

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) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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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	MORGENSTERN FAMILY CORP 1
Doc ID	1372020

Tops

Name	Top	Datum
Anhydrite	775	+1111
Heebner	3048	-1162
Totonto	3063	-1177
Douglas	3076	-1190
Brown Lime	3138	-1252
Lansing	3152	-1266
Base Kansas City	3377	-1491
Arbuckle	3387	-1501

JAMES C. MUSGROVE

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

Office (620) 588-4250

Res. Claflin (620) 587-3444

Mai Oil Operations
Morgenstern Family Corp #1
NW-SE-SW-NW (2184'FNL & 802'FWL)
Section 35-17s-13w
Barton County, Kansas

Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (rig #3)
Commenced: August 24, 2017
Completed: August 30, 2017
Elevation: 1886' K.B., 1884' D.F., 1878' G.L.
Casing program: Surface; 8 5/8" @ 454'
Production, 5 1/2" @ 3453'
Sample: Samples saved and examined 2800' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 2800' to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were four (4) Drill Stem Tests ran by Trilobite Testing Co.
Electric Log: By Eli Wireline Services, Dual Induction, Compensated Density/Neutron and Micro Log.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	775	+1111
Base Anhydrite	797	+1089
Heebner	3048	-1162
Toronto	3063	-1177
Douglas	3076	-1190
Brown Lime	3138	-1252
Lansing	3152	--1266
Base Kansas City	3377	-1491
Arbuckle	3377	-1501
Rotary Total Depth	3455	-1569
Log Total Depth	3456	-1570

(All tops and zones corrected to Electric Log Measurement)

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

TOPEKA SECTION

2968-2980' Limestone, white, gray, slightly fossiliferous, trace black tarry stain, no show of free oil and questionable odor in fresh samples.
2994-3004' Limestone, gray, white, finely crystalline, few medium crystalline, chalky, trace black stain, no show of free oil and no odor in fresh samples.

3008-3020' Limestone, gray, slightly fossiliferous, poor visible porosity, trace black to dark brown stain, no show of free oil and no odor in fresh samples.

TORONTO SECTION

3063-3076' Limestone, tan, oolitic; slightly cherty; poor visible porosity, no shows; trace limestone, tan, medium crystalline, poor porosity, trace brown spotty stain, no free oil and no odor in fresh samples.

LANSING SECTION

3152-3160' Limestone, tan, fossiliferous, scattered porosity, brown stain, and black stain, no show of free oil and faint odor in fresh samples.

3160-3170' Limestone, as above.

3183-3191' Limestone, gray, tan, fossiliferous in part; poorly developed, trace brown, black and gray stain, no free oil and faint odor in fresh samples.

3196-3200' Limestone, as above; poor visible porosity, no shows.

3200-3210' Limestone, white, oolitic, chalky in part; fair inter-crystalline and pinpoint porosity, brown stain, show of free oil and fair odor in fresh samples.

Drill Stem Test #1 **3168-3220**
(Log Depth 3170-3222)

Times: 30-30-45-60

Blow: Strong

Recovery: 90' muddy water, slightly show of oil
1180' water

Pressures: ISIP 777 psi
FSIP 719 psi
IFP 59-382 psi
FFP 375-593 psi
HSH 1519-1475 psi

3220-3232' Limestone, tan, finely crystalline, few fossiliferous, slightly cherty, plus gray oolitic chert.

3238-3252' Limestone, as above

3283-3292' Limestone, cream, tan, fine and medium crystalline, few oolitic, poorly developed porosity, trace brown stain, no show of free oil and no odor in fresh samples.

3298-3320' Limestone, tan, oolitic, sub-oomoldic, poorly developed porosity, trace brown stain, weak show of free oil and no odor.

3323-333' Limestone, as above, plus limestone, tan, fossiliferous, chalky in part, brown spotty stain, no show of free oil and no odor in fresh samples.

Drill Stem Test #2 **3271-3338**
(Log Depth **3273-3340**)

Times: 30-30-45-60

Blow: Strong

Recovery: 640' gas in pipe
402' very heavily oil and gas cut watery mud
(40% gas; 40% oil; 10% water; 10% mud)
186' oil and gas cut muddy water
(25% gas; 10% oil; 55% water; 10% mud)
248' Slightly oil cut muddy water
(1% oil; 99% water)

Pressures: ISIP 961 psi
FSIP 943 psi
IFP 35-176 psi
FFP 182-335 psi
HSH 1584-1554 psi

3350-3358' Limestone, tan, oolitic, fossiliferous, chalky, poor spotty light brown stain, no show of free oil and no odor in fresh samples.

ARBUCKLE SECTION

3387-3396' Dolomite, cream, white, finely crystalline, sucrosic, scattered pinpoint type porosity, brown spotty stain, show of free oil and faint odor in fresh samples.

Drill Stem Test #3 **3350-3394**
(Log Depth **3352-3396**)

Times: 30-30-45-45

Blow: Strong

Recovery: 120' gas in pipe
680' clean oil
372' gassy muddy oil
(25% gas; 60% oil; 15% mud)

Pressures: ISIP 1013 psi
FSIP 970 psi
IFP 43-201 psi
FFP 208-357 psi
HSH 1623-1609 psi

3396-3400' Dolomite, as above, plus white chert.

3400-3407' Dolomite, tan, white, fine and medium crystalline, fair inter-crystalline porosity, brown stain, show of free oil and odor in fresh samples plus white sucrosic dolomite; as above.

Mai Oil Operations
Morgenstern Family Corp #1
NW-SE-SW-NW (2184'FNL & 802'FWL)
Section 35-17s-13w
Barton County, Kansas

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Drill Stem Test #4 **3398-3405**
(Log Depth 3400-3407)

Times: 45-30-30-45

Blow: Weak to Good

Recovery: 10' clean oil
360' water

Pressures: ISIP 1048 psi
FSIP 1047 psi
IFP 18-115 psi
FFP 119-174 psi
HSH 1630-1599 psi

3407-3420' Dolomite, white and cream, finely crystalline, sucrosic, fair pinpoint porosity, trace poor stain, no show of free oil and faint odor in fresh samples; plus white, oolitic chert.

3420-3440' Dolomite, tan, medium crystalline, slightly cherty, poor visible porosity, black tarry stain, no show of free oil and no odor in fresh samples.

