

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems 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 test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Mai Oil Operations, Inc.
Well Name	WIRTZ 10
Doc ID	1436344

Tops

Name	Top	Datum
Anhydrite	625	+1194
Topeka	2714	-895
Heebner	2977	-1158
Toronto	3002	-1183
Brown Lime	3096	-1277
Lansing	3112	-1293
Base Kanas City	3346	-1527
Arbuckle	3356	-1537

JAMES C. MUSGROVE

Petroleum Geologist, LLC
212 Main Street
P.O. Box 215
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 786-0839

Mai Oil Operations Inc.
Wirtz #10
W/2-NW-NE-NE (330' FNL & 1050' FEL)
Section 33-19s-12w
Barton County, Kansas

Page 1

5 1/2" Production Casing Set

.Contractor: Southwind Drilling Co. (rig #3)
Commenced: October 11, 2018
Completed: October 19, 2018
Elevation: 1819' K.B., 1817' D.F., 1811' G.L.
Casing program: Surface; 8 5/8" @ 631'
Production, 5 1/2" @ 3428'
Sample: Samples saved and examined 2700' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 2700' to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were five (5) Drill Stem Tests ran by Trilobite Testing Co.
Electric Log: By Eli; Dual Induction; Compensated Density/Neutron Log and Micro Log.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	625	+1194
Topeka	2714	-895
Heebner	2977	-1158
Toronto	3002	-1183
Douglas	3013	-1196
Brown Lime	3096	-1277
Lansing	3112	-1293
Base Kansas City	3346	-1527
Conglomerate	3352	-1533
Arbuckle	3356	-1537
Rotary Total Depth	3440	-1621
Log Total Depth	3439	-1620

(All tops and zone(s) corrected to Electric Log Measurements)

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

TOPEKA SECTION

- 2836-2850' Limestone, tan, cream, granular, fossiliferous, good porosity; trace brown stain, no free oil and no odor in fresh samples.
- 2888-2902' Limestone, tan, cream, fossiliferous, chalky, good scattered pinpoint and vuggy type porosity; trace brown stain, no show of free oil; trace black dead oil; and no odor.
- 2923-2938' Limestone, cream, tan, fossiliferous, granular in part, vuggy and oomoldic porosity, trace pyrite, no show of free oil and no odor in fresh samples.

TORONTO SECTION

- 3002-3012' Limestone, cream, dolomitic, granular; few chalky; fair pinpoint porosity; trace brown stain, no free oil and no odor in fresh samples.

DOUGLAS SECTION

- 3022-3030' Sand, gray, greenish gray; fine grained; sub-rounded; well sorted; trace black stain, no free oil and no odor in fresh samples.

LANSING SECTION

- 3113-3122' Limestone, tan; buff; finely crystalline, mottled; chalky; poor visible porosity.
- 3124-3130' Limestone, tan, buff, poor scattered pinpoint porosity, trace gray/black stain, no show of free oil and no odor.
- 3134-3142' Limestone, tan, oomoldic, good oomoldic and vuggy type porosity; light brown stain; show of free oil and good odor in fresh samples.
- 3148-3153' Limestone, tan, fossiliferous, cherty, dense; poor scattered porosity; trace brown stain, weak spotty show of free oil and fair odor in fresh samples.

Drill Stem Test #1 **3101-3153**

Times: 30-30-45-45

Blow: Strong, G.T.S. in 27 mins, T.S.T.M.

Recovery: 186' gassy muddy water; scum of oil
124' muddy water; sum of oil

Pressures: ISIP 632 psi
FSIP 617 psi
IFP 45-91 psi
FFP 83-144 psi
HSH 1480-1453 psi

- 3161-3170' Limestone, white, tan, brown, mottled, dense; poor porosity; trace black stain, no free oil and questionable odor in fresh samples.

- 3181-3192' Limestone, tan, fossiliferous, cherty, dense; poor visible porosity; no show of free oil and no odor in fresh samples.
- 3203-3213' Limestone, cream, slightly chalky, poor vuggy porosity; trace black stain, trace of free oil and no odor in fresh samples.
- 3248-3256' Limestone, white, cream; slightly chalky; poor vuggy and oomoldic type porosity; trace black stain, no show of free oil and no odor in fresh samples.
- 3262-3270' Limestone, white, slightly chalky; oomoldic, large vugs, good oomoldic and vuggy type porosity; trace black stain, show of free oil and fair odor in fresh samples.
- 3279-3288' Limestone, tan; fossiliferous, oomoldic, scattered oomoldic and pinpoint type porosity, trace brown stain, show of free oil and fair odor in fresh samples.
- 3303-3310' Limestone, tan, cream, fossiliferous, good porosity, no shows, plus chert, tan, opaque; no shows.
- 3310-3326' Limestone, white, cream, slightly chalky, poor scattered porosity; trace brown and black stain, no free oil and faint odor in fresh samples.
- 3332-3340' Limestone, white, cream, fossiliferous, good vuggy type porosity, light brown to golden brown stain and saturation; show of free oil and strong odor in fresh samples.

Drill Stem Test #2

3261-3346

Times: 30-30-45-45

Blow: Weak to strong

**Recovery: 50' gas in pipe
150' very slightly oil cut muddy water
(1% oil; 65% water, 34% mud)**

**Pressures: ISIP 699 psi
FSIP 637 psi
IFP 18-49 psi
FFP 59-90 psi
HSH 1571-1536 psi**

ARBUCKLE SECTION

- 3356-3364' Dolomite, white and gray; fair pinpoint porosity; brown stain, show of free oil and strong odor in fresh samples.

Drill Stem Test #3 **3325-3364**

Times: 30-30-45-45

Blow: Strong

Recovery: 196' gas in pipe
114' gassy oil
62' oil cut muddy water
(30% oil; 20% water, 50% mud)

Pressures: ISIP 646 psi
FSIP 658 psi
IFP 23-53 psi
FFP 57-86 psi
HSH 1629-1607 psi

3364-3379' Dolomite, gray, cream, coarse crystalline, good inter-crystalline porosity, dark brown stain, show of free oil and strong odor in fresh samples.

Drill Stem Test #4 **3365-3379**

Times: 30-30-30-30

Blow: Strong

Recovery: 124' gas in pipe
682' gassy oil
124' oil and gas cut mud
(5% gas; 20% oil; 75% mud)

Pressures: ISIP 1124 psi
FSIP 1120 psi
IFP 47-177 psi
FFP 194-309 psi
HSH 1644-1601 psi

3379-3390' Dolomite, as above, trace pyrite;

Drill Stem Test #5 **3382-3390**

Times: 10-15-10-15

Blow: Strong

Recovery: 2511' mud cut water

Pressures: ISIP 1187 psi
FSIP 1189 psi
IFP 729-965 psi
FFP 1008-1145 psi
HSH 1644-1627 psi

Mai Oil Operations Inc.
Wirtz #10
W/2-NW-NE-NE (330' FNL & 1050' FEL)
Section 33-19s-12w
Barton County, Kansas

Page 5

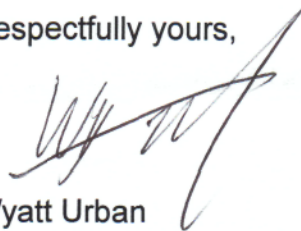
3390-3420'	Dolomite, white, medium to large crystalline, poor to fair inter-crystalline porosity; dense, trace light brown stain, show of free oil and strong odor in fresh samples.
3420-3440'	Dolomite, white, finely crystalline, cherty; dense, poor visible porosity, no show of free oil and faint odor in fresh samples.

