

Confidentiality Requested:

Yes  No

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

Form ACO-1

January 2018

**Form must be Typed**

**Form must be Signed**

**All blanks must be Filled**

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

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

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

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

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

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

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

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**AFFIDAVIT**

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

Submitted Electronically

**KCC Office Use ONLY**

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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# JASPAR COMPANY INC.

Scale 1:240 Imperial

Well Name: GARTH UNIT #1  
Surface Location: SW NE SE NW Sec. 22 - 6S - 20W  
Bottom Location:  
API: 15-163-24338-00-00  
License Number: 34903  
Spud Date: 4/28/2017 Time: 12:00 AM  
Region: ROOKS COUNTY KANSAS  
Drilling Completed: 5/4/2017 Time: 12:35 PM  
Surface Coordinates: 1710' FNL & 1410' FWL  
Bottom Hole Coordinates:  
Ground Elevation: 2169.00ft  
K.B. Elevation: 2174.00ft  
Logged Interval: 3000.00ft To: 3750.00ft  
Total Depth: 3654.00ft  
Formation: LANSING - KANSAS CITY; ARBUCKLE  
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

## OPERATOR

Company: JASPAR CO.  
Address: P.O. BOX. 1120  
HAYS, KS 67601  
Contact Geologist: SHANE VEHIGE  
Contact Phone Nbr: (785) 623-6982  
Well Name: GARTH UNIT #1  
Location: SW NE SE NW Sec. 22 - 6S - 20W  
API: 15-163-24338-00-00  
Pool:  
State: KANSAS  
Field: UNNAMED  
Country: USA

## SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.5412796  
Latitude: 39.5198774  
N/S Co-ord: 1710' FNL  
E/W Co-ord: 1410' FWL

## LOGGED BY



Company: BIG CREEK CONSULTING, INC.  
Address: 1909 MAPLE  
ELLIS, KS 67637

Phone Nbr: (785) 259-3737  
 Logged By: GEOLOGIST

Name: JEFF LAWLER

**CONTRACTOR**

Contractor: WW DRILLING, LLC  
 Rig #: 8  
 Rig Type: MUD ROTARY  
 Spud Date: 4/28/2017  
 TD Date: 5/4/2017  
 Rig Release: 5/6/2017

Time: 12:00 AM  
 Time: 12:35 PM  
 Time: 10:45 PM

**ELEVATIONS**

K.B. Elevation: 2174.00ft  
 K.B. to Ground: 5.00ft  
 Ground Elevation: 2169.00ft

**NOTES**

**\*\*THERE IS A 2' UPHOLE CORRECTION TO CORRELATE DRILLING TIME TO POROSITY LOG\*\***


DUE TO ECONOMICAL RECOVERY ON DST #5 IT WAS DECIDED TO RUN 5 1/2" PRODUCTION CASING AND FURTHER EVALUATE THE CONGLOMERATE SAND WITH OPEN HOLE COMPLETION.

RESPECTFULLY SUBMITTED,  
 JEFF LAWLER

**WELL COMPARISON SHEET**

FORMATION	GARTH UNIT #1				ATTABERRY #1 SE SE NW 22-6-20				GARTRELL #2 SW NE SW 22-6-20				GARTRELL #5 SE NE SW 22-6-20				D&R UNIT #1 SE SW SE NE 21-6-20			
	2174		2169		2186		2159		2184		2172		2172		2172		2172			
	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS		
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM		
ANHYDRITE TOP	1776	398	1776	398	1790	396			1761	398	+ 0	+ 0	1784	400	- 2	- 2	1770	402	- 4	- 4
BASE	1808	366	1810	364					1790	369	- 3	- 5	1812	372	- 6	- 8	1803	369	- 3	- 5
TOPEKA	3176	-1002	3176	-1002					3158	-999	- 3	- 3	3182	-998	- 4	- 4	3164	-992	- 10	- 10
HEEBNER SHALE	3373	-1199	3375	-1201	3397	-1211	+ 12	+ 10	3358	-1199	+ 0	- 2	3383	-1199	+ 0	- 2	3363	-1191	- 8	- 10
TORONTO	3396	-1222	3398	-1224	3418	-1232	+ 10	+ 8	3380	-1221	- 1	- 3	3407	-1223	+ 1	- 1	3386	-1214	- 8	- 10
LKC	3410	-1236	3411	-1237	3434	-1248	+ 12	+ 11	3395	-1236	+ 0	- 1	3420	-1236	+ 0	- 1	3401	-1229	- 7	- 8
BKC	3610	-1436	3615	-1441					3594	-1435	- 1	- 6	3618	-1434	- 2	- 7	3599	-1427	- 9	- 14
CONGLOMERATE SAND			3650	-1476					3630	-1471		- 5	3652	-1468		- 8	3630	-1458		- 18
ARBUCKLE					3740	-1554			3670	-1511			3670	-1486			3638	-1466		
TOTAL DEPTH	3652	-1478	3654	-1480	3772	-1586	+ 108	+ 106	3686	-1527	+ 49	+ 47	3685	-1501	+ 23	+ 21	3698	-1526	+ 48	+ 46

**DST #1 TORONTO - LKC A 3370' - 3430'**

	<b>DRILL STEM TEST REPORT</b>	
	Jaspar Co PO BOX 1120 Hays KS 67601 ATTN: Jeff Lawler	S22-6S-20W Rooks, KS Garth Unit #1 Job Ticket: 63207 Test Start: 2017.05.02 @ 06:20:00

**GENERAL INFORMATION:**

Formation: **Toronto-LKC "A"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:55:45  
 Time Test Ended: 12:05:00

Test Type: Conventional Bottom Hole (Initial)  
 Tester: Spencer J. Staab  
 Unit No: 84

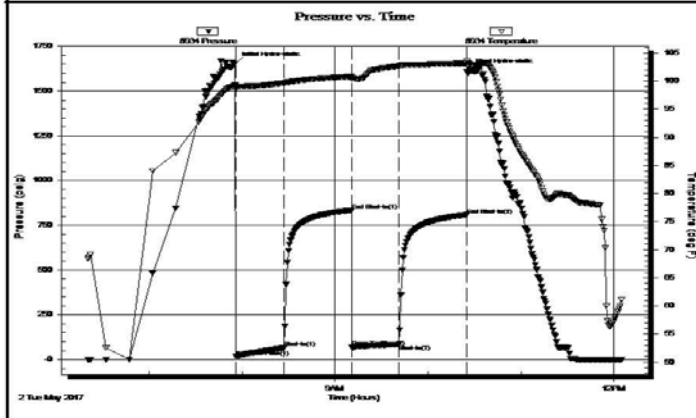
Interval: **3370.00 ft (KB) To 3430.00 ft (KB) (TVD)**  
 Total Depth: 3430.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches-Hole Condition: Fair  
 Reference Elevations: 2174.00 ft (KB)  
 2169.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8934** **Inside**

Press@RunDepth: 83.70 psig @ 3377.00 ft (KB)  
 Start Date: 2017.05.02 End Date: 2017.05.02  
 Start Time: 06:20:15 End Time: 12:05:00

Capacity: 8000.00 psig  
 Last Calib.: 2017.05.02  
 Time On Btm: 2017.05.02 @ 07:55:30  
 Time Off Btm: 2017.05.02 @ 10:27:00

**TEST COMMENT:** 30-IF-Fair Blow ; Built from a surface to 5"  
 45-ISI-No Blow Back  
 30-FF-Weak Blow ; at 3 minutes built from a surface to 3"  
 45-FSI-No Blow Back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1654.34	99.27	Initial Hydro-static
1	15.03	98.57	Open To Flow (1)
32	63.76	99.61	Shut-In(1)
75	831.17	100.80	End Shut-In(1)
76	68.64	100.34	Open To Flow (2)
106	83.70	102.66	Shut-In(2)
150	808.32	103.11	End Shut-In(2)
152	1619.47	102.93	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
160.00	WM 10% VV 90% M	1.14

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

Trilobite Testing, Inc

Ref. No: 63207

Printed: 2017.05.02 @ 19:38:10

### DST #2 LKC C - D 3432' - 3476'

	<b>DRILL STEM TEST REPORT</b>	
	Jaspar Co PO BOX 1120 Hays KS 67601 ATTN: Jeff Lawler	<b>S22-6S-20W Rooks, KS</b> <b>Garth Unit #1</b> Job Ticket: 63208 <b>DST#: 2</b> Test Start: 2017.05.02 @ 19:44:00

**GENERAL INFORMATION:**

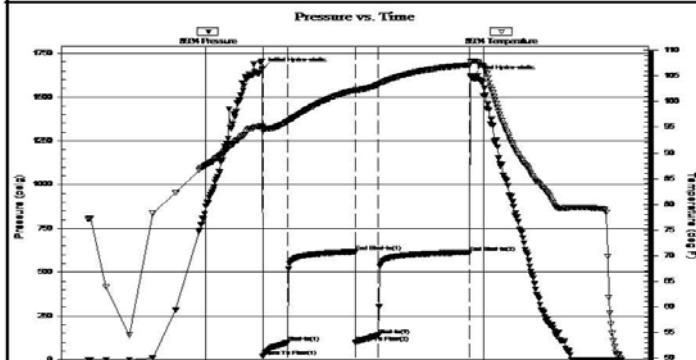
Formation: **LKC "C-D"**  
 Deviated: No Whipstock      ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 21:37:15      Tester: Spencer J. Staab  
 Time Test Ended: 01:29:00      Unit No: 84

Interval: **3432.00 ft (KB) To 3476.00 ft (KB) (TVD)**  
 Reference Elevations: 2174.00 ft (KB)  
 Total Depth: 3476.00 ft (KB) (TVD)      2169.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 5.00 ft

**Serial #: 8934      Inside**

Press@RunDepth: 139.22 psig @ 3439.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2017.05.02      End Date: 2017.05.03	Last Calib.: 2017.05.03
Start Time: 19:44:15      End Time: 01:29:00	Time On Btm: 2017.05.02 @ 21:37:00
	Time Off Btm: 2017.05.02 @ 23:51:45

**TEST COMMENT:** 15-IF-Strong Blow ; Built from 1/2" to BOB in 12 mins  
 45-ISI-No Blow Back  
 15-FF-Strong Blow ; Built from surface to 9&1/2"  
 60-FSH-No Blow Back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.69	95.06	Initial Hydro-static
1	18.79	94.39	Open To Flow (1)
16	97.57	96.04	Shut-In(1)
60	615.26	102.26	End Shut-In(1)
61	99.27	102.04	Open To Flow (2)
75	139.22	103.32	Shut-In(2)
134	611.23	107.11	End Shut-In(2)
135	1619.60	107.77	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbt)
270.00	MWV 30% M 70% W	2.69

\* Recovery from multiple tests

Trilobite Testing, Inc

Ref. No: 63208

Gas Rates

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

Printed: 2017.05.03 @ 07:19:15

DST #3 LKC E - F 3476' - 3500'



**TRILOBITE TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co  
 PO BOX 1120  
 Hays KS 67601  
 ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**  
**Garth Unit #1**  
 Job Ticket: 63209      **DST#: 3**  
 Test Start: 2017.05.03 @ 07:44:00

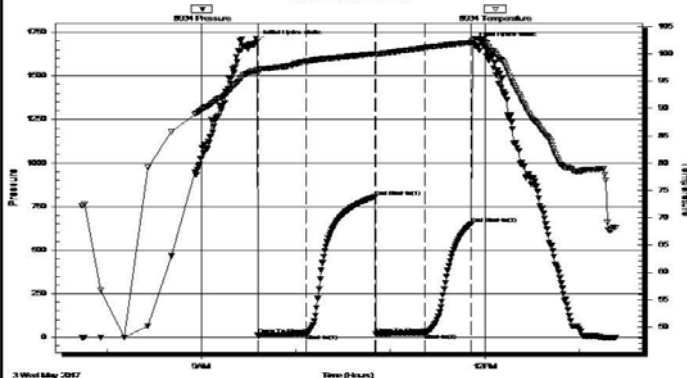
GENERAL INFORMATION:

Formation: **LKC "E-F"**  
 Deviated: No Whipstock      ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 09:35:45      Tester: Spencer J. Staab  
 Time Test Ended: 13:23:15      Unit No: 84  
 Interval: **3476.00 ft (KB) To 3500.00 ft (KB) (TVD)**  
 Reference Elevations: 2174.00 ft (KB)  
 Total Depth: 3500.00 ft (KB) (TVD)      2169.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 5.00 ft

**Serial #: 8934      Outside**  
 Press@RunDepth: 23.44 psig @ 3477.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2017.05.03      End Date: 2017.05.03      Last Calib.: 2017.05.03  
 Start Time: 07:44:15      End Time: 13:23:15      Time On Btm: 2017.05.03 @ 09:35:30  
 Time Off Btm: 2017.05.03 @ 11:52:15

TEST COMMENT: 30-IF-Very Weak Blow ; Built from a surface to 1"  
 45-ISI-No Blow Back  
 30-FF-No Blow  
 30-FSH-No Blow Back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1696.74	97.07	Initial Hydro-static
1	11.79	96.44	Open To Flow (1)
31	19.64	98.65	Shut-In(1)
75	805.02	99.99	End Shut-In(1)
76	18.91	99.66	Open To Flow (2)
107	23.44	101.13	Shut-In(2)
136	651.47	102.07	End Shut-In(2)
137	1690.07	102.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbt)
20.00	OCM 5% O 95% M	0.10

