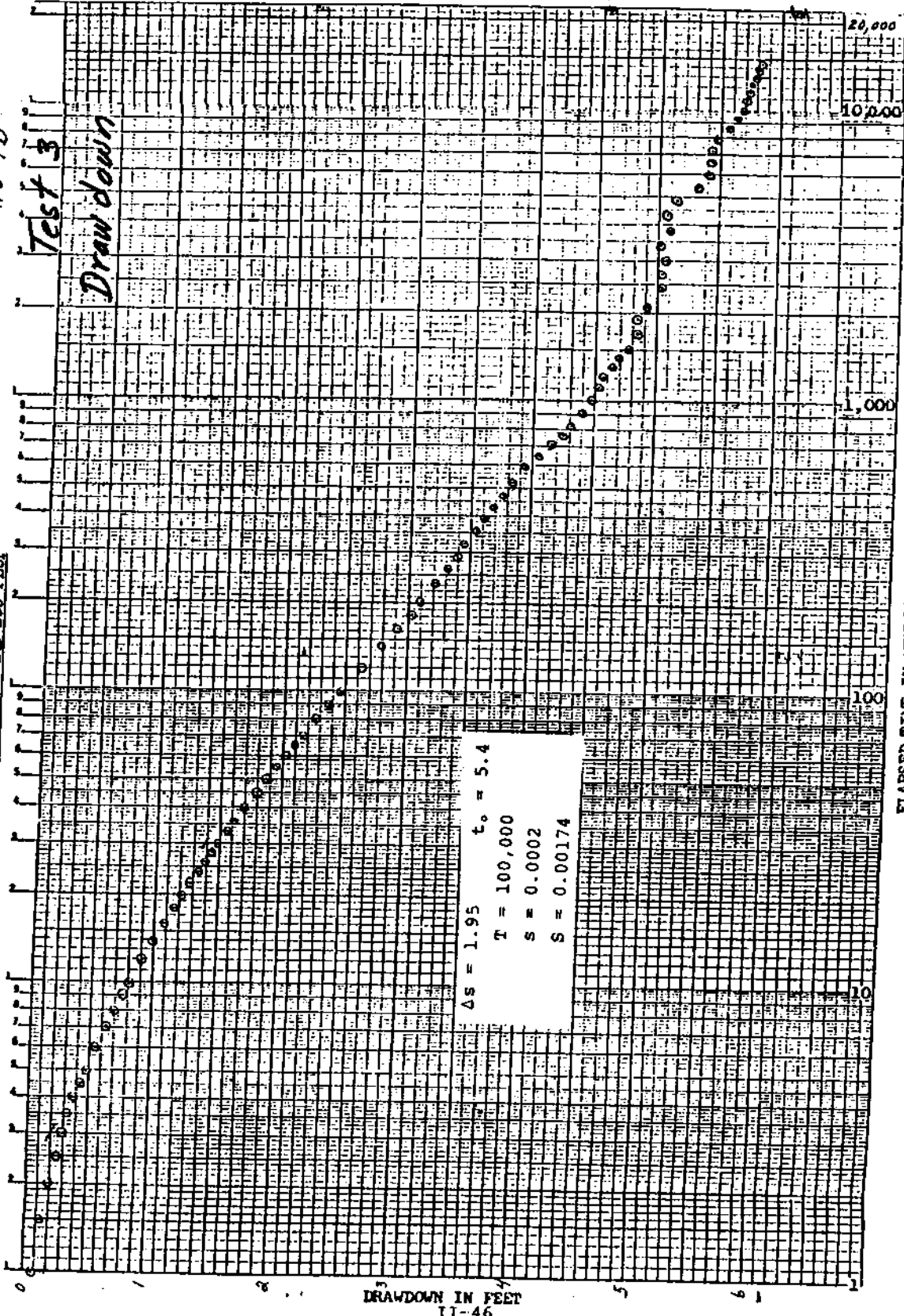
ELAPSED TIME IN MINUTES



RO-9B

Test 3  
Draw down

TIME-DRAWDOWN SEMI-LOG PLOT



DRAWDOWN IN FEET  
II-46

ELAPSED TIME IN MINUTES

98

AQUIFER TEST

Recovery

Well No. RO-7

Date 1-7-83 Location Cape Coral

Meas. Point 2.3 ft above  
Top plate of well

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet PNL +13.99	Pumping Rate
0745	0	+13.99	0	
0900	0	13.99		
0906	1	13.99		
	1 1/2	13.99		
	2	13.99		
	2 1/2	13.99		
	3	13.99		
	3 1/2	13.99		
	4	13.99		
	4 1/2	13.99		
	5	13.99		
	6	13.99		
	7	13.99		
	8	13.99		
	9	13.99		
0915	10	13.99		
	12	13.99		
	14	13.99		
	16	13.99		
	18	13.99		
	20	13.99		
	22	13.99		
	24	13.99		
	26	13.99	0	

II-47  
RO-7

Test 3 Rec 1

## AQUIFER TEST

Well No. RO-7Date 4-7-63 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Recovery Drawdown in Feet PWL +13.99	Pumping Rate
	28		13.99	.0	
	30		13.99	.0	
	33		14.00	0.01	
	36		14.00	}	
	40		14.00		
	45		14.00		
	50		14.00		
	55		14.00		
	60		14.01	.02	
	65		14.01	}	
	70		14.01		
	80		14.01		
	90		14.02	.03	
	100		14.02	.04	
	120		14.03	.04	
	130		14.04	.05	
	140		14.05	.06	
	160		14.05	}	
	165		14.06		
	180		14.07	.08	
	205		14.08	.09	
1300	235		14.11	.12	
1334	267		14.14	.15	
1404	299		14.17	.18	

AQUIFER TEST

Well No. RO-7

Date 04-07-83 Location Cape Coral  
to 4-8-83

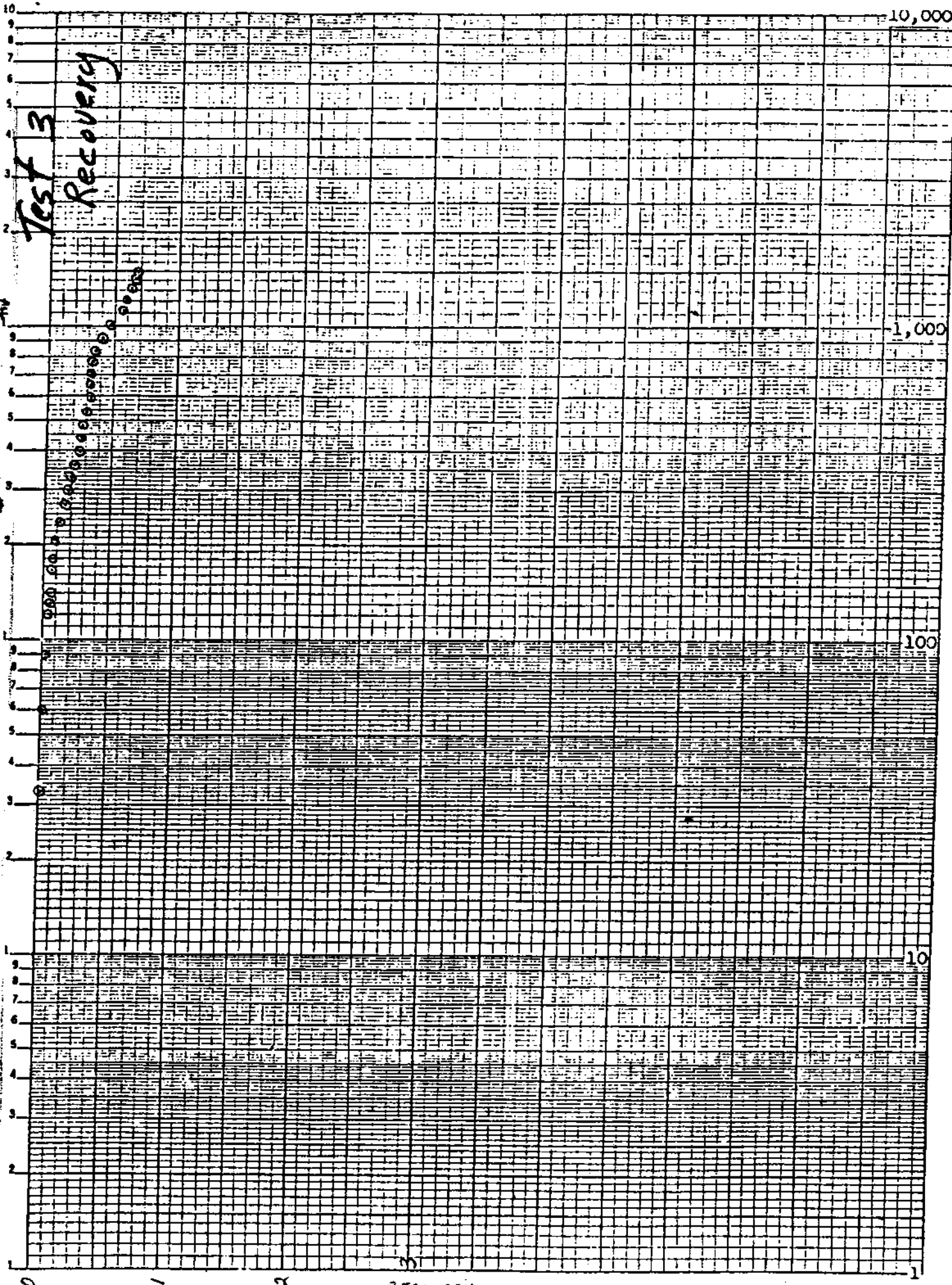
Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Tape Reading Held - Wet	Water Level	Recovery Drawdown in Feet PWL +13.99	Pumping Rate
1433	328		+14.19	.20	
1504	359		+14.21	.22	
1544	399		+14.34	.25	
1624	439		+14.26	.27	
1704	479		+14.27	.28	
1753	528		+14.29	.30	
1853	588		+14.31	.32	
1957	652		+14.31	.32	
2057	712		+14.31	.32	
2156	771		+14.33	.34	
2256	831		+14.35	.36	
0017	912		+14.40	.41	
0155	1010		+14.47	.48	
0355	1110		+14.54	.55	
0516	1211		+14.58	.59	
0654	1309		+14.61	.62	
0834	1409		+14.65	.66	
0930	1465		+14.67	.68	

TIME-DRAW SEMI-LOG PLOT

11 7 1

Test 3  
Recovery



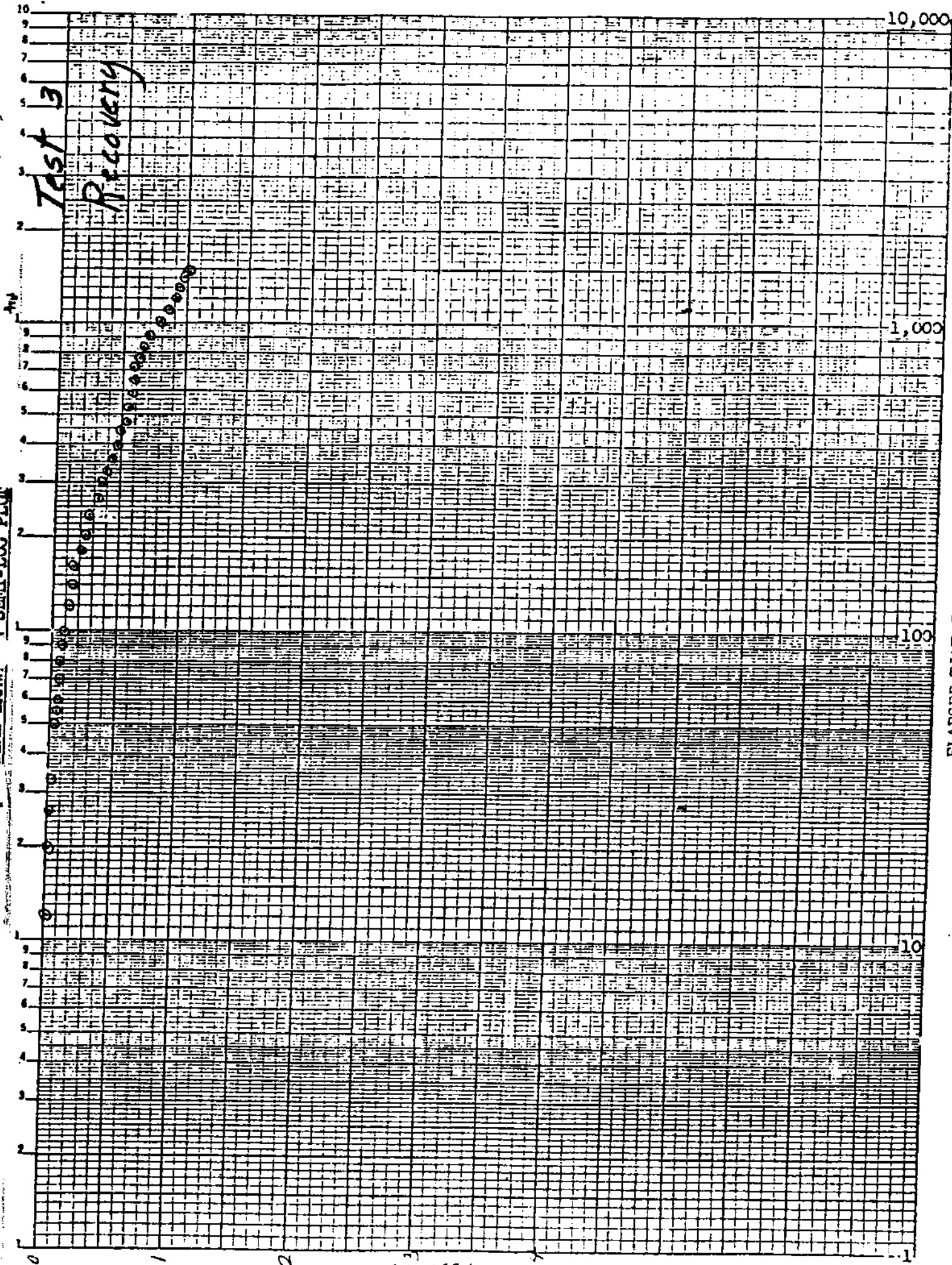
RECOVERY IN FEET

ELAPSED TIME IN MINUTES

TIME-DRAW / SEMI-LOG PLOT

N. 9

Test 3  
Recovery

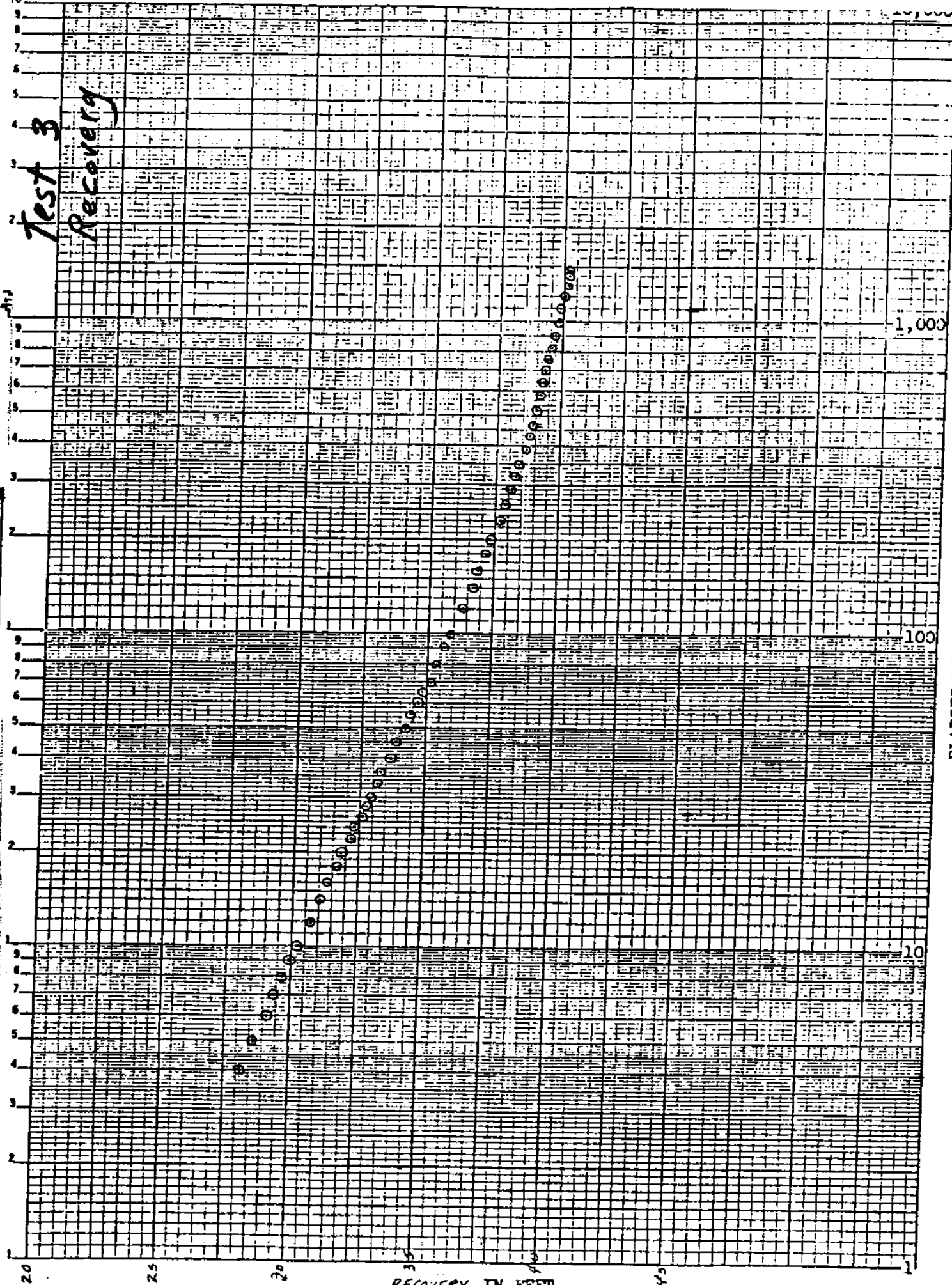


RECOVERY IN FEET

K 9

Test 3  
Recovery

TIME-DRAW N SEMI-LOG PLOT



RECOVERY IN FEET

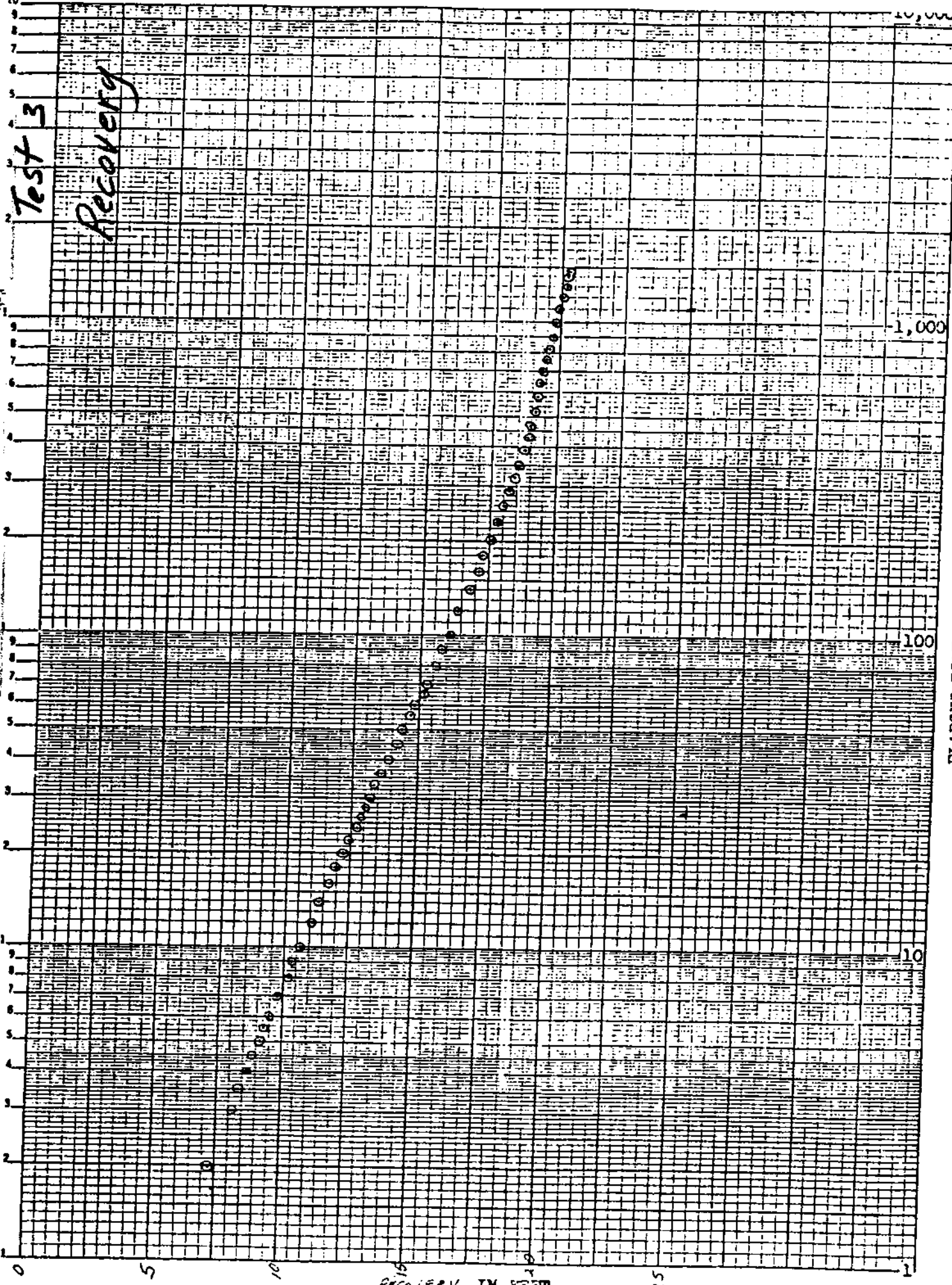
ELAPSED TIME IN MINUTES

TIME-DRAW IN SEMI-LOG PLOT

A

Test 3

Recovery



RECOVERY IN FEET

II-53

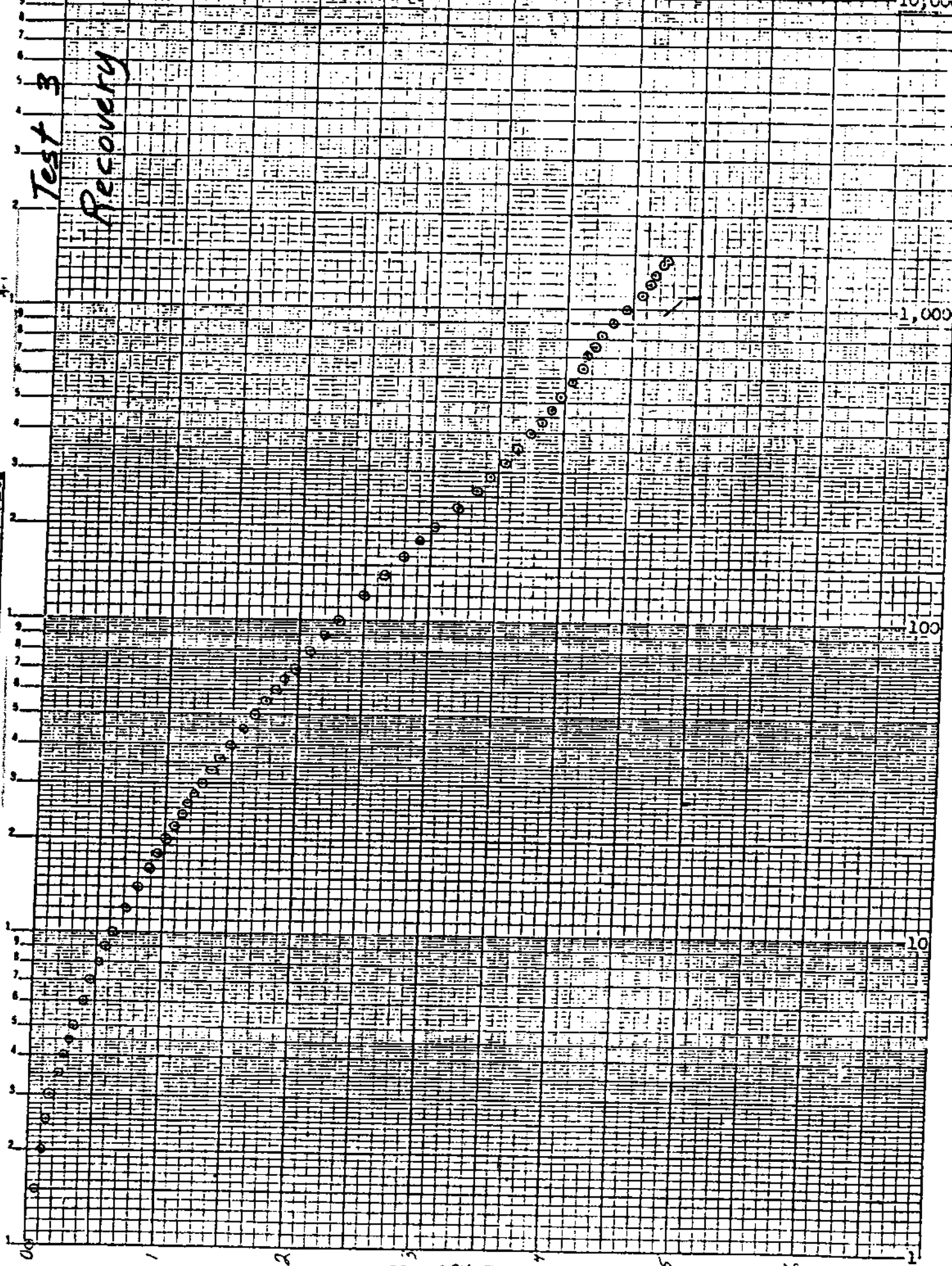
STANDARD TIME IN LOGARITHM



TIME-DRAIN IN SEMI-LOG PLOT

9

Test 3  
Recovery



RECOVERY IN FEET

AQUIFER TEST

Drawdown

Well No. RO-7

Date 3/4/83 Location Chiquita Blvd.

Meas. Point Hole in top plate of well  
2.3

Located 4851 Ft. N. of RO-9

Clock Time	Elapsed Time (Min.)	Add. of Correction	0.9 mile Water Level	Drawdown in Feet	Pumping Rate
0720			12.56		
0830	0	4' 5" 8 <sup>TK</sup>	12.58		
	15	4' 5" 8	}		
	30	4' 5" 8			
	45	4' 5" 8			
	1	4' 5" 8			
	1 1/2	4' 5" 8			
	2	4' 5" 8			
	2 1/2	4' 5" 8 <sup>TK</sup>			
	3	4' 5" 8			
	3 1/2	4' 5" 8			
	4	4' 5" 8			
	4 1/2	4' 5" 8			
	5	4' 5" 8			
	6	4' 5" 8			
	7	4' 5" 8			
	8	4' 5" 8			
	9	4' 5" 8			
	10	4' 5" 8			
	12	4' 5" 8			
	14	4' 5" 8			
	16	4' 5" 8			
	18	4' 5" 8			
	20	4' 5" 8			
	22	4' 5" 8	12.58		

Test 1 II-55

AQUIFER TEST

Well No. RO-7

Date 3/4/83 Location \_\_\_\_\_

Meas. Point Hole in top plate of well

Clock Time	Elapsed Time (Min.)	Add 8A.	Water Level	Drawdown in Feet	Pumping Rate
	24	4' 5" 8 <sup>TEN</sup>	12.58		
	26	4' 5" 8	}		
	28	4' 5" 8			
	30	4' 5" 8			
	33	4' 5" 8			
	36	4' 5" 8			
	40	4' 5" 8			
	45	4' 5" 8 <sup>TEN</sup>			
	50	4' 5" 8	12.58	0	
	55	4' 5" 7 <sup>TEN</sup>	12.57	.01	
	60	4' 5" 7 <sup>TEN</sup>	}		
	65	4' 5" 7 <sup>TEN</sup>			
	70	4' 5" 7			
	80	4' 5" 7	12.57		
	90	4' 5" 6 <sup>TEN</sup>	12.56	.02	
	100	4' 5" 6 <sup>TEN</sup>	12.56		
	120	4' 5" 5 <sup>TEN</sup>	12.55	.03	
	140	4' 5" 4 <sup>TEN</sup>	12.54	.04	

AQUIFER TEST

Drawdown

Well No. R08

Date 3/4/83 Location Chiquita Blvd.

Meas. Point Hole in top

Located 2468 ft. N. of R0-9 plate 2.5

Clock Time	Elapsed Time (Min.)	About $\frac{1}{2}$ mile Water Level	Drawdown in Feet	Pumping Rate
0718		13.24		
0830	0	13.24		
	1/4	13.24	0	
	1/2	13.24		
	3/4	13.24		
	1	13.24		
	1 1/2	13.24		
	2	13.24		
	2 1/2	13.24		
	3	13.24		
	3 1/2	13.24		
	4	13.24		
	4 1/2	13.24		
	5	13.24		
	6	13.24		
	7	13.24		
	8	13.24		
	9	13.24		
	10	13.24		
	12	13.24		
	14	13.24	0	
	16	13.235		
	18	13-2.35	13.235	
	20	13-2.35	}	
	22	13-2.35		

Test 1

13.235  
II-57

AQUIFER TEST

Date 3/4 Location \_\_\_\_\_

Well No. R.O. 8  
 Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	17	Water Level	Drawdown in Feet	Pumping Rate
	24	13 - 2.30	13.23	.01	
	26	13 - 2.25	13.225		
	28	13 - 2.25	13.225		
	30	13 - 2.20	13.22	.02	
	33	13 - 2.15	13.215		
	36	13 - 2.10	13.21	.03	
	40	13 - 2.05	13.205		
	45	13 - 1.95	13.195	.04	
	50	13 - 1.90	13.19	.05	
	55	13 - 1.80	13.18	.06	
0930	60	13 - 1.75	13.175		
	65	13 - 1.70	13.17	.07	
	70	13 - 1.60	13.16	.08	
	80	13 - 1.50	13.15	.09	
	90	13.135	13.135	.10	
	100	13.120 (F)	13.12	.12	
	120	13.090 (F)	13.09	.15	
	140	13.060 (F)	13.06	.18	
	160				
	180				
	200				
	230				
	260				

AQUIFER TEST

Drawdown

LOWER HAWTHORN # 9

Well No. RO-9

Date 3/4/83 Location Chiquita Blvd.

