Case No
5434

Large Exhibits

U.S. DEPARTMENT OF THE INTERIOR

P.O. BOX 1060

GALLUP, NEW MEXICO 87301

IN REPLY REFER TO: NM-27

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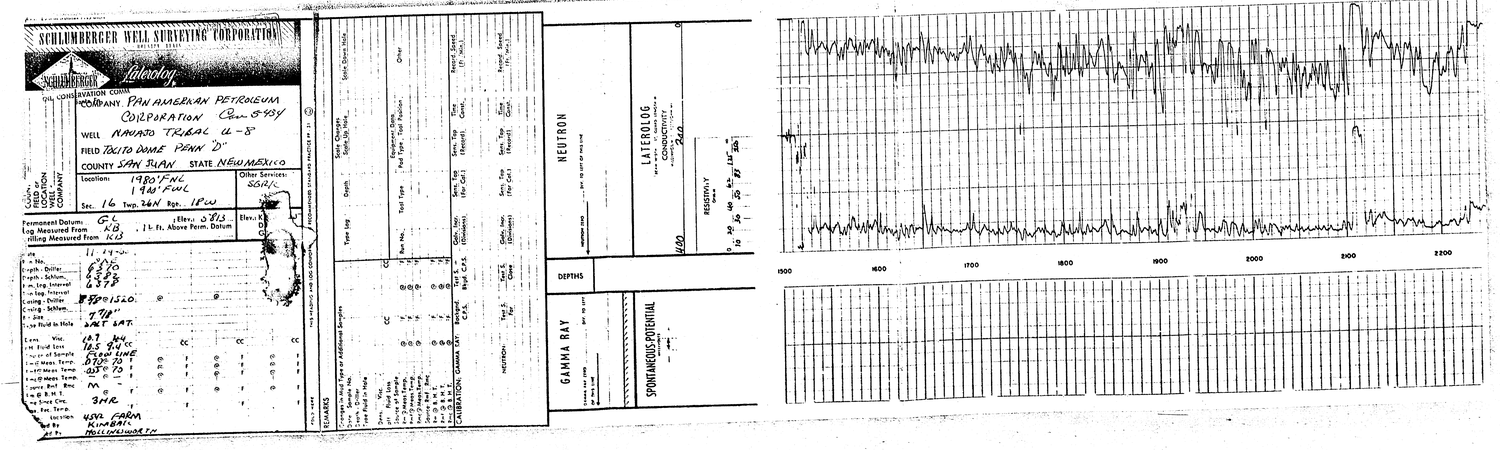
DOCUMENT NUMBER: #3434

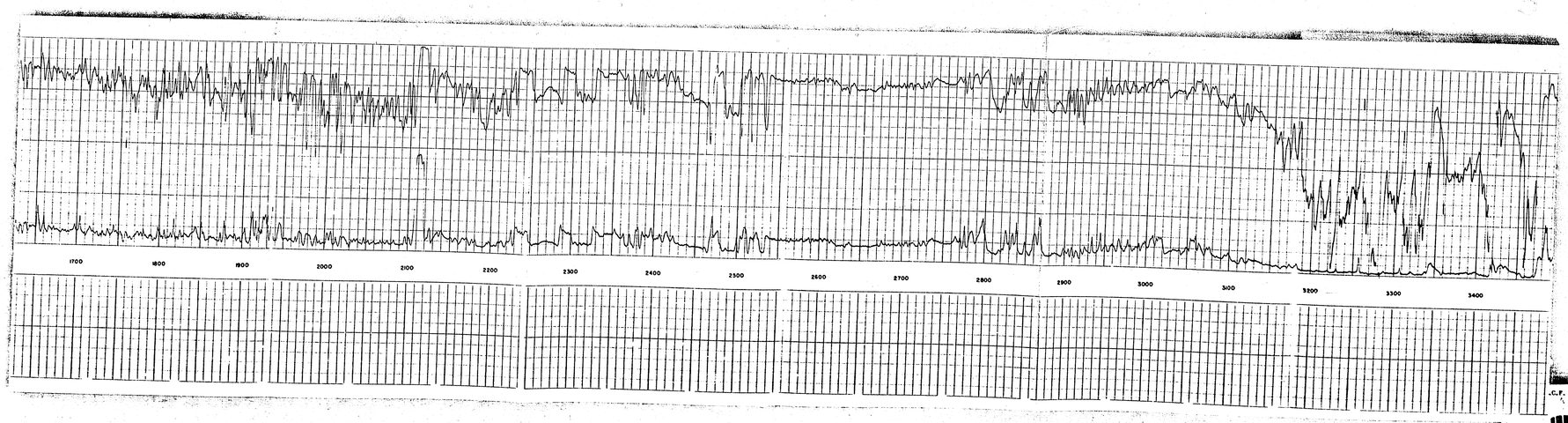
PAGE NUMBER: 34

FROM NUMBER: 150

DATE: 1-8-1988

SCANNED OUT BY: Lydia Bloo





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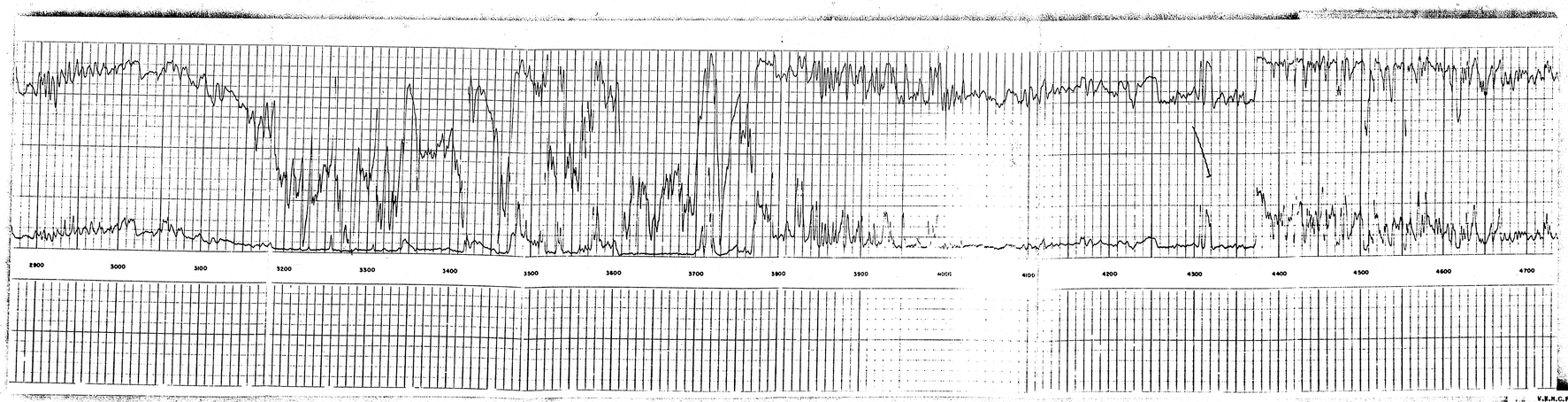

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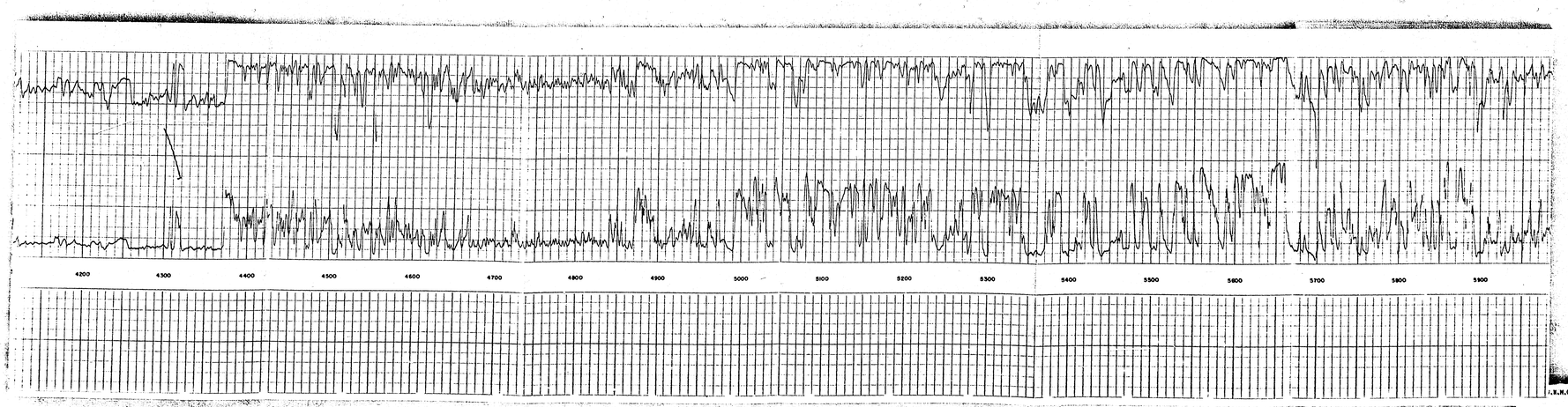

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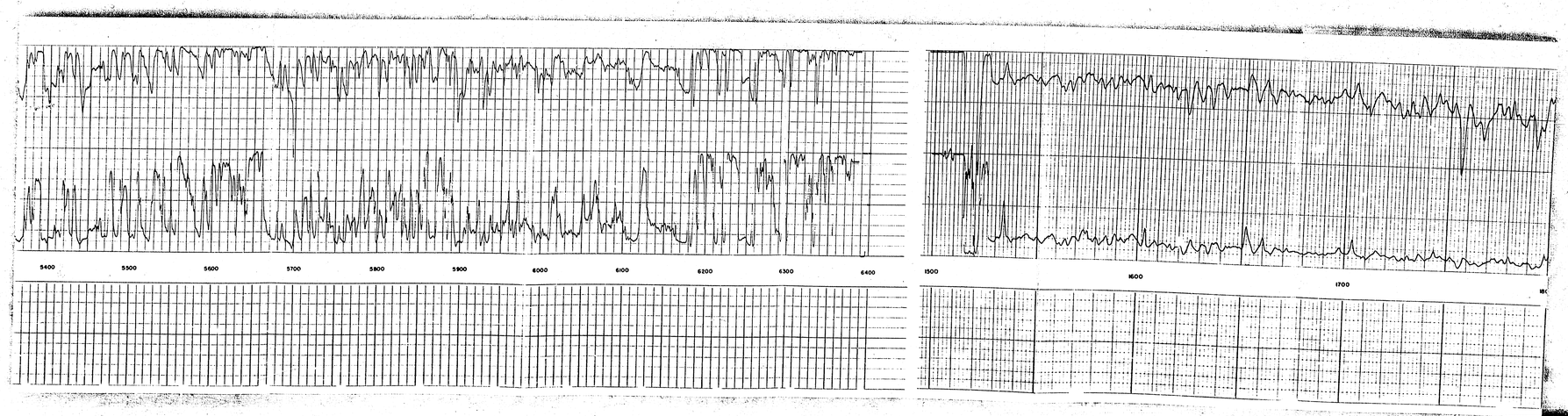

