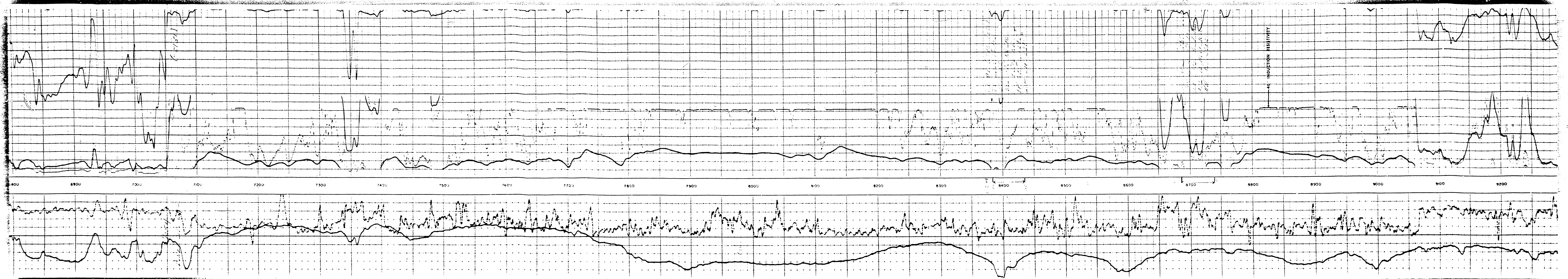
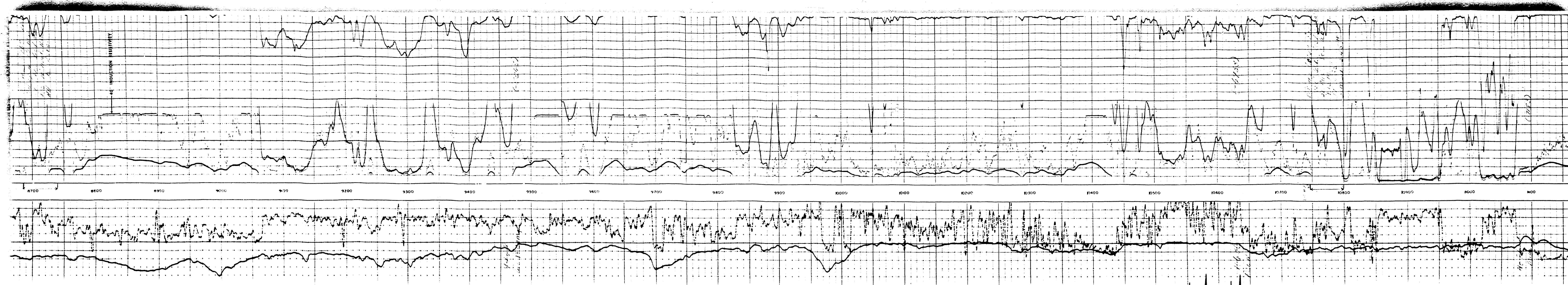


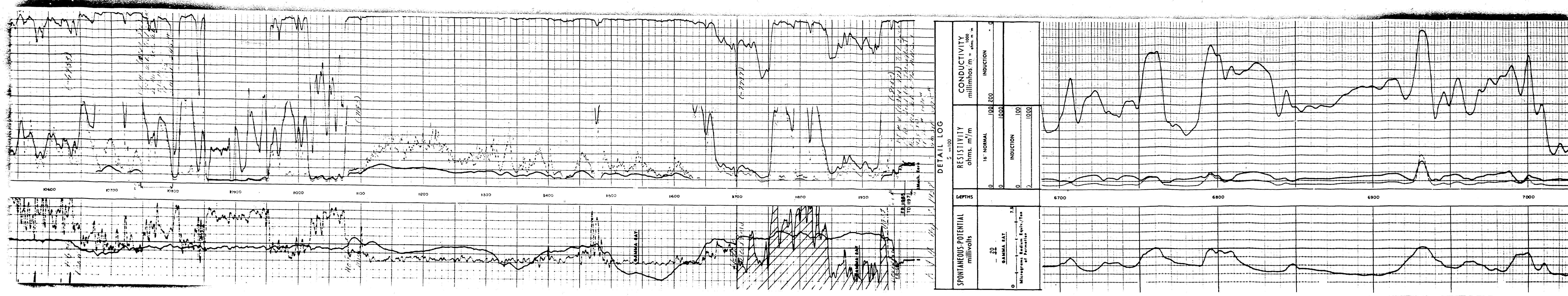
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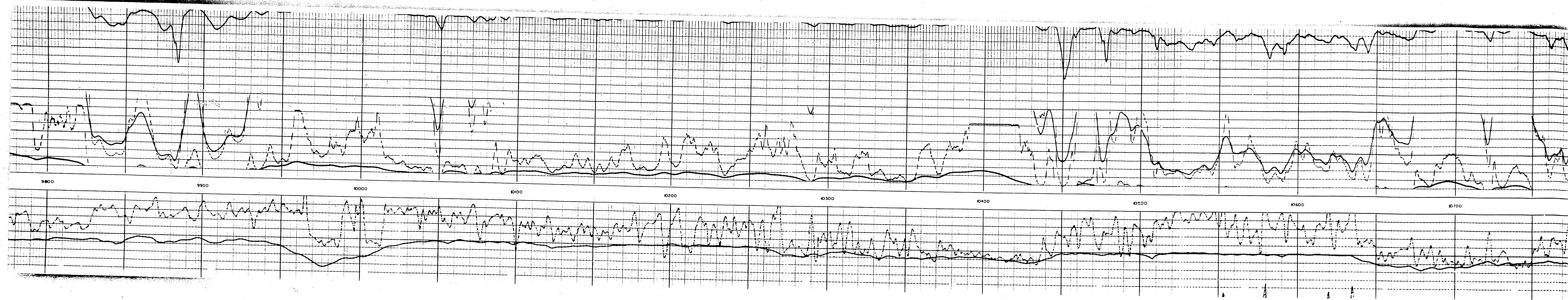
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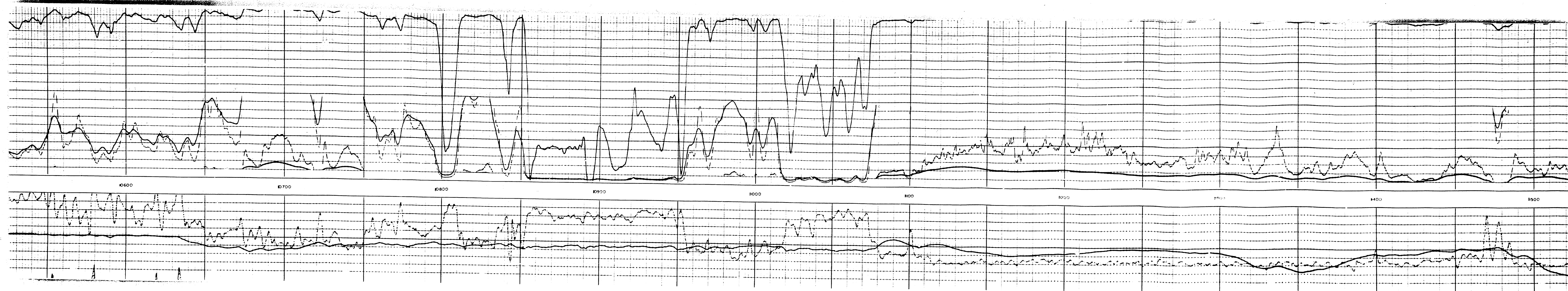
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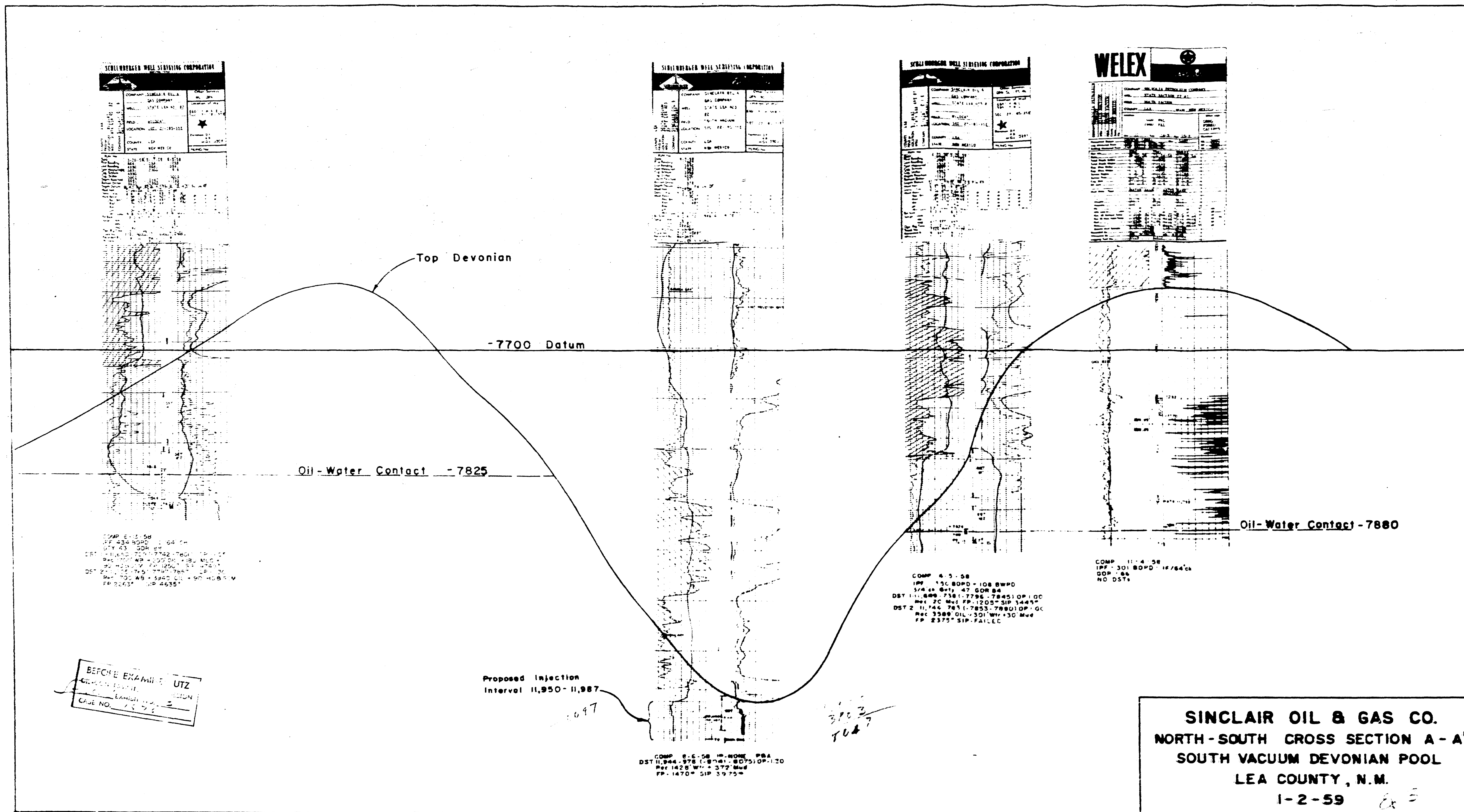


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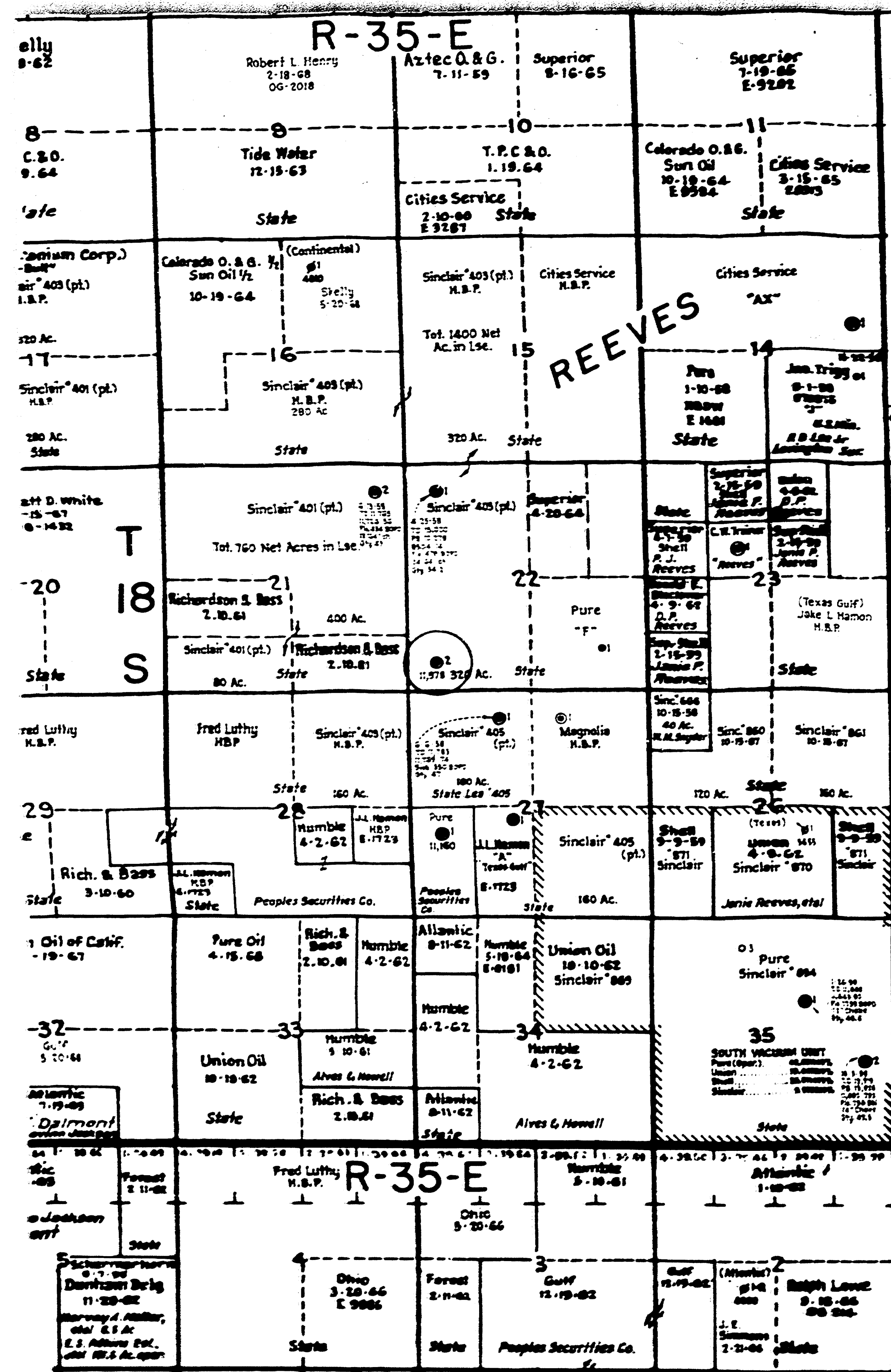




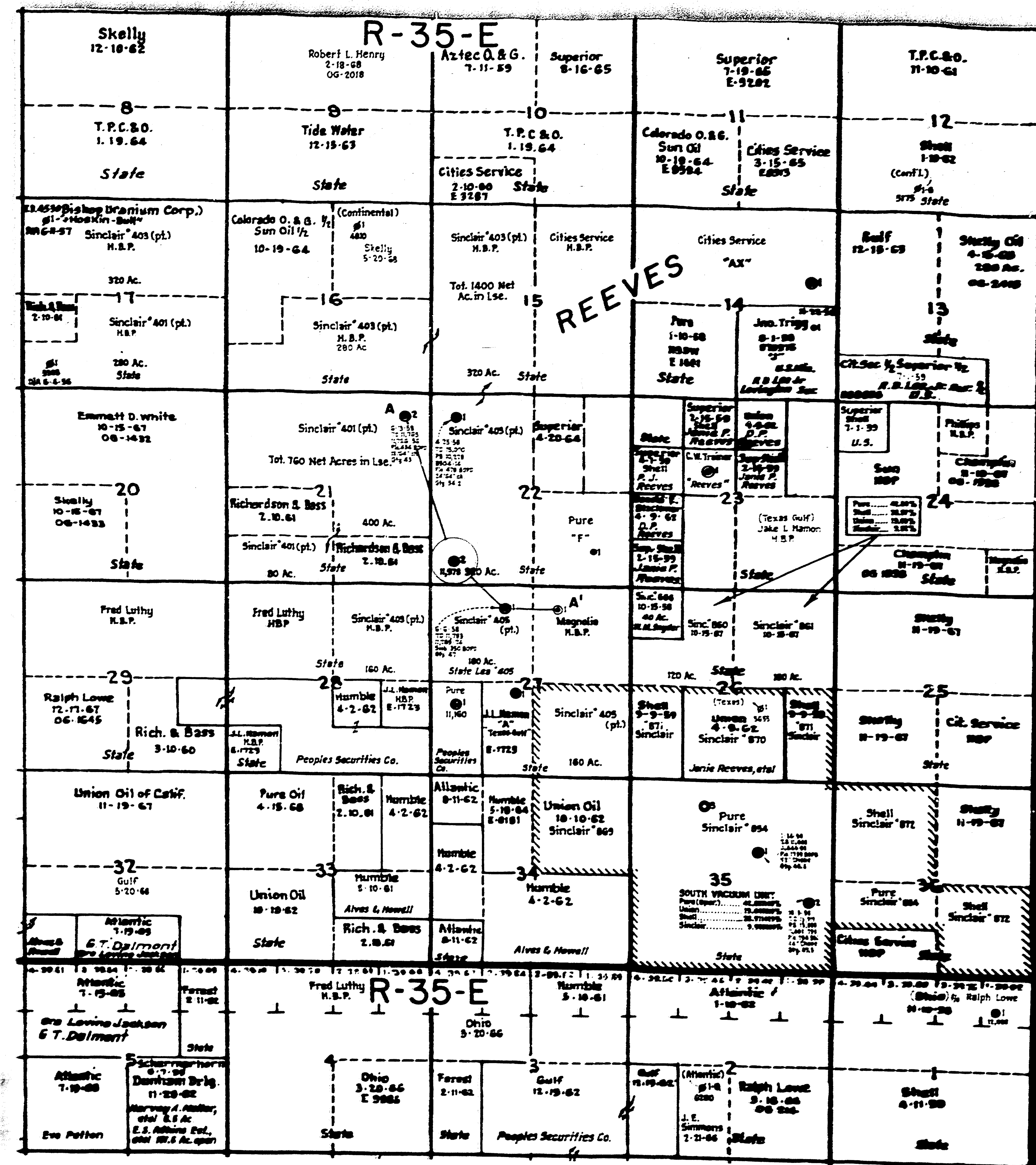
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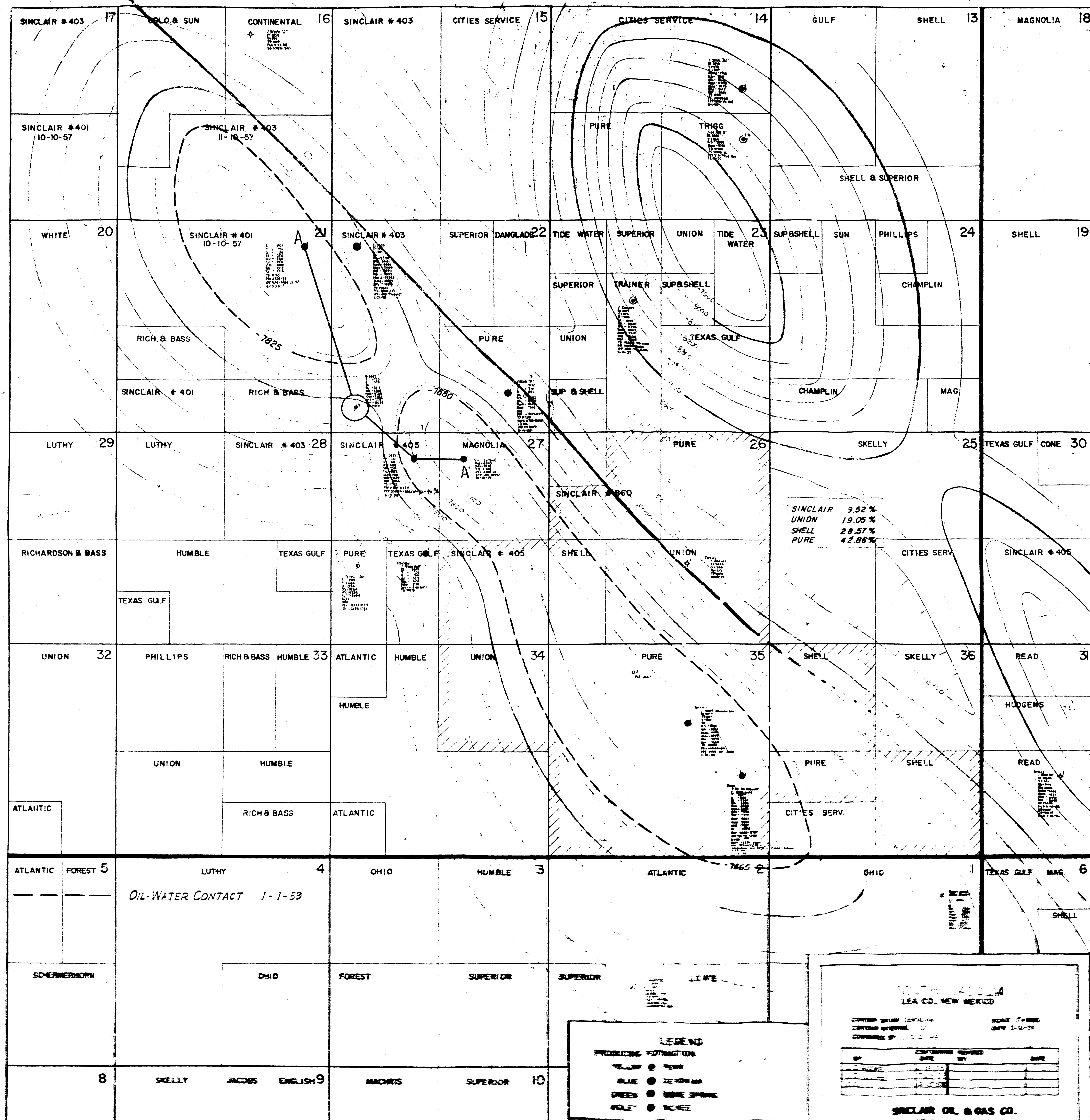
PART OF
LEA CO., NEW MEXICO
SCALE: 1" = 2000'



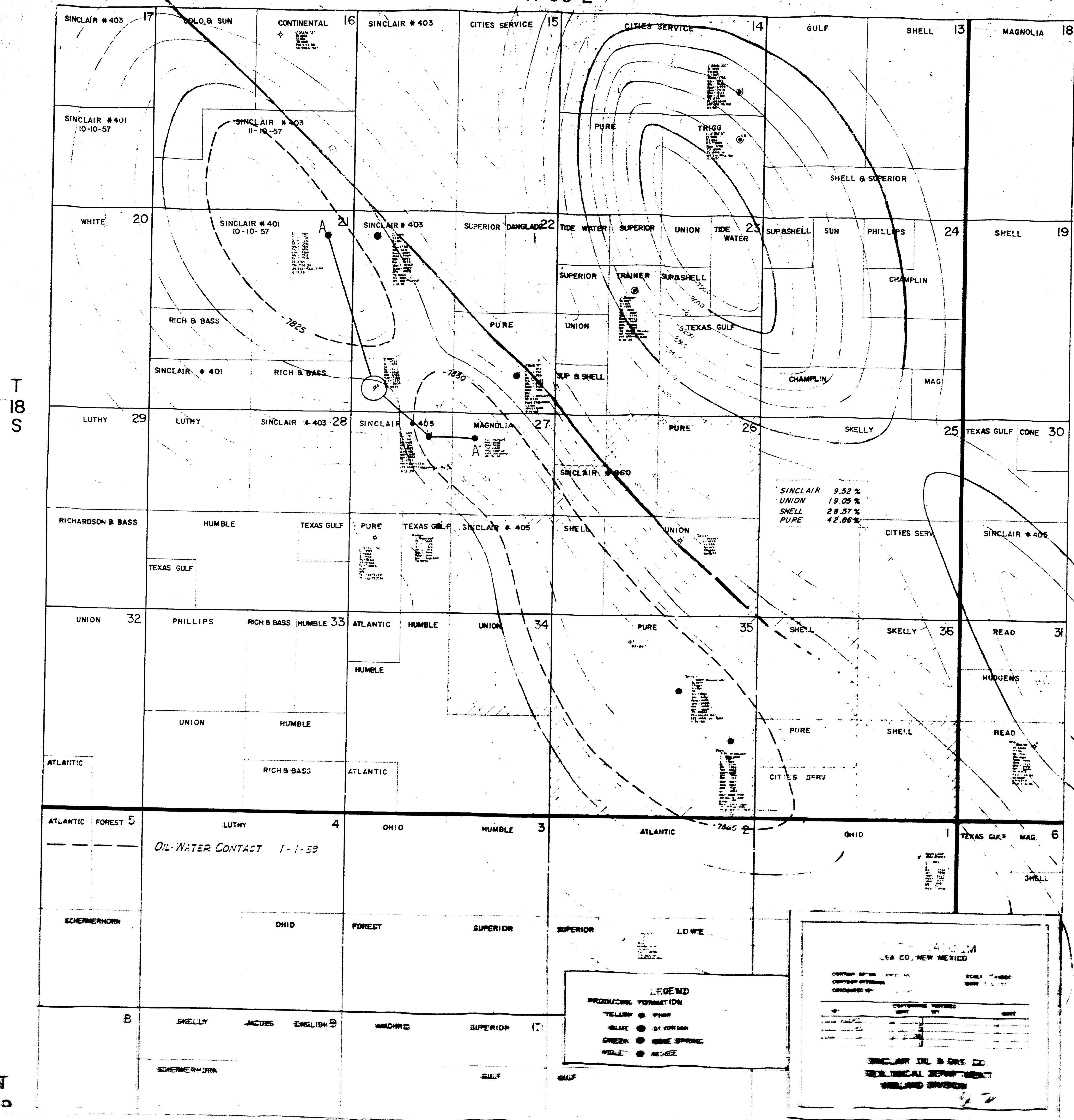
PART OF
LEA CO., NEW MEXICO
SCALE: 1" = 2000'