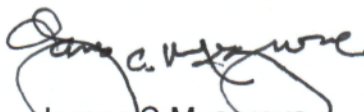
3440-3455' Dolomite, white, fine and medium crystalline, fair inter-crystalline to vuggy type porosity, no shows, plus chert, white, tan oolitic.

Rotary Total Depth 3455
Log Total Depth 3456

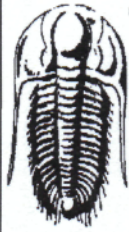
Recommendations:

5 1/2' production casing was set and cemented on the Mai Oil Operations, Morgenstern Family Corp #1.

Respectfully yours,


James C Musgrove
Petroleum Geologist





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

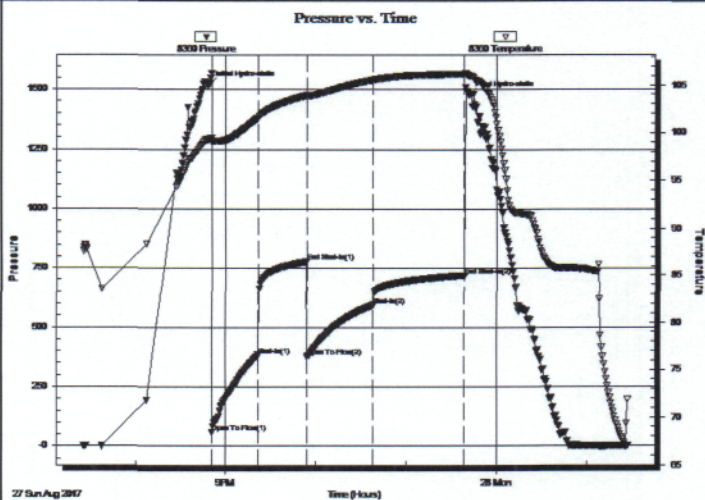
Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63018 **DST#: 1**
 Test Start: 2017.08.27 @ 19:25:10

GENERAL INFORMATION:

Formation: **LKC C-D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 20:50:50 Tester: Ray Schwager
 Time Test Ended: 01:27:34 Unit No: 77
 Interval: **3168.00 ft (KB) To 3220.00 ft (KB) (TVD)** Reference Elevations: 1886.00 ft (KB)
 Total Depth: 3220.00 ft (KB) (TVD) 1878.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8360 **Inside**
 Press@RunDepth: 593.84 psig @ 3170.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.27 End Date: 2017.08.28 Last Calib.: 2017.08.28
 Start Time: 19:25:10 End Time: 01:27:34 Time On Btm: 2017.08.27 @ 20:48:35
 Time Off Btm: 2017.08.27 @ 23:41:49

TEST COMMENT: 30-IFP-BOB in 2 min
 30-ISIP-no bl bk
 45-FFP-BOB in 10 min
 60-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1519.30	99.31	Initial Hydro-static
3	59.58	99.05	Open To Flow (1)
33	382.08	101.51	Shut-In(1)
66	777.76	103.89	End Shut-In(1)
66	375.38	103.74	Open To Flow (2)
110	593.84	105.55	Shut-In(2)
170	719.61	106.15	End Shut-In(2)
174	1475.98	105.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	MW 30%M70%W w/show of oil	1.26
1180.00	Water	16.55

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

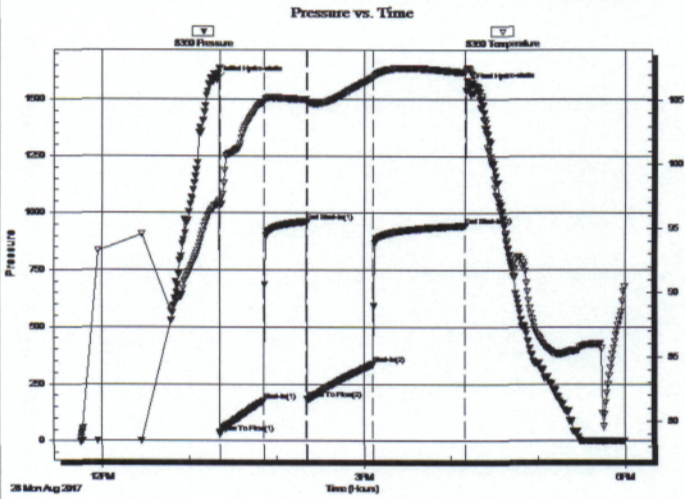
Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63019 DST#: 2
 Test Start: 2017.08.28 @ 11:45:50

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:21:30
 Time Test Ended: 17:59:29
 Interval: **3271.00 ft (KB) To 3338.00 ft (KB) (TVD)**
 Total Depth: 3338.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360 Inside
 Press@RunDepth: 335.64 psig @ 3277.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.28 End Date: 2017.08.28 Last Calib.: 2017.08.28
 Start Time: 11:45:50 End Time: 17:59:29 Time On Btm: 2017.08.28 @ 13:19:30
 Time Off Btm: 2017.08.28 @ 16:12:44

TEST COMMENT: 30-IFP-BOB in 3 min
 30-ISIP-no bl bk
 45-FFP-BOB in 7 min
 60-FSIP-4"bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1584.60	96.83	Initial Hydro-static
2	35.76	96.79	Open To Flow (1)
33	176.40	104.85	Shut-In(1)
62	961.38	105.07	End Shut-In(1)
62	182.63	104.80	Open To Flow (2)
107	335.64	106.76	Shut-In(2)
171	943.00	107.17	End Shut-In(2)
174	1554.93	107.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	640'GIP	0.00
402.00	GM&WCO 40%G40%O10%W10%M	5.64
186.00	GO&MCW 25%G10%O10%M55%W	2.61
248.00	SOCW 1%O99%W	3.48

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63020 DST#: 3
 Test Start: 2017.08.29 @ 02:05:40

GENERAL INFORMATION:

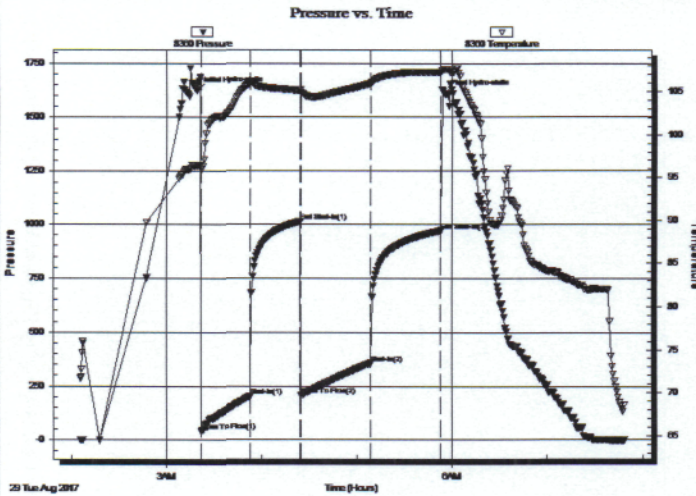
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:22:05
 Time Test Ended: 07:48:34
 Interval: **3350.00 ft (KB) To 3394.00 ft (KB) (TVD)**
 Total Depth: 3394.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360