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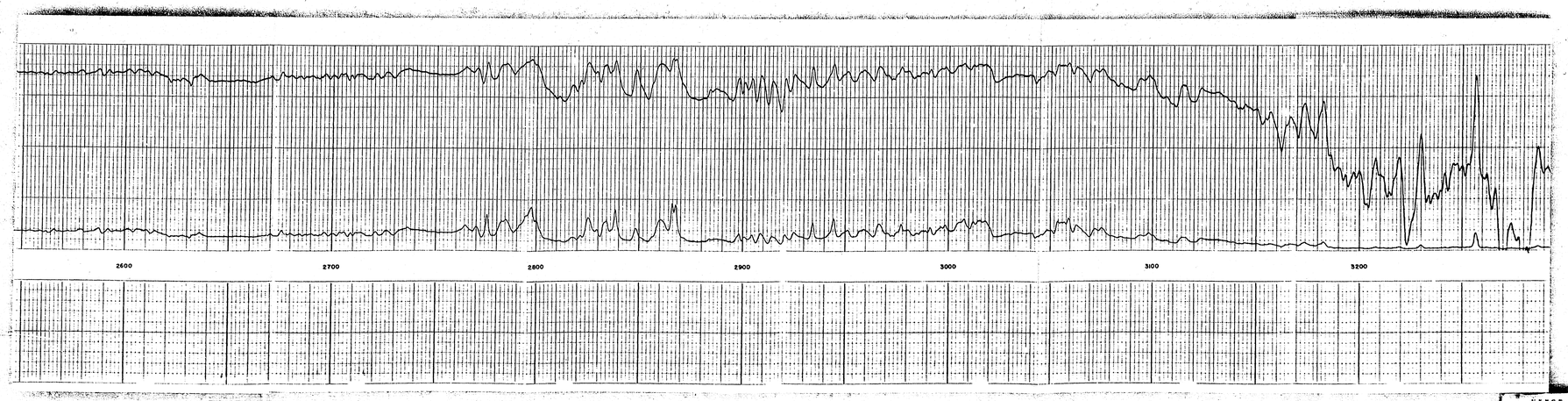

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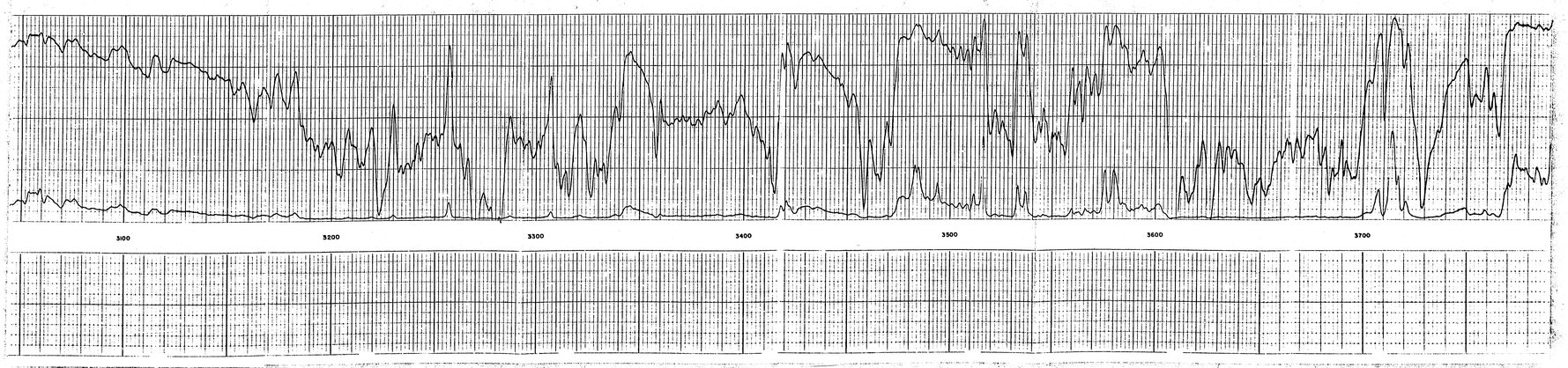

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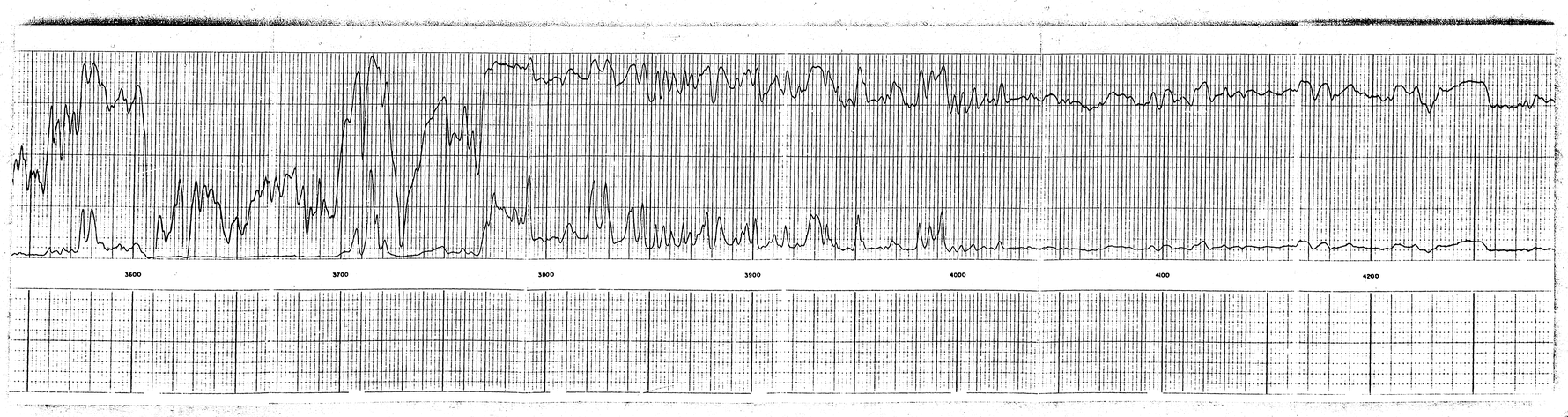

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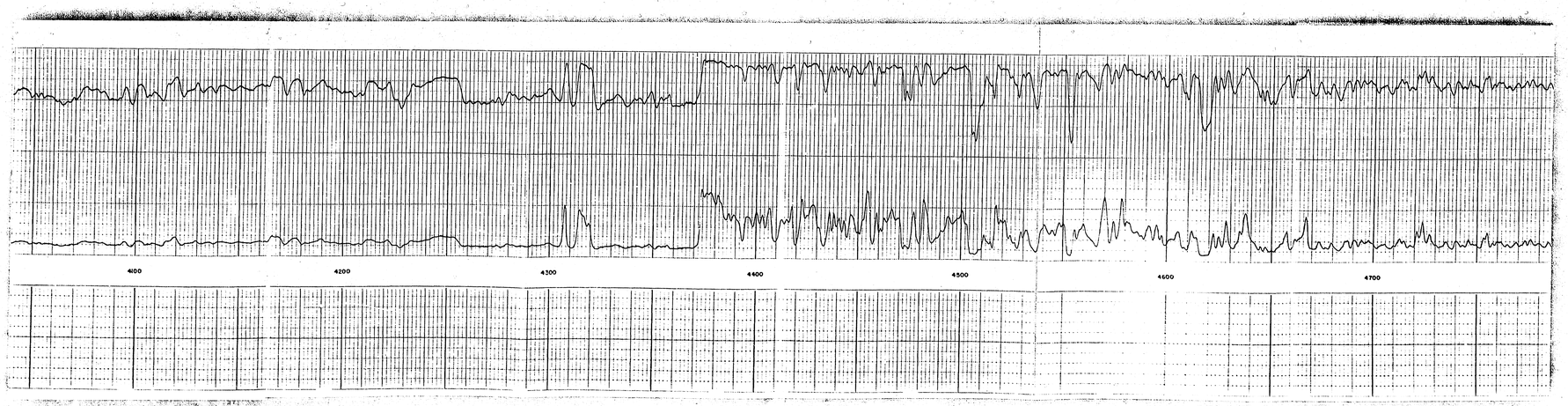

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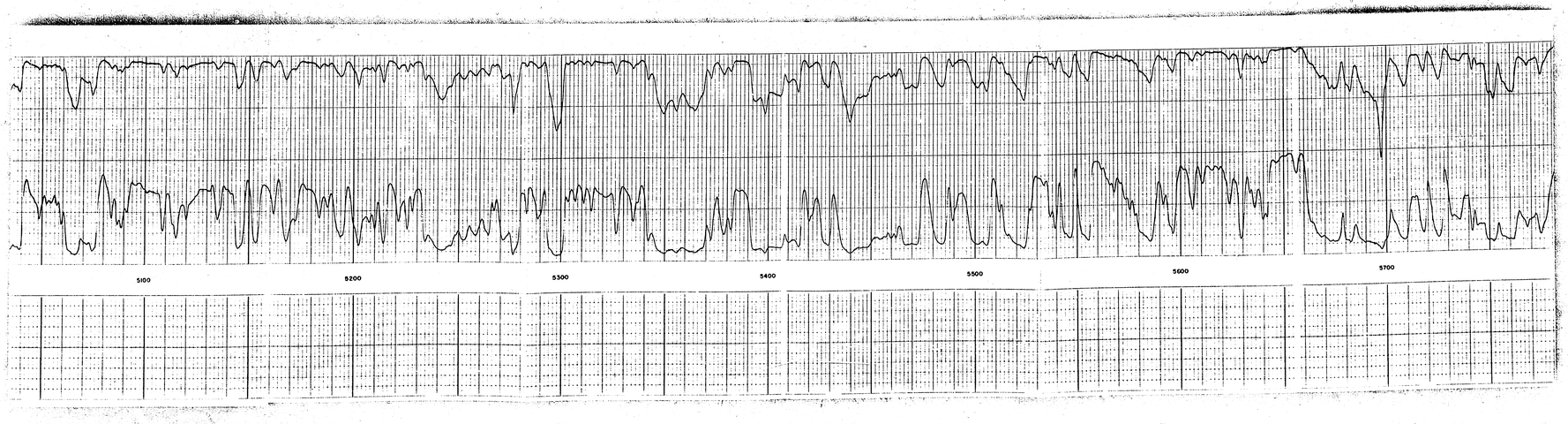

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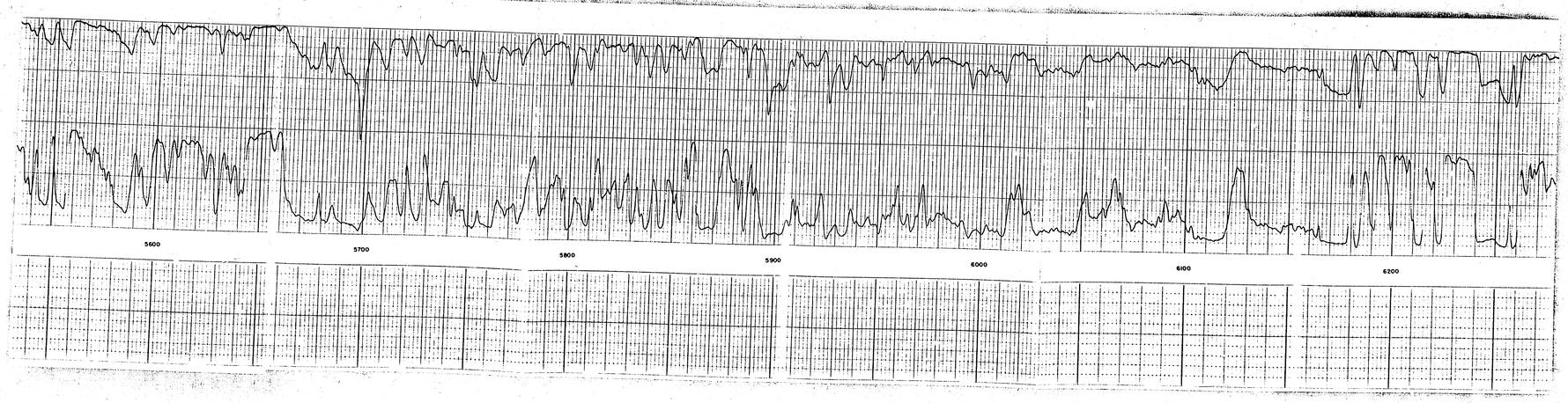

