

April 14, 1951

GEOLOGIC REPORT

Francis Oil & Gas Co. #1 Anderson  
SW SW SW Sec 29 T7S R19W  
Rooks County, Kansas

Elevation: 1941 DF  
1943 KB

Total Depth: 3403 KB in Arbuckle

Wildcat

Casing Record: 8 3/4" W/ 800  
5 1/2" @ 3399 W/125 Sax

Commenced:

Completed: April 11, 1951 Rotary

I. P.:

Summary of Formations (Depth From KB)

|                     |               |
|---------------------|---------------|
| Anhydrite (Driller) | 1440          |
| Heebner             | 3036          |
| Toronto             | 3112          |
| Lansing             | 3130 (-1127)  |
| Conglomerate        | 3336          |
| Arbuckle            | 3398 (-1455)  |
| Total Depth         | 3403 Arbuckle |

Cores: None

Drill Stem Tests:

- #1. 3114-41 Open 1 hour. Mild blow throughout. Recovered 100 feet lightly oil out mud with salty taste. RHSP 580# in 15".
- #2. 3399-3403 Open 1 hour 15 minutes. Recovered 90' free oil, 3 feet mud with very faintly salty taste. RHSP 960# in 20 minutes.

Electric Log: None.

Oil Shows:

Topeka 3036-46 Limestone, porous, fossiliferous fine crystalline. Good show dark heavy oil. This zone is possibly commercial.

3058-73 Interbedded porous well stained limestone, dense limestone and shale. Possibly commercial.

Toronto 3112-27 Limestone, white medium crystalline cherty. Abundant fine crystalline oolitic. Scattered porosity and stain. Estimated non-commercial.

Lansing-Kansas City 3131-34 Limestone, oolitic, interstitial porosity. Fair porosity, light stain. Free oil. Possibly commercial.

- 3212-16 Limestone, sacrose dolomitic, light odor. Scattered stain. Poor porosity.
- 3221-28 1 inch and 2 inch streaks pay interbedded with dense limestone. Estimate 1 foot net pay.
- 3311-21 Interbedded shale and limestone with few thin streaks saturation. Estimate 1 foot pay.
- 3321-32 Estimate 6 inch pay in interbedded limestone and shale.
- 3388-92 Sand, porous limey round medium coarse. Good show oil.

**Arbuckle**

Dolomite, tan medium to coarsely crystalline, sandy, glauconitic. Good porosity. Good show. Estimate commercial.

Recommendations

1. It is recommended that casing be cemented 1 foot in the Arbuckle. If this well can be completed commercially as a "natural" well, it is recommended that this be done. If not, it is recommended that the zone be strata-lifted or hydrafac'd, rather than conventionally acidized. It is also suggested that conventional acid might cause a swelling of the sand grains in this formation. Dowell XM might be a more desirable acid to use, if it is acidized.
2. After Arbuckle is depleted, it is recommended the following zones be tested:
  - a. 3388-92 Acidize with XM acid.
  - b. 3281-3332 Acidize complete zone.
  - c. 3213-16 Acidize.
  - d. 3131-34 Acidize.
  - e. 3038-46 Acidize. If this zone is commercial, and after it is depleted, it is recommended it be squeezed and zone 3058-73 be perforated and acidized.

Respectfully submitted,

Joseph Teichman

JT:dt

Francis Oil & Gas Co. #1 Anderson  
 SW SW SW Sec 2 T7S R19W  
 Rooks County, Kansas

Elevation: 1941 BF

1943 KB

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DESCRIPTION OF WELL CUTTINGS

