Gulf Energy & Minerals Co.-U.S.
Edna Ziegler #1-6
Trego County, Kansas

WILDCAT WELL REPORT

Gene K. Behrens
November, 1976

Approved: _____ _____
District Geologist Date

E. B. Hale 12/13/76
Regional Geologist Date

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WILDCAT WELL REPORT

PROSPECT NAME:	South Collyer Prospect
WELL NAME:	Gulf Energy & Minerals Co.-U.S. Edna Ziegler #1-6
SURFACE LOCATION:	NE SW S6-13S-25W Trego County, Kansas 6 miles south of Collyer, Kansas
ELEVATION:	2534' K.B. 2520' G.L.
SPUD DATE:	10-12-76
COMPLETION DATE:	10-25-76
TD:	4520' (Driller) 4524' (Logger)
INITIAL PRODUCTION:	D&A
CONTRACTOR:	Rains & Williamson Oil Company, Inc. Rig #2
GULF INTEREST:	100%
AFE NO:	84071

CONTENTS

GEOLOGIC SECTION

Reasons for Drilling

This Prospect was based on subsurface geological isopach and structural mapping which indicated the possibility of a structurally high anomally. Seismic data in the area, purchased from Central Exploration Company, Inc., and the above geologic data were used to select the drillsite. The relatively shallow total depth (4500') and the availability of nearby pipelines were favorable economic factors which enhanced the prospect.

The closest offset wells were:

Lauck Oil Company S16-13S-25W
#1 Billinger
D&A T.D. 4476'

Farmer, Inc. S11-13S-26W
#1 Werth
D&A T.D. 4543'

Lauck Oil Company S34-12S-26W
#1 Ziegler
D&A T.D. 4543'

Legal clearance was obtained and AFE No. 84071 was approved as part of the 1976 Drilling Program. Drilling commenced on 10-12-76 and the well was completed on 10-25-76. The well reached a final depth of 4520' (Miss) and was plugged and abandoned on 10-25-76 due to unfavorable results of sample shows, log calculations, and drill stem tests.

Structural Summary

This prospect was located on the western flank of the Central Kansas Uplift. Accumulation of hydrocarbons in

this area appears to be associated with small structural closures. Structures with more than 20 feet of closure are considered to be legitimate drillable features. Geologic structure contour mapping on top of the Lansing Formation (Figure 1) showed the possibility of a high structure which was similiar to producing features located to the southwest and northeast of this drillsite.

Stratigraphic Summary

The major stratigraphic objectives were limestone reserviors in the Topeka Limestone (Shawnee Group, Penn); Lansing - Kansas City Groups (Penn); Marmaton Group (Penn); and the Mississippian.

