

HESS OIL COMPANY

225 N. Market, Suite 300

Wichita, Kansas 67202

(316) 263-2243

GEOLOGICAL REPORT

WANDALENE #2

370' FSL, 2460' FWL of

SECTION 20 - 17S - 22W

NESS COUNTY, KANSAS

Commenced: 1-2-12 Elevations: 2268' GR, 2273' KB
Completed: 1-10-12 Surface Pipe: 8-5/8" @ 222' KB
Contractor: Mallard J.V. Production Pipe: 5-1/2"

One foot drilling time was kept from 1500 to 1592' KB and from 3500 to Rotary Total Depth. Ten foot drilling samples (wet & dry) were kept from 4000' to RTD.

Following are sample tops, descriptions of zones of interest (including all shows of oil & gas), and the results of all drill stem tests.

<u>ANHYDRITE</u>	<u>1530</u>	<u>(+743)</u>
<u>BASE ANHYDRITE</u>	<u>1567</u>	<u>(+706)</u>
<u>HEEBNER</u>	<u>3661</u>	<u>(-1388)</u>
<u>LANSING</u>	<u>3704</u>	<u>(-1431)</u>
<u>BASE KANSAS CITY</u>	<u>3982</u>	<u>(-1709)</u>
<u>PAWNEE</u>	<u>4080</u>	<u>(-1807)</u>
<u>FORT SCOTT</u>	<u>4171</u>	<u>(-1897)</u>
<u>CHEROKEE SHALE</u>	<u>4190</u>	<u>(-1917)</u>
<u>MISSISSIPPI</u>	<u>4272</u>	<u>(-1999)</u>

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Page 2

4270-72' KB Clear, medium grained, fairly sorted, sandstone clusters & loose grains. Slight show of free oil in very poor porosity, no odor, slight stain.

4273-76' KB White, sharp & tripolitic, chert. Fair show of free oil in poor "on edge" porosity, slight odor, fair stain, and a fair cut.

DRILL STEM TEST #1 4190 to 4276' KB 86' Anchor

Blow: very slow build to $\frac{1}{2}$ " 2nd - slight surface blow, died in 18 min.

Times: Open 45, Closed 45, Open 45, Closed 45.

Recovered: 1' oil 60' (50% SW, 50% Mud)

Pressures: IH 2170# IF 24 - 34# ISIP 907#
FH 2055# FF 40 - 46# FSIP 762#

4277-80' KB White, sharp & tripolitic, cherts. Good show of free oil in fair "on edge" porosity, good odor, good stain, and a strong cut.

DRILL STEM TEST #2 4270 to 4280' KB 10' Anchor

Blow: build to 8". 2nd - build to 8".

Times: Open 30, Closed 45, Open 30, Closed 45.

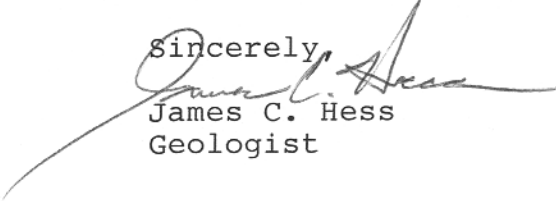
Recovered: 60' Gas
370' HOCM (20% Oil, 80% M) No Water !!

Pressures: IH 2205# IF 26 - 135# ISIP 1172#
FH 2168# FF 148 - 193# FSIP 1137#

Note: a little plugging action on 1st opening - a lot on second !

ROTARY TOTAL DEPTH 4280 (-2007)

No logs were needed or run. 5-1/2" 15.5# Casing was set with a packer shoe @ 4273' KB. Cemented w/150sx EA-II cement. A D.V. Tool was set at 1517-19' KB and cemented to surface w/200sx SMDC.