| <u>Depth</u> | <u>Description</u>                                                                                                                                                                        | <u>Remarks</u>          |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 2900-10      | Limestone, grey to tan granular.                                                                                                                                                          |                         |
| 20           | Limestone, white to buff granular chalky.                                                                                                                                                 |                         |
| 30           | Limestone, buff sacrose dolomitic. Minor grey opaque fossiliferous chert.                                                                                                                 |                         |
| 40           | Shale, grey micaceous splintery. Abundant grey calcareous fine sandstone. Abundant grey mottled limestone.                                                                                |                         |
| 50           | Limestone, white to buff granular fusulinid.                                                                                                                                              |                         |
| 60           | Same. Interbedded dark grey micaceous shale.                                                                                                                                              |                         |
| 70           | Limestone, white to buff fine crystalline. Pinpoint porosity.                                                                                                                             |                         |
| 80           | Same. Minor buff opaque chert.                                                                                                                                                            |                         |
| 90           | Same.                                                                                                                                                                                     |                         |
| 2990-3000    | Limestone, buff granular to brown fine crystalline. Minor black carbonaceous "Heebner-type" shale.                                                                                        |                         |
| 3000-10      | Same. Increase black shale.                                                                                                                                                               |                         |
| 20           | Limestone, buff to tan granular to fine crystalline.                                                                                                                                      |                         |
| 30           | Same. Much grey shale. Minor fusulinid limestone.                                                                                                                                         |                         |
| 40           | Limestone, buff to tan fine crystalline.                                                                                                                                                  |                         |
| 50           | Same. Abundant porous limestone well saturated with dark oil. Possible well.                                                                                                              | Correct to<br>3038-46   |
| 55           | Limestone, buff granular. Abundant grey opaque chert.                                                                                                                                     | Fair show oil           |
| 60           | Limestone, grey granular. Abundant grey opaque chert.                                                                                                                                     |                         |
| 70           | Traces well stained (dark) fossiliferous limestone and grey and green shale. Mostly buff granular limestone.                                                                              | Streaks from<br>3058-73 |
| 75           | Limestone, buff to tan granular. Minor brown translucent chert.                                                                                                                           |                         |
| 80           | Limestone, buff to tan granular spotted dark stain. Abundant white smooth chert. Minor brown translucent chert.                                                                           |                         |
| 85           | Limestone, buff granular to brown fine crystalline. Traces saturated porous (very dark oil) lime, minor grey opaque chert.                                                                |                         |
| 90           | Limestone, white to buff granular chalky. Trace dark brown chert.                                                                                                                         |                         |
| 95           | Abundant black carbonaceous shale and green to grey micaceous shale. Same limestone to brown fine crystalline.                                                                            | Heebner 3086            |
| 3095-3100    | Limestone, buff granular to brown fine crystalline. Minor black carbonaceous shale. Abundant grey micaceous shale.                                                                        |                         |
| 3100-05      | Limestone, buff granular to brown fine crystalline. Spotty dark stain. Trace white translucent chert. Trace brown translucent chert.                                                      |                         |
| 10           | Limestone, grey white granular to brown fine crystalline.                                                                                                                                 |                         |
| 15           | Abundant grey micaceous shale.                                                                                                                                                            |                         |
| 20           | Limestone, buff granular. Abundant tan to brown to orange translucent to transparent chert. Abundant buff fine to medium crystalline fossiliferous oolitic. Scattered porosity and stain. | Toronto 3112            |

Francis Oil &amp; Gas Company #1 Anderson

DESCRIPTION OF WELL CUTTINGS (continued)

| <u>Depth</u> | <u>Description</u>                                                                                                        | <u>Remarks</u>                                                                                              |
|--------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 3120-25      | Limestone, white medium crystalline fossiliferous slightly chert. Traces stain.                                           |                                                                                                             |
| 30           | Same. Much red micaceous shale.                                                                                           | Break 3131-34<br>DST #1 3114-41                                                                             |
| 35           | Limestone, white oolitic. Show of oil. Light odor. Fair interstitial porosity.                                            | Open 1 hr. Re<br>100' lightly                                                                               |
| 40           | Limestone, white to tan fine crystalline. Abundant white smooth opaque chert.                                             | OCM Good odor.<br>BHP 580# in 15                                                                            |
| 50           | Limestone, white granular to fine crystalline. Minor white chert. Trace stain.                                            | Lansing 3130                                                                                                |
| 60           | Same.                                                                                                                     |                                                                                                             |
| 70           | Same.                                                                                                                     |                                                                                                             |
| 75           | Abundant apple green shale.                                                                                               |                                                                                                             |
| 80           | Limestone, white to tan fine crystalline. Green and grey shale.                                                           |                                                                                                             |
| 90           | Limestone, white granular to tan dense. Trace brown translucent chert.                                                    |                                                                                                             |
| 3190-3200    | Same. Thin streak well stained porous limestone.                                                                          |                                                                                                             |
| 3200-10      | Same. Traces stain porous limestone.                                                                                      |                                                                                                             |
| 20           | Limestone, white granular to tan fine crystalline. Minor white mealy granular limestone. Odor and stain. Poor porosity.   |                                                                                                             |
| 25           | Abundant tan sucrose partly dolomitic limestone. Scattered stain. Light odor. Slight show free oil. Only traces porosity. | Correct to<br>3213-16<br>in streaks.                                                                        |
| 30           | Same.                                                                                                                     |                                                                                                             |
| Circ.        | Limestone, buff sucrose dolomitic. Traces stain. Poor porosity.                                                           | Correct to<br>3221-28                                                                                       |
| 40           | Limestone, white granular chalky to tan fine crystalline.                                                                 |                                                                                                             |
| 50           | Same, to grey dense.                                                                                                      |                                                                                                             |
| 60           | Abundant dark brown to grey mottled fine crystalline limestone.                                                           |                                                                                                             |
| 70           | Limestone, white granular to buff dense, trace stain. Poor porosity. Traces light grey opaque chert.                      |                                                                                                             |
| 80           | Limestone, white to buff granular to grey fine crystalline. Trace dark grey translucent chert.                            |                                                                                                             |
| 90           | Limestone, tan dense minor tan suboolitic limestone with spotted saturation. Scattered porosity.                          | Correct to<br>3281-89 1" to<br>2" streaks.<br>Saturation in<br>this interval<br>net pay not over<br>1 foot. |
| 3290-3300    | Limestone, white granular to tan dense.                                                                                   |                                                                                                             |
| 3300-10      | Same. Trace buff subtranslucent chert.                                                                                    |                                                                                                             |
| 20           | Same. Abundant varicolored shale. Trace red limestone. Trace well stained oolitic limestone.                              |                                                                                                             |

