

DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

PO Box 33
Russell, Ks 67665

ATTN: Allen Bangert

6-11-20-Ellis-Ks

Whisman # 3

Start Date: 2002.10.30 @ 22:39:02

End Date: 2002.10.31 @ 05:21:02

Job Ticket #: 16710 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations

PO Box 33
Russell, Ks 67665

ATTN: Allen Bangert

Whisman # 3

6-11-20-Ellis-Ks

Job Ticket: 16710

DST#: 1

Test Start: 2002.10.30 @ 22:39:02

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:44:32

Time Test Ended: 05:21:02

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 21

Interval: **3606.00 ft (KB) To 3683.00 ft (KB) (TVD)**

Total Depth: 3683.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2058.00 ft (KB)

2053.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 2357

Inside

Press@RunDepth: 43.34 psig @ 3609.00 ft (KB)

Start Date: 2002.10.30

End Date:

2002.10.31

Start Time: 22:39:03

End Time:

05:21:02

Capacity: 7000.00 psig

Last Calib.: 2002.10.31

Time On Btm: 2002.10.31 @ 00:42:02

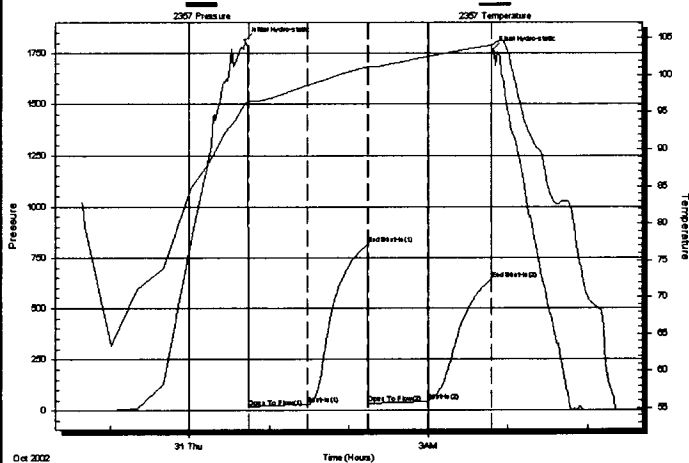
Time Off Btm: 2002.10.31 @ 03:48:32

TEST COMMENT: IF-Weak building to 1"

FF-Weak steady surface blow

Times-45-45-45-45

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1812.66	96.05	Initial Hydro-static
3	17.88	96.45	Open To Flow (1)
47	31.92	98.60	Shut-In (1)
92	815.13	101.11	End Shut-In (1)
93	34.89	101.13	Open To Flow (2)
138	43.34	102.51	Shut-In (2)
186	642.29	104.06	End Shut-In (2)
187	1766.74	104.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
59.00	Slightly OCM 3%o 97% m	0.29
1.00	CO	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations

Whisman # 3

PO Box 33
Russell, Ks 67665

6-11-20-Ellis-Ks

Job Ticket: 16710

DST#: 1

ATTN: Allen Bangert

Test Start: 2002.10.30 @ 22:39:02

Tool Information

Drill Pipe:	Length: 3486.00 ft	Diameter: 3.80 inches	Volume: 48.90 bbl	Tool Weight: 1200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 115.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose: 60000.00 lb
		Total Volume:	49.47 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3606.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	77.00 ft			
Tool Length:	98.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

C.O. Sub	1.00			3586.00	
S.I. Tool	5.00			3591.00	
HMV	5.00			3596.00	
Packer	5.00			3601.00	21.00 Bottom Of Top Packer
Packer	5.00			3606.00	
Stubb	1.00			3607.00	
Perforations	1.00			3608.00	
C.O. Sub	1.00			3609.00	
Recorder	0.00	2357	Inside	3609.00	
Blank Spacing	63.00			3672.00	
C.O. Sub	1.00			3673.00	
Recorder	0.00	13254	Outside	3673.00	
Perforations	7.00			3680.00	
Bullnose	3.00			3683.00	77.00 Bottom Packers & Anchor

