

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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Musgrove

Petroleum Geology
212 Main Street, Claflin KS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>Mai Oil Operations</u>	ELEVATIONS
LEASE <u>Herl "A" #8</u>	KB <u>1964'</u>
FIELD <u>Herl</u>	DF _____
LOCATION <u>W2-SW-NE-SE (1650' FSL & 1055' FEL)</u>	GL <u>1956'</u>
SEC <u>28</u> TWSP <u>14S</u> RGE <u>17W</u>	Measurements Are All From <u>KB</u>
COUNTY <u>Ellis</u> STATE <u>Kansas</u>	
CONTRACTOR <u>Southwind Drilling (Rig #3)</u>	CASING SURFACE <u>8 5/8" @ 1107'</u>
SPUD <u>06/15/2018</u> COMP <u>06/21/2018</u>	PRODUCTION <u>None</u>
RTD <u>3545'</u> LTD <u>-no log-</u>	ELECTRICAL SURVEYS <u>None</u>
MUD UP <u>2817'</u> TYPE MUD <u>Chemical</u>	

SAMPLES SAVED FROM 2850' TO RTD

DRILLING TIME KEPT FROM 2850' TO RTD

SAMPLES EXAMINED FROM 2900' TO RTD

GEOLOGICAL SUPERVISION FROM 2900' TO RTD

GEOLOGIST ON WELL Jim Musgrove

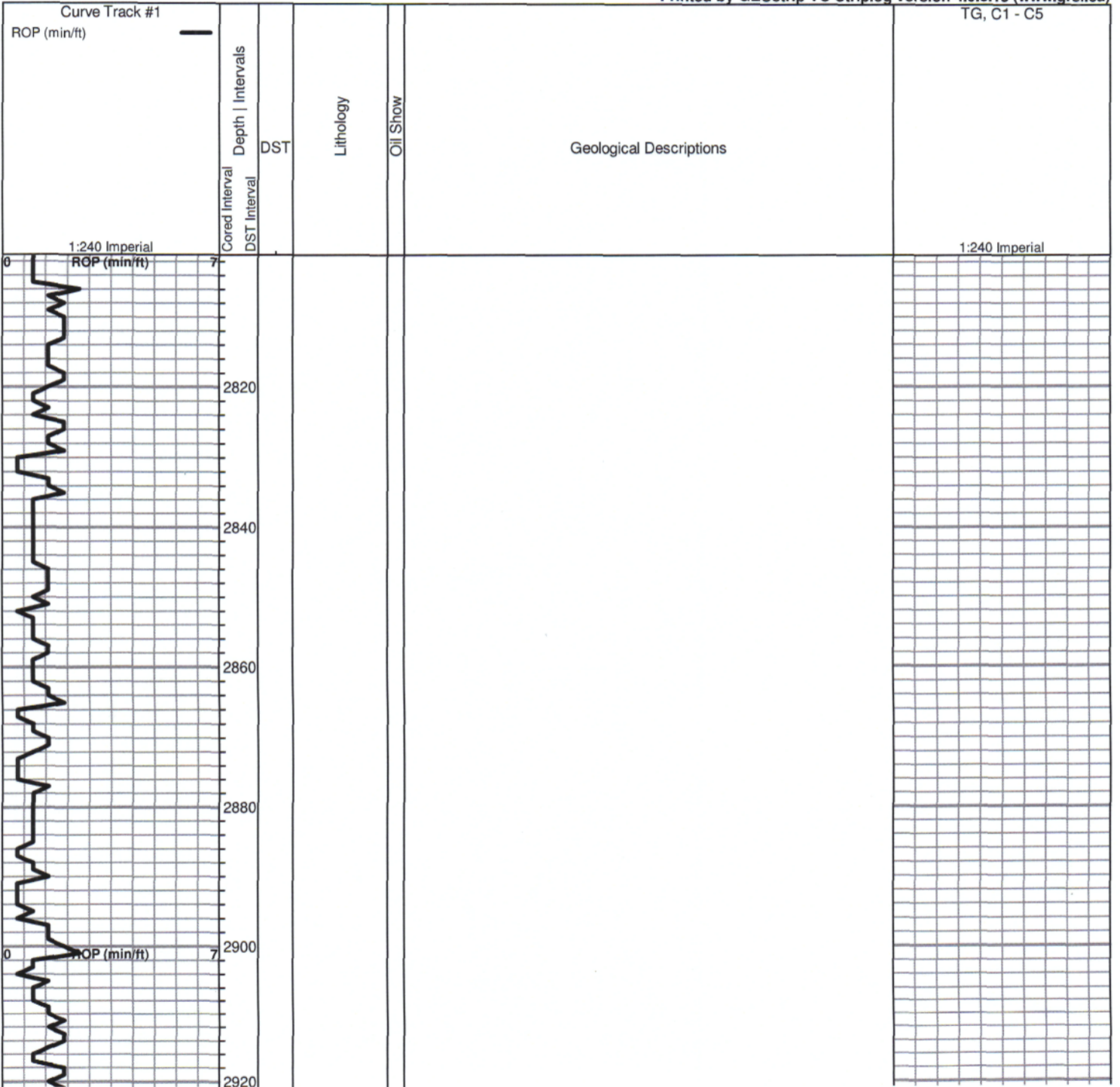
FORMATION TOPS	LOG	SAMPLES				
Anhydrite		1094 (+870)				
Base Anhydrite		1131 (+833)				
Heebner		3173 (-1209)				
Toronto		3193 (-1229)				
Lansing		3222 (-1258)				
Base Kansas City		3443 (-1479)				
					28	

