

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 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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# Musgrove

Petroleum Geology  
212 Main Street, Claflin KS



## MAI OIL OPERATIONS, INC.

Scale 1:240 Imperial

Well Name: K\_R Mai # 1  
 Surface Location: 8-16S-11W  
 Bottom Location: 2310' FNL 909' FWL (W/2-SE-SW-NW)  
 API: 15-009-26286-0000  
 License Number: 5259  
 Spud Date: 2/3/2020 Time: 3:34 PM  
 Region: BARTON CO.  
 Drilling Completed: 2/10/2020 Time: 5:50 PM  
 Surface Coordinates:  
 Bottom Hole Coordinates:  
 Ground Elevation: 1853.00ft  
 K.B. Elevation: 1862.00ft  
 Logged Interval: 2600.00ft To: 3398.00ft  
 Total Depth: 3400.00ft  
 Formation: LANSING  
 Drilling Fluid Type: Chemical/Fresh Water Gel

DRILLING				OIL				DRY				OIL				
MAI OIL OPERATIONS				CINCRIS ENERGY				KAISER - FRANCIS				JASON OIL				
K&R UNIT #1				WIRTH #1				OLEARY #1				WIRTH #1				
8-16s-11w [2310 FNL & 909' FWL]				8-16-11W [2050' FNL & 4190'FWL]				8-16S-11W NW-SW-NW				7-16-11W				
KB	1862	GL	1474	KB	1868			RB	1865			DF	1820			
LOG	SAMPLE			LOG	LOG	SMPL.	SAMPLE.	LOG	SMPL.	LOG	LOG	SMPL.				
LOG DEPTH	S.S	SAMPLE DEPTH	S.S	DEPTH	S.S.	DEPTH	CORR.	DEPTH	S.S	CORR.	CORR.	DEPTH	S.S	CORR.	CORR.	
ANHYDRITE	725	1137	724	1138	711	1157	- 20	- 19	737	1128	+ 9	+ 10	675	1145	- 8	- 7
B. ANHYDRITE	750	1112	750	1112	738	1130	- 18	- 18	764	1101	+ 11	+ 11	700	1120	- 8	- 8
TOPEKA	2622	-760	2618	-756					2640	-775	+ 15	+ 19	2568	-748	- 12	- 8
KING HILL	2749	-887	2754	-892	2746	-878	- 9	- 14								
QUEEN HILL	2820	-958	2821	-959	2814	-946	- 12	- 13								
PLATTSMOUTH	2850	-988	2849	-987	2845	-977	- 11	- 10								
HEEBNER	2908	-1046	2908	-1046	2901	-1033	- 13	- 13	2927	-1062	+ 16	+ 16	2851	-1031	- 15	- 15
TORONTO	2926	-1064	2928	-1066	2916	-1048	- 16	- 18	2947	-1082	+ 18	+ 16	2869	-1049	- 15	- 17
DOUGLAS	2939	-1077	2941	-1079	2931	-1063	- 14	- 16	2958	-1093	+ 16	+ 14				
BROWN LIME	3000	-1138	3003	-1141	2996	-1128	- 10	- 13	3022	-1157	+ 19	+ 16	2943	-1123	- 15	- 18
LANSING	3014	-1152	3015	-1153	3008	-1140	- 12	- 13	3036	-1171	+ 19	+ 18	2959	-1139	- 13	- 14
BKC	3279	-1417	3280	-1418	3295	-1427	+ 10	+ 9					3228	-1408	- 9	- 10
ARBUCKLE	3297	-1435	3298	-1436	3291	-1423	- 12	- 13					3274	-1454	+ 19	+ 18
RTD	3400	-1538	3400	-1538	3291	-1423	- 115	- 115	3050	-1185	- 353	- 353	3330	-1510	- 28	- 28
LTD	3400	-1538	3400	-1538									3327	-1507	- 31	- 31



### DRILLSTEM TESTS

No Interval Formation

1	3070-3114	LKC F-G 2490' GIP, 180' GCO 310' GOCM
2	3180-3250	LKC "J-L" :50' M
3	3271-3308	ARBUCKLE 420' G.C.O, 120 'G_S.O.C.M
4	3308-3316	ARBUCKLE 30' GIP .600' C.O.

**NOTES**

Contractor: Southwind Drilling, Inc. (Rig #3)  
 Spud: 2/04/2020      Comp: 2/10/2020  
 RTD: 3400'      LTD: 3400  
 Mud Up: 2400'      Type Mud: Chemical

Samples Saved From: 2600' to RTD  
 Drilling Time Kept From: 2600' to RTD  
 Samples Examined From: 2600' to RTD  
 Geological Supervision from: 2600' to RTD  
 Geologist on Well: Jim Musgrove

Surface Casing: 8 5/8" @ 402'  
 Production Casing: 5 1/2" @3387.76'

Electronic Surveys: Logged by ELI WIRELINE, CDL, CNL, DIL, MICRO, SON

**OPEN HOLE LOGS**

Logging Company: ELI, WIRELINE  
 Logging Engineer: JEFF LUEBBERS  
 Truck #: 922339  
 Logging Date: 2/10/2020      Time Spent: 4.5  
 # Logs Run: 4      # Logs Run Successful: 4

**LOGS RUN**

Tool	Logged Interval	Logged Interval	Hours	Remarks	Run #
CDL/CNL	2600.00ft	3398.00ft	2.00		1
MEL/SON	0.00ft	3398.00ft	2.00		2

**LOGGING OPERATION SUMMARY**

Date	From	To	Description Of Operation
12/5/2007	0.00ft	3398.00ft	CDL/CNL, MEL/SON

**LOGGED BY**



Company: MUSGROVE PETROLEUM INC.  
 Address: 212 MAIN STREET  
CLAFLIN, KS, 67525

Phone Nbr: 620-786-0839  
 Logged By: Geologist

Name: JAMES C. MUSGROVE

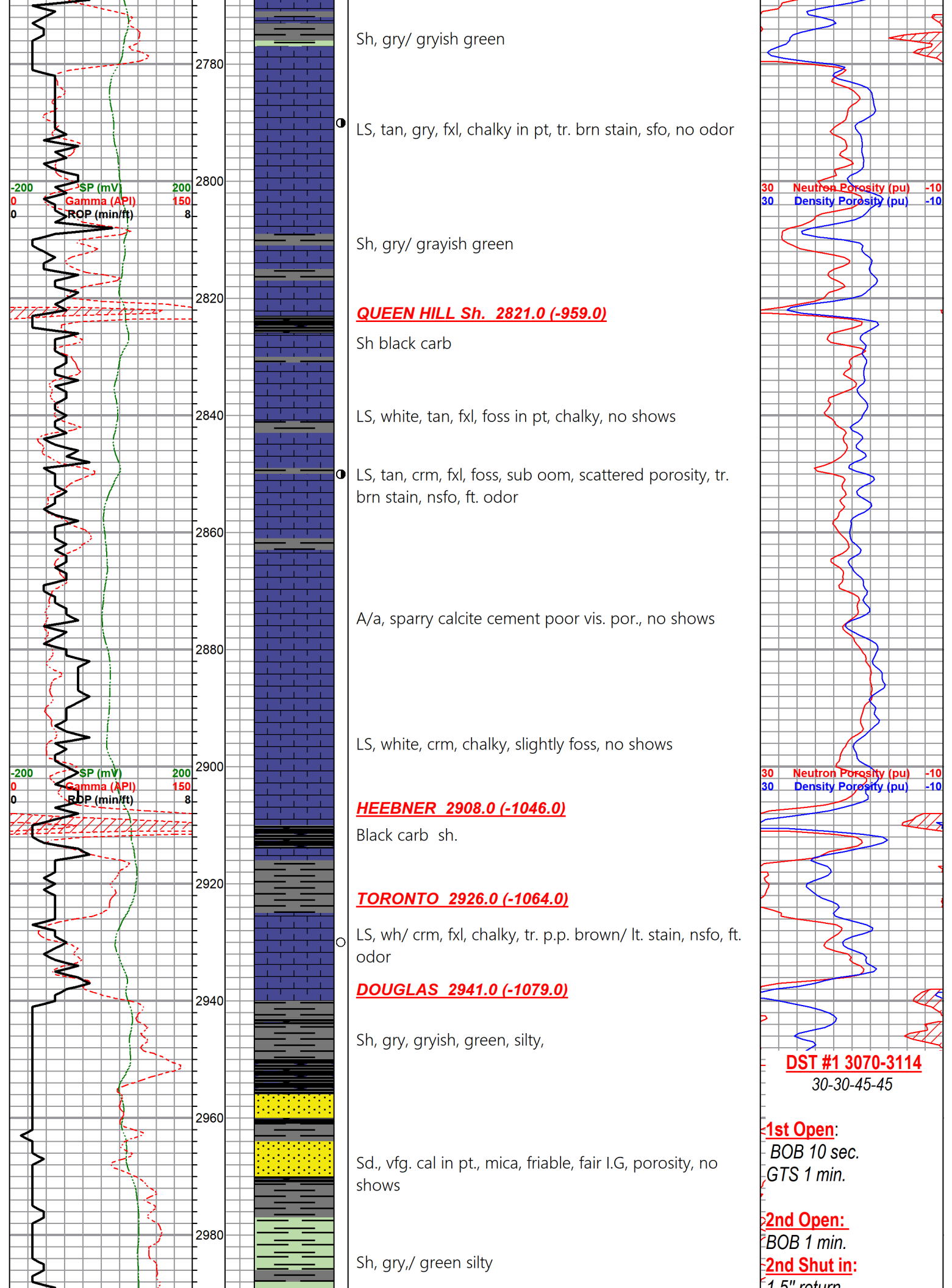
**ELEVATIONS**

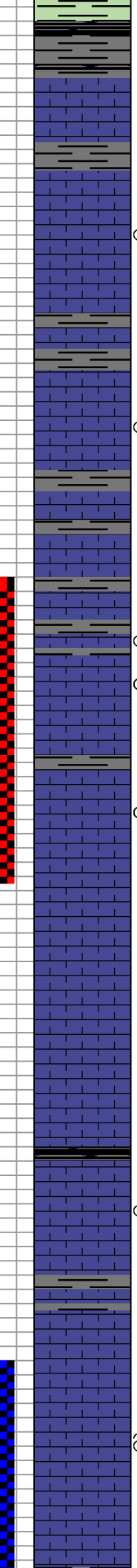
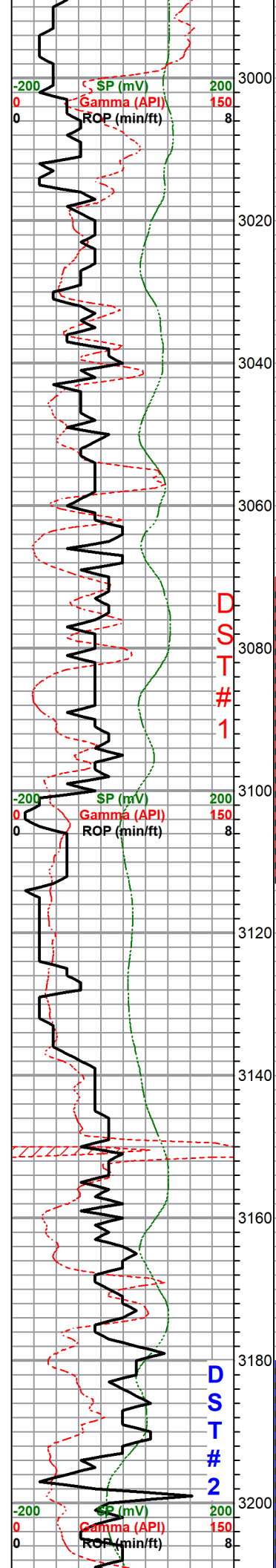
K.B. Elevation: 1862.00ft      Ground Elevation: 1853.00ft  
 K.B. to Ground: 9.00ft