EXHIBIT 1

16



R 35 E



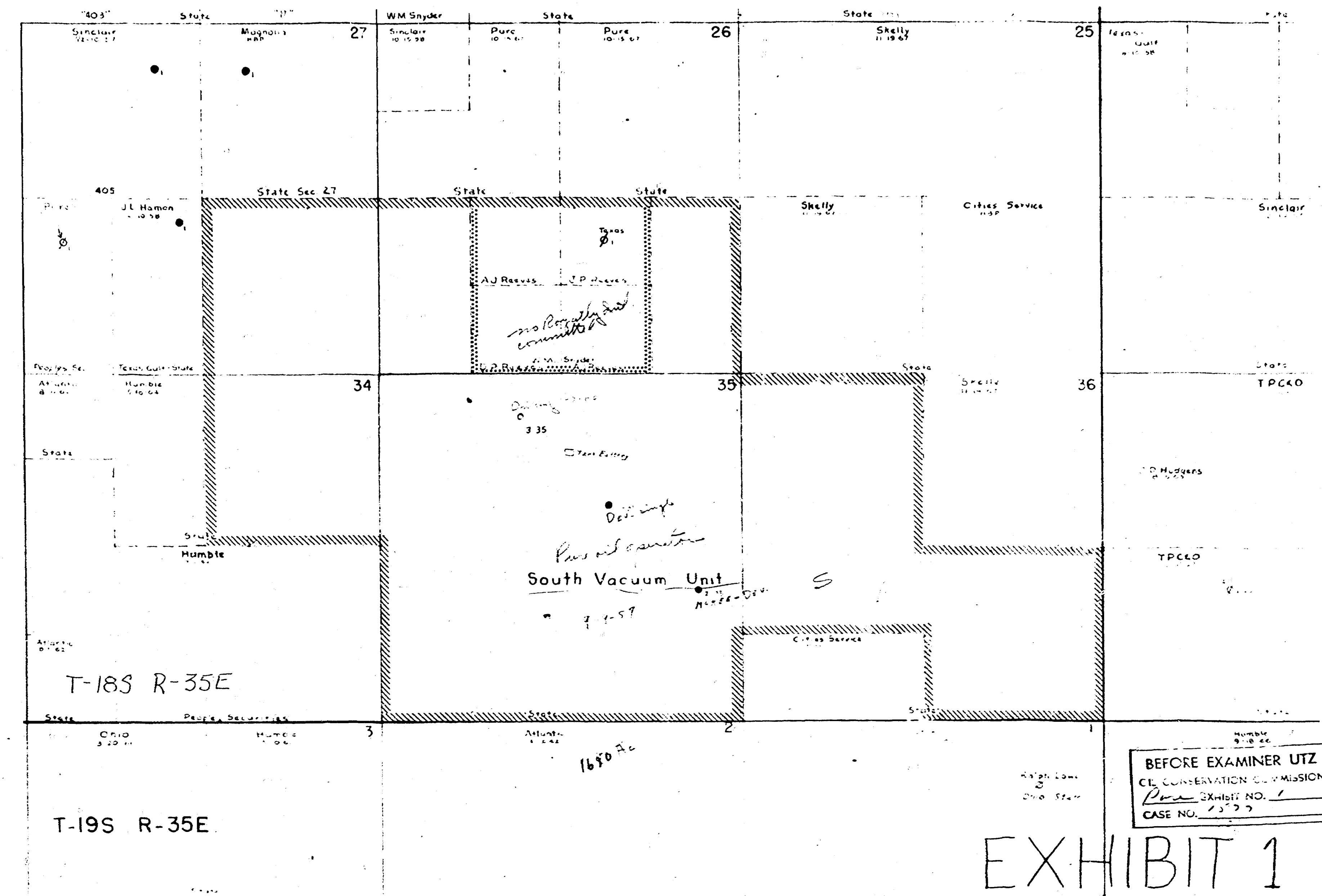
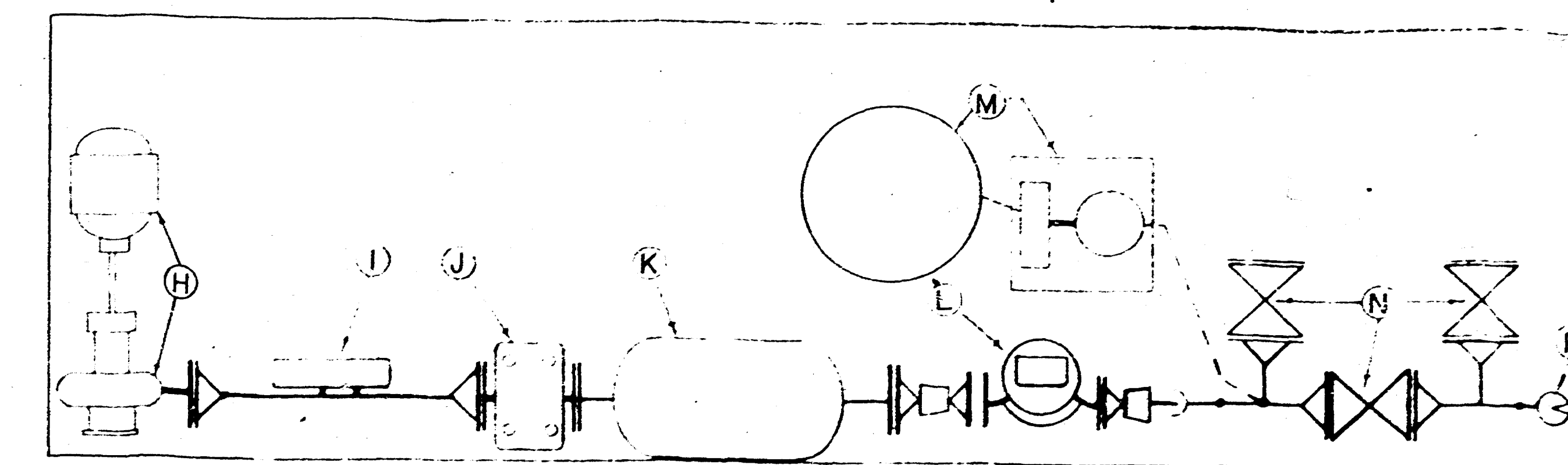


EXHIBIT 1



PLAN VIEW

DETAIL SCHEMATIC DIAGRAM OF METERING SKID
SOUTH VACUUM AUTOMATIC CUSTODY TRANSFER SYSTEM
SOUTH VACUUM UNIT - LEA COUNTY, NEW MEXICO

EXHIBIT 3

- H - Centrifugal pump and explosion proof electric motor
- I - 3" Inst. Inc. Inline BS & W Monitor Probe
- J - 3" Smith Strainer
- K - 3" Smith Deaerator
- L - 2" Smith S-12 positive displacement meter with automatic temperature compensator, horizontal non-reset counter, set-stop counter, motor control switch and impulse transmitter to give one pulse per barrel
- M - Teststem Type 3700 Sample Pump and shop made sample container
- N - 3" Plug Valve in Prover Manifold
- P - 3" L-K Automatic Shut off & Back Pressure Valve with Diaphragm Head

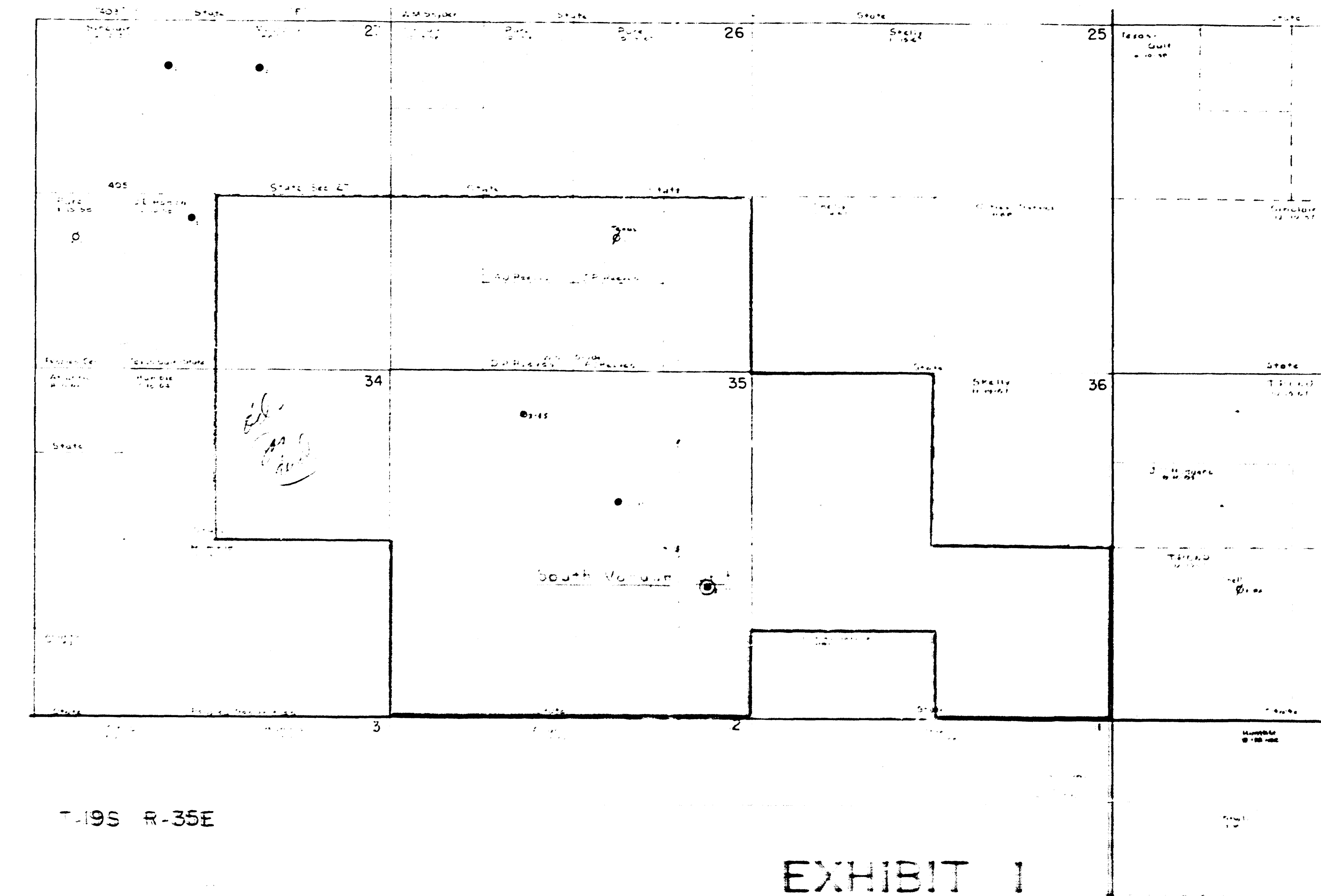
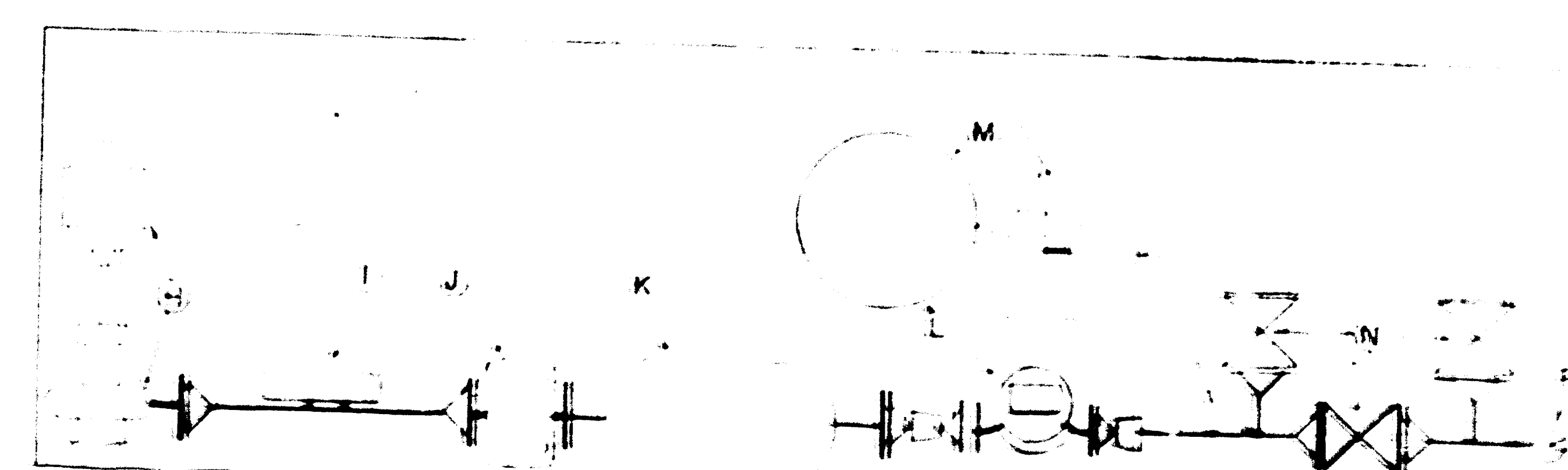


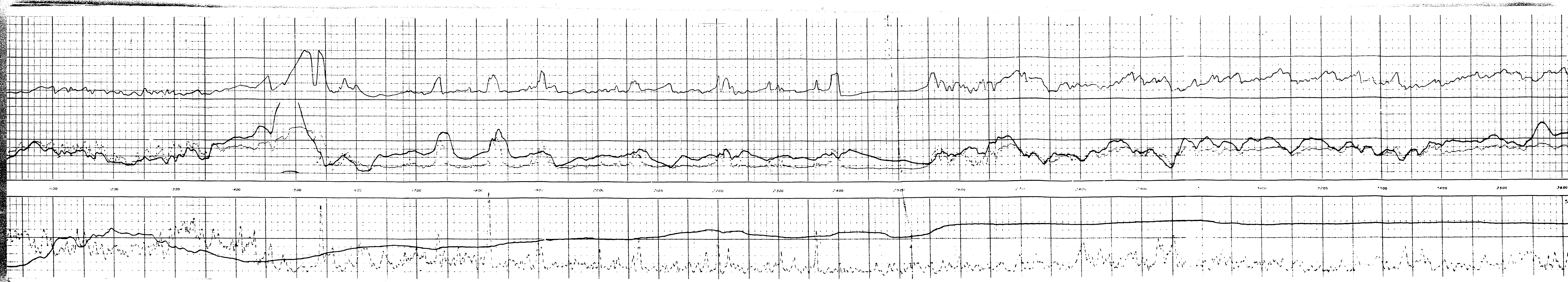
EXHIBIT 1



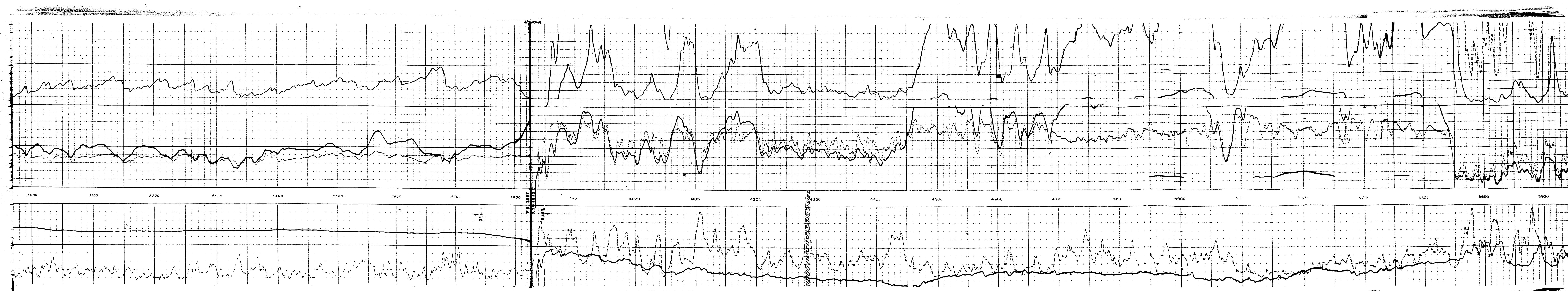
PLAN VIEW

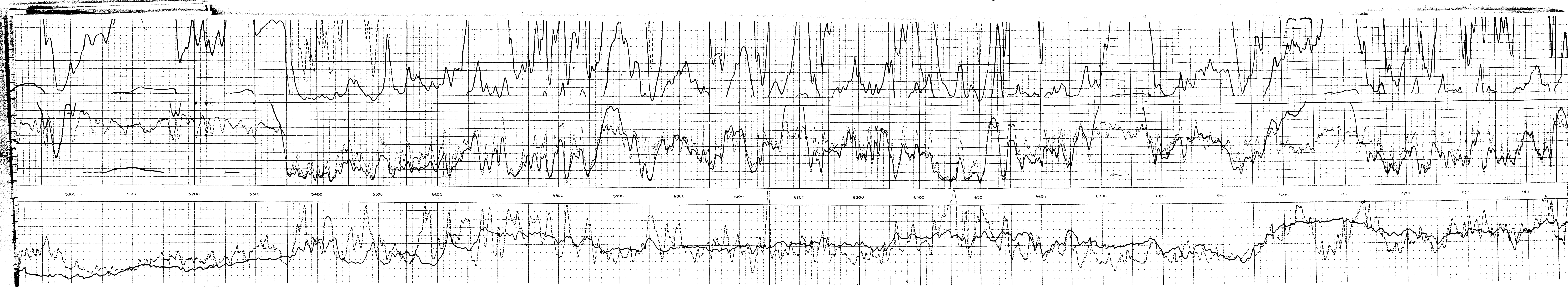
DETAIL SCHEMATIC DIAGRAM OF METERING SKID
SOUTH VACUUM AUTOMATIC CUSTODY TRANSFER SYSTEM
SOUTH VACUUM UNIT - LEA COUNTY, NEW MEXICO

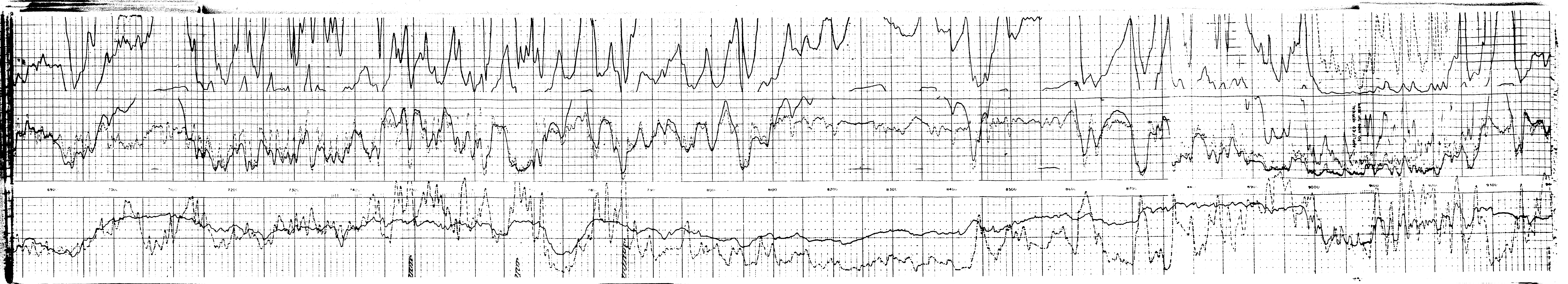
- H - Centrifugal pump and explosion proof electric motor
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- L - 2" Smith S-12 positive displacement meter with automatic temperature compensator, horizontal non-reset counter, set-stop counter, motor control switch and impulse transmitter to give one pulse per barrel
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- P - 3" L-K Automatic Shut off & Back Pressure Valve with Diaphragm Head



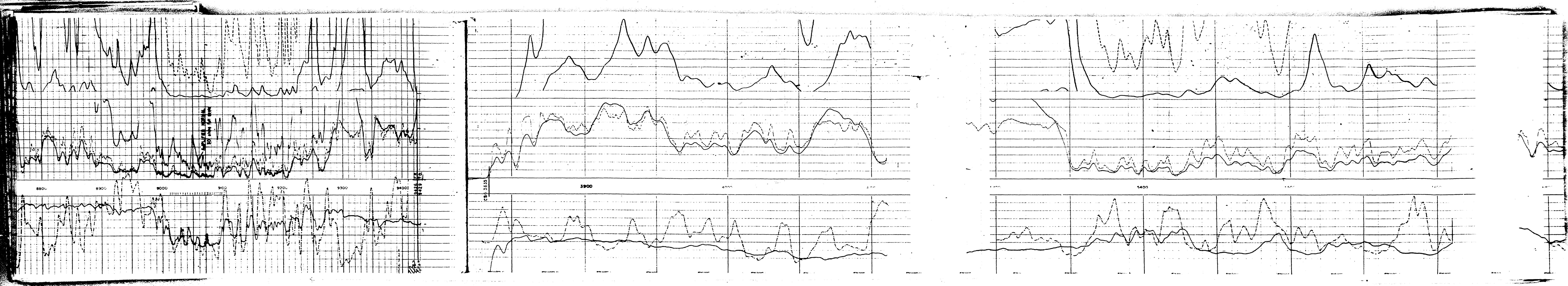
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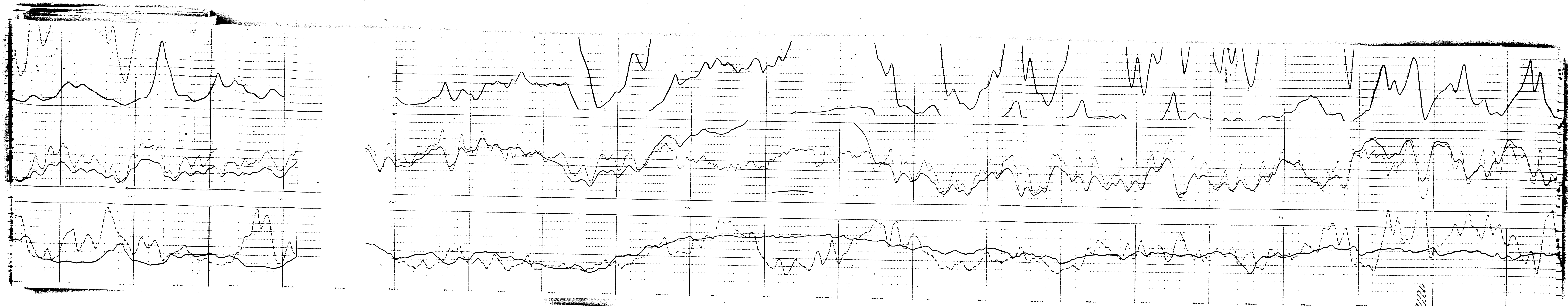