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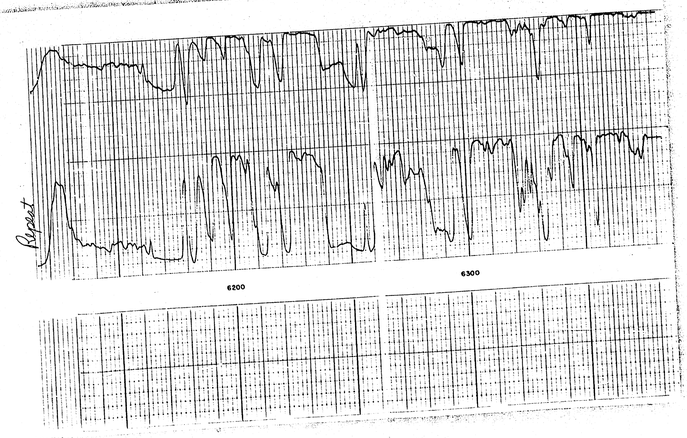

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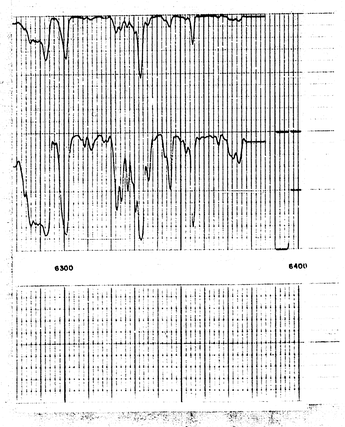

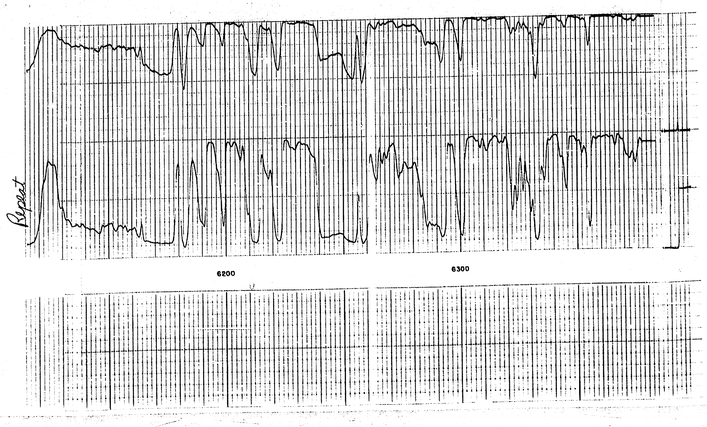

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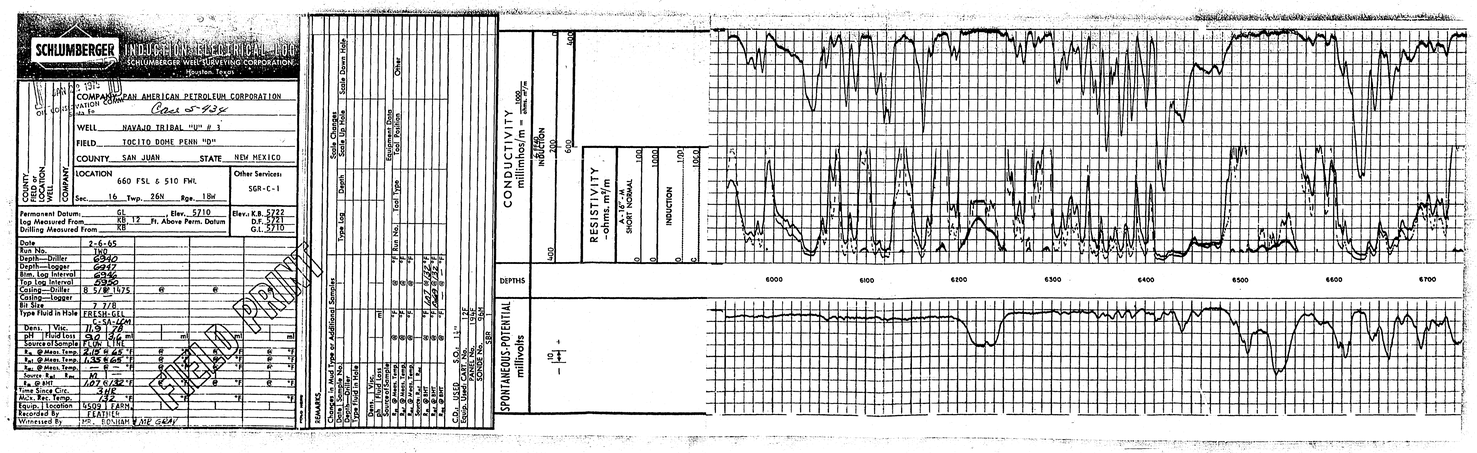

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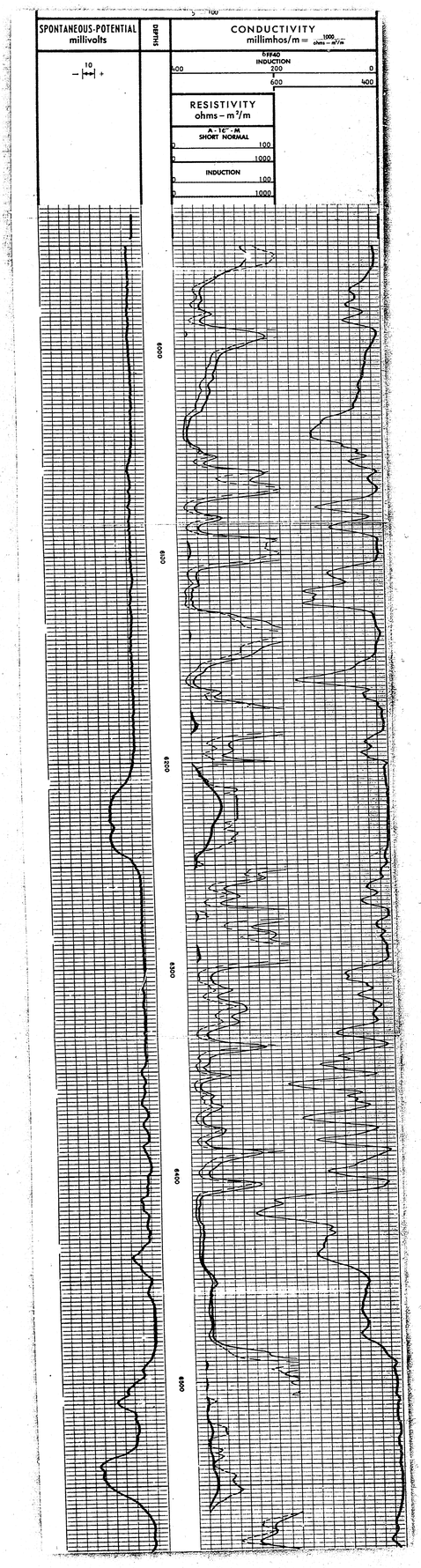
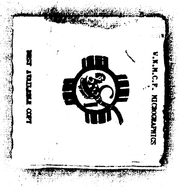

SPONTANEOUS-POTENTIAL
millivolts
10
DEPTHS
CONDUCTIVITY
millimhos/m = 1000 / ohms – m²/m
R-IF40
INDUCTION
400
200
0
600
400
RESISTIVITY
ohms – m²/m
A - 16" - M
SHORT NORMAL
0
100
0
1000
INDUCTION
0
100
0
1000
6000
6100
6200
6300
6400
6500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ATOMIC ENERGY
1958

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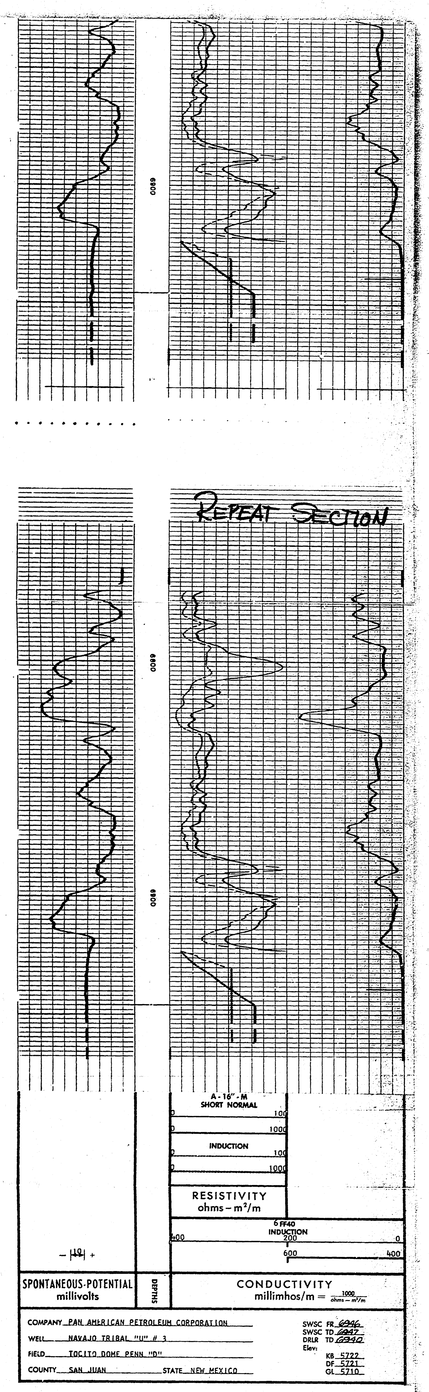
6800
6900
REPEAT SECTION
A-16"-M
SHORT NORMAL
0
100
0
1000
INDUCTION
0
100
0
1000
RESISTIVITY
ohms – m²/m
6 FF40
INDUCTION
200
0
600
400
– 100 +
SPONTANEOUS-POTENTIAL
millivolts
DEPTHS
CONDUCTIVITY
millimhos/m = 1000 / ohms – m²/m
COMPANY PAN AMERICAN PETROLEUM CORPORATION
WELL NAVAJO TRIBAL "U" # 3
FIELD TOCITO DOME PENN "D"
COUNTY SAN JUAN STATE NEW MEXICO
SWSC FR. 6946
SWSC TD. 6987
DRLR TD. 6990
Elev.
KB. 6722
DF. 6721
GL. 6710

Gen 3931

SONIC LOG - GAMMA RAY

WITH CALIPER

SCHLUMBERGER WELL SURVEYING CORPORATION
Houston, Texas

COUNTY, FIELD or LOCATION, STATE — OIL CONSERVATION COMM. Gen 3931

COMPANY PAN AMERICAN PETROLEUM CORPORATION Pan Am

WELL NAVAJO TRIBAL 4-8

FIELD TOLTO DOME PENN "C"

COUNTY SAN JUAN STATE NEW MEXICO

LOCATION 1980' FNL 1820' FWL

Sec. ____ Twp. ____ Rge. ____

Other Services: LL

Permanent Datum: GL Elev. 5611

Log Measured From KB 12 Ft. Above Perm. Datum

Drilling Measured From KB

Elev.: K.B. 5623 D.F. G.L. 5611

Date	11-18-60									
Run No.	ONE									
Depth—Driller	6330									
Depth—Logger	6326									
Btm. Log Interval	6317									
Top Log Interval	2500									
Casing—Driller	8 5/8" @ 330	@		@		@				
Casing—Logger	330									
Bit Size	7 7/8"									
Type Fluid in Hole	SALT JAT									
Dens. / Visc.	10.7 / 44									
pH / Fluid Loss	10.5 / 9.4		ml		ml					ml
Source of Sample	CIRCULATING									
R_m @ Meas. Temp.	.72 @ 70 °F	@	°F	@	°F	@	°F	@	°F	
R_{mf} @ Meas. Temp.	.65 @ 70 °F	.53 @ 60	°F	@	°F	@	°F	@	°F	
R_{mc} @ Meas. Temp.	@	@	°F	@	°F	@	°F	@	°F	
Source: R_{mf} R_{mc}	MEAS. MEAS.									
R_m @ BHT	.046 @ 133 °F	@	°F	@	°F	@	°F	@	°F	
Time Since Circ.	6 HRS.									
Max. Rec. Temp.	130 °F		°F		°F		°F		°F	
Equip. / Location	4068 / FARMI									
Recorded By	KINSEAL									
Witnessed By	HOLMES, WARD									

Cross Hairs

REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No. / Depth

Type Fluid in Hole

Dens. / Visc.

pH / Fluid Loss

R_m @ Meas. Temp.