**LEGEND**

- |                    |            |
|--------------------|------------|
| <b>Oil Show</b>    | <b>DST</b> |
| ● Good Show        | ■ DST Int  |
| ● Fair Show        | ■ DST alt  |
| ● Poor Show        | ■ Core     |
| ○ Spotted or Trace | tail pipe  |







**BROWN LIME 3003.0 (-1141.0)**

LS, tan, brown, cherty in pt, dense  
Sh, gry/green

**LANSING 3015.0 (-1153.0)**

LS, gry white, foss, chalky, por vis. tr. brown , stain , nsfo, no odor

Sh, gry, silty + wh/ gry- opaque cherts

LS, gry, tan, fxl, sligthty chalky tr. gry, lightly chalky tr. gry brn stain nsfo no odor

LS, gry, ool, poor vis. porosity, no shows

LS, white/ crm, ool, scattered porosity, golden brown stain , sfo, ft. odor

LS, gry, white, oom, slightly ool, good oom por., golden brn, stain, sfo, ft. odor

LS, gry, oom, good oom, chalky, fair porosity, no shows

LS, tan, cherty (dense)

Sh, black carb

LS, gry, white, ool, poor visl. porosity, tr. brn stain , nsfo, ft. odor

LS, tan, ool, foss, slighly cherty (dense) poor porosity, no shows

LS, white, gry, ool, oom chalky in pt, poor brown stain , wksfo, ??? odor

LS, white, gry, chalky, poor porosity, no shows

**Recovery:**

2490' GIP  
360' GHOCM  
180' GSOCM

**Pressures:**

ISIP 532 psi  
FSIP 500 psi  
IFP 238 -222 psi  
FFP 250-500 psi  
HSH 1488-1447 psi

30 Neutron Porosity (pu) -10  
30 Density Porosity (pu) -10

**DST#2 3180-3250**

30-30-45-45

**1st Open:**

Weak Blow

**Recovery:**

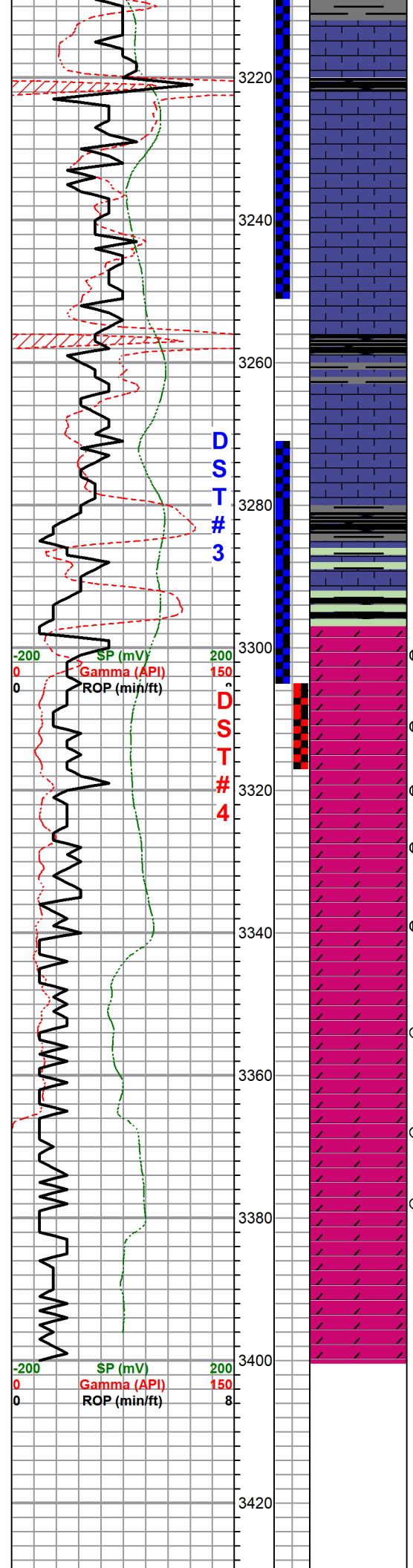
50' Mud w/ tr. of oil

**Pressures:**

ISIP 220 psi  
FSIP 244 psi  
IFP 28-35 psi  
HSH 1597-1549 psi

30 Neutron Porosity (pu) -10  
30 Density Porosity (pu) -10





Sh, black carb

LS, tan, white chlky, cherty dense.

LS, white/ gry, ool,/ foss

Sh, black carb  
sh, gry, silty

LS, gry, white, foss, ool, chalky ==> cherty (dense)

**BKC 3280.0 (-1418.0)**  
Sh, gry, green , maroon, sh. soft

**ARBUCKLE 3298.0 (-1419.0)**

Dol, white, crm, med-fxl, poor vis. porosity, tr. brn stain ,nsfo, ft. odor

Dol, white, med xln, fair inlxn por., brn stain , sfo, faint --> fair odor

Dol, white, med, coarse xln, good ixln vuggy porosity good stain , sat., good show of free oil

Dol, a/a, fair --> good stain/ sat., sfo, good odor

Dol, a/a, sandy in part, fair stain, sat, sfo, ft. odor+white chert

Dol, a/a, +pyrite, tan, & white chert, poor stain, tr. fo, ft. odor

a/a, dol, sandy, in part, fair stain, sat, sfo, ft. odor , + white chert

Dol, a/a, + gry & white chert no shows , fair odor

**RTD 3400.0 (-1538.0)**  
**LTD 3400.0 (-1538.0)**

**DST # 3 3271-3308**  
**30-30-30-45**

**1st Open:**  
BOB 3 min 20 sec.  
**1st Shut in:**  
Surface blow  
**2nd Open :**  
BOB 7 mins.

**Recovery:**  
420' Clean Gassy Oil  
120' G&SOCM  
(10%G, 20%O, 70%M)

**Pressures:**  
SIP 600 psi  
FSIP 590 psi  
IFP 40-150 psi  
FFP 158-217 psi  
HSH 1591-1554 psi

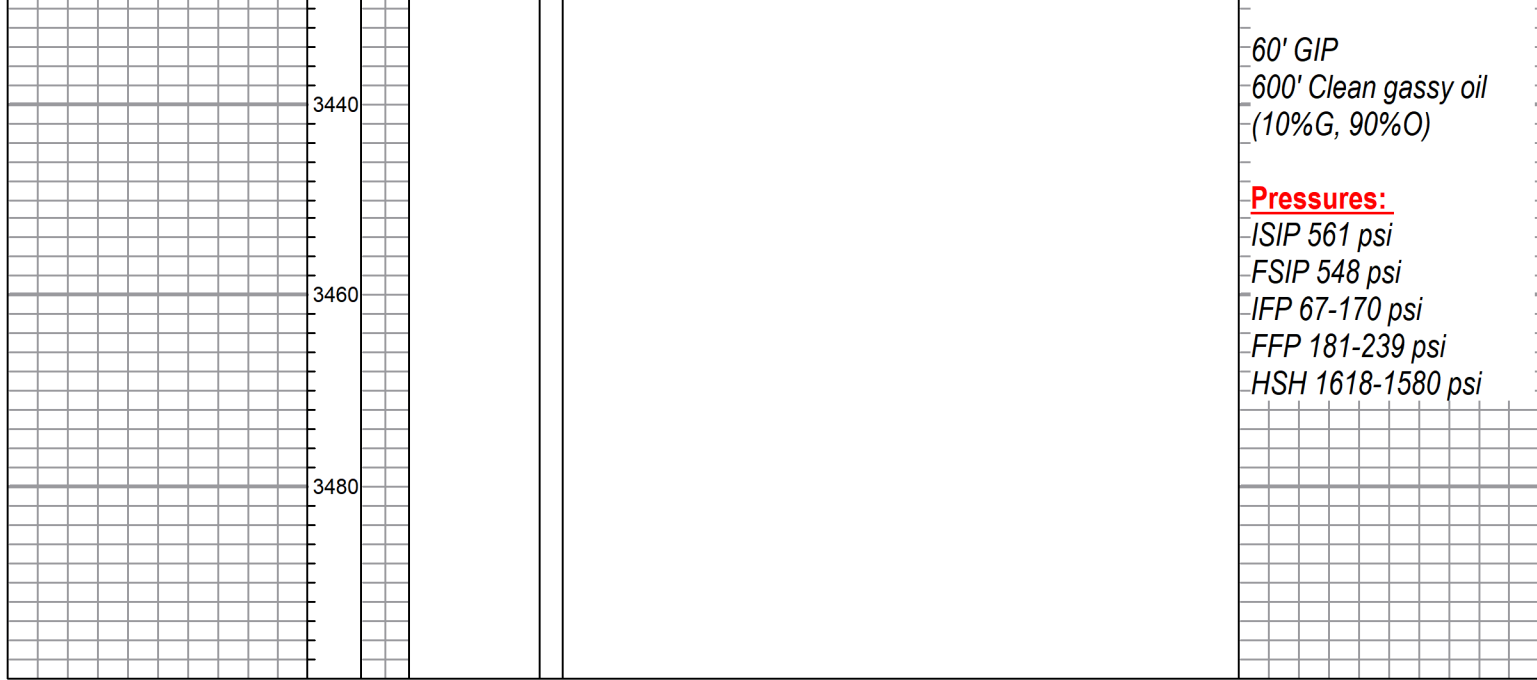
**DST#4 3308-3316**  
**30-30-30-45**

**1st Open:**  
BOB 1.45 mins.

**1st Shut-in:**  
1/4" blow back

**2nd Open:**  
BOB 5 mins.  
**2nd Shut-in:**  
no return

**Recovery:**







**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: 2/4/2020  
 Invoice # 1884

P.O.#:

Due Date: 3/5/2020

Division: Russell

# Invoice

**Contact:**  
 Mai Oil Operations  
**Address/Job Location:**

8411 Preston Rd. Ste 800  
 Dallas TX 75225-5520

**Reference:**  
 K&R MAI 1 SEC 8-16-11

**Description of Work:**  
 SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 675.02	No				
Common-Class A	120	\$ 1,870.26	Yes				
POZ Mix-Standard	80	\$ 423.68	Yes				
Calcium Chloride	9	\$ 381.32	Yes				
Bulk Truck Matl-Material Service Charge	213	\$ 161.15	No				
Pump Truck Mileage-Job to Nearest Camp	35	\$ 119.16	No				
Premium Gel (Bentonite)	4	\$ 87.76	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	35	\$ 92.68	No				

