

1. Considered 5-26, 1977 3503-3

2. Name of Applicant BERNARD L. LEE

3. Post Office Address SUMMIT

4. Amount of water claimed ~~2.1~~ 4.9

5. Source of water supply ~~Q-3~~ 180' DEEP WELLS

6. Water to be used for IRRIGATION

Acres to be irrigated 345

7. Water to be diverted and used in GRANT county
about 2 1/2 miles of WATERTOWN

8. Proof of Publication Received 4-25-77

Not Received _____

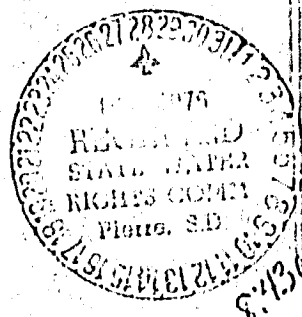
9. Application Approved 1-31-79

Subject to well depth & specific
gravity

Not Approved _____

Action deferred _____

10. Remarks:

No. 3503-3Map No. 2783-3 Water Division No. 3 WILLETSTONE CREEK District
(Blanks to be Filled by the Engineer for the W. D. C.)

APPLICATION FOR PERMIT

To Appropriate Water within the State of South Dakota

(NOTE - Draw a line through items not applicable)

1. Name of Applicant Bernard L. Lee
 Postoffice address Summit 57206, State South Dakota
 If a corporation show date and place of incorporation _____
2. Method of accomplishing work (Contract, employment of others, or by direct labor) Contract & Direct labor
3. Name of diversion work Lee Enterprises Irrigation Project
4. Amount of water claimed (cubic feet per second) 4.9
5. Source of water supply 2 wells
6. Location of point of diversion Well #1 2375' N 33° E of SW corner sec 6-120-51
Well #2 - 1165' N 110° E of NW corner sec 6-120-51, well #3 1800'
N 135° W of NE corner sec 12-120-52 County Brant
7. Annual period or periods during which water is to be used April through October
8. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) irrigation
9. For irrigation use: Total number of acres to be irrigated 345

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.		Land Description		No. Acres Irr.
NW 1/4 of NW 1/4 sec 6-120-51	23	NW 1/4 of SW 1/4 of sec 6-120-51	38	38
NE 1/4 " " " "	17	NE 1/4 " " " "	40	40
SW 1/4 " " " "	17	SW 1/4 " " " "	18	18
SE 1/4 " " " "	20	SE 1/4 " " " "	20	20

Attach sheet if more space is needed NE 1/4 sec 12-120-52 15.2

10. Time required to complete construction of water supply system Five years. Additional time required to complete application of water to the proposed beneficial use four years.
11. Choice of newspaper for Notice of Intent to Appropriate Water publication Brant County Review
12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source. 3 wells with deep well turbinesB. Works proposed to transport water to place of use. closed conduitC. Works proposed to apply water to beneficial use. center pivot irrigation machineEstimated Total Cost. \$120,000Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map.
(See instructions concerning preparation.)

STATE OF SOUTH DAKOTA

County of BrantI, Bernard L. Lee the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.Signed Bernard L. LeeSubscribed and sworn to before me this 23 day of Dec, 1976

Notary Public (or other qualified officer)

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 3503-3

BERNARD L. LEE

(Applicant)

SUMMIT

(Post Office Address)

SOUTH DAKOTA 57266

(State)

With the following modifications:

The irrigation well (s) approved under this permit will be located near domestic wells and other irrigation wells which may obtain water from the same aquifer. The irrigation well owner, under this permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in irrigation wells having prior water rights.

The specific capacity of the well (s) shall be determined by test pumping the well (s) prior to connecting the well (s) to the irrigation system and a record of the specific capacity filed with the Commission office.

Date of first receipt of application DECEMBER 28, 1976

Date of return to applicant for correction, amendments or changes required _____, 19____

Date of receipt of corrected application JANUARY 10, 1977

Approved JANUARY 31, 1979 Recorded in Book 20 Page 138

WATER RIGHT PERMIT NO. 3503-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 3503-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject; however, to the following limitations and conditions:

1. The date from which applicant may claim right is DECEMBER 28, 1976
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before JULY 31, 1981
3. The whole of said work is to be completed on or before JANUARY 31, 1984
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is JANUARY 31, 1987
5. The water appropriated shall be used for the purpose of IRRIGATION

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed 4.9 cubic feet per second; neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for beneficial uses served; and if for the irrigation purposes said appropriation must be limited to not more than 3 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually and beneficially applied for irrigation on or before JANUARY 31, 1987; said water to be used during the following described annual period: APRIL - OCTOBER

Witness me and this 16th day of FEBRUARY, 1979

WATER RIGHTS COMMISSION

By:

John Walsh
Chief Engineer, Executive Officer

Certificate of Construction Issued NOVEMBER 10, 1981

Water License Issued NOVEMBER 10, 1981

STATE CONSERVATION COMMISSION
SUPPORTING INFORMATION
FOR APPROPRIATION OF GROUND WATER IN ACCORDANCE
WITH SDCL 46-6-3 AS AMENDED
(This Form Required for Proposed Well Irrigation Only)

FOR COMMISSION USE ONLY

Irrigation System: _____

Water Quality: _____

Soils Capability: _____

Approved: _____

Disapproved: _____

NAME: Edward T. Lee
ADDRESS: Summit South Dakota 57266
COUNTY: Cheyenne

LEGAL DESCRIPTION

1. WELL LOCATION: W² of Sec 6-120-51
2. AREA TO BE IRRIGATED: W² of Sec 6-120-51 & NE Sec 12-120-52

TYPE OF IRRIGATION

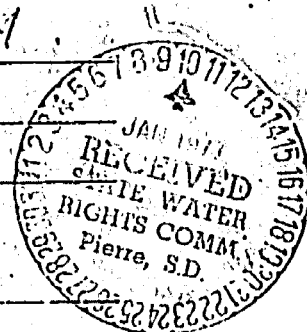
3. GRAVITY _____ SPRINKLER (Indicate Type): Center Pivot
4. CROPS TO BE IRRIGATED: Corn and Alfalfa

LAND CAPABILITY FOR IRRIGATION

5. PERCENTAGE OF SLOPE: See attached sheet
6. PHYSICAL SOILS CLASSIFICATION FOR IRRIGATION: _____

WATER QUALITY (To Be Completed by Commission)

7. SAMPLE NO: 76-2091
8. SALINITY: EC - 7.75 ml (mod. h)
9. SODIUM: SAR: 0.25 (low)



I do hereby certify that a chemical analysis of the ground water to be
acquired for irrigation from South Dakota State University and;
the land capability for irrigation information has been acquired from

Soil Conservation Service

and:

that the legal description for the location of the well and land to be
irrigated is true and correct.

Bernard T. Lee

Subscribed and sworn before me this

23 day of Dec 1976.

John F. L. L. L.

P. F. # 1416

(Title)

REPORT OF ANALYSIS
Water Quality Laboratory
Water Resources Research Institute
South Dakota State University
Brookings, South Dakota 57006

Submitted by: Bernard T. Lee
 Address: Summit, SD 57266

Date Rec'd: December 21, 1976
 Sample No. 76-2091
 Identification Well-
W1, Sec. 6, T 120N, R 51W

WATER ANALYSIS

Calcium (Ca)	113	ppm*	5.65	me/l**
Magnesium (Mg)	39	ppm	3.20	me/l
Sodium (Na)	12	ppm	0.52	me/l
Potassium (K)	4	ppm	0.10	me/l
Sulfate (SO ₄)	147	ppm	3.05	me/l
Nitrate (as N)		ppm		me/l
Chloride (Cl)	6	ppm	0.18	me/l
Bicarbonate (HCO ₃)	361	ppm	5.92	me/l
Carbonate (CO ₃)		ppm		me/l
Iron (Fe)		ppm		me/l
Fluoride (F)		ppm		me/l
Hardness (EDTA as CaCO ₃)		ppm		g.p.g.***
Alkalinity (Methyl Orange)	296	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	795	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	0.25			
Sodium	5.49	% of cations		
Residual sodium carbonate	0.00	me/l		
pH	7.09			
Others:				

*ppm=parts per million

**me/l=millequivalents per liter

***g.p.g.=grains per gallon

COMMENTS: Total cations 9.47 me/l
 Total anions 9.15 me/l

By: Shirley Kitten

Service Performed

Amount Due

Irrigation analysis

\$8.00 PAID

Make checks payable to: Water Quality Laboratory

Cut along dotted line and return the lower portion with payment

Sample No. 76-2091

Amount Enclosed \$

Signed



December 30, 1976

Mr. Bernard T. Lee
Summit, SD 57266

Dear Mr. Lee:

Your water sample (Lab. No. 76-2092) has been analyzed and the results are reported on the accompanying sheet, which is your copy to keep.

I am also enclosing a copy of AES pamphlet #13 for your use. The quality of your water for irrigation use is plotted approximately by means of the red cross in the chart on the outside back cover.

Your water, as indicated by this analysis, is satisfactory for use on the soils you indicate will be irrigated. If a salt problem or a water table problem should develop, contact extension personnel for assistance.

The WI-1, soils information, and a copy of the water analysis are being forwarded to the State Conservation Commission for their action.

Sincerely yours,

L. O. Fine

L. O. Fine
Water Quality Lab

LOF:ckb
Enclosures

cc: State Conservation Commission

2 identical wells

Form 2A - Wells, Dugouts or Water Storage Dams (Supplement to form 2)

12. Principal Features of the Proposed Water Supply System (continued.)

D. Well Information or Estimates

(1) Drill Hole, Diameter 2 5/8", Depth 180'
(2) Casing, Type Steel, Diameter 1 1/2", Thickness 1/4"
(wood, concrete, steel, etc)
(3) Perforated Screen,
Type Cant slit, Diameter 1 1/2", Length 20'
(4) Gravel Pack, Thickness 4", Length of gravel pack 30'

E. Dugout Information or Estimates.

(1) Surface dimensions —, Depth —

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Please attach a copy to test well log if available.)

Character of Water bearing materials 2' to 140' clay, 140' to 180'
with moving sand, the sand is deeper
but did not have enough drill stem
to go deeper.

Depth to top of water bearing material 100'

Depth to bottom of water bearing material 150' ±

Thickness of water bearing material 40' ±

Depth to water (ground surface to water level) 20'

(2) Distance to nearest existing household or livestock watering wells.

☒ On same owner's property — rds. On property owned by others — rds.

G. Water Storage Dams.

If the proposed water use system contains one or more water storage dams, please show in the space below, the height, maximum water depth, surface area and storage capacity of each storage dam. The location of each water storage dam should be shown on the water right map.

Well #1

Same prop. by

180 rds.

Well #2

80 rds.

Other prop. by

180 rds

50 rds

Bernard Lee

Signature of Applicant

Permit No. 3503-3

Water Diversion No. 3 Big Sioux River Water District
10170202

CERTIFICATE OF CONSTRUCTION

This is to Certify, That Bernard T Lee

the holder of
Permit No. 3503-3, issued upon Application No. 3503-3, bearing date of priority of
December 28, 1976 authorizing the diversion of 4.9* cu. ft. per second of the waters of
ground water (one well) County of Grant, State of South Dakota at
a point 30 feet south of the center of the NE 1/4, Section 12, T120N, R52W

for irrigation

purpose, has B complied with the provisions of the laws of the State of South Dakota relating to proof of
completion of the works of diversion set out and described in said Permit; that s works are found in satisfactory
condition for diverting and conveying to the place of intended use 1.88 cu. ft. per second of water.

Date November 10, 1981

*2.7 cfs was transferred to Permit No. 3503-3A,
and is being licensed separately as it is from a
different water source.

John Hatch
JOHN HATCH, Chief Engineer
Water Rights Division

WATER LICENSE NO. 3503-3.

(1) WHEREAS, On the 28th day of December A. D. 19 76
Bernard T. Lee

made Water Right Application No. 3503-3 for a permit to use 4.9* cubic feet per second of the waters
 of ground water (one well)

County of Grant State of South Dakota, for irrigation
 purposes; and

(2) WHEREAS, On the 31st day of June A. D. 19 79

Permit No. 3503-3, with a date of priority of December 28, 1976

was issued to said applicant for the diversion of said water, and provided for the completion of construction of the water
 supply system therein described on or before the 31st day of January A. D. 19 84 and for the
 application to beneficial use of said water on or before the 31st day of January A. D. 19 87

and:

(3) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
 relating to completion of the construction of the water supply system and is entitled to divert 1.88 cubic feet
 per second of water for beneficial use and,

(4) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
 relating to the application of water to beneficial use of the following extent,

to irrigate a 132 acre circle in the NE $\frac{1}{4}$, Section 12, T120N, R52W

*2.7 cfs was transferred to Permit No. 3505-3A, and is being licensed
separately as it is from a different source of water.

(5) NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota, We hereby grant and confirm to Bernard T Leo

of Summit, South Dakota

the holder _____ and owner _____ of said permit No. 3503-3 a water right, dating from December 28, 1976
to use of 1.80 cubic feet per second of the waters
of ground water (one well)

in the County of Grant and State of South Dakota, or so much thereof as may be necessary for the
purposes hereinbelow mentioned, to be diverted at a point 30 feet south of the center of the NE 1/4
Section 12, T120N, R52W

and conducted to and upon a 132 acre circle in the NE 1/4, Section 12, T120N, R52W

for the purpose of irrigation

Subject to any limitations listed in Water Right Permit No. 3503-3 and subject to the laws of the State of South Dakota.

WITNESS, My hand and seal of our office at Pierre, South Dakota
this 10th day of November A. D.
Nineteen Hundred and Eighty-one

WATER MANAGEMENT BOARD

By:

John Hatch
Chief Engineer, Executive Officer JOHN HATCH

Form 6 - Notice of Intent to Appropriate Water

No. 3503-3

Publish first publication, on or before May 12, 19 77

**NOTICE
INTENT TO APPROPRIATE WATER**

Pierre, South Dakota 57501

April 4, 1977

Notice is hereby given that Bernard L. Lee
whose post office address is Summit, South Dakota, has made an application in accordance
with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use

4.9 cubic feet of water per second of time from the ground water through the
Lee Enterprises Irr. Project, the point of diversion of which is to be located in the

NW 1/4 SW 1/4, NE 1/4 NW 1/4 of Section 6, T12ON, R51W, center of NE 1/4

of Section 12, Twp. 12ON, Range 52W. Said water to be used for the purpose
of providing irrigation on the following described land:

WA, Section 6, T12ON, R51W; NE 1/4, Section 12, T12ON, R52W

This application No. 3503-3 will be considered by the Water Rights Commission at their office at
Pierre upon the 26th day of May, 19 77, at 11:00 A.M. All interested
persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

JAMES KONTERTON
Water Rights Specialist

BFJ/bw

cc: **Bernard L. Lee, Summit, SD 57266**

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Grant) ss.

I, Clarence Justice hereby
certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Grant County Review

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the

City of Milbank

County of Grant and State of South Dakota;
that the said notice was published in said newspaper on the following
two dates:

April 13, 1977

April 20, 1977

Clarence Justice
(Signature)

(Title)

foreman

(Date Signed)

4-21-77

NOTICE OF INTENT
TO APPROPRIATE WATER

Pierre, South Dakota 57501

April 4, 1977

Notice is hereby given, that
Bernard L. Lee, whose post
office address is Summit,
South Dakota, has made an
application in accordance with
the provisions of the water
laws of South Dakota for a per-
mit to appropriate for benefi-
cial use 4.9 cubic of water per
second of time from ground
water through the Lee Enter-
prises Irrigation Project, the
points of diversion of which are
to be located in the NW 1/4
SW 1/4 NE 1/4 NW 1/4 of Section 6,
T120N, R51W; center of NE 1/4
of Section 12, Twp. 120N, Range
52W. Said water to be used for
the purpose of providing irriga-
tion on portions of the following
described land: W 1/2 Section 5,
T120N, R51W; NE 1/4 Section 12,
T120N, R52W.

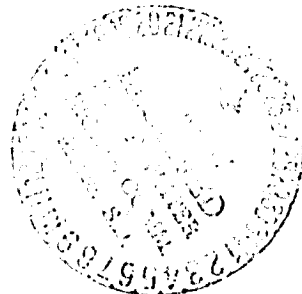
This application No. 3503-3
will be considered by the Water
Rights Commission at their
office at Pierre upon the 26th
day of May, 1977, at 11:00 A.M.
All interested persons may
appear and be heard.

Water Rights Commission
James Winterton

Water Rights Specialist

April 13

April 20



REPORT ON
AREA OF CONTROVERSY IN CODINGTON AND GRANT COUNTIES
March 20, 1978

Controversy developed in northern Codington and southern Grant counties during the spring and summer of 1976. This was the beginning of the first full year of irrigation in the area and coincidentally was one of the driest years on record. There are two distinct hydrologic conditions associated with the controversy which are not related. Concern has been expressed regarding the shallow water table glacial outwash sand and gravel deposit under water table conditions associated with the Big Sioux River and its tributaries, and the other problem is associated with a deeper glacial outwash sand and gravel deposit under artesian conditions (see figures A, B, & C).

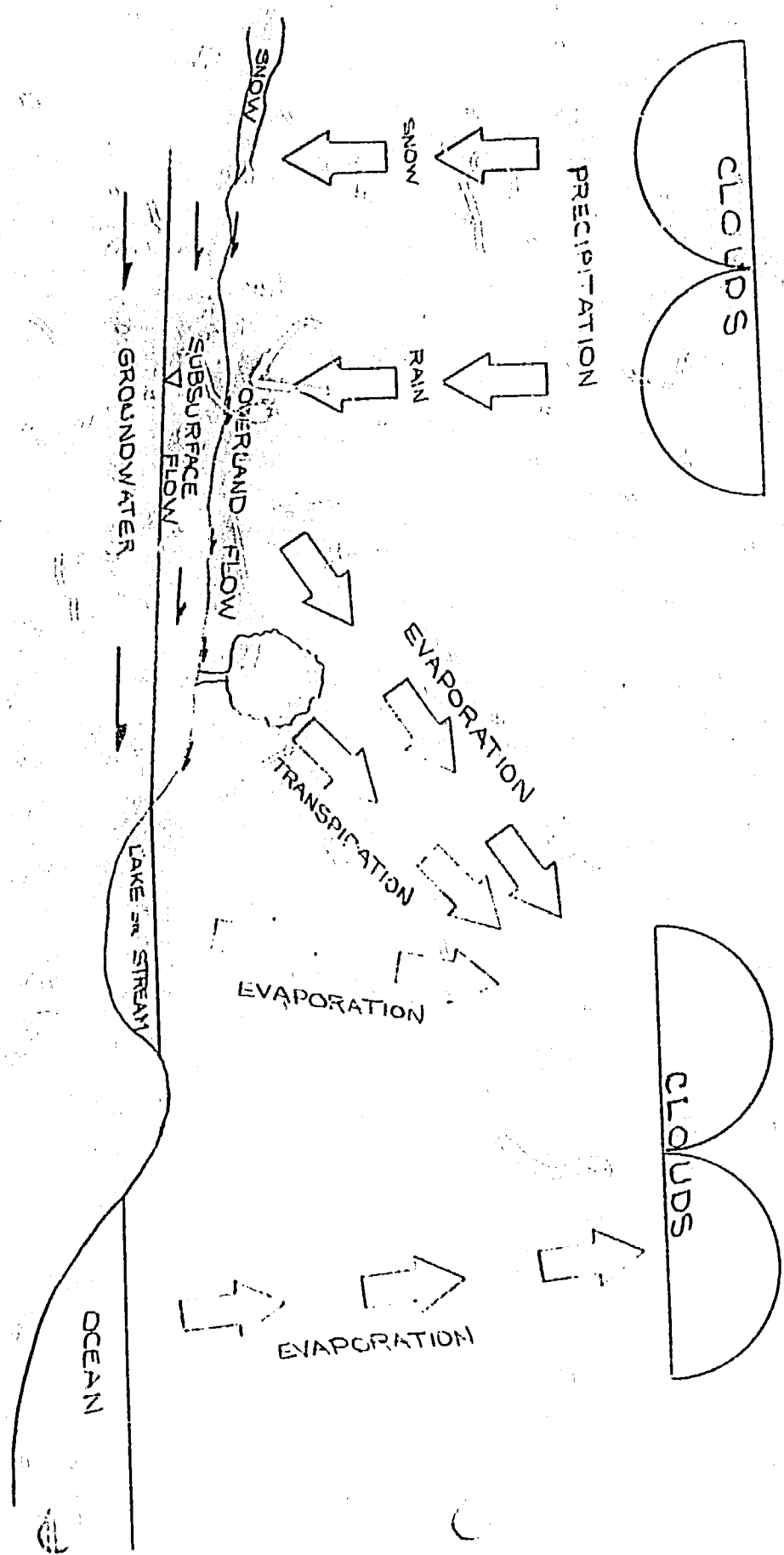
Codington and Grant Counties Water Use
(Sioux River Basin)

	1977 Reported Acreage	1977 CFS Reported	1977 Permits & Acreage	1977 Permit CFS
Irrigation Surface water	135	2.01	4 586.0	5.38
Irrigation Ground water	2926.0	32.42	47 10633.7	114.12
Watertown Municipal				18.12 with 12.85F/U
Other Municipal Industrial and Commercial uses				9.752 With 8.0 F/U
Rural Water				

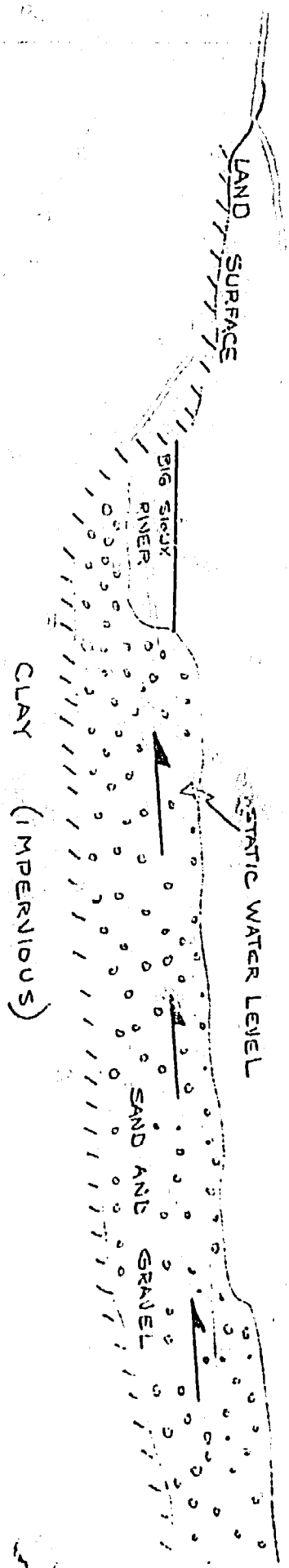
F/U - Future Use

There have been many questions and complaints concerning the Big Sioux River. The Water Rights Commission has adopted a river and well spacing policy which requires that future high capacity wells into a water table aquifer be located at least 660 feet from a river. This policy was adopted all along the Big Sioux River. This helps to diminish the effect of high capacity well pumping

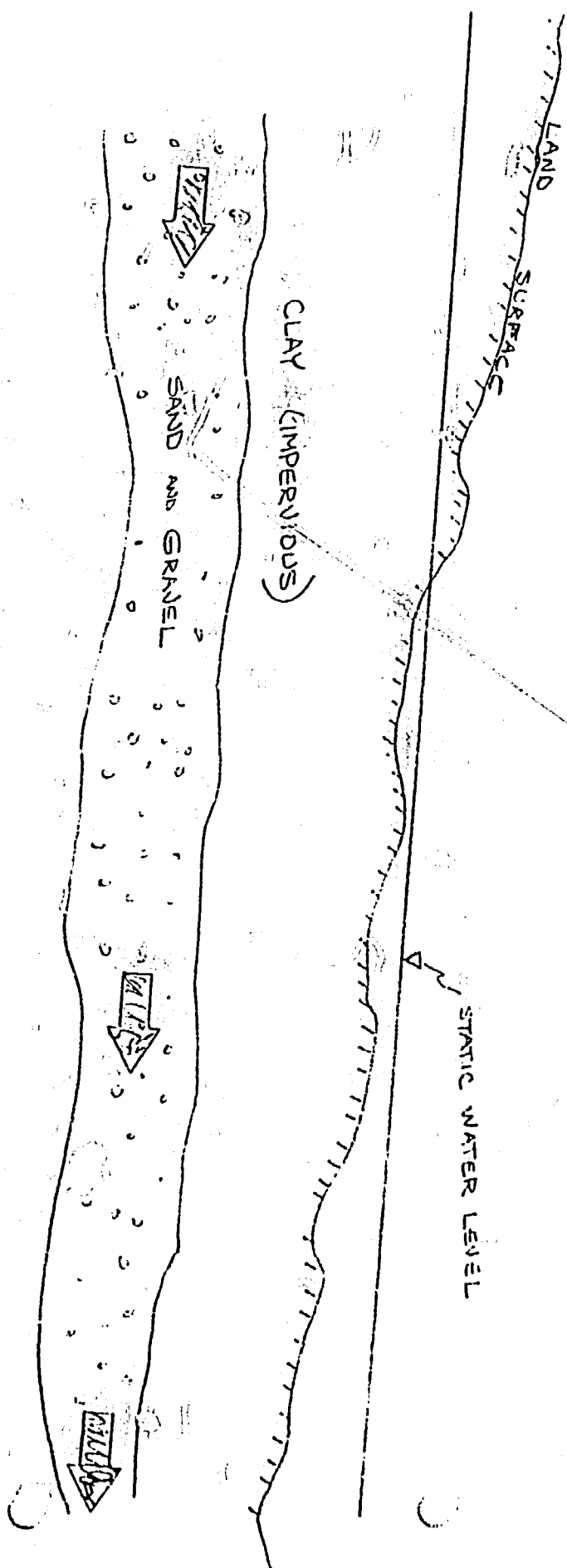
HYDROLOGIC CYCLE

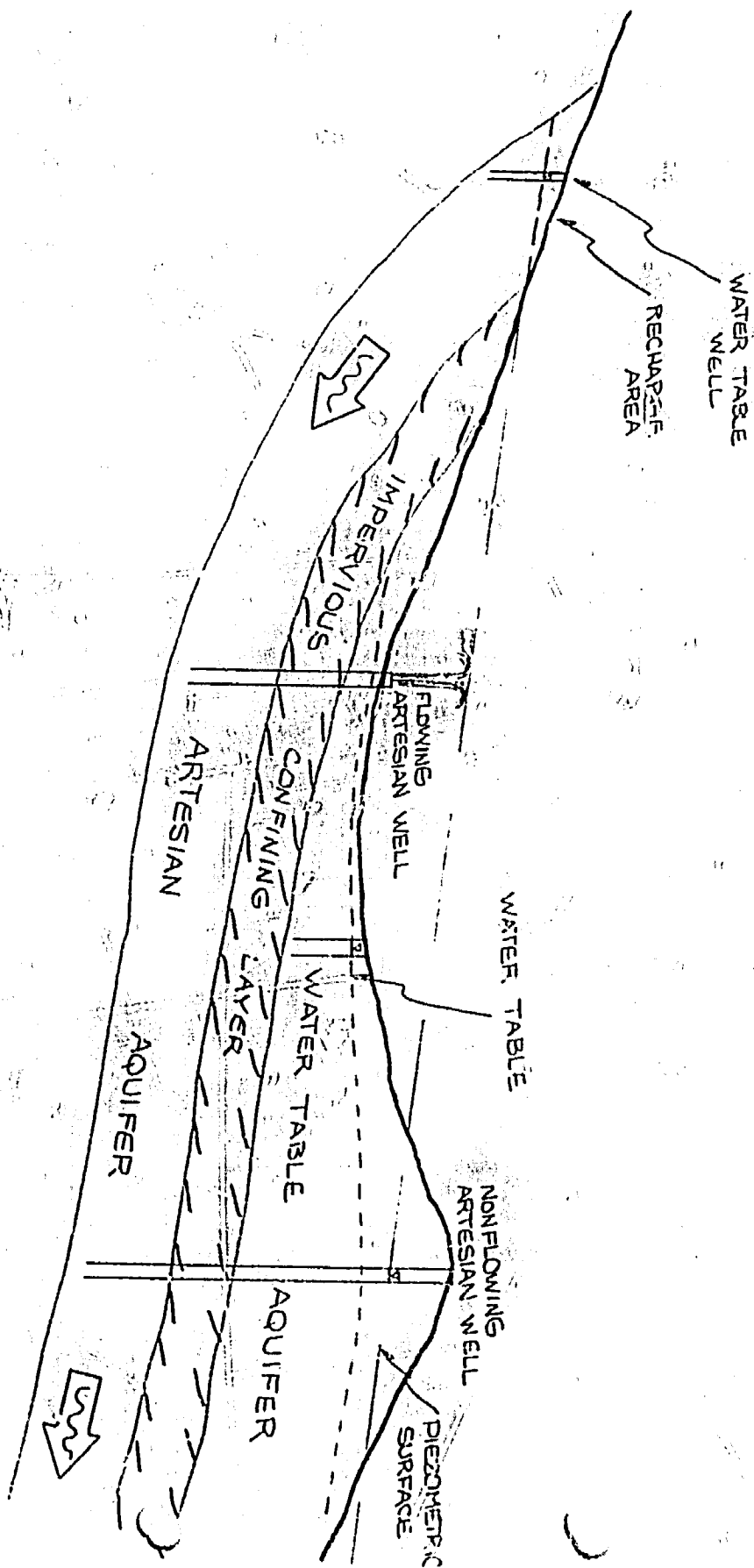


A
WATER TABLE CONDITIONS



ARTESIAN CONDITIONS





upon the river. There is no doubt that irrigation pumping may affect streamflow; however, the question becomes how much can be attributed to drought and how much to pumping? Under normal conditions, during dry weather, the aquifer discharges water into streams. This action continues whether high capacity pumping is going on or not. The preponderance of information collected, indicates the aquifer levels are being maintained.

WATER LEVEL INFORMATION

During 1976, the Water Rights Commission Staff measured a combination of 18 observation wells and domestic wells. Seven of the wells were in the artesian aquifer and 11 were in the water table aquifer. After reviewing this information, the Commission Staff discontinued the measuring of some of the domestic wells. In addition, the Commission Staff drilled 14 observation wells in 1977 (see figure 1). The new observation wells allow the aquifer water levels to be monitored.

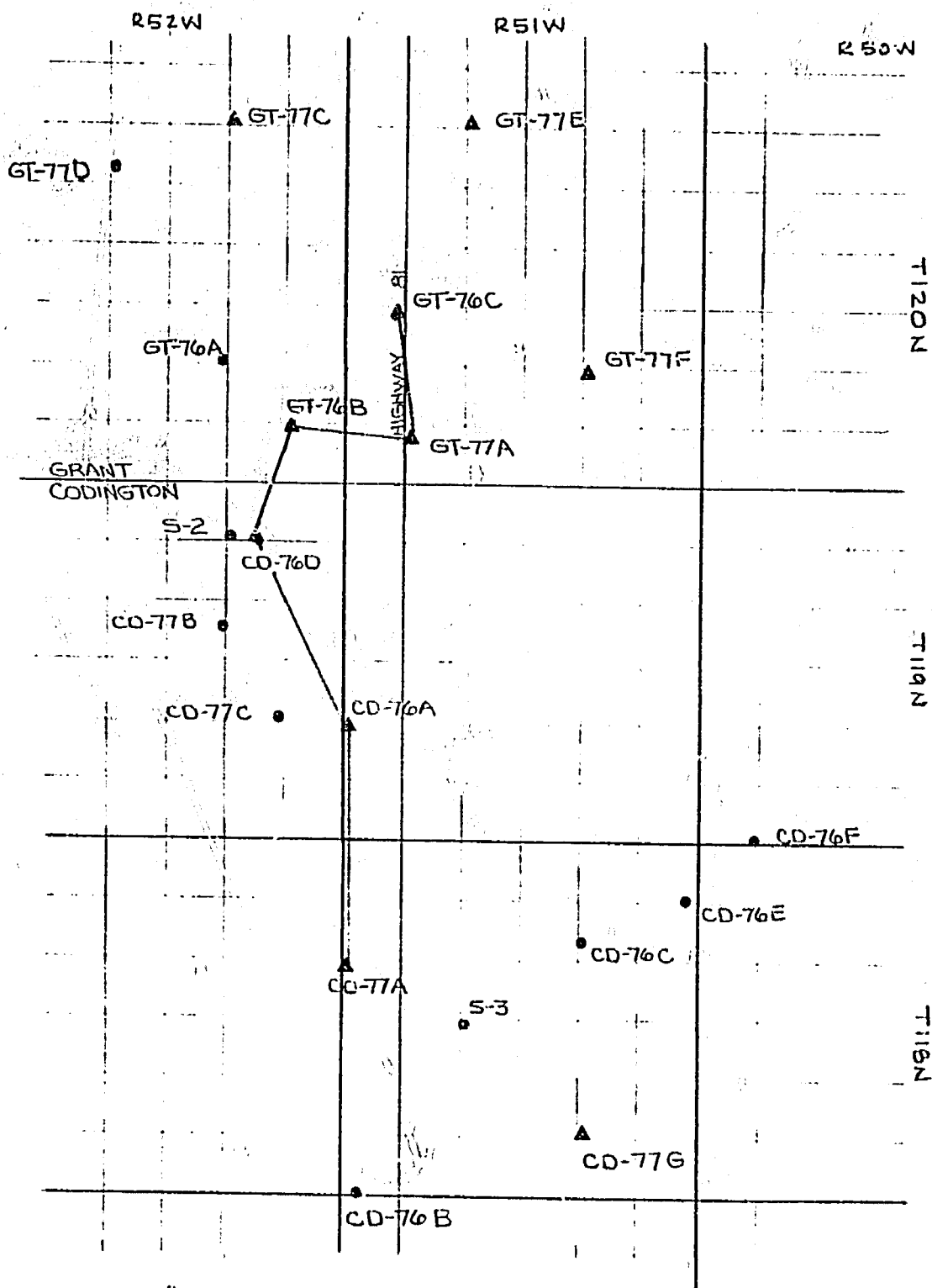
WATER TABLE AQUIFERS

There is historical information available concerning the shallow aquifers. The following chart is a summary of the readings from the shallow aquifer observation wells.