R_{mf} @ Meas. Temp.

R_{mc} @ Meas. Temp.

R_m @ BHT

R_{mf} @ BHT

R_{mc} @ BHT

Time Since Circ.

Max. Rec. Temp.

Equip. / Location

Recorded By

Witnessed By

Scale Changes — Type Log / Depth / Scale Up Hole / Scale Down Hole

Equipment Data — Run No. / Tool Type / Tool No. / Other

BHC Log — Run No. / Bit Size / Depth — 1ST READING 6317 / 7 7/8 / 2500; 2ND READING 6317 / 7 7/8 / 330

CALIBRATIONS — BHC: CPS 20 / GAMMA RAY: 70

RUN NO. 1 / DATE 11-18-60 / CASING REC. 8 5/8 @ 330 / TUBING REC. 2 @ 6317 / PACKER SET AT 6317 / PACKER NO. 3415 / SONDE NO. 1410

RECORDED BY KINSEAL / WITNESSED BY HOLMES, WARD

LOGGED — Interval Transit Time (microseconds per foot) / Velocity (feet per second)

INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT
140 — 90 — 40

DEPTHS

GAMMA RAY
API UNITS
0 — 150

N.S.&E. 10" DIAMETER
CALIPER
HOLE DIAM. IN INCHES
6 — 16

0300 0400 0500 0600 0700 0800 0900 1000

W.N.M.C.F. MICROGRAPHICS

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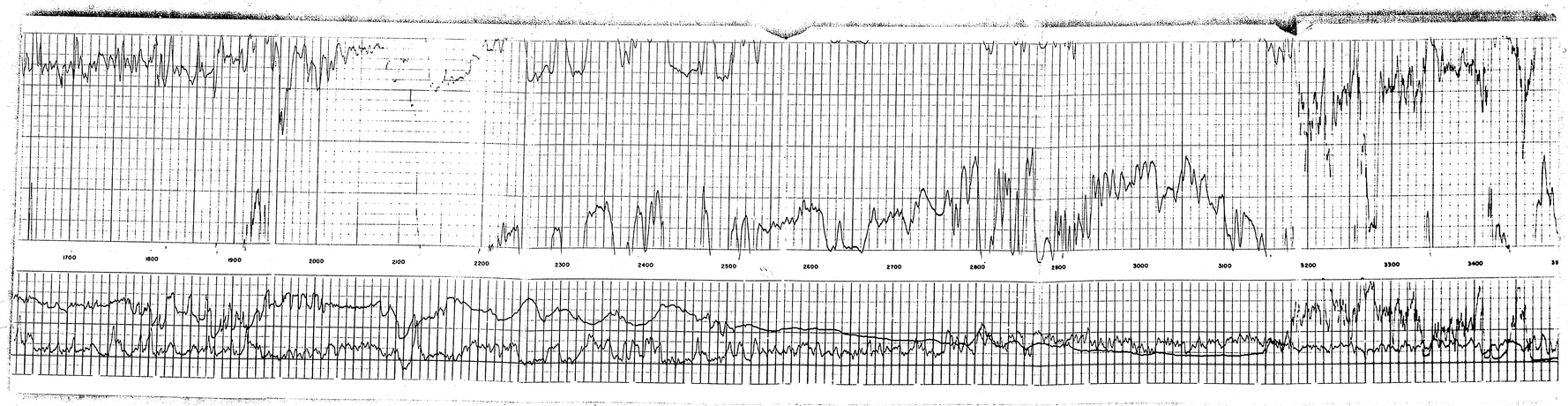

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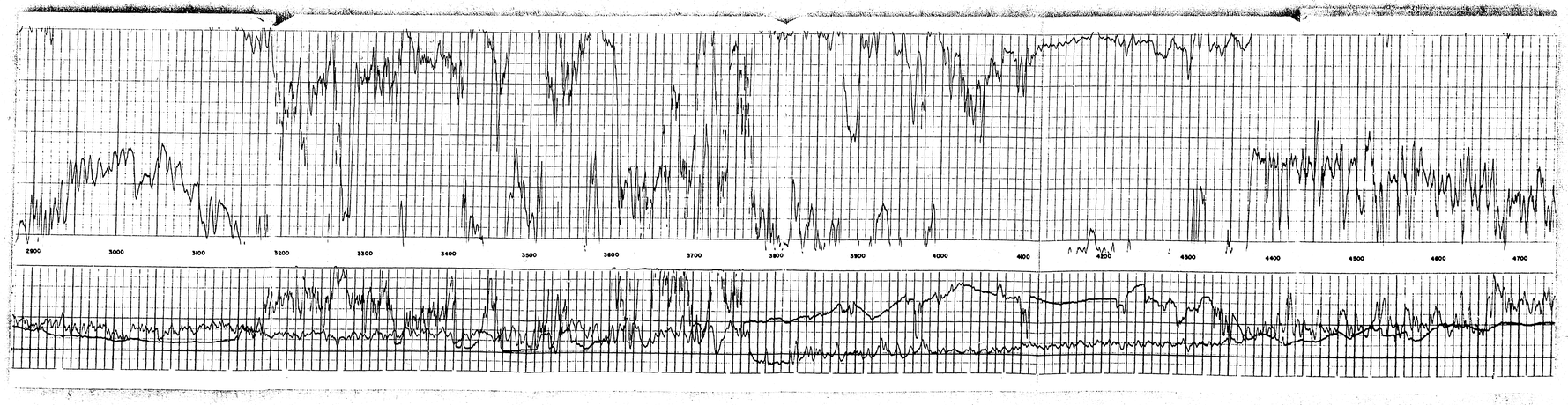

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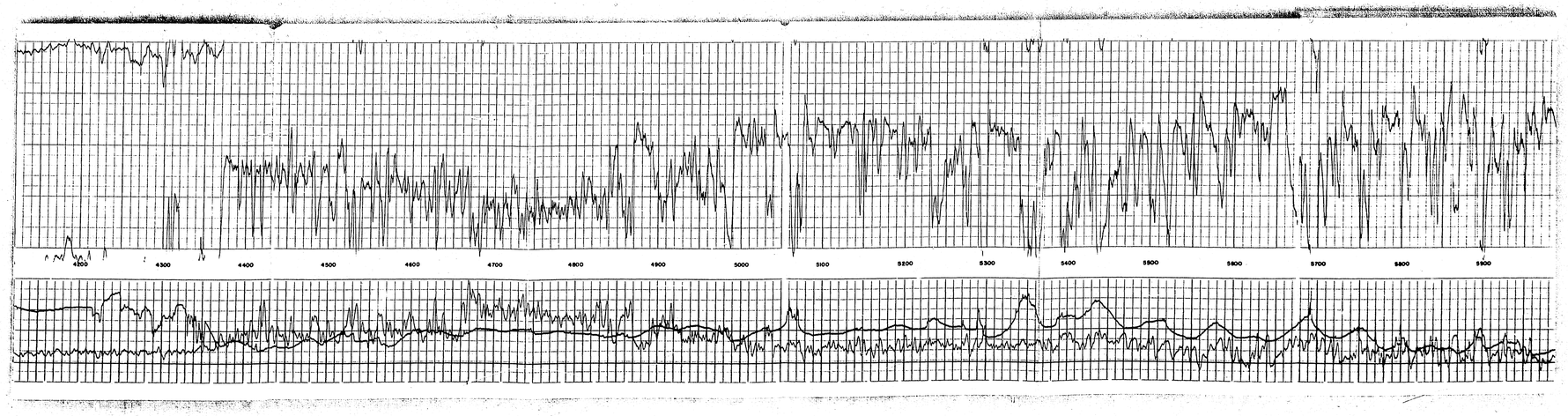

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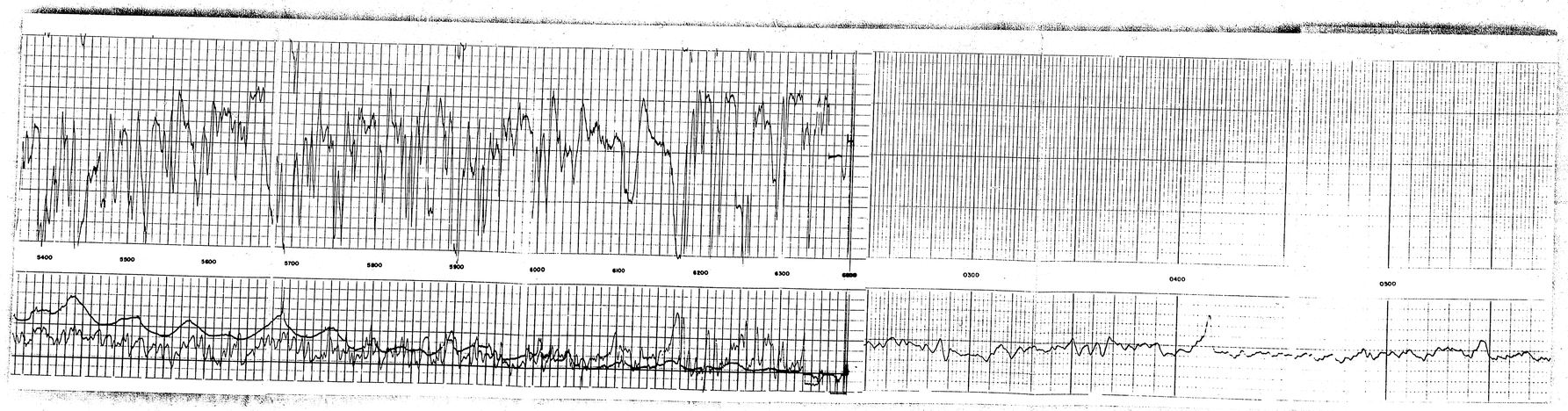