\* Recovery from multiple tests

Trilobite Testing, Inc


Ref. No: 63209

Gas Rates

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

Printed: 2017.05.03 @ 15:24:35

**DST #4 LKC H - I 3524' - 3572'**

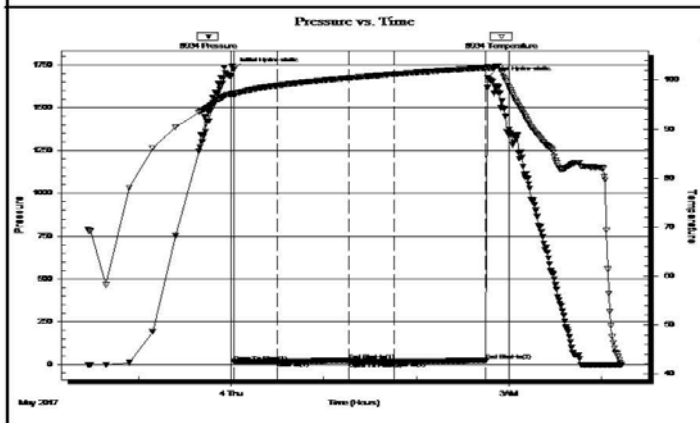
	<b>DRILL STEM TEST REPORT</b>	
	Jasper Co PO BOX 1120 Hays KS 67601 ATTN: Jeff Lawler	S22-6S-20W Rooks, KS <b>Garth Unit #1</b> Job Ticket: 63210 <b>DST#: 4</b> Test Start: 2017.05.03 @ 22:27:00

**GENERAL INFORMATION:**

Formation: <b>LKC "H-I"</b>	Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock      ft (KB)	Tester: Spencer J. Staab
Time Tool Opened: 00:01:45	Unit No: 84
Time Test Ended: 04:13:00	Reference Elevations: 2174.00 ft (KB)
<b>Interval: 3524.00 ft (KB) To 3572.00 ft (KB) (TVD)</b>	2169.00 ft (CF)
Total Depth: 3572.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

<b>Serial #: 8934</b>	<b>Inside</b>	Capacity: 8000.00 psig
Press@RunDepth: 16.79 psig @ 3535.00 ft (KB)	Start Date: 2017.05.03	End Date: 2017.05.04
Start Time: 22:27:15	End Time: 04:13:00	Last Calib.: 2017.05.04
		Time On Btm: 2017.05.04 @ 00:01:30
		Time Off Btm: 2017.05.04 @ 02:46:00

**TEST COMMENT:** 30-IF-Very Weak Blow ; Built from a surface to 1/2"  
 45-ISI-No Blow Back  
 30-FF-No Blow  
 60-FSI-No Blow Back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1724.74	97.39	Initial Hydro-static
1	15.73	96.85	Open To Flow (1)
29	16.50	98.92	Shut-In(1)
75	24.18	100.45	End Shut-In(1)
75	15.79	100.46	Open To Flow (2)
104	16.79	101.22	Shut-In(2)
164	23.09	102.57	End Shut-In(2)
165	1676.58	102.59	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	Mud w /scum oil 100% M	0.02

\* Recovery from multiple tests

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

Trilobite Testing, Inc      Ref. No: 63210      Printed: 2017.05.04 @ 07:19:43

**ROCK TYPES**

Cht	shale, grn	Carbon Sh	Arg/Shale
Lmst fw7>	shale, gry	shale, red	Ss










**ACCESSORIES**

<b>MINERAL</b>	<b>STRINGER</b>
* Sandy	Sandstone



# OTHER SYMBOLS

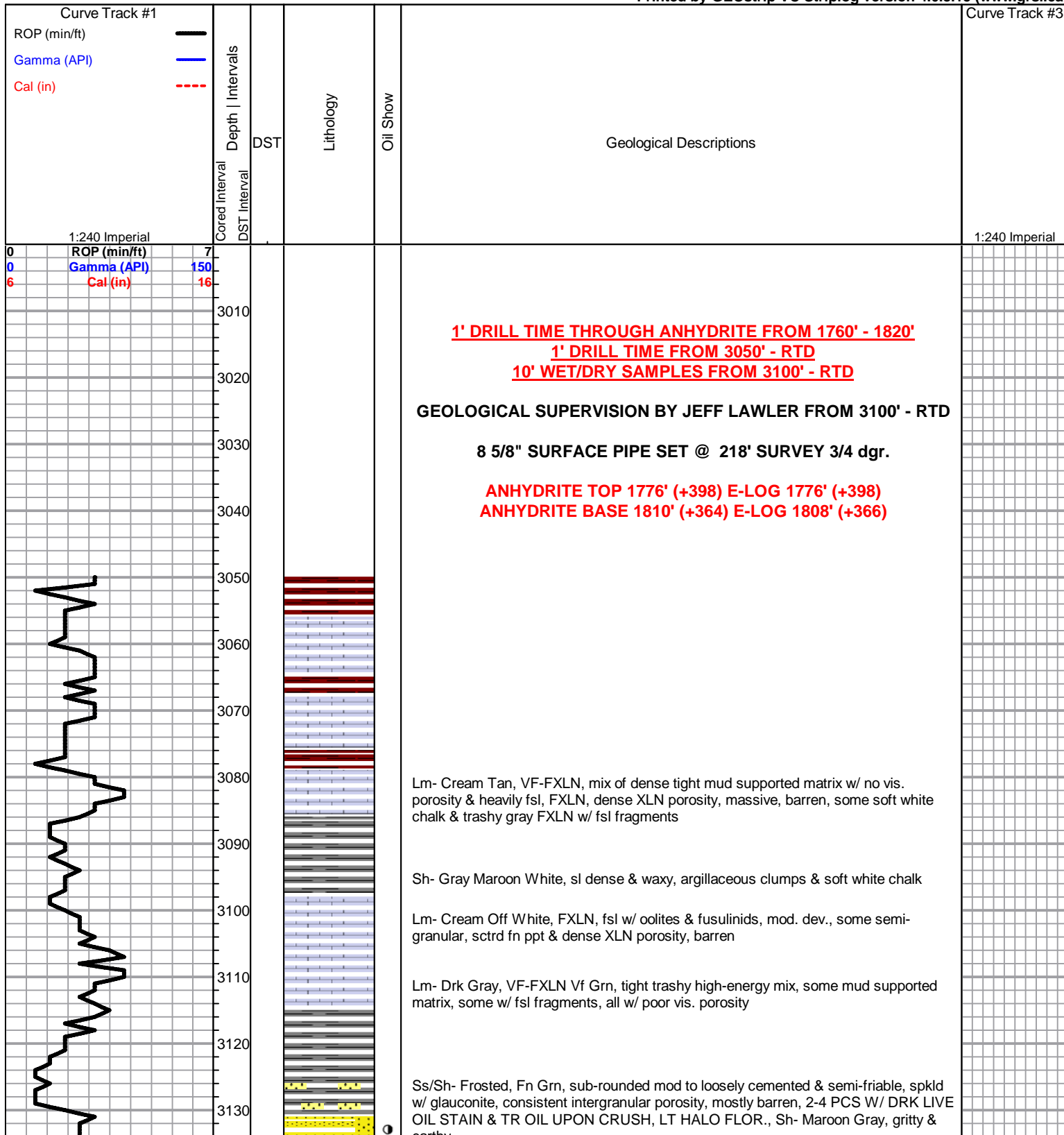
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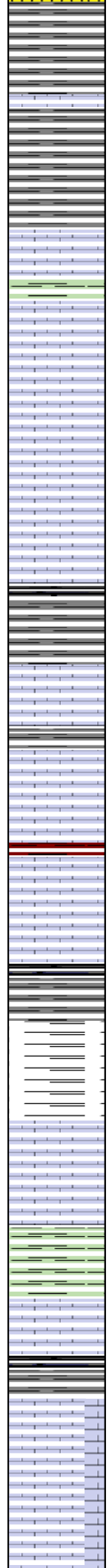
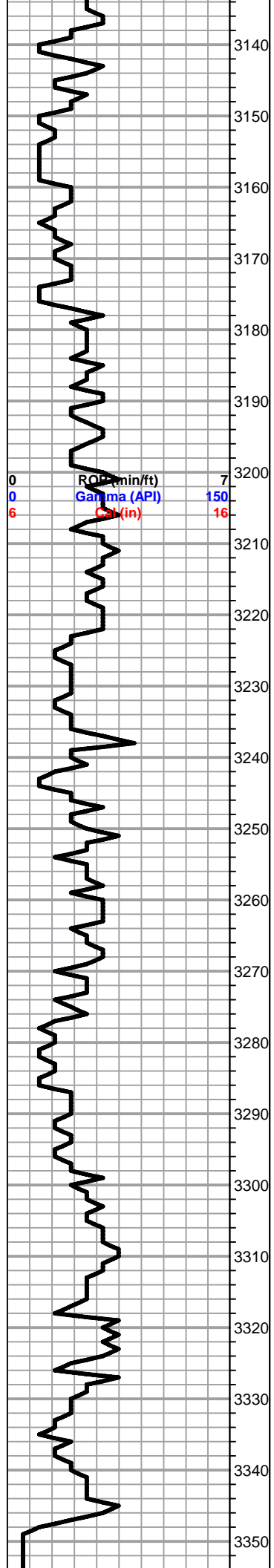
-  Daily Report
-  Digital Photo
-  Document
-  Folder
-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

## DST

-  DST Int
-  DST alt

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





earthy

Sh- Gray, argillaceous clumps

Lm- Drk Gray, FXLN, trashy high-energy, poor vis. porosity, thin lens

Lm/Sh- Interbedded thin Lm & Sh beds, Lm- Tan Cream, mix of sharp cherty like Ls w/o vis. porosity, granular cream arenaceous Ls, loose & crumbly, intergranular porosity

**TOPEKA 3176' (-1002) E-LOG 3176' (-1002)** Lm- Cream Off White, FXLN, loosely cemented, sl fsl, poor vis. porosity, some chalky in part

Lm- Cream Tan, VFXLN Vf Grn, dense, tight, min. vis. porosity, chalky mud supported matrix

Lm- Cream Tan, Vf Grn, loosely cemented mud supported matrix, chalky, some soft white chalk

Lm- Buff Drk Gray, FXLN, well cemented high-energy trashy mix, fsl, dense XLN porosity

Lm- Gray, Fn Grn, well cemented, arenaceous Ls

Lm/Chert- Cream, mix of heavily fsl & oolitic Ls w/ sctrd-dense XLN porosity, gritty dolomitic Ls w/ consistent microXLN porosity, sharp cherty Ls w/o vis. porosity, & soft white chalk

Lm- Gray, FXLN, dense, well cemented, fsl, sctrd-dense XLN porosity, barren

Lm- Cream, VF-FXLN, mix of tight VFXLN w/ min. vis. porosity & fsl, FXLN w/ sctrd-dense XLN porosity, all barren, few sl chalky in part

Sh- Black Gray Maroon Green, fissile & carbonaceous, silty & waxy, gritty & earthy, many argillaceous clumps

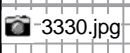
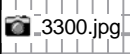
Lm- Off White Cream, VF-FXLN, mix of tight sl fsl w/ dense XLN porosity & loosely cemented & semi-friable arenaceous Ls w/ consistent intergranular porosity, 2-4 PCS W/ DRK SCTRDR STN, NSFO, NO ODR, much soft white chalk

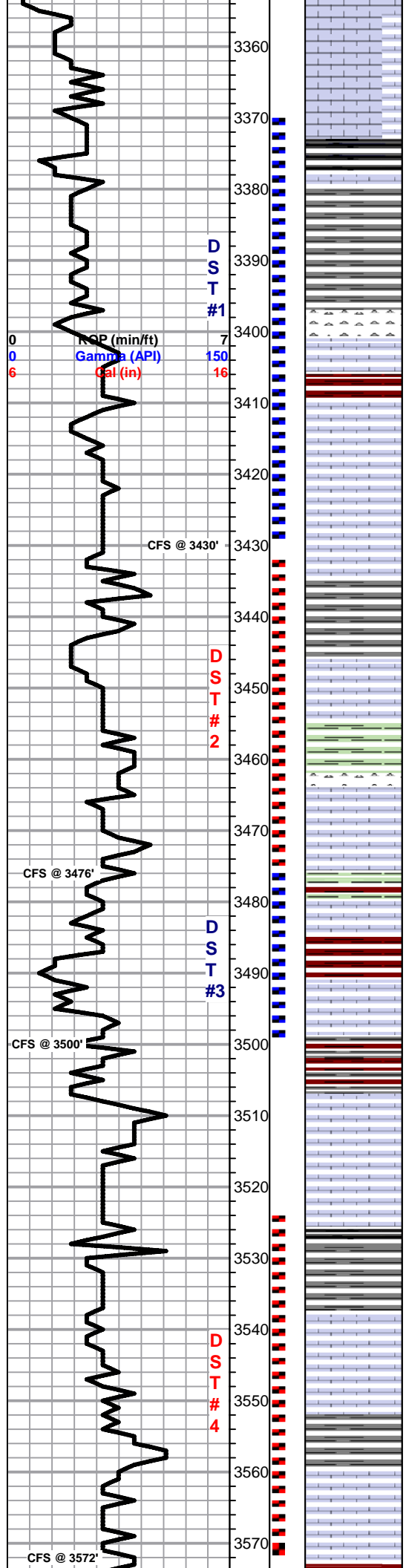
Sh- Green Maroon, sl waxy, gummy wash

Lm- Cream, FXLN, dense, well cemented, fsl w/ fusulinds, sctrd XLN porosity, barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd ppt interoolite & XLN porosity, SCTRDR DRK STN, NSFO, WK ODR, abundant soft white chalk

