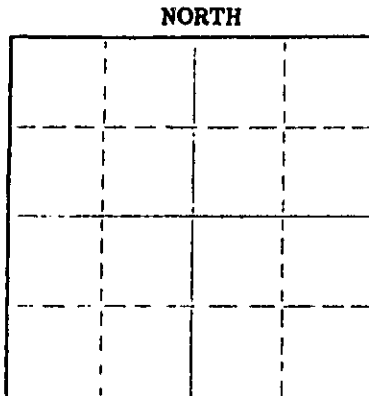


STATE OF KANSAS
STATE CORPORATION COMMISSION
CONSERVATION DIVISION
P. O. BOX 17027
WICHITA, KANSAS 67217

FORM CP-4

WELL PLUGGING RECORD



Locate well correctly on above
Section Plat

Russell County. Sec. 12 Twp. 14 Rge. 14 (S) W (W)
Location as "NE/CNW&SW4" or footage from lines. SE SE SW
Lease Owner Ehrlich Drilling Company
Lease Name Floyd Brandenburg #C4 Well No. #C4
Office Address Drawer 546, Wilson, Kansas
Character of Well (completed as Oil, Gas or Dry Hole) Dry
Date well completed _____ 19____
Application for plugging filed April 18 1974
Application for plugging approved " 19 1974
Plugging commenced July 5 1974
Plugging completed July 5 1974
Reason for abandonment of well or producing formation Dry
If a producing well is abandoned, date of last production _____ 19____
Was permission obtained from the Conservation Division or its agents before plugging was commenced? Yes

Name of Conservation Agent who supervised plugging of this well Donald Truan
Producing formation _____ Depth to top _____ Bottom _____ Total Depth of Well 2389 Feet
Show depth and thickness of all water, oil and gas formations.

OIL, GAS OR WATER RECORDS

CASING RECORD

FORMATION	CONTENT	FROM	TO	PUT IN	PULLED OUT

Describe in detail the manner in which the well was plugged, indicating where the mud fluid was placed and the method or methods used in introducing it into the hole. If cement or other plugs were used, state the character of same and depth placed, from _____ feet to _____ feet for each plug set.

Total depth 2389, Set Plug at 2000' Pipe shot at 1532'

250' 8 5/8, Plug with Halliburton, 2 sacks hulls, 20 sacks gel

100 Sacks Cement. Plug to Abandon old Well

(If additional description is necessary use BACK of this sheet)
Name of Plugging Contractor Wilson Exploration and Development, Inc.
Address Drawer 546, Wilson, Kansas 67490

STATE OF Kansas COUNTY OF Ellsworth
Julius Ehrlich, President of Inc. (employee of owner) or (owner or operator) of the above-described

well, being first duly sworn on oath, says: That I have knowledge of the facts, statements, and matters herein contained and the log of the above-described well as filed and that the same are true and correct. So help me God.

(Signature) Julius Ehrlich
Julius Ehrlich, Pres. Dr. 546, Wilson, Ks.
(Address)

SUBSCRIBED AND SWORN TO before me this 15 day of July, 1974

My commission expires April 16, 1978

Josephine A. Thielen
Josephine A. Thielen

Notary Public.



RICHARD B. SCHMIDT

1219 COLLEGE AVENUE
TOPEKA, KANSAS 66604

PETROLEUM EXPLORATION CONSULTANT

August 7, 1968

EHRLICH DRILLING COMPANY ET. AL.

Wilson, Kansas 67490, Operator

Floyd Brandenburg # C - 4, the center of the SE $\frac{1}{4}$, SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 12, Township 14 South, Range 14 West, Russell County, Kansas.

GENERAL:

Contractor: Ehrlich Drilling Company.
Rotary Drilling: Surface to 2389 feet.
Spudded & set surface pipe: July 14, 1968.
Under surface drilling commenced: July 21, 1968.
Drilling completed below the Tarkio lime: July 28, 1968.
Casing pipe run: August 3, 1968.

CASING:

8 - 5/8ths inch surface pipe cemented at 186 feet with good portland cement of 75 sacks and circulated to the surface. The base of the casing was well below the fresh water sand.

4 - 1/2 inch production casing pipe was cemented at 2389 feet with 150 sacks of cement.

ELEVATION:

1753 feet, ground level after dirt work.
1755 feet, on derrick floor.
1757 feet, above sea level on rotary bushing. Rotary bushing elevation and measurements are used but corrected to electric log measurements in parenthesis unless otherwise stated.