Meas. Point Hole in top of plate  
2.4

Pumped Well

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
06:58 08:20	0	+11.74 +11.74 LSD	Static +11.79	
08:30	2:30	27.62	- 39.41	
	4:00	28.42	26.02 40.21	
	5:30	28.00	- 39.79	ADJUSTING PUMPING RATE
	7:00	32.06	43.80	69" 100 gpm
	8:00	30.51	42.30	Continued adjust.
	9:00	30.91	42.70	
	10:00	31.25	43.04	
	12:00	31.99	43.78	
	14:00	32.38	44.17	
	16	32.68	44.47	
	18	33.03	44.82	
	21	33.45	45.24	
	24	33.90	45.69	
	26	34.09	45.88	
	28	34.38	46.17	
	30	34.78	32.38 46.57	
	34 1/2	35.37	47.16	
	37	35.65	47.44	
	41	35.96	47.75	Value wide open
09:15	45	36.05	47.84	995 gpm
	52	36.21	48.00	
	59	36.27	48.06	
	65	36.35	48.14	977 gpm
	70	36.41	48.20	974 gpm

AQUIFER TEST

Date 3/4/83 Location \_\_\_\_\_

Well No. R0-9

Meas. Point \_\_\_\_\_

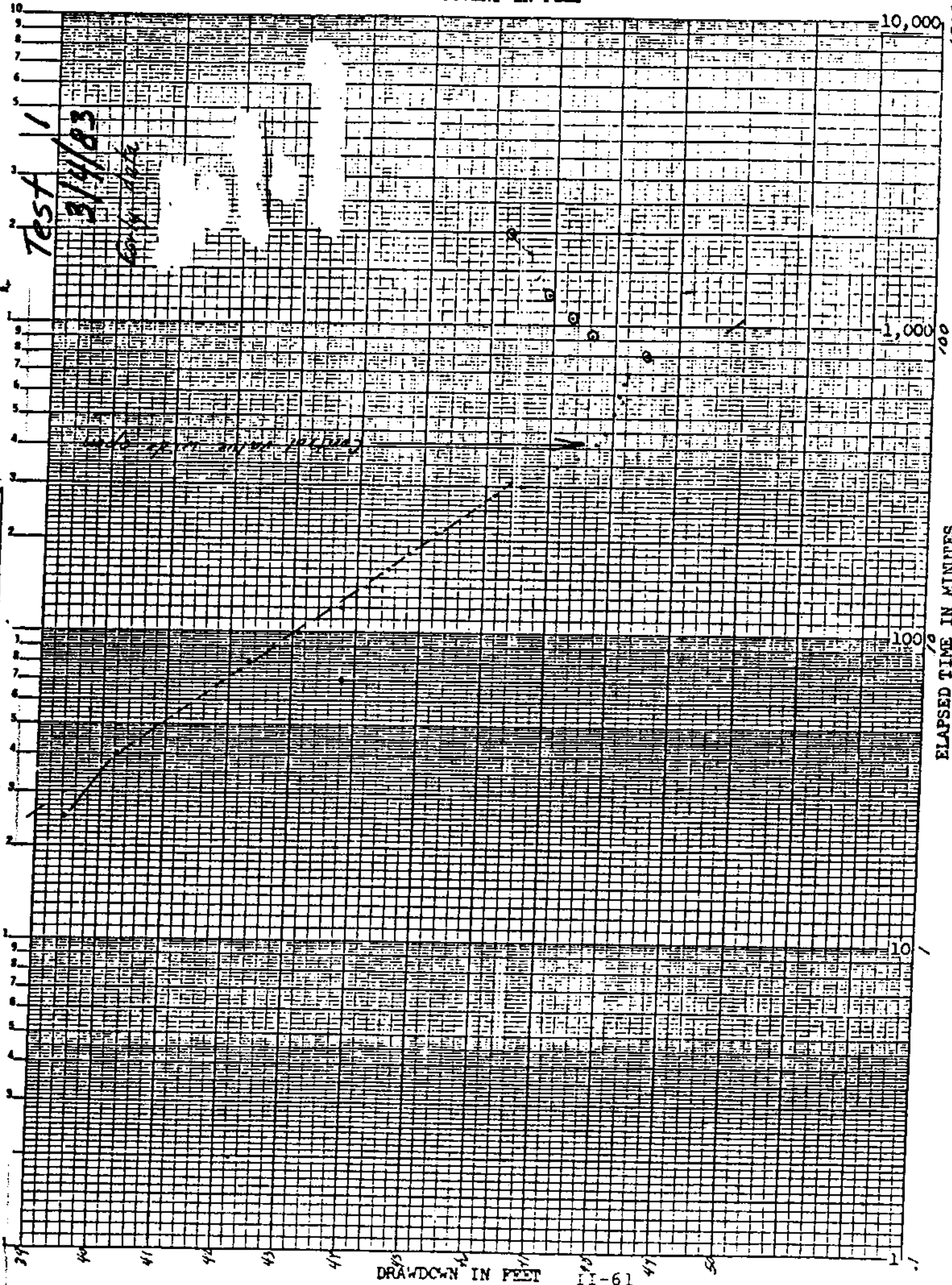
Clock Time	Elapsed Time (Min.)		Drawdown Water Level <i>Static +11.79</i>	Drawdown in Feet <i>LSD</i>	Pumping Rate
	<i>80</i>	<i>36.71</i>	<i>48.50</i>	<i>24.31</i>	<i>968 gpm</i>
	<i>93</i>	<i>35.82</i>	<i>47.61</i>		
	<i>105</i>	<i>35.51</i>	<i>47.30</i>		
<i>1035</i>	<i>125</i>	<i>35.18</i>	<i>46.97</i>		<i>927 gpm</i>
<i>1058</i>	<i>148</i>	<i>34.48</i>	<i>46.27</i>		
<i>1105</i>		<i>Test discontinued</i>			<i>904 gpm</i>

D.M.P. 'wel' 20-0

TEST 1  
2/4/83

60-14-114

TIME-DRAWN SEMI-LOG PLOT



ELAPSED TIME IN MINUTES

DRAWDOWN IN FEET

11-61



Valve open completely at 09:10 - Level drops  
below 68" to 70" range

09:15	67 "	995
09:20	66 1/2 "	991
09:25	66 "	988
09:30	65 "	981
09:35	64 1/2 "	977
09:40	64 "	974
09:45	63 1/2 "	971
09:50	63 "	968
09:55	62 1/2 "	964
10:02*	61 1/2 "	958
10:05	61 "	955
10:10	59 1/2 "	945
10:15	59 "	942
10:20	58 1/2 "	938
10:25	58	934
10:30	57 1/2 "	930
10:35	57	927
10:40	56 1/2 "	923
10:45	56	919
10:50	55 1/2 "	915
10:55	55	912
11:00	54 1/2 "	908
11:05	54	904
	OFF	
11:08	72"	(70" = 1016) +

DATA 3-4-83

(DK)

\* Reading site obstructed by tube fitting.

## AQUIFER TEST

## Drawdown

Well No. 9ADate 3/4/83 Location Chiquita Blvd.Meas. Point Top of cLocated 71.2 ft. N. of R0-9

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet	Pumping Rate
0			+14.24'	0	
15 sec			+7.60	6.64	
1 min			+4.50	9.74	
2			+3.21	11.03	
2.5			+2.68	11.56	
3			+2.27	11.97	
3.5			+1.87	12.37	
4.0			+1.54	12.70	
4.5			+1.20	13.04	
5			+0.96	13.28	
6			+0.57	13.67	
7		Above m/p	+0.04	14.20	
8		Below n/l	-0.49	14.73	
9			0.86	15.10	
10			1.16	15.40	
12			1.53	15.77	
14			2.07'	16.31	
16			2.42'	16.66	
18			2.82'	17.06'	
20			3.14'	17.38'	
22			3.45'	17.69'	
24			3.70'	17.94'	
26			3.93'	18.17'	
28			4.20'	18.44'	
30			4.41'	18.65	

II-63

Test 1

AQUIFER TEST

Well No. 9A

Date 03-04-93 Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet	Pumping Rate
	33	(Below MP)	4.78'	19.02'	
	36	6-0.70	5.10'	19.34'	
	40	6-0.58	5.42'	19.66'	
	45	7-1.24	5.76'	20.00'	
	50	7-0.92	6.08'	20.32'	
	55	7-0.70	6.30'	20.54'	
0930	60	7-0.45	6.55'	20.79	
	65	7-0.25	6.75'	20.99'	
	70	8-1.06	6.94'	21.18'	
	80	8-0.77	7.23'	21.47'	
	90	8-0.58	7.42'	21.66'	
	100	8-0.49	7.51'	21.75'	
1030	120	8-0.32	7.68'	21.92'	
	140	8-0.14	7.86	22.10	
	148	8-0.10	7.90	22.14	

WEL 9A 03-04-83

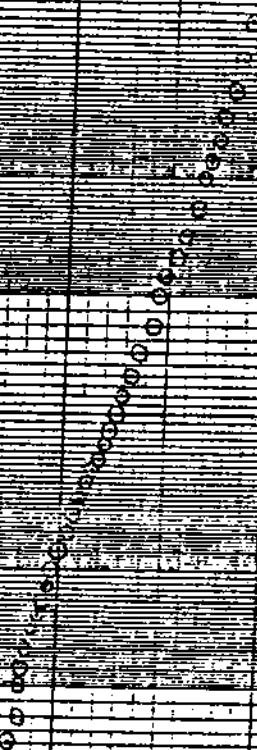
K&E KUPFFEL & ESSEN CO. MADE IN USA

46 6212

Test 1

3/4/83

9A



## AQUIFER TEST

## Drawdown

William A. Pearson

Well No. 98Date 3/4/83 Location Chiquita Blvd.Meas. Point Alt. of top ofLocated 700.2 ft. N. of <sup>cap. 1.9</sup> RO-9

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
0710	0	11.69		
0830	0	11.71		
	16 sec	11.70	.01	
	30 sec	11.69	.02	
	45 sec	11.65	.06	
	1 min	11.63	.08	
	1 1/2 min	11.56	.15	
	2	11.49	.22	
	2 1/2	<del>11.42</del> 11.42	.29	
	3	11.35	.36	
	3 1/2	11.28	.43	
	4	11.21	.50	
	4 1/2	11.15	.56	
	5	11.09	.62	
	6	10.98	.73	
	7	10.88	.83	
	8	10.79	.92	
	9	10.70	1.01	
	10	10.62	1.09	
	12	10.48	1.23	
	14	10.35	1.36	
	16	10.24	1.47	
	18	10.14	1.57	
	20	10.05	1.66	
	22	9.97	1.74	

AQUIFER TEST

William A Kousins

Well No. 9B

Date 3/4/83 Location Chiquita Blvd.

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
	24	9.89	1.82	
	26	9.87	1.90	
	28	9.74	1.97	
	30	9.67	2.04	
	33	9.58	2.13	
	36	9.49	2.22	
	40	9.38	2.33	
	45	9.25	2.46	
	50	9.14	2.57	
	55	9.04	2.67	
	60	8.95	2.76	
	65 (1:05)	8.87	2.84	
	70 (1:10)	8.78	2.93	
	80 (1:20)	8.66	3.05	
	90 (1:30)	8.55	3.16	
	100 (1:40)	8.46	3.25	
	120 (2:00)	8.31	3.40	
	140 (2:20)	8.20	3.51	

AQUIFER TEST  
*Drawdown*

Well No. R0-7

Date 3/11/82 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Correction-add 8 ft.	Water Level	Drawdown in Feet	Pumping Rate
1115	0	11.97			
1155	0	3.97	11.97		
	15	3.97			
	30	3.97			
	45	3.97			
	1	3.97			
	1 1/2	3.97			
	2	3.97			
	2 1/2	3.97			
	3	3.97			
	3 1/2	3.97			
	4	3.97			
	4 1/2	3.97			
	5	3.97			
	6	3.97			
	7	3.97			
	8	3.97			
	9	3.97			
	10	3.97			
	12	3.97			
	14	3.97			
	16	3.97			
	18	3.97			
	20	3.97	11.97		

AQUIFER TEST

Well No. RO-7

Date 3/11/83 Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Correction - add 8 ft.	Water Level	Drawdown in Feet	Pumping Rate
	22	3.97	11.97		
	24	3.97			
	26	3.97			
	28	3.97			
2 <sup>30</sup>	30	3.97			
	33	3.97			
	36	3.97			
	40	3.97			
	45	3.97			
	50	3.97			
	55	3.97			
3 <sup>00</sup>	60	3.97	11.97	0	
	65	3.96	11.96	.01	
	70	3.96	11.96	.01	
	80	3.95	11.95	.02	
	126	3.92	11.92	.05	



AQUIFER TEST

Drawdown

Well No. RO-8

Date 3/11/83 Location Cape Coral

Meas. Point \_\_\_\_\_

START TIME CLOCK 11:00 AM

Clock Time	Elapsed Time (Min.)	Water Level	Uncorrected Drawdown in Feet	Pumping Rate
1159	0	12.70		
2:08	0	12.70		
	1/4			
	1/2			
	3/4			
	1			
	1 1/2			
	2			
	2 1/2			
	3			
	3 1/2			
	4			
	4 1/2			
	5			
	6			
	7	12.70		
	8	12.69		
	9			
	10			
	12			
	14			
	16			
	18			
1:57 READING	20	12.69	.01	

Test 2 31-70

AQUIFER TEST

Well No. PO-8

Date 3/11/83 Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

STARTED LOGGING @ 17:00:00

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
	22	12.68	.102	
	24	12.68		
	26 (4)	12.68		
	28 (11)	12.67	.103	
	30 (18)	12.67		
	33	12.67		
	36	12.67		
	46	12.66	.104	
	48	12.65	.105	
	50 (30)	12.64	.106	
	55	12.64		
	60	12.64		
	65 (35)	12.63	.107	
	70 (40)	12.61	.109	
	80 (50)	12.60	.110	
	90 (60)	12.57	.113	
	100 (70)	12.54	.116	
	120 (90)	12.52	.118	
	140 (110)	12.51	.119	
	160	12.47	.123	

## AQUIFER TEST

## Drawdown

Pumped Well

Well No. RO-9Date 3/11/83 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet Static +11.09	Pumping Rate
1220	0	+11.13			
1345	0	+11.09	+11.09		
	1.4	30 - 2.07	27.93	39.02	
	2.	30 - 1.58	28.42	39.51	
	2.5	30 - 1.45	28.45	39.54	
*	3.	30 - 1.36	28.64	39.73	* ADJUST Q
	4.	30 - 2.70	27.30	38.39	" "
	5.	25.74	25.74	36.83	" "
	6.	25.17	25.17	26.26	" "
	7.	25-.33	24.67	35.76	900 gpm
	8.	25-.25	24.75	35.84	
	9.	25-.07	24.93	36.02	
	10	25.12	25.12	36.21	
	12	25.46	25.46	36.35	
	14	26.10		37.19	
	16	26.50		37.59	
	18	26.76		37.85	
	20	27.03		38.12	
	22	27.23		38.32	
	24	27.43		38.52	
	26	27.60		38.69	
	28	27.76		38.85	
	30	30 - 1.97	28.03	39.12	
	33	30 - 1.53	28.45	39.54	

Test 2 II-72

1

AQUIFER TEST

Well No.   R0-9  

Date   3/11/83   Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)		Water Level	Drawdown in Feet	Pumping Rate
	36	30 - 1.36	28.64	39.73	
	40	30 - 1.01	28.99	40.08	53" 896 gpm
	45	30 - 0.76	29.24	40.33	
	50	30 - 0.47	29.53	40.62	
	55	30 - 0.09	29.91	41.00	
3:00 PM	60	30.44		41.53	
	66	30.72		41.81	
	71	30.85		41.94	
	80	31.11		42.20	
3:30 PM	90	31.45		42.54	
	102	32.12		43.21	
4:00 PM	120	32.59		43.68	
	142	32.91		44.00	50.5" 876 gpm
	162	32.80		43.89	Valve wide open - no further adjustment available

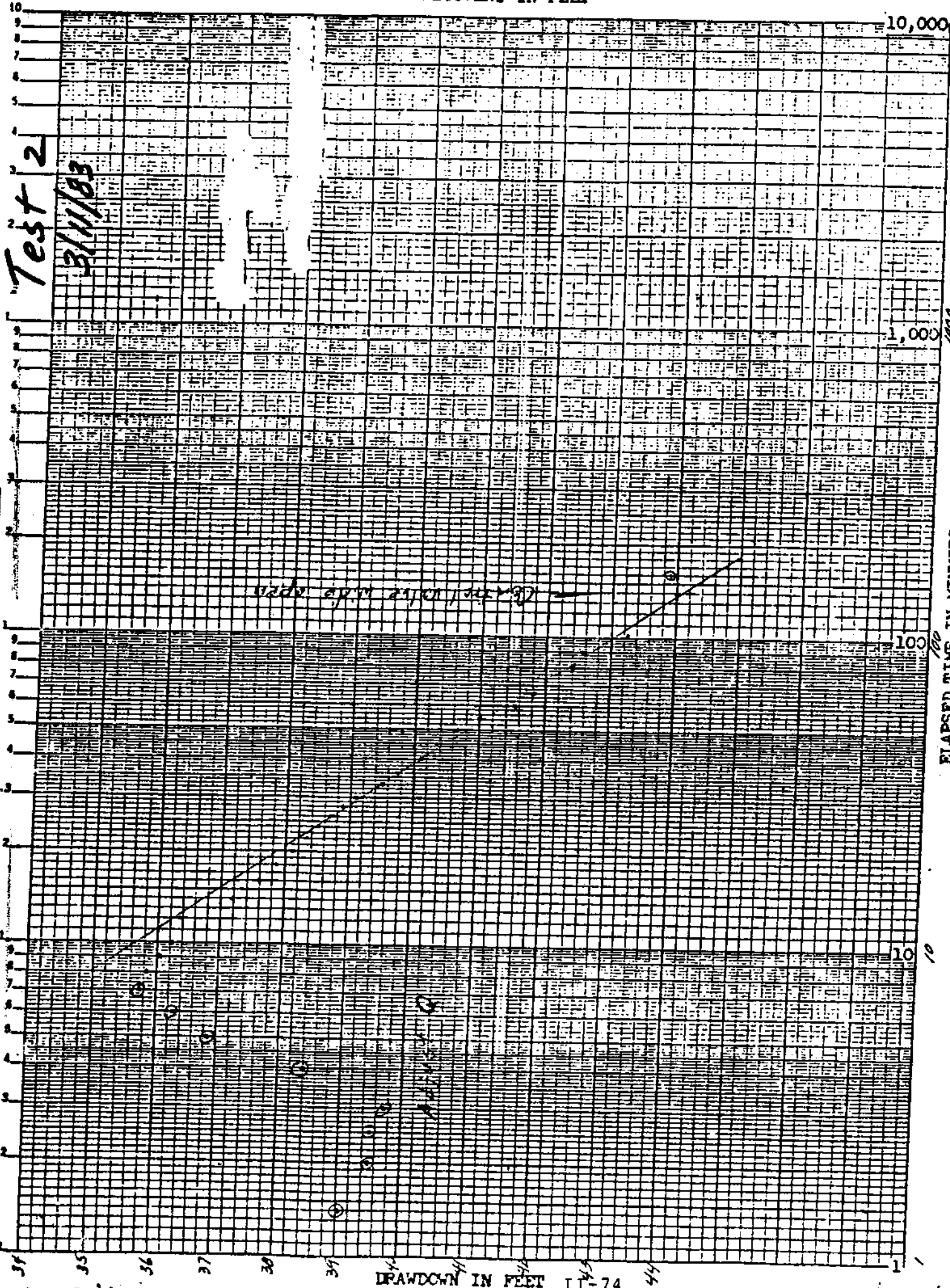
Pumpout well 20.1

Test 2

3/11/03

SEMI-LOG PLOT

TIME-DRAWN



DRAWDOWN IN FEET II-74

ELAPSED TIME IN MINUTES

AQUIFER TEST

Drawdown

Well No. 94

Date 03-11-83 Location CHIKUITA PKWY, CAPE CORAL Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	(ABOVE MP)	(G. M.P.) Water Level	Drawdown in Feet	Pumping Rate
1348	0	(ABOVE MP)	+ 11.10		
1404	0		+ 11.00'	0	
	0.25		+ 6.70	4.30'	
	0.5		+ 6.48	4.52'	
	0.75		+ 5.09	5.92'	
	1.0		+ 4.02	6.98'	
	1.5		+ 2.85	8.15'	
	2.0		+ 2.53	8.77'	
	2.5		+ 1.71	9.29'	
	3.0		+ 1.30	9.70'	
	3.5		+ 0.76	10.04'	
	4.0		+ 0.77	10.23'	
	4.5		+ 0.51	10.36'	
	5		+ 0.56	10.44'	
	6		+ 0.31	10.69'	
	7	ABOVE MP ↓	+ 0.16	10.84'	
	8	BELOW MP	- 0.02	11.02'	
	9		0.39	11.39'	
	10		0.63	11.63'	900
	12		1.04	12.04'	900
	14		1.41	12.41'	700
	16	2.00 - 0.34'	1.66	12.66	900
	18	3.00 - 1.03'	1.97'	12.97'	700
	20	3.00 - 0.76'	2.24'	13.24'	900
	22	3.00 - 0.50'	2.50'	13.50'	900

Test 2 II-75

Date 03-11-03 Location CHIQUITA RWY. CAPE CORAL

Well No. 9A

Meas. Point \_\_\_\_\_

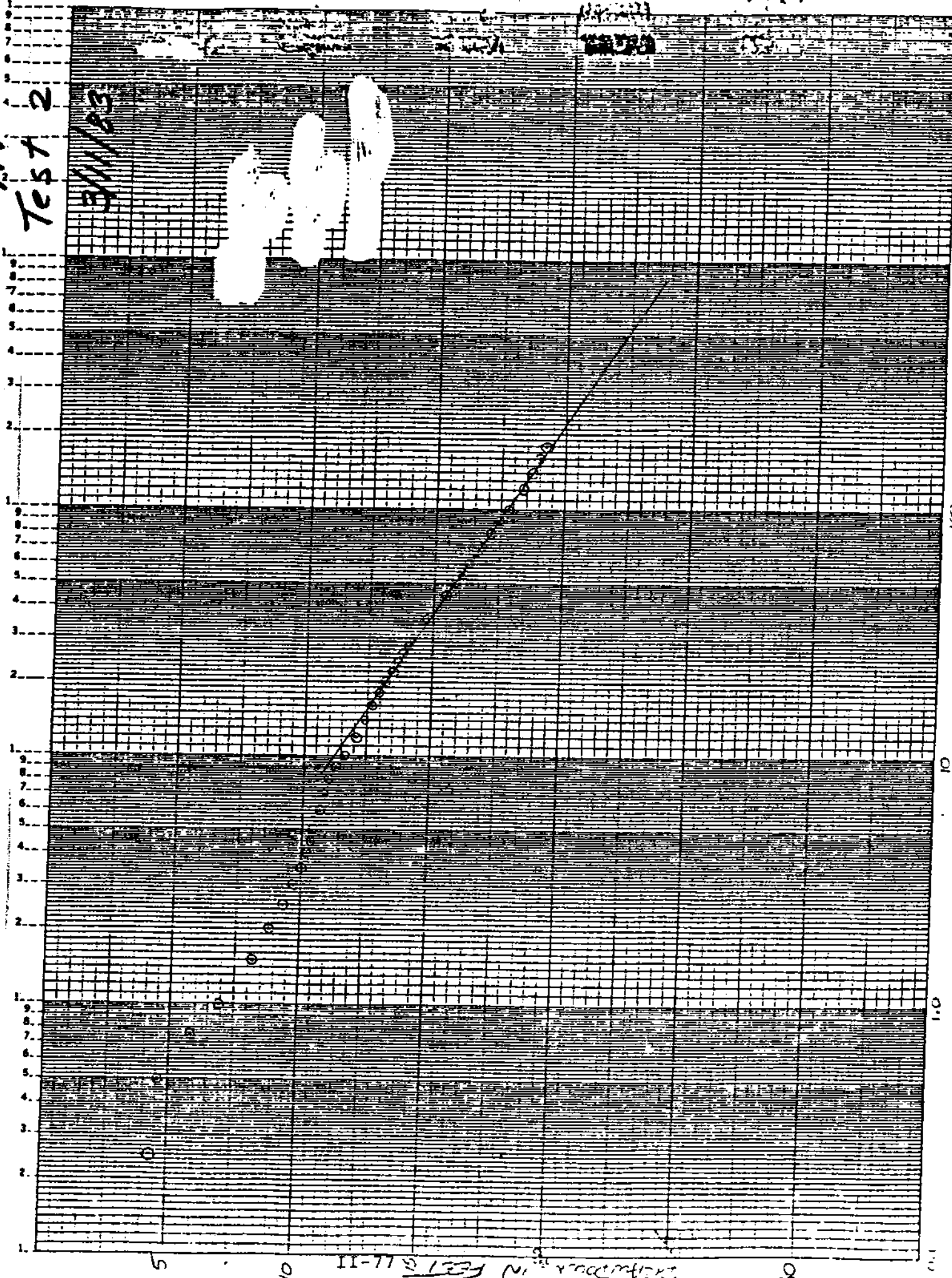
Clock Time	Elapsed Time (Min.)	(Below MP)	Water Level (Below MP)	Drawdown in Feet	Pumping Rate, GPM
	24	3.00' - 0.27'	2.73'	13.73'	900
	26	4.00' - 1.07'	2.93'	13.73'	900
	28	4.00' - 0.88'	3.12'	14.12'	900
	30	4.00' - 0.70'	3.30'	14.50'	900
	33	4.00' - 0.38'	3.62'	14.62'	900
	36	5.00' - 1.13'	3.87'	14.37'	900
	40	5.00' - 0.83'	4.17'	15.17'	900
	45	5.00' - 0.50'	4.50'	15.50'	900
	50	6.00' - 1.21'	4.79'	15.79'	900
	55	6.00' - 0.90'	5.10'	16.10'	900
	60	6.00' - 0.61'	5.39'	16.59'	900
	65	6.00' - 0.37'	5.63'	16.63'	900
	70	7.00' - 1.17'	5.83'	16.83'	900
	80	7.00' - 0.81'	6.19'	17.19'	900
	90	7.00' - 0.51'	6.49'	17.49'	900
	100	8.00' - 1.14'	6.86'	17.86'	900
	120	8.00' - 0.63'	7.37'	18.37'	900
1645	140	9.00' - 1.30'	7.70'	18.70'	896
1705	160	9.00' - 1.00'	8.00'	19.00'	874
1725	200	9.00' - 0.74'	8.26'	19.26'	
	230				
	260				
	290				

II-16  
Test 2

46 6212

Test 2

3/11/83



DEPTH IN FEET 8 II-II

30



## AQUIFER TEST

## Draw down

Well No. 9BDate 3/11/03 Location Cape Coral

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Uncorrected Drawdown in Feet	Pumping Rate
12:02	0	11.08		
1:51	0	11.03		
2:04		11.02		
	$\frac{1}{4}$	11.00	.02	
	$\frac{1}{2}$	10.96	.06	
	$\frac{3}{4}$	10.95	.07	
	1	10.92	.10	
	$1\frac{1}{2}$	10.85	.17	
	2	10.79	.23	
	$2\frac{1}{2}$	10.70	.32	
	3	10.63	.39	
	$3\frac{1}{2}$	10.55	.47	
	4-	10.49	.53	
	$4\frac{1}{2}$	10.43	.59	
	5	10.37	.65	
	6-	10.27	.75	
	7	10.19	.83	
	8	10.11	.91	
		10.04	.98	
	10	9.98	1.04	
	12	9.87	1.15	
	14	9.77	1.25	
	16	9.67	1.35	
	18	9.59	1.43	

AQUIFER TEST

Well No. 9B

Date 3/11/03 Location \_\_\_\_\_

Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Drawdown in Feet	Pumping Rate
	20	9.50	1.52	
	22	9.43	1.59	
	24	9.37	1.65	
	26	9.29	1.73	
	28	9.24	1.78	
	30	9.19	1.83	
	33	9.10	1.92	
	36	9.03	1.99	
	40	8.94	2.08	
	45	8.83	2.19	
	50	8.73	2.29	
	55	8.64	2.38	
	60	8.55	2.47	
	65	8.48	2.54	
	70	8.39	2.63	
	80	8.25	2.77	
	90	8.14	2.88	
	100	8.01	3.01	
	120	7.83	3.19	
	140	7.67	3.35	
	160	7.55	3.47	

# AQUIFER TEST

## *Recovery*

Well No. 9B

Date 3/11/83 Location \_\_\_\_\_

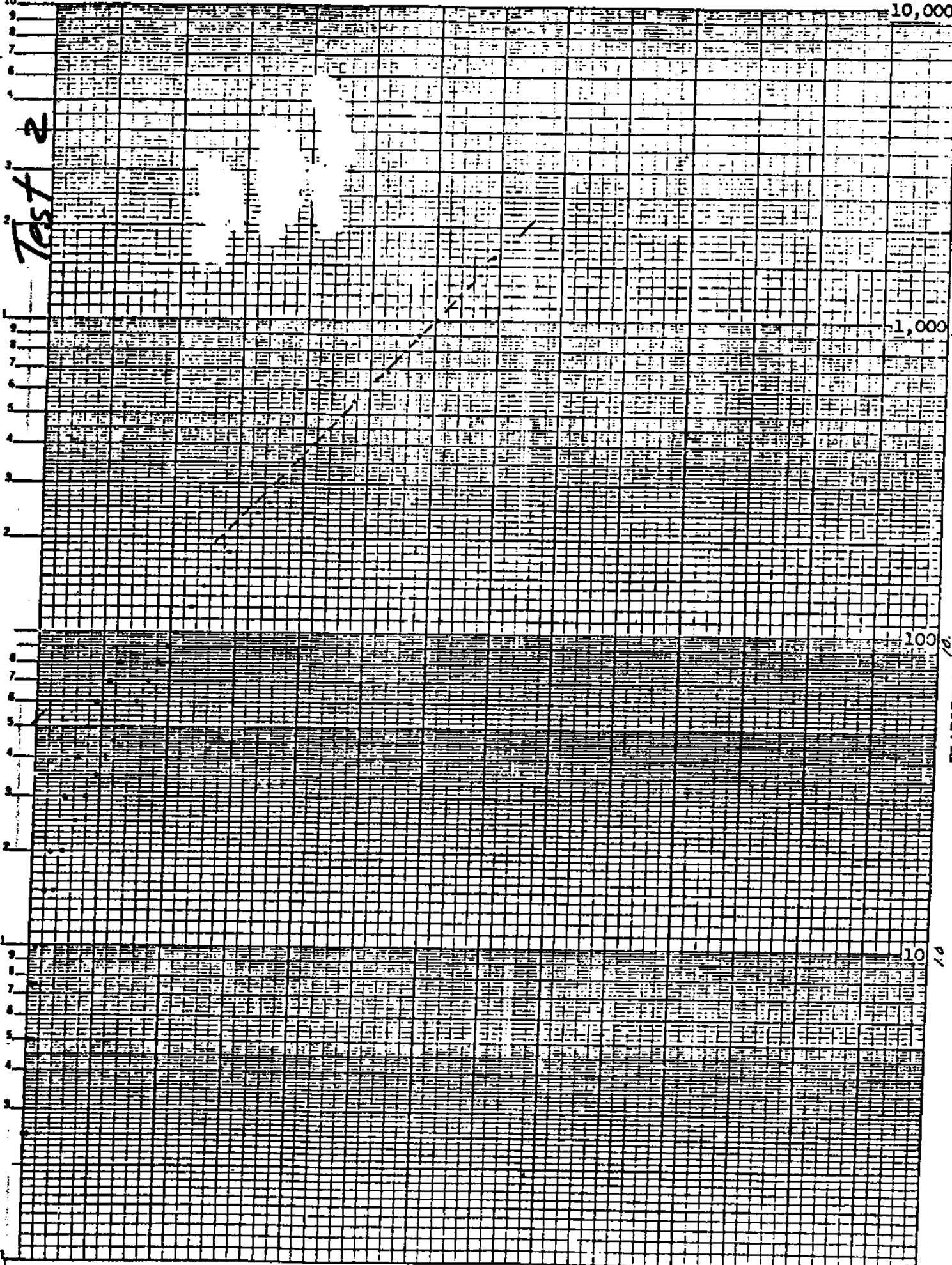
Meas. Point \_\_\_\_\_

Clock Time	Elapsed Time (Min.)	Water Level	Recovery Drawdown in Feet	Pumping Rate
	0	7.37		
	1/2	7.39	.02	
	30 Sec.	7.40	.03	
	45 Sec.	7.41	.04	
	1	7.42	.05	
	1.5	7.47	.10	
	2	7.50	.13	
	3	7.60	.23	
	4	7.69	.32	
	5	7.76	.39	
	6	7.84	.47	
	7	7.92	.55	
	8	7.99	.62	