Sincerely,

James C. Hess
Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY HESS OIL COMPANY ELEVATIONS
 LEASE WANDALENE * 2 KB 2273'
 FIELD _____ DF 2271'
 LOCATION 370' FSL, 2460' FWL GL 2268'
 SEC 20 TWP 17 S RGE 22 W Measurements Are All
 COUNTY NESS STATE KANSAS From KB

CONTRACTOR MALLARD J.V. CASING
 SPUD 1-2-12 COMP 1-10-12 SURFACE 8-5/8" at 222'
 RTD 4280' LTD none PRODUCTION 5-1/2"
 MUD UP 3650' TYPE MUD CHEMICAL

ELECTRICAL SURVEYS
none

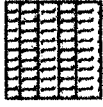
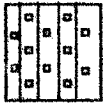



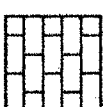
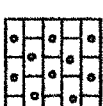
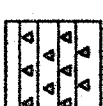

SAMPLES SAVED FROM 4000' TO TD
 DRILLING TIME KEPT FROM 3500' TO TD
 SAMPLES EXAMINED FROM 4000' TO TD
 GEOLOGICAL SUPERVISION FROM 3550' TO TD
 GEOLOGIST ON WELL JAMES C. HESS

FORMATION TOPS	LOG	SAMPLES	
ANHYDRITE		1530 (+743)	22 W
BASE ANHYDRITE		1567 (+706)	
HEEBNER		3661 (-1388)	
LANSING		3704 (-1431)	
BASE KANSAS CITY		3982 (-1709)	
PAWNEE		4080 (-1807)	
FORT SCOTT		4171 (-1898)	20
CHEROKEE SHALE		4190 (-1917)	
MISSISSIPPI		4272 (-1999)	
R T D		4280 (-2007)	17

REMARKS Pipe Strip 120' long to board

7505

LEGEND

- 
 Anhydrite
- 
 Salt
- 
 Sandstone
- 
 Shale
- 
 Carb sh
- 
 Limestone
- 
 Ool.Lime
- 
 Chert
- 
 Dolomite

SCALE 1" = 100'

Lithology	Drilling time in minutes	DEPTH	Sample Description	Remarks, drill stem tests, etc.
0	0	1500		
5	5			
10	10			
15	15			
20	20			
40	40			ANHYDRITE 1530 (+743)
60	60			
				BASE ANHYDRITE 1567

LOG 7703

(+706)

80

3500

20

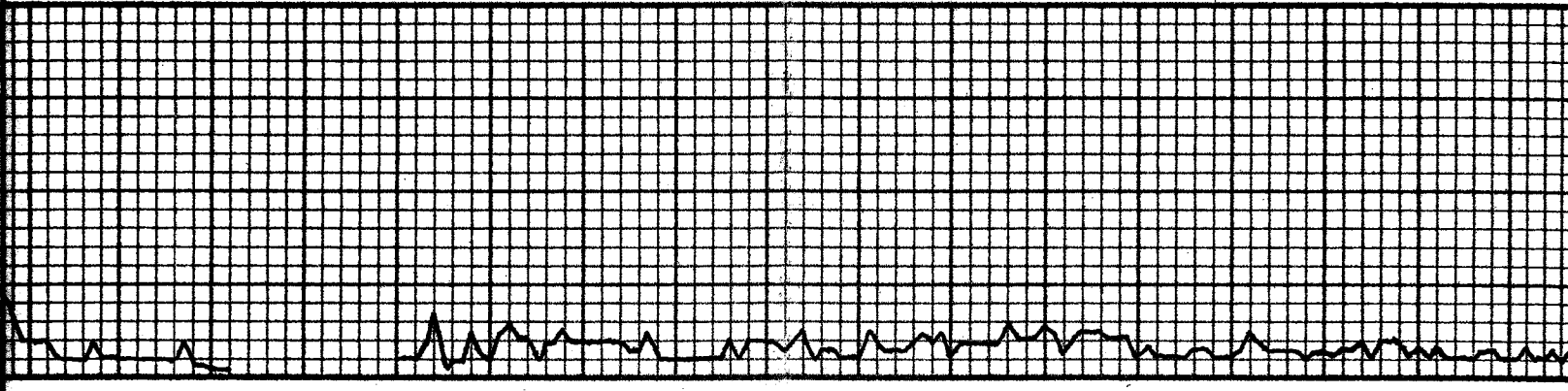
40

60

80

3600

20



HEEBNER 3661 (-1388)