Total Tool Length: 98.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

Whisman # 3

PO Box 33
Russell, Ks 67665

6-11-20-Ellis-Ks

Job Ticket: 16710

DST#: 1

ATTN: Allen Bangert

Test Start: 2002.10.30 @ 22:39:02

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
59.00	Slightly OCM 3%o 97%m	0.290
1.00	CO	0.005

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

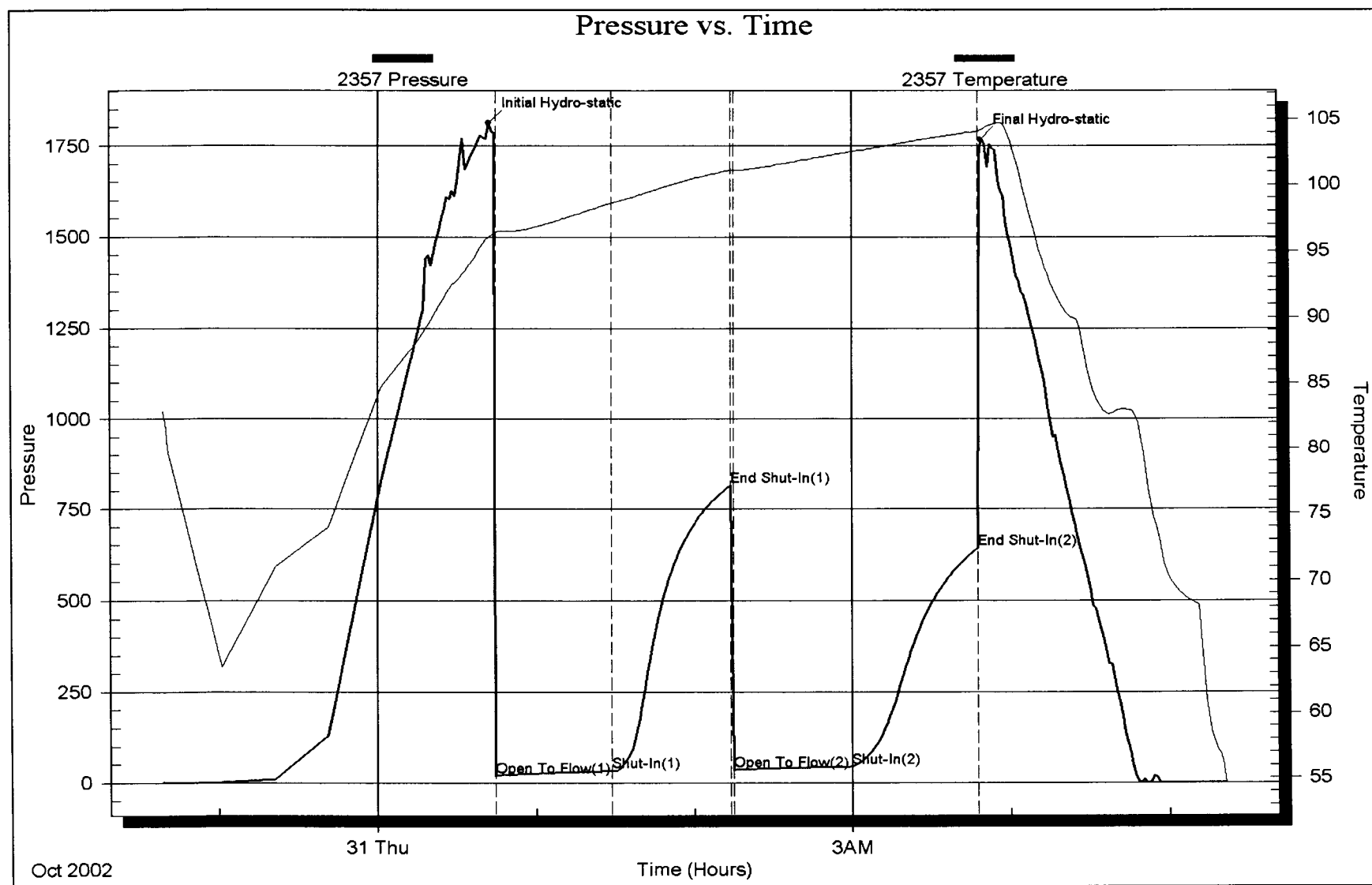
Num Gas Bombs: 0

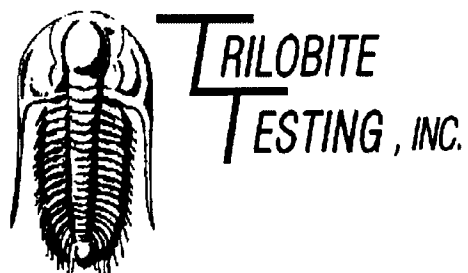
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

PO Box 33
Russell, Ks 67665

ATTN: Allen Bangert

6-11-20-Ellis-Ks

Whisman # 3

Start Date: 2002.10.31 @ 11:59:25

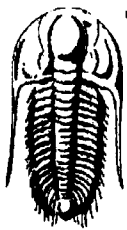
End Date: 2002.10.31 @ 18:16:55

Job Ticket #: 16711 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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DRILL STEM TEST REPORT

Mai Oil Operations

PO Box 33
Russell, Ks 67665

ATTN: Allen Bangert

Whisman # 3

6-11-20-Ellis-Ks

Job Ticket: 16711

DST#: 2

Test Start: 2002.10.31 @ 11:59:25

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 13:34:25

Time Test Ended: 18:16:55