Inside

Press@RunDepth: 357.84 psig @ 3358.00 ft (KB)
 Start Date: 2017.08.29 End Date: 2017.08.29 Capacity: 8000.00 psig
 Start Time: 02:05:40 End Time: 07:48:34 Last Calib.: 2017.08.29
 Time On Btm: 2017.08.29 @ 03:19:20
 Time Off Btm: 2017.08.29 @ 05:55:05

TEST COMMENT: 30-IFP-BOB in 4 min
 30-ISIP-no bl bk
 45-FFP-BOB in 7 min
 45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1623.68	96.45	Initial Hydro-static
3	43.27	95.98	Open To Flow (1)
34	201.64	106.05	Shut-In(1)
65	1013.70	105.17	End Shut-In(1)
66	208.66	104.91	Open To Flow (2)
110	357.84	105.98	Shut-In(2)
154	970.80	107.27	End Shut-In(2)
156	1609.47	107.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	120'GIP	0.00
680.00	CO	9.54
372.00	GMO 25%G15%M60%O	5.22

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63021 **DST#: 4**
 Test Start: 2017.08.29 @ 14:05:08

GENERAL INFORMATION:

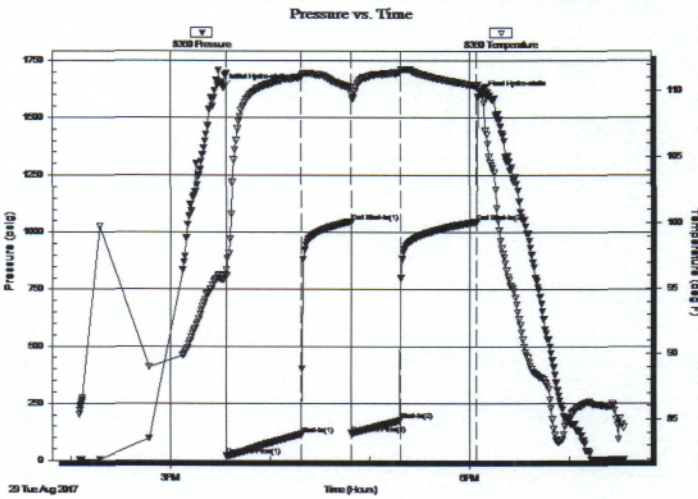
Formation: **Arbucke**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:33:48
 Time Test Ended: 19:32:47
 Interval: **3398.00 ft (KB) To 3405.00 ft (KB) (TVD)**
 Total Depth: 3405.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360

Inside

Press@RunDepth: 174.91 psig @ 3399.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.29 End Date: 2017.08.29 Last Calib.: 2017.08.29
 Start Time: 14:05:08 End Time: 19:32:47 Time On Btm: 2017.08.29 @ 15:32:03
 Time Off Btm: 2017.08.29 @ 18:07:33

TEST COMMENT: 45--IFP-w k to BOB in 25 min
 30-ISIP-no bl bk
 30-FFP- w k to BOB in 27 min
 45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1630.78	95.66	Initial Hydro-static
2	18.90	95.96	Open To Flow (1)
47	115.34	111.05	Shut-In(1)
77	1048.82	110.23	End Shut-In(1)
77	119.85	109.79	Open To Flow (2)
106	174.91	111.38	Shut-In(2)
153	1047.55	110.34	End Shut-In(2)
156	1599.42	109.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	CO	0.14
360.00	Water	5.05

* Recovery from multiple tests

Gas Rates

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

QUALITY OILWELL CEMENTING, INC.