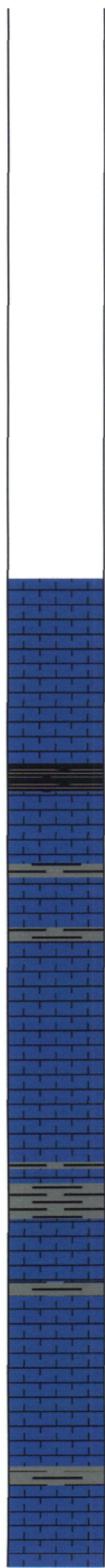
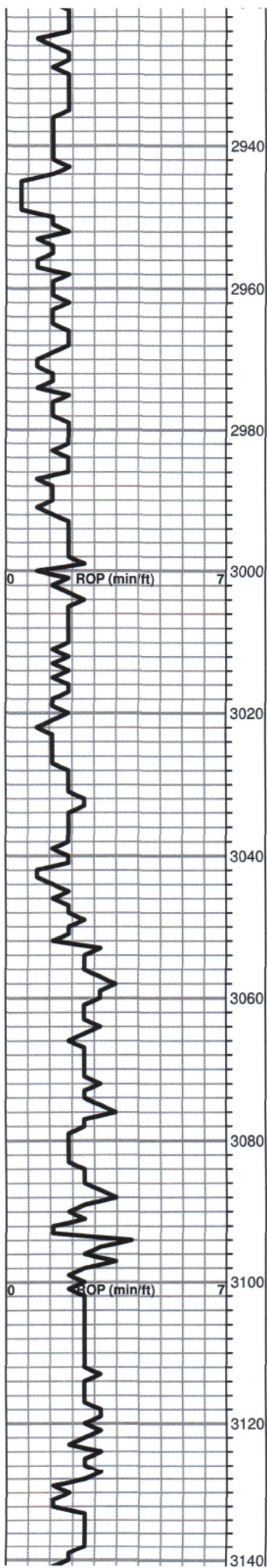
Conglomerate	3460	(-1496)	<table border="1"> <tr> <td></td> <td></td> <td></td> <td>X</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				X								
				X											
Arbuckle	3505	(-1541)													
RTD	3545	(-1581)													

LEGEND

Oil Show ● Good Show ● Fair Show ○ Poor Show ○ Spotted or Trace ○ Questionable Strn D Dead Oil Strn ■ Fluorescence * Gas	DST ■ DST Int ■ DST alt ■ Core tail pipe
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LS, gry, white, chalky, poor vis. porosity, no shows

a/a

Sh, black carb

LS, white, gry, fxl, chalky, scattered p.p porosity, no shows

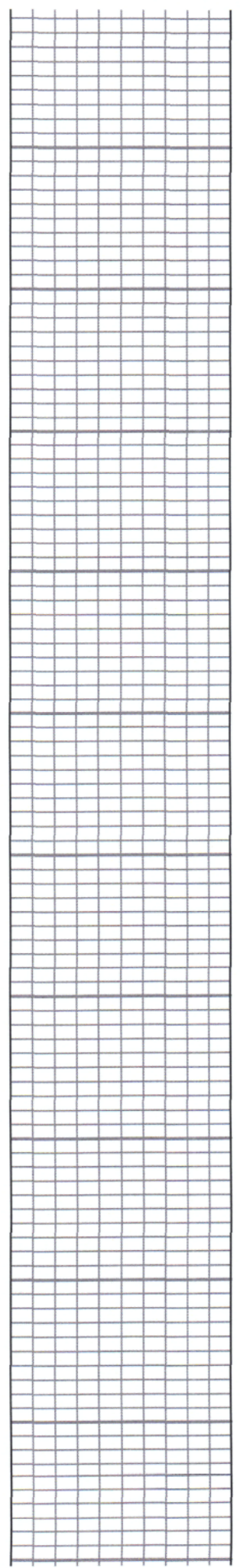
LS, a/a

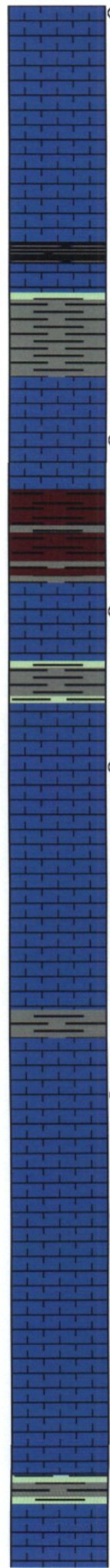
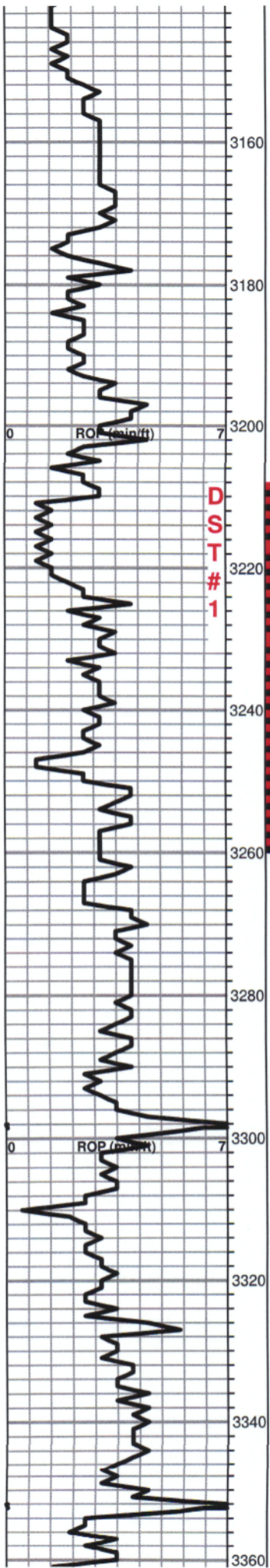
LS, gry, white, fxl, gran., slightly chalky, no shows

Sh, coffee brown / blk .

LS, gry, white, fxl, slightly chalky, no shows

LS, a/a, + gry, coal blk boney chert





LS, tan, buff, fxl, foss, scattered porosity, brn stain, tr. fo, ??? odor

LS, gry, white, fxl, chlky, + gry chert

Heebner 3173.0 (-1209.0)
Sh, black carb

Sh, silty, gry, mica.

Toronto 3193.0 (-1234.0)
LS, gry, white, fxl, chalky, poor vis. porosity, tr. brn stain, nsfo, no odor

Sh. gry, maroon

Lansing 3222.0 (-1258.0)
LS, white, fxl, slightly chalky, scattered p.p. porosity, brown/ blk stain, tr. fo, no odor, tr. soft green sh. & maroon sh.