Lm- Cream Off White, mix of loosely cemented arenaceous Ls, intergranular porosity, sl fsl well cemented FXLN Lm w/ sctrd XLN porosity, & much soft white chalk





Lm- Cream Buff, FXLN, dense, well cemented, sl fsl, poorly dev. w/ sctrd XLN porosity

**HEEBNER 3375' (-1201) E-LOG 3373' (-1199)** Sh- Black, fissile & carbonaceous

**TORONTO 3398' (-1224) E-LOG 3396' (-1222)** Lm/Chert- Gray & White sharp fresh bedded chert on top, gradating into a fsl, sl oolitic w/ crinoids, mod. dev. w/ sctrd ppt & XLN porosity, sctrd secondary reXLN, SCTRD DRK STN, FR SHEEN, SL TR FO, FR ODR

**LKC 3411' (-1237) E-LOG 3410' (-1236)** Lm- White Off White, VF-MED XLN, mix of well dev. oolitic & fsl w/ sctrd-consistent ppt inter fsl porosity & secondary reXLN porosity, LT SCTRD STN, HVY SHEEN, NSFO, GD ODR, & mostly tight, well cemented w/ poor vis. porosity, some soft white chalk

Lm- Off White, VFXLN, dense cherty Ls w/ sctrd XLN porosity, SCTRD LT STN, NSFO, FR ODR

Sh- Gray Maroon, dense sl waxy slivers, gritty & earthy

Lm- Off White, VF-Med XLN, mix of well dev. oolitic clusters w/ consistent interoolite ppt porosity & secondary reXLN porosity, LT SCTRD STN, WK SHEEN, NSFO, MOD. ODR., & sl fsl w/ sctrd XLN porosity, barren, & soft sl chalky mud supported matrix, barren

Sh- Green Gray Maroon, gritty & silty, gritty & earthy

Chert- Lt Gray, fresh bedded fsl sharp chert, cryptoXLN

Lm- Off White, FXLN, fsl, mod. dev. w/ sctrd fn ppt & XLN porosity, LT SCTRD STN, NSFO, LT SHEEN, WK ODR

Sh- Green Maroon, silty & calcareous, argillaceous clumps

Lm- Off White, FXLN, oolitic, sctrd dev. w/ sctrd fn ppt interoolite & XLN porosity, some loosely cemented, LT SCTRD STN, FR SHEEN, SL TR FO, GD SL SULPHURIC ODR (WATER??)

Lm- Tan, VF-FXLN, vry dense & well cemented, sl oolitic w/ some loose crinoids, porosity varies from min. vis.- sctrdn fn ppt interoolite & secondary reXLN porosity, DRK SCTRD STN, FR SHEEN, TR FO UPON CRUSH, GD ODR

Lm- White Off White, VF-FXLN Vf Grn, dense tight mix, well to loosely cemented & crumbly mud supported matrix, all vry clean & barren

Lm- Lt Gray/Mint Green, VFXLN Vf Grn, dense tight mix, mostly well cemented, mix of XLN & mud supported matrix, all clean & barren

Sh- Black Gray Green, fissile & carbonaceous, argillaceous clumps, silty & calcareous

Lm- Cream Off White, VF-FXLN, sl fsl, well cemented, sctrd XLN porosity, some sl chalky in part, LT SCTRD STN, TR FO, WK ODR

Lm- Off White, FXLN, fsl & oolitic, sctrd fn ppt interoolite & XLN porosity, LT SCTRD STN, 1 PC TR FO W/ GSY BUBBLES, NO ODR

SHORT TRIP SURVEY 1dgr. STRAP +0.76'

DST #1 TORONOT-LKC A 3370' - 3430' 30-45-30-45

160' WM (10%W)

IFP: 15-63#  
FFP: 68-83#  
SIP: 831-808#  
BHT: 103 dgr

-3405.jpg

-3415.jpg

DST #2 LKC C-D 3432' - 3476' 15-45-15-60

270' MW (70%W)

IFP: 18-97#  
FFP: 99-139#  
SIP: 615-611#

-3450.jpg

-3470.jpg

-3485.jpg

-3495.jpg

DST #3 LKC E-F 3476' - 3500' 30-45-30-30

20' OCM (5%O)

IFP: 11-19#  
FFP: 18-23#  
SIP: 805-651#  
HYD: 1696-1690#

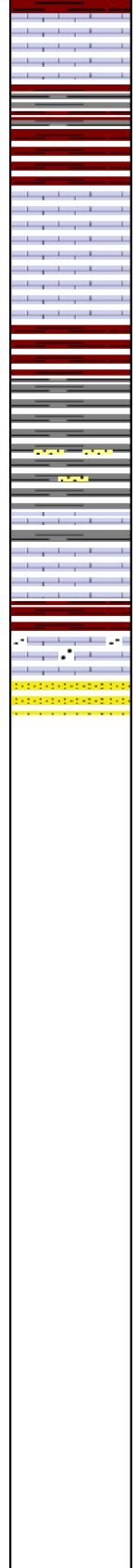
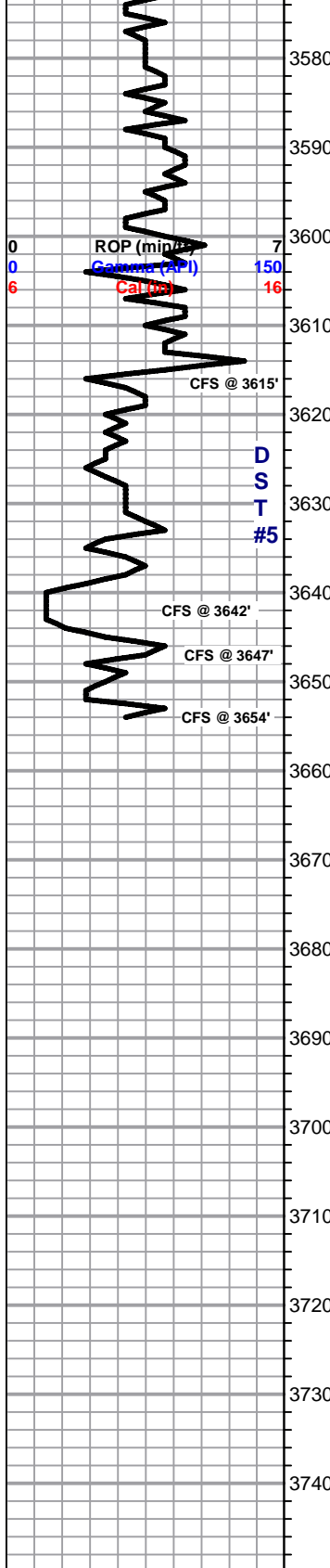
DST #4 LKC H - I 3524' - 3572' 30-45-30-60

5' MUD w/ OIL SCUM

IFP: 15-16#  
FFP: 15-16#  
SIP: 24-23#  
HYD: 1724-1676#

-3545.jpg

-3562.jpg



Lm- Cream Off White, VF-FXLN, dense, well cemented, tight, poorly dev. w/ min. vis. porosity, sl chalky in part, some soft white chalk, clean & barren

Sh- Maroon Gray, gritty & earthy, semi-waxy

Lm- Tan, VF-FXLN, dense, fsl w/ fusulinids, poorly dev. w/ sctrd micro XLN & secondary reXLN porosity, clean & barren

**BKC 3615' (-1441) E-LOG 3610' (-1436)** Sh- Maroon Gray Green, gritty & earthy, argillaceous clumps, silty & calcareous, sl arenaceous

Sh- Gray, abundant argillaceous clumps & sandy shale

Sh- A/A w/ abundant argillaceous maroon clumps & shaley Ss/sandy shale

**3642' 20"** Lm- White, FXLN, loosely cemented & crumbly, sl oolitic, some sl chalky in part, barren, abundant shale A/A, sl influx in shaley Ss

**40"** Lm- A/A, influx of gritty & earthy maroon Sh

**60"** Sh- influx of gritty & earthy maroon sh

**3647' 20"** Lm- White, FXLN, sl fsl, oolitic w/ sctrd fn ppt interoolite porosity, barren

**40"** Lm- White, FXLN, A/A, more dev. w/ sctrd ppt & XLN porosity, SCTRD DRK STN, FR SFO, GD SULPHURIC ODR, some sl chalky in part

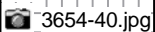
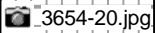
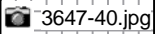
**60"** Lm- A/A w/ sub-rounded med qtz inclusions, STN & ODR A/A

**CONGLOMERATE SAND 3650' (-1476)**

**3654' 20"** Ss- Clear Frosted, Fn-Med Grn, sub-rounded, moderate sorting & consolidated, cementation varying from friable to mod. Ca cementation, DRK STN, FR SFO, GD ODR

**40"** Ss- A/A w/ white varying degree of dolomitic cementation, DRK STN, FR SFO, GD ODR

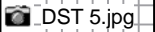
**RTD 3654' (-1480) LTD 3652' (-1478) @ 12:35 5/4/2017**



DST #5  
**CONGL. SAND**  
 3610' - 3654'  
 30-45-30-60

240' TF  
 120' OCWM  
 (10% O, 25% W, 65% M)  
 80' OCM  
 (30% O, 70% M)  
 20' MCO  
 (80% O, 20% M)  
 20' SMCO  
 (95% O, 5% M)

Gr: 27 API  
 IFP: 32-81#  
 FFP: 92-11#  
 SIP: 1056-1057#  
 HYD: 1772-1727#  
 BHT: 109 dgr.





0.2 mm

3300' x 30



0.5 mm

3330' x 20



0.2 mm

3405' X 30







0.5 mm

3450' x 25









0.5 mm

3545' X 20

3562.jpg

A011 1280x1024 2017/05/03 20:55:50 Unit: mm Magnification: 77.5 x 1



3562' X 20

3647-40.jpg

A012 1280x1024 2017/05/04 14:47:39 Unit: mm Magnification: 77.5 x 1



3647' 40" X 20

3654-20.jpg



3654-40.jpg









## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120  
Hays KS 67601

ATTN: Jeff Lawler

### **Garth Unit #1**

### **S22-6S-20W Rooks,KS**

Start Date: 2017.05.02 @ 06:20:00

End Date: 2017.05.02 @ 12:05:00

Job Ticket #: 63207                      DST #: 1

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

Printed: 2017.05.05 @ 09:23:19

Jaspar Co  
S22-6S-20W Rooks,KS  
Garth Unit #1  
DST # 1  
Toronto - LKC "A"  
2017.05.02



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Jaspar Co  
 PO Box 1120  
 Hays KS 67601  
 ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**

**Garth Unit #1**

Job Ticket: 63207

**DST#: 1**

Test Start: 2017.05.02 @ 06:20:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:55:45

Time Test Ended: 12:05:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

**Interval: 3370.00 ft (KB) To 3430.00 ft (KB) (TVD)**

Reference Elevations: 2174.00 ft (KB)

Total Depth: 3430.00 ft (KB) (TVD)

2169.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8934 Inside**

Press@RunDepth: 83.70 psig @ 3377.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.05.02 End Date: 2017.05.02

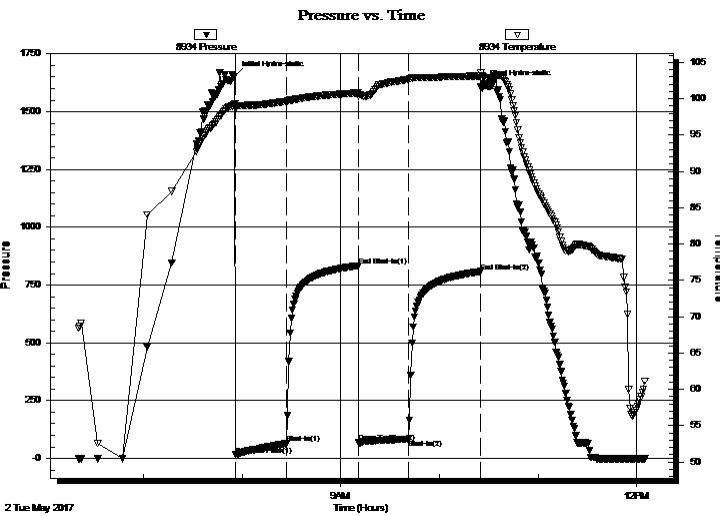
Last Calib.: 2017.05.02

Start Time: 06:20:15 End Time: 12:05:00

Time On Btm: 2017.05.02 @ 07:55:30

Time Off Btm: 2017.05.02 @ 10:27:00

**TEST COMMENT:** 30-IF-Fair Blow ; Built from a surface to 5"  
 45-ISI-No Blow Back  
 30-FF-Weak Blow ; at 3 minutes built from a surface to 3"  
 45-FSI-No Blow Back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1654.34	99.27	Initial Hydro-static
1	15.03	98.57	Open To Flow (1)
32	63.76	99.61	Shut-In(1)
75	831.17	100.80	End Shut-In(1)
76	68.64	100.34	Open To Flow (2)
106	83.70	102.66	Shut-In(2)
150	808.32	103.11	End Shut-In(2)
152	1619.47	102.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
160.00	WM 10%W 90%M	1.14