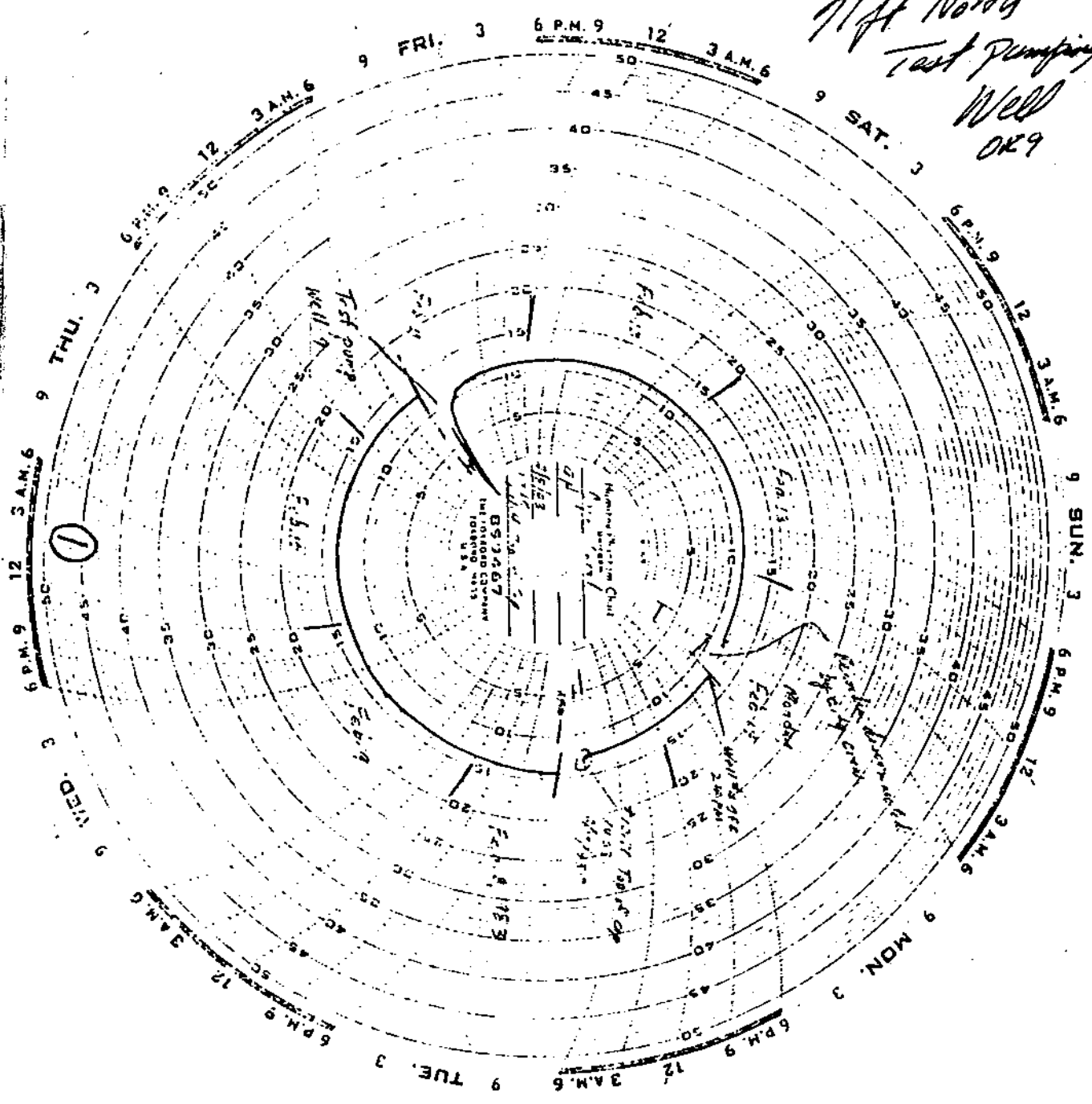
13-11-03  
u/h/03  
D. D. Low

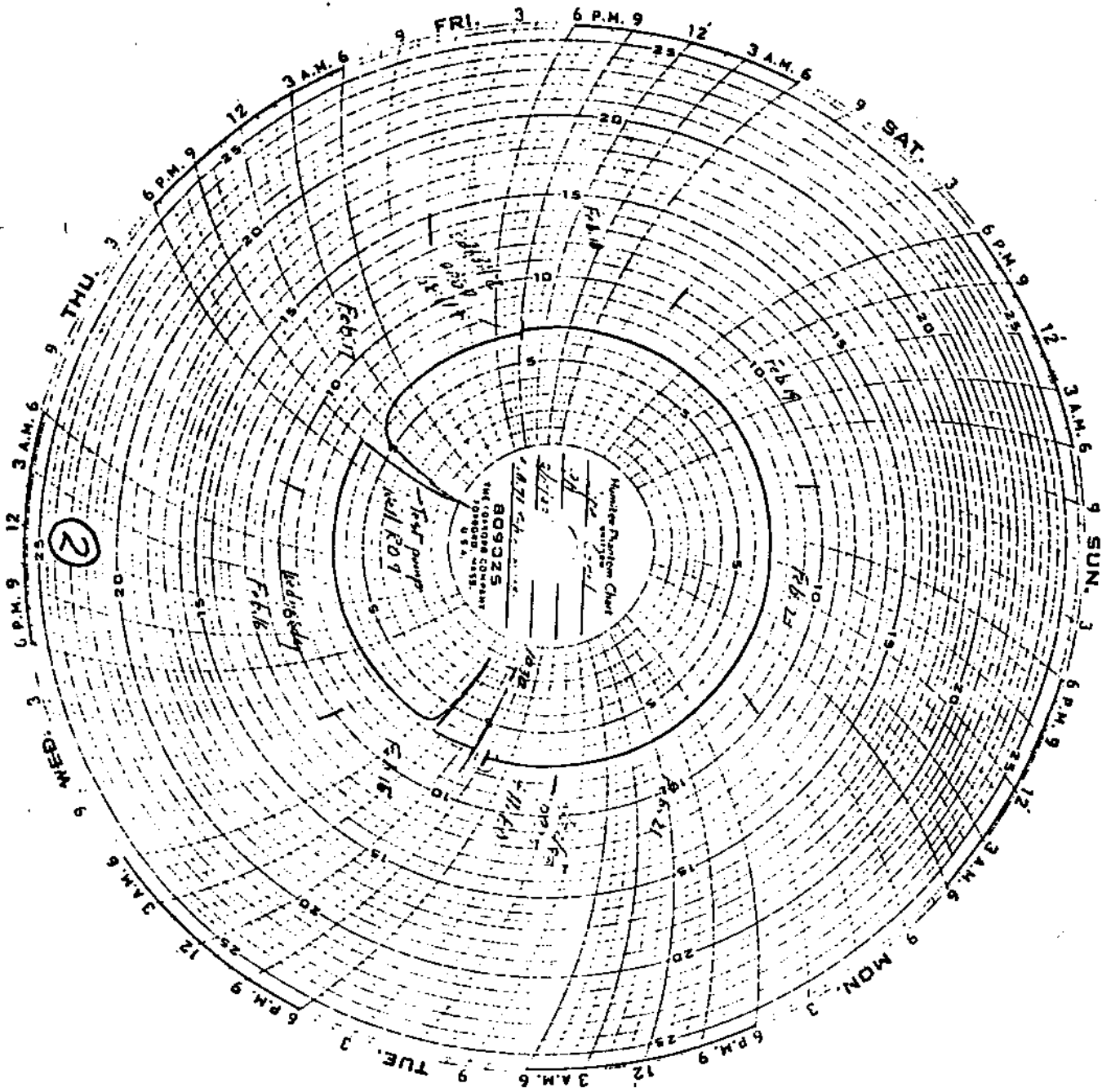
Test 2

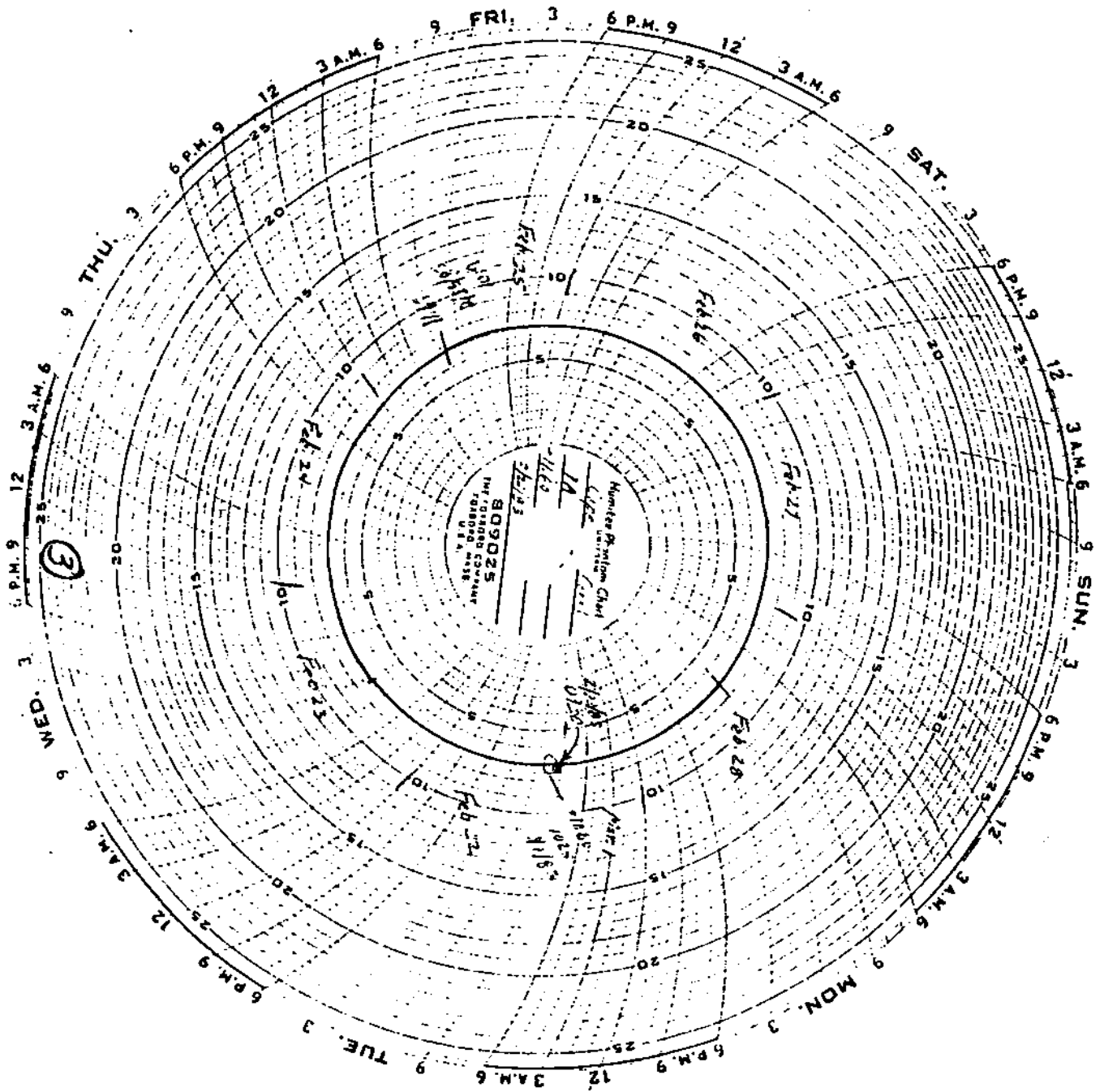
II-81-LOW PLO

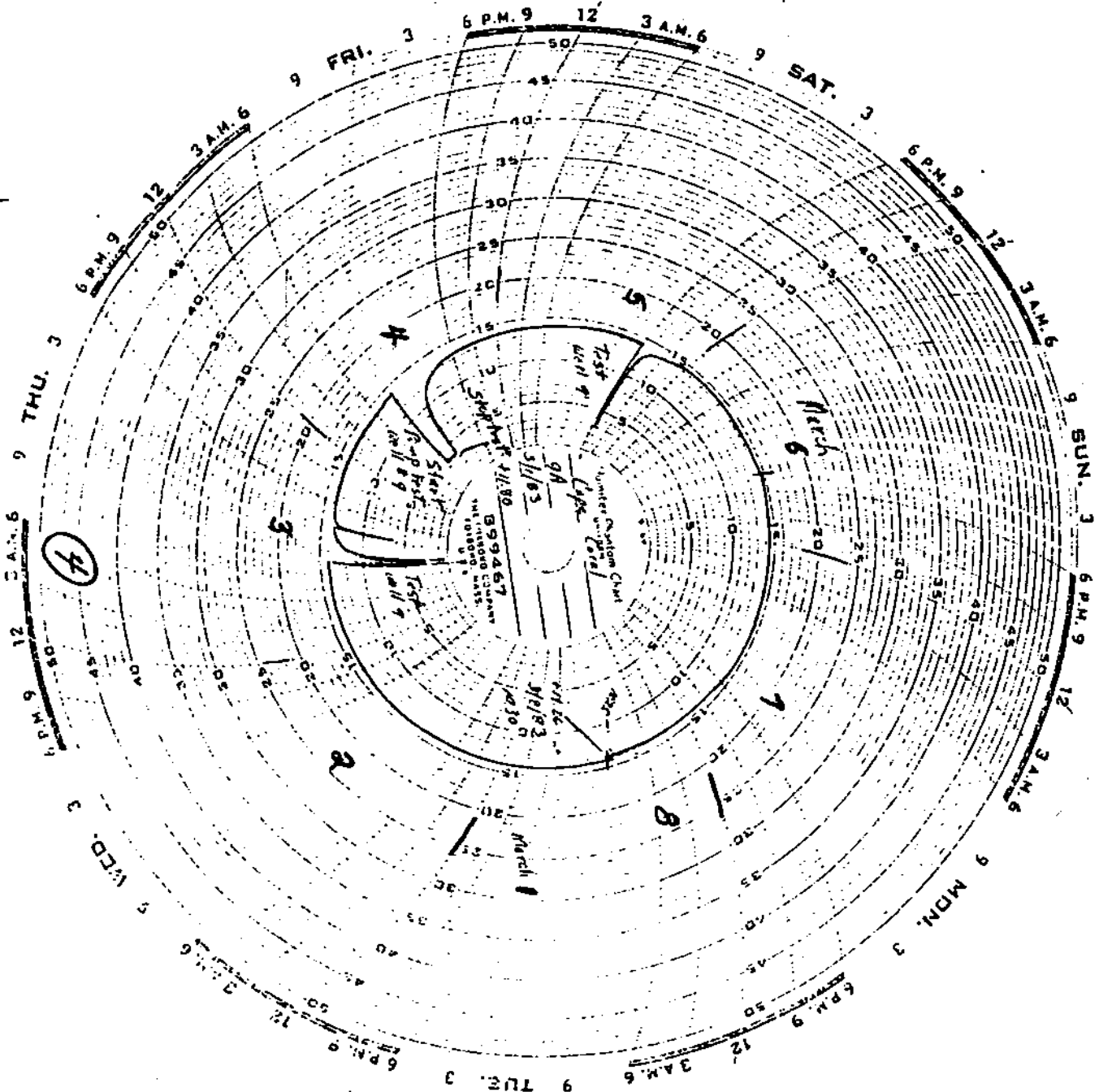


*Obs Well 9th  
 71ft North  
 Test Pumping  
 Well  
 029*

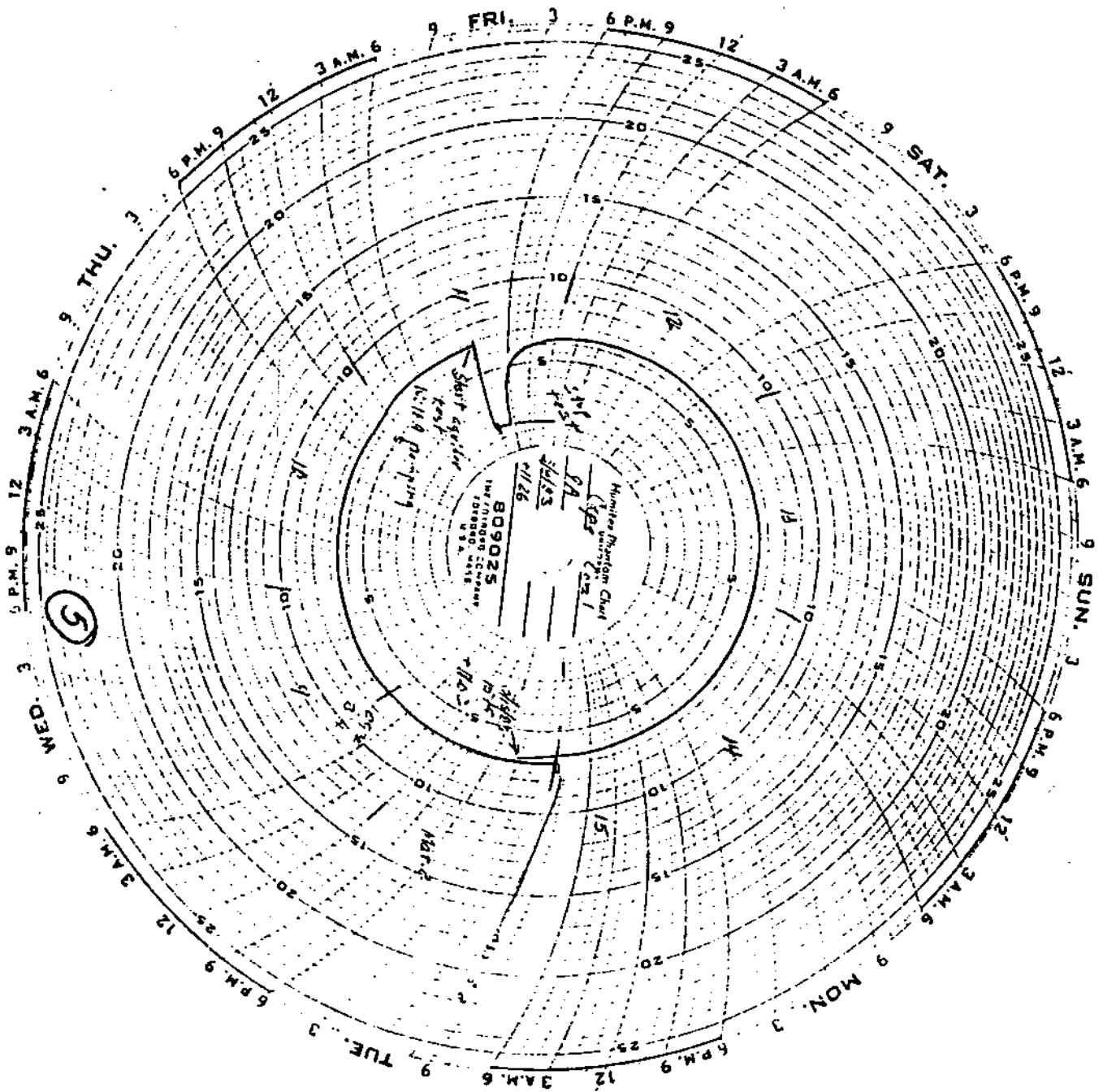


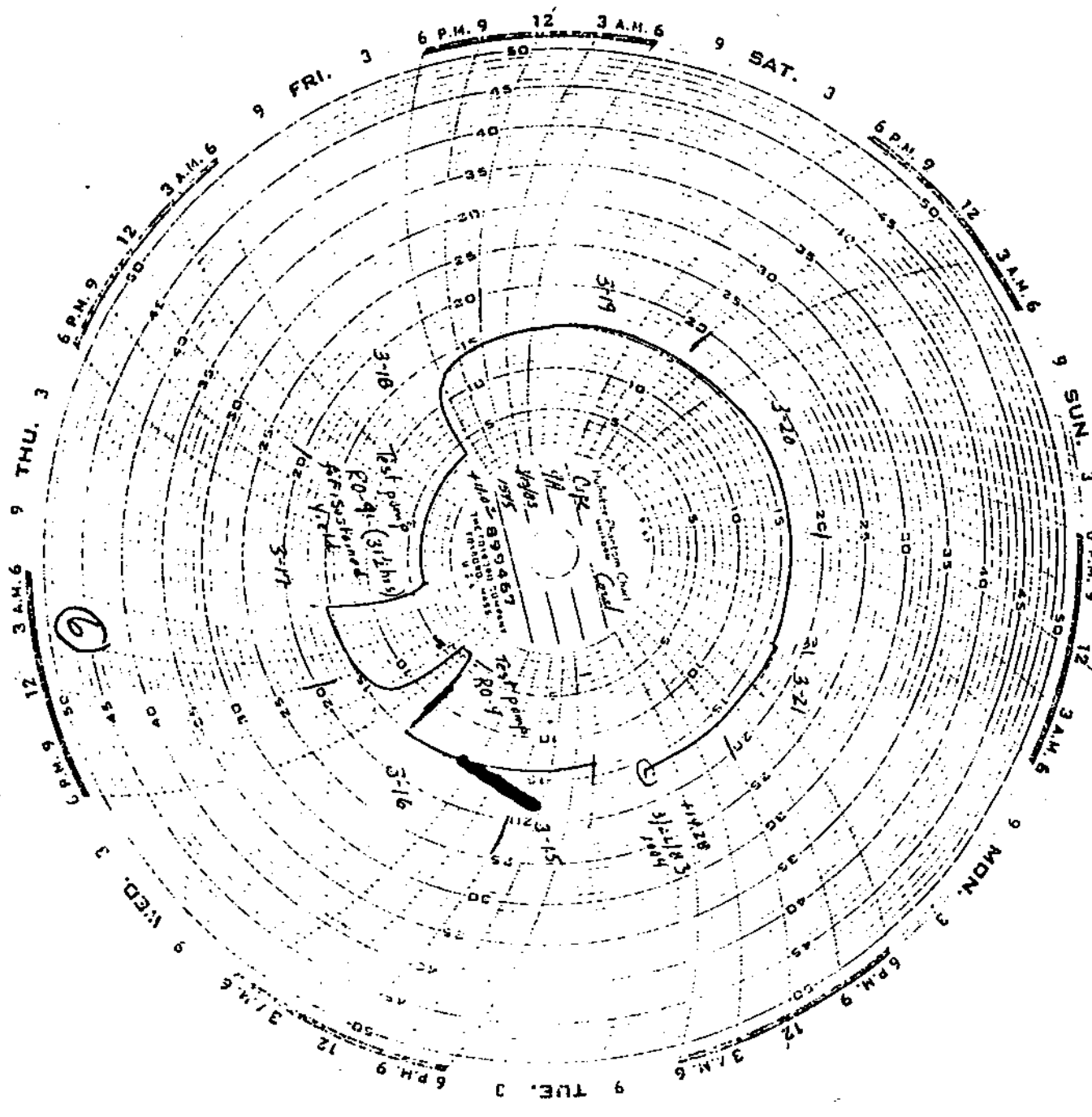


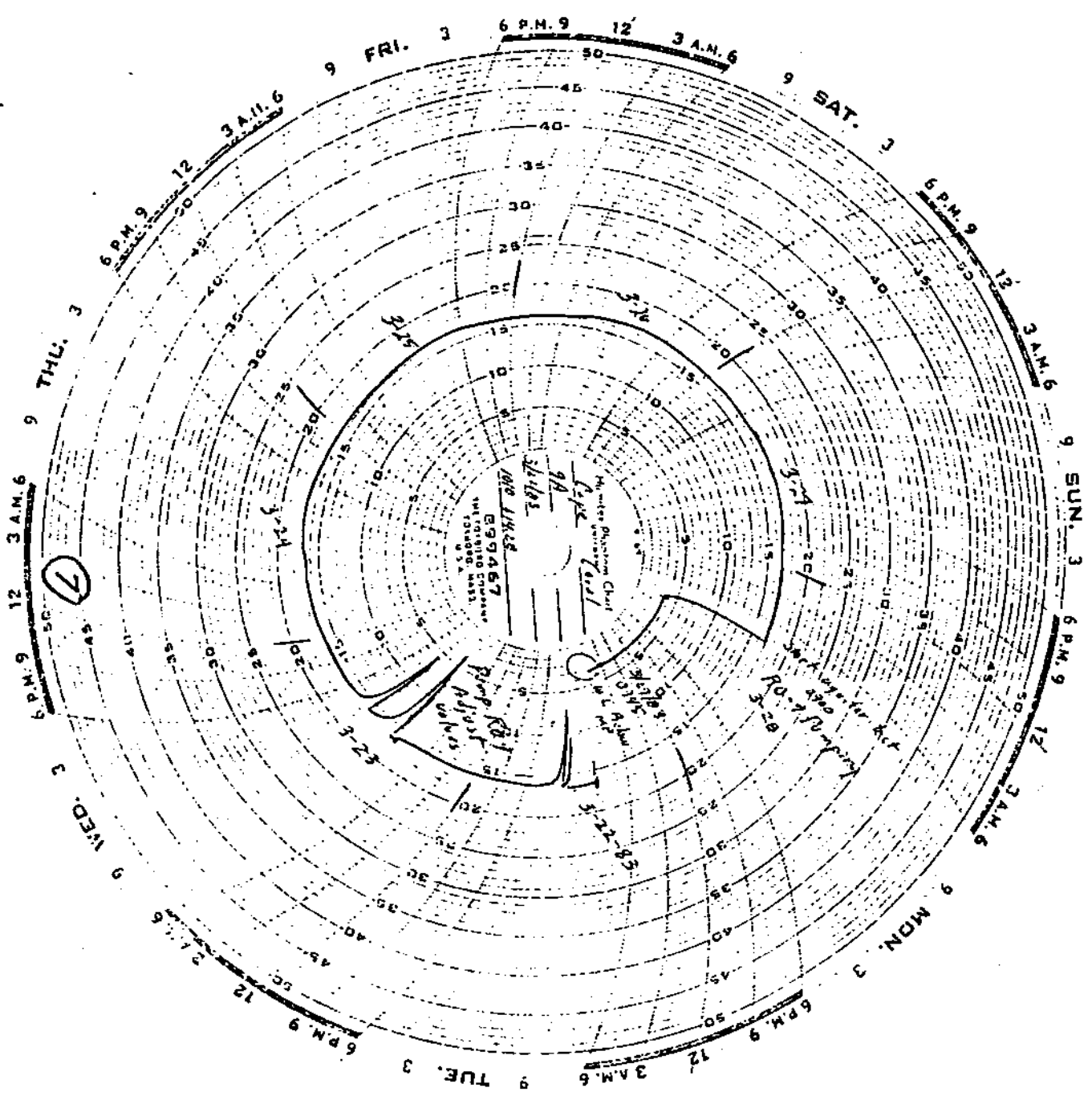


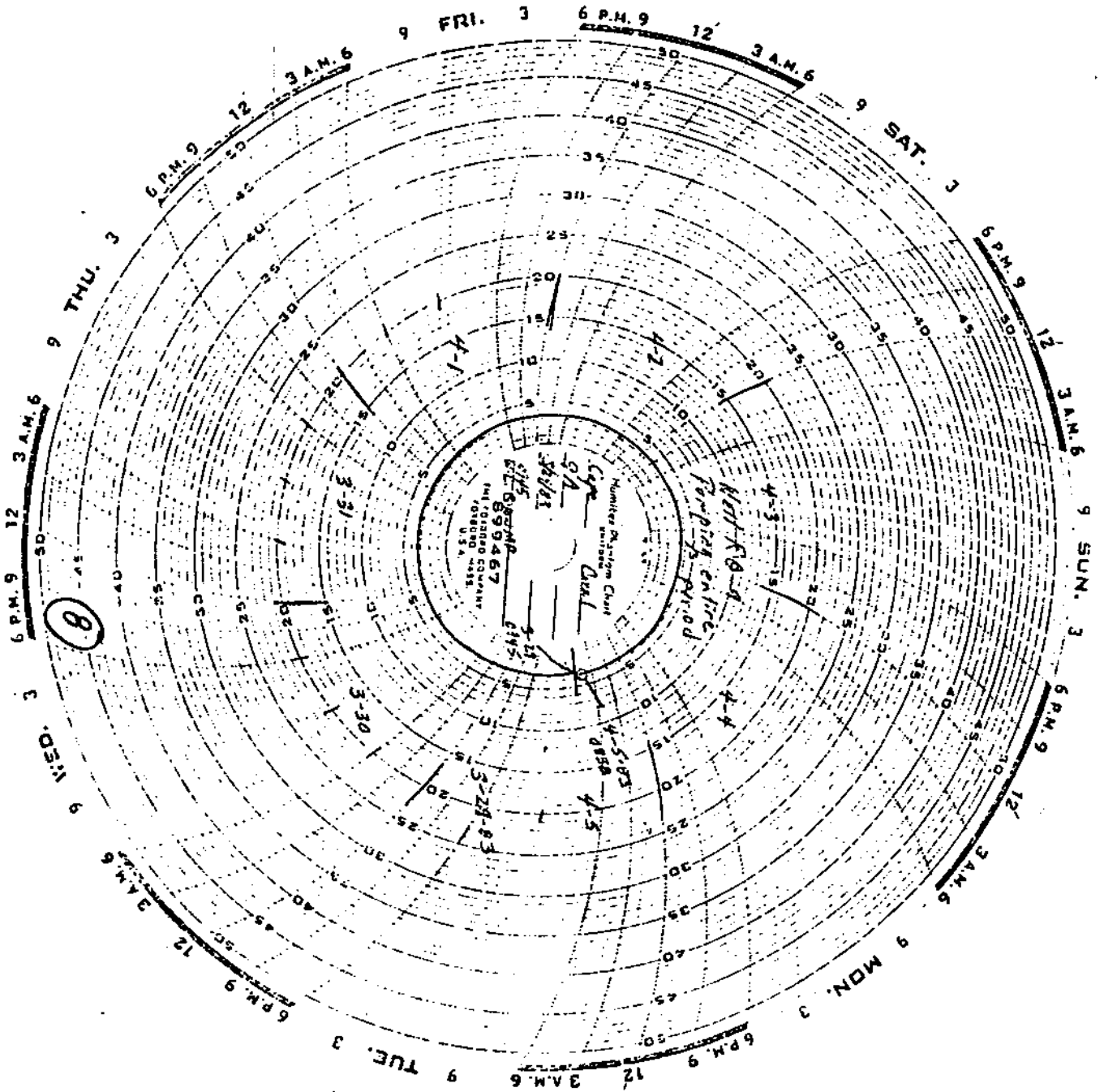


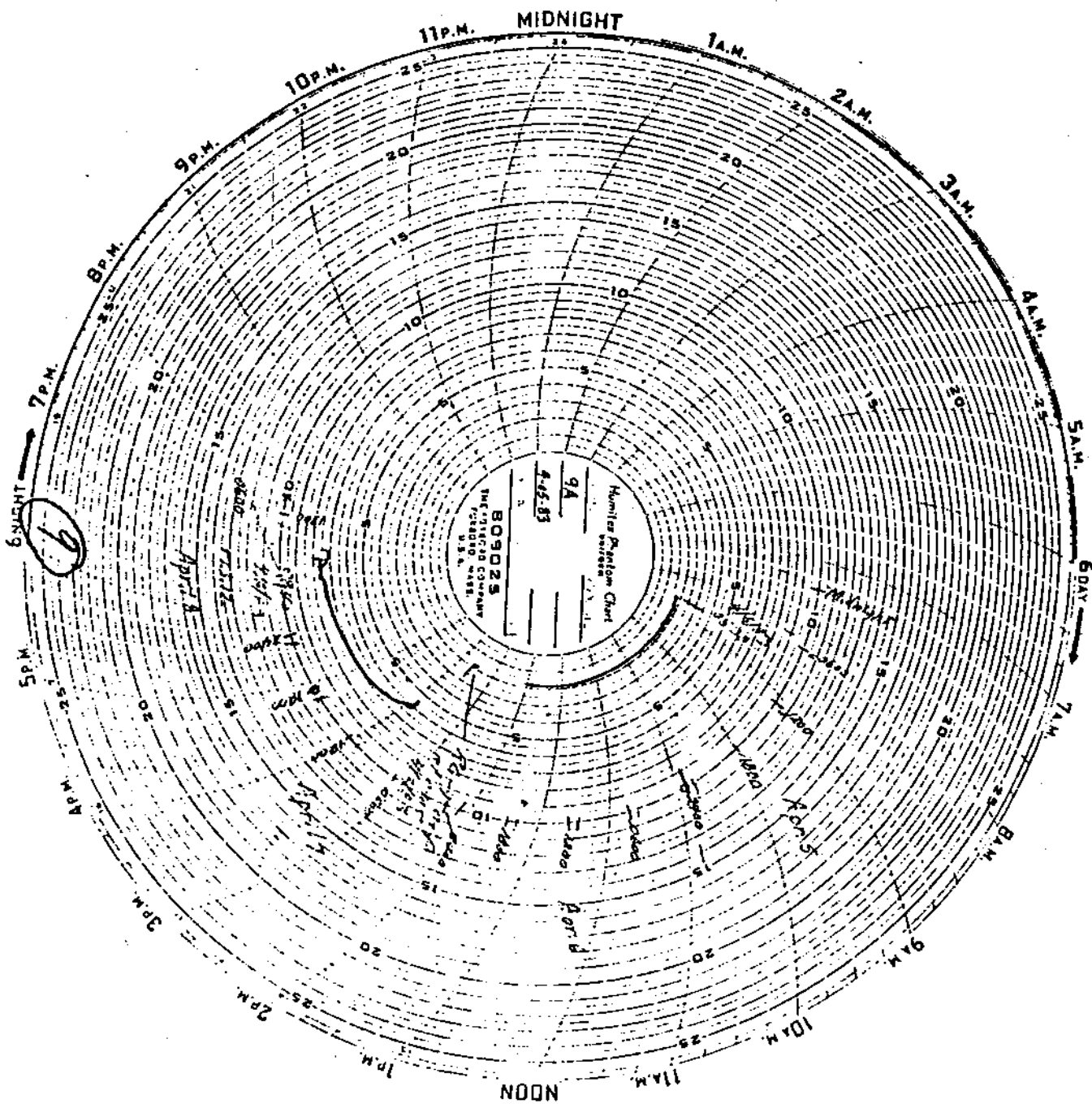






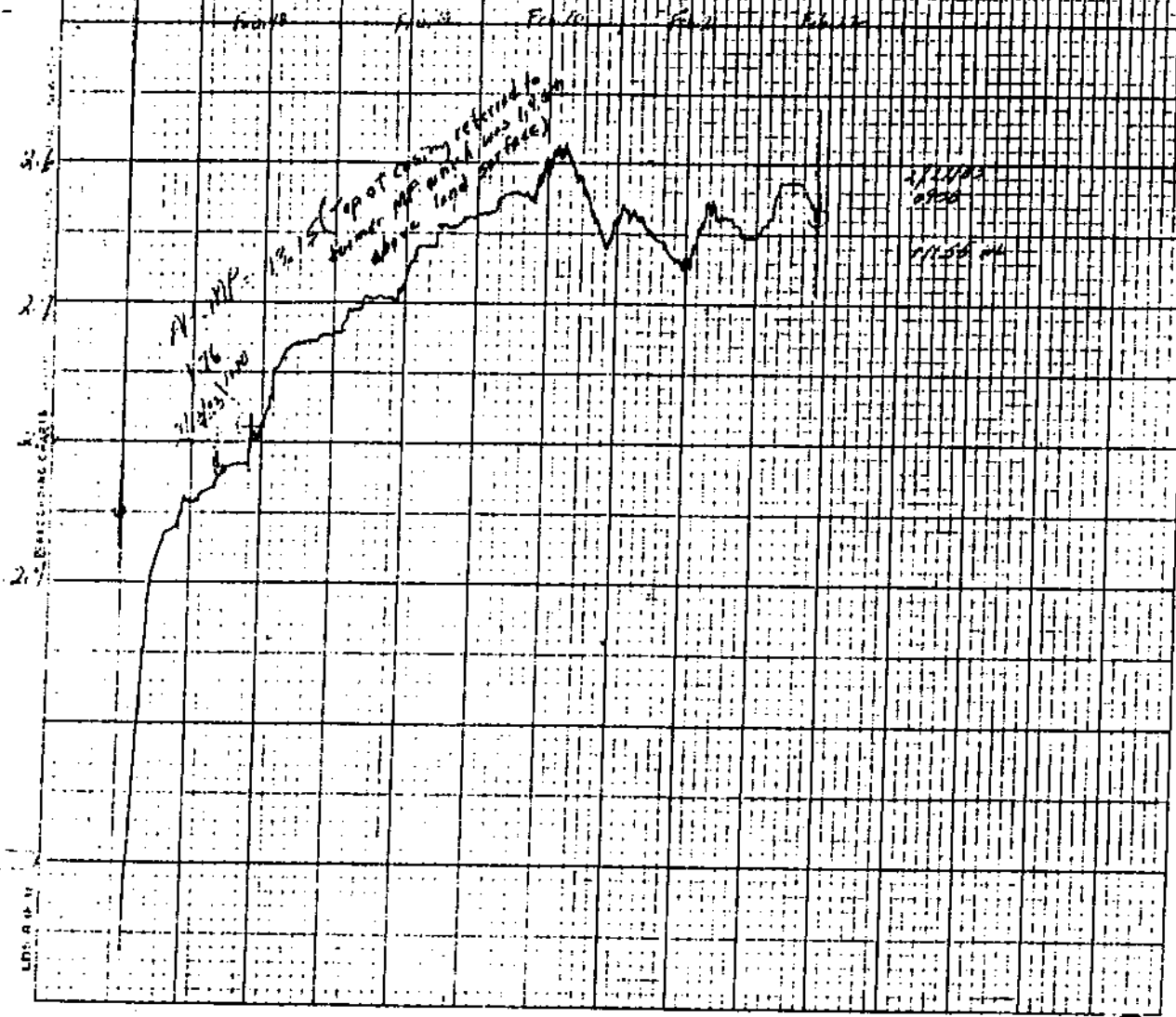






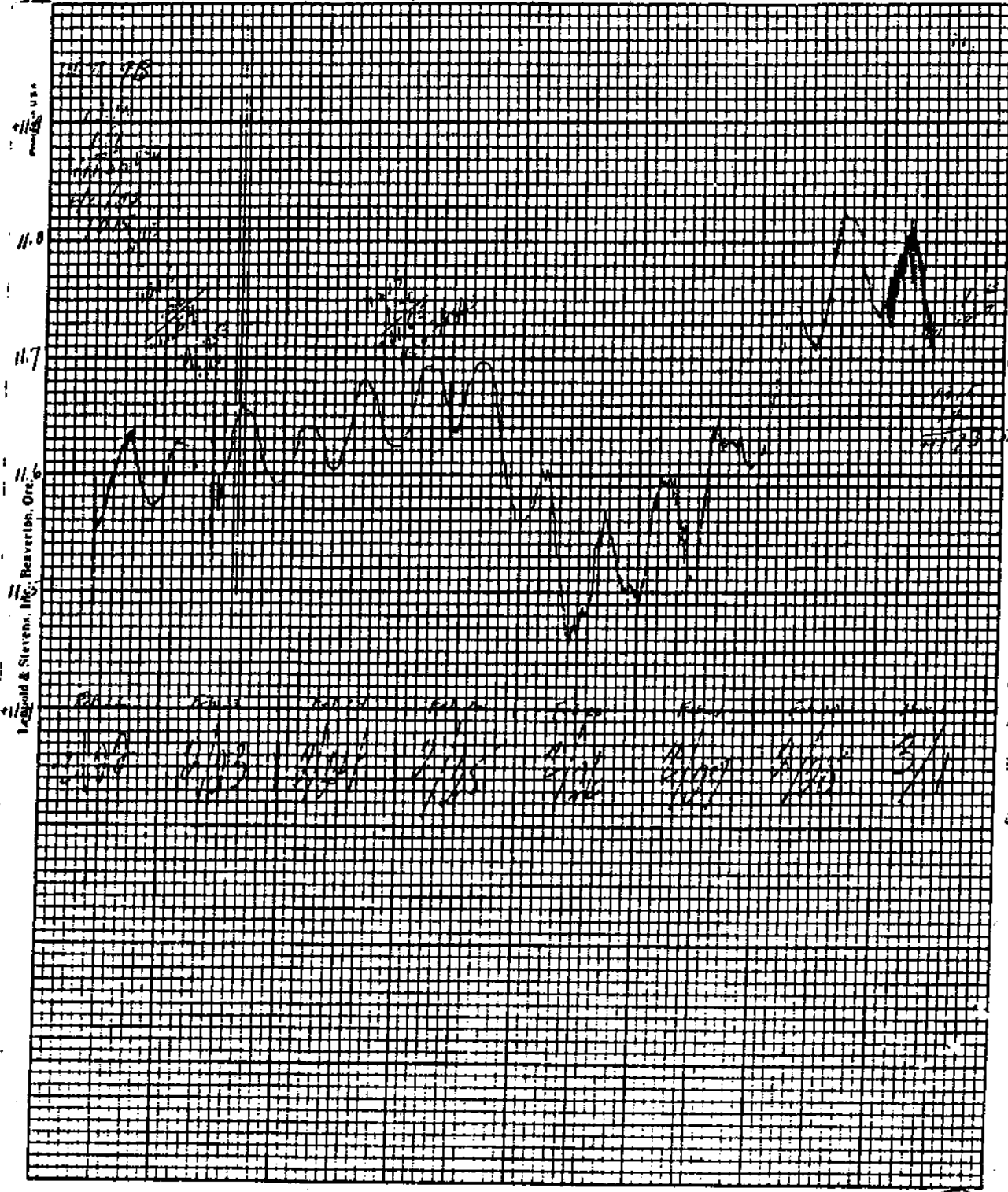
Well 7B  
2/17/87  
11:41 AM  