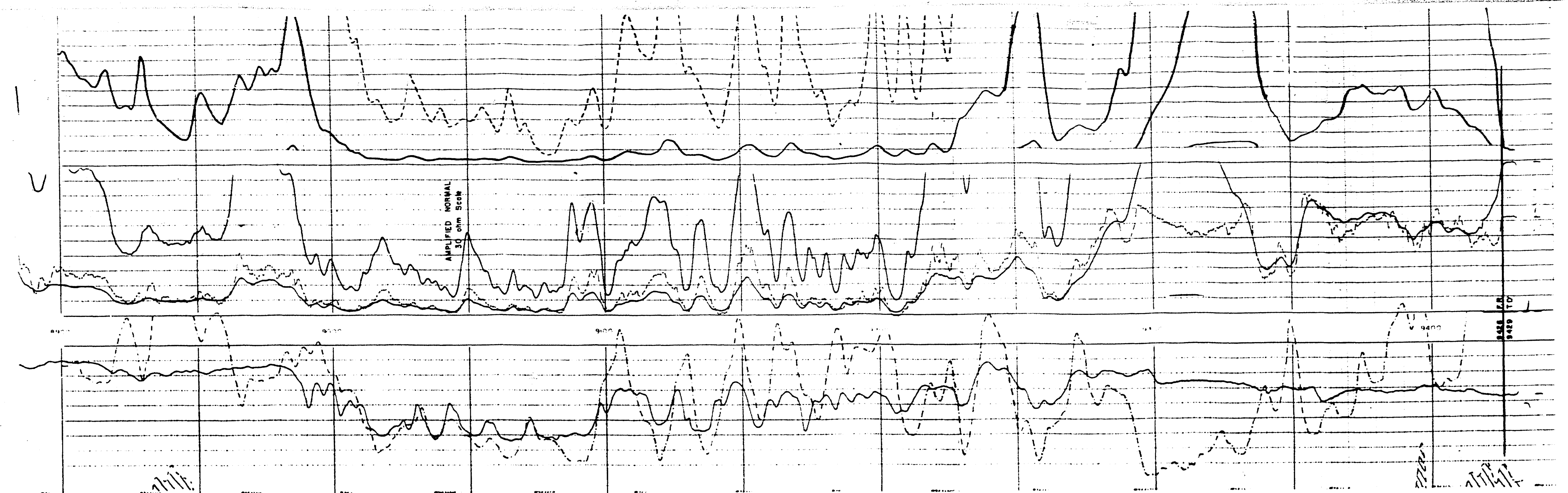
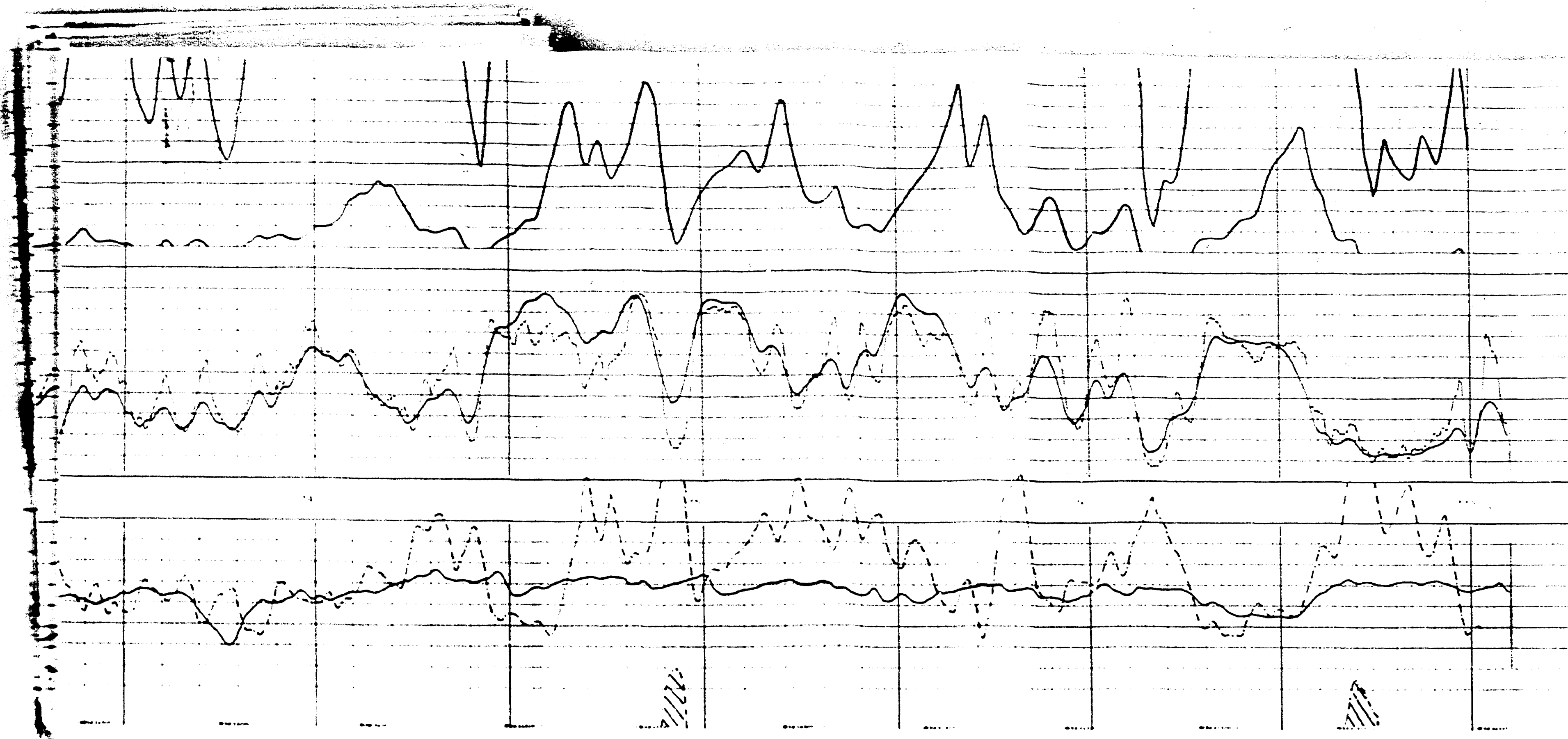
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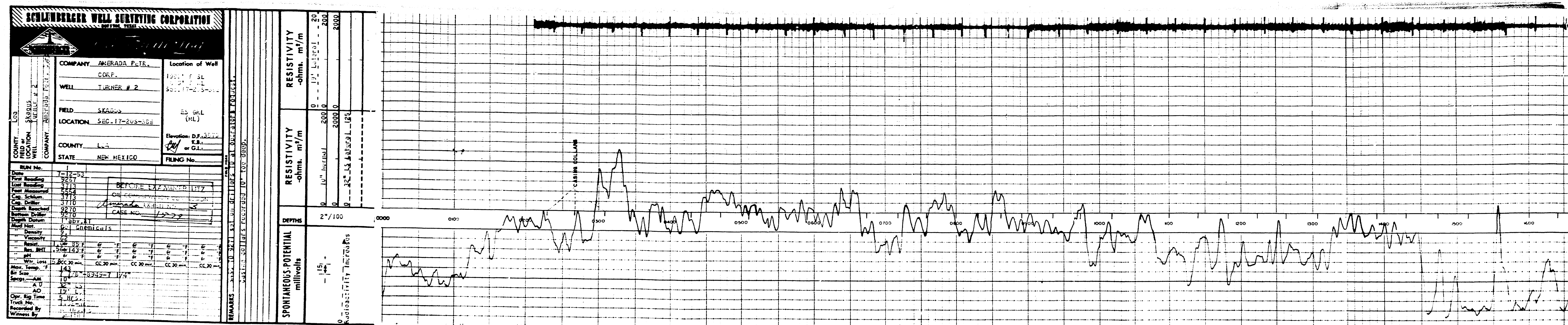
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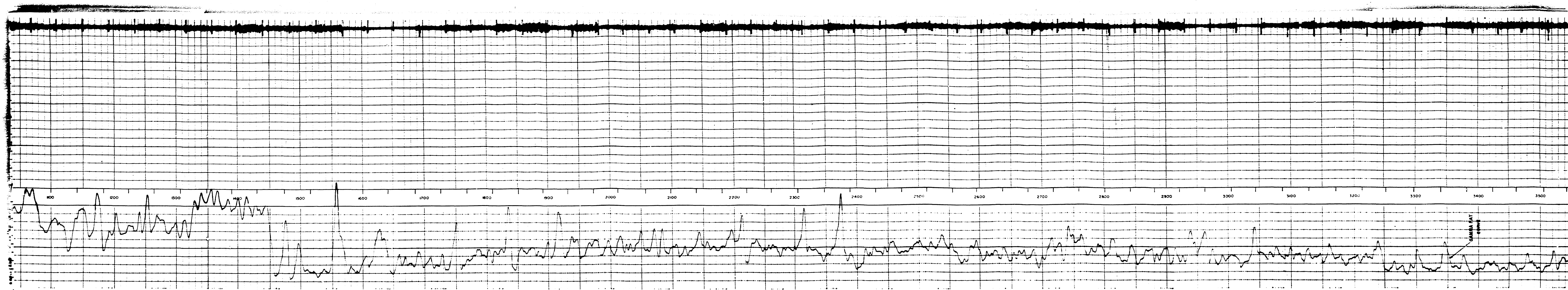


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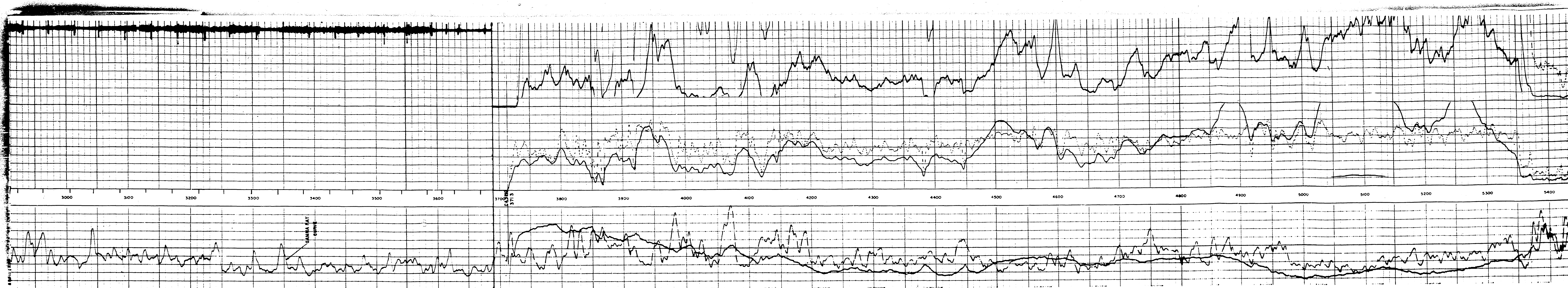


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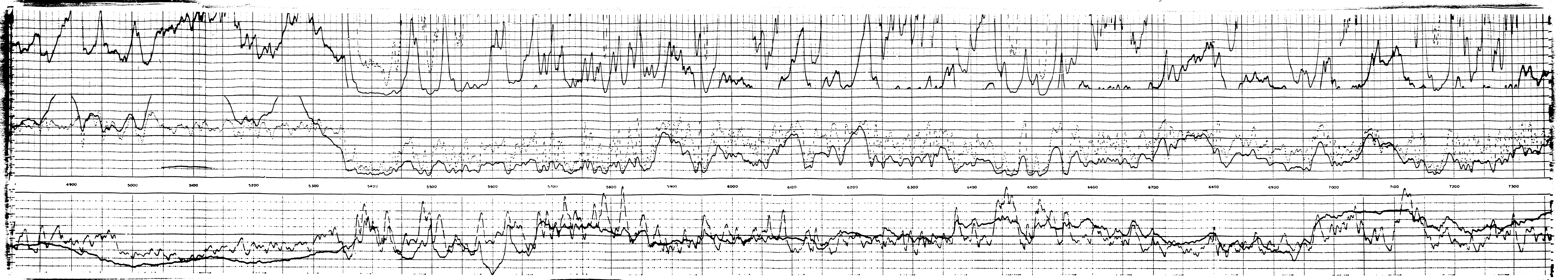




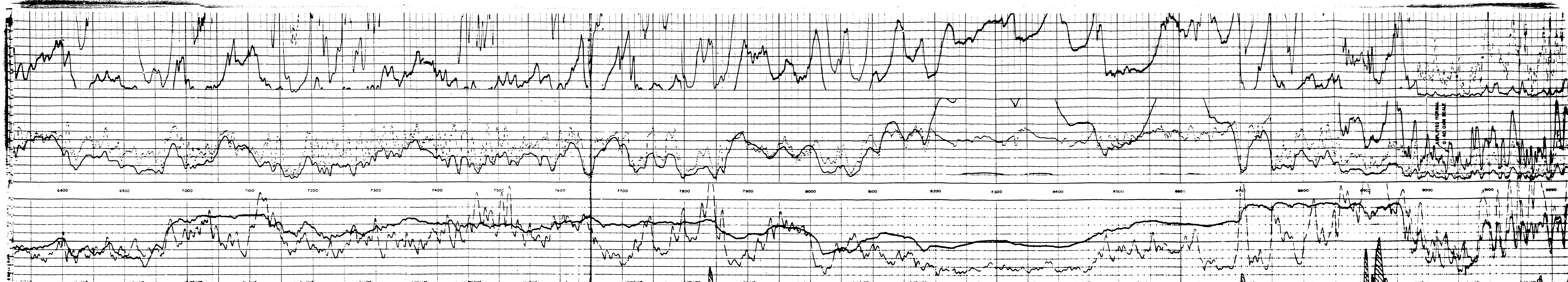
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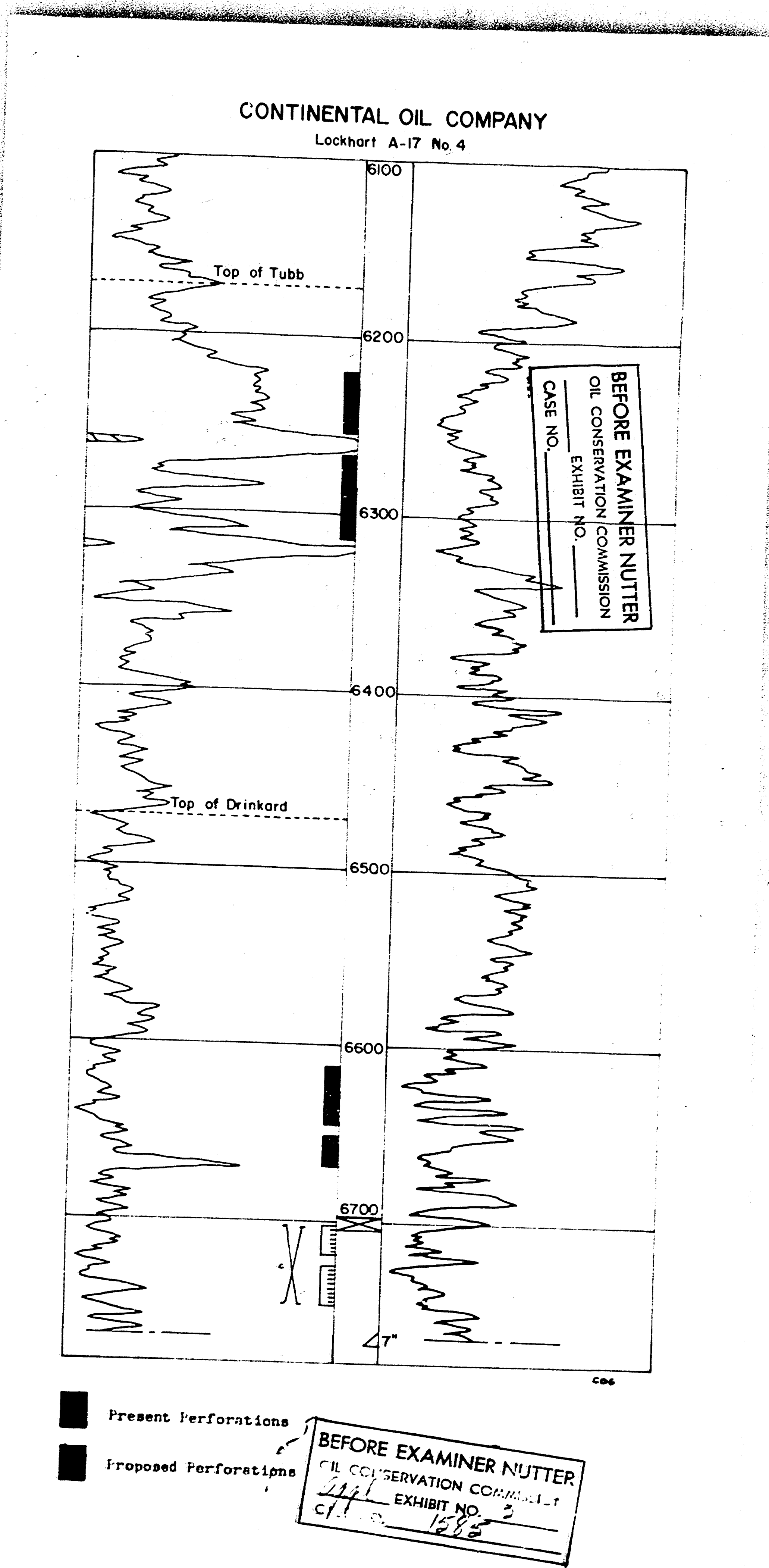
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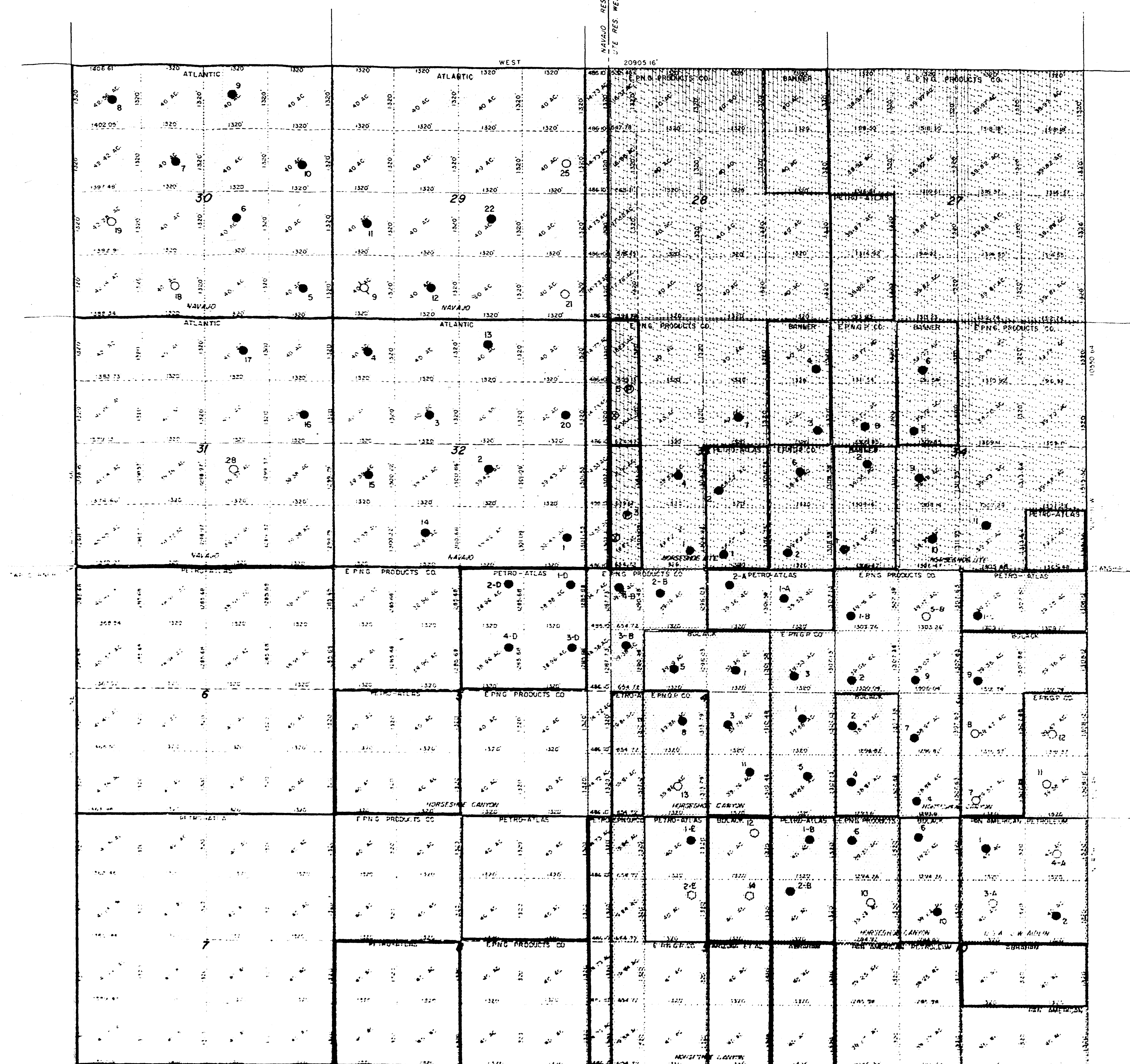
CITIES SERVICE				R31E GULF				WOOLLEY			
								WOOLLEY QUEEN			
								TPCAO			
KERR-WGEE GOV'T D 33				BROWNING 34				STATE I 35			
CITIES SERVICE				CITIES SERVICE				CITIES SERVICE			
GOV'T A				GOV'T C				STATE AN			
TRIGG				FEDERAL-34				WOOLLEY QUEEN			
240 150 50				CITIES SERVICE				PENROSE			
230 150 70				240 150 200 220				ADA			
4				230 150 120 130				SHELTON			
220				220 150 100 90				RICH STATE			
FEDERAL-4				GOV'T B				PENROSE			
TRIGG				CITIES SERVICE				GULF STATE			
120 40				170 110 50 30				WHALEY CO			
270 100 110 30				70 10 20 40				GEROR OIL			
200 100 100 10				PENROSE				ZACHERY STATE			
200 170 50 20				GULF				LATE OIL			
FEDERAL-9				PHILMEX				STATE AN			
				FEDERAL HOPP A				ZACHERY STATE			
								STATE H			
								PENROSE			
								GULF			
								ZIMMERMAN			
								REP FEDERAL			

CAPROCK - QUEEN POOL
CHAVES CO., NEW MEXICO
CITIES SERVICE OIL CO.

35



NAVAJO RES. EAST BOUNDARY



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DTIC - EXT. DIS. ONLY

REFERENCES

EX-10

EL PASO NATURAL GAS PRODUCTS COMPANY
HORSESHOE CANYON AREA
DISTRICT OFFICE
SAND HILL COUNTY
NEW WYCOG

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. _____
CASE NO. _____

BEFORE EXAMINER UTZ.
CIL CONSERVATION COMMISSION
Cabot EXHIBIT NO. 1
CASE NO. 1587

Cabot, et al

Forest

2
T.D. 10,240

Ventura

T.D. 6300.1-C

TD. 12,437
H. L. Lowe, et al

Cabot, et al

Cabot
Lowe
T.D. 11,686

Cabot, et al 35

J. R. Reed, et al

Cabot, et al

T D. 12,839

H. W. Fleet, et al

KING PLANT

To Mc Donald 8 Miles

T.P.C. & O.

2

Atlantic
Reed
T.D. 12,864

KING FIELD
LEA COUNTY, N. M.

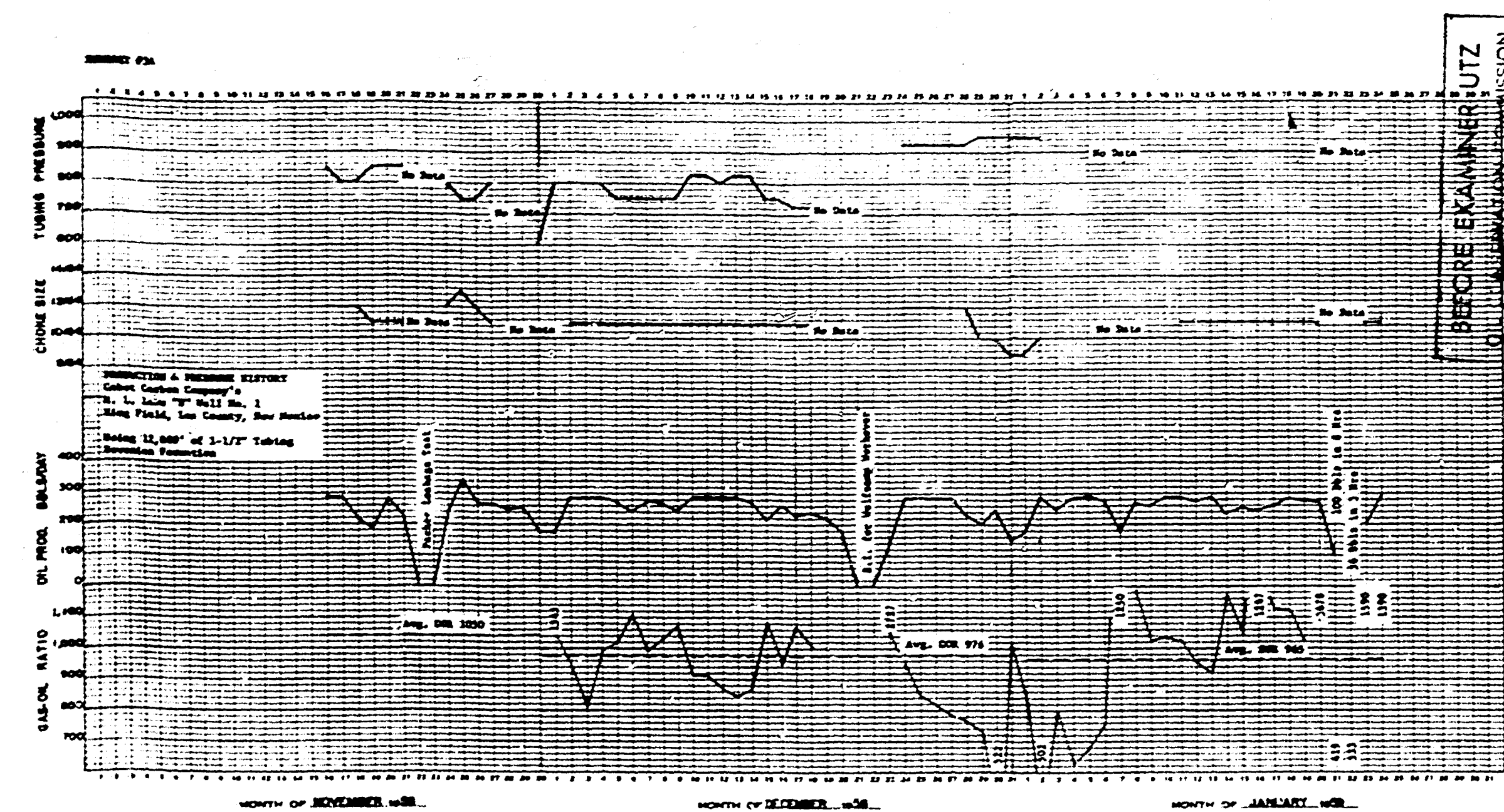
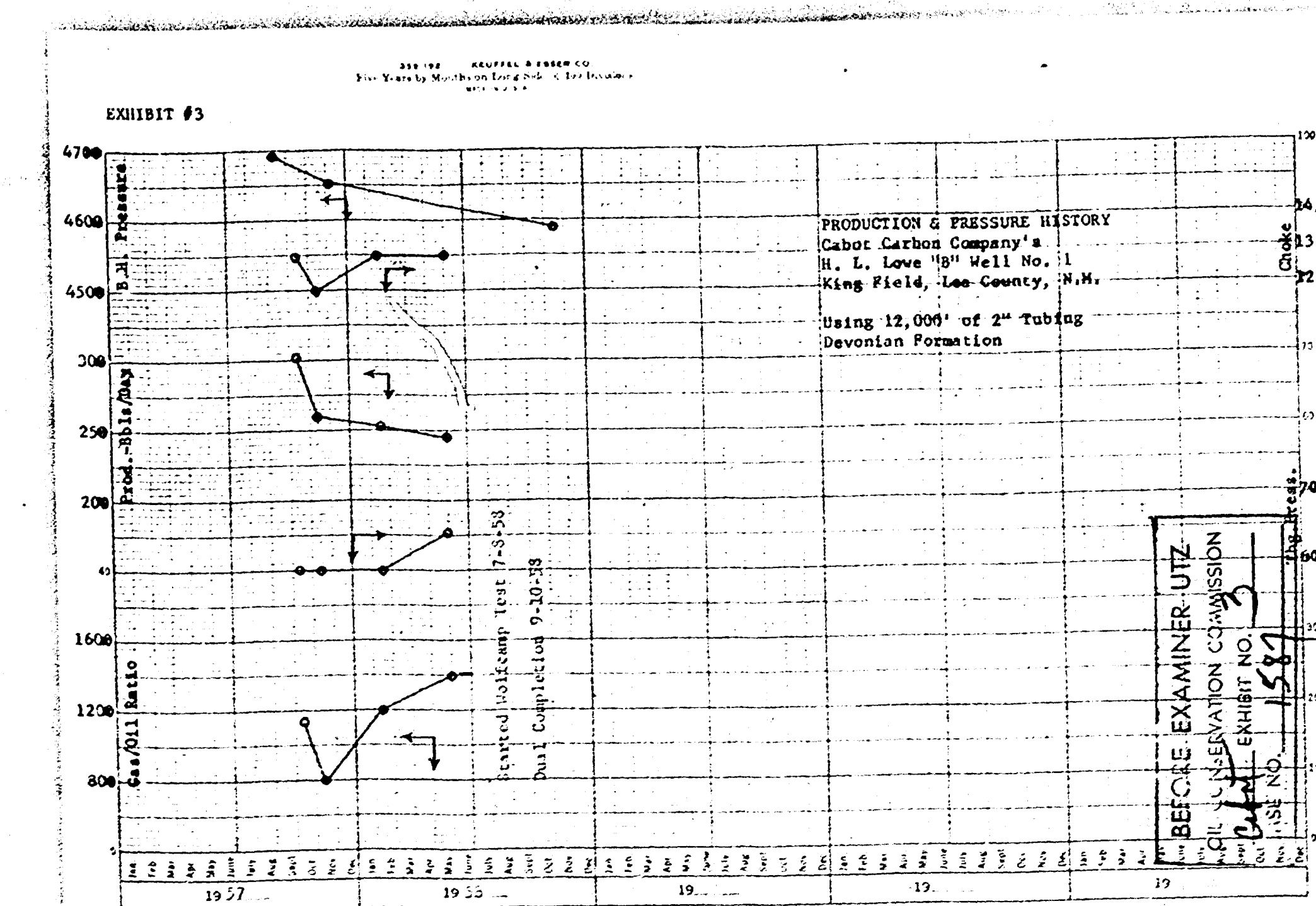
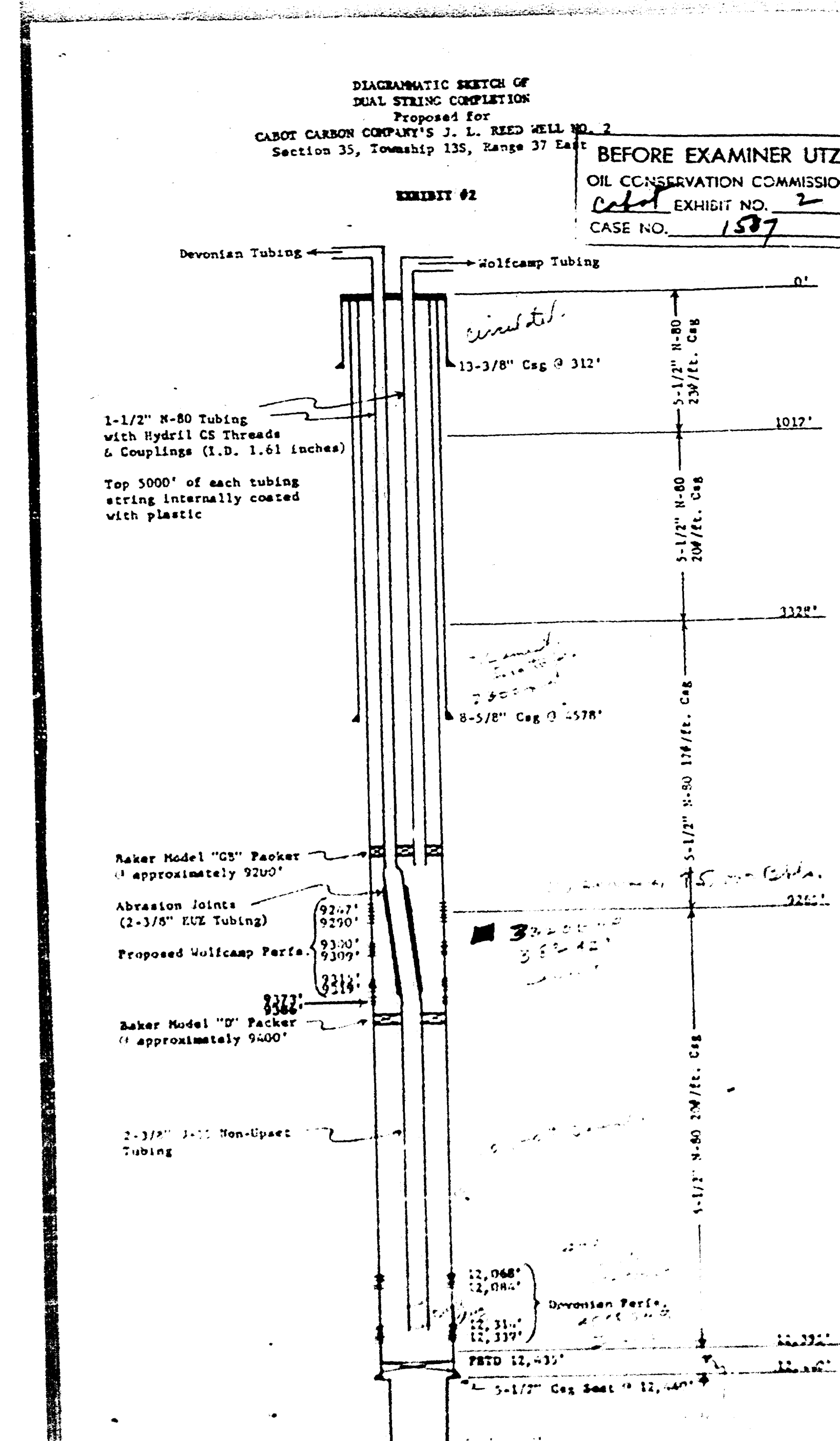
SCALE: 1"=500'

