

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
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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	MALVERN UNIT 1
Doc ID	1499404

Tops

Name	Top	Datum
Anhydrite	634	1178
Heebner	2982	-1170
Toronto	2998	-1186
Douglas	3014	-1202
Douglas Sand	3035	-1223
Brown Lime	3101	-1289
Lansing	3117	-1305
Base KC	3356	-1544
Conglomerate	3364	-1552
Arbuckle	3387	-1575



DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations, Inc.**

8411 Preston RD STE 800 Dallas TX
75225+5520

ATTN: Jim Musgrove

Kim Unit #1

27-19s-12w Barton, KS

Start Date: 2019.11.01 @ 09:09:00

End Date: 2019.11.01 @ 16:00:39

Job Ticket #: 65708 DST #: 1

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

Printed: 2019.11.05 @ 15:35:43



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

ATTN: Jim Musgrove

Job Ticket: 65708

DST#: 1

Test Start: 2019.11.01 @ 09:09:00

GENERAL INFORMATION:

Formation: **LKC A-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:26:00

Time Test Ended: 16:00:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3106.00 ft (KB) To 3195.00 ft (KB) (TVD)

Reference Elevations: 1812.00 ft (KB)

Total Depth: 3195.00 ft (KB) (TVD)

1803.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 6772

Inside

Press@RunDepth: 29.80 psig @ 3107.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.01

End Date:

2019.11.01

Last Calib.:

2019.11.01

Start Time:

09:09:01

End Time:

16:00:40

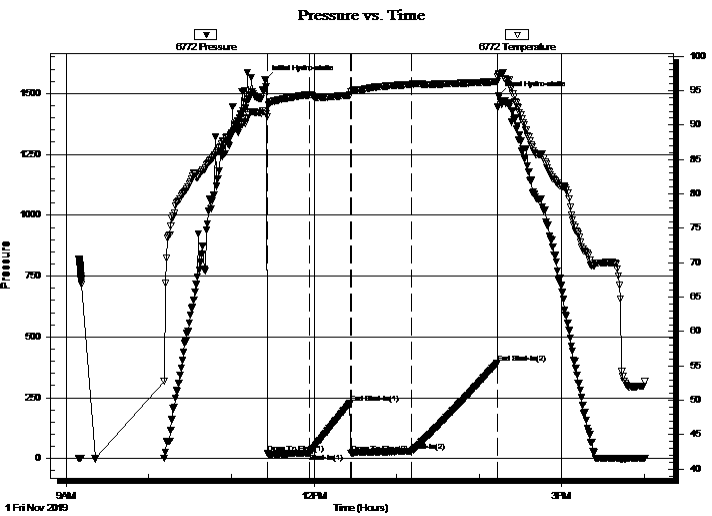
Time On Btm:

2019.11.01 @ 11:24:20

Time Off Btm:

2019.11.01 @ 14:13:50

TEST COMMENT: IF-30-BOB 4 mins total build of 43"
 IS-30- no blow back
 FF-45- BOB 10 secs total build of 46"
 FS-60- no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1555.65	92.05	Initial Hydro-static
2	20.89	91.20	Open To Flow (1)
33	22.91	94.41	Shut-In(1)
62	228.79	94.34	End Shut-In(1)
63	22.79	94.83	Open To Flow (2)
107	29.80	95.91	Shut-In(2)
169	392.69	96.31	End Shut-In(2)
170	1489.37	97.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	GV/SOCM 5%G 5%O 90%M	0.63
0.00	GIP 700'	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.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 65708

DST#: 1

ATTN: Jim Musgrove

Test Start: 2019.11.01 @ 09:09:00

Tool Information

Drill Pipe:	Length: 3098.00 ft	Diameter: 3.80 inches	Volume: 43.46 bbl	Tool Weight: 2500.00 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: 40000.00 lb
			<u>Total Volume: 43.46 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3106.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	89.00 ft			
Tool Length:	109.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3087.00	
Shut In Tool	5.00			3092.00	
Hydraulic tool	5.00			3097.00	
Packer	5.00			3102.00	20.00 Bottom Of Top Packer
Packer	4.00			3106.00	
Stubb	1.00			3107.00	
Recorder	0.00	6772	Inside	3107.00	
Recorder	0.00	6769	Outside	3107.00	
Perforations	19.00			3126.00	
Change Over Sub	1.00			3127.00	
Drill Pipe	64.00			3191.00	
Change Over Sub	1.00			3192.00	
Bullnose	3.00			3195.00	89.00 Bottom Packers & Anchor

Total Tool Length: 109.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 65708

DST#: 1

ATTN: Jim Musgrove

Test Start: 2019.11.01 @ 09:09:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	GVSOCM 5%G 5%O 90%M	0.631
0.00	GIP 700'	0.000

Total Length: 45.00 ft

Total Volume: bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

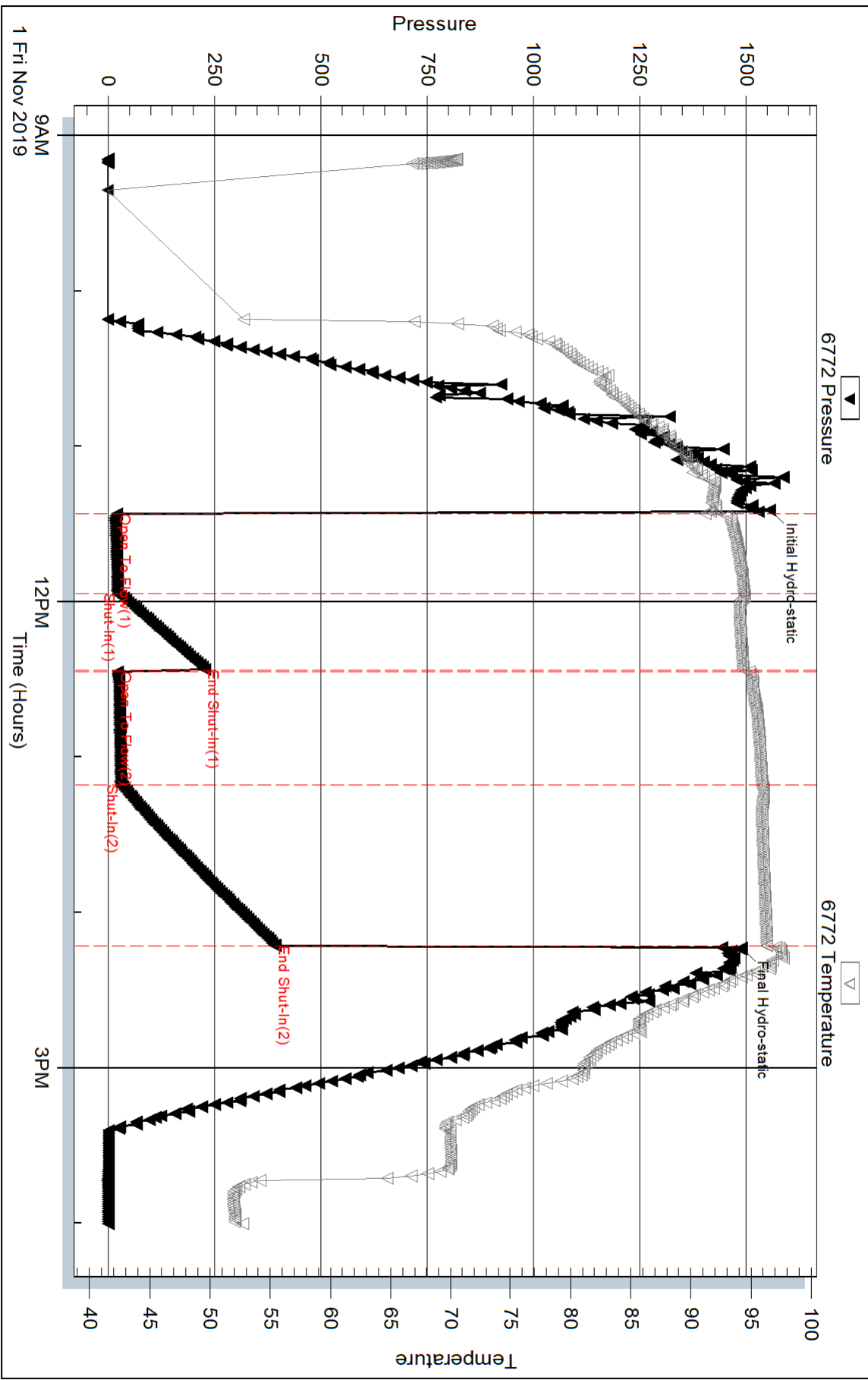
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