LS, white/ cream, ool, sub oom, slightly chalky, fair poroisty stain, tr. fo & faint odor

LS, white/gry, fxl, chalky, poor v is. porosity, tr. white & gry chert

LS, white/gry, ool/ foss, chlky in pt, poor vis. porosity

LS, gry, ool, chalky, brown stain, nsfo, no odor

LS, white, cream, fxl, few sub oom, chalky tr. stain, nsfo, no odor

LS, white/ gry, chalky --> cherty poor vis. porosity, no shows

Sh, gry, green-black

DST# 1 3200-3260
30-30-45-45

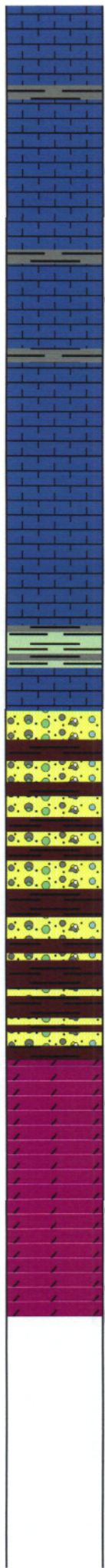
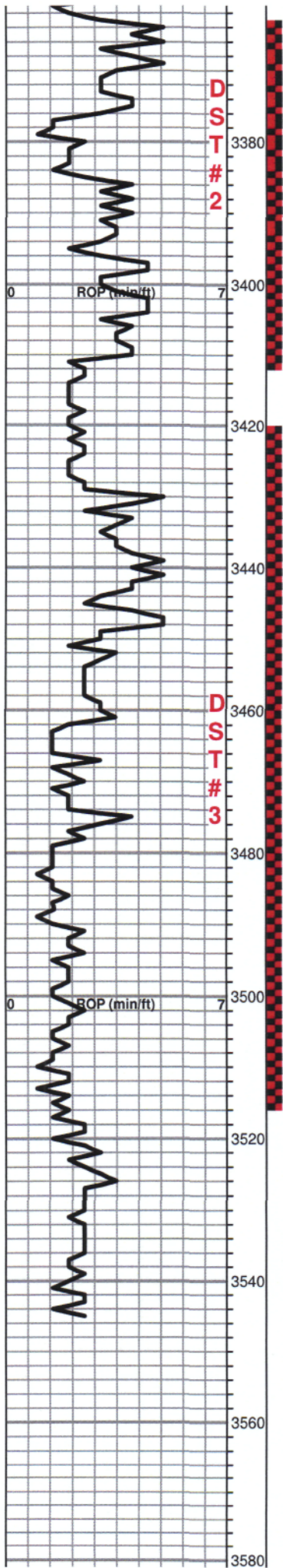
1st Open:
Weak blow;
built to 2"

2nd Open:
Weak blow;
built to 3.5"

Recovery:
50' Mud

Pressures:
ISIP 99 psi
FSIP 90 psi
IFP 36-45 psi
FFP 52-57 psi
HSH 1566-1536 psi

DST #2 3341-3410



LS, white, gry, few sub oom, chalky, no shows

LS, gry, white, ool, oom, scattered porosity, good brown stain, tr. fo, no odor

LS, gry, foss, fair vuggy porosity, brown/ golden brown stain, sfo, no odor

Poor samples

Tr. LS, white/ cream, finely ool, highly chalky

Base KC 3443.0 (-1484.0)

Sh, gry/ green
LS, tan, dense

Conglomerate 3460.0 (-1496.0)

Sh, maroon, rusty, brown sh. Tr. green, silty sand, & white cherts

Abd. blood red blocky shale

Sh, maroon, red, blocky, tr. white ool, & tan cherts

Arbuckle 3505.0 (-1541.0)

Dol. gry, tan, med xln, few suc. scattered inxln porosity, brown-gry stain, sfo, faint odor

Dol. a/a, + tan, fxl, slightly cherty (dense), decrease in staining, sfo, no odor

Dol. gry, white, med xln, fair inxln porosity, blk stain, sfo(black heavy/dead) no odor

RTD 3545.0 (-1581.0)

45-30-45-45

1st Open :
Fair blow 4 1/4'

2nd Open:
Weak

Recovery:
63' Mud, tr. oil

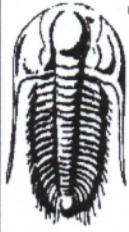
Pressures:
ISIP 89 psi
FSIP 64 psi
IFP 39-49 psi
FFP 57-64 pi
HSH 1637-1612 psi

DST#3 3420-3516
30-30-30-30

1st Open:
Weak blow

Recovery:
20' Mud

Pressures:
ISIP 701 psi
FSIP 710 psi
IFP 51-57 psi
FFP 54-57 psi
HSH 1719-1602 psi



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas, TX 75225
 ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
 Job Ticket: 64024 **DST#: 1**
 Test Start: 2018.06.19 @ 08:04:00

GENERAL INFORMATION:

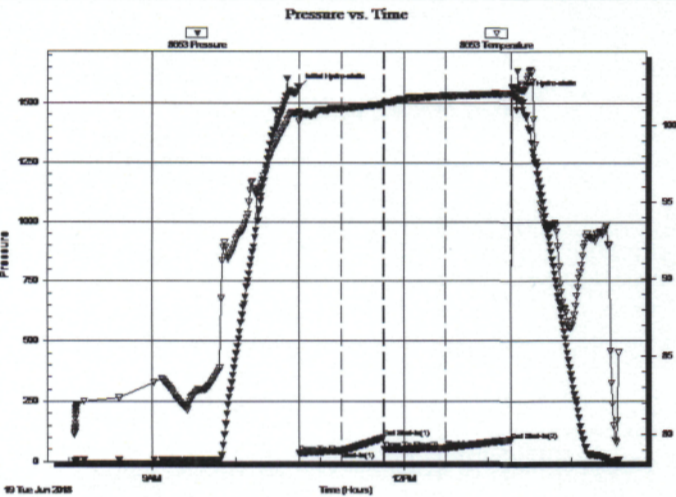
Formation: **LKC "A-G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:45:10
 Time Test Ended: 14:34:30
 Interval: **3200.00 ft (KB) To 3260.00 ft (KB) (TVD)**
 Total Depth: 3260.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Cade Gerhard
 Unit No: 65
 Reference Elevations: 1964.00 ft (KB)
 1956.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8653

