INDRIO AQUIFER TEST REPORT

BY: GEORGE W. HILL

I. Summary

A. Location. -- St. Lucie County, Florida, Township 34 South, Range 39 East, NW½, 5E½ Section 17.

B. Dates. -- August 21-22, 1979.

C. Length. -- Pumping: 26.5 hours; Recovery: 1.5 hours.

D. Discharge. -- 203 Gallons per minute.

E. Hydraulic Coefficients. -- Transmissivity -- 2,590 ft^2/day
Storage Coefficient -- 7.5×10^{-5}

F. Analytical Model. -- Hantush-Jacob (leaky artesian, nonsteady flow)

G. Remarks. -- T value obtained by a composite filting of log-log plots of drawdown versus $\frac{t}{r2}$ to type curves after Cooper, Plate 3, Professional Paper 708. Wells with radii of 75, 150, and 300 feet were used. The delayed yield method was considered and resulting T values are very close to the above (2,830 ft^2/day and 2,590 ft^2/day). The Image Well Theory after Stallman yields very nearly the same T values as the Hantush-Jacob solution.

II. Narrative

A. Introduction

1. Test Purpose. -- To determine the transmissivity and, if possible, the storage coefficient of the best producing zone of the so-called shallow aquifer. This test was part of a reconnaissance study of the aquifer in conjunction with Project FL-268 in cooperation with South Florida Water Management District. The project is referred to as the Upper East Coast Planning Area which includes Martin and St. Lucie Counties and east Okeechobee County, Florida.

2. Personnel. -- George Hill, Ralph Wilcox, Bill Long, Mike Dooley, Jay Wendorf and Richard Cook - all on the Jupiter Field Headquarters staff, except Mr. Cook. Bill Long supervised the test drilling and well construction of the test network. Computations and reports were done by George Hill, Hydrologist-in-charge and were reviewed by Fred Meyer of the South Florida Subdistrict.

B. Physical Aspects

1. Site Location. -- The test site is in Township 34 South, Range 39 East, in the NW¼, SE¼ Section 17, on I-95, ten miles northwest of downtown Fort Pierce and 2.5 miles north of Florida Sunshine Parkway (Exhibit I).

2. Test Drilling and Geophysical Logs. -- Prior to setting the aquifer test well network, a test well was drilled and logged to determine where the best producing zone might be located (Exhibit III).

3. Aquifer Description. -- The so-called shallow aquifer is mainly composed of sand, clay, silt and shell of Pleistocene and Pliocene epochs. Sediments forming the aquifer system are components of the Fort Thompson and Anastasia Formations overlain by Pamlico Sand (W. Miller, 1979). Shell and sand lenses in the Caloosahotchee Marl are also present. Many facies changes appear. Generally the aquifer system is unconfined and under water-table conditions, but localized artesian conditions have been noted by other investigators (Parker 1955) in the vicinity of Fort Pierce and Indiantown where discontinuous clay lenses act as confining units.

Each well of the network was screened in a zone composed mainly of sand and broken shell. This zone is overlain with a thin layer of blue-green colored clay. -Just above this is a layer of sand and shell with marl streaks. Below the pumped zone is a layer of pale green clay about 14 feet thick (Exhibit III).

4. Well Description. -- The production well was finished with 6-inch ID PVC pipe to a depth of 90 feet below land surface and was screened from 60 to 90 feet below land surface with wire wrapped under-bar construction PVC screen. Screen slots are thirty thousandths.

Five 2-inch ID PVC wells were installed on a tangent with the pumped well - two on the south side and three on the north side. Pertinent well data are shown below.

Well No.	Radius, in Feet	Drilled Depth, in Feet	Screened Interval in Feet
10N	10	92	59-89
25S	25	92	60-90
75N	75	125	59-89
150S	150	83	60-80
300N	300	92	59-89

Please see Exhibit II.

5. Instrumentation. -- Four Keck/Stevens water level recorders on observation wells 10N, 25S, 75N and 150 South. Steel tapes were used to measure drawdown in well 300 N. A Weather Measure, Model B201 barograph was used to record barometric pressure during the test.

6. Pump. -- The production well was pumped with a 4-inch centrifugal, gasoline driven pump.

7. Measurement of Drawdown and Recovery Data. -- The Keck surface followers in conjunction with Stevens F-type recorders gave good record. Only minor adjustments to the gage height chart were necessary. No adjustments of the drawdown data were made for barometric pressure or waterlevel fluctuations. On the flat part of each chart record of drawdown there appears to be some sort of diurnal pattern in the trace with a marked increase in drawdown during the last four hours of pumping. However background water-level data recorded for several days prior to the test does not reflect a fluctuation pattern similar to the drawdown pattern. Drawdown and recovery data are included in Exhibits VI-VII.

8. Discharge. -- The production well was pumped at about 203 gallons per minute. Discharge was measured with a circular orifice weir (6-inch pipe, 3-inch orifice with a piezometer mounted in the side of the weir. The rate was very steady after the first 15 minutes of pumping. Discharge data are shown in Exhibit V.

A 6-inch aluminum pipeling was used to route the discharge about 600 feet to a drainage canal to the west of the production well (Exhibit I).

9. Potential Surface Water Recharge Sources. -- Drainage or irrigation canals surround the test site. Please see aerial photograph in Exhibit I. No surface water levels were recorded on these canals during the test.

C. Computation

1. Computations are included in Exhibit VIII. Three solution methods were considered. 1) Hantush-Jacob solution for a leaky confined aquifer with vertical movement. 2) Boulton solution for delayed yield in an unconfined aquifer with vertical movement. 3) Stallman's Image Well Theory (bounded aquifer solution).

2. Type Curve Fitting. -- T values computed using all three methods are in very close proximity. Log-log plots of drawdown versus time (or $\frac{t}{r^2}$ when applicable) can be fitted to each of the three families of type curves reasonably well. The average T value computed for each of the three methods are shown below.

Method	No. of Wells	Transmissivity, in ft^2/day
Hantush-Jacob	3	2,590
Boulton (delayed yield)	2	2,710
Image Well Theory	3	2,560

There was no shallow observation well to facilitate evaluation of vertical movement from a semi-unconfined aquifer above the pumped zone. The drawdown data in a shallow well would give some hint as to the applicability of a delayed yield solution. Too, the test was not long enough to indicate a delayed yield response on the third segment of the type curves.

Using the following equation,

$$r_i = \frac{(r)^2 \times ti}{t_r}$$

an application of the image well theory (after Stallman) was attempted by approximating the location of the image well from the pumped well and dividing this distance by two to determine the location of a recharging boundary. It appears possible that recharge from surrounding canals could affect the test. However, there is no data to substantiate this. Computation of the image radius (r_i) for three observation wells are shown in the table below:

Obs. Well	5-Ft.	t_{r}-Min.	t_{i}-Min.	r-in Ft.	r_{i}-Ft.	$\frac{r_{i}}{2}$-in Ft.
75N	3.0	1.1	600	75	1,750	875
150S	2.0	1.1	100	150	1,430	715
300N	1.1	3.2	100	300	1,680	840

Even though the drawdown curves fit the image well type curves very well, other boundary responses can be similar such as a leaky confined or leaky unconfined aquifer.

The lithologic and geophysical logs indicate the presence of a semi confined layer above the screened zone. This suggests a leaky confined situation (Exhibit III).

3. Transmissivity. -- Use the result of the Hantush-Jacob method for unsteady flow in a leaky confined aquifer which is 2,590 ft^2/day. Results of the other methods are not significantly different.

4. Storage Coefficient.-- Storage coefficient computed from match points using the Hantush-Jacob type curves (leaky artesian nonsteady flow) is 7.5×10^{-5}.

5. Leakance -- .0017

Indrio Test
St Lucie County
August 21-22, 1979

Delayed Yield Solution PL 8; P.P. 708

X = Match Points - Image Theory

well 75N
$E_w(u) = 1.0$
$1/u_p = 10$
$A = 1.15$
$t = 0.46$
$K = 25$

150S
$E_w(u) = 1.0$
$1/u_p = 1.0$
$A = 1.30$
$t = 0.23$
$K = 10$

300N
$E_w(u) = 1.0$
$1/u_p = 1.0$
$A = 1.2$
$t = 0.94$
$K = 5$

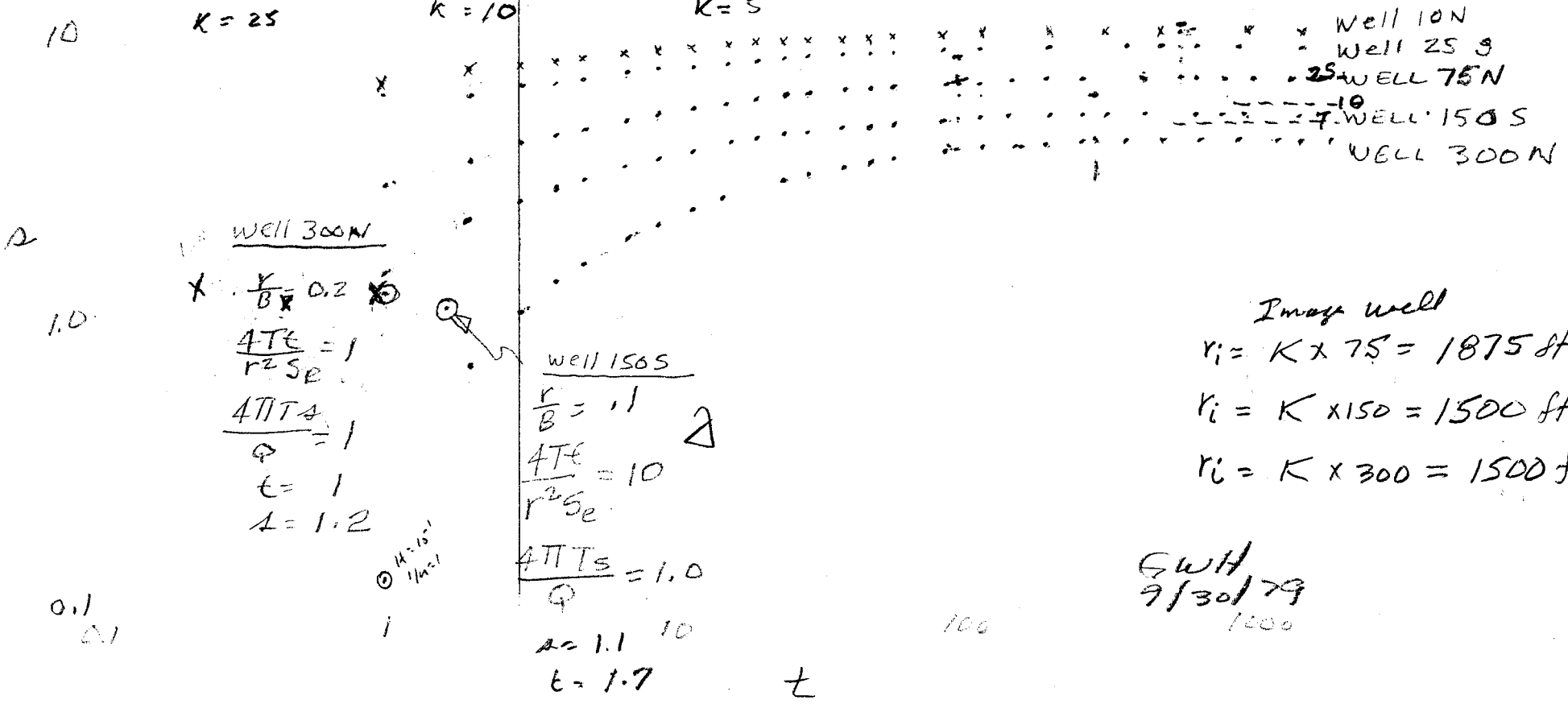


Image well
$r_i = K \times 75 = 1875$ ft
$r_i = K \times 150 = 1500$ ft
$r_i = K \times 300 = 1500$ ft

GWH
9/30/79

Identification No. _____ Other No. ID-1

County St. Lucie Lat-Long 273110 0802700.01

Twp 34S Rg 39E Sec 17 da Date 7/24/79

Location Leslie Scott's Grove I-95 and Indio Road

Driller P&W Drilling Owner USGS Log by W.A. Long

Depth	Time	Hardness	Description of Formation
0-1	1130	Soft	Sand, fine, light gray.
1-4		Soft	Sand, fine to medium bright orange 5% shell.
4-6		Soft	Sand, clayey, dark gray, ribbons.
6-8		Soft	Sand, clayey, blue gray and brown mottled.
8-10	1137	Med. Soft	Sand, clayey, blue gray and brown mottled, brown clay, sand tougher than blue gray; a little shell lense at 8' to 8-1/2'.
10-13		Med. Soft	Sand, 60% clayey, blue gray.
13-21	1144	Med.	Shell and 50% sand, fine to medium, tan to brown to 17', thin lenses of organic dark brown sand. Bivalves.
21-34	1154	Med.	Shell and fine to medium sand (shell small broken to small broken bivalve.
34-39		Med.	Sandstone lenses in shell and sand mixed, tan to dark gray, clay stringers after 34 feet.
39-42	1208	Hard	Shell and sand, cemented (calcite) (Anastasia) turning to Limestone, sandy cream to black at 41 feet. Marly thin streak.
42-52	1228	Med.	Sand 60% fine to medium. Shell 40% broken small. Stopped, mixed mud.
52-57		Med.	Sand, fine to medium and shell, broken small, tan to gray.
57-59		Med. Hard	Clay, sandy, blue green (drilled a little tough).
59-63	1245	Med.	Sand and shell, medium fine sand, small and broken shell.
63-80	1303	Med.	Sand 75% and shell 25% - used water.
80-82	1320	Med.	Clay, sandy, light gray green.
82-84	1327	Med. Soft	Sand 75%, fine to medium with broken shell 25%.
84-89		Med. Soft	Same as above.
89-90		Med. Soft	Drilled like pack sand, a little thin.
-95	1330		Soft clay, sandy, lenses, light green.

Identification No. _____ Other No. ID-25S

County St. Lucie Lat-Long 273110 0802700.02

Twp 34S Rg 39E Sec 17 da Date 7/25/79

Location Scotts Grove at I-95 and Indio Road.

Driller P&W Drilling Owner USGS Log by W.A. Long

Depth	Time	Hardness	Description of Formation
0-4	1010	Soft	Sand, fine to medium, gray, little shell.
4-13		Soft	Sand, clayey, gray little shell 8 to 8-½ feet.
13-21	1020	Med. Soft	Shell and sand, fine to medium, tan to brown.
21-34	1025	Med.	Shell and sand, fien to medium, shell fragments.
34-42	1033	Med.	Shell and sand with medium sandstone lenses and calcite cemented. Hard 39-42.
42-57	1038	Med.	Sand and shell mixed.
57-59	1047	Med. Hard	Clay, sandy, blue green.
59-80	1053	Med.	Sand and shell, mixed. Used water.
80-82	1109	Med. Soft	Clay, sandy, light greenish gray. (Mixed mud).
82-93	1130	Med. Soft	Sand - fine to medium with little broken shell.
TD	1135		Drilled like packed sand.

Identification No. _____ Other No. ID 150-S

County St. Lucie Lat-Long 273110 0802700.03

Twp 34S Rg 39E Sec 17 da Date 7/25/79

Location Scott's Grove at I-95 and Indio Road

Driller P&W Drilling Owner USGS Log by W.A. Long

Depth	Time	Hardness	Description of Formation
0-1	1448	Soft	Sand, fine to medium, light gray.
1-3		Soft	Sand, fine to medium, orange.
3-4		Soft	Sand, fine to medium, black, organic.
4-11		Med.	Sand, fine to medium, clayey, gray to tan.
11-14		Med.	Clay, sandy, blue gray.
14-19		Soft	Sand, fine to very coarse.
19-21	1453	Med. Soft	Shells, fragments to small whole (bivalve) with fine to medium sand, tan to gray.
21-35	1502		As above.
35-37		Med.	Clay and lime, sandstone lenses.
37-38		Med.	Shell, slightly cemented, little sand - 20%.
38-42	1508	Soft	Shell and sand 40%, fine.
42-46	1515	Med.	Sandstone, limey, very fine, cream to tan.
46-47		Soft	Clay, blue green? (Odd color for this depth).
47-56		Soft	Sand, fine to medium and shell, broken to small whole.
56-59		Soft	Clay, blue green and thin lenses with sand.
59-63	1525	Very Soft	Shell (50%) and sand (50%) tan to black.
63-75			Sand - 75% and shell.
75-80			Sand and shell with thin clay lenses.
80-80.5		Hard	Sand and shell cemented.
80.5-83	1540	Hard	Sand and shell clayey (light gray green).

Identification No. _____ Other No. ID-75N

County St. Lucie Lat-Long 273110 0802700.04

Twp 34S Rg 39E Sec 17 da Date 7/23/79

Location Scotts Grove at I-95 and Indrio Road

Driller P&W Drilling Owner USGS Log by Wilcox & Long

Depth	Time	Hardness	Description of Formation
0-8	1130	Soft	Sand fine to medium and clay, tan to brown.
8-12		Soft	Clay, sandy (40%) blue-green.
12-20	1138	Soft	Shells small broken to whole bivalve, light brown < 2 cm.
20-39	1144	Soft	Shells as above and fine sand, dark gray to black.
39-42	1148	Med.	Sandstone, silty, cream to buff.
42-58	1153	Soft	Sand 70%, fine to medium and broken shell.
58-59			Clay, blue gray.
59-63			Limestone, green gray with clay streaks.
63-73	1228		Sandstone, medium grained with broken shell 40%, silty.
73-80	1238	Soft	Sand fine and sandstone, thin well broken shell.
80-84	1242	Hard to Med	Sandstone, buff tan with black specks. Very hard 80-81 ft.
84-89		Med	Sand, fine and broken shell. <.5 cm.
89-103	1250	Med.	Clay, light gray green with black specks.
103-105	1253	Med.	Shells, Gastropods and bivalves <1.5 cm.
105-113		Med.	Clay, light gray green and buff and broken shell.
113-125	1300	Med.	Clay, sandy, dark green (balls in sieve).

Identification No. _____ Other No. ID-300N

County St. Lucie Lat-Long 273110 0802700.05

Twp 34S Rg 39E Sec 17 da Date 7/26/79

Location I-95 and Indio Rd. - Scott's Grove

Driller P&W Drilling Owner USGS Log by W.A. Long

Depth	Time	Hardness	Description of Formation
0-1	1320	Soft	Sand, fine to med., light gray.
1-7		Med. Soft	Clay, sandy, brown.
7-13		Med. Soft	Clay, sandy, blue green.
13-21	1325	Soft	Sand, fine to coarse silica, brown to clear, a sandy clay layer at about 15'.
21-34	1330	Soft	Shell, fine broken to small whole and sand fine to med., tan to black.
34-36		Med. Hard	Sandstone, gray, lightly cemented.
36-39		Soft	Sand and shell, loose
39-42	1338	Med. Hard	Limestone sandy, cream to gray, slightly cemented.
42-54	1343		Sand 60%, fine to med., gray and shell, fine broken to small whole, tan to dark gray.
54-63	1350	Med. to Hd	Sandstone, fine grained and sandy clay lenses layered; Sandstone dark gray, clay blue green. Fossil snakefang in cuttings (Pit Viper).
63-83	1355 1400	Med. Soft	Sand 60%, fine to medium and shell, broken to small whole, some sandstone stringers and sandy clay, lenses, blue green, some nodules present.
83-87	1405	Med. Soft	As above.
87-92	1410	Med. Soft	Clay, sandy with sand and shell layers, light green to gray (salt and pepper look).

U. S. GEOLOGICAL SURVEY — WELL LOG

WELL NUMBER 273110 0802700.04 (latitude-longitude) LOCAL* _____ COUNTY St. Lucie

OWNER OR NAME U.S.G.S.

LOCATION T 34S R 39E SEC 17, X 1/4 NE 1/4 SE 1/4

WELL DEPTH 125 ft., CASED 90 ft., DIAMETER 2 in.

DEPTH LOGGED 124 ft., TOP _____ ft., BOTTOM _____ ft., DATE COMPLETED 7-23-79

FORMATION _____, FORMATION TOP reference to LSD _____ MSL _____

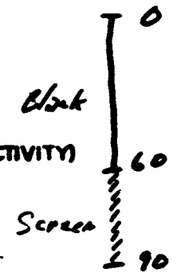
AQUIFER _____, WATER LEVEL reference to LSD _____ MSL _____

ELEVATION LSD _____ ft. MSL SPEED OF LOGGING 23 ft/min.