**Invoice Terms:**  
 Net 30

SubTotal:	\$	3,811.04
Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice:	\$	(95.28)
<hr/>		
SubTotal for Taxable Items:	\$	2,693.95
SubTotal for Non-Taxable Items:	\$	1,021.81
<hr/>		
Total:	\$	3,715.76
Tax:	\$	202.05
<hr/>		
7.50% Barton County Sales Tax		

**Thank You For Your Business!**

<b>Amount Due:</b>	<b>\$</b>	<b>3,917.81</b>
<b>Applied Payments:</b>		
<b>Balance Due:</b>	<b>\$</b>	<b>3,917.81</b>

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. 1884

Cell 785-324-1041

Date	2-4-20	Sec.	8	Twp.	16	Range	11	County	Barton	State	Ks	On Location		Finish	3:15AM	
Lease	K + R mai							Well No.	1	Owner	E/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	Mai oil operations							
Hole Size	12 1/4"		T.D.	402'		Depth	402'									
Csg.	8 5/8"		Depth													
Tbg. Size			Depth													
Tool			Depth													
Cement Left in Csg.	15'		Shoe Joint	15'		Cement Amount Ordered	200 60/40 4% CC 2% Gel									
Meas Line			Displace	24 1/2 BLS												
<b>EQUIPMENT</b>										Common 120						
Pumptrk	17	No.	Cementer	David		Poz. Mix	80									
Bulktrk	15	No.	Driver	Tony		Gel.	4									
Bulktrk	p.u.	No.	Driver	Rick		Calcium	9									
<b>JOB SERVICES &amp; REMARKS</b>										Hulls						
Remarks:	Cement did Circulate															
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 213															
	Mileage															
<b>FLOAT EQUIPMENT</b>										Guide Shoe						
										Centralizer						
										Baskets						
										AFU Inserts						
										Float Shoe						
										Latch Down						
										Pumptrk Charge Surface						
										Mileage 35						
										Tax						
										Discount						
										Total Charge						
X Signature	Joy Krui															

Thanks

575



**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: 2/10/2020  
 Invoice # 1889

P.O.#:  
 Due Date: 3/11/2020  
 Division: Russell

# Invoice

**Contact:**  
 Mai Oil Operations  
**Address/Job Location:**

8411 Preston Rd. Ste 800  
 Dallas TX 75225-5520

**Reference:**  
 K & R MAI 1 SEC 8-16-11

**Description of Work:**  
 PROD STRING

**Services / Items Included:**

Quantity	Price	Taxable
Labor	\$ 675.02	No
Common-Class A	\$ 1,496.21	Yes
Mud Clear	\$ 1,104.61	Yes
5 1/2" Turbolizer	\$ 708.16	Yes
POZ Mix-Standard	\$ 338.95	Yes
Auto Fill Float Shoe, 5 1/2"	\$ 254.21	Yes
Latch Down Plug & Baffle, 5 1/2"	\$ 201.25	Yes
Salt (Fine)	\$ 138.76	Yes
Bulk Truck Matl-Material Service Charge	\$ 133.91	No
Pump Truck Mileage-Job to Nearest Camp	\$ 119.16	No
Bulk Truck Mileage-Job to Nearest Bulk Plant	\$ 92.68	No

Item	Quantity	Price	Taxable
Premium Gel (Bentonite)	3	\$65.82	Yes
Flo Seal	40	\$60.53	Yes

SubTotal: \$ 5,389.26

**Invoice Terms:**

Net 30

Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (134.73)

SubTotal for Taxable Items:	\$ 4,259.27
SubTotal for Non-Taxable Items:	\$ 995.26

Total: \$ 5,254.53

Tax: \$ 319.45

7.50% Barton County Sales Tax

**Amount Due: \$ 5,573.98**

**Applied Payments:**

**Balance Due: \$ 5,573.98**

**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.

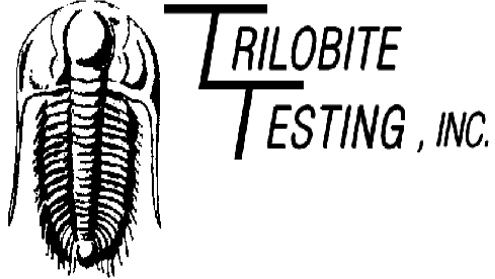
Federal Tax I.D.# 20-2886107

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

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

No. 1889

Date	2-10-20	Sec.	8	Twp.	16	Range	11	County	Barton	State	Ks	On Location		Finish	5:45
Lease								K+R Mai		Well No.		1			
Contractor								Southwind		#3		Owner E.H. To			
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								Longstring		Charge To		Mai oil operations			
Hole Size								7 7/8"		T.D.		3400'			
Csg.								5 1/2" 14# New		Depth		3387.76'			
Tbg. Size										Depth					
Tool										Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg.								21.85'		Shoe Joint		21.85'			
Meas Line								Displace		82 BLS		1/4# Flo-seal			
<b>EQUIPMENT</b>															
Pumptrk								17		No.		Cementer Helper Tim			
Bulktrk								14		No.		Driver Mike			
Bulktrk								P.U.		No.		Driver Rick			
<b>JOB SERVICES &amp; REMARKS</b>															
Remarks:								Common 96							
Rat Hole								30 SX		Poz. Mix		64			
Mouse Hole										Gel.		3			
Centralizers								1-13		Calcium					
Baskets								pipe on bottom break Circulation		Hulls					
D/V or Port Collar								pump 1600 gal mud clear		Salt		14			
48, plug Rathole w/ 30sx, Hook to 5 1/2" Casing mix 130 sx								Cement shut down wash		Flowseal		40#			
pump + lines Displaced plug w/ 82 BLS NW. Released held								Lift pressure 600 #		Kol-Seal					
Land plug to 1500 #								Thanks		Mud CLR 48		1000 gal			
										CFL-117 or CD110 CAF 38					
										Sand					
										Handling		177			
										Mileage					
<b>FLOAT EQUIPMENT</b>															
										Guide Shoe					
										Centralizer		13			
										Baskets					
										AFU Inserts					
										Float Shoe		1			
										Latch Down		1			
										Pumptrk Charge		prod string			
										Mileage		35			
Signature								Chris		Tax					
										Discount					
										Total Charge					



## DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

8411 Preston Rd STE 800 Dallas TX  
75225+5520

ATTN: Jim Musgrove

### **K&R Mai #1**

### **8-16s-11w Barton,KS**

Start Date: 2020.02.07 @ 08:36:00

End Date: 2020.02.07 @ 16:38:20

Job Ticket #: 65722                      DST #: 1

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

Printed: 2020.02.11 @ 10:38:15





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

ATTN: Jim Musgrove

Job Ticket: 65722

**DST#: 1**

Test Start: 2020.02.07 @ 08:36:00

## GENERAL INFORMATION:

Formation: **LKC F - G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:53:40

Time Test Ended: 16:38:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

**Interval: 3070.00 ft (KB) To 3114.00 ft (KB) (TVD)**

Reference Elevations: 1862.00 ft (KB)

Total Depth: 3114.00 ft (KB) (TVD)

1853.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 6772**

**Inside**

Press@RunDepth: 250.10 psig @ 3071.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.07

End Date:

2020.02.07

Last Calib.:

2020.02.07

Start Time:

08:36:01

End Time:

16:38:20

Time On Btm:

2020.02.07 @ 10:50:10

Time Off Btm:

2020.02.07 @ 14:04:39

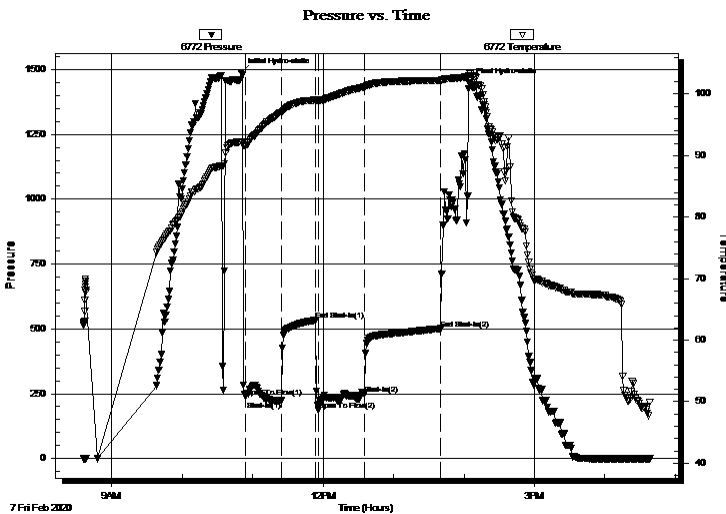
**TEST COMMENT:** IF-30- BOB 10 secs GTS 1min built to 693,522 mcf/d

ISI-30- ---

FF-45- BOB 1min built to 568,563 mcf/d

FSI-60- 1 1/2" blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1488.38	92.28	Initial Hydro-static
4	238.30	91.59	Open To Flow (1)
35	222.01	97.06	Shut-In(1)
64	532.46	99.03	End Shut-In(1)
66	186.23	98.94	Open To Flow (2)
106	250.10	101.17	Shut-In(2)
170	500.64	102.23	End Shut-In(2)
195	1447.31	103.52	Final Hydro-static

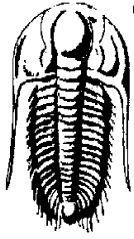
## Recovery

Length (ft)	Description	Volume (bbl)
60.00	GSOCM 20%G 10%O 70%M	0.84
120.00	GSOCM 50%G 10%O 40%M	1.68
180.00	GHOCM 20%G 50%O 30%M	2.52
180.00	GCO 20%G 80%O	2.52
0.00	GIP 2490'	0.00

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	60.00	118.03
Last Gas Rate	0.75	22.00	568.56
Max. Gas Rate	0.38	130.00	528.97





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65722

**DST#: 1**

ATTN: Jim Musgrove

Test Start: 2020.02.07 @ 08:36:00

## Tool Information

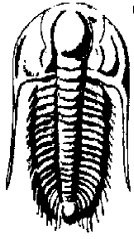
Drill Pipe:	Length: 3068.00 ft	Diameter: 3.80 inches	Volume: 43.04 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 43.04 bbl</u>	Tool Chased 7.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3070.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	64.00 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			3051.00	
Shut In Tool	5.00			3056.00	
Hydraulic tool	5.00			3061.00	
Packer	5.00			3066.00	20.00 Bottom Of Top Packer
Packer	4.00			3070.00	
Stubb	1.00			3071.00	
Recorder	0.00	6772	Inside	3071.00	
Recorder	0.00	6769	Outside	3071.00	
Perforations	6.00			3077.00	
Change Over Sub	1.00			3078.00	
Drill Pipe	32.00			3110.00	
Change Over Sub	1.00			3111.00	
Bullnose	3.00			3114.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 64.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65722

**DST#: 1**

ATTN: Jim Musgrove

Test Start: 2020.02.07 @ 08:36:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