Rotary Total Depth	3440 (-1620)
Log Total Depth	3439 (-1621)

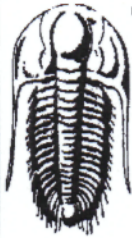
Recommendations:

5 1/2" production casing was set and cemented on the Mai Oil Operations, Inc., Wirtz #10.

Respectfully yours,



Wyatt Urban
Petroleum Geologist



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston RD Ste 800
 Dallas TX 75225+5520
 ATTN: Wyatt Urban

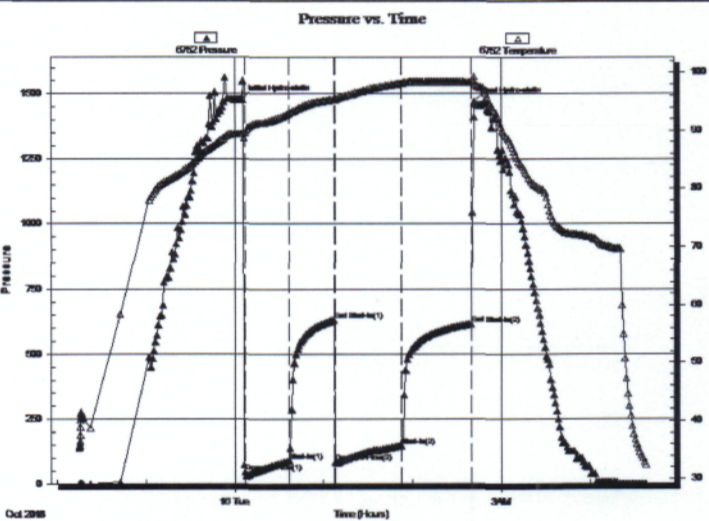
33-19s-12w Barton,KS
Wirtz #10
 Job Ticket: 63471 **DST#: 1**
 Test Start: 2018.10.15 @ 22:15:00

GENERAL INFORMATION:

Formation: **LKC A - C**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:07:02
 Time Test Ended: 04:37:02
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney/Benny Mu
 Unit No: 72
 Interval: **3101.00 ft (KB) To 3153.00 ft (KB) (TVD)**
 Total Depth: 3153.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 1819.00 ft (KB)
 1811.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 615.94 psig @ 3103.00 ft (KB) Capacity: psig
 Start Date: 2018.10.15 End Date: 2018.10.16 Last Calib.: 2018.10.16
 Start Time: 22:15:01 End Time: 04:38:02 Time On Btm: 2018.10.16 @ 00:05:17
 Time Off Btm: 2018.10.16 @ 02:42:02

TEST COMMENT: IFPP 30 Minutes Blow built to BOB in 1 1/2 minutes GTS 27 minutes
 ISI 30 Minutes Light surface blow back
 FFP 45 Minutes Blow built to BOB in 30 seconds
 FSI 45 Minutes Blow back built to 25"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1479.10	89.47	Initial Hydro-static
2	44.74	89.60	Open To Flow (1)
32	90.31	93.05	Shut-In(1)
62	630.79	95.38	End Shut-In(1)
63	84.83	95.35	Open To Flow (2)
108	148.07	98.17	Shut-In(2)
155	615.94	98.38	End Shut-In(2)
157	1470.53	98.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	light O cut MW/M 10 W 90	1.74
186.00	O&G cut MW/ G 15 M 35 W 50	2.61

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	10.30	9.25
Last Gas Rate	0.13	10.30	9.25



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63471

DST#: 1

ATTN: Wyatt Urban

Test Start: 2018.10.15 @ 22:15:00

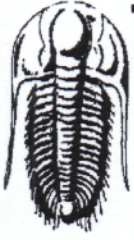
Tool Information

Drill Pipe:	Length: 3096.00 ft	Diameter: 3.80 inches	Volume: 43.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 43.43 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 24000.00 lb
Depth to Top Packer:	3101.00 ft			Final 25000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.78 ft			
Tool Length:	71.78 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3086.00	
Hydraulic tool	5.00			3091.00	
Top Packer	5.00			3096.00	
Packer	5.00			3101.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3102.00	
Recorder	1.00	6752	Outside	3103.00	
Anchor	13.00			3116.00	
Change Over Sub	1.00			3117.00	
Drill Pipe	31.78			3148.78	
Change Over Sub	1.00			3149.78	
Bullnose	3.00			3152.78	51.78 Anchor Tool

Total Tool Length: 71.78



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63471

DST#: 1

ATTN: Wyatt Urban

Test Start: 2018.10.15 @ 22:15:00

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:

19000 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	light O cut M W/M 10 W 90	1.739
186.00	O&G cut M W/ G 15 M 35 W 50	2.609

Total Length: 310.00 ft Total Volume: 4.348 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: recovery resistivity .57 ohms @ 40 deg

