15-009-24811

ORIGINAL

19-19s-14w

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LD Drilling Inc.
Calcara #1
SW-SE-SE; Section 19-19s-14w
Barton County, Kansas

5 ½" Production Casing Set

Contractor: Val Energy Co. (Rig #3)

Commenced: February 9, 2005

Completed: February 18, 2005

Elevation: 1914' K.B.; 1912' D.F.; 1904' G.L.

Casing Program: Surface; 8 5/8" @ 835'
Production; 5 1/2" @ 3627'

Samples: Samples saved and examined 1650' to the Rotary Total Depth.

Drilling Time: One (1) foot drilling time recorded and kept 1650' to the Rotary Total Depth.

Measurements: All depths measured from the Kelly Bushing.

Formation Testing: There were six (6) Drill Stem Tests ran by Diamond Testing.

Electric Log: By Log Tech; Dual Induction, Dual Compensated Porosity Log and Microresistivity.

Gas Detector: By Dombar Mud.

Formation	Log Depth	Sub-Sea Datum
Anhydrite	823	+1091
Herington	1746	+168
Winfield	1797	+117
Towanda	1859	+58
Ft. Riley	1896	-18
Council Grove	2073	-159
Neva	2248	-334
Red Eagle	2308	-394
Tarkio	2599	-685
Howard	2737	-823
Topeka	2795	-881
Toronto	3142	-1228
Douglas	3160	-1246
Brown Lime	3211	-1297
Lansing	3223	-1309
Base Kansas City	3448	-1534
Conglomerate	3462	-1548
Arbuckle	3542	-1628
Rotary Total Depth	3635	-1721
Log Total Depth	3628	-1714

(All tops and zones corrected to Electric Log measurements.)

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SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

HERINGTON SECTION

1746-1760' Dolomite; gray, finely crystalline, sucrosic, soft, trace gas bubbles (14unit kick).

1760-1776' Dolomite; gray, mottled, finely crystalline, sucrosic, few fossiliferous, scattered intercrystalline to vuggy type porosity, trace gas bubbles.

WINFIELD SECTION

1797-1808' Dolomite; white, gray, finely crystalline, sucrosic, scattered pinpoint porosity, trace gas bubbles, no fluorescence, plus trace tan chert.

Drill Stem Test #1 1718-1813' (log 1711-1806)

Times: **30-30-45-60**

Blow: **Strong**

Recovery: **70' mud**

Pressures:

ISIP	**283**	**psi**
FSIP	**309**	**psi**
IFP	**32-39**	**psi**
FFP	**42-56**	**psi**
HSH	**850-825**	**psi**

NEVA SECTION

2248-2262' Limestone; white, cream, fossiliferous in part, chalky, poor visible porosity, trace pale yellow to bright fluorescence, no gas bubbles, no gas kick.

RED EAGLE SECTION

2308-2336' Limestone; white, fine to medium crystalline, chalky in part, trace poor yellow fluorescence, no gas bubbles, no gas kick.

TOPEKA SECTION

3035-3044' Limestone; white, gray, fossiliferous, poor visible porosity, trace black to brown stain, trace free oil (heavy, black) and no odor in fresh samples.

3050-3064' Limestone; as above, trace stain.

3071-3090' Limestone; white, gray, sub oomoldic, chalky, scattered porosity, questionable edge staining, no show of free oil or odor in fresh samples.

TORONTO SECTION

3142-3150' Limestone; white, cream, dolomitic, finely crystalline, sucrosic, poor visible porosity, trace brown to golden brown stain, no show of free oil, questionable gas bubbles, no odor in fresh samples.

LANSING SECTION

3226-3231' Limestone; cream, tan, finely crystalline, chalky, scattered pinpoint porosity, good 100% dark brown stain and saturation, show of free oil, trace gas bubbles.

Drill Stem Test #2 **3231-3250' (log 3224-3243)**

Times: **30-30-30-30**

Blow: **Weak**

Recovery: **10' mud**

Pressures:

ISIP	**116**	**psi**
FSIP	**78**	**psi**
IFP	**29-30**	**psi**
FFP	**32-33**	**psi**
HSH	**1529-1515**	**psi**

3251-3256' Limestone; white, cream, fossiliferous, chalky, trace brown to black stain, no show of free oil, and faint odor in fresh samples, trace white gray fossiliferous chert.

3268-3272' Limestone; gray, white, oolitic, fossiliferous, trace brown to gray stain, trace free oil and faint odor in fresh samples.

3279-3284' Limestone; white, gray, oolitic, fossiliferous, chalky in part, brown spotty stain and saturation, trace of free oil and faint odor in fresh samples.