42 deg API

Mud Weight: 8.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GSOCM 20%G 10%O 70%M	0.842
120.00	GSOCM 50%G 10%O 40%M	1.683
180.00	GHOCM 20%G 50%O 30%M	2.525
180.00	GCO 20%G 80%O	2.525
0.00	GIP 2490'	0.000

Total Length: 540.00 ft

Total Volume: 7.575 bbl

Num Fluid Samples: 0

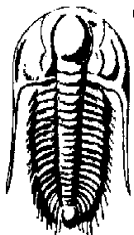
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**GAS RATES**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65722

**DST#: 1**

ATTN: Jim Musgrove

Test Start: 2020.02.07 @ 08:36:00

### Gas Rates Information

Temperature: 59 (deg F)

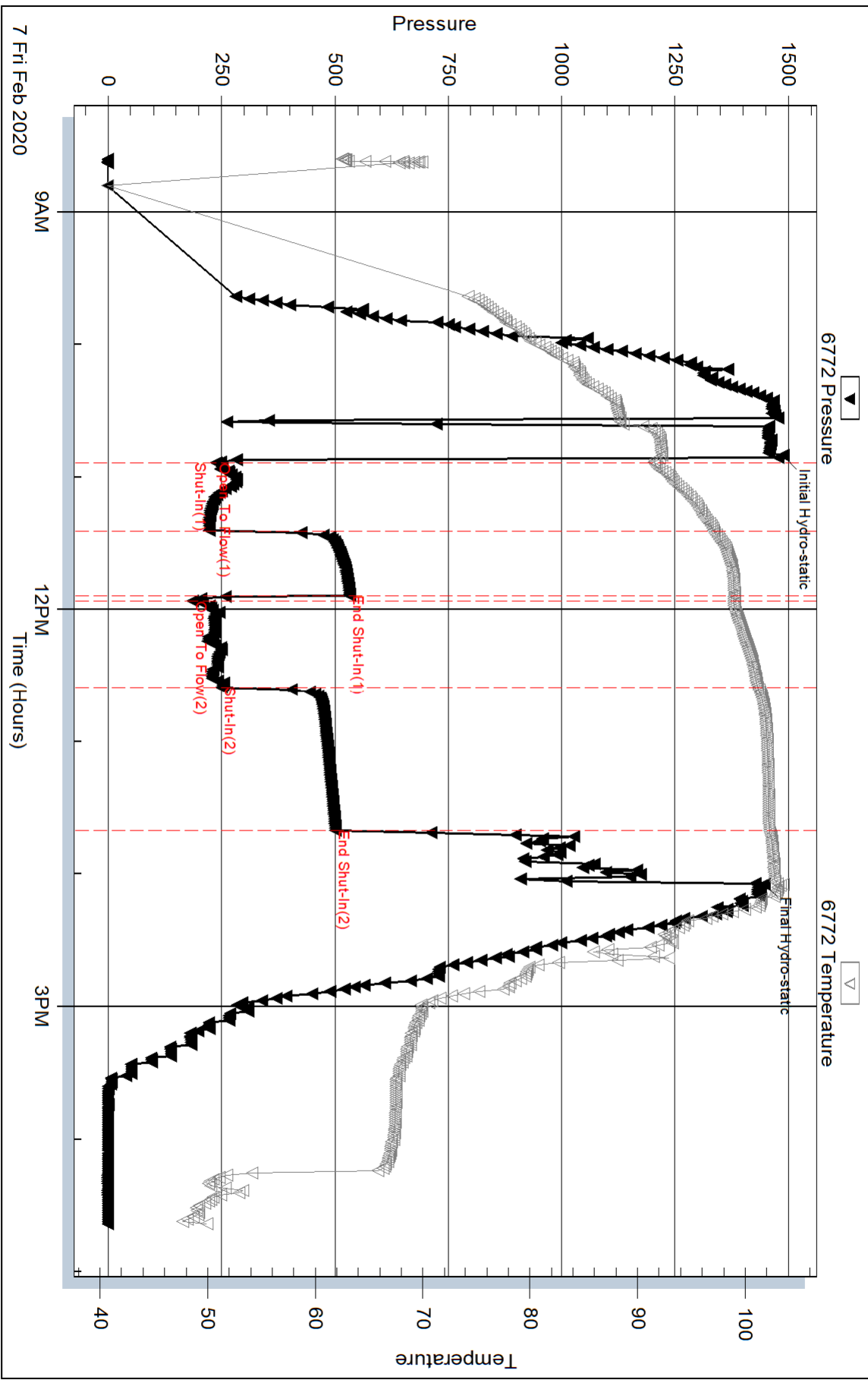
Relative Density: 0.65

Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	2	0.25	60.00	118.03
1	10	0.38	130.00	528.97
1	20	0.75	34.00	756.00
1	30	0.75	30.00	693.52
2	2	0.75	9.00	365.50
2	5	0.75	27.00	646.66
2	10	0.75	29.00	677.90
2	20	0.75	26.00	631.04
2	30	0.75	26.00	631.04
2	40	0.75	23.00	584.18
2	45	0.75	22.00	568.56

### Pressure vs. Time

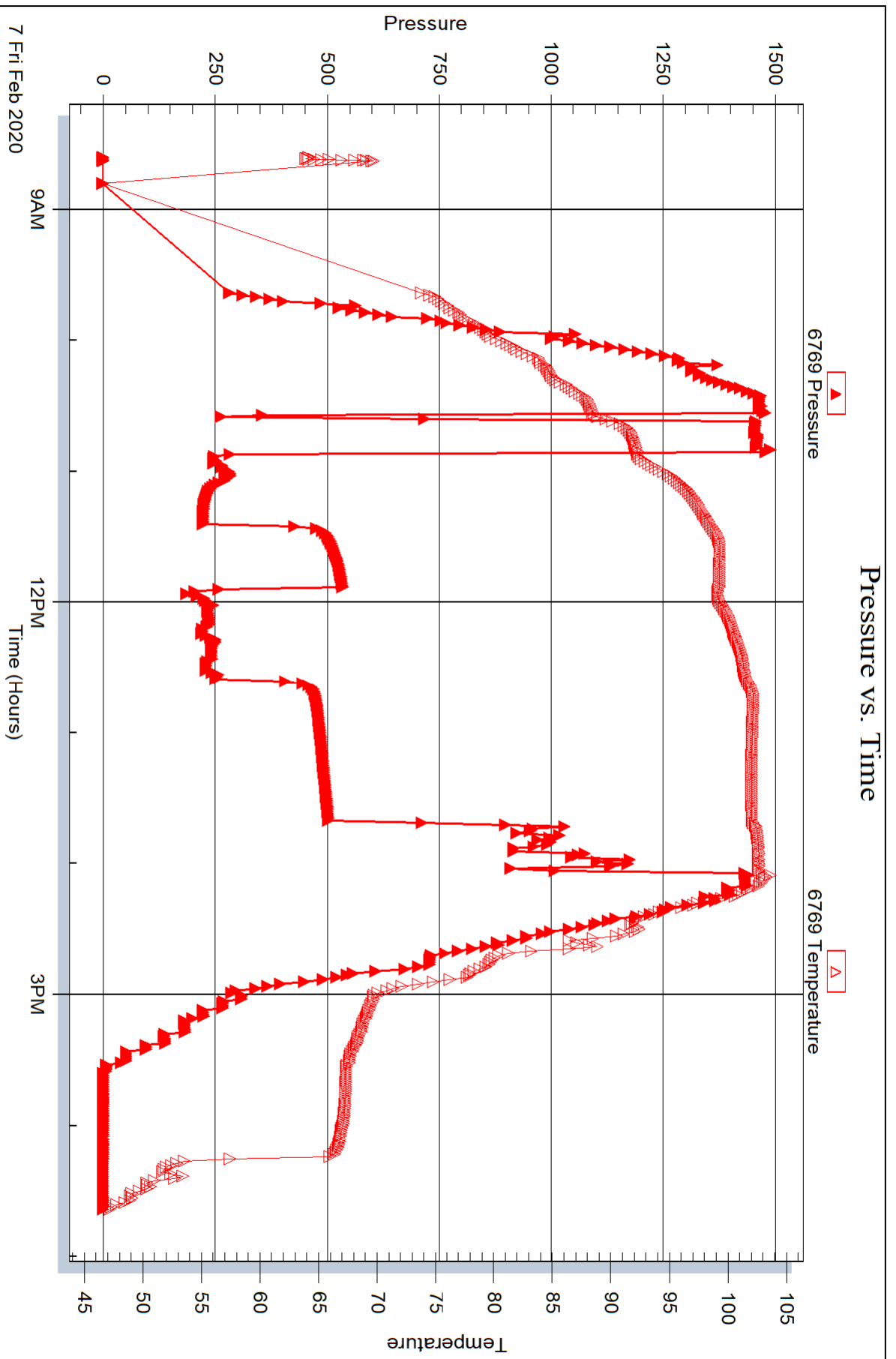


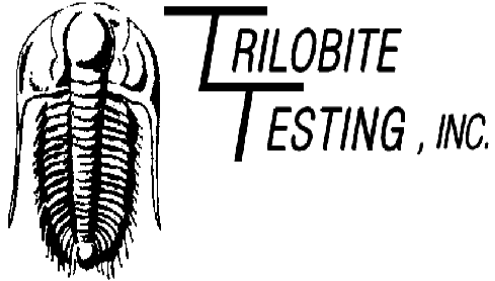
Serial #: 6769

Outside Mai Oil Operations

K&R Mai #1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

8411 Preston Rd STE 800 Dallas TX  
75225+5520

ATTN: Jim Musgrove

### **K&R Mai #1**

### **8-16s-11w Barton,KS**

Start Date: 2020.02.08 @ 06:45:00

End Date: 2020.02.08 @ 12:17:50

Job Ticket #: 65723                      DST #: 2

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

Printed: 2020.02.11 @ 10:39:58





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

ATTN: Jim Musgrove

Job Ticket: 65723

**DST#: 2**

Test Start: 2020.02.08 @ 06:45:00

## GENERAL INFORMATION:

Formation: **LKC J - L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:05:00

Time Test Ended: 12:17:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

**Interval: 3180.00 ft (KB) To 3250.00 ft (KB) (TVD)**

Reference Elevations: 1862.00 ft (KB)

Total Depth: 3250.00 ft (KB) (TVD)

1853.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 6772**

**Inside**

Press@RunDepth: 35.40 psig @ 3181.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08

End Date:

2020.02.08

Last Calib.:

2020.02.08

Start Time: 06:45:01

End Time:

12:17:50

Time On Btm:

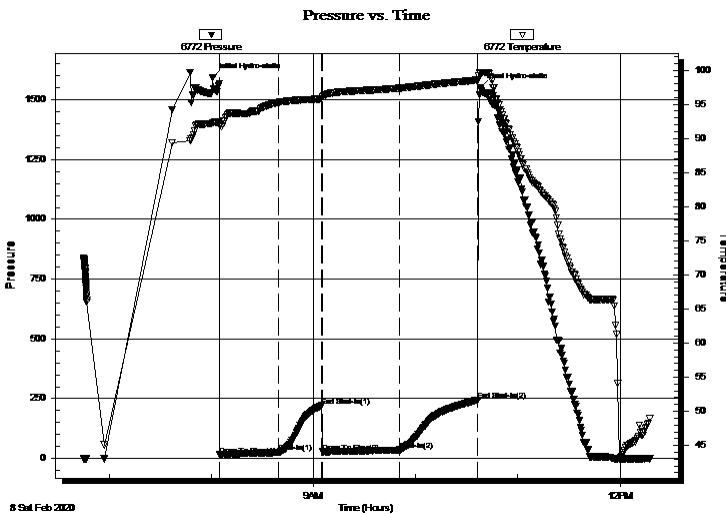
2020.02.08 @ 08:00:50

Time Off Btm:

2020.02.08 @ 10:38:00

**TEST COMMENT:** IF-30- built to 2 1/2"  
ISI-30- no blow back  
FF-45- built to 2 1/2"  
FSI-45- no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1593.74	92.34	Initial Hydro-static
5	15.23	91.97	Open To Flow (1)
39	25.15	95.26	Shut-In(1)
64	220.00	95.77	End Shut-In(1)
65	28.05	96.10	Open To Flow (2)
110	35.40	97.35	Shut-In(2)
156	244.16	98.53	End Shut-In(2)
158	1549.57	99.49	Final Hydro-static

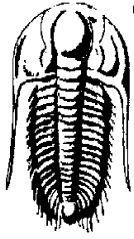
## Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100%M	0.70

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65723

**DST#: 2**

ATTN: Jim Musgrove

Test Start: 2020.02.08 @ 06:45:00

## Tool Information

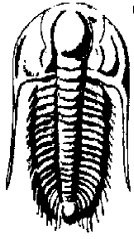
Drill Pipe:	Length: 3194.00 ft	Diameter: 3.80 inches	Volume: 44.80 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 44.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3180.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	90.00 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			3161.00	
Shut In Tool	5.00			3166.00	
Hydraulic tool	5.00			3171.00	
Packer	5.00			3176.00	20.00 Bottom Of Top Packer
Packer	4.00			3180.00	
Stubb	1.00			3181.00	
Recorder	0.00	6772	Inside	3181.00	
Recorder	0.00	6769	Outside	3181.00	
Perforations	32.00			3213.00	
Change Over Sub	1.00			3214.00	
Drill Pipe	32.00			3246.00	
Change Over Sub	1.00			3247.00	
Bullnose	3.00			3250.00	70.00 Bottom Packers & Anchor

**Total Tool Length: 90.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65723

**DST#: 2**

ATTN: Jim Musgrove

Test Start: 2020.02.08 @ 06:45:00

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Mud 100%M	0.701

Total Length: 50.00 ft      Total Volume: 0.701 bbl

Num Fluid Samples: 0

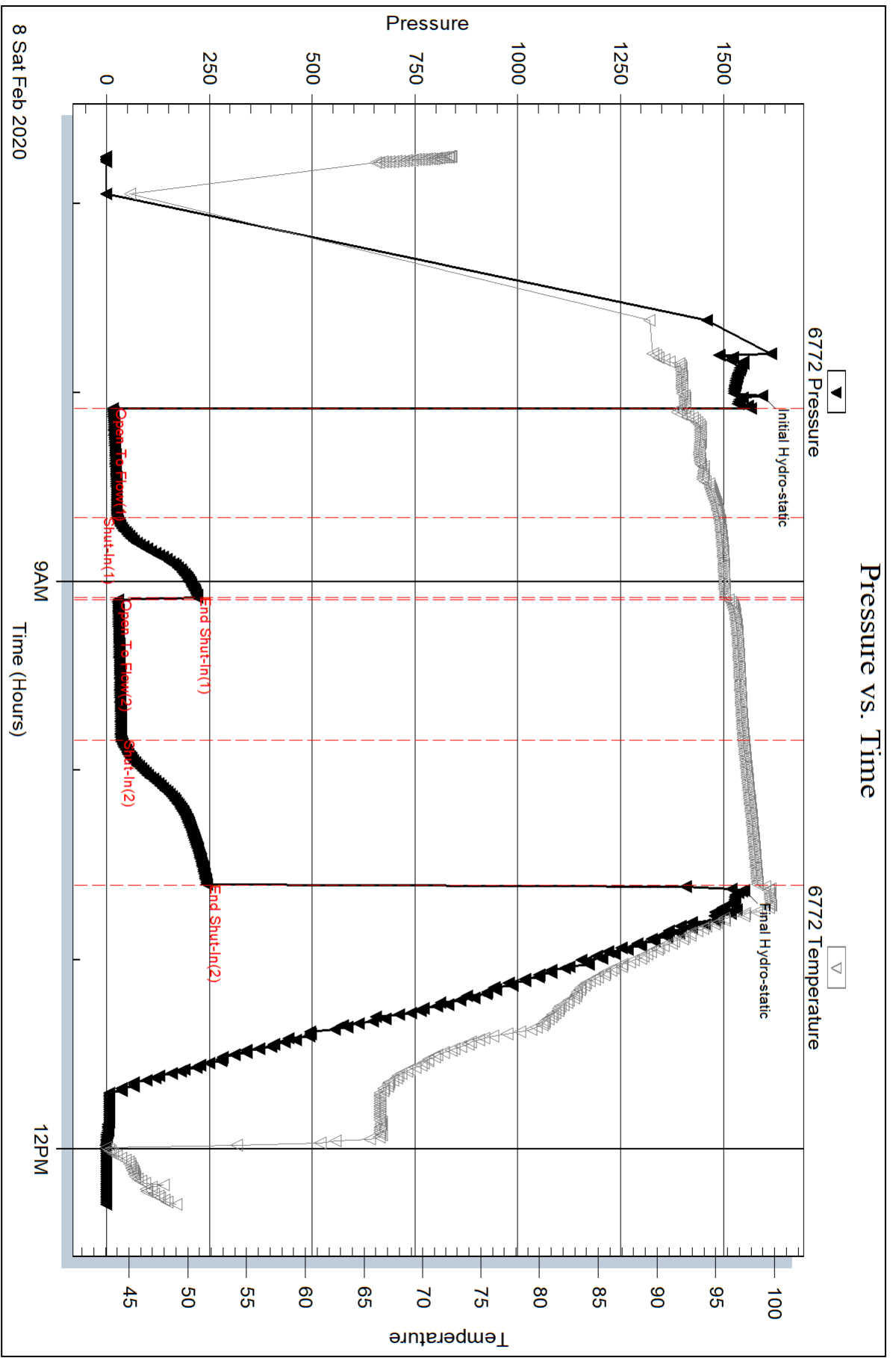
Num Gas Bombs: 0

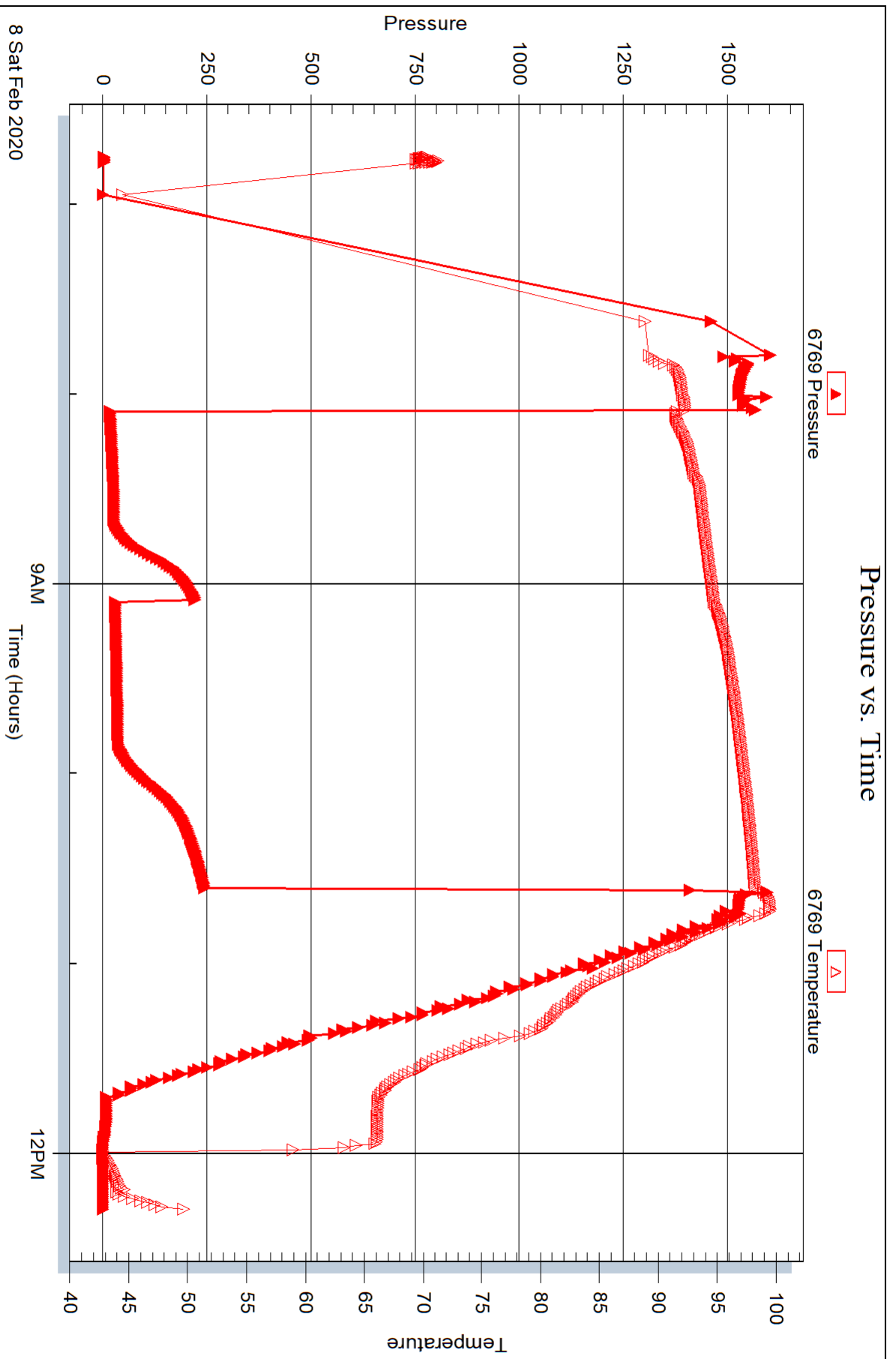
Serial #:

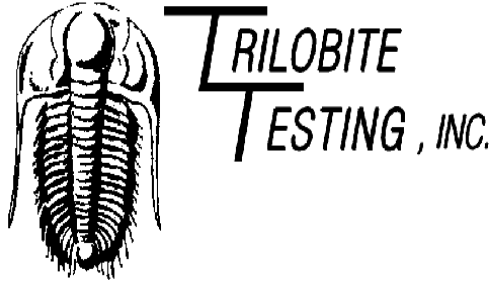
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