Water Level  
2.55 Below  
Top of casing

Obs Well 7B  
Lower than  
1986



WATER LEVEL RECORDER

Chart (1)

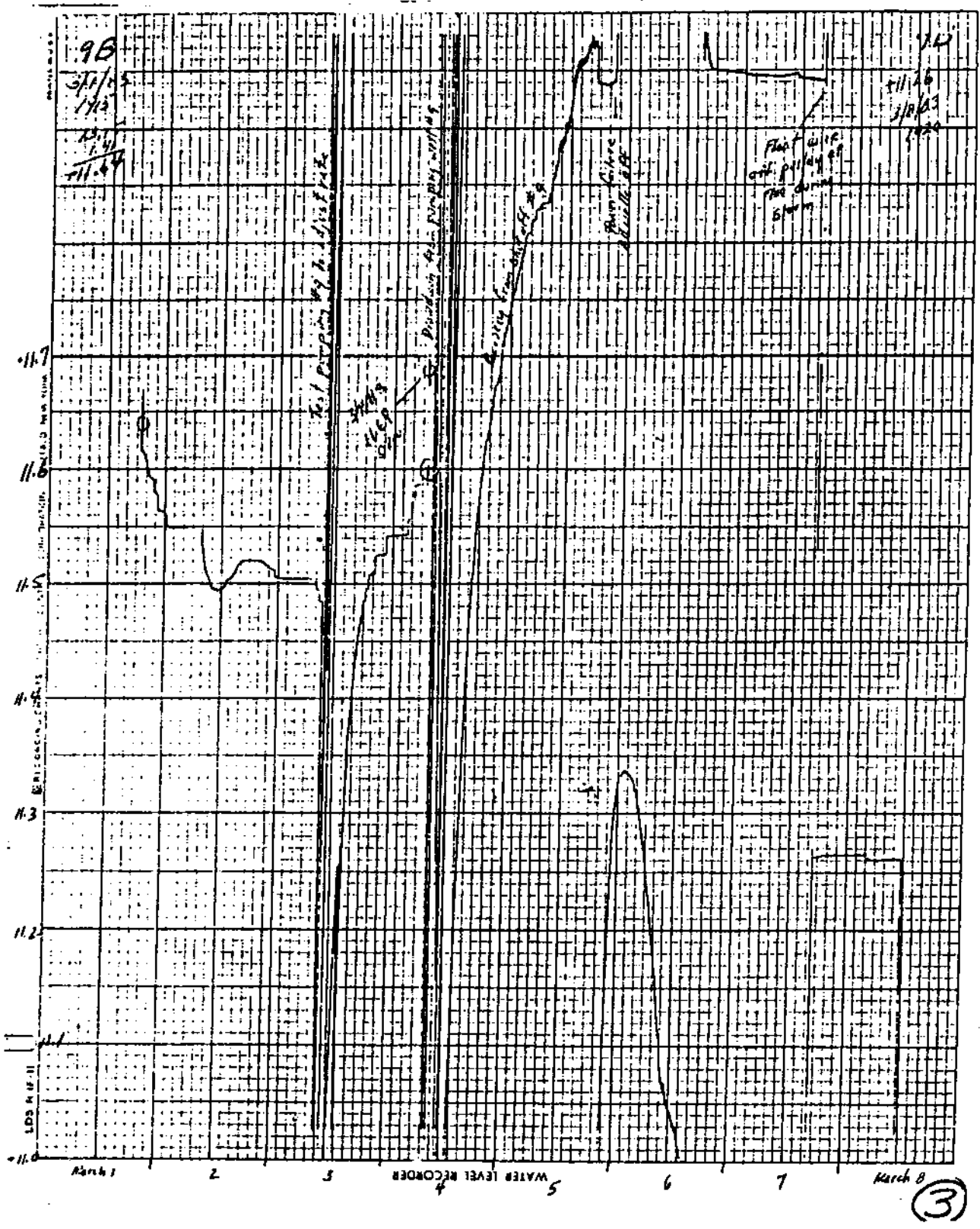


Legend & Stevens, Inc., Beaverton, Ore.  
 11.9  
 11.8  
 11.7  
 11.6  
 11.5  
 Feet

Chart F-1

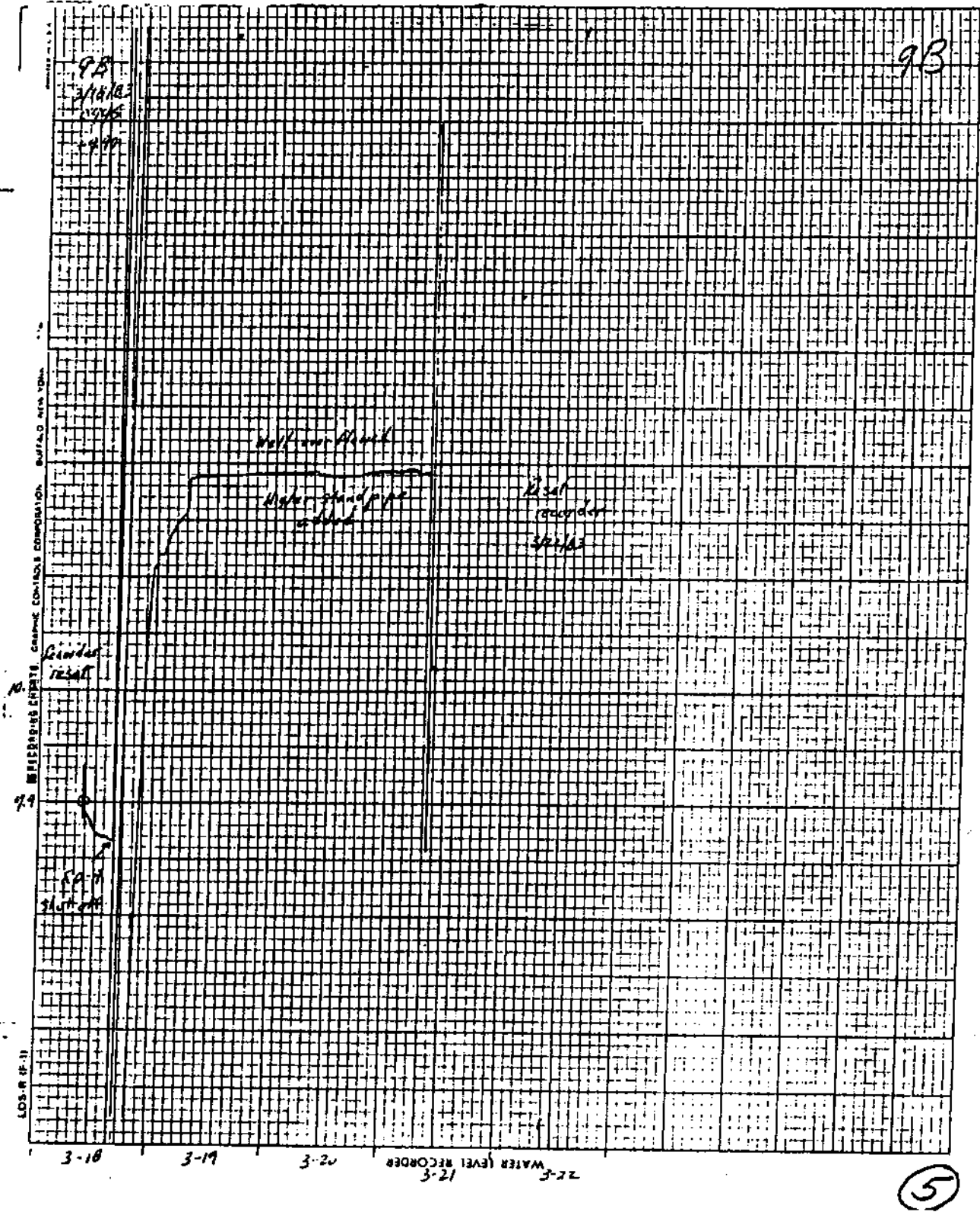
Stevens Water Level Recorder - Type F

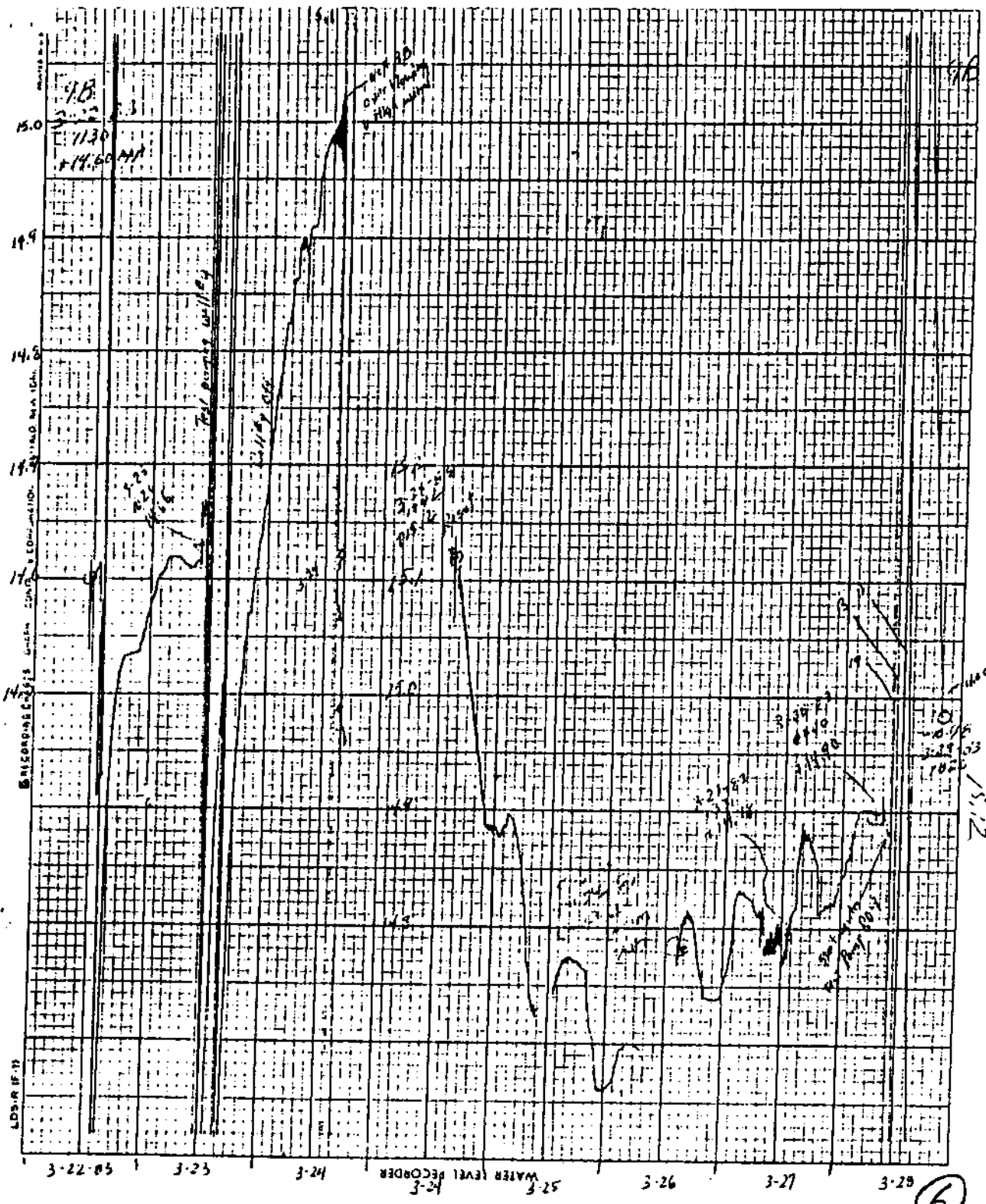
(2)

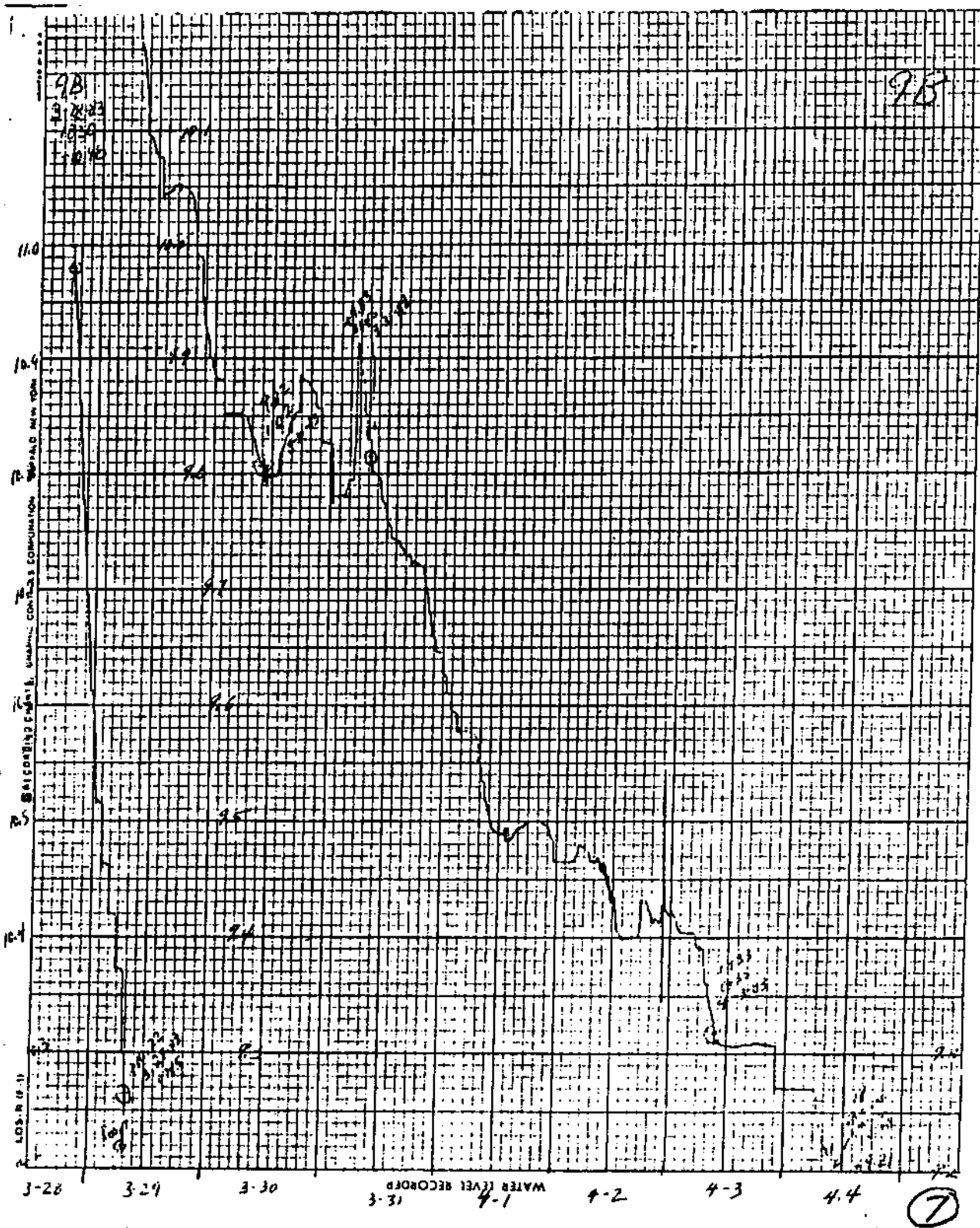


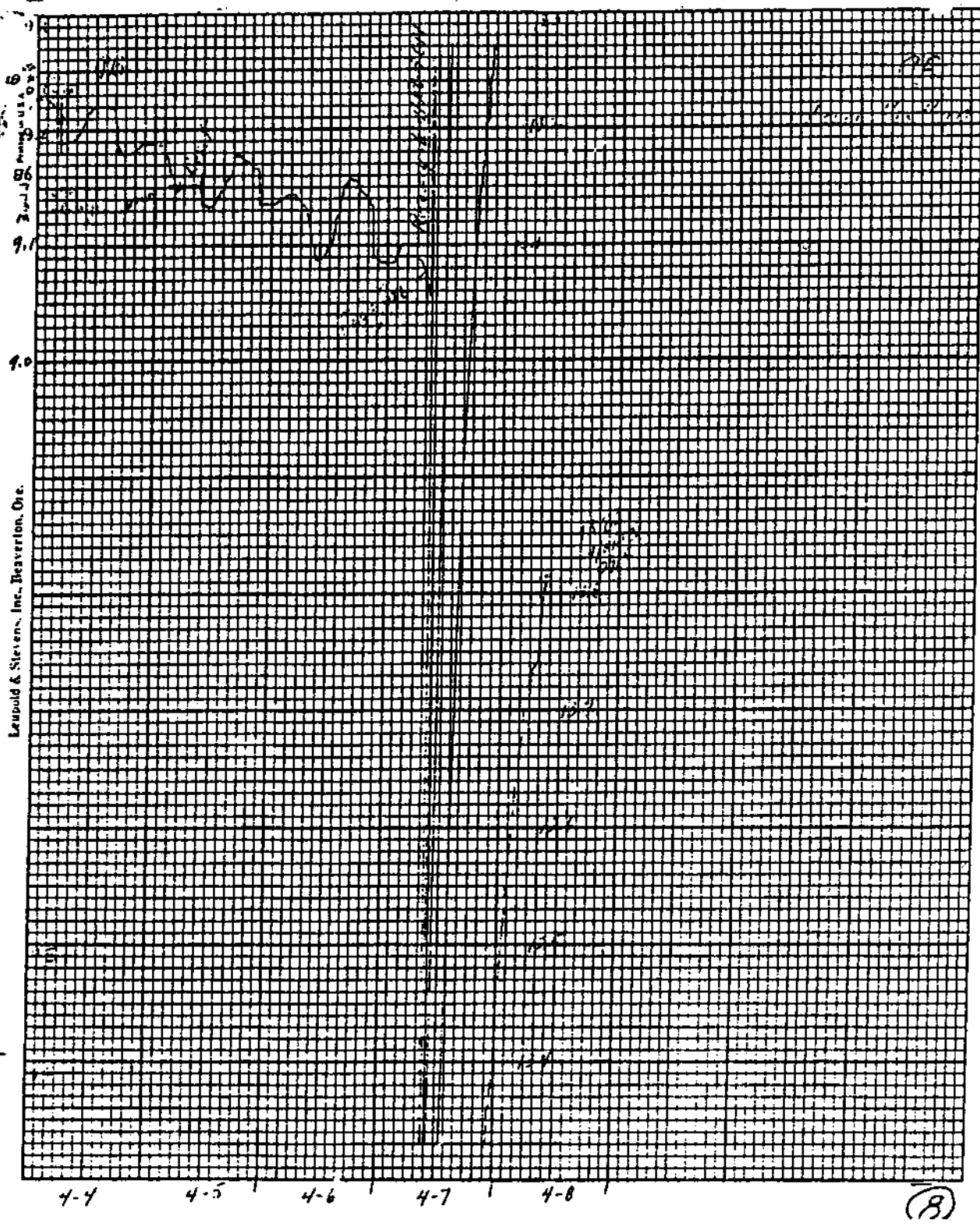












Leupold & Stevens, Inc., Beaverton, Ore.

Chart F-1

Stevens Water Level Recorder - Type F

PROJECT NO. 107

REYNOLD & STEVENS, INC., HOVERTON, OK.