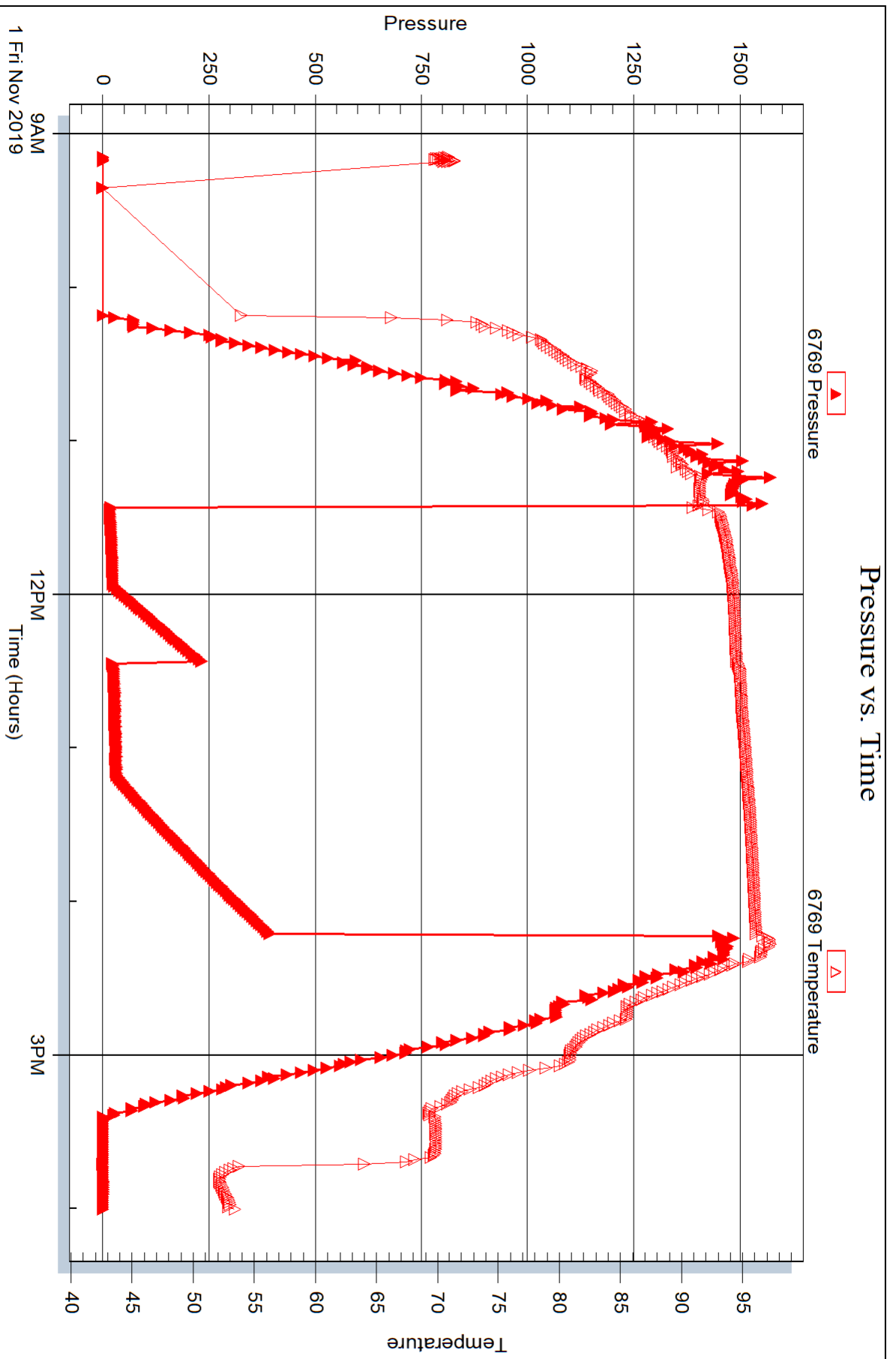


Serial #: 6769

Outside Mai Oil Operations, Inc.

Kim Unit #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations, Inc.**

8411 Preston RD STE 800 Dallas TX
75225+5520

ATTN: Jim Musgrove

Kim Unit #1

27-19s-12w Barton, KS

Start Date: 2019.11.02 @ 04:08:36

End Date: 2019.11.02 @ 10:59:57

Job Ticket #: 59438 DST #: 2

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

Printed: 2019.11.05 @ 15:34:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

ATTN: Jim Musgrove

Job Ticket: 59438

DST#: 2

Test Start: 2019.11.02 @ 04:08:36

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:25:42
 Time Test Ended: 10:59:57
 Interval: **3261.00 ft (KB) To 3340.00 ft (KB) (TVD)**
 Total Depth: 3340.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan Lonsdale
 Unit No: 73
 Reference Elevations: 1812.00 ft (KB)
 1803.00 ft (CF)
 KB to GR/CF: 9.00 ft

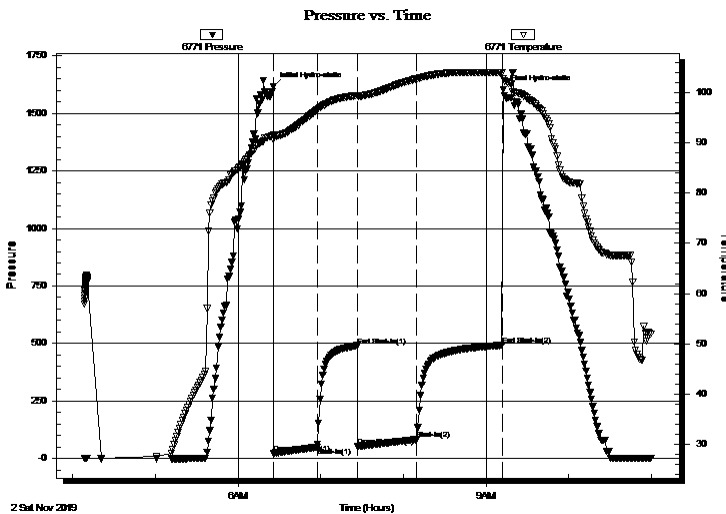
Serial #: 6771

Inside

Press@RunDepth: 81.54 psig @ 3262.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.02 End Date: 2019.11.02 Last Calib.: 2019.11.02
 Start Time: 04:08:37 End Time: 10:59:57 Time On Btm: 2019.11.02 @ 06:25:27
 Time Off Btm: 2019.11.02 @ 09:12:27

TEST COMMENT: 30- IF- Slow ly built to 8"
 30- IS- No blow
 45- FF- Slow ly built to 6"
 60- FS- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1617.96	91.53	Initial Hydro-static
1	20.06	90.63	Open To Flow (1)
32	48.48	96.47	Shut-In(1)
61	489.99	99.40	End Shut-In(1)
62	51.49	99.31	Open To Flow (2)
104	81.54	102.70	Shut-In(2)
167	491.59	103.87	End Shut-In(2)
167	1604.90	102.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
140.00	MW, 25%M 75%W	1.98

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59438

DST#: 2

ATTN: Jim Musgrove

Test Start: 2019.11.02 @ 04:08:36

Tool Information

Drill Pipe:	Length: 3257.00 ft	Diameter: 3.82 inches	Volume: 46.17 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: 46.17 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3261.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	79.00 ft			
Tool Length:	99.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3242.00	
Shut In Tool	5.00			3247.00	
Hydraulic tool	5.00			3252.00	
Packer	5.00			3257.00	20.00 Bottom Of Top Packer
Packer	4.00			3261.00	
Stubb	1.00			3262.00	
Recorder	0.00	6771	Inside	3262.00	
Recorder	0.00	8700	Outside	3262.00	
Perforations	10.00			3272.00	
Change Over Sub	1.00			3273.00	
Drill Pipe	63.00			3336.00	
Change Over Sub	1.00			3337.00	
Bullnose	3.00			3340.00	79.00 Bottom Packers & Anchor

Total Tool Length: 99.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59438

DST#: 2

ATTN: Jim Musgrove

Test Start: 2019.11.02 @ 04:08:36

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:

36000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
140.00	MW, 25%M 75%W	1.985