8411 Preston Rd STE 800 Dallas TX  
75225+5520

ATTN: Jim Musgrove

### **K&R Mai #1**

#### **8-16s-11w Barton,KS**

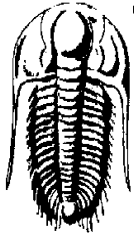
Start Date: 2020.02.09 @ 01:13:00

End Date: 2020.02.09 @ 08:02:30

Job Ticket #: 65724                      DST #: 3

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

Printed: 2020.02.11 @ 10:39:29



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

ATTN: Jim Musgrove

Job Ticket: 65724

**DST#: 3**

Test Start: 2020.02.09 @ 01:13:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:22:00

Time Test Ended: 08:02:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

**Interval: 3271.00 ft (KB) To 3308.00 ft (KB) (TVD)**

Reference Elevations: 1862.00 ft (KB)

Total Depth: 3308.00 ft (KB) (TVD)

1853.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 6772**

**Inside**

Press@RunDepth: 217.46 psig @ 3272.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.09

End Date:

2020.02.09

Last Calib.:

2020.02.09

Start Time: 01:13:01

End Time:

08:02:30

Time On Btm:

2020.02.09 @ 03:21:00

Time Off Btm:

2020.02.09 @ 05:39:10

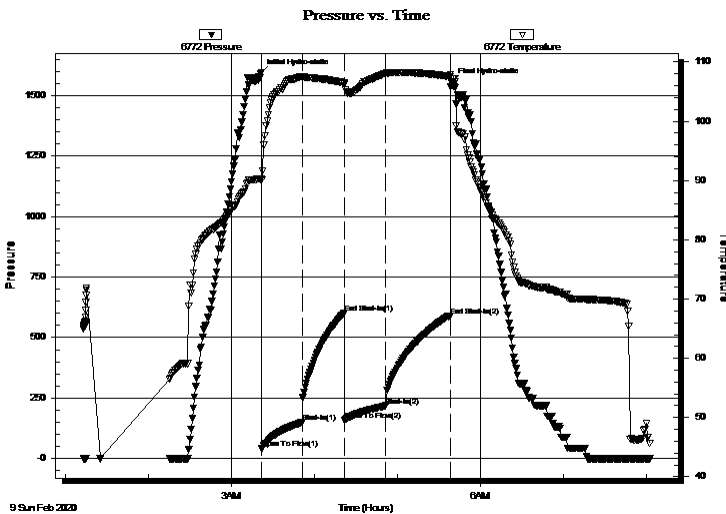
**TEST COMMENT:** IF-30-BOB 3 min 20 sec total build of 54"

ISI-30- surface blow back

FF-30- BOB 7 mins total build of 24"

FSI-45- no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1591.45	90.13	Initial Hydro-static
1	40.80	90.07	Open To Flow (1)
31	150.93	107.54	Shut-In(1)
61	600.26	106.47	End Shut-In(1)
61	158.70	106.24	Open To Flow (2)
91	217.46	108.04	Shut-In(2)
137	590.22	107.55	End Shut-In(2)
139	1554.37	107.20	Final Hydro-static

## Recovery

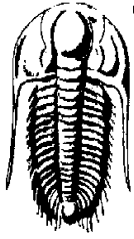
Length (ft)	Description	Volume (bbl)
420.00	GCO 20%G 80%O	5.89
120.00	GSOCM 10%G 20%O 70%M	1.68

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65724

**DST#: 3**

ATTN: Jim Musgrove

Test Start: 2020.02.09 @ 01:13:00

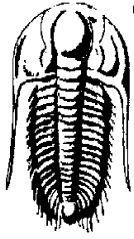
## Tool Information

Drill Pipe:	Length: 3257.00 ft	Diameter: 3.80 inches	Volume: 45.69 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: 56000.00 lb
			<u>Total Volume: 45.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3271.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	57.00 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			3252.00	
Shut In Tool	5.00			3257.00	
Hydraulic tool	5.00			3262.00	
Packer	5.00			3267.00	20.00 Bottom Of Top Packer
Packer	4.00			3271.00	
Stubb	1.00			3272.00	
Recorder	0.00	6772	Inside	3272.00	
Recorder	0.00	6769	Outside	3272.00	
Perforations	33.00			3305.00	
Bullnose	3.00			3308.00	37.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>57.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65724

**DST#: 3**

ATTN: Jim Musgrove

Test Start: 2020.02.09 @ 01:13:00

## 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
420.00	GCO 20%G 80%O	5.891
120.00	GSOCM 10%G 20%O 70%M	1.683

Total Length: 540.00 ft

Total Volume: 7.574 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

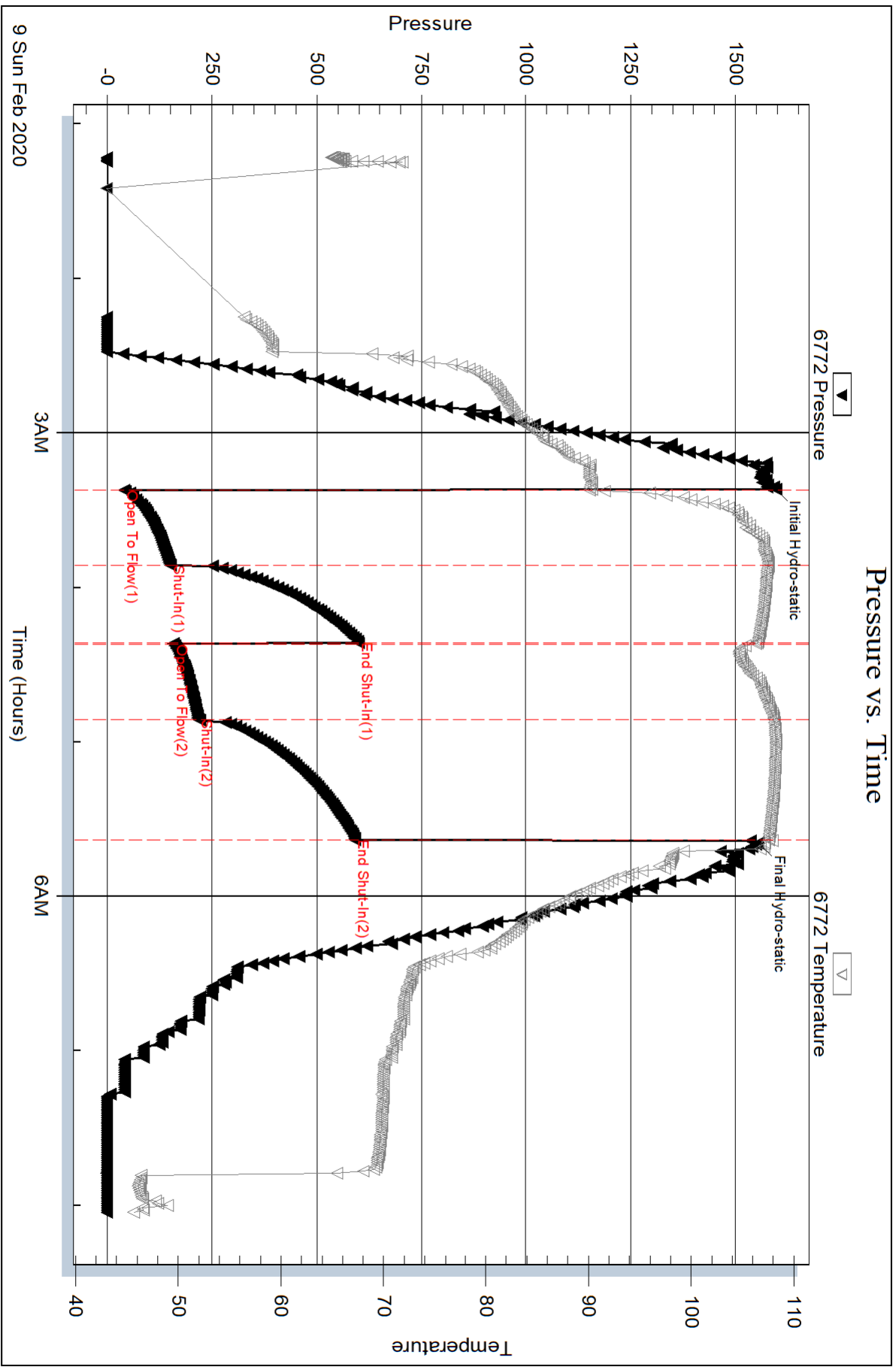
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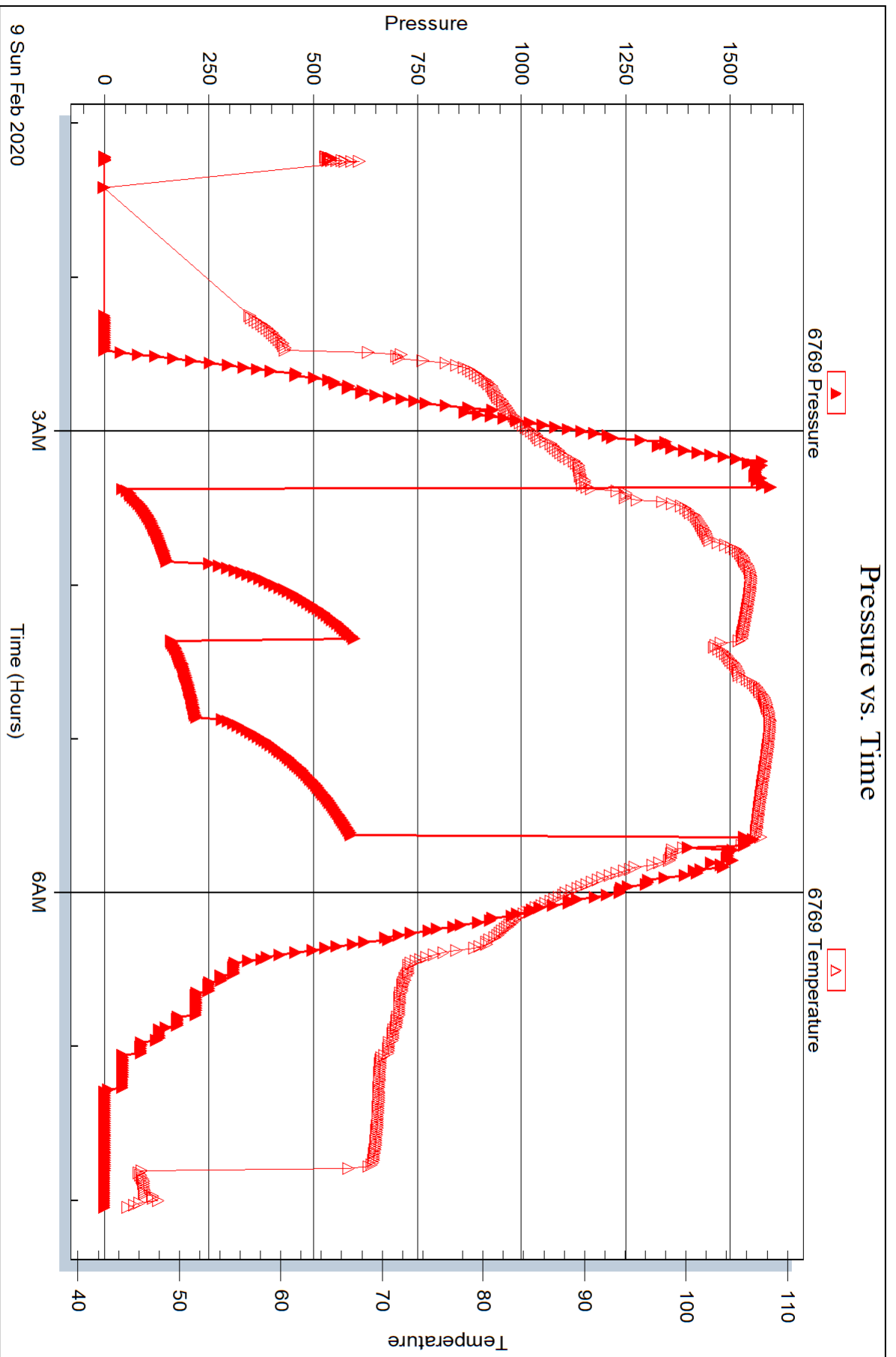
Laboratory Name:

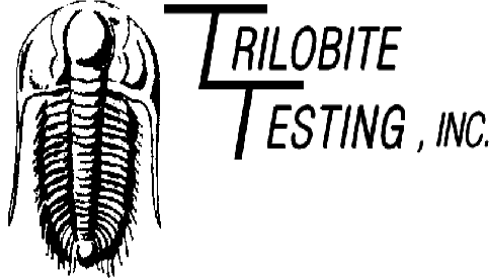
Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Mai Oil Operations**

8411 Preston Rd STE 800 Dallas TX  
75225+5520

ATTN: Jim Musgrove

### **K&R Mai #1**

#### **8-16s-11w Barton,KS**

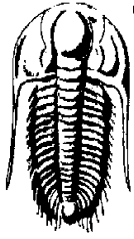
Start Date: 2020.02.09 @ 14:12:00

End Date: 2020.02.09 @ 20:29:20

Job Ticket #: 65725                      DST #: 4

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

Printed: 2020.02.11 @ 10:39:03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

ATTN: Jim Musgrove

Job Ticket: 65725

**DST#: 4**

Test Start: 2020.02.09 @ 14:12:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:48:10

Time Test Ended: 20:29:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

**Interval: 3308.00 ft (KB) To 3316.00 ft (KB) (TVD)**

Reference Elevations: 1862.00 ft (KB)

Total Depth: 3316.00 ft (KB) (TVD)

1853.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 6772 Inside**

Press@RunDepth: 239.68 psig @ 3309.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.09

End Date:

2020.02.09

Last Calib.:

2020.02.09

Start Time: 14:12:01

End Time:

20:29:20

Time On Btm:

2020.02.09 @ 15:46:10

Time Off Btm:

2020.02.09 @ 18:07:20

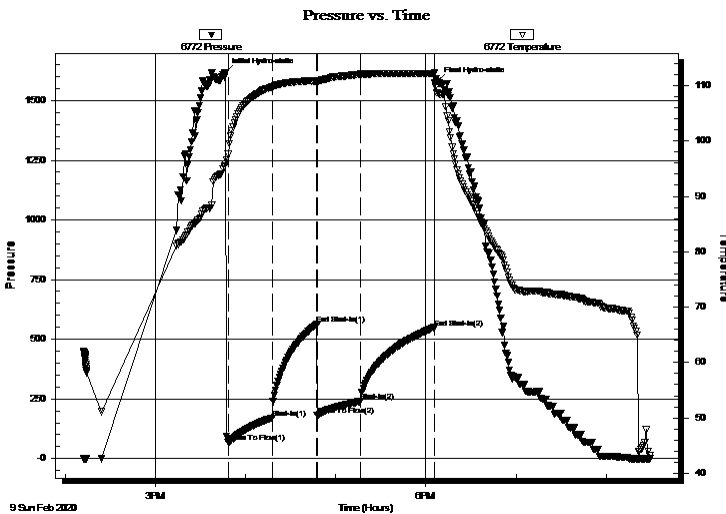
**TEST COMMENT:** IF-30-BOB 1 min 45 secs total build of 64"

ISI-30- 1/4" blow back

FF-30- BOB 5 mins total build of 28"

FSI-45- no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1618.13	95.57	Initial Hydro-static
2	67.99	97.58	Open To Flow (1)
32	170.06	109.75	Shut-In(1)
61	561.69	110.81	End Shut-In(1)
62	181.98	110.69	Open To Flow (2)
91	239.68	112.04	Shut-In(2)
140	548.79	112.17	End Shut-In(2)
142	1580.46	108.70	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
600.00	GCO 10%G 90%O	8.42
0.00	GIP 30'	0.00

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65725

**DST#: 4**

ATTN: Jim Musgrove

Test Start: 2020.02.09 @ 14:12:00

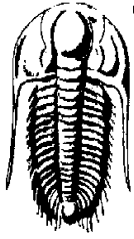
## Tool Information

Drill Pipe:	Length: 3322.00 ft	Diameter: 3.80 inches	Volume: 46.60 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: 52000.00 lb
			<u>Total Volume: 46.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3308.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	28.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3289.00	
Shut In Tool	5.00			3294.00	
Hydraulic tool	5.00			3299.00	
Packer	5.00			3304.00	20.00 Bottom Of Top Packer
Packer	4.00			3308.00	
Stubb	1.00			3309.00	
Recorder	0.00	6772	Inside	3309.00	
Recorder	0.00	6769	Outside	3309.00	
Perforations	4.00			3313.00	
Bullnose	3.00			3316.00	8.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>28.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mai Oil Operations

**8-16s-11w Barton,KS**

8411 Preston Rd STE 800 Dallas TX 75225+5520

**K&R Mai #1**

Job Ticket: 65725

**DST#: 4**

ATTN: Jim Musgrove

Test Start: 2020.02.09 @ 14:12:00

## 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: 42.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8300.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
600.00	GCO 10%G 90%O	8.416
0.00	GIP 30'	0.000

Total Length: 600.00 ft      Total Volume: 8.416 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

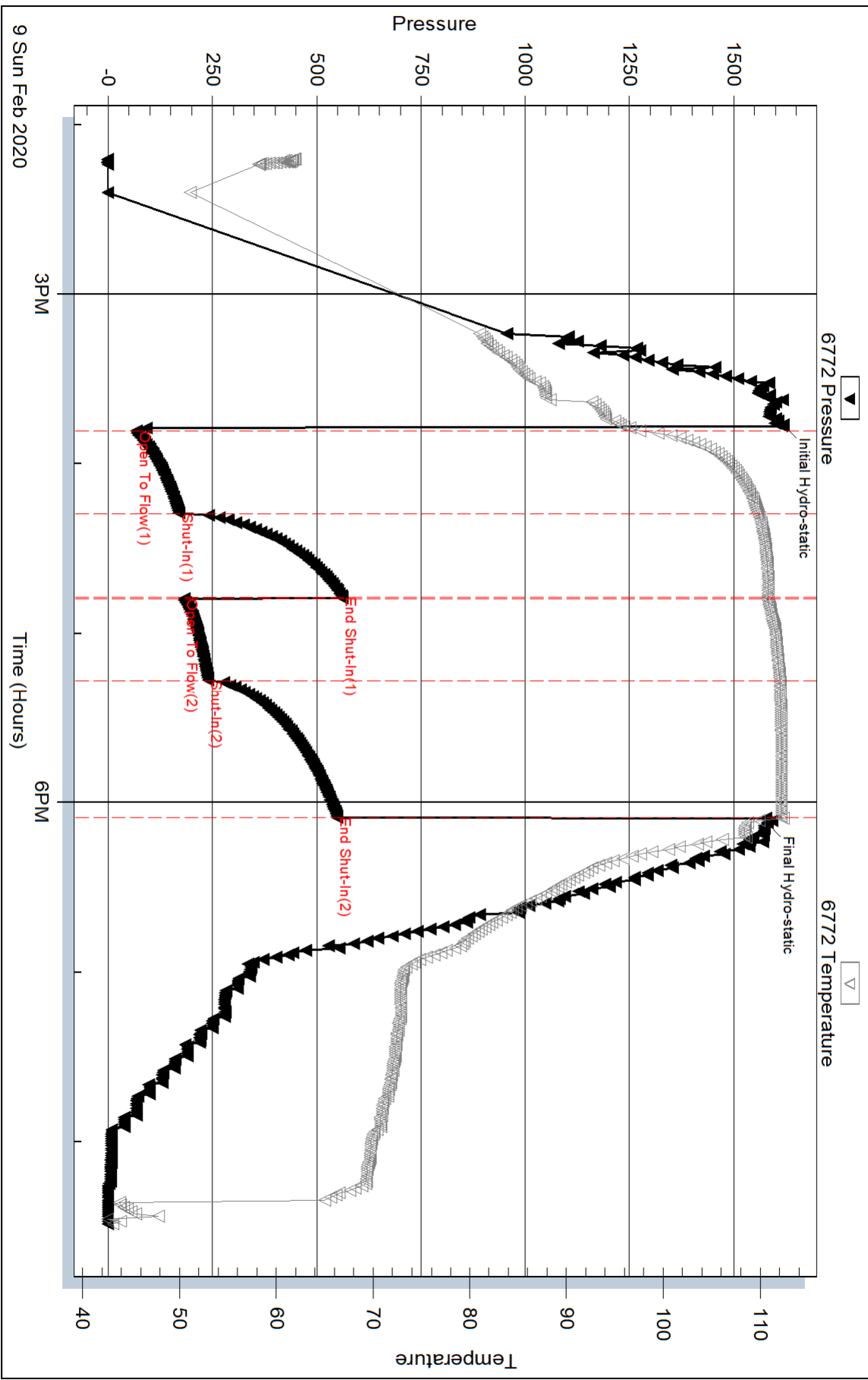
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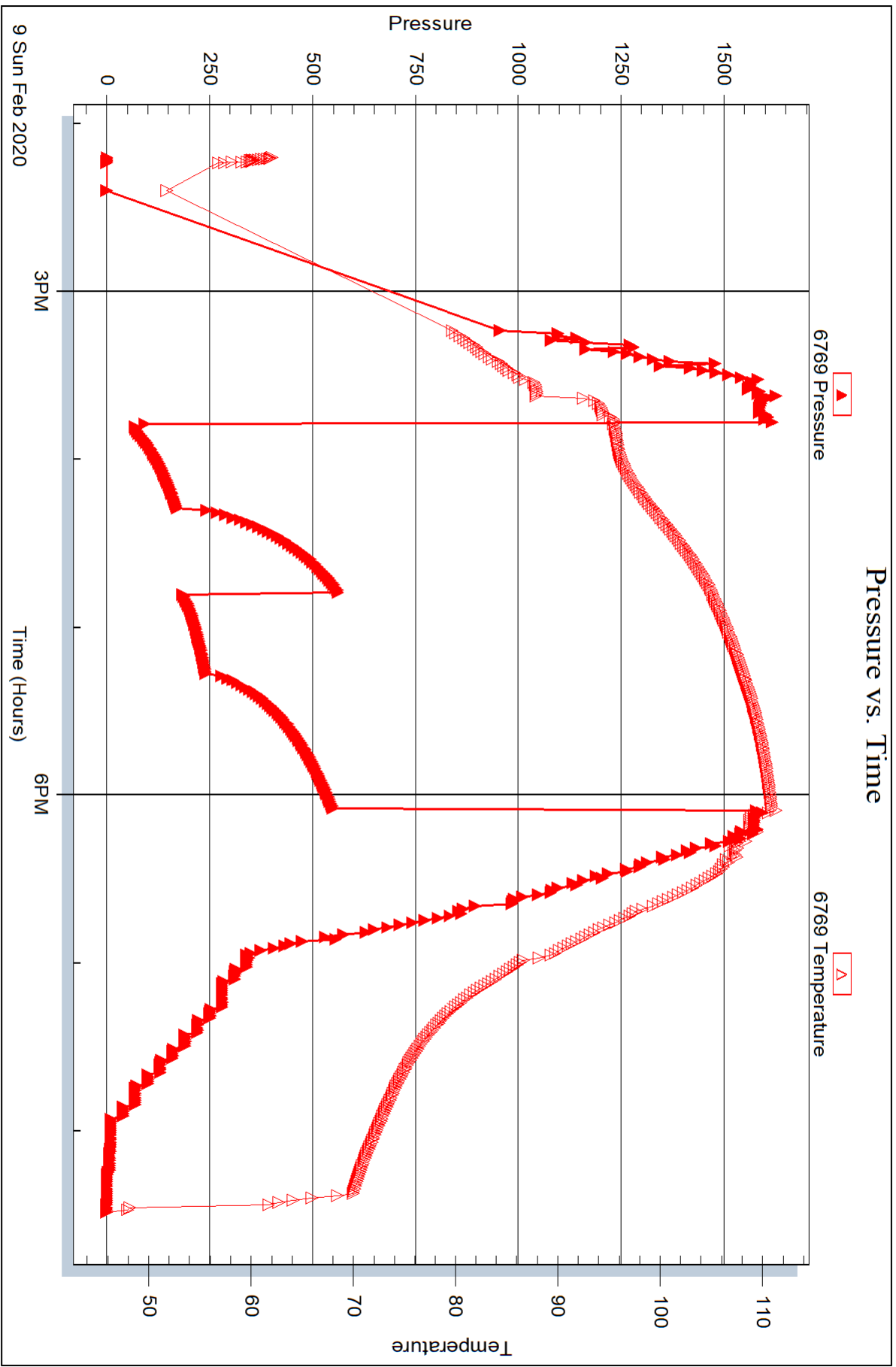
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **65722**