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63207

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2017.05.02 @ 06:20:00

## Tool Information

Drill Pipe:	Length: 3238.00 ft	Diameter: 3.80 inches	Volume: 45.42 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	51000.00 lb
			<u>Total Volume:</u>	Tool Chased	2.00 ft
				String Weight: Initial	43000.00 lb
Drill Pipe Above KB:	9.00 ft			Final	43000.00 lb
Depth to Top Packer:	3370.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	60.00 ft				
Tool Length:	80.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3351.00	
Shut In Tool	5.00			3356.00	
Hydraulic tool	5.00			3361.00	
Packer	5.00			3366.00	20.00 Bottom Of Top Packer
Packer	4.00			3370.00	
Stubb	1.00			3371.00	
Perforations	5.00			3376.00	
Change Over Sub	1.00			3377.00	
Recorder	0.00	9120	Inside	3377.00	
Recorder	0.00	8934	Inside	3377.00	
Drill Pipe	32.00			3409.00	
Change Over Sub	1.00			3410.00	
Perforations	16.00			3426.00	
Bullnose	4.00			3430.00	60.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63207

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2017.05.02 @ 06:20:00

## 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:

25500 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1250.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
160.00	WM 10%W 90%M	1.142

Total Length: 160.00 ft      Total Volume: 1.142 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

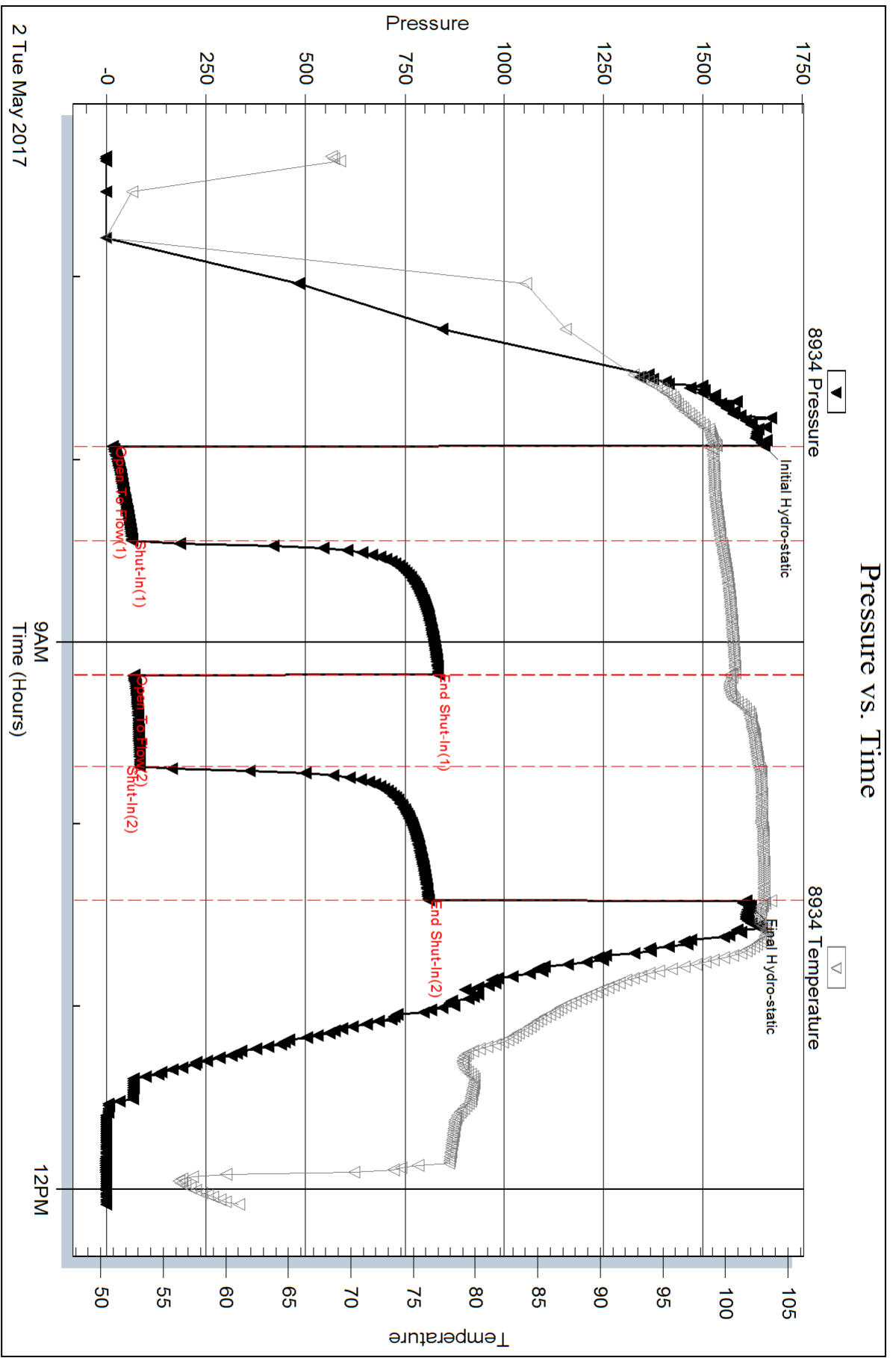
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1# LCM

RW=.307@ 60 degrees

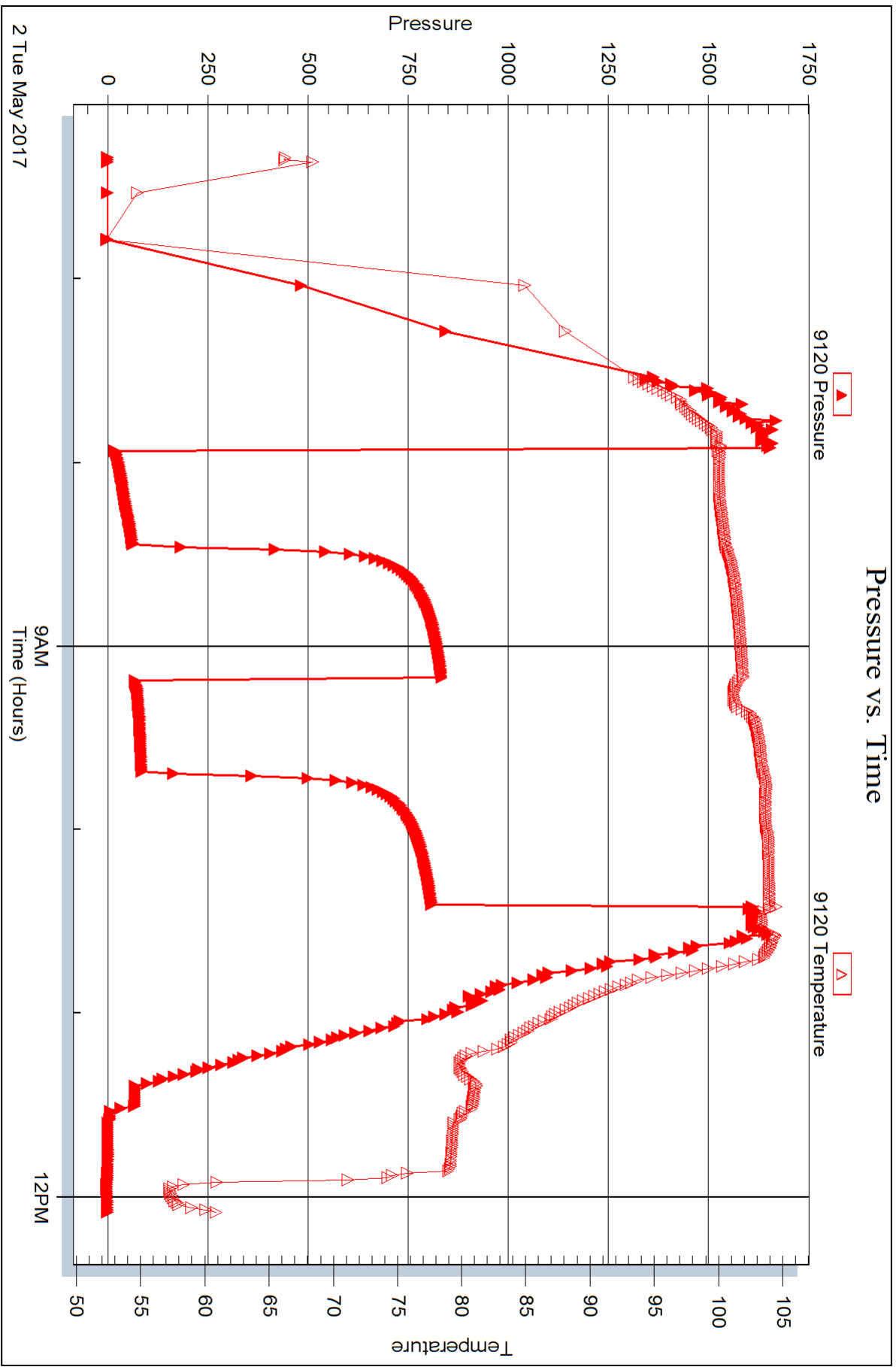


Serial #: 9120

Inside Jasper Co

Garth Unit #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63207

Printed: 2017.05.05 @ 09:23:20



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120  
Hays KS 67601

ATTN: Jeff Lawler

### **Garth Unit #1**

### **S22-6S-20W Rooks,KS**

Start Date: 2017.05.02 @ 19:44:00

End Date: 2017.05.03 @ 01:29:00

Job Ticket #: 63208                      DST #: 2

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

Printed: 2017.05.05 @ 09:22:38

Jaspar Co  
S22-6S-20W Rooks,KS  
Garth Unit #1  
DST # 2  
LKC "C-D"  
2017.05.02





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Jaspar Co  
PO Box 1120  
Hays KS 67601  
ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**  
**Garth Unit #1**  
Job Ticket: 63208      **DST#: 2**  
Test Start: 2017.05.02 @ 19:44:00

## GENERAL INFORMATION:

Formation: **LKC "C-D"**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 21:37:15  
Time Test Ended: 01:29:00  
Interval: **3432.00 ft (KB) To 3476.00 ft (KB) (TVD)**  
Total Depth: 3476.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2174.00 ft (KB)  
2169.00 ft (CF)  
KB to GR/CF: 5.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Spencer J. Staab  
Unit No: 84

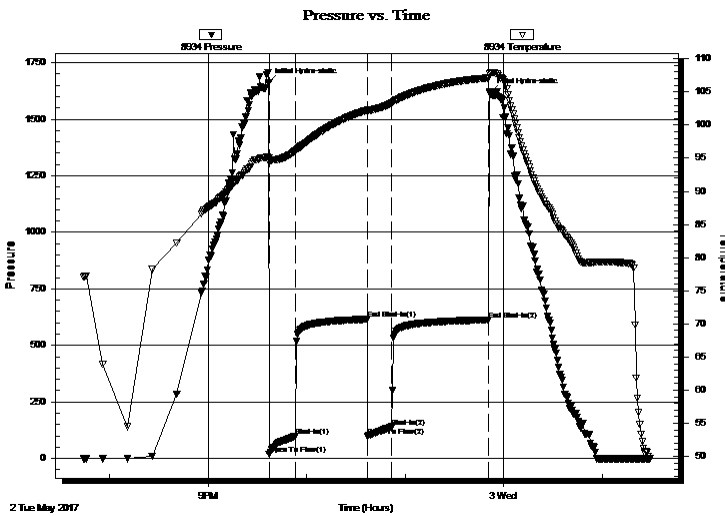
## Serial #: 8934

Inside

Press@RunDepth: 139.22 psig @ 3439.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2017.05.02      End Date: 2017.05.03      Last Calib.: 2017.05.03  
Start Time: 19:44:15      End Time: 01:29:00      Time On Btm: 2017.05.02 @ 21:37:00  
Time Off Btm: 2017.05.02 @ 23:51:45

TEST COMMENT: 15-IF-Strong Blow ; Built from 1/2" to BOB in 12 mins  
45-ISI-No Blow Back  
15-FF-Strong Blow ; Built from surface to 9&1/2"  
60-FSI-No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.69	95.06	Initial Hydro-static
1	18.79	94.39	Open To Flow (1)
16	97.57	96.04	Shut-In(1)
60	615.26	102.26	End Shut-In(1)
61	99.27	102.04	Open To Flow (2)
75	139.22	103.32	Shut-In(2)
134	611.23	107.11	End Shut-In(2)
135	1619.60	107.77	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
270.00	MW 30%M 70%W	2.69

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63208

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2017.05.02 @ 19:44:00

## Tool Information

Drill Pipe:	Length: 3300.00 ft	Diameter: 3.80 inches	Volume: 46.29 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3432.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	64.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3413.00	
Shut In Tool	5.00			3418.00	
Hydraulic tool	5.00			3423.00	
Packer	5.00			3428.00	20.00 Bottom Of Top Packer
Packer	4.00			3432.00	
Stubb	1.00			3433.00	
Perforations	5.00			3438.00	
Change Over Sub	1.00			3439.00	
Recorder	0.00	9120	Inside	3439.00	
Recorder	0.00	8934	Inside	3439.00	
Drill Pipe	31.00			3470.00	
Change Over Sub	1.00			3471.00	
Perforations	1.00			3472.00	
Bullnose	4.00			3476.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 64.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63208