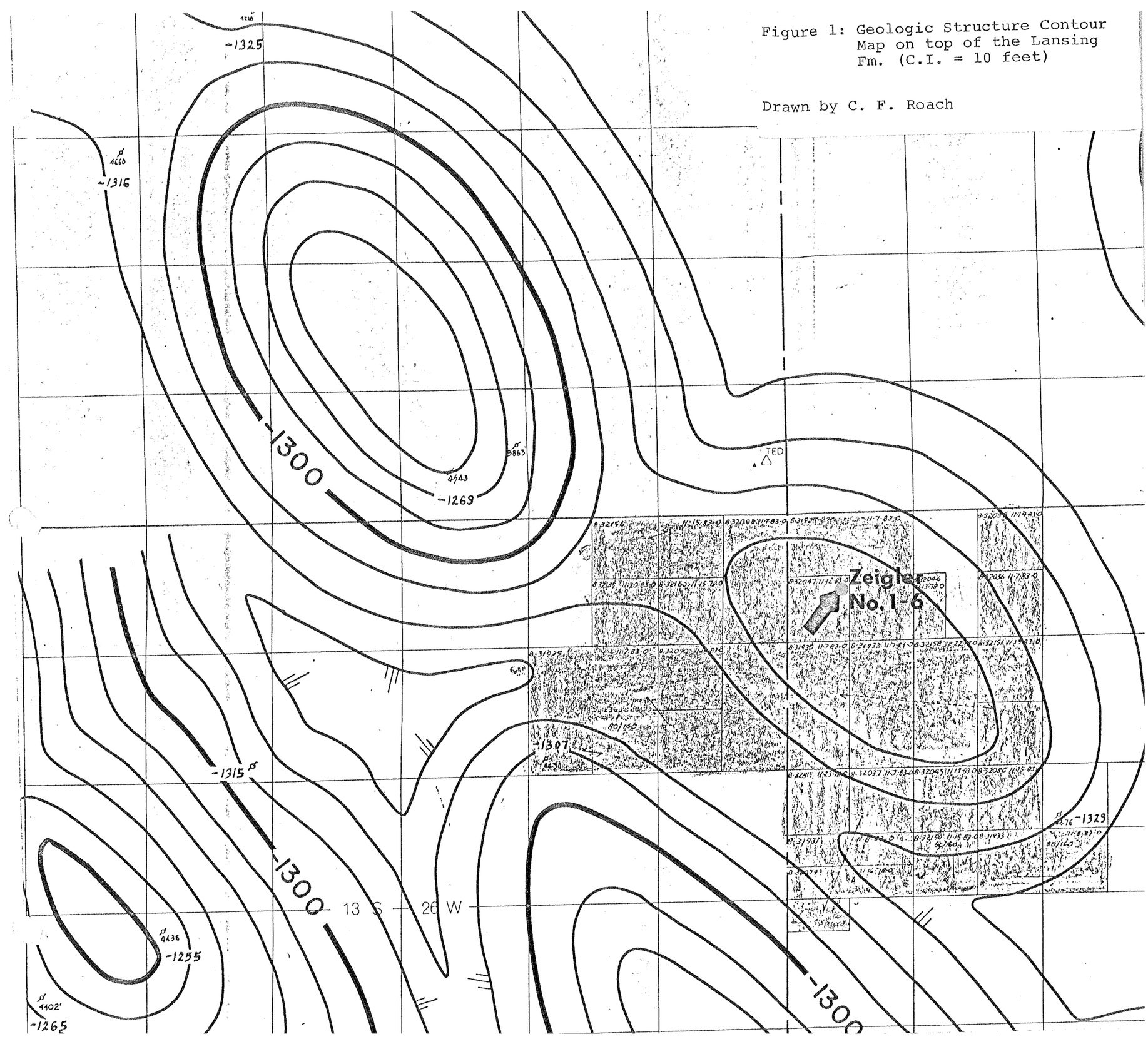
Hydrocarbon Detection Results

Cuttings: Well cuttings were taken at 10 foot intervals. At 4350' (Ft. Scott Fm, Marmaton Group, Penn.) a slight show of oil with fluorescence and slow cut was encountered. No other shows were seen in the sample cuttings and therefore strong evidence of hydrocarbons was lacking.

Portable Gas Detector: The gas detector, supplied by Universal Well Logging Inc., indicated a small background gas peak correlative with the show of oil at 4350'. Similiar small peaks also occurred but these were interpreted to be "shale gas". (Well File Enclosure 1).

Figure 1: Geologic Structure Contour Map on top of the Lansing Fm. (C.I. = 10 feet)