TOP OR START OF LOG 5.2 ft. above LSD OPERATOR Wm Hopkins

TYPE LOG

- ☐ DRILLING TIME
- ☐ CASING-COLLAR
- ☐ CALIPER (diameter)
- ☐ DRILLER'S
- ■ ELECTRIC
- ☐ FLUID-CONDUCTIVITY (RESISTIVITY)
- ☐ GEOLOGIST OR SAMPLE
- ☐ MAGNETIC
- ☐ INDUCTION
- ■ GAMMA-RAY
- ☐ DIPMETER (inclinometer)
- ☐ LATER
- ☐ MICRO
- ☐ MICROLATER
- ☐ NEUTRON
- ☐ PHOTOGRAPHIC (TV, still, movie)
- ☐ RADIOACTIVE-TRACER
- ☐ RADIATION
- ☐ SONIC
- ☐ TEMPERATURE
- ☐ TEMPERATURE (FLUID-CONDUCTIVITY)
- ☐ FLUID-VELOCITY



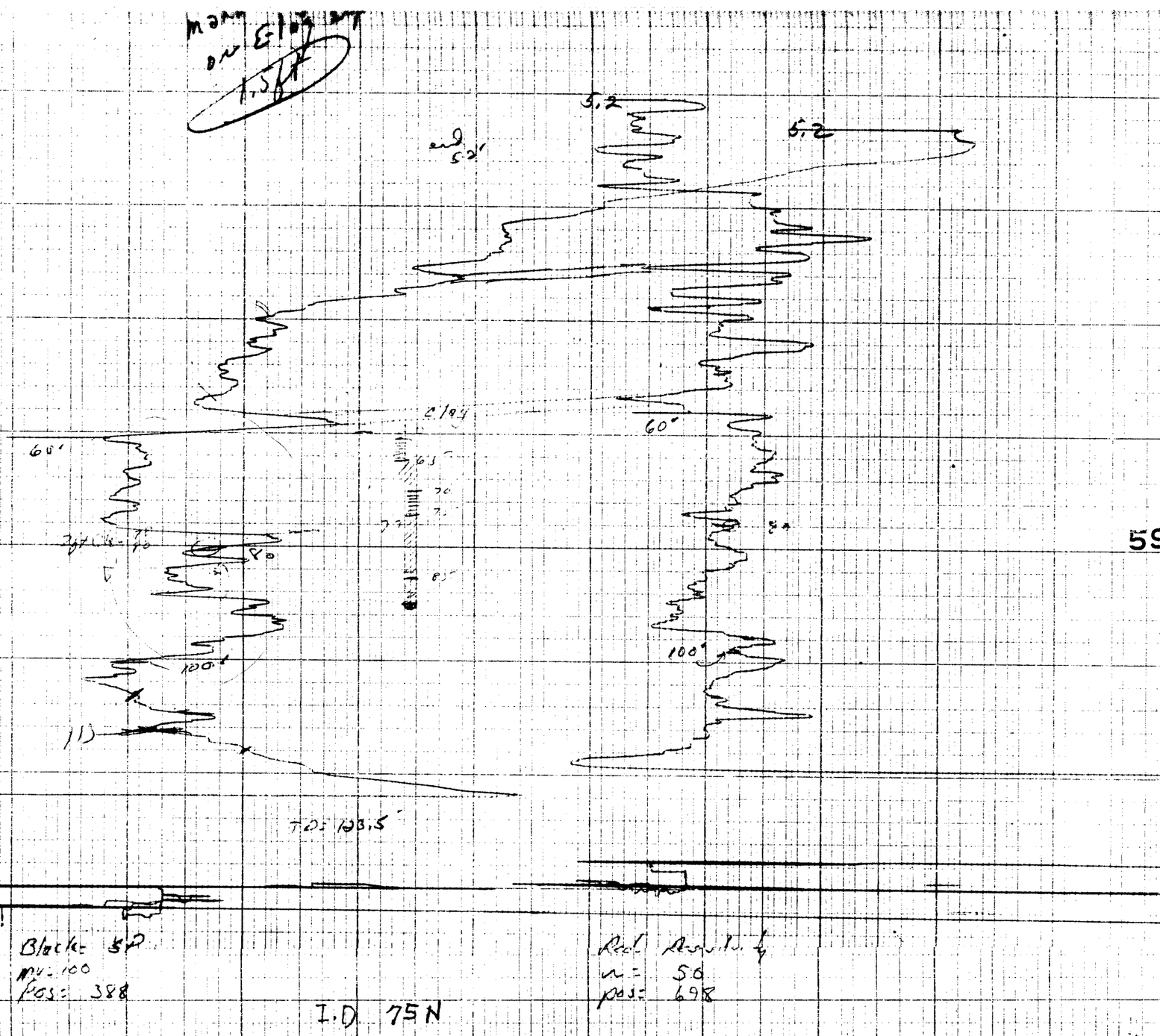
USE OF WELL

- ☐ ANODE
- ☐ DRAINAGE
- ☐ DESTROYED
- ■ OBSERVATION
- ☐ OIL-GAS
- ☐ RECHARGE
- ■ TEST
- ☐ UNUSED
- ☐ WITHDRAWAL
- ☐ WASTE

QW SAMPLE ☐ NO ☐ YES DATE SAMPLED _____ DEPTH(S) SAMPLED _____

LOG SCALES HORIZ _____, VERT 20'=1" LOGGED ■ UP ☐ DOWN

S.P. MV = 100 DEPTH RESISTIVITY ohm = 50



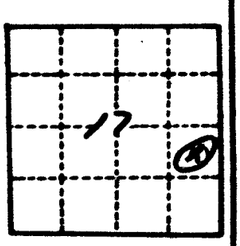
Indrio Rd

U. S. GEOLOGICAL SURVEY — WELL LOG

WELL NUMBER 273110 0802700.04 (latitude-longitude) LOCAL* _____ COUNTY St. Lucie

OWNER OR NAME USGS

LOCATION T 34S R 39E SEC. 17, NE 1/4 SE 1/4 ___ 1/4



WELL DEPTH 125 ft., CASED 90 ft., DIAMETER 2 in.

DEPTH LOGGED 125 ft., TOP _____ ft., BOTTOM _____ ft., DATE COMPLETED 2-23-79

FORMATION _____, FORMATION TOP reference to LSD _____ MSL _____

AQUIFER _____, WATER LEVEL reference to LSD _____ MSL _____

ELEVATION LSD _____ ft. MSL SPEED OF LOGGING 20 ft/min.

TOP OR START OF LOG 8 ft. above LSD below OPERATOR Wm Hopkins

TYPE LOG

- ☐ DRILLING TIME
- ☐ CASING-COLLAR
- ☐ CALIPER (diameter)
- ☐ DRILLER'S
- ■ ELECTRIC
- ☐ FLUID-CONDUCTIVITY (RESISTIVITY)
- ☐ GEOLOGIST OR SAMPLE
- ☐ MAGNETIC
- ☐ INDUCTION
- ■ GAMMA-RAY
- ☐ DIPMETER (inclinometer)
- ☐ LATER
- ☐ MICRO
- ☐ MICROLATER
- ☐ NEUTRON
- ☐ PHOTOGRAPHIC (TV, still, movie)
- ☐ RADIOACTIVE-TRACER
- ☐ RADIATION
- ☐ SONIC
- ☐ TEMPERATURE
- ☐ TEMPERATURE (FLUID-CONDUCTIVITY)
- ☐ FLUID-VELOCITY

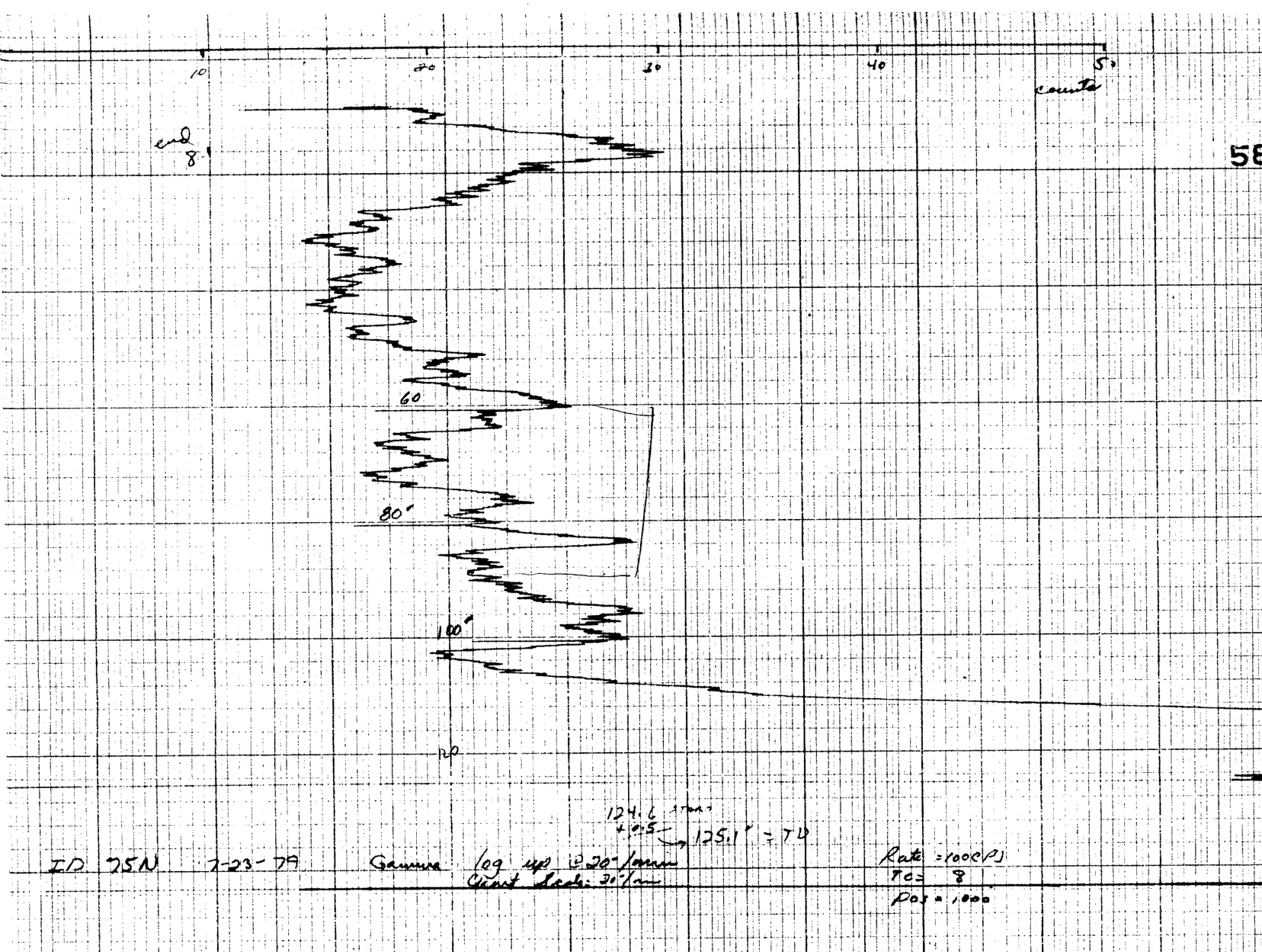
USE OF WELL

- ☐ ANODE
- ☐ DRAINAGE
- ☐ DESTROYED
- ■ OBSERVATION
- ☐ OIL-GAS
- ☐ RECHARGE
- ■ TEST
- ☐ UNUSED
- ☐ WITHDRAWAL
- ☐ WASTE

QW SAMPLE ☐ NO ☐ YES DATE SAMPLED _____ DEPTH(S) SAMPLED _____

LOG SCALES HORIZ 9.7" = 50 cps, VERT 1" = 20' LOGGED ■ UP ☐ DOWN

S.P. Tc = 8 DEPTH RESISTIVITY _____



124.6 true
+0.5 → 125.1' = TD

ID 75N 7-23-79 Gamma log up @ 20'/min
Chart Scale: 20'/in

Rate = 1000 CPS
Tc = 8
Pos = 1.000

Indria Test Solution

Delayed Yield Solution (Boulton, PL & PP)

Match points

	Well 300 N	Well 150 S
$4\pi s/Q$	1.0	1.0
$4Tt/r^2S_c$	1.0	10
t	1.0	1.7
s	1.20	1.1

Well 300 N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.20}$$

$$T = 19,385$$

$$T = 2,590 \text{ ft}^2/\text{d}$$

$$S_c = \frac{4 \times 2590 \times 1.0}{(300)^2 \times 1440 \times 1.0}$$

$$= 8.0 \times 10^{-5}$$

Well 150 S

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.1}$$

$$T = 21,147$$

$$T = 2,830$$

$$S_c = \frac{4 \times 2830 \times 1.7}{(150)^2 \times 1440 \times 10}$$

$$S_c = 6.0 \times 10^{-5}$$

Site Indio Road date of test 8-21-79 & 8-22-7

Well No 150 S actual r ____ m.p. elevation 21.28

(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79 0930	0	4.31	0	
	1	5.77	1.46	3.1×10^{-8}
	2	6.48	2.17	6.2×10^{-8}
	3	6.90	2.59	9.3×10^{-8}
	4	7.17	2.86	1.2×10^{-7}
	5	7.38	3.07	1.5
	7	7.69	3.38	2.2
	9	7.94	3.63	2.8
	12	8.19	3.88	3.7
	16	8.41	4.10	4.9
	20	8.57	4.26	6.2
	25	8.72	4.41	7.7
	30	8.82	4.51	9.3×10^{-7}
	40	8.97	4.66	1.2×10^{-6}
	50	9.07	4.76	1.5
	60	9.14	4.83	1.8
	90	9.26	4.95	2.9
1130	120	9.35	5.04	3.7
1200	150	9.40	5.09	4.6
1300	210	9.44	5.13	6.5
1400	270	9.47	5.16	8.3×10^{-6}
1500	330	9.46	5.17	1.0×10^{-5}
1600	390	9.49	5.18	1.2

Site _____ date of test _____

Well No 150 5 actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1700	450	9.49	5.18	1.4×10^{-5}
1800	510	9.49	5.18	1.6
1900	570	9.49	5.18	1.8
2000	630	9.49	5.18	1.9
2100	690	9.49	5.18	2.1
2200	750	9.49	5.18	2.3
2300	810	9.50	5.19	2.5
2400	870	9.51	5.20	2.7
8-22-71 0100	930	9.51	5.20	2.9
0200	990	9.50	5.19	3.1
0300	1,050	9.49	5.18	3.2
0500	1,170	9.47	5.16	3.6
0600	1,230	9.47	5.16	3.8
0700	1,290	9.47	5.16	4.0
0800	1350	9.47	5.16	4.2
0900	1,410	9.46	5.15	4.4
1000	1,470	9.43	5.12	4.5
1100	1,530	9.41	5.10	4.7
1200	1,590 (min. since shutdown)	9.39	5.08	4.9×10^{-5}
	1,591 1	8.18	3.87	
	1,592 2	7.57	3.26	
	1,593 3	7.18	2.87	
	1,594 4	6.89	2.59	

Site _____ date of test _____

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 $day\,ft^{-2}$
	1,595	5	6.68	2.37	
	1,597	7	6.35	2.04	
	1,600	10	6.02	1.71	
	1,602	12	5.85	1.54	
	1,605	15	5.66	1.35	
	1,610	20	5.42	1.11	
	1,615	25	5.23	0.92	
	1,620	30	5.11	0.80	
	1,630	40	4.92	0.61	
	1,640	50	4.80	0.49	
1302	1,650	60	4.70	0.39	
1336	1,684	94	4.50	0.19	

Site Indio Road date of test 8-21-79 & 8-22-7

Well No 300N actual r ____ m.p. elevation 21.63

(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79 0849	—	3.63	—	
0931	1	3.62	0	7.72×10^{-9}
	2	4.30	0.68	1.5×10^{-8}
	3	4.68	1.06	2.3
	4	4.98	1.36	3.1
	5	5.18	1.56	3.9
	7	5.52	1.90	5.4
	9	5.75	2.13	6.9
	12	6.03	2.41	9.3×10^{-8}
	15	6.26	2.64	1.2×10^{-7}
	25	6.67	3.05	1.9
	30	6.82	3.20	2.3
	40	7.01	3.39	3.1
	50	7.14	3.52	3.9
	60	7.24	3.62	4.6
	90	7.42	3.80	6.9
	120	7.51	3.89	9.3
1205	155	7.60	3.98	1.2×18^{-6}
1301	211	7.68	4.06	1.6×10^{-6}
1400	270	7.72	4.10	2.1
1500	330	7.75	4.13	2.6
1600	390	7.77	4.15	3.0
1700	450	7.79	4.17	3.5

Site Tudris Road date of test _____

Well No 300 N actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1800	510	7.78	4.16	3.9×10^{-6}
1900	570	7.79	4.17	4.4
2000	630	7.79	4.17	4.9
2100	690	7.80	4.18	5.3
2200	750	7.81	7.19	5.8
2255	805	7.81	4.19	6.2
2400	870	7.82	4.20	6.7
8-22-79 0100	930	7.82	4.20	7.2
0200	990	7.80	4.18	7.6
0300	1,050	7.80	4.18	8.1
0500	1,170	7.80	4.18	9.0
0600	1,230	7.79	4.17	9.5×10^{-6}
0700	1,290	7.79	4.17	9.9×10^{-6}
0800	1,350	7.79	4.17	1.0×10^{-5}
0900	1,410	7.79	4.17	1.1
1000	1,470	7.77	4.15	1.1
1100	1,530	7.76	4.14	1.2
1200	1,590 (min since shutdown)	7.75	4.13	1.2×10^{-5}
	1,591 1	7.35	3.73	
	1,592 2	7.10	3.48	
	1,593 3	6.79	3.17	
	1,594 4	6.58	2.96	
	1,595 5	6.38	2.76	

Site Indris Road date of test _____

Well No 300 N actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,597 7	6.09	2.47	
	1,600 10	5.77	2.15	
	1,602 12	5.59	1.97	
	1,605 15	5.38	1.76	
	1,610 20	5.11	1.49	
	1,615 25	4.94	1.32	
	1,620 30	4.76	1.14	
	1,630 40	4.64	1.02	
	1,640 50	4.42	0.80	
	1,650 60	4.29	0.67	
1332	1,680 90	4.03	0.41	

Site Indrio Road date of test 8-21-79 & 8-22-79

Well No 75N actual r ____ m.p. elevation 21.41

(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day/ft^2
8-21-79				
0930	0	4.46	0	
	1	7.38	2.92	1.2×10^{-7}
	2	8.15	3.69	2.5
	3	8.60	4.14	3.7
	4	8.90	4.44	4.9
	5	9.11	4.65	6.2
	7	9.45	4.99	8.6
	9	9.68	5.22	1.1×10^{-6}
	12	9.94	5.48	$1.5 \times$
	16	10.17	5.71	2.0
	20	10.34	5.88	2.5
	25	10.49	6.03	3.1
	30	10.62	6.16	3 7
	40	10.82	6.36	4.9
	50	10.89	6.43	6.2
	60	10.97	6.51	7.4
1100	90	11.13	6.67	1.1×10^{-5}
1130	120	11.22	6.76	1.5
1202	152	11.29	6.83	1.9
1300	210	11.33	6.87	2.6
1400	270	11.37	6.91	3.3
1500	330	11.39	6.93	4.1
1600	390	11.39	6.93	4.8

Site _____ date of test _____

Well No 75N actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1700	450	11.40	6.94	5.6×10^{-5}
1800	510	11.40	6.94	6.3
1900	570	11.40	6.94	7.0
2000	630	11.40	6.94	7.8
2100	690	11.41	6.95	8.5
2200	750	11.41	6.95	9.3×10^{-5}
2300	810	11.42	6.96	1.0×10^{-4}
2400	870	11.43	6.97	1.1
0100	930	11.43	6.97	1.15
0200	990	11.42	6.96	1.2
0300	1,050	11.41	6.95	1.3
0500	1,170	11.39	6.93	1.4
0600	1,230	11.40	6.94	1.5
0700	1,290	11.41	6.95	1.6
0800	1,350	11.40	6.94	1.7
0900	1,410	11.38	6.92	1.74
1000	1,470	11.36	6.90	1.81
1100	1,530	11.34	6.88	1.9
1200	1,540	11.33	6.87	2.0×10^{-4}
	1,591 (1 min since shutdown)	8.91	4.45	
	1,592 (2)	8.20	3.74	
	1,593 (3)	7.74	3.28	
	1,514 (4)	7.43	2.97	