Total Length: 140.00 ft Total Volume: 1.985 bbl

Num Fluid Samples: 0

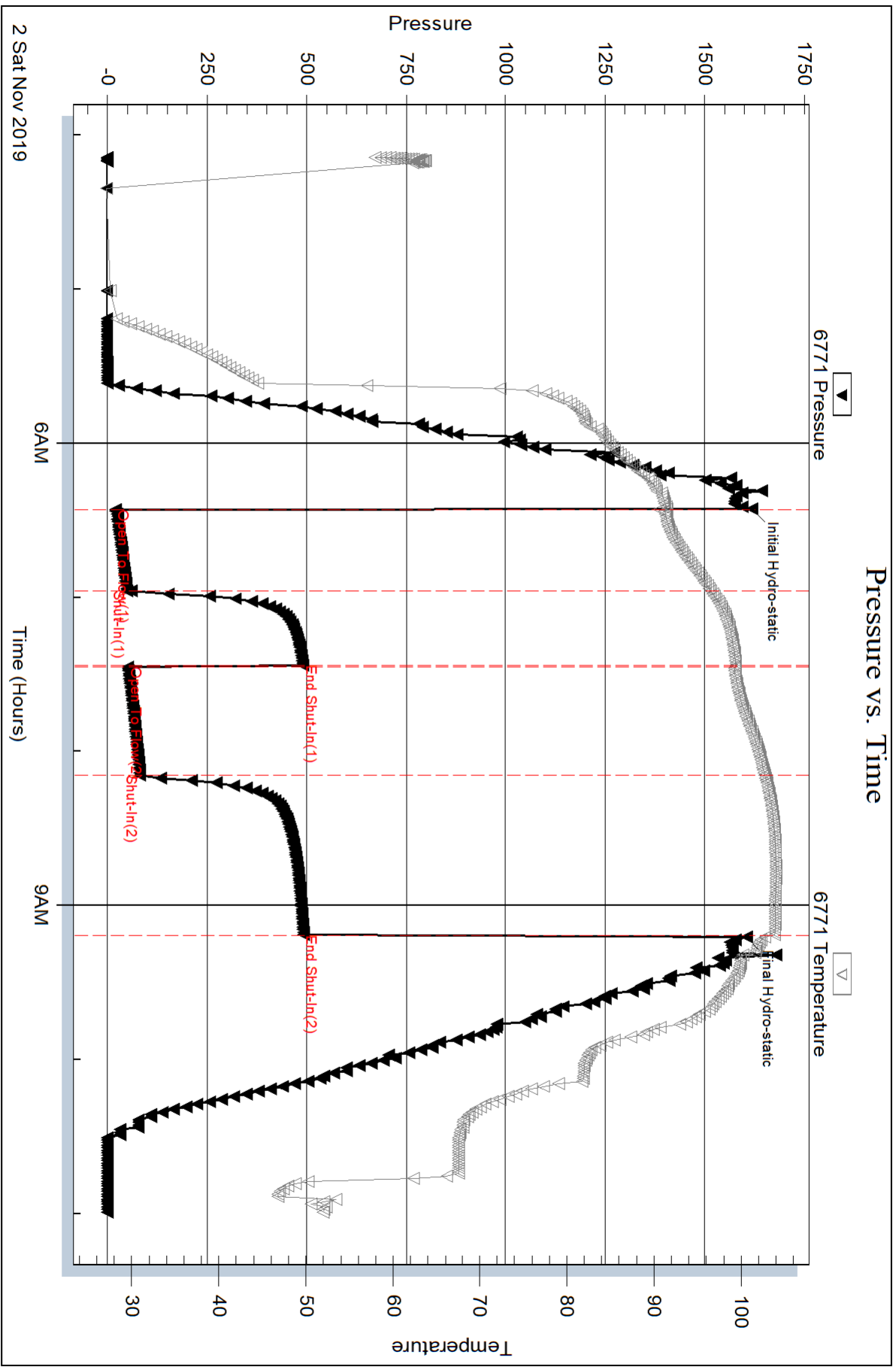
Num Gas Bombs: 0

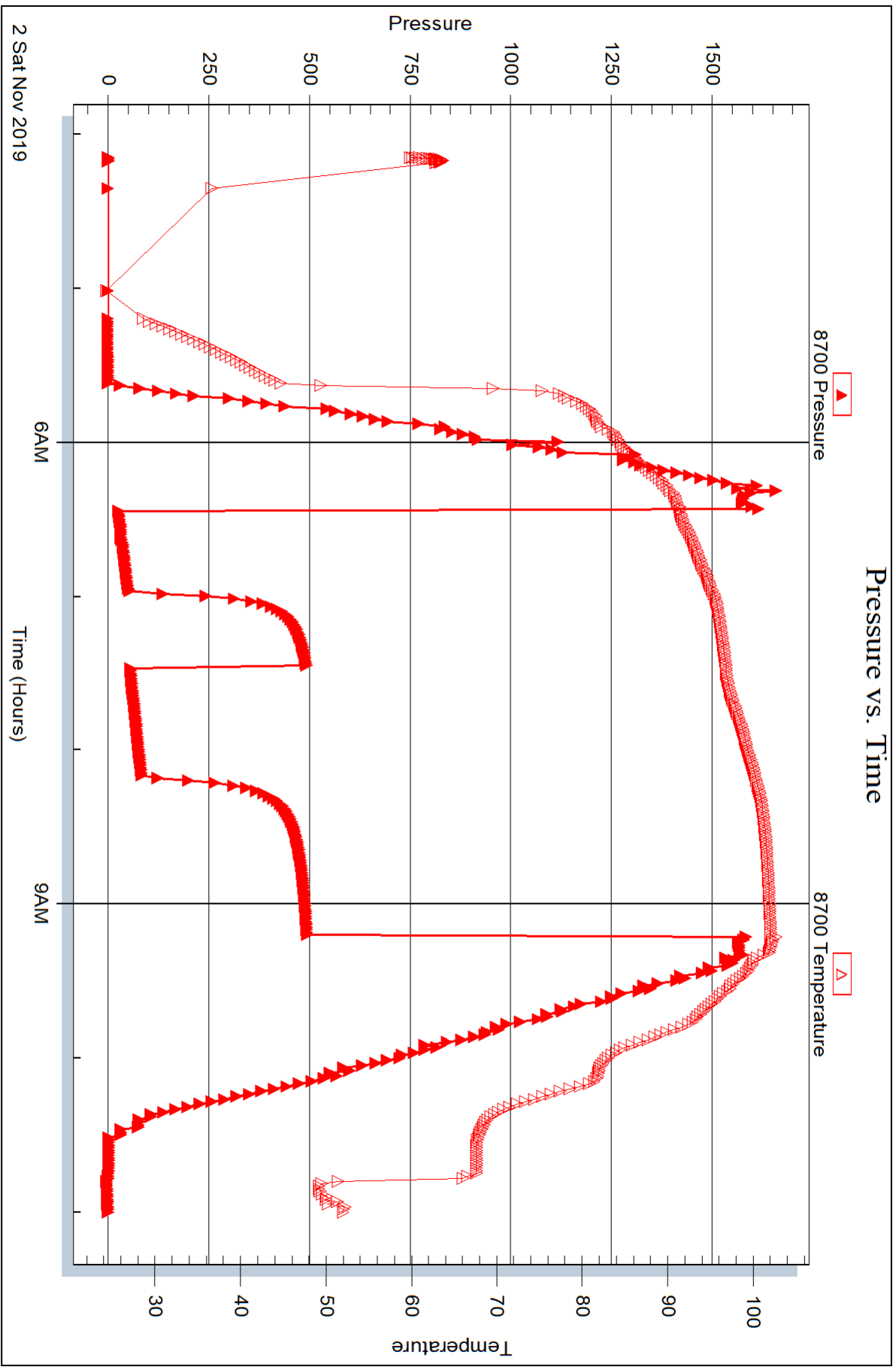
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .27@48deg







DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations, Inc.**

8411 Preston RD STE 800 Dallas TX
75225+5520

ATTN: Jim Musgrove

Kim Unit #1

27-19s-12w Barton, KS

Start Date: 2019.11.02 @ 17:18:49

End Date: 2019.11.02 @ 23:00:40

Job Ticket #: 59439 DST #: 3

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

Printed: 2019.11.05 @ 15:34:10



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

ATTN: Jim Musgrove

Job Ticket: 59439

DST#: 3

Test Start: 2019.11.02 @ 17:18:49

GENERAL INFORMATION:

Formation: **Conglomerate Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:07:55

Time Test Ended: 23:00:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3335.00 ft (KB) To 3375.00 ft (KB) (TVD)

Reference Elevations: 1812.00 ft (KB)

Total Depth: 3375.00 ft (KB) (TVD)

1803.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8700 Outside

Press@RunDepth: 16.74 psig @ 3336.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.02 End Date: 2019.11.02

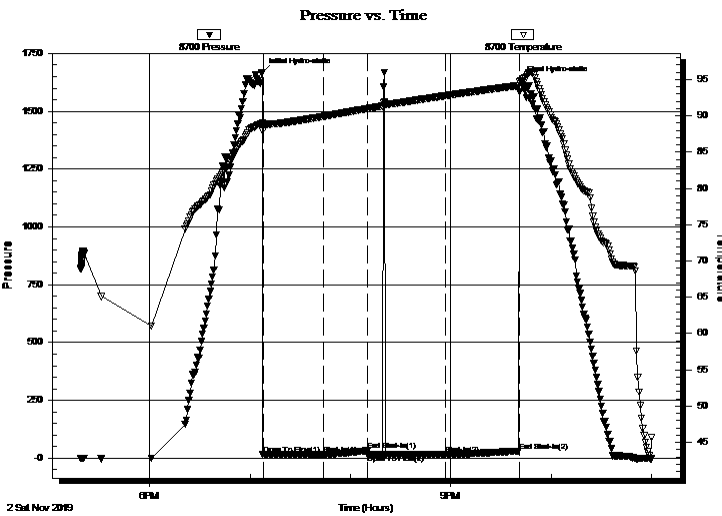
Last Calib.: 2019.11.02

Start Time: 17:18:50 End Time: 23:00:40

Time On Btm: 2019.11.02 @ 19:07:25

Time Off Btm: 2019.11.02 @ 21:41:55

TEST COMMENT: 30- IF- 1/4" blow
 30- IS- No blow
 45- FF- No blow . Flushed tool. 1/4" blow
 45- FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1666.72	89.00	Initial Hydro-static
1	16.93	88.60	Open To Flow (1)
37	15.50	89.91	Shut-In(1)
63	32.34	90.96	End Shut-In(1)
63	15.90	90.99	Open To Flow (2)
110	16.74	92.76	Shut-In(2)
154	31.13	94.18	End Shut-In(2)
155	1631.24	94.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.07

* 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.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59439

DST#: 3

ATTN: Jim Musgrove

Test Start: 2019.11.02 @ 17:18:49

GENERAL INFORMATION:

Formation: **Conglomerate Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:07:55

Time Test Ended: 23:00:40

Interval: **3335.00 ft (KB) To 3375.00 ft (KB) (TVD)**

Total Depth: 3375.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Reference Elevations: 1812.00 ft (KB)

1803.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 6771 Inside

Press@RunDepth: psig @ 3336.00 ft (KB)

Start Date: 2019.11.02

End Date: 2019.11.02

Start Time: 17:18:53

End Time: 23:00:43

Capacity: 8000.00 psig

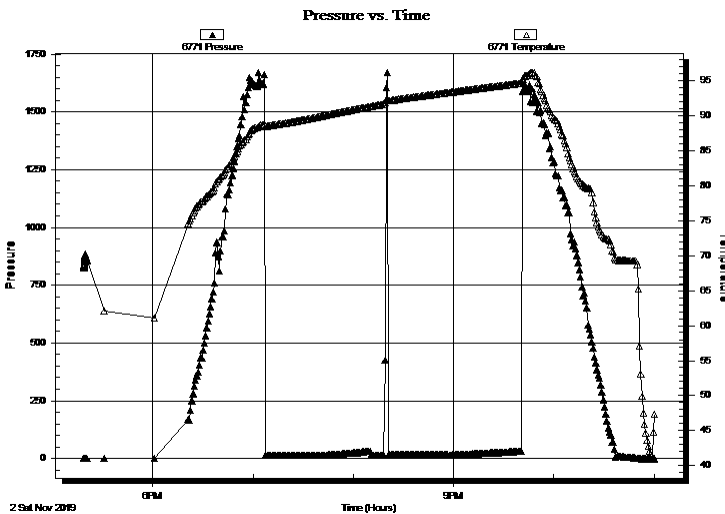
Last Calib.: 2019.11.02

Time On Btm:

Time Off Btm:

TEST COMMENT: 30- IF- 1/4" blow
 30- IS- No blow
 45- FF- No blow . Flushed tool. 1/4" blow
 45- FS- No blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.07

* 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.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59439

DST#: 3

ATTN: Jim Musgrove

Test Start: 2019.11.02 @ 17:18:49

Tool Information

Drill Pipe:	Length: 3321.00 ft	Diameter: 3.80 inches	Volume: 46.58 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: 42000.00 lb
			<u>Total Volume: 46.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3335.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3316.00	
Shut In Tool	5.00			3321.00	
Hydraulic tool	5.00			3326.00	
Packer	5.00			3331.00	20.00 Bottom Of Top Packer
Packer	4.00			3335.00	
Stubb	1.00			3336.00	
Recorder	0.00	6771	Inside	3336.00	
Recorder	0.00	8700	Outside	3336.00	
Perforations	3.00			3339.00	
Change Over Sub	1.00			3340.00	
Drill Pipe	31.00			3371.00	
Change Over Sub	1.00			3372.00	
Bullnose	3.00			3375.00	40.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59439

DST#: 3

ATTN: Jim Musgrove

Test Start: 2019.11.02 @ 17:18:49

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: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