Drawn by C. F. Roach



SOUTH COLLYER PROSPECT

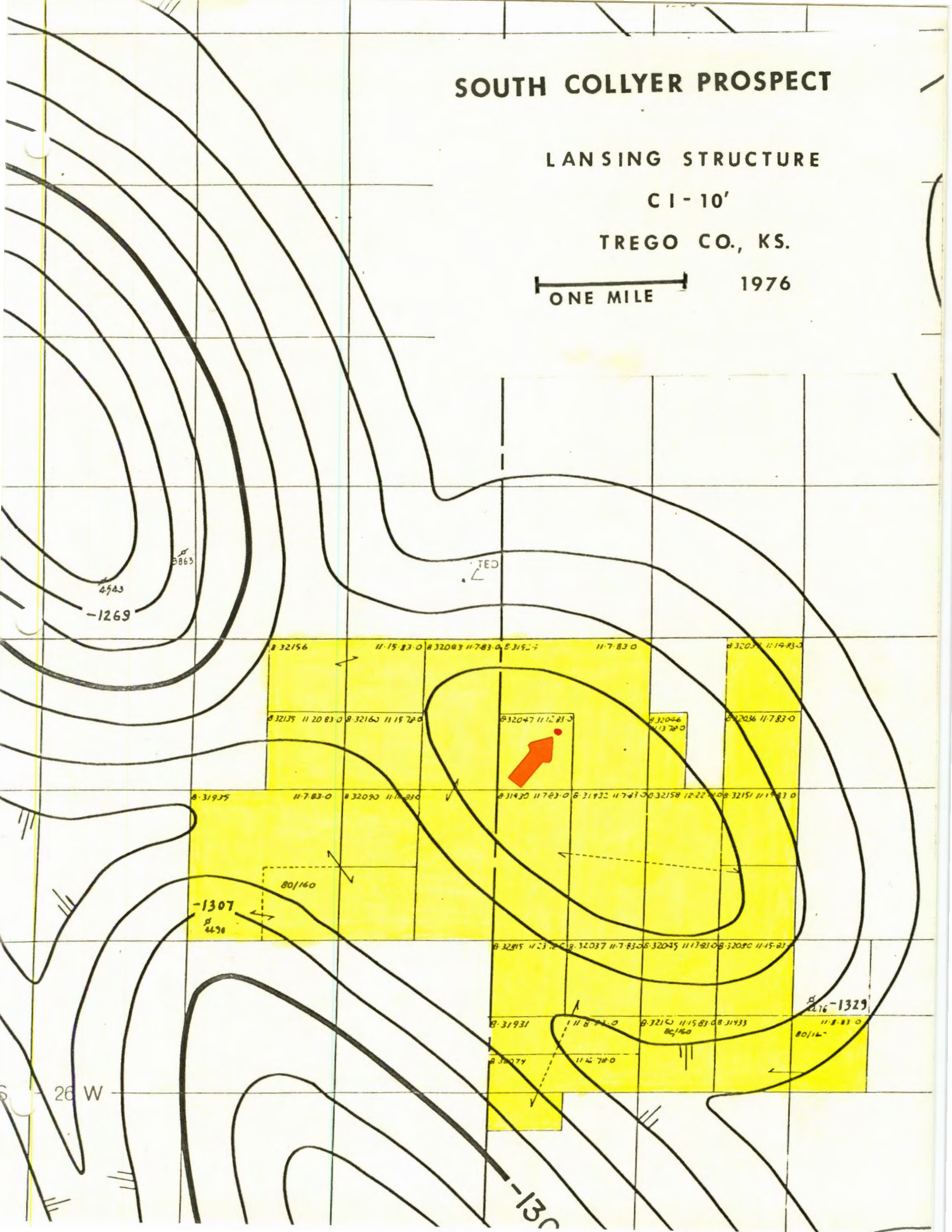
LANSING STRUCTURE

CI - 10'

TREGO CO., KS.

ONE MILE

1976



Logs and Sidewall Cores: Logging was done on 10-21-76 by Schlumberger from 648' to 4524'. A simultaneous Dual Laterlog (Gamma Ray, SP, Caliper, shallow and deep Resistivity, Microspherical Focus) and a simultaneous compensated Neutron-Formation Density Log (Caliper, Gamma Ray, compensated Neutron Porosity, Bulk Density, Formation Factor) were run (Well File Enclosures 2&3). Tops were picked (Table 1) and Log calculations of promising zones were made (Table 2). In addition, 24 sidewall cores were taken opposite selected zones of interest with varying degrees of success (Table 3&4). After reviewing the cores and calculations it was concluded that the primary objectives were "tight" or "wet". However, the Runnymede Sandstone, penetrated between 2120'-2166' appeared worthy of a test. A D.S.T. of the interval 2120'-2138', just below the Stone Corral Formation was therefore requested by the Exploration Department.