Inside

Press@RunDepth: 57.11 psig @ 3237.00 ft (KB)
 Start Date: 2018.06.19 End Date: 2018.06.19
 Start Time: 08:04:01 End Time: 14:34:30
 Capacity: 8000.00 psig
 Last Calib.: 2018.06.19
 Time On Btm: 2018.06.19 @ 10:45:00
 Time Off Btm: 2018.06.19 @ 13:17:20

TEST COMMENT: IF-30- Weak surface; built to 2"
 IS-30- No blow back
 FF-45- Fair blow ; built to 3 3/4"
 FSI-45-No blow back



PRESSURE SUMMARY

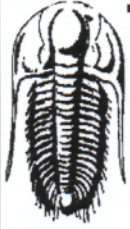
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1566.11	100.87	Initial Hydro-static
1	36.27	100.26	Open To Flow (1)
31	45.41	101.10	Shut-In(1)
61	99.24	101.37	End Shut-In(1)
61	52.63	101.42	Open To Flow (2)
105	57.11	101.93	Shut-In(2)
152	90.00	102.09	End Shut-In(2)
153	1536.07	102.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	M 100%M	

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas, TX 75225
ATTN: Jim Musgrove

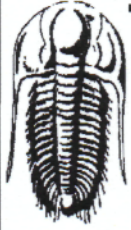
28-14s-17w Ellis,KS
Herl "A" #8
Job Ticket: 64024 **DST#: 1**
Test Start: 2018.06.19 @ 08:04:00

Tool Information

Drill Pipe:	Length: 3206.00 ft	Diameter: 3.82 inches	Volume: 45.45 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 45.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3200.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	81.00 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	2.00			3181.00	
Shut In Tool	5.00			3186.00	
Hydraulic tool	5.00			3191.00	
Packer	5.00			3196.00	21.00 Bottom Of Top Packer
Packer	4.00			3200.00	
Stubb	1.00			3201.00	
Change Over Sub	2.00			3203.00	
Drill Pipe	32.00			3235.00	
Change Over Sub	2.00			3237.00	
Recorder	0.00	8653	Inside	3237.00	
Recorder	0.00	8737	Outside	3237.00	
Perforations	20.00			3257.00	
Bullnose	3.00			3260.00	60.00 Bottom Packers & Anchor

Total Tool Length: 81.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations
8411 Preston Rd STE 800
Dallas, TX 75225
ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
Job Ticket: 64024 **DST#: 1**
Test Start: 2018.06.19 @ 08:04:00

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:	ppm
Viscosity: sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4400.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	M 100%M	

Total Length: 50.00 ft Total Volume: bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: LCM- 2#

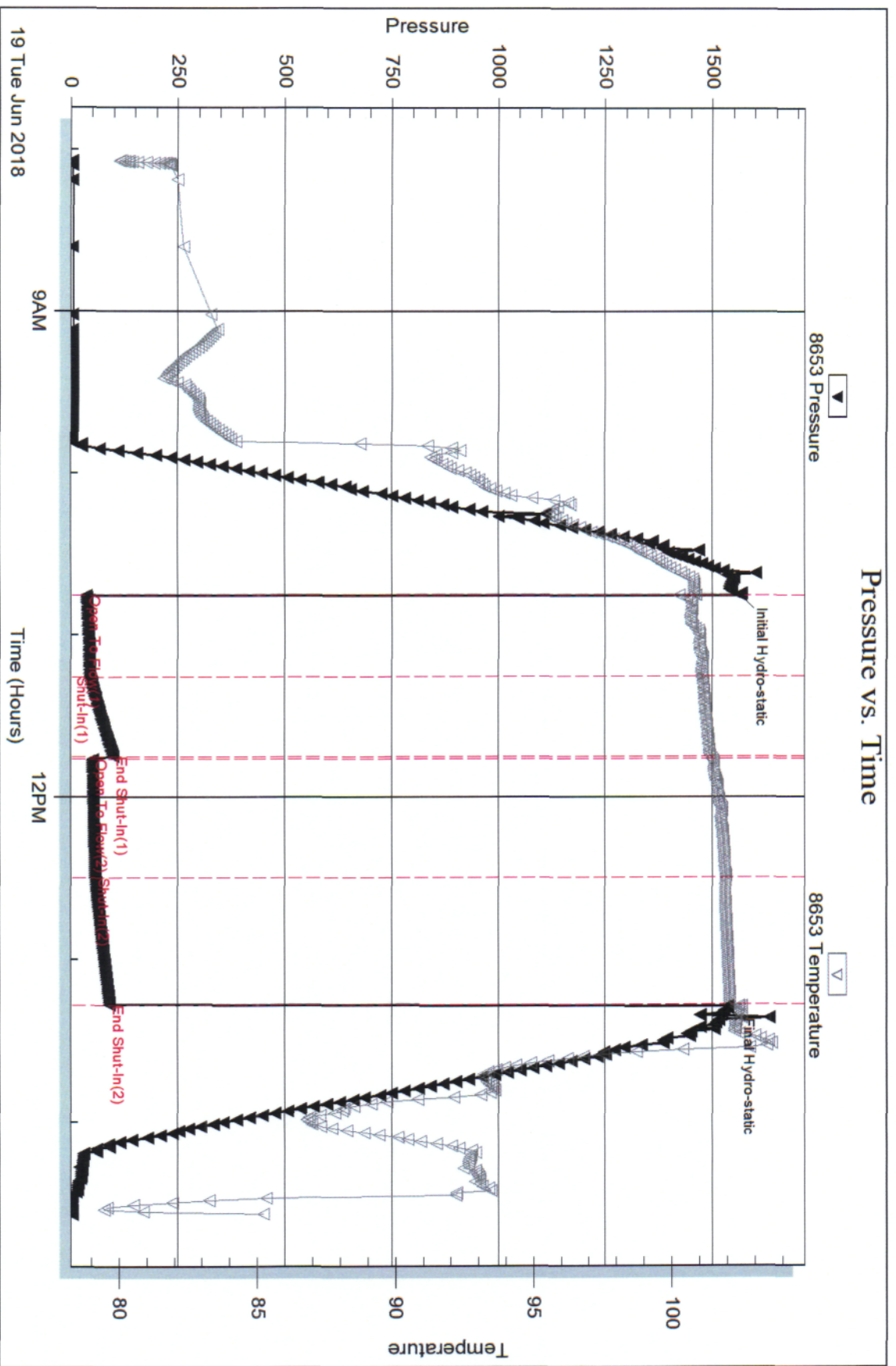
Serial #: 8653

Inside

Mai Oil Operations

Well "A" #8

DST Test Number: 1





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas, TX 75225
 ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
 Job Ticket: 64025 **DST#: 2**
 Test Start: 2018.06.20 @ 06:33:00