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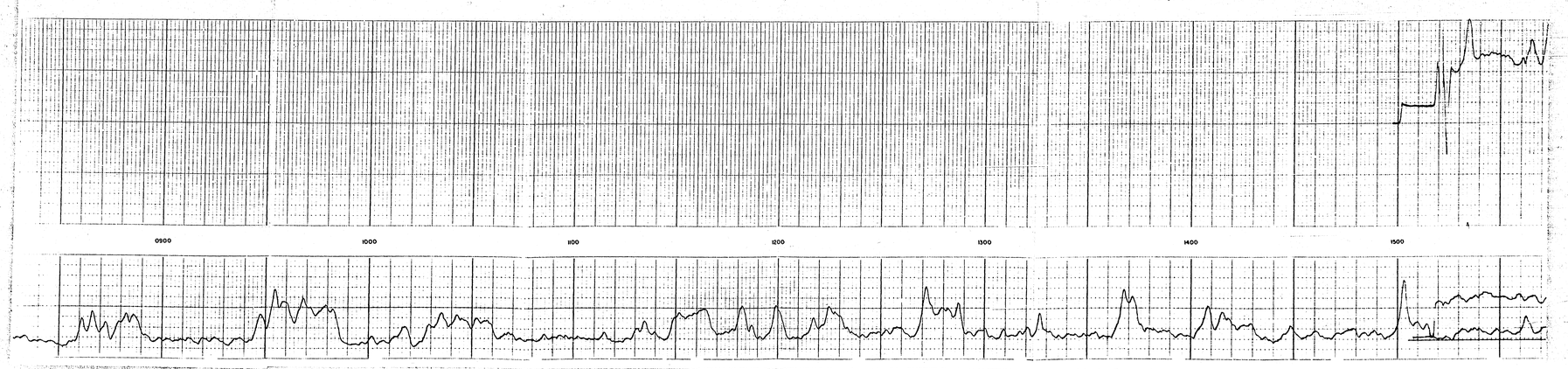

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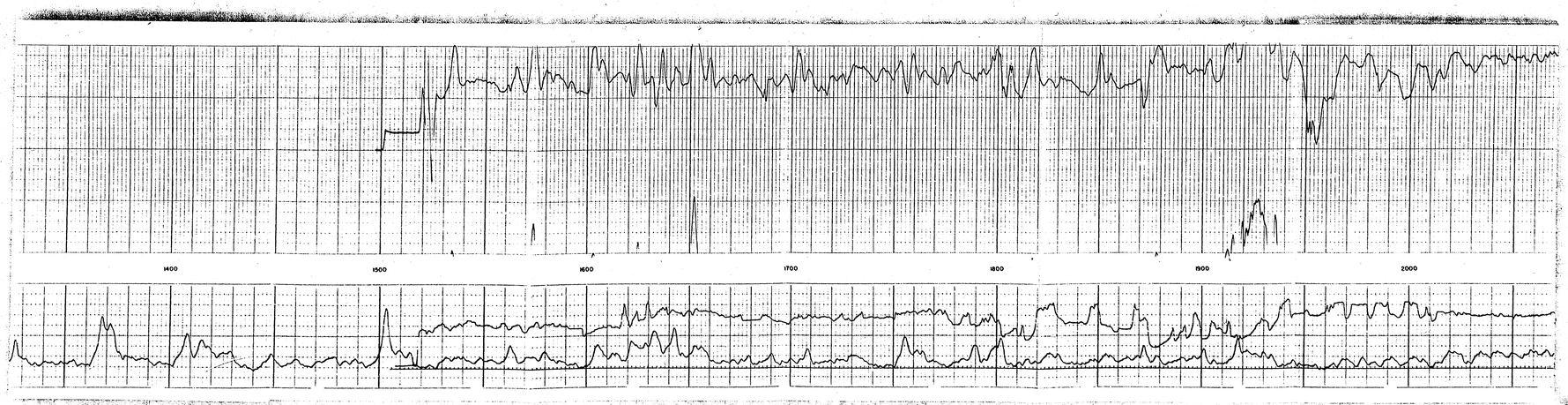

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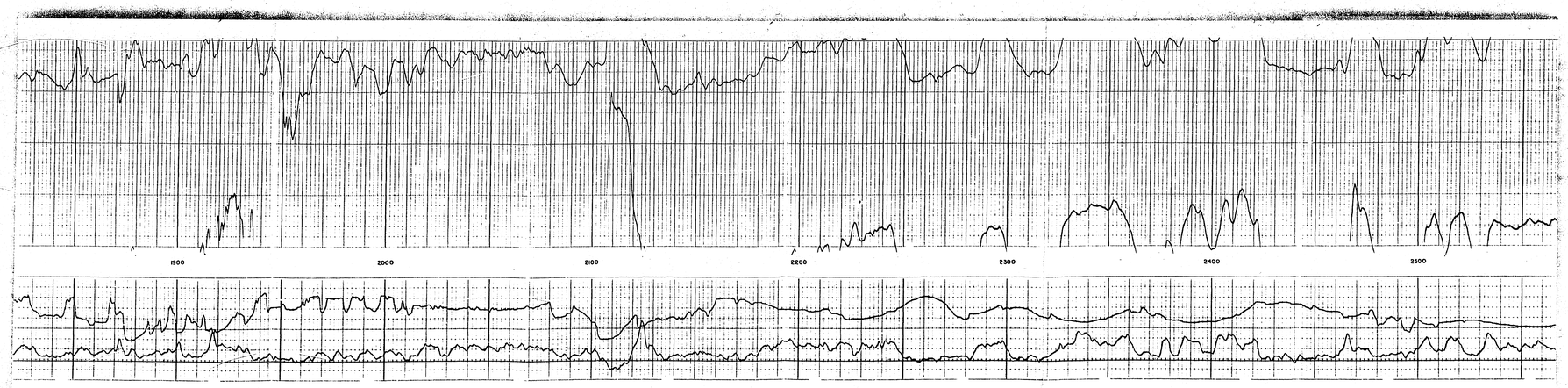

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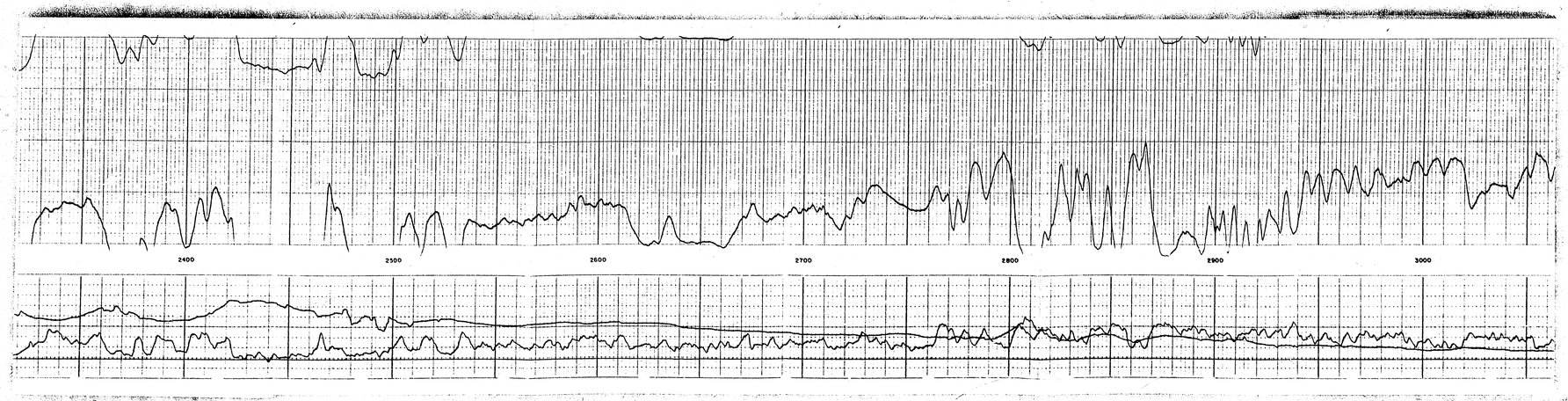

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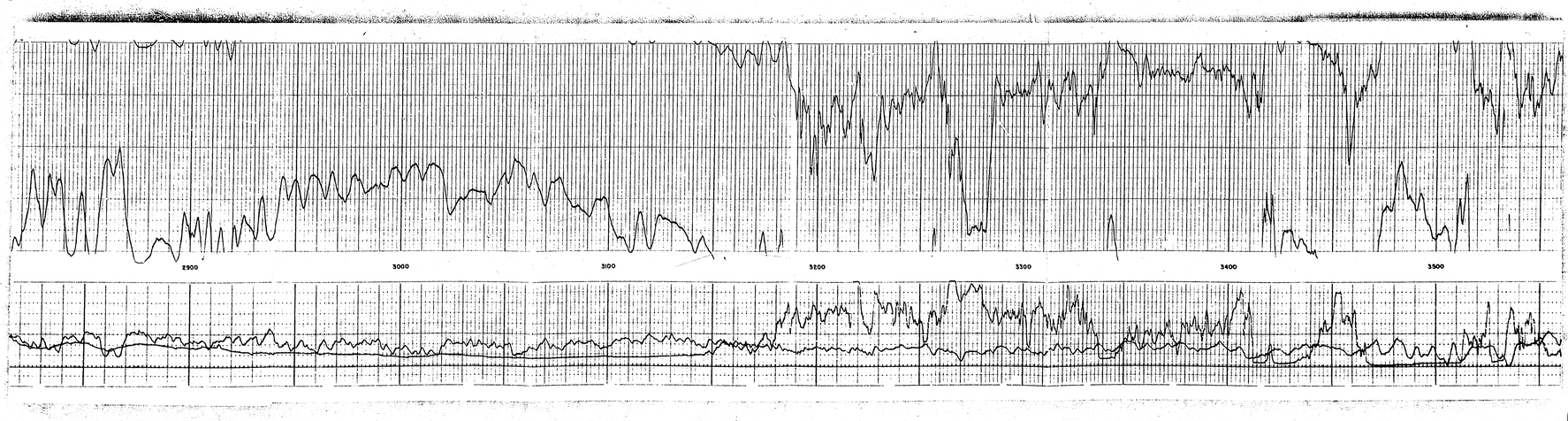

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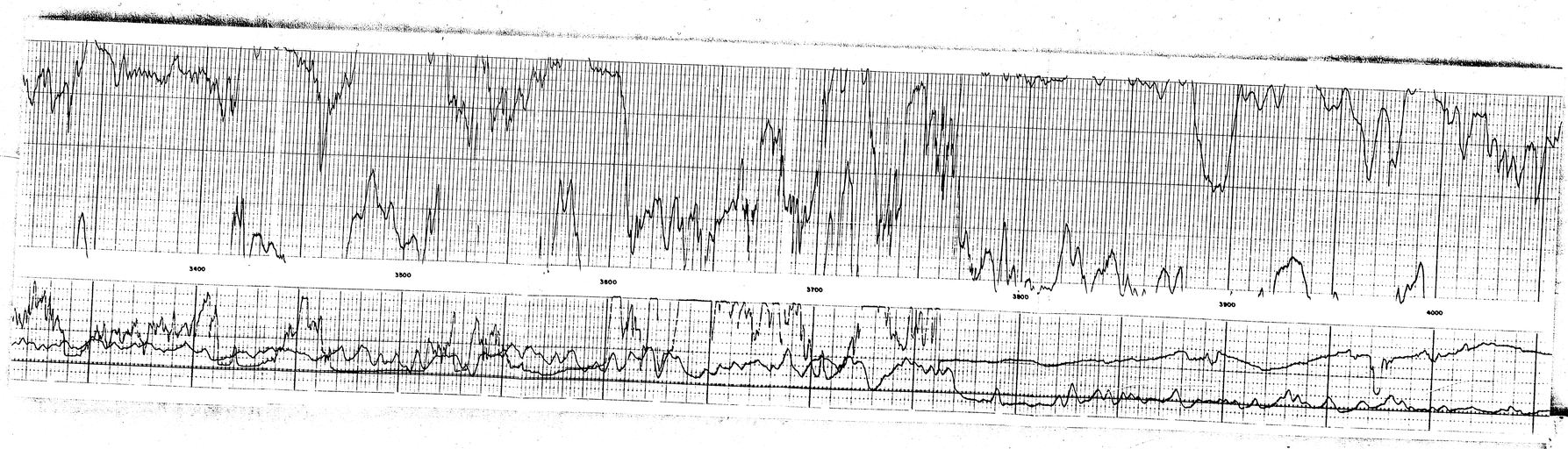