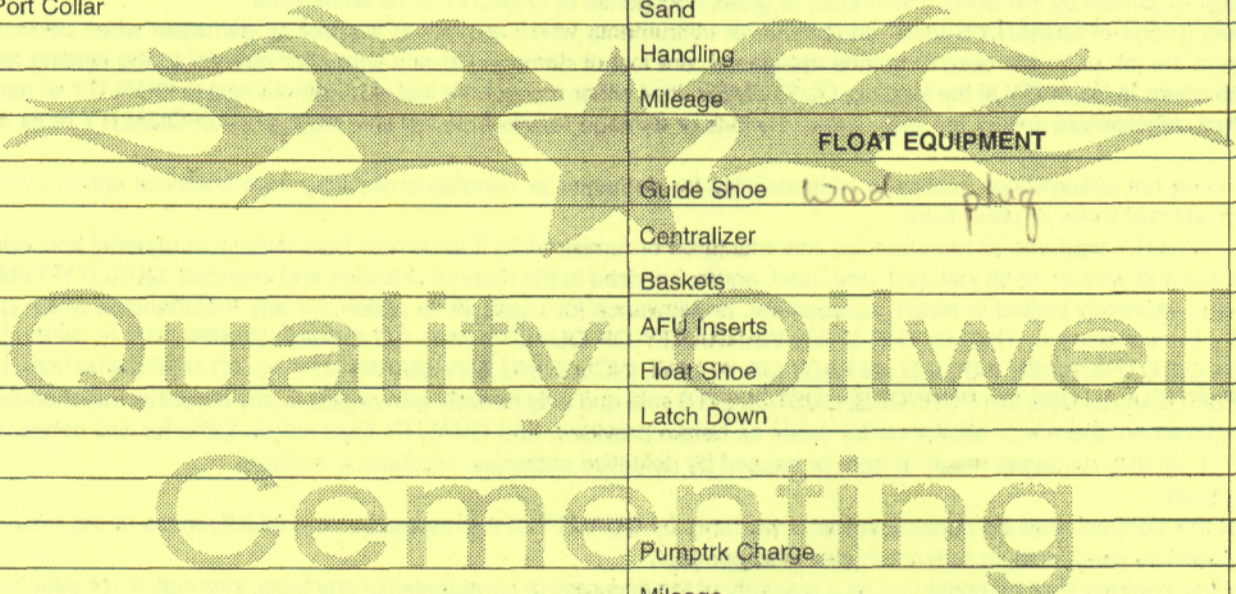
Federal Tax I.D.# 20-2886107

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

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

No. 291

Date	8-24-17	Sec.	35	Twp.	17	Range	13	County	Barton	State	KS	On Location	Finish	10:00PM	
Lease								Location		Morgensern Family Corp					
Well No.								1		Owner					
Contractor								Southwind #3		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.					
Type Job								Surface		Charge To					
Hole Size								12 1/4"		T.D.		454'			
Csg.								8 3/8"		Depth		454'			
Tbg. Size										Street					
Tool										City		State			
Cement Left in Csg.								15'		Shoe Joint		15'			
Meas Line								Displace		28 Bcs					
EQUIPMENT								Common							
Pumptrk		18		No.		Cementer		Craig		Poz. Mix					
Bulktrk		9		No.		Driver		Tony		Gel.					
Bulktrk		pu.		No.		Driver		Rick		Calcium					
JOB SERVICES & REMARKS								Hulls							
Remarks:								Cement did Circulate							
Rat Hole								Salt							
Mouse Hole								Flowseal							
Centralizers								Kol-Seal							
Baskets								Mud CLR 48							
D/V or Port Collar								CFL-117 or CD110 CAF 38							
								Sand							
								Handling							
								Mileage							
FLOAT EQUIPMENT															
								Guide Shoe							
								Wood plug							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
X Signature								Joy Driver							



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. 295

Date	8-30-17	Sec.	35	Twp.	17	Range	13	County	Barton	State	Ks	On Location		Finish	NOON 6:00
------	---------	------	----	------	----	-------	----	--------	--------	-------	----	-------------	--	--------	--------------

Lease	Morgenstern Family Corp	Well No.	1	Location	Hoisington - 2E 1/2N, E15
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Contractor	Southwind #3	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.
------------	--------------	-------	--

Type Job	Logging	Charge To	Maioil operations
----------	---------	-----------	-------------------

Hole Size	7 7/8"	T.D.	3455'
Csg.	5 1/2" 14# used	Depth	3453'

Tbg. Size		Depth		City		State	
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			

Cement Left in Csg.	33.05'	Shoe Joint	33.05'	Cement Amount Ordered	160 60/40 10% Salt 2% Gel 1/4# Flucel
---------------------	--------	------------	--------	-----------------------	---------------------------------------

Meas Line		Displace	83 1/2 Bcs	1000 gal mud Clear 48
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EQUIPMENT

Pumptrk	16	No.	Cementer		Common
			Helper		
Bulktrk		No.	Driver		Poz. Mix
			Driver	Genn	
Bulktrk	pu.	No.	Driver		Gel.
			Driver	Rick	
			Driver		Calcium

JOB SERVICES & REMARKS

Remarks:		Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	
Centralizers	1-9, 13	Kol-Seal	
Baskets	pipe on bottom break Circulation	Mud CLR 48	
D/V or Port Collar	pump 1000 gal mud Clear 48	CFL-117 or CD110 CAF 38	
plug Rathole	w/ 305x Cement 3/2"	Sand	
	w/ 1305x Cement. shut down wash	Handling	
	pump + lines. Displaced plug w/ 83 1/2 Bcs	Mileage	
	of New. Released + held		

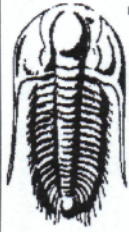
FLOAT EQUIPMENT

Lift pressure	650 #	Guide Shoe	
Land plug to	1500 #	Centralizer	10
		Baskets	
		AFU Inserts	
		Float Shoe	1
		Latch Down	1

		Pumptrk Charge	
		Mileage	

		Tax	
		Discount	
		Total Charge	

X Signature *[Handwritten Signature]*



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

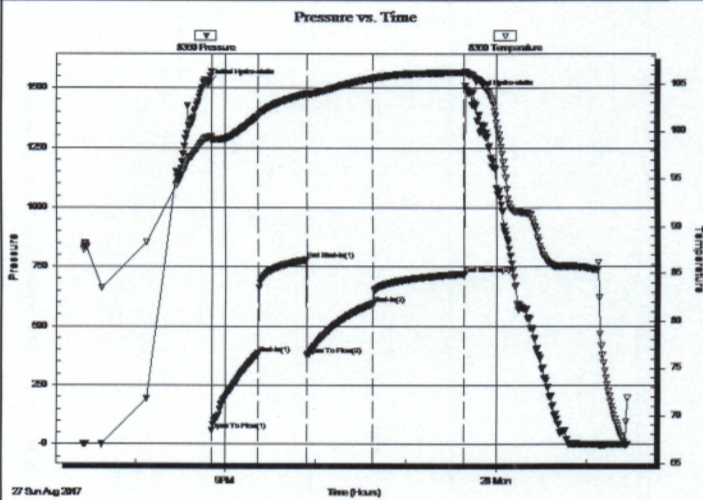
Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63018 **DST#: 1**
 Test Start: 2017.08.27 @ 19:25:10

GENERAL INFORMATION:

Formation: **LKC C-D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 20:50:50 Tester: Ray Schwager
 Time Test Ended: 01:27:34 Unit No: 77
 Interval: **3168.00 ft (KB) To 3220.00 ft (KB) (TVD)** Reference Elevations: 1886.00 ft (KB)
 Total Depth: 3220.00 ft (KB) (TVD) 1878.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8360 Inside
 Press@RunDepth: 593.84 psig @ 3170.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.27 End Date: 2017.08.28 Last Calib.: 2017.08.28
 Start Time: 19:25:10 End Time: 01:27:34 Time On Btm: 2017.08.27 @ 20:48:35
 Time Off Btm: 2017.08.27 @ 23:41:49

TEST COMMENT: 30-IFP-BOB in 2 min
 30-ISIP-no bl bk
 45-FFP-BOB in 10 min
 60-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1519.30	99.31	Initial Hydro-static
3	59.58	99.05	Open To Flow (1)
33	382.08	101.51	Shut-In(1)
66	777.76	103.89	End Shut-In(1)
66	375.38	103.74	Open To Flow (2)
110	593.84	105.55	Shut-In(2)
170	719.61	106.15	End Shut-In(2)
174	1475.98	105.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	MW 30%M70%W w/show of oil	1.26
1180.00	Water	16.55