Well	Seasonal Fluction	High Reading	Low Reading	Present Reading
S-1(1957)	1 - 2'	7.1 7- 9-62	14.6 2- 8-77	11.6 12- 1-77
S-2(1957)	1 - 2'	6.6 7- 9-62	13.1 12- 7-66	10.9 10-18-77
S-3(1957)	1 - 2'	10.9 5- 2-73	18.6 10-29-68	14.8 12- 1-77
S-4(1957)	1 - 2'	2.4 4-22-69	16.9 9- 8-77	16.2 12- 2-77
** S-5(1957)	1 - 2'	15.15 8-29-57	23.8 8-17-77	21.7 12- 2-77
WA-1(1960)	1 - 2'	7.2 7- 9-62	12.2 2- 8-77	10.5 12- 1-77
WA-2(1960)	2 - 3'	2.7 7- 9-62	11.00 7-13-67	5.3 12- 1-77
WA-3(1960)	1 - 2'	3.5 7-18-72	15.8 10-26-60	8.2 12- 2-77
WA-4(1960)	2 - 3'	3.0 7-18-72	10.4 8- 3-76	5.5 12- 2-77

** Well is within 200 feet of rural water system well

Typically water table wells fluctuate only a few feet during a year, declining steadily during summer months; recharge usually occurs during spring snowmelt. Also, drought periods cause a gradual decline and during extended drought periods the decline is compounded by lack of large scale runoff conditions. Any period of heavy runoff recharges water table aquifers.



SCALE 1" = 2 MILE

- WATER TABLE OBSERVATION WELL
- ▲ ARTESIAN OBSERVATION WELL

ARTESIAN AQUIFER

There are two years of water level information available from the artesian aquifer. The storage, thickness and extent of the aquifer are unknown, but the addition of 10 observation wells into this aquifer indicates excellent irrigation potential. Thus far, the aquifer has been traced for a distance of 18 - 20 miles, with a width of a few miles and the thickness of the gravel is variable from a few feet up to 60 feet. The following is a summary of the water level data collected thusfar:

OBSERVATION WELL RECORDS (ARTESIAN AQUIFER)

DATE	CD-76D	CD-76A	GT-76B	GT-76C	GT-77A
6-16-76	5.8				
6-24-76	14.9				
7-2-76	16.5				
7-8-76	18.2				
7-14-76	18.8				
7-22-76	18.7				
7-28-76	20.6				
8-3-76	20.6				
8-11-76	24.8				
8-17-76	26.4				
8-26-76	26.6				
9-8-76	27.8				
9-22-76	21.5				
10-21-76	16.0				
11-1-76	12.9				
12-1-76	9.1				
2-8-77	(frozen)				
4-7-77	5.6				
6-16-77	17.0	14.2	29.0	68.7	
6-21-77	12.0	14.4	22.7	66.2	
6-29-77	10.0	13.9	21.7	64.6	
7-6-77	15.9	14.3	35.5	68.5	
7-21-77	20.1	15.5	40.7	72.0	93.8
8-3-77	24.3	17.1	42.8	73.6	96.9
8-17-77	20.3	18.6	34.6	76.0	
9-8-77	12.9	16.4	23.1	67.0	90.7
9-20-77	10.2	15.2	20.2	64.5	88.1
10-18-77	8.5	13.0	18.5	61.8	85.0
12-1-77	5.6	11.5	15.6	60.0	83.0
1-17-78	(frozen)	10.8	14.9	59.1	82.2

Note that all water levels have returned to the previous spring levels. Figure 2 and Figure 3 are plots of these same 5 observation wells. Figure 2 is a water level elevation plot showing the fluctuation due to irrigation withdrawals and Figure 3 is a diagrammatic cross-section showing the formation and water level (see figure 1). The slope of the water is generally to the south (this is called the hydraulic gradient) which indicates that the water movement is in that direction. The actual land surface has no influence upon the water levels under artesian conditions as is common under water table conditions.

PUMPING DATA FROM THE ARTESIAN AQUIFER:

The following discussion relates to what happens in and around the irrigation wells during pumping. The data from the area is incomplete and therefore suspect. A comparison between the drawdowns recorded in the observation wells and the computed or anticipated drawdowns do compare favorably with one another. A complete aquifer test would provide better information concerning aquifer characteristics.

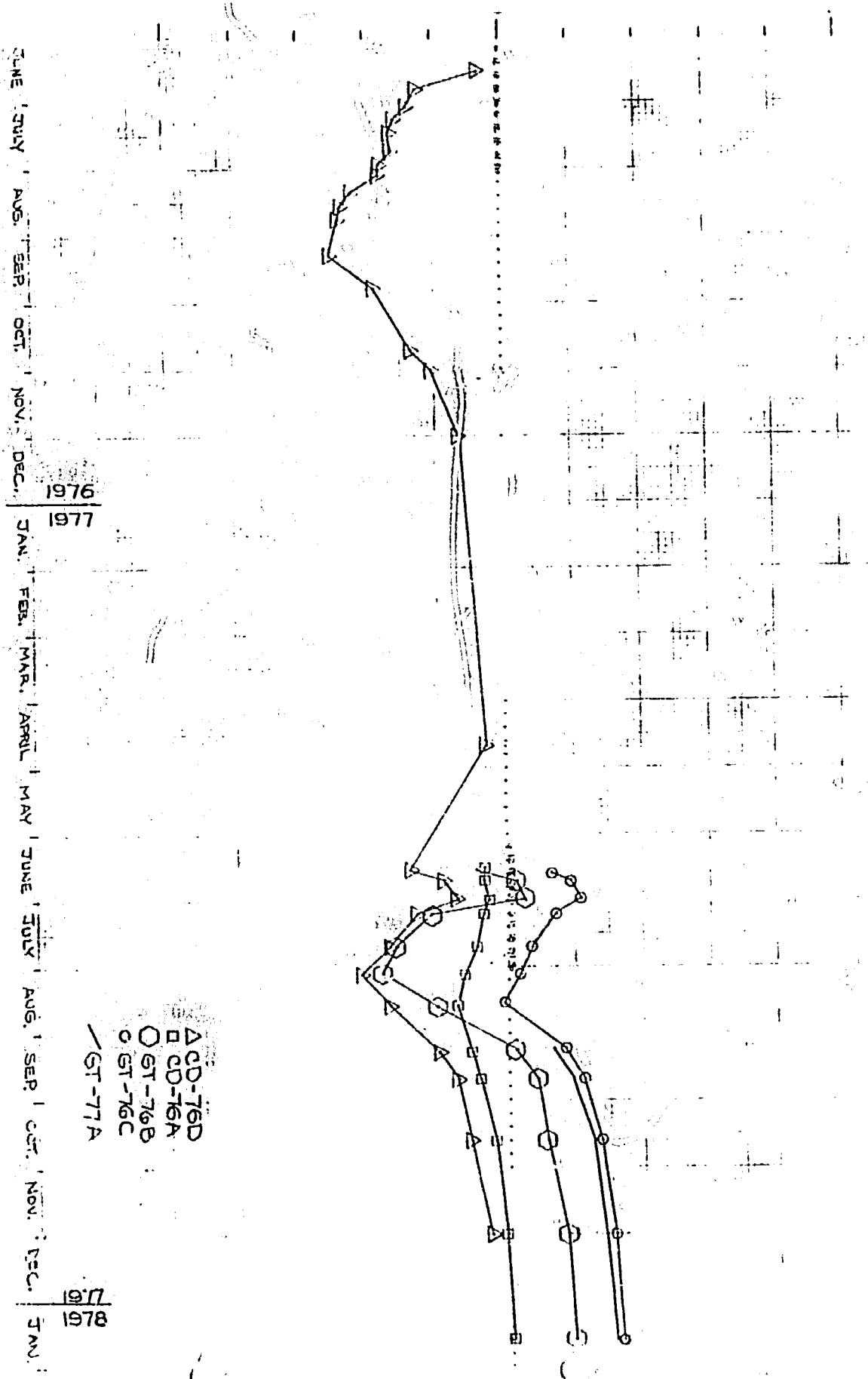
Initially in 1976, there was only one irrigation well pumping and the Commission only had one observation well located approximately 1½ mile to the south of the irrigation well. By plotting the drawdowns which occurred in the observation well (CD-76D) versus the duration of time (figure 4) some of the basic characteristics of the aquifer may be determined. Using the information obtained from the drawdown-time plot, the distance-drawdown curve (figure 5) can be constructed. This step shows how much drawdown can be expected after x number of days pumping at x gallons per minute and how far from the pumping well the drawdown extends. Figure 6, figure 7 and figure 8 are plots showing the effect of the irrigation pumping upon the aquifer with the present number of wells. These plots are simply variations of the same data. Notice that expected drawdowns anywhere around the well field can be predicted.

The plotted data assumes a constant rate of pumping and for a continuous time interval. Under actual field conditions, this never occurs. One system may be off a few days for some reason or another. Therefore, the plots should represent a conservative outlook. Under the present well field configuration pumping of existing irrigation wells continuously for 30 days would produce a drawdown of 30 - 35 feet in observation well CD-76D. This may necessitate the lowering of pumps in domestic wells within this area. A continuation of pumping could begin to affect the output of the irrigation wells themselves. For this reason it is important that standard spacing of high capacity wells be maintained.

SUMMARY OF DOMESTIC WELL QUESTIONNAIRES

Total sent	629	
Total response	232	
Well Types	Bored	216
	Drilled	74
Wells Into Artesian Formation	36	

FIG. 2
 ACTUATOR DESERT MOUNTAIN WATERS LEVEL ELEVATION



16.3

ST-100

ST-7A

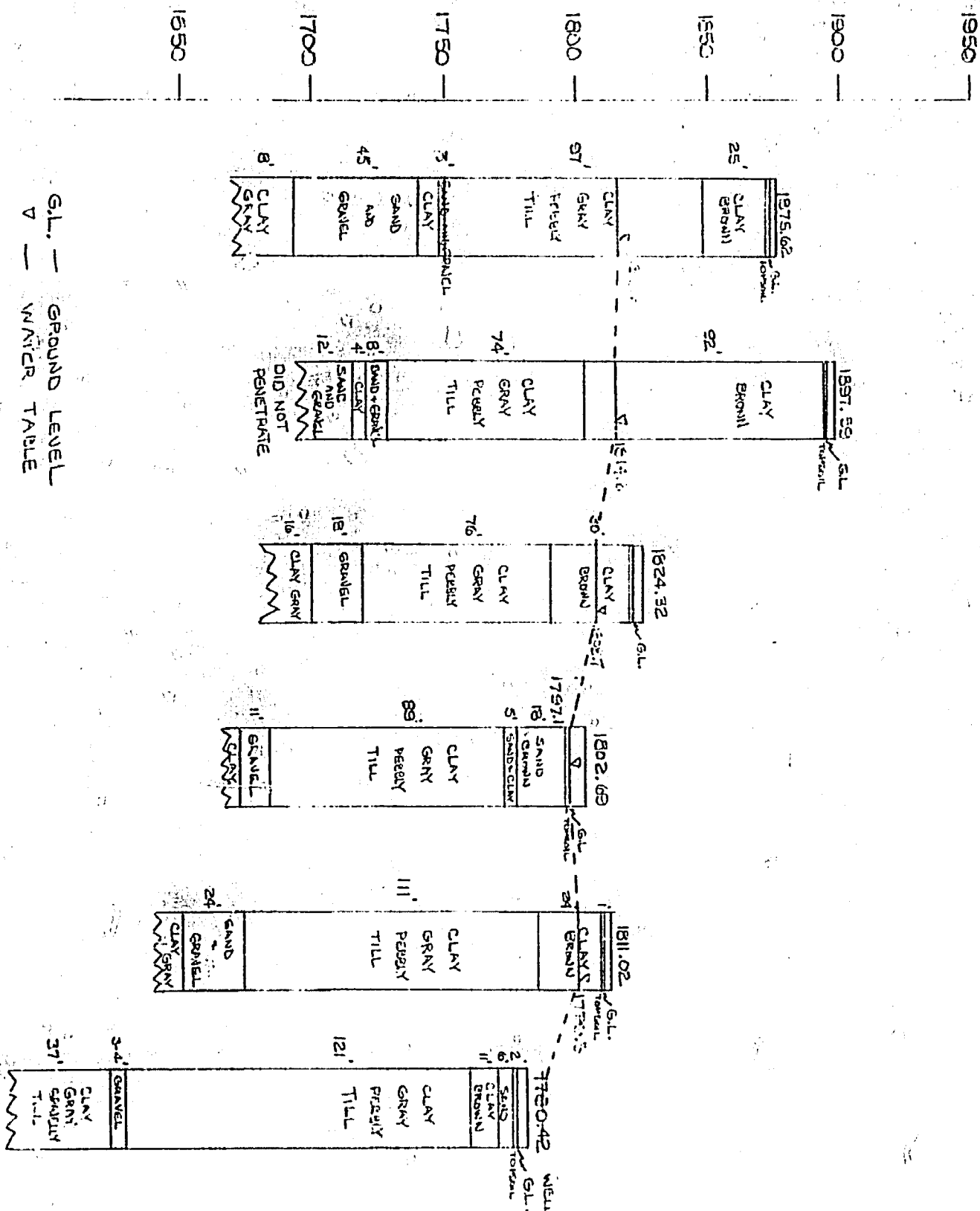
ST-7B

CC-76L

CC-76h

CC-77

MEAN SEA LEVEL



$s_{p,0.1} = 1.83$
 $s_{p,0.1} = 1.08$

1000
 500
 250
 125
 62.5
 31.25
 15.625
 7.8125
 3.90625
 1.953125
 0.9765625
 0.48828125
 0.244140625
 0.1220703125
 0.06103515625
 0.030517578125
 0.0152587890625
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FIG. 5
DISTANCE-DRAWDOWN CURVE FROM TIME-DRAWDOWN CURVE

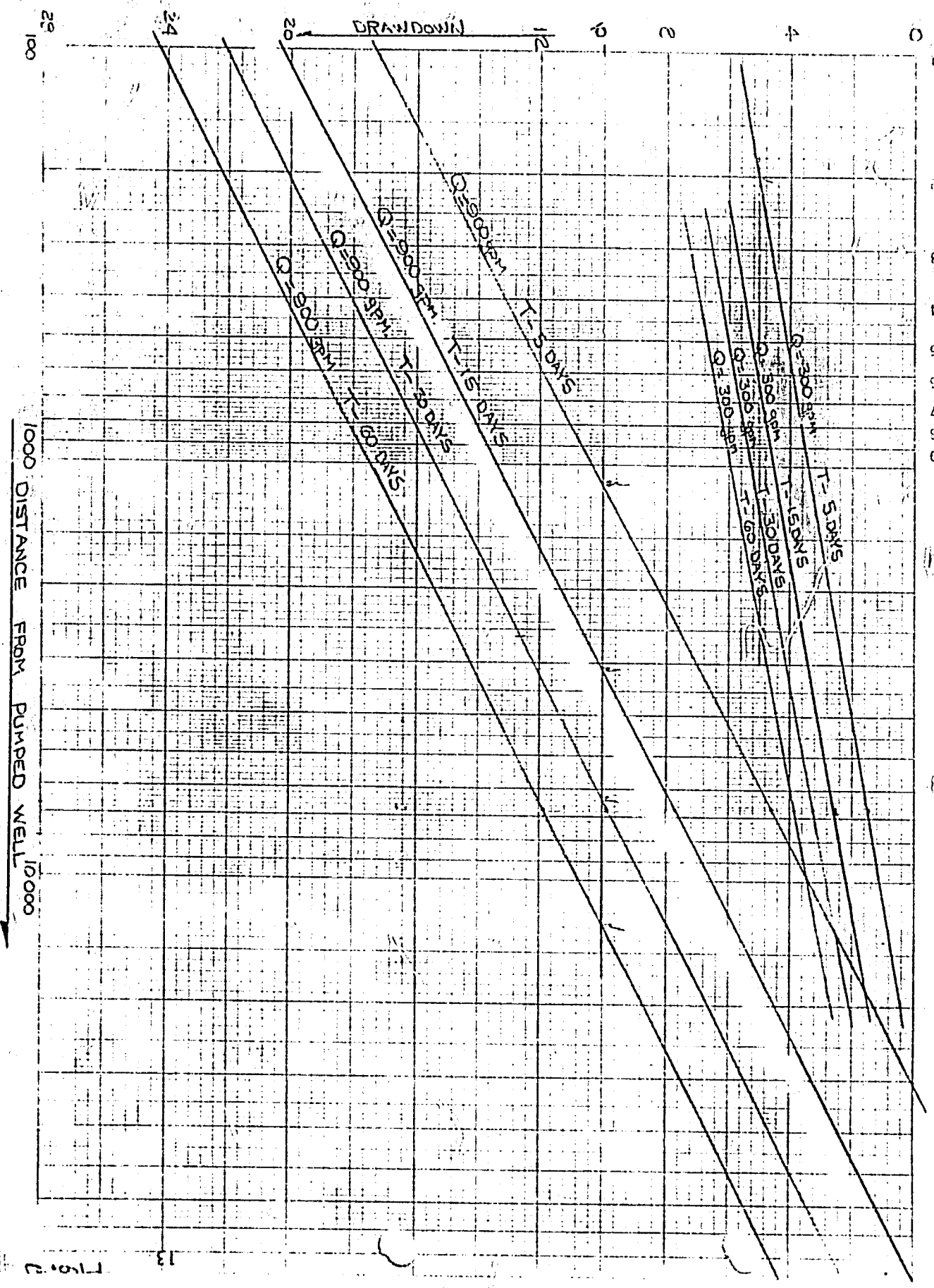


FIG. 5

Fig. 6

14 EXTENT OF 10 FEET LET DOWN CONTOUR, AFTER 7 DAYS (Broken line)
 PUMPING WELLS #1, #2, #3, #4 WELL #4 SHOWS 5 FEET CONTOUR
 (Solid line) AFTER 60 DAYS

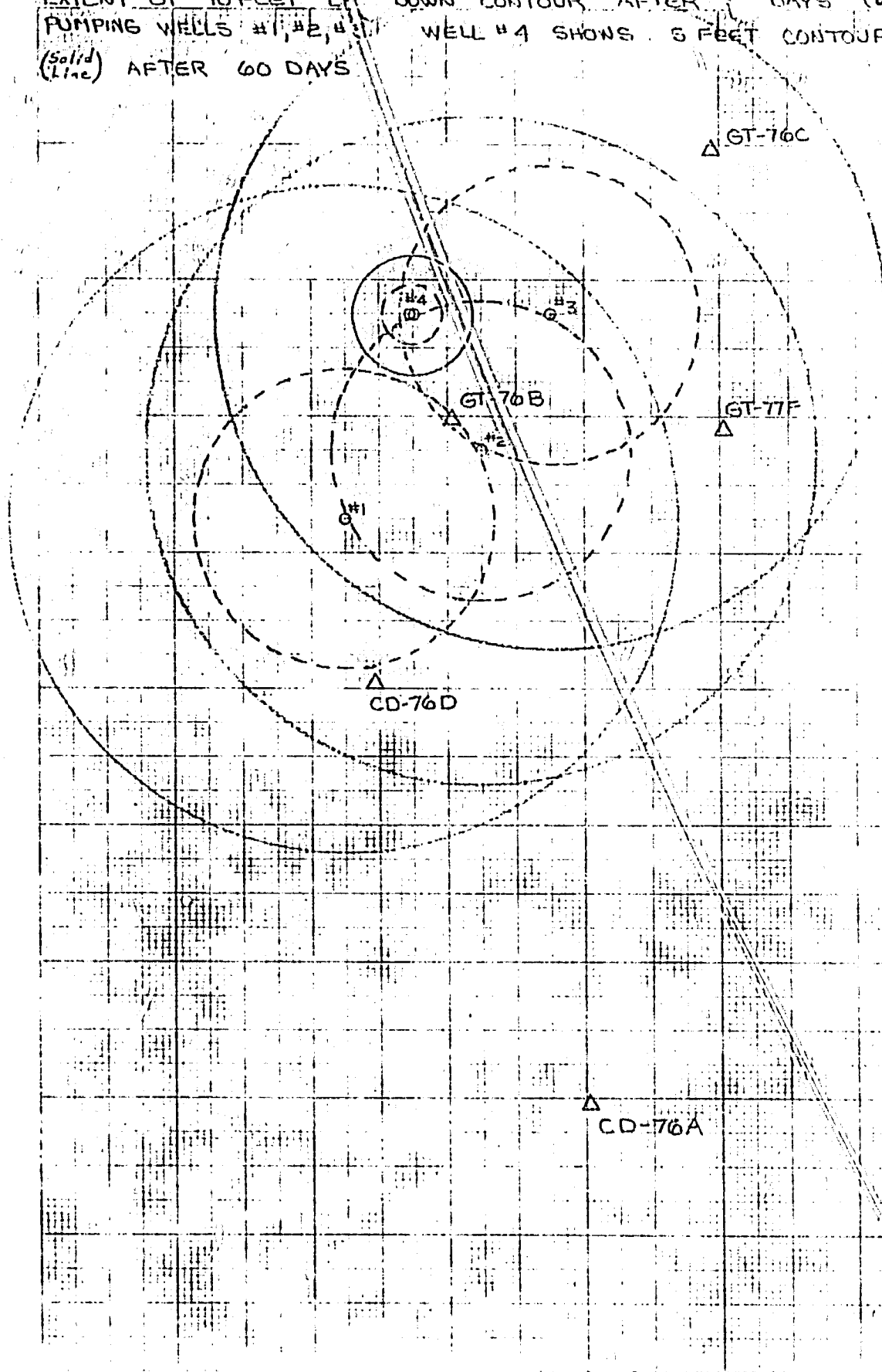


FIG. 7

15

(BROKEN
LINE)

EXTENT OF 50 FEET CONTOUR OF DRAWDOWN AFTER 5 DAYS
PUMPING WELLS #1, #2, #3 WELL #4 SHOWS 5 FEET CONTOUR

(SOLID)

AFTER 15 DAYS

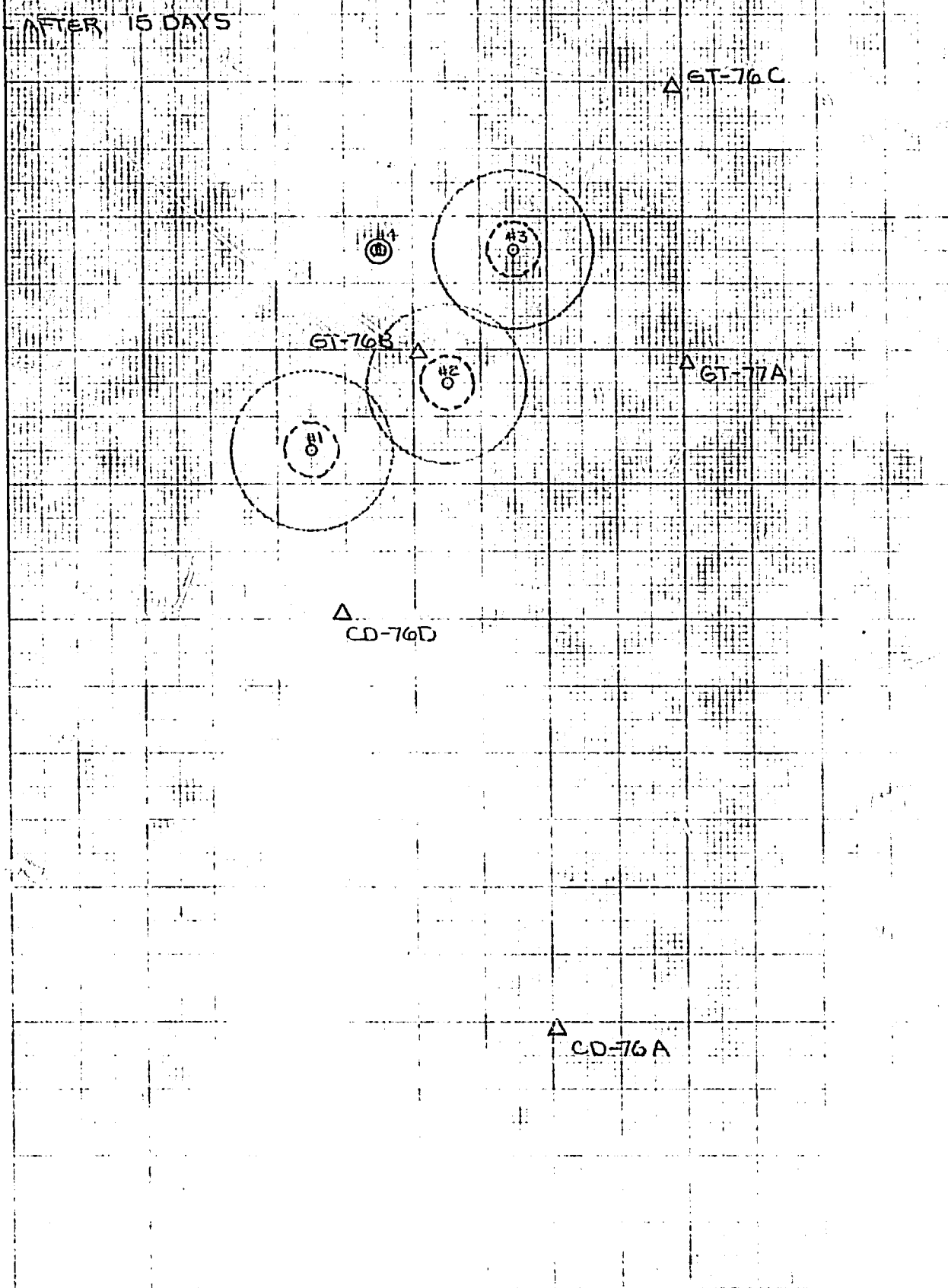
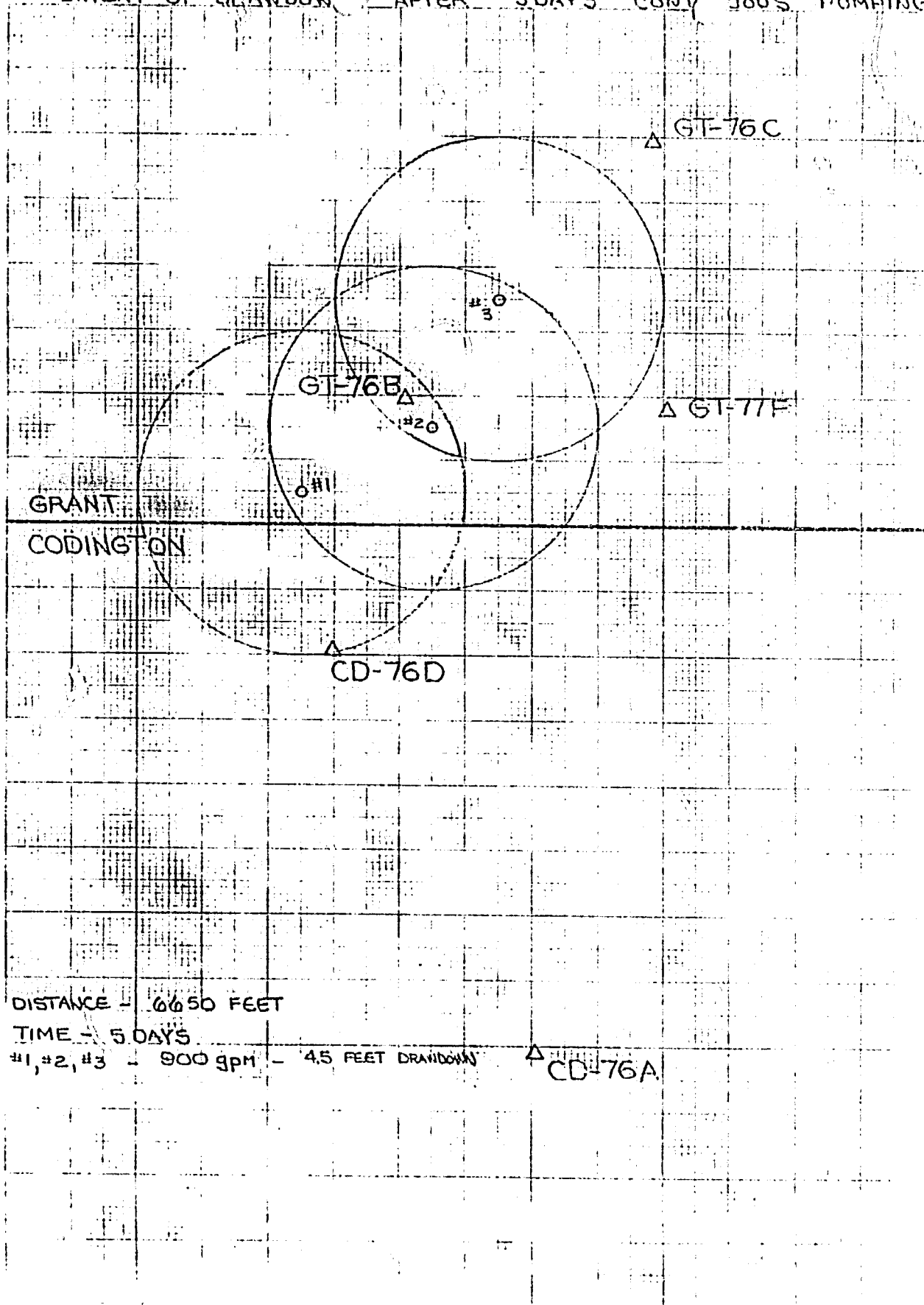


FIG. 8.

EXTENT OF DRAWDOWN AFTER 5 DAYS CONTINUOUS PUMPING



Generally the information obtained from the questionnaire was helpful, although there were few people who actually knew much about their wells. Even so, there are approximately 36 domestic wells which are located in the artesian aquifer. These wells may be affected if further irrigation permits are granted. Many of these wells are adequate and the pumps can be lowered, but a few are inadequate. The inadequate wells may need to be replaced.

Many of the wells reported appear to be seepage wells. That is, no aquifer is penetrated and the water is obtained from leakage from the surrounding material. These wells are not affected by high capacity well pumping. Probably the best indication of a seepage well is if that well can be pumped dry in a few hours. The owner is depending upon the storage capacity of the well for a water supply. Typically these wells give the owners problems during dry weather.

Listing of Deferred Applications:

Permit No.	County	For	CFS Amount	Wells	Acreage	Priority Date
3229-3	CD	Harlan Stadhiem	3.90	1	270	8-20-76
* 3225-3	GT	Clifford Grinols	2.28	1	160	10- 5-76
* 3226-3	GT	Clifford Grinols	2.28	1	160	10- 5-76
3227-3	CD	Falk Farms	2.28	1	160	10- 5-76
** 3231-3	CD	David McElhany	4.10	2	289	9- 9-76
3342-3	GT	Joseph P. Amdahl	5.0	2	468	12- 7-76
3745-3	CD	Owen Thacker	2.20	1	160	12-27-76
3502-3	GT	John LaBarr	2.0	1	135	12-28-76
3503-3	GT	Bernard L. Lee	4.9	3	345	12-28-76
4153-3	GT	Falk Farms	4.0	2	312	9-15-77
4184-3	GT	R.E., Ina, Scott Kahnke	4.4	2	312	10-27-77
3941-3	CD	Gary Zemlicka	.57	Dugout ***	40	
4180-3	CD	R.E. Kahnke		additional diversion points		(2)
4181-3	CD	R.E. Kahnke		additional diversion point		(1)
4182-3	CD	R.E., Ina, Scott Kahnke		additional diversion point		(1)
4183-3	CD	R.E., Ina, Scott Kahnke	.15		Trailer Court Well	

* No test hole - Logs are not available

** Already has a permit for shallow water for same land.

*** Dugout located in stream bed - intermitten flows in stream

DISCUSSION OF APPLICATIONS:

1. Applications 3941-3, 4180-3, 4181-3, and 4183-3 are all for water table wells. The historical water level data indicates there is water available in the shallow water table aquifers. There should be no noticeable effect upon domestic water supplies, if these applications are approved.

2. The water level data from the deeper artesian aquifer indicates there is water available for appropriation. Problems do exist, however, as to the correct high capacity well spacing in order to prevent excessive well interference. Until an aquifer pump test is conducted, the Commission Staff will recommend at least $1\frac{1}{2}$ mile spacing between the high capacity wells. In fact, under intensive development this spacing may prove inadequate. There is a maximum number of wells that can be allowed in any aquifer even though this spacing could be maintained. The Commission Staff is not able to determine the total number of high capacity wells which can be allowed at this time.
- A. The well for Application No. 3229-3 is more than $3\frac{1}{2}$ miles from the nearest existing irrigation well. This acreage is also covered under Permit No. 2171-3.
- B. The wells for Applications 3225-3 and 3226-3 are located $\frac{1}{2}$ mile and 1 mile respectively from an existing irrigation well.
- C. The well for Application No. 3227-3 is approximately $1\frac{1}{2}$ miles from an existing irrigation well.
- D. The wells for Application No. 3231-3 are more than 10 miles from an existing irrigation well. This land is already covered under Water Right No. 2203-3 for shallow wells. Also the proposed irrigation wells are less than $\frac{1}{2}$ mile apart.
- E. The wells for Application No. 3342-3 are 3 miles from the nearest existing irrigation well. The individual wells are $\frac{1}{2}$ mile apart.
- F. The well for Application No. 3745-3 is more than 3 miles from a location with a priority right.
- G. The well for Application No. 3502-3 is approximately 1 mile from an existing irrigation well.
- H. The wells for Application No. 3503-3 are more than 3 miles from an existing irrigation well and less than 1 mile apart individually.
- I. The wells for Application No. 4153-3 are approximately $\frac{1}{2}$ mile from an existing well and $\frac{1}{2}$ mile apart.
- J. The wells for Application No. 4184-3 are approximately $\frac{1}{2}$ mile from an existing irrigation well and only $\frac{1}{2}$ mile apart.

RECOMMENDATIONS:

1. The Water Rights Commission Staff recommends approval of Water Right Application Nos. 3941-3, 4180-3, 4181-3, 4182-3, and 4183-3 with the following qualifications:

The irrigation well approved under this Permit will be located near domestic wells and other irrigation wells which may obtain water from the same aquifer. The irrigation well owner, under this Permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in irrigation wells having prior water rights.

2. The Commission Staff recommends approval of Application No. 3229-3 from the artesian aquifer with the following qualifications:

That irrigation well approved under this Permit will be located near domestic wells and other irrigation wells which may obtain water from the same aquifer. The irrigation well owner, under this Permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in irrigation wells having prior water rights.

That the location of the irrigation well be moved to the west and north of the proposed location to eliminate a potential flowing well.