Well Name & No. K&R Mai #1 Test No. 1 Date 2-7-2020  
 Company Mai Oil Operations Elevation 1862 KB 1853 GL  
 Address 8411 Preston Rd STE 800 Dallas TX 75225+5520  
 Co. Rep / Geo. Jim Musgrove Rig Southwind Rig 3  
 Location: Sec. 8 Twp 16S Rge. 11W Co. Barton State KS

Interval Tested 3070-3114 Zone Tested F-G IKC  
 Anchor Length 44' Drill Pipe Run 3068 Mud Wt. 8.4  
 Top Packer Depth 3065 Drill Collars Run \_\_\_\_\_ Vis 65  
 Bottom Packer Depth 3070 Wt. Pipe Run \_\_\_\_\_ WL 6.4  
 Total Depth 3114 Chlorides 5500 ppm System LCM 1#

Blow Description IF-BOB 10secs GTS 1min built to 693,522 Mcf/d  
KSI-

FE-BOB 1min built to 568,563 Mcf/d  
FSI- ~~2500~~ 1 1/2" blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>G.S.O.C.M.</u>	<u>20</u>	<u>10</u>	<u>0</u>	<u>70</u>
<u>120</u>	<u>G.S.O.C.M.</u>	<u>50</u>	<u>10</u>	<u>0</u>	<u>40</u>
<u>180</u>	<u>G.H.O.C.M.</u>	<u>20</u>	<u>50</u>	<u>0</u>	<u>30</u>
<u>180</u>	<u>G.C.O.</u>	<u>20</u>	<u>80</u>	<u>0</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 540' BHT 103 Gravity 42 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1488  Test 1200 T-On Location 7:20 AM  
 (B) First Initial Flow 238  Jars \_\_\_\_\_ T-Started 8:36  
 (C) First Final Flow 222  Safety Joint \_\_\_\_\_ T-Open 10:55  
 (D) Initial Shut-In 532  Circ Sub \_\_\_\_\_ T-Pulled 1:40 PM  
 (E) Second Initial Flow 186  Hourly Standby \_\_\_\_\_ T-Out 4:39  
 (F) Second Final Flow 250  Mileage 78 mi RT Comments \_\_\_\_\_  
 (G) Final Shut-In 500  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1447  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Initial Shut-In 30  Extra Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Final Flow 45  Extra Recorder \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Shut-In 60  Day Standby \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Sub Total 1278  Accessibility \_\_\_\_\_ Sub Total 0  
 Total 1278 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Benny Mulligan

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **65723**

Well Name & No. KOR Maj. #1 Test No. 2 Date \_\_\_\_\_  
 Company Mur Oil Operations Elevation 1862 KB 1853 GL \_\_\_\_\_  
 Address 8411 Preston Rd STE 800 Dallas TX 75225 + 5520  
 Co. Rep / Geo. Jim Musgrove Rig Southwind Rig 3  
 Location: Sec. 8 Twp 16s Rge. 11w Co. Barton State KS

Interval Tested 3180-3250 Zone Tested LRC J-L  
 Anchor Length ~~70~~ 70' Drill Pipe Run 3194 Mud Wt. 8.9  
 Top Packer Depth ~~3180~~ 3175 Drill Collars Run \_\_\_\_\_ Vis 53  
 Bottom Packer Depth ~~3250~~ 3180 Wt. Pipe Run \_\_\_\_\_ WL 8.0  
 Total Depth 3250 Chlorides 6200 ppm System LCM 1#

Blow Description IF - total build of 2 1/2"  
ISI - no blow back  
FF - built to 2 1/2"  
FST - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>Mud</u>			<u>100%</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50' BHT 99.5 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1593  Test 1200 T-On Location 5:46 AM  
 (B) First Initial Flow 15  Jars T-Started 6:45  
 (C) First Final Flow 25  Safety Joint T-Open 8:05  
 (D) Initial Shut-In 220  Circ Sub T-Pulled 10:35  
 (E) Second Initial Flow 28  Hourly Standby T-Out 12:18 PM  
 (F) Second Final Flow 35  Mileage 78 mi RT Comments \_\_\_\_\_  
 (G) Final Shut-In 244  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1549  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 30  
 Final Flow 45  
 Final Shut-In 45

Sub Total 1278 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. **65724**

4/10

Well Name & No. K&R mar #1 Test No. 3 Date 2/8/2020  
 Company Mai Oil Operations Elevation 1862 KB 1853 GL  
 Address 8411 Preston Rd STE 800 Dallas TX 75225+5520  
 Co. Rep / Geo. Jim Musgrove Rig Southwind Rig 3  
 Location: Sec. 8 Twp 16S Rge. 11W Co. Barton State KS

Interval Tested 3271-3308 Zone Tested Arbuckle  
 Anchor Length 37' Drill Pipe Run 3237 Mud Wt. 8.9  
 Top Packer Depth 3266 Drill Collars Run \_\_\_\_\_ Vis 54  
 Bottom Packer Depth 3271 Wt. Pipe Run \_\_\_\_\_ WL 7.6  
 Total Depth 3308 Chlorides 8800 ppm System LCM 1/#  
 Blow Description IE-BOB 3min 20secs total build of 54"  
FST- Surface blow back  
FE-BOB 7mins total build of 24"  
FST- NO blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>420</u>	<u>G.C.O.</u>	<u>20</u>	<u>80</u>		
<u>120</u>	<u>G.S.O.C.M.</u>	<u>10</u>	<u>20</u>		<u>70</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 540' BHT 107 Gravity 40 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1591  Test 1200 T-On Location 11:15 PM  
 (B) First Initial Flow 40  Jars \_\_\_\_\_ T-Started 1:13 AM  
 (C) First Final Flow 150  Safety Joint \_\_\_\_\_ T-Open 3:22  
 (D) Initial Shut-In 600  Circ Sub \_\_\_\_\_ T-Pulled 5:37  
 (E) Second Initial Flow 158  Hourly Standby \_\_\_\_\_ T-Out \_\_\_\_\_  
 (F) Second Final Flow 217  Mileage 78mi RT Comments \_\_\_\_\_  
 (G) Final Shut-In 590  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1554  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 1278  
 Sub Total 1278 MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 45

Approved By \_\_\_\_\_ Our Representative Benny Mulligan

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65725

Well Name & No. K&R mai #1 Test No. 4 Date 2/9/2020  
 Company Mai Oil Operations Elevation 1862 KB 1853 GL  
 Address 8411 Preston Rd STE 200 Dallas TX 75225+5520  
 Co. Rep / Geo. Jim Musgrove Rig Southwind Rig 3  
 Location: Sec. 8 Twp 16S Rge. 11W Co. Barton State KS

Interval Tested 3308-3316 Zone Tested Arbuckle  
 Anchor Length 8' Drill Pipe Run 3322 Mud Wt. 9.0  
 Top Packer Depth 3303 Drill Collars Run \_\_\_\_\_ Vis 42  
 Bottom Packer Depth 3308 Wt. Pipe Run \_\_\_\_\_ WL 8.0  
 Total Depth 3316 Chlorides 8,300 ppm System LCM Tr  
 Blow Description IF - BOB 1min 45secs total build of 64"  
LST - ~~blow~~ blow back 1/4"  
FF - BOB 5mins total build of 28"  
FSTI - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
600'	G.C.O.	10	90		
	GIP 60'				

Rec Total 600 BHT 108 Gravity 40 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1618  Test 1200 T-On Location 2:00PM  
 (B) First Initial Flow 67  Jars \_\_\_\_\_ T-Started 2:12  
 (C) First Final Flow 170  Safety Joint \_\_\_\_\_ T-Open 3:47  
 (D) Initial Shut-In 561  Circ Sub \_\_\_\_\_ T-Pulled 6:02  
 (E) Second Initial Flow 181  Hourly Standby \_\_\_\_\_ T-Out 8:30  
 (F) Second Final Flow 239  Mileage 78mi RT x2 Comments loaded tools at  
 (G) Final Shut-In 548  Sampler 78+78 11:00 AM 2-10-2020  
 (H) Final Hydrostatic 1580  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 30  
 Final Flow 50  
 Final Shut-In 45

Sub Total 1356 Total 1356  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Benny Mulligan  
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