DRILL STEM TESTS:

None

COPIES: None

LOGS RUN:

Great Guns, Hays, Kansas, open hole, Gamma Ray - Neutron, Guard - Caliper four curve log with well site opinion.

G E O L O G I C A L D A T A

Drilling time was recorded from 675 to 751 feet; from 1740 to 2387 feet. From 2387 to 2389, the drilling bit started to lock and the true drilling time was not recorded. Samples were saved and examined wet from 1950 to the total depth of 2389 feet. It should be noted that there is a discrepancy of two (2) feet between drilling and electric log measurements at 2158 feet of drilling equals 2160 feet on the electric log, a two foot down-the-hole correction. At the Grandhaven lime, both of the measurements are identical.

<u>FORMATION TOPS</u>	<u>By electric log</u>
Anhydrite	731 (\neq 1026)
Base of the Anhydrite	767 (\neq 990)
Crouse Lime	1941 (- 185)
Aspinwall Lime	2214 (- 457)
Brownville Lime	2230 (- 473)
Grandhaven Lime	2276 (- 519)
Dry Sand Section (First Tarkio Sand)	2288 (- 531)
Dover Lime	2300 (- 543)
Langdon Sand Section (Second Tarkio Sand)	2310 (- 553)
Tarkio Lime	2346 (- 589)
Willard Sand Section (Third Tarkio Sand)	2383 (- 626) by drilling time. The electric log did not reach this depth.
Total depth	2389 (- 632)

IMPORTANT ZONES:

At 1985 (1987) feet, fairly dense light gray lime and sand with a show of dead tarlike oil. Considerable iron pyrite with white fossiliferous lime. The electric log shows this to be the zone from 1974 to 1980 feet.

At 2020 (2022) feet, considerable fossiliferous limestone with little gray shale present. The lime had shows of free oil in the fractures but the saturation was absent in most pieces even though some had a fair stain and a distinct faint odor. This was after the end of the one hour circulating time. The above two zones are Council Grove limestone members.

At 2225 (2227) feet, the drill pipe was directly circulated for one (1) hour at the base of the possibly present Indian Cave Sand Section. Red, tan, orange sandstone, fine to medium size, well rounded to sub-angular and silty in part. This corresponds to the possible small development of the Indian Cave section from 2220 to 2224 feet on the electric log even though it is shaley in most being the Towle Shale. No shows of oil or gas were present. This zone does produce in a few areas.

At 2282 feet well was circulated for one (1) hour to clean-up the well bore prior to entering into prospective oil zones. Recovered gray and brown shale and white lime which is from the Grandhaven lime section.

At 2285 feet, the well was circulated for 1/2 hour to clean-up more of the well bore since it was determined that the above was still Grandhaven lime. Recovered red to brown shale which lays directly above the First Tarkio sand section. At 2276 feet, the drilling and electric log measurements are exactly identical.

Dry Sand

At 2294 feet, Green, very fine grained tight sand was recovered with no show of oil or odor as well as green and gray shale, white to light green with some gray clay matrix. This is the very small zone from 2288 to 2290 feet on the electric log which shows considerable shale below this area of 2290 to 2300 feet which is to the top of the Dover lime.

Langdon Sand

At 2310 feet, the well was circulated for one (1) hour to clean-up the well bore prior to entering into the Second Tarkio Sand Section. Gray shale and black coal was recovered.

At 2316 feet, the well was circulated for one (1) hour to obtain samples. Recovered fine to medium grain shaly, micaceous sandstone clusters with no show of oil and gas in most clusters. There were several clusters which did have a show of free oil and gas bubbles but contained no odor. Considerable gray shale was present in the samples.

At 2322 feet, the well was circulated for two (2) hours for more samples. Recovered more of the same, last above with no odor. The few pieces which did have shows of free oil were not totally saturated.

These two last zones or sections from which samples were examined correspond to the Second Tarkio Sand section from 2310 to 2318 feet. The Guard log shows this 8 feet to contain from 45 to 55 percent water content depending upon which electric logging engineer made the calculating, Mr. Hoffman, Monday of Great Guns or Mayard Webber, a former engineer with said firm.

Willard Sand

At 2383 to 2388 feet which was not covered by the electric log, the well was circulated for three (3) hours to clean-up the well prior to electric logging. Recovered blue to gray shale with blue-gray and brownish sandstone clusters with no show of free oil and odor.

STRUCTURAL COMPARISON:

To your Brandenburg A-2, the SW, SE of the NW $\frac{1}{4}$ of Section 12, 14-14, Russell County, Kansas, your well is:

On the Anhydrite, flat, on the Brownville lime, five (5) feet lower, on the Grandhaven lime, eight (8) feet lower, on the First Tarkio sand, eight (8) feet lower, on Dover lime ten (10) feet lower, on the Second Tarkio sand section ten (10) feet lower, on the Tarkio lime, six (6) feet lower.