Drill Stem Tests: The first test was done with HOWCO straddle packers at 2120'-2135'. This attempt failed because of extreme caving. A Lynes straddle packer, which has a greater expanding capability, had to be used for the second attempt. The top packer was set at 2115' and the bottom at 2135'. The tool was opened for 2 1/2 hours and yielded a 5 minute initial flow which recovered 2 feet of mud with no shows (Table 5 and Well File Enclosure 4).

Table 1

FORMATION TOPS FROM LOGS

Age	Unit	Depth	Sub-Sea
Perm	Stone Corral Fm.	2072'	+ 462'
Perm	Hutchinson Salt	2410'	+ 124'
Penn	Topeka L.S.	3592'	-1058'
Penn	Heebner Sh	3820'	-1286'
Penn	Toronto L.S.	3840'	-1306'
Penn	Lansing Gr.	3860'	-1326'
Penn	Base Kansas City Gr.	4126'	-1592'
Penn	Pawnee L.S.	4278'	-1744'
Penn	Fort Scott L.S.	4342'	-1808'
Penn	Cherokee Gr.	4370'	-1836'
Penn	Basal Conglomerate	4402'	-1868'
Miss	Mississippian L.S.	4442'	-1908'

K.B. Elev. = 2534'

Table 2 - LOG CALCULATIONS

	RW	RMF	Rxo	RT	M	Lith	ϕN	ϕD	Sxo	% Por.	% H2o	
2118-20	.04	.13	Save	Save	2.1	Dolo.	9	15	79	16	50	Prob. Gas
2120-22	.04	.13	13Pk	14PK	2.1	Dolo.	6	16	66	17	36	Prob. Gas
2124-29	.04	.13	7/5	7½	2.1	Dolo.	9	17	88/100	18	46	Prob. Gas
2129-31	.04	.13	4	6	2.1	Dolo.	11	17	160	19	48	Prob. Gas
2131-36	.04	.13	4½	7	2.1	Dolo.	13	18	95	20	45	Prob. Gas
2136-37	.04	.13	7½	5	2.1	Dolo.	10	18	81	20½	50	Prob. Gas
2140-44	.04	.13	2	2	2.1	Dolo.	25	18	100	22	71	Poss. Show
2144-46	.04	.13	2.5	3½	2.1	Dolo.	16	16	100	16	74	Poss. Show
2146-50	.04	.13	2	3	2.1	Dolo.	19	14	94	17	78	Wet
3616-20	.04			3.2AV	Arch	L.S.	19RK	17RK		18	56	Poss. Show
3910-14	.06			12	Arch	L.S.	89	11		10	66	Poss. Show
3914-16	.06			18	Arch	L.S.	8	8		8	69	Poss. Show
3916-18	.06			40	Arch	L.S.	8	10		9	50	Poss. Show
3918-20	.06			40	Arch	L.S.	6	6		6	70	Tight
4290	.04			8	Arch	L.S.	12	10		11	73	Poss. Show
4296-4300	.04			7	Arch	L.S.	14	9		12	71	Poss. Show
4300-20	.04			6	Arch	L.S.	14	9½		12	77	Poss. Show

Done By Schlumberger
10/21/76

Table 3

SIDE WALL CORE INFORMATION

Core #	Depth	Inches Recovered	Empty	Damaged	Pounds Pulled
1	4490	½			
2	4484	3/4			
3	4480	3/4			
4	4470	1			6
5	4351	1 1/2			5
6	4350	½			
7	4298	½			
8	4293	¼		X	
9	3916	½			
10	3914	3/4			0.5
11	3873	½		X	
12	3864	3/4			2
13	3847	¼			
14	3764		X	X	
15	3754	1			
16	3728	1			1
17	3619	½			7
18	3617	1 1/4			4
19	2144	1½			2
20	2140	1½			
21	2136		X		
22	2132	1			
23	2128	½			
24	2124	1			