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: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63018 **DST#: 1**
Test Start: 2017.08.27 @ 19:25:10

Tool Information

Drill Pipe:	Length: 3173.00 ft	Diameter: 3.80 inches	Volume: 44.51 bbl	Tool Weight: 2200.00 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: 45000.00 lb
			<u>Total Volume: 44.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3168.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3148.00	
Shut In Tool	5.00			3153.00	
Hydraulic tool	5.00			3158.00	
Packer	5.00			3163.00	21.00 Bottom Of Top Packer
Packer	5.00			3168.00	
Stubb	1.00			3169.00	
Perforations	1.00			3170.00	
Recorder	0.00	8360	Inside	3170.00	
Recorder	0.00	8673	Outside	3170.00	
Blank Spacing	32.00			3202.00	
Perforations	15.00			3217.00	
Bullnose	3.00			3220.00	52.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Rd STE 800
Dallas TX 75225-5520
ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63018 **DST#: 1**
Test Start: 2017.08.27 @ 19:25:10

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:	65000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.15 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	MV 30%M70%W w /show of oil	1.262
1180.00	Water	16.552

Total Length: 1270.00 ft Total Volume: 17.814 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW .11@75F

Serial #: 8360

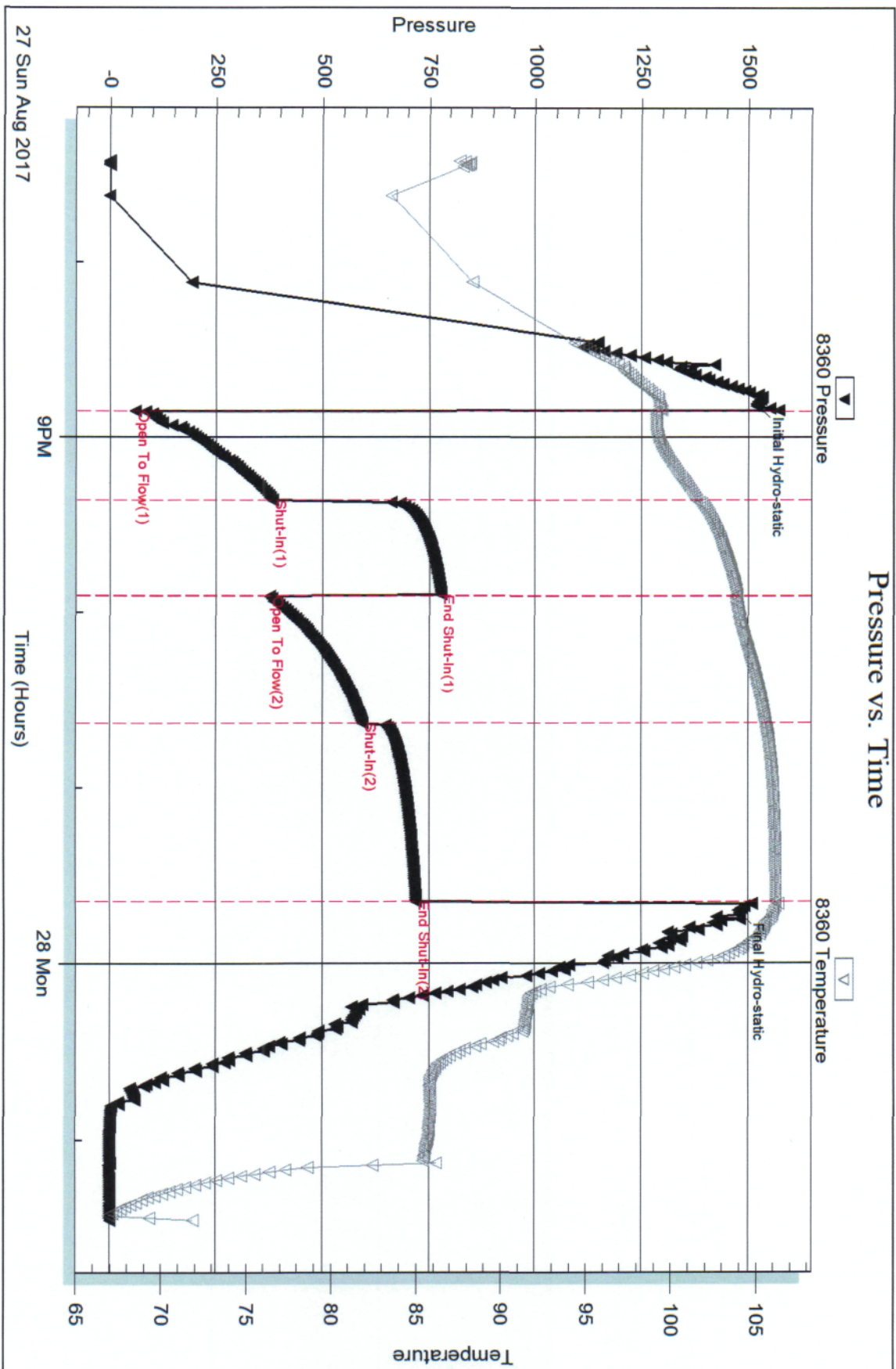
Inside

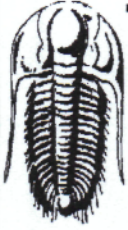
Mai Oil Operations Inc

35-17s-13w Barton,KS

DST Test Number: 1

Pressure vs. Time





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63019 **DST#: 2**
 Test Start: 2017.08.28 @ 11:45:50

GENERAL INFORMATION:

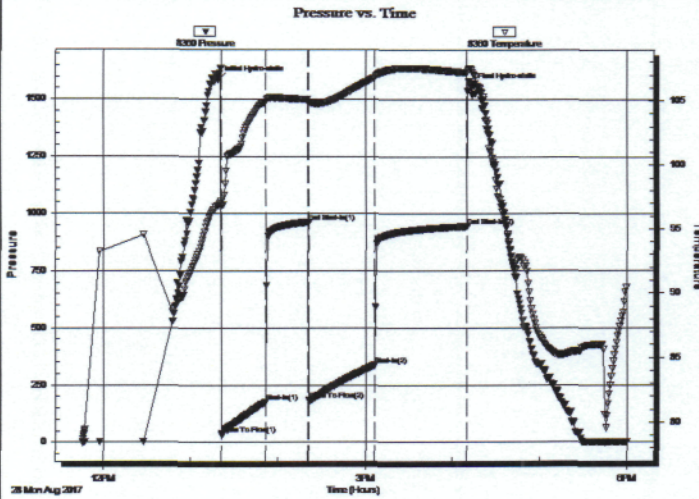
Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:21:30
 Time Test Ended: 17:59:29
 Interval: **3271.00 ft (KB) To 3338.00 ft (KB) (TVD)**
 Total Depth: 3338.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360