GENERAL INFORMATION:

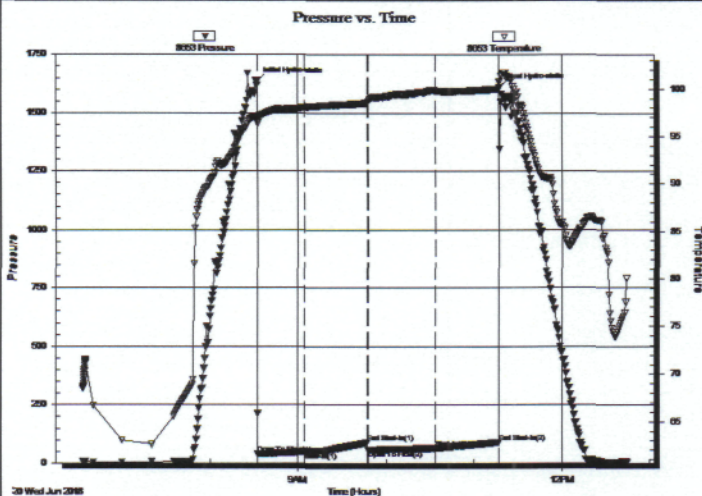
Formation: **LKC "H-I-J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 08:32:40 Tester: Cade Gerhard
 Time Test Ended: 12:44:50 Unit No: 65
 Interval: **3341.00 ft (KB) To 3410.00 ft (KB) (TVD)** Reference Elevations: 1964.00 ft (KB)
 Total Depth: 3410.00 ft (KB) (TVD) 1956.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8653

Inside

Press@RunDepth: 64.47 psig @ 3378.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.06.20 End Date: 2018.06.20 Last Calib.: 2018.06.20
 Start Time: 06:33:01 End Time: 12:44:50 Time On Btm: 2018.06.20 @ 08:32:20
 Time Off Btm: 2018.06.20 @ 11:17:20

TEST COMMENT: IF-45- Fair blow ; Built to 4 1/2"
 IS-30- No blow back
 FF-45- Weak blow ; Built to 2 1/2"
 FSI-45- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1637.32	97.00	Initial Hydro-static
1	39.63	96.64	Open To Flow (1)
32	49.31	98.05	Shut-In(1)
75	89.99	98.51	End Shut-In(1)
76	57.69	98.68	Open To Flow (2)
122	64.47	99.79	Shut-In(2)
165	90.19	99.99	End Shut-In(2)
165	1612.13	100.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	M 100%M	0.89

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas, TX 75225
ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
Job Ticket: 64025 **DST#: 2**
Test Start: 2018.06.20 @ 06:33:00

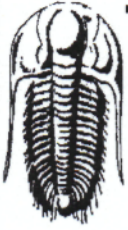
Tool Information

Drill Pipe:	Length: 3333.00 ft	Diameter: 3.82 inches	Volume: 47.25 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: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 42000.00 lb
			<u>Total Volume: 47.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3341.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	90.00 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	2.00			3322.00	
Shut In Tool	5.00			3327.00	
Hydraulic tool	5.00			3332.00	
Packer	5.00			3337.00	21.00 Bottom Of Top Packer
Packer	4.00			3341.00	
Stubb	1.00			3342.00	
Change Over Sub	2.00			3344.00	
Drill Pipe	32.00			3376.00	
Change Over Sub	2.00			3378.00	
Recorder	0.00	8653	Inside	3378.00	
Recorder	0.00	8737	Outside	3378.00	
Perforations	29.00			3407.00	
Bullnose	3.00			3410.00	69.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations
8411 Preston Rd STE 800
Dallas, TX 75225
ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
Job Ticket: 64025 **DST#: 2**
Test Start: 2018.06.20 @ 06:33:00

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:	ppm
Viscosity: sec/qt	Cushion Volume: bbl		
Water Loss: 6.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6100.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
63.00	M 100%M	0.893

Total Length: 63.00 ft Total Volume: 0.893 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: LCM- 2#