PROJECT  
SOLUTIONS OF THE

DIS NO

RO-1

Louis Hawthorn

Well RO-7

Disturbance to NW 1/4 plat of  
well which is 2 1/2 ft  
above ground surface

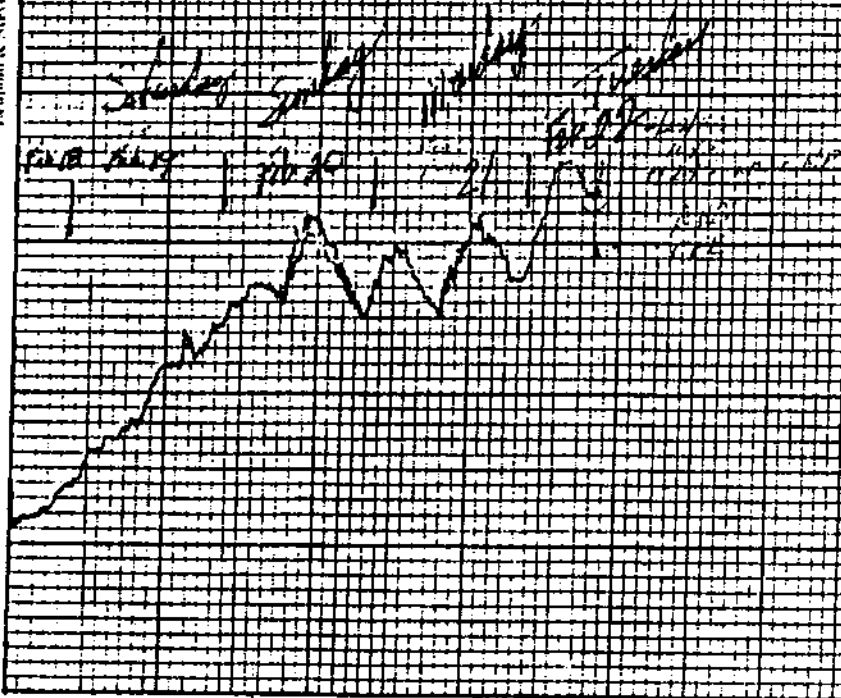
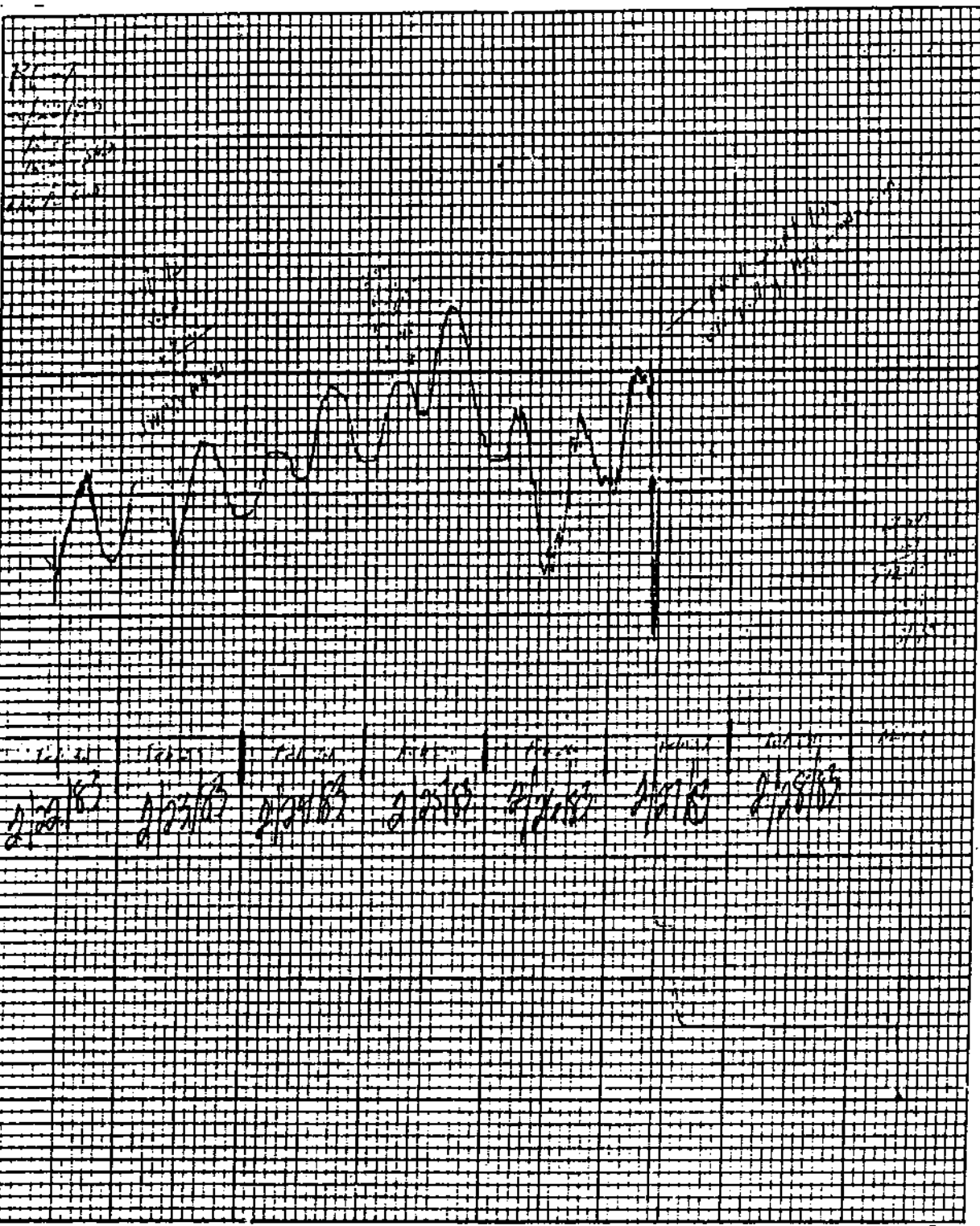


Chart ①

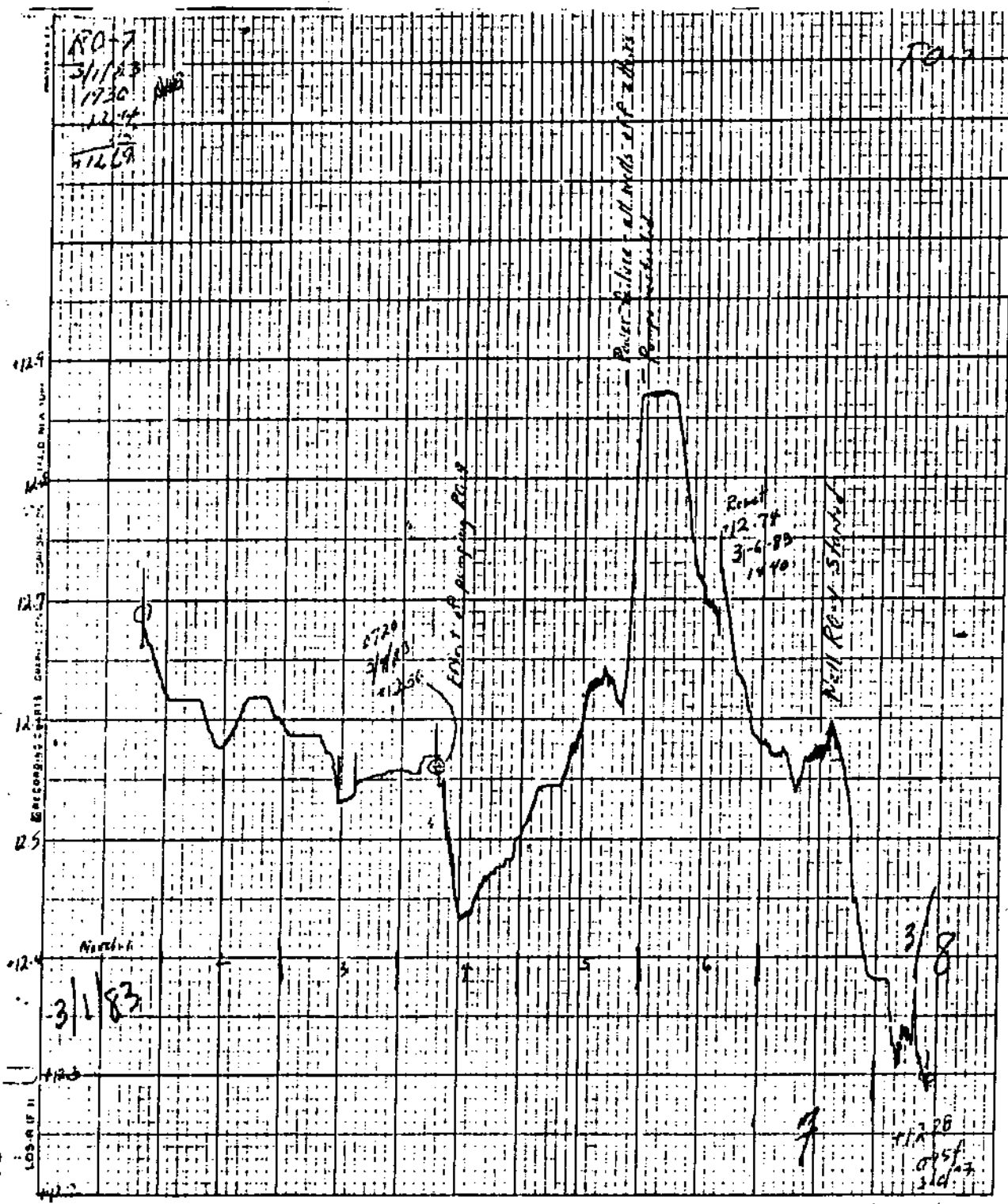
Project U.S.A.  
12.7  
12.6  
12.5  
12.4  
12.3  
12.2  
12.1  
12.0  
11.9  
11.8  
11.7  
11.6  
11.5  
11.4  
11.3  
11.2  
11.1  
11.0  
10.9  
10.8  
10.7  
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10.4  
10.3  
10.2  
10.1  
10.0  
9.9  
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9.5  
9.4  
9.3  
9.2  
9.1  
9.0  
8.9  
8.8  
8.7  
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8.4  
8.3  
8.2  
8.1  
8.0  
7.9  
7.8  
7.7  
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7.5  
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7.2  
7.1  
7.0  
6.9  
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6.1  
6.0  
5.9  
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5.4  
5.3  
5.2  
5.1  
5.0  
4.9  
4.8  
4.7  
4.6  
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4.1  
4.0  
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3.2  
3.1  
3.0  
2.9  
2.8  
2.7  
2.6  
2.5  
2.4  
2.3  
2.2  
2.1  
2.0  
1.9  
1.8  
1.7  
1.6  
1.5  
1.4  
1.3  
1.2  
1.1  
1.0  
0.9  
0.8  
0.7  
0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0.0



12.31	12.31	12.31	12.31	12.31	12.31	12.31	12.31
12.31	12.31	12.31	12.31	12.31	12.31	12.31	12.31

Chart F  
S  
M  
Singer Wave Lead Recorder - Type F

(2)

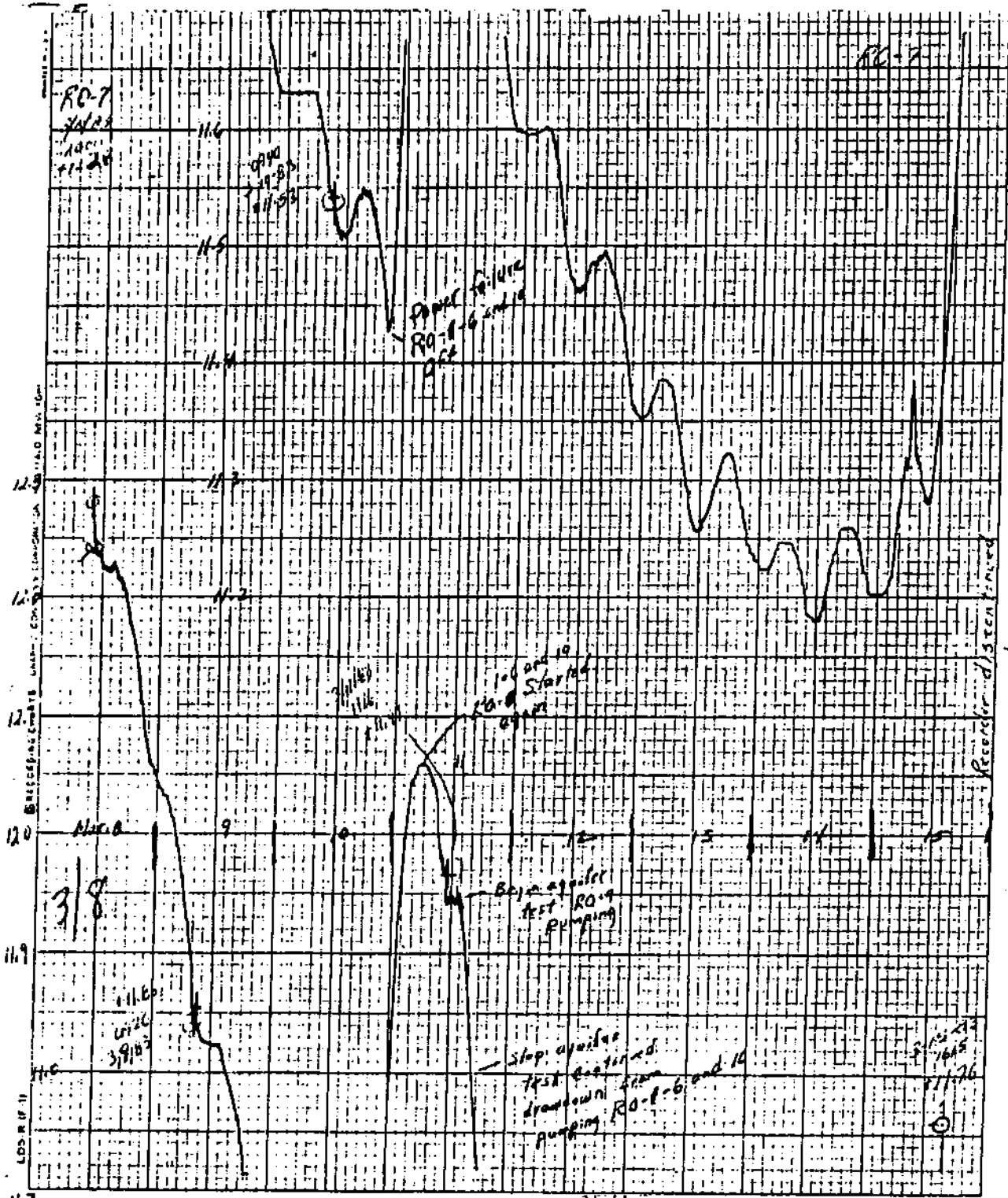


WATER LEVEL RECORDER

③

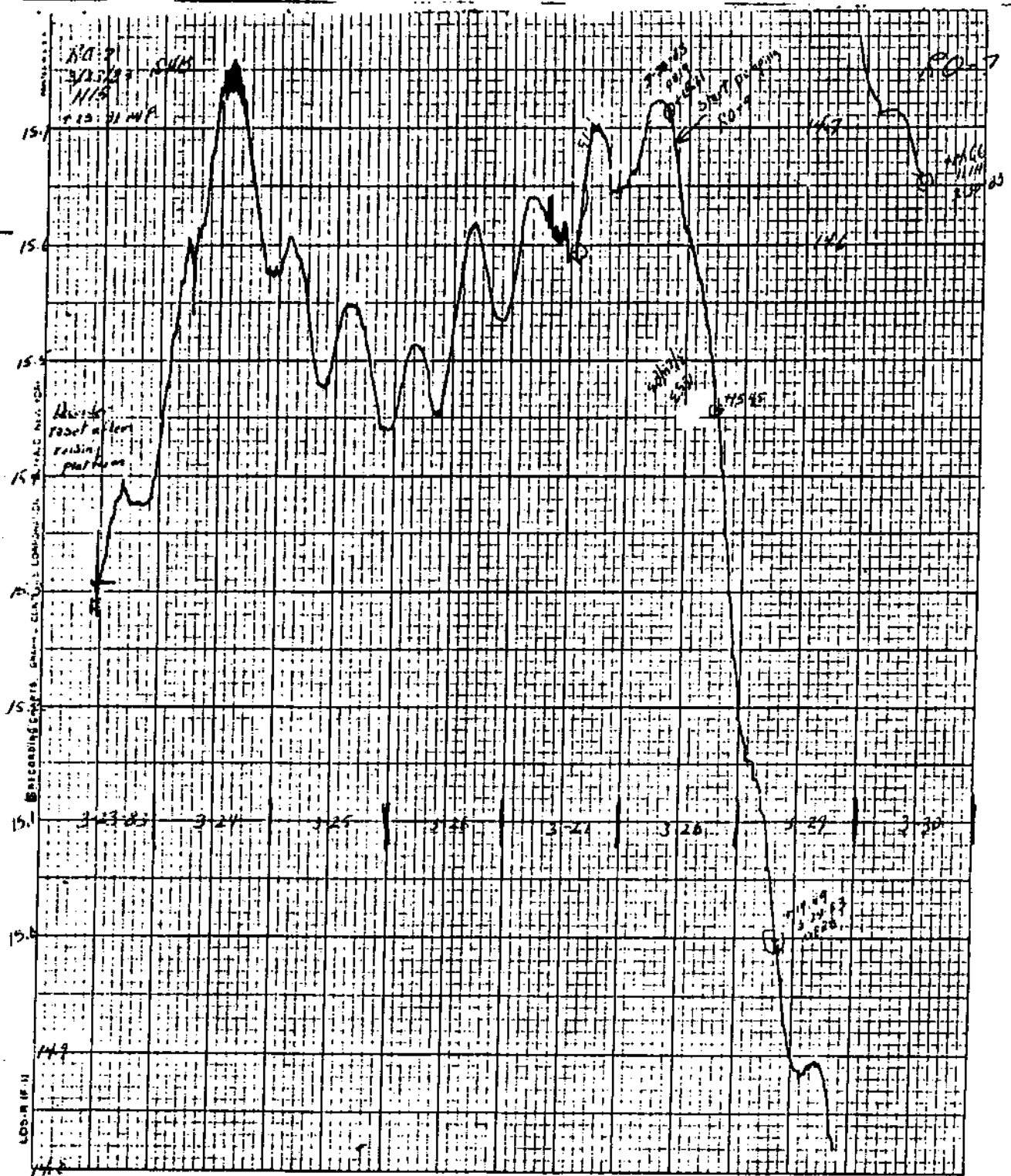
MARCH 8

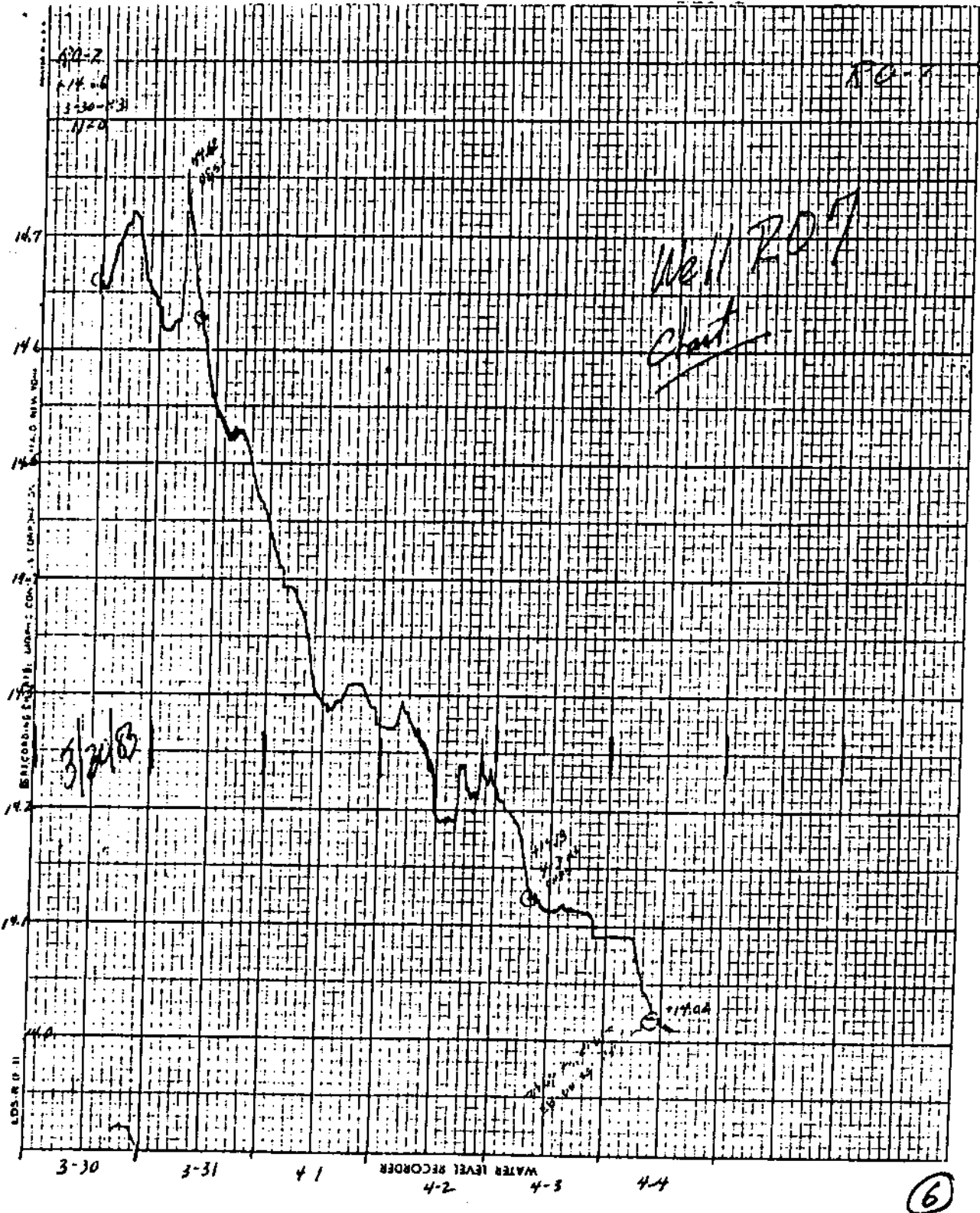




WATER LEVEL RECORDER

4





Leopold A. Stevens, Inc., Beaverton, Ore.

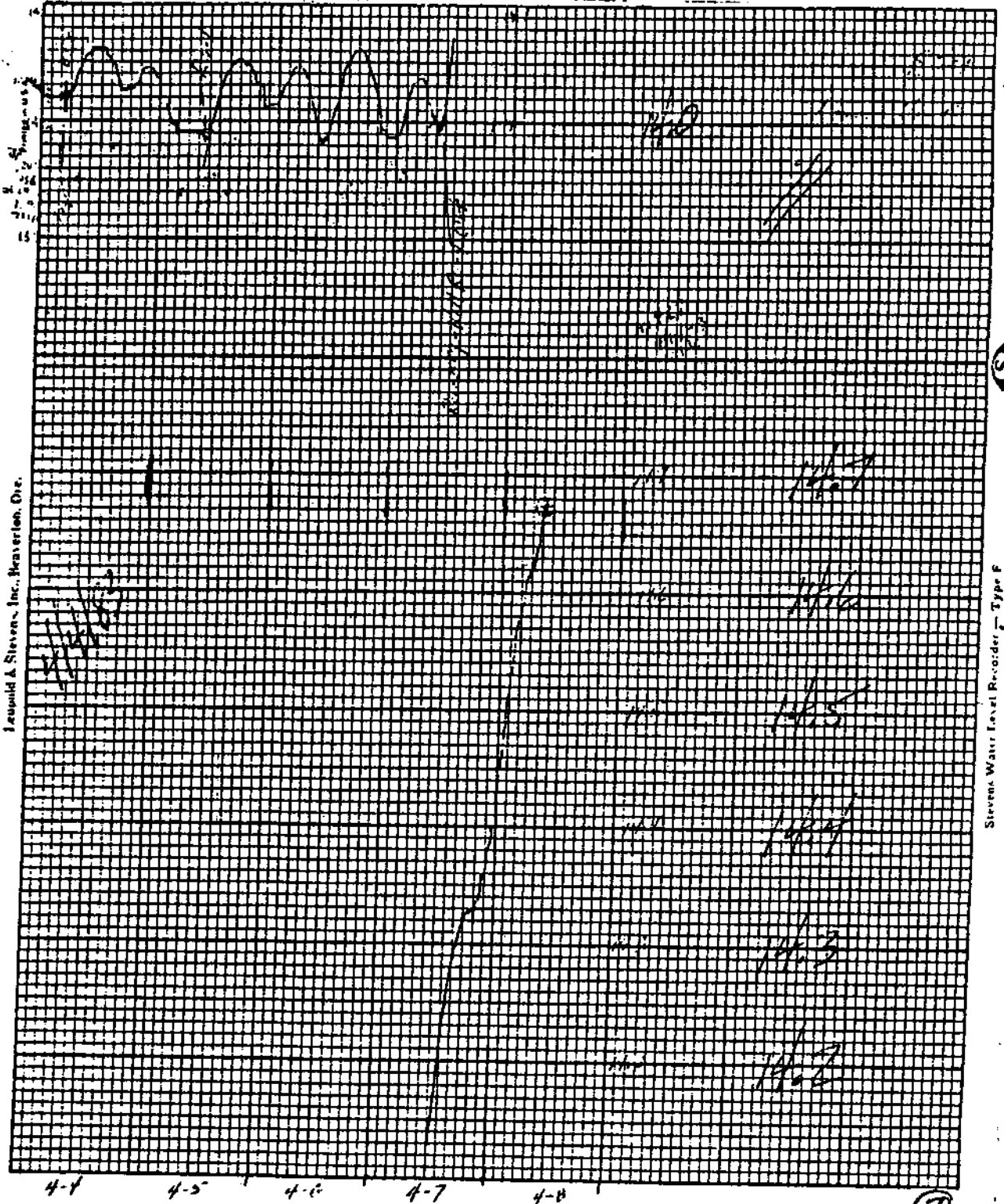


Chart F-1

Stevens Water Level Recorder - Type F

WS FORM 1068C

REVISED APRIL 1972

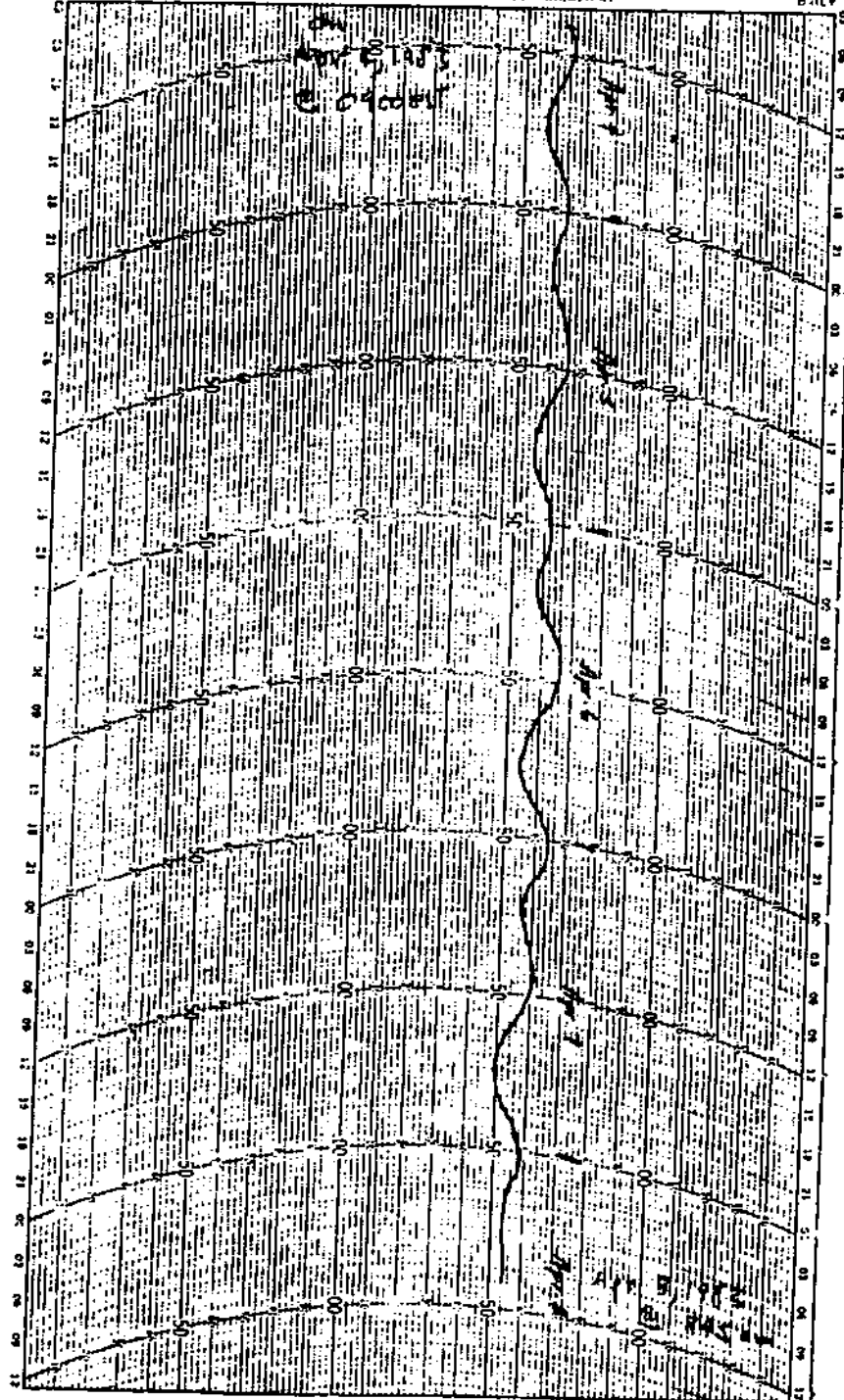
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

Federal Bldg

Ft. Myers

STATION PREVIOUS AT 04 0900Z BAROGRAM  
RECORD IN 10 MINUTE TIME PER THICKEN AT

OFF 080845AM



PLEASE USE RED PEN FOR THIS CHART

WS FORM 455-17

(PREVIOUS EDITIONS OBSOLETE)

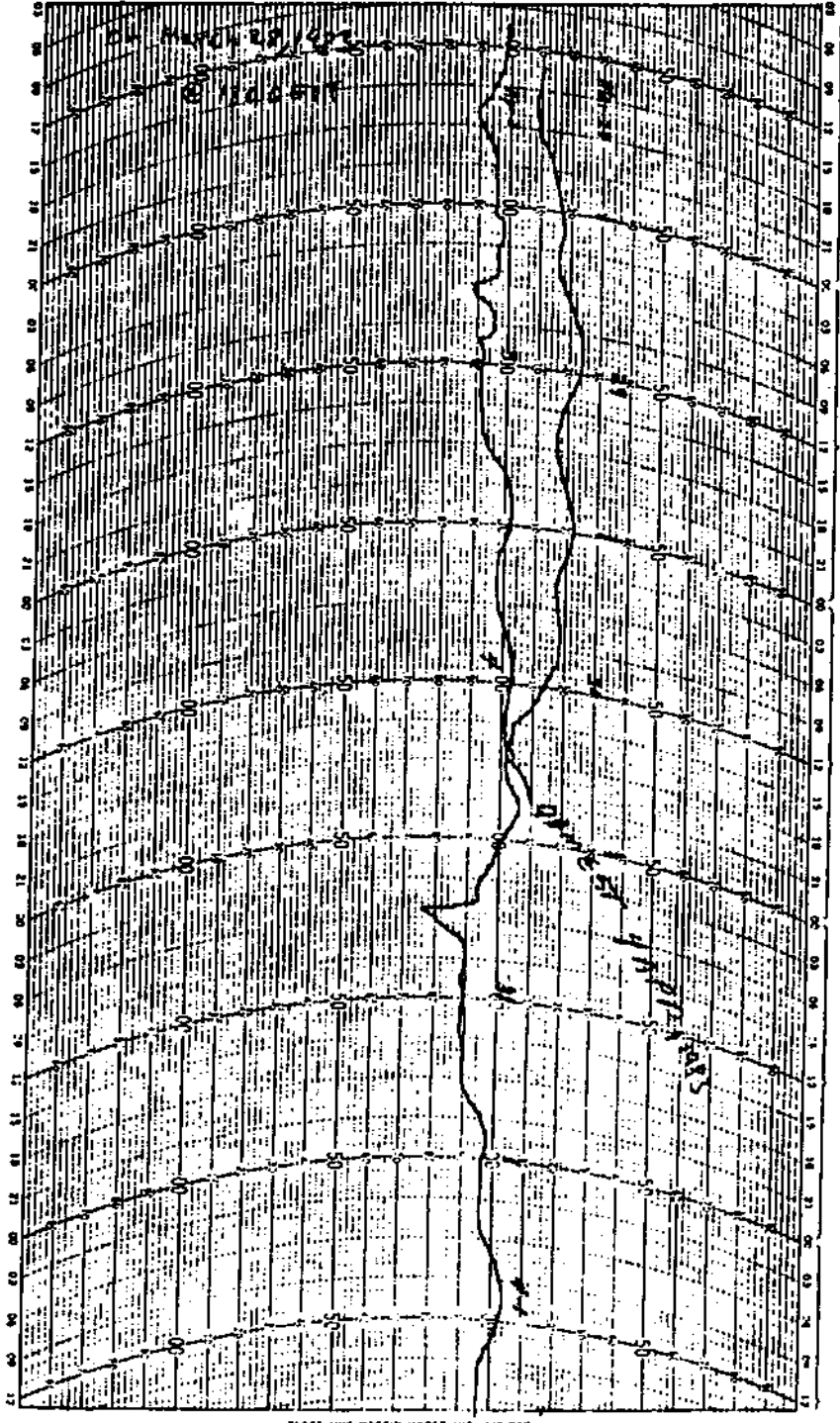
FOR USE IN 7 628 INCHES LONG 4 1/4 IN 2 3/8 INCHES ABOVE CLOCK FINGER  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE IS INDICATED AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ TO MERIDIAN ELEVATION (in ft) \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: 28/30065T

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: 04090065T



PLACE TIME MARKER UNDER THE CURVE

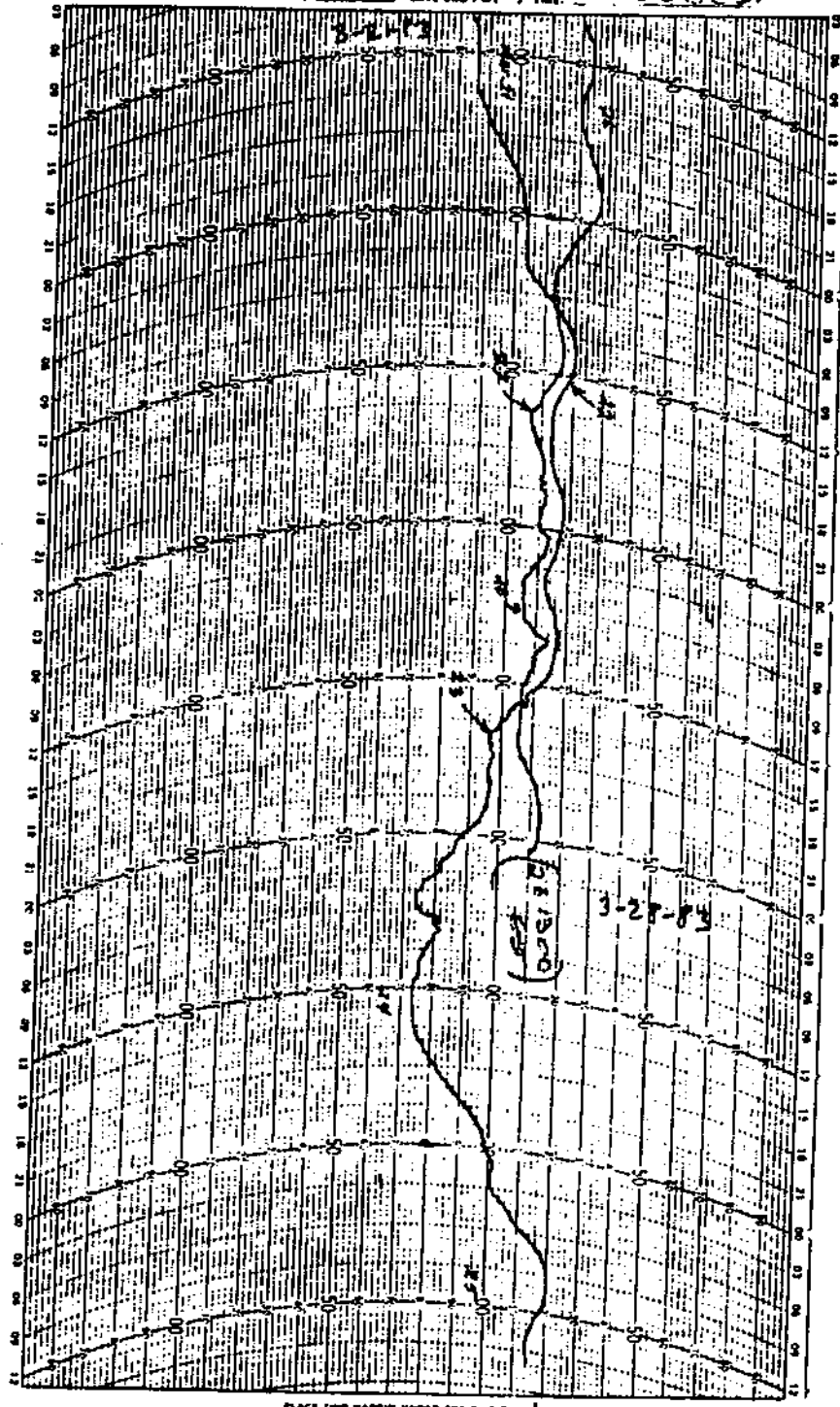
FOR USE IN 7 DAY RECORD LINE WITH 10.3 FT. INCHES ABOVE CLASH FLOOR  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE (in inches) AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN \_\_\_\_\_ ELEVATION (in \_\_\_\_\_)