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2017.05.02 @ 19:44:00

## 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:

72500 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1250.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	MW 30%M 70%W	2.685

Total Length: 270.00 ft      Total Volume: 2.685 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2 # LCM

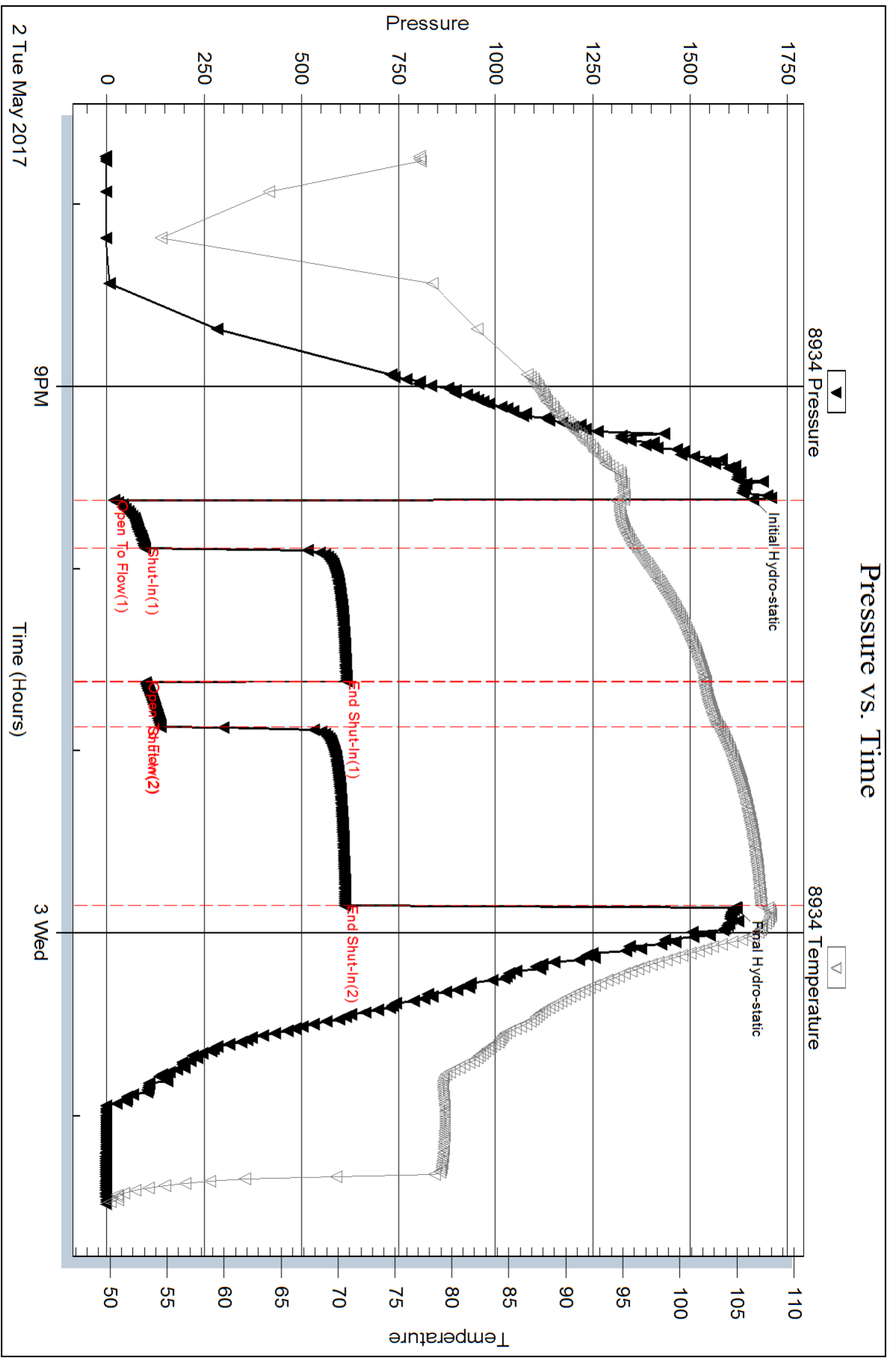
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Serial #: 8934

Inside Jasper Co

Garth Unit #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63208

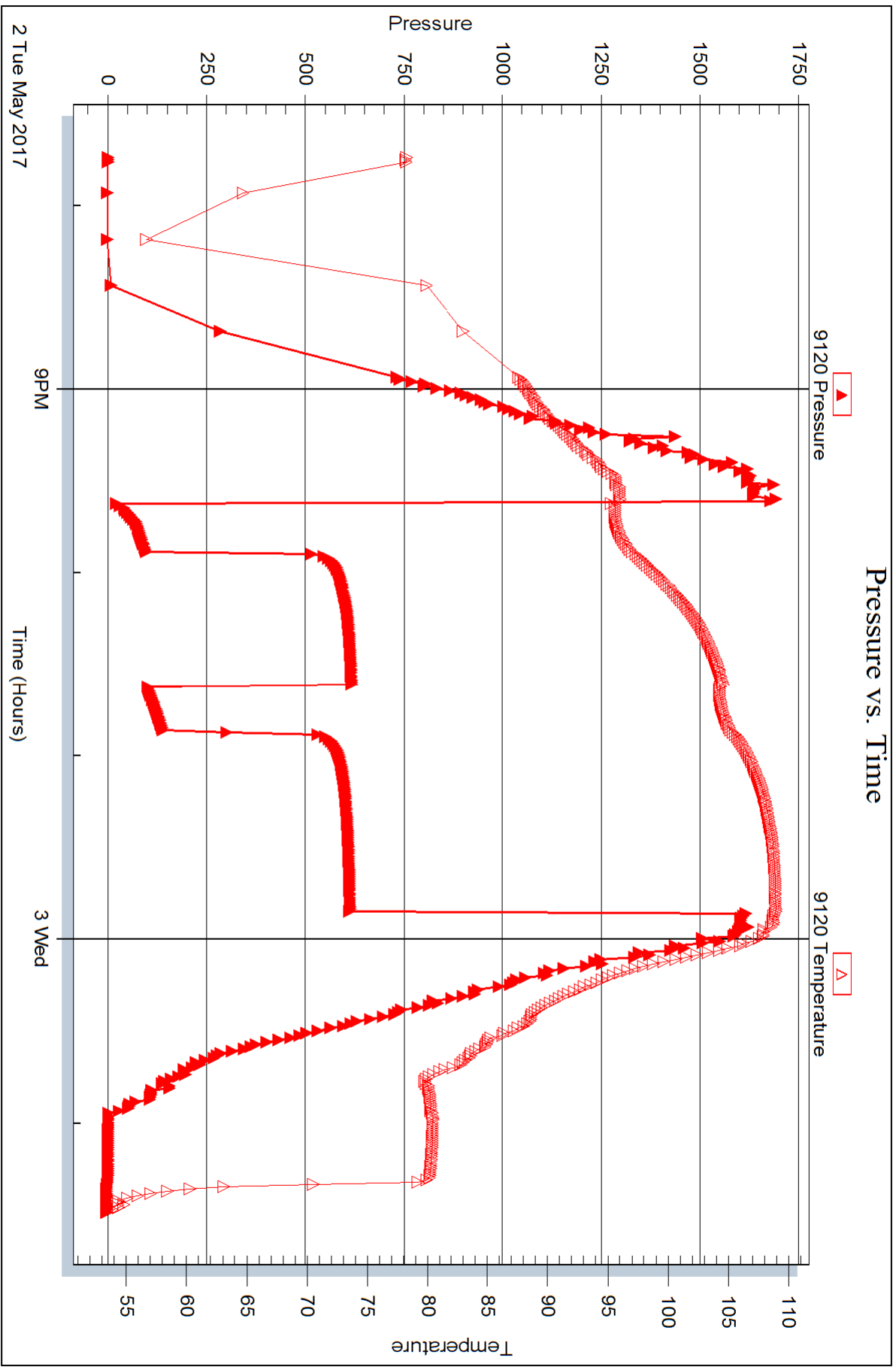
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Serial #: 9120

Inside Jasper Co

Garth Unit #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63208

Printed: 2017.05.05 @ 09:22:39



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120  
Hays KS 67601

ATTN: Jeff Lawler

### **Garth Unit #1**

### **S22-6S-20W Rooks,KS**

Start Date: 2017.05.03 @ 07:44:00

End Date: 2017.05.03 @ 13:23:15

Job Ticket #: 63209                      DST #: 3

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

Printed: 2017.05.05 @ 09:14:13

Jaspar Co  
S22-6S-20W Rooks,KS  
Garth Unit #1  
DST # 3  
LKC "E-F"  
2017.05.03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Jaspar Co  
 PO Box 1120  
 Hays KS 67601  
 ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**

**Garth Unit #1**

Job Ticket: 63209

**DST#: 3**

Test Start: 2017.05.03 @ 07:44:00

## GENERAL INFORMATION:

Formation: **LKC "E-F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:35:45  
 Time Test Ended: 13:23:15  
 Interval: **3476.00 ft (KB) To 3500.00 ft (KB) (TVD)**  
 Total Depth: 3500.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 2174.00 ft (KB)  
 2169.00 ft (CF)  
 KB to GR/CF: 5.00 ft

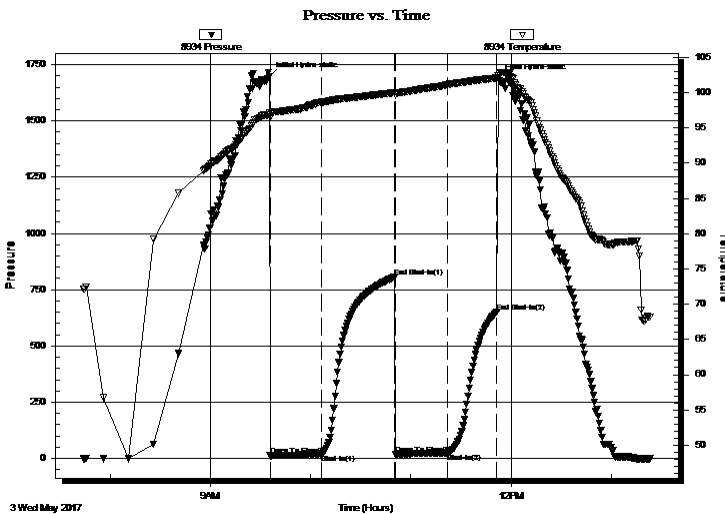
**Serial #: 8934**

**Outside**

Press@RunDepth: 23.44 psig @ 3477.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.05.03 End Date: 2017.05.03 Last Calib.: 2017.05.03  
 Start Time: 07:44:15 End Time: 13:23:15 Time On Btm: 2017.05.03 @ 09:35:30  
 Time Off Btm: 2017.05.03 @ 11:52:15

**TEST COMMENT:** 30-IF-Very Weak Blow ; Built from a surface to 1"  
 45-ISI-No Blow Back  
 30-FF-No Blow  
 30-FSI-No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1696.74	97.07	Initial Hydro-static
1	11.79	96.44	Open To Flow (1)
31	19.64	98.65	Shut-In(1)
75	805.02	99.99	End Shut-In(1)
76	18.91	99.66	Open To Flow (2)
107	23.44	101.13	Shut-In(2)
136	651.47	102.07	End Shut-In(2)
137	1690.07	102.45	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 5% O 95%M	0.10

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co  
PO Box 1120  
Hays KS 67601  
ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**  
**Garth Unit #1**  
Job Ticket: 63209      **DST#: 3**  
Test Start: 2017.05.03 @ 07:44:00

**Tool Information**

Drill Pipe:	Length: 3364.00 ft	Diameter: 3.80 inches	Volume: 47.19 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	61000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	42000.00 lb
Drill Pipe Above KB:	29.00 ft			Final	42000.00 lb
Depth to Top Packer:	3476.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	44.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			3457.00	
Shut In Tool	5.00			3462.00	
Hydraulic tool	5.00			3467.00	
Packer	5.00			3472.00	20.00      Bottom Of Top Packer
Packer	4.00			3476.00	
Stubb	1.00			3477.00	
Recorder	0.00	9120	Inside	3477.00	
Recorder	0.00	8934	Outside	3477.00	
Perforations	19.00			3496.00	
Bullnose	4.00			3500.00	24.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>44.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63209

**DST#: 3**

ATTN: Jeff Lawler

Test Start: 2017.05.03 @ 07:44:00

## 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: 48.00 sec/qt

Cushion Volume:

bbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1250.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 5% O 95%M	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl

Num Fluid Samples: 0

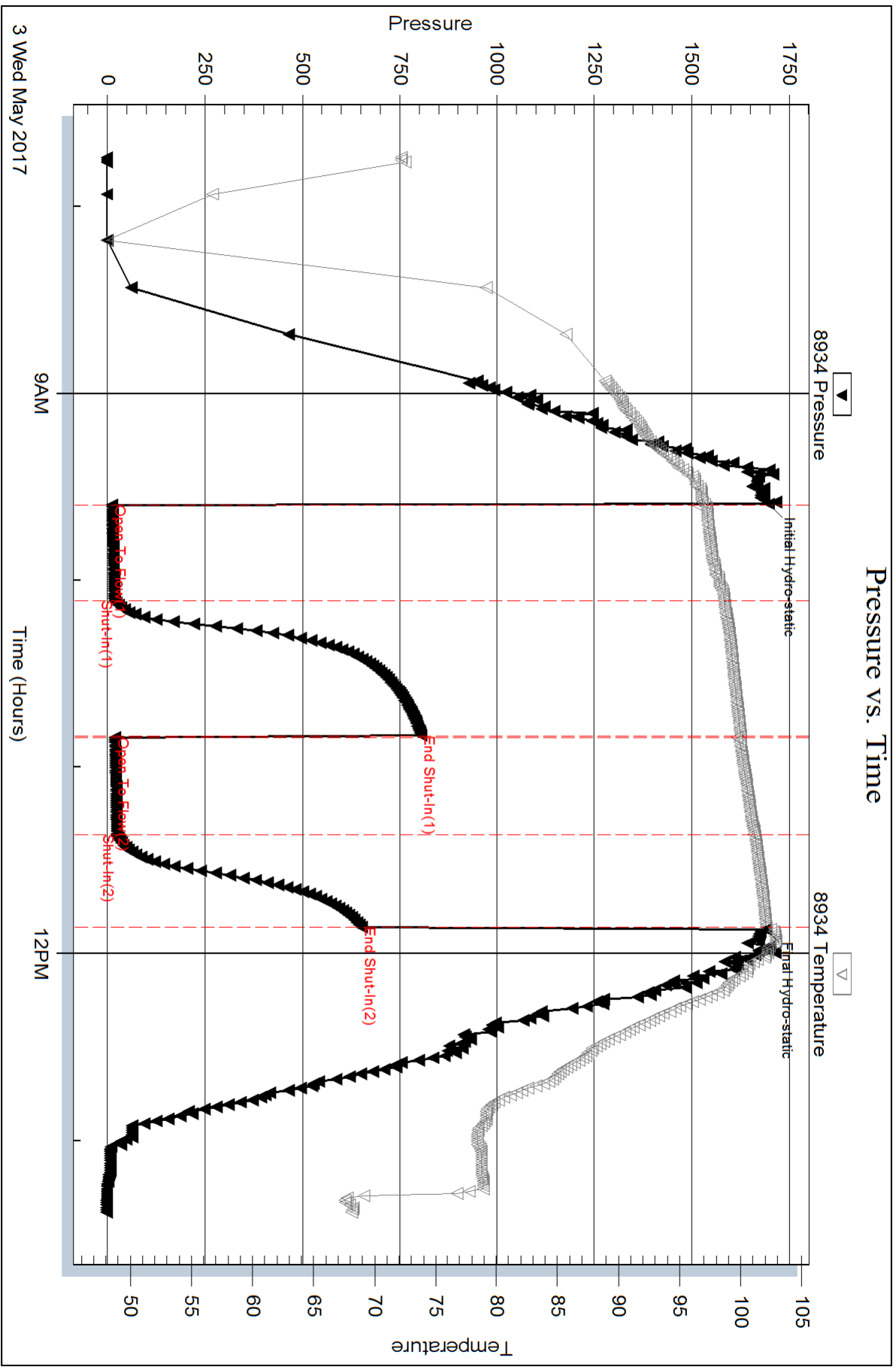
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2# LCM

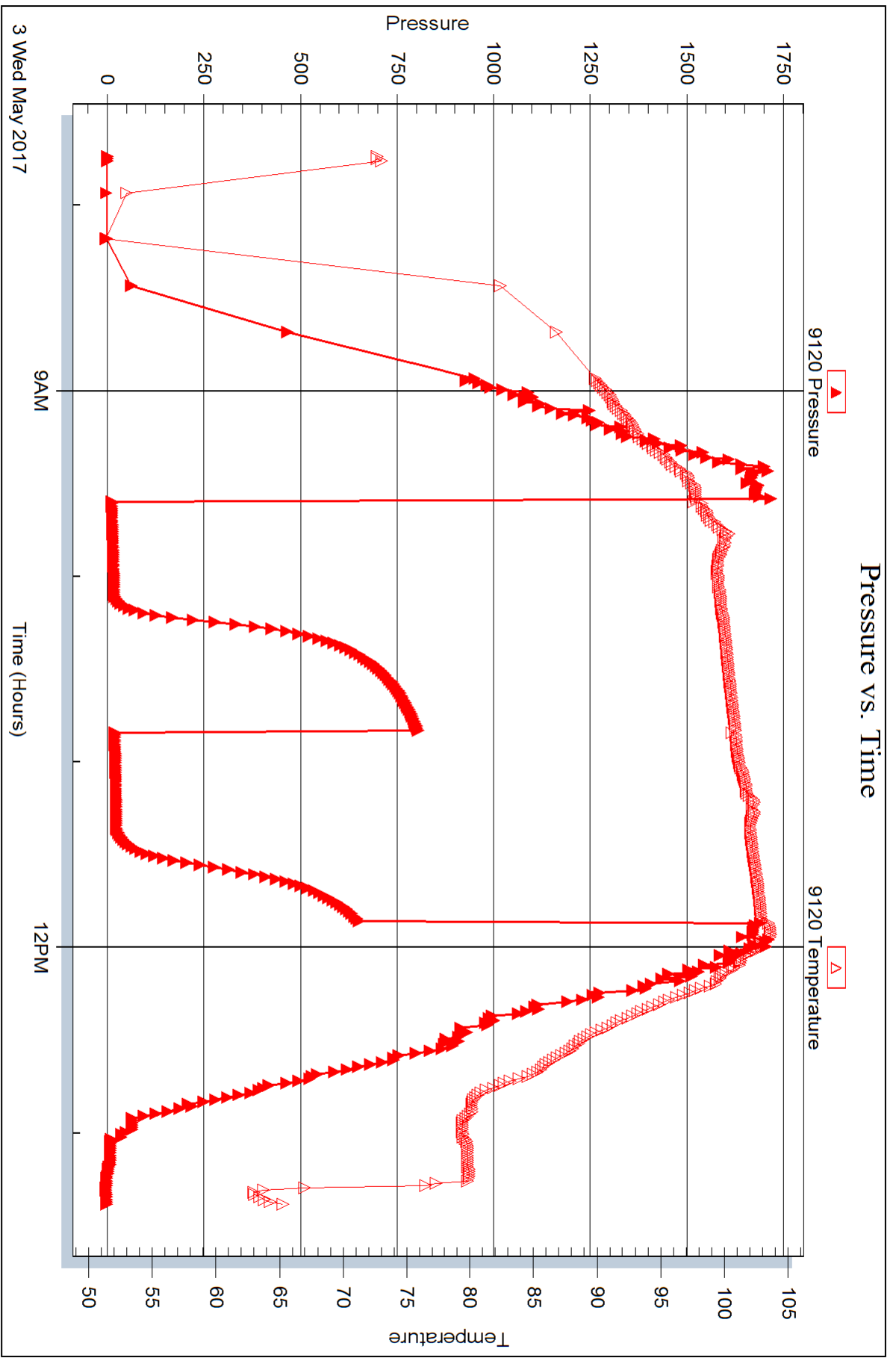


Serial #: 9120

Inside Jasper Co

Garth Unit #1

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 63209

Printed: 2017.05.05 @ 09:14:14



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120  
Hays KS 67601

ATTN: Jeff Lawler

### **Garth Unit #1**

### **S22-6S-20W Rooks,KS**

Start Date: 2017.05.03 @ 22:27:00

End Date: 2017.05.04 @ 04:13:00

Job Ticket #: 63210                      DST #: 4

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

Printed: 2017.05.05 @ 09:13:49



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Jaspar Co  
 PO Box 1120  
 Hays KS 67601  
 ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**

**Garth Unit #1**

Job Ticket: 63210

**DST#: 4**

Test Start: 2017.05.03 @ 22:27:00

## GENERAL INFORMATION:

Formation: **LKC "H-I"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:01:45  
 Time Test Ended: 04:13:00  
 Interval: **3524.00 ft (KB) To 3572.00 ft (KB) (TVD)**  
 Total Depth: 3572.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 2174.00 ft (KB)  
 2169.00 ft (CF)  
 KB to GR/CF: 5.00 ft

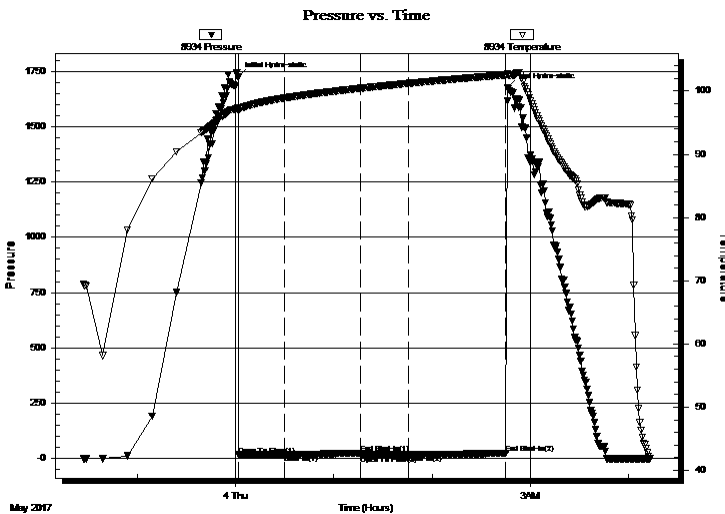
**Serial #: 8934**

**Inside**

Press@RunDepth: 16.79 psig @ 3535.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.05.03 End Date: 2017.05.04 Last Calib.: 2017.05.04  
 Start Time: 22:27:15 End Time: 04:13:00 Time On Btm: 2017.05.04 @ 00:01:30  
 Time Off Btm: 2017.05.04 @ 02:46:00

**TEST COMMENT:** 30-IF-Very Weak Blow ; Built from a surface to 1/2"  
 45-ISI-No Blow Back  
 30-FF-No Blow  
 60-FSI-No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1724.74	97.39	Initial Hydro-static
1	15.73	96.85	Open To Flow (1)
29	16.50	98.92	Shut-In(1)
75	24.18	100.45	End Shut-In(1)
75	15.79	100.46	Open To Flow (2)
104	16.79	101.22	Shut-In(2)
164	23.09	102.57	End Shut-In(2)
165	1676.58	102.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w /scum oil 100%M	0.02

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co  
PO Box 1120  
Hays KS 67601  
ATTN: Jeff Lawler

**S22-6S-20W Rooks, KS**  
**Garth Unit #1**  
Job Ticket: 63210 **DST#: 4**  
Test Start: 2017.05.03 @ 22:27:00

## Tool Information

Drill Pipe:	Length: 3398.00 ft	Diameter: 3.80 inches	Volume: 47.67 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 51000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3524.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3505.00	
Shut In Tool	5.00			3510.00	
Hydraulic tool	5.00			3515.00	
Packer	5.00			3520.00	20.00 Bottom Of Top Packer
Packer	4.00			3524.00	
Stubb	1.00			3525.00	
Perforations	9.00			3534.00	
Change Over Sub	1.00			3535.00	
Recorder	0.00	9120	Inside	3535.00	
Recorder	0.00	8934	Inside	3535.00	
Drill Pipe	32.00			3567.00	
Change Over Sub	1.00			3568.00	
Bullnose	4.00			3572.00	48.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co

**S22-6S-20W Rooks,KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63210

**DST#: 4**

ATTN: Jeff Lawler

Test Start: 2017.05.03 @ 22:27:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1250.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w /scum oil 100%M	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

