

4-7-19W

James F. Chase - Geologist - Hu. 3-3948 - 724 Sunset St. - Russell, Kans.

Bennett & Roberts Oil Opr.
#5 Riffe, CS/2, S₁/4, S₂/4
Sec. 4, T7S, R19W S/2
Rooks County, Kansas

The following is a geological report and drilling time log on your Riffe No. 5, Riffe Pool, Rooks County, Kansas.

All formation tops were determined from sample analysis and time log interpretation and are corrected to rotary bushing measure.

Well was under geological supervision from 3150 to rotary total depth.

OPERATOR: Bennett & Roberts Oil Opr.

CONTRACTOR: Bennett & Roberts Drlg. Inc.

RIG: Number One

COMMENCED: April 7, 1959

COMPLETED: April 15, 1959

CASING: Surface: 8 5/8 @ 180 w/125 sacks cement.
Production: 5 1/2 @ 3449 w/125 sacks cement.

SAMPLES: 10' Interval from 3000 to 3200.
5' Interval from 3205 to 3460 R.T.D.

DRILLING TIME: 1' Interval from 3000 to 3460 R.T.D.

TOOL PUSHER: Don L. Roberts

DRILLERS: Vernon Zorn Daylight Tour
Floyd Weimaster Evening Tour
Wm. Weimaster Morning Tour

ELEVATION: Laughlin & Simmons
Great Bend, Kansas

Derrick Floor 1988
Rotary Bushing 1991

ELECTRIC LOGS: Lane Wells, Gamma Ray-Neutron-Collor Log
inside 5 1/2" casing.

CORES: None

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SUMMARY OF FORMATIONS

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Cinnarron Anhydrite	1545	/ 446	(Driller)
Heebner Shale	3146	-1155	
Toronto Lime	3174	-1183	
Lansing K.C.	3189	-1198	
Arbuckle	3448	-1457	
R.T.D.	3460	-1467	

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SUMMARY OF POROSITY

3124-28 Limestone, gray, fine crystalline, fossiliferous, spotted fine vugular porosity, scattered heavy staining with dark saturation. Zone appears to be of no commercial value.

Toronto (3174)

3174-83 Limestone, gray-white, fine to sub-crystalline, slight to poor porosity, no staining.

Lansing (3189)

Zone A

3194-98 Limestone, buff-white, fine crystalline, oolitic, spotted vugular porosity, light stain and saturation, mostly unstained, slight odor, no free oil. This zone was included in D.S.T. #1. Additional testing is not recommended.

Zone B

3201-08 Limestone, cream-tan, fine crystalline, sucrose, spotted good to fair finely vugular porosity, spotted fair to light staining, good odor, small show of free oil. This zone was included in D.S.T. #1 with poor results. Recommend additional testing after lower zones have depleted and before abandoning hole.

DRILL STEM TEST #1 Prosser Testers, single packer, 14' anchor.

Depth:	3196-3210
Tool Open:	60 minutes
Blow:	Weak for 30 mins, intermittant 30 mins.
Recovery:	40' formation water
B.H.P.	565 p.s.i./20 mins.
I.F.P.	0
F.F.P.	0

Zone C

3229-32 Limestone, tan-buff, fine crystalline, finely granular, spotted fair to good vugular porosity, scattered light to good stain and saturation, fair odor, small show of free oil. This zone was included in D.S.T. #2, recommend additional testing.

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Of the two zones covered in D.S.T. #2, Zone C showed the best saturation.

Zone D
3249-53

Limestone, cream and gray, fine crystalline, fossiliferous, spotted light stain and saturation, slight odor, no free oil. This zone was included in D.S.T. #2, recommend additional testing.

DRILL STEM TEST #2 Prosser Testers, single packer, 39' anchor.

Depth: 3217-3256
 Tool Open: 60 minutes
 Blow: Fair, 60 minutes
 Recovery: 115' muddy oil, 305' gas on top of fluid.
 B.H.P.: 530 p.s.i./20 minutes
 I.F.P.: 105 p.s.i.
 F.F.P.: 190 p.s.i.

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Zone E
3266-68

Limestone, gray, fine crystalline, matted fossiliferous, slight vugular porosity, very light stain, mostly unstained. This zone was included in D.S.T. #3. Additional testing is not recommended unless Zone F does not respond to treatment.

Zone F
3284-88

Limestone, cream, fine crystalline, fossiliferous, spotted fair vugular porosity, small show of free oil, good odor, fair to light stain and saturation. This zone was included in D.S.T. #3. Recommend additional testing as zone registered good B.H.P.

DRILL STEM TEST #3 Prosser Testers, single packer, 29' anchor.

Depth: 3266-3295
 Tool Open: 60 minutes
 Blow: Weak intermittant, 60 minutes
 Recovery: 35' heavy mud, slightly gassy with few specks of oil
 B.H.P.: 905 p.s.i./20 minutes
 I.F.P.: 0
 F.F.P.: 0

Zone G
3322-25

Limestone, gray, fine crystalline, slight fossiliferous, cherty, rare stain, poor porosity, no additional testing recommended.

Zone H
3341-44

Limestone, gray, fine crystalline, slight fossiliferous, slight to poor porosity, rare stain, no free oil or odor. This zone appears to be of no commercial value.

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Zone I
3363-66

Limestone, gray-tan, fine crystalline, finely fossiliferous, slight to poor porosity, very light stain, no odor or free oil. Zone does not appear to be as good as same zones found in wells #1 and #3, therefore no D.S.T. was attempted. However zone should be considered for additional testing if Lane Wells Log shows porosity.

Zone J
3385-95

Limestone, cream and brown, fine crystalline, platy and fossiliferous, poor porosity, rare light stain, no commercial value.

