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Mai Oil Operations
Littler #4
SE-SE-NE-SW (1570' FSL & 2155' FWL)
Section 31-16s-19w
Rush County, Kansas
Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (Rig #3)
Commenced: January 2, 2014
Completed: January 8, 2014
Elevation: 2083' K.B; 2051' D.F; 2075' G.L.
Casing program: Surface; 8 5/8" @ 1096'
Production; 5 1/2" @ 3899'
Sample: Samples saved and examined 3300' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 3300 ft. to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were one (1) Drill Stem Test ran by Trilobite Testing Co.
Electric Log: By Nabors; Dual Induction, Compensated Density/Neutron Log and Micro.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	1304	+779
Base Anhydrite	1340	+743
Heebner	3406	-1323
Toronto	3424	-1341
Lansing	3449	-1366
Base Kansas City	3713	-1630
Pawnee/Marmaton	3753	-1670
Arbuckle	3838	-1755
Rotary Total Depth	3900	-1817
Log Total Depth	3900	-1817

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

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

LANSING SECTION

3474-3480' Limestone; tan, gray, finely crystalline, oolitic, oomoldic, fair oomoldic porosity, trace spotty brown stain, no show of free oil and no odor in fresh samples.
3490-3500' Limestone; gray, oolitic/fossiliferous, oomoldic in part, fair oomoldic porosity, poor stain, no free oil and no odor in fresh samples.

- 3525-3546' Limestone; cream, tan, finely crystalline, oolitic, poor visible porosity, plus gray/tan chert.
- 3550-3560' Limestone; tan, gray, finely crystalline, oolitic, oomoldic, good oomoldic porosity (barren).
- 3596-3610' Limestone; white/cream, finely crystalline, oolitic/fossiliferous, scattered porosity, slightly chalky, no shows.
- 3620-3630' Limestone; white, light gray, finely crystalline, poor porosity, chalky.
- 3638-3656' Limestone; white, light gray, oolitic, oomoldic, fair oomoldic porosity, chalky (barren).
- 3670-3686' Limestone; cream, white, finely crystalline, oolitic, poor porosity, chalky in part.
- 3691-3710' Limestone; cream, tan, finely crystalline, oolitic, dense.

PAWNEE SECTION

- 3753-3790' Limestone; cream/white, finely crystalline, chalky (dense) plus chert, peach, cream, tan, boney, no shows.

ARBUCKLE SECTION

- 3838-3844' Dolomite; cream, tan, finely crystalline, sucrosic, scattered intercrystalline porosity, light brown stain, trace of free oil and faint odor in fresh samples.

Drill Stem Test #1 3786-3844'

Times: 30-45-45-60

Blow: Strong

**Recovery: 3' clean oil
 378' oil cut muddy water
 (10% gas, 20% water, 70% mud)
 724' oil and gas cut muddy water
 (10% gas, 10% oil, 70% water, 10% mud)
 315' very slightly oil cut muddy water
 (3% oil, 87% water, 10% mud)**

**Pressures: ISIP 1174 psi
 FSIP 1175 psi
 IFP 52-356 psi
 FFP 363-671 psi
 HSH 1912-1838 psi**

- 3844-3856' Dolomite; tan, cream, finely crystalline, sub oomoldic, fair porosity, trace stain, trace of free oil and faint odor in fresh samples.
- 3856-3870' Dolomite; cream, tan, finely crystalline, sucrosic, poor scattered porosity, black stain, no free oil, plus chert, white/cream, boney.

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Page 3

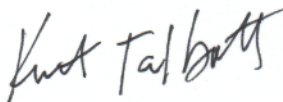
3876-3880' Dolomite and chert as above.

3880-3900' Dolomite; tan, cream, finely crystalline, poor porosity, dense.

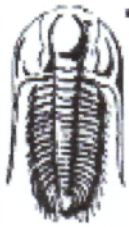
Rotary Total Depth	3900
Log Total Depth	3900

Recommendations: 5 ½" production casing was set and cemented in the Littler #4.

Respectfully submitted;



Kurt Talbott,
Petroleum Geologist



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd Ste 800
 Dallas Tx 75225 + 5520
 ATTN: Kurt Talbott

31-16s-19w Rush,KS
Littler #4
 Job Ticket: 54778 **DST#: 1**
 Test Start: 2014.01.07 @ 21:43:47

GENERAL INFORMATION:

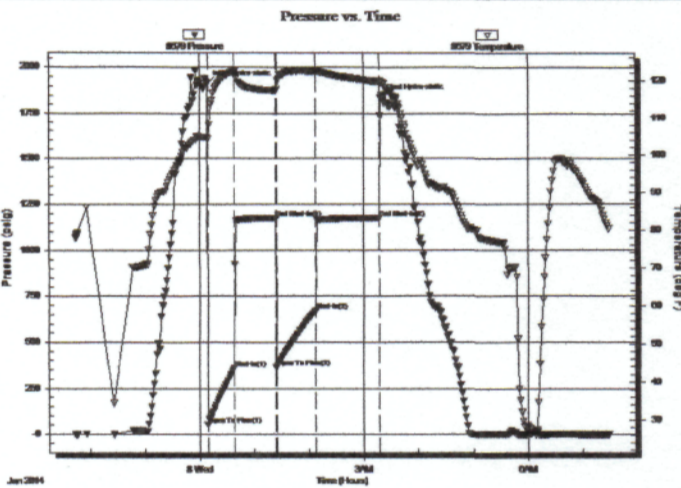
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 00:08:47
 Tester: Jeff Brown
 Time Test Ended: 07:30:47
 Unit No: 67
 Interval: **3786.00 ft (KB) To 3844.00 ft (KB) (TVD)**
 Reference Elevations: 2083.00 ft (KB)
 Total Depth: 3844.00 ft (KB) (TVD)
 2075.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 8.00 ft

