

5248-51

Operator Name W. L. Kirkman, Inc. Lease Name Cordes Well# 1 SEC 2 TWP. 34S RGE. 29

WELL LOG

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken ☒ Yes ☐ No
 Samples Sent to Geological Survey ☒ Yes ☐ No
 Cores Taken ☐ Yes ☒ No

Formation Description
☒ Log ☐ Sample

DST #1
 3125-3135
 30-60-30-60
 IF: 32054
 ISIP: 873
 FF: 77-97
 FSIP: 851
 HP: 1614-1528
 Recovery: 120' Muddy water Chlorides 45,000 ppm
 Temp: 112°

The sixth "break" (3148-3156) is described as:

Limestone, cream, fine crystalline, ooliscastic to oolitic, good ooliscastic porosity, slight show gas. 6 units Chromatograph, no increase Hot Wire.

DST #2
 3143-3154
 30-60-30-60
 IF: 32-86
 ISIP: 894
 FF: 129-172
 FSIP: 1603-1495
 Recovery: 340' saltwater chlorides 45,000 ppm
 Temp: 102°

The top 38' of the Toronto exhibited a considerable lithology change relative to the upper Toronto encountered in the W. L. Kirkman, Inc. #1 Borchers. Following is the description (4370-4408)

Shale, light gray, micaceous, slightly sandy. Limestone, tan, fine crystalline, fossiliferous Sandstone, white, fine grained, micaceous in part, friable to firm, no show. CONTINUED

CASING RECORD ☐ new ☐ used

Report all strings set - conductor, surface, intermediate, production, etc.

Purpose of string	size hole drilled	size casing set (in O.D.)	weight lbs/ft.	setting depth	type of cement	# sacks used	type and percent additives
Surface	12 1/4	8 5/8	23	1475	Lite	500	6% gel, 2% CC
Production	7 7/8	5 1/2	14	6381	Common	200	3% CC
					LW(Scavenge)	50	
					60-40 POZ	375	15% salt, 75% CR2

PERFORATION RECORD

specify footage of each interval perforated

shots per foot	specify footage of each interval perforated	Acid, Fracture, Shot, Cement Squeeze Record (amount and kind of material used)	Depth
4	5830-5836	500 gals. 15% Reg. Acid	5830-36
4	5248-5251	4000 gals. 28% NE. acid	5830-36
		500 gals. 15% S.O.S.	5248-51

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Swope porosity was encountered at 5022'. Considerable thinning relative to the W. L. Kirkman, Inc. #1 Borchers was observed through the Swope porosity: 34' - #1 Cordes, versus 51' - #1 Brochers. Swope description (5022-5036):

Limestone, cream to tan, fine crystalline, oolitic to oolitic, good oolitic porosity, fair to poor crystalline porosity, fair show gas.

DST #3 5123-5136 covers this zone.

IF 30 min 350-779#
 ISIP 60 min 1719#
 FF 30 min 818-1089#
 FSIP 60 min 1719
 HP 2503-2491#
 Recovery: 2150' saltwater chlorides 85,000 ppm
 Temp: 118°

A pipe strap prior to DST #3 was made and revealed a 2.31' difference, the strap being the shorter of the two measurements. Weather conditions were windy. No correction was made.

The Marmaton was topped at a depth of 5172'. Porosity not present in the #1 Borchers was encountered from a depth of 5172' to 5180' and carries the following description:

Limestone, white, fine crystalline, fossiliferous, oolitic in part, poor pinpoint, small vuggy and interclastic porosity, very slight show gas, very slight show light brown oil, faint fluorescence, faint odor.

DST #4 5132-5204 covers this zone.

IF 30 min 87-87#
 ISIP 60 min 1716#
 FF 30 min 109-109#
 FSIP 60 min 1769#
 HP 2487-?
 Recovery: ?
 Gas to surface on second opening.
 Gauge: 49.3 MCF 10 min
 34.3 MCF 20 min
 30.7 MCF 30 min

The tool and drill pipe were found to be stuck in the hole when it was attempted to pick up off bottom. The bar was dropped to open the reverse circulating sub and circulation was established through the reverse circulating sub. Oil was then spotted around the collars with no results in freeing the tool and pipe. A free point was run and revealed that the pipe was stuck at 3130'. Oil was moved up hole and spotted around this point. Another free point was run following this and pipe was found to be stuck at approximately 4099' or just below the reverse circulating sub. After reaming the hole down to the top of the fish, washpipe was run and successfully washed down over the fish to the top of the top packer on the test tool. The fish was then successfully recovered.

The "Middle" Marmaton was encountered at 5244. Sample description of this zone from 5244' to 5250' is as follows:

Limestone, tan, fine crystalline, oolitic to oolitic in part, good oolitic porosity, fair recrystallized interclastic porosity, good show bleeding gas, fair show bleeding light brown oil, good odor, good fluorescence.

DST #5 5242-5271 covers this zone

IF 10 min NO PRESSURES - both recorders failed
 ISIP 15 min
 FF 30 min
 FSIP 45 min
 HP

Gas to surface in 3 minutes first opening.