Arbuckle (3448)

3448-52

Dolomite, gray, fine crystalline, slight vugular porosity, spotted dark to light staining, no free oil, some odor. The bottom 2' of this zone was included in D.S.T. #4.

3452-56

Dolomite, gray-tan, fine to medium crystalline, granular, fair vugular porosity, spotted dark stain and saturation, small show of free oil, slight odor. This zone was included in D.S.T. #4.

3456-60

Dolomite, tan-buff, fine crystalline, spotted slight vugular porosity, scattered light staining. This zone was included in D.S.T. #4.

DRILL STEM TEST #4 Produced **RECEIVED** CONSERVATION DIVISION
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S, dual packers, 10' anchor.

Depth: 3450-3460
Tool Open: 45 mins.
Blow: Weak, 2 minutes.
Recovery: Oil cut mud, 1 pt. free oil
B.H.P. 6/20 mintues
I.F.P. 0
F.F.P. 0

Rotary Total Depth 3460 (-1469)

STRUCTURAL COMPARISON

Lansing: Well ran 5' lower than your #3 Riffe to the Northwest, 3' higher than your #1 Riffe to the Northeast, flat with Sohio's #1 Riffe to the East, 5' lower than Sierra's Desmarteau #1 to the Southeast, 5' higher than Sam Pack's Arbuckle producer 1/2 mile West.

Arbuckle: Well ran 3' lower than Sam Pack's Arbuckle well to the West, 34' higher than Sierra's #1 Desmarteau to the Southeast, 37' higher than Sohio's #1 Riffe to the East, 1' lower than your #3 Riffe in the Weathered Arbuckle top, 3' higher than your #1 Riffe on the same formation.

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REMARKS

5 1/2" casing was set 1' in the Arbuckle for additional testing. An additional 6' to 8' of Arbuckle penetration will encounter the second zone of saturation. Additional testing is recommended for the following zones in the Lansing K.C.: Zone I, F, D, C, B, as stated in this report.

Zone I was perforated in the Riffe #1 & #3	Oil, trace water
Zone H was perforated in the Riffe #1	Oil, Trace water
Zone D was perforated in the Riffe #1 & #3	Oil, Trace to 35% water.
Zone C was perforated in the Riffe #3	Oil, 20% water.
Zone B was perforated in the Riffe #3	Oil, 17% water.

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Respectfully submitted,

J.F. Chase

J.F. Chase, Geologist

JFC:mc

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Drilling Time Log
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DRILLING TIME LOG

<u>Depth</u>	<u>Time</u>	<u>Remarks</u>
3001-10	2 2 2 2 2 2 4 6 3 5	Mix mud.
20	4 2 2 1 1 1 1 1 2 2	
30	3 5 6 6 6 5 3 3 3 4	Mix mud.
40	6 6 6 5 3 3 3 5 4 6	
50	7 5 5 2 5 7 5 4 3 3	
60	4 4 5 3 3 4 4 4 4 4	
70	6 7 7 7 5 4 5 5 7 4	
80	5 5 5 4 4 4 4 4 9 10	
90	11 12 10 9 9 10 9 10 11 11	
3091-3100	13 6 7 6 7 8 9 7 5 5	Trip @ 3091.
3101-10	6 8 3 2 5 2 2 2 5 5	
20	4 5 11 10 11 7 4 8 8 5	Mixing mud.
30	4 5 6 7 4 3 3 5 4 5	Vis. 42, Wt. 10.2
40	5 4 3 2 2 4 4 5 5 6	
50	6 8 7 7 6 5 2 3 2 4	Heebner 3146.
60	8 8 5 8 7 5 5 5 5 4	Vis. 43, "5. 10.4, W.L. 11 cc
70	4 4 6 5 4 5 4 5 3 4	
80	4 4 3 3 4 7 7 6 6 6	
90	8 7 6 4 4 4 5 4 3 6	Lansing 3189.
3191-3200	8 8 11 8 5 6 6 6 9 8	
3201-10	7 5 6 5 6 6 6 5 7 7	Circ. @ 3201 & 3210 D.S.T. #1
20	7 9 10 9 5 8 9 9 6 7	
30	5 5 6 6 5 6 7 6 5 6	
40	7 9 8 9 10 9 11 10 8 6	Circ. @ 3235.
50	5 7 7 7 4 4 8 10 9 8	
60	8 9 7 6 9 5 5 4 6 6	Circ. @ 3256, D.S.T. #2.
70	5 4 5 5 5 4 5 6 7 7	
80	5 5 4 3 2 3 6 5 6 5	Circ. @ 3274.
90	5 5 5 6 4 3 3 4 5 6	Circ. @ 3287.
3291-3300	6 6 6 7 7 5 6 5 5 7	Circ. @ 3295, D.S.T. #3.
3301-10	5 6 6 6 5 6 5 6 2 7	
20	5 4 3 2 3 3 2 3 2 3	
30	4 8 7 7 8 10 13 8 10 10	
40	11 11 13 5 6 7 7 4 4 5	
50	6 7 7 7 8 9 9 8 8 9	Circ. @ 3348.
60	11 9 12 5 5 5 5 7 6 7	
70	11 10 9 7 8 7 10 10 9 10	
80	12 7 4 5 5 5 5 8 7 5	Circ. @ 3371
90	5 4 7 6 7 10 12 12 14 12	
3391-3400	12 12 14 12 12 10 6 8 10 7	
3401-10	7 8 11 9 6 3 3 4 3 3	
20	3 4 4 4 4 4 4 5 6 5	
30	6 10 9 5 7 7 7 7 10 7	
40	8 8 8 7 8 11 15 13 13 13	
50	11 8 8 6 6 8 8 7 8 10	
60	8 8 6 4 5 5 4 5 4 7	Circ. @ 3460 D.S.T. #4.

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