Because of the improper spacing, the Commission Staff recommends the continued deferral of Application Nos. 3225-3 and 3226-3. These applications have priority to any of the following Application Nos. 3227-3, 3231-3, 3342-3, 3745-3, 3502-3, 3503-3, 4153-3, and 4184-3 even though spacing is not a problem with some of these applications.

Until information is available to confirm the spacing recommendation, the Commission Staff does not believe the Commission should pass over the prior rights. For this reason, the Commission Staff recommends continued deferral of these applications.

James Goodman
Hydrologist



No. 3503-3

Department of Natural Resource Development

WATER RIGHTS COMMISSION

June 6, 1977

Joe Foss Building, Pierre, South Dakota 57501

Phone 605/224-3151

Bernard L. Lee
Summit, S.D. 57266

Dear Mr. Lee:

The Water Rights Commission deferred action on your Application

No. 3503-3 at the May 25-26, 1977 Commission meeting, pending investigation by the Commission Staff.

Although your Application has been deferred, it does retain the original priority date established when the Application was received. You will be notified when the Application will be reconsidered by the Commission.

If you have any questions, feel free to contact this Office.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Commission

JH/bw

Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501

Phone 605/224-3151

March 22, 1978:

TO: Persons concerned with deferred applications in Codington & Grant Counties

FROM: John Hatch, Chief Engineer, Water Rights Commission

SUBJECT: Reconsideration of deferred applications in Codington & Grant Counties

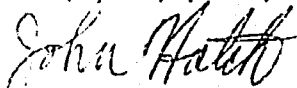
The Water Rights Commission will reconsider Water Rights Applications in Codington and Grant Counties at 2:00 p.m., March 28, 1978 at the Guest House, 101 North Broadway, Watertown, South Dakota.

This reconsideration hearing will be conducted in accordance with the provisions of SDCL 46-1-1 thru 46-1-8; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41; 46-6-3, 46-6-5, 46-6-6.1, 46-6-10, 46-6-14 and Commission Rules ARSD 52:01:01:01 thru 52:01:01:13.

The Applications were deferred by the Water Rights Commission during 1976, 1977 and 1978, pending Staff investigation.

After reconsideration of the Applications, the Commission can approve, defer, or deny all or parts of the Applications. A copy of the "Report on Area of Controversy in Codington & Grant Counties" is enclosed for your information.

Very truly yours,



JOHN HATCH, Chief Engineer
Water Rights Commission

JH:kjw

enclosure



Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501
Phone 605/773-3151

January 16, 1979

TO: Persons Interested in Deferred Water Right Applications West of South Shore in Codington and Grant Counties

FROM: John Hatch, Chief Engineer, Water Rights Commission

SUBJECT: Reconsideration of Deferred Applications

The Water Rights Commission will reconsider deferred Water Right Applications in the area west of South Shore in Codington and Grant counties at 1:30 p.m., January 31, 1979 at the South Dakota Education Association Building, 411 E. Capitol, Pierre, South Dakota.

This reconsideration hearing will be conducted in accordance with the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-14; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41; 46-6-3, 46-6-3.1, 46-6-5, 46-6-6.1, 46-6-10, 46-6-14 and Commission Rules ARSD 52:01:01:01 thru 52:01:01:13.

These applications were deferred by the Water Rights Commission during 1977 and 1978, pending Staff investigation.

After reconsideration of the deferred applications, the Commission can approve, defer or deny all or part of any of these applications.

This hearing is an adversary proceeding. Any person has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing. Decisions of the Commission may be appealed to the courts as provided by law.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Commission

JH/gy



Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501
Phone 605/224-3151

February 13, 1979

TO: Persons from Codington & Grant Counties in attendance at Water Rights Commission Meeting, January 31, 1979.

The Water Rights Commission at its meeting January 31, 1979 approved the following applications:

3327-3 Falk Farms, Inc.
3225-3 Clifford Grinols
3226-3 Clifford Grinols
3342-3 Joseph P. Ahmdahl

3745-3 Owen Thacker
3502-3 Bernard L. Lee
3503-3 John La Barr

The above applications were approved with the following qualifications:

The irrigation well(s) approved under this permit will be located near domestic wells and other irrigation wells which may obtain water from the same aquifer. The irrigation well owner, under this permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in irrigation wells having prior water rights.

The specific capacity of the well(s) shall be determined by test pumping the well(s) prior to connecting the well(s) to the irrigation system and a record of the specific capacity filed with the Commission office.

At the January 31, 1979 meeting the Water Rights Commission also deferred action on the following applications:

4135-3 Falk Farms, Inc.

4184-3 R. E. Ina & Scott Kahnke

South Dakota Statutes provide that the decision by the Commission may be appealed to the courts.

Very truly yours,

A handwritten signature in cursive script that reads "John Hatch".

JOHN HATCH, Chief Engineer
Water Rights Commission

JH:kjw

Technical Report On
Aquifer Pump Test Southwest Grant County
Using Falk Irrigation Well

December, 1978

Location: The Irrigation well is located in the center of the NE $\frac{1}{4}$ Section 23, T120N, R52W reservation.

General

Comments: The source of water is a buried glacial outwash deposit of sand and gravel under artesian conditions.

The hydraulic gradient (direction of water movement) is toward the southwest at approximately 5 feet per mile in the vicinity of the production well.

The thickness and lateral extent are variable although test holes indicate an areal extent of at least 66 square miles at an average thickness of 20-30'. The thickness can vary dramatically in a few miles, from more than 45 feet at observation well GT-76C to only 3 feet at CD-77A. The artesian head is 100 feet or more at nearly any location. Flowing wells may be obtained below a land surface elevation of 1800.0 feet. Observation wells have been located into the aquifer over a great distance from north to south but not east to west. The eastern boundary can be established with some reliability but not the western boundary. Drilling was confined to areas where a flow would not be obtained. Any widening of the aquifer to the west increases its size tremendously.

See sketches I, II, III, IV
Also relevant well log data is included.

Purpose: The purpose of the aquifer test was to determine the hydrogeological characteristics of the aquifer.

Test: Pumping began Monday, April 24, 1978 at 3:00 p.m. and continued for 72 hours. During this period 13 observation wells and 4 domestic wells were monitored after shutdown recovery data was obtained from these sources as well. The primary wells were:

- 1). Irrigation well #2
- 2). Service well
- 3). Temporary observation well
- 4). GT-76B
- 5). Falk domestic

A 6" flow meter borrowed from the USGS was used to measure the rate of discharge. The discharge remained constant over the entire test averaging 1010 gpm. Six Water Rights Commission Staff were present to monitor the test.

Data: All data was plotted in a conventional manner. Time-drawdown curves were constructed for each primary observation using the type-curve

(Theis) method and the modified non-equilibrium formula (Jacob) method. Recovery data was also plotted using the Jacob method. These methods should define the aquifer characteristics transmissivity (T) and storage coefficient (S). Also distance - drawdown plots were constructed for different time intervals and these T and S values calculated. (See figures 1 thru 17)

Table listing T and S values

	T	S	(A) Recovery
Irrigation well	1) 32,150 2) 43,000	can not be calculated	
Service well	1) 54,600 2) 45,600	1) 6.26×10^{-5} 2) 2.70×10^{-4}	T) 43,000 S) 3.87×10^{-4}
Temporary Observation well	1) 46,700 2) 42,300	1) $.93 \times 10^{-5}$ 2) 1.98×10^{-5}	T) 39,800 S) 2.19×10^{-5}
GT-76B	1) 53,800 2) 54,700	1) 4.77×10^{-5} 2) 4.08×10^{-5}	T) 49,200 S) 6.12×10^{-5}
Falk domestic	1) 57,900 2) 64,300	1) 1.36×10^{-4} 2) 1.10×10^{-4}	did not plot

1) Theis method

2) Jacob method

A) recovery data handled using Jacob method only

T and S values determined by distance-drawdown

Time	T	S	r_o
1 hour	61,300	2.95×10^{-5}	5,100
10 hours	53,300	5.5×10^{-5}	11,000
24 hours	53,300	5.7×10^{-5}	16,600
67 hours	49,400	1.20×10^{-4}	18,500

This is that amount of time passed since the beginning of pumping.

r_o is the distance in feet from the production well that the cone of depression extends to at the given time.

Distance from to	Service	Temp Obs. Well	GT-76B	Falk domestic	GT-77A	CD-76D	GT-76C
Production Well	36	700	1,920	4,800	9,100	10,000	14,100

Discussion of Data and Procedures:

Was the Testing Period long enough? This can be shown to true by
the following calculation.

$$t_{SL} = 1.35 \times 10^5 r^2 S/T$$

t_{SL} = Time needed to Elapse
 r = Distance from Production
Well to Observation Well

For Temp Obs. Well $t_{SL} = (1.35 \times 10^5)(700^2)(1.43 \times 10^{-5}) / 43,700$

$$t_{SL700} = 15.14 \text{ minutes}$$

For GT-76B $t_{SL1920} = (1.35 \times 10^5)(1920^2)(4.86 \times 10^{-5}) / 53,800$

$$t_{SL1920} = 449.56 \text{ minutes}$$

$$7.49 \text{ hours}$$

For Falk Domestic $t_{SL4800} = (1.35 \times 10^5)(4800^2)(1.36 \times 10^{-4}) / 57,900$

$$t_{SL4800} = 7305.95 \text{ minutes}$$

$$121.77 \text{ hours}$$

$$5.07 \text{ days}$$

Calculations of T and S are valid for wells out through GT-76B using the Jacob Method. Calculations for the Falk Domestic well may not be accurate because the test should have been run 5 days in order to evaluate T and S at that distance.

Examination of the values of T and S show good correlation. Predictions using this data can be made. However care must be taken when calculating theoretical drawdowns over long periods of time in this case. In all instances the predicted water levels will be lower than the actual measured level. This is the effect of recharge to the system. Predictions assume no recharge. This accounts for the discrepancies in water level measurements and predictions. Since this problem shows up in 3 days, imagine what is happening after 60 days or longer. (See Figures A,B,C,D)

What is the specific capacity of the irrigation well?

$$\text{Actual } Q/s = 1010/46.49 = 20.83 \text{ gallons/foot}$$

$$\text{Calculated } T = 54,600 \quad S = 6.26 \times 10^{-5} \quad t = 4310 \quad (\text{Service Well}) \quad r_w = 36$$

$$Q/s = T / [2.64 \text{ LOG } (Tt / 2693 r_w^2 S) - 65.5]$$

$$Q/s = 22.37 \text{ gal/ft}$$

What is the permeability of the aquifer?

$$T = kb$$

b = saturated thickness

k = permeability

$$k = T/b = 54,600/20 = 2730 \text{ gpd/ft}^2$$

This indicates an apparent velocity of approximately .25 feet per day.

Is there any vertical leakage?

Examination of figures 1 thru 17 do not indicate any significant leakage problem.

A possible value for leakage (maximum) can be calculated:

$$P' = \frac{Tm' (r/b)^2}{r^2} = \frac{(50,000)(110')(.001^2)}{36^2} = .004 \text{ gpd/ft}^2$$

This shows there is very little leakage at the well site.

Was there a pronounced barometric effect?

No.

How much water is there?

To evaluate this question I decided to simplify this system. A 16 square mile area was chosen with the production well near the center. (See Figure 18)

The amount of water moving through this area and that amount in storage can be calculated.

Volume moving through under natural conditions:

$$Q = TIL \quad (\text{Darcy Equation})$$

$$Q = (50,000)(5 \text{ ft/mile})(4 \text{ mile})$$

$$Q = 1,000,000 \text{ gpd}$$

$$Q = \text{Discharge}$$

$$T = \text{Transmissivity}$$

$$I = \text{Hydraulic Gradient}$$

$$L = \text{Width of Aquifer}$$

$$3.07 \text{ A.F./Day} \quad \text{or} \quad 1120 \text{ A.F./Year}$$

Notice: A change in the hydraulic gradient of 1 ft/mile increases or decreases the amount of water movement by 200,000 gpd. (.61 AF/Day)

Inducing a one foot increase in gradient by pumping would supply 1/7 of the daily withdrawal of a single irrigation well.

Volume in storage:

To calculate this quantity of water the entire aquifer under 16 square miles was dewatered.

First, consider storage in artesian head or V_{SA}

$$V_{SA} = S (\text{Surface Area})(\text{Thickness})$$

$$V_{SA} = (5.0 \times 10^{-5})(16)(5280^2)(100)$$

$$V_{SA} = 2,230,000 \text{ Ft}^3, 16,684,000 \text{ gallons, } 51.20 \text{ A.F.}$$

Second, consider storage remaining in gravel or V_{SWT}

$$V_{SWT} = S (\text{Surface Area})(\text{Thickness})$$

[Very conservative
Could be .2] $V_{SWT} = (.1)(16)(5280^2)(25)$

[* used .2 for S] $V_{SWT} = 1,115,136,000 \text{ Ft}^3, 8,340,000,000 \text{ gallons, } 25,600 \text{ A.F.}$
*51,200 A.F.

$$T = V_{SA} + V_{SWT} = \underline{25,650 \text{ A.F.}} \quad \text{or} \quad \underline{*51,250 \text{ A.F.}}$$

Notice that the amount of water tied up as artesian pressure is not significant when compared to the total amount.

How do present withdrawals compare to the amount of water available?

There are 4 irrigation wells within the boundaries of the study area which can pump about 3300 gpm.

$$\text{Pumping 1 well for 60 days at 1000 gpm yields } 265 \text{ A.F.}$$

$$\text{Pumping 3 wells for 60 days at 1000 gpm yields } 795 \text{ A.F.}$$

$$\text{Pumping 1 well for 60 days at 300 gpm yields } 79 \text{ A.F.}$$

$$\text{Total 4 wells } 874 \text{ A.F.}$$

Actual pumpage-

1977 535 A.F.

1978 270 A.F.

Note: If no recharge occurred then the entire volume of water tied up as artesian head would be removed in 3.5 days at 3300 gpm. Of course this doesn't happen. In fact, the recharge under normal conditions is significant.

It has been shown that 1120 A.F. move through this area during 1 year under normal gradient. Simple arithmetic shows that 1 more irrigation well may be allowed inside this area without changing any water levels. (See Figure 19) Also, it has been shown that increasing the gradient simply increases the amount of water drawn in. Pumping stimulates the recharge. To allow a decrease of water levels in this portion of the aquifer could be a good management tool. Also, the amount of water appropriated is much larger than the amount being put to use.

How should individual wells be spaced?

The time for the drawdown to reach equilibrium at any distance from a well can be calculated.

$$T_E = a^2 S / [112 T_E \text{ Log } (2a/r)^2]$$

a = Distance to recharge area

r = Any distance from well

E = Constant

For r = 36' $T_E = 26$ days

For r = 1900' $T_E = 52$ days

These figures indicate stability would never occur during any one irrigation season.

Figure 20 is an attempt to contour drawdowns inside the present well field after 30 days continuous pumping at 3300 gpm. Notice that the further away from the well the more predictable the configuration.

This solution ignores recharge, boundary conditions and other geo-hydrologic factors, therefore care must be used when analyzing this figure. Drawdowns inside the well field should theoretically exceed 55' at GT-76B. Looking at the hydrograph of GT-76B this never happens under field conditions. Actually 20' during this 30 day period may be realistic. The difference between these two values can be attributed to the increase in the rate of recharge due to increasing the hydraulic gradient by the increase in drawdowns.

This is important to consider when spacing wells. The distance between 2 wells is not as important as the total number of wells allowed. A 10,000 feet spacing between individual wells would maintain the pumping level at least 10' from the top of the aquifer. This assumes no recharge and a 90 day pumping period at 1000 gpm for each well.

10,000 feet is 1.89 miles. Geometrically this allows 4 wells inside this area under no recharge conditions.

Remember in order to maintain a pumping level in an irrigation well there must be an allowance of 60 feet within the pumped well and then allow for the affect the other wells will have on the one being pumped. (From time-drawdown curve of production well-Figure 1) The natural recharge during 90 days is 270 A.F. and certainly is greater than this under heavy pumping.

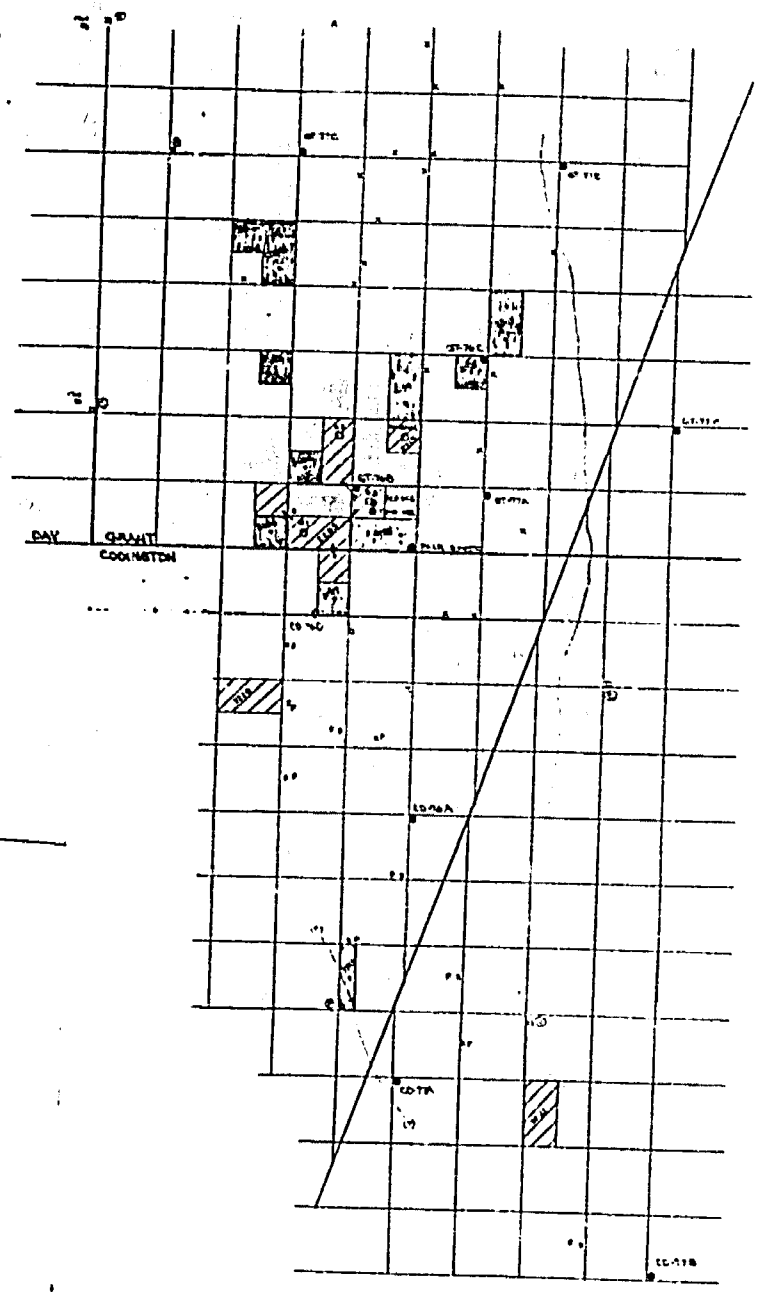
Conclusions:

- 1). Predictions of water levels can be made especially in the vicinity of the production wells. These predictions can be checked against the historical observation well hydrographs.
- 2). Estimates of quantities of water in storage and moving through the area can be made.
- 3). Spacing of individual is not as important as considering the entire aquifer system in relation to total withdrawals. Spacings of less than 1.89 miles could begin to cause a decline in the water level which will be permanent when these withdrawals exceed the induced inflow. This may be the proper approach because a decline such as this simply increases the recharge.
- 4). For every mile increase in width (4 miles) in the aquifer the amount of water moving through increases by .75 A.F./Day or 274 A.F./Yr. Each successive increase in the aquifer width by 1 mile would supply an irrigation well, 1000 gpm for 60 days with only pumping season effects upon the water level.
- 5). All predictions are conservative

Suggestions:

- 1). Further delineate aquifer boundaries to west by drilling more test holes.
- 2). Locate recharge area.
- 3). Stress aquifer by locating more large capacity wells.
- 4). Provide more observation wells in order to further develop contour maps.
- 5). Attempt to duplicate field conditions in a working model.

JAMES A. GOODMAN, Hydrologist



SKETCH I

ALL IN BURNED OUTWASH

- IRRIGATION WELL
- EXPLORATION WELL
- × COMBUSTION WELLS
- XF FLOWING TRANSISTIC WELLS
- ▨ LAND UNDER PERMIT
- SOGA OR WAC TEST WELLS LOG AVAILABLE
- ▩ LAND UNDER DEERPEP APPLICATION

SCALE: 1/4" = 1 MILE

SKETCH II

NORTH TO SOUTH PROFILE

GT-77C
(T)

GT-76C

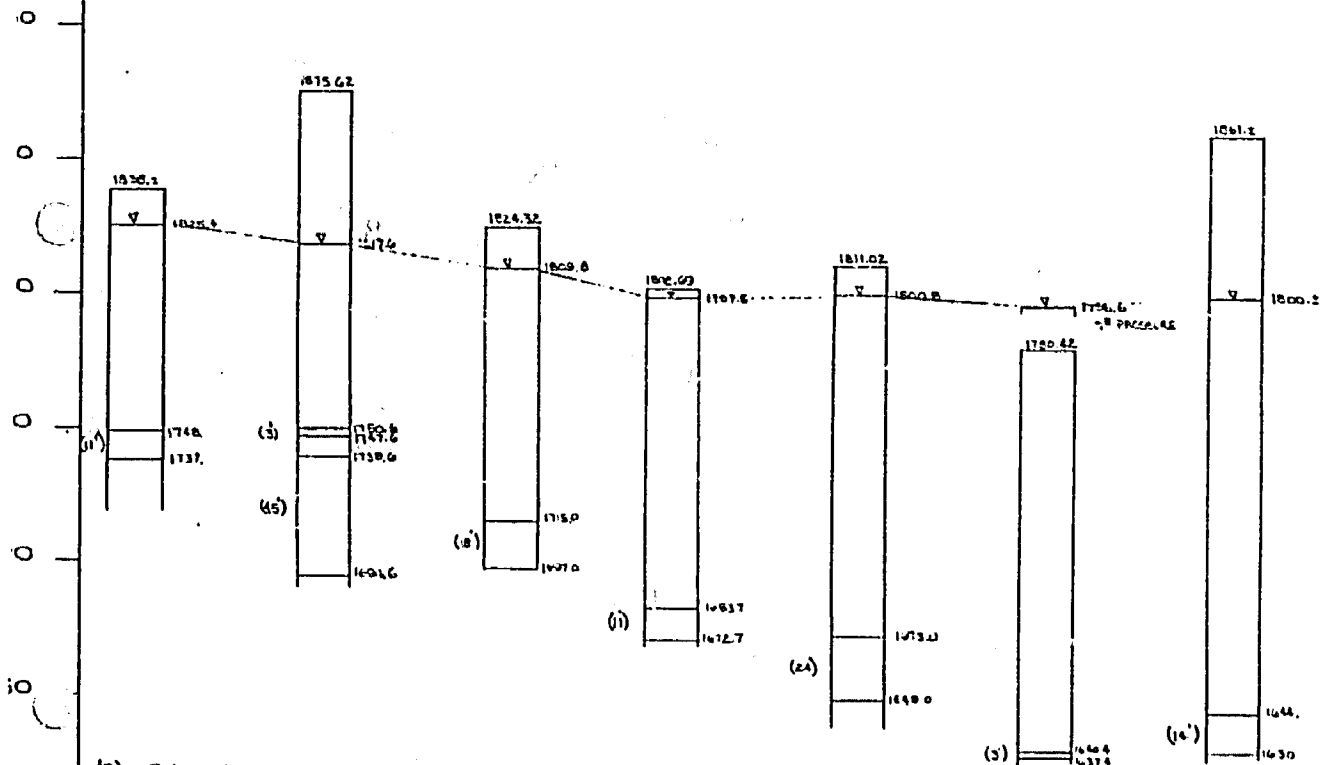
GT-76B

CD-76D

CD-76A

CD-77A

CD-77G
(T)