Serial #: 8679

Inside

Press@RunDepth: 670.78 psig @ 3822.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.01.07 End Date: 2014.01.08 Last Calib.: 2014.01.08
 Start Time: 21:43:48 End Time: 07:28:47 Time On Btm: 2014.01.08 @ 00:08:17
 Time Off Btm: 2014.01.08 @ 03:18:17

TEST COMMENT: IFP=Strong blow BOB in 2-1/2 min
 IS=Dead no blow back
 FFP=Strong blow BOB in 2-3/4 min
 FS=Dead no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1912.08	104.70	Initial Hydro-static
1	51.97	104.13	Open To Flow (1)
30	355.83	122.05	Shut-In(1)
76	1174.43	117.21	End Shut-In(1)
76	362.50	117.61	Open To Flow (2)
119	670.78	122.29	Shut-In(2)
189	1175.36	119.58	End Shut-In(2)
190	1838.45	119.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
315.00	VSOCMW 3%O 10%M 87%W	4.42
724.00	GOCMW 10%G 10%O 10%M 70%W	10.16
378.00	OCWM 10%O 20%W 70%M	5.30
3.00	Free Oil	0.04

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7040

Date	Sec.	Twp.	Range	County	State	On Location	Finish
1-3-14	31	16	19	Rush	KS		4:00 PM

Location Lubenthal 15 7 25 1 1/2 W N.W.

Lease	Well No.	Owner	
<u>Littler</u>	<u>#4</u>	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Contractor		Charge To	
<u>Southwind</u>	<u>#3</u>	<u>Man Oil</u>	
Type Job	T.D.	Street	
<u>Surface</u>	<u>1097</u>		
Hole Size	Depth	City	
<u>12 1/4</u>	<u>1097</u>	State	
Csg.	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
<u>4 5/8</u>	<u>1097</u>	Cement Amount Ordered <u>450 60/140 30/60 20/60</u>	
Tbg. Size	Shoe Joint	Cement Amount Ordered	
Tool			
Cement Left in Csg.			
<u>30</u>			
Meas Line	Displace		
	<u>67 3/4 bbl</u>		

EQUIPMENT

Pumptrk	No.	Cementer	Common
<u>5</u>		<u>Lonnie W</u>	Poz. Mix
Bulktrk	No.	Driver	Gel.
<u>19</u>		<u>Chad</u>	Calcium
Bulktrk	No.	Driver	
<u>Pu</u>		<u>Brett</u>	

JOB SERVICES & REMARKS

Remarks:	Salt
Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down

	Pumptrk Charge	Tax
	Mileage	Discount
		Total Charge
X Signature <u>[Signature]</u>		

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Home Office P.O. Box 32 Russell, KS 67665

No. 7042

Date	Sec.	Twp.	Range	County	State	On Location	Finish
1-9-14	31	16	19	Rush	KS		7:30 AM

Location Liebenthal 15 7w 25 16w 14e

Lease	Well No.	Owner	
Littler	#4	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Contractor	Type Job	Charge To	
Southwood #3	Production string	Man O.I.	
Hole Size	T.D.	Street	
7 7/8	3900		
Csg.	Depth	City	
5 1/2	3899'	State	
Tbg. Size	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
		Cement Amount Ordered 160 60/40 10% 5-11 2% 6-11 1/4 Flt	
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered	
21.49	21.49		
Meas Line	Displace		
	94 1/2 bbl		

EQUIPMENT

Pumptrk	No.	Cementer	Helper	Common
5		Lannie	W	Poz. Mix
Bulktrk	No.	Driver	Lannie	Gel.
1		M		Calcium
Bulktrk	No.	Driver	Brett	
Pu				

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole - 30 cr	Salt
Mouse Hole	Flowseal
Centralizers - 1, 2, 3, 4, + 5	Kol-Seal
Baskets - 2	Mud CLR 48 - 1000 gal
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

Mix 1000 gal Mud Flush	Guide Shoe
Pluggal Rat Hole 1 30 cr	Centralizer - 5
Mix 130 cr 60/40 down 5 1/2	Baskets - 1
Displaced 94 1/2 bbl	AFU Inserts
Mud pressure @ 700 lbs	Float Shoe
Landed Plug @ 1400 lbs	Latch Down - 1
Plus held	Rubber Plug - 1
	Pumptrk Charge
	Mileage

X Signature *Kent*

tax
Discount
Total Charge