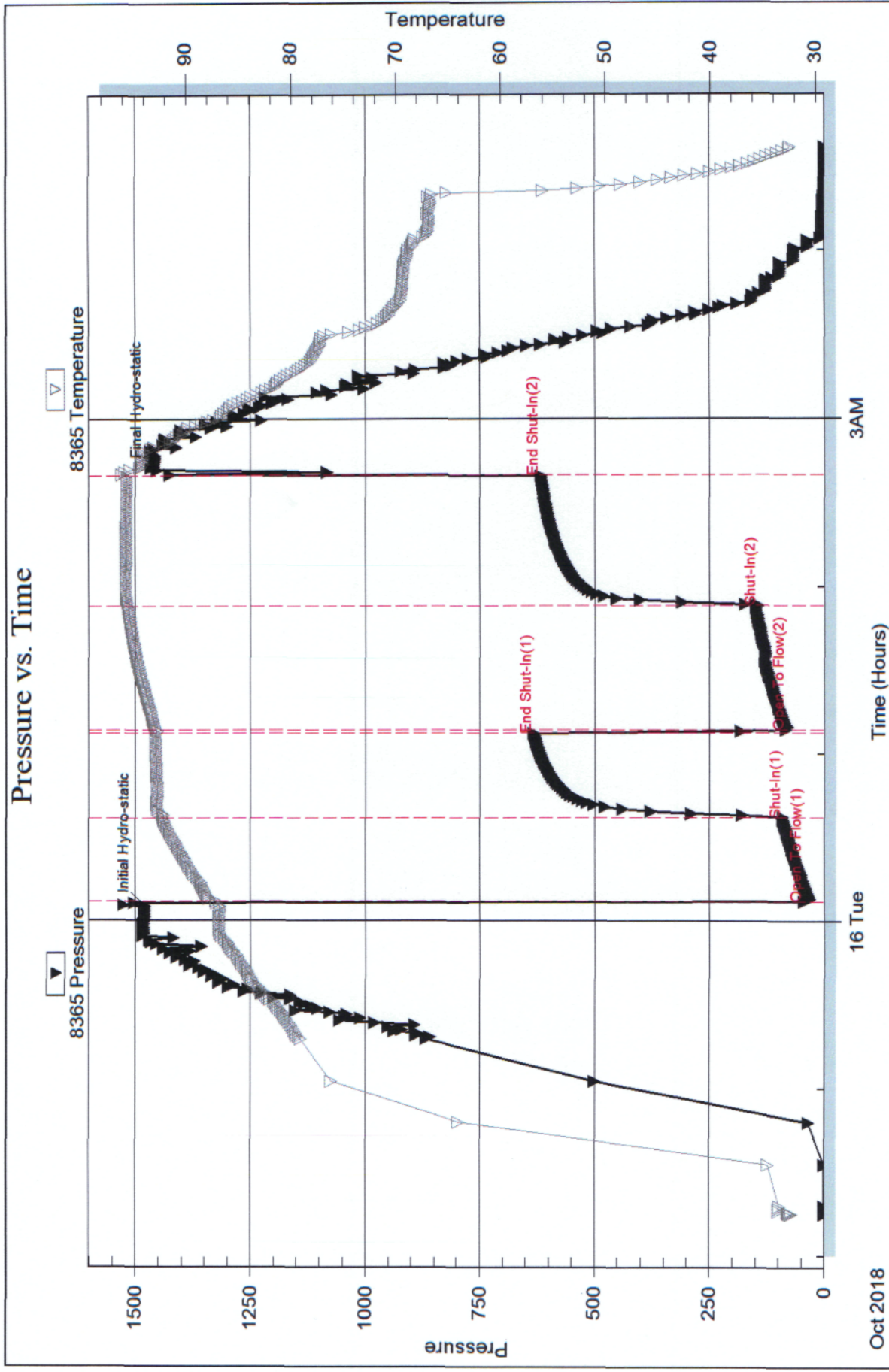
Serial #: 8365

Inside

Mai Oil Operations Inc

Wirtz #10

DST Test Number: 1





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
8411 Preston RD Ste 800
Dallas TX 75225+5520
ATTN: Wyatt Urban

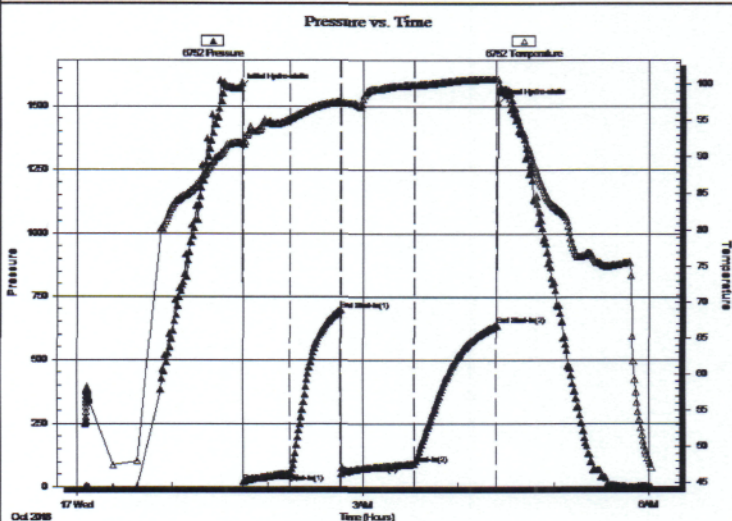
33-19s-12w Barton,KS
Wirtz #10
Job Ticket: 63472 **DST#: 2**
Test Start: 2018.10.17 @ 00:05:00

GENERAL INFORMATION:

Formation: **LKC H - K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:44:17
Time Test Ended: 06:01:02
Interval: **3261.00 ft (KB) To 3346.00 ft (KB) (TVD)**
Total Depth: 3346.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 1819.00 ft (KB)
1811.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
Press@RunDepth: 636.38 psig @ 3263.00 ft (KB) Capacity: psig
Start Date: 2018.10.17 End Date: 2018.10.17 Last Calib.: 2018.10.17
Start Time: 00:05:01 End Time: 06:02:02 Time On Btm: 2018.10.17 @ 01:42:47
Time Off Btm: 2018.10.17 @ 04:24:47

TEST COMMENT: IFP - Blow built to 10"
ISI - No blow back
FFP - BOB in 30 mins - total build 15 1/2 "
FSI - Blow back built a additional 1"



PRESSURE SUMMARY

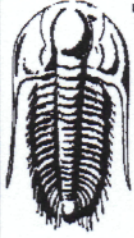
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1570.23	91.95	Initial Hydro-static
2	17.83	91.71	Open To Flow (1)
31	50.12	95.22	Shut-In(1)
63	697.94	97.63	End Shut-In(1)
64	51.15	97.56	Open To Flow (2)
110	90.47	99.89	Shut-In(2)
162	636.38	100.74	End Shut-In(2)
162	1512.27	100.71	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	light oil cut muddy water O1% M34% W62.10	
0.00	90' gip	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston RD Ste 800
Dallas TX 75225+5520
ATTN: Wyatt Urban

33-19s-12w Barton,KS
Wirtz #10
Job Ticket: 63472 **DST#: 2**
Test Start: 2018.10.17 @ 00:05:00

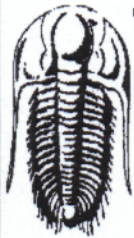
Tool Information

Drill Pipe:	Length: 3253.00 ft	Diameter: 3.80 inches	Volume: 45.63 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 45.63 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 28000.00 lb
Depth to Top Packer:	3261.00 ft			Final 28000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.77 ft			
Tool Length:	104.77 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3246.00	
Hydraulic tool	5.00			3251.00	
Top Packer	5.00			3256.00	
Packer	5.00			3261.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3262.00	
Recorder	1.00	6752	Outside	3263.00	
Anchor	15.00			3278.00	
Change Over Sub	1.00			3279.00	
Drill Pipe	62.77			3341.77	
Change Over Sub	1.00			3342.77	
Bullnose	3.00			3345.77	84.77 Anchor Tool

Total Tool Length: 104.77



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63472

DST#: 2

ATTN: Wyatt Urban

Test Start: 2018.10.17 @ 00:05:00

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:

22000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	light oil cut muddy water O1% M34% W65%	2.104
0.00	90' gip	0.000

Total Length: 150.00 ft Total Volume: 2.104 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