Site _____ date of test _____

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,595	5	7.20	2.74	
	1,597	7	6.84	2.38	
	1,600	10	6.46	2.00	
	1,602	12	6.27	1.81	
	1,605	15	6.05	1.59	
	1,610	20	5.78	1.32	
	1,615	25	5.59	1.13	
	1,620	30	5.44	0.98	
	1,630	40	5.22	0.76	
	1,640	50	5.07	0.61	
1302	1,650	60	4.97	0.51	
1335	1,683	93	4.74	0.28	

WELL 300 N

9-194
November 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Indio Road
Pumping Test

WATER LEVEL MEASUREMENTS (Field) Measured by

Location of Project OBSERVATION WELL 300 N

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/21/79	0849	300 N	6.00	2.37	3.63	
	(0931) 1		4.00	.38	3.62	
	2		5.00	.70	4.30	
	3		6.00	1.32	4.68	
	4		7.00	2.02	4.98	
	5		8.00	2.82	5.18	
	7		6.00	1.48	5.52	
	9		7.00	1.25	5.75	
	12		8.00	1.97	6.03	
	15		7.00	.74	6.26	
	25		7.00	.33	6.67	
	30		8.00	1.18	6.82	
	40		15.00	7.99	7.01	
	50		9.00	1.86	7.14	
	1hr/60		9.00	1.76	7.24	
	90		9.00	1.58	7.42	
	2hr/120		9.00	1.49	7.51	
	1205		9.00	1.40	7.60	
	1301		9.00	1.32	7.68	
	1400		10.00	2.28	7.72	
	1500		9.00	1.25	7.75	
	1600		9.00	1.23	7.77	
	1700		9.00	1.21	7.79	

9-194
November 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

[redacted]

WATER LEVEL MEASUREMENTS (Field) Measured by

Location of Project

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/21/79	1800	300 N	9.00	1.22	7.78	
	1900		9.00	1.21	7.79	
	2000		10.00	2.21	7.79	
	2100		9.00	1.20	7.80	
	2200		8.00	0.19	7.81	
	2255		9.00	1.19	7.81	
	2400		8.00	0.18	7.82	
8/22/79	0100		9.00	1.18	7.82	
	0200		8.00	0.20	7.80	
	0300		9.00	1.20	7.80	
	0500		8.00	0.20	7.80	
	0600		8.00	0.21	7.79	
	0700		9.00	1.21	7.79	
	0800		8.00	0.21	7.79	
	0900		9.00	1.21	7.79	
	10.00		9.00	1.23	7.77	
	11.00		10.00	2.24	7.76	
	12.00		9.00	1.25	7.75	
	1 min		10.00	2.65	7.35	
	2 min		11.00	3.90	7.10	
	3 min		12.00	5.21	6.79	
	4 min		13.00	6.42	6.58	
	5 min		14.00	7.62	6.38	

9-194
November 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project OBSERVATION WELL 300 N

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/28/69	7 min	300 N	7.00	.91	6.09	
	10 m		7.00	1.23	5.77	
	12		7.00	1.41	5.59	
	15		7.00	1.62	5.38	
	20		7.00	1.89	5.11	
	25		7.00	2.06	4.94	
	30		7.00	2.24	4.76	
	40		10.00	5.36	4.64	
	50		7.00	2.58	4.42	
	60 min		6.00	1.71	4.29	
	1330		6.00	1.97	4.03	

U. S. GOVERNMENT PRINTING OFFICE

9-194
November 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project _____

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS

Site Indrio Road date of test 8-21-79 & 8-22-79

Well No 255 actual r ____ m.p. elevation 21.31
(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79				
0930	0	4.33	0	
	2	10.45	6.12	
	3	10.83	6.50	
	4	11.09	6.76	
	5	11.32	6.97	
	7	11.61	7.28	
	9	11.80	7.47	
	12	12.02	7.69	
	16	12.23	7.90	
	20	12.38	8.05	
	25	12.52	8.19	
	30	12.63	8.30	
	40	12.78	8.45	
	50	12.86	8.53	
1030	60	12.94	8.61	
1100	90	13.08	8.75	
1130	120	13.16	8.83	
1200	150	13.19	8.86	
1300	210	13.23	8.90	
1400	270	13.26	8.93	
1500	330	13.27	8.94	
1600	390	13.28	8.95	
1700	450	13.28	8.95	

Site Indris Road date of test _____

Well No 255 actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day/ft^2
1800	510	13.27	8.94	
1900	570	13.26	8.93	
2000	630	13.26	8.93	
2100	690	13.26	8.93	
2200	750	13.27	8.94	
2300	810	13.28	8.95	
2400 8-22-79	870	13.28	8.95	
0100	930	13.28	8.95	
0200	990	13.27	8.94	
0300	1,050	13.26	8.93	
0500	1,170	13.25	8.92	
0600	1,230	13.25	8.92	
0700	1,290	13.25	8.92	
0800	1,350	13.25	8.92	
0900	1,410	13.24	8.91	
1000	1,470	13.22	8.89	
1100	1,530	13.20	8.87	
1200	1,590	13.18	8.85	
	1,591 (min since shutdown: 1)	8.69	4.36	
	1,592 (2)	7.95	3.62	
	1,593 (3)	7.47	3.14	
	1,594 (4)	7.22	2.89	
	1,595 (5)	6.91	2.58	

Site Indio Road date of test _____

Well No 255 actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,597	7	6.58	2.25	
	1,600	10	6.20	1.87	
	1,602	12	6.02	1.69	
	1,605	15	5.79	1.46	
	1,610	20	5.53	1.20	
	1,615	25	5.36	1.03	
	1,620	30	5.21	0.88	
	1,630	40	5.01	0.68	
	1,640	50	4.87	0.54	
1302	1,650	60	4.77	0.44	
	1680	90	4.59	0.26	

Site Intrio Road date of test 8-21-79 & 8-22-7

Well No 10N actual r ____ m.p. elevation 21.95

(elev. only accurate with respect to other wells in suite

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79				
0930	0	4.96	0	
	1	11.68	6.72	
	2	12.36	7.40	
	3	12.74	7.78	
	4	12.98	8.02	
	5	13.17	8.21	
	7	13.44	8.48	
	9	13.64	8.68	
	12	13.84	8.88	
	16	14.01	9.05	
	20	14.16	9.20	
	25	14.27	9.31	
	30	14.37	9.41	
	40	14.50	9.54	
	50	14.59	9.63	
	60	14.65	9.69	
1100	90	14.79	9.83	
1130	120	14.87	9.91	
1200	150	14.92	9.96	
1300	210	14.95	9.99	
1400	270	14.98	10.02	
1500	330	14.99	10.03	
1600	390	14.99	10.03	

Site Indio Road date of test 8/21-22/79

Well No 10N actual r ____ m.p. elevation 21.95

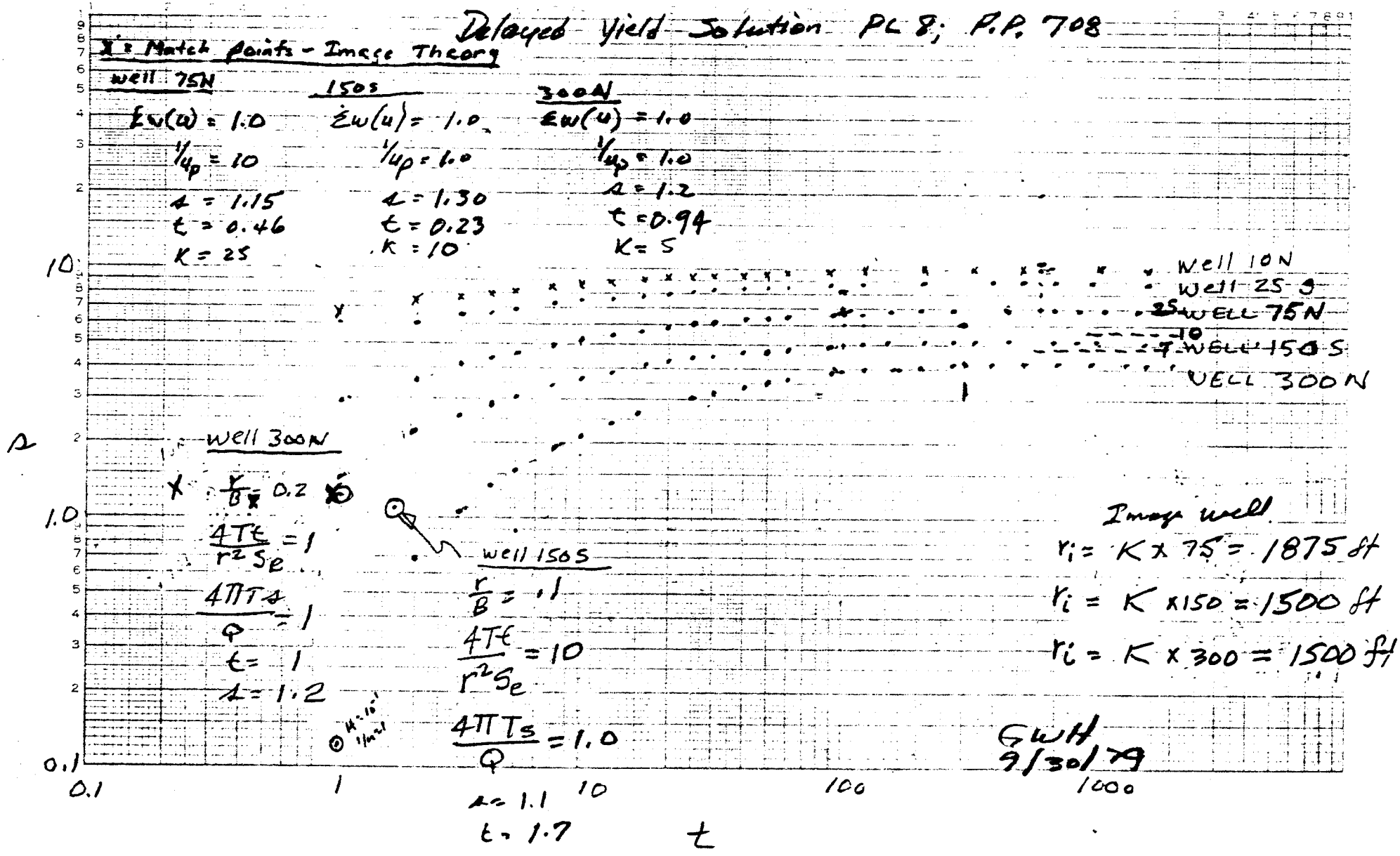
time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1700	450	15.00	10.04	
1800	510	15.00	10.04	
1900	570	15.00	10.04	
2000	630	15.00	10.04	
2100	690	15.00	10.04	
2200	750	15.01	10.05	
2300	810	15.01	10.05	
2400	870	15.01	10.05	
0100	930	15.02	10.06	
0200	990	15.01	10.05	
0300	1,050	15.01	10.05	
0500	1,170	14.99	10.03	
0500	1,230	14.99	10.03	
0700	1,290	14.99	10.03	
0800	1,350	14.99	10.03	
0900	1,410	14.98	10.02	
1000	1,470	14.97	10.01	
1100	1,530	14.94	9.98	
1200	1,590	14.93	9.97	
	1,591 (min since shutdown: 1)	9.29	4.33	
	1,592 (2)	8.50	3.54	
	1,593 (3)	8.05	3.09	
	1,594 (4)	7.74	2.78	

Site Indrio Road date of test 8/21-22/79

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,595	5	7.53	2.57	
	1,597	7	7.18	2.22	
	1,600	10	6.71	1.85	
	1,602	12	6.62	1.66	
	1,605	15	6.42	1.46	
	1,610	20	6.15	1.19	
	1,615	25	5.98	1.02	
	1,620	30	5.85	0.89	
	1,630	40	5.65	0.69	
	1640	50	5.50	0.54	
1302	1,650	60	5.41	0.45	
1331	1,679	89	5.26	0.30	

Indrio Test
St Lucie County
August 21-22, 1979



Location Grid Pump Test — Pumped Well

Party

Date

LINE	Date / Station	Time (Clock)	Time min/pump	H	R	DTW		RPM	REMARKS
1	8/24/79	0930	1'30"	~~30.00~~	~~1.55~~			1400	
2		0935	5	30.00	2.41	27.59		1370	
3		1030	60					1370	
4		1105	95					1370	
5		1120½						1360	
6		1300						1360	
7		1400						1370	
8	8/25/79	0900						1370	
9		1000						1370	
10		1100						1370	
11		1200						1360	
12		1201		30.00	.86				
13	Pump off	1202							
14		1204½	2'30"	9.00	.71				
15			3'30"	9.00	1.17				
16			4'30"	9.00	1.48				
17			6 min	8.00	.72				
18			7'30"	8.00	1.00				
19			10'	8.00	1.35				
20			20'	8.00	1.97				
21			34'	7.00	1.46				
22		1302	60'	7.00	1.77				
23									
24									
25									

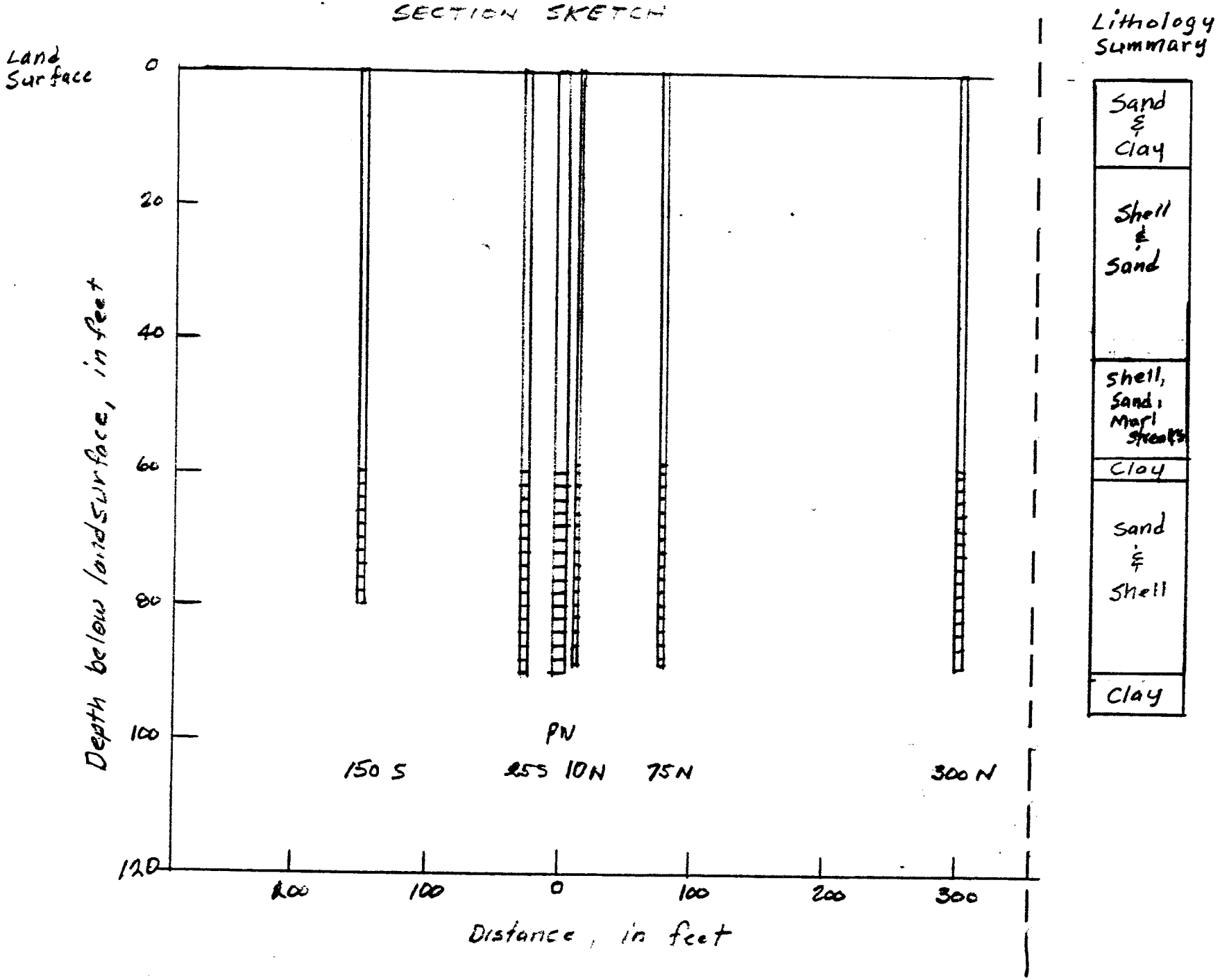
Location I 95 and Indian Road

Party P & W Drilling Date 7/27/79

Line	Well No	Drill Depth	Bottom of Screen	Top of Screen	Feet of Blank Csg.	Static Water Level Elev.	Tot	Date	Standby	Pumping Test REMARKS
1	ID-75N	125	89	59	60	1100	3	7/23	2 hrs	30 min 2" hole
2	ID-300N	92	89	59	60	1640	2	7/26	—	30 min 2" hole
3	ID-10N	92	89	59	60	1420	2	7/26	—	30 min 2" hole
4	ID-1	95	90	60	60	1130	3	7/24		30 min 6" hole
5						1630	4			
6	ID-25S	92	90	60	60	1330	½	7/25		30 min
7	ID-150S	83	80	60	60	1100	2	7/25		30 min
8										
9	2"	84		2"	300 / 60"					
10	10"	95	950							
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

INDIO AQUIFER TEST

SECTION SKETCH



Indio East
Aug, 1979

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project DISCHARGE

DATE	HOUR	WELL NO. inches	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	REMARKS
8/21	1700	9 5/8	203			
	1800	9 5/8				
	1900	9 5/8				
	2000	9 5/8				
	2100	9 3/4				
	2200	9 5/8				
	2300	9 3/4				
	2400	9 5/8				
8-2279	0100	9 3/4				
	0200	9 3/4				
	0300	9 3/4				
	0500	9 3/4				
	0600	9 3/4				
	0700	9 3/4				
	0800	9 3/4				
	0900	9 3/4				
	1000	9 3/4				
	1200	9 3/4				

Q = 203 gpm

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project _____

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	REMARKS

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

Location Indio Rd & I-95 Test site (Scott Grove)

Party Long | Time | Date July 1979

Line	Well Station	Drill Depth BS	Csg Avg	Screen HI	Set screen FS	Develop Avg	Standby Elev	Remarks
1	ID-1	95	62	60-90	½	7 hrs	0	
2		950.00	372.00					
3	ID-10N	90	60	59-89	½ hr	1220 2 hrs		
4	ID-25 N	125	65	63-89	½ hr	3 hrs	2 hrs	
5								
6	ID-300N	92	63	63-89	½ hr	2 hrs		
7								
8	ID-25 S	90	62	60-90	½ hr	½ hr		
9	ID-150 S	83	57	55-80	½ hr	2 hrs	0	
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

REMARKS

Location Indrio Road Pumping test well suite

Party Dooley T Wilcox [ruler]

Date 8-22-79 (after test)

Line	Station	BS	Avg	HI	FS	Avg	Elev.	REMARKS
1		3.00					20.00	TOP CULVERT, ORANGE PAINT.
2				24.00			↖	elev from map
3					2.72		21.28	150 S
4					2.69		21.31	25 S
5					2.05		21.95	10 N
6					2.59		21.41	75 N
7					2.37		21.63	300 N
8								
9					2.31		21.69	PRO. WELL
10								
11								
12								
13								
14								
15						What is land surface elevation?		
16						are these elevations Top of casing		
17								
18								
19								
20								
21								
22								
23								
24								
25								

WELL 300N

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Irdrio Road Pumping test

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project OBSERVATION WELL 300 N