To the Murfin Drilling Company's Waymaster "A - 3", the SE, SW of the SE $\frac{1}{4}$ of Section 13, 14-14, Russell County, Kansas, approximately one (1) mile south and 1200 feet east of your Brandenburg "C - 4" which is this well, it is:

On the Brownville lime, seven (7) feet higher, on the Grandhaven lime flat, on the First Tarkio sand, flat, on the Dover lime two (2) feet higher, on the Second Tarkio Sand section, three (3) feet higher. Since their total depth is at the base of the Second Tarkio, no further comparisons could be made.

Your well is approximately flat or several feet higher than some of the lower producing wells in Section 13, directly south of your C-4 well. This is based on the known and available electric log datum.

SUMMARY:

After reaching the base of the Tarkio Sand Section (Langdon sand), this writer recommended the testing of this zone by Drill-stem-testing to determine the fluid content.

Since a live show of free oil was found at 2022 feet in the Council Grove lime as well as the small show of free oil in the Second Tarkio Sand section at 2310 to 2318 feet, higher management decided to run a four curve electric log in order that all formation zones might be evaluated at once. The Guard curve allegedly determines probable oil and water content of all zones upon evaluation by a reliable and competent logging engineer.

The logging engineers determined that the zones in the Council Grove lime at 1987 and 2022 feet contained considerable water.

There is some disagreement on the content of the type of fluid at 2310 to 2318 feet between Mr. Hoffman and Mr. Munday of Great Guns and Maynard Webber, a former engineer with said firm. The former list approximately 55 per cent water and the later about 45 percent water.

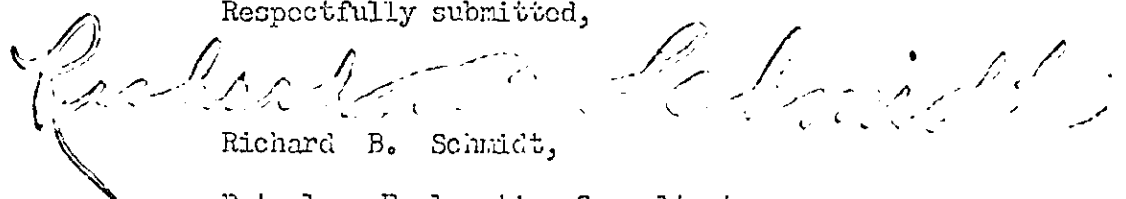
Whenever, the reading exceeds 50 percent, it is very likely that the zone will produce a higher percentage of water than the actual percentage reading. This means that 55 percent water does not equal 45 percent oil. Generally when a disagreement exists, a drill-stem-test should be run, especially when wild-cat-drilling a well.

The Second Tarkio sand zone shows of free oil were considerably better than your Brandenburg A - 2 well but not as good as your Brandenburg B - 6 well, the center of the SE $\frac{1}{4}$, SE, NE $\frac{1}{4}$ of Section 13, 14-14. The thickness of the sand is comparable; in fact the log indicates a much less shaley section in the sand in this well.

R E C O M M E N D A T I O N S

Since there was considerable discussion on running production casing for further testing and the disagreement between the logging engineers, higher management decided to run casing for further testing. This writer originally recommended the running of a drill-stem-test to evaluate the Second Tarkio zone. The running of casing, testing with cable tools without further tangible evidence of percentage of fluid content, if any, when a controversy exists among logging engineers is not prudent-oil field judgment. Due to the pipe running or non-running controversy on your Brandenburg A - 2, and management's desire, it was reluctantly suggested that casing be run for further testing in order to satisfy all interested people as to oil producing ability or non-ability.