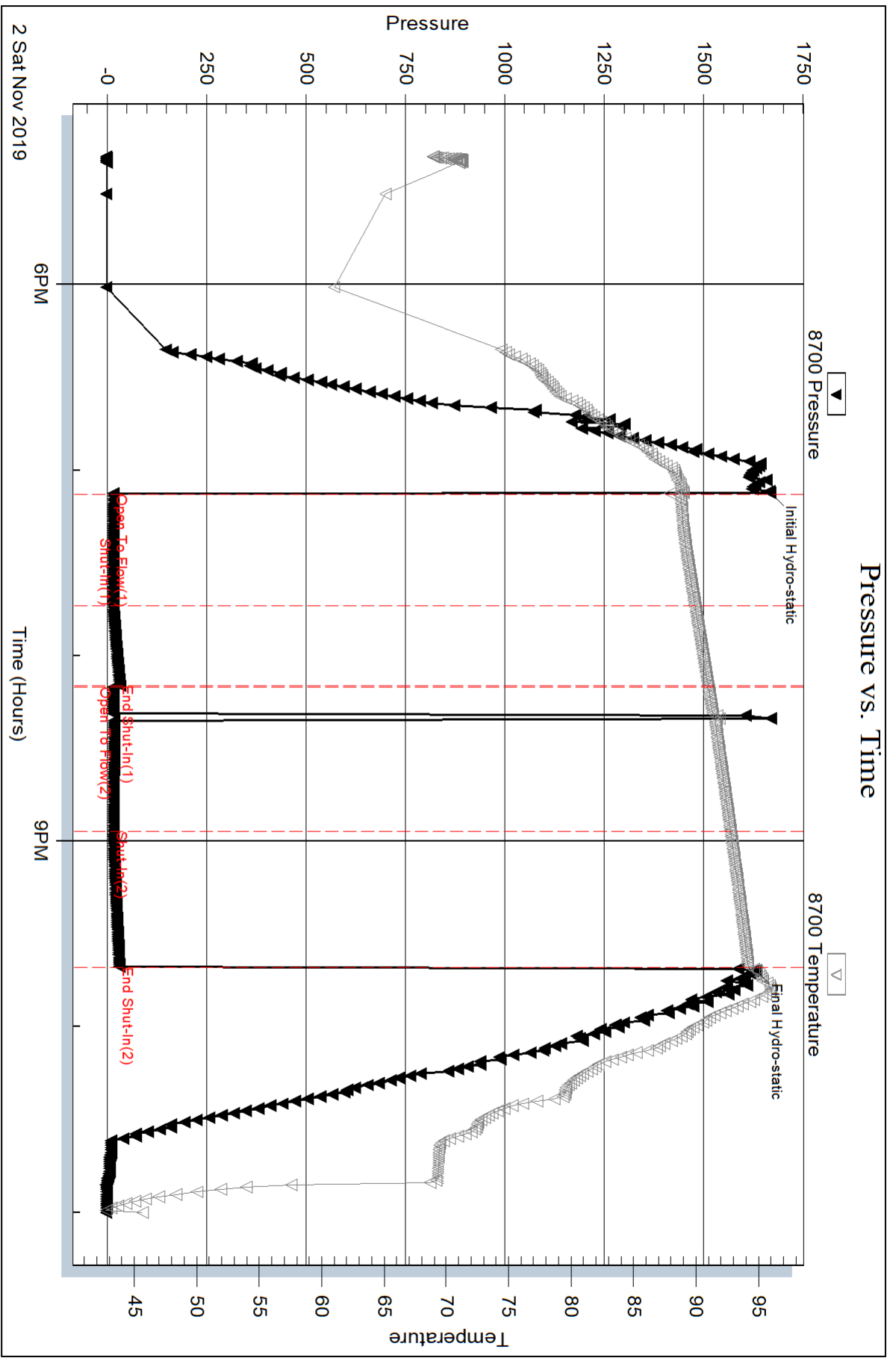
Num Gas Bombs: 0

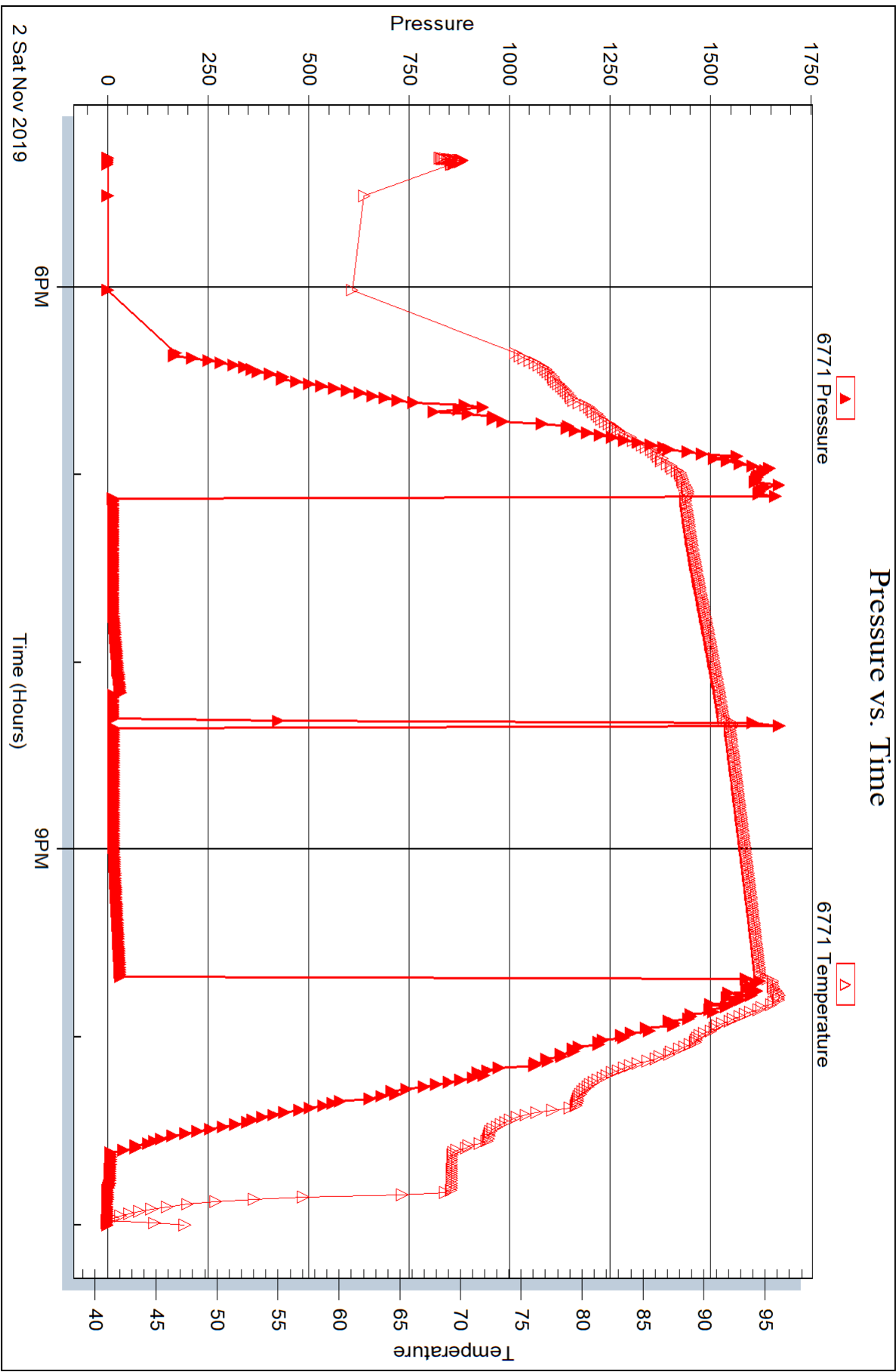
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations, Inc.**

8411 Preston RD STE 800 Dallas TX
75225+5520

ATTN: Jim Musgrove

Kim Unit #1

27-19s-12w Barton, KS

Start Date: 2019.11.03 @ 04:16:14

End Date: 2019.11.03 @ 10:50:08

Job Ticket #: 59440 DST #: 4

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

Printed: 2019.11.05 @ 15:33:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

ATTN: Jim Musgrove

Job Ticket: 59440

DST#: 4

Test Start: 2019.11.03 @ 04:16:14

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:22:24

Time Test Ended: 10:50:08

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3330.00 ft (KB) To 3394.00 ft (KB) (TVD)

Reference Elevations: 1812.00 ft (KB)

Total Depth: 3394.00 ft (KB) (TVD)

1803.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8700 Outside

Press@RunDepth: 62.81 psig @ 3331.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.03

End Date:

2019.11.03

Last Calib.:

2019.11.03

Start Time:

04:16:15

End Time:

10:50:09

Time On Btm:

Time Off Btm:

2019.11.03 @ 08:54:23

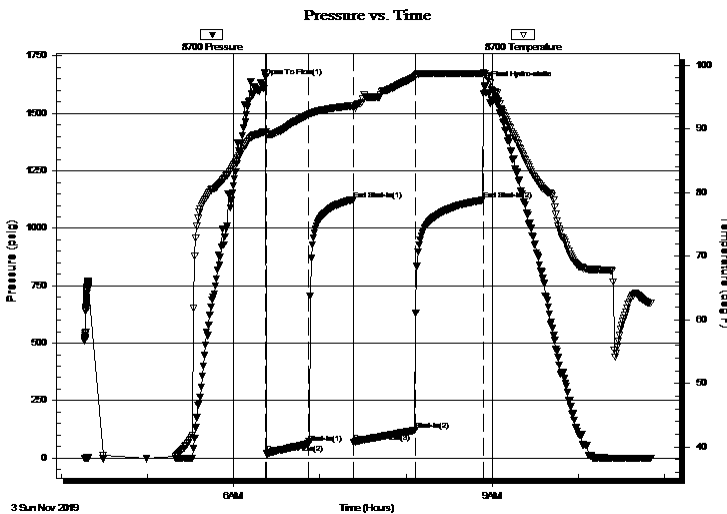
TEST COMMENT: 30- IF- BOB 19 mins. Built to 14.07"

30- IS- No blow

45- FF- BOB 29 mins. Built to 13.69"

45- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1660.46	89.51	Open To Flow (1)
1	18.51	89.01	Open To Flow (2)
30	62.81	92.19	Shut-In(1)
61	1125.31	93.67	End Shut-In(1)
62	68.73	93.31	Open To Flow (3)
104	121.73	98.28	Shut-In(2)
151	1122.81	98.71	End Shut-In(2)
152	1619.59	98.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	SWOCM, 10%W 20%O 70%M	0.85
160.00	OCM, 25%O 75%M	2.27
30.00	CO	0.43

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59440

DST#: 4

ATTN: Jim Musgrove

Test Start: 2019.11.03 @ 04:16:14

Tool Information

Drill Pipe:	Length: 3322.00 ft	Diameter: 3.82 inches	Volume: 47.09 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: 43000.00 lb
			<u>Total Volume: 47.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3330.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3311.00	
Shut In Tool	5.00			3316.00	
Hydraulic tool	5.00			3321.00	
Packer	5.00			3326.00	20.00 Bottom Of Top Packer
Packer	4.00			3330.00	
Stubb	1.00			3331.00	
Recorder	0.00	6771	Inside	3331.00	
Recorder	0.00	8700	Outside	3331.00	
Perforations	26.00			3357.00	
Change Over Sub	1.00			3358.00	
Drill Pipe	32.00			3390.00	
Change Over Sub	1.00			3391.00	
Bullnose	3.00			3394.00	64.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations, Inc.