- Devonian Well
- Wolfcamp Well
- Dry Hole

State

37

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S

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EXERCISE 4

COMPARISON OF CLEARANCE USING VARIOUS SIZES OF TUBING IS 3-1/2" 23W/PT CASING

5-1/2 Inch Casing

	1.	2.	3.	4.	5.		
	Joint OD of 1-1/2" CS	Joint OD of 1-1/2" CS Tubing	Joint OD of 1-1/2" CS Tubing	Joint OD of (1-3/4) Special Wt/Lb/ft	Joint OD of 2-1/4" CS Tubing	Combinations	Clearance - Inches
WT/Lb	Yield 10 Comp/Inch		WT/Lb	Yield 10 Comp/Inch	WT/Lb	1,2,3,4,5	
23	4.345"	2.113"	2.200"	2.500"	2.500"	2.330"	1 1/2
							4.345 - (2.113 + 2.113) = 0.318(1)
							1 3/4
							4.345 - (2.113 + 2.330) = 0.212(2)
							1 5/8
							4.345 - (2.113 + 2.500) = -0.048
							1 7/8
							4.345 - (2.113 + 2.500) = -0.066
							2 1/8
							4.345 - (2.113 + 2.330) = 0.107(3)
							2 3/8
							4.345 - (2.200 + 2.330) = -0.185
							2 5/8
							4.345 - (2.200 + 2.500) = -0.135
							2 7/8
							4.345 - (2.300 + 2.330) = 0.015(1)
							3 1/8
							4.345 - (2.500 + 2.500) = -0.655
							3 3/8
							4.345 - (2.500 + 2.330) = -0.485
							3 5/8
							4.345 - (2.300 + 2.330) = -0.285
							4 1/8
							4.345 - (2.500 + 2.500) = -0.655
							4 3/8
							4.345 - (2.300 + 2.330) = -0.285
							4 5/8
							4.345 - (2.300 + 2.330) = -0.285

(1) If gas lift valves, circulating subs, etc., are run (Joint OD = 2.250). Clearance = 4.345 - (2.113 + 2.250) = 0.162

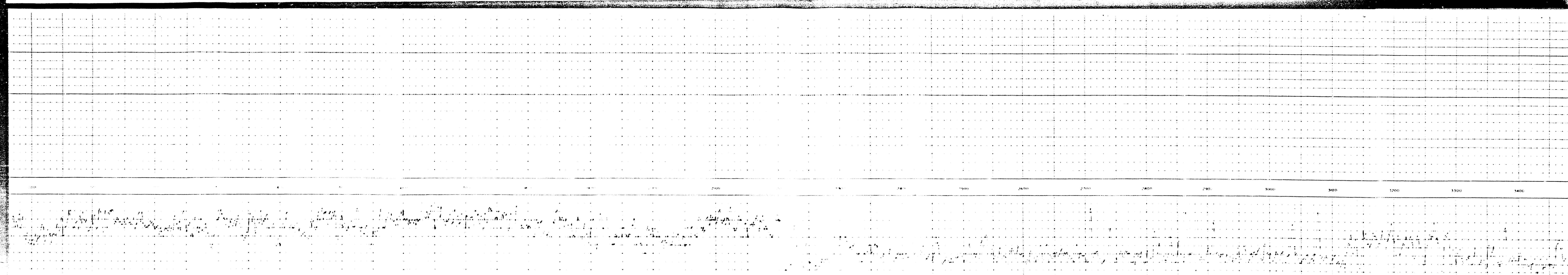
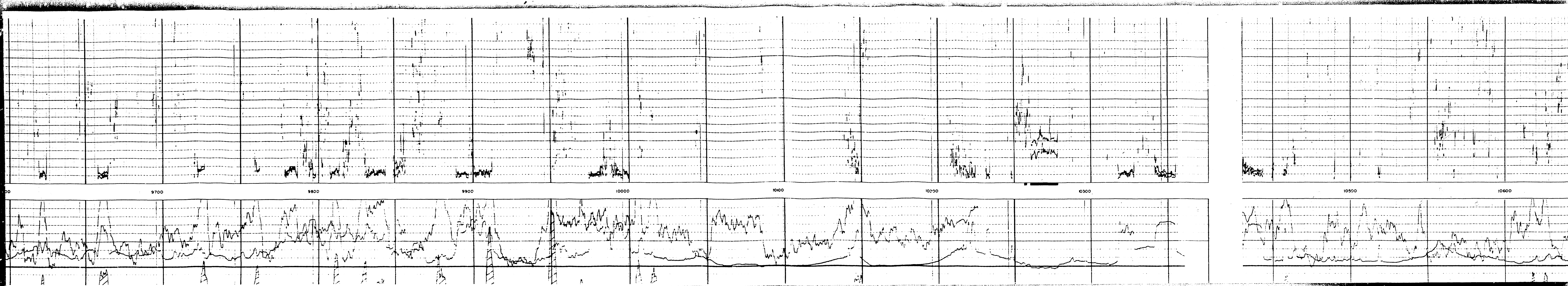
(2) Prefer to using Rydell CS joint over non Rydell because of greater joint tension factor and greater clearance

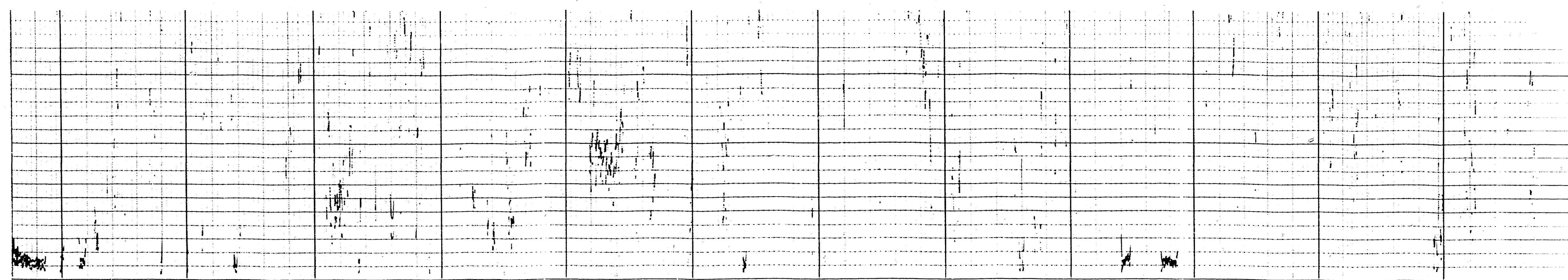
(3) If gas lift valves, circulating subs, etc., are used on 1-1/2" string (Joint OD = 2.250) Clearance = 4.345 - (2.250 + 2.330) = 0.065

(4) If gas lift valves, circulating subs, etc., are used on one string (Joint OD = 2.250) Clearance = 4.345 - (2.250 + 2.330) = 0.065

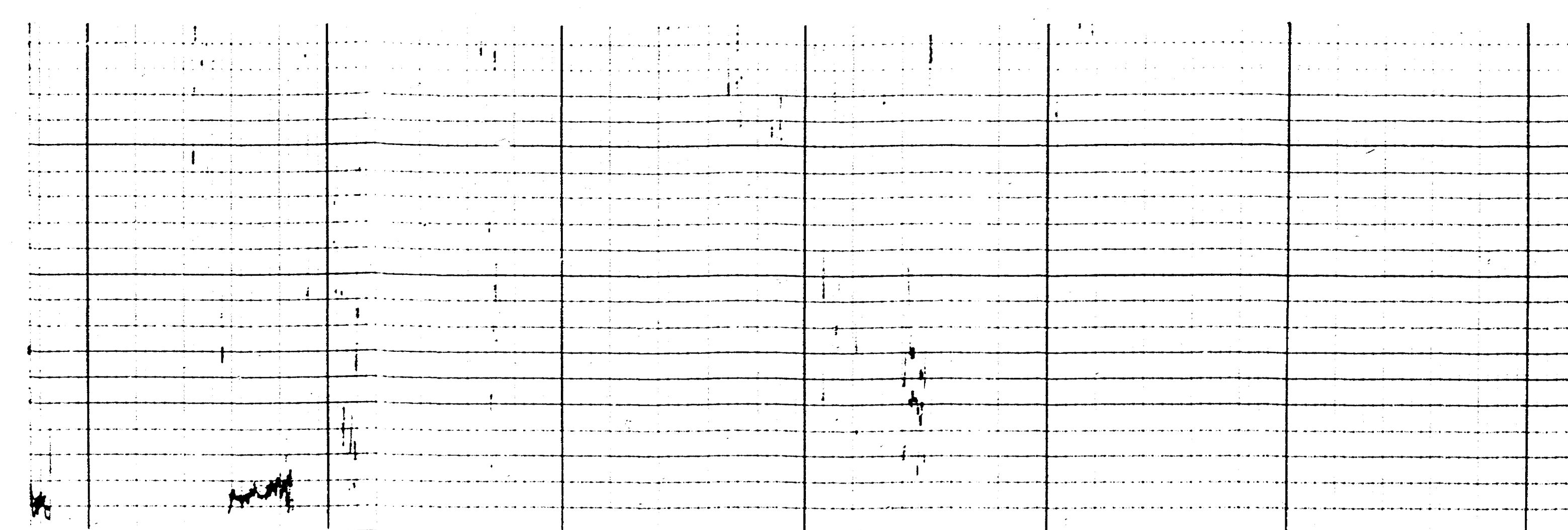
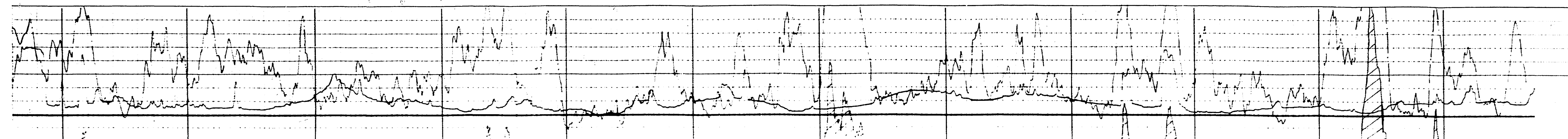
(5) If gas lift valves, circulating subs, etc., are used on 1-1/2" string (Joint OD = 2.250) Clearance = 4.345 - (2.250 + 2.330) = 0.065

FIELD EXAMINER UTZ
DATE 1/24/82
WEL INC. 1582

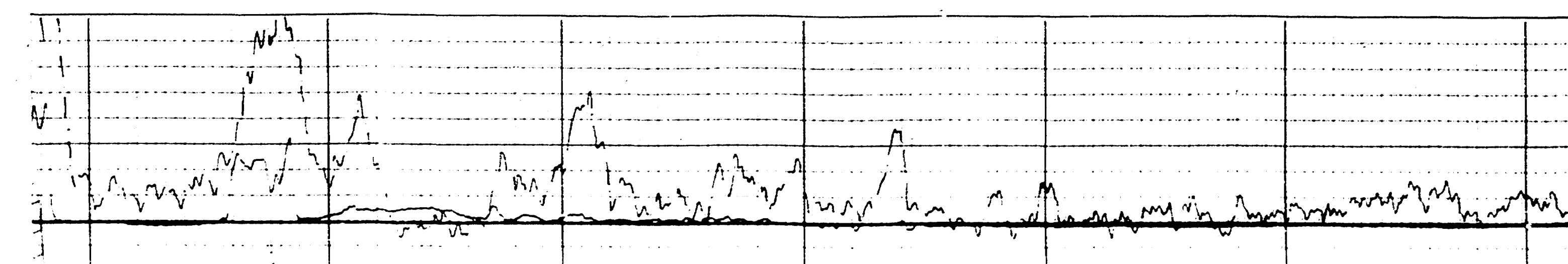




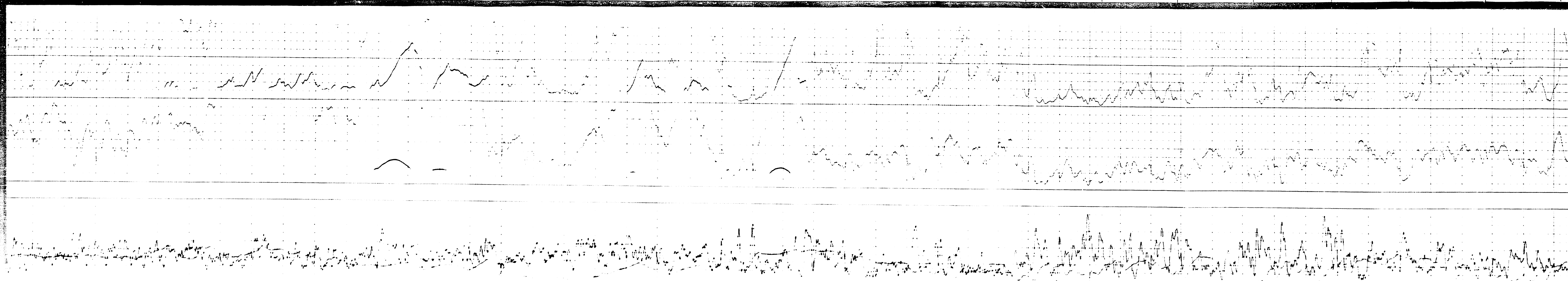
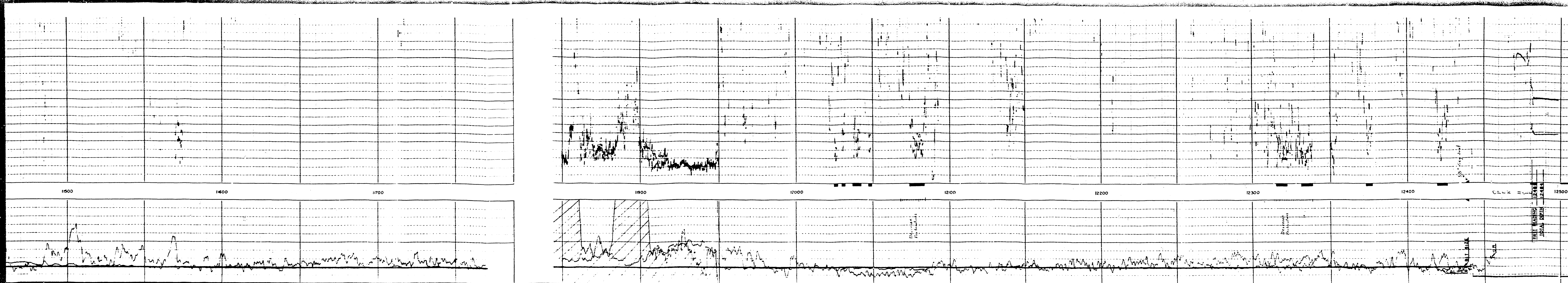
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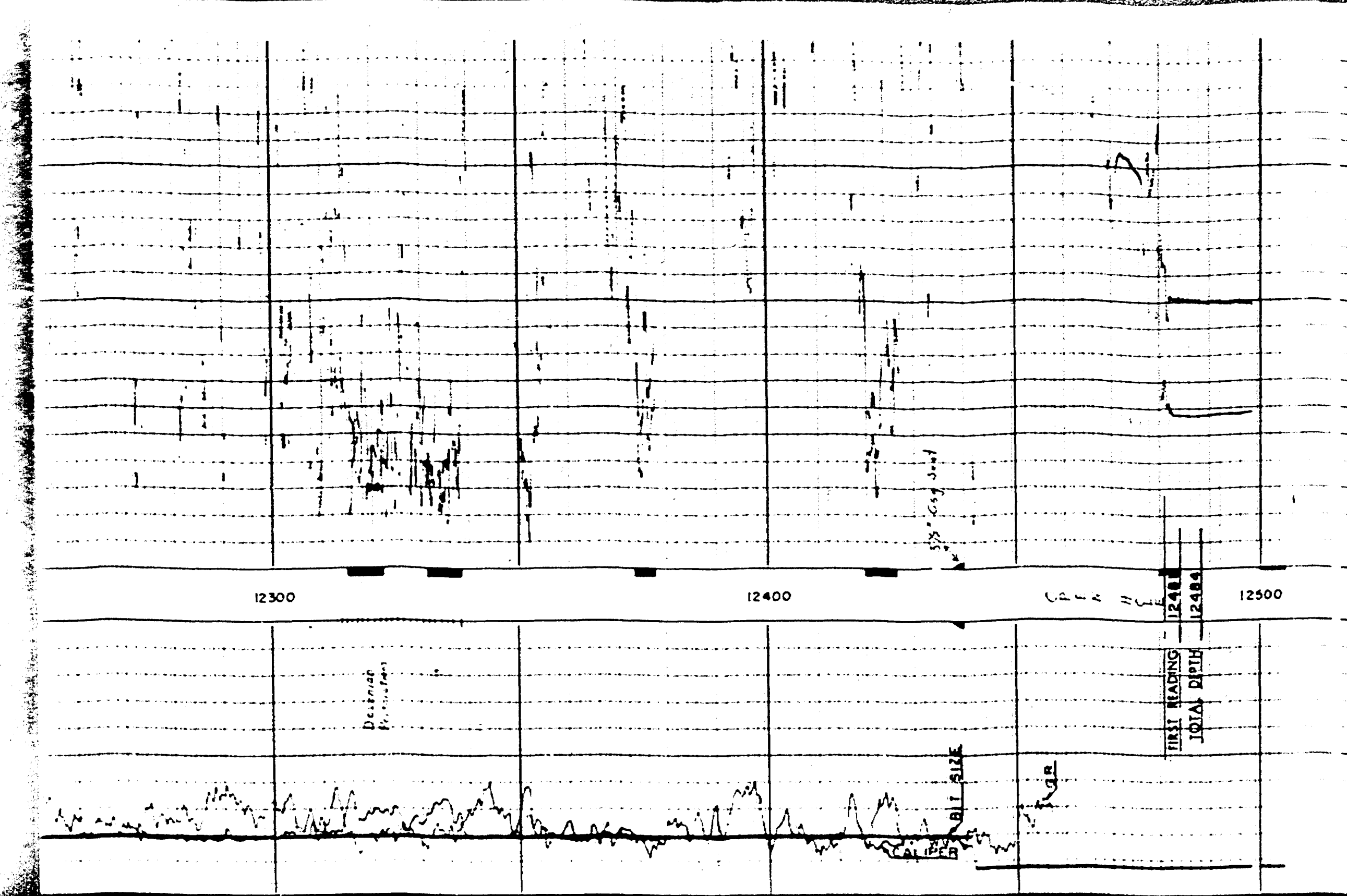
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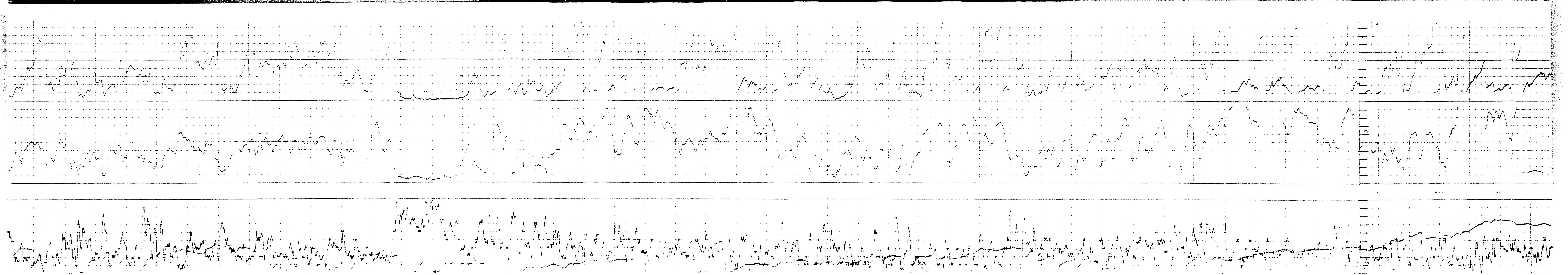


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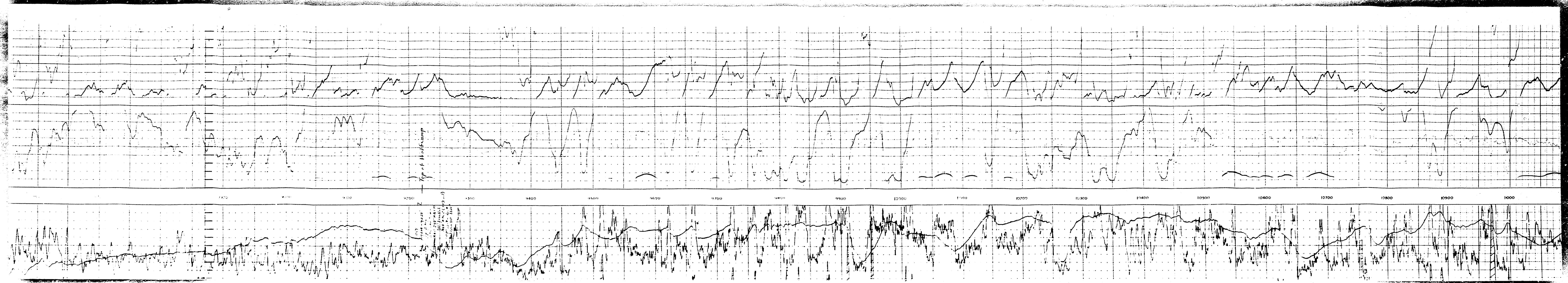


CARDY CLARK COMPANY
 U.S. GEOLOGICAL SURVEY
 FIELD DIVISION
 LOS ANGELES, CALIF.