LANSING 3704 (-1431)

40

60

80

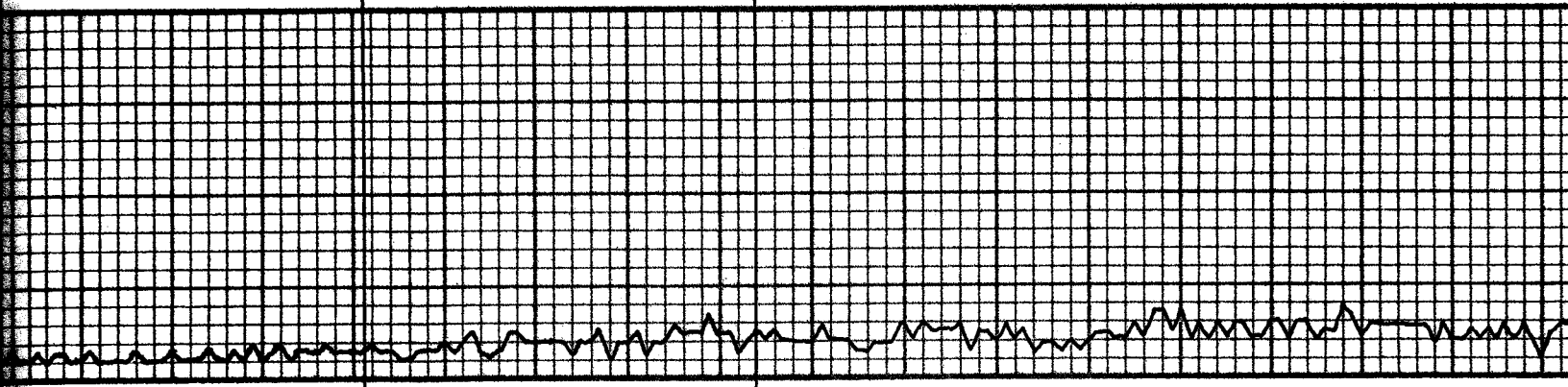
3700