Table 4

SIDEWALL CORE DESCRIPTIONS

Depth	Description
4490'	Lms., white, fine-grained, chalky. No apparent porosity. Trace black staining. No cut or fluorescence.
4484'	Lms., white, chalky. Trace porosity. Some orange and dark brown stain. No cut or fluor.
4480'	Lms., light gray, very fine-grained, arigillaceous. Tight. No cut or fluor.
4470'	Lms., light gray, argillaceous, chalky. Trace porosity. No cut or fluor.
4351'	Lms., cherty to silty reddish-white dolomite. 5-10% intercrystalline porosity. No cut or fluor.
4350'	Lms., gray, cherty. Tight. No cut or fluor.
4298'	Lms., white, fine-grained, silty. 10% porosity. No cut or fluor.
4293'	Lms., light gray to buff. Tight. No cut or fluor.
3916'	Lms., white, fine-grained, clean. Slightly vuggy. Trace yellow flour. No cut.
3914'	Lms., white, fine-grained. Low porosity. No cut or fluor.
3873'	Lms., white fine-grained. 10-20% porosity. No cut or fluor.
3864'	Lms., white, fine-grained. Tight. No cut or fluor.
3847'	Lms., white to light gray, very fine-grained. Tight. No cut or fluor.
3764'	None recovered
3754'	Sh., light gray, calcareous, hard. No cut or fluor.
3728'	Sh., light gray, calc., hard. No cut or fluor.
3619'	Sh., light gray, calc., soft. No cut or fluor.
3617'	Sh., dark green, hard. No cut or fluor.

2144'	Sds., red, very fine-grained, Qtz. Porous. Inclusions of anhydrite. No cut or fluor.
2136'	None recovered.
2132'	Sds., red, very fine-grained, Qtz. Porous. Inclusions of anhydrite. No cut or fluor.
2128'	Ibid
2124'	Ibid

Table 5

D.S.T. Results

Interval Tested:	2115'-2135' Runnymede Sandstone
Procedure:	30 min. open 1 hr. S.I. 2 hrs. open 2 hrs. S.I.
Results:	IHP 1088 psi IFP 22-22 psi ISIP 49 psi FFP 26-26 psi FSIP 41 psi FHP 1060 psi Weak blow for 5 minuites and then slight bubbling. Recovered 2 feet umd. No shows.

Conclusions and Recommendations

All possible pay zones were evaluated to be non-commercial by the portable gas detector, cuttings logs and their calculations, sidewall cores, and D.S.T.'s. This well was structurally higher than any drilled in the immediate area to date, however no evidence for the occurrence of economic hydrocarbons was found. All parties concerned recommended that the hole be plugged.

NON-GEOLOGIC SECTION

DRILLING TIME

A drilling time log with sample descriptions is enclosed with the well file (Well File Enclosure 5).

DRILLING MUD

A salt-gel base mud was used and supplied by Total Mud Service Company. The following mud program was adhered to:

0' - 600'	Spud Mud
600' -4000'	Gel-Lime Slurry
4000' -4520'	Gel-Lime Slurry with water loss of 15 cc or less.

CASING PROGRAM - AS RUN

Surface: 0' - 648' of 8 5/8" OD, 24#, K-55, ST&C in 12 1/4" hole Cmt. w/Halliburton w/290 sx. 60-40 Pozmix, Class "A" Cmt. Tailed w/100 sx. Class "A" Cmt.

PLUGGING PROGRAM

The following plugs were set by Halliburton on 10-25-76:

Surface - 20'	
320' - 640'	w/40 sx. cmt.
663' - 1118'	w/70 sx. cmt.
1864' - 2126'	w/50 sx. cmt.

ESTIMATED EXPEDITURES

The estimated total expeditures carried on the daily drill report on 10-25-76 was $74,348.

SIDE WALL CORE INFORMATION

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7	4298	½			
8	4293	¼		X	
9	3916	½			
10	3914	3/4			0.5
11	3873	½		X	
12	3864	3/4			2
13	3847	¼			
14	3764		X	X	
15	3754	1			
16	3728	1			1
17	3619	½			7
18	3617	1 1/4			4
19	2144	1½			2
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3914-16	.06			18	Arch	L.S.	8	8		8	69	Poss. Show
3916-18	.06			40	Arch	L.S.	8	10		9	50	Poss. Show
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4296-4300	.04			7	Arch	L.S.	14	9		12	71	Poss. Show
4300-20	.04			6	Arch	L.S.	14	9½		12	77	Poss. Show

Done By Schlumberger
10/21/76