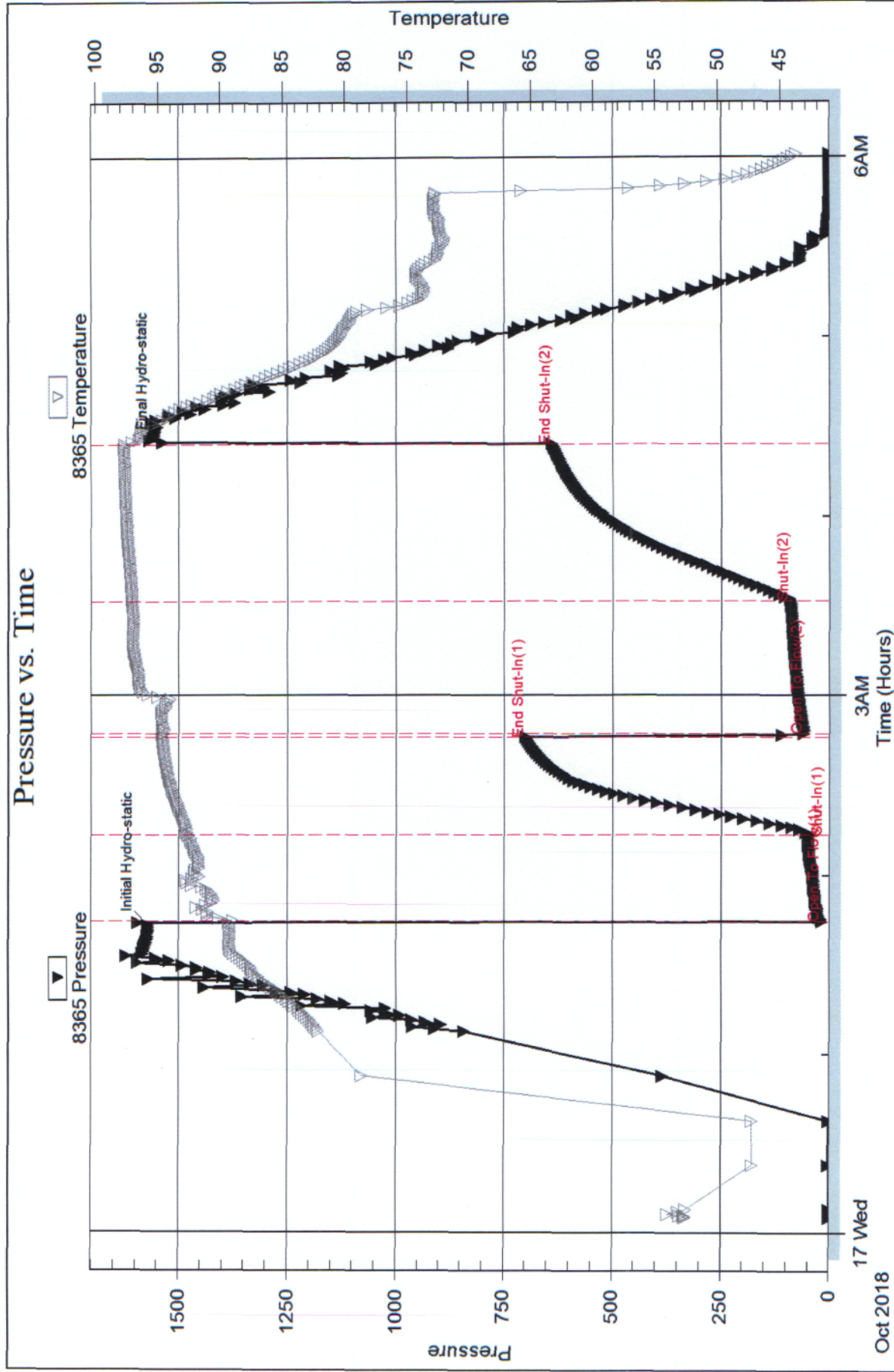
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: recovery resistivity .485@47 deg

Pressure vs. Time





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston RD Ste 800
 Dallas TX 75225+5520
 ATTN: Wyatt Urban

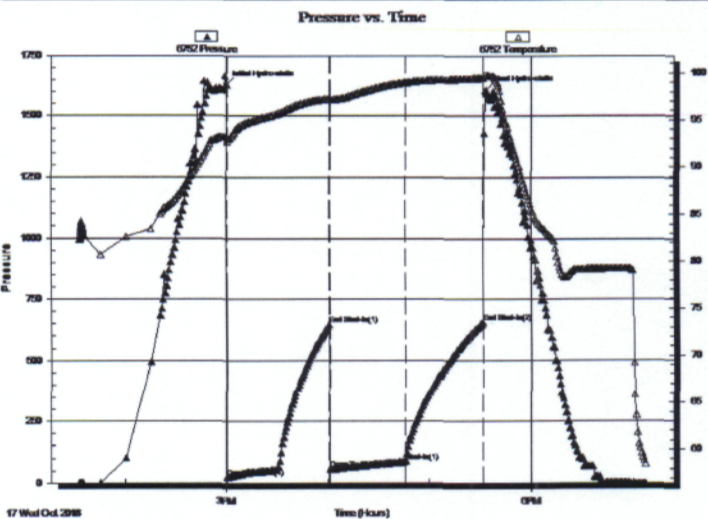
33-19s-12w Barton,KS
Wirtz #10
 Job Ticket: 63473 **DST#: 3**
 Test Start: 2018.10.17 @ 13:33:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:00:47
 Time Test Ended: 19:07:02
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney/Benny Mu
 Unit No: 72
 Interval: **3325.00 ft (KB) To 3364.00 ft (KB) (TVD)**
 Total Depth: 3364.00 ft (KB) (TVD)
 Reference Elevations: 1819.00 ft (KB)
 1811.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 656.63 psig @ 3327.00 ft (KB) Capacity: psig
 Start Date: 2018.10.17 End Date: 2018.10.17 Last Calib.: 2018.10.17
 Start Time: 13:33:01 End Time: 19:08:02 Time On Btm: 2018.10.17 @ 14:59:47
 Time Off Btm: 2018.10.17 @ 17:33:17

TEST COMMENT: IFP - BOB in 18 min - blow built to 17"
 ISI - No blow back
 FFP - BOB in 17 mins - blow built 22 1/2 "
 FSI - Blow back built additional 2 "



PRESSURE SUMMARY

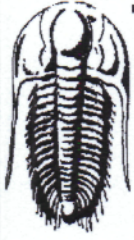
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1629.84	93.11	Initial Hydro-static
1	22.83	92.67	Open To Flow (1)
61	647.50	97.17	End Shut-In(1)
62	57.12	97.14	Open To Flow (2)
106	85.80	98.95	Shut-In(1)
152	656.63	99.46	End Shut-In(2)
154	1608.41	99.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	WOCM W- 20% O- 30% M- 50%	0.87
114.00	GO G- 10% O- 90%	1.60
0.00	196' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63473

DST#: 3

ATTN: Wyatt Urban

Test Start: 2018.10.17 @ 13:33:00

Tool Information

Drill Pipe:	Length: 3316.00 ft	Diameter: 3.80 inches	Volume: 46.51 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 46.51 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3325.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	59.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: ruined packer

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut-In Tool	5.00			3310.00	
Hydraulic tool	5.00			3315.00	
Top Packer	5.00			3320.00	
Packer	5.00			3325.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3326.00	
Recorder	1.00	6752	Outside	3327.00	
Anchor	34.00			3361.00	
Bullnose	3.00			3364.00	39.00 Anchor Tool