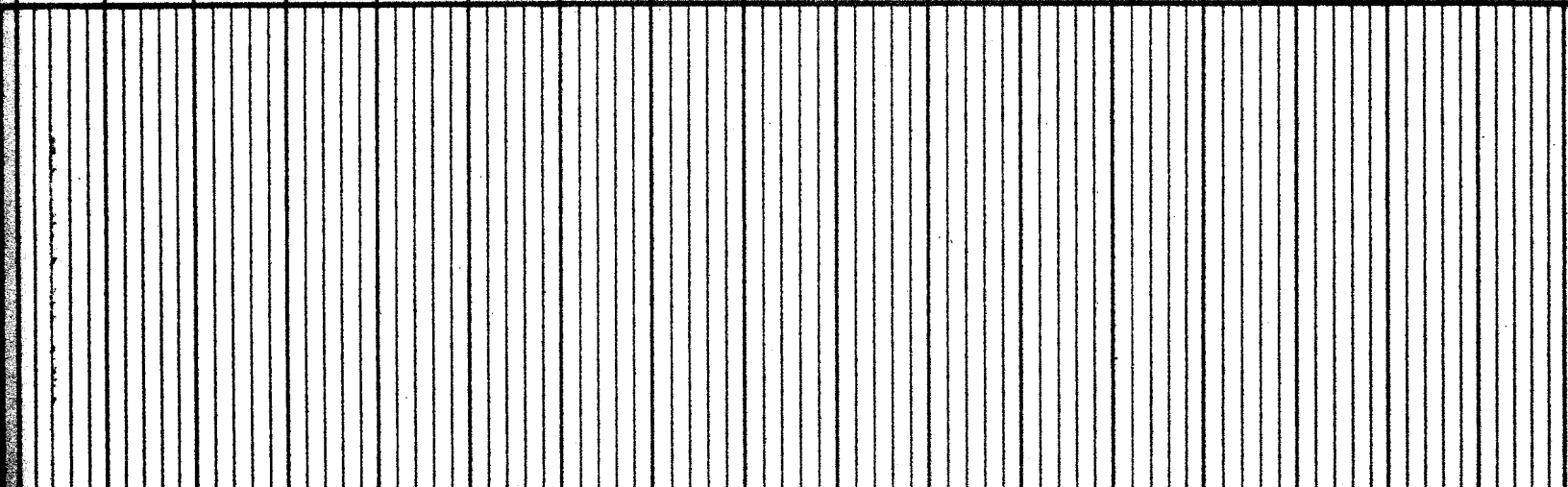
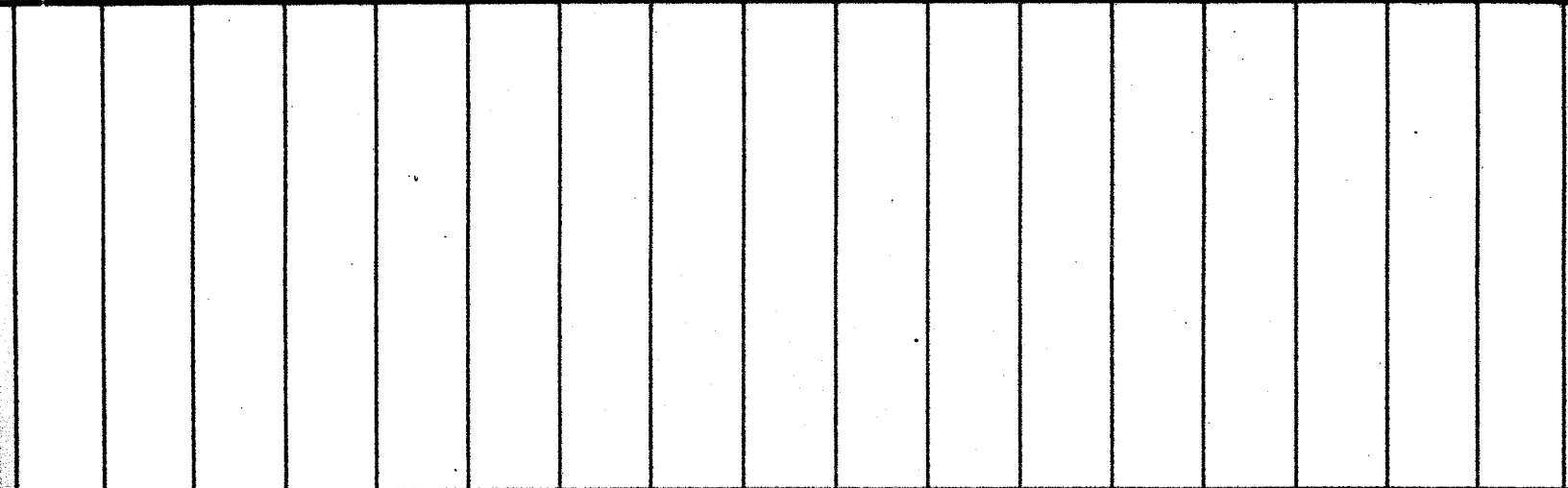
20