27-19s-12w Barton, KS

8411 Preston RD STE 800 Dallas TX 75225+5520

Kim Unit #1

Job Ticket: 59440

DST#: 4

ATTN: Jim Musgrove

Test Start: 2019.11.03 @ 04:16:14

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

24000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	SWOCM, 10%W 20%O 70%M	0.851
160.00	OCM, 25%O 75%M	2.268
30.00	CO	0.425

Total Length: 250.00 ft Total Volume: 3.544 bbl

Num Fluid Samples: 0

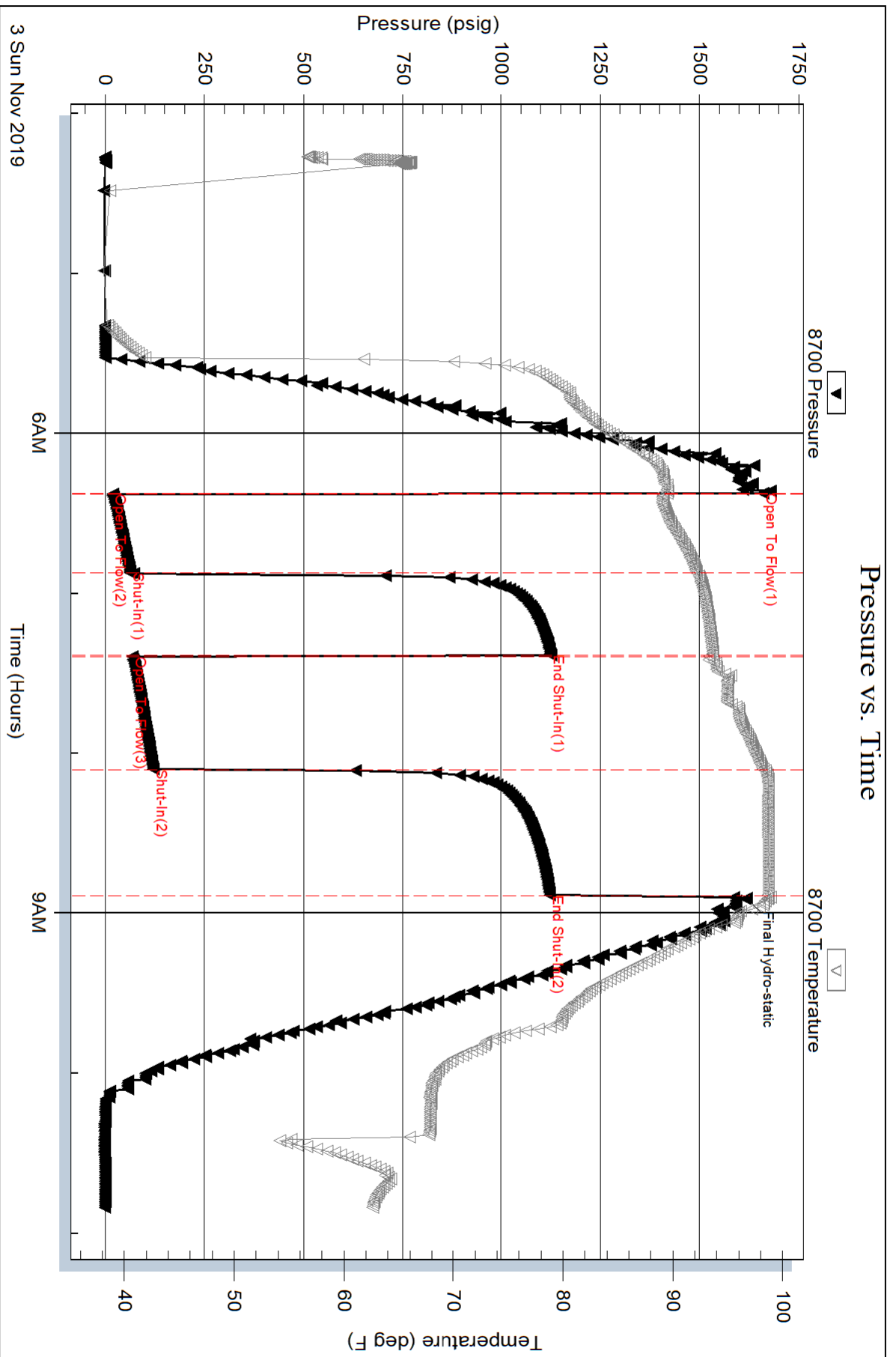
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .42 @ 50deg



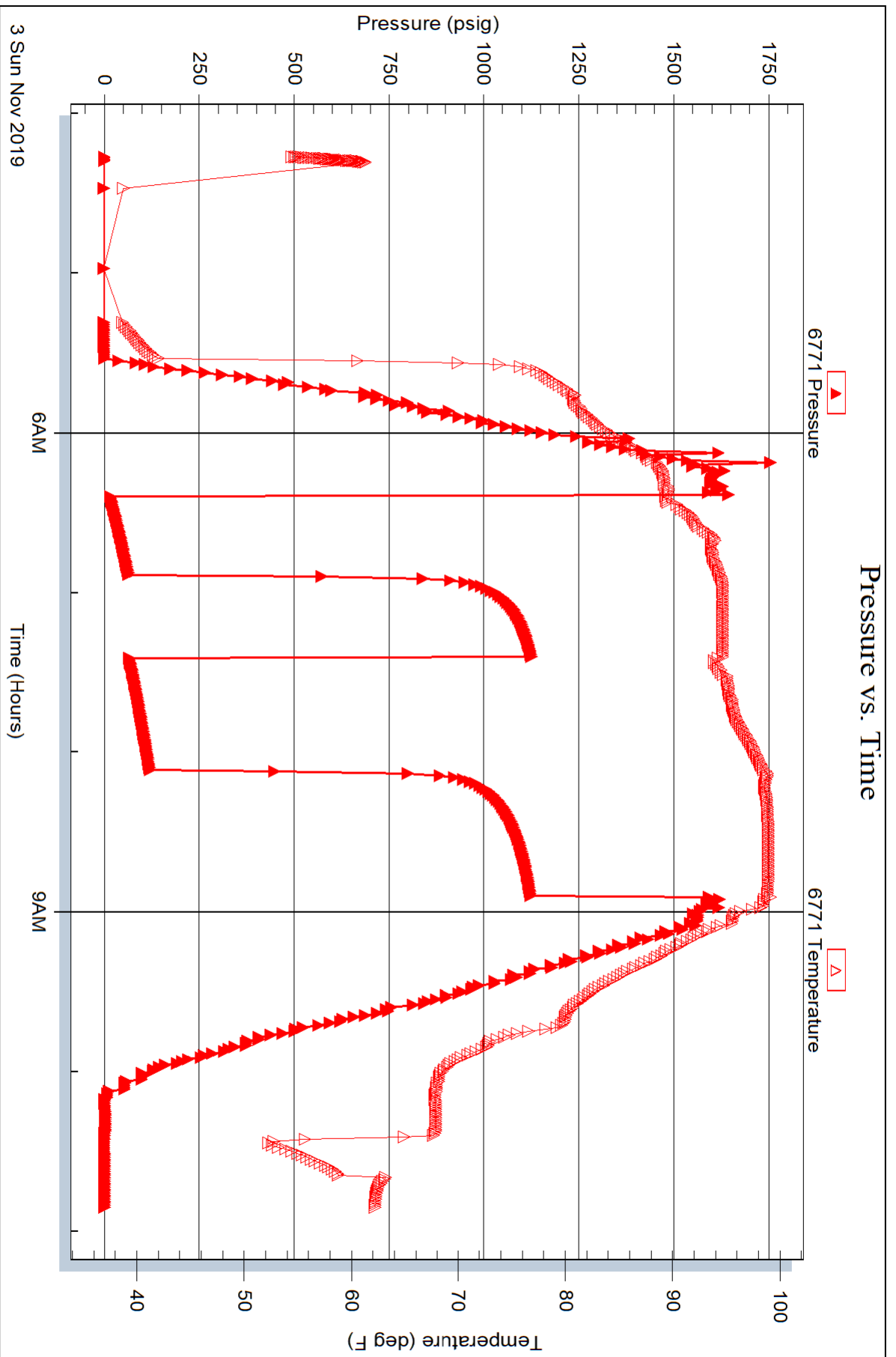
Serial #: 6771

Inside

Mai Oil Operations, Inc.

Kim Unit #1

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65708

Well Name & No. Kim Unit #1 Test No. 1 Date 11-1-2019
 Company Mer Oil operations Elevation 1814 KB 1803 GL
 Address 8711 Preston Rd STE 800 Dallas TX 75225+5520
 Co. Rep / Geo. Jim Mwsgrore Rig South Wind Rig 3
 Location: Sec. 27 Twp 19s Rge. 12w Co. Barton State KS

Interval Tested 3106-3195 Zone Tested A-@F
 Anchor Length 89' Drill Pipe Run 3098' Mud Wt. 8.9
 Top Packer Depth 3101 Drill Collars Run _____ Vis 50
 Bottom Packer Depth 3106 Wt. Pipe Run _____ WL 8.4
 Total Depth 3195 Chlorides 3500 ppm System LCM 1/2#

Blow Description FF-BOB 4mins total build of 43"
ISI- no blow back
FF-BOB 10secs total build of 46"
FBI- no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>GVSOcm</u>	<u>5</u>	<u>5</u>	<u>90</u>	<u>0</u>
Rec	Feet of <u>GIP 700'</u>	%gas	%oil	%water	%mud
Rec	Feet of _____	%gas	%oil	%water	%mud
Rec	Feet of _____	%gas	%oil	%water	%mud
Rec	Feet of _____	%gas	%oil	%water	%mud

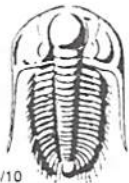
Rec Total 45 BHT 97 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1555 Test 1200 T-On Location 8:17 AM.
 (B) First Initial Flow 20 Jars _____ T-Started 9:09
 (C) First Final Flow 22 Safety Joint _____ T-Open 11:26
 (D) Initial Shut-In 228 Circ Sub _____ T-Pulled 2:13 P.M.
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 4:01
 (F) Second Final Flow 29 Mileage 18mi RT 18 Comments Loaded tools after
 (G) Final Shut-In 392 Sampler _____ DST #1 to go on days
 (H) Final Hydrostatic 1489 Straddle _____ off

EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Extra Packer _____
 Initial Shut-In 30 Extra Recorder _____
 Final Flow 45 Day Standby _____
 Final Shut-In 60 Accessibility _____
 Sub Total 1218 MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59438

4/10

Well Name & No. Kim Unit #1 Test No. 2 Date 11/2/19
 Company Mai Oil Operations, Inc. Elevation 1812 KB 1803 GL
 Address 8411 Preston Rd., Ste. 800 Dallas, TX 75225
 Co. Rep / Geo. Tom Musgrove Rig Southwind 3
 Location: Sec. 27 Twp. 19 S Rge. 12 W Co. Barton State KS