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: 21 0930 EST

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: 28 1300 EST



WS FORM 455-17

(FORMERLY FORM 1874-1-73)

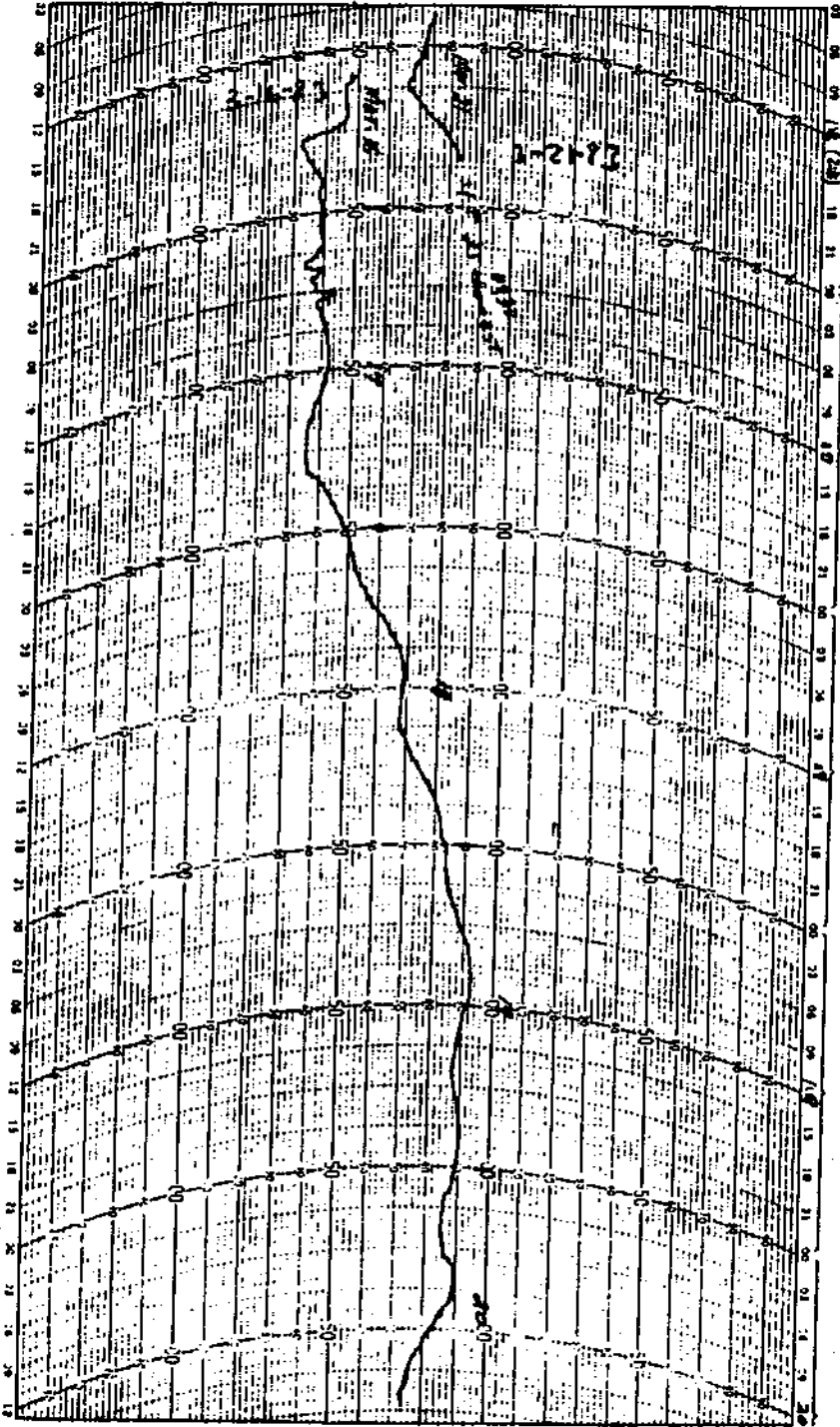
PEN AND INK 7 028 INCHES LONG, 4 946 IN 2.575 INCHES ABOVE CURVE FLANGE  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE IN MERCURY AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN ELEVATION (in ft) \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: Nov 16 1400 EST

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: Nov 21 0930 EST





(FORM NO. 1000)

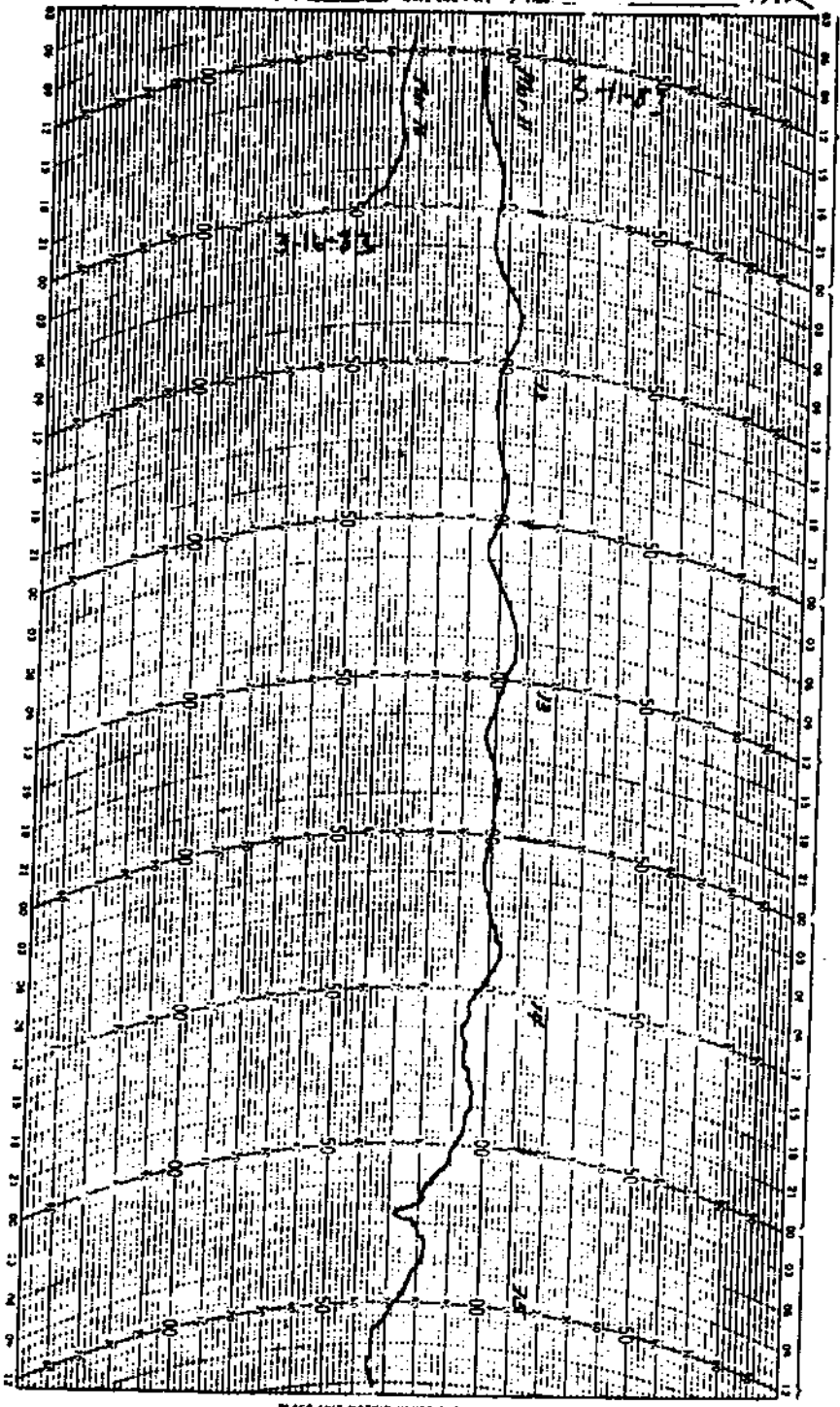
NEW 200 IN 7 885 THREE LINE 2 1/2 IN 2.125 INCHES ABOVE GLOBE FLANGE  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE IN MERCURY AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN ELEVATION IN \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: 245 PM EST 11 MAR

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: 210 PM 16 MAR



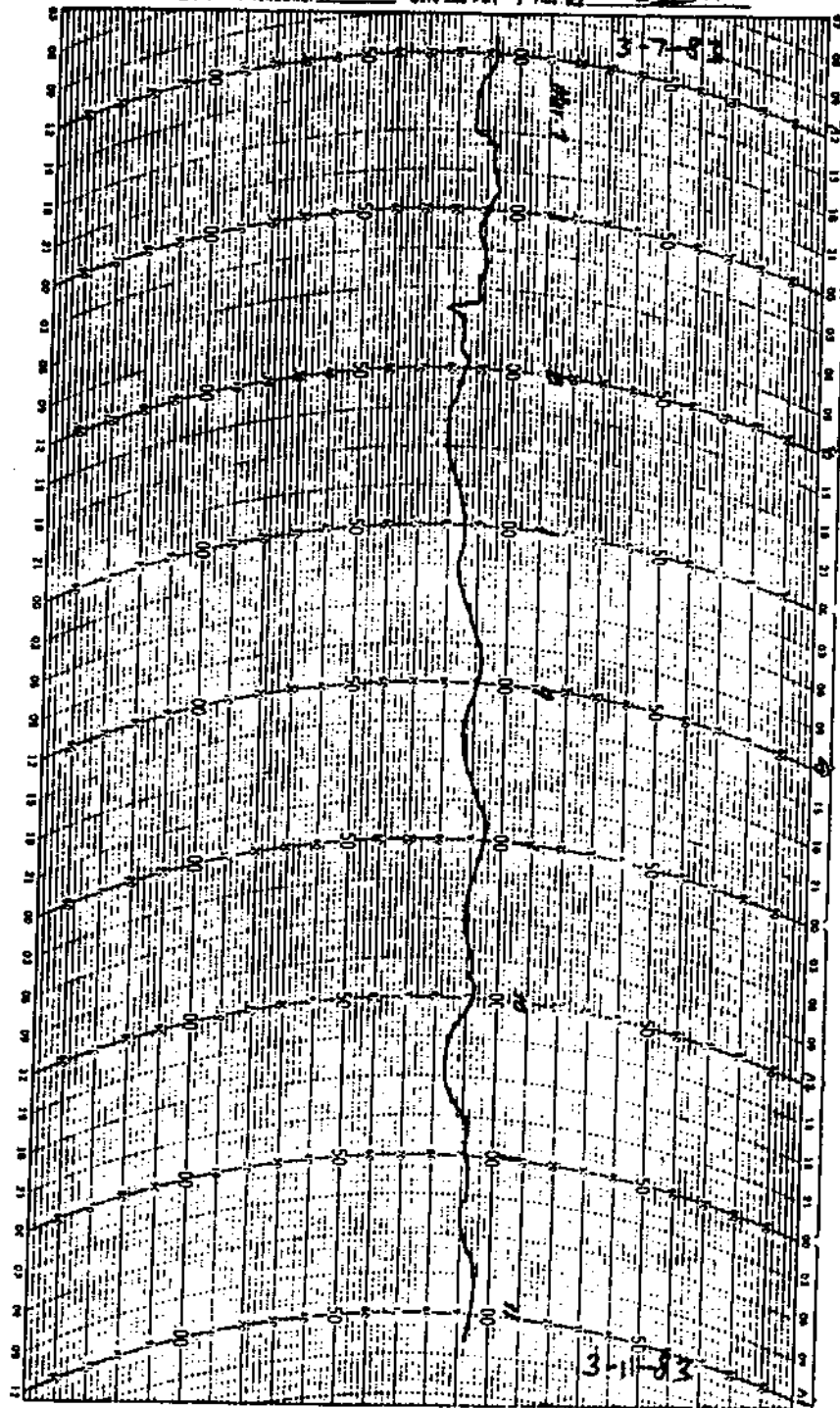
PLACE THIS BAROGRAM UNDER THE CLIP BAR

STATION PRESSURE IN INCHES AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN. ELEVATION IN \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: Mar 08 10 AM EST

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: Mar 01 2 45 PM

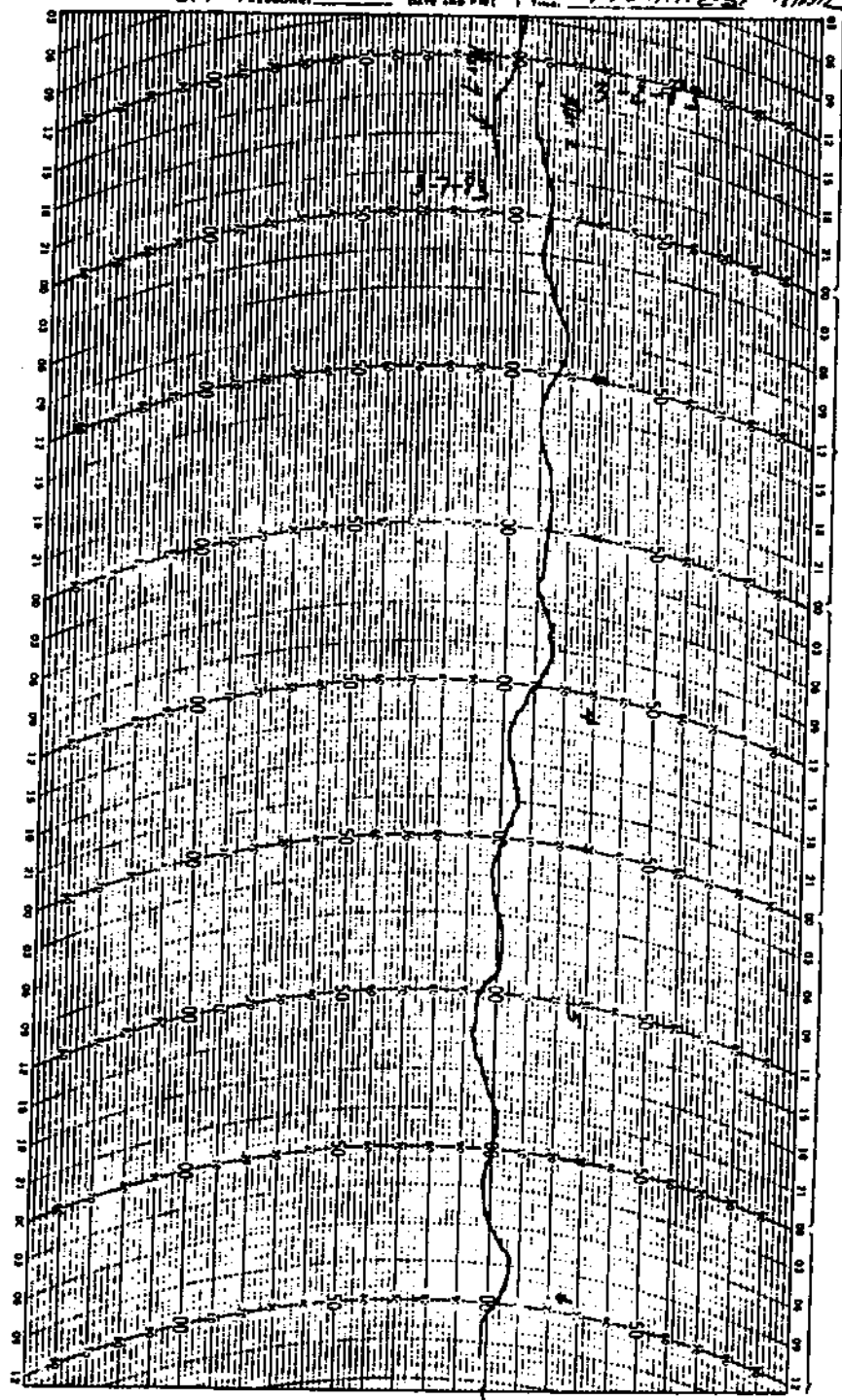


STATION PRESSURE IN mmHg AT \_\_\_\_\_

TYPE OF RECORD \_\_\_\_\_ IN MERIDIAN. ELEVATION (in ft.) \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: 02 1425 EST

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: 27 10 AM EST MAR



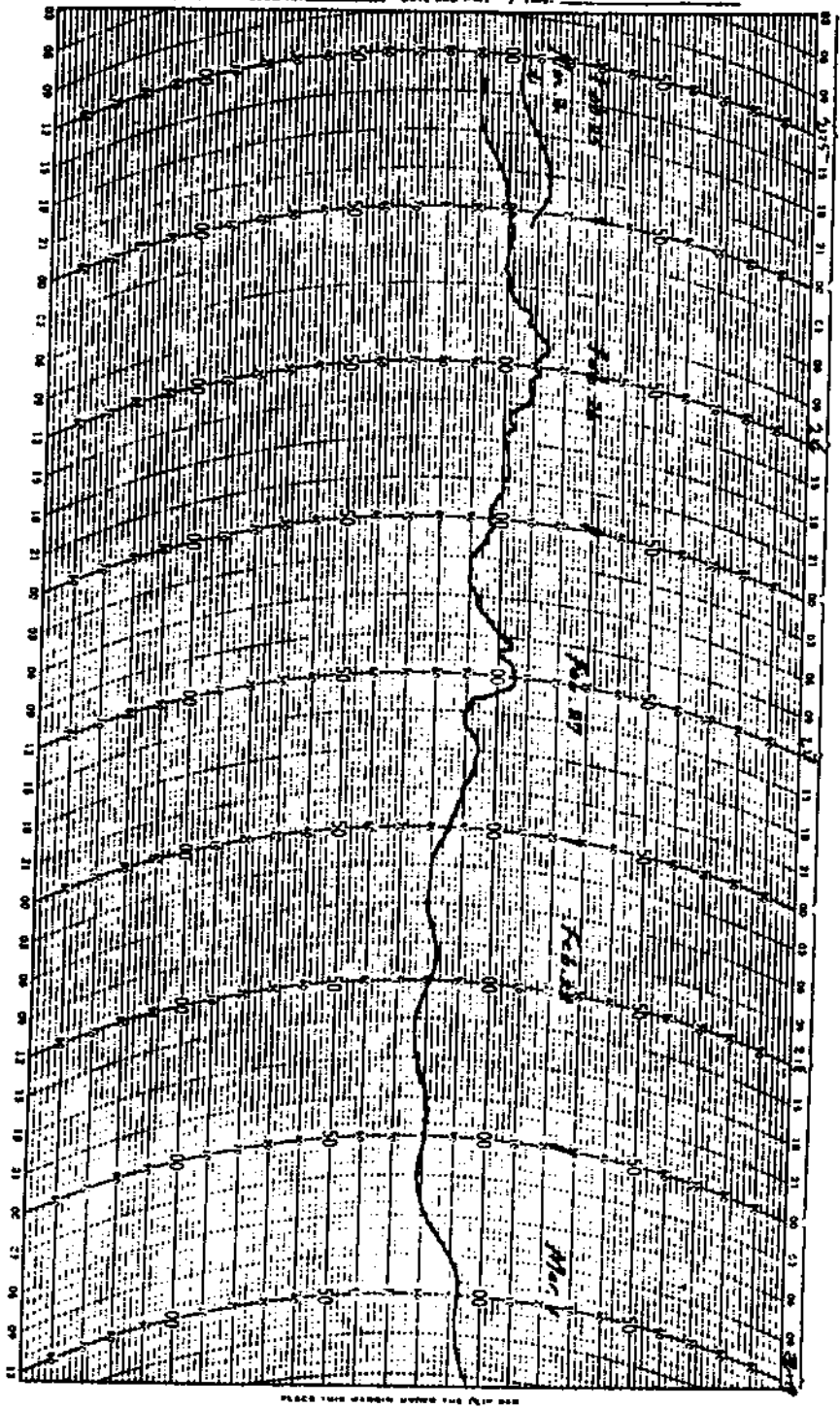
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE IN MERCURY AT \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN ELEVATION (IN.) \_\_\_\_\_

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: \_\_\_\_\_ TIME: 051900 EST 4/2/83

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: \_\_\_\_\_ TIME: 3-2-83 1420



PLACE THIS BAROGRAM UNDER THE ALTIMETER

BANUGHAM

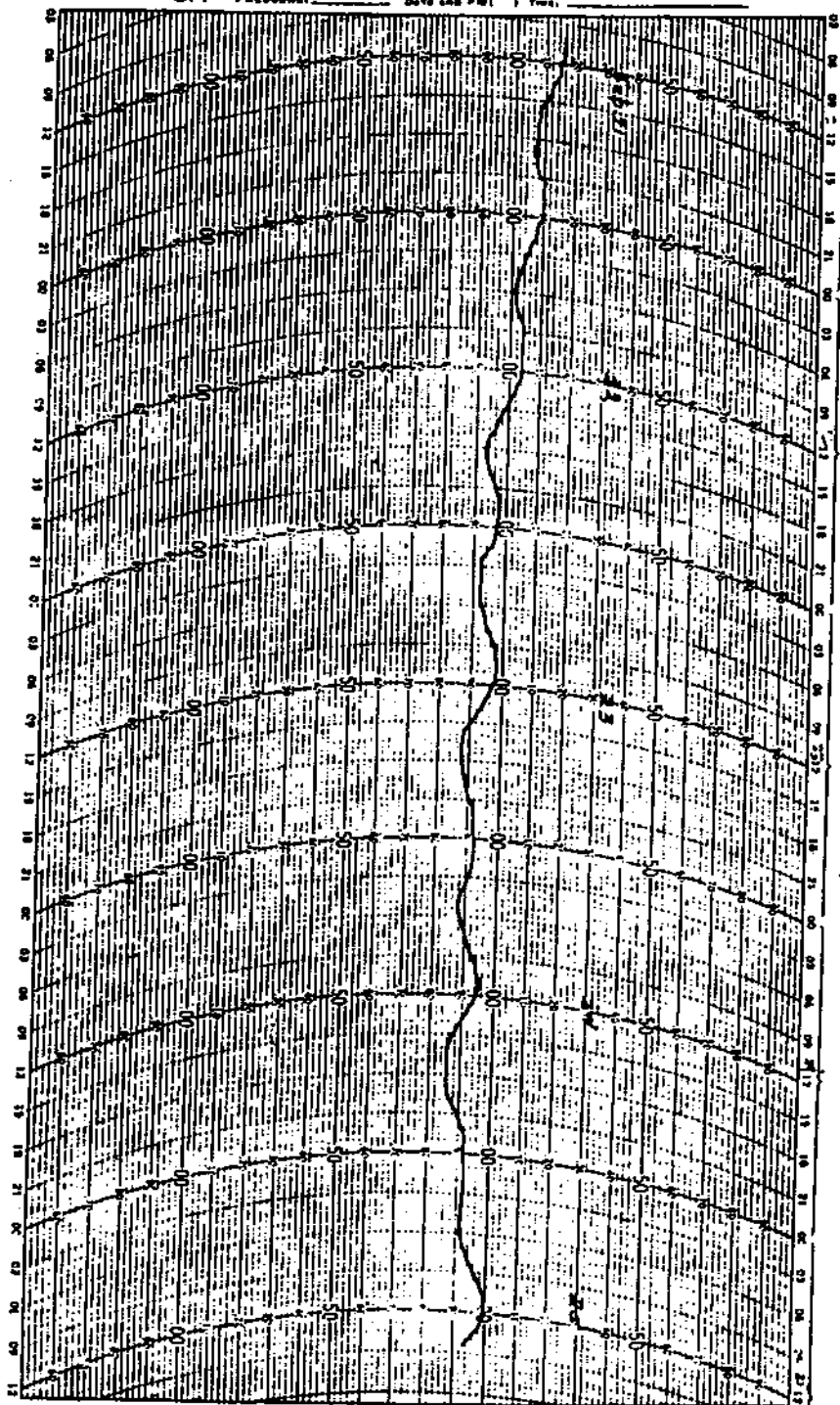
STATION PRESSURE IN MERCURY AT \_\_\_\_\_

WB Fed Bldg, Ft. Myer 5

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN ELEVATION IN \_\_\_\_\_

ON PRESSURE \_\_\_\_\_ DATE AND TIME \_\_\_\_\_ AM ( ) PM ( ) TIME: 21000+MEST

OFF PRESSURE \_\_\_\_\_ DATE AND TIME \_\_\_\_\_ AM ( ) PM ( ) TIME: 1963



PLACE THE RECORD WORDS AND DATE BAR

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

STATION PRESSURE AT *WB Fil City* BAROGRAM *11/15/83*  
RECORD IN *11/15/83* PER THICKEN AT *21/1230PM 2/15/83*

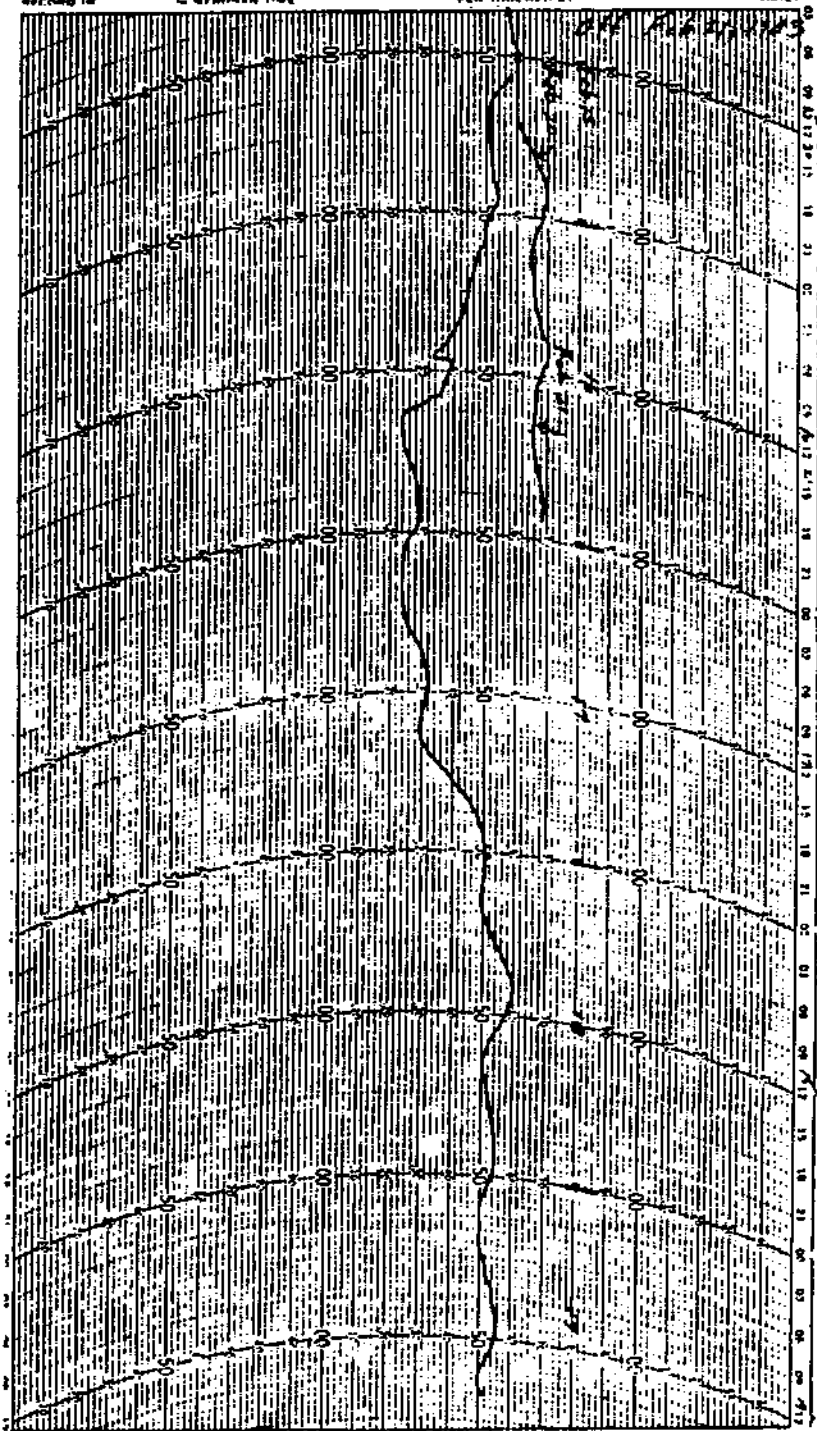
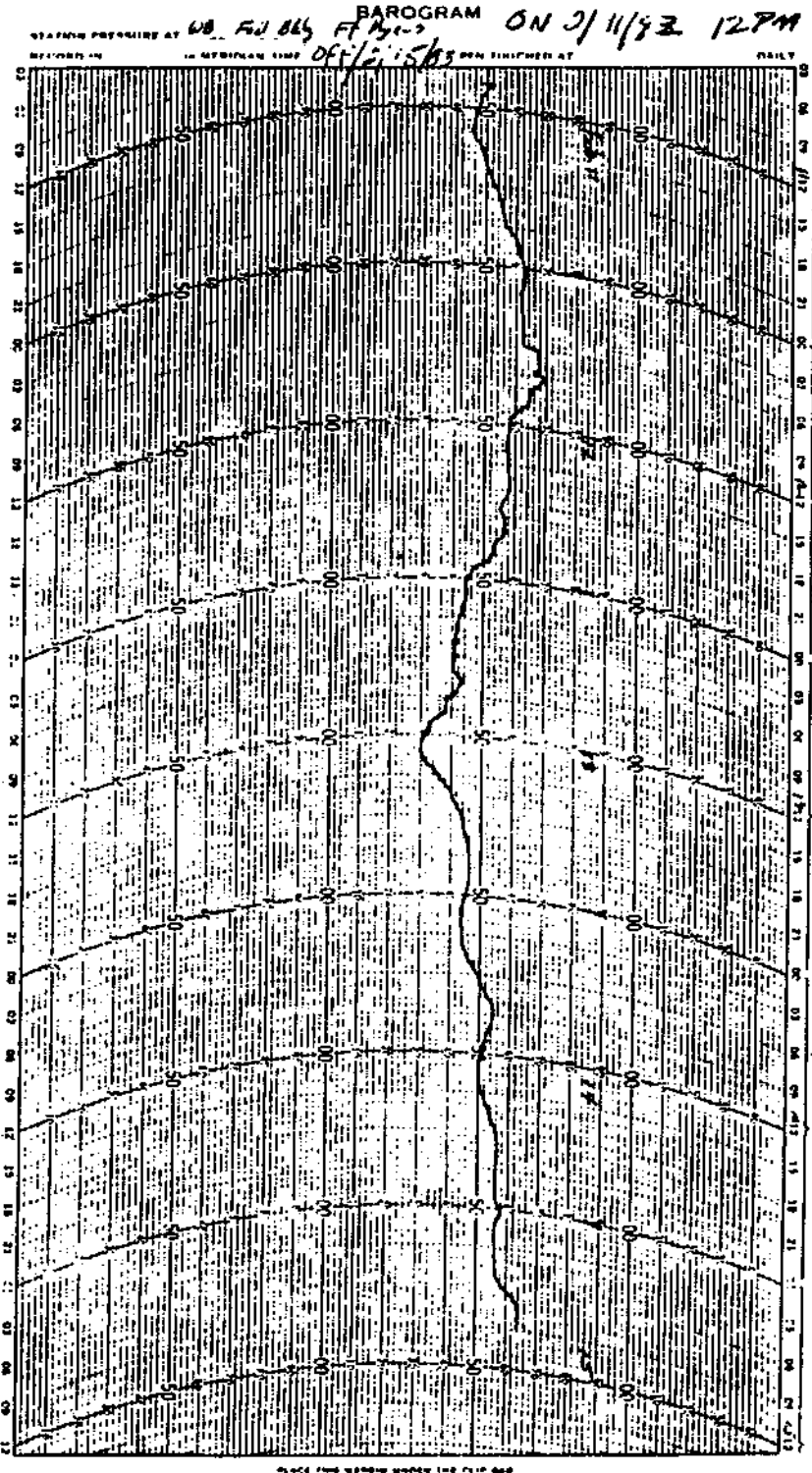