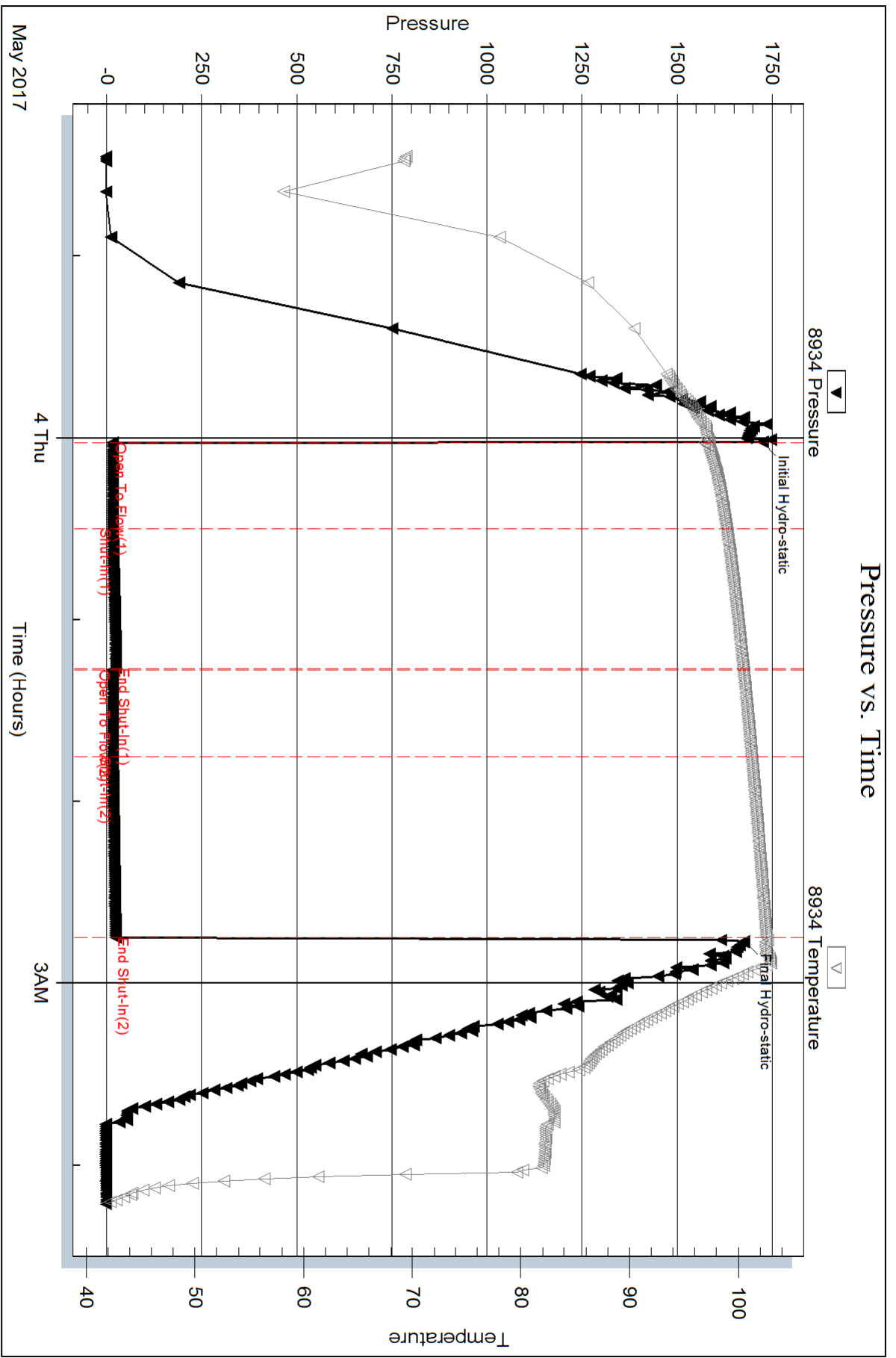
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2# LCM

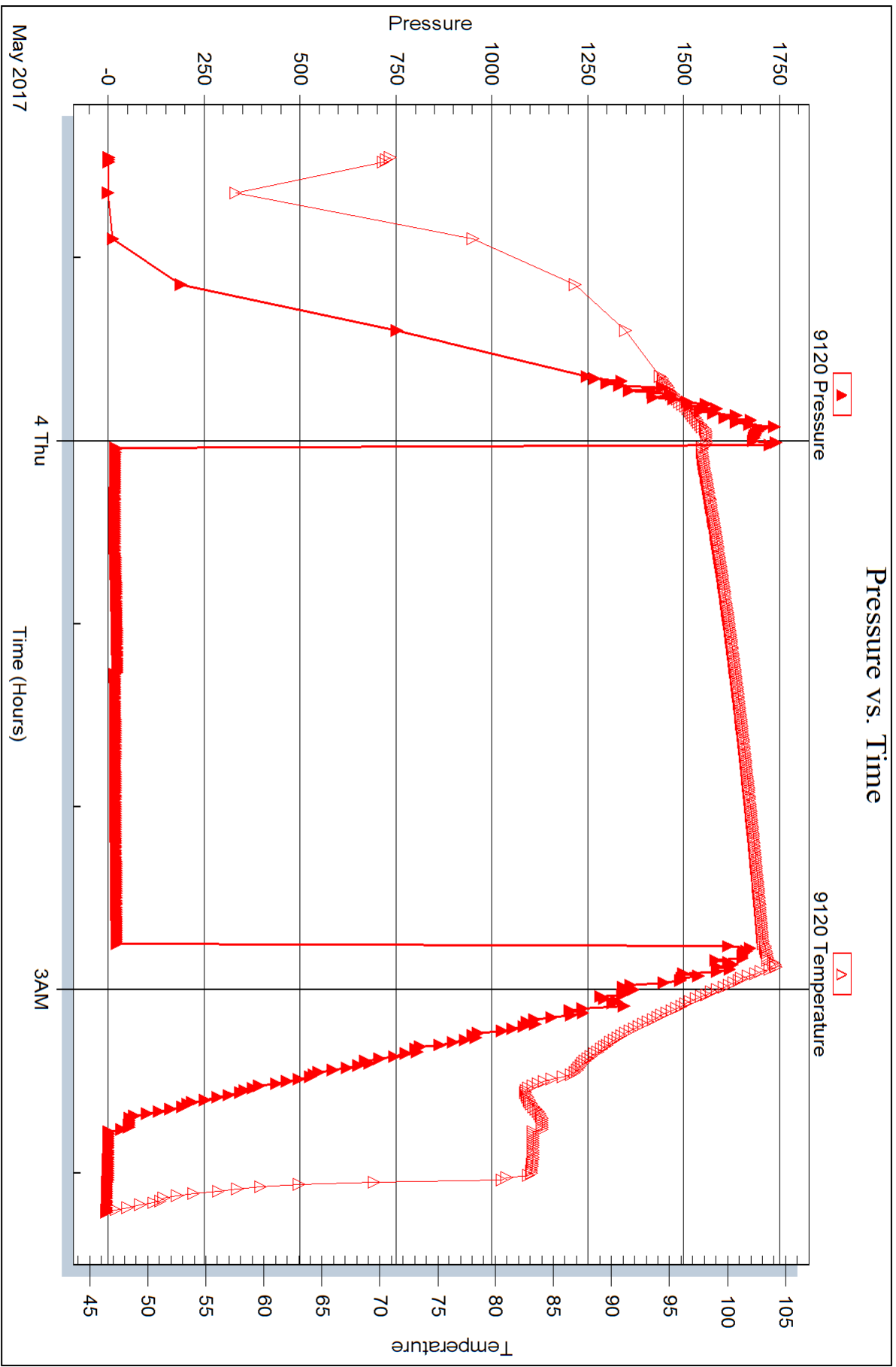


Serial #: 9120

Inside Jasper Co

Garth Unit #1

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120  
Hays KS 67601

ATTN: Jeff Lawler

### **Garth Unit #1**

### **S22-6S-20W Rooks,KS**

Start Date: 2017.05.04 @ 18:03:35

End Date: 2017.05.05 @ 00:46:05

Job Ticket #: 63207                      DST #: 5

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

Printed: 2017.05.05 @ 09:12:54

Jaspar Co S22-6S-20W Rooks,KS Garth Unit #1 DST # 5 Conglomerate 2017.05.04



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Jaspar Co  
 PO Box 1120  
 Hays KS 67601  
 ATTN: Jeff Lawler

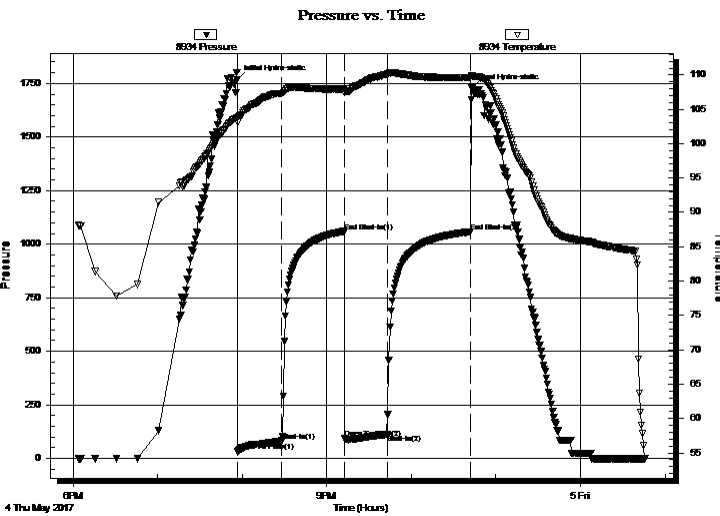
**S22-6S-20W Rooks, KS**  
**Garth Unit #1**  
 Job Ticket: 63207 **DST#: 5**  
 Test Start: 2017.05.04 @ 18:03:35

## GENERAL INFORMATION:

Formation: **Conglomerate**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:56:50  
 Time Test Ended: 00:46:05  
 Interval: **3610.00 ft (KB) To 3654.00 ft (KB) (TVD)**  
 Total Depth: 3654.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 2174.00 ft (KB)  
 2169.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8934 Inside**  
 Press@RunDepth: 111.70 psig @ 3617.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.05.04 End Date: 2017.05.05 Last Calib.: 2017.05.04  
 Start Time: 18:03:50 End Time: 00:46:05 Time On Btm: 2017.05.04 @ 19:56:20  
 Time Off Btm: 2017.05.04 @ 22:42:50

**TEST COMMENT:** 30 IFP - BOB in 20 min  
 45 ISI - Weak surface blow back built to 1/4" Died in 20 min  
 30 FFP - BOB in 23 min  
 60 FSI - Surface blow back built to 1 1/4" died back to 1/2"



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1768.06	103.82	Initial Hydro-static
1	32.30	103.14	Open To Flow (1)
32	81.98	107.30	Shut-In(1)
76	1056.55	107.95	End Shut-In(1)
77	92.36	107.42	Open To Flow (2)
107	111.70	110.01	Shut-In(2)
166	1057.52	109.60	End Shut-In(2)
167	1727.71	109.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	OCWM 10%O 25%W 65%M	0.59
80.00	OCM 30%O 70%M	1.11
20.00	MCO 80%O 20%M	0.28
20.00	SMCO 95%O 5%M	0.28

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co

**S22-6S-20W Rooks, KS**

PO Box 1120  
Hays KS 67601

**Garth Unit #1**

Job Ticket: 63207

**DST#: 5**

ATTN: Jeff Lawler

Test Start: 2017.05.04 @ 18:03:35

## Tool Information

Drill Pipe:	Length: 3480.00 ft	Diameter: 3.80 inches	Volume: 48.82 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: lb
			<u>Total Volume: 49.42 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial lb
Depth to Top Packer:	3610.00 ft			Final 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			3591.00	
Shut In Tool	5.00			3596.00	
Hydraulic tool	5.00			3601.00	
Packer	5.00			3606.00	20.00 Bottom Of Top Packer
Packer	4.00			3610.00	
Stubb	1.00			3611.00	
Perforations	5.00			3616.00	
Change Over Sub	1.00			3617.00	
Recorder	0.00	9120	Inside	3617.00	
Recorder	0.00	8934	Inside	3617.00	
Drill Pipe	32.00			3649.00	
Change Over Sub	1.00			3650.00	
Bullnose	4.00			3654.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 64.00**





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Jaspar Co  
PO Box 1120  
Hays KS 67601  
ATTN: Jeff Lawler

**S22-6S-20W Rooks,KS**  
**Garth Unit #1**  
Job Ticket: 63207      **DST#: 5**  
Test Start: 2017.05.04 @ 18:03:35

**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API: 27 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 44000 ppm
Viscosity: 62.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1250.00 ppm		
Filter Cake: inches		

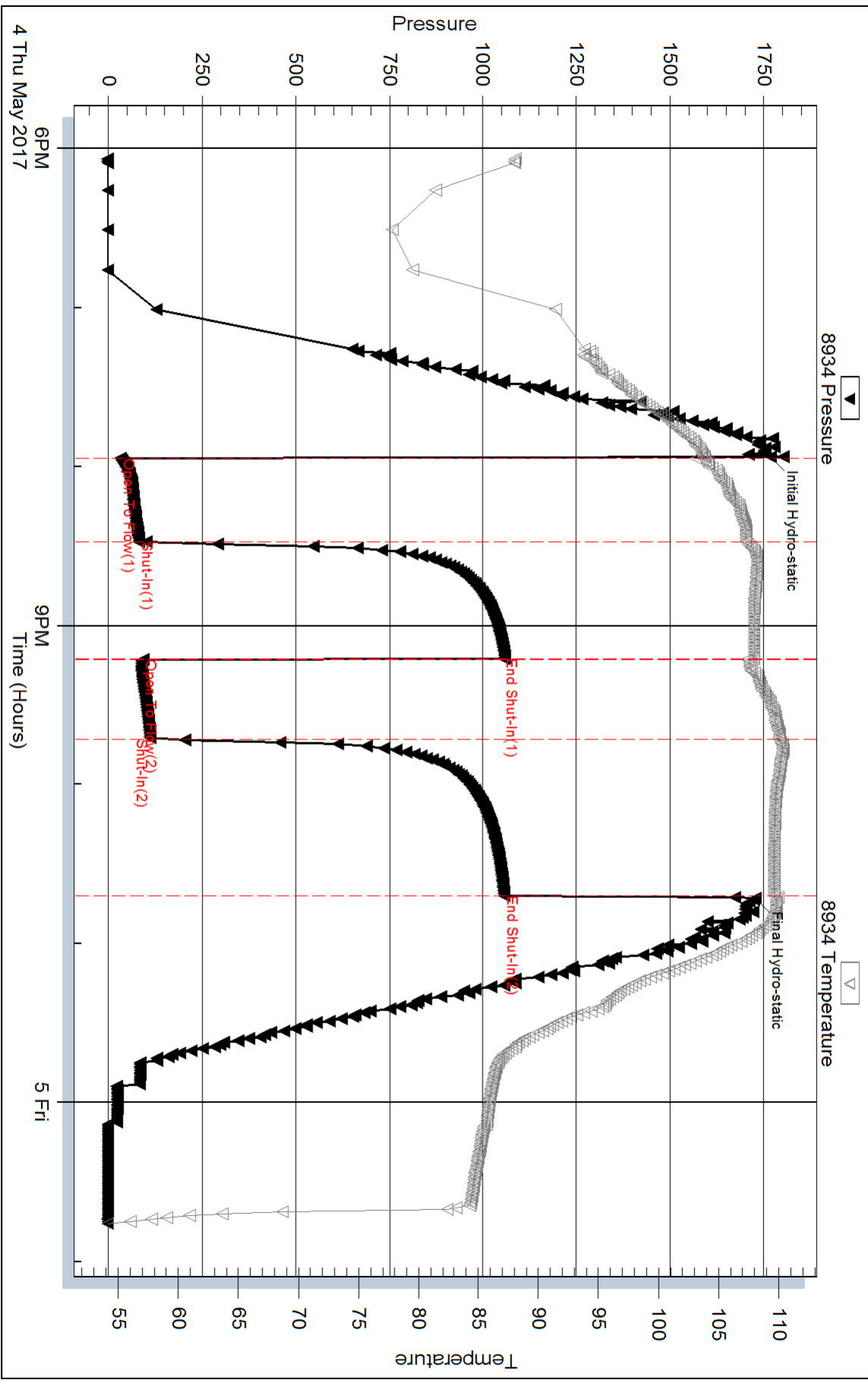
**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
120.00	OCWM 10%O 25%W 65%M	0.590
80.00	OCM 30%O 70%M	1.113
20.00	MCO 80%O 20%M	0.281
20.00	SMCO 95%O 5%M	0.281

