



Joshua R. Austin

Petroleum Geologist

report for

RAMA Operating CO., Inc



COMPANY: RAMA Operating Company, Inc.

LEASE: FISHER #1-23

FIELD: ST. JOHN

LOCATION: 2310' FSL & 1830' FEL (W2-NE-NW-SE)

SEC: 23 **TWSP:** 24s **RGE:** 13w

COUNTY: Stafford **STATE:** Kansas

KB: 1921' **GL:** 1910'

API # 15-185-24060-00-00

CONTRACTOR: Sterling Drilling (rig #4)

Spud: 10/07/2019 **Comp:** 10/15/2019

RTD: 4069' **LTD:** 4070'

Mud Up: 2978' **Type Mud:** Chemical was displaced

Samples Saved From: 3100' to RTD

Drilling Time Kept From: 1600' to RTD

Samples Examined From: 3100' to RTD

Geological Supervision From: 3200' to RTD

Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @ 307'

Production Casing: 5 1/2" @ 4063'

Electronic Surveys: Pioneer Energy Services

NOTES

On the basis of the positive structural position and drill stem test it was recommended by all parties involved in the Fisher 1-23 to run 5 1/2" production casing to further test the Arbuckle and Lansing zones.

RAMA Operating Company Inc.

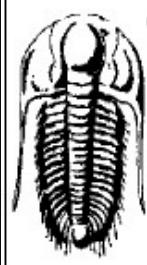
Well Comparison Sheet

DRILLING WELL

COMPARISON WELL

COMPARISON WELL

1921 KB					1907 KB				1906 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Anhydrite	730	1191	728	1193								
Heebner	3369	-1448	3370	-1449					3357	-1451	3	2
Toronto	3389	-1468	3384	-1463					3374	-1468	0	5
Douglas	3409	-1488	3404	-1483								
Brown Lime	3515	-1594	3514	-1593					3494	-1588	-6	-5
Lansing	3542	-1621	3540	-1619	3528	-1621	0	2	3525	-1619	-2	0
BKC	3813	-1892	3808	-1887								
Viola	3896	-1975	3894	-1973	3895	-1988	13	15	3891	-1985	10	12
Simpson	4023	-2102	4026	-2105	4010	-2103	1	-2	4016	-2110	8	5
Arbuckle	4064	-2143	N/A	N/A	4065	-2158	15	N/A	4064	-2158	15	N/A
Total Depth	4069	-2148	4070	-2149	4087	-2180			4084	-2178		



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

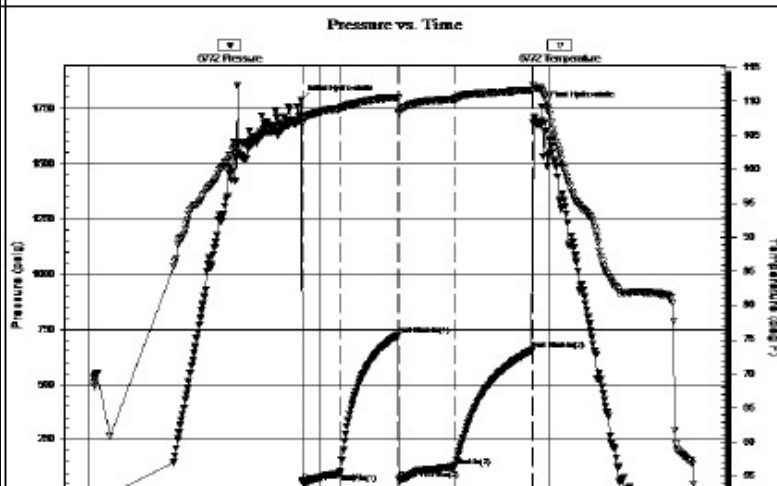
Rama Operating Co 23-24s-12w
 101 S. Main st stafford KS 67578+1429 **Fisher #1-23**
 ATTN: Josh Austin Job Ticket: 65703 **DST#: 1**
Test Start: 2019.10.11 @ 18:04:00

GENERAL INFORMATION:

Formation: **Lansing A-D**
 Deviated: **No Whipstock:** ft (KB)
 Test Type: **Conventional Bottom Hole (Initial)**
 Time Tool Opened: **20:47:20**
 Tester: **Benny Mulligan**
 Time Test Ended: **01:56:00**
 Unit No: **66**
 Interval: **3548.00 ft (KB) To 3598.00 ft (KB) (TVD)**
 Reference Elevations: **1921.00 ft (KB)**
 Total Depth: **3598.00 ft (KB) (TVD)**
 1910.00 ft (CF)
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 KB to GR/CF: **11.00 ft**

Serial #: 6772 **Inside**
 Press@RunDepth: **125.70 psig @ 3549.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2019.10.11** End Date: **2019.10.12** Last Calib.: **2019.10.12**
 Start Time: **18:04:01** End Time: **01:56:00** Time On Btm: **2019.10.11 @ 20:46:10**
 Time Off Btm: **2019.10.11 @ 23:55:30**

TEST COMMENT: IF-30-BOB 1min total build of 226"
 ISI-45- no blow back
 FF-45- BOB 35secs total build of 259"
 FSI-60- gts w hen bled off no blow back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1789.19	107.15	Initial Hydro-static
2	58.45	106.87	Open To Flow (1)
31	98.18	108.99	Shut-In(1)
76	723.08	110.47	End Shut-In(1)
77	68.01	108.02	Open To Flow (2)
121	125.70	110.31	Shut-In(2)
182	654.95	111.56	End Shut-In(2)
190	1757.09	111.10	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
120.00	GHOCM 40%G 40%O 20%M	0.59
120.00	GHOCM 20%G 40%O 40%M	0.72
60.00	GVSOCM 5%G 5%O 90%M	0.84
0.00	GIP 3030'	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Rama Operating Co
 101 S. Main st stafford KS 67578+1429
 ATTN: Josh Austin

23-24s-12w
Fisher #1-23
 Job Ticket: 65704 **DST#: 2**
 Test Start: 2019.10.12 @ 13:44:00

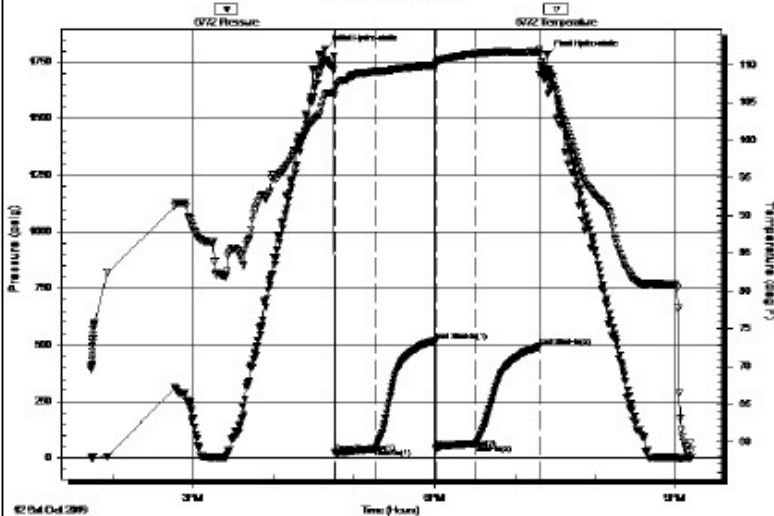
GENERAL INFORMATION:

Formation: **Lansing H**
 Deviated: **No Whipstock** ft (KB)
 Time Tool Opened: 16:46:00
 Time Test Ended: 21:12:30
 Interval: **3669.00 ft (KB) To 3685.00 ft (KB) (TVD)**
 Total Depth: **3685.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole (Initial)**
 Tester: **Benny Mulligan**
 Unit No: **66**
 Reference Elevations: **1921.00 ft (KB)**
 1910.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6772 **Inside**
 Press@RunDepth: **64.90 psig @ 3670.00 ft (KB)**
 Start Date: **2019.10.12** End Date: **2019.10.12**
 Start Time: **13:44:01** End Time: **21:12:30**
 Capacity: **8000.00 psig**
 Last Calib.: **2019.10.12**
 Time On Btn: **2019.10.12 @ 16:38:20**
 Time Off Btn: **2019.10.12 @ 19:24:20**