Interval Tested 3261-3340 Zone Tested LKC
 Anchor Length 29' Drill Pipe Run 3257 Mud Wt. 8.9
 Top Packer Depth 3256 Drill Collars Run Vis 50
 Bottom Packer Depth 3261 Wt. Pipe Run WL 8.4
 Total Depth 3340 Chlorides 3500 ppm System LCM 1/2#

Blow Description IF - Slowly built to 8"
FSI - No blow
FF - Slowly built to 6"
FSI - No blow

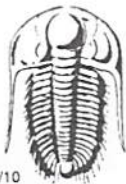
Rec	Feet of	%gas	%oil	%water	%mud
<u>140</u>	<u>MW</u>			<u>75</u>	<u>25</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 140' BHT 104° Gravity API RW .27 @ 48 °F Chlorides 36,000 ppm
 (A) Initial Hydrostatic 1618 Test 1200 T-On Location 0345
 (B) First Initial Flow 20 Jars T-Started 0409
 (C) First Final Flow 48 Safety Joint T-Open 0626
 (D) Initial Shut-In 490 Circ Sub T-Pulled 0911
 (E) Second Initial Flow 51 Hourly Standby T-Out 1100
 (F) Second Final Flow 82 Mileage 16 RT 18 Comments
 (G) Final Shut-In 492 Sampler
 (H) Final Hydrostatic 1605 Straddle

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Initial Open 30 Extra Packer
 Initial Shut-In 30 Extra Recorder
 Final Flow 45 Day Standby
 Final Shut-In 60 Accessibility
 Sub Total 1218
 Total 1218
 MP/DST Disc't

Approved By Our Representative Brannan Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59439

4/10

Well Name & No. Kim Unit #1 Test No. 3 Date 11/2/19
 Company Mai Oil Operations, Inc. Elevation 1812 KB 1803 GL
 Address 8411 Preston Rd. Ste. 800 Dallas, TX 75225
 Co. Rep / Geo. Wyatt Urban Rig Southwind 3
 Location: Sec. 27 Twp. 19 S Rge. 12 W Co. Barton State KS

Interval Tested 3335-3375 Zone Tested Long. Sand
 Anchor Length 40' Drill Pipe Run 3321 Mud Wt. 9.2
 Top Packer Depth 3330 Drill Collars Run — Vis 45
 Bottom Packer Depth 3335 Wt. Pipe Run — WL 8.8
 Total Depth 3375 Chlorides 5,000 ppm System LCM 2#

Blow Description IF- 1/4" blow
FSI- No blow
PF- No blow. Flushed tool. 1/4" blow
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>M</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 94° Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic 1667 Test 1200 T-On Location 1700
 (B) First Initial Flow 17 Jars — T-Started 1719
 (C) First Final Flow 16 Safety Joint — T-Open 1908
 (D) Initial Shut-In 32 Circ Sub — T-Pulled 2138
 (E) Second Initial Flow 16 Hourly Standby — T-Out 2301
 (F) Second Final Flow 17 Mileage 16 RT Comments —
 (G) Final Shut-In 31 Sampler —
 (H) Final Hydrostatic 1631 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 30 Extra Recorder — Sub Total 0
 Initial Shut-In 30 Day Standby — Total 1218
 Final Flow 45 Accessibility — MP/DST Disc't —
 Final Shut-In 45 Sub Total 181218

Approved By _____ Our Representative Brannan Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59440

Well Name & No. Kim Unit #1 Test No. 4 Date 11/3/19
 Company Mai Oil Operations, Inc. Elevation 1812 KB 1803 GL
 Address 8411 Preston Rd., Ste. 800 Dallas, TX 75225
 Co. Rep / Geo. Wyatt Urban Rig Southwind 3
 Location: Sec. 27 Twp. 19 S Rge. 12 W Co. Barton State KS

Interval Tested 3330-3394 Zone Tested Arbuckle
 Anchor Length 64' Drill Pipe Run 3322 Mud Wt. 9.2
 Top Packer Depth 3325 Drill Collars Run --- Vis 45
 Bottom Packer Depth 3330 Wt. Pipe Run --- WL 8.8
 Total Depth 3394 Chlorides 5000 ppm System LCM 2#

Blow Description IF-BOB 19 mins. Built to 14.07"
ISF- No blow
FF-BOB 29 mins. Built to 13.69"
FST- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>SWOCM</u>	<u>20</u>	<u>10</u>	<u>70</u>	<u>20</u>
<u>160</u>	<u>OCM</u>	<u>25</u>		<u>75</u>	<u>25</u>
<u>30</u>	<u>CO</u>				

Rec Total 250' BHT 99° Gravity 32 API RW .42 @ 50° F Chlorides 24000 ppm

(A) Initial Hydrostatic 1660 Test 1200 T-On Location 0400
 (B) First Initial Flow 19 Jars --- T-Started 0416
 (C) First Final Flow 63 Safety Joint --- T-Open 0622
 (D) Initial Shut-In 1125 Circ Sub --- T-Pulled 0852
 (E) Second Initial Flow 69 Hourly Standby --- T-Out 1050
 (F) Second Final Flow 122 Mileage 16 RT 18 Comments 3 nights motel
 (G) Final Shut-In 1123 Sampler ---
 (H) Final Hydrostatic 1620 Straddle ---

Ruined Shale Packer ---
 Ruined Packer ---
 Extra Copies ---
 Initial Open 30 Extra Packer ---
 Initial Shut-In 30 Extra Recorder ---
 Final Flow 45 Day Standby ---
 Final Shut-In 45 Accessibility ---
 Sub Total 1218 MP/DST Disc't ---

Approved By _____ Our Representative Brannan Lousdale

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Musgrove

Petroleum Geology
212 Main Street, Claflin KS

NOTES

Company: Mai Oil Operations

Lease: Kim Unit # 1

Field: N/A

Location: N2-NE-SE-SE (1300' FSL & 330' FEL)

Sec: 27 Twsp: 19S Rge: 12W

County: Barton State: Kansas

KB: 1812' GL: 1803'

Contractor: Southwind Drilling Inc. (Rig #3)

Spud: 10/28/2019 Comp: 11/13/2019

RTD: 3450' LTD: 3450'


Mud Up: 2700' Type Mud: Chemical

Samples Saved From: 2700' to RTD
 Drilling Time Kept From: 2700' to RTD
 Samples Examined From: 2700' RTD
 Geological Supervision from: 3450' to RTD

Geologist on Well: Jim Musgrove (2700'-3340') & Wyatt Urban (3340'-RTD)

Surface Casing: 8 5/8" @ 631'
 Production Casing 5 1/2" @ 3448'

Electronic Surveys: Logged by ELI WIRELINE; DIL, CNL/CDL, MEL

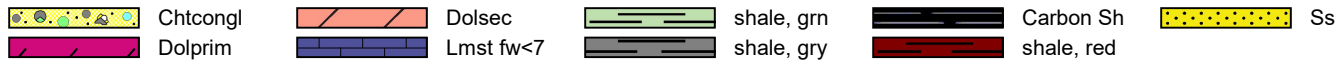
	DRILLING				DRY				OIL				OIL			
	MAI OIL				FRANCIS RAYMOND				TILCO, ET AL				OMEGA DRLG.			
	KIM UNIT #1				SCHARTZ #1				HAAK #1				SCHARTZ #1			
	22-21S-21S (S2-S2-SW-NW)				27-19S-12W (NW-SE-SE)				34-19S-12W (SE-SW-NE)				34-19S-12W			
KB	1812	GL	1803	KB	1810			KB	1812			KB	1812			
LOG	SAMPLE			LOG	LOG	SMPL.	SAMPLE			LOG	SMPL.	LOG	LOG	SMPL.		
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.
ANHYDRITE TOP	634	1178	630	1182												
ANHYDRITE BASE	650	1162	648	1164												
TOPEKA									2706	-894			2663	-851		
HEEBNER SHALE	2982	-1170	2981	-1169	2982	-1172	+ 2	+ 3	2968	-1156	- 14	- 13	2973	-1161	- 9	- 8
TORONTO	2998	-1186	3000	-1188					2986	-1174	- 12	- 14	2996	-1184	- 2	- 4
DOUGLAS	3014	-1202	3018	-1206									3011	-1199	- 3	- 7
BROWN LIME	3102	-1290	3101	-1289	3101	-1291	+ 1	+ 2	3090	-1278	- 12	- 11	3097	-1285	- 5	- 4
LANSING	3116	-1304	3116	-1304	3117	-1307	+ 3	+ 3	3107	-1295	- 9	- 9	3113	-1301	- 3	- 3
BKC	3356	-1544	3356	-1544									3362	-1550	- 6	- 6
CONGLOMERATE	3364	-1552	3360	-1548	3356	-1546	- 6	- 2					3362	-1550	- 2	+ 2
ARBUCKLE	3386	-1574	3386	-1574	3400	-1590	+ 16	+ 16	3376	-1564	- 10	- 10	3382	-1570	- 4	- 4
RTD	3450	-1638	3450	-1638												
LTD	3450	-1638	3450	-1638												