PLATE THIS GRAPH UNDER THE CLIP



WS FORM 455-17

(PREVIOUS EDITIONS OBSOLETE)

FOR USE AT 2,952 FEET LONG 4.50 IN 2.578 INCHES ABOVE CLASH PLANGE  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

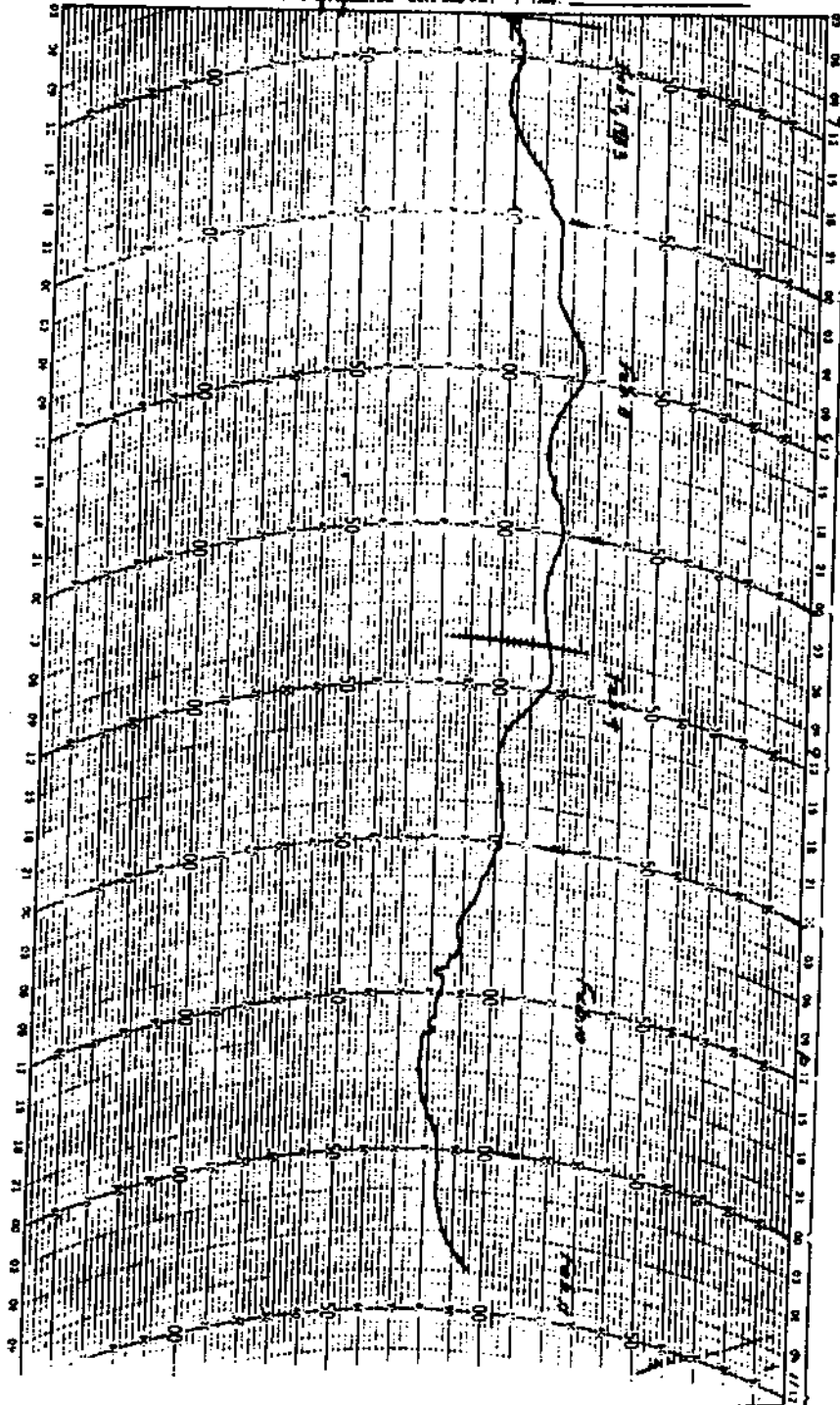
BAROGRAM

STATION PRESSURE IS TAKEN AT WB. Fed. Hwy. Ft. Myers

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN \_\_\_\_\_ ELEVATION IN \_\_\_\_\_

ON PRESSURE 29.753 DATE AND TIME \_\_\_\_\_

OFF PRESSURE 29.128 DATE AND TIME \_\_\_\_\_



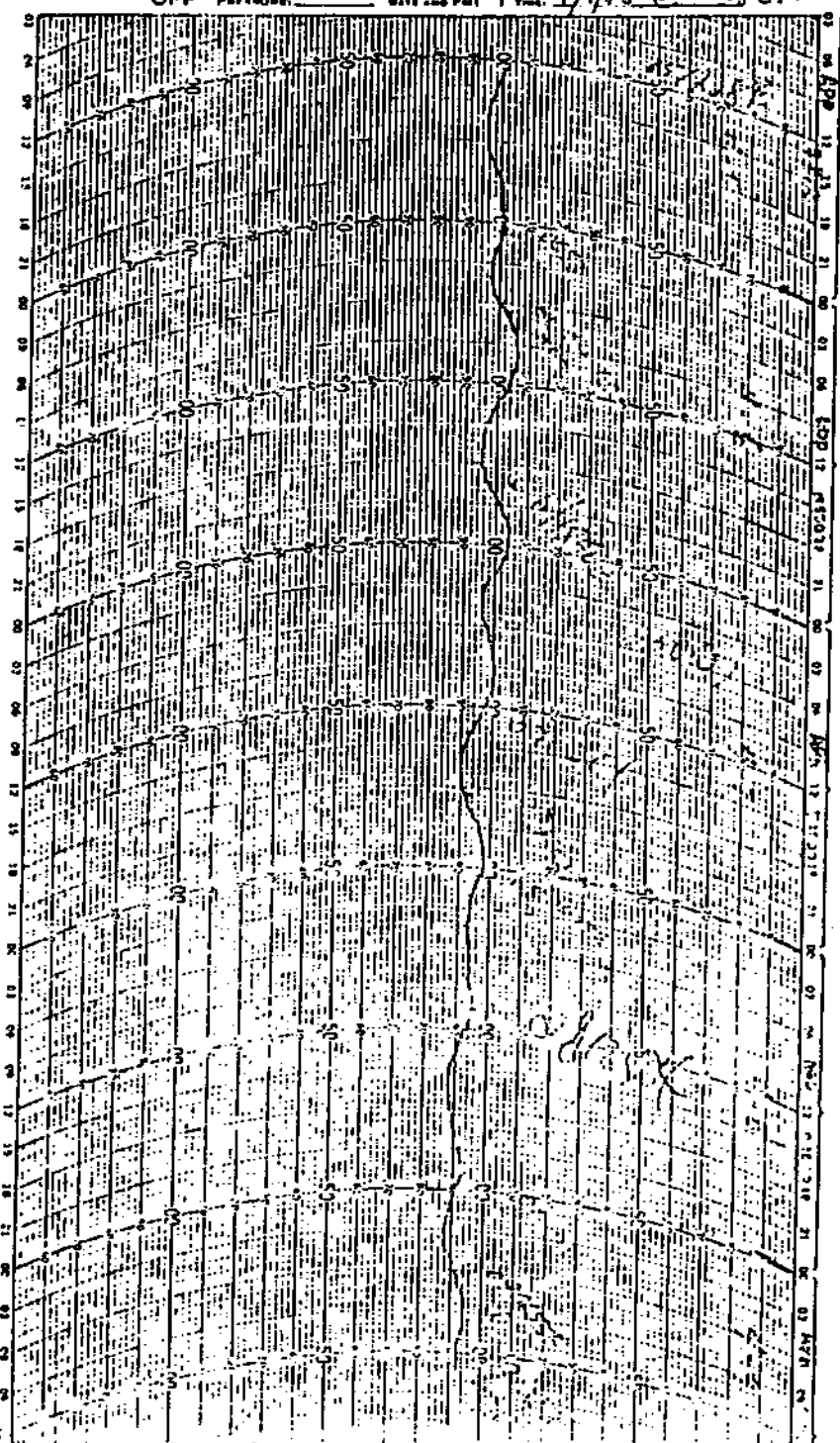


WS FORM 4 455 17

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE (IN HG) AT \_\_\_\_\_ SEA/SS (PAGE #) \_\_\_\_\_  
COR \_\_\_\_\_

TIME OF FIX \_\_\_\_\_ IN MERIDIAN ELEVATION (IN H) \_\_\_\_\_  
ON 300299 04-05-83 1258Z  
OFF 4/1/83 @ 1255 ET



WS FORM 19517

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

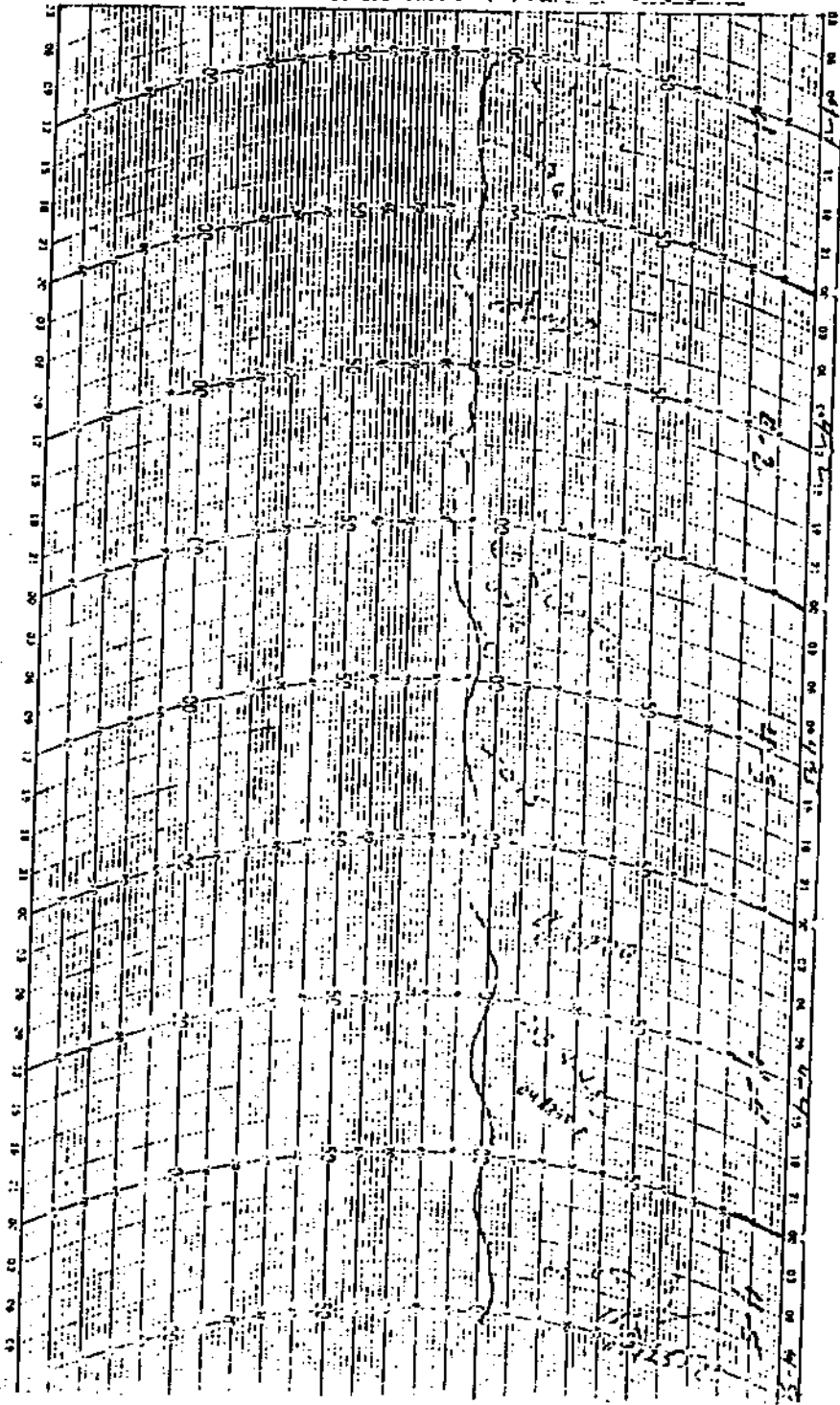
BAROGRAM

STATION REPORT IS MADE AT FT PIERCE FL FIS

TIME OF READING 12:00 AM LOCAL TIME ELEVATION (M)

ON PRESSURE 29.38 DATE AND TIME 4-01-87 1750E

OFF PRESSURE DATE AND TIME 4-05-87

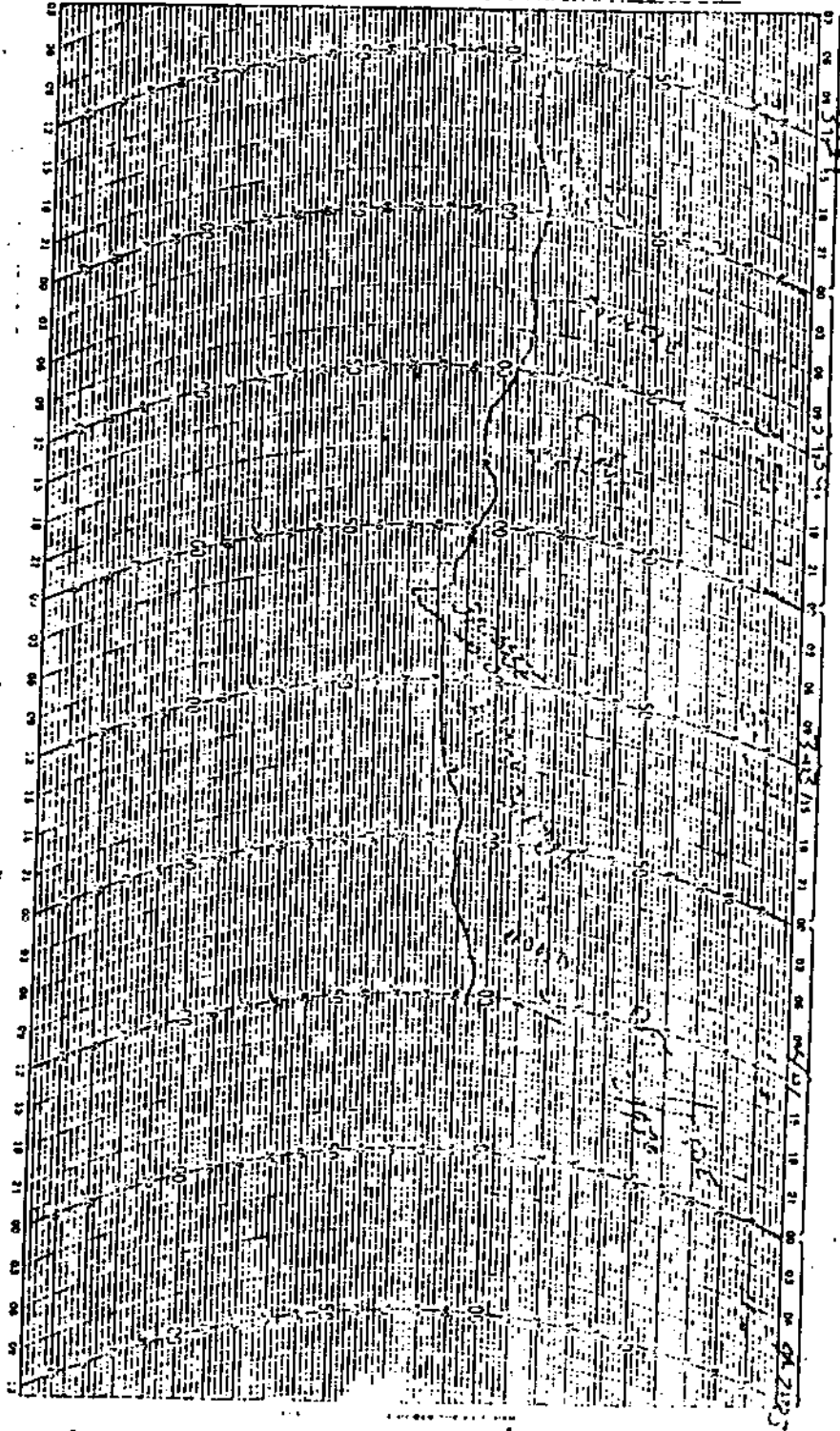


STATION PRESSURE BY METHOD OF FT. MYERS FL ESS

TIME OF RECORD \_\_\_\_\_ TO MERIDIAN. ELEVATION IN \_\_\_\_\_

ON PRESSURE 30.150 DATE AND TIME 3-29-83 1305

OFF PRESSURE 28.850 DATE AND TIME 4-01-81 1250



WS FORM 455 17

726 500 IN 7 825 INCHES DIA. AND IN 3 975 IN DIA ALUMI CLIP PLANK  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

**BAROGRAM**

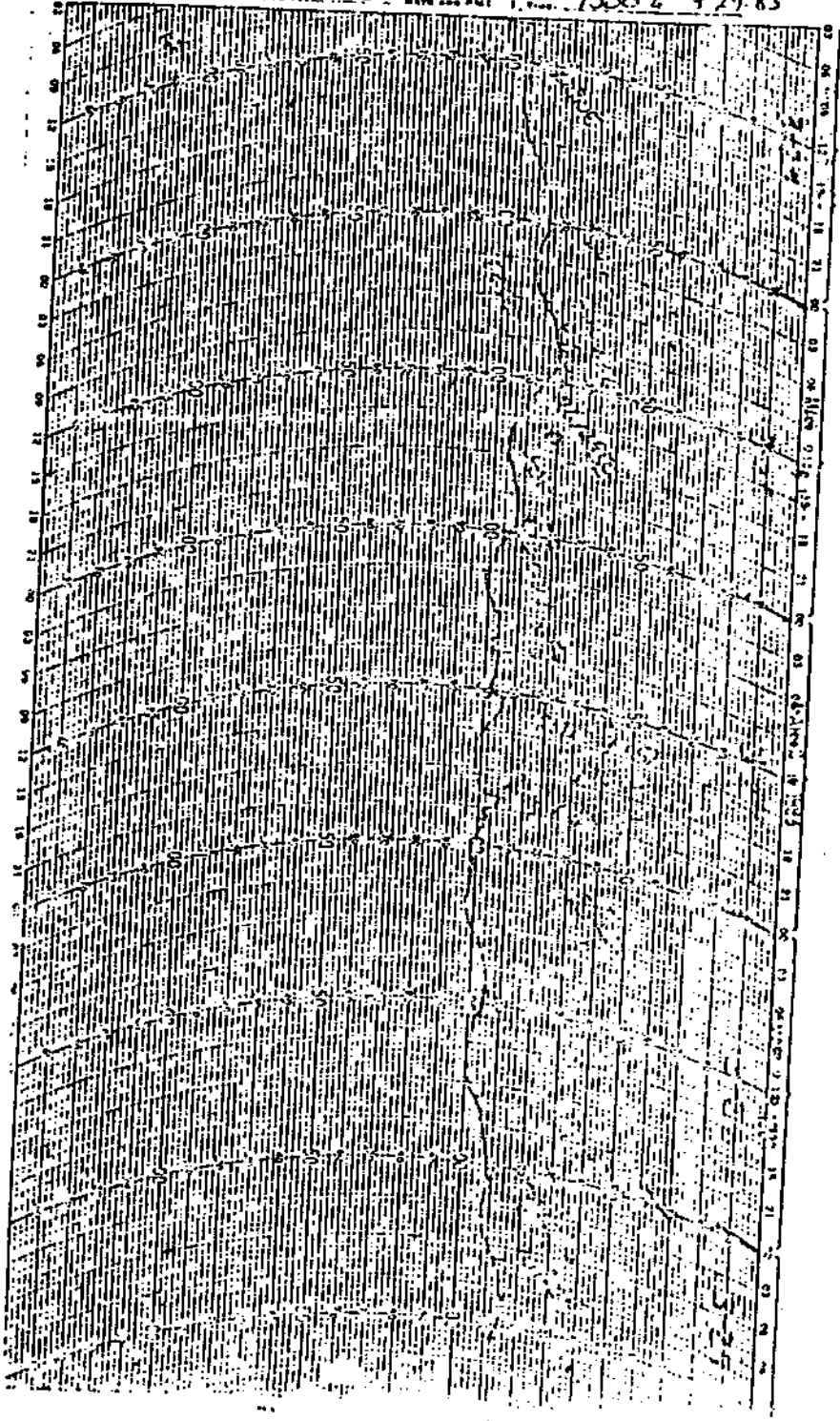
(MARKS PAGE FILE)  
1081 JAMES, FLORIDA

STATION PRESSURE INDICATED BY \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN HYDRIMAN, ELEVATION (FT) \_\_\_\_\_

ON PRESSURE: 30.070 DATE AND TIME: 7 1310

OFF PRESSURE: 30.150 DATE AND TIME: 1300 G 9 19 83



WS FORM 455 17

(PREVIOUS EDITIONS OBSOLETE)

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

BAROGRAM

STATION NAME (PLACE FIELD)

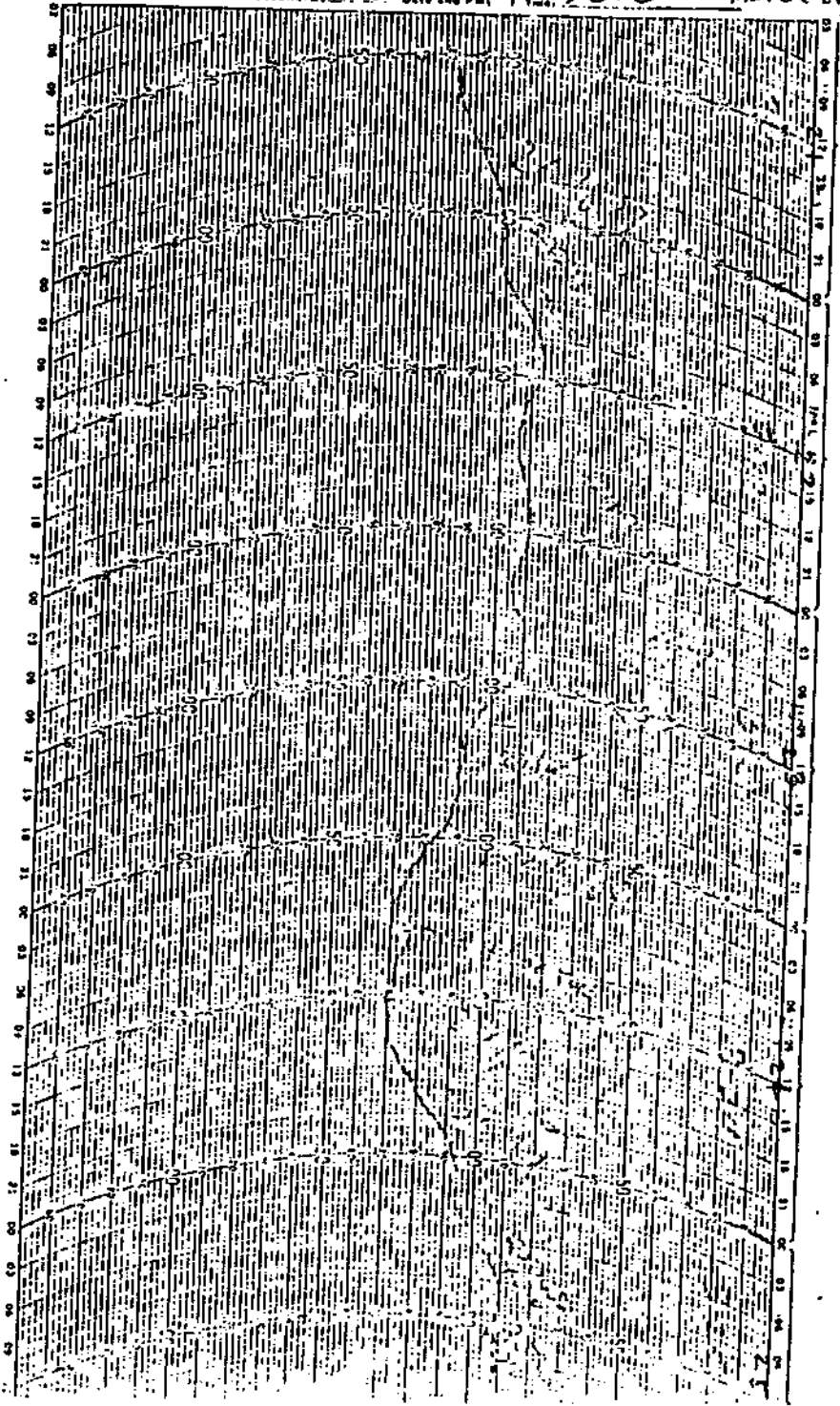
STATION (PLACE FIELD)

STATION PRESSURE (IN) (CHECKED AT)

TIME OF RECORD - 75 TO MERIDIAN ELEVATION (IN.) - 18

ON PRESSURE - 13.80 DATE AND TIME (X) - 1356 March 24, 1983

OFF PRESSURE - 13.00 DATE AND TIME (X) - 1305 March 25, 1983



WS FORM 456-17

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

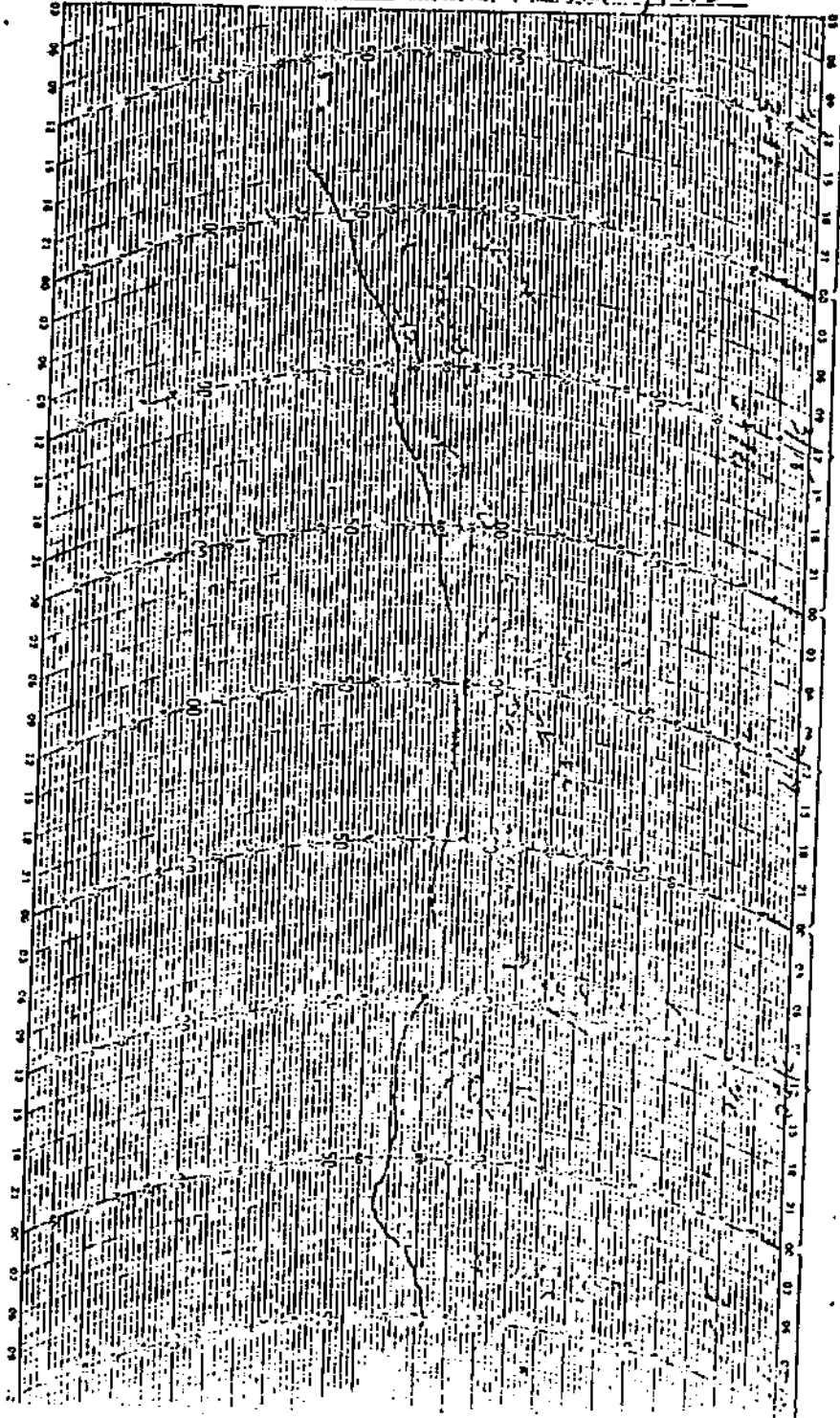
STATION PRESSURE IN HENRY AT \_\_\_\_\_

TAAPV PAGE (10)  
ICSI WETS (1000)

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN OF EQUATION (M) \_\_\_\_\_

ON PRESSURE: 29.12 DATE AND TIME: MAR 17, 1982

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: MAR 21, 1982



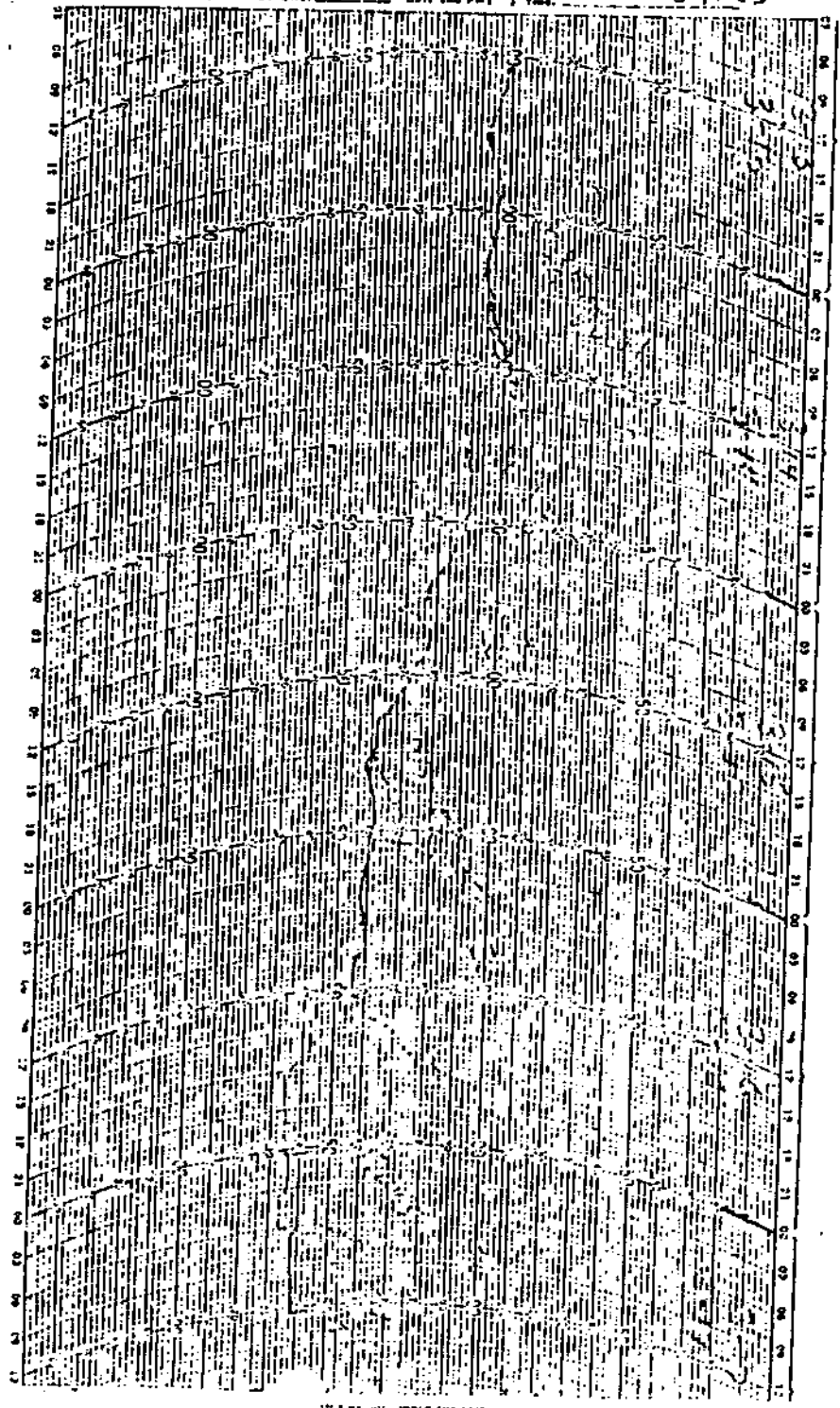
U.S. DEPARTMENT OF COMMERCE  
BUREAU OF METEOROLOGY  
BAROGRAPH

STATION PRESSURE INDICATED AT FT. MYERS, FL. E25

TIME OF RECORD 75 IN HOURS ELEVATION IN 18

ON PRESSURE 29.99 DATE AND TIME 1300Z 3-13-83

OFF PRESSURE \_\_\_\_\_ DATE AND TIME 3-17-83



WS FORM 455 17

REPLACES FORM 455 (1977)