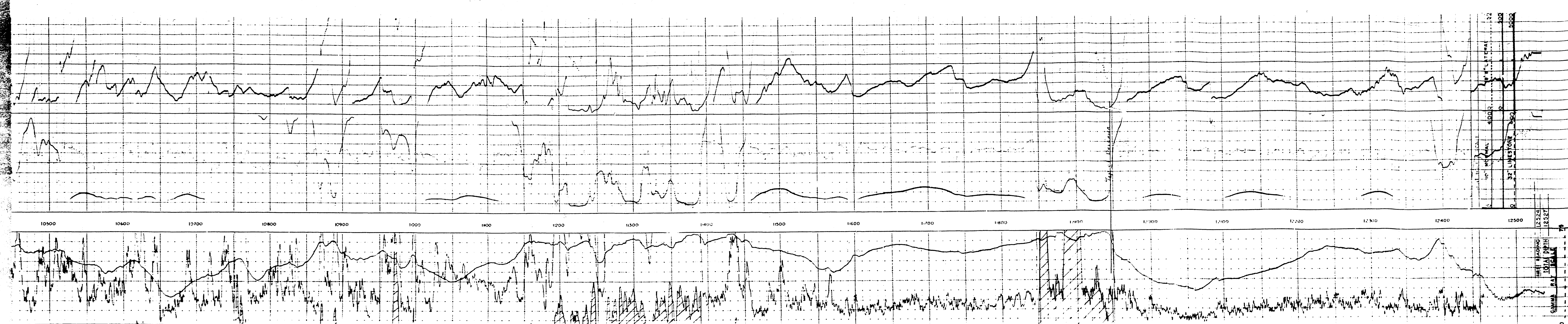
TOPE EXAMINER UTZ
 U.S. GEOLOGICAL SURVEY
 CASE NO. 1587



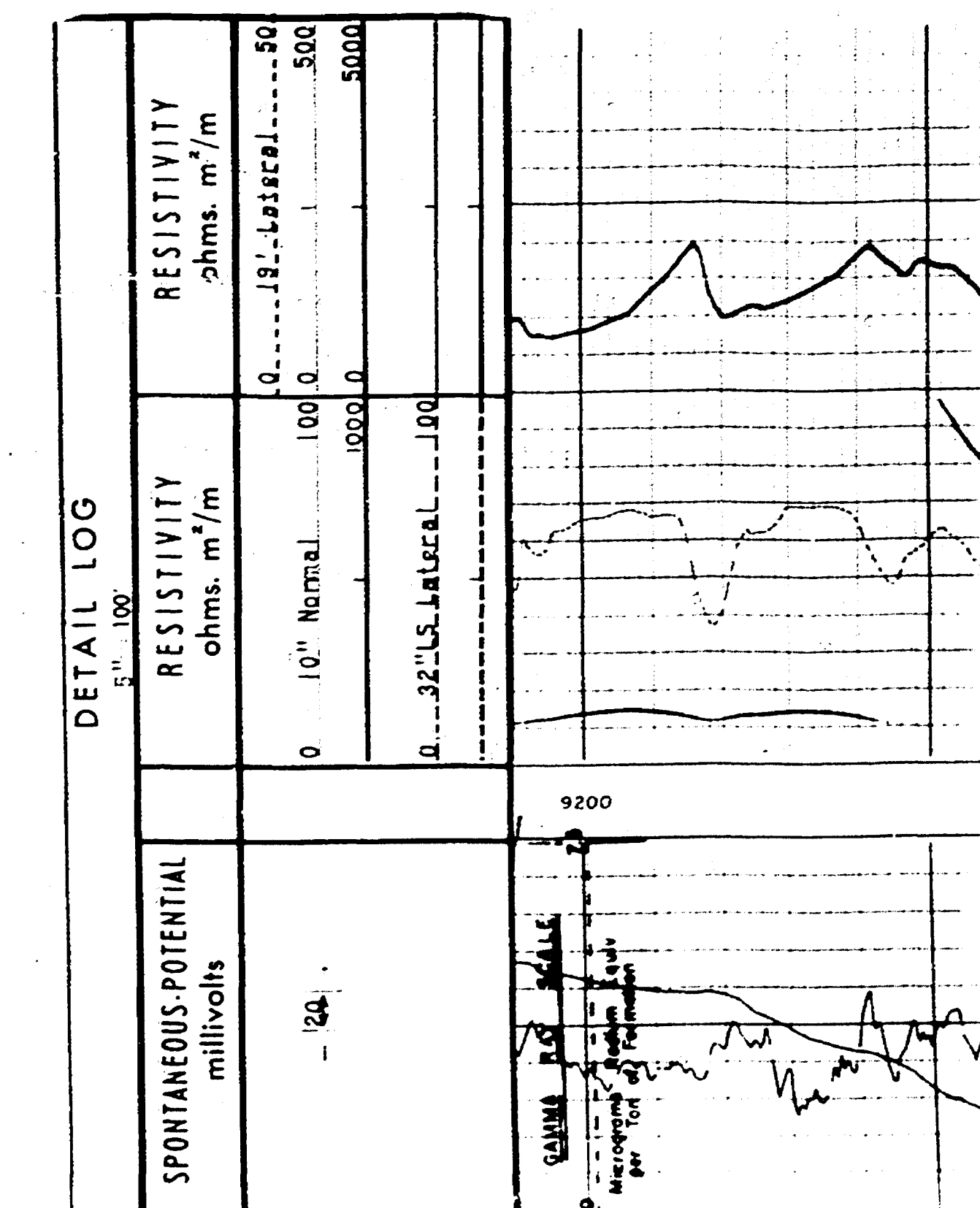
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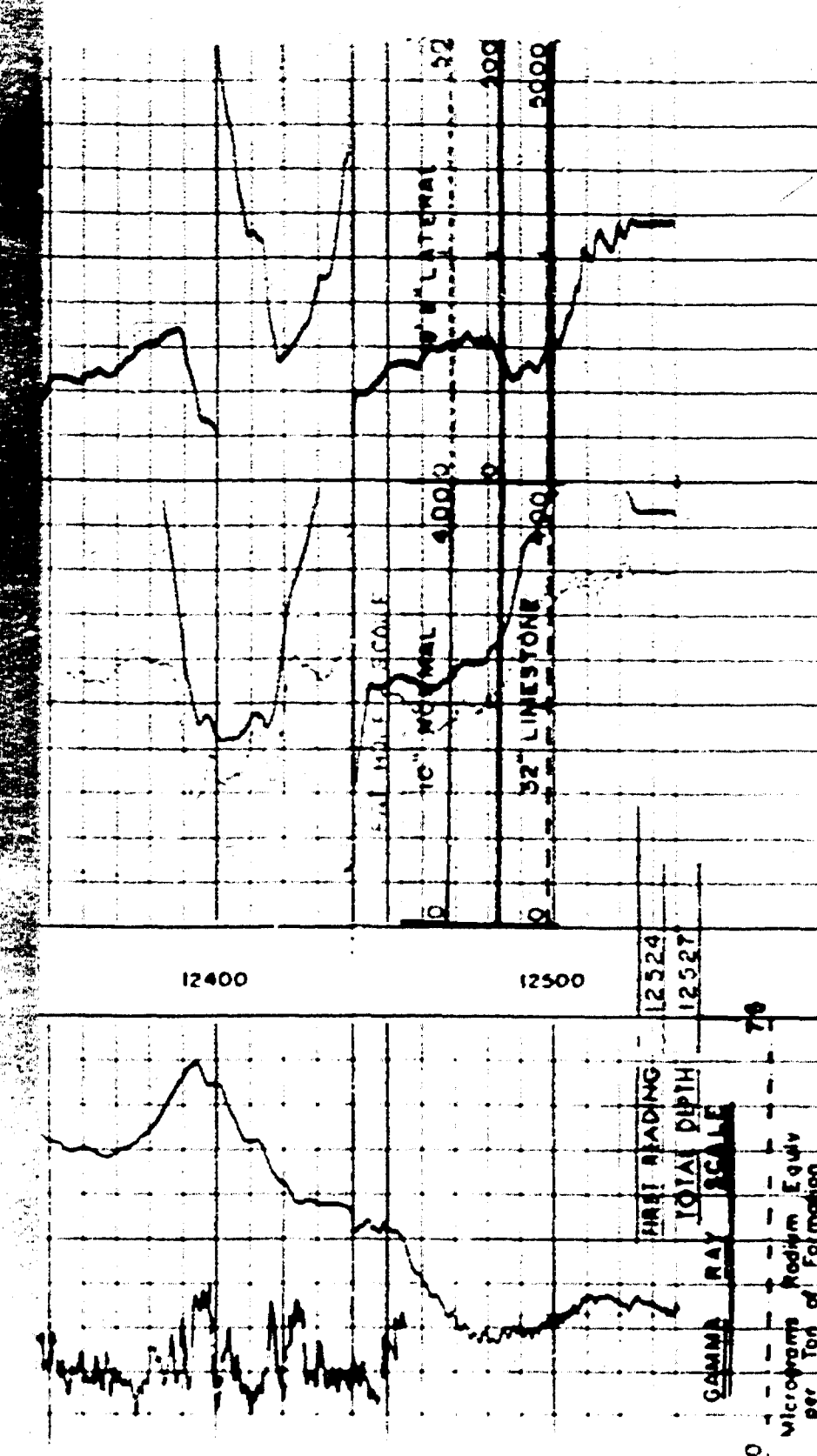


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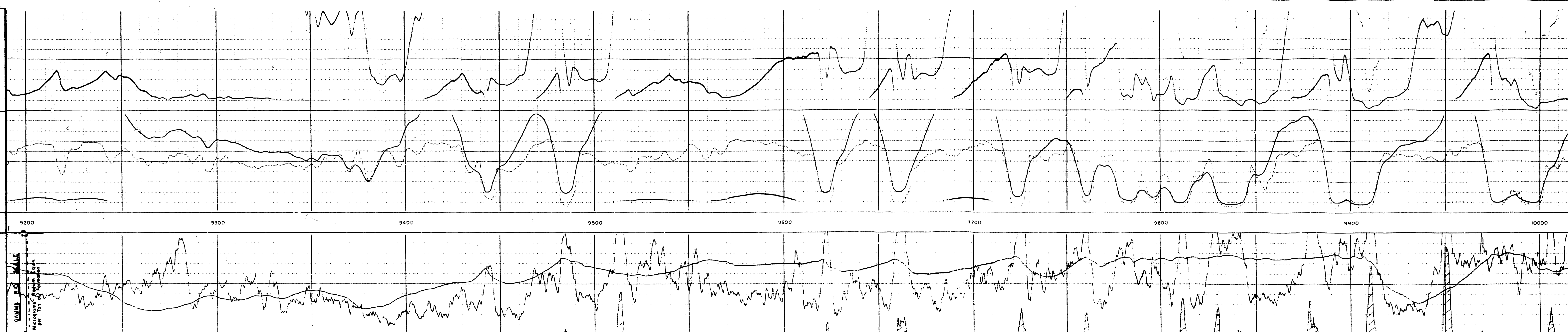


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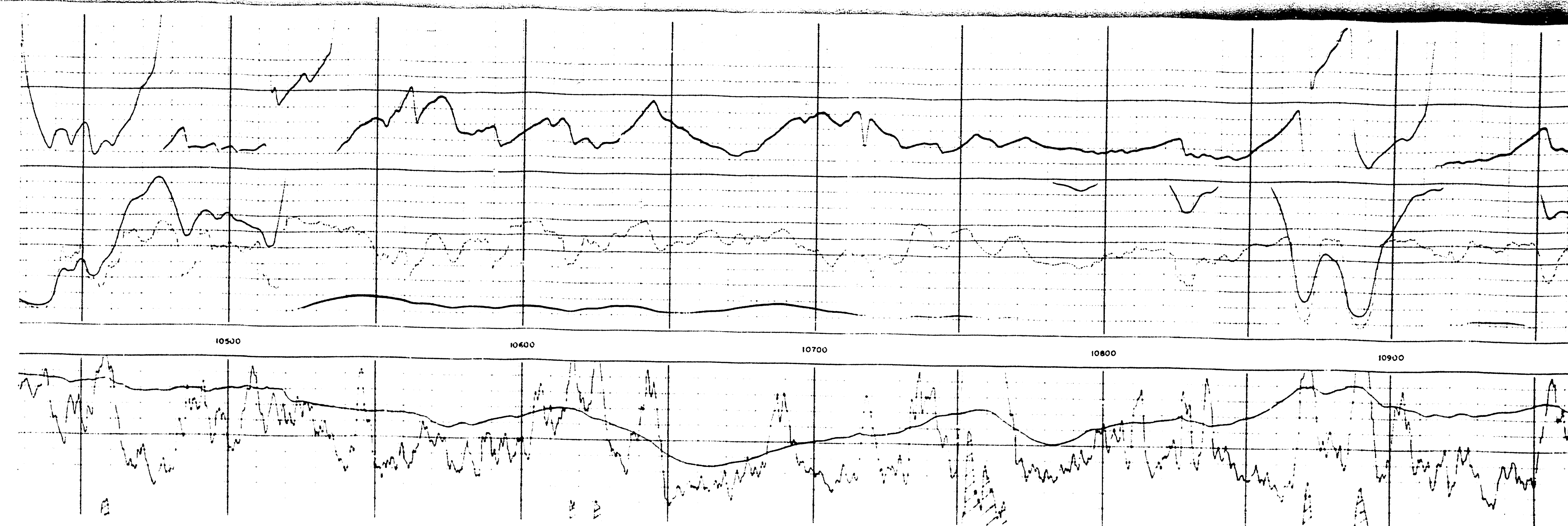
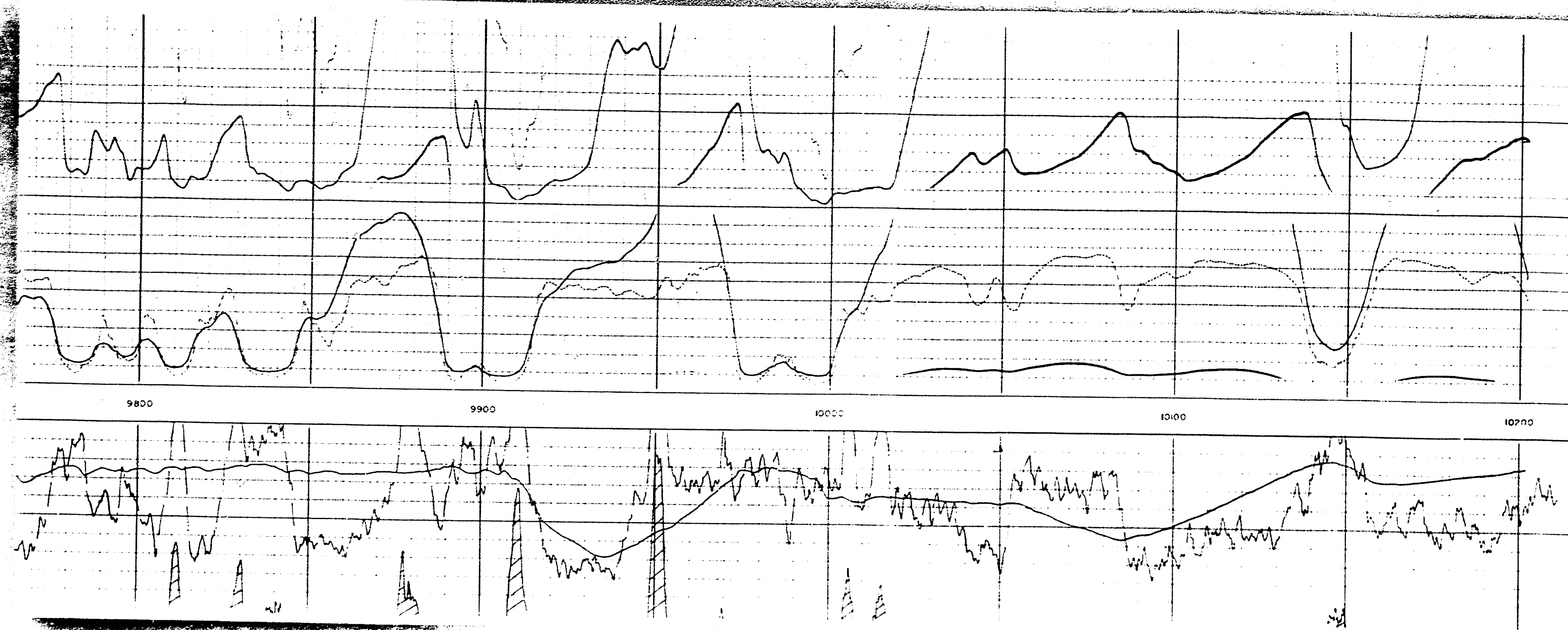




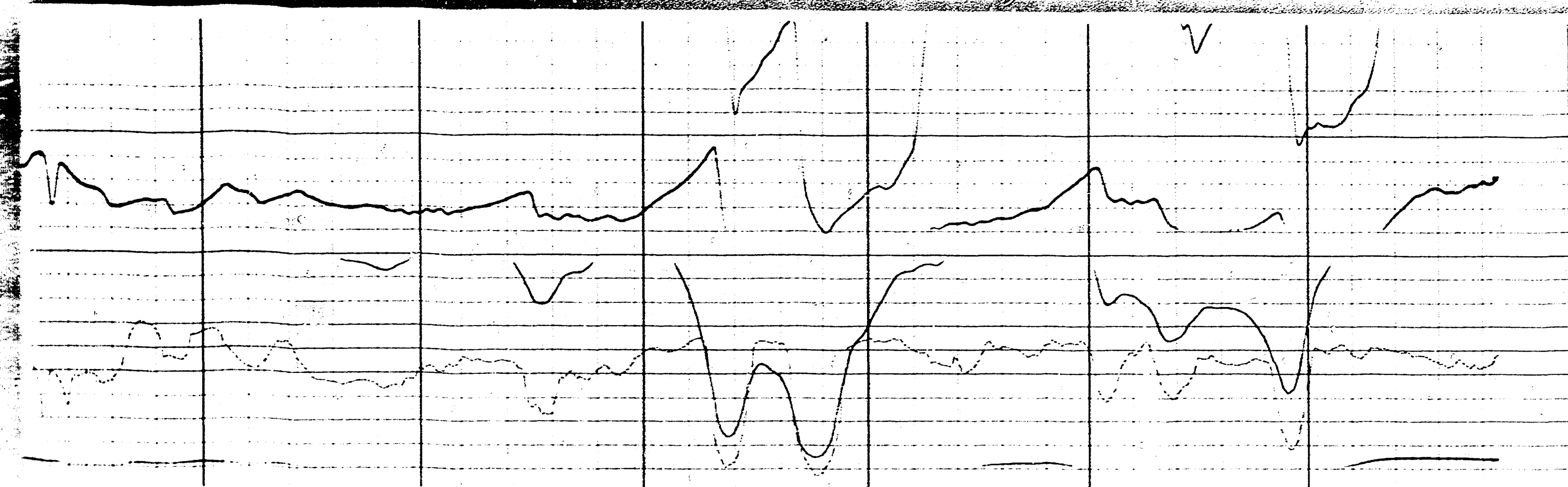
DETAIL LOG		
5" 100'		
SPONTANEOUS POTENTIAL	RESISTIVITY	RESISTIVITY
millivolts	ohms m/m	ohms m/m
- 24 -	0 10" Normal	0 10" Lateral
	100 0	100 0
	5000 0	5000 0
	0 32" Lateral	0 32" Lateral
	100 0	100 0
	5000 0	5000 0



45



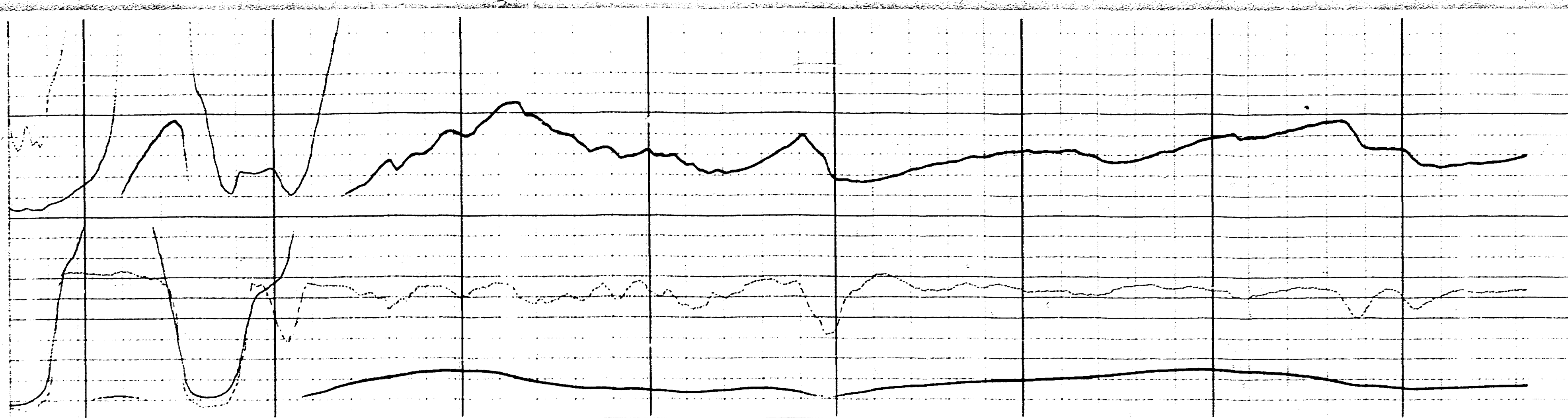
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10800