Drill Stem Test #3 **3250-3291' (log 3243-3284)**

Times: **30-45-45-60**

Blow: **Fair**

Recovery: **70' gas in pipe**
50' very slightly oil and gas cut mud
(10% oil, 5% gas, 95% mud)

Pressures:

ISIP	**199**	**psi**
FSIP	**146**	**psi**
IFP	**33-33**	**psi**
FFP	**29-35**	**psi**
HSH	**1586-1552**	**psi**

3286-3303' Limestone; cream, white, oomoldic, fair to good oomoldic porosity, brown to golden brown stain and saturation, show of free oil and good odor in fresh samples (7 unit gas kick).

Drill Stem Test #4 **3292-3310' (log 3285-3303)**

Times: **30-30-30-45**
Blow: **Strong**
Recovery: **700' water**
Pressures:

ISIP	**1033**	**psi**
FSIP	**1036**	**psi**
IFP	**40-190**	**psi**
FFP	**195-315**	**psi**
HSH	**1625-1549**	**psi**

3303-3320' Limestone; cream, white, oomoldic, good oomoldic porosity, chalky, fair to good stain, show of free oil and fair to good odor in fresh samples.

3362-3368' Limestone; white/cream, oolitic, oomoldic, chalky, trace brown stain, trace of free oil and faint odor in fresh samples.

3376-3386' Limestone; white, oolitic, fossiliferous, chalky in part, gray to black to brown stain, trace of free oil and faint odor in fresh samples.

3393-3400' Limestone; white, gray, cream, fossiliferous/oolitic, few oomoldic, chalky in part, black to brown stain, trace of free oil and faint odor in fresh samples.

Drill Stem Test #5 **3350-3420' (log 3343-3413)**

Times: **30-30-45-60**

Blow: **Strong**

Recovery: **800' gas in pipe**
120; heavy oil and gas cut mud
(30% oil, 25% gas, 45% mud)
190' oil and gas cut watery mud
(10% oil, 20% gas, 15% water, 55% mud)
190' slightly oil cut gassy water
(3% oil, 10% gas, 87% water)
250' gassy water

Pressures:	**ISIP**	**985**	**psi**
	FSIP	**977**	**psi**
	IFP	**53-196**	**psi**
	FFP	**213-338**	**psi**
	HSH	**1664-1575**	**psi**

3438-3444' Limestone; white, tan, fossiliferous, slightly chalky, questionable discoloration, no shows of oil and faint odor in fresh samples.

CONGLOMERATE SECTION

3478-3490' Varied colored shale, plus varied colored chert.

3490-3512' Shale; green, maroon, rusty brown, sub waxey, trace sand, white, sub angular, quartzitic, friable, trace black stain, no show of free oil or odor in fresh samples.

3512-3530' Chert; white, red yellow, oolitic, opaque, plus maroon, purple sandy shale.

3530-3542' Varied colored chert in matrix of varied colored shale.

ARBUCKLE SECTION

3542-3553' Dolomite; white, cream, medium crystalline, fair intercrystalline porosity, spotty golden brown to gray and black stain, show of free oil and faint odor in fresh samples.

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Drill Stem Test #6 **3450-3550' (log 3443-3553)**

Times: **30-45-45-60**

Blow: **Strong, gas to surface 4 minutes, gas gauged as follows:**

Initial Flow:	
10 minutes	**472,000 cfgpd**
20 minutes	**750,000 cfgpd**
30 minutes	**865,000 cfgpd**
Final Flow	
10 minutes	**865,000 cfgpd**
20 minutes	**796,000 cfgpd**
30 minutes	**773,000 cfgpd**
40 minutes	**749,000 cfgpd**
45 minutes	**725,000 cfgpd**

Recovery: **300' slightly oil cut muddy water**
(5% oil, 30% mud, 65% water)

Pressures:

ISIP	**1115**	**psi**
FSIP	**1063**	**psi**
IFP	**267-277**	**psi**
FFP	**284-251**	**psi**
HSH	**1693-1633**	**psi**

3553-3566' Dolomite; as above.

3566-3580' Dolomite; cream, white, medium to coarse crystalline, fair to good intercrystalline to vuggy type porosity, spotty brown stain and saturation, show of free oil and good odor in fresh samples.

3580-3590' Dolomite; as above.

3590-3610' Dolomite; white, cream, fine to medium crystalline, sandy in part, fair to good porosity, trace stain, trace of free oil and faint odor in fresh samples.

3610-3620' Dolomite; white, cream, finely crystalline, sucrosic, sandy, no shows.

3620-3635' Dolomite; as above, very fine to medium coarse grained sand inclusions, no shows.

Rotary Total Depth **3635 (-1721)**
Log Total Depth **3628 (-1714)**

Recommendations:
On the basis of the favorable structural position and the positive results of the Drill Stem Tests, it was recommended by all parties involved to set and cement 5 ½" production casing at 3627 (one foot off bottom) and the following zones be tested in the Calcara #1.

1. Arbuckle 3546-3548 perforate
2. Lansing 3394-3398 perforate
3. Lansing 3364-3366 perforate

Respectfully submitted;

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Petroleum Geologist