FOR ANCHOR STATION USE ONLY. APPROX. 3 3/4" DIA. STATION CIRCLE PLINGS  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

STATION NAME

BAROGRAM

VERSION 13.00 1981

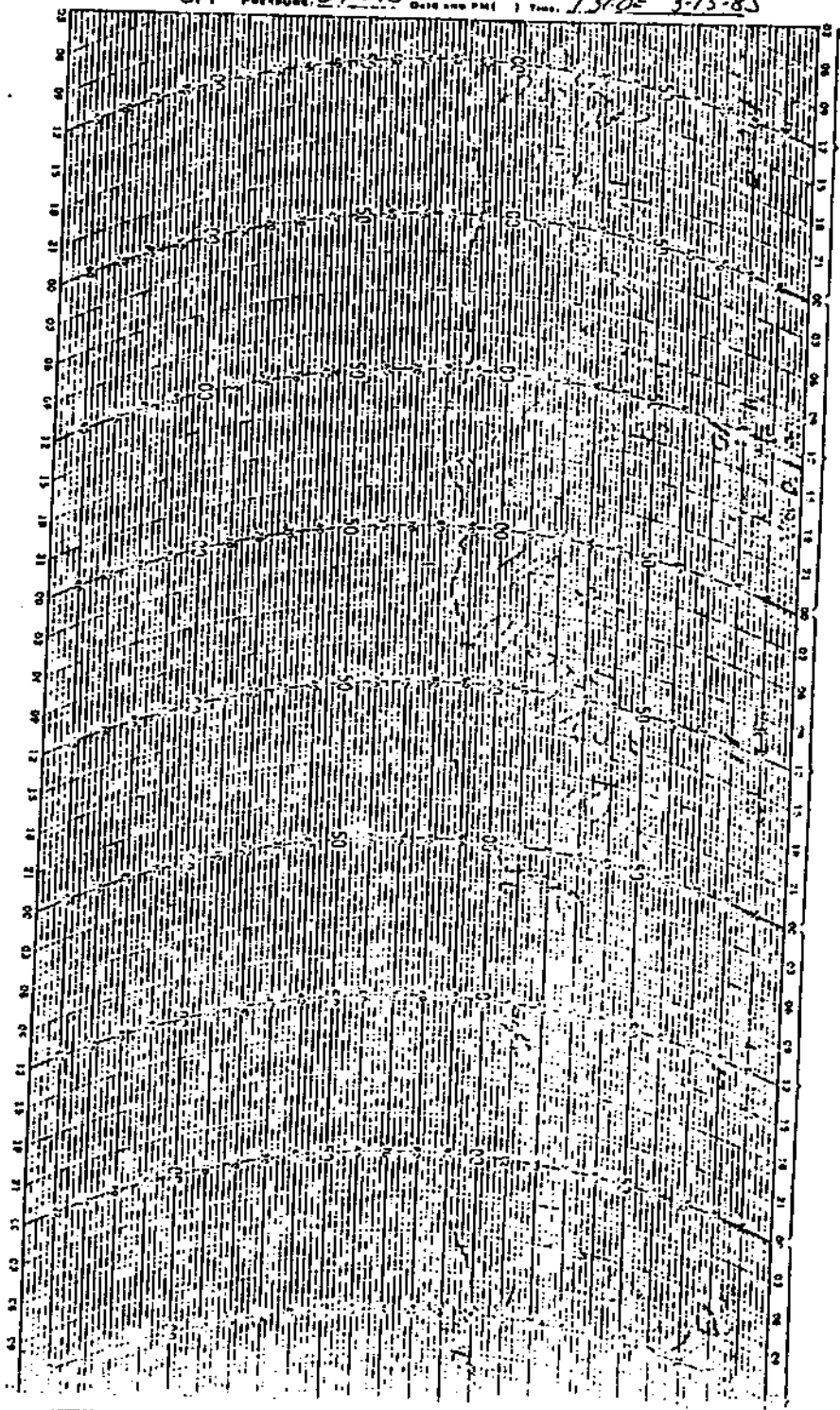
NO. OF STATIONS

STATION PREATURE (in inches) AT 1774

TIME OF RECORD 75 IN MERIDIAN. ELEVATION (in ft) 18

ON PRESSURE: 29.660 DATE AND TIME: 09/25/83 3/9/83

OFF PRESSURE: 29.990 DATE AND TIME: 13105 3-13-85





WS FORM 455-17

FORMERLY WS-101  
MAY 4 1971

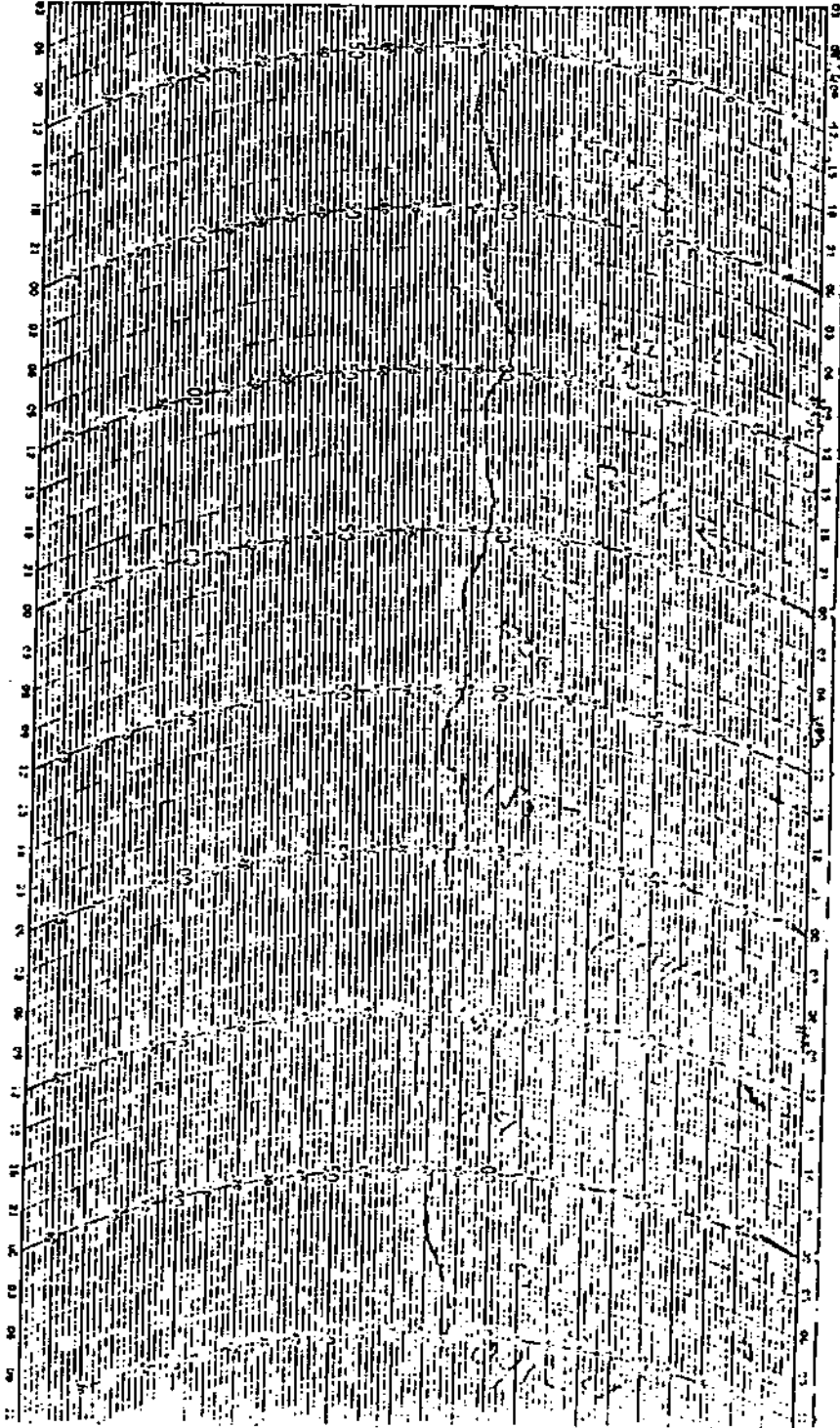
FOR USE IN PAPER INSTRUMENT LOGS, TYPE NO. 1  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

STATION PRESSURE IN INCHES AT \_\_\_\_\_

TAKE THIS PAGE INTO  
ACCOUNT WHEN RECORDING

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN. ELEVATION IN \_\_\_\_\_

ON PRESSURE: 29.870 AM: 1 DATE AND TIME: 05/14/80 TIME: 3/5/83  
OFF PRESSURE: 29.860 AM: 1 DATE AND TIME: 3/9/83



WS FORM 455 17

REPLACES FORMS 455 AND 455-1

U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE  
BAROGRAM

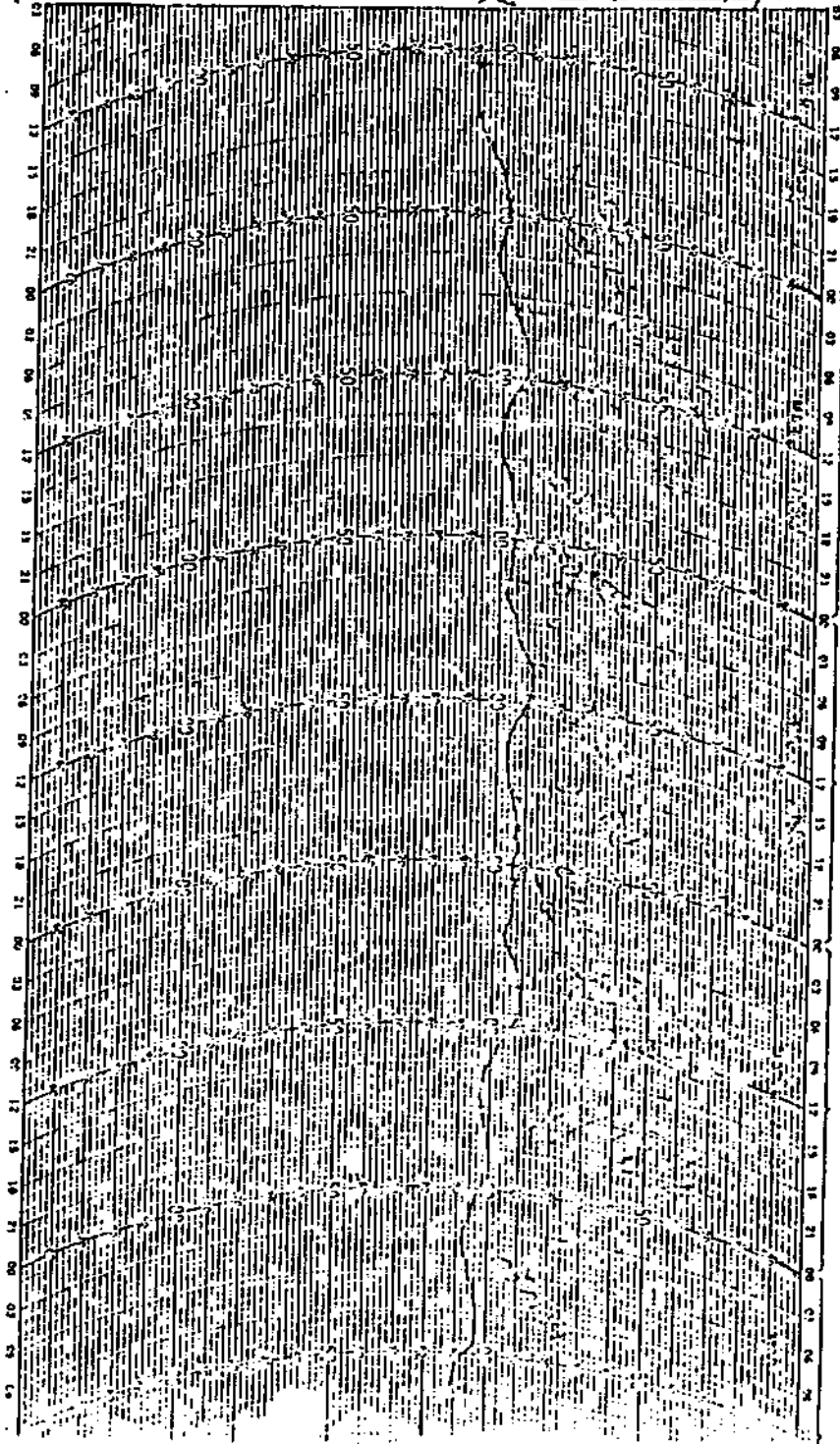
(ADDRESS (PAGE INCL))  
031133 CALIFORNIA

STATION PRESSURE (in inches) AT Fny

TIME OF RECORD 0730 MERIDIAN ELEVATION (in ft) 18

ON PRESSURE: \_\_\_\_\_ DATE AND TIME: 3/1/83

OFF PRESSURE: 29.890 DATE AND TIME: 061350 3/5/83



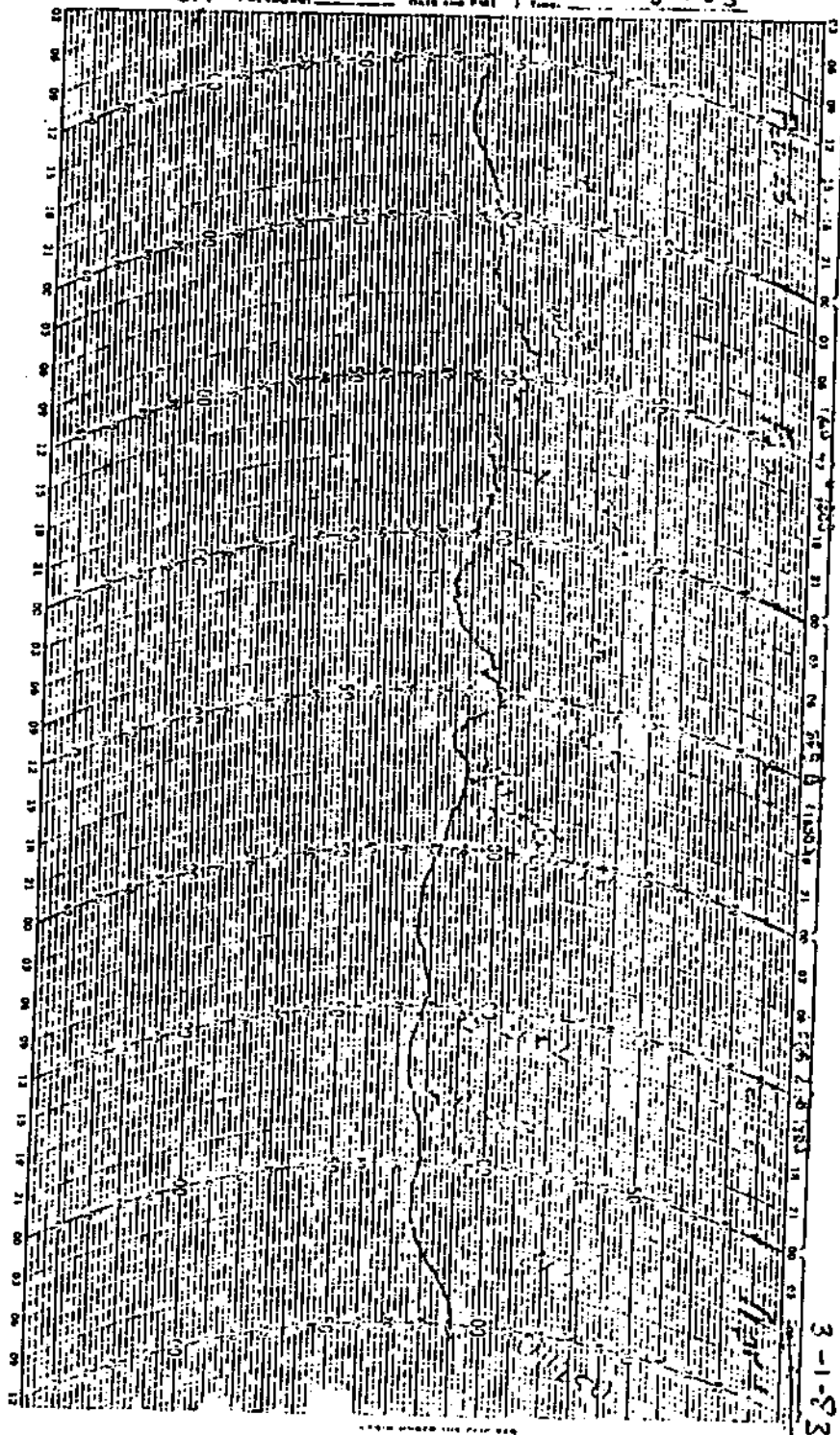
BAROGRAM

STATION PRESSURE IN MERCURY AT \_\_\_\_\_ (PLACE PAGE NO.)  
\_\_\_\_\_ (NAME AND PLACE)

TIME OF READING \_\_\_\_\_ IN MERIDIAN, ELEVATION (M.) \_\_\_\_\_

ON PRESSURE: 829.0 DATE AND TIME: \_\_\_\_\_ TIME: 2-25-43

OFF PRESSURE: \_\_\_\_\_ DATE AND TIME: \_\_\_\_\_ TIME: 3-1-83



WS FORM 455-17

(PRECEDENT MODEL)  
MAY 1 1951

FOR USE IN 7,670 INCHES LONG, AND IN 3,375 INCHES ABOVE CLUSE PLINGS  
U.S. DEPARTMENT OF COMMERCE - NOAA NATIONAL WEATHER SERVICE

**BAROGRAM**

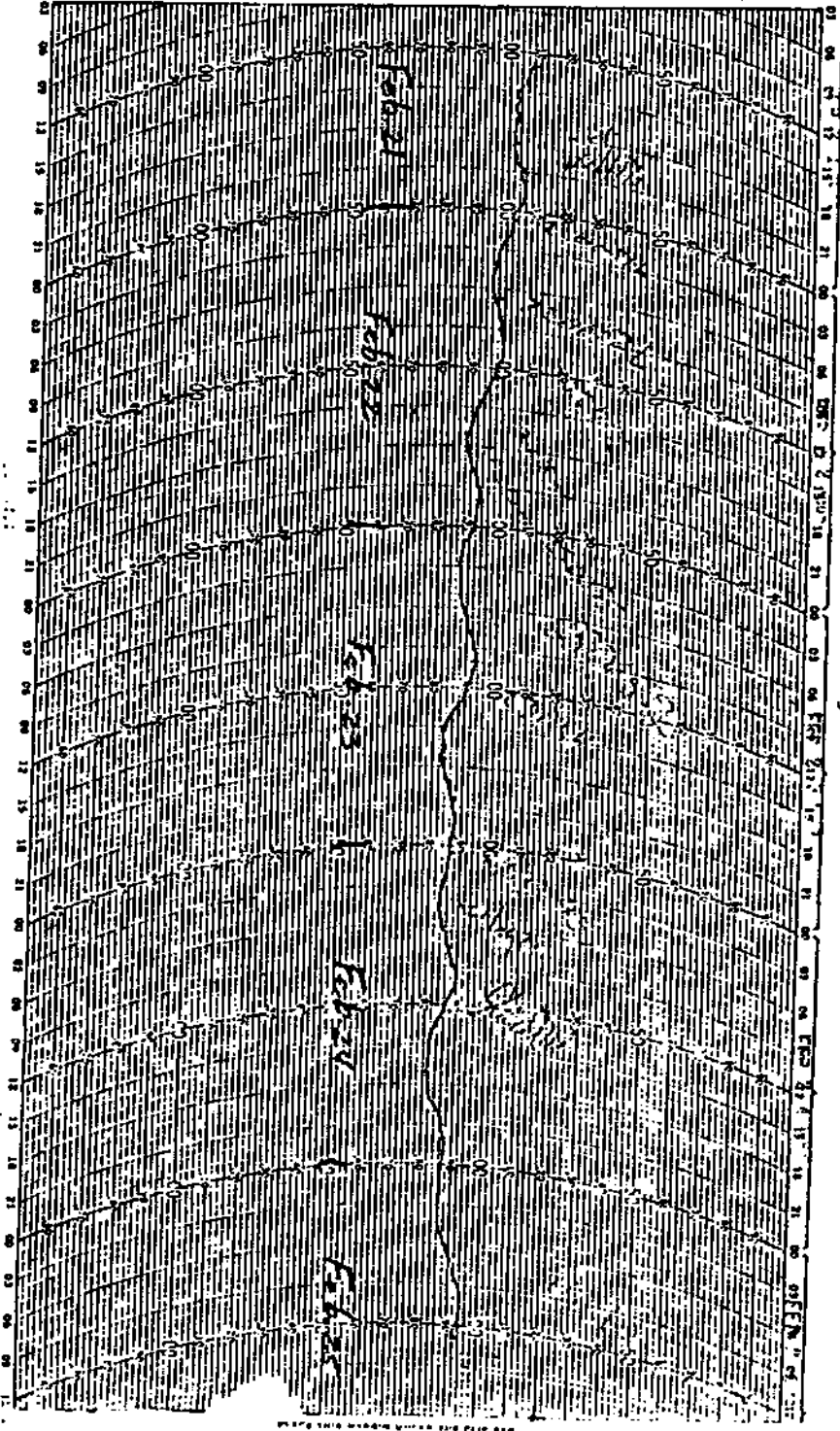
FAIRFS PAGE FIVE  
FOE WTES, FLORIDA

STATION PRESSURE IS CORRECTED BY \_\_\_\_\_

TIME OF RECORD \_\_\_\_\_ IN MERIDIAN, ELEVATION IN \_\_\_\_\_

ON PRESSURE: 29.08 AMT: 3 DATE AND TIME: 1300 G 2/21/53

OFF PRESSURE: \_\_\_\_\_ AMT: 1 DATE AND TIME: \_\_\_\_\_



BAROGRAM

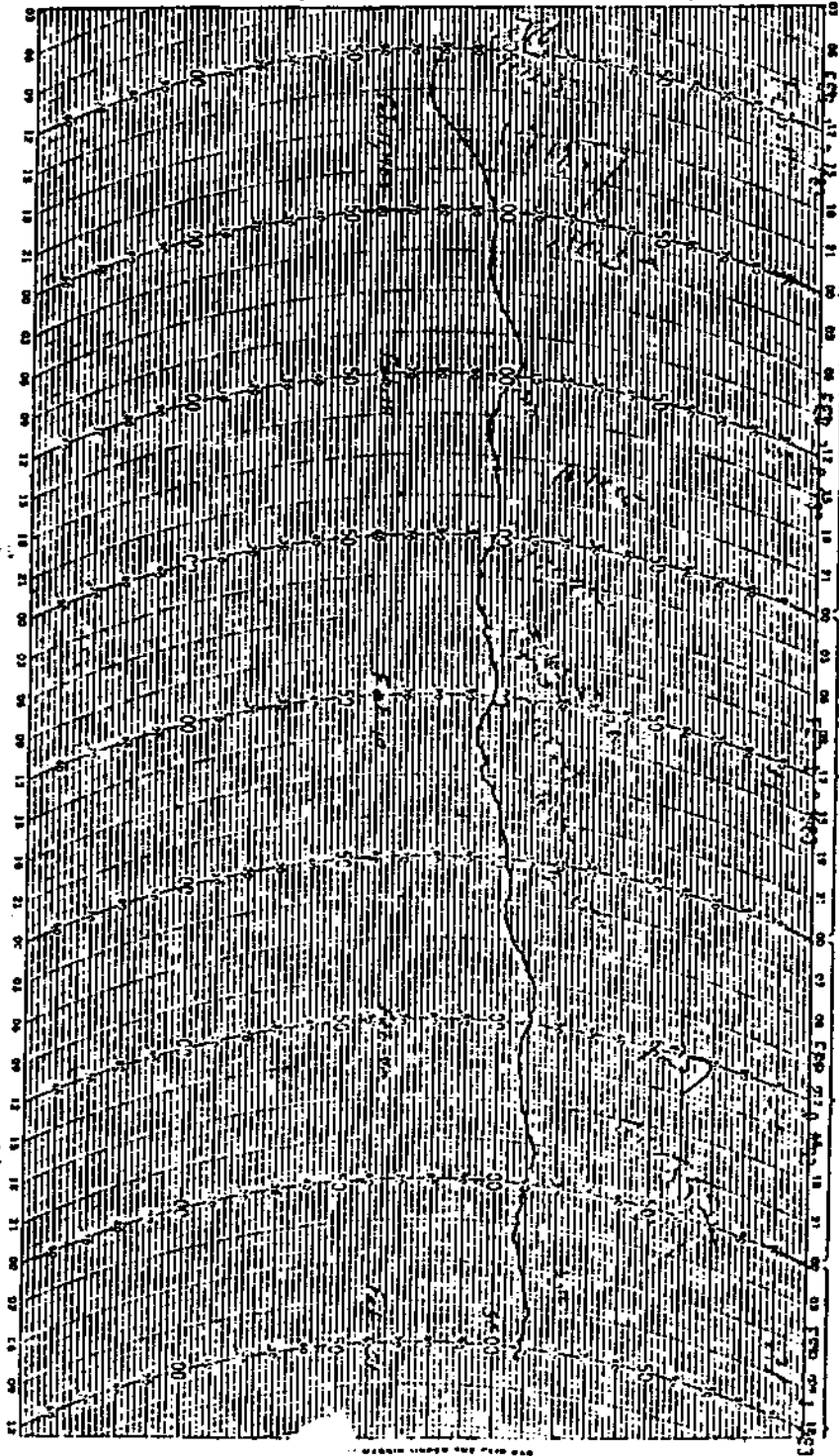
FAA/NS PAGE 1101  
FORT MYER, FLORIDA

STATION PRESSURE IN mmHg AT \_\_\_\_\_

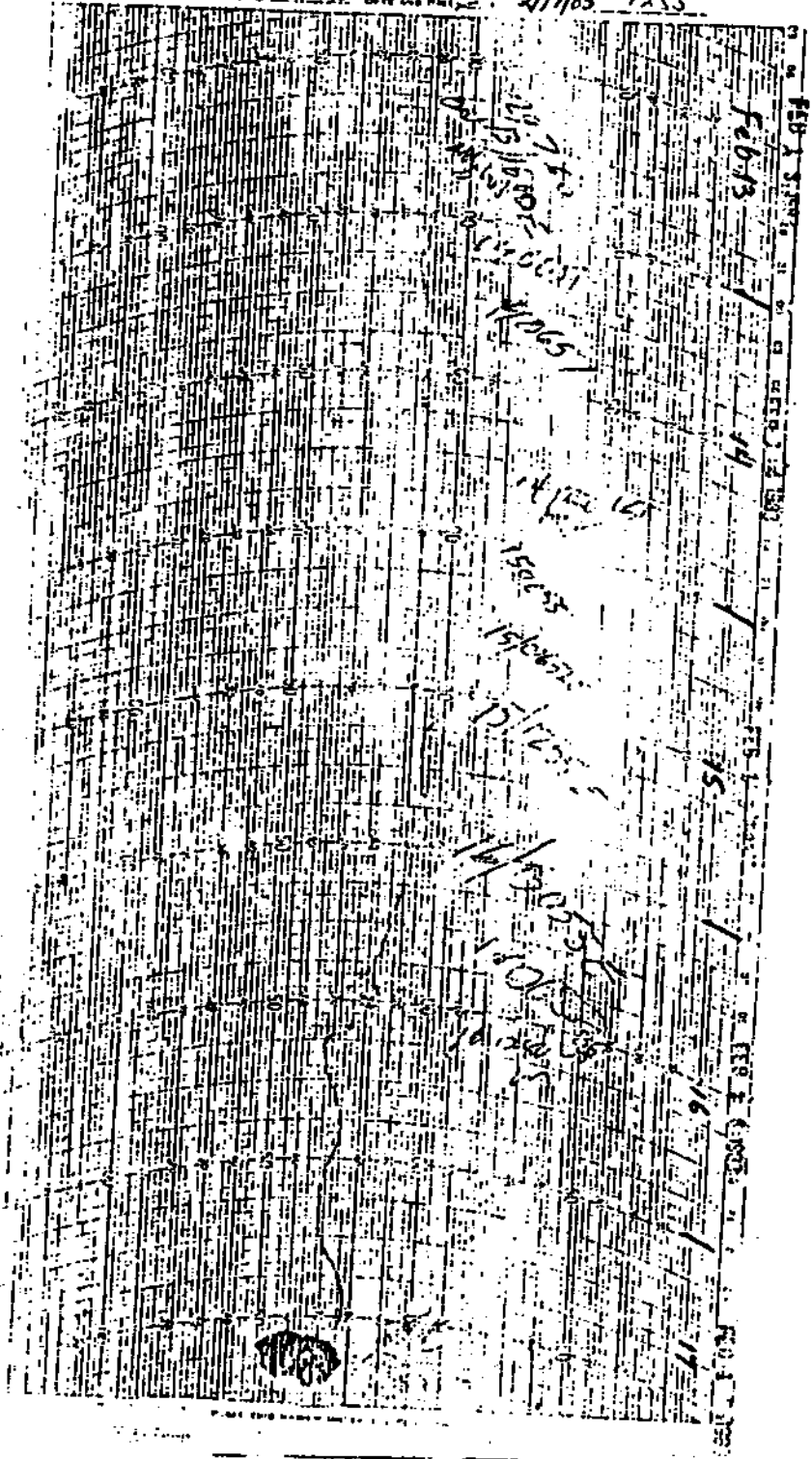
TIME OF RECORD \_\_\_\_\_ IN MERIDIAN, ELEVATION (M) \_\_\_\_\_

ON PRESSURE 29.770 DATE AND TIME 185 FEB 17 1983

OFF PRESSURE 30.000 DATE AND TIME 1300E 2/17/83



STATION NO. 75 NAME FAVES PAGE FIELD  
JOHN WHEEL ROOMA  
 TIME OF FIXTURE 18 IN MERIDIAN, ELEVATION 18  
 ON PRESSURE 29.740 DATE AND TIME 2/13/83 1100E  
 OFF PRESSURE 29.90 DATE AND TIME 2/17/83 1255



THE PACIFIC  
S. FLORIDA

STAINS (PAGE FOLD)  
FOR WIND RECORD

ON PRESSURE 29.66 DATE AND TIME 24-2-07-83 1540  
OFF PRESSURE \_\_\_\_\_ DATE AND TIME 2/13/83