10900

11000

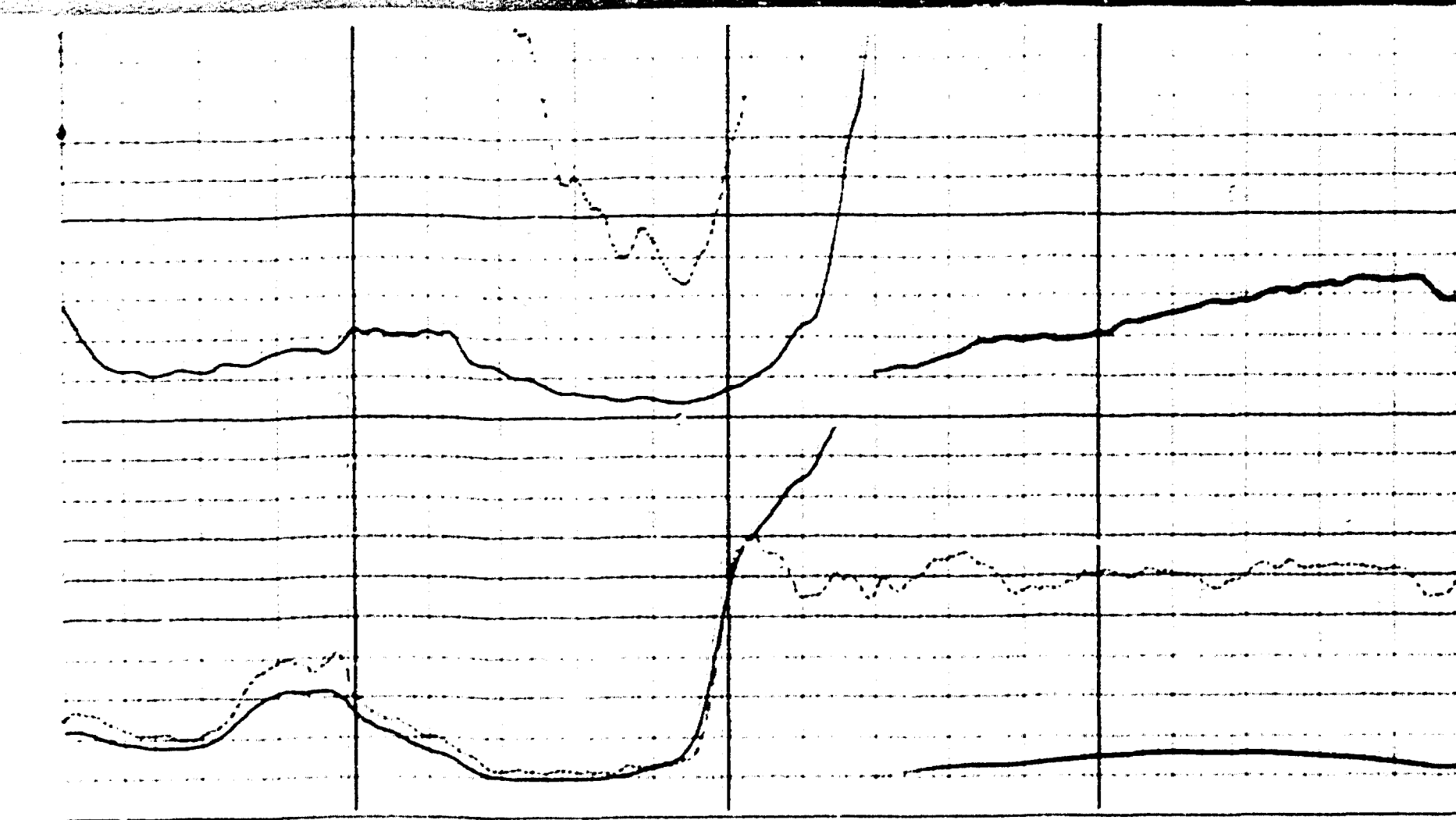


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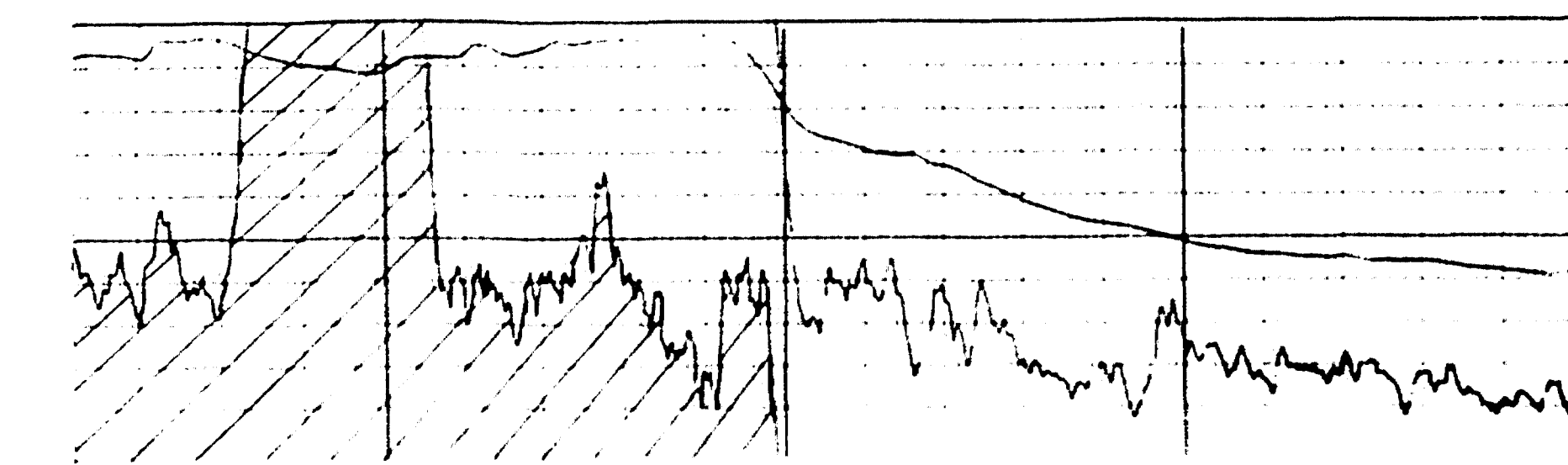
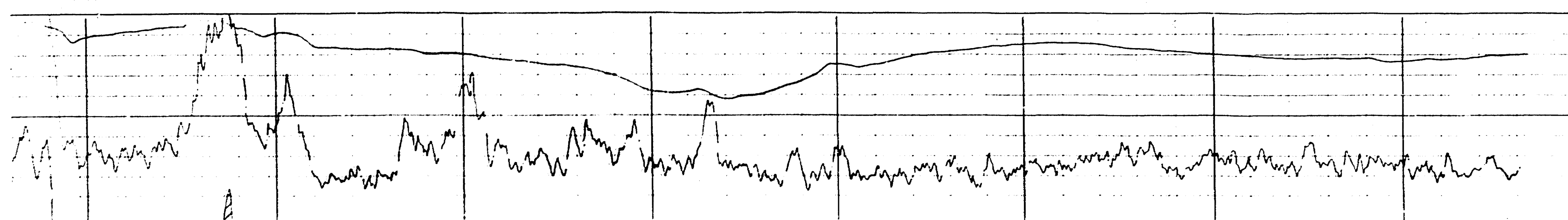
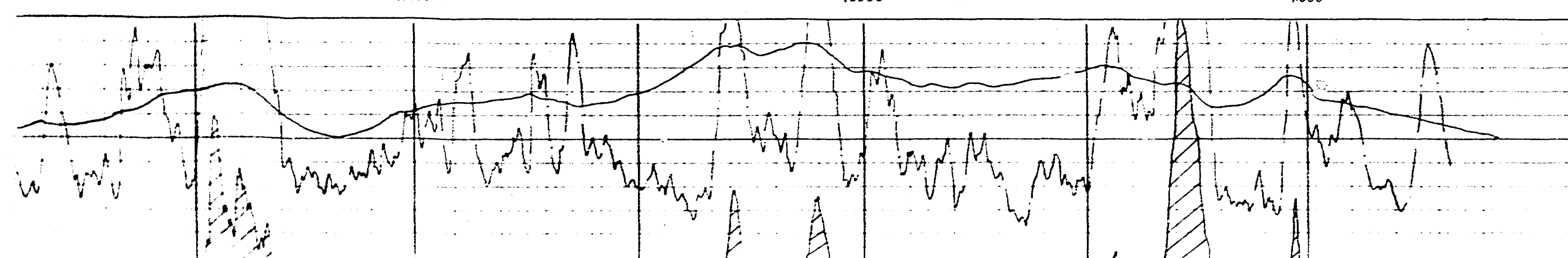
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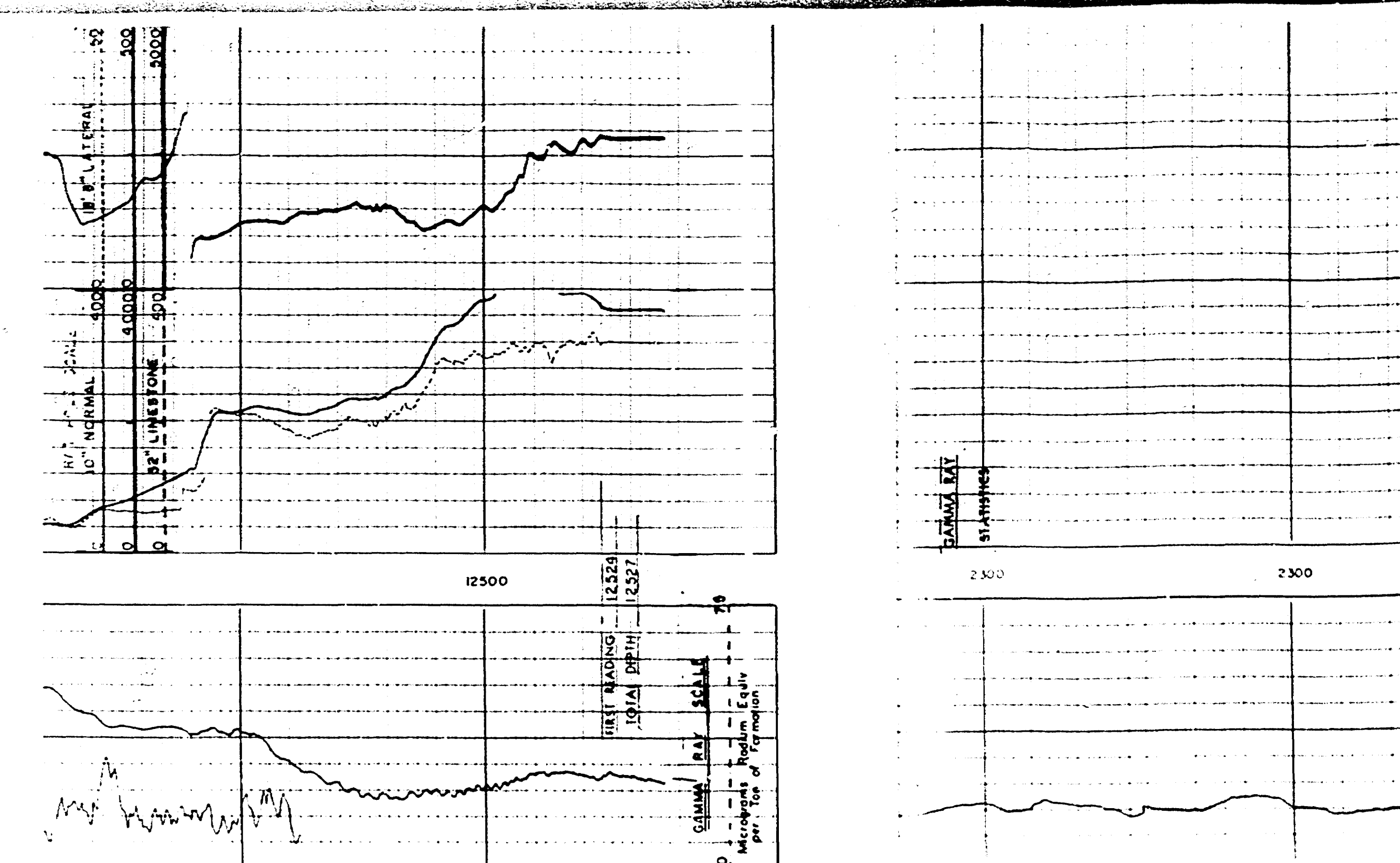
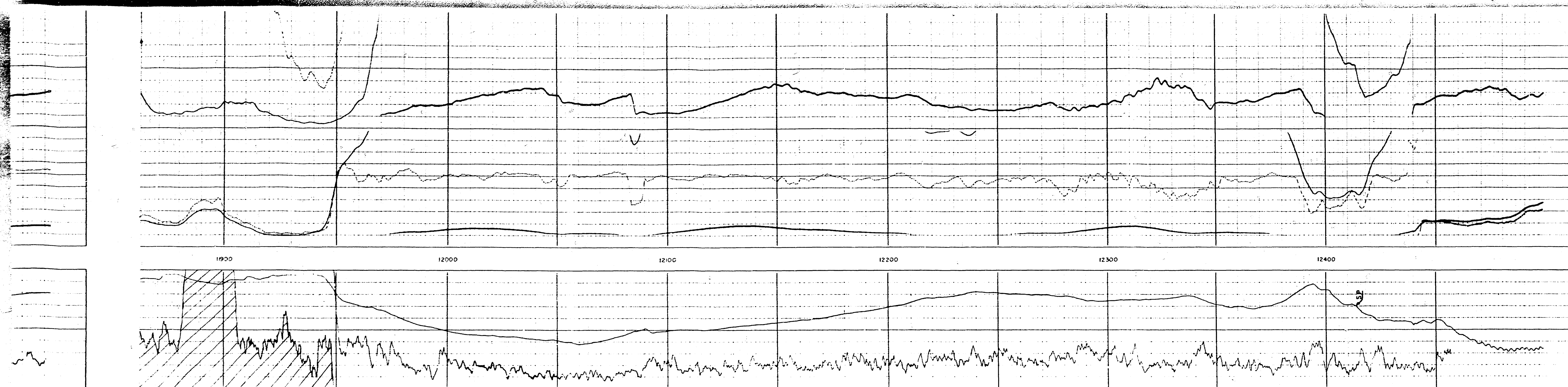
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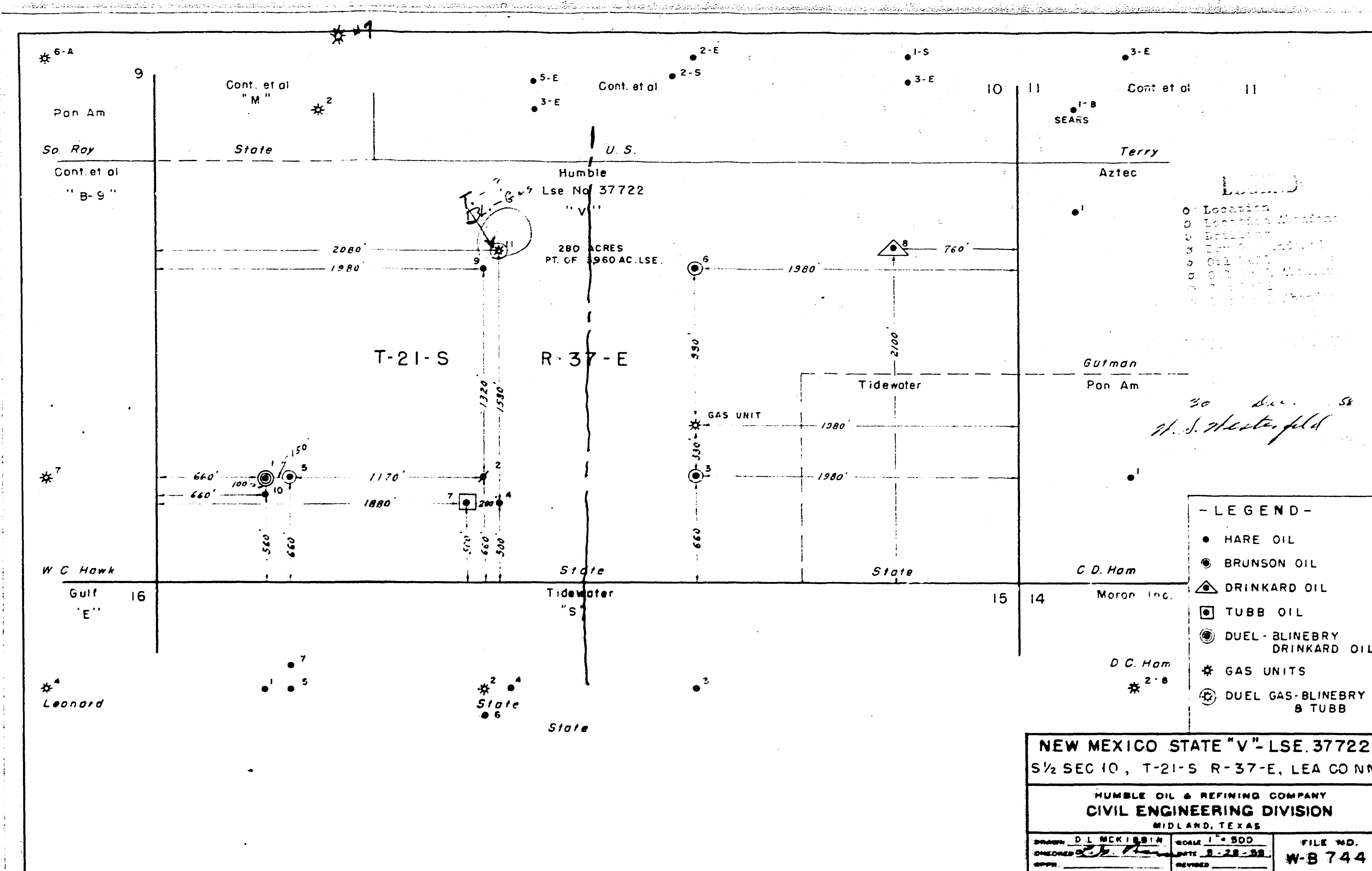
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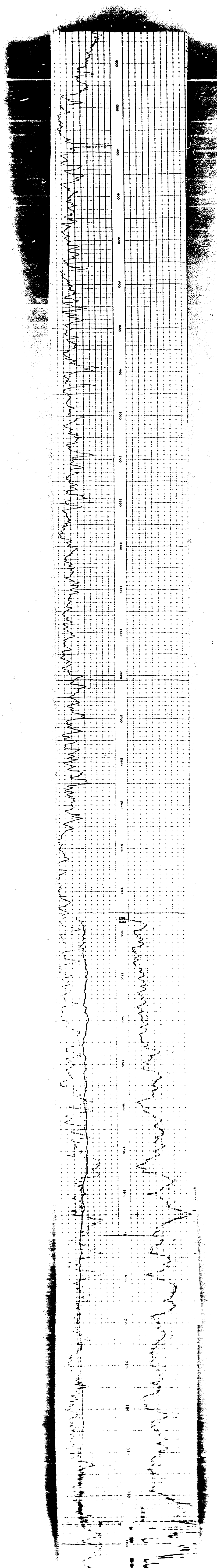
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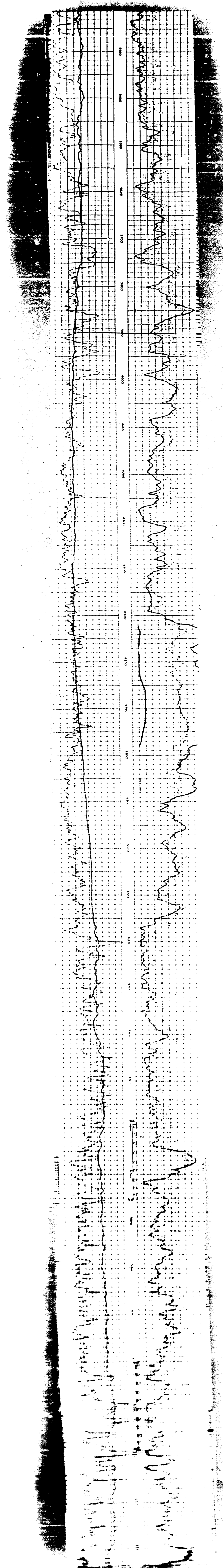


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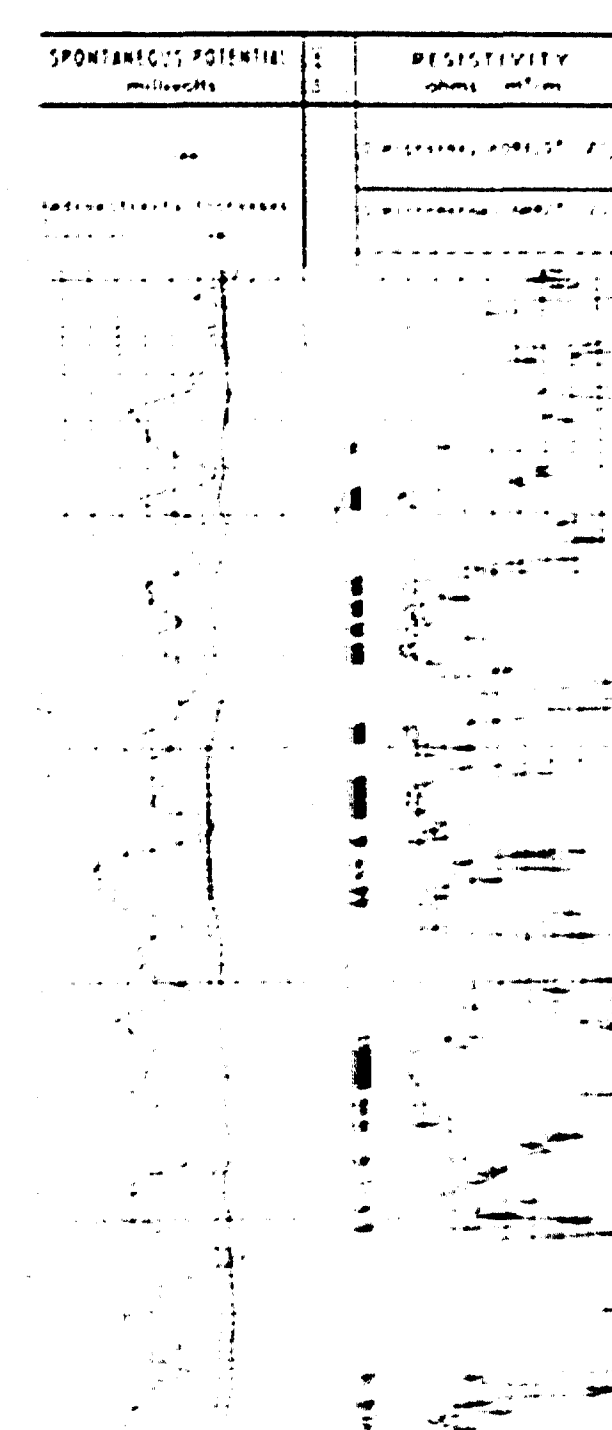
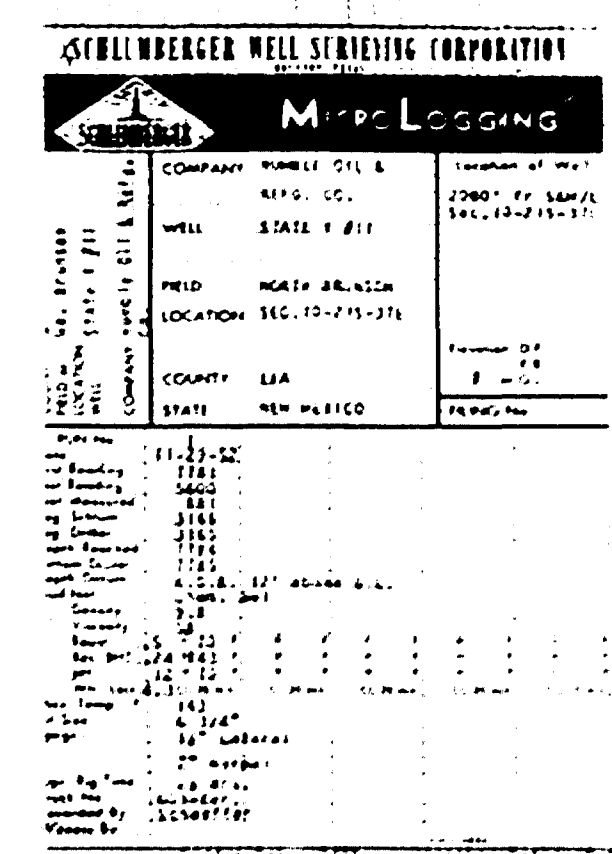
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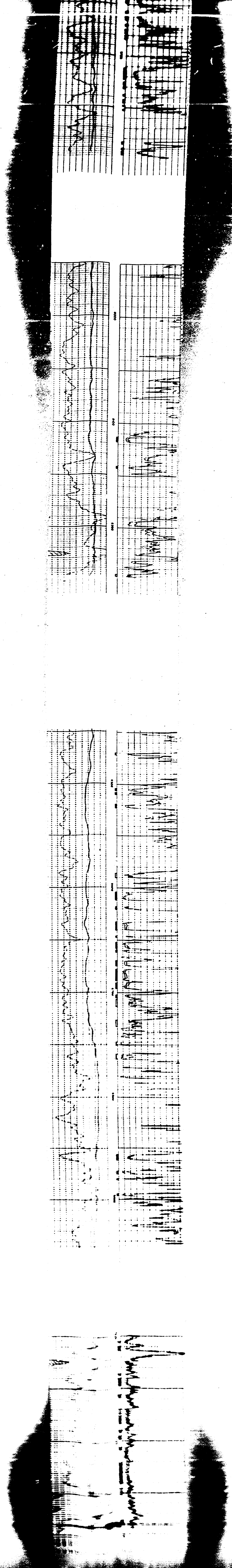
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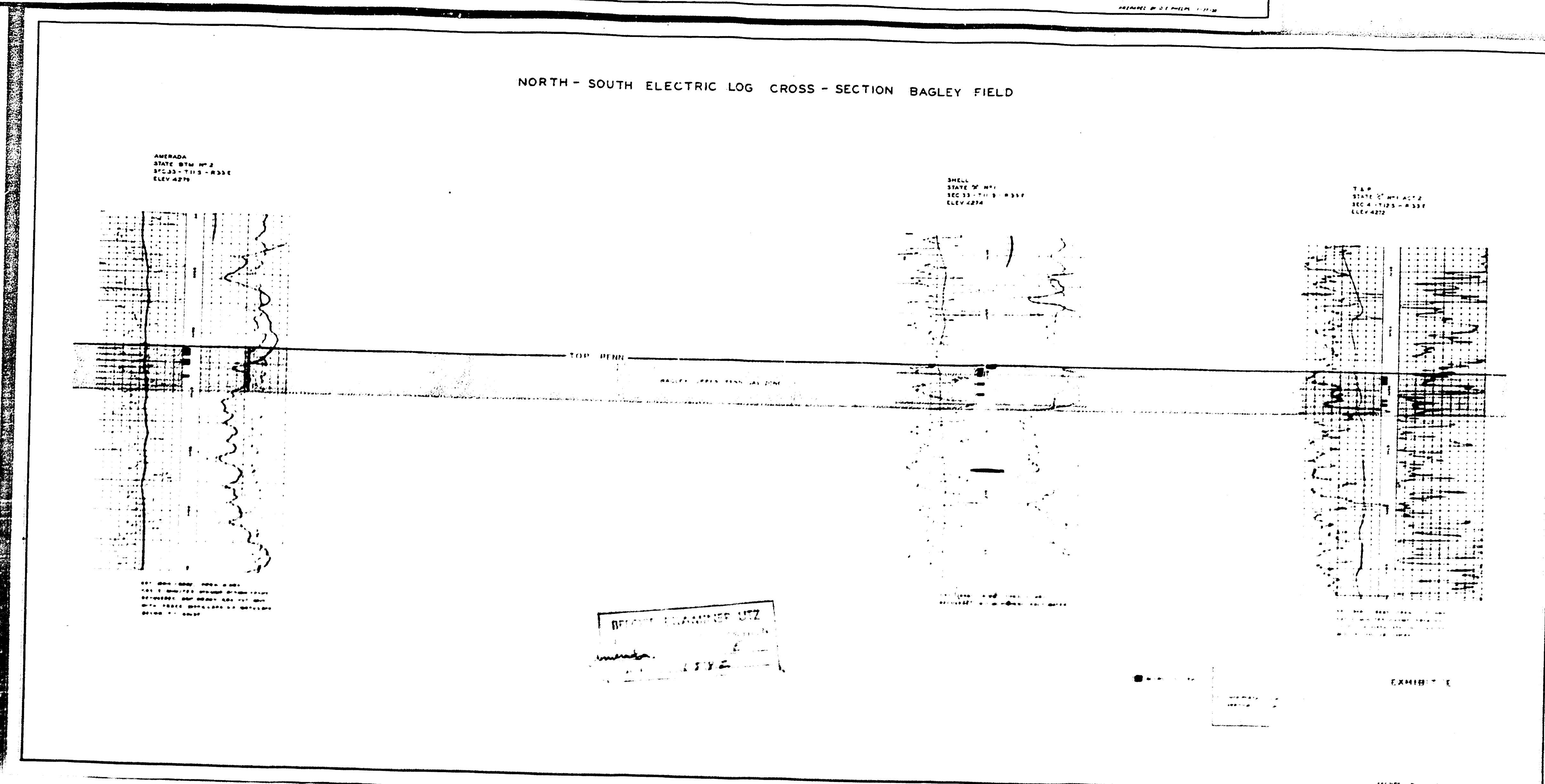
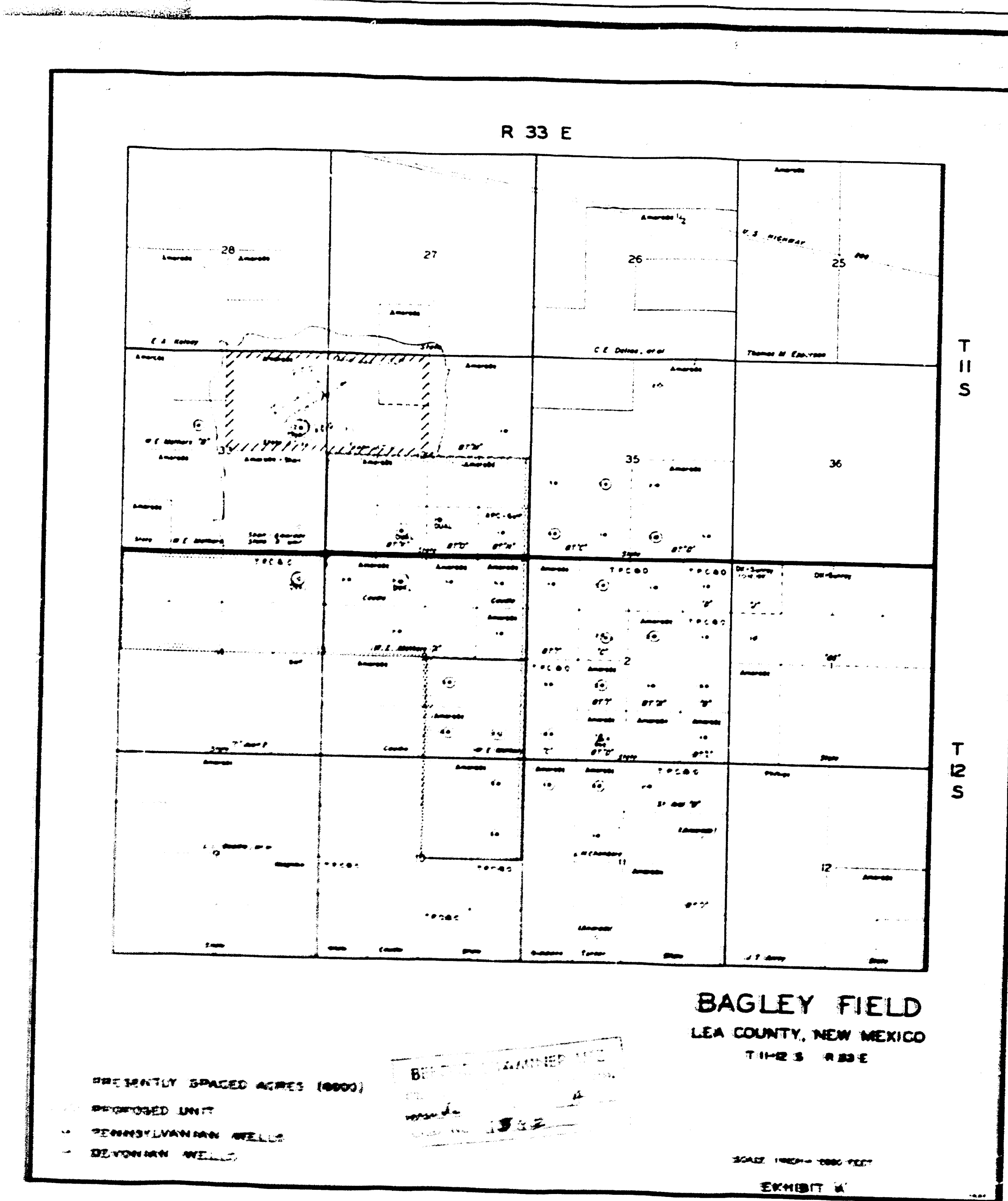
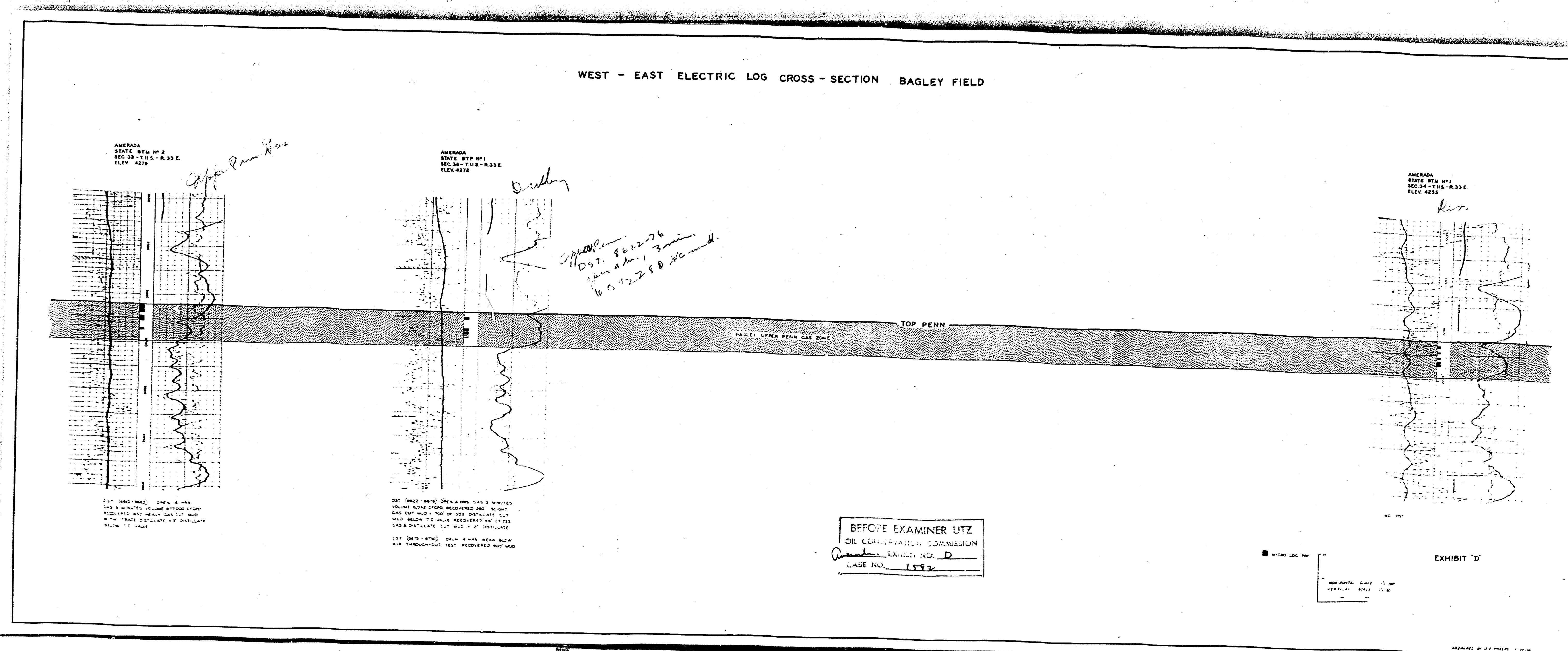