Inside

Press@RunDepth: 335.64 psig @ 3277.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.28 End Date: 2017.08.28 Last Calib.: 2017.08.28
 Start Time: 11:45:50 End Time: 17:59:29 Time On Btm: 2017.08.28 @ 13:19:30
 Time Off Btm: 2017.08.28 @ 16:12:44

TEST COMMENT: 30-IFP-BOB in 3 min
 30-ISIP-no bl bk
 45-FFP-BOB in 7 min
 60-FSIP-4"bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1584.60	96.83	Initial Hydro-static
2	35.76	96.79	Open To Flow (1)
33	176.40	104.85	Shut-In(1)
62	961.38	105.07	End Shut-In(1)
62	182.63	104.80	Open To Flow (2)
107	335.64	106.76	Shut-In(2)
171	943.00	107.17	End Shut-In(2)
174	1554.93	107.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	640'GIP	0.00
402.00	GM&WCO 40%G40%O10%W10%M	5.64
186.00	GO&MCW 25%G10%O10%M55%W	2.61
248.00	SOCW 1%O99%W	3.48

* Recovery from multiple tests

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: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63019 DST#: 2
Test Start: 2017.08.28 @ 11:45:50

Tool Information

Drill Pipe:	Length: 3262.00 ft	Diameter: 3.80 inches	Volume: 45.76 bbl	Tool Weight: 2200.00 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: 50000.00 lb
			<u>Total Volume: 45.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3271.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.00 ft			
Tool Length:	88.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3251.00	
Shut In Tool	5.00			3256.00	
Hydraulic tool	5.00			3261.00	
Packer	5.00			3266.00	21.00 Bottom Of Top Packer
Packer	5.00			3271.00	
Stubb	1.00			3272.00	
Perforations	5.00			3277.00	
Recorder	0.00	8360	Inside	3277.00	
Recorder	0.00	8673	Outside	3277.00	
Blank Spacing	33.00			3310.00	
Perforations	25.00			3335.00	
Bullnose	3.00			3338.00	67.00 Bottom Packers & Anchor

Total Tool Length: 88.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Rd STE 800
Dallas TX 75225-5520
ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63019 **DST#: 2**
Test Start: 2017.08.28 @ 11:45:50

Mud and Cushion Information

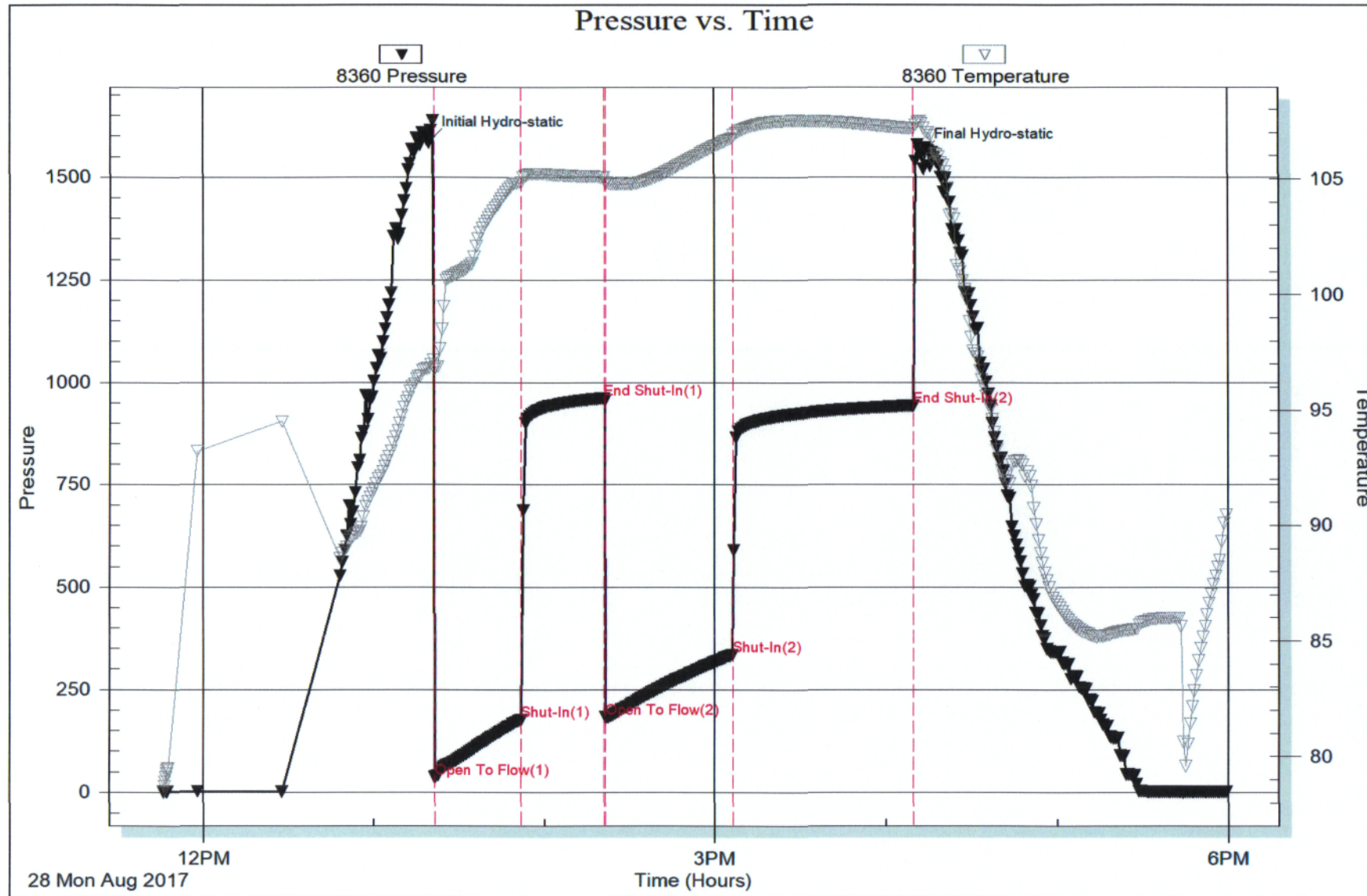
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	70000 ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.92 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6000.00 ppm			
Filter Cake: 1.00 inches			