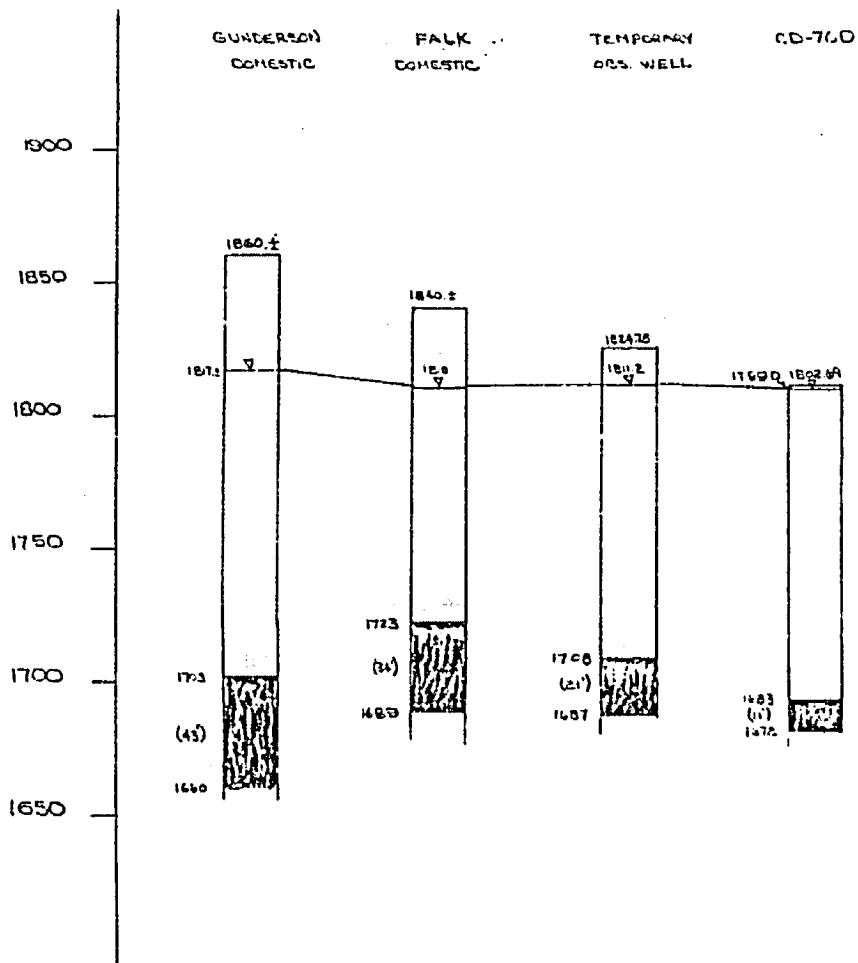


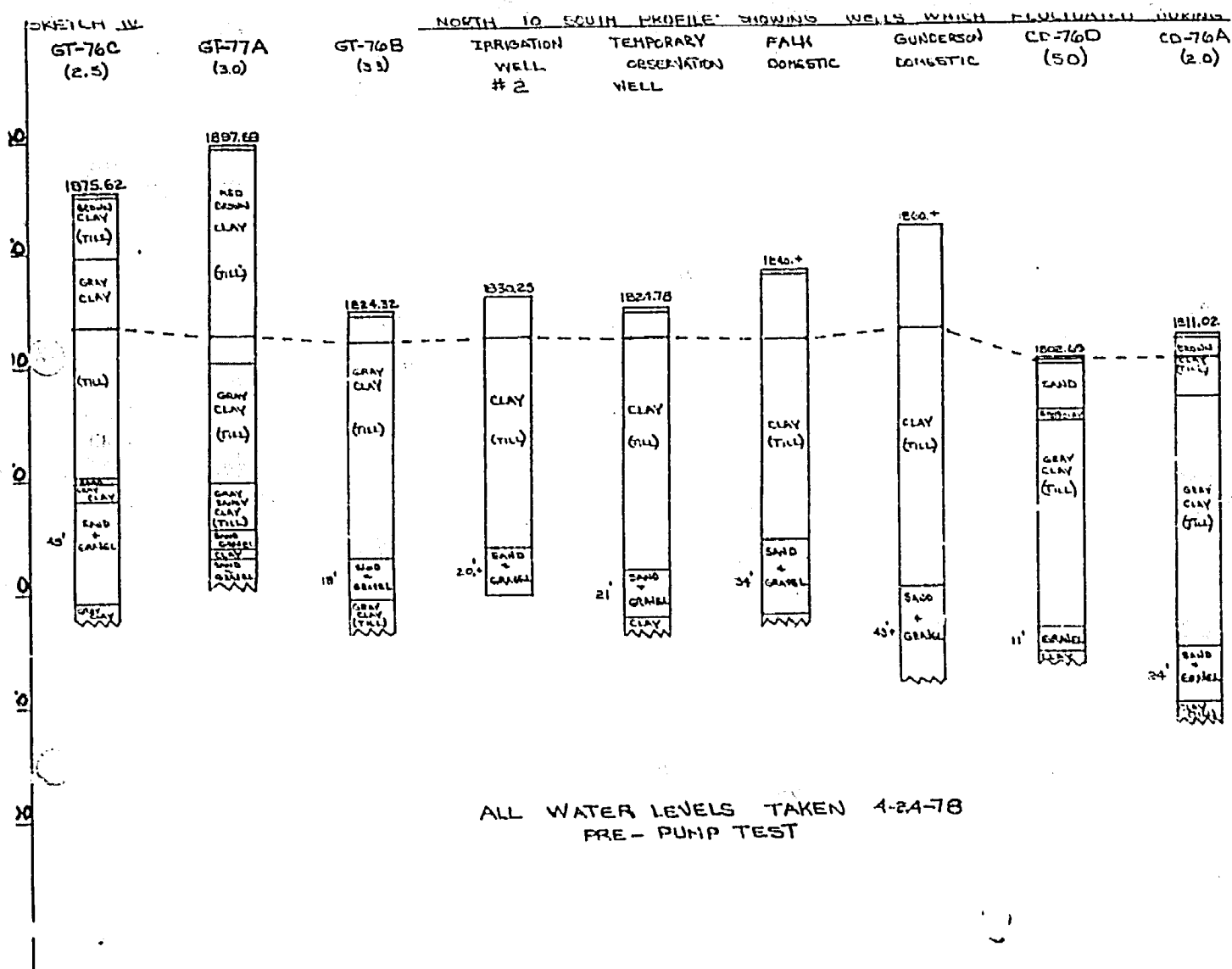
(T) - TOPOGRAPHIC SHEET ELEVATIONS
THE REST ARE INSTRUMENT

SHADED AREA - SAND & GRAVEL

SKETCH III

EAST TO WEST PROFILE



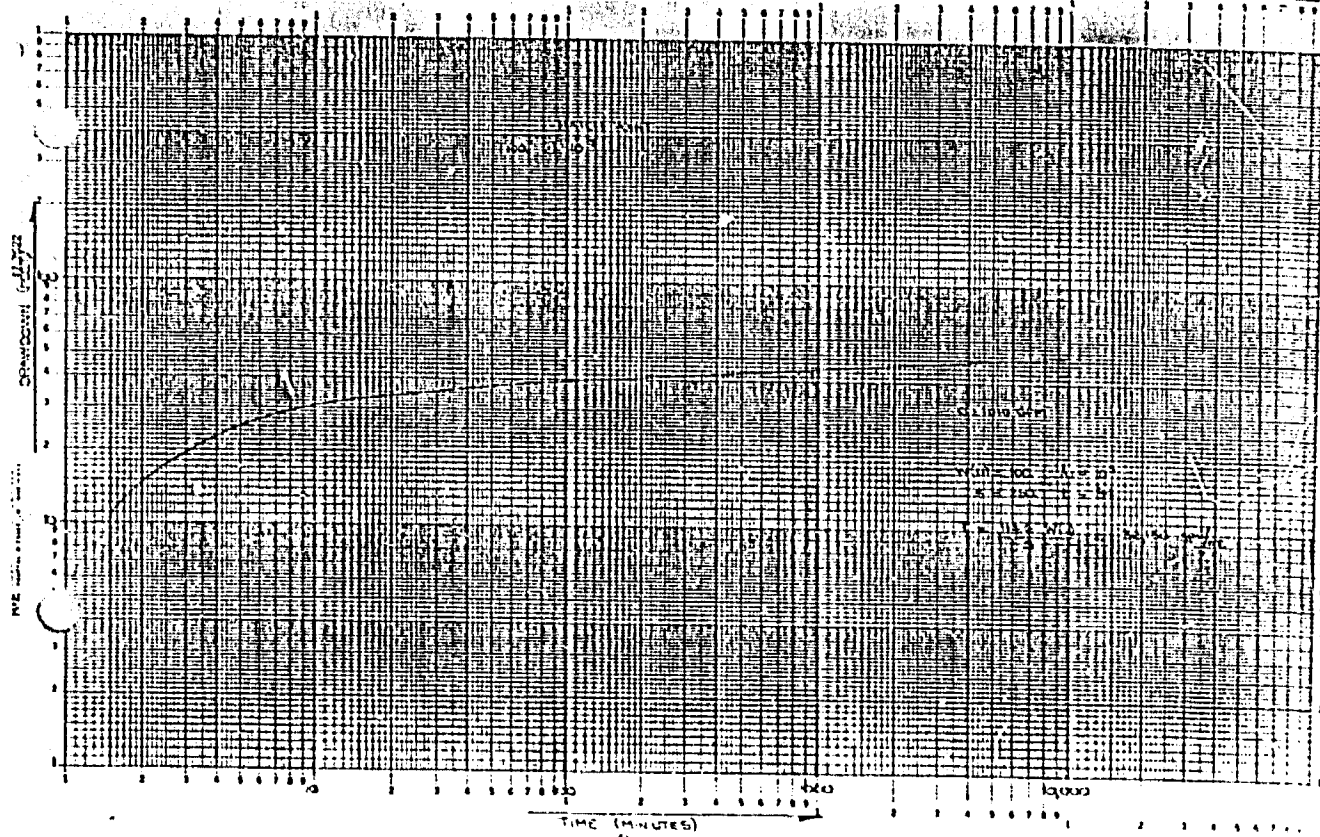


TIME - DRAW DOWN

PRODUCTION WELL

FALK AQUIFER TEST

FIGURE 1



K-E SEMI-LOGARITHMIC CHART CYCLES X 70 DIVISIONS
RELIEF & ENERGY 440-0001

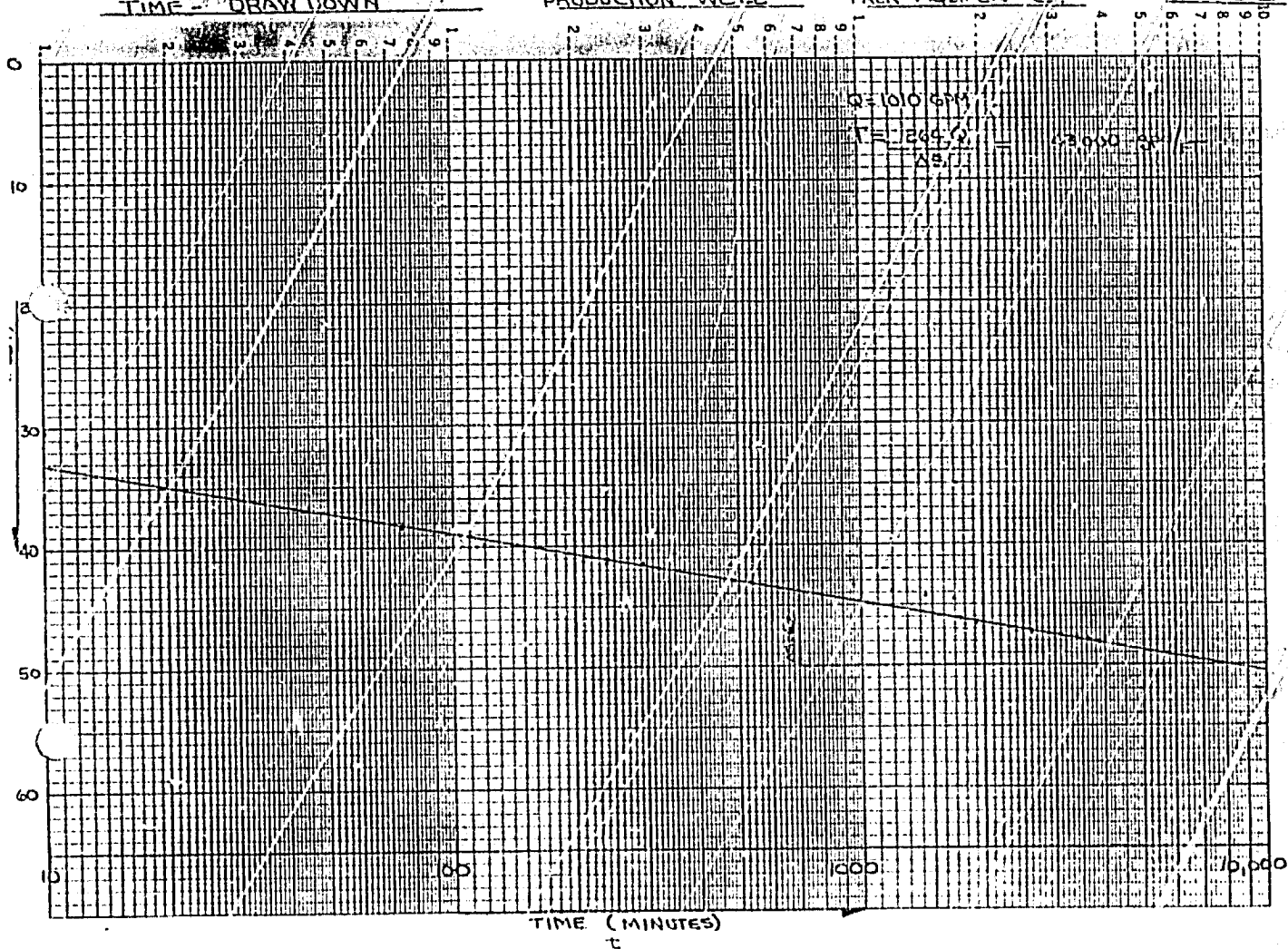
46 5493

TIME - DRAW DOWN

PRODUCTION WELL

FALK AQUIFER TEST

FIGURE 2

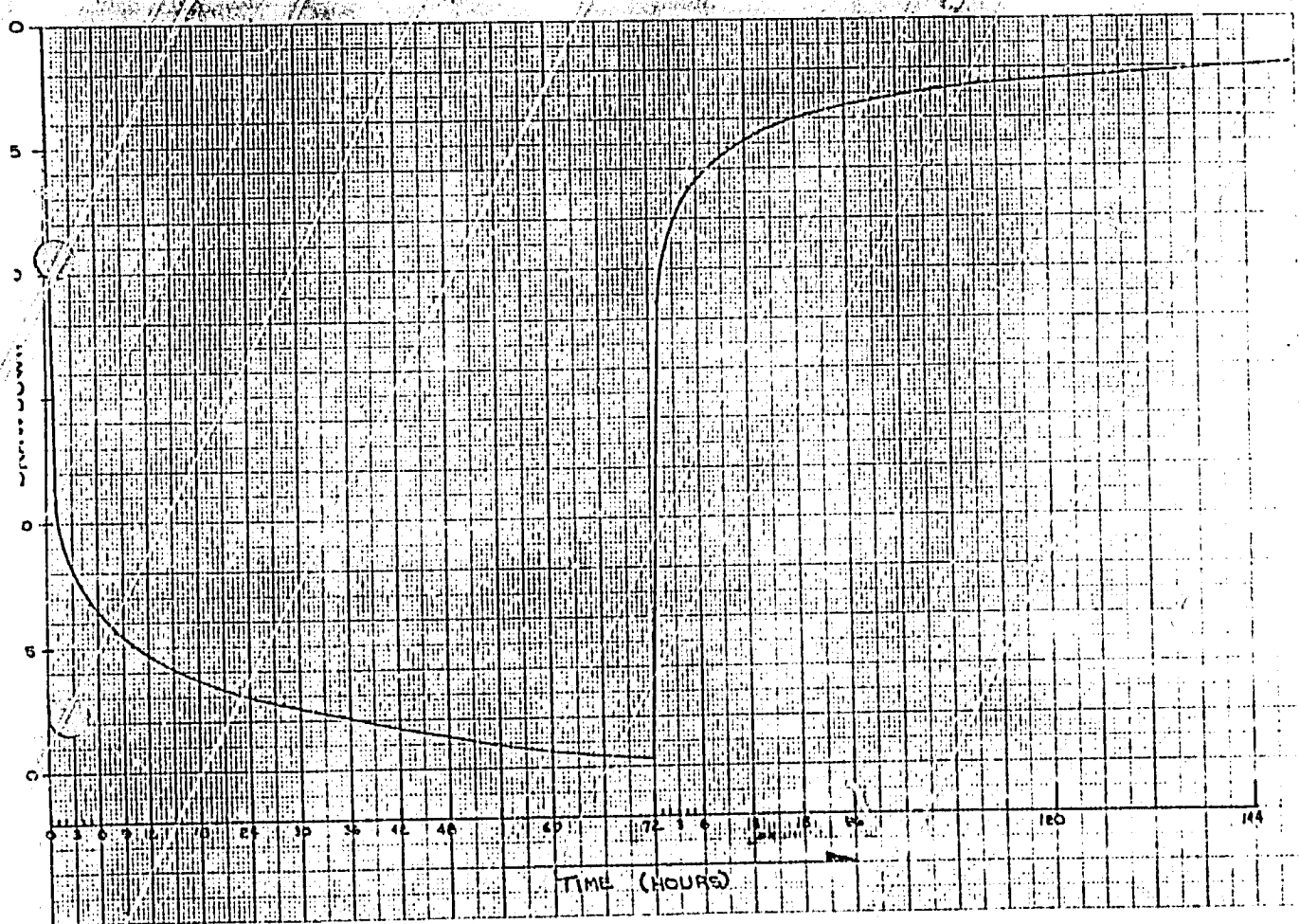


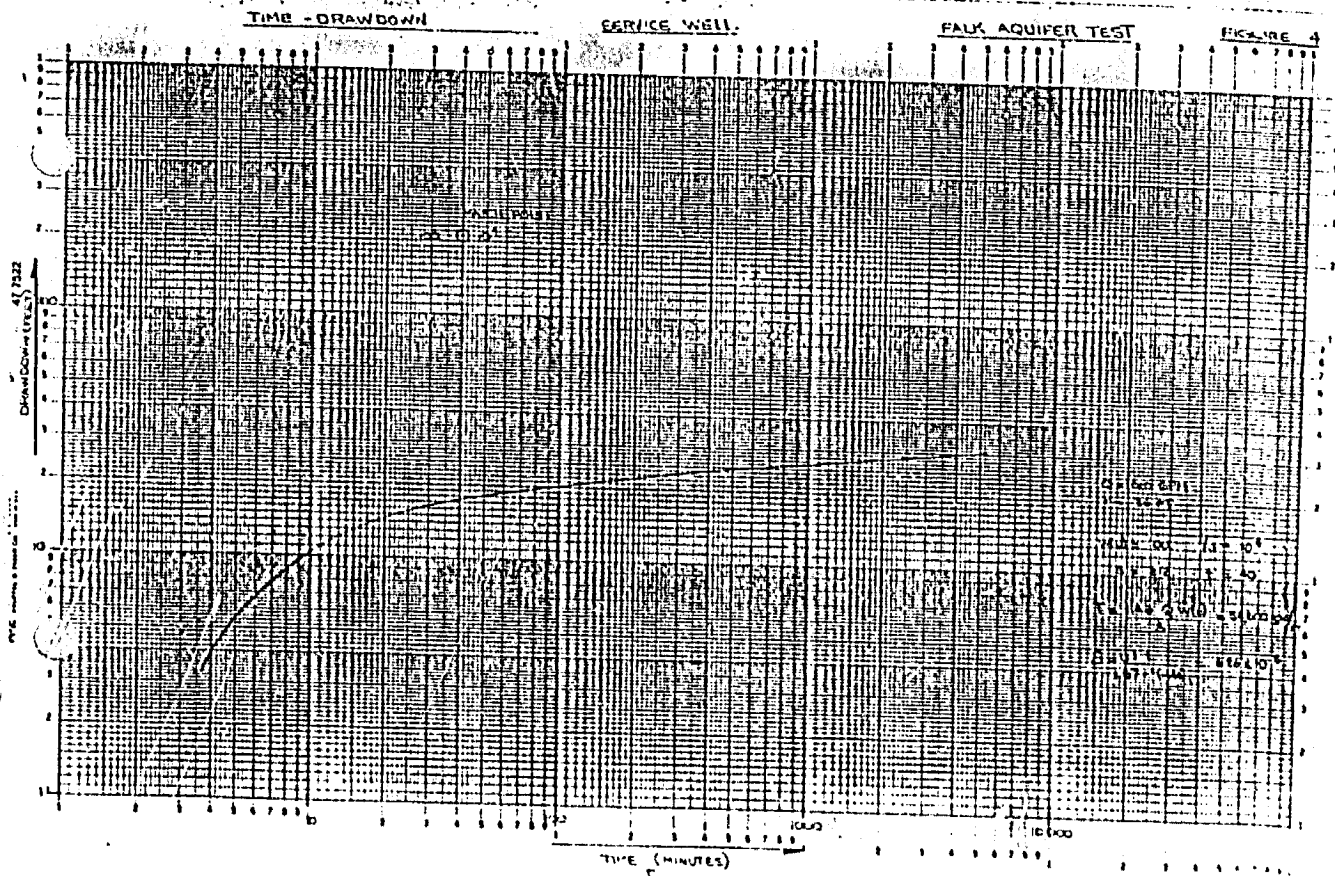
HEAD PRODUCTS, DANTON OHIO 43005

WATERMETER IN THE GROUND

SERVICE WELL HYDROGRAPH

FIGURE 3





K-E SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS
KUEFFEL & ESSER CO. MADE IN U.S.A.

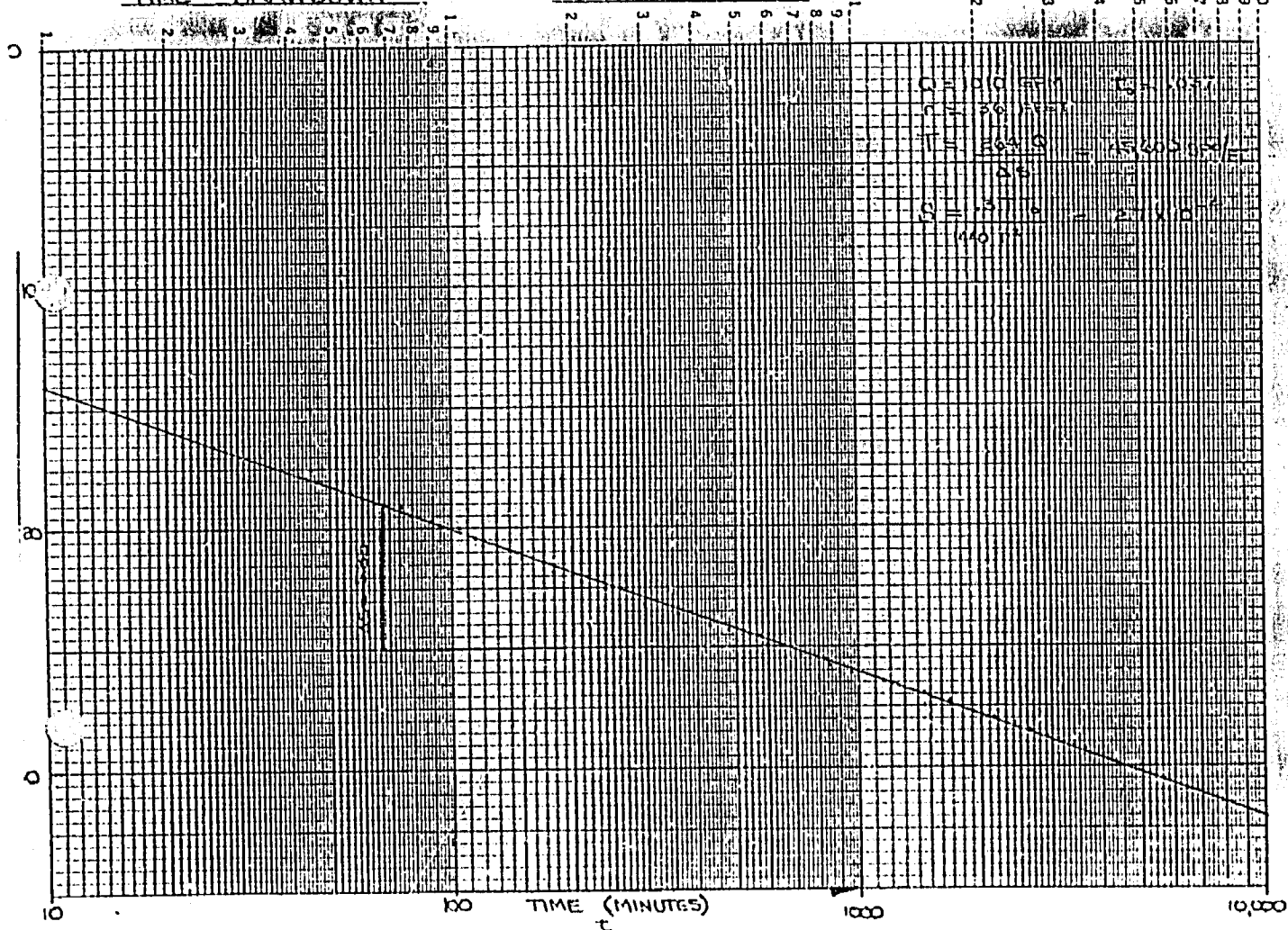
46 5493

TIME - DRAWDOWN

SERVICE WELL

FAULK AQUIFER TEST

FIGURE 5

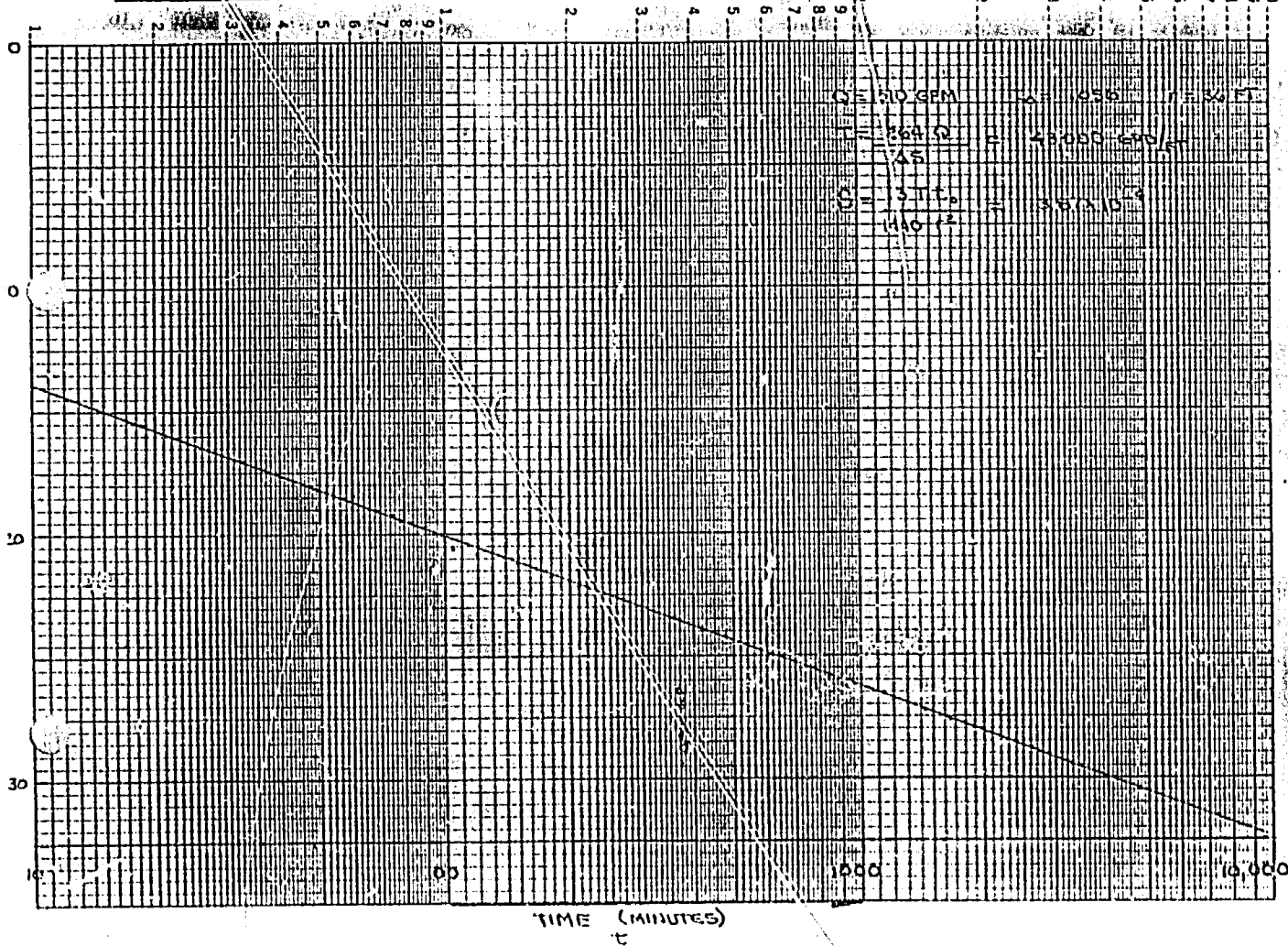


RECOVERY SERVICE WELL

K&E SEMI-LOGARITHMIC 1 CYCLES X 20 DIVISIONS
 REUFFEL & ERSER CO. MADE IN U.S.A.

46 5493
 FALK AQUIFER TEST

FIGURE 6



K·E 20 X 20 TO THE INCH 7 X 10 INCHES
REUFFEL & ESSLER CO. NEW YORK

46 1242

TEMPORARY OBSERVATION WELL

HYDROGRAPH

FIGURE 7

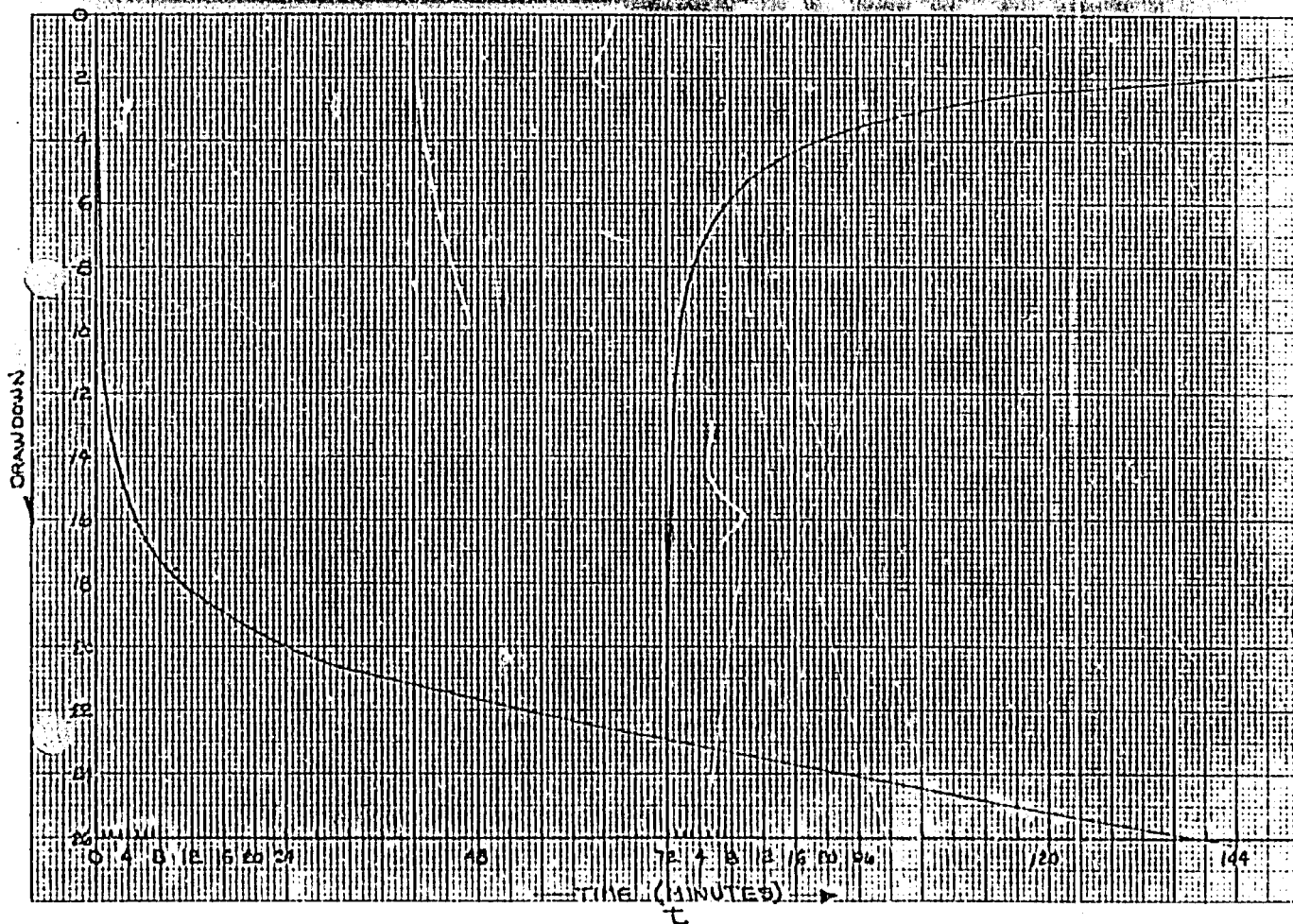


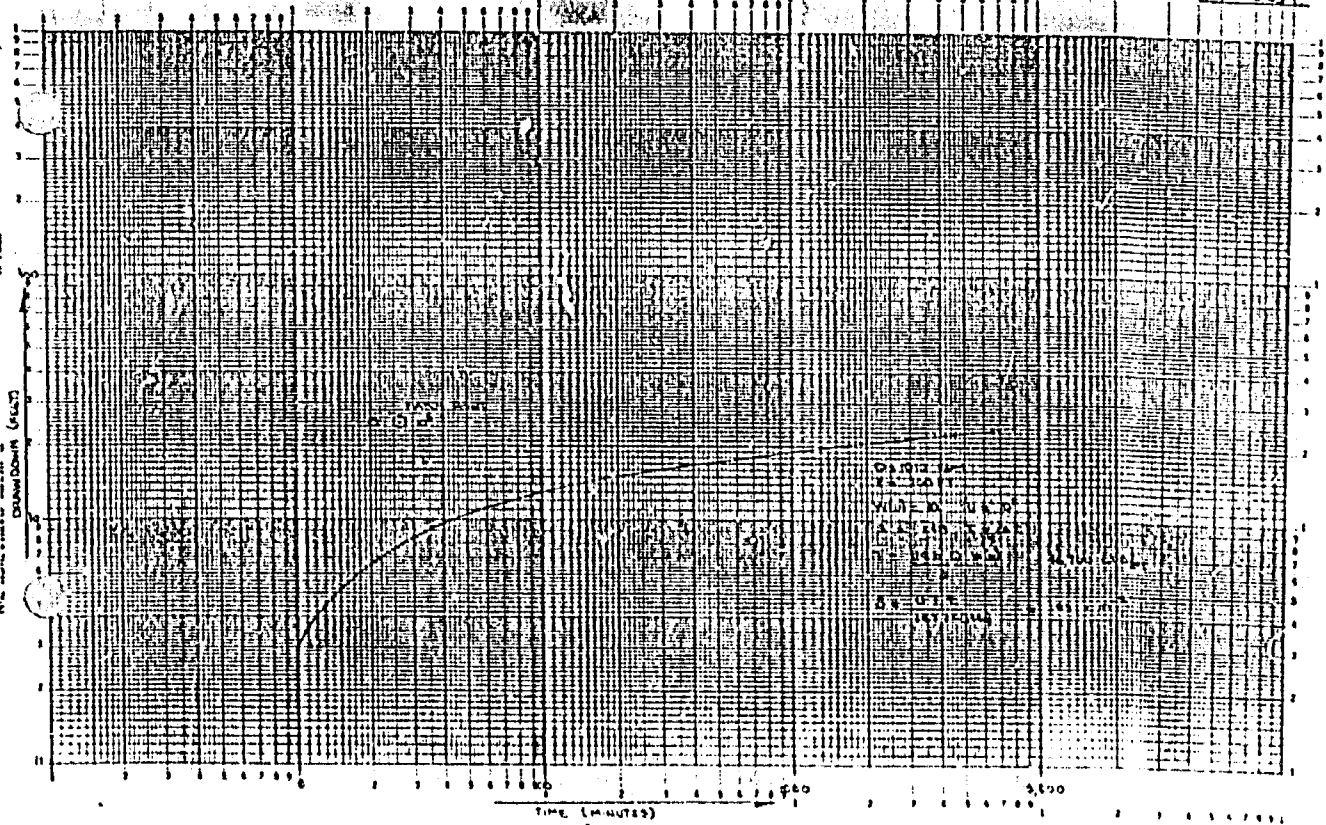
FIG 7

TIME - DRAWDOWN

TEMPORARY OBSERVATION WELL

FAK AQUIFER TEST

FIGURE 23



TIME-DRAWDOWN

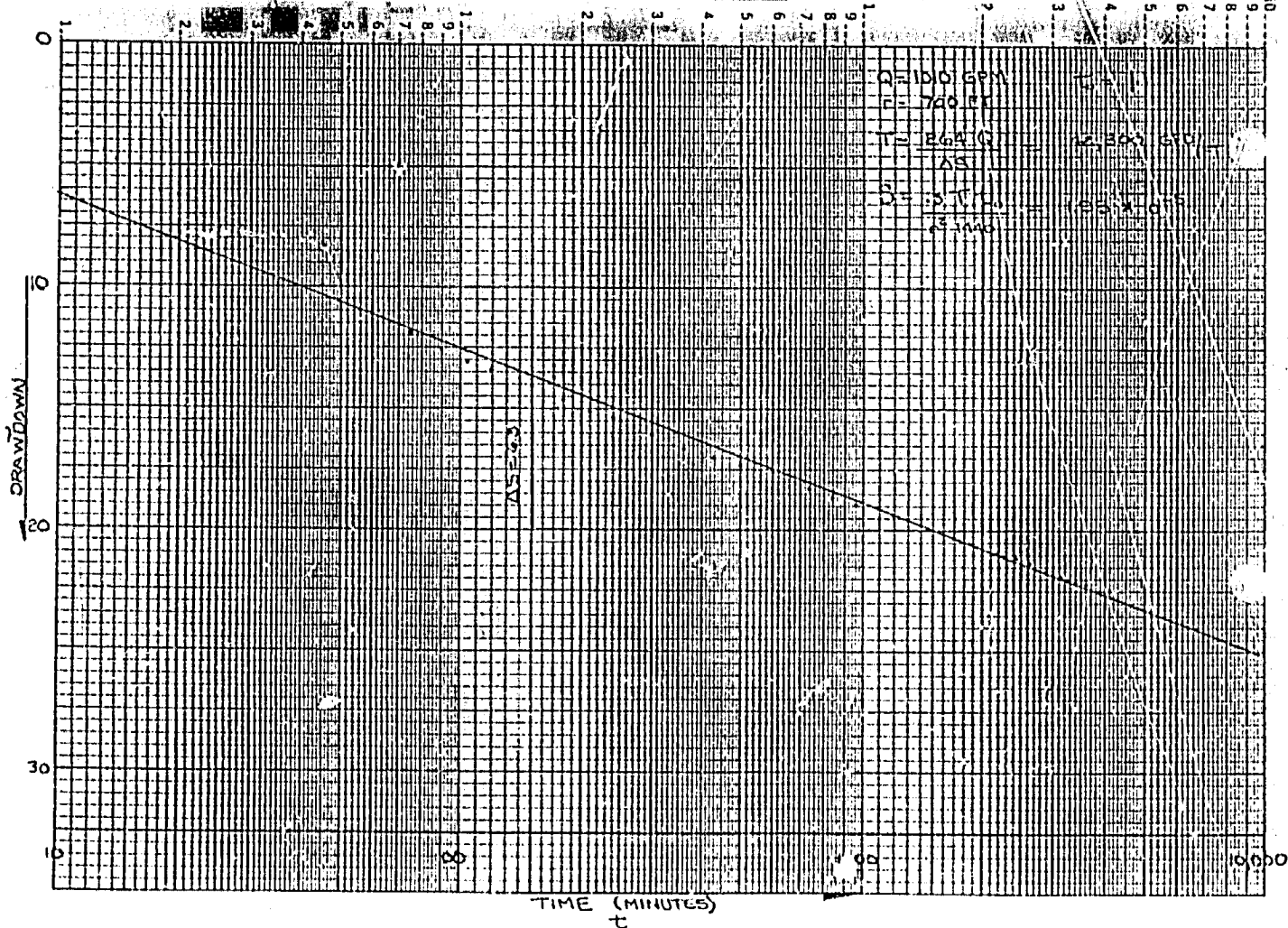
K&E SEMI-LOGARITHMIC 3 CYCLES 4 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

TEMPORARY OBSERVATION WELL

46 5493

FALK AQUIFER TEST

FIGURE 9



K-E SEMI-LOGARITHMIC CYCLES & 10 DIVISIONS
 BEUTEL & ESSER CO. MADE IN U.S.A.