Respectfully submitted,



Richard B. Schmidt,

Petroleum Exploration Consultant

DRILLING TIME LOG

EHRLEICH DRILLING COMPANY

Floyd Brandenburg " C - 4, the center of the SE $\frac{1}{4}$, SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of
Section 12, Township 14 South, Range 14 West, Russell County, Kansas

Depth	Time per foot	Remarks
675 - 700	1 1 2 1 1 1 2 1 1 2 2 1 2 3 1 2 2 1 1 1 1 1 2 3 1 2	
701 - 720	1 2 2 2 1 1 2 1 1 3 3 2 2 3 2 2 2 2 2 2	
740	3 3 3 2 2 3 2 3 3 2 4 4 5 5 4 5 4 4 5 5	Drilling time instructions were not followed to 800 ft.
751	5 5 4 4 5 5 5 5 5 4 6	
1741 - 1760	3 2 2 2 2 3 3 2 2 2 3 2 2 2 2 2 2 4 4 2	
1780	2 4 3 3 6 5 4 5 5 5 6 5 4 4 4 6 6 3 3 3	
1800	3 3 3 4 3 4 1 3 5 5 2 3 5 3 3 4 3 5 3 3	
1801 - 1820	5 5 4 4 6 5 4 5 4 5 5 6 5 2 2 3 3 3 3 3	
1840	3 3 5 3 3 2 3 2 16 5 1 2 2 5 8 8 5 4 3 3	
1860	3 3 4 3 6 4 4 10 7 9 6 8 6 5 6 5 6 3 2 4	
1880	3 4 5 7 7 7 8 6 7 7 7 8 7 5 4 5 8 11 14 14	
1900	11 10 12 13 3 5 4 7 6 5 4 3 5 5 10 6 4 7 12 4	
1901 - 1920	4 9 9 11 10 6 5 6 6 9 9 7 13 7 5 10 6 5 6 4	
1940	6 10 2 2 3 5 5 4 4 4 4 3 3 3 5 1 1 3 3 5	
1960	4 3 5 3 4 4 3 3 3 3 3 5 3 1 1 1 1 3 2 3	
1980	4 4 4 3 3 3 3 2 2 2 1 1 3 3 4 3 3 1 2 2	
2000	2 1 1 3 1 1 1 2 2 2 2 2 2 2 2 2 3 1 2 3	
2001 - 2020	2 1 2 2 2 3 3 3 3 4 5 4 2 3 3 2 2 3 3 2	Steel line measurements of () 2020 is actually 2023 ft.
2040	4 4 5 4 3 5 5 4 4 6 4 4 5 5 3 2 4	
2060	3 3 4 3 3 2 3 4 4 2 2 2 2 3 4 3 2 2 2 3	
2080	3 1 3 3 2 2 3 4 3 4 2 1 2 6 5 3 4 2 3 3	
2100	3 3 2 2 3 3 5 2 2 2 2 2 2 2 3 4 3 2 3 4	
2101 - 2120	3 4 2 2 4 3 1 5 3 2 2 0 2 2 5 3 4 3 4 3	Circ C 2110 for 1 hr.
2140	3 6 5 2 4 5 3 4 4 3 4 4 2 3 3 4 6 4 2 4	Circ C 2220 for 1 hr.
2160	3 2 2 2 3 4 3 3 3 3 3 4 4 2 3 3 3 2 4 4	Steel line 2176 from 2173 ft.
2180	6 3 4 6 4 4 3 2 3 3 4 2 3 3 3 3 4 3	(2173 is 2176 feet)
2200	4 3 3 5 5 3 3 2 2 4 3 3 3 3 3 2 3 4 4 3	
2201 - 2220	3 5 4 4 3 3 3 3 2 2 2 2 2 2 3 5 3 3 4 2	
2240	3 3 3 3 2 2 2 2 2 4 3 2 3 2 5 6 6 5 5 4	Circ C 2225 for 1 hr.
2260	4 4 4 5 5 5 5 3 4 4 5 4 4 6 4 5 4 4 4 5	
2280	4 7 5 4 3 5 3 2 5 4 5 5 7 4 5 4 5 6 5 7	Circ C 2278 for 1 hr.
2300	5 5 6 7 5 5 5 3 4 2 2 2 2 2 1 2 3 2 3 5	Circ C 2283, 88, 93 for 1 hr. C 2280 1/2 hr.
2301 - 2320	2 2 2 2 2 2 2 2 2 2 2 3 1 1 1 2 2 1 2 2	Circ C 2300 for 1/2 hr. and 2310 for 1 hr.
2340	2 2 2 3 11 12 11 11 12 14 7 3 3 3 3 2 3 3 3 3	Circ C 2322 for 1 hr. C 2334 for 1 hr.
2360	3 2 4 5 7 6 6 6 7 8 12 4 4 0 0 6 3 4 1 2	SR C 2347
2380	4 3 2 3 2 2 1 1 1 1 2 1 2 1 2 1 1 1 1 2	
2387	3 2 2 3 3 2 12	Circ. C 2386 for 3 hrs to run electric log.
2388	Bit started to lock, time too irratic to measure.	
2389	Bit still locking, time too irratic.	

PETROLEUM EXPLORATION CONSULTANT

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