Test Type: **Conventional Bottom Hole**

Tester: **Dan Bangle**

Unit No: **21**

Interval: **3680.00 ft (KB) To 3696.00 ft (KB) (TVD)**

Total Depth: **3696.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Good**

Reference Elevations: **2058.00 ft (KB)**

2053.00 ft (CF)

KB to GR/CF: **5.00 ft**

Serial #: **2357**

Inside

Press@RunDepth: **63.85 psig @ 3681.00 ft (KB)**

Start Date:

2002.10.31

End Date:

2002.10.31

Capacity: **7000.00 psig**

Last Calib.:

2002.10.31

Start Time:

11:59:26

End Time:

18:16:55

Time On Btm:

2002.10.31 @ 13:31:55

Time Off Btm:

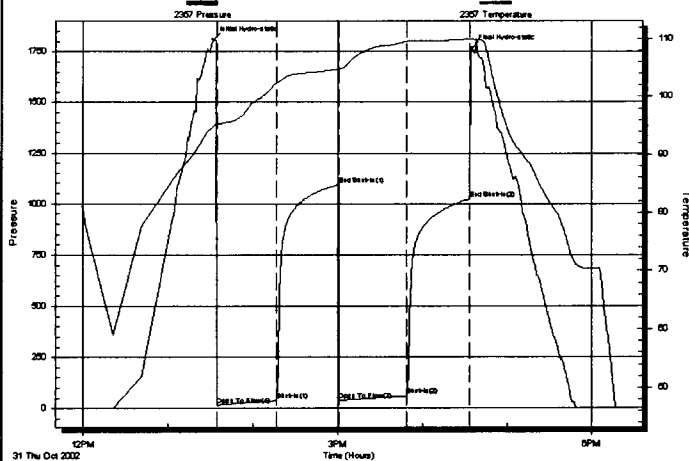
2002.10.31 @ 16:34:55

TEST COMMENT: **FF-Weak building to 1 1/2"**

FF-Weak steady surface blow

Times-45-45-45-45

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1808.50	94.80	Initial Hydro-static
3	14.96	95.21	Open To Flow (1)
45	37.63	102.33	Shut-In (1)
89	1092.36	104.73	End Shut-In (1)
89	38.97	104.74	Open To Flow (2)
137	63.85	109.53	Shut-In (2)
182	1023.37	109.97	End Shut-In (2)
183	1766.90	109.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mdy w tr Rw .13 @ 80 = 38000ppm	0.39