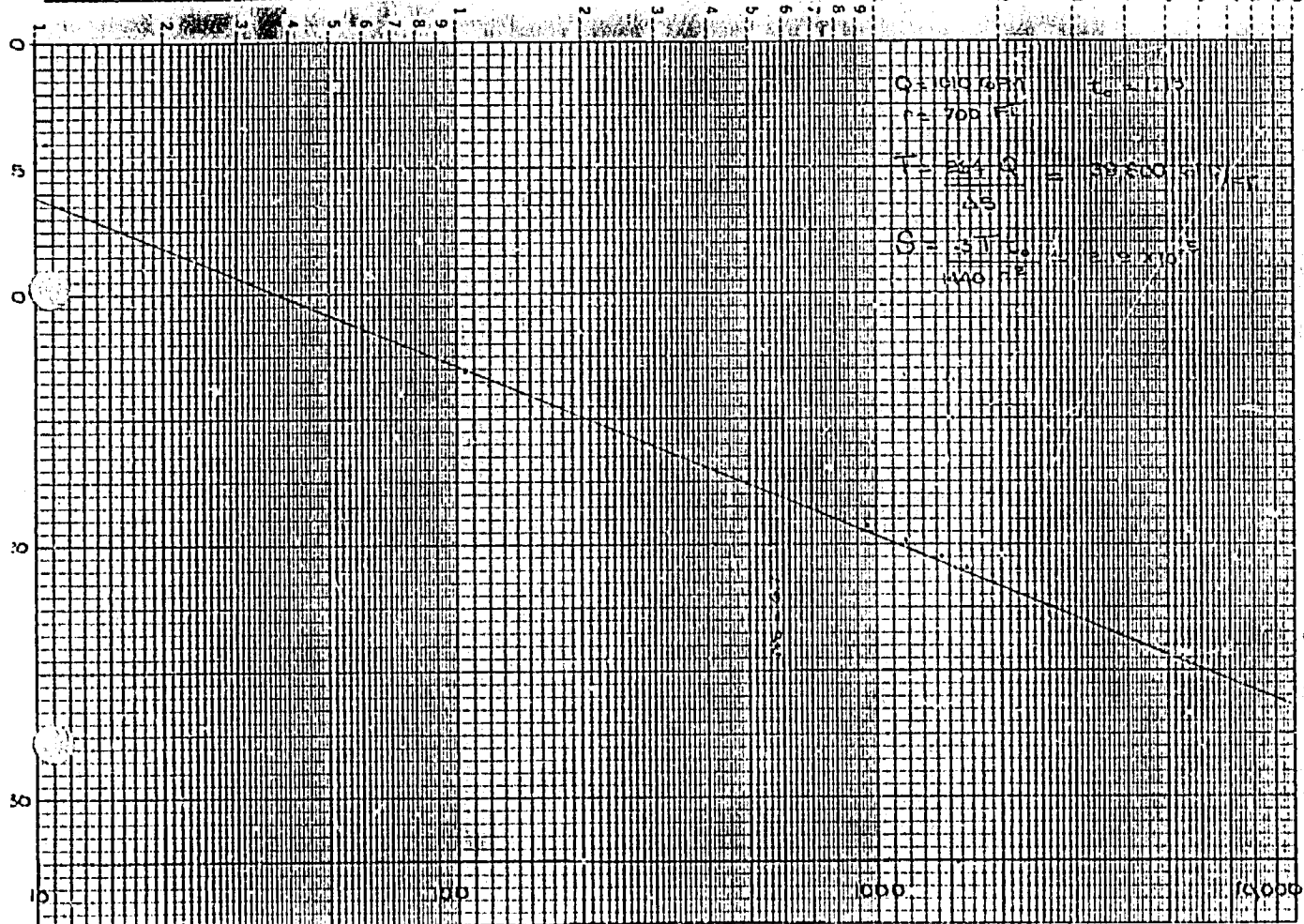
46 5493

RECOVERY

TEMPORARY OBSERVATION WELL

FALK AQUIFER TEST

FIGURE 10



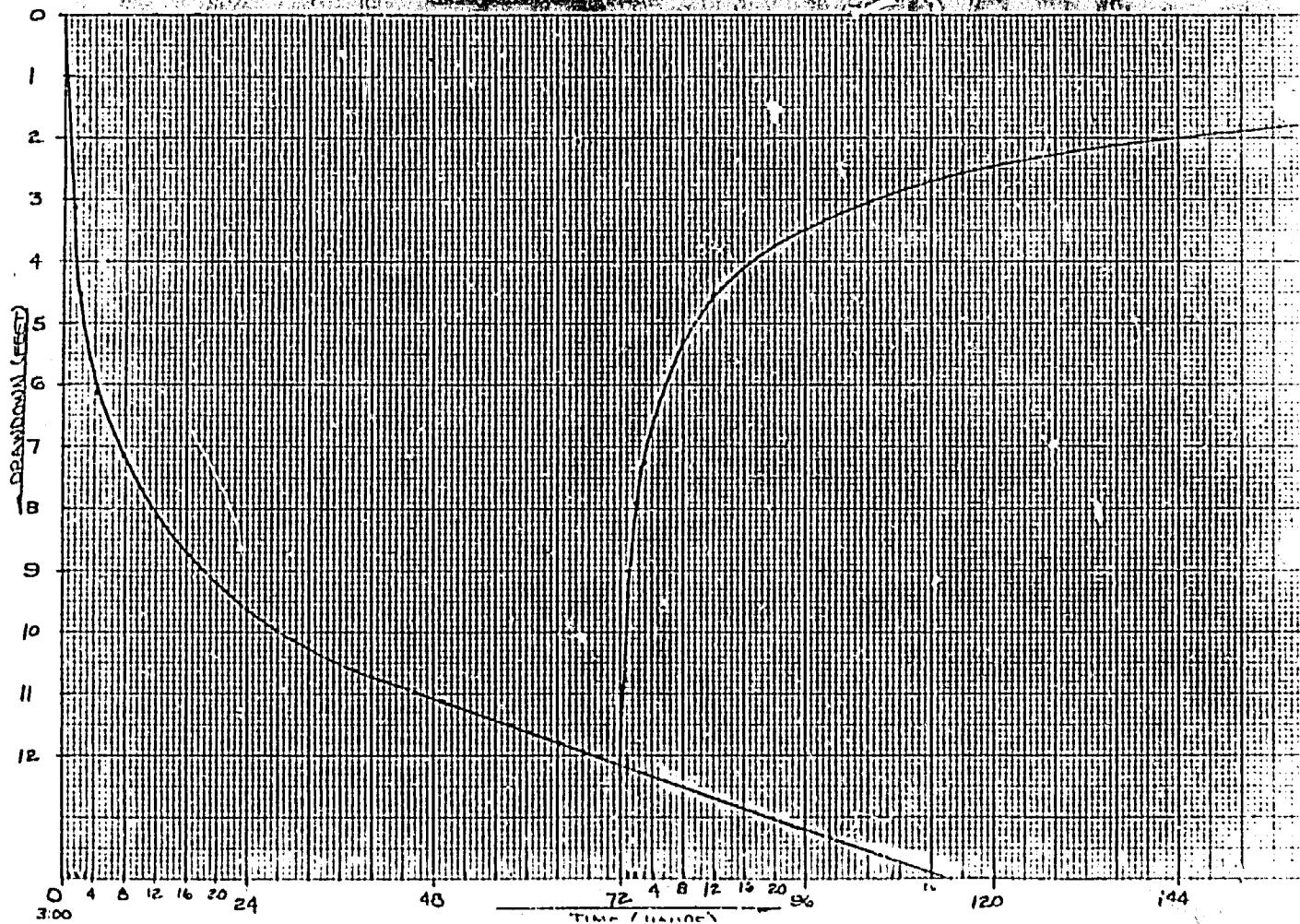
Q = 110 GPM
 $r = 700$ FT
 $T = 254$ G = 99,800 G/G
 $S = .57$ U.S. = 2.2 x 10⁻⁵

TIME (MINUTES)
 T

ST-76B HYDROGRAPH

FALK AQUIFER TEST

FIGURE 11



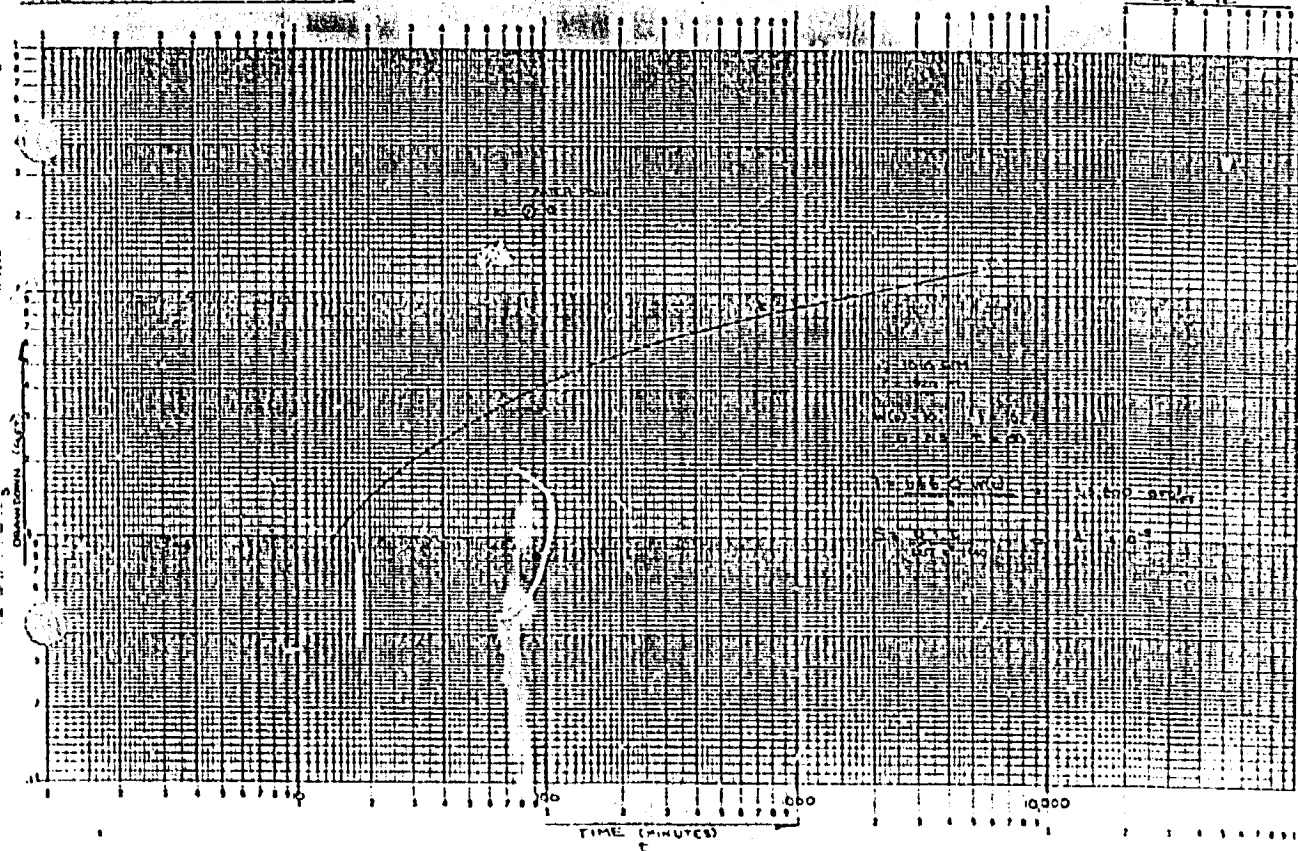
11 917

TIME-DRAWDOWN

GI-208

HAWK PUMP TEST

FIGURE 12



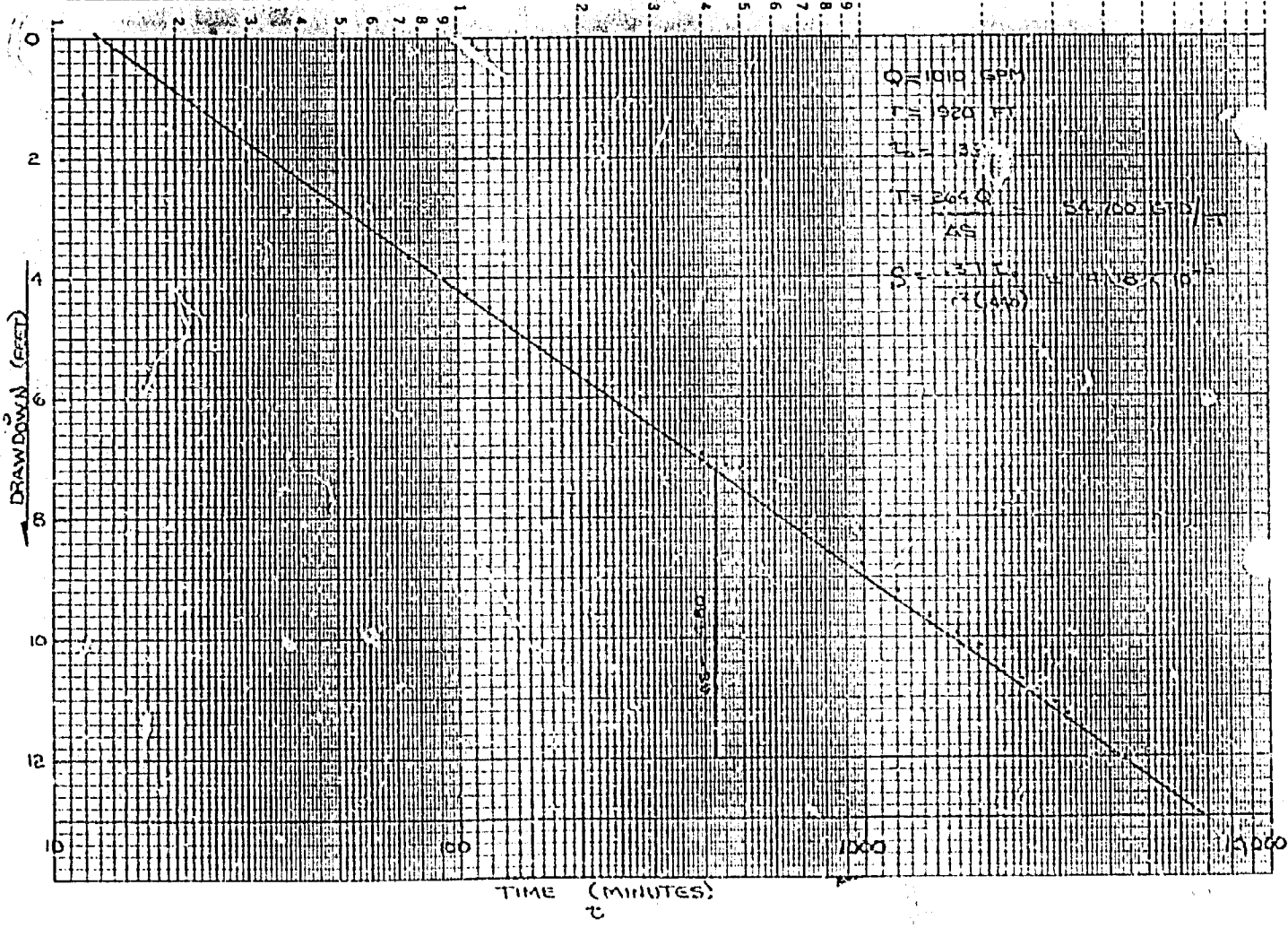
K&E SEMI-LOGARITHMIC CYCLES & 10 DIVISIONS
REUFFEL & ESMAC CO. MINNAPOLIS

46 5493

TIME - DRAW DOWN GT-76B

FALK AQUIFER TEST

FIGURE 13



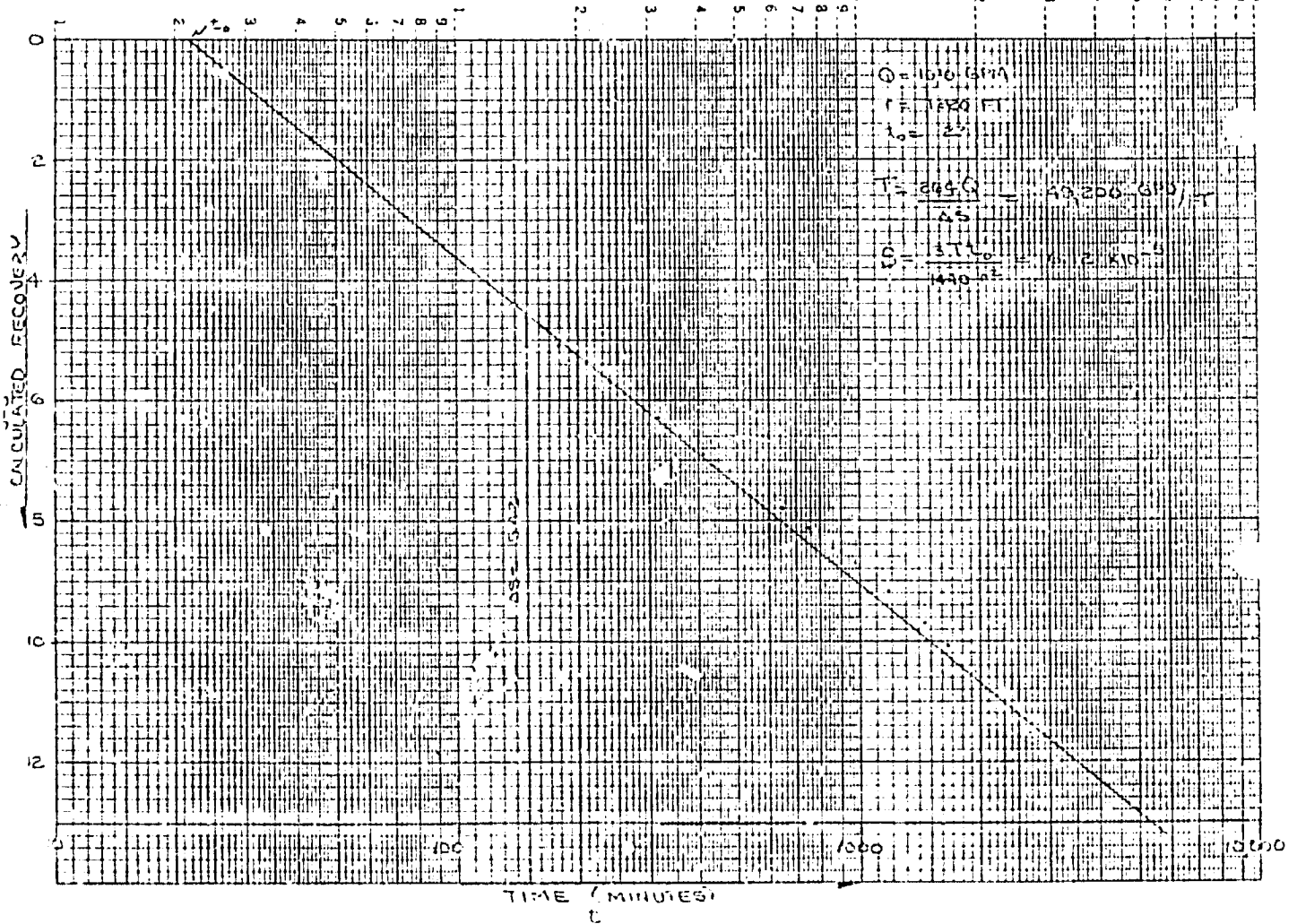
K&E SEMI-LOGARITHMIC CYCLES & 70 DIVISIONS
 HELFELT & EBER CO. NEW YORK

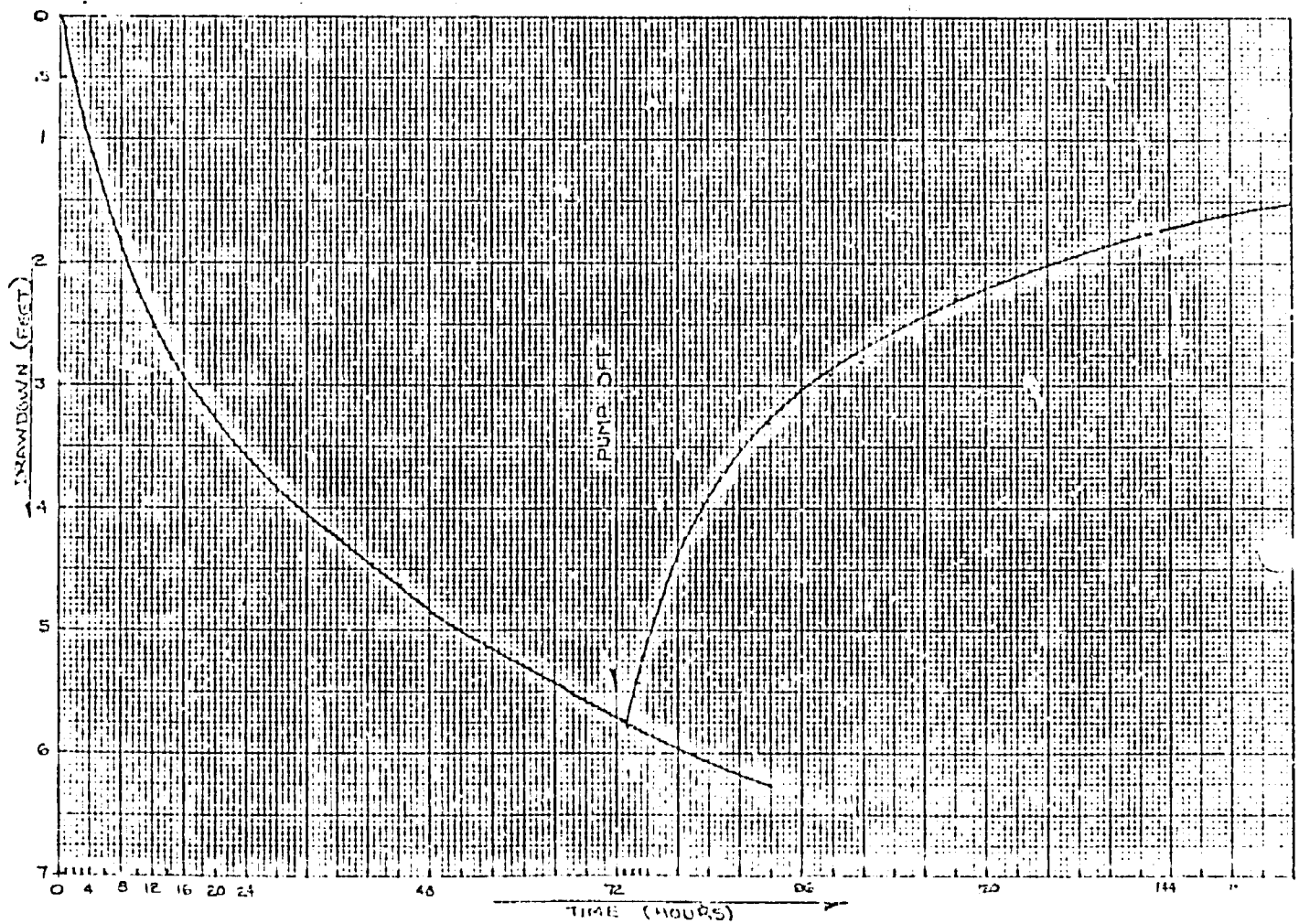
46 5193

RECOVERY 61-74B

FALK AQUIFER TEST

FIGURE 14



FALK DOMESTIC HYDROGRAPHFALK AQUIFER TESTFIGURE 15

TIME - 10:00:00

DATE - 10/10/77

FIGURE 10



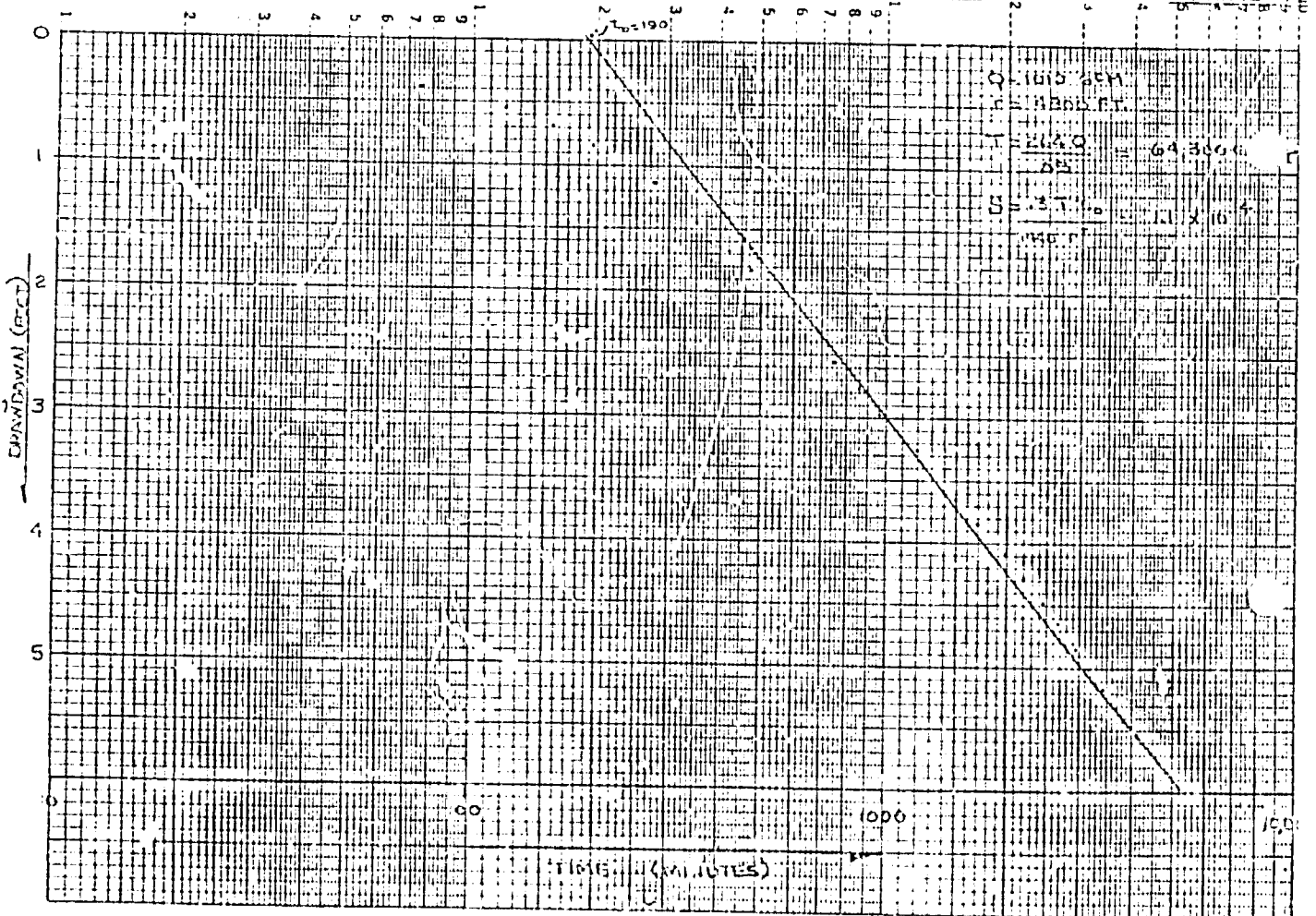
K&E SEMI-LOGARITHMIC CYCLES & DIVISIONS
 HOFFMAN & BESSER CO. NEW YORK

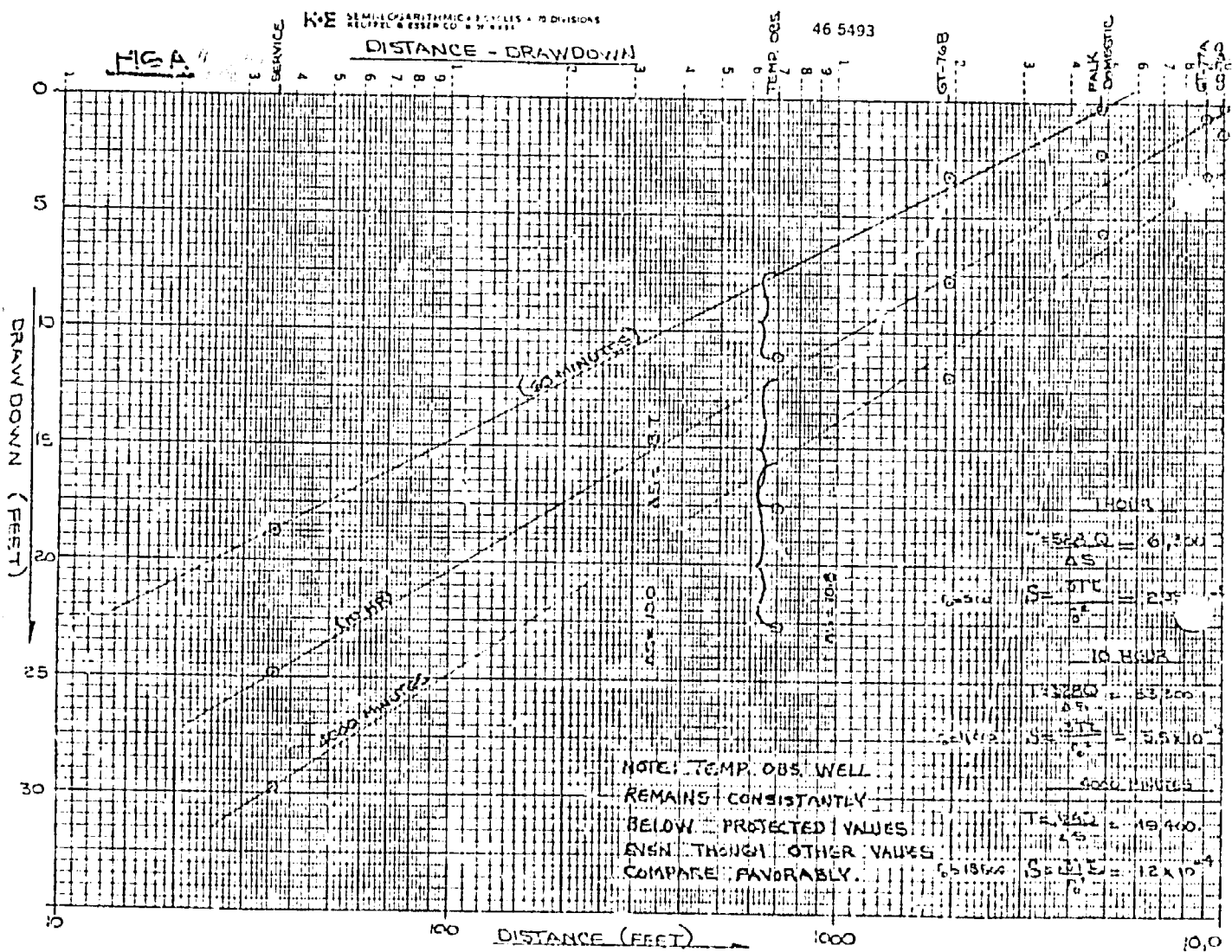
46 5493

TIME - DRAWDOWN FALK DOMESTIC

FALK AQUIFER TEST

FIGURE 17





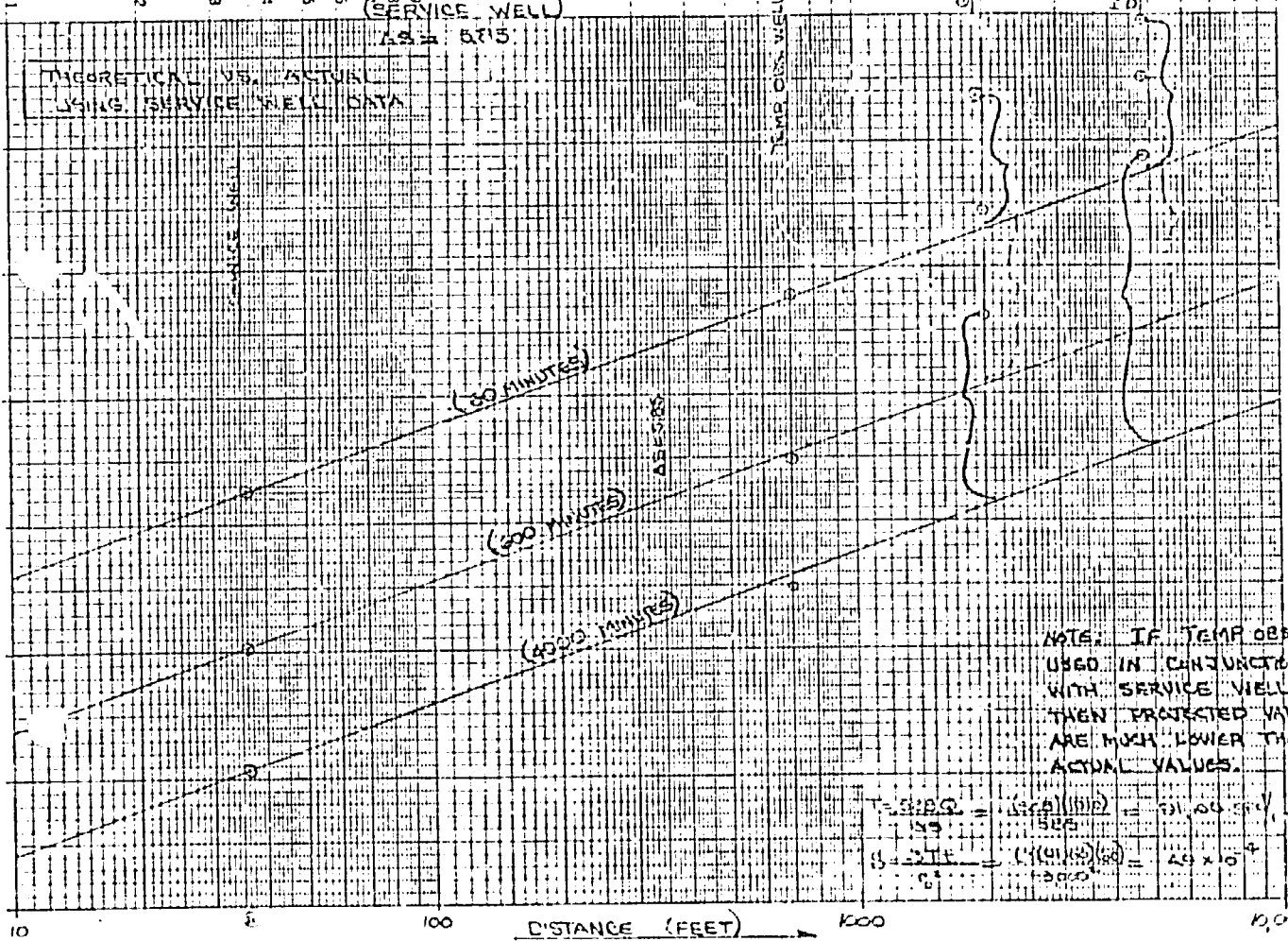
FIGB

DISTANCE - DRAWDOWN

(SERVICE WELL)

AS 5715

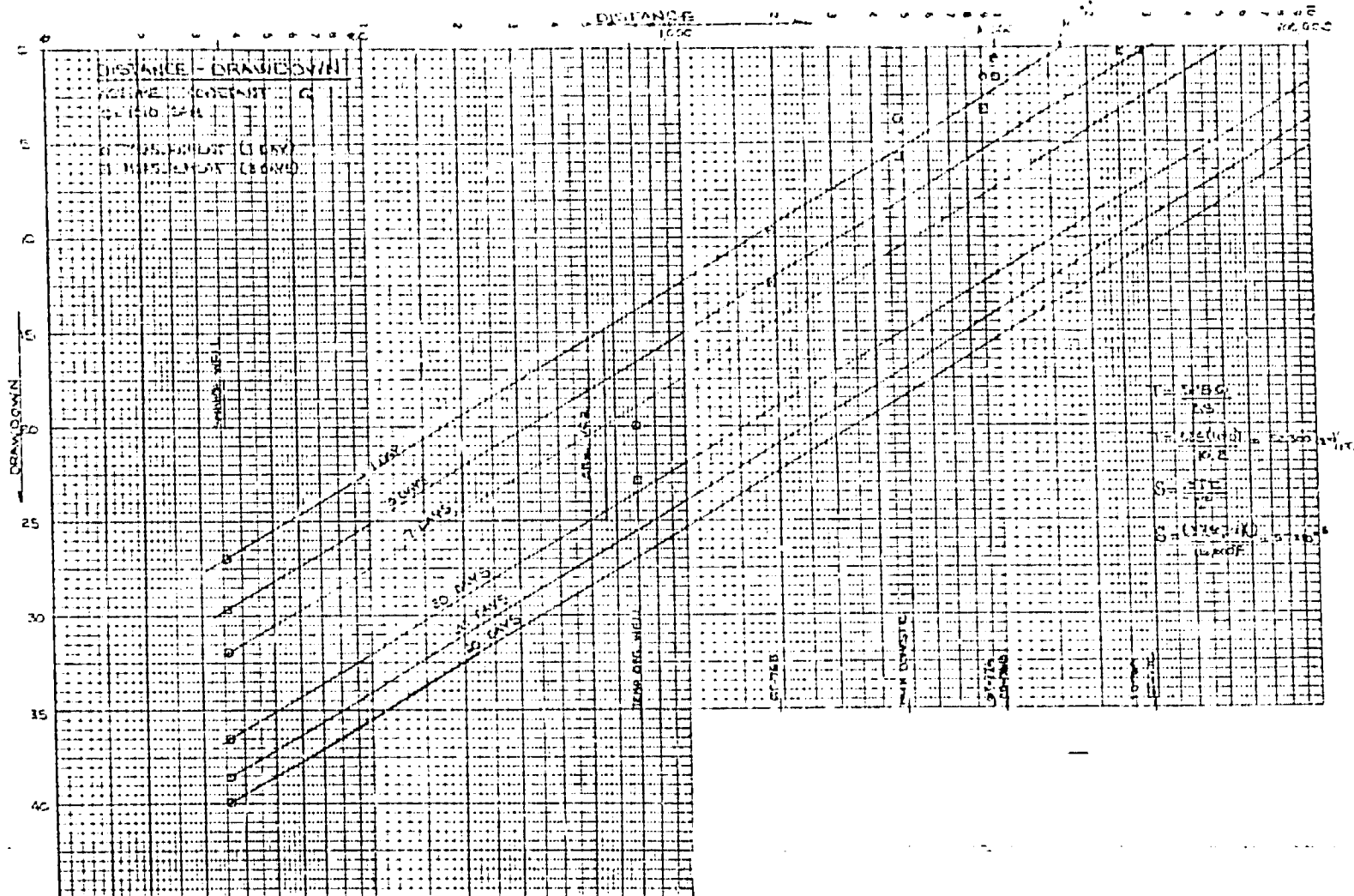
THEORETICAL VS. ACTUAL
USING SERVICE WELL DATA