TEST COMMENT: IF-30-BOB 19mns 30secs total build of 16"
 IS-45- no blow back
 FF-30- built to 9 1/2 "
 FSI-45- no blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1804.79	105.90	Initial Hydro-static
8	24.29	106.00	Open To Flow (1)
38	42.09	109.15	Shut-In(1)
83	519.81	109.88	End Shut-In(1)
83	44.89	110.06	Open To Flow (2)
113	64.90	111.46	Shut-In(2)
160	493.03	111.69	End Shut-In(2)
167	1781.01	109.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OSWM 5%O 75%W 20%M	0.30
30.00	GOSM 5%G 1%O 94%M	0.15
0.00	GIP 150'	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Rama Operating Co
 101 S. Main St
 Stafford KS 67578+1429
 ATTN: Josh Austin

23-24s-12w Stafford,KS
Fisher #1-23
 Job Ticket: 65705 DST#: 3
 Test Start: 2019.10.14 @ 00:58:00

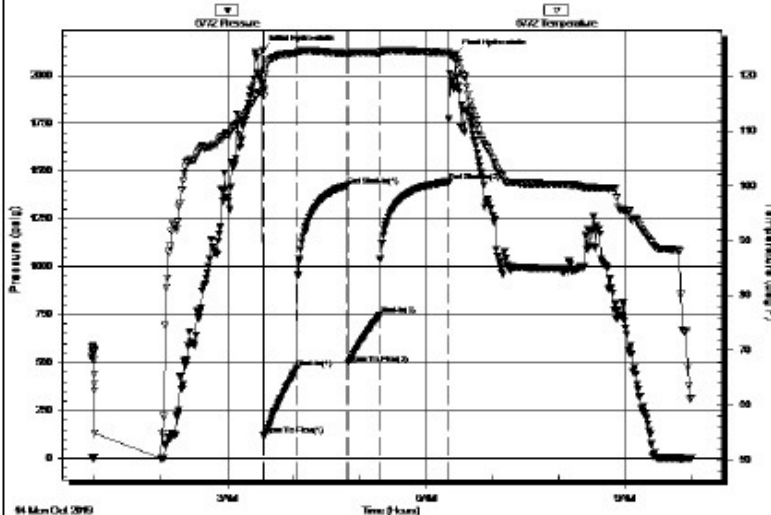
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: **03:33:20**
 Time Test Ended: **10:00:19**
 Interval: **4064.00 ft (KB) To 4069.00 ft (KB) (TVD)**
 Total Depth: **4069.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole (Initial)**
 Tester: **Benny Mulligan**
 Unit No: **66**
 Reference Elevations: **1921.00 ft (KB)**
 1910.00 ft (CF)
 KB to GR/CF: **11.00 ft**

Serial #: 6772 **Inside**
 Press@RunDepth: **745.85 psig @ 4065.00 ft (KB)**
 Start Date: **2019.10.14** End Date: **2019.10.14**
 Start Time: **00:58:01** End Time: **10:00:19**
 Capacity: **8000.00 psig**
 Last Calib.: **2019.10.14**
 Time On Btm: **2019.10.14 @ 03:32:20**
 Time Off Btm: **2019.10.14 @ 06:26:09**

TEST COMMENT: IF-30-BOB 1min total build of 178"
 IS-45-11" of blow back
 FF-30- BOB 40secs total build of 155"
 FSI-60- 1 1/2" of blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2131.06	117.21	Initial Hydro-static
1	123.09	116.32	Open To Flow (1)
31	471.87	124.07	Shut-In(1)
77	1424.66	124.04	End Shut-In(1)
77	494.26	123.64	Open To Flow (2)
106	745.85	124.18	Shut-In(2)
168	1442.33	124.26	End Shut-In(2)
174	2105.97	123.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM 20%G 20%O 60%M	0.30

Gas Rates

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

1975.00	GCO 20%G 80%O	26.19
0.00	GIP 425'	0.00

ROCK TYPES

Cht	Dolsec	shale, grn	shale, red
Cht vari	sdy lmst	shale, gry	Ss
Chtcongl	Lmst fw7>	Carbon Sh	

OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