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations

Whisman # 3

PO Box 33
Russell, Ks 67665

6-11-20-Ellis-Ks

Job Ticket: 16711

DST#:2

ATTN: Allen Bangert

Test Start: 2002.10.31 @ 11:59:25

Tool Information

Drill Pipe:	Length:	3549.00 ft	Diameter:	3.80 inches	Volume:	49.78 bbl	Tool Weight:	1100.00 lb		
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb		
Drill Collar:	Length:	115.00 ft	Diameter:	2.25 inches	Volume:	0.57 bbl	Weight to Pull Loose:	60000.00 lb		
					Total Volume:	50.35 bbl	Tool Chased	0.00 ft		
Drill Pipe Above KB:	5.00 ft							String Weight: Initial	55000.00 lb	
Depth to Top Packer:	3680.00 ft							Final	55000.00 lb	
Depth to Bottom Packer:	ft									
Interval between Packers:	16.00 ft									
Tool Length:	37.00 ft									
Number of Packers:	2	Diameter:	6.75 inches							
Tool Comments:										

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3660.00	
S.I. Tool	5.00			3665.00	
HMV	5.00			3670.00	
Packer	5.00			3675.00	21.00 Bottom Of Top Packer
Packer	5.00			3680.00	
Stubb	1.00			3681.00	
Recorder	0.00	2357	Inside	3681.00	
Perforations	12.00			3693.00	
Recorder	0.00	13254	Outside	3693.00	
Bullnose	3.00			3696.00	16.00 Bottom Packers & Anchor
Total Tool Length:	37.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

Whisman # 3

PO Box 33
Russell, Ks 67665

6-11-20-Ellis-Ks

Job Ticket: 16711

DST#: 2

ATTN: Allen Bangert

Test Start: 2002.10.31 @ 11:59:25

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

38000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	Mdy w tr Rw .13 @ 80 = 38000ppm	0.393