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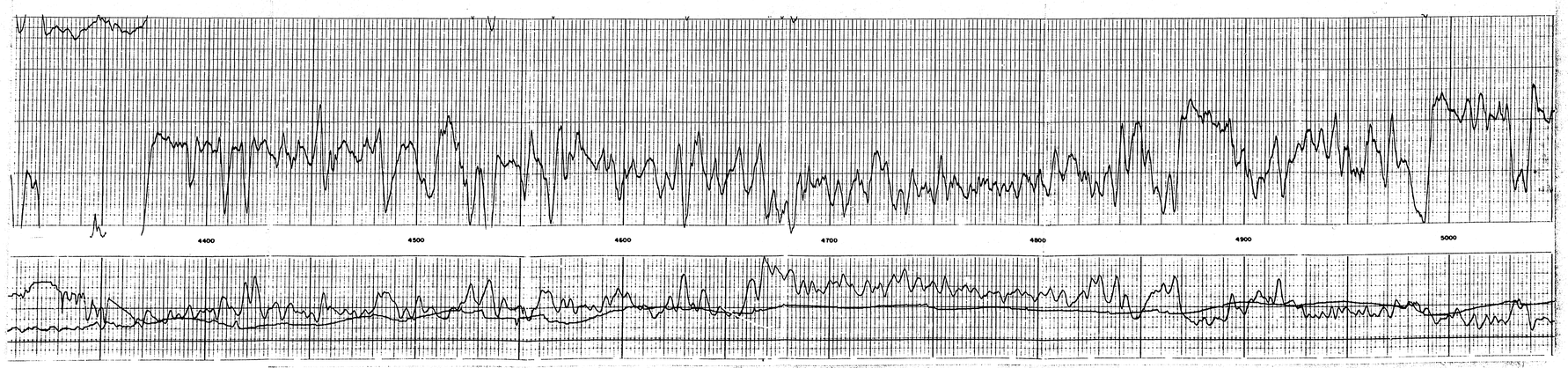

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U.S. GEOLOGICAL SURVEY
OPEN-FILE REPORT 88-450

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FRAME NUMBER: 150 - 186
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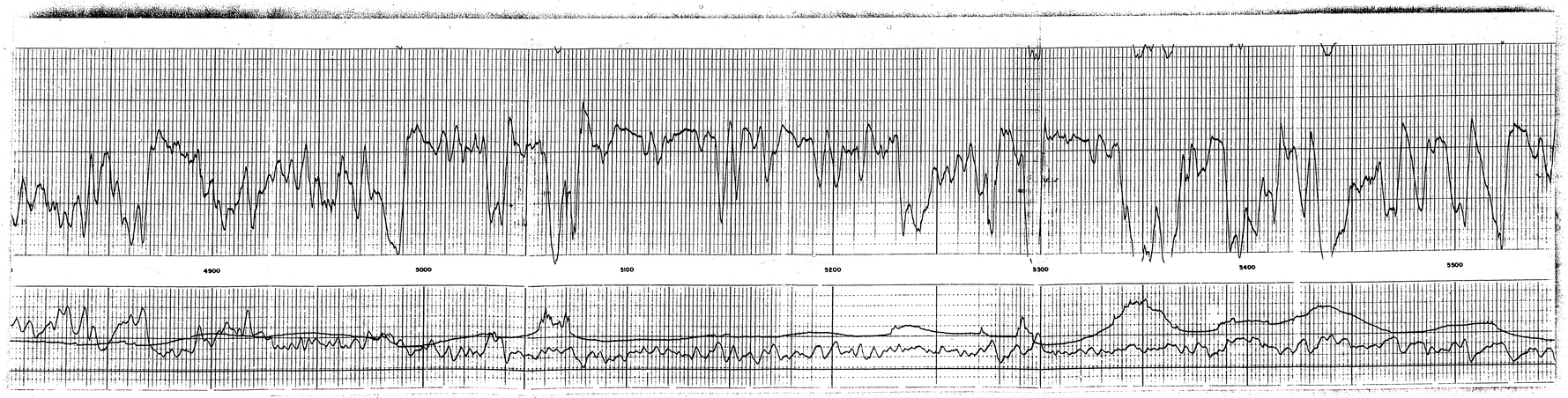

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C.I. MICROGRAPHICS N.M.H.C.F.
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- FRAME NUMBER: 150 - 186-187
- DATE: 1-8-1988
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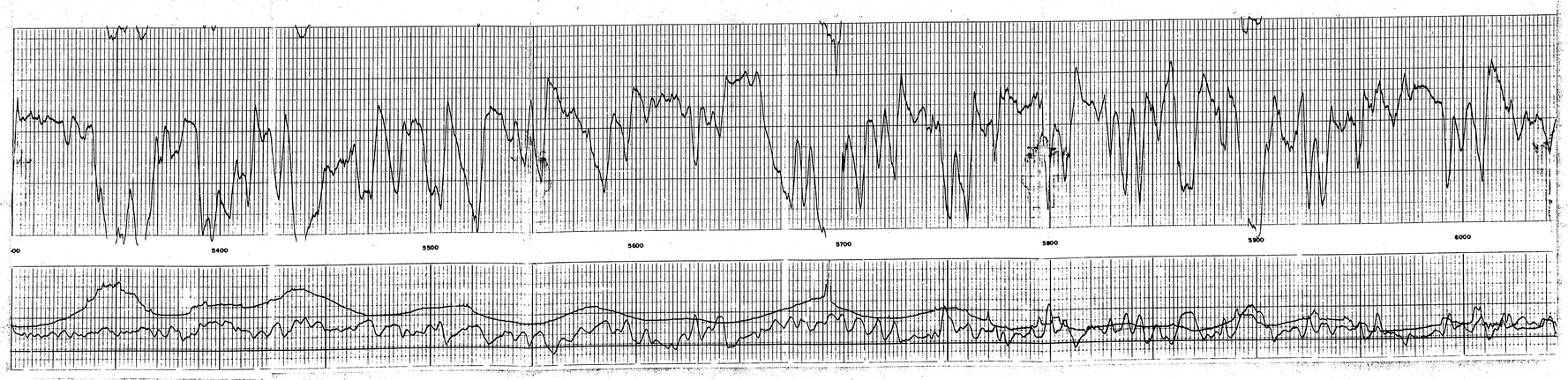

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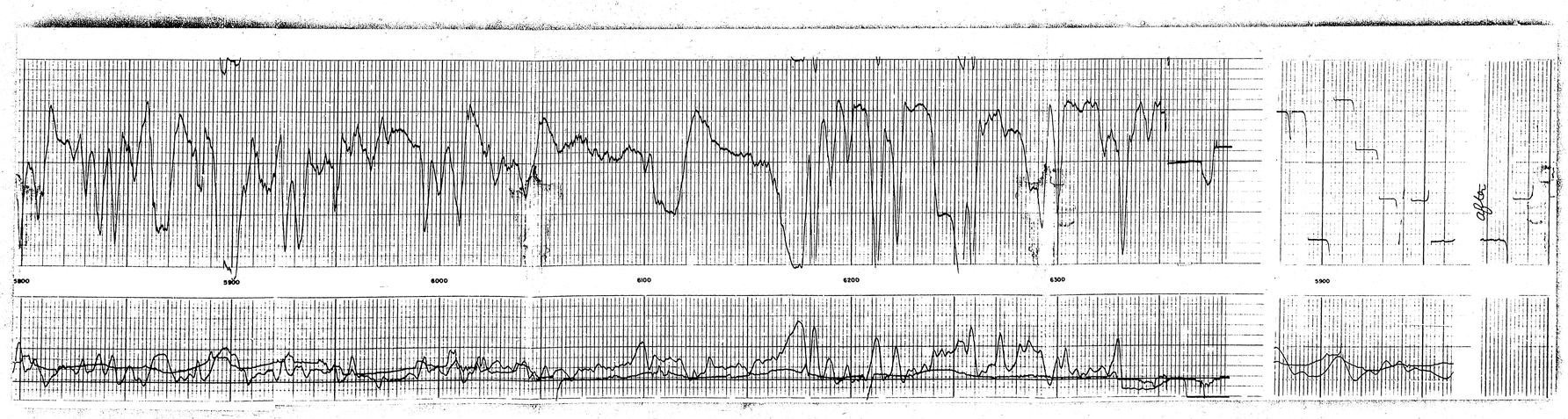
PAGE NUMBER: 150 - 186-187-188

DATE: 1-8-1988

CAMERA OPR BY: Sydia Elia



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DATE 1-8-1988
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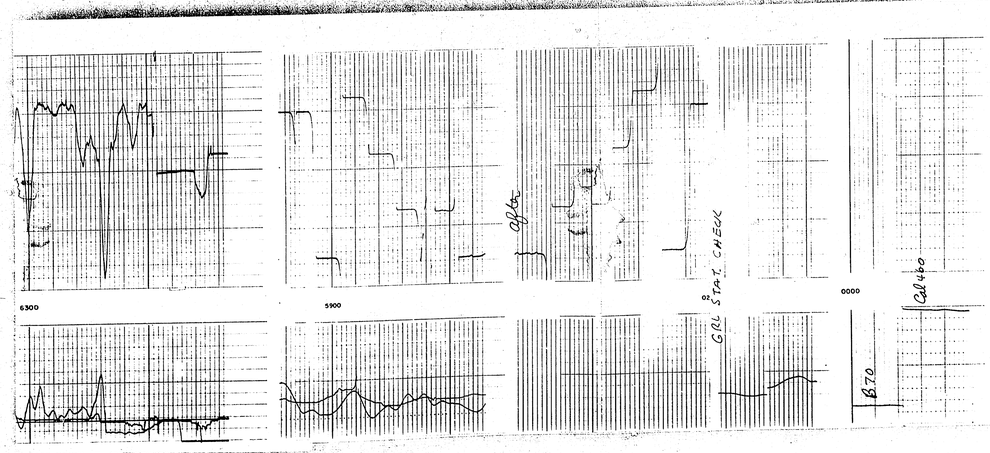

Case 5934

U.B.C. MICROGRAPHICS
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SCHLUMBERGER SONIC LOG GAMMA RAY

SCHLUMBERGER WELL SURVEYING CORPORATION
Houston, Texas

Coal 5?3?