NOTE: IF TEMP. OBS.
USED IN CONJUNCTION
WITH SERVICE WELL
THEN PROJECTED VALUES
ARE MUCH LOWER THAN
ACTUAL VALUES.

$$T = \frac{3.18 Q}{C_p} = \frac{(3.18)(1000)}{500} = 6.36 \times 10^{-4}$$

$$S = \frac{3.18 Q}{C_p} = \frac{(3.18)(1000)}{500} = 6.36 \times 10^{-4}$$

[illegible]

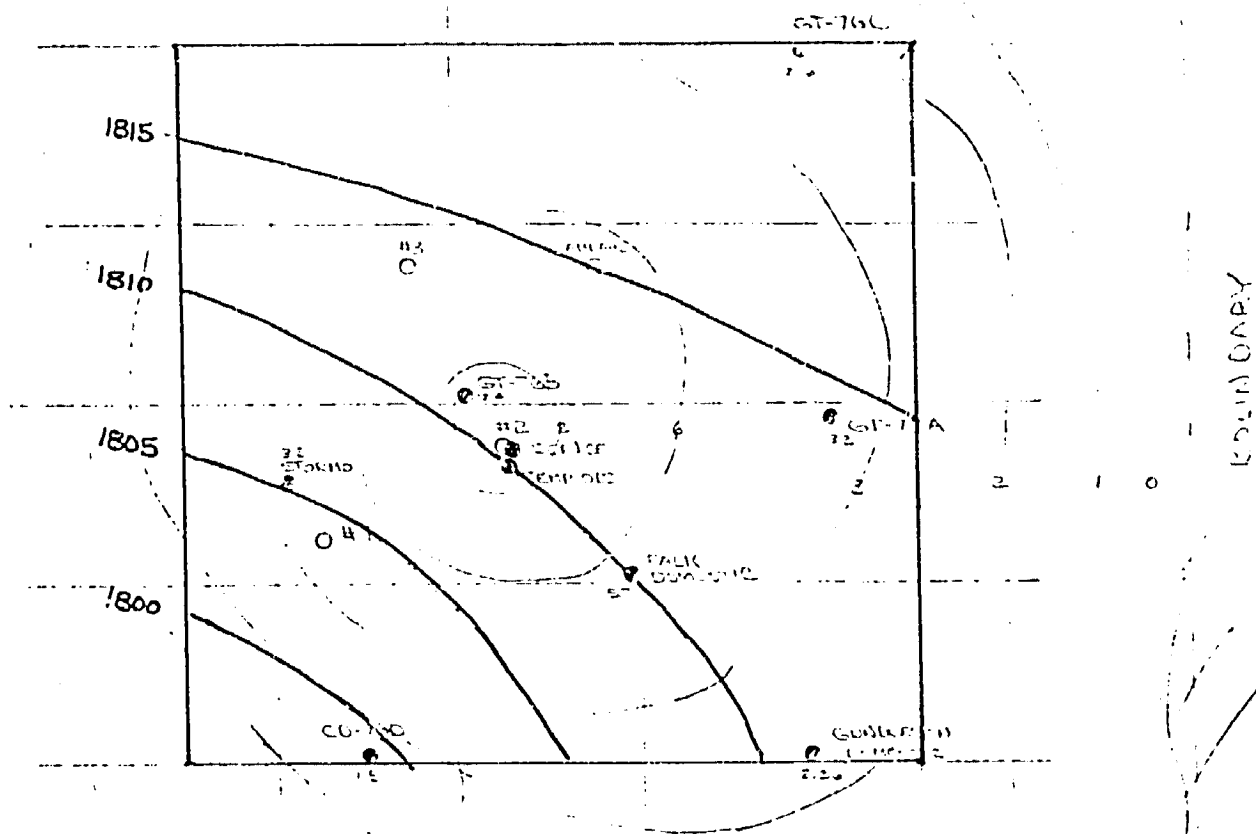
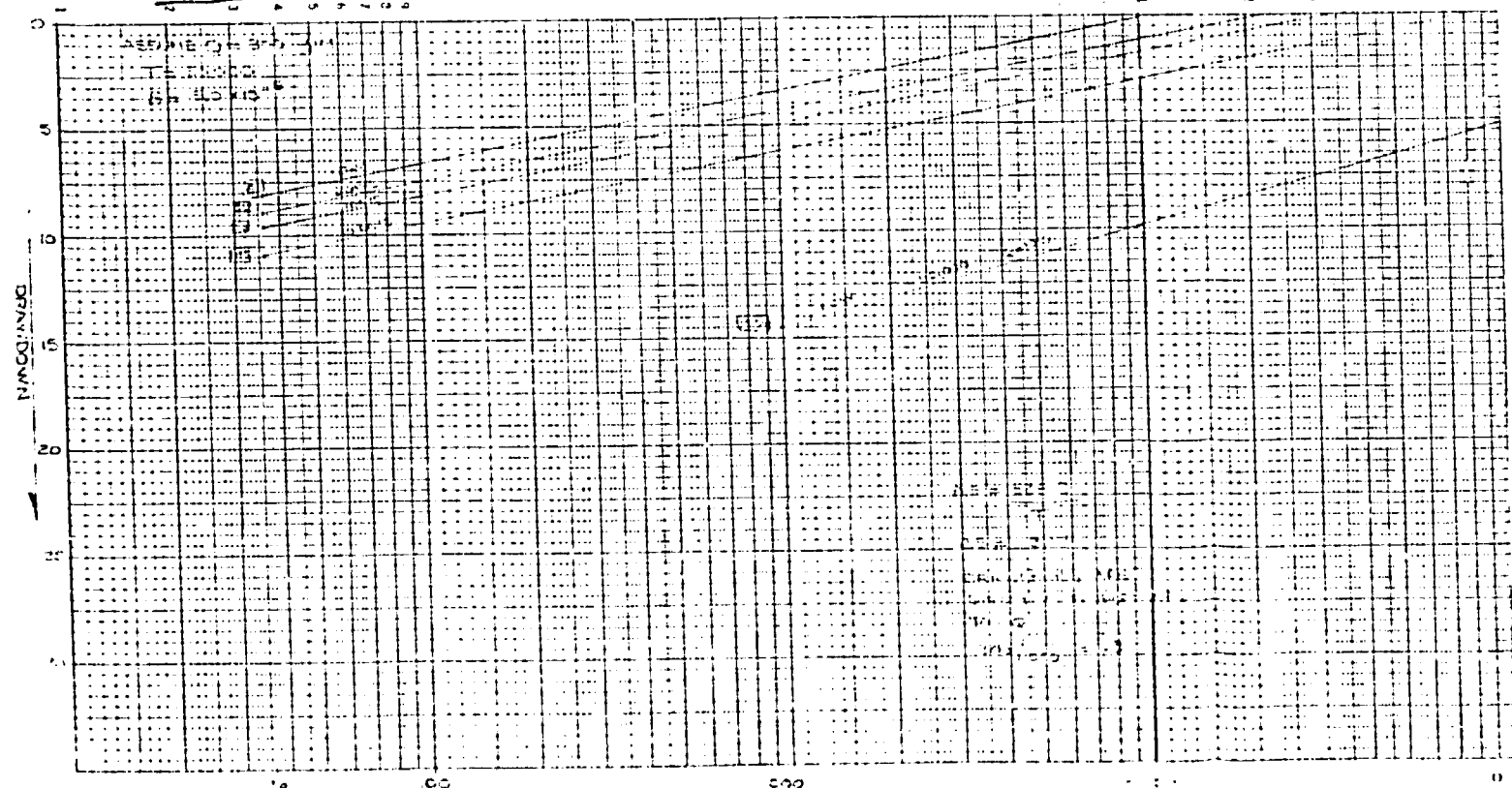
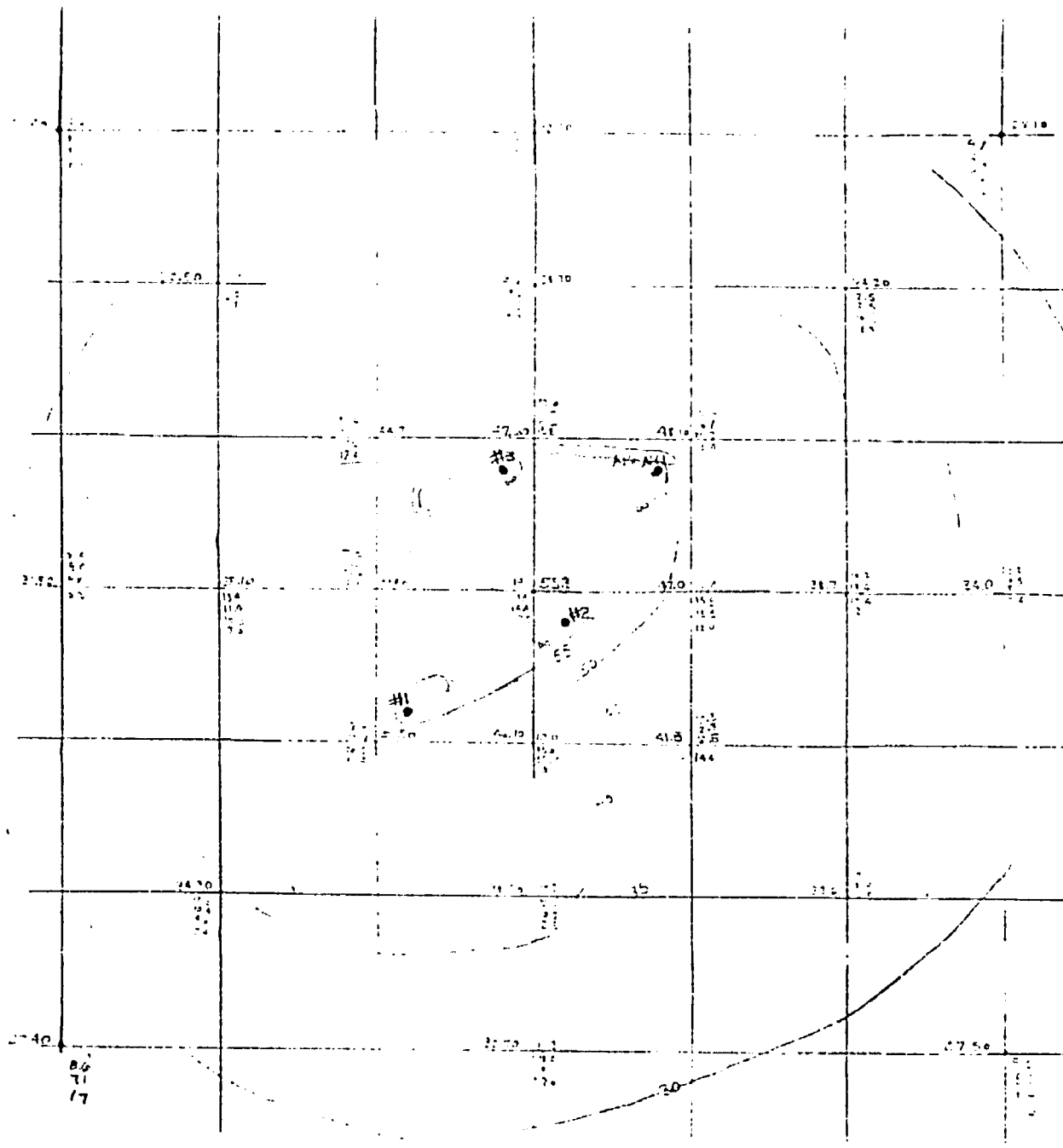


FIG D



SHEET 2 OF 2
 CONTOUR DRAINAGE INSIDE PRESENT WELL FIELD
 100' WIDE - 100' DEEP - 100' HIGH - 100' LONG
 100' WIDE - 100' DEEP - 100' HIGH - 100' LONG



SAMPLE:- THEORETICAL W/L AT ST-70B - 69.2' SEE DRAINAGE
 AT ST-70C - 32.2'
 AT ST-77A - 21.7'
 ACTUAL MEASUREMENT AT ST-70B AFTER 30 DAYS (SEE WELL HYDROGRAPH)
 INDICATE 15' DRAINAGE, AND 12' IN 2 DAYS DURING AQUIFER TEST.

LOGS OF OPERATIONS WELLS, TEST HOLE, DOMESTIC WELLS, IRRIGATION WELLS

TEST HOLE C.

DRILLER SDGS

LOCATION 0000 SEC 12 T 120N R 53W RES.

0-4 TOPSOIL

4-18 TILL, YELLOW CLAY, GRAVELLY

18-25 TILL, GRAY CLAY

25-27 TILL, YELLOW CLAY

27-30 GRAVEL COARSE

30-46 TILL, YELLOW CLAY

46-58 GRAVEL, COARSE

58-75 TILL, YELLOW CLAY

75-130 TILL, GRAY CLAY

130-140 TILL, GRAY, VERY GRAVELLY

* 140-170 GRAVEL, WITH LIGHT GRAY CLAY

170-257 TILL, GRAY CLAY

257-284 GRAVEL, TIGHT

284-385 TILL, GRAY

385-395 TILL, GRAY, WITH HARD BROWN CLAY

395-433 TILL, GRAY

433-470 GRAVEL, HIGH SHALE PEGGLE CONTENT

470-700 SHALE, BLACK, BLOCKY

700-720 SHALE, LIGHT GRAY, CALCAREOUS

TEST HOLE A

DRILLER SDGS

LOCATION 8888 SEC 18 T 121N R 52W RES.

0-27 TILL, BROWN

27-39 TILL, GRAY

39-63 TILL, TAN TO LIGHT GRAY, VERY SILTY

63-65 GRAVEL

65-96 TILL, YELLOW BROWN

* 96-124 GRAVEL AND SILT LAYERS

124-128 TILL, GRAY, SILTY

128-245 TILL, GRAY TO BROWN

245-288 TILL, LIGHT BROWN

288-312 SAND AND GRAVEL, ROCKS

312-497 TILL, BROWN AND GRAY

497-505 GRAVEL

505-530 SHALE

GT-77E - OBSERVATION WELL

DRILLER - EGGS

LOCATION - EBBB SEC. 29, T12N R. 51W R. 5.

WATER LEVEL - 77.

0-5 TILL, YELLOW CLAY, OXIDIZED

5-10 TILL, OXIDIZED, GRAVELLY

10-17 TILL, YELLOW CLAY

17-28 TILL, GRAY, VERY SILTY (LACUSTINE?)

28-111 TILL, YELLOW CLAY, OXIDIZED

110-132 TILL, GRAY CLAY, GRAVELLY

132-137 GRAVEL, COARSE

137-220 TILL, GRAY CLAY, GRAVELLY IN SPOTS

* 220-227 GRAVEL, COARSE

227-245 TILL, GRAY CLAY

APPLICATION 3342-3 TEST HOLES

DRILLER - EMPIRE

LOCATION - E 1/2 SEC. 33, T12N R52W

WATER LEVEL - 43' (REPORTED)

NE 1/4

0-98 TILL

98-119 SAND WITH CLAY

119-130 SAND

130-134 CLAY

* 140-155 SAND MEDIUM

155-158 CLAY

* 158-170 SAND MEDIUM

170-174 CLAY

* 174-177 SAND COARSE

177 CLAY

SE 1/4

0-2 TOPSOIL, BLACK

2-14 GRAVEL

14-119 TILL

* 119-150 SAND MEDIUM

150-160 CLAY

LOGS CONTINUED

GT-76C OBSERVATION WELL

DRILLER SDGS

LOCATION AAAA SEC. 12 T120N R. 52W RES.

WATER LEVEL 13.0

0-5 TOPSOIL, BLACK

.5-122 TILL, OXIDIZED CLAY

122-125 SAND, MEDIUM TO COARSE

125-133 TILL, GRAY CLAY

* 133-178 SAND AND GRAVEL, MEDIUM TO COARSE

178-185 TILL, GRAY CLAY

GT-76B OBSERVATION WELL

DRILLER SDGS

LOCATION BBBB SEC. 23 T120N R. 52W RES.

WATER LEVEL 13.1

0-1 TOPSOIL, BLACK

1-30 TILL, YELLOW OXIDIZED CLAY

30-106 TILL, GRAY CLAY

* 106-124 SAND AND GRAVEL, MEDIUM TO COARSE

124-140 TILL, GRAY CLAY

TEST HOLE B

DRILLER SDGS

LOCATION CCCC SEC. 20 T121N R. 52W RES.

0-2 TILL, YELLOW CLAY

2-5 GRAVEL, COARSE

5-22 TILL, YELLOW OXIDIZED CLAY

22-27 TILL, YELLOW GRAVELLY

27-85 TILL, LIGHT GRAY

85-146 TILL, GRAY CLAY

146-154 SAND, WITH CLAY

154-165 TILL, GRAY CLAY

165-200 TILL, GRAY SHALEY CLAY, HARD DRILLING, ROCKS AT 195

FALK #3

DRILLER EMPIRE

LOCATION CENTER NE $\frac{1}{4}$ SEC. 15 T120N R52W RES

0-2 TOPSOIL

2-57 SAND AND GRAVEL

57-70 TILL, GRAY CLAY

70-114 TILL, YELLOW CLAY

* 114-130 SAND AND GRAVEL

6" CASING

130 TILL, GRAY CLAY

TEST HOLE - APPLICATION 3225-3

DRILLER STADHIEM

LOCATION NEAR CENTER NE $\frac{1}{4}$ SW $\frac{1}{4}$ SEC. 15 T120N R52W RES

0-1 TOPSOIL

1-22 GRAVEL

22-105 TILL

* 105-125 GRAVEL

125-140 TILL

AMDAHL IRRIGATION

DRILLER

LOCATION CENTER NE $\frac{1}{4}$ SEC. 14 T120N R52W RES

0-2 TOPSOIL, BLACK

2-37 TILL, YELLOW CLAY

37-122 TILL, GRAY CLAY

* 122-182 GRAVEL

182 TILL

TEMPORARY OBSERVATION WELL

DRILLER STADHIEM

LOCATION 100' SOUTH OF CENTER NE $\frac{1}{4}$ SEC. 23 T120N R52W RES

WATER LEVEL 13'

0-114 TILL CONTACT AND GRAVEL THICKNESS OK.

* 114-135 GRAVEL

FALK #2 (ALSO SAME FOR SERVICE WELL)

WATER LEVEL 18'

DRILLER EMPIRE

LOCATION CENTER OF NE $\frac{1}{4}$ SEC. 23 T120N R52W RES.

0-2 TOPSOIL

2-5 TILL, SANDY

5-15 SAND AND GRAVEL

15-35 TILL, YELLOW CLAY

35-115 TILL, GRAY CLAY

* 115-134(?) SAND AND GRAVEL (DID NOT COMPLETELY PENETRATE)

LOCATION C.C.D. SEC. 27 T120N R52W N.E.S
WATER LEVEL - 4'

0-2 TOPSOIL, BLACK

2-20 SAND

20-25 SAND WITH CLAY

25-114 TILL, GRAY CLAY

* 114-125 GRAVEL, WHITE COARSE

125-128.5 TILL, GRAY CLAY

CD-77A OBSERVATION WELL

DRILLER STADHIEM

LOCATION R2B3 SEC. 18, T118N R52W

WATER LEVEL - FLOWING 7-8"

0-2 TOPSOIL, BLACK

2-5 GRAVEL, BROWN COARSE

8-19 TILL, BROWN CLAY

19-140 TILL, GRAY CLAY

* 140-143 GRAVEL, MEDIUM

143-178 TILL, GRAY CLAY, GRAVELLY

178-180 TILL, BROWN-OLIVE CLAY

TEST HOLE F

DRILLER STADHIEM

LOCATION B2B3 SEC 35 T118N R52W RES.

0-1 TOPSOIL (BLACK)

1-18 TILL, YELLOW-BROWN - VERY SILTY, LOESS (?)

18-21 TILL, BROWN, GRAVELLY

21-91 TILL, CLAY

91-132 TILL, BROWN - SANDY

132-176 TILL, GRAY

176-178 TILL, BROWN - CARBONACEOUS - OILY

178-200 TILL, GRAY - HARD

DRILLER SOGS

LOCATION BBBB SEC 20 T11N R1W

0-2 TOPSOIL, BLACK

2-42 TILL, YELLOW CLAY, OXIDIZED

42-84 TILL, GRAY CLAY, WOOD AT 63'

84-92 TILL, YELLOW CLAY, OXIDIZED

92-108 TILL, GRAY CLAY

108-170 TILL, GRAY CLAY, LOTS OF WOOD AT 115'

CD-76A OBSERVATION WELL

DRILLER SOGS

LOCATION BBBB SEC 13 T11N R51W RES.

WATER LEVEL 10'

0-1 TOPSOIL, BLACK

1-25 TILL, YELLOW OXIDIZED CLAY

25-136 TILL, GRAY CLAY

* 136-160 GRAVEL, MEDIUM TO COARSE

160-170 TILL, GRAY CLAY

GT-77F OBSERVATION WELL

DRILLER SOGS

LOCATION: J BBBB SEC 26 T12N R52W

WATER LEVEL - 52'

0-2 TOPSOIL, BLACK

2-3 GRAVEL

3-16 TILL, YELLOW CLAY

16-32 SAND AND GRAVEL, WITH CLAY

32-104 TILL, GRAY CLAY

104-124 TILL, GRAY CLAY, HARD

124-131 TILL, BROWN CLAY

131-137 TILL, GRAY CLAY, VERY SILTY, HARD

137-179 TILL, BROWN CLAY

179-182 SAND AND GRAVEL, WITH CLAY

182-197 TILL, GRAY CLAY, GRAVELLY

* 197-201 GRAVEL, COARSE

201-230 TILL, GRAY CLAY

LOGS CONTINUED

OBSERVATION WELL CO-77-G

DRILLER EDGE

LOCATION CCCC SEC 26 T 18N R 52W

WATER LEVEL 61'

0-2 TOPSOIL, BLACK

2-30 TILL, BROWN CLAY

30-48 TILL, GRAY CLAY

48-56 TILL, BROWN TO GRAY CLAY

56-85 TILL, GRAY CLAY

85-92 TILL, GRAY CLAY, HARD

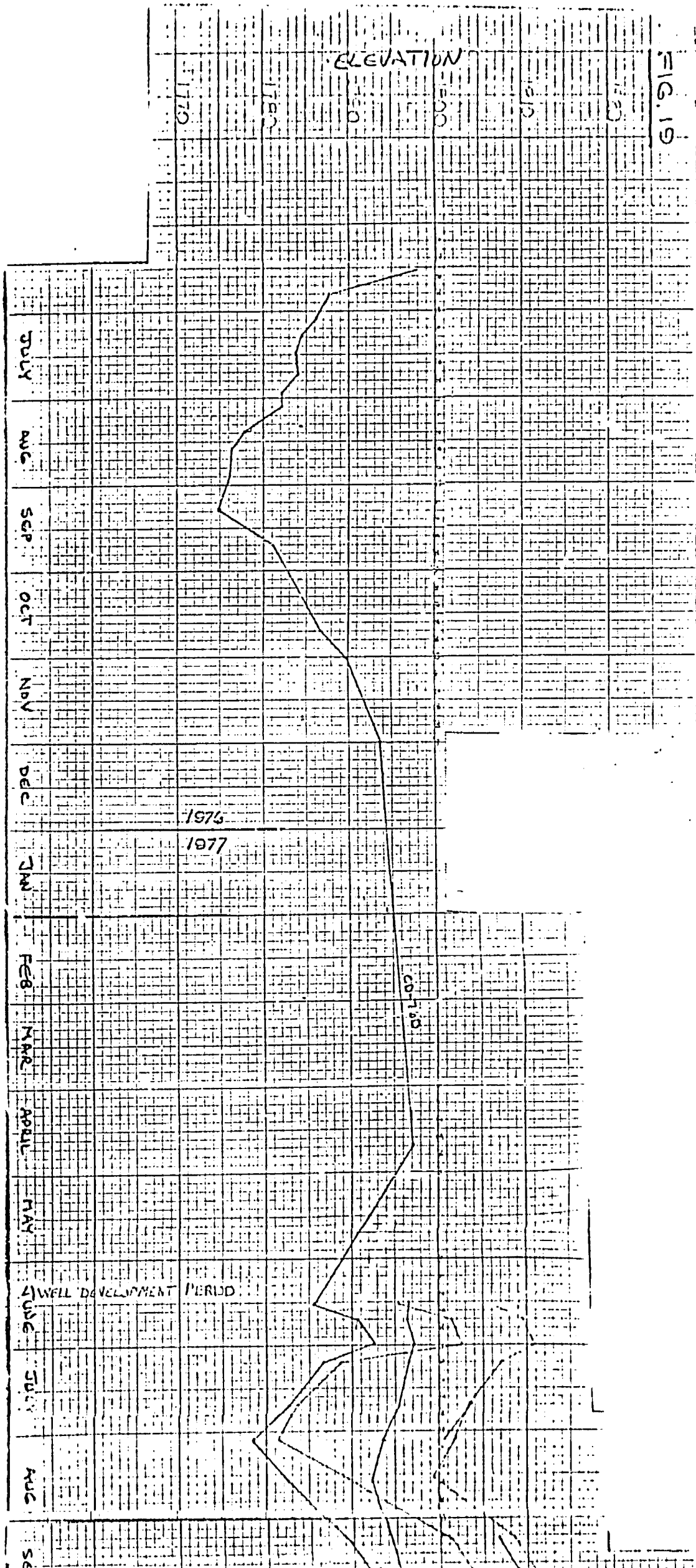
92-217 TILL, GRAY CLAY

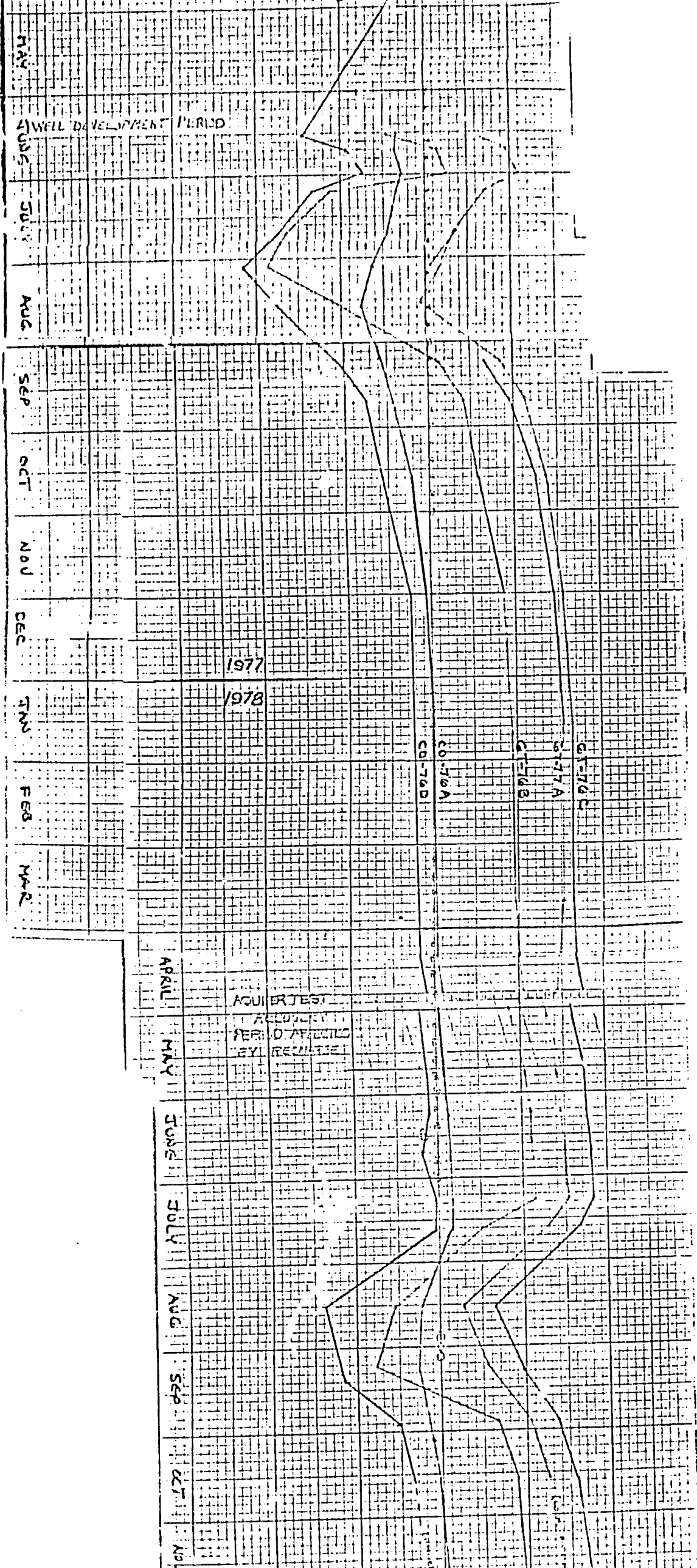
* 217-231 SAND, MEDIUM TO COARSE

231-245 TILL, GRAY CLAY

FIG. 19

ELEVATION





RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 8495

T.B. Lee for:

PIERRE,

October 1, 1921

RECEIVED OF Bernard L. Lee, Summit. SD 57266

the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit to Appropriate Water No. (examination, processing, recording and filing)		
Fee for inspecting Construction, and issuing Cert. of Construction No. 5503-3	50.	0
Fee for inspecting Beneficial Use, and issuing Water License No. 3503-3		
Fee for issuing Location Certificate-Dry Draw, No.		
Fee for filing		
Fee for certified copy of		
Fee for Print copy of map		
Fee for Certifying		
Fee for		
(any other work as provided by law)		
TOTAL	50.	00

WATER RIGHTS COMMISSION

By

Chief Engineer, Executive Officer
J. H. HATCH / 105

Permit No. 350B-3Water Division 3 BIG SIOUX RIVER Water DistrictREPORT OF EXAMINATION OF WORKS
AND/OR APPLICATION OF WATER TO BENEFICIAL USE

TO: WATER RIGHTS, WATER MANAGEMENT BOARD / FOSS BLDG., PIERRE, SOUTH DAKOTA 57501

I have this day made a thorough examination of the water use system constructed by BERNARD T. LEE of SUMMIT holder of Permit No. 350B-3 bearing date of priority of DECEMBER 28, 1976 authorizing the diversion of 4.9 * cu. ft. per second of the waters of GROUNDWATER for IRRIGATION purposes, in GRANT County.

I have to report on the condition of the same as follows:

The Water Use System consists of,

A. Works used to divert the water:
180' DEEP WELL WITH 16" FIBREGLAS CASING - 40' FIBREGLAS SCREEN
WESTERN LAND ROLLER 10" PUMP - 4-14CH, POWERED BY
200HP CUMMINS DIESEL ENGINE

B. Works used to transport water to place of use,
30' OF 8" ALUMINUM LINE TO CENTER OF PIVOT

C. Works used to apply water to beneficial use.
13 TOWER VALLEY WATER DRIVE CENTER PIVOT SYSTEM
WITH NELSON #100 END GUN

The system is in the following condition: GOOD

The point of diversion is located 30' S OF THE CENTER OF THE NE⁴
SECTION 12, T12ON, R52W

The works are capable of diverting and conveying to the place of use 1.88 (850 GPM)
cu. ft. per second of water which is to be used for IRRIGATION

Water has been put to beneficial use to the maximum extent as follows:

132 ACRE CIRCLE IN NE⁴, SECTION 12, T12ON, R52W

comprising a total of 132 acres of land.

* 2.7 CFS WAS TRANSFERRED TO PERMIT NO 350B-3A AND
IS BEING LICENSED SEPARATELY AS IT IS FROM A
DIFFERENT WATER SOURCE.

1.88

Date AUGUST 27, 1981
[Signature]
(Signature)

**South Dakota Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

March 23, 1987

BERNARD T LEE
SUMMIT, SD 57266

NOTICE

Re: Violation of Water Permit(s). 4637-3 and 1986 Irrigation
Questionnaire Requirements.

Our records indicate that the 1986 Irrigation Questionnaire has not been submitted for Permit No(s). 4637-3. The request for the questionnaire was dated November 3, 1986. The Water Management Board has directed that owners of water permits who have not submitted 1986 Irrigation Questionnaires be given notice of permit violation and of hearing(s) before the Board. The hearing(s) will be held to determine action to be taken by the Board for violation of Water Permit No(s). 4637-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will also be to determine if Permit No(s). 3503-3A and 3503-3 should be amended with the qualification to require the Questionnaire to be submitted each year.

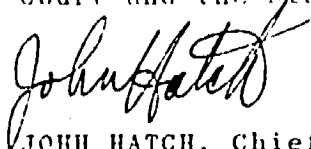
The hearing(s) will be at 2:00 pm, May 6, 1987, in Room 216, Joe Foss Building, 523 E Capitol, Pierre SD.

The hearing(s) will be conducted pursuant to the provisions of SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11, and 46-2-17. These are contested case hearings pursuant to procedures contained in SDCL 1-26.

Following the hearings(s), the Water Management Board can:

1. Suspend Permit No(s). 4637-3 until either the 1986 Questionnaire is submitted or for the period of up to one year;
2. Amend Permit No(s). 3503-3A and 3503-3 to require the Irrigation Water Use Questionnaire to be submitted each year;
3. Postpone any action;
4. Take no action.