40

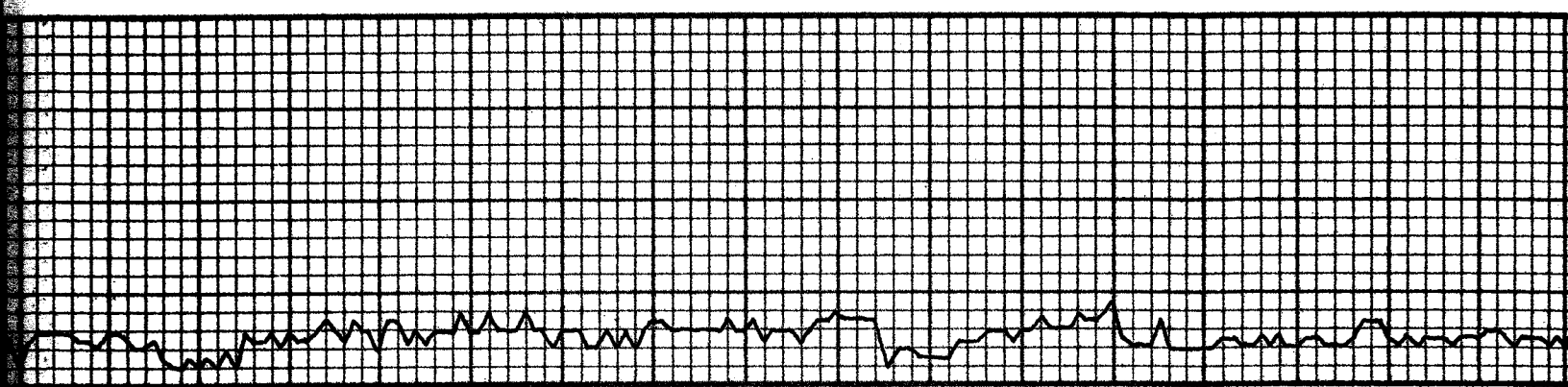
60

80





3800 20 40 60 80 3900 20 40 60



BASE KANSAS CITY

3982 (-1709)