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DESCRIPTION OF WELL CUTTINGS (continued)

| <u>Depth</u> | <u>Description</u>                                                                                                                                               | <u>Remarks</u>                                                                                 |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 3320-30      | Same. Scattered stain. Poor porosity. Trace orange translucent chert.                                                                                            | Correct to 3311-21. Interbedded shale and limestone w/ few thin streaks saturation Est. 1 foot |
| 35           | Streaks oolitic finely porous well stained limestone.                                                                                                            | Marmaton 3321 Est 6" pay in interval 3321-33                                                   |
| 40           | Shale, variegated and white to tan. Trace red limestone.                                                                                                         |                                                                                                |
| 45           | Same.                                                                                                                                                            |                                                                                                |
| 50           | Same. Increase shale.                                                                                                                                            |                                                                                                |
| 55           | Shale, soft red, minor grey sandy shale.                                                                                                                         |                                                                                                |
| 60           | Trace grey shaley fine sandstone. Washes out                                                                                                                     | Correct to 3344-55                                                                             |
| 70           | Limestone, white medium crystalline oolitic. Traces light grey translucent chert.                                                                                |                                                                                                |
| 3377 Circ    | Abundant red stain limestone and red shale.                                                                                                                      |                                                                                                |
| 80           | Shale, red chunky. Traces red sandy argillaceous limestone.                                                                                                      |                                                                                                |
| 85           | Same.                                                                                                                                                            |                                                                                                |
| 3385 Circ    | Limestone, white fine crystalline. Spotty stain. Abundant grey to tan translucent chert.                                                                         |                                                                                                |
| 90           | Same.                                                                                                                                                            |                                                                                                |
| 94           | Limestone, sucrose dolomitic well saturated. Abundant green shale.                                                                                               | Conglomerate 3386                                                                              |
| Circ 15"     | Sand, partly porous limey rounded medium coarse. Good saturation. Bleeding oil. Partly impregnated with green shale.                                             | Limey sand show oil 3388-92                                                                    |
| 30"          | Same. Trace red opaque weathered chert. Trace weathered oolitic chert.                                                                                           |                                                                                                |
| 45"          | Same. Slight increase weathered chert. Some green sandy shale noted.                                                                                             |                                                                                                |
| 3394-3400    | Shale, green sandy.                                                                                                                                              | Arbuckle 3398                                                                                  |
| 3400-03      | Dolomite.                                                                                                                                                        | DST #2 3399-3403                                                                               |
| 3403 Circ    | Dolomite, tan medium to coarsely crystalline sandy and glauconitic, partly sandy impregnated with green shale and glauconitic. Good vugular porosity. Good odor. | Op 1 hr 15", Rec. 90' free oil & 3' mud w/ slightly salty taste.                               |
| 3403 TD      | Bleeding                                                                                                                                                         | BHSIP 960# in 20'                                                                              |

Respectfully submitted,

Joseph Teichman

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 SW SW SW Sec 9 T7S R19W  
 Rocks County, Kansas

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 1943 KB

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Wildest

Casing Record: 8 3/4" @ W/ sax  
 5 1/2" @ 3399 W/125 sax

Commenced:  
 Completed: April 11, 1951 Rotary  
 I. P.:

DRILLING TIME LOG

| <u>Depth</u> | <u>Time</u>               | <u>Remarks</u>        |
|--------------|---------------------------|-----------------------|
| 2900-10      | 5 5 6 4 4 4 5 4 4 4       |                       |
| 20           | 5 4 5 5 4 2 1 1 1 2       |                       |
| 30           | 1 3 5 5 6 5 4 5 5 4       |                       |
| 40           | 3 3 3 4 5 4 6 4 4 4       |                       |
| 50           | 4 3 4 5 4 4 6 8 6 7       | 2950-trip             |
| 60           | 2 2 2 2 2 2 2 2 3 4       |                       |
| 70           | 5 4 5 5 4 3 3 2 4 5       |                       |
| 80           | 4 4 2 3 2 4 4 4 4 4       |                       |
| 90           | 5 2 4 4 3 2 3 3 2 2       |                       |
| 2990-3000    | 2 2 2 2 3 2 3 2 2 4       |                       |
| 3000-10      | 5 4 5 4 5 4 3 4 3 1       |                       |
| 20           | 1 2 2 2 1 3 4 6 5 4       |                       |
| 30           | 5 4 3 4 3 6 8 5 5 4       |                       |
| 40           | 3 4 3 6 7 4 4 4 3 2       |                       |
| 50           | 2 2 2 2 2 2 5 5 6 8       |                       |
| 60           | 8 9 8 8 4 6 7 6 3 3       |                       |
| 70           | 4 4 5 5 5 4 4 6 4 3       |                       |
| 80           | 3 4 4 5 6 5 4 4 5 8       |                       |
| 90           | 8 8 7 6 7 6 5 5 5 7       |                       |
| 3090-3100    | 10 8 12 7 6 6 7 8 12 7    |                       |
| 3100-10      | 4 7 6 7 6 7 7 6 6 6       |                       |
| 20           | 7 7 10 11 10 8 8 9 10 10  |                       |
| 30           | 9 8 7 7 9 7 8 8 8 8       |                       |
| 40           | 9 4 5 5 8 10 9 7 9 7      |                       |
| 50           | 8 8 5 5 8 8 8 7 9 7       | 3141 DST 27 ft anchor |
| 60           | 8 6 6 6 5 5 5 4 6 5       |                       |
| 70           | 4 3 4 4 5 5 4 5 5 3       |                       |
| 80           | 4 5 3 4 6 5 9 6 7 6       |                       |
| 90           | 4 6 6 3 4 6 6 6 4 5       |                       |
| 3190-3200    | 5 5 5 4 6 6 5 4 6 6       |                       |
| 3200-10      | 5 5 5 6 5 4 5 7 8 7       |                       |
| 20           | 4 5 5 3 2 3 5 7 6 6       |                       |
| 30           | 4 3 3 4 2 2 2 3 6 6       |                       |
| 40           | 8 10 5 7 7 7 8 7 7 6      |                       |
| 50           | 6 7 8 7 7 7 7 5 4 7       |                       |
| 60           | 8 6 7 6 6 7 7 7 7 7       |                       |
| 70           | 6 6 6 7 7 7 9 10 10 9     |                       |
| 80           | 11 11 11 8 10 9 9 10 9 10 |                       |
| 90           | 10 6 7 8 6 6 8 7 7 9      |                       |
| 3290-3300    | 9 10 11 8 9 8 8 7 7 8     |                       |
| 3300-10      | 9 8 8 6 6 7 7 8 9 10      |                       |
| 20           | 6 4 6 8 3 5 6 4 4 6       |                       |

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DRILLING TIME LOG (page 2)

| <u>Depth</u> | <u>Time</u>            | <u>Remarks</u>        |
|--------------|------------------------|-----------------------|
| 3320-30      | 5 6 7 6 6 5 5 6 6 6    |                       |
| 40           | 5 6 6 7 6 6 7 8 7 5    |                       |
| 50           | 6 6 7 5 4 4 3 3 3 3    |                       |
| 60           | 3 4 4 4 5 6 7 3 7 8    |                       |
| 70           | 6 6 8 7 9 8 9 10 10 12 |                       |
| 80           | 5 4 5 5 6 5 5 5 5 4    | 3377 Circ 43 min.     |
| 90           | 5 5 5 6 5 5 7 6 4 5    | 3385 Circ 1 hr 8 min. |
| 3390-3400    | 5 5 6 6 5 4 4 5 2 4    | 3394 Circ 1 hr.       |
| 3400-03      | 6 5 2                  | 3403 Circ Total Depth |

Respectfully submitted,

Joseph Teichman

JT:dt