The hearing(s) is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

A handwritten signature in cursive script, appearing to read "John Hatch", written in dark ink.

JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

NOTE: If the questionnaire(s) are received in this office before the hearing date, you will no longer be in violation of your permit(s) and your name will be deleted from the agenda pertaining to these hearings.

South Dakota Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

April 13, 1987

3503-3
3503-3A
4637-3

Bernard T Lee
Box 66
Summit, SD 57266

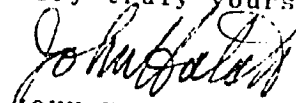
Dear Mr. Lee:

This will acknowledge receipt of and thank you for the return of your 1986 Irrigation Questionnaires. A notice was sent to you March 23, 1987 regarding the Irrigation Questionnaire submittal violation of Water Permit Nos. 3503-3, 3503-3A and 4637-3 and the date hearings were to be held before the Water Management Board to determine any action to be taken concerning the violation.

Please disregard the notice sent to you dated March 23, 1987. Your name has been deleted from the agenda pertaining to these hearings.

If you have any questions, please contact us.

Very truly yours,



JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

**SOUTH DAKOTA Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

WATER RIGHTS DIVISION

(605) 773-3352

3503-3
3503-3A
4637-3

December 2, 1987

Claire Konold
Federal Land Bank
Box 786
Watertown, South Dakota 57201

Dear Mr. Konold:

Please find enclosed a copies of Notice of Transfer of Water Permit forms. These forms must be signed by the owner before a notary and returned to this office with a filing fee of \$2.50 for each transfer, total of \$7.50 for three.

Upon receipt of the enclosed forms and the \$2.50 filing fee for each, total of \$7.50, the permits will be transferred to the proper name. South Dakota Water Law 46-5-30.3 requires Notice of any sale, grant, lease, conveyance or other transfer of a Water Permit or Water Right to appropriate water to be filed with this office within ninety days.

Please advise if you have any questions..

Sincerely,

Maxine Stirling
Secretary



3503-3

Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

January 29, 1988

BERNARD T LEE
BOX 66
SUMMIT, SD 57266

NOTICE

Re: Violation of Water Permit No(s). 4637-3 and 1987 Irrigation Questionnaire Requirements

Our records indicate that the 1987 Irrigation Questionnaire has not been submitted for Permit No(s). 4637-3. The request for the questionnaire was dated October 3, 1987. The Water Management Board has directed that owners of water permits who have not submitted 1987 Irrigation Questionnaires be given notice of permit violation and of hearing(s) before the Board. The hearing(s) will be held to determine action to be taken by the Board for violation of Water Permit No(s). 4637-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will also be to determine if Permit No(s) 3503-3, 3503-3A should be amended with the qualification to require the Questionnaire to be submitted each year.

The hearing(s) will be at 9:00 am, March 2, 1988, in Room 216, Joe Foss Building, 523 E Capitol, Pierre, South Dakota.

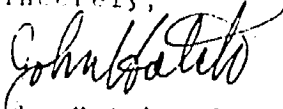
The hearing(s) will be conducted pursuant to the provisions of SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11, and 46-2-17. These are contested case hearings pursuant to procedures contained in SDCL 1-26.

Following the hearing(s), the Water Management Board can:

1. Suspend Permit No(s). 4637-3 until either the 1987 Questionnaire is submitted or for the period of up to one year;
2. Amend Permit No(s) 3503-3, 3503-3A also held by BERNARD T LEE to require the Irrigation Water Use Questionnaire to be submitted each year;
3. Postpone any action;
4. Take no action.

The hearing(s) is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited, if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

Sincerely,



John Hatch, Chief Engineer
Water Rights Division

Note: If the questionnaire(s) are received in this office before the March 2 hearing date, you will no longer be in violation of your permit(s) and your name will be deleted from the agenda pertaining to these hearings.



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

March 14, 1988

NOTICE OF AMENDMENT TO WATER PERMIT(S)

TO: BERNARD T LEE
BOX C6
SUMMIT, SD 57266

FROM: John Hatch, Chief Engineer
Water Rights Division
773-3352

SUBJECT: Amendment to Water Permit No(s). 3503-3, 3503-3A

Pursuant to the provisions of the notice dated January 29, 1988 and following the Hearing March 2, 1988, the Water Management Board has amended Water Permit No(s). 3503-3, 3503-3A to add the following qualification to each:

"This permit is subject to the Irrigation Water Use Questionnaire being submitted each year."

The addition of this qualification to your Permit(s) means that failure to submit the required irrigation questionnaire in the future could result in suspension of the water permit and no use of water for up to one year for the first violation. Please include the enclosed attachment with your permit.



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Attachment to Water Permit No(s). 3503-3, 3503-3A

Pursuant to the provisions of the notice dated January 29, 1988 and following the Hearing March 2, 1988, the Water Management Board has amended Water Permit No(s). 3503-3, 3503-3A to add the following qualification to each:

"This Permit is subject to the Irrigation Water Use Questionnaire being submitted each year."

3503-3 & 3503-3A

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

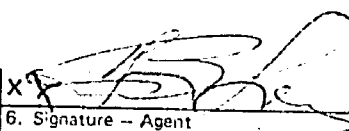
1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
(Extra charge) *(Extra charge)*

BERNARD T LEE
 BOX 66
 SUMMIT, SD 57266

4. Article Number
 P 501 739 056

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

6. Signature - Agent
 X 

7. Date of Delivery
 3/15/88

8. Addressee's Address (ONLY if requested and fee paid)
 RR1 BOX 64
 Summit, S.D. 57266

PS Form 3811, Mar. 1987

• U.S.G.P.O. 1987-178-266

DOMESTIC RETURN RECEIPT



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

3503-3

July 26, 1988

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

Enclosed is a partially completed "Notice of Transfer" for use in filing an ownership change on Water Right No. 3503-3. Please check over the form and sign in the presence of a notary public. Upon completion of the form, return it to our office with a required filing fee of \$2.50. The water right will then be transferred to your name.

South Dakota Water Law 46-5-30.3 requires Notice of any sale, grant, lease, conveyance or other transfer of a Water Permit or Water Right to appropriate water to be filed with this office within ninety days.

If you have any questions, please contact us.

Sincerely,

GENNY MCMATH
Natural Resources Analyst
605 773-3352

enclosure



SOUTH
 Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

October 18, 1988

Second Notice
Water Right No. 3503-3

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

On July 26, 1988, notice was sent to you concerning the transfer of Water Right No. 3503-3 in the name of Bernard T Lee which covers irrigation of the NE 1/4 Section 20, T120N, R52W. To date, we have not heard from you on this matter.

A transfer form was previously sent to you, enclosed is an additional form. Please sign, have notarized and return the form to this office with the required filing fee of \$2.50. The permit can then be transferred to your name. It is very important that ownership records be kept current. South Dakota Water Law 46-5-30.3 requires Notice of any sale, grant, lease, conveyance or other transfer of a Water Permit or Water Right to appropriate water to be filed with this office within ninety days.

If you have any questions, please contact us.

Very truly yours,



John Hatch, Chief Engineer
Water Rights Division
(605) 773-3352

enclosure



3503-3

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery.

3. Article Addressed to:
 Wallace Redlin
 1143 4th St NW
 Watertown SD 57201

4. Article Number
 P 321 925 697

Type of Service:
☒ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED**.

5. Signature — Addressee
 X *Wallace Redlin*

6. Signature — Agent
 X

7. Date of Delivery
 10-19-88

8. Addressee's address **ONLY** if requested and fee paid
 1143 4th St NW
 Watertown SD 57201

PS Form 3811, Feb. 1986

DOMESTIC RETURN RECEIPT

NO. 3503-3



NOTICE OF TRANSFER OF WATER PERMIT

TO: Water Rights
Foss Building
Pierre, SD 57501

Date: 11-22-88

This is to notify you that the title to the lands described as follows:

NE 1/4 Section 12, T120N, R52W

formerly owned by Bernard Lee

has been transferred to W. H. Lee, Jr. 1142 4th St NE, NE 1/4, SD 57501
(please include complete mailing address)

together with any rights to the beneficial use of water thereon as evidenced by

Water Right Permit No. 3503-3 as provided for in SDCL 46-5-32 and 46-5-33.

You are therefore hereby requested to file this "Notice of Transfer of Water Permit" in its appropriate file at the Div. of Water Rights, Water Management Board as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is hereto attached to cover filing fees as required under SDCL 46-2-13.

STATE OF SOUTH DAKOTA)
County of Pierre) ss.

I, Wallace Redlin being first duly sworn on my oath depose and say:
That my relation to the above described undertaking is that of Owner, that I have read the above foregoing statement, and I know of my own personal knowledge that the information herein stated is true.

Wallace Redlin
(Signed)

Subscribed and sworn to before me this 22 Day of Nov, 1988

James M. Johnson
(Notary Public) 531-96

RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

Pierre, November 22, 1993

RECEIVED OF Wallace Redlin 1143 4th St. NW, Watertown, SD 57201

the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct works and to put water to beneficial use _____		
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		2 50
Fee for Filing Transfer Form <u>3503-3</u>		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____ (Any Other Work Provided by Law)	Total	2 50

By John Hatch
Chief Engineer JOHN HATCH (MS)

No. 3503-3

SOUTH Dakota Department of
Water & Natural Resources
Joe Foss Building Water Rights Division
Pierre, South Dakota 57501 Phone (605) 773-3352

December 2, 1988

Wallace Redlin
1143 Fourth Street NW
Watertown, South Dakota 57201

Dear Mr. Redlin:

Enclosed is receipt No. 411504 in the amount of \$ 2.50 which you
paid for transfer of Water Right No. 3503-3.

Our records now show you as the owner of this Water Right.

Sincerely,

Maxine Stirling
Secretary

ms/
Enc.

WNR-821-7/79
Receipt & Notice of filing of Transfer of Water Right

 **Department of
Water & Natural Resources**

Joe Fost Building
523 East Capitol
Pierre, South Dakota 57501-3181

July 19, 1988

3503-3

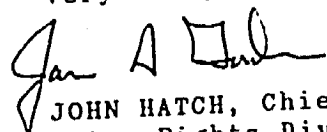
Bernard T Lee
RR 1, Box 64
Summit SD 57266

Dear Mr. Lee:

During the week of July 12-15 an investigation of domestic well complaints was conducted in Codington and Grant Counties. In all instances, the domestic wells were completed into the Prairie Coteau Aquifer (artesian aquifer) and the water levels were being affected by irrigation withdrawals. One of the complaints was that irrigation systems were wasting water by spraying on county roads and highways. This is not necessary and needs to be prevented. Not only is this a hazard to motorists with potential liability for the irrigator, but it is poor public relations.

I am requesting that you prevent the end guns from spraying on the county roads and highways. Technically, spraying roads is a waste of water and legislation could be introduced and passed by the Legislature that could be difficult to live with.

Very truly yours,


FOR JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352



**SOUTH DAKOTA Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

February 9, 1990

WALLACE REDLIN
1143 4TH ST NW
WATERTOWN, SD 57201

NOTICE

RE: Violation of Water Permit No(s). 3503-3

Our records indicate that the 1989 Irrigation Questionnaire has not been submitted for Permit No(s). 3503-3. The request for the Questionnaire was dated October 13, 1989. The Water Management Board had directed that owners of water permits who have not submitted the 1988 Irrigation Questionnaire be given notice of permit violation and a hearing to be held by the Board. The hearing will be held to determine action to be taken by the Board for violation of Water Permit No(s). 3503-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 8:30 am, March 7, 1990 at the Howard Johnson's, Roosevelt-Jefferson Room, I-90 at LaCrosse, Rapid City SD.

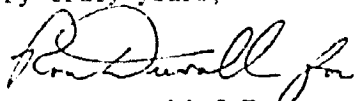
The hearing will be conducted pursuant to the provisions of SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to procedures contained in SDCL 1-26. Following the hearing, the Water Management Board can:

1. Suspend Permit No(s). 3503-3 until the 1989 Irrigation Water Use Questionnaire is submitted or for a period of up to one year;
2. Postpone any action;
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire is received in this office before the March 7th hearing date, you will no longer be in violation of your permit and your name will be deleted from the agenda for the hearing.

Very truly yours,


JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

 **Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

March 14, 1990

3503-3

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

I am writing to acknowledge receipt of your 1989 irrigation questionnaire for Water Permit No. 3503-3. You may disregard the February 9, 1990 Notice of failure to submit the 1989 irrigation questionnaire. Your questionnaire was received prior to the March Water Management Board meeting and your name was deleted from the agenda pertaining to the hearing.

If you have any questions, please contact Jenny McMath, at (605) 773-3352.

Sincerely,



RON DUVALL
Natural Resources Engineer
Water Rights Division



WALLACE REDLIN
1143 4TH ST NW
WATERTOWN SD 57201

NOTICE

RE: Violation of Water Permit No(s) 3503-3

Our records indicate that the 1993 Irrigation Questionnaire has not been submitted for Permit No(s) 3503-3. The request for the Questionnaire was dated October 18, 1993. The Water Management Board has directed that owners of water permits who have not submitted the 1993 Irrigation Questionnaire be given notice of permit violation and a hearing to be held by the Board. The hearing held by the Board will determine the action to be taken for violation of Water Permit No(s) 3503-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 8:45 am, April 6, 1994, at the Golden Hills Resort, 900 Miners Ave, Lead, SD, and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to SDCL 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 3503-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is(are) received in this office on/or before April 1, 1994, you will no longer be in violation of your permit and your name will be deleted from the Board agenda.

Very truly yours,

Ron Duvall, Natural Resources Engineer IV
Water Rights Division
605 773-3352

3503-3

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:

3503-3

WALLACE REDLIN
1143 4TH ST NW
WATERTOWN SD 57201

5. Signature (Addressee)

6. Signature (Agent)

4a. Article Number

837 692 663

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

FEB 18 1994

8. Addressee's Address (Only if requested and fee is paid)

I also wish to receive the following services (for an extra fee):

LL-22 Addressee's Address

2. ☐ Restricted Delivery

Consult postmaster for fee.

Thank you for using Return Receipt Service



3503-3

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

March 2, 1994

3503-3

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

I am writing to acknowledge receipt of your 1993 Irrigation questionnaire. You may disregard the February 16, 1994, Notice of Violation of Water Permit No. 3503-3.

The questionnaire was received in our office prior to the Water Management Board meeting and your name has been deleted from the agenda.

If you have any questions, please contact me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Division
(605) 773-3352



January 30, 1996

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

 JOE FOSS BUILDING
 523 EAST CAPITOL
 PIERRE, SOUTH DAKOTA 57501-3181
NOTICE
TO: WALLACE REDLIN, 1143 4TH ST NW, WATERTOWN, SD 57201

FROM: Ron Duvall, Natural Resources Engineer
 for John Hatch, Chief Engineer
 Water Rights Program

SUBJECT: Violation of Water Permit No(s) 3503-3

Our records indicate that the 1995 Irrigation Questionnaire has not been submitted for Permit No(s) 3503-3. The request for the Questionnaire was dated October 20, 1995. The Water Management Board has directed that owners of water permits who have not submitted the 1995 Irrigation Questionnaire be given notice of permit violation and a hearing to be held by the Board. The hearing held by the Board will determine the action to be taken for violation of Water Permit No(s) 3503-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 9:45 am March 6, 1996 in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol, Pierre, SD, and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 3503-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is(are) received in this office on/or before March 1, 1996, you will no longer be in violation of your permit and your name will be deleted from the Board agenda. If you have questions or need assistance in completion of the irrigation questionnaire(s), please contact Genny McMath at (605) 773-3352.

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

WALLACE REDLIN
1143 4TH ST NW
WATERTOWN SD 57201

4a. Article Number

2 161 984 081

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

2/1/96

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X *John Redlin*

PS Form 3811, December 1994

Domestic Return Receipt



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

February 5, 1996

3503-3

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

I am writing to acknowledge receipt of your 1995 irrigation questionnaire. You may disregard the January 30, 1996, **Notice of Violation of Water Permit No. 3503-3.**

The information was received in our office prior to the Water Management Board meeting and your name has been deleted from the agenda.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in cursive script that reads 'Genny McMath'.

Genny McMath
Environmental Scientist
Water Rights Division
(605) 773-3352



January 22, 1999

3503-3
DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

NOTICE

TO: WALLACE REDLIN, 1143 4TH ST NW, WATERTOWN, SD 57201
FROM: Ron Duvall, Natural Resources Engineer
for John Hatch, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 1998 Irrigation Questionnaire(s)

Our records indicate that the 1998 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 3503-3. The request for the Questionnaire was dated October 16, 1998. The Water Management Board has directed that owners of water permits who have not submitted the 1998 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 3503-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 9:45 am, March 3, 1999 in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol, Pierre, SD, and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 3503-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is(are) received in this office on/or before March 1, 1999, you will no longer be in violation of your permit and your name will be deleted from the Board agenda. If you have questions or need assistance in completion of the irrigation questionnaire(s), please contact Genny McMath at (605) 773-3352.

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.

3503-3

3503-3

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- 1. ☐ Addressee's Address
- 2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

WALLACE REDLIN
1143 4TH ST NW
WATERTOWN SD 57201

4a. Article Number
Z119 141 601

4b. Service Type

- ☐ Registered
- ☐ Express Mail
- ☐ Return Receipt for Merchandise
- ☒ Certified
- ☐ Insured
- ☐ COD

5. Received By: (Print Name)
Wallace Redlin

6. Signature: (Addressee or Agent)
X *Wallace Redlin*

7. Date of Delivery
1-23-99

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

102593 97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

February 2, 1999

3503-3

Wallace Redlin
1143 4th St NW
Watertown, SD 57201

Dear Mr. Redlin:

I am writing to acknowledge receipt of your 1998 irrigation questionnaire. You may disregard the January 22, 1999, "Notice" concerning reporting requirements for Water Right No. 3503-3.

The information was received in our office prior to the Water Management Board meeting and your name has been deleted from the agenda.

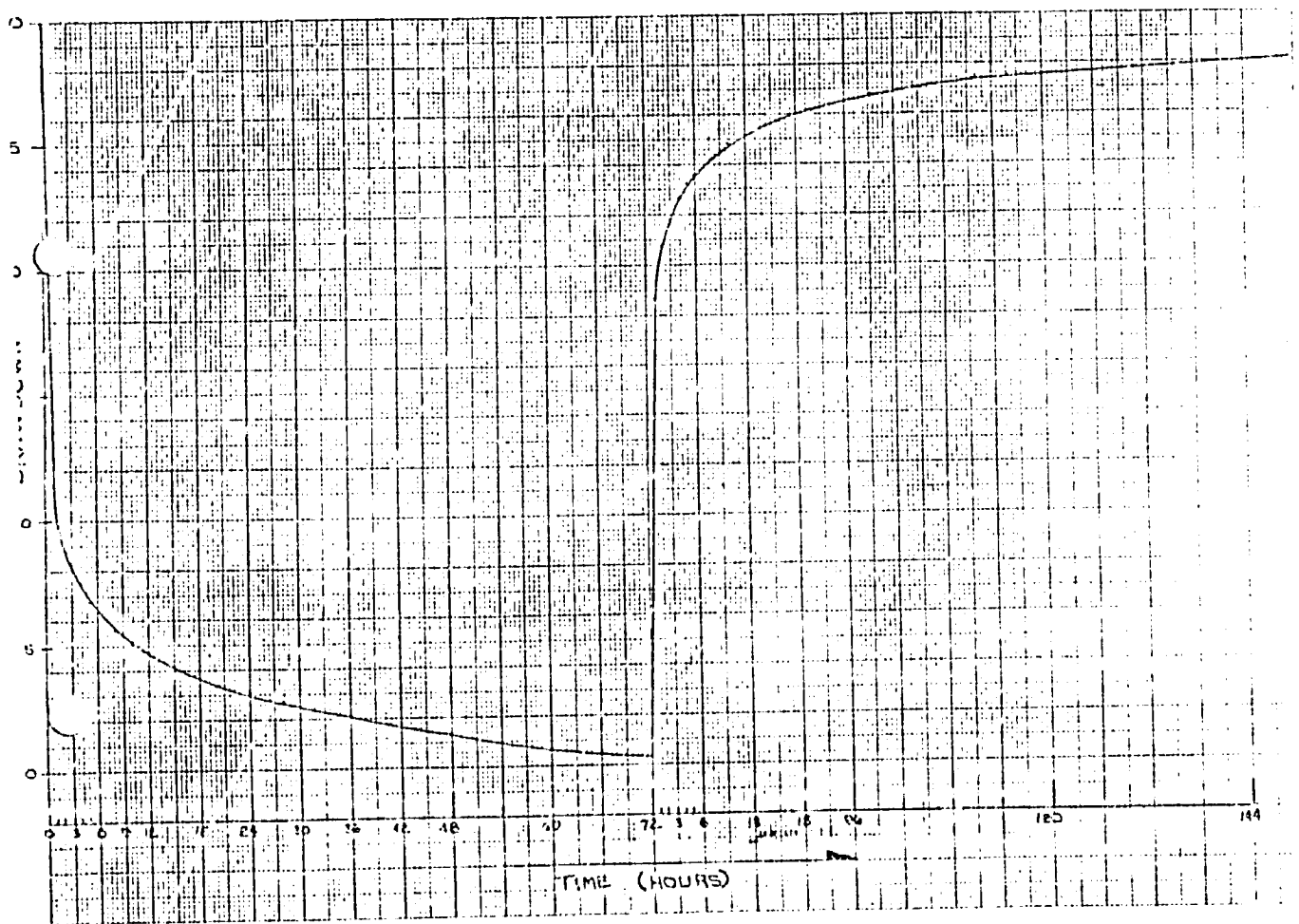
If you have any questions, please contact me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