60

80

4000

20

40

60

80

4100

20

WT. Top VF/In sl chalky Lm
w/PE's w/ chalky Lm
Some Red + green sh's

Mostly Red + green sh's
Some w/ Top VF/In Lm
PE's w/ chalky Lm

Lots of Red + green sh's
Some Lm - 1/2 grey sl chalky Lm
FEW PE's w/ chalky Lm

AA w/ more sh's No β
No show

Lm - 1/2 grey VF-felp Lm
w/PE's w/ chalky Lm
Some green + Red sh's

AA w/ more sh's No β
No show

WT - Top VF-felp sl chalky Lm
w/PE's w/ chalky Lm
Some green + Red sh's

AA w/ more sh's No β
No show

WT - 1/2 grey VF/In DS Lm
w/PE's w/ chalky Lm
Some green sh's

WT - grey VF/In sl chalky Lm
w/PE's w/ grey chalky Lm
FEW green sh's

AA w/ some w/ grey chalky Lm
No β No show

WT - grey VF/In sl chalky Lm
w/ some w/ chalky Lm
FEW green sh's

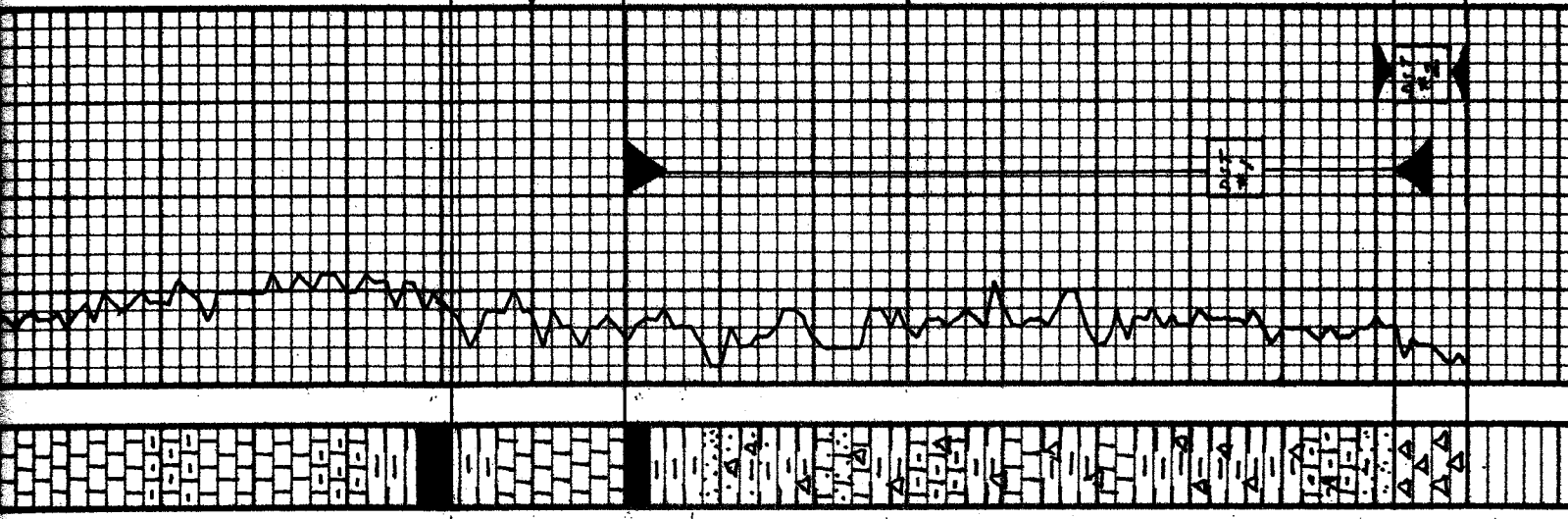
AA w/ less sh's No β



PAWNEE 4080 (-1807)

AA w/ less sh's No. 8 No show
 Crm. clay v. fine Ds Lm w/ Pt's w/ shaly Lm few sh's
 AA w/ few sh's No. 8 No show
 Crm. clay v. fine w/ shaly Lm w/ Pt's w/ shaly Lm some green sh's
 AA w/ more green sh's No. 8 No show
 Bl Carb. sh's
 Crm. Tan v. fine Ds Lm w/ Pt's w/ shaly Lm some green sh's
 AA w/ less sh's No. 8 No show
 Bl Carb. sh's
 Mostly sh's w/ some Lm
 Pt's clay small Lm in ss solid for shale filled w/ No show
 Mostly Red & Green sh's
 Tan v. fine Ds Lm few lower sh w/ Pt's shaly Ds Crm. Some Red & Green sh's No show
 20
 WT. clay v. fine Ds Lm Pt's shaly Ds Some Red & Green sh's
 AA w/ more sh's No. 8 No show
 Crm. Tan v. fine Ds Lm w/ Pt's v. shaly A Some Red & Green sh's
 Mostly Red & Green sh's Some WT. clay v. fine Lm Pt's v. shaly A
 Mostly sh's AA
 Sl. show in blue '775 v. sh
 Fair show of free oil in wt. A sl. show some show & some turbidite
 Low show in blue

40
 60
 80
 4200
 20
 40
 60
 80



FORT SCOTT 4171 (-1898)

Short Trip

CHEROKEE SHALE 4190 (-1917)

MISSISSIPPI 4272 (-1999)

RTD 4280 (-2007)

DST #1
 4190-4276' KB
 86' ANCHOR
 TIMES:
 45-45-45-45
 RECOVERED:
 1' oil
 60' 1/2 SW 1/4 M
 PRESSURES:
 IH 2170#
 FH 2055#
 IF 24-34#
 FF 40-46#
 ISEP 907#
 FSEP 762#

DST #2
 4270-4280' KB
 10' ANCHOR
 TIMES:
 30-45-30-45
 RECOVERED:
 60' Gas
 370' 20% oil 80% M
 PRESSURES:
 IH 2205#
 FH 2168#
 IF 26-135#
 FF 148-193#
 ISEP 1172#
 FSEP 1137#

NOTE: Some plugging existed
 on 2nd flow

4300

20

40

60

80

4400

20

40