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/21/79	0849	300 N	6.00	2.37	3.63	
	(939)				3.62	
			6.00	.45		
			7.	1.25	5.75	
			7.00			
				1.18		
					7.01	
	55		9	1.86	7.14	
	1m 60		9		7.24	
				1.58	7.	
				1.40	7.	
	1205		9.00	1.40	7.60	
	1301			1.32	7.68	
	1400		10.00	2.28	7.72	
	150		9.00	1.25	7.75	
	1600		9.00	1.23	7.77	
	1700		9.00	1.21	7.79	

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

~~WATER LEVEL~~ MEASUREMENTS (Field) Measured by _____

Location of Project _____

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/21/79	1500	300 N	9.00	1.22	7.78	
	1900		9.00	1.21	7.79	
	2000		10.00	2.21	7.79	
	2100		9.00	1.20	7.80	
	2200		8.00	0.19	7.81	
	2255		9.00	1.19	7.81	
	2400		8.00	0.18	7.82	
8/22/79	0100		9.00	1.18	7.82	
	0200		8.00	0.20	7.80	
	0300		9.00	1.20	7.80	
	0500		8.00	0.20	7.80	
	0600		8.00		7.79	
	0700				7.79	
	0800				7.79	
	09				7.79	
	10.00		9.00	1.23	7.77	
	11.00		10.00	2.24	7.76	
	12.00		9.00	1.25	7.75	
			10.00	2.65	7.35	
			11.00	3.90	7.10	
			12.00	5.21	6.79	
			13.00	6.42	6.58	
			14.00	7.62	6.38	

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project OBSERVATION WELL 300 N

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8/28/19	7 min	300 N	7.00	.91	6.09	
	10 m		7.00	1.23	5.77	
	12		7.00	1.41	5.59	
	15		7.00	1.62	5.38	
	20		7.00	1.89	5.11	
	25		7.00	2.06	4.94	
	30		7.00	2.24	4.76	
	45		10.00	5.36	4.64	
	50		7.00	2.58	4.42	
	60 min		[illegible]	1.71	4.29	
	13 30		6.00	1.97	4.03	

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project _____

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

Site Indian Road date of test 8-21-79 & 8-22-79

Well No 10N actual r ____ m.p. elevation 21.95

(elev. relative to with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r² day ft⁻²
8-21-79				
0900	0	11.96	0	
	1	11.68	6.72	11.68 − 4.96 = 6.72 → 6.94×10^{-6}
	2	12.36	7.10	1.69 / 5.03 → 1.39×10^{-5}
	3	12.74	7.78	2.08×10^{-5}
	4	13.21	8.03	2.78×10^{-5}
	5	13.17	8.03	3.47×10^{-5}
	7	13.44	8.48	4.86×10^{-5}
	9	13.54	8.58	6.25×10^{-5}
	12	13.81	8.82	8.33×10^{-5}
	16	14.01	9.05	1.11×10^{-4}
	20	14.16	9.20	1.388×10^{-4}
	25	14.27	9.31	
	30	14.37	9.41	
	40	14.50	9.54	2.78×10^{-4}
	50	14.59	9.63	
	60	14.65	9.69	
1100	90	14.79	9.83	
1130	120	14.87	9.91	8.33×10^{-4}
1200	150	14.92	9.96	
1300	210	14.95	9.99	
1400	270	14.98	10.02	
1500	330	14.99	10.03	
1600	390	14.99	10.03	2.71×10^{-3}

Site Indio Road date of test 8/21-22/79

Well No 10N actual r ____ m.p. elevation 21.95

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
[illegible]	[illegible]	15.90	10.07	
[illegible]	[illegible]	[illegible]	10.04	
1900	[illegible]	[illegible]	10.04	
2000	630	15.00	10.04	4.37×10^{-3}
[illegible]	690	15.00	10.04	
[illegible]	[illegible]	15.01	10.05	
[illegible]	[illegible]	15.01	10.05	
[illegible]	[illegible]	15.01	10.05	
[illegible]	[illegible]	15.00	10.06	
[illegible]	[illegible]	15.01	10.05	
[illegible]	1050	15.01	10.05	7.29×10^{-3}
[illegible]	1170	14.99	10.03	
[illegible]	1230	14.99	10.03	
0700	1290	14.99	10.03	
0800	1350	14.99	10.03	
0900	1410	14.98	10.02	
1000	1470	14.97	10.01	
1100	1530	14.94	9.98	
1200	1590	14.93	9.97	
	1591 (min since shutdown 1)	9.29	4.33	
	1592 (2)	8.50	3.54	
	1593 (3)	8.05	3.09	
	1594 (4)	7.74	2.78	

Site Indrio Road date of test 8/21-22/79

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	[illegible]	5	7.50	2.57	
	1,597	7	7.71	2.22	
	1,600	10	5.81	1.85	
	1,602	12	6.68	1.66	
	1,605	15	5.12	1.46	
	1,610	20	5.15	1.19	
	1,615	25	5.16	1.02	
	1,620	30	5.75	0.79	
	1,630	40	5.65	0.59	
	1,640	50	5.50	0.54	
1302	1,655	60	5.41	0.45	
1331	1,679	79	5.26	0.30	

Site Indio Road date of test 8-21-79 & 8-22-79

Well No 255 actual r ____ m.p. elevation 21.31
(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day/ft^2
8-21-79 0930	0	4.33	0	
	2	10.45	6.12	2.2×10^{-6}
	3	10.83	6.50	3.3×10^{-6}
	4	11.09	6.76	4.4×10^{-6}
	5	11.32	6.99	5.5×10^{-6}
	7	11.61	7.28	7.7×10^{-6}
	9	11.80	7.47	9.9×10^{-6}
	12	12.02	7.69	1.32×10^{-5}
	16	12.23	7.90	1.76×10^{-5}
	20	12.38	8.05	2.2×10^{-5}
	25	12.52	8.19	2.75×10^{-5}
	30	12.63	8.30	3.3×10^{-5}
	40	12.78	8.45	4.4×10^{-5}
	50	12.86	8.53	5.5×10^{-5}
1030	60	12.94	8.61	6.6×10^{-5}
1100	90	13.08	8.75	9.9×10^{-5}
1130	120	13.16	8.83	1.32×10^{-4}
1200	150	13.19	8.86	1.65×10^{-4}
1300	210	13.23	8.90	2.31×10^{-4}
1400	270	13.26	8.93	
1500	330	13.27	8.94	3.63×10^{-4}
1600	390	13.28	8.95	
1700	450	13.28	8.95	4.96×10^{-4}

Site Indio Road date of test _____

Well No 255 actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1800	510	13.27	8.94	
1900	570	13.26	8.93	
2000	630	13.26	8.93	
2100	690	13.26	8.93	
2200	750	13.27	8.94	
2300	810	13.28	8.95	8.91×10^{-4}
2400 8-22-79	870	13.28	8.95	
0100	930	13.28	8.95	
0200	990	13.27	8.94	
0300	1,050	13.26	8.93	
0500	1,170	13.25	8.92	
0600	1,230	13.25	8.92	
0700	1,290	13.25	8.92	
0800	1,350	13.25	8.92	
0900	1,410	13.24	8.91	
1000	1,470	13.22	8.89	
1100	1,530	13.20	8.87	
1200	1,590	13.18	8.85	
	1,591 (min since shutdown: 1)	8.69	4.36	
	1,592 (2)	7.95	3.62	
	1,593 (3)	7.47	3.14	
	1,594 (4)	7.22	2.89	
	1,595 (5)	6.91	2.58	

Site Indio Road date of test _____

Well No 255 actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,597 7	6.58	2.25	
	1,600 10	6.20	1.87	
	1,602 12	6.02	1.69	
	1,605 15	5.79	1.46	
	1,610 20	5.53	1.20	
	1,615 25	5.36	1.03	
	1,620 30	5.21	0.88	
	1,630 40	5.01	0.68	
	1,640 50	4.87	0.54	
1302	1,650 60	4.77	0.44	
	1680 90	4.59	0.26	

Site [illegible] Mound date of test 8-21-79 & 8-22-79

Well No 7 SN actual r ____ m.p. elevation 21.[illegible]

(elev. only accurate with respect to other wells in suite)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79				
0930	0	4.46	0	
	1	7.38	2.92	1.2×10^{-7}
	2	8.15	3.69	2.5
	3	8.60	4.14	3.7
	4	8.90	4.44	4.9
	5	9.11	4.65	6.2
	7	9.45	4.99	8.6
	9	9.68	5.22	1.1×10^{-6}
	12	9.94	5.48	$1.5 \times$
	16	10.17	5.71	2.0
	20	10.34	5.88	2.5
	25	10.49	6.03	3.1
	30	10.62	6.16	3.7
	40	10.82	6.36	4.9
	50	10.89	6.43	6.2
	50	10.97	6.51	1.4
1100	90	11.13	6.67	1.1×10^{-5}
1130	120	11.22	6.76	1.5
1202	152	11.29	6.83	1.9
1300	210	11.33	6.87	2.6
1400	270	11.37	6.91	3.3
1500	330	11.39	6.93	4.1
1600	390	11.39	6.93	4.8

Site _____ date of test _____

Well No 75N actual r _____ m.p. elevation: _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1700	450	11.40	[illegible]	5.6×10^{-5}
1800	510	11.40	6.91	6.3
1900	570	11.40	[illegible]	7.0
2000	630	11.40	[illegible]	7.8
2100	690	11.41	[illegible]	8.5
2200	750	11.41	[illegible]	9.3×10^{-5}
2300	810	11.42	[illegible]	1.0×10^{-4}
2400	870	11.43	[illegible]	1.1
0100	[illegible]	11.43	[illegible]	1.15
0200	[illegible]	11.42	6.96	1.2
0300	[illegible]	11.41	6.95	1.3
0500	1,170	11.39	[illegible]	1.4
0600	1,230	11.40	[illegible]	1.5
0700	1,290	11.41	6.95	1.6
0800	1,350	11.40	6.94	1.7
0900	1,410	11.38	6.92	1.74
1000	1,470	11.36	6.90	1.81
1100	1,530	11.34	6.88	1.9
1200	1,540	11.33	6.67	2.0×10^{-4}
	1,591 (1 min since shutdown)	7.91	4.45	
	1,592 (2)	[illegible]	3.74	
	1,593 (3)	7.74	3.28	
	1,594 (4)	7.43	2.97	

Site _____ date of test _____

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test		depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,595	5	7.20	2.74	
	1,597	7	6.84	2.38	
	1,600	10	6.46	2.00	
	1,602	12	6.27	1.81	
	1,605	15	6.05	1.59	
	1,610	20	5.78	1.32	
	1,615	25	5.59	1.13	
	1,620	30	5.44	0.98	
	1,630	40	5.22	0.76	
	1,640	50	5.07	0.61	
1308	1,650	60	4.97	0.51	
1335	1,678	88	4.74	0.28	

Site Indio Road date of test 8-21-79 & 8-22-79

Well No 150 S actual r ____ m.p. elevation 21.26

(elev. only accurate with respect to other wells in site)

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day/ft^2
8-21-79				
0930	0	4.31	0	
	1	5.77	1.46	3.1×10^{-8}
	2	6.48	2.17	6.2×10^{-8}
	3	6.90	2.59	9.3×10^{-8}
	4	7.17	[illegible]	1.2×10^{-7}
	5	7.38	[illegible]	1.5
	7	7.69	3.38	2.2
	9	7.94	3.63	2.8
	12	8.19	3.88	3.7
	15	8.41	4.10	4.9
	20	8.57	4.26	6.2
	25	8.72	4.41	7.7
	30	8.82	4.51	9.3×10^{-7}
	40	8.97	4.66	1.2×10^{-6}
	50	9.07	4.76	1.5
	60	9.14	4.83	1.8
	90	9.26	4.95	2.9
1130	120	9.35	5.04	3.7
1200	150	9.40	5.09	4.6
1300	210	9.44	5.13	6.5
1400	270	9.47	5.16	8.3×10^{-6}
1500	330	9.46	5.17	1.0×10^{-5}
1600	390	9.49	5.18	1.2

Site _____ date of test _____

Well No 150 S actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1700	450	9.49	5.17	1.4×10^{-5}
1800	510	9.49	5.17	1.6
1900	570	9.49	5.17	1.8
2000	630	9.49	5.18	1.9
2100	690	9.49	5.18	2.1
2200	750	9.49	5.18	2.3
2300	810	9.50	5.19	2.5
2400	870	9.51	5.20	2.7
8-23-71 0100	930	9.51	5.20	2.9
0200	990	9.50	5.19	3.1
0300	1,050	9.49	5.18	3.2
0500	1,170	9.47	5.16	3.6
0600	1,230	9.47	5.16	3.8
0700	1290	9.47	5.16	4.0
0800	1350	9.47	5.16	4.2
0900	1,410	9.46	5.15	4.4
1000	1,470	9.43	5.12	4.5
1100	1,530	9.41	5.10	4.7
1200	1,590 (min. since shutdown)	9.39	5.08	4.9×10^{-5}
	1,591 1	8.18	3.87	
	1,592 2	7.57	3.26	
	1,593 3	7.18	2.87	
	1,594 4	6.89	2.59	

Site _____ date of test _____

Well No _____ actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1515 5	5.66	2.37	
	1,597 7	6.35	2.07	
	1,600 10	6.02	1.71	
	1,602 12	5.85	1.54	
	1,605 15	5.66	1.35	
	1,610 20	5.42	1.11	
	1,615 25	5.23	0.92	
	1625 30	5.11	0.80	
	1630 40	4.98	0.51	
	1[illegible] 50	4.90	0.49	
1302	[illegible] 80	4.70	0.39	
1355	[illegible] 94	4.50	0.19	

Site Indio Road date of test 8-21-79 & 8-22-79

Well No 300N actual r ____ m.p. elevation 21.63
elev. only accurate with respect to other wells in suite

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
8-21-79 0749	—	3.63	—	
0931	1	3.52	0	7.72×10^{-9}
	2	4.30	0.68	1.5×10^{-8}
	3	4.68	1.06	2.3
	4	4.98	1.36	3.1
	5	5.18	1.56	3.9
	7	5.52	1.90	5.4
	9	5.75	2.13	6.9
	12	6.03	2.41	9.3×10^{-8}
	15	6.26	2.64	1.2×10^{-7}
	25	6.67	3.05	1.9
	30	6.82	3.20	2.3
	40	7.01	3.39	3.1
	50	7.14	3.52	3.9
	60	7.24	3.62	4.6
	90	7.42	3.80	6.9
	120	7.51	3.89	9.3
1205	155	7.60	3.98	1.2×10^{-6}
1301	211	7.68	4.05	1.6×10^{-6}
1400	270	7.72	4.10	2.1
1500	330	7.75	4.13	2.6
1600	390	7.77	4.15	3.0
1700	450	7.79	4.17	3.5

Site Indio Road date of test _____

Well No 300N actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
1800	510	7.78	4.16	3.9×10^{-6}
1900	570	7.79	4.17	4.4
2000	630	7.79	4.17	4.9
2100	690	7.80	4.18	5.3
2200	750	7.81	7.19	5.8
2255	805	7.81	4.19	6.2
2400	870	7.82	4.20	6.7
8-22-79 0100	930	7.82	4.20	7.2
0200	990	7.80	4.18	7.6
0300	1,050	7.80	4.18	8.1
0500	1,170	7.80	4.18	9.0
0600	1,230	7.79	4.17	9.5×10^{-6}
0700	1,290	7.79	4.17	9.9×10^{-6}
0800	1,350	7.79	4.17	1.0×10^{-5}
0900	1,410	7.79	4.17	1.1
1000	1,470	7.77	4.15	1.1
1100	1,530	7.76	4.14	1.2
1200	1,590	7.75	4.13	1.2×10^{-5}
	min since shutdown			
	1,591 1	7.35	3.73	
	1,592 2	7.10	3.48	
	1,593 3	6.79	3.17	
	1,594 4	6.58	2.96	
	1,595 5	6.38	2.76	

Site Indio Road date of test _____

Well No 300 N actual r _____ m.p. elevation _____

time	min since start of test	depth to water (ft)	drawdown (ft)	t/r^2 day ft^{-2}
	1,597 7	6.09	2.47	
	1,600 10	5.77	2.15	
	1,602 12	5.59	1.97	
	1,605 15	5.38	1.76	
	1,610 20	5.11	1.49	
	1,615 25	4.94	1.32	
	1,620 30	4.76	1.14	
	1,630 40	4.64	1.02	
	1,640 50	4.42	0.80	
	1,650 60	4.29	0.67	
1332	1,680 90	4.03	0.41	

Location I 95 and Indian Road

Party P & W Drilling Date 7/27/79

LINE	Well No	Drill Depth	Bottom of Screen	Top of Screen	Feet of Blank Csg.	Start Air Avg	Stop Air Elev.	Tot	Date	Standby	settings REMARKS	
1	ID-75N	125	89	59	60	0800	1100	3	7/23	2 hrs	30 min	2" hole
2	ID-300N	92	89	59	60	~~1320~~ 1440	1640	2	7/26	—	30 min	2" hole
3	ID-10N	~~92~~	89	59	60	1220	1420	2	7/26	—	30 min	2" hole
4	ID-1	95	~~90~~	~~60~~	60	830	1130	3	7/24		30 min	6" hole
5						1230	1630	4				
6	ID-25S	92	90	60	60	1300	1330	½	7/25		30 min	
7	ID-150S	83	80	60	60	900	1100	2	7/25		30 min	
8												
9	2"	~~84~~		2"	300 / 60"		Inc. 16½			2 hrs	3 hrs.	
10	10"	95	950.00									
11												
12		2,420.00			900.00		1237.50			110.00	225.00	
13		950.00			360.00						75.00	
14												
15												
16												
17												
18												
19												
20										Total =	6,277.50	
21												
22												
23												
24												
25												

Location Industrial Pump Test — Purged Well

Party — Date

LINE	Date / Station	Time (Clock)	Time min/[illegible]	H	R	DTW		RPM	REMARKS
1	8/21/79	0930	1'30"	~~3.40~~	~~7.88~~			1400	
2		0935	5	30.00	2.41	27.59		1370	
3		1030	60					1370	
4		1105	95					1370	
5		1130						1360	
6		1300						1360	
7		1400						1370	
8	8/22/79	0900						1370	
9		1000						1370	
10		1100						1370	
11		1200						1360	
12		1201		30.00	.86				
13	Pump off	1202							
14		1204½	2'30"	9.00	.81				
15			3'30"	9.00	1.17				
16			4'30"	9.00	1.48				
17			6 min	8.00	.72				
18			7'30"	8.00	1.00				
19			10'	8.00	1.35				
20			20'	8.00	1.97				
21			34'	7.00	1.86				
22		1302	60'	7.00	1.77				
23									
24									
25									

Location Indian Rd & I-95 Test site (Scott Grove)

Party Kor- Time Date July 1979

LINE	Well Station	Drill Depth BS	Csg Avg	Screen HI	set screen FS	Develop Avg	Standby Elev	Record REMARKS
1	ID-1	95	62	60-90	½	7 hrs	0	
2		~~95.00~~	~~37.2 02~~					
3	ID-10N	90	60	59-89	½ hr	~~12.00~~ 2 hrs		
4	ID-25 N	125	65	63-89	½ hr	3 hrs	2 hrs	
5								
6	ID-300N	92	63	63-89	½ hr	2 hrs		
7								
8	ID-25 S	90	62	60-90	½ hr	½ hr		
9	ID-150S	83	57	55-80	½ hr	2 hrs	0	
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Location Indrio Road Pumping test well suite

Party Dooley T Wilcox

Date 8-22-79 (after test)

LINE	Station	BS	Avg	HI	FS	Avg	Elev.	REMARKS
1		3.00					20.00	TOP CULVERT, ORANGE PAINT.
2				23.00			↖ elev from map	
3					2.72		20.28	150 S
4					2.69		20.31	25 S
5					2.05		20.95	10 N
6					2.59		20.41	75 N
7					2.37		20.63	300 N
8								
9					2.31		20.69	PRO. WELL
10								
11								
12								
13								
14								
15								What is land surface elevation?
16								are these elevations Top of casing
17								
18								
19								
20								
21								
22								
23								
24								
25								

9-195
(July 1949)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Office) FIELD No. .....

OWNER Indrio OFFICE No. .....

~~LOCATION~~ Discharge (4" orifice, 6" pipe PROJECT .....