SERVICE WELL HYDROGRAPH

FIGURE 3

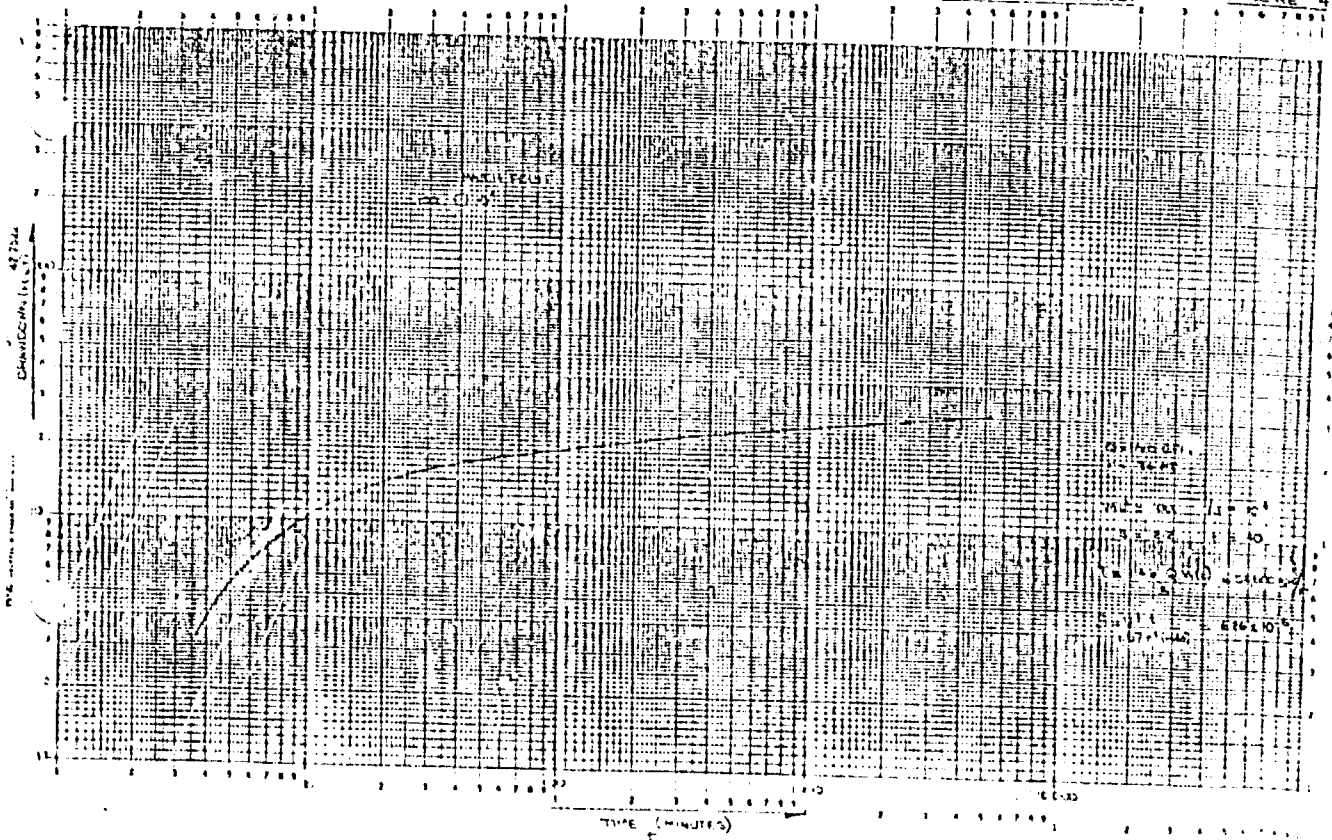


TIME - DRAWDOWN

SERVICE WELL

PAUK AQUIFER TEST

FIGURE 4



K-E SEMI-LOGARITHMIC CYCLES X 10 DIVISIONS
 REED & ESSER CO. N.Y.C. 1954

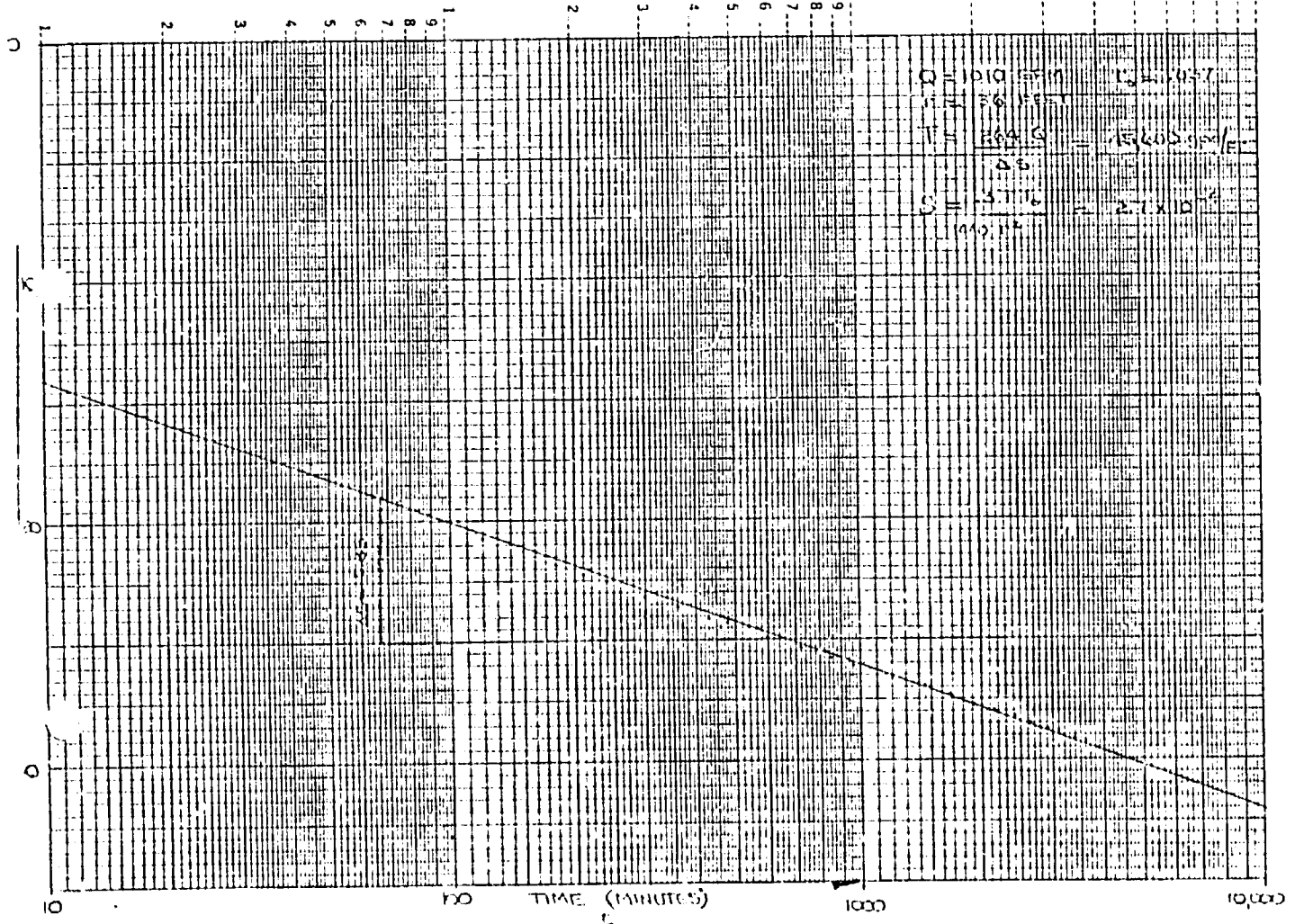
46 5493

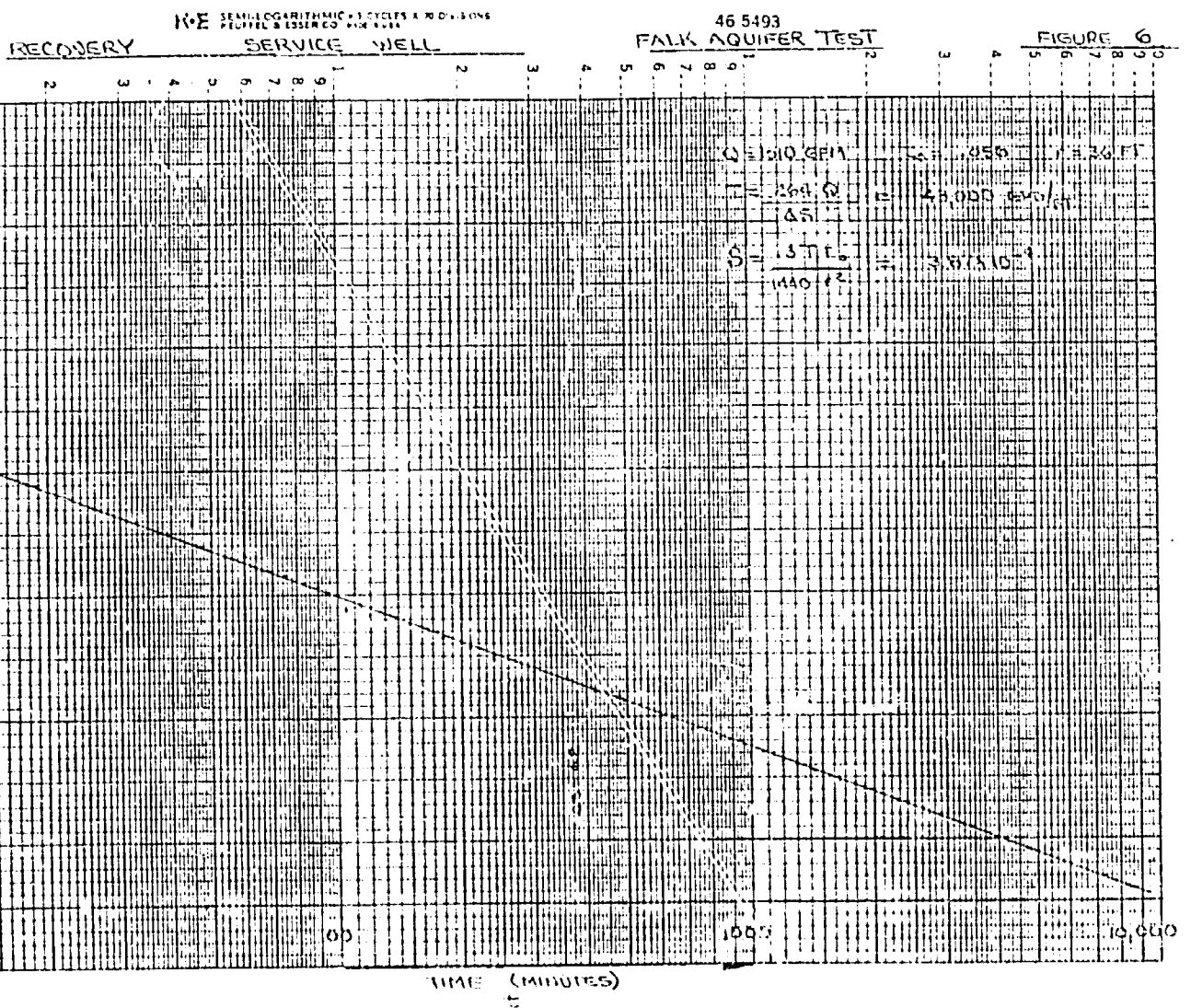
TIME - DRAWDOWN

SERVICE WELL

FAUK AQUIFER TEST

FIGURE 5





10-2 20 X 20 TO THE INCH 7 X 15 INCHES
REUFIL & SUTHER CO. - ALABAMA

46 1242

TEMPORARY OBSERVATION WELL

HYDROGRAPH

FIGURE 7

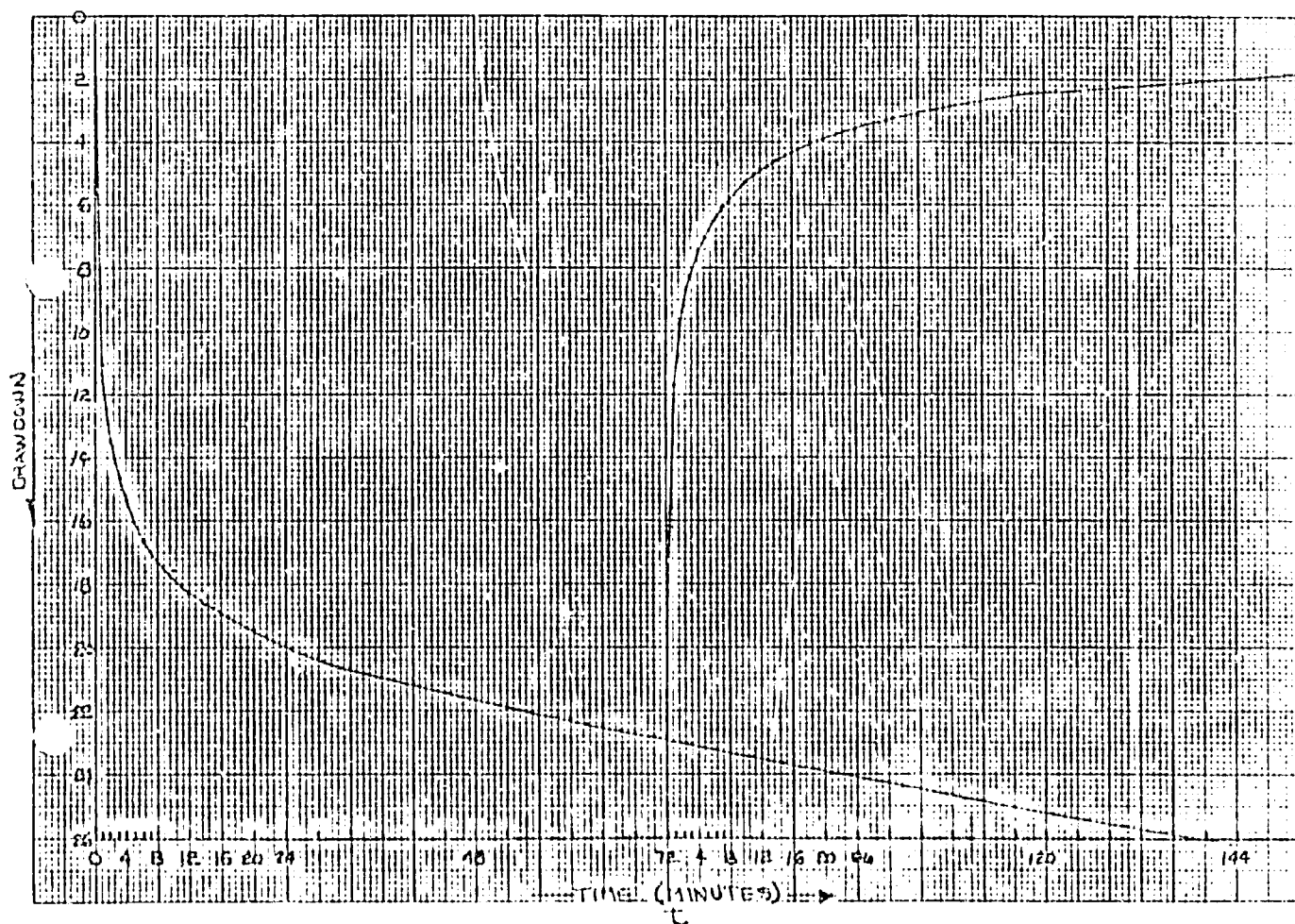
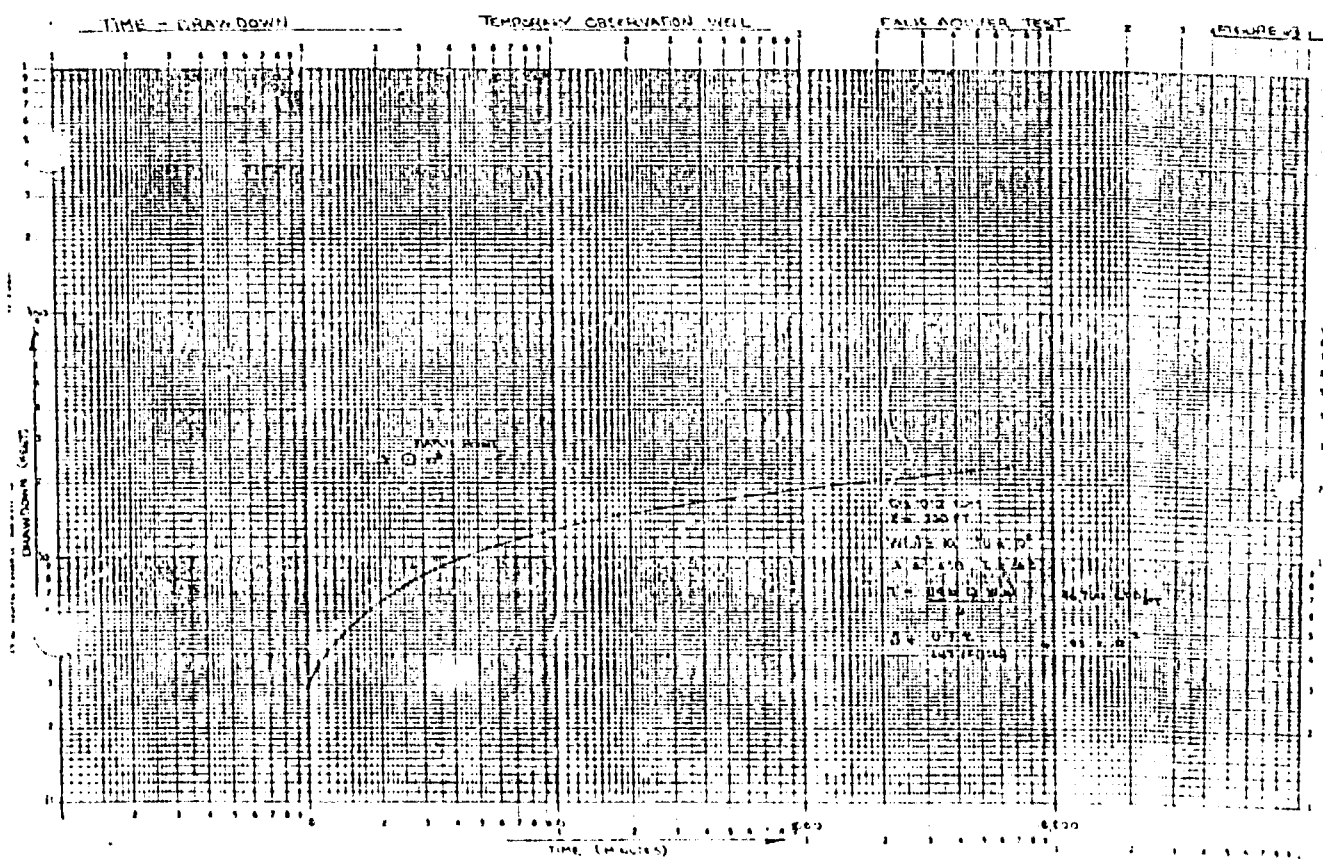


FIG 7



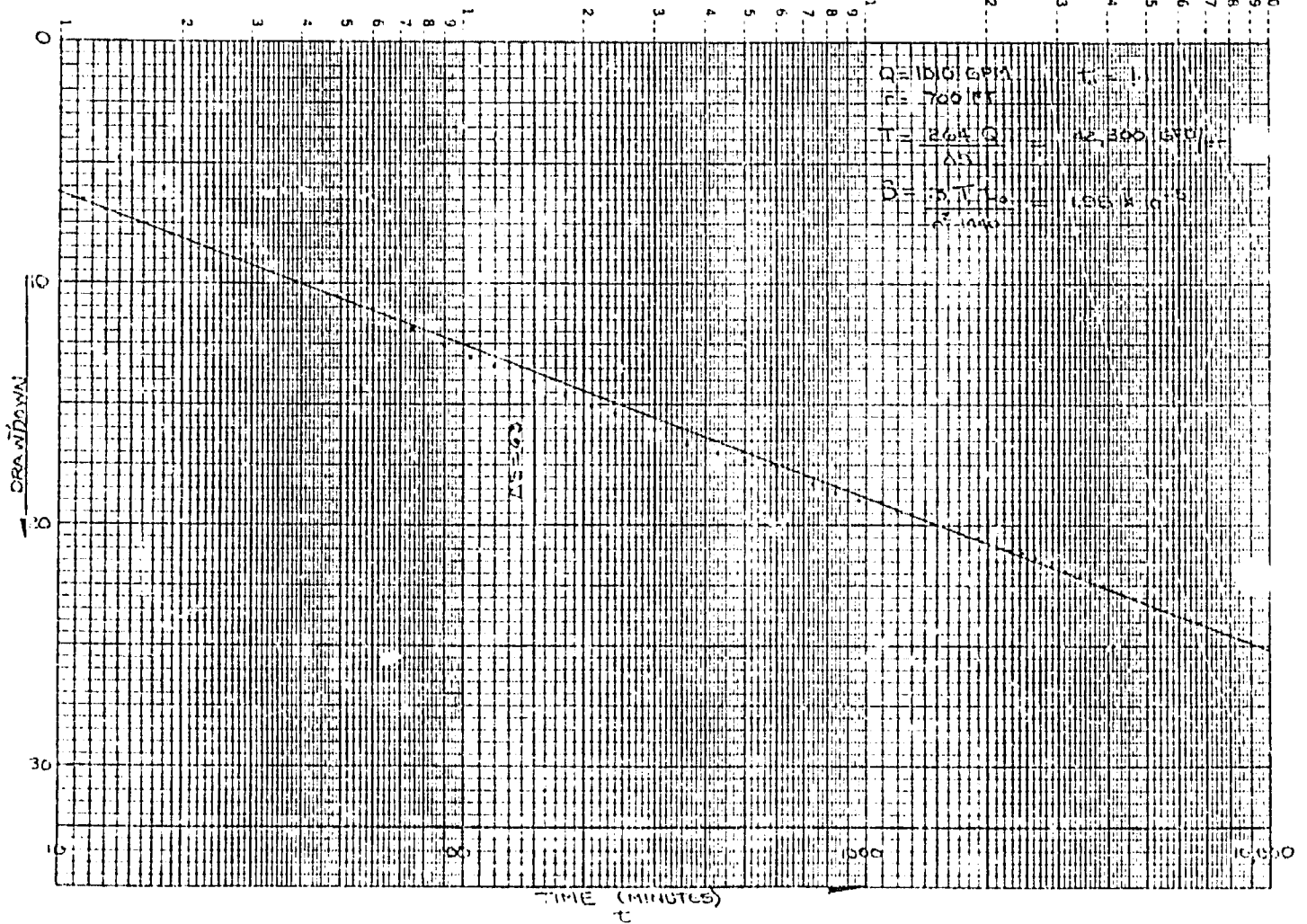
K-E SEMI-LOGARITHMIC CYCLES & DIVISIONS
REIMPEL & SESSER CO. NEW YORK

46 5493

TIME-DRAWDOWN TEMPORARY OBSERVATION WELL

FALKS AQUIFER TEST

FIGURE 10



K-E SEMI-LOGARITHMIC PAPER 17 CYCLES X 10 DIVISIONS
 REPRODUCED BY EMMER CO. 414 W. 4TH ST.

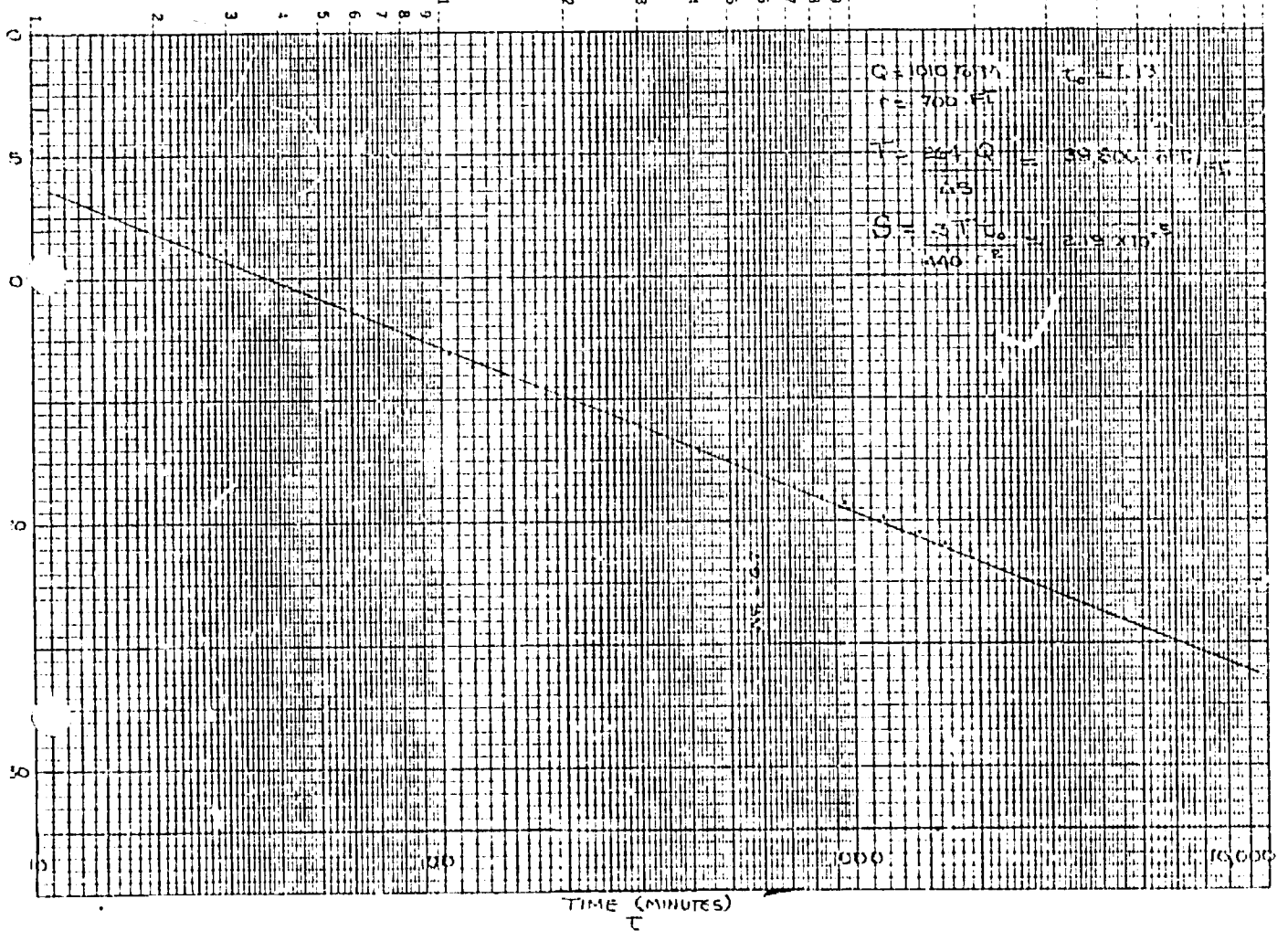
46 5493

RECOVERY

TEMPORARY OBSERVATION WELL

FAUX-AQUIFER TEST

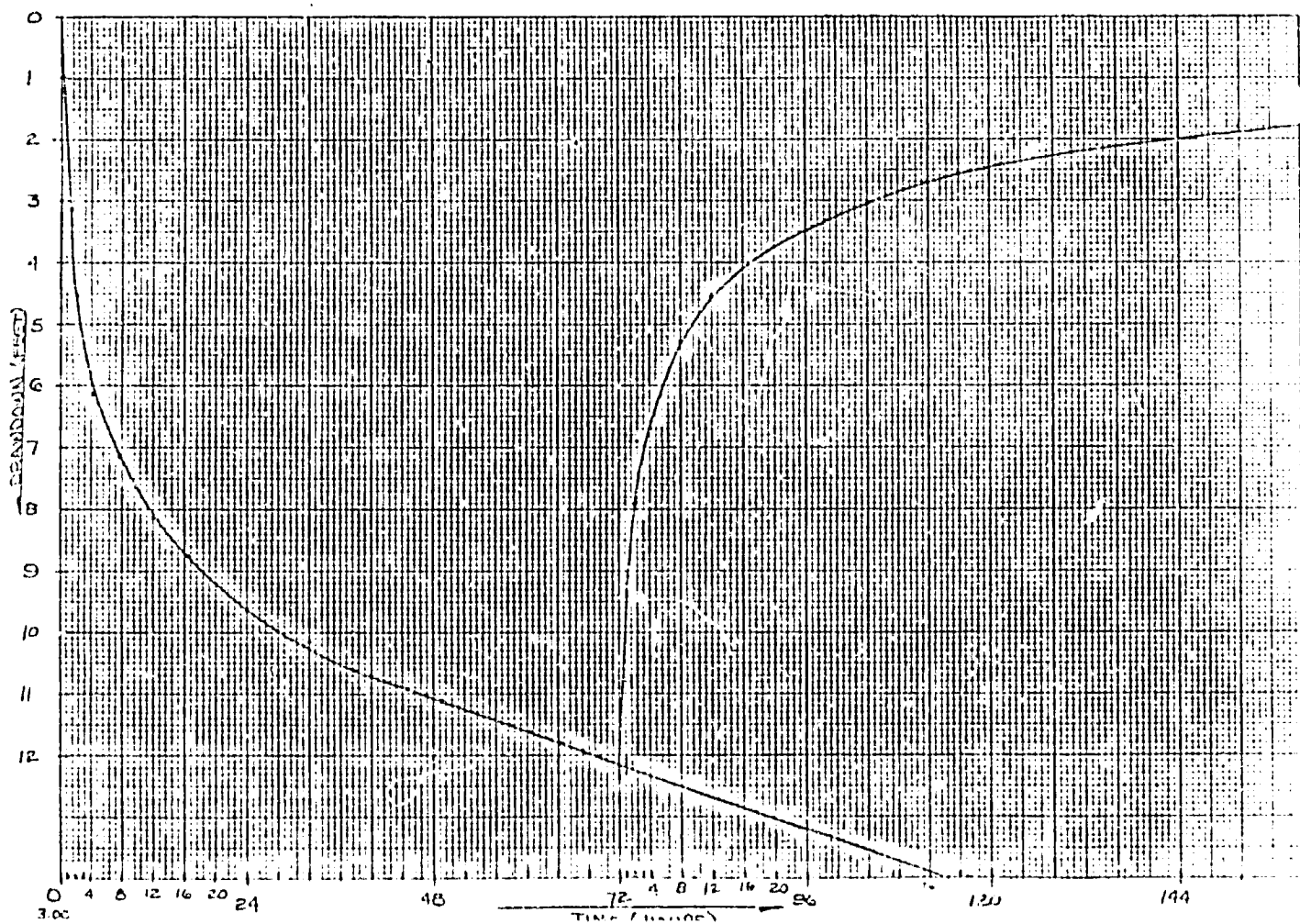
FIGURE 10



ST-76B HYDROGRAPH

TALKS AQUIFER TEST

FIGURE 11



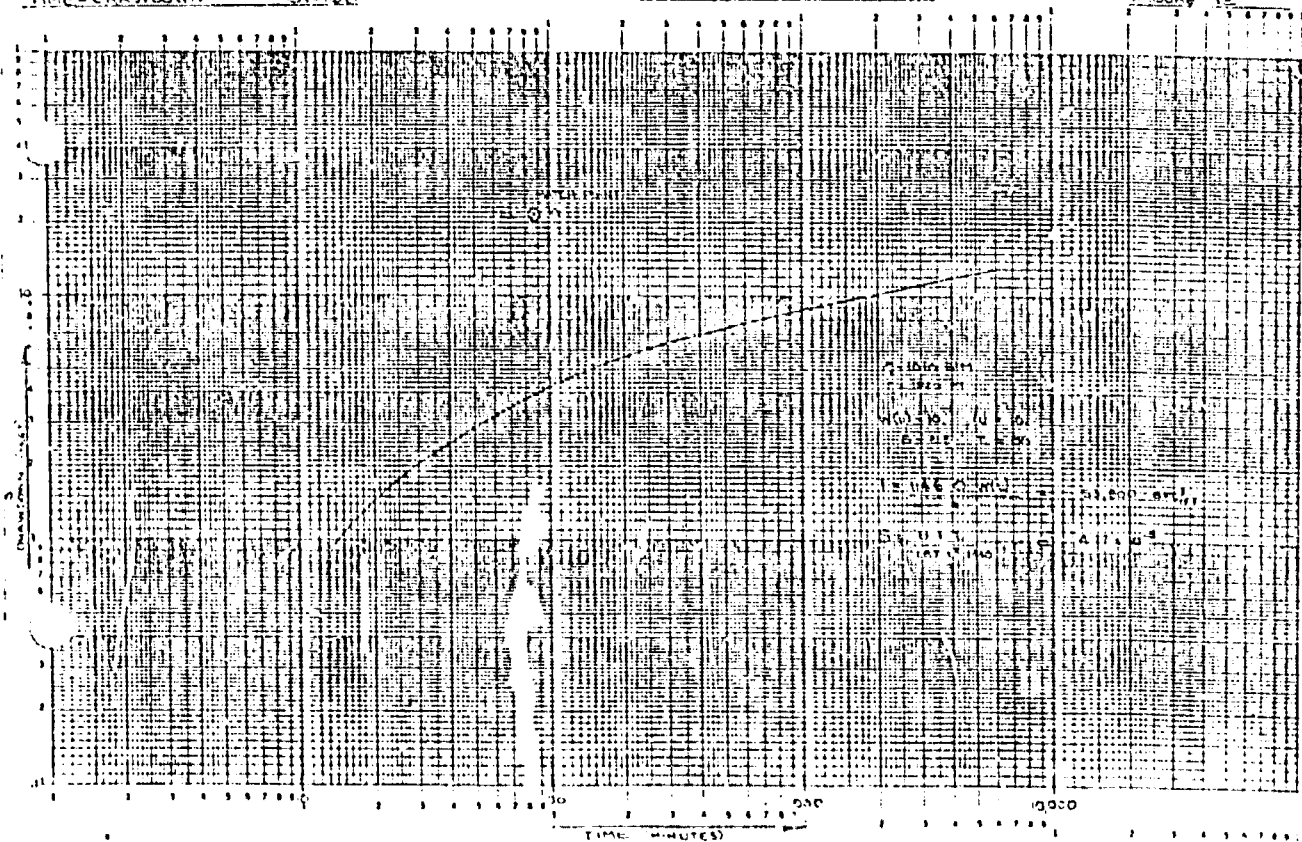
17 611

TIME-DRAWDOWN

GE-108

PUMP TEST

FIGURE 12



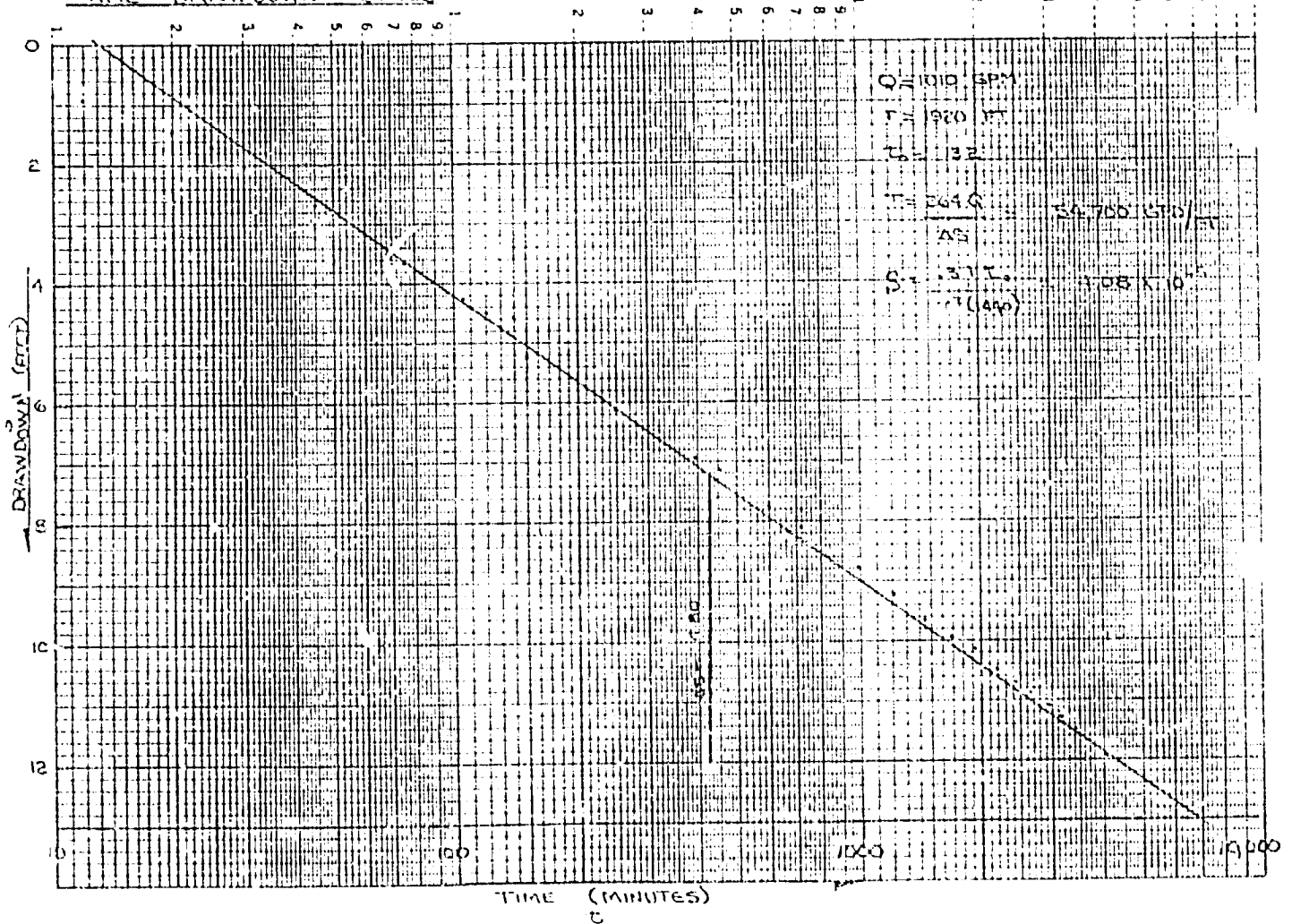
K·E SEMI-LOGARITH MIC. CYCLES & 10 DIVISIONS
STOFFEL & EDWARDS CO. CHICAGO, ILL.

46 5493

TIME - DRAWDOWN GT-76B

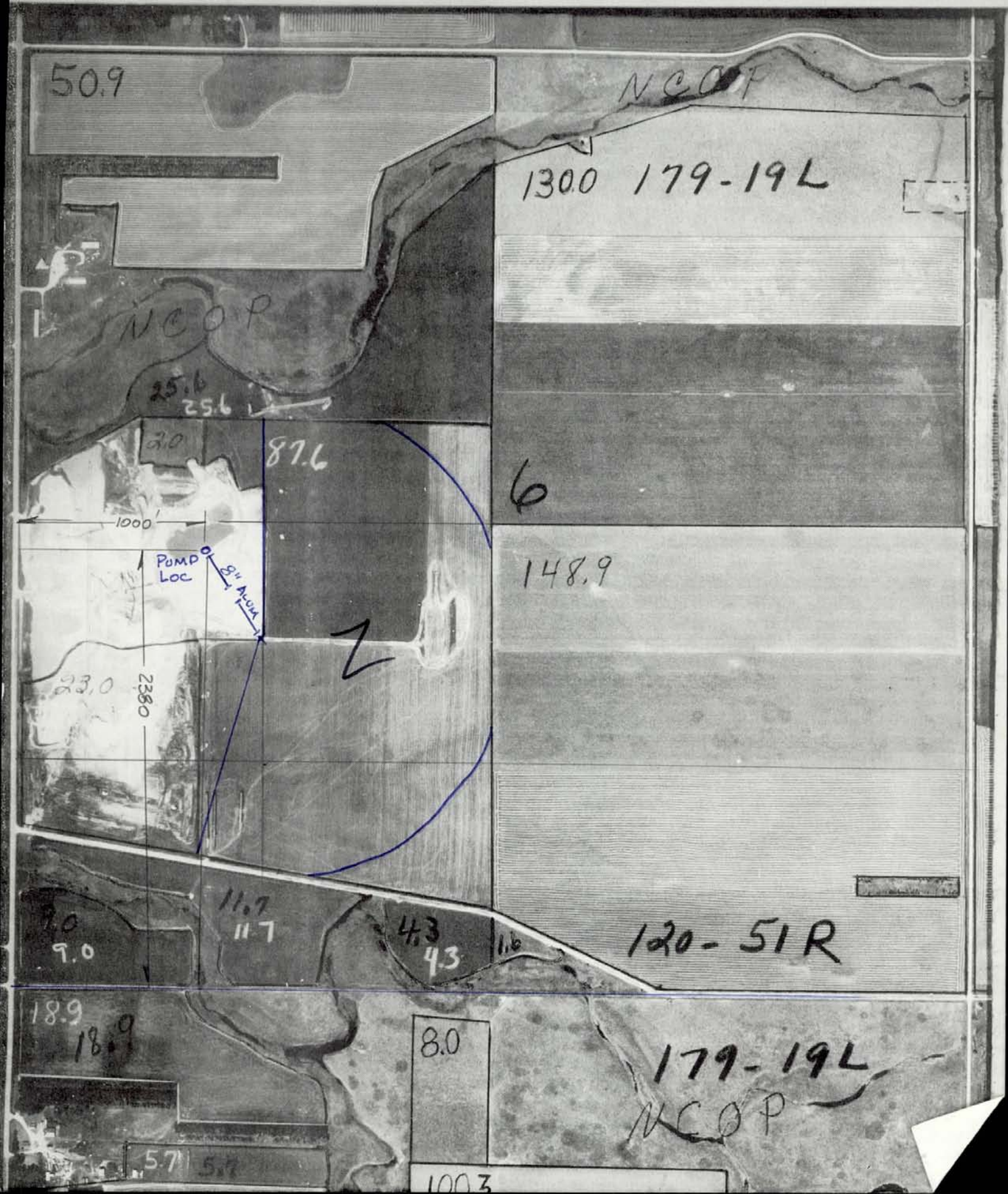
FALK AQUIFER TEST

FIGURE 13



NOT TO SCALE

3503-3



NOT TO SCALE

3503-3

120-50 R

65.9

151.5

179-20 L

WELL

15.7
15.7

83.2

12

59.9

52.2

NCOP

28.5

79.0

79.0

32.0
32.0

120-52 R

31' 1450' N 110° E well #2

19.3

N-C-O-P

147.4

Test well #1

2325' N 33° E

4.0

4.3

18.9

8.0

1860' N 135° W
#43

Bernard L Lee
Irrigation Project #1
Summit S. Dakota

Area Irrigated - Parts of
W² of sec 6- 120-51
& NE⁴ sec 12-120-52

12-26-76 Continued
John Swenson

Still in CRP until 2015

SD EForm - 0495LD V2

NOTICE OF TRANSFER OF OWNERSHIP

For filing fee call (605) 773-3352

Mail to: PMB 2020
DENR - Water Rights Program
523 E Capitol Ave
Pierre, SD 57501-3182

JUL 19 2012

WATER RIGHTS
PROGRAM

Water Right/Permit No. 3503-3

Date: 7/18/2012

I/We request that Water Right/Permit No. 3503-3 formerly owned by:

Wallace Redlin

be transferred to:

New Owner Name: Michael or Nancy Johnson

Address: 14962 483rd Ave

City, State, Zip Milbank SD 57252 Telephone No. 605-432-5600

Title to the following described land(s)/property has been transferred as described above:

NE $\frac{1}{4}$, S $\frac{1}{2}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$
Section 12, Township 120 North, Range 52 West
of the 5th P.M., in former Sisseton and Wahpeton Indian Reservation
in Grant County, SD

☒ I understand that the validity of Water Right/Permit No. 3503-3 has not been determined by this transfer action. If I have any questions on validity, I understand that only the Water Management Board has the authority to determine if a water right/permit is valid (see note below.)

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Fifty Dollars (\$50.00) is included to cover the filing fee as required by SDCL 46-2-13.

I, Nancy Johnson, the new owner, certify that the above information is true and correct.

Nancy Johnson
(signed by new owner)

NOTE: Water permits may be cancelled for nonconstruction after the five year construction period has expired. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 7/19, 2012

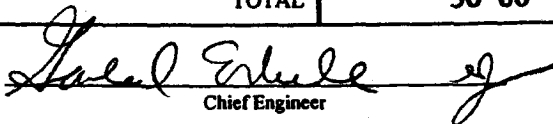
RECEIVED OF Granite View Farms Inc Michael or Nancy Johnson 14962 483rd Ave Milbank SD

57252

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	50	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form <u>3503-3</u>		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	50 00

No. **05493**

By 
Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
www.denr.sd.gov

July 19, 2012

3503-3

Michael or Nancy Johnson
14962 483rd Ave
Milbank SD 572562

Dear Mr. & Mrs. Johnson:

I am writing to knowledge receipt of the transfer form and filing fee you submitted for changing ownership on Water Right No. 3503-3.

The ownership change has been completed. Water Right No. 3503-3 formerly held by Wallace Redlin is now listed in your names.

Enclosed for your records is Receipt No. 05493 in the amount of \$50.00. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Genny McMath". The signature is written in a cursive, flowing style.

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

May 12, 2016

3503-3

Michael or Nancy Johnson
14962 483rd Ave
Milbank SD 57252

Dear Mr. & Mrs. Johnson:

I am contacting you in regard to your Water Right No. 3503-3 (copy enclosed).

Irrigators in South Dakota are required to submit an annual irrigation questionnaire reporting how much water was pumped during the irrigation season. Our records show the land authorized for irrigation under Water Right No. 3503-3 has been in the Conservation Reserve Program through 2015.

The purpose of my letter is to find out the status of irrigation on your property. Please take a few minutes and answer the questions on the attached sheet and return it in the envelope provided. If you have made a decision not to maintain the water right, let me know that as well.

Thank you in advance for your help in updating the water right.

Sincerely,

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures

RECEIVED

MAY 23 2016

WATER RIGHTS
PROGRAM

Water Right No. 3503-3
Michael or Nancy Johnson

Water Right No. 3503-3 authorizes diversion of ground water to irrigate 132 acres in the NE ¼ Section 12, T120N, R52W.

Do you still own the land described above?

Yes ☒

No ____ (If no, please list the name and mailing address of the new owner)

Has the land been re-enrolled in CRP?

Yes ____ through calendar year ____

No ☒

If the land has not been re-enrolled in CRP, we will begin mailing irrigation questionnaires to you for annual reporting. Questionnaires are mailed to irrigators in October each year and are due back in December.

We are going to use for irrigation.

For informational purposes:

46-5-37.2. Exceptions to forfeiture for nonuse. The provisions of § 46-5-37 notwithstanding, no water right or permit may be forfeited for nonuse if land authorized for irrigation by a permit or right is placed under an acreage reserve or production quota program or otherwise withdrawn from use as required for participation in any federal program, if:

- the water source is not fully appropriated
- if the withdrawal from use does not prevent approval of new permits from the same source, and
- if the appropriated water has been applied to beneficial irrigation use prior to participation in a federal program.