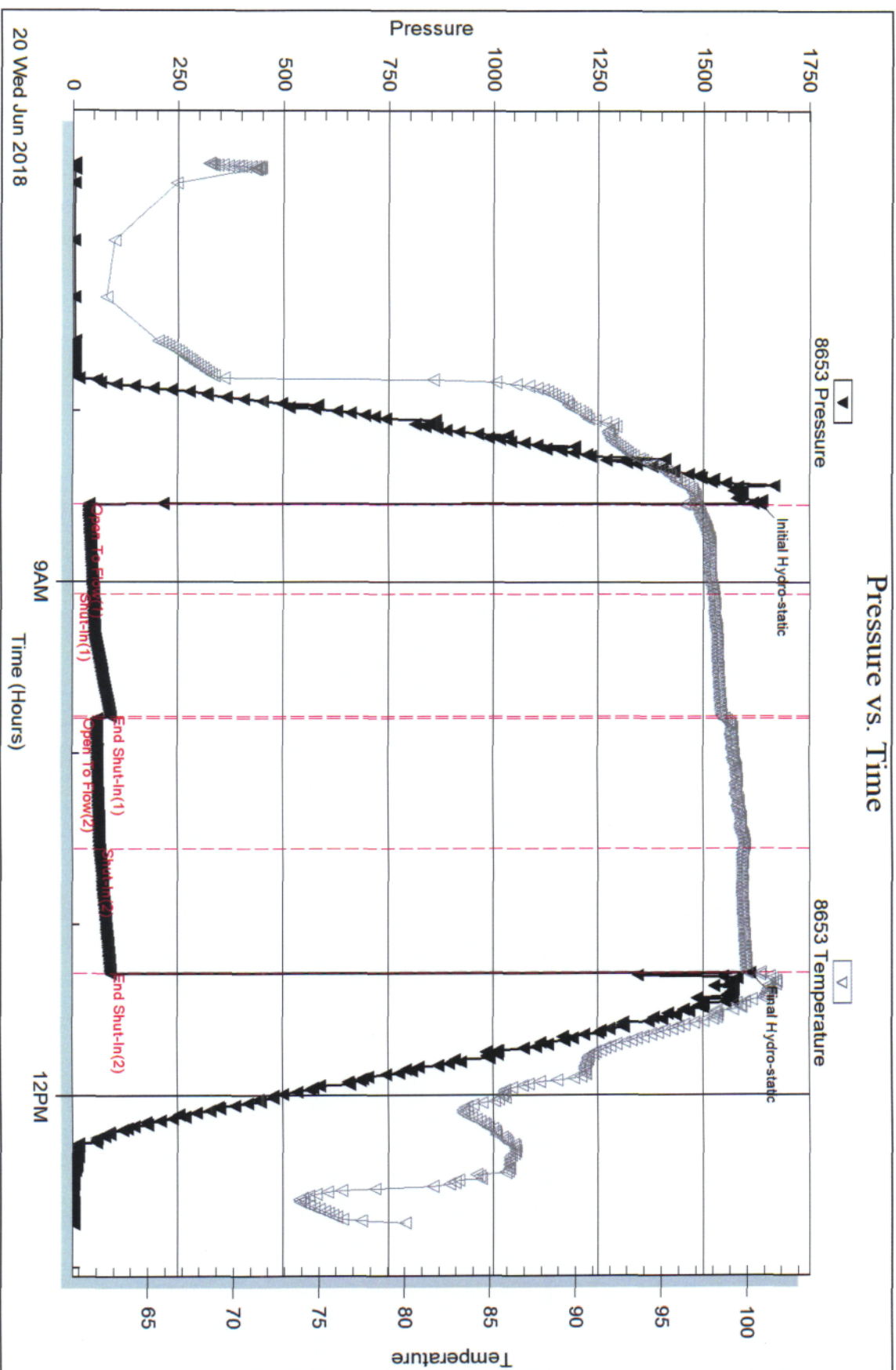
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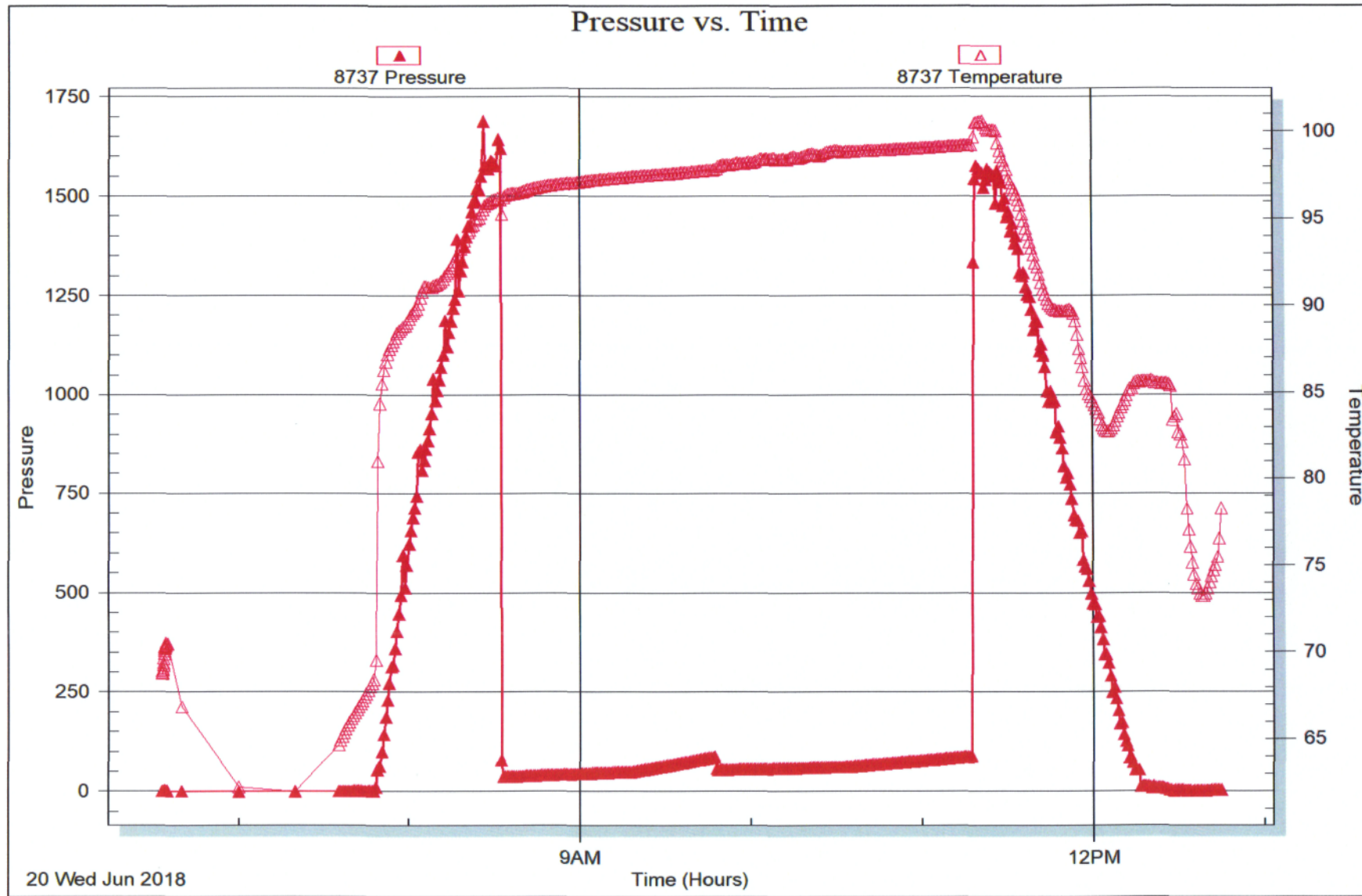
Inside