MEASURING POINT Nob. the orifice pipe settled and was shorter on last check, so check w/ Bob

ELEVATION OF MEASURING POINT from now on

DATE	HOUR	DEPTH TO WATER	HEIGHT OF WATER SURFACE Q (GPM)	MEAS. BY	REMARKS (Wells pumping, etc.)
		& inches			Temp
8/21/79	0930	0			
	0931	0			
	33	x 10"	205		
	34	x 10 1/2"	210		
	35	x 10 1/2"	210		
	7	10 1/2"	210		
	10	10 1/4"	203		
	12	10"	205		
	15	9 3/4"	203		24.0° C (air 31°)
1000	30	9 1/2"	↑		Cond. 610
1040	70	9 1/4"	assumed to be 203 this period RWW 8-30-79		24.0° C (air 34)
	1100	9 1/8"			
	1130	9 1/8"			24° (AIR 36°)
Note	1205	9 1/2"	↓	WK	24°
	1310	9 3/4"	203	WK	
	1400	9 3/4"			
	1500	9 5/8"			
	1600	9 3/4"	↓		

U.S. GOVERNMENT PRINTING OFFICE : 1963 O—688576
886-688

17.1
16
16 x 17.1
(2)

Cond. = 610 16 x 17.1

1040 (8/21/79) Hardness = 16 x 17.1 = 174

Indio test Aug, 1979

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project DISCHARGE

DATE	HOUR	WELL NO. INCHES	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS
8-21	1700	9 5/8	203			
	1800	9 5/8				
	1900	9 5/8				
	2000	9 5/8				
	2100	9 3/4				
	2200	9 5/8				
	2300	9 3/4				
	2400	9 5/8				
8-22-79	0100	9 3/4				
	0200	9 3/4				
	0300	9 3/4				
	0500	9 3/4				
	0600	9 3/4				
	0700	9 3/4				
	0800	9 3/4				
	0900	9 3/4				
	1200	9 3/4				
		Q	= 203 gpm			

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

9-194
November 1949

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

WATER LEVEL MEASUREMENTS (Field) Measured by _____

Location of Project _____

DATE	HOUR	WELL NO.	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	REMARKS

U. S. GOVERNMENT PRINTING OFFICE 16—51605-2

Indris Aquifer Test

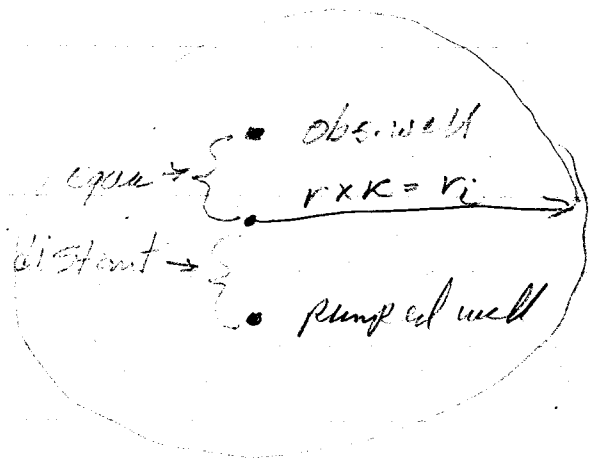
Aug. 21 - 22, 1979

computation for application of image well theory to pt. 3, p. 11, 108 by evaluation of K.

well 75N -- $r = 75$, $K = 2.5$, $r_i = 1875$ ft

well 150S -- $r = 150$, $K = 10$, $r_i = 1500$ ft

well 300N -- $r = 300$, $K = 5$, $r_i = 1500$ ft



by G.W. Hill

Indio Test, St. Lucie County

Image Well theory – Recharging PL 9, PP 708

For Log-log plot of s versus t the curve matching is good.

Match Points

Well 79N	Well 150S	Well 300N
$\Sigma w(u) = 1.0$	$\Sigma w(u) = 1.0$	$\Sigma w(u) = 1.0$
$1/u_p = 10$	$1/u_p = 1.0$	$1/u_p = 1.0$
$s = 1.15$	$s = 1.30$	$s = 1.2$
$t = 0.46$	$t = 0.23$	$t = 0.94$
$K = 25$	$K = 7.5$	$K = 5$

Well 79N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.15}$$

$$= 2{,}700 \text{ ft}^2/\text{day}$$

Well 150S

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.3}$$

$$= 2{,}390 \text{ ft}^2/\text{day}$$

Well 300N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.2}$$

$$T = 2{,}590 \text{ ft}^2/\text{day}$$

Indio Test, St. Lucie County

Image Well theory – Recharging Pl 9, PP708

For Log-log plot of s versus t, the curve matching is good.

Match Points

Well 79N	Well 150S	Well 300N
$\Sigma w(u) = 1.0$	$\Sigma W(u) = 1.0$	$\Sigma w(u) = 1.0$
$1/u_p = 10$	$1/u_p = 1.0$	$1/u_p = 1.0$
$s = 1.15$	$s = 1.30$	$s = 1.2$
$t = 0.46$	$t = 0.23$	$t = 0.94$
$K = 25$	$K = 7.5$	$K = 5$

Well 79N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.15}$$

$$= 2,700 \text{ ft}^2/\text{day}$$

Well 150S

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.3}$$

$$= 2,390 \text{ ft}^2/\text{day}$$

Well 300N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.2}$$

$$T = 2,590 \text{ ft}^2/\text{day}$$

Indra Test Solution by George Hill

Delayed Yield Solution PL 8; P.P. 708

Well No	Transmissivity	Sc
150 S	2,830 ft²/d	
300 N	2,590 ft²/d	8.0×10^{-5}
	ave. = 2,710	

Hantush - Jacob Method PL 3; P.P. 708

Well No.	Transmissivity	Storage Coefficient
75 N 150 S 300 N	2,590 ft²/d	7.4×10^{-5}

Same as above

Image Well Theory PL 9, P.P. 708

Well No.	Transmissivity
75 N	2,700 ft²/day
150 S	2,390 ft²/day
300 N	2,590 ft²/day
	Ave. = 2,560

T In ball park with others

Indio Aquifer Test

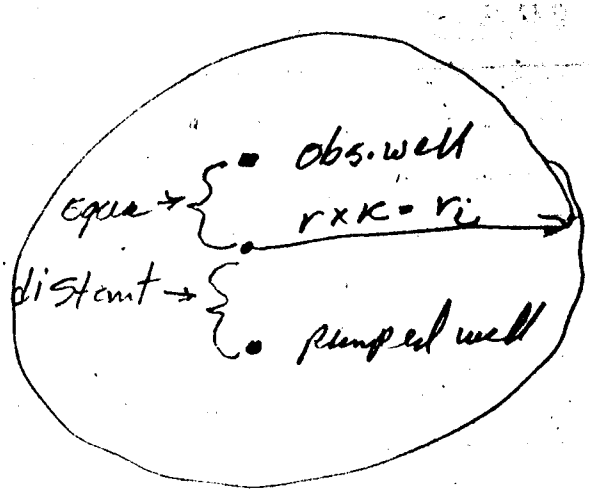
Aug. 21-22, 1979

approx.
computation for location of image well from PL 9, P.P. 708 by evaluation of K.

Well 75N -- r = 75, K = 25, r_i = 1875 ft

Well 150S -- r = 150, K = 10, r_i = 1500 ft

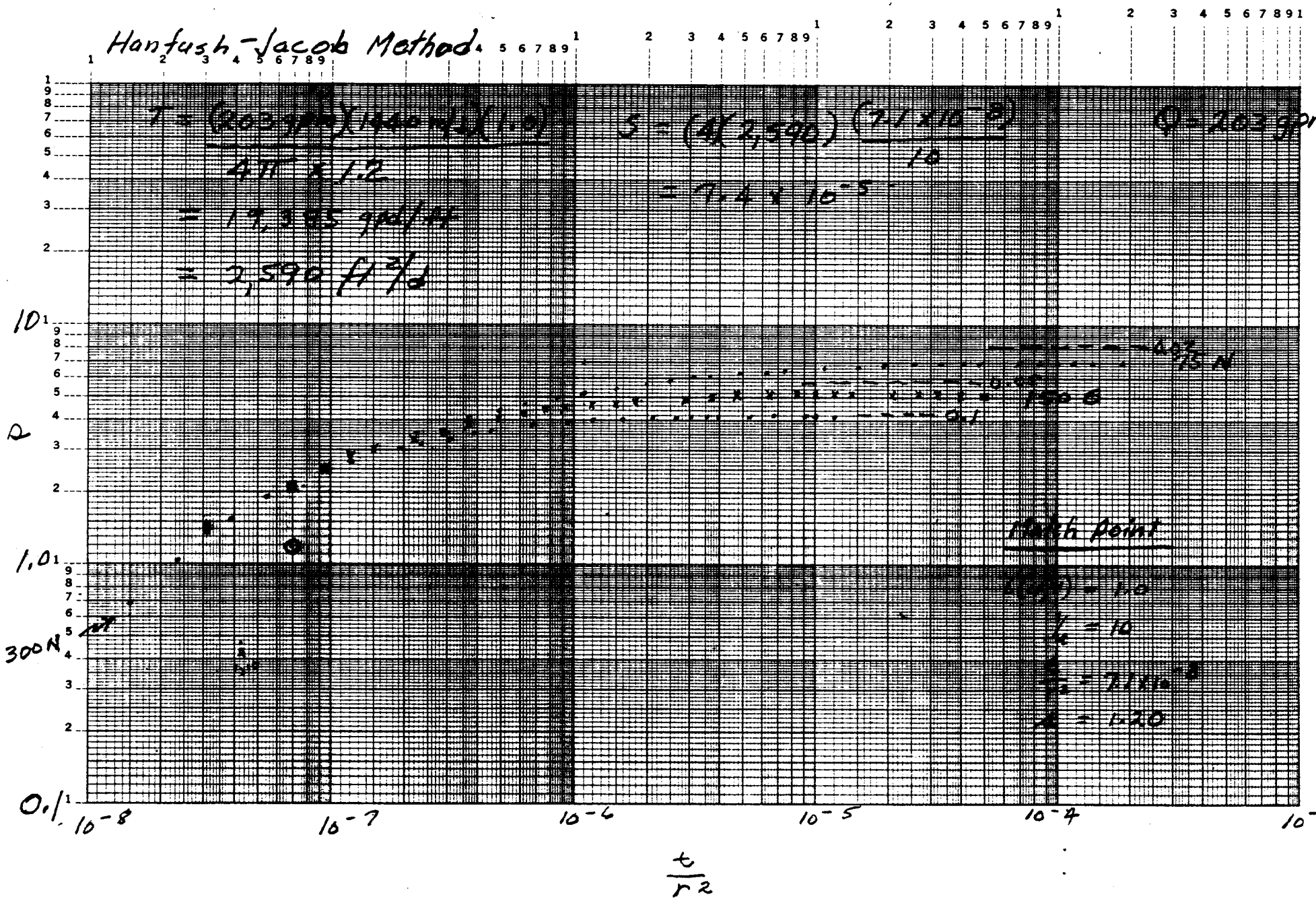
Well 300N -- r = 300, K = 5, r_i = 1500 ft



by G.W. Hill

46 7520

Indio Test



Indra Test Solution by George Hill

Delayed Yield Solution Pl 8; P.P. 708

Well No	Transmissivity	Se
150 S	2,830 ft²/d	
300 N	2,590 ft²/d	8.0×10^{-5}
	ave. = 2,710	

Hantush - Jacob Method Pl 3; P.P. 708

Well No.	Transmissivity	Storage Coefficient
75 N 150 S 300 N	2,590 ft²/d	7.4×10^{-5}

Same as above

Image Well Theory Pl 9, P.P. 708

Well No.	Transmissivity
75 N	2,700 ft²/day
150 S	2,390 ft²/day
300 N	2,590 ft²/day
	Ave. = 2,560

T In ball park with others

Indio Test Solution

Delayed Yield Solution (Boulton, PL 8, PP 708)

Match points

	Well 300 N	Well 150 S
$4\pi Ts/Q$	1.0	1.0
$4Tt/r^2Se$	1.0	10
t	1.0	1.7
Δ	1.20	1.1

Well 300 N

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.20}$$

$$T = 19,385$$

$$T = 2,590 \text{ ft}^2/\text{d}$$

$$Se = \frac{4 \times 2590 \times 1.0}{(300)^2 \times 1440 \times 1.0}$$

$$= 8.0 \times 10^{-5}$$

Well 150 S

$$T = \frac{203 \times 1440 \times 1.0}{4\pi \times 1.1}$$

$$T = 21,147$$

$$T = 2,830$$

$$Se = \frac{4 \times 2830 \times 1.7}{(150)^2 \times 1440 \times 10}$$

$$Se = 6.0 \times 10^{-5}$$

Indiana Road Test

Steady State drawdown at t = 1,050 min

r	s
10	10.05
25	8.93
75	6.95
150	5.18
300	4.18

Indio Test

Hantush-Jacob Method

$$T = \frac{(2039\,gpm)(1440\,m/d)(1.0)}{4\pi \times 1.2}$$

$$= 19,385\,gpd/ft$$

$$= 2,590\,ft^2/d$$

$$\text{Round To } 2600\,ft^2/d$$

$$S = (4)(2,590)\left(\frac{7.4 \times 10^{-8}}{10}\right)$$

$$= 7.4 \times 10^{-5}$$

$$= 7.3 \times 10^{-5}$$

$$Q = 2039\,gpm$$

$W(u, r/B) = 1$

$1/u = 10$

$B = 1.18$

$t/r^2 = 7 \times 10^{-8}$

Match point

$W(u, r/B) = 1.0$

$1/u = 10$

$\frac{t}{r^2} = 7.1 \times 10^{-8}$

$B = 1.20$

$r = 300' = 0.1$

$150' = .07$

$75' = .03$

$\frac{K'}{b'} = 4 \times 2590 \times \frac{(0.1)^2}{(300)^2} = 1.2 \times 10^{-3}$

$\frac{K'}{b'} = 4 \times 2590 \times \frac{(.07)^2}{(150)^2} = 2.3 \times 10^{-3}$

$\frac{K'}{b'} = 4 \times 2590 \times \frac{(.03)^2}{(75)^2} = 1.7 \times 10^{-3}$

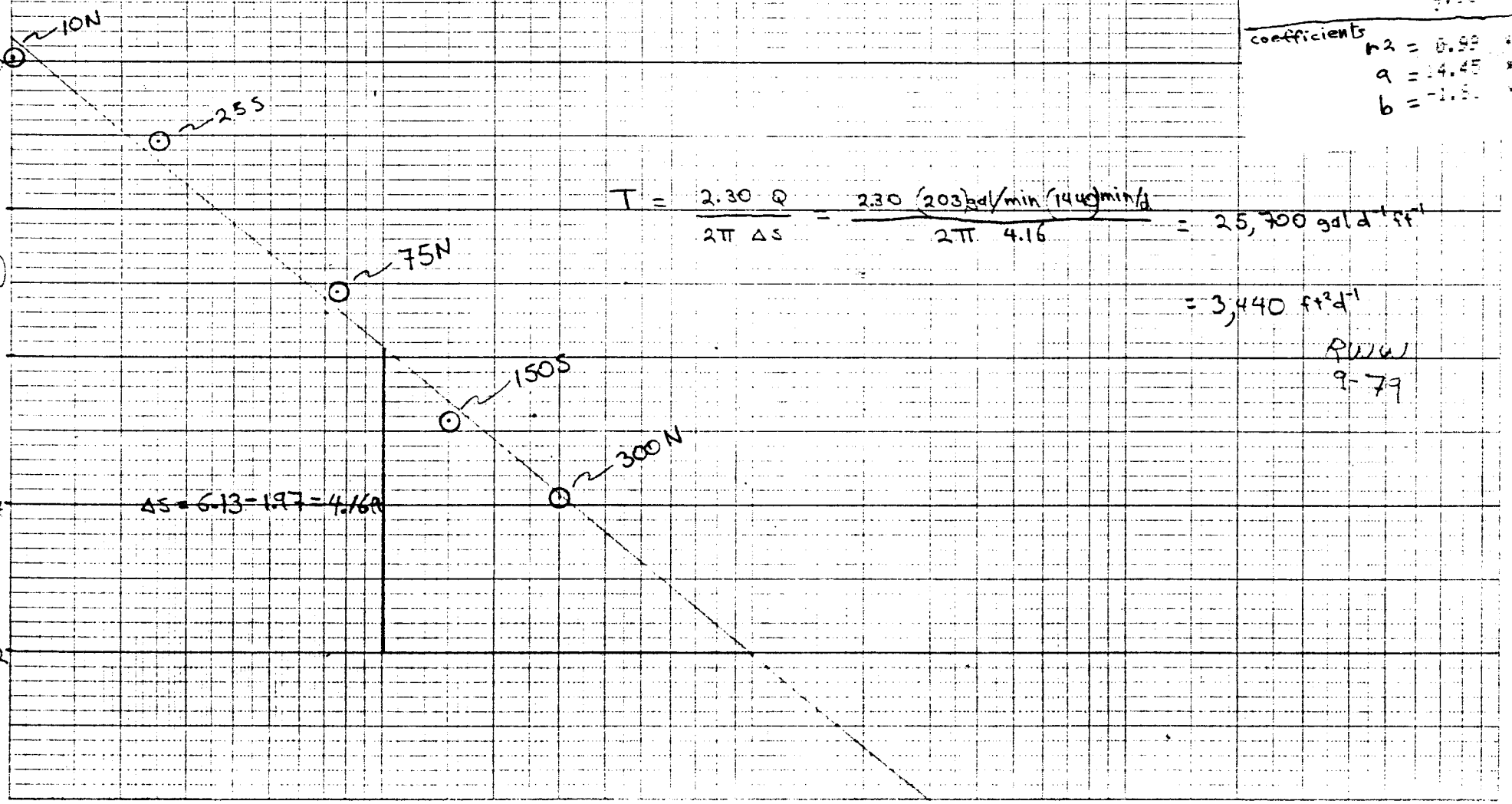
10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3}