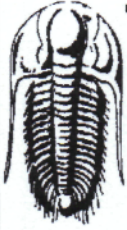
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	640'GIP	0.000
402.00	GM&WCO 40%G40%O10%W10%M	5.639
186.00	GO&MCW 25%G10%O10%M55%W	2.609
248.00	SOCW 1%O99%W	3.479

Total Length: 836.00 ft Total Volume: 11.727 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW .10@75F





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd STE 800
 Dallas TX 75225-5520
 ATTN: Jim Musgrove

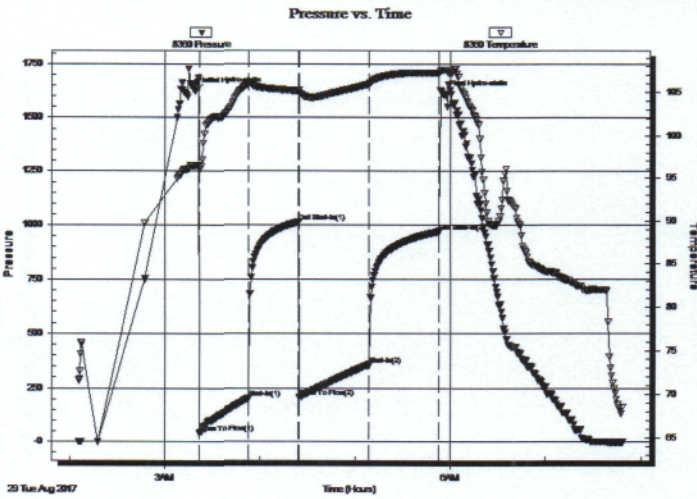
Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63020 DST#: 3
 Test Start: 2017.08.29 @ 02:05:40

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:22:05
 Time Test Ended: 07:48:34
 Interval: **3350.00 ft (KB) To 3394.00 ft (KB) (TVD)**
 Total Depth: 3394.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360 Inside
 Press@RunDepth: 357.84 psig @ 3358.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.29 End Date: 2017.08.29 Last Calib.: 2017.08.29
 Start Time: 02:05:40 End Time: 07:48:34 Time On Btm: 2017.08.29 @ 03:19:20
 Time Off Btm: 2017.08.29 @ 05:55:05

TEST COMMENT: 30-IFP-BOB in 4 min
 30-ISIP-no bl bk
 45-FFP-BOB in 7 min
 45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1623.68	96.45	Initial Hydro-static
3	43.27	95.98	Open To Flow (1)
34	201.64	106.05	Shut-In(1)
65	1013.70	105.17	End Shut-In(1)
66	208.66	104.91	Open To Flow (2)
110	357.84	105.98	Shut-In(2)
154	970.80	107.27	End Shut-In(2)
156	1609.47	107.60	Final Hydro-static

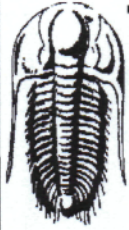
Recovery

Length (ft)	Description	Volume (bbl)
0.00	120'GIP	0.00
680.00	CO	9.54
372.00	GMO 25%G15%M60%O	5.22

* Recovery from multiple tests

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: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63020 DST#: 3
Test Start: 2017.08.29 @ 02:05:40

Tool Information

Drill Pipe:	Length: 3359.00 ft	Diameter: 3.80 inches	Volume: 47.12 bbl	Tool Weight: 2200.00 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: 45000.00 lb
			<u>Total Volume: 47.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 32000.00 lb
Depth to Top Packer:	3350.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3330.00	
Shut In Tool	5.00			3335.00	
Hydraulic tool	5.00			3340.00	
Packer	5.00			3345.00	21.00 Bottom Of Top Packer
Packer	5.00			3350.00	
Stubb	1.00			3351.00	
Perforations	7.00			3358.00	
Recorder	0.00	8360	Inside	3358.00	
Recorder	0.00	8673	Outside	3358.00	
Blank Spacing	33.00			3391.00	
Bullhose	3.00			3394.00	44.00 Bottom Packers & Anchor

Total Tool Length: 65.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Rd STE 800
Dallas TX 75225-5520
ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63020 DST#: 3
Test Start: 2017.08.29 @ 02:05:40

Mud and Cushion Information

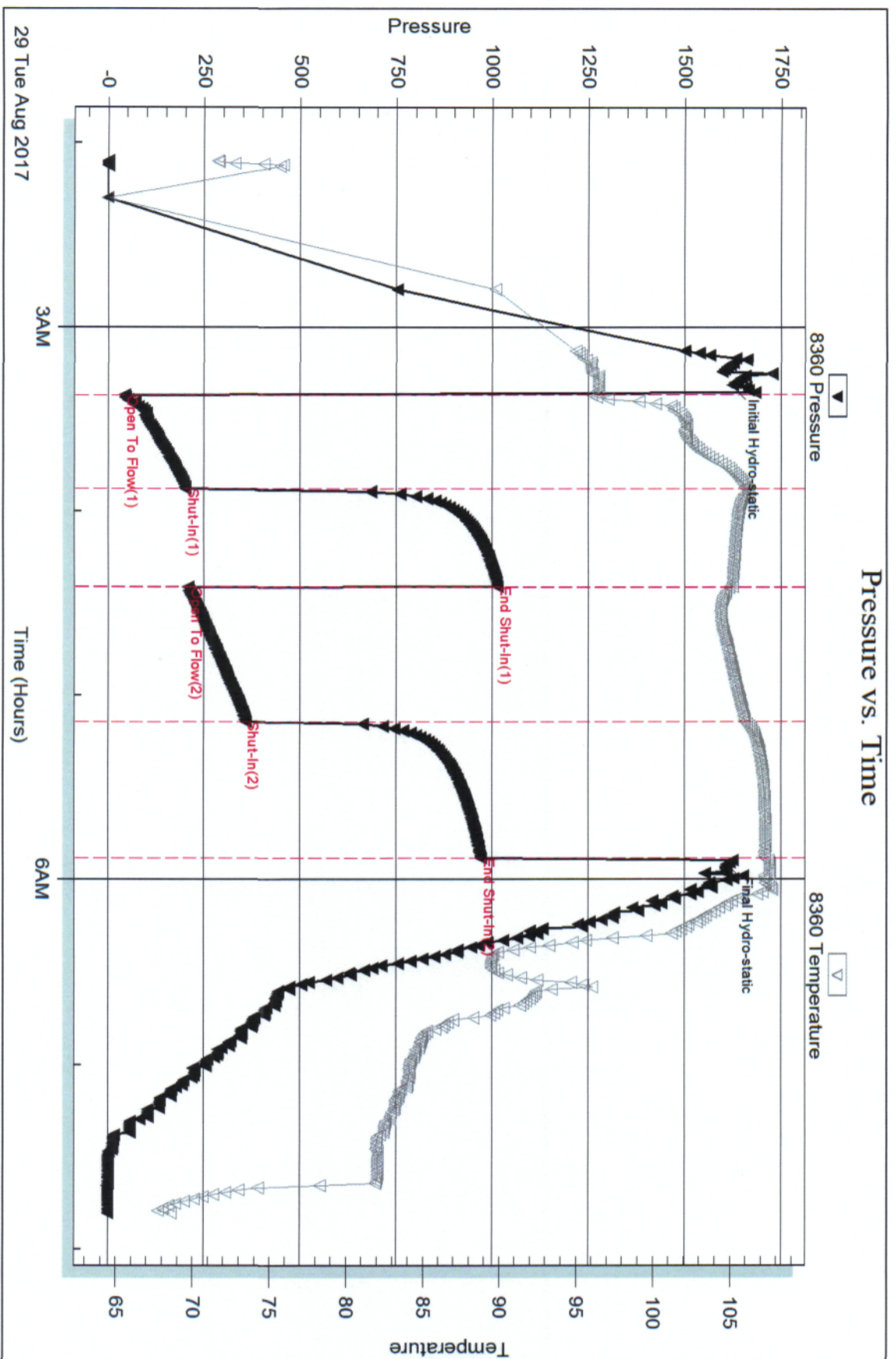
Mud Type: Gel Chem	Cushion Type:	Oil API: 40 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.94 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 6000.00 ppm		
Filter Cake: 1.00 inches		