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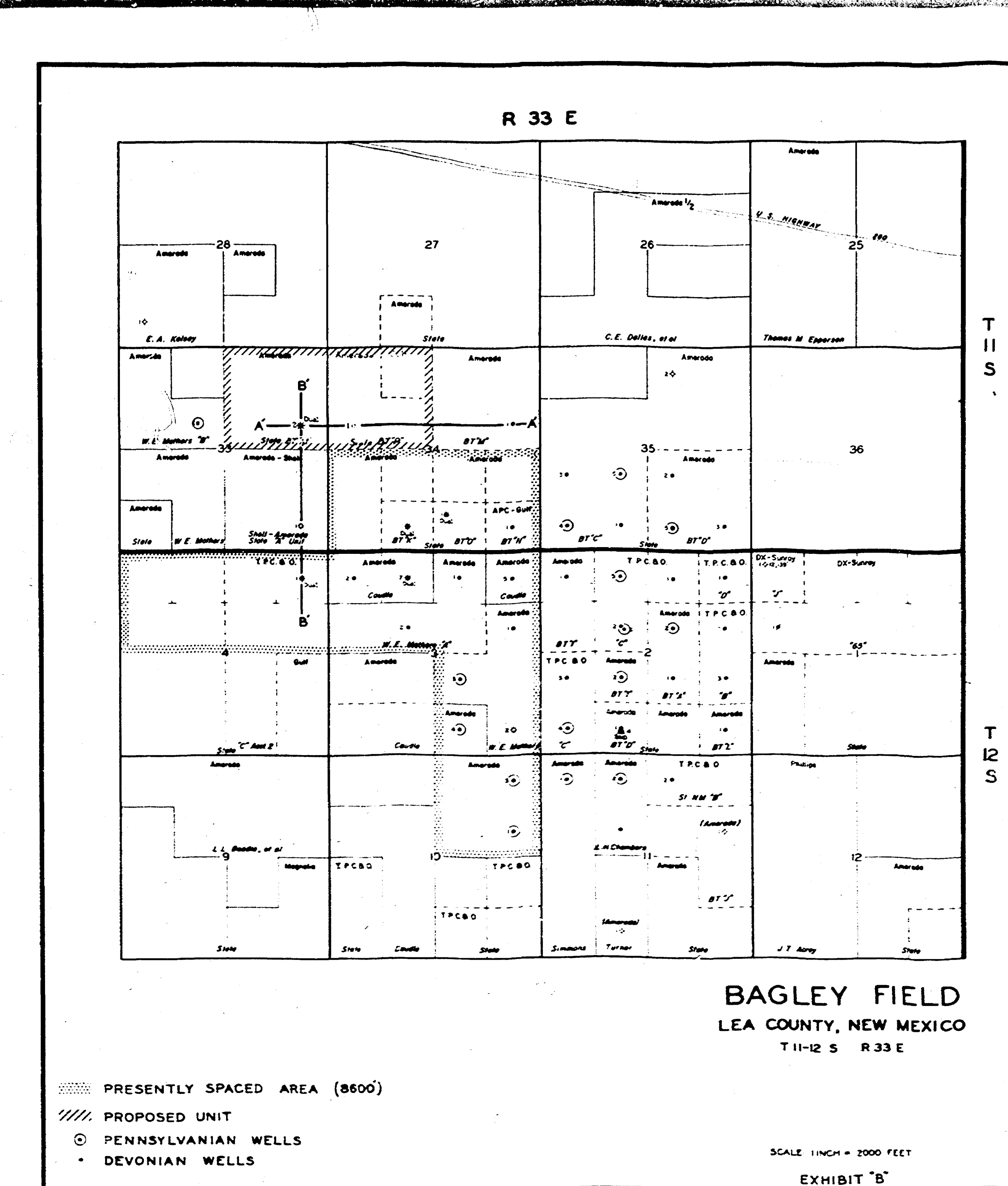
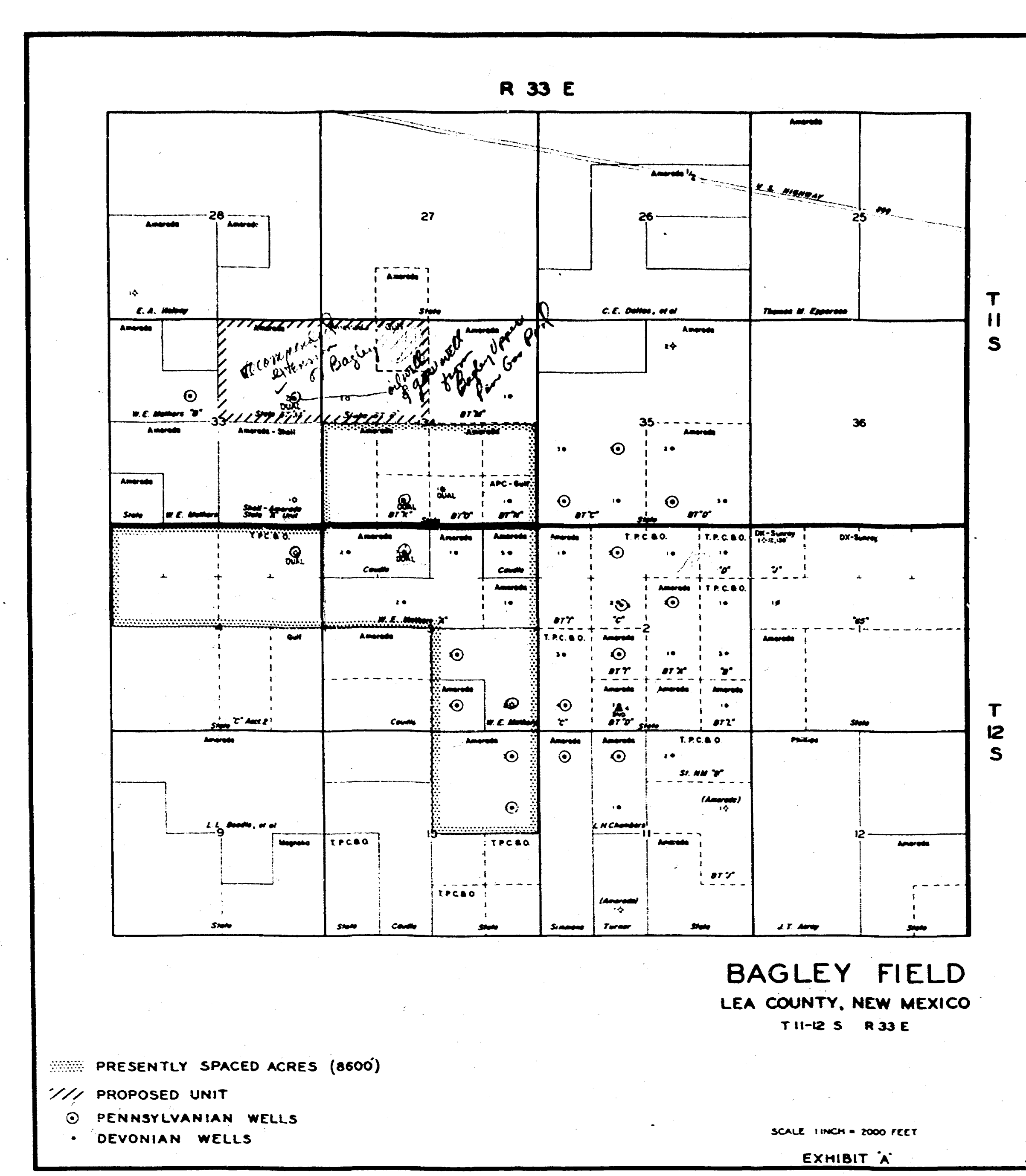
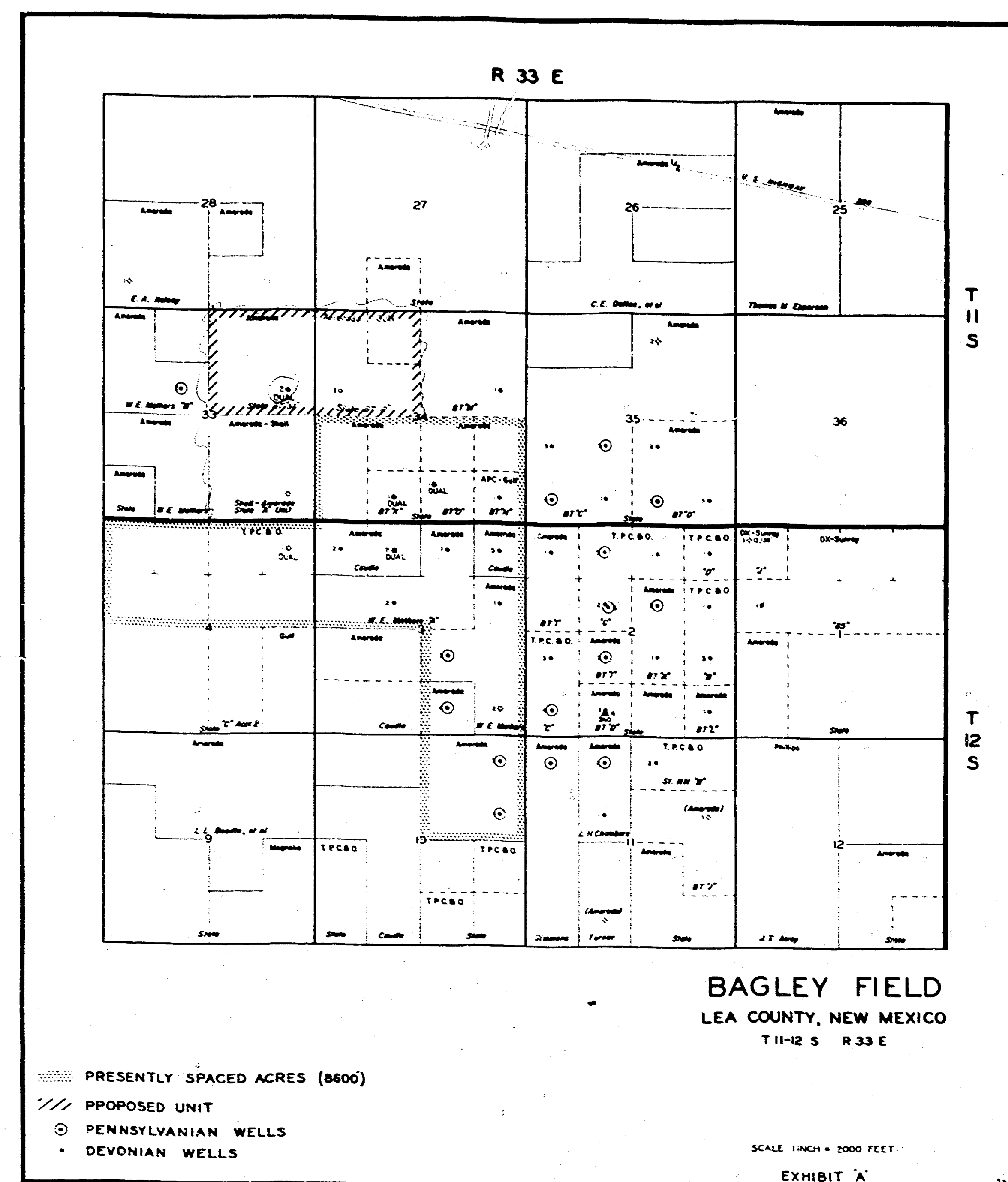


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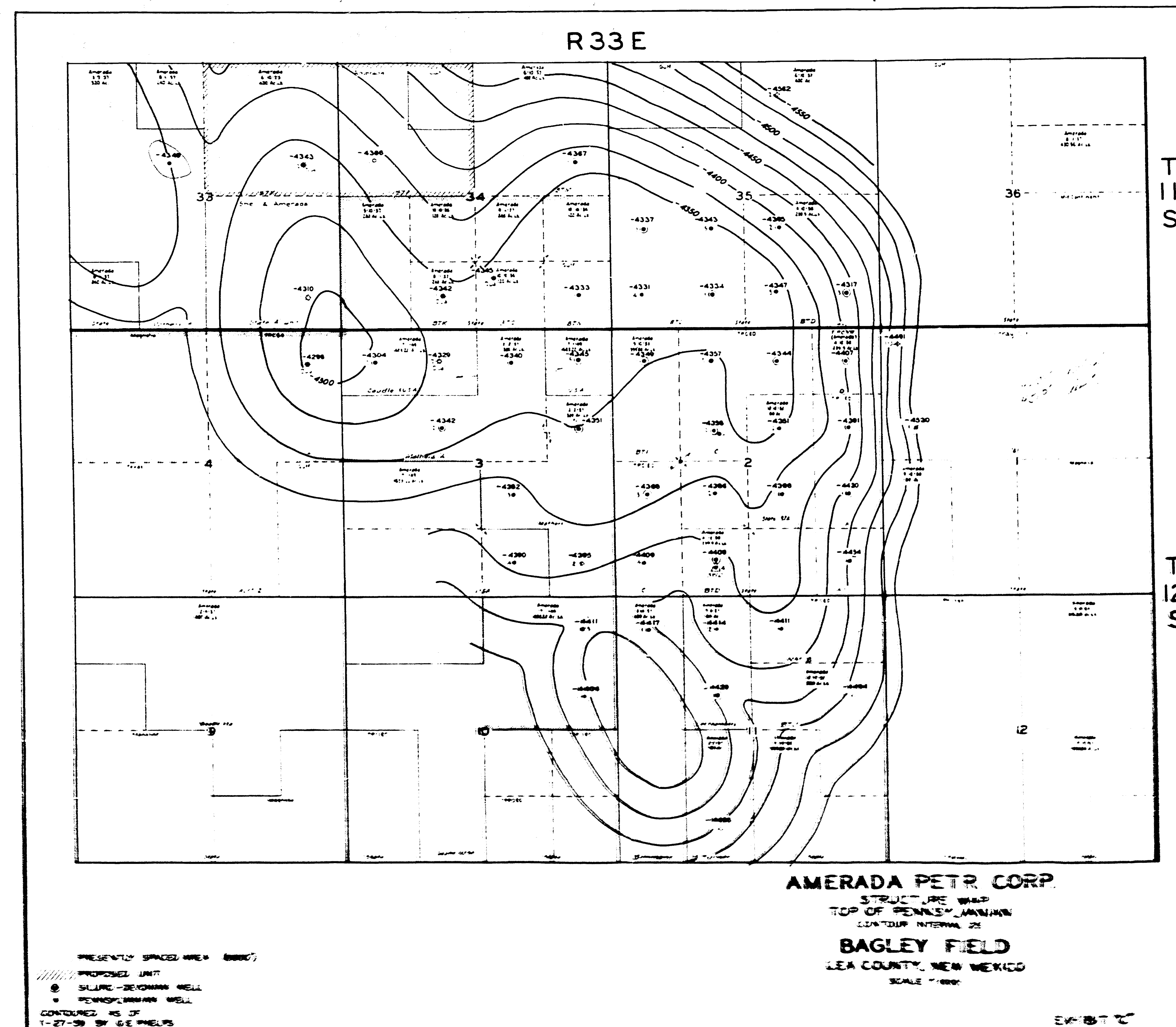


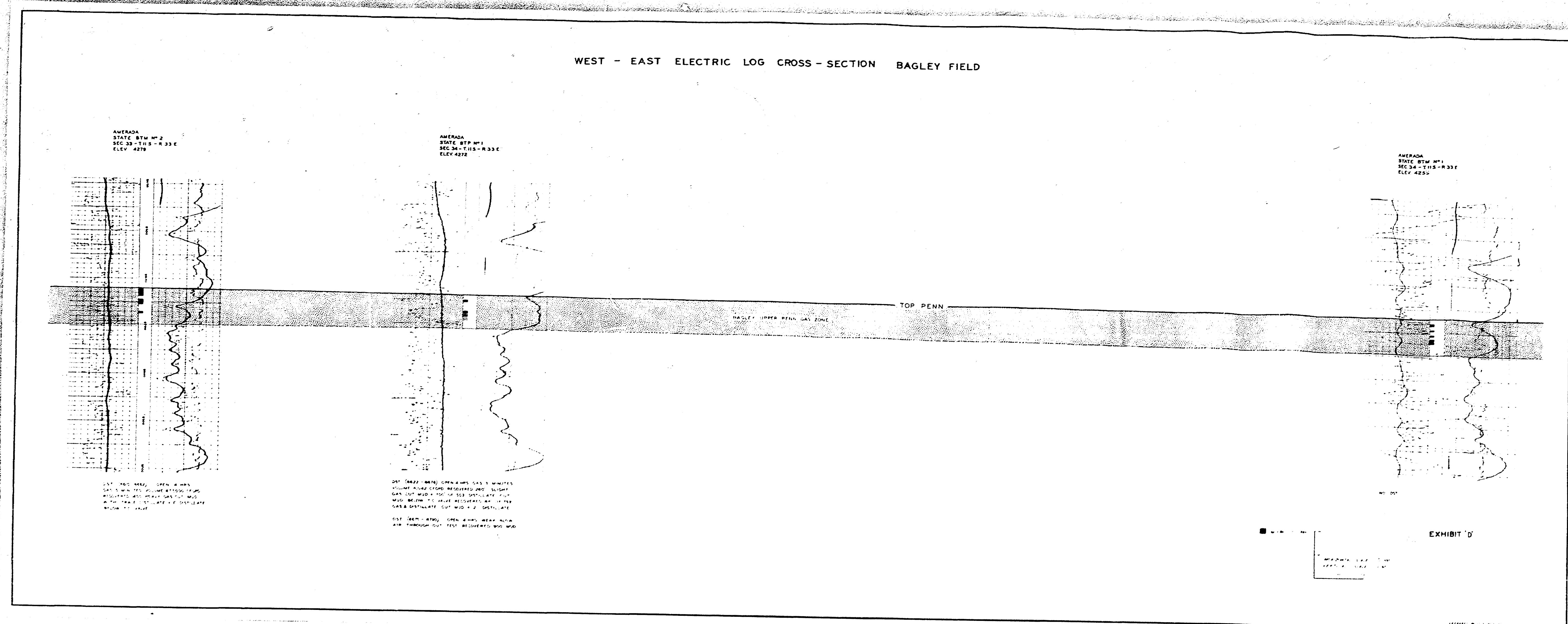
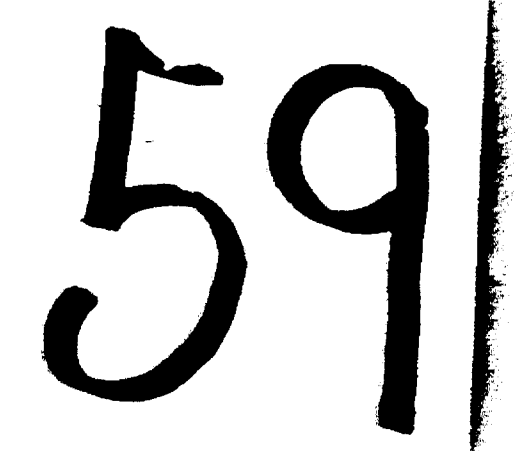