Gauged: 353 MCF 5 minutes
 319 MCF 10 minutes

Second Opening

4.4 MCF 5 minutes
 4.8 10 minutes
 5.2 15 minutes
 5.6 20 minutes
 5.2 25 minutes
 4.4 30 minutes

Recovery: 4010' clean gassy oil
 Temp: 122°

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OCT 04 1984

CONSERVATION DIVISION
 Wichita, Kansas

OCT 12 1984

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Two other zones of interest in the "Lower" Marmaton were drill stem tested. The first of these zones (5388-5394) is described as follows:

Limestone, cream, fine crystalline, scattered pinpoint porosity, scattered small vuggy porosity, faint fluorescence, no odor, very slight show gas, very slight show oil.

DST #6 5271-5316 covers this zone
IF 10 min 122-112#
ISIP 15 min 1334#
FF 10 min 112-133#
FSIP 15 min 1313#
HP 2527-2516#

Initial flow: weak 1" blow

Final flow: no blow, flush tool - no blow.

Recovery: 90' mud chlorides 12,000 ppm

Temp: 122°

2-34-29
#1 Cordes

The second of the "Lower" Marmaton zones tested carries the following description (5322-5326):

Limestone, cream, fine crystalline, good crystalline and small vuggy porosity, excellent show gas, good show oil, good odor, good fluorescence.

DST #7 5318-5364 covers this zone
IF 10 min NO PRESSURES - both records failed.
ISIP 15 min
FF 30 min
FSIP 45 min
HP

Recovery: 60' oil cut mud (5% oil)

60' saltwater chlorides 90,000 ppm

Temp: 120°

Morrow Sand was encountered with shows of hydrocarbons present. One of these sandstones carries the following description (5748-5754):

Sandstone, white, tan, fine grained, angular, glauconitic in part, poor to fair visible porosity, good fluorescence, faint odor, fair show oil, fair show gas, gilsonitic in part.

DST #8 5731-5753 covers this zone
IF 10 min 421-454#
ISIP 15 min 1863#
FF 30 min 508-443#
FSIP 45 min 1841#
HP 2778-2789#

Gas to surface 1st opening

Guaged: 2.2 MMCF 5 minutes
2.5 MMCF 10 minutes

Second Opening:

2.3 MMCF 5 minutes
2.9 MMCF 10 minutes
2.9 MMCF 15 minutes
3.0 MMCF 20 minutes
2.9 MMCF 25 minutes
2.9 MMCF 30 minutes

Recovery: 200' mud

100' saltwater chlorides 115,000 ppm

Temp: 120°

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OCT 04 1964

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Wichita, Kansas

A second Morrow Sand with hydrocarbon shows was encountered from 5756-5770:

Sandstone, white fine grained, poorly sorted, angular to subrounded, glauconitic, poor to fair visible porosity, no show to fair show oil and gas, gilsonitic.

DST #9 5755-5768 covers this zone
IF 10 min 64-54#
ISIP 15 min 1366#
FF 15 min 75-64#
FSIP 15 min 1216#
HI 2701-2767#

Both flows - weak 1/2" blow.

Recovery: 90' mud chlorides 60,000 ppm

Temp: 120°

and,

OCT 18 1964

State Geological Survey
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2 - 34 - 296^{PL}
1 Cordes

Pre-Pennsylvanian erosion has apparently removed much of the top of the Mississippian Chester age rocks. The top of the Chester was encountered at 5820'. The Chester zone that is correlative to the zone productive of gas in the W. L. Kirkman, Inc. #1 Borchers was preserved however. A description of the zone is (5832-5836):

Limestone, tan to cream, fine crystalline, fossil fragments, poor pinpoint and small vuggy porosity, very slight show gas, very slight show of oil, fluorescence.

It was decided not to test this zone.

The Basal Chester Sand was encountered at depths of 6084-6102' and 6106-6118'.

6084-6102:

Limestone, white fine crystalline, slightly oolitic, slightly sandy, streaks with fair pinpoint porosity with slight show oil and gas.

Sandstone, white, fine grained, subangular, fair visible porosity, poor to fair show oil and gas, gilsonitic, weak fluorescence, lime.

6106-6118:

Sandstone, tan, fine grained, subangular to subrounded, some fair visible porosity, limey, no show to very slight show oil.

A drilling break from 6254-6271 in the St. Louis carries the following description:

Limestone, white, fine crystalline, fossiliferous, oolitic, chalky matrix, very soft, falls apart very easily, fluorescence, no visible cut, leaves light brown residue in dimple tray, no visible porosity,

Limestone, brown, fine crystalline, slightly oolitic, rare pinpoint porosity, fluorescence, leaves light brown residue in dimple tray - only two pieces found, one of which had a fair show of gas. Two units Hot Wire maximum.

Pipe was set on the W. L. Kirkman, Inc. #1 Cordes for further evaluation of the above described zones.

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