Total Length: 80.00 ft

Total Volume: 0.393 bbl

Num Fluid Samples: 0

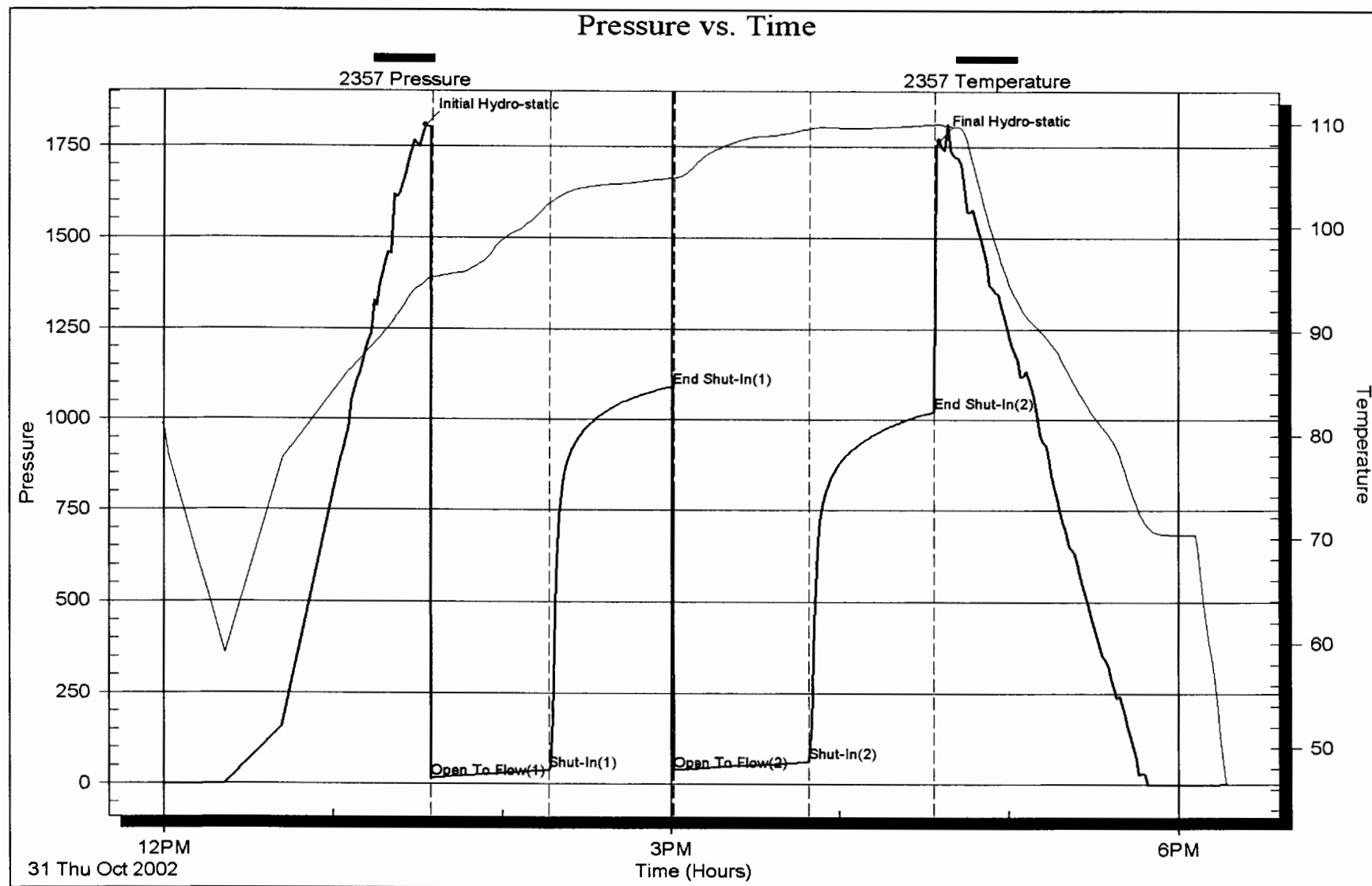
Num Gas Bombs: 0

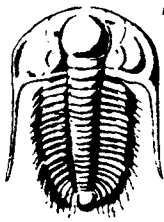
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

INVOICE
#5280 \$1770⁰⁰

No 16710

Test Ticket

Well Name & No. <u>Whisman #3</u>	Test No. <u>1</u>	Date <u>10-30-02</u>
Company <u>Mai Oil Operations</u>	Zone Tested <u>Arbuckle</u>	
Address <u>P.O. Box 33, Russell, KS 67665</u>	Elevation <u>2058</u> KB <u>2053</u> GL	
Co. Rep / Geo. <u>Todd Margenstern</u> Cont. <u>Murfin #16</u>	Est. Ft. of Pay _____	Por. _____ %
Location: Sec. <u>6</u> Twp. <u>11</u> Rge. <u>20</u> Co. <u>Ellis</u> State <u>KS</u>		
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____
	Evaluation (Y, N) _____	

Interval Tested 3606 - 3683 Initial Str Wt./Lbs. 55,000 Unseated Str Wt./Lbs. 55,000
 Anchor Length 77 Wt. Set Lbs. 30,000 Wt. Pulled Loose/Lbs. _____
 Top Packer Depth 3601 Tool Weight 1200
 Bottom Packer Depth 3606 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 3683 Wt. Pipe Run _____ Drill Collar Run 115
 Mud Wt. 9.4 LCM Y4 Vis. 48 WL 7.2 Drill Pipe Size 4.5XH Ft. Run 3486
 Blow Description I.F. Weak-building to 1"