COMPANY	PAN AMERICAN PETROLEUM CORPORATION
WELL	NAVAJO TRIBAL "U" # 3
FIELD	TOCITO DOME PENN "D"
COUNTY	SAN JUAN STATE NEW MEXICO
LOCATION	660 FSL & 510 FWL
Sec.	16 Twp. 26N Rge. 18W
Other Services:	IES

Permanent Datum: GL, Elev. 5710
Log Measured From KB, 12 Ft. Above Perm. Datum
Drilling Measured From KB
Elev.: K.B. 5722, D.F. 5721, G.L. 5710

Date	2-6-65			
Run No.	TWO			
Depth—Driller	6940			
Depth—Logger	6948			
Btm. Log Interval	6946			
Top Log Interval	5950			
Casing—Driller	8 5/8@1475	@	@	@
Casing—Logger	—			
Bit Size	7 7/8			
Type Fluid in Hole	FRESH-GEL C-SA-LCM			
Dens. | Visc.	9.9 | 78			
pH | Fluid Loss	9.0 | 3.6 ml	ml	ml	ml
Source of Sample	FLOW LINE			
R_m @ Meas. Temp.	2.15 @ 66 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.35 @ 65 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	— @ — °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	M | —			
R_m @ BHT	1.07 @ 132 °F	@ °F	@ °F	@ °F
Time Since Circ.	5HR			
Max. Rec. Temp.	132 °F	°F	°F	°F
Equip. | Location	4509 | FARM.			
Recorded By	FEATHER			
Witnessed By	MR. BONHAM & MR. GEAR			

FIELD PRINT

REMARKS

Changes in Mud Type or Additional Samples						Scale Changes			
Date	Sample No.					Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth—Driller									
Type Fluid in Hole									
Dens. | Visc.									
ph | Fluid Loss	ml								
Source of Sample									
R_m @ Meas. Temp.	@ °F	@ °F							
R_{mf} @ Meas. Temp.	@ °F	@ °F							
R_{mc} @ Meas. Temp.	@ °F	@ °F							
Source: R_{mf} R_{mc}									
R_m @ BHT	@ °F	1.07 @ 132 °F							
R_{mf} @ BHT	@ °F	0.669 @ 132 °F							
R_{mc} @ BHT	@ °F	@ °F							

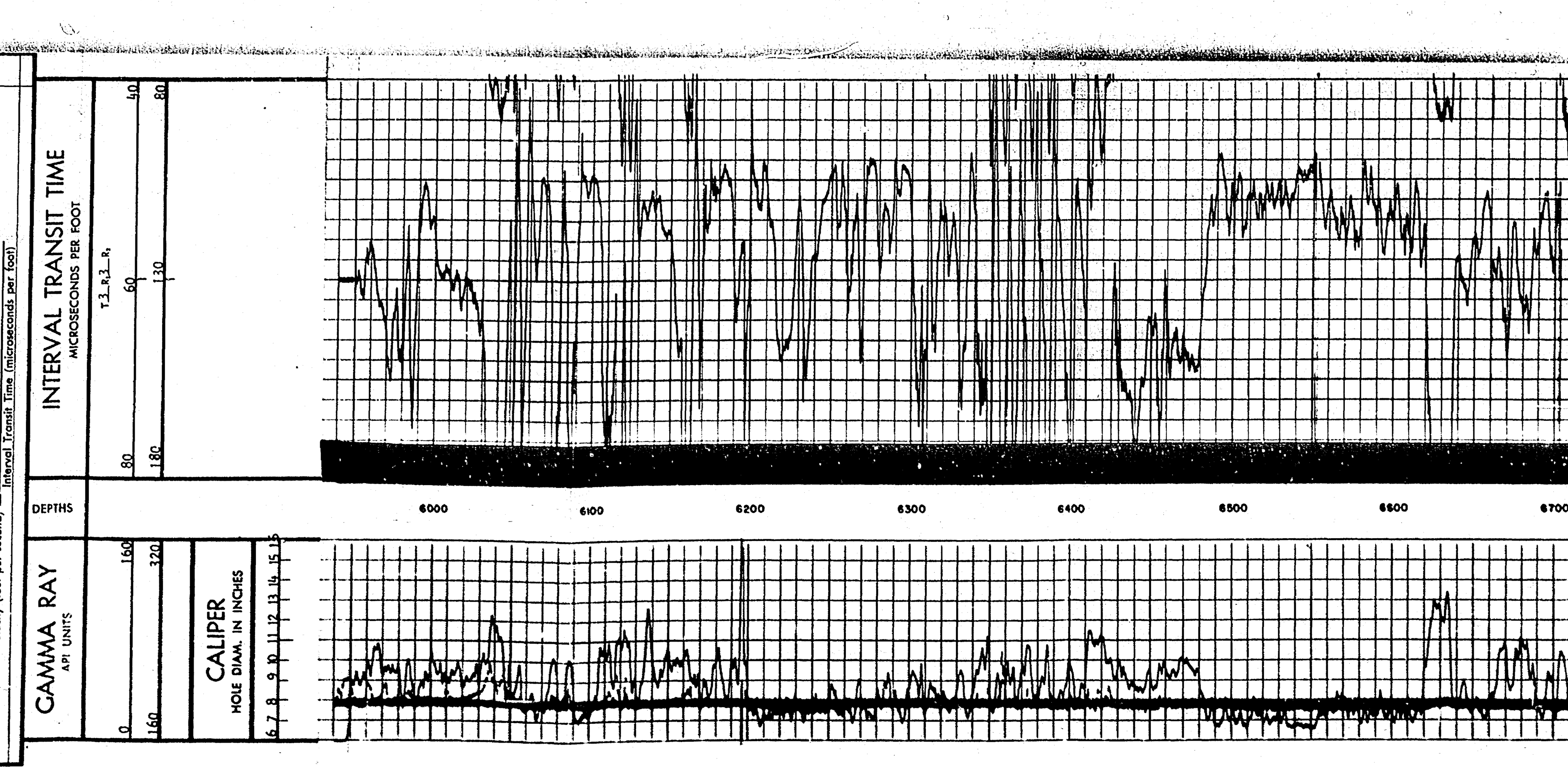
Equipment Data				
Run No.	Tool Type	Pad Type	Tool Pos.	Other

C.D.: USED S.O.: 1-H-49089 1-VCD
Equip. Used: CART. No. 708 GNC NO. 63H
PANEL No. 3468 VIP NO. X9A
SONDE No. 127J
GNP NO. 3070

CALIBRATION:	BACKGND. CPS.	SOURCE CPS.	GALV. INCR. DIVISIONS	SENS. TAP (FOR CAL.)	SENS. TAP (RECORD)	TIME CONST.	RECORDING SPEED (FT./MIN.)
GAMMA RAY:	80	480	82.5	500	400	2	30

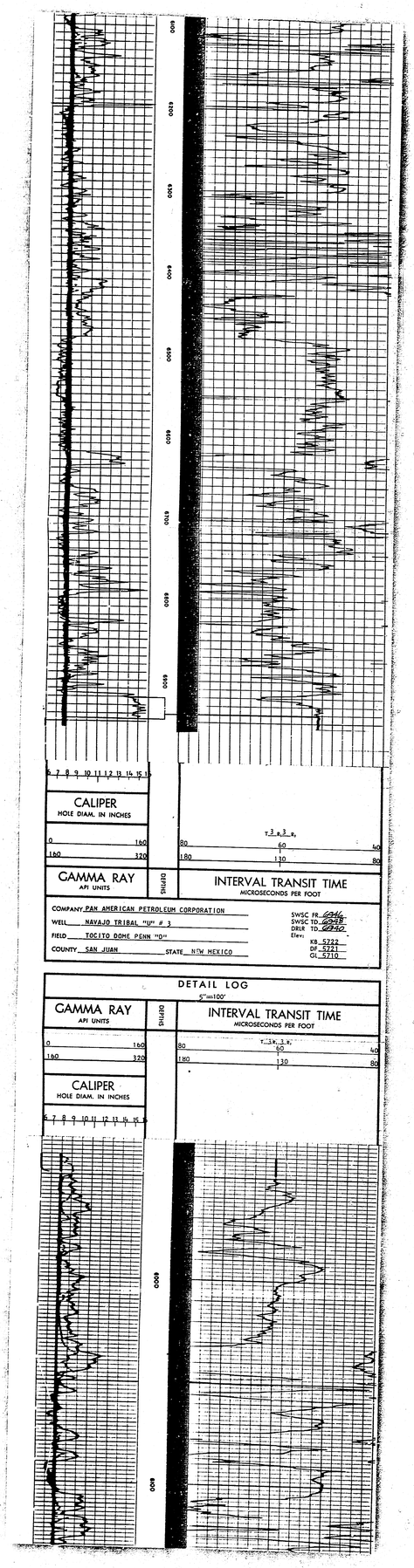
INTEGRATED CURVE RECORDED 4.5' DEEP

$$\text{Velocity (feet per second)} = \frac{1{,}000{,}000}{\text{Interval Transit Time (microseconds per foot)}}$$



W.N.M.C.F. MICROGRAPHICS

BEST AVAILABLE COPY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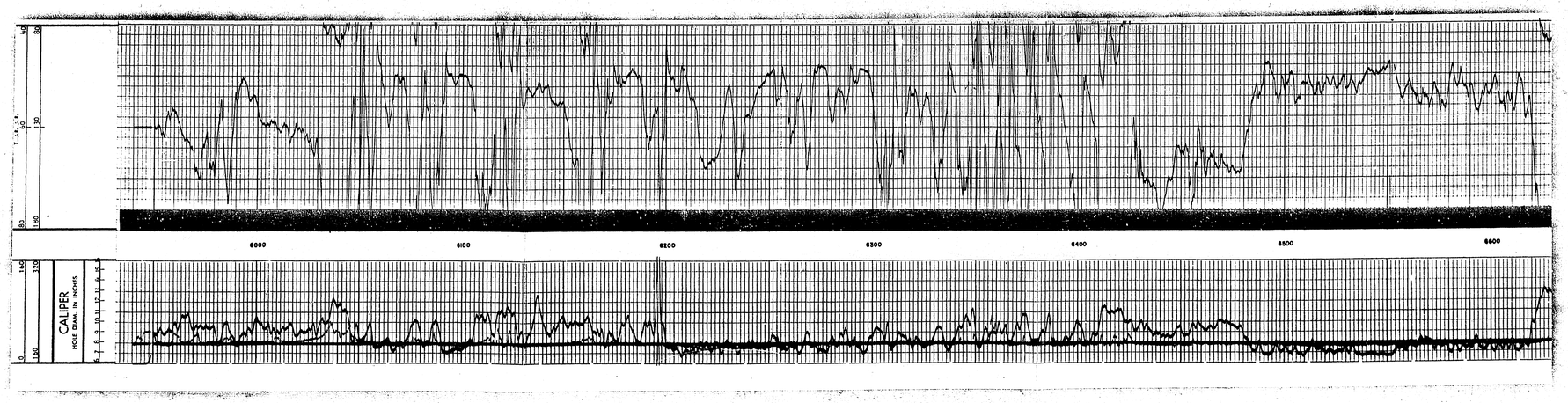
CALIPER
HOLE DIAM. IN INCHES
0 160
160 320
GAMMA RAY
API UNITS
DEPTHS
INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT
80 60 40
180 130 80
COMPANY PAN AMERICAN PETROLEUM CORPORATION
WELL NAVAJO TRIBAL "U" # 3
FIELD TOCITO DOME PENN "D"
COUNTY SAN JUAN STATE NEW MEXICO
SWSC FR 6946
SWSC TD 6946
DRLR TD 6950
Elevs:
KB 5722
DF 5721
GL 5710
DETAIL LOG
5"=100'
GAMMA RAY
API UNITS
INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT
0 160
160 320
CALIPER
HOLE DIAM. IN INCHES
6 7 8 9 10 11 12 13 14 15 16
80 60 40
180 130 80
6800
6900