$\frac{t}{r^2}$

Indio Road Pumping Test
8-21 & 22-79

THEIM METHOD

$s = 14.45 - 4.16(\log t)$ from logarithmic regression of points - 4P-9Z



$$T = \frac{2.30\,Q}{2\pi\,\Delta s} = \frac{2.30\,(203)\text{gal/min}\,(1440)\text{min/d}}{2\pi\,4.16} = 25{,}700\ \text{gal d}^{-1}\text{ft}^{-1}$$

$$= 3{,}440\ \text{ft}^2\text{d}^{-1}$$

RWW
9-79

r → 10.00
s → 10.01

35.00	
8.33	
75.00	*
8.91	**
150.00	**
8.16	**
300.00	***
4.10	***

coefficients

r2 = 0.99	**
a = 14.45	**
b = -1.61	***

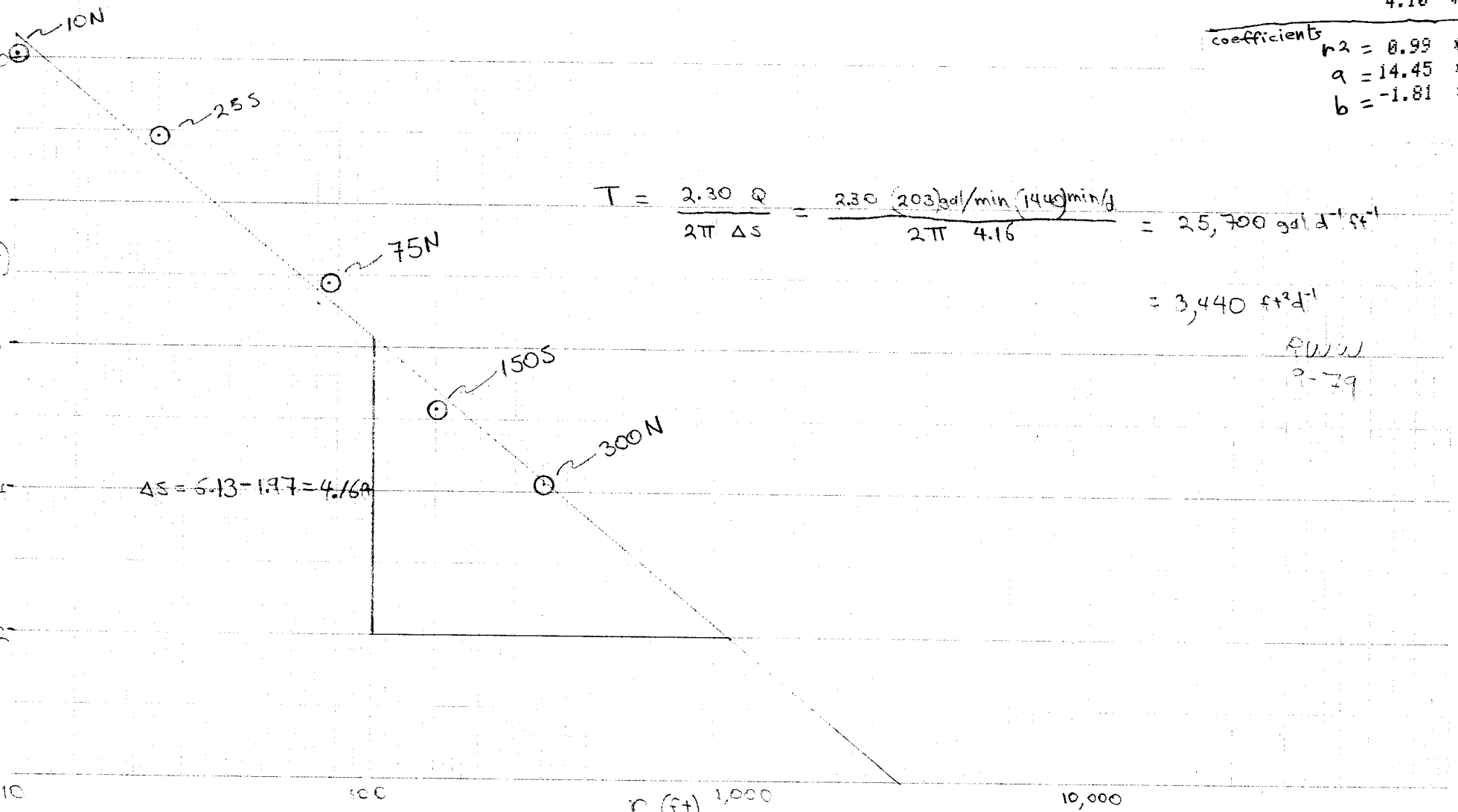
Intrio Road Pumping Test
2-21-22-79

THEIM METHOD

$= 14.45 - 4.16(\log r)$ from logarithmic regression of points -4P-a=

r →	10.00
s →	10.02
	25.00
	8.93
	75.00
	6.91
	150.00
	5.16
	300.00
	4.10

coefficients		
r^2	= 0.99	***
a	= 14.45	***
b	= -1.81	***



$$T = \frac{2.30\ Q}{2\pi\ \Delta s} = \frac{2.30\ (203)\text{gal/min}\ (1440)\text{min/d}}{2\pi\ \ 4.16} = 25{,}700\ \text{gal d}^{-1}\text{ft}^{-1}$$

$= 3{,}440\ \text{ft}^2\text{d}^{-1}$

PWW
2-79

Steady State Leaky confined Aquifer solution WSP 1536E p 110

Indian Road Test — Plotted and computed by D. W. Peck 3/29/80

$$T = \frac{Q}{2\pi s} K_0(u)$$

$$T = \frac{200 \times 1440 \times 1}{2 \times 3.14 \times 1.98 \times 7.48}$$

$$T = 3096 \text{ or } 3100 \text{ ft}^2/\text{d}$$

$$u = r\sqrt{\frac{K'}{Tb'}}$$

$$0.1 = 210\sqrt{\frac{K'}{3100\,b'}}$$

$$0.00048 = \sqrt{\frac{K'}{3100\,b'}}$$

$$0.0007 = \frac{K'}{b'}$$

Match Point

① $u = 0.1$

$K_0(u) = 1$

$r = 210$ ft

$s = 1.98$ ft

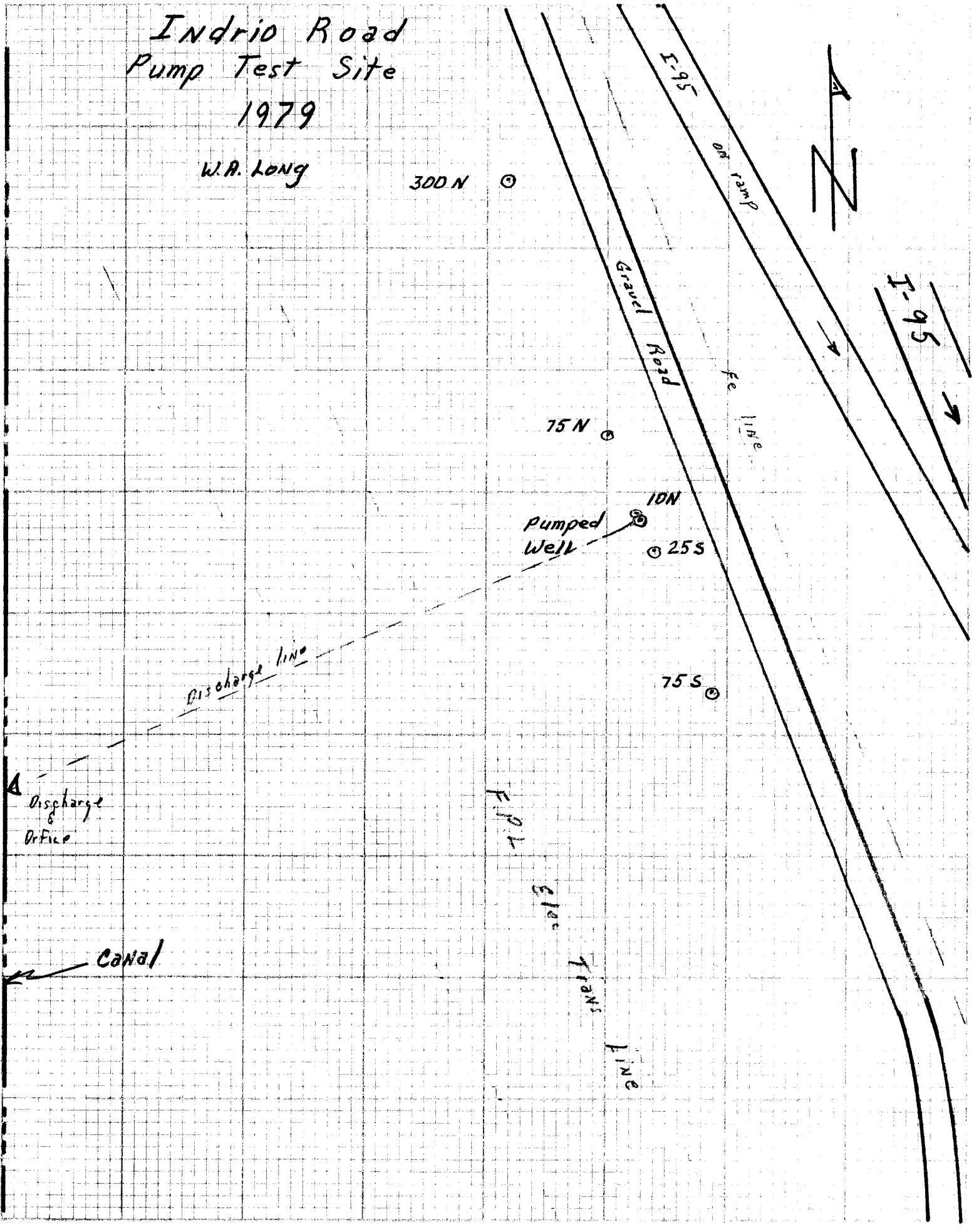
10 ~ ft

100

1000

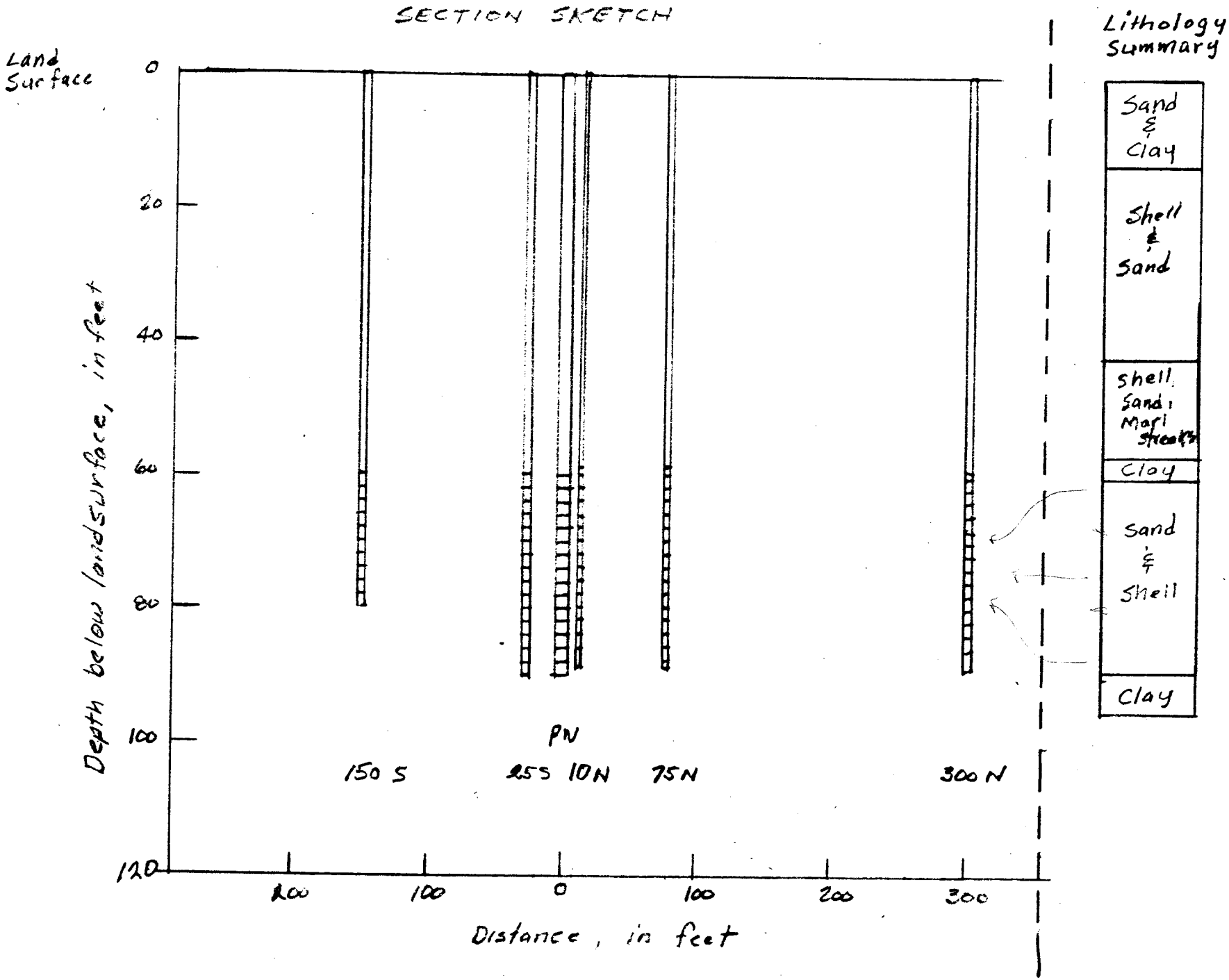
1.0

1


Indrio Road
Pump Test Site
1979
W.A. Long
300 N
75 N
10N
Pumped Well
25S
75S
Discharge line
Discharge Orfice
Canal
Gravel Road
I-95
I-95 on ramp
fe line
F.P.L.
Trans. line

INDIO AQUIFER TEST

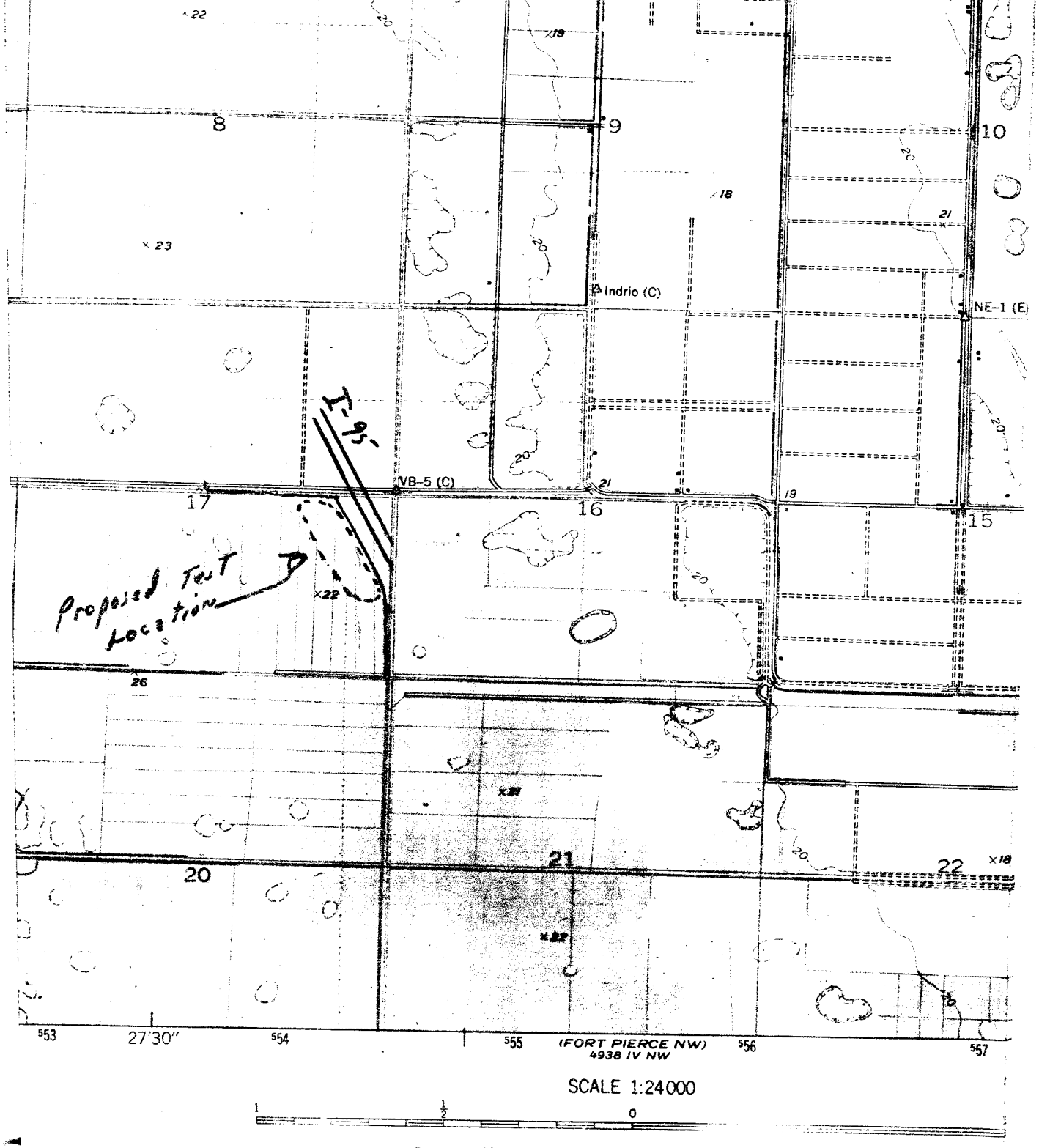
SECTION SKETCH



SCALE 1:24

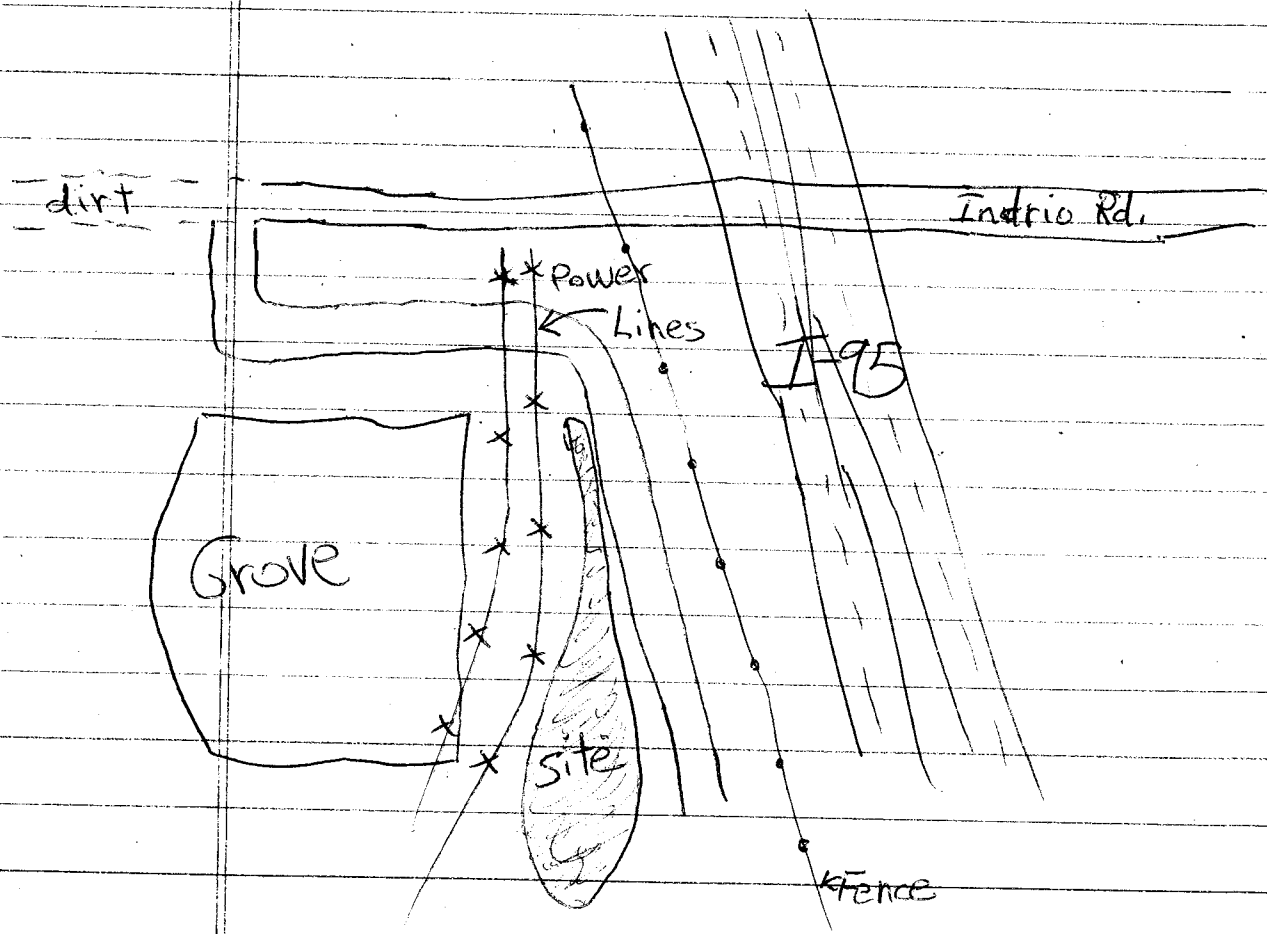
1 1/2 0

1000 0 1000 2000


8
9
10
17
16
15
20
21
22
Indrio (C)
NE-1 (E)
VB-5 (C)
I-95
Proposed Test Location
553
27'30"
554
555
(FORT PIERCE NW)
4938 IV NW
556
557
SCALE 1:24000
1
½
0