F.F. Weak steady surface blow

Recovery — Total Feet	GIP	Ft. in DC	Ft. in DP
Rec. <u>1</u> Feet Of <u>CO</u>	%gas _____ %oil _____ %water _____ %mud _____		
Rec. <u>59</u> Feet Of <u>slightly OK</u>	%gas <u>3</u> %oil _____ %water <u>97</u> %mud _____		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		

BHT 104 °F Gravity _____ °API D@ _____ °F Corrected Gravity _____ °API
 RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 2,000 ppm System

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>1812</u>			<u>2357</u>	<u>22'00</u>
(B) First Initial Flow Pressure	<u>17</u>			<u>3609</u>	<u>22'39</u>
(C) First Final Flow Pressure	<u>31</u>			<u>13254</u>	<u>00'43</u>
(D) Initial Shut-In Pressure	<u>815</u>			<u>3673</u>	<u>03'43</u>
(E) Second Initial Flow Pressure	<u>34</u>				<u>05'21</u>
(F) Second Final Flow Pressure	<u>43</u>				
(G) Final Shut-in Pressure	<u>642</u>				
(Q) Final Hydrostatic Mud	<u>1766</u>				

Initial Opening 45 Test _____ 700
 Initial Shut-in 45 Jars _____
 Final Flow 45 Safety Joint _____
 Final Shut-in 45 Straddle _____
 Circ. Sub _____
 Sampler _____
 Extra Packer _____
 Elec. Rec. X 150
 Mileage 35 35
 Other _____
 TOTAL PRICE \$ \$885⁰⁰

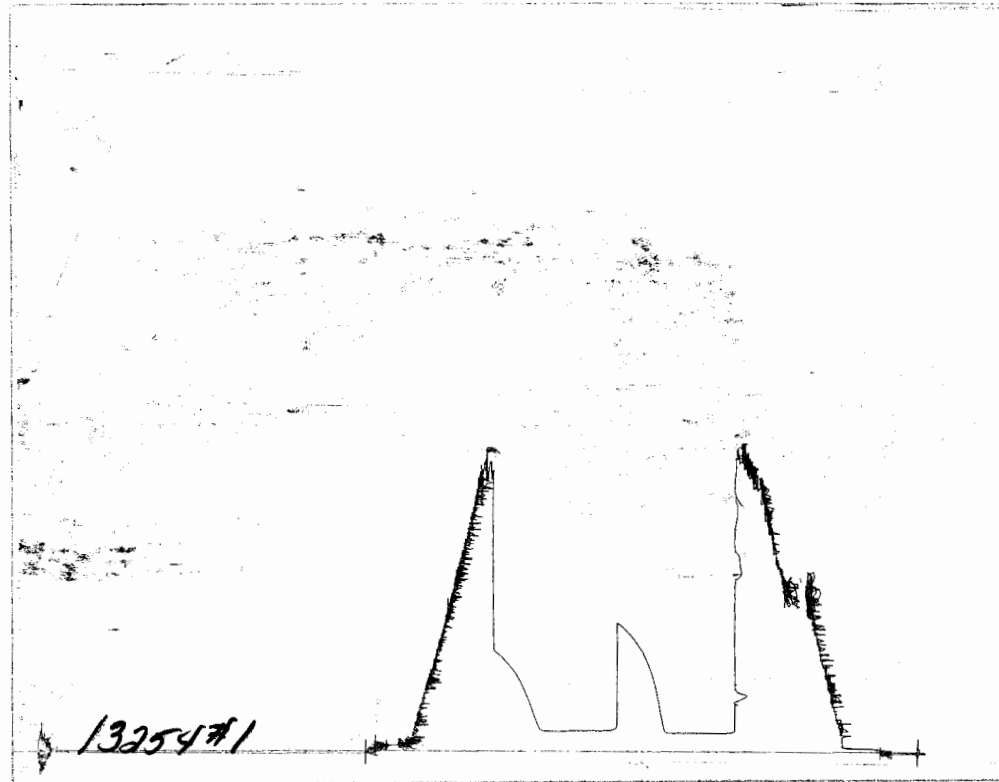
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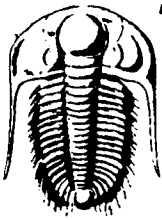
Approved By _____

