9-27-12W

GEOLOGICAL REPORT

W. K. BLACK, INC.

STUDER A #5
C-W/2-SW-NW
9-27S-12W
PRATT COUNTY, KANSAS

JAMES F. DILTS
WICHITA, KANSAS

149884

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March 12, 1986

W. K. Black, Inc.
Box 801
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Re: W. K. Black, Inc.
Studer A #5
C-W/2-SW-NW 9-27S-12W
Pratt County, Kansas

Gentlemen:

Submitted herewith is the geological report concerning the above captioned test. Data pertinent to the operation are tabulated below.

Spud: February 23, 1986	Rotary Complete: March 4, 1986
Contractor: Aldebaran Drlg. Rig #2	Tool Pusher: Mr. Scott Mason
Surface Pipe: 227' 10 3/4 @ 236 w/ 275 sx	Samples: 2500' to RTD
	Cores: None
Production Pipe: 4½ @ 4188 w/75sx	Log: Welex Guard SWN Density
Drill Time: 2500' to RTD	Elevation:
DST: (1) Western Testing Co.	Mud Up" 3400' Starch
Mud: Black Gold Mud Co.	API # 15-151-21,767
Geologist on location: 3500'	
Gas Detector: J B Gas Detectors	

Geological formation tops as picked from the samples and corrected to the open hole survey follow. All measurements are from rotary bushing elevation.

Elevations: 1850 RB 1841 GL

Stone Corral Anhydrite	672	+1178
Indian Cave Sand	2664	- 814
Wabaunsee	2706	- 856
Stotler	2820	- 970
Tarkio	2880	-1030
Howard	3030	-1180
Topeka	3140	-1290
Heebner	3476	-1626
Brown Lime	3662	-1812
Lansing	3676	-1826
Swope	3926	-2076
Base Kansas City	4028	-2178
Mississippian Chert	4118	-2268
Mississippian Lime	4164	-2314
RTD	4190	
LTD	4193	

9-27-12W

3844 to 3848 Kansas City: Limestone: buff to tan, fine crystalline, fossiliferous, oolicastic in part with fair vuggy and oolicastic porosity, trace of free oil, no odor, dull yellow green fluorescence. This interval gave a 15 unit Hot wire response. E-Log calculations indicate 11 to 12% effective porosity with 29 to 48% water saturation. This interval may be considered for perforation prior to abandonment.

3860 to 3867 Kansas City: Limestone: buff to cream, fine crystalline, fossiliferous, with fair vuggy porosity, no show of free oil, scattered light tan stain, no odor, very sparse dull fluorescence. E-Log calculations indicate 5 to 9% porosity with 58 to 89% water saturation. This interval in considered to be water productive due to high water saturations.

3888 to 3898 Kansas City: Limestone: buff to cream, fine crystalline, fossiliferous, with fair vuggy porosity, scattered show of free oil, no odor, dull yellow fluorescence. This zone gave a 10 unit Hot wire kick. E-Log calculations indicate 8 to 18% effective porosity with 24 to 56% water saturation. The top of this interval may be considered for perforation prior to abandonment. Sample evaluation indicates the zone to be water productive.

3926 to 3936 Kansas City Swope: Limestone, cream, fine crystalline, very fossiliferous, with fair to good vuggy and fossilcast porosity, fair show of free oil, weak odor, fair bright yellow fluorescence, fair tan stain. This zone gave an 80 unit Hot wire response. This zone was evaluated by DST #1. E-Log calculations indicate 11 to 20% effective porosity with 40 to 69% water saturation. This zone should be evaluated prior to abandonment of this well. Recommended perforation 3926 to 3928.

DST #1 3912 to 3950

Op 30 Si 60 Op 45 Si 90

Strong steady blow. Chlorides: 72,000 ppm

Recovered 460 feet fluid
220 feet slightly oil cut gassy mud, 5% oil.
240 feet gassy oil cut muddy water.

IBHCIP	1329 psi	FBHCIP	1319 psi
IFPs	83 psi to 124 psi	FFPs	187 psi to 208 psi
IHP	2083 psi	FHP	1978 psi

BHT 122° F

3970 to 3984 Kansas City Hertha: Limestone: buff to cream, fine crystalline, fossiliferous, with fair to good vuggy porosity, no show of free oil, no odor, very sparse dull yellow fluorescence. This interval did not give an indentifiable Hot wire response. E-Log calculations indicate 6 to 14% effective porosity with 51 to 86% water saturation. This zone is considered to be water productive due to high water saturations.

14-884

4086 to 4100 Lower Marmaton: Limestone and Cherty Limestone: buff, fine crystalline, fossiliferous, with fair to good vuggy and fracture porosity, with chert, tan, vitreous, translucent, fossiliferous and spicular with good tan stain in porosity, no show of free oil, no odor, dull yellow fluorescence. Hot wire gave a 30 unit Kick while drilling this zone. E-Log calculations indicate 5 to 13% effective porosity with 23 to 83% water saturation. This zone should be considered for further evaluation prior to abandonment.

4118 to 4164 Mississippian Chert: Chert and Cherty Limestone: white, weathered to vitreous, fossiliferous to very fossiliferous with good vuggy, fossil cast, and some tripolitic porosity, fair show of free oil, good tan stain, weak odor, good fluorescence, fair cut. This interval gave a 200+ unit kick on the Hot wire. E-Log calculations indicate 13 to 19% effecti porosity with 28 to 47% water saturation. This zone should be perforated and stimulated as necessary to establish production.

Note: Circulation was lost at 4108. Attempts to regain circulation were not successful. It was decided to dry drill into the Mississippian as far as possible. During drilling operations, partial returns were established which allowed us to recover a Mississippian sample. At 4190 we ran out of fluid, tripped out for logs and ran 4½ inch casing with no downhole problems.

STRUCTURAL RELATIONSHIP

	W. K. Black A-5 Studer W/2-SW-NW 9-27S-12W	W. K. Black A-4 Studer NE-SW-NW 9-27S-12W	W. K. Black A-2 Studer W/2-E/2-NW 9-27S-12W	Case O & G #1 Grizzley E/2-SE-NE 8-27S-12W
Indian Cave	- 814	- 816	- 814	- 816
Howard	-1180	-1184	-1191	-1185
Lansing	-1826	-1831	-1836	-1829
Mississippi Ch.	-2268	-2284	-2292	-2271
Mississippi Lm.	-2314	-2326	-2360	-2327

RECOMMENDATIONS

It was recommended that casing be set to further evaluate the Mississippian Chert in this well. The Mississippian is high structurally with above average porosity and good shows. It is recommended that the Marmaton and Swope zones be reviewed prior to abandonment.

Respectfully submitted,

James F. Dilts

James F. Dilts,
Consultant Geologist

JFD:gkd