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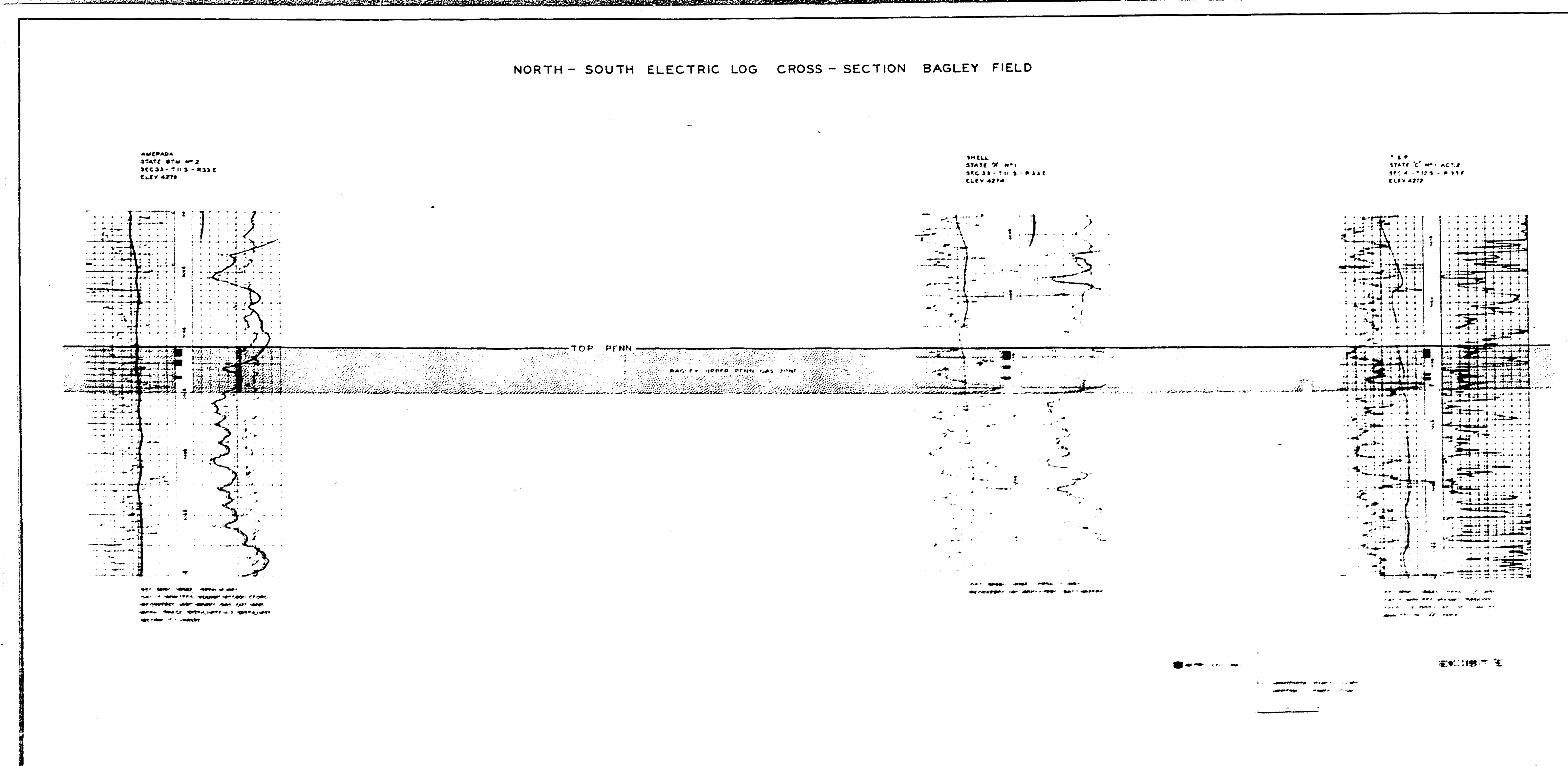
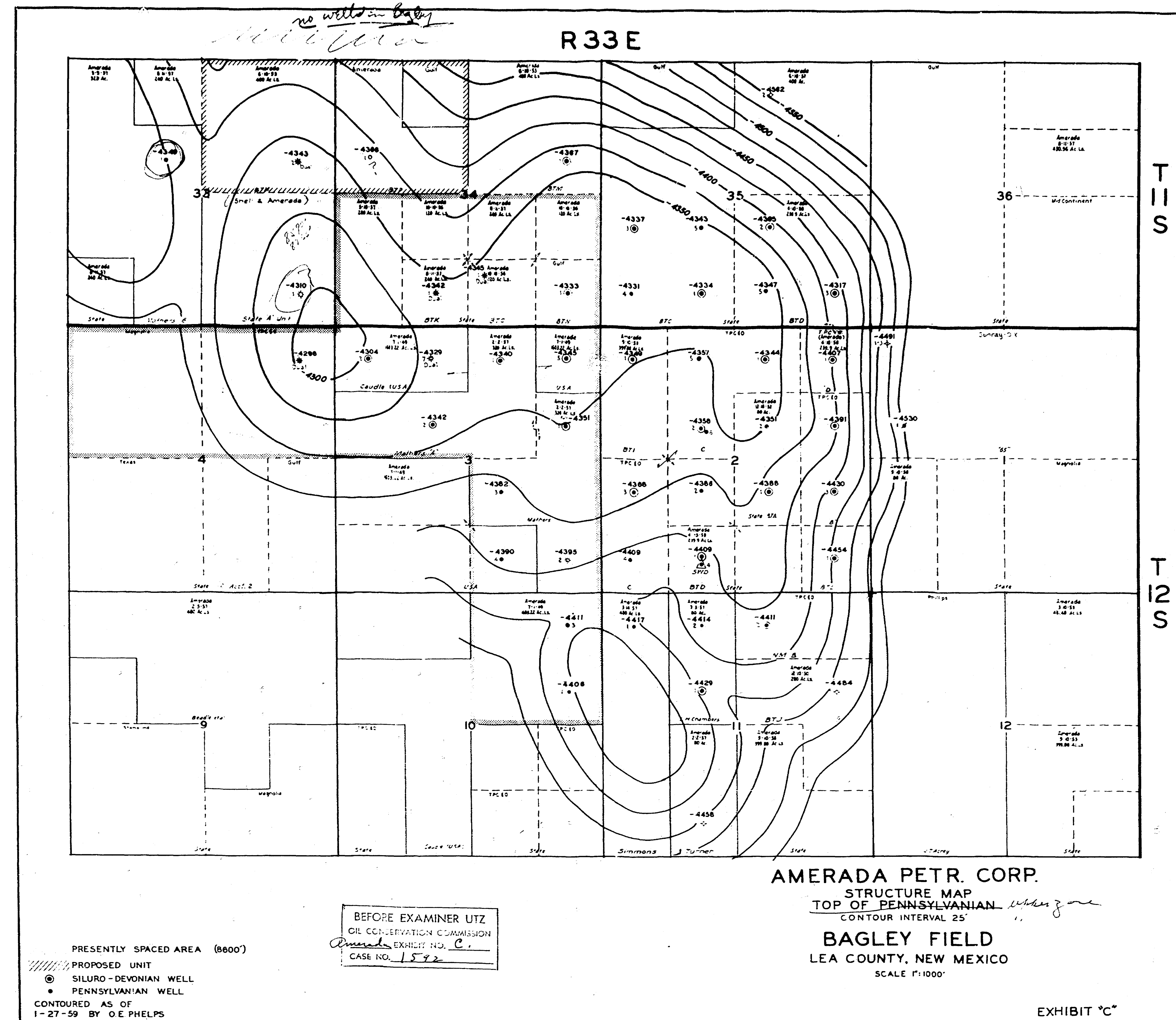
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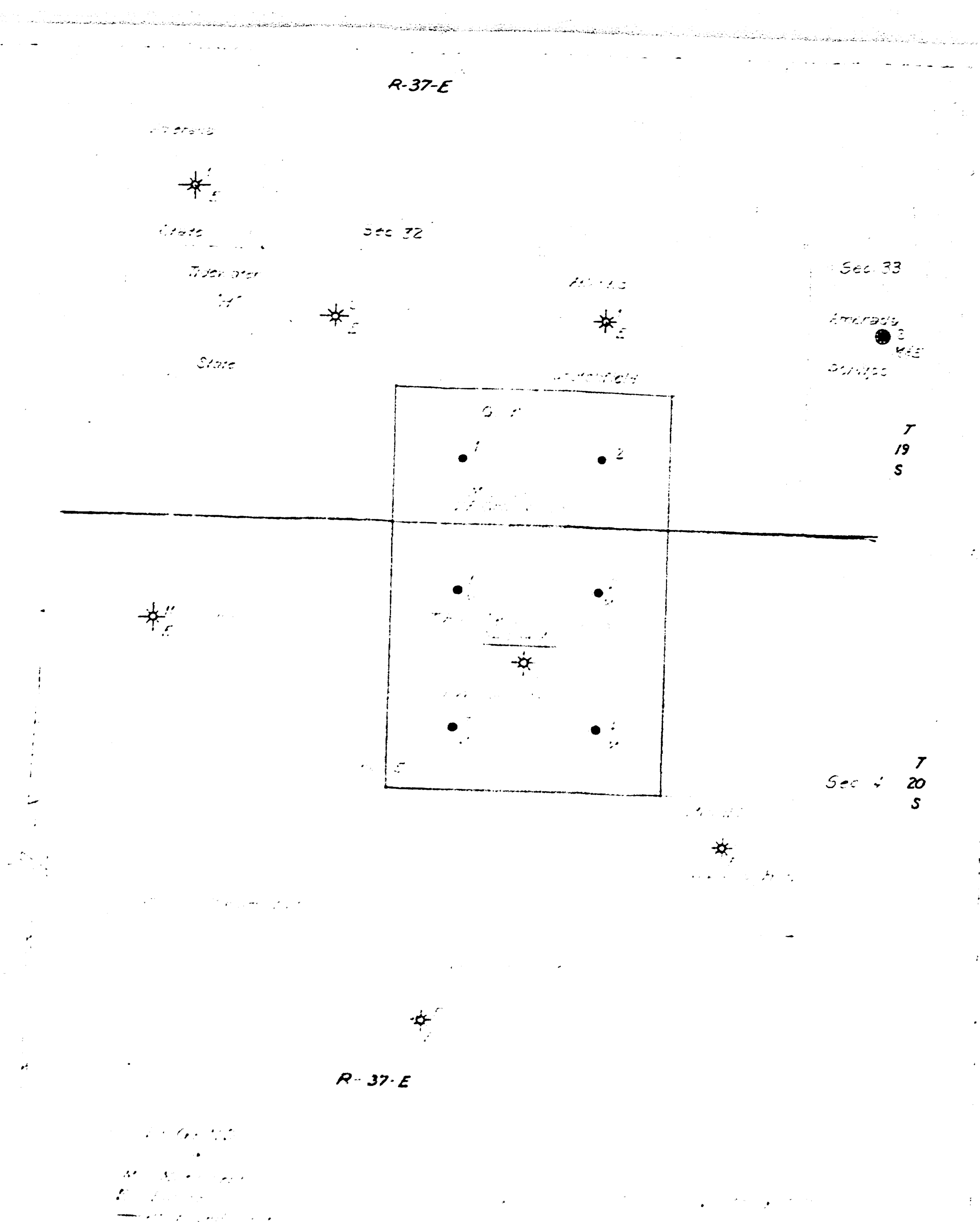
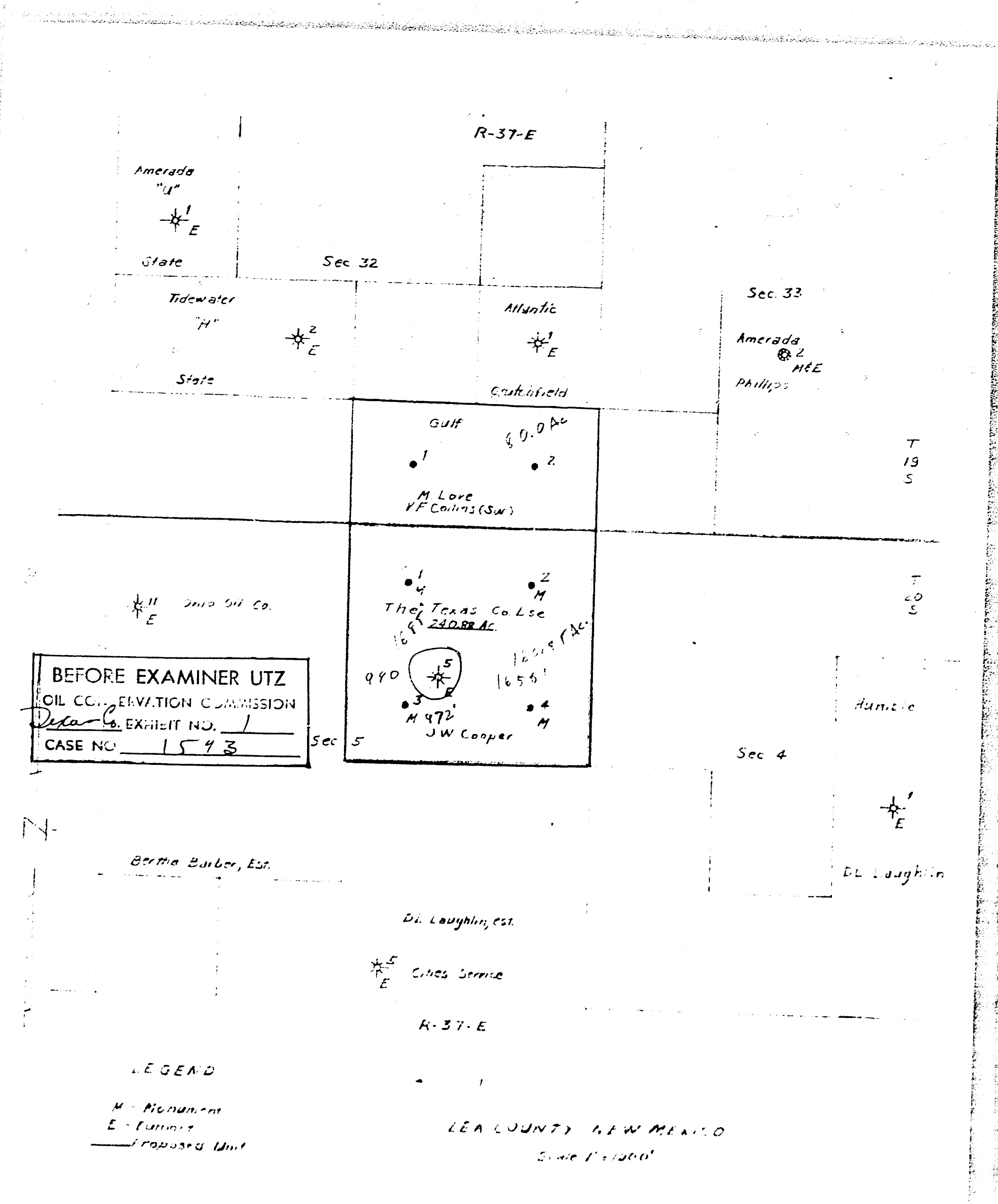


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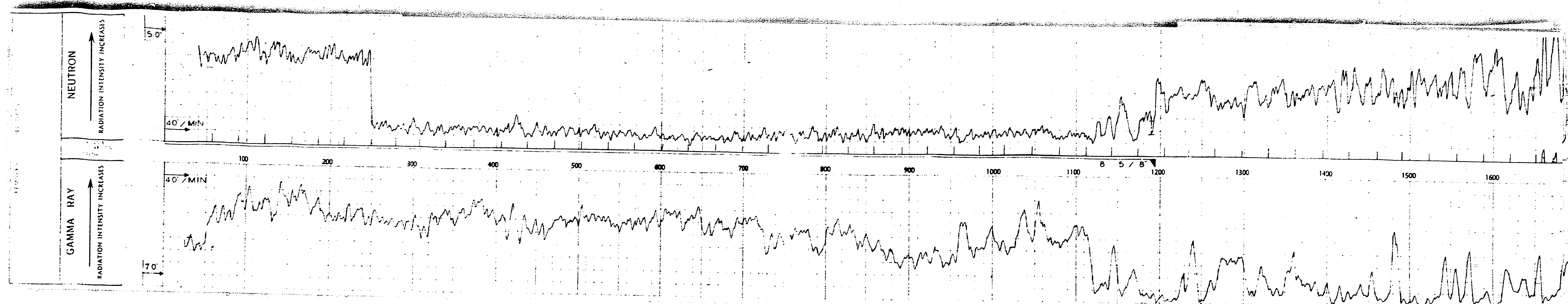
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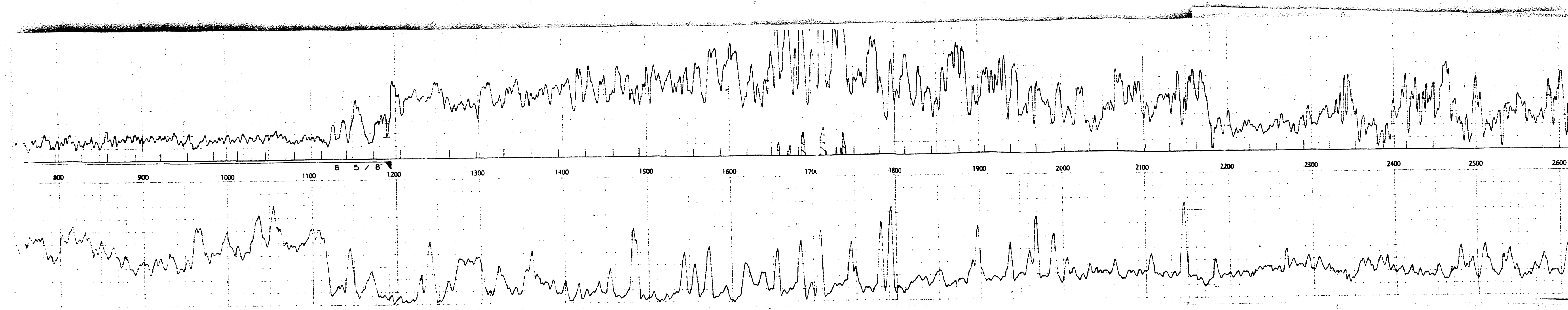
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LANE RADIOACTIVITY LOG WELLS COMPANY			
Location of Well <i>F-15</i>		FILE NO.	
COMPANY: THE TEXAS COMPANY		WELL: COOPER NO. 5	
WELL: COOPER NO. 5		COUNTY: LEA	
FIELD: BENTON		STATE: TEX.	
COUNTY: LEA		LOCATION: CENTER OF NE 1/4 OF SECTION 5, T-20-S, R-37-E	
D. F. ELEV. 3566		LOG MEAS. FROM DRIVE BUSHING ELEV. 3568	
		DRIG. MEAS. FROM DRIVE BUSHING ELEV. 3566	
		PERM. DATUM 5 1/2" BRASS HEAD ELEV. 3566.5	
TYPE OF LOG		GAMMA RAY NEUTRON	
RUN NO.		ONE-WIN ONE-WIN	
DATE		2-23-51 2-23-51	
TOTAL DEPTH (DRILLER) - FEET		3500 3500	
EFFECTIVE DEPTH (DRILLER) - FEET		3500 3500	
TOP OF LOGGED INTERVAL		SURFACE SURFACE	
BOTTOM OF LOGGED INTERVAL		3197 3197	
TYPE OF FLUID IN HOLE		MUD MUD	
FLUID LEVEL		FULL FULL	
MAXIMUM RECORDED TEMP.		6000 6000	
NEUTRON SOURCE STRENGTH & TYPE		36" 36"	
SOURCE SPACING - IN.		8.25 8.25	
LENGTH OF MEASURING DEVICE - IN.		3 5/8" 3 5/8"	
C.D. OF INSTRUMENT - IN.		1 1/2" 1 1/2"	
TIME CONSTANT - SECONDS		20-40 20-40	
LOGGING SPEED - FT. MIN.		275 275	
COUNT RATE VARIATION - IN.		275 275	
DENSITY REFERENCE		275 275	
RECORDED BY		WITNESSED BY	
WITNESSED BY		WITNESSED BY	
CASING RECORD			
PIPE NO.	SIZE	CASING	WELL
ONE	12"	8 5/8"	FROM WELL HEAD TO SURFACE TO 1200
ONE	7 7/8"	5 1/2"	SURFACE TO 3300 SURFACE TO 3300
ONE	1 3/4"	5 1/2"	3300 TO 3300 SURFACE TO 3300

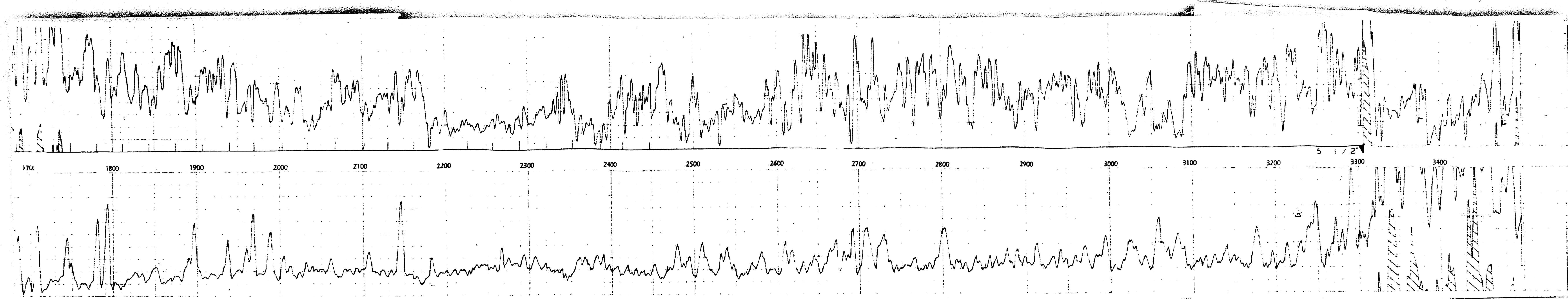
BEFORE EXAMINER UTZ
OR SUPERVISOR COMMISSION
EXHIBIT NO. 1523
CASE NO. 1523



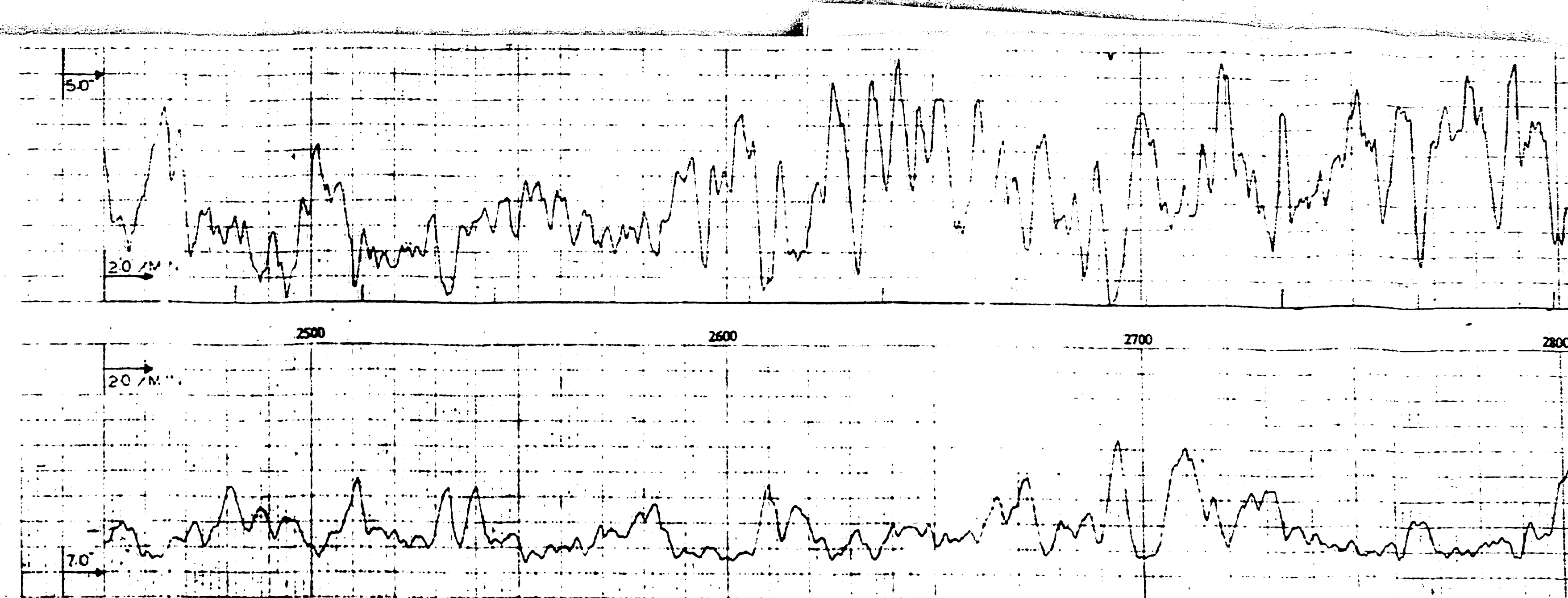
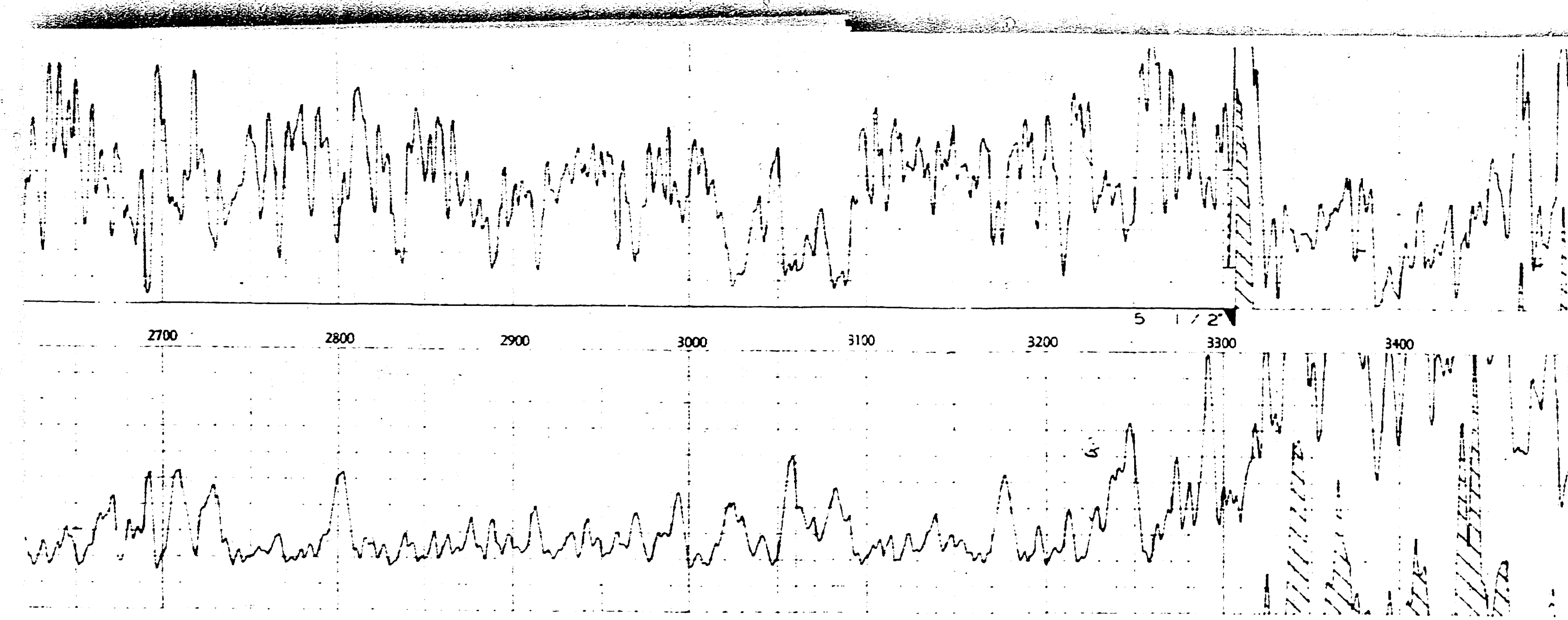
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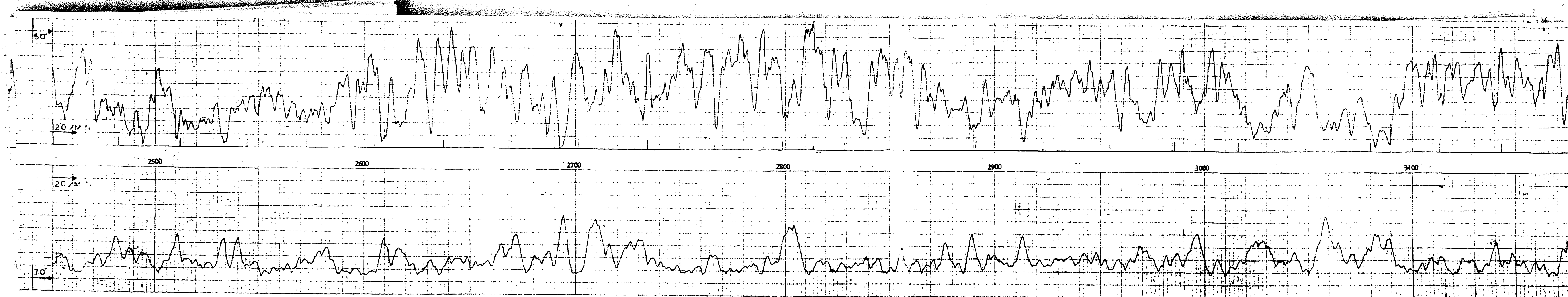
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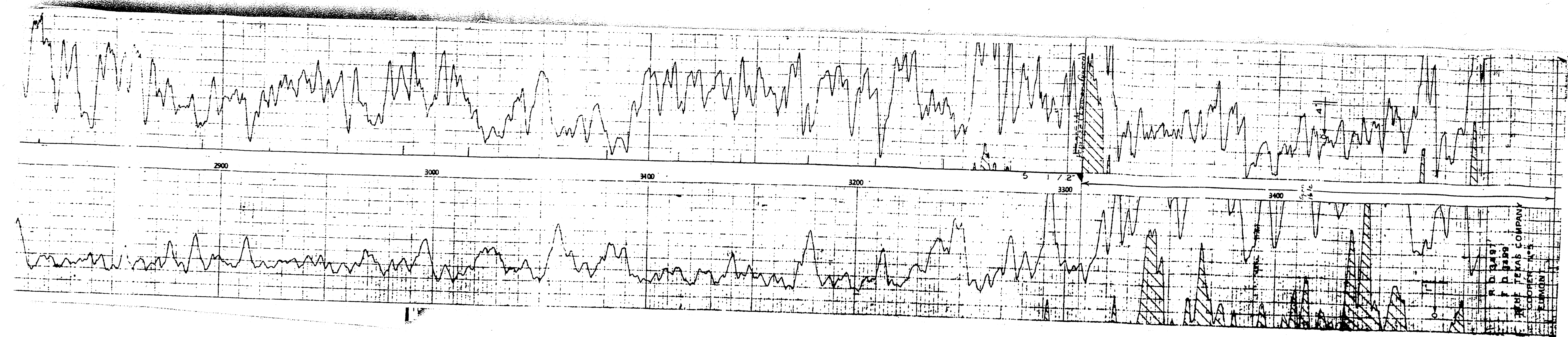
66



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Geological Map of the Colorado Plateau

1900

Permian, Triassic, Jurassic

Navajo, Kanab, Kaiparowits Plateaus

Glen Rose, Orderville, Panguitch Basins

Grand Canyon, Colorado River

221 1574