W.R.N.C.F. MICROGRAPHICS
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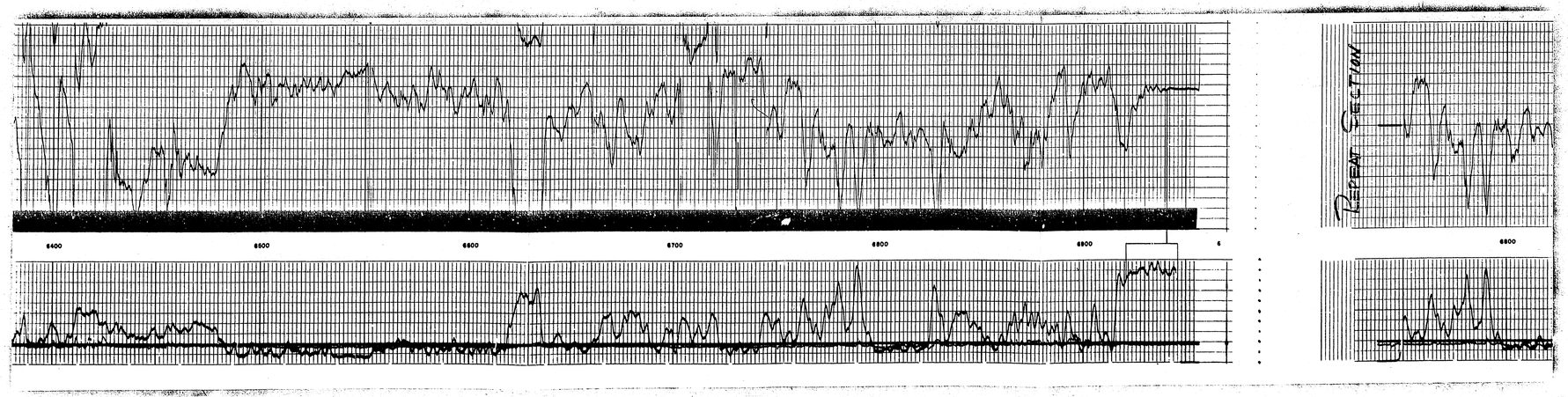

V.N.M.C.F. MICROGRAPHICS
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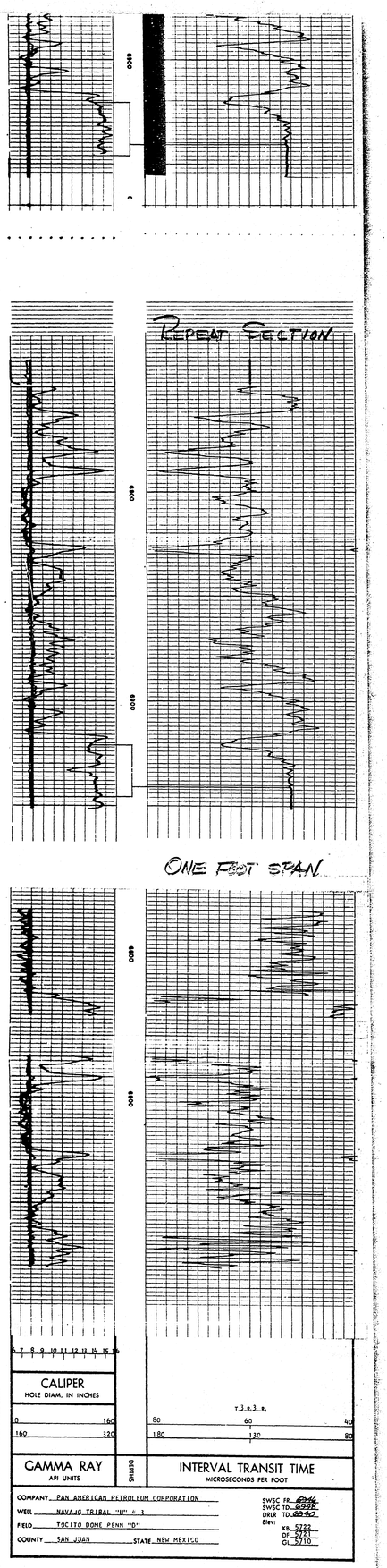
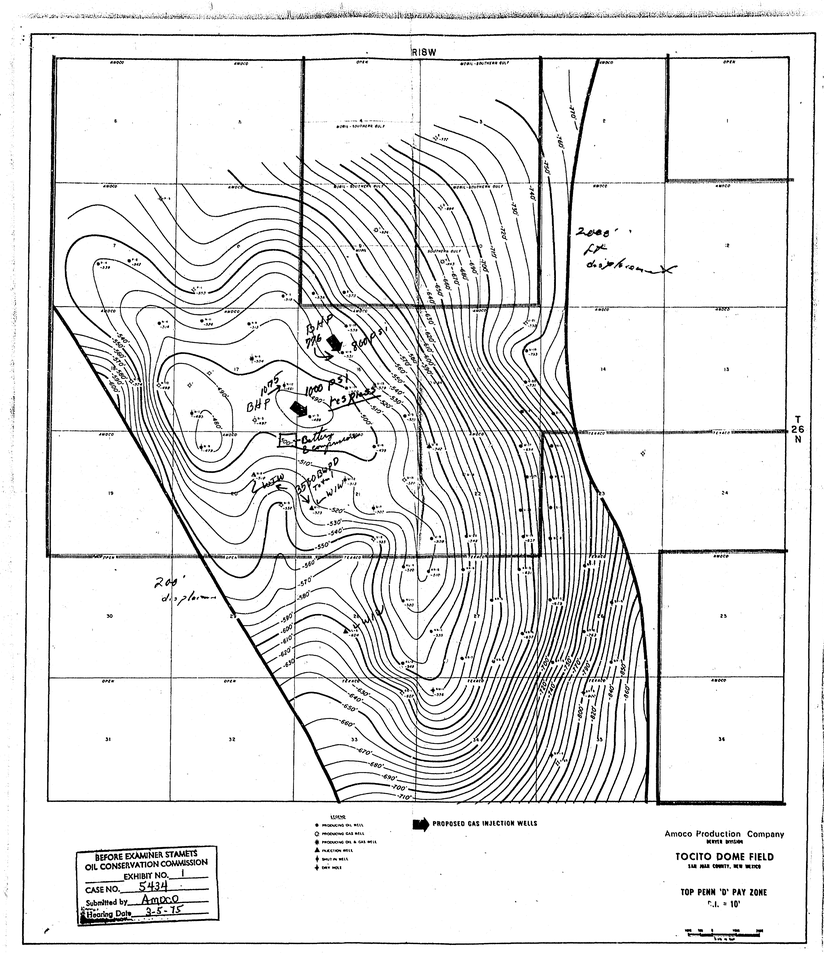

6800
6900
REPEAT SECTION
ONE FOOT SPAN
6 7 8 9 10 11 12 13 14 15 16
CALIPER
HOLE DIAM. IN INCHES
0 160
160 320
T.I.T.T.
80 60 40
180 130 80
GAMMA RAY
API UNITS
DEPTHS
INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT
COMPANY PAN AMERICAN PETROLEUM CORPORATION
WELL NAVAJO TRIBAL "D" # 1
FIELD TOCITO DOME PENN "D"
COUNTY SAN JUAN STATE NEW MEXICO
SWSC FR 6946
SWSC TD 6958
DRLR TD 6950
Elev:
KB 5723
DF 5721
GL 5710

N.M.O.C.D. MICROGRAPHICS
P.O. BOX 2088
SANTA FE, NEW MEXICO 87501

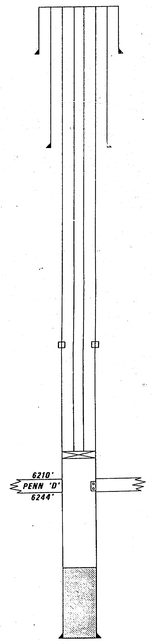
Water Damaged Document
DOCUMENT NUMBER: #5434
PAGE NUMBER: 34
PAGE NUMBERS: 150 - 186-187-188-189-195
DATE: 1-8-1988
FILMED BY: Lydia Baca



N.M.O.C.D. MICROGRAPHICS
BEST AVAILABLE COPY

Amoco Production Company

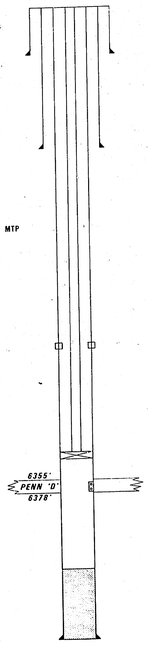
NAVAJO TRIBAL "U" NO. 3
PROPOSED INJECTION CONFIGURATION
BOREHOLE DIAGRAM



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 5434
Submitted by Amoco
Hearing Date 3-5-75

Amoco Production Company

NAVAJO TRIBAL "U" NO. 8
PROPOSED INJECTION CONFIGURATION
BOREHOLE DIAGRAM



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 5434
Submitted by Amoco
Hearing Date 3-5-75

W.R.M.C.F. MICROGRAPHICS
BEST AVAILABLE COPY

U.N.M.C.F. MICROGRAPHICS
BEST AVAILABLE COPY

AMOCO	AMOCO	OPEN	MOBIL-SOUTHERN GULF	AMOCO	OPEN
6	5	4	3	2	1
		MOBIL-SOUTHERN GULF			
AMOCO	AMOCO	MOBIL-SOUTHERN GULF	MOBIL-SOUTHERN GULF	AMOCO	AMOCO
7	8	9	10	11	12
		MOBIL	SOUTHERN GULF		
AMOCO	AMOCO	AMOCO	AMOCO	AMOCO	AMOCO
18	17	16	15	14	13
AMOCO	AMOCO	AMOCO	AMOCO	TEXACO	TEXACO
19	20	21	22	23	24
OPEN	OPEN	TEXACO	TEXACO	TEXACO	AMOCO
30	29	28	27	26	25
OPEN	OPEN	TEXACO	TEXACO	TEXACO	AMOCO
31	32	33	34	35	36

T 26 N

LEGEND

- Oil Wells
- Water Disposal Wells
- Proposed Test Injection Wells
- Amoco Acreage

Amoco Production Company
DENVER DIVISION

TOCITO DOME FIELD

SAN JUAN COUNTY, NEW MEXICO

Case 5434

U.N.M.C.F. MICROGRAPHICS
BEST AVAILABLE COPY

R18W

T 26 N

AMOCO 6	AMOCO 5	OPEN 4 / MOBIL-SOUTHERN GULF	MOBIL-SOUTHERN GULF 3	AMOCO 2	OPEN 1
AMOCO 7	AMOCO 8	MOBIL-SOUTHERN GULF 9 / MOBIL	MOBIL-SOUTHERN GULF 10 / SOUTHERN GULF	AMOCO 11	AMOCO 12
AMOCO 18	AMOCO 17	AMOCO 16	AMOCO 15	AMOCO 14	AMOCO 13
AMOCO 19	AMOCO 20	AMOCO 21	AMOCO 22	TEXACO 23	TEXACO 24
OPEN 30	OPEN 29	TEXACO 28	TEXACO 27	TEXACO 26	AMOCO 25
OPEN 31	OPEN 32	TEXACO 33	TEXACO 34	TEXACO 35	AMOCO 36

LEGEND

- Oil Wells
- Water Disposal Wells
- Proposed Test Injection Wells
- Amoco Acreage

Amoco Production Company
DENVER DIVISION

TOCITO DOME FIELD

SAN JUAN COUNTY, NEW MEXICO

Case 5434

1000 500 0 1000 2000
Scale in feet

LAND DEPARTMENT DENVER, COLORADO