6-27-79

WAL & RWW visited site just south of Indrio road and west of I-95



verbal
got permission from Leslie Scott to drill and run the tests on his land

site location Oslo Quad. T34S, R39E, Sec 17 W½ NE¼ SE¼

WELL 150 South

150S MW0 8/21/79

GT = 0902

H = 6.00

R = 1.69

DTW = 4.31

1205

held 10.00

read 9.53

dtw 9.47

150 S MW0 RWL

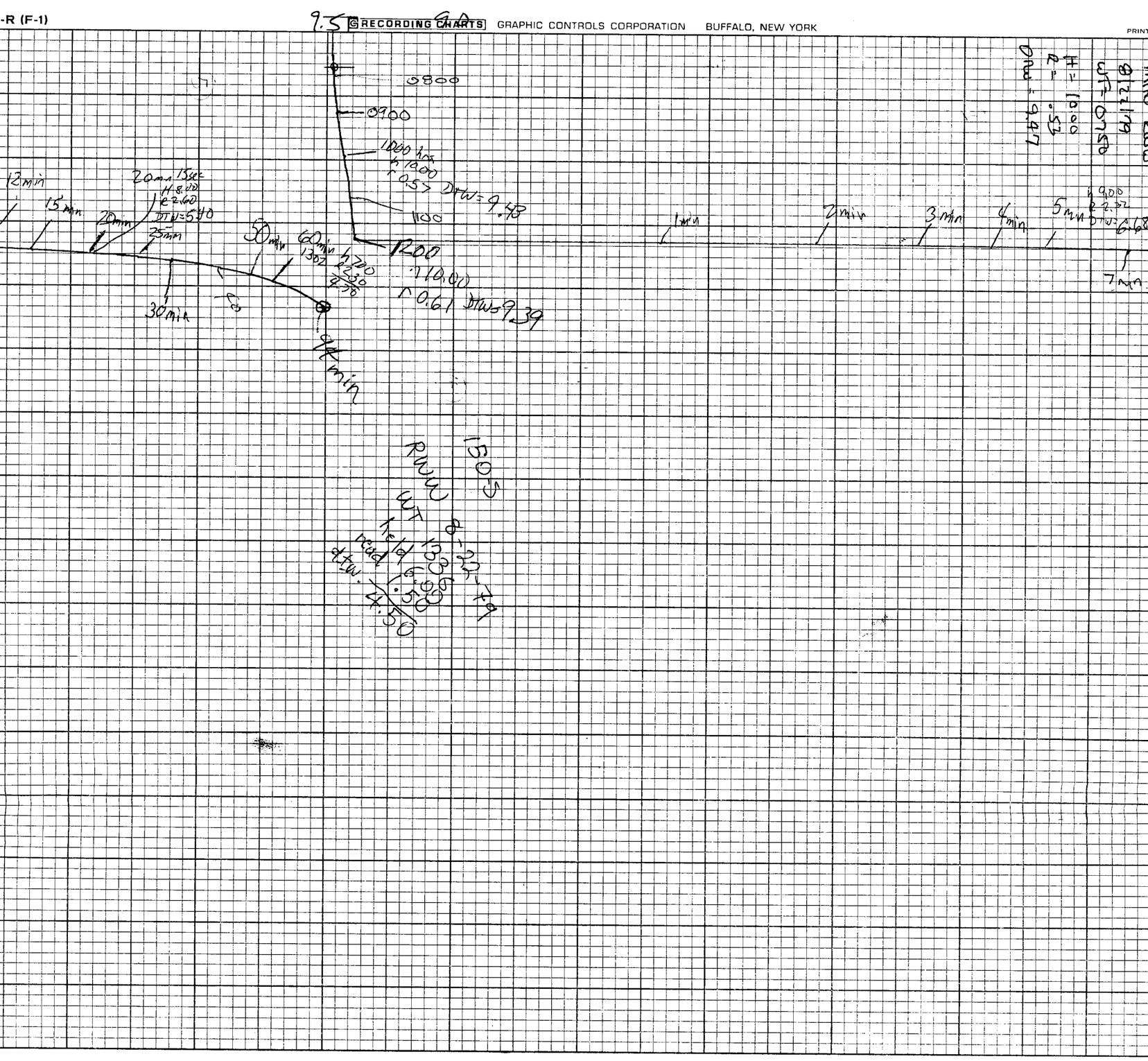
8/22/79 GT = 0950

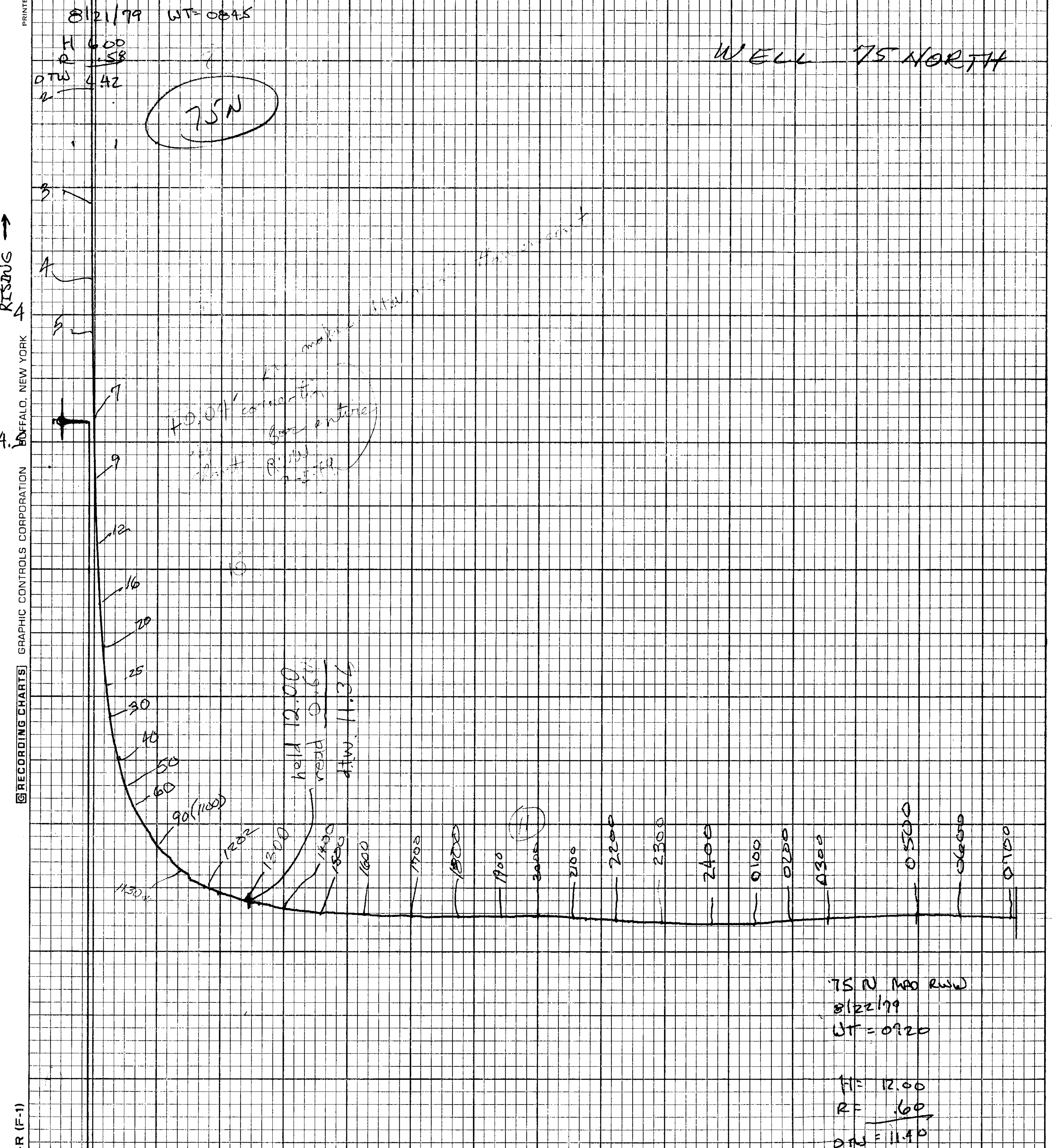
H = 10.00

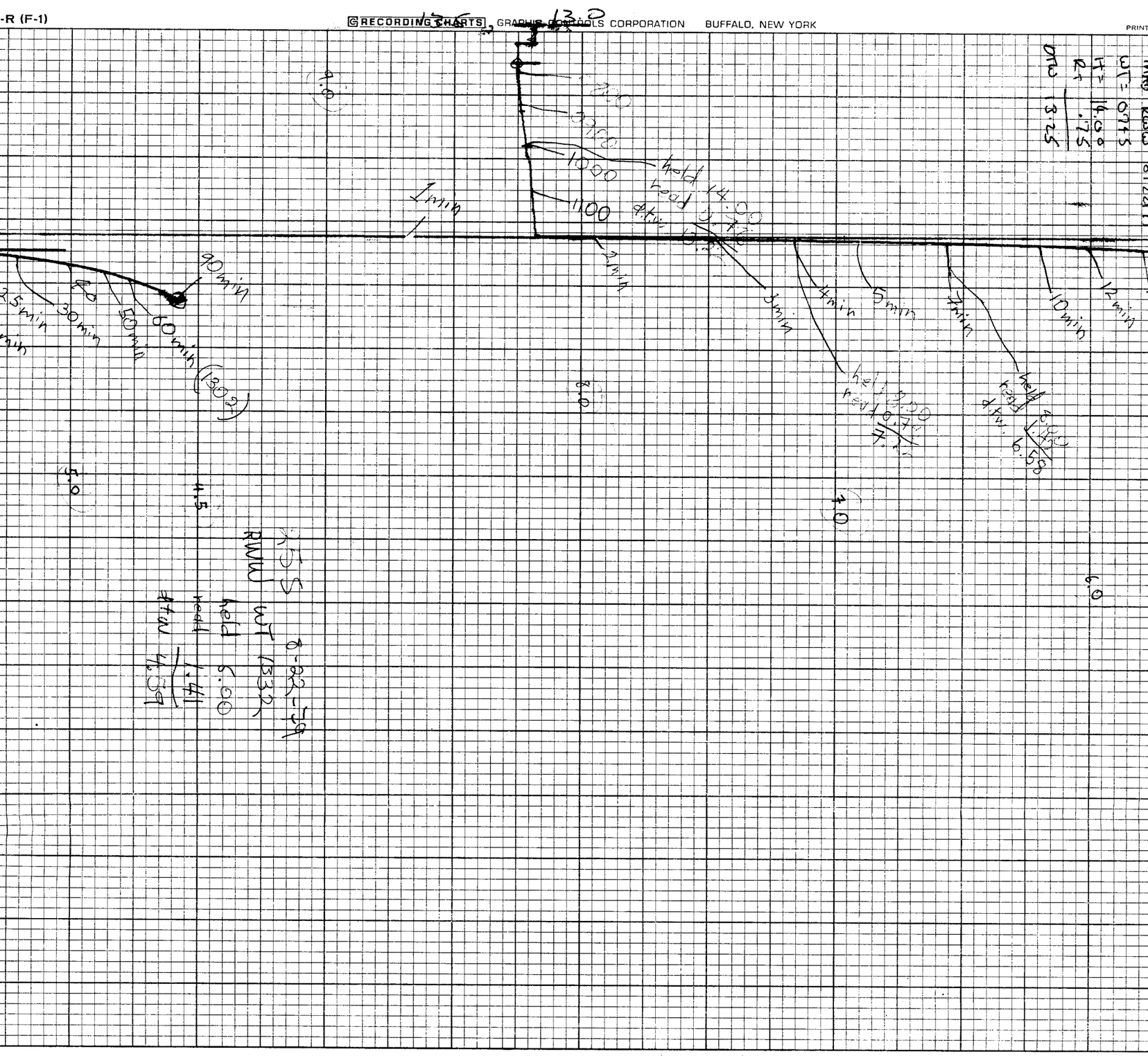
R = .53

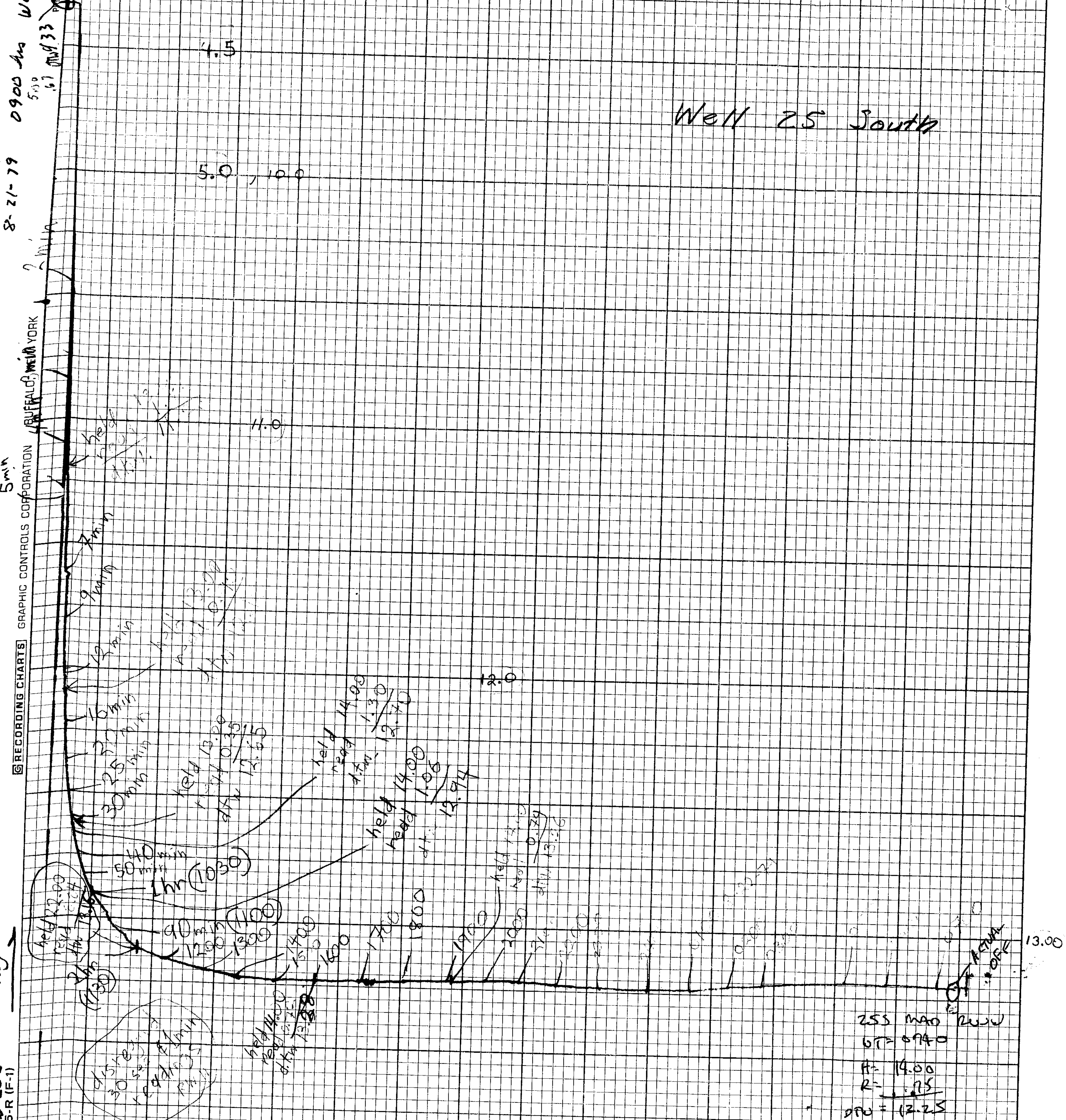
DTW = 9.47

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK




8/21/79 WT= 0845
H 6.00
R .58
DTW 4.42
75N
WELL 75 NORTH
RISING →
GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK
RECORDING CHARTS
R (F-1)
1300
1600
1700
1800
1900
2000
2100
2200
2300
2400
0100
0200
0300
0500
0700
75 N
8/22/79
WT = 0920
H= 12.00
R= .60
= 11.40




Well 25 South
8-21-79
0900 hrs
GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK
RECORDING CHARTS
4.5
5.0
11.0
12.0
13.00
held 13.00
read 0.35
dtw 12.65
held 14.00
read 1.30
dtw 12.70
held 14.00
read 1.06
dtw 12.94
1hr (1030)
2hr (1130)
(1100)
1200
1300
1400
1500
1600
1700
1800
1900
2000
disregard 30 sec & 1 min readings
ACTUAL OFF
25S MAO RWW
ST = 0940
H = 14.00
R = .75
DTW = 12.25

H= 10.00
R= 5.04
DTW= 4.96

each passage of pen over
top = Point, i.e. 14 Inch reading = 10.00'
Bottom = Point + 10.06'

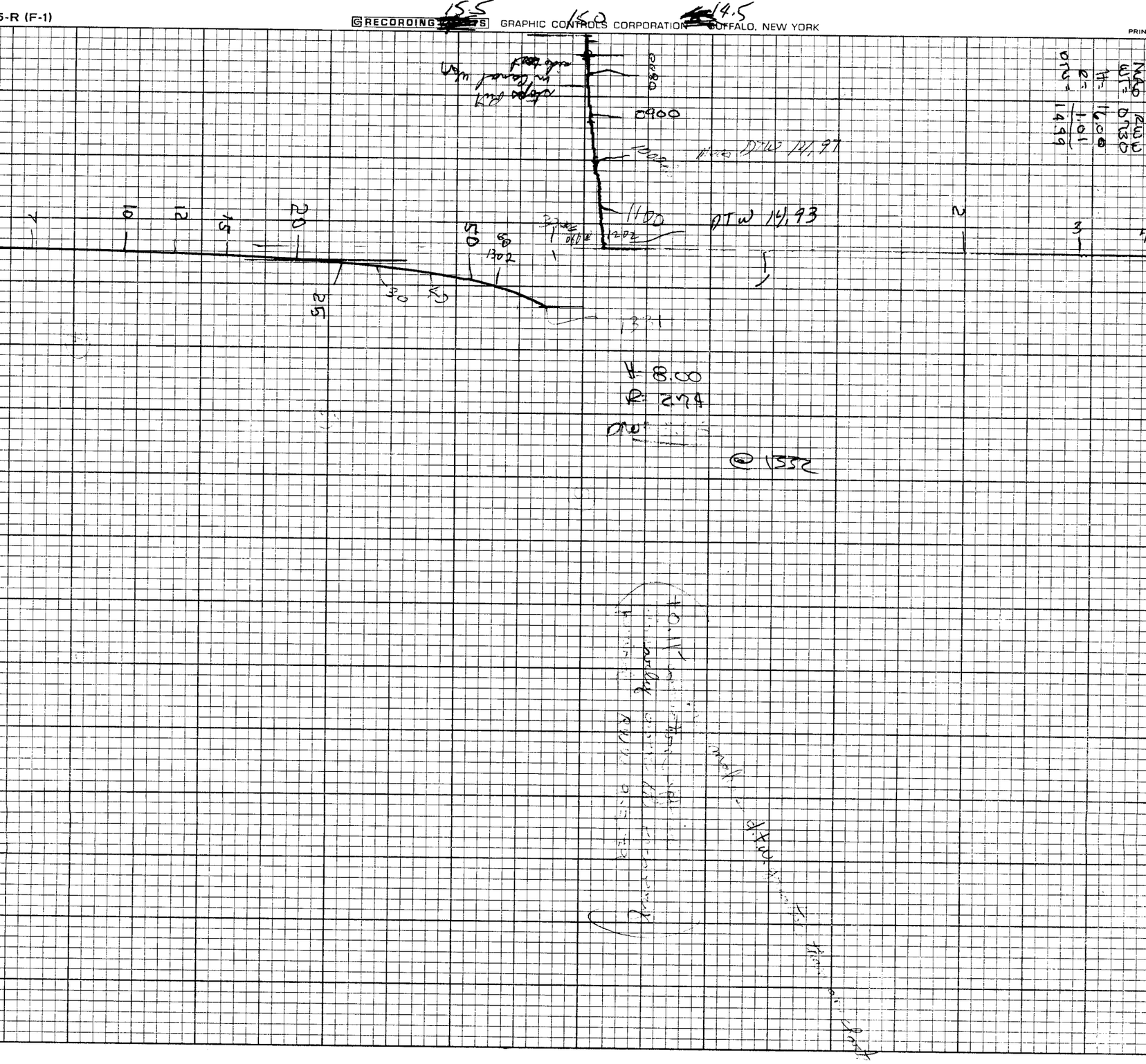
RWW
9-7-79

11a-12n
1300
2"=1 Hr
WTW=14.99

1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 0100 0200 0300 0500 0600 0700