MAI OIL OPERATIONS, KIM UNIT #1





ROCK TYPES



ACCESSORIES

MINERAL

- Carbonaceous Flakes
- ▲ Chert, dark

FOSSIL

- F Fossils < 20%
- Oolite
- ⊗ Oomoldic

TEXTURE

- FX Finexln

OTHER SYMBOLS

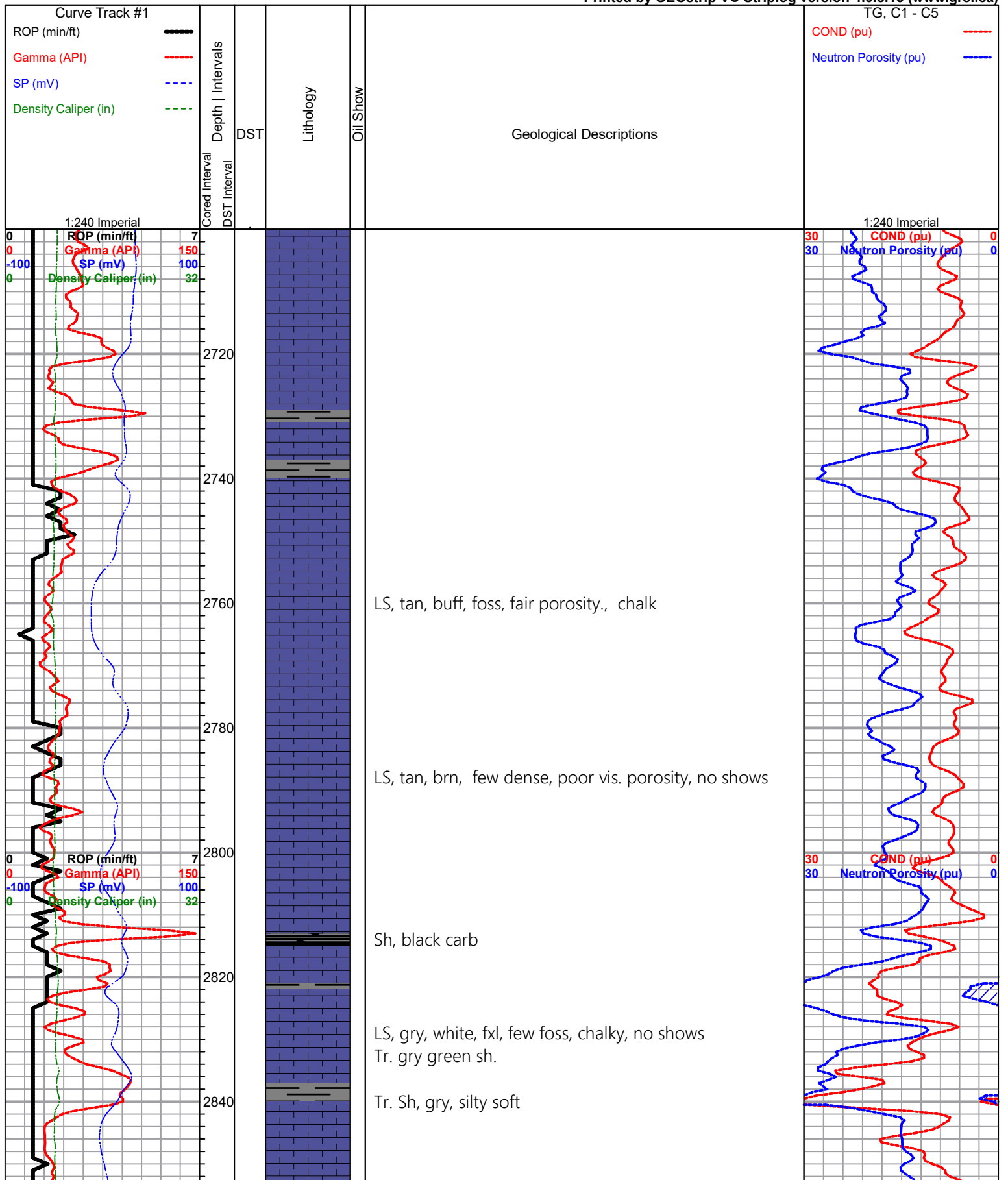
Oil Show

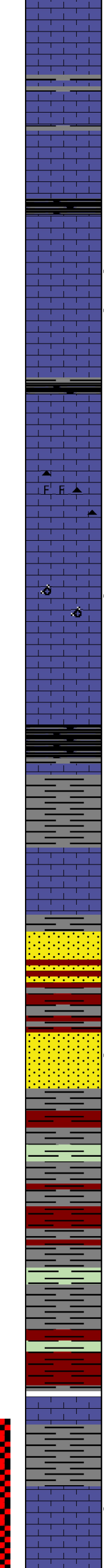
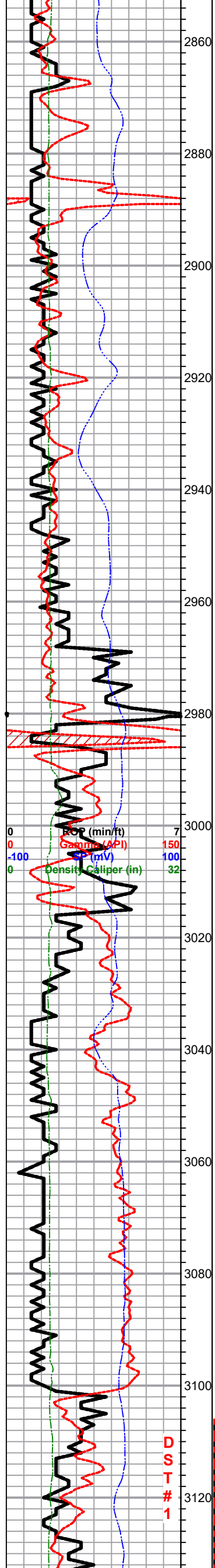
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- * Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)





LS, tan, buff, foss, chalky, tr. tan, brn cherts, nsfo

Ditto a/a

tr. blk carb .

Tr. gry, boney chert,

LS, white, gran. in pt, chalky, tr. brn sppty stain, nsfo, ft. odor

Tr. dk sh, gry

LS, white, gry, fxl, foss, chalky, tr. gry, chert

LS, gry, crm, sub oom, chalky, tr. gry blk stain, nsfo no odor

HEEBNER 2981.0 -11659.0

Sh, black carb

Sh, gry, silty soft

TORONTO 3000.0 -1188.0

LS, white, gry, fxl, foss in pt, chalky, tr. brn stain nsfo, no odor

DOUGLAS 3017.0 -1205.0

Sd. white, gry, greenish, vfg, slity mica, no shows

Sd., white, lime green, vfg., silty, in pt, few with fair porosity, mica, tr. poor light brn stain, nsfo, no odor

Sh, gry greenish, silty, soft

Sh, a/a

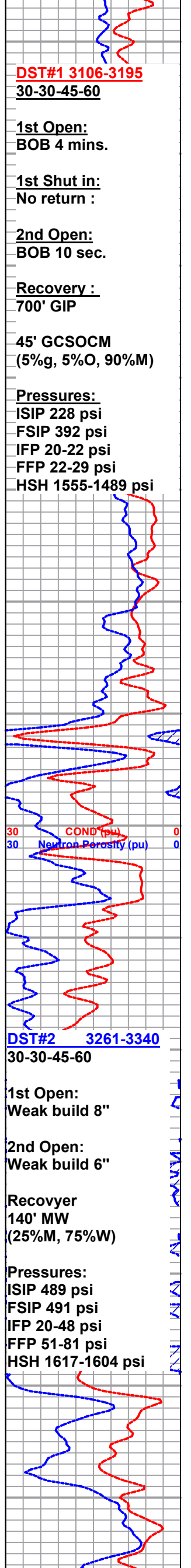
BROWN LIME 3101.0 -1289.0

LS, tan, brn, fxl, dense, few cherty

LANSING 3116.0 -1314.0

LS, white, cream, ool, scattered brn golden brn stain tr. fo ft. odor

LS, tan, cream, dense, poor vis. porosity



DST#1 3106-3195
30-30-45-60

1st Open:
BOB 4 mins.

1st Shut in:
No return :

2nd Open:
BOB 10 sec.

Recovery :
700' GIP

45' GCSOCM
(5%g, 5%O, 90%M)

Pressures:
ISIP 228 psi
FSIP 392 psi
IFP 20-22 psi
FFP 22-29 psi
HSH 1555-1489 psi

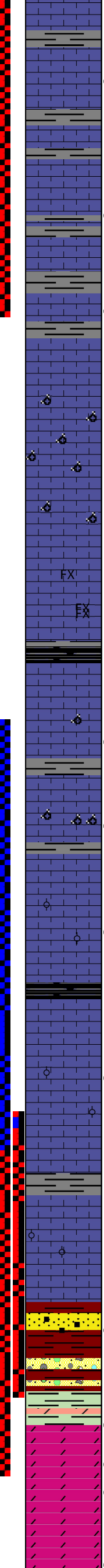
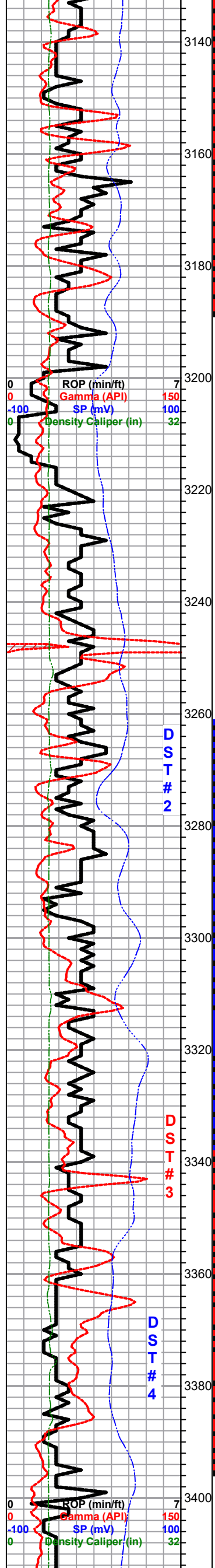
DST#2 3261-3340
30-30-45-60

1st Open:
Weak build 8"

2nd Open:
Weak build 6"

Recoverer
140' MW
(25%M, 75%W)

Pressures:
ISIP 489 psi
FSIP 491 psi
IFP 20-48 psi
FFP 51-81 psi
HSH 1617-1604 psi



Tr. sh, gry, silty

LS, white, gry, foss, ool, poor vis. porosity, tr. spotty brn stain, nsfo, ft. odor

LS, gry, foss, scattered vuggy porosity, brn golden brn stain, tr. pyrite, ft. odor

LS, gry, tan, ool, chalky, poor vis. porosity, brn / gry- blk stain, sfo, ??? odor

LS, tan, gry, oom, good oom/ vuggy porosity, (barren)

LS, a/a, sub oom, chalky

LS, gry, white, chalky --> cherty, dense

Tr. gry, coffee, brn, blk, shale

LS, white, crm, chalky, foss, few sub oom, poor vis. porosity, tr. brn stain, tr. sfo, ??? odor

LS, white, crm, ool, chalky, brn / blk stain, tr. fo, ??? odor

LS, tan, foss, poor scattered / vuggy type por. tr. sfo, faint odor

LS, white, finely ool, chalky, brn blk stain tr. fo, ft. odor

Sh, gry, dk gry

LS, white, crm, ool, chalky in pt, / brn stain, nsfo, no odor

BASE KC 3356.0 -1544.0

Slug dk gry blk sh.

LS, tan, buff, ool, poorly developed porosity, sl. chalky, nsfo, no odor

CONGLOMERATE 3376.0 -1564.0

Sd. white, / cr. med grain, poorly sorted, friable, lt. brn stn, sfo, strong odor.