Our Representative Dan Rangle

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 16711

Test Ticket

Well Name & No. <u>Whisman #3</u>	Test No. <u>2</u>	Date <u>10-31-02</u>
Company <u>Mai Oil Operations</u>	Zone Tested <u>Archbuckle</u>	
Address _____	Elevation <u>2058</u> KB <u>2053</u> GL	
Co. Rep / Geo. <u>Todd Morgenstern</u> Cont. <u>Murfin #16</u>	Est. Ft. of Pay _____	Por. _____ %
Location: Sec. <u>6</u> Twp. <u>11</u> Rge. <u>20</u> Co. <u>Ellis</u> State <u>Ks</u>		
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____
	Evaluation (Y, N) _____	

Interval Tested 3680 — 3696 Initial Str Wt/Lbs. 55,000 Unseated Str Wt/Lbs. 55,000
 Anchor Length 16 Wt. Set Lbs. 30,000 Wt. Pulled Loose/Lbs. 60,000
 Top Packer Depth 3675 Tool Weight 1100
 Bottom Packer Depth 3680 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 3696 Wt. Pipe Run _____ Drill Collar Run 115
 Mud Wt. 9.2 LCM _____ Vis. 50 WL 7.2 Drill Pipe Size 4.5 XH Ft. Run 3549
 Blow Description I.F. Weak - building to 1 1/2"

E.F. Weak steady surface blow

Recovery — Total Feet <u>80</u>	GIP _____	Ft. in DC <u>80</u>	Ft. in DP _____
Rec. <u>80</u> Feet Of <u>mdy WTR.</u>	%gas _____	%oil _____	%water _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____
BHT <u>109</u> °F Gravity _____	°API D@ _____	°F Corrected Gravity _____	°API _____
RW <u>1.3</u> @ <u>80</u> °F	Chlorides <u>38,000</u> ppm Recovery	Chlorides <u>3,000</u> ppm System	

AK-1	Alpine		
(A) Initial Hydrostatic Mud	<u>1808</u> PSI	Recorder No. <u>2357</u>	T-On Location <u>11:45</u>
(B) First Initial Flow Pressure	<u>14</u> PSI	(depth) <u>3681</u>	T-Started <u>11:59</u>
(C) First Final Flow Pressure	<u>37</u> PSI	Recorder No. <u>13254</u>	T-Open <u>13:30</u>
(D) Initial Shut-In Pressure	<u>1092</u> PSI	(depth) <u>3693</u>	T-Pulled <u>16:30</u>
(E) Second Initial Flow Pressure	<u>38</u> PSI	Recorder No. _____	T-Out <u>18:16</u>
(F) Second Final Flow Pressure	<u>63</u> PSI	(depth) _____	T-Off Location _____
(G) Final Shut-in Pressure	<u>1023</u> PSI	Initial Opening <u>45</u>	Test <u>700</u>
(Q) Final Hydrostatic Mud	<u>1766</u> PSI	Initial Shut-in <u>45</u>	Jars _____
		Final Flow <u>45</u>	Safety Joint _____
		Final Shut-in <u>45</u>	Straddle _____
			Circ. Sub _____
			Sampler _____
			Extra Packer _____
			Elec. Rec. <u>X</u> <u>150</u>
			Mileage <u>35</u> <u>35</u>
			Other _____
			TOTAL PRICE \$ <u>\$885.00</u>

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Approved By _____

Our Representative Dan Rangle

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart