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63473

DST#: 3

ATTN: Wyatt Urban

Test Start: 2018.10.17 @ 13:33:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	WOCM W- 20% O- 30% M- 50%	0.870
114.00	GO G- 10% O- 90%	1.599
0.00	196' GIP	0.000

Total Length: 176.00 ft

Total Volume: 2.469 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

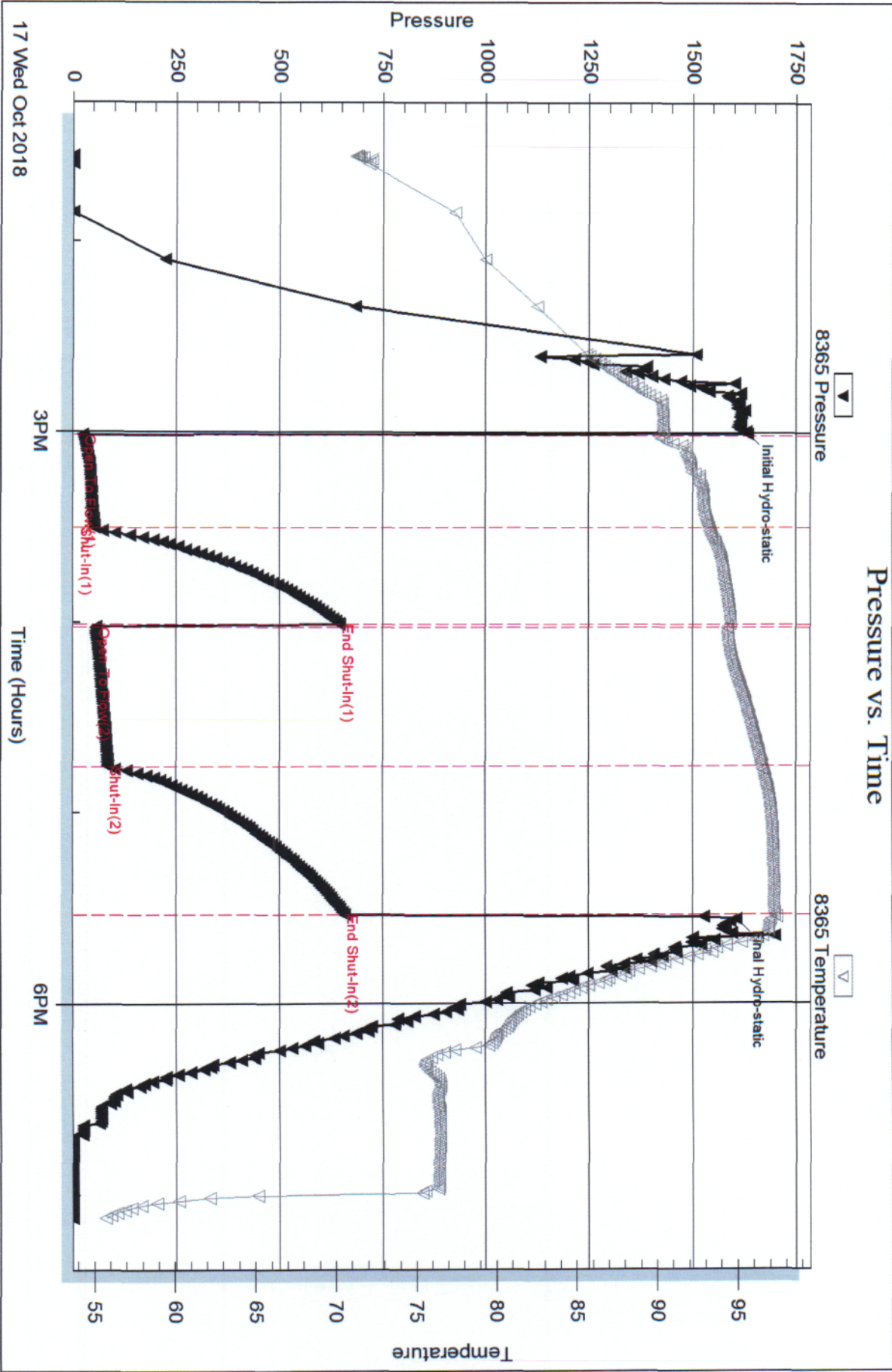
Recovery Comments:

Serial #: 8365

Inside Mai Oil Operations Inc

Well #10

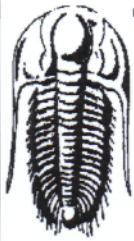
DST Test Number: 3



Tribble Testing, Inc

Ref. No: 63473

Printed: 2018.10.22 @ 16:14:00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mai Oil Operations Inc
8411 Preston RD Ste 800
Dallas TX 75225+5520
ATTN: Wyatt Urban

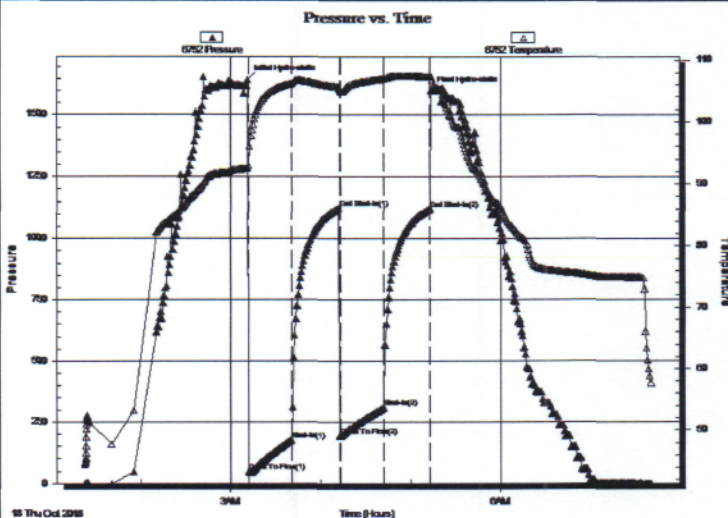
33-19s-12w Barton,KS
Wirtz #10
Job Ticket: 63474 **DST#: 4**
Test Start: 2018.10.18 @ 01:23:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:12:02
Time Test Ended: 07:41:02
Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney/Benny Mu
Unit No: 72
Interval: **3365.00 ft (KB) To 3379.00 ft (KB) (TVD)**
Reference Elevations: 1819.00 ft (KB)
Total Depth: 3379.00 ft (KB) (TVD) 1811.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
Press@RunDepth: 1120.29 psig @ 3367.00 ft (KB) Capacity: psig
Start Date: 2018.10.18 End Date: 2018.10.18 Last Calib.: 2018.10.18
Start Time: 01:23:01 End Time: 07:40:02 Time On Btm: 2018.10.18 @ 03:11:32
Time Off Btm: 2018.10.18 @ 05:13:17

TEST COMMENT: IFP BOB in 2 1/2 minutes/ Total build 81"
ISI Blow back built additional 1 inch
FFP BOB in 4 minutes Total build 54"
FSI No blow back



PRESSURE SUMMARY

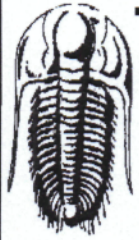
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1645.62	92.65	Initial Hydro-static
1	49.22	92.99	Open To Flow (1)
30	177.83	106.22	Shut-In(1)
61	1123.61	105.59	End Shut-In(1)
62	193.03	105.22	Open To Flow (2)
91	309.35	107.04	Shut-In(2)
122	1120.29	107.29	End Shut-In(2)
122	1600.37	107.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
682.00	GO G-30% O-70%	9.57
124.00	GOCM G-5% O-20% M-75%	1.74
0.00	124' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston RD Ste 800
Dallas TX 75225+5520
ATTN: Wyatt Urban

33-19s-12w Barton,KS
Wirtz #10
Job Ticket: 63474 **DST#: 4**
Test Start: 2018.10.18 @ 01:23:00

Tool Information

Drill Pipe:	Length: 3348.00 ft	Diameter: 3.80 inches	Volume: 46.96 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
		Total Volume: 46.96 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 32000.00 lb
Depth to Top Packer:	3365.00 ft			Final 33000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	34.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut-In Tool	5.00			3350.00	
Hydraulic tool	5.00			3355.00	
Top Packer	5.00			3360.00	
Packer	5.00			3365.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3366.00	
Recorder	1.00	6752	Outside	3367.00	
Anchor	9.00			3376.00	
Bullnose	3.00			3379.00	14.00 Anchor Tool

Total Tool Length: 34.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63474

DST#: 4

ATTN: Wyatt Urban

Test Start: 2018.10.18 @ 01:23:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
682.00	GO G-30% O-70%	9.567
124.00	GOCM G-5% O-20% M-75%	1.739
0.00	124' GIP	0.000

Total Length: 806.00 ft Total Volume: 11.306 bbl

Num Fluid Samples: 0

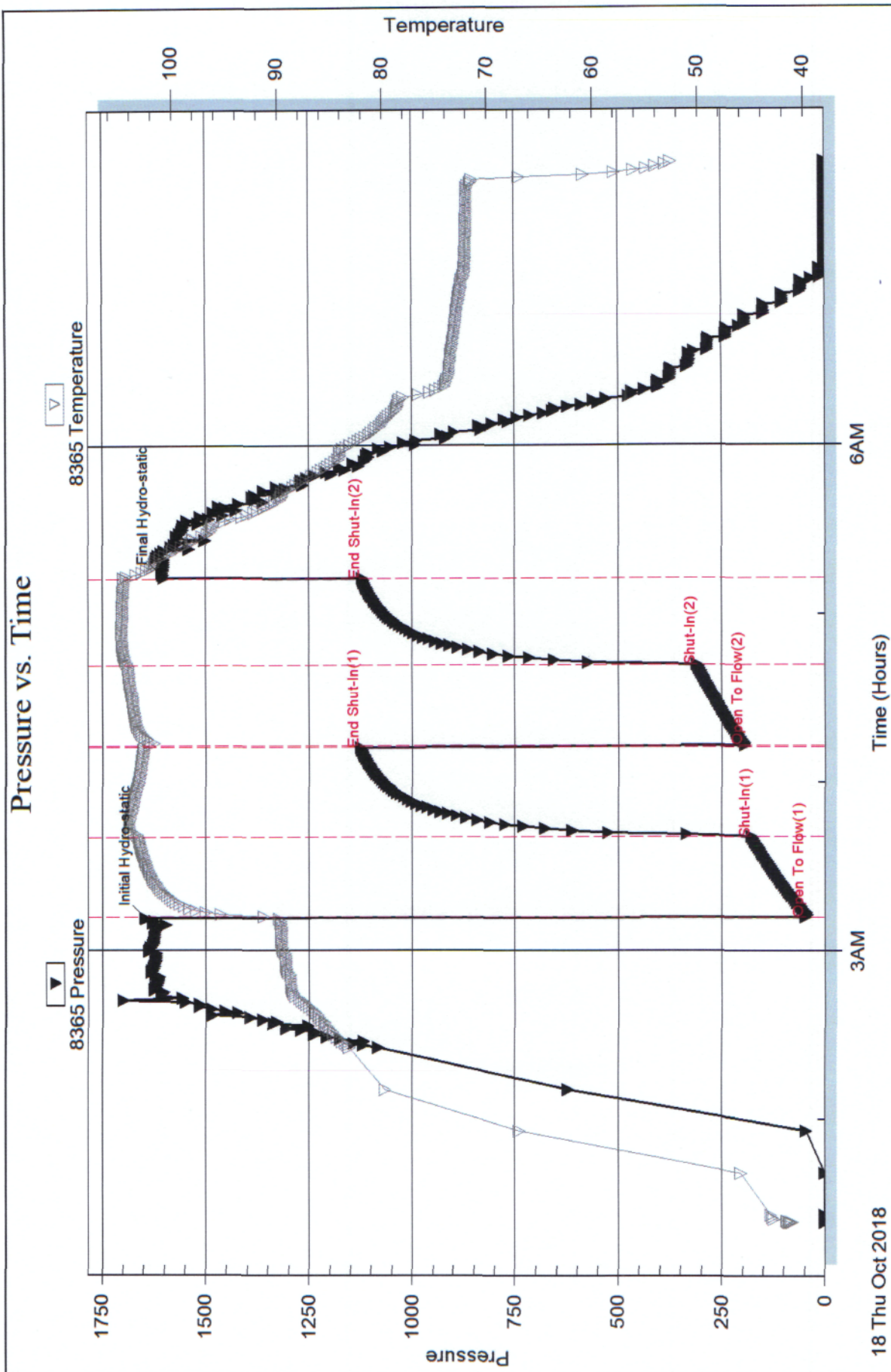
Num Gas Bombs: 0

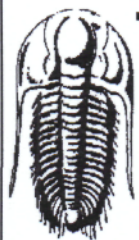
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston RD Ste 800
 Dallas TX 75225+5520
 ATTN: Wyatt Urban

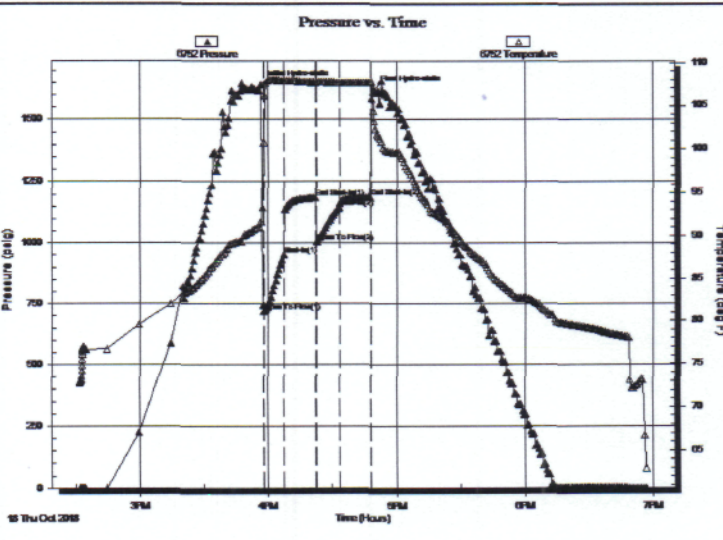
33-19s-12w Barton,KS
Wirtz #10
 Job Ticket: 63475 **DST#: 5**
 Test Start: 2018.10.18 @ 14:32:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:57:32
 Time Test Ended: 18:56:17
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swiney/Benny Mul
 Unit No: 72
 Interval: **3382.00 ft (KB) To 3390.00 ft (KB) (TVD)**
 Total Depth: 3390.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 1819.00 ft (KB)
 1811.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 1188.19 psig @ 3384.00 ft (KB) Capacity: psig
 Start Date: 2018.10.18 End Date: 2018.10.18 Last Calib.: 2018.10.18
 Start Time: 14:32:01 End Time: 18:57:02 Time On Btm: 2018.10.18 @ 15:56:47
 Time Off Btm: 2018.10.18 @ 16:49:32

TEST COMMENT: IFP Blow built to BOB in 30 sec.
 ISI No blow back
 FFP Blow built to BOB in 30 sec.
 FSI No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1640.76	91.64	Initial Hydro-static
1	716.48	100.80	Open To Flow (1)
11	953.72	107.86	Shut-In(1)
26	1186.13	107.69	End Shut-In(1)
27	1005.94	107.73	Open To Flow (2)
37	1143.71	107.66	Shut-In(2)
52	1188.19	107.61	End Shut-In(2)
53	1620.97	103.26	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
2511.00	SMCW M 5% W 95%	35.22

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston RD Ste 800
Dallas TX 75225+5520
ATTN: Wyatt Urban

33-19s-12w Barton,KS
Wirtz #10
Job Ticket: 63475 **DST#: 5**
Test Start: 2018.10.18 @ 14:32:00

Tool Information

Drill Pipe:	Length: 3377.00 ft	Diameter: 3.80 inches	Volume: 47.37 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 47.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3382.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	28.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3367.00	
Hydraulic tool	5.00			3372.00	
Top Packer	5.00			3377.00	
Packer	5.00			3382.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3383.00	
Recorder	1.00	6752	Outside	3384.00	
Anchor	3.00			3387.00	
Bullnose	3.00			3390.00	8.00 Anchor Tool

Total Tool Length: 28.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

33-19s-12w Barton,KS

8411 Preston RD Ste 800
Dallas TX 75225+5520

Wirtz #10

Job Ticket: 63475

DST#: 5

ATTN: Wyatt Urban

Test Start: 2018.10.18 @ 14:32:00

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:

14000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2511.00	SMCW M5% W 95%	35.223

Total Length: 2511.00 ft Total Volume: 35.223 bbl

Num Fluid Samples: 0

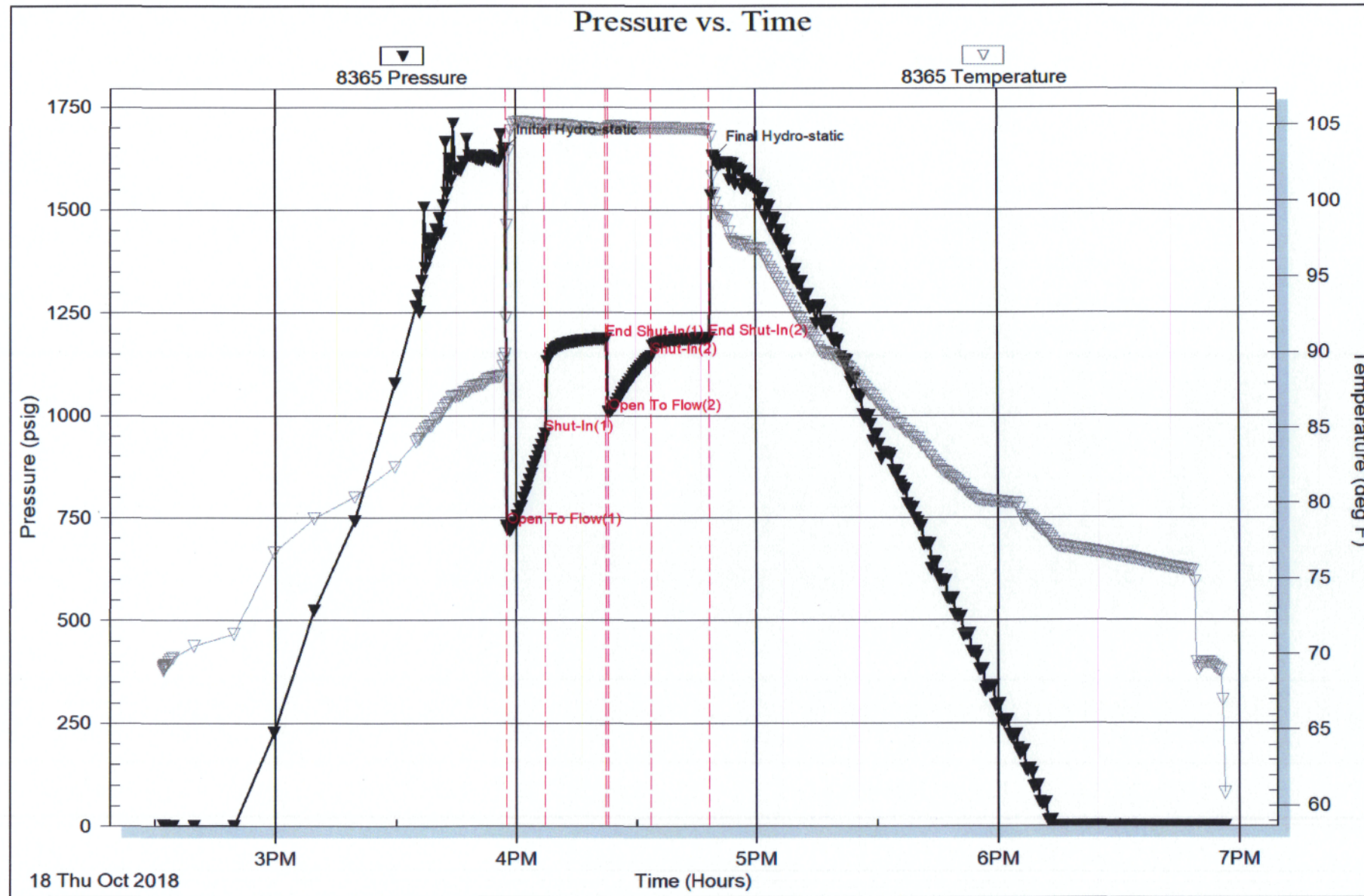
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .552 ohms @ 62 deg.