Mai Oil Operations

Well "A" #8

DST Test Number: 2







DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**
8411 Preston Rd STE 800
Dallas, TX 75225

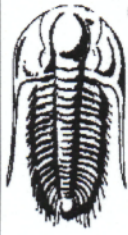
ATTN: Jim Musgrove

Herl "A" #8

28-14s-17w Ellis,KS

Start Date: 2018.06.21 @ 06:27:00
End Date: 2018.06.21 @ 12:00:00
Job Ticket #: 64451 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas, TX 75225
 ATTN: Jim Musgrove

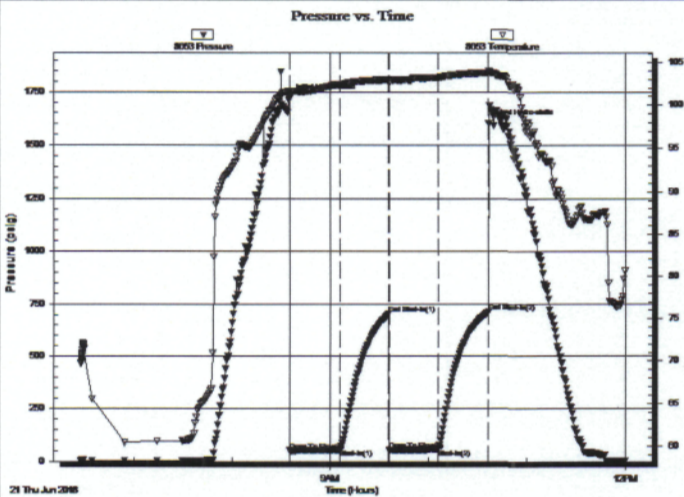
28-14s-17w Ellis,KS
Herl "A" #8
 Job Ticket: 64451 **DST#: 3**
 Test Start: 2018.06.21 @ 06:27:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 08:35:10 Tester: Cade Gerhard
 Time Test Ended: 12:00:00 Unit No: 65
 Interval: **3420.00 ft (KB) To 3516.00 ft (KB) (TVD)** Reference Elevations: 1964.00 ft (KB)
 Total Depth: 3516.00 ft (KB) (TVD) 1956.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GRVCF: 8.00 ft

Serial #: 8653 Inside
 Press@RunDepth: 57.34 psig @ 3488.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.06.21 End Date: 2018.06.21 Last Calib.: 2018.06.21
 Start Time: 06:27:01 End Time: 12:00:00 Time On Btm: 2018.06.21 @ 08:35:00
 Time Off Btm: 2018.06.21 @ 10:36:30

TEST COMMENT: IF-30- Very weak surface blow
 IS-30- No blow back
 FF-30- Very Weak surface blow
 FSI-30- No blow back



PRESSURE SUMMARY

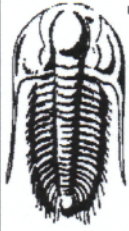
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1719.09	101.64	Initial Hydro-static
1	51.34	101.04	Open To Flow (1)
31	57.34	102.40	Shut-In(1)
61	701.26	102.97	End Shut-In(1)
61	54.85	102.56	Open To Flow (2)
91	57.34	103.21	Shut-In(2)
122	710.47	103.80	End Shut-In(2)
122	1602.63	104.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	M 100%M	0.28

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas, TX 75225
 ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
 Job Ticket: 64451 **DST#: 3**
 Test Start: 2018.06.21 @ 06:27:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:35:10
 Time Test Ended: 12:00:00

Test Type: Conventional Bottom Hole (Initial)
 Tester: Cade Gerhard
 Unit No: 65

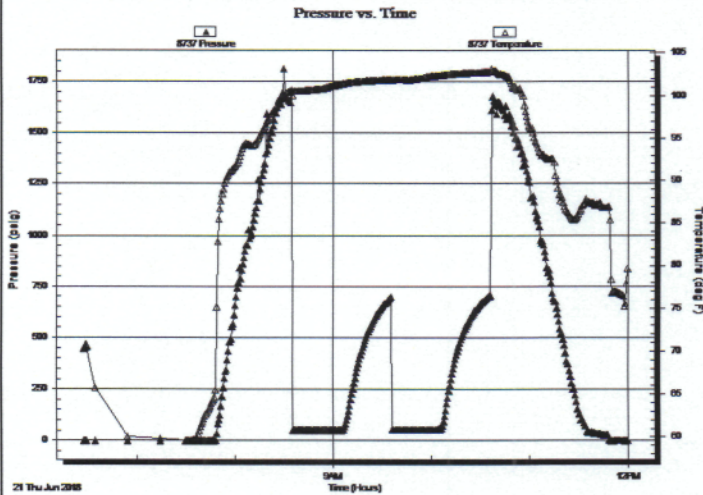
Interval: **3420.00 ft (KB) To 3516.00 ft (KB) (TVD)**
 Total Depth: 3516.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1964.00 ft (KB)
 1956.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8737 Outside
 Press@RunDepth: psig @ 3488.00 ft (KB)
 Start Date: 2018.06.21 End Date: 2018.06.21
 Start Time: 06:27:01 End Time: 12:00:00

Capacity: 8000.00 psig
 Last Calib.: 2018.06.21
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF-30- Very weak surface blow
 IS-30- No blow back
 FF-30- Very Weak surface blow
 FSI-30- No blow back



PRESSURE SUMMARY

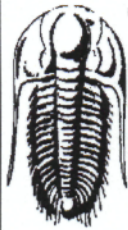
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
20.00	M 100%M	0.28

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas, TX 75225
ATTN: Jim Musgrove

28-14s-17w Ellis,KS
Herl "A" #8
Job Ticket: 64451 **DST#: 3**
Test Start: 2018.06.21 @ 06:27:00

Tool Information

Drill Pipe:	Length: 3427.00 ft	Diameter: 3.82 inches	Volume: 48.58 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 41000.00 lb
			<u>Total Volume: 48.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3420.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	94.00 ft			
Tool Length:	115.00 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	2.00			3401.00	
Shut In Tool	5.00			3406.00	
Hydraulic tool	5.00			3411.00	
Packer	5.00			3416.00	21.00 Bottom Of Top Packer
Packer	4.00			3420.00	
Stubb	1.00			3421.00	
Change Over Sub	2.00			3423.00	
Drill Pipe	63.00			3486.00	
Change Over Sub	2.00			3488.00	
Recorder	0.00	8653	Inside	3488.00	
Recorder	0.00	8737	Outside	3488.00	
Perforations	23.00			3511.00	
Bullnose	3.00			3514.00	94.00 Bottom Packers & Anchor