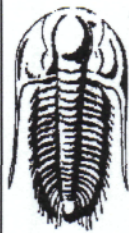
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	120'GIP	0.000
680.00	CO	9.539
372.00	GMO 25%G15%M60%O	5.218

Total Length: 1052.00 ft Total Volume: 14.757 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: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
 Job Ticket: 63021 DST#: 4
 Test Start: 2017.08.29 @ 14:05:08

GENERAL INFORMATION:

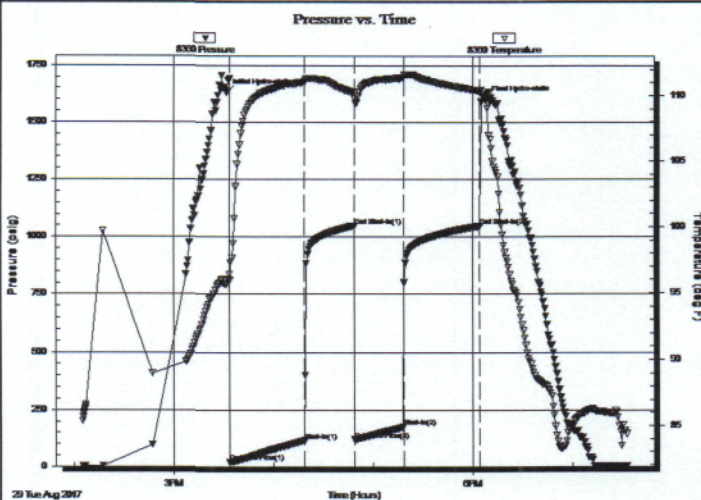
Formation: **Arbucke**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:33:48
 Time Test Ended: 19:32:47
 Interval: **3398.00 ft (KB) To 3405.00 ft (KB) (TVD)**
 Total Depth: 3405.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1886.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8360

Inside

Press@RunDepth: 174.91 psig @ 3399.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.29 End Date: 2017.08.29 Last Calib.: 2017.08.29
 Start Time: 14:05:08 End Time: 19:32:47 Time On Btm: 2017.08.29 @ 15:32:03
 Time Off Btm: 2017.08.29 @ 18:07:33

TEST COMMENT: 45--IFP-w k to BOB in 25 min
 30-ISIP-no bl bk
 30-FFP- w k to BOB in 27 min
 45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1630.78	95.66	Initial Hydro-static
2	18.90	95.96	Open To Flow (1)
47	115.34	111.05	Shut-In(1)
77	1048.82	110.23	End Shut-In(1)
77	119.85	109.79	Open To Flow (2)
106	174.91	111.38	Shut-In(2)
153	1047.55	110.34	End Shut-In(2)
156	1599.42	109.78	Final Hydro-static

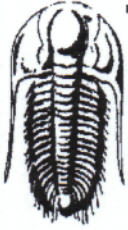
Recovery

Length (ft)	Description	Volume (bbl)
10.00	CO	0.14
360.00	Water	5.05

* Recovery from multiple tests

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: Jim Musgrove

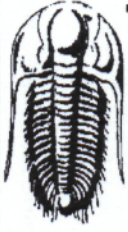
Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63021 DST#: 4
Test Start: 2017.08.29 @ 14:05:08

Tool Information

Drill Pipe:	Length: 3391.00 ft	Diameter: 3.80 inches	Volume: 47.57 bbl	Tool Weight: 2200.00 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: 45000.00 lb
			<u>Total Volume: 47.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 32000.00 lb
Depth to Top Packer:	3398.00 ft			Final 33000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 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
Change Over Sub	1.00			3378.00	
Shut In Tool	5.00			3383.00	
Hydraulic tool	5.00			3388.00	
Packer	5.00			3393.00	21.00 Bottom Of Top Packer
Packer	5.00			3398.00	
Stubb	1.00			3399.00	
Recorder	0.00	8360	Inside	3399.00	
Recorder	0.00	8673	Outside	3399.00	
Perforations	3.00			3402.00	
Bullnose	3.00			3405.00	7.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Rd STE 800
Dallas TX 75225-5520
ATTN: Jim Musgrove

Morgenstern Family Corp #1
35-17s-13w Barton,KS
Job Ticket: 63021 **DST#: 4**
Test Start: 2017.08.29 @ 14:05:08

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:	28000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.77 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	CO	0.140
360.00	Water	5.050

Total Length: 370.00 ft Total Volume: 5.190 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW .25@65F