Sh, maroon, v. c. chert, dk blk carb sh., + white chalk

[ERO. Ar buckle??@3383] Dol, white, frosted, poorly developed poor inxln porosity, v. wk spotty brn stain, wk blk sfo, (sour)

ARBUCKLE 3386.0 -1574.0

Dol. tan/ white, fxl, dense, poor vis. porosity, poor inxln por., tr. blk stain nsfo, ft. odor tr. pyrite

(40" sample) Dol, tan, suc-->. Rhomb. med xln, good inxln porosity, SFO, brn stain, strong odor, inc. lg, clast pyrite

Dol, tan, white, f- med xln, fair inxln porosity, dk. blk patty stain, sour/ sulfuric odor, abd. pyrite in complex

DST#3 3335-3375
30-30-45-45

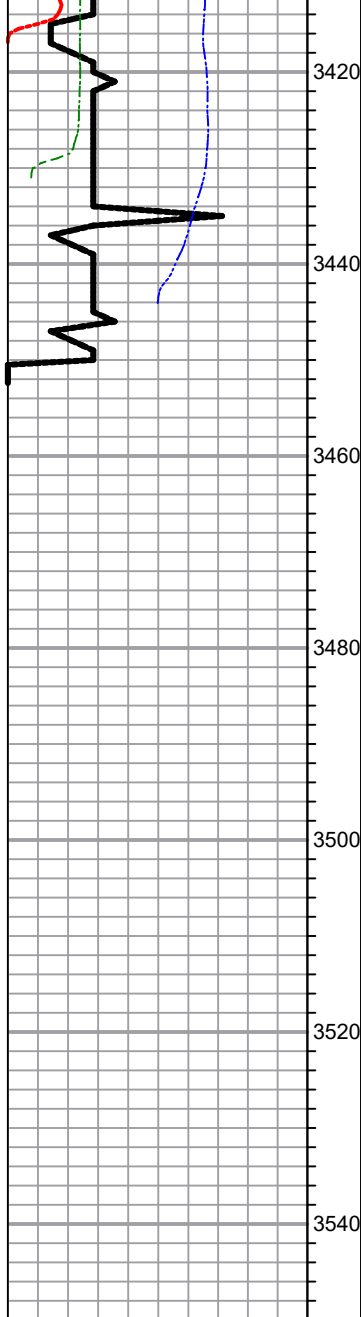
1st Open:
Weak blow

2nd Open:
No blow, flushed tool, no help

Recovery:
5' mud

Jim Musgrove 2700-3340
Wyatt Urban 3340 -RTD

COND (pu)
 Neutron Porosity (pu)



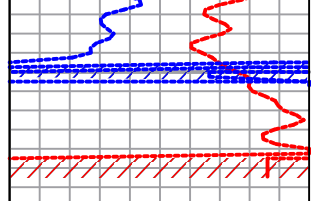
spty stain, sour/ sulfuric odor , abd. pyrite in samples

Dol, white, dense, poor inxln porosity, dense, tr. spty sfo, dk blk sfo, poor odor, tr. Dol. dense, cherty, pyrite infused, nsfo, ft. ??? odor

Dol, white, dense, poor inxln porosity, dense, tr. blk wk spty sfo, no odor , Tr. white, cherty dol. no sfo no odor

Dol white, fxl, dense, poor vis. porosity, no shows, no odor, tr. ool, white chert

LTD 3450.0 -1683.0
RTD 3450.0 -1683.0



DST#4 3330-3394
30-30-45-45

1st Open:
BOB 19 mins.

2nd Open
BOB 29 mins.

Recovery:
30' Clean Oil

60' SWOCM
(10%W, 20%O, 70%M)

160' OCM
(25%O, 75%M)

Pressures:
ISIP 1125 psi
FSIP 1122 psi
IFP 18-62 psi
FFP 68-121 psi
HSH 1660-1619psi



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 WEST WICHITA AVE, RUSSELL KS 67665
 PHONE:785-324-1041 FAX:785-483-1087
 EMAIL: cementing@ruraltel.net

Date: 10/29/2019
 Invoice # 1733

P.O.#:

Due Date: 11/28/2019

Division: *Russell*

Invoice

Contact:
 Mai Oil Operations
Address/Job Location:

8411 Preston Rd. Ste 800
 Dallas TX 75225-5520

Reference:
 KIM UNIT 1 SEC 27-19-12

Description of Work:
 LONG SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 657.71	No				
Common-Class A	270	\$ 4,100.19	Yes				
POZ Mix-Standard	180	\$ 928.85	Yes				
Calcium Chloride	20	\$ 825.64	Yes				
Flo Seal	225	\$ 331.73	Yes				
Bulk Truck Matl-Material Service Charge	478	\$ 352.37	No				
Premium Gel (Bentonite)	9	\$ 192.40	Yes				
8 5/8" Top Rubber Plug	1	\$ 89.94	Yes				
Pump Truck Mileage-Job to Nearest Camp	15	\$ 49.76	No				
Bulk Truck Mileage-Job to Nearest Bulk Plant	15	\$ 38.70	No				

SubTotal: \$ 7,567.29

Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (189.18)

SubTotal for Taxable Items: \$ 6,307.03

SubTotal for Non-Taxable Items: \$ 1,071.08

Total: \$ 7,378.11

Tax: \$ 473.03

7.50% Barton County Sales Tax

Amount Due: \$ 7,851.14

Applied Payments:

Balance Due: \$ 7,851.14

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

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

No. 1733

Cell 785-324-1041

Date	10-29-19	Sec.	27	Twp.	19	Range	12	County	Barton	State	KS	On Location		Finish	8:45 AM
Lease								Location		Great Bend - 8E to 80th Ave, 1/4 N,					

Lease	Kim unit		Well No.	#1	Owner	W/Info	
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.	642'	Street			
Csg.	8 5/8"	Depth	642'	City	State		
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Tool		Depth		Cement Amount Ordered 450 60% 40% 2% Gel 1/2# Flowseal			
Cement Left in Csg.	20'	Shoe Joint	20'				
Meas Line		Displace	39 1/2 Bu				

EQUIPMENT

Pumptrk	17	No.	Cementer	Tony L.
			Helper	
Bulktrk	19	No.	Driver	Lance
Bulktrk	p.u.	No.	Driver	Rick

Com.	270
Poz. M.	1/80
Gel.	9'
Calcium	20

JOB SERVICES & REMARKS

Remarks: Cement did Circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Hulls

Salt

Flowseal 225 #

Kol-Seal

Mud CLR 48

CFL-117 or CD110 CAF 38

Sand

Handling 478

Mileage

FLOAT EQUIPMENT

Guide Shoe Rubber plug

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

Pumptrk Charge Long Surface

Mileage 15

Tax

Discount

Total Charge

X Signature *Joy Davis*

Thanks



QUALITY OILWELL CEMENTING, INC.
 PO BOX 32 - 740 WEST WICHITA AVE, RUSSELL KS 67665
 PHONE:785-324-1041 FAX:785-483-1087
 EMAIL: cementing@ruraltel.net

Date: 11/4/2019
 Invoice # 1611

P.O.#:

Due Date: 12/4/2019

Division: Russell

Invoice

Contact:
 Mai Oil Operations
 Address/Job Location:

8411 Preston Rd. Ste 800
 Dallas TX 75225-5520

Reference:
 KIM UNIT 1 SEC 27-19-12

Description of Work:
 PROD STRING

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 657.71	No	Pump Truck Mileage-Job to Nearest Camp	15	\$49.76	No
Common-Class A	96	\$ 1,457.85	Yes	Bulk Truck Mileage-Job to Nearest Bulk Plant	15	\$38.70	No
Mud Clear	1000	\$ 545.51	Yes				
5 1/2" Turbolizer	10	\$ 530.77	Yes				
POZ Mix-Standard	64	\$ 330.26	Yes				
Auto Fill Float Shoe, 5 1/2"	1	\$ 247.69	Yes				
Latch Down Plug & Baffle, 5 1/2"	1	\$ 196.09	Yes				
Salt (Fine)	14	\$ 135.20	Yes				
Bulk Truck Matl-Material Service Charge	177	\$ 130.48	No				
Premium Gel (Bentonite)	3	\$ 64.13	Yes				
Flo Seal	40	\$ 58.97	Yes				

SubTotal: \$ 4,443.13

Discount Available ONLY if Invoice is Paid & Received
 within listed terms of invoice: \$ (111.08)

SubTotal for Taxable Items: \$ 3,477.31

SubTotal for Non-Taxable Items: \$ 854.74

Total: \$ 4,332.05

Tax: \$ 260.80

7.50% Barton County Sales Tax

Amount Due: \$ 4,592.85

Applied Payments:

Balance Due: \$ 4,592.85

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.

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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

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

No. 1611

Date	11-4-19	Sec.	27	Twp.	19	Range	12	County	BARTON	State	Kansas	On Location		Finish	7:30 Am
Location								ELLINWOOD 2W 1/4 N.							

Lease	KIM UNIT		Well No. #			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	SOUTH WIND		DRG. Rig #	3 Jay		Charge To	MAI OIL OPERATIONS INC									

Type Job	PRODUCTION		STRING			Street										
Hole Size	7 7/8		T.D.	3450		City	State									
Csg.	5 1/2 14# CSG		Depth	3448												

Size	8 5/8 Surface		Depth	642												
Tool	LATCH DN ASSY		Depth	3427		The above was done to satisfaction and supervision of owner agent or contractor.										
Cement Left in Csg.	21 3/4		Shoe Joint	21 3/4		Cement Amount Ordered	160 SX 7/40 10% SALT 2966									

Meas Line			Displace	83.58/BBH			1/4" # FIO SEAL									
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EQUIPMENT				Common	96
Pumptrk	20	No.	Cementer Helper	Poz. Mix	64
Bulktrk	14	No.	Driver	Gel.	3
Bulktrk		No.	Driver	Calcium	

JOB SERVICES & REMARKS				Hulls	
Remarks:				Salt	14
Rat Hole	30SX			Flowseal	40#
Mouse Hole				Kol-Seal	
Centralizers	1-8-10-12			Mud CLR 48	1000 GAL
Baskets				CFL-117 or CD110 CAF	38
D/V or Port Collar				Sand	
	Ran 5 1/2 14# csg. Set @ 3448			Handling	177
	Drop AFU - Bell Received Circ.			Mileage	
	Circ. ON BOTTOM APPROX 45 min.				
	Pump 1000 GAL mud CLR 48				
	Cement Rat w/ 30 SX.				
	mix 130 SX Down Hole.				
	Clear-Line - Release LATCH/Plug				
	Displaced a total of BBH H ₂ O				
	LAND Plug @ 1500#				
	HAD 650# LIST Pressure.				
	Release Pressure AFU - Plug (HELD)				

FLOAT EQUIPMENT				Guide Shoe	
				Centralizer	10 TURBO-
				Baskets	
				AFU Inserts	
				Float Shoe	1-
				Latch Down	1-

Pumptrk Charge	prod string				
Mileage	15				

THANK'S!				Tax	
Signature				Discount	
Total Charge					