10 N RWW/WL Stopped chart
9-12-79
WT 0730
held 16.00
read 1.01
dtw 14.99

RECORDING GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

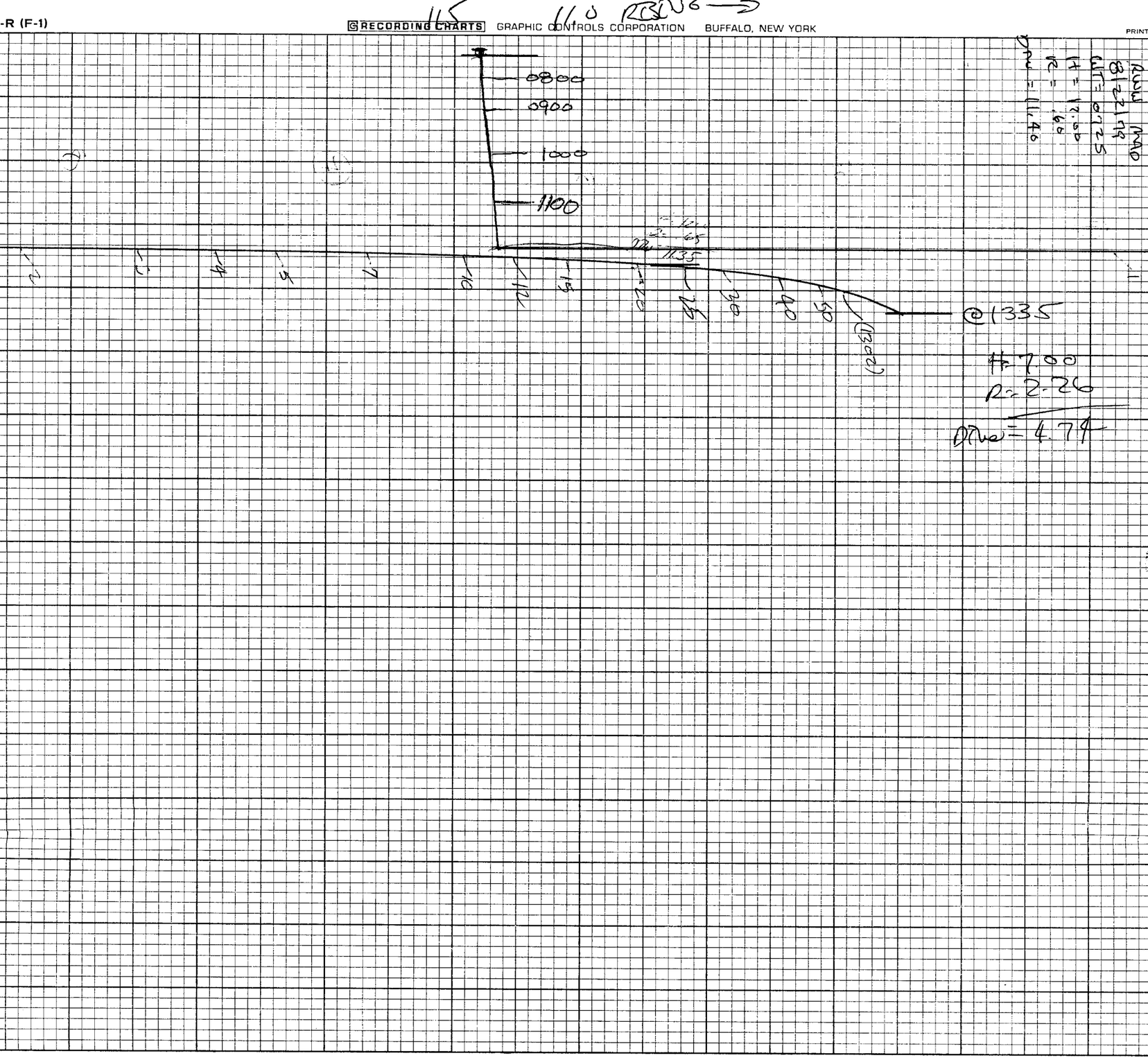


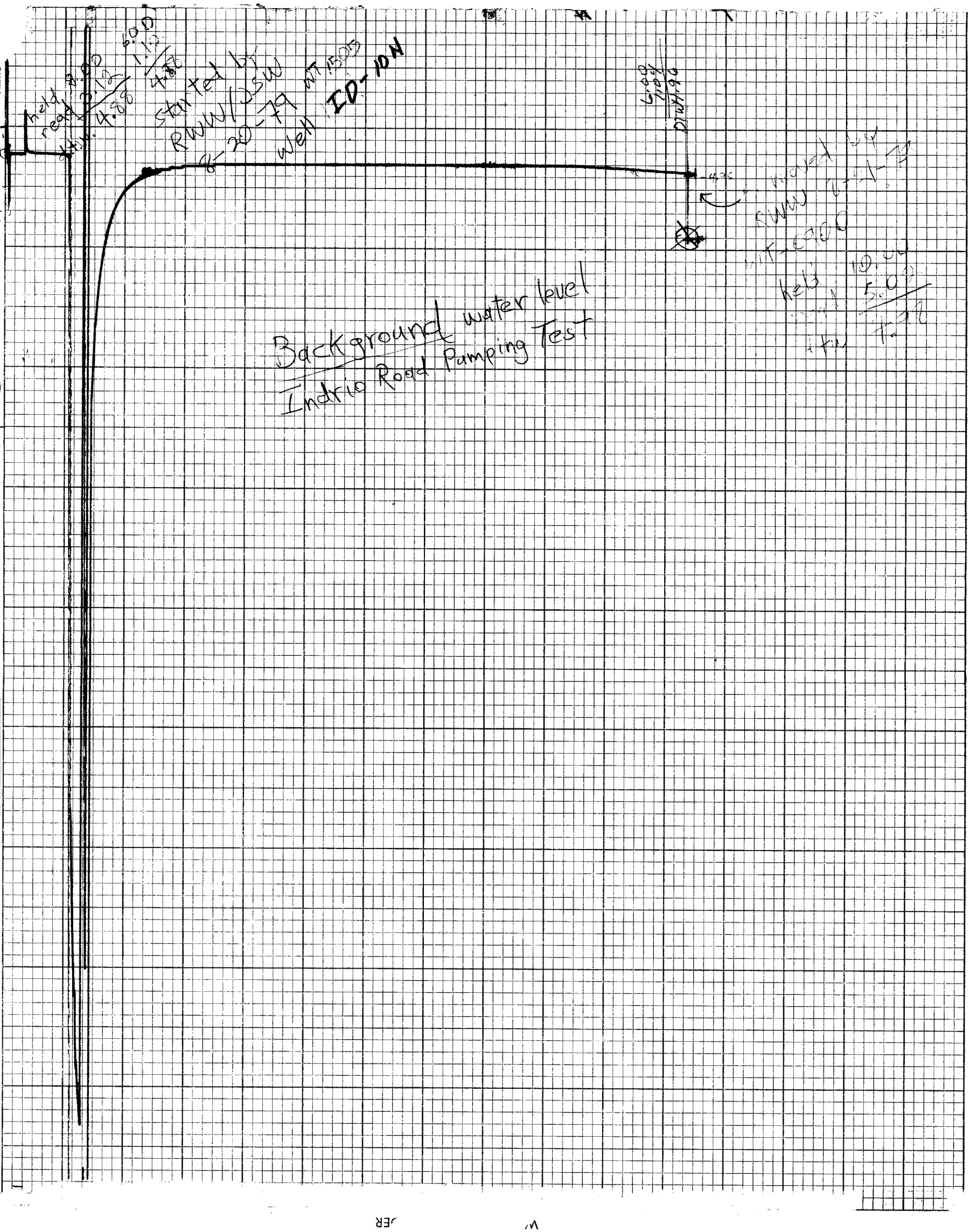
-R (F-1)

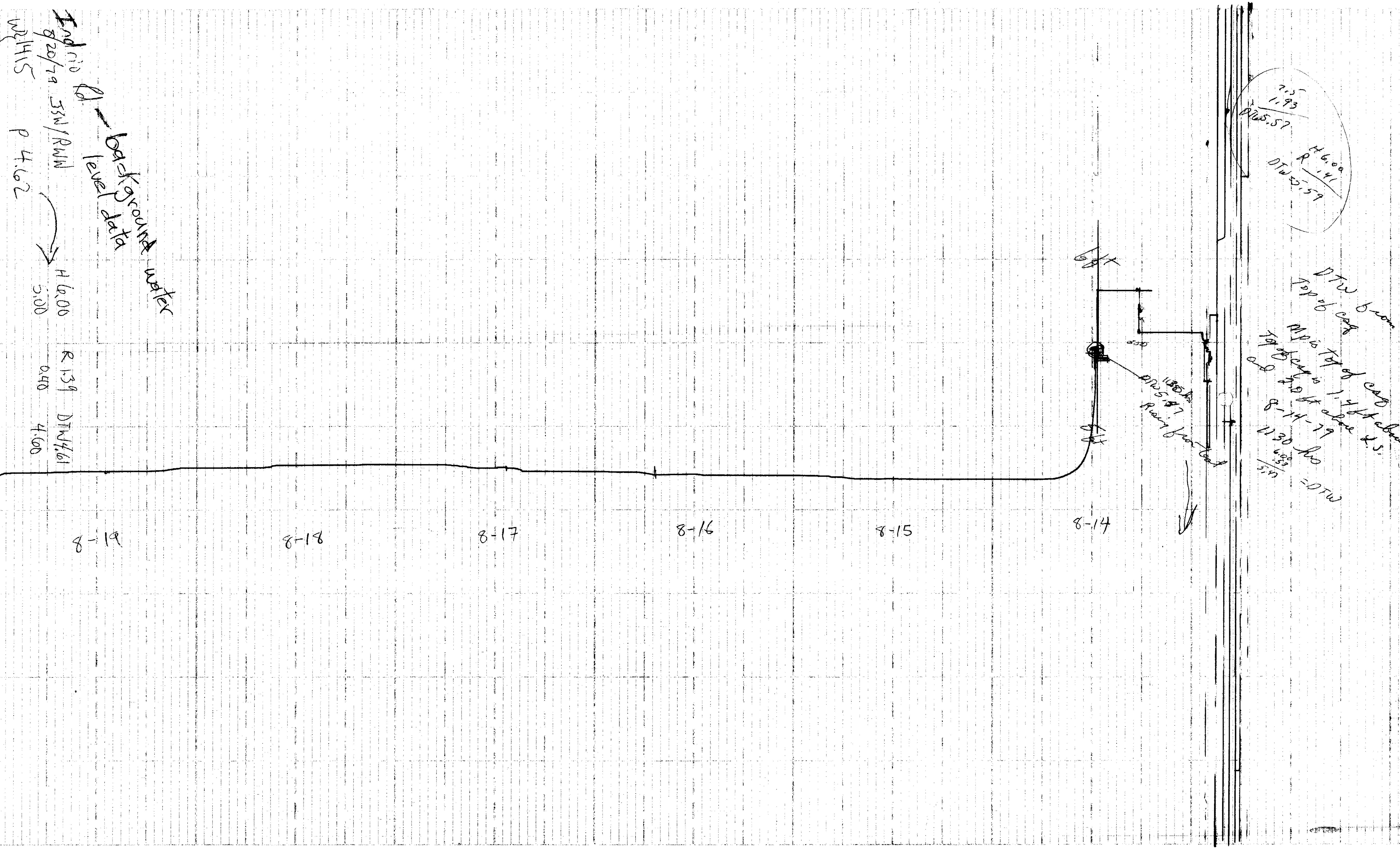
115 160 RIH →

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

PRINT



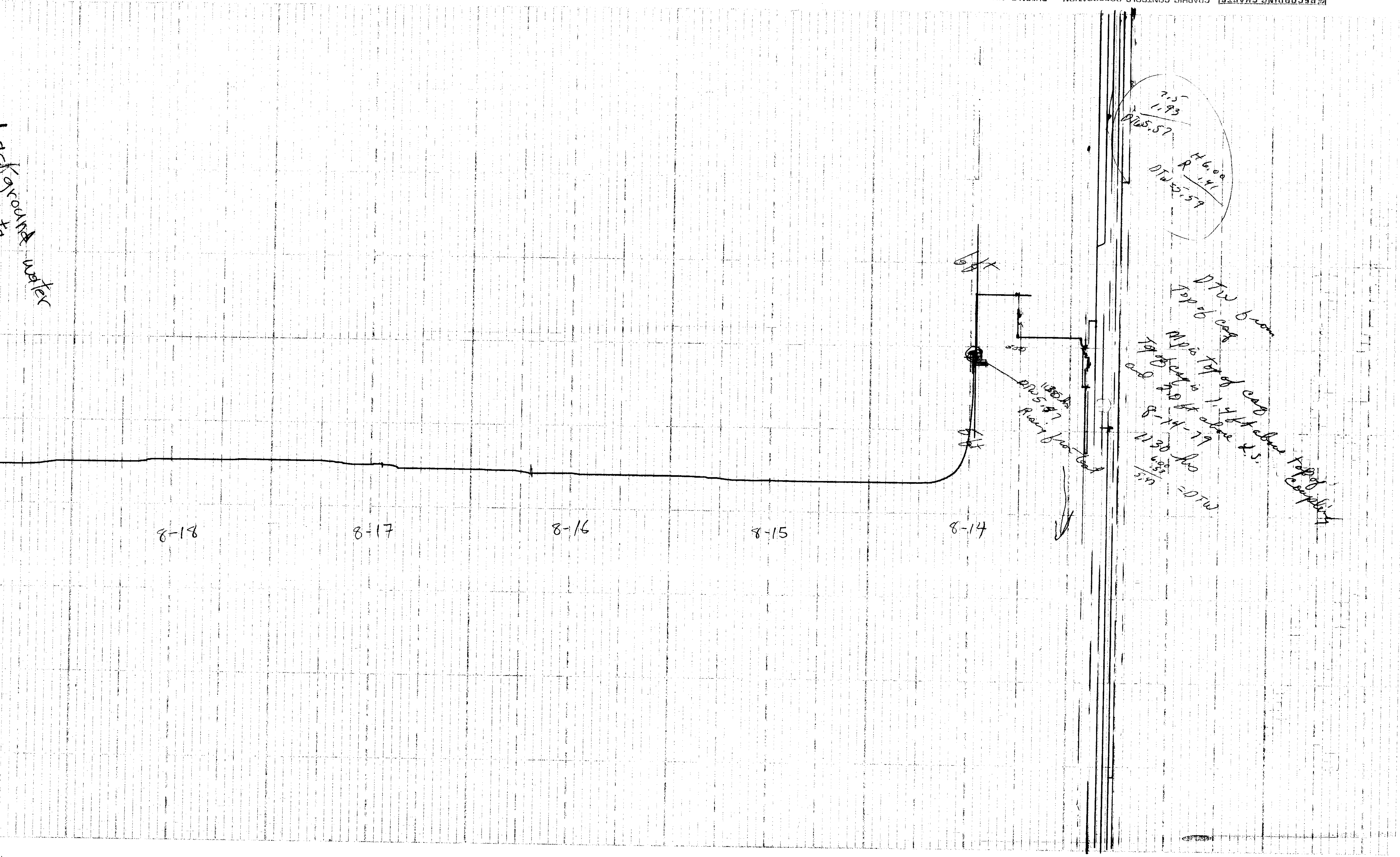


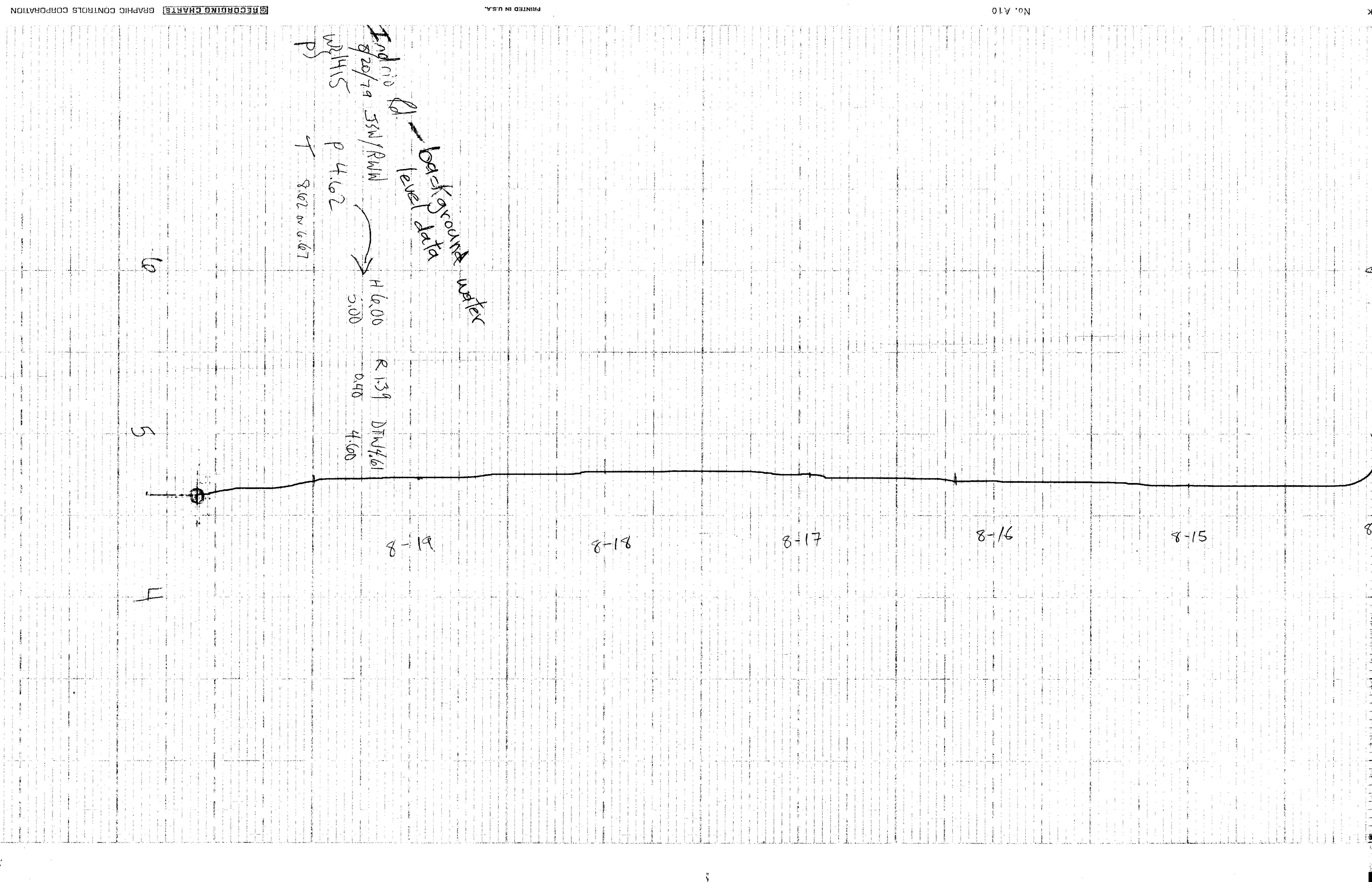

Endrico Rd. — background water level data
8/20/79 JSW/RWW
P 4.62
H 6.00 R 1.39 DTW 4.61
5.00 0.40 4.60
8-19
8-18
8-17
8-16
8-15
8-14
6 ft
7.5
1.93
DTW 5.57
H 6.00
R .41
DTW 5.59
DTW from Top of csg
MP is Top of csg 1.4 ft above G.S.
8-14-79
1130 hrs
= DTW
1135 hrs
DTW 5.47

PRINTED IN U.S.A.

No. A10

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK




No. A10
PRINTED IN U.S.A.
RECORDING CHARTS GRAPHIC CONTROLS CORPORATION
background water level data
8/20/79
P 4.62
H 6.00
5.00
R 1.39
0.40
DTW 4.61
4.60
6
5
4
8-19
8-18
8-17
8-16
8-15

8-20-79
WT 0910

8-21-79
WT 0825

just prior to start of
Indrio Road
pumping test 7 day gears

8 9 10 11 NOON 13 14 15 16 17 18 19 20 21 22 23 MT 1 2 3 4 5 6

30.50 30.00 29.50 29.00 28.50

WEATHER MEASURE CORPORATION
P.O. BOX 41257 · SACRAMENTO, CALIFORNIA 95841
TELEPHONE (916) 481-7565

BAROGRAPH
C291-D-HG

STATION Indrio

DATE ON 8-21-79
DATE OFF 8-22-79

RWW/MAD
8-22-79 WT 0755

0

note: The thinner trace from 0730 to