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. 1122

Date	10-19-18	Sec.	33	Twp.	19	Range	12	County	Barton	State	Ks	On Location		Finish	5:45 PM
------	----------	------	----	------	----	-------	----	--------	--------	-------	----	-------------	--	--------	---------

Location *Dartmouth Elevator - 1/45, 3/4 E, 3/4 In*

Lease	<i>Wirtz</i>	Well No.	<i>10</i>	Owner	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	<i>Southwind</i>	#	<i>3</i>	Charge To	<i>Main oil operations</i>
Type Job	<i>Completion</i>	T.D.	<i>3440'</i>	Street	
Hole Size	<i>7 7/8"</i>	Depth	<i>3428.67'</i>	City	
Csg.	<i>5 1/2" 14# New</i>	Depth		State	
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Depth		Cement Amount Ordered	<i>160 60/40 10% Salt 2% Gel 1/4# Pozal</i>
Cement Left in Csg.	<i>22.05'</i>	Shoe Joint	<i>22.05'</i>	Meas Line	
Displace	<i>83 BLS</i>				

EQUIPMENT

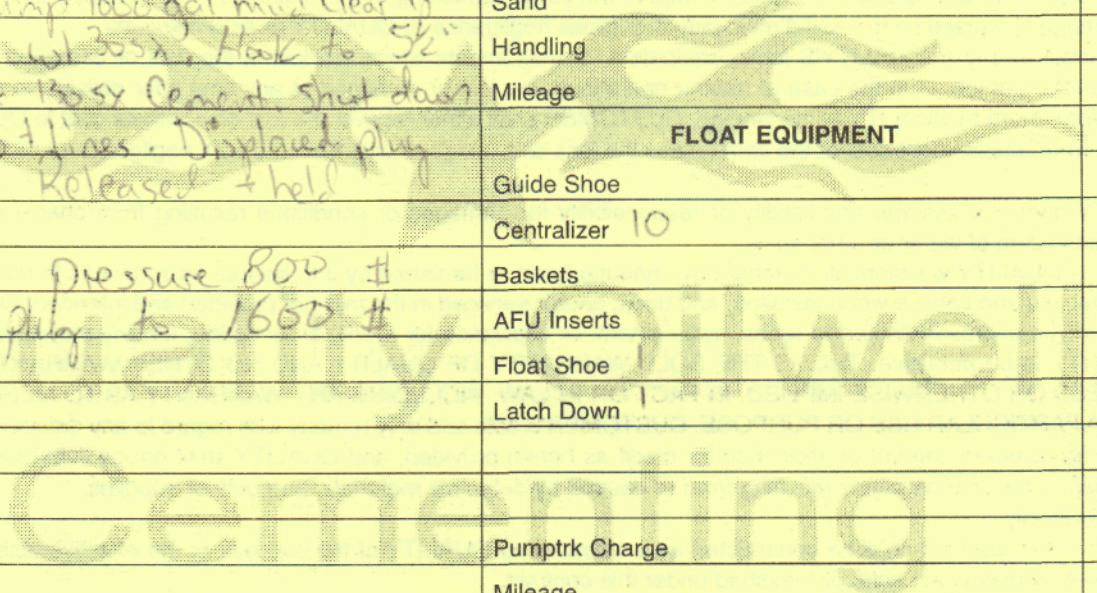
Pumptrk	<i>16</i>	No.		Cementer	<i>David</i>	Common
				Helper		
Bulktrk	<i>15</i>	No.		Driver	<i>Glenn</i>	Poz. Mix
				Driver		
Bulktrk	<i>p.u.</i>	No.		Driver	<i>Rice</i>	Gel.
				Driver		
						Calcium

JOB SERVICES & REMARKS

Remarks:		Hulls
Rat Hole		Salt
Mouse Hole		Flowseal
Centralizers	<i>1-8 10 +12</i>	Kol-Seal
Baskets	<i>pipe on bottom break Circulation</i>	Mud CLR 48
D/V or Port Collar	<i>pump 100 gal mud Clear 48</i>	CFL-117 or CD110 CAF 38
	<i>plug Rathole w/ 305x, Hark to 5 1/2"</i>	Sand
	<i>Casing mix 135x Cement, shut down</i>	Handling
	<i>wash pump + lines. Displaced plug</i>	Mileage
	<i>w/ 83 Bcs. Released + held</i>	FLOAT EQUIPMENT
		Guide Shoe
		Centralizer <i>10</i>
		Baskets
		AFU Inserts
		Float Shoe
		Latch Down <i>1</i>
		Pumptrk Charge
		Mileage

		Tax
		Discount
		Total Charge

X Signature *Chris [Signature]*



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. 1121

Date	10-12-18	Sec.	33	Twp.	19	Range	12	County	Barton	State	Ks	On Location	7:00 PM
------	----------	------	----	------	----	-------	----	--------	--------	-------	----	-------------	---------

Location Dartmouth elevator + 56 Hwy, 1/4 S, 3/4 E

Lease: Wirtz Well No. 10 Owner: State

Contractor: Southwind #3 To: Quality Oilwell Cementing, Inc.
Type Job: Surface You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size: 12 1/4" T.D. 631' Charge To: Main oil operations

Csg. 8 5/8" Depth: 631' Street:

Tbg. Size: Depth: City: State:

Tool: Depth: The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 20' Shoe Joint 20' Cement Amount Ordered 450 Sx 60/40 4% Ca 28 Gel 2# Fty seal

Meas. Line Displace 39 BUS Used 440

EQUIPMENT

Pumptrk 16 No. Cementer Lick Common 265

Bulktrk 19 No. Driver Doug Poz. Mix 175

Bulktrk 19 No. Driver Doug Gel. 9

Bulktrk 19 No. Driver Doug Calcium 20

JOB SERVICES & REMARKS

Remarks: Cement did Circulate Huffs:

Rat Hole: Used Salt:

Mouse Hole: Used Flowseal 240

Ceritral: 440 Sx Cement Kol-Seal:

Baskets: CFL-117 or CD110 CAF 38

D/V or Port Collar: Sand:

Handling 480 Mileage:

FLOAT EQUIPMENT

Guide Shoe rubber plug

Centralizer:

Baskets:

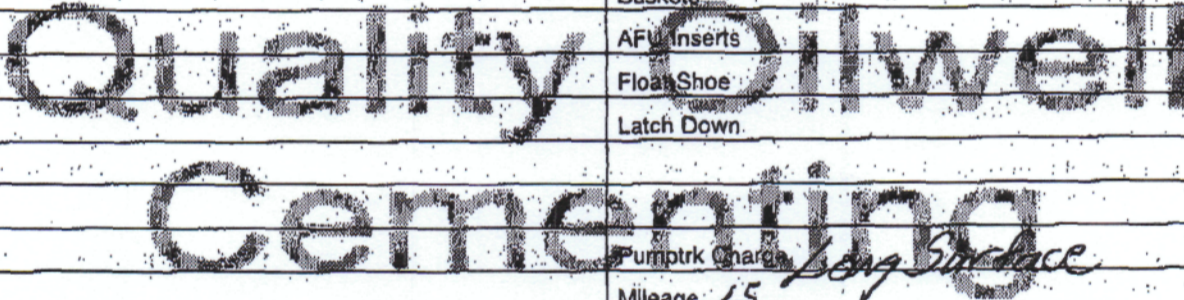
AFV Inserts:

Float Shoe:

Latch Down:

Pumptrk Charge Long Surface

Mileage 15



X Signature Joy Shree

Tax
Discount
Total Charge