Total Tool Length: 115.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

28-14s-17w Ellis,KS

8411 Preston Rd STE 800
Dallas, TX 75225

Herl "A" #8

Job Ticket: 64451

DST#: 3

ATTN: Jim Musgrove

Test Start: 2018.06.21 @ 06:27:00

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:

ppm

Viscosity: sec/qt

Cushion Volume:

bbl

Water Loss: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6700.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	M 100%M	0.284

Total Length: 20.00 ft Total Volume: 0.284 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: LCM- 1#

Serial #: 8653

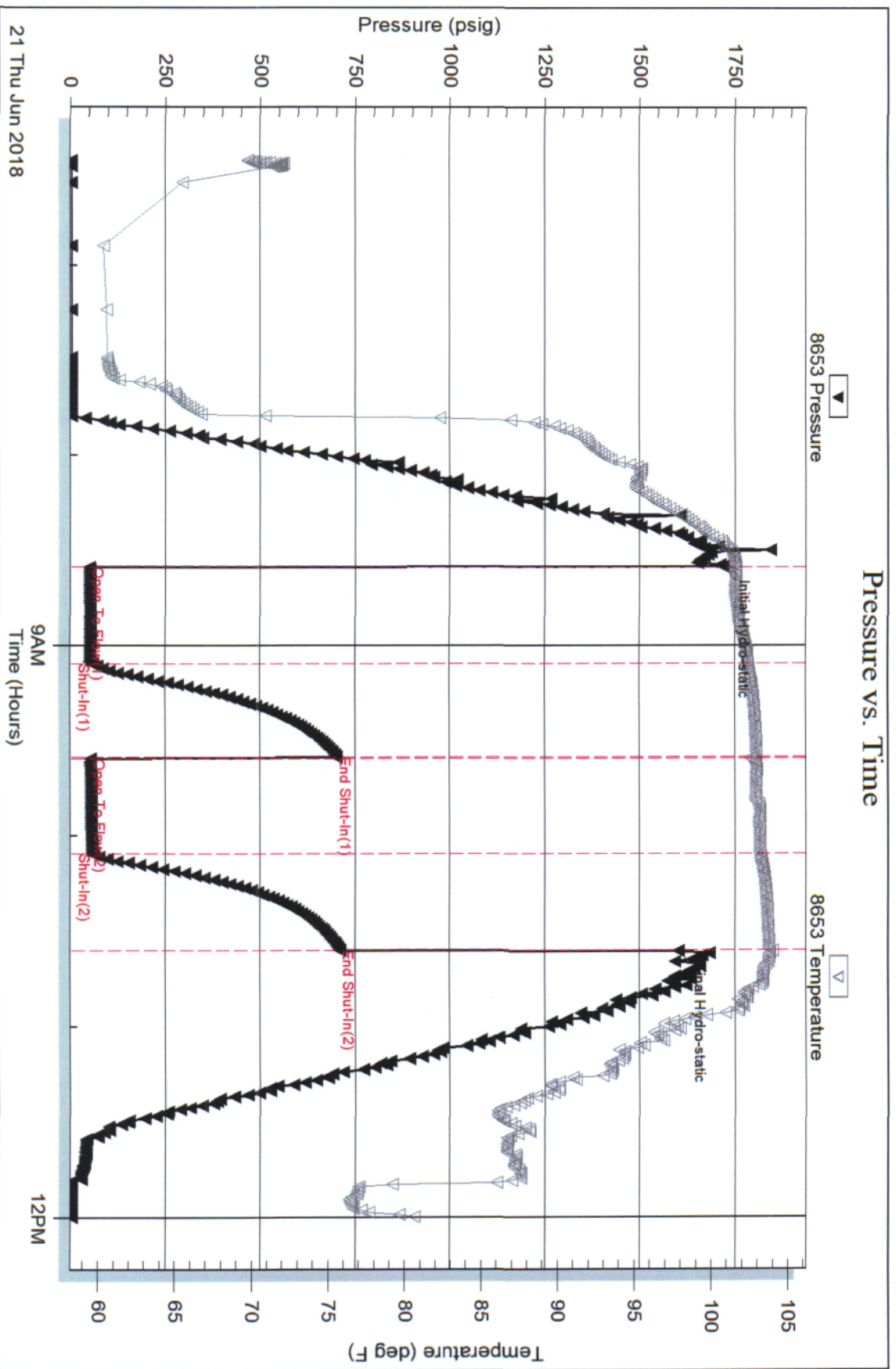
Inside

Mai Oil Operations

Well "A" #8

DST Test Number: 3

Pressure vs. Time



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. 790

Date	6-16-18	Sec.	28	Twp.	14	Range	17	County	Ellis	State	KS	On Location		Finish	2:00 PM
Lease	Hel A							Well No.	8	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	Main oil operations						
Hole Size	12 1/4"			T.D.	1107'			Street							
Csg.	8 5/8"			Depth	1107'			City	State						
Tbg. Size				Depth				The above was done to satisfaction and supervision of owner agent or contractor.							
Tool				Depth				Cement Amount Ordered 450 6 1/4 9% cc 2% bel.							
Cement Left in Csg.	20'			Shoe Joint	20'										
Meas Line				Displace	69 1/4 BLS										
EQUIPMENT								Common							
Pumptrk	17	No.		Cementer	David			Poz. Mix							
				Helper											
Bulktrk	19	No.		Driver	Jack			Gel.							
				Driver											
Bulktrk	p.u.	No.		Driver	Rick			Calcium							
				Driver											
JOB SERVICES & REMARKS								Hulls							
Remarks:	Cement did Circulate							Salt							
Rat Hole								Flowseal							
Mouse Hole								Kol-Seal							
Centralizers								Mud CLR 48							
Baskets								CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand							
								Handling							
								Mileage							
								FLOAT EQUIPMENT							
								Guide Shoe Rubber plug							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
X Signature	Jay Brewer														