Total Length: 240.00 ft      Total Volume: 2.265 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: Rw .235 @ 50

# Pressure vs. Time

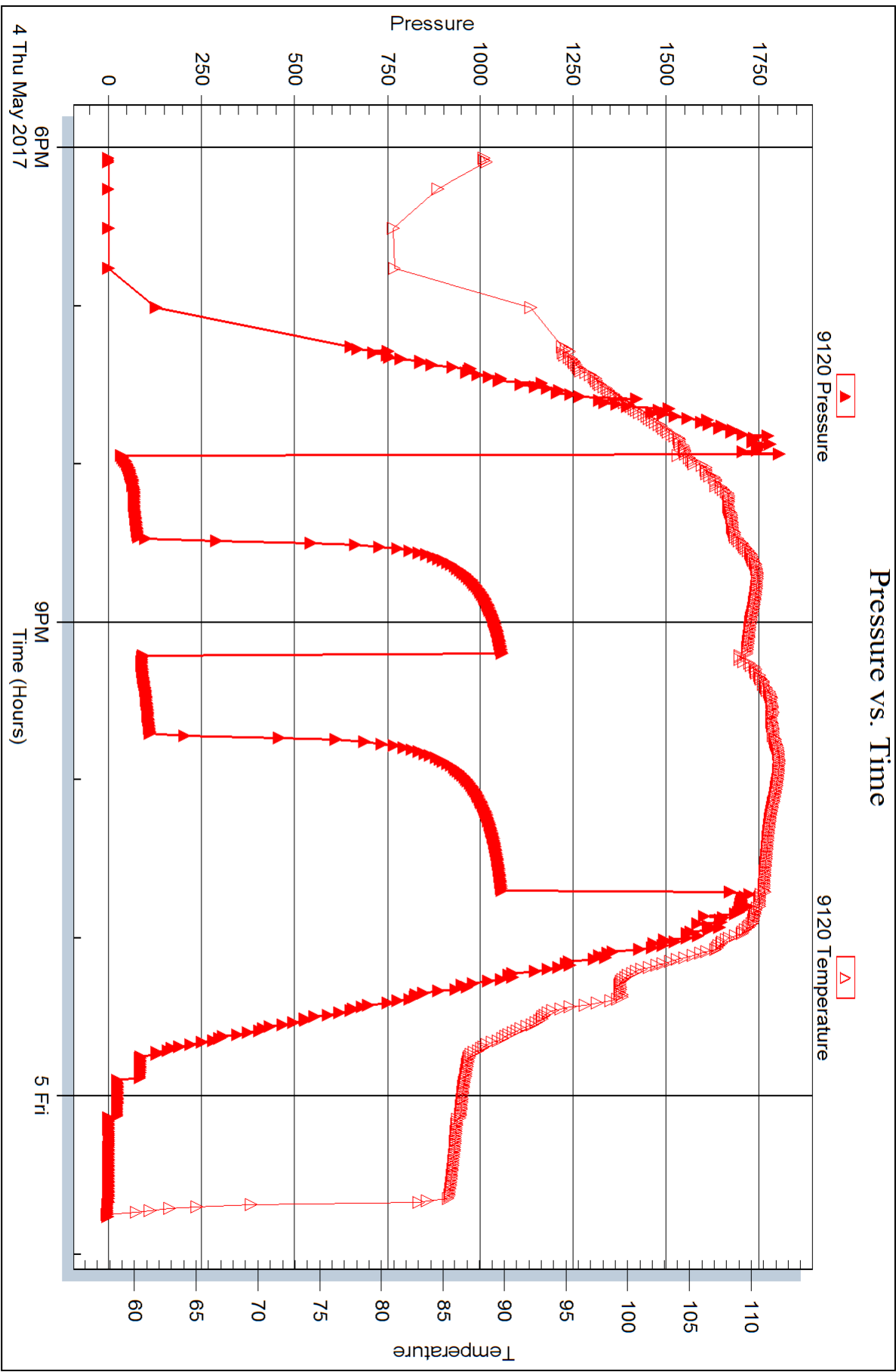


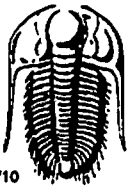
Serial #: 9120

Inside Jasper Co

Garth Unit #1

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63207

Well Name & No. Earth Unit #1 Test No. 1 Date 05/02/2017  
 Company Jasper Co Elevation 2174 KB 2169 GL  
 Address PO BOX 1120 Hays, KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig 2W2 #8  
 Location: Sec. 22 Twp. 6S Rge. 20W Co. Rooks State KS

Interval Tested 3370' - 3430' Zone Tested Taronto - LMC "A"  
 Anchor Length 60' Drill Pipe Run 3238' Mud Wt. 8.7  
 Top Packer Depth 3365' Drill Collars Run 121' Vis 62  
 Bottom Packer Depth 3370' Wt. Pipe Run — WL 6.8  
 Total Depth 3430' Chlorides 1250 ppm System LCM 1#

Blow Description 17 - Fair Blow; Built from a surface to 5"  
ISD - No Blow Back

77 - Weak Blow; at 3 mins built from a surface to 3"  
ISD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>160</u>	<u>W/M</u>		<u>10</u>	<u>90</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 160' BHT 103° Gravity — API RW 307 @ 60 ° F Chlorides 25,500 ppm

- (A) Initial Hydrostatic 1654
- (B) First Initial Flow 15
- (C) First Final Flow 63
- (D) Initial Shut-In 831
- (E) Second Initial Flow 68
- (F) Second Final Flow 83
- (G) Final Shut-In 808
- (H) Final Hydrostatic 1619

- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 128 RT 96
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1146

- T-On Location 04:15
- T-Started 06:20
- T-Open 07:55
- T-Pulled 10:25
- T-Out 12:03
- Comments had to wait on cat to get to catwalk; tool slid 2 ft
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1146
- MP/DST Disc't

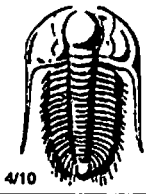
Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 45

Approved By \_\_\_\_\_

Our Representative Spencer J. Smith Thanks!

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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63208

Well Name & No. Earth Unit #1 Test No. 2 Date 05/02/2017  
 Company Jasper Co Elevation 2174 KB 2169 GL  
 Address PO BOX 1120 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig 9W9W #8  
 Location: Sec. 22 Twp. 6s Rge. 20w Co. Rooks State KS

Interval Tested 3432' - 3476' Zone Tested LKC "C+D"  
 Anchor Length 44' Drill Pipe Run 3300' Mud Wt. 9  
 Top Packer Depth 3427' Drill Collars Run 121' Vis 50  
 Bottom Packer Depth 3432' Wt. Pipe Run - WL 7.2  
 Total Depth 3476' Chlorides 1250 ppm System LCM 1.5#

Blow Description 77- Strong Blow; Build from 1/2" to 130B in 12 minutes  
75D- No Blow Back  
77- Strong Blow; Build from a surface to 9 1/2"  
75D- No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>270'</u>	<u>MW</u>		<u>70</u>	<u>30</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 270' BHT 107° Gravity - API RW 170 @ 45 °F Chlorides 72,500 ppm

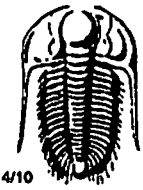
(A) Initial Hydrostatic 1661  Test 1050 T-On Location 19:08  
 (B) First Initial Flow 18  Jars \_\_\_\_\_ T-Started 19:44  
 (C) First Final Flow 97  Safety Joint \_\_\_\_\_ T-Open 21:36  
 (D) Initial Shut-In 615  Circ Sub \_\_\_\_\_ T-Pulled 23:51  
 (E) Second Initial Flow 99  Hourly Standby \_\_\_\_\_ T-Out: 01:27 05/03/2017  
 (F) Second Final Flow 139  Mileage 128 R7 96 Comments \_\_\_\_\_  
 (G) Final Shut-In 611  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1619  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1146  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 15  
 Initial Shut-In 45  
 Final Flow 15  
 Final Shut-In 60

Sub Total 1146

Approved By \_\_\_\_\_ Our Representative Spencer J. Anab Thank-you!  
 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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63209

Well Name & No. North Unit #1 Test No. 3 Date 05/03/2017  
 Company Jasper Co Elevation 2174 KB 2169 GL  
 Address PO BOX 1120 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig WW #8  
 Location: Sec. 22 Twp. 6S Rge. 20W Co. Rooks State KS

Interval Tested 3476' - 3500' Zone Tested LKC "E-7"  
 Anchor Length 24' Drill Pipe Run 3364' Mud Wt. 9.2  
 Top Packer Depth 3471' Drill Collars Run 121' Vis 48  
 Bottom Packer Depth 3476' Wt. Pipe Run - WL 7.6  
 Total Depth 3500' Chlorides 1250 ppm System LCM 1.5#

Blow Description 7- Very Weak Blow; Built from a surface to 1"

55- No Blow Back  
77- No Blow  
75D- No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>OCM</u>	<u>5</u>		<u>95</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 20' BHT 102° Gravity - API RW - @ - ° F Chlorides - ppm

- (A) Initial Hydrostatic 1696
- (B) First Initial Flow 11
- (C) First Final Flow 19
- (D) Initial Shut-In 805
- (E) Second Initial Flow 18
- (F) Second Final Flow 23
- (G) Final Shut-In 651
- (H) Final Hydrostatic 1690

- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 128R7 96
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1146

T-On Location 07:09  
 T-Started 07:44  
 T-Open 09:35  
 T-Pulled 11:50  
 T-Out 13:22

Comments \_\_\_\_\_  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total .0  
 Total 1146  
 MP/DST Disc't \_\_\_\_\_

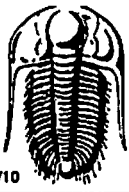
Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 30

Approved By \_\_\_\_\_

Our Representative Spencer J. Neal Thanks!

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785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63210

Well Name & No. North Unit #1 Test No. 4 Date 05/03/2017  
 Company Jasper Co. Elevation 2174 KB 2169 GL  
 Address PO Box 1120 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig 209W#8  
 Location: Sec. 22 Twp. 6s Rge. 20w Co. Rooks State Ks

Interval Tested 3524' - 3572' Zone Tested LKC "H-D"  
 Anchor Length 48' Drill Pipe Run 3398' Mud Wt. 9.2  
 Top Packer Depth 3519' Drill Collars Run 121' Vis 48  
 Bottom Packer Depth 3524' Wt. Pipe Run - WL 7.6  
 Total Depth 3572' Chlorides 1,250 ppm System LCM 1.5#

Blow Description 77- Very Weak Blow; Built from a surface to 1/2"  
75D- No Blow Back  
77- No Blow  
78D- No Blow Back

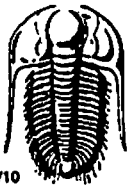
Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud w/ some oil</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 103° Gravity - API RW - @ - F Chlorides - ppm

(A) Initial Hydrostatic <u>1724</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>22:00</u>
(B) First Initial Flow <u>15</u>	<input type="checkbox"/> Jars	T-Started <u>22:27</u>
(C) First Final Flow <u>16</u>	<input type="checkbox"/> Safety Joint	T-Open <u>00:00 05/04/2017</u>
(D) Initial Shut-In <u>24</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>02:45</u>
(E) Second Initial Flow <u>15</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>04:11</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>12827</u> 96	Comments
(G) Final Shut-In <u>23</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1676</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1146</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1146</u>	

Approved By \_\_\_\_\_ Our Representative Spencer J. Stahl Thanks!  
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785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63211

Well Name & No. North Unit #1 Test No. 5 Date 05/04/2017  
 Company Jasper Co Elevation 2174 KB 2169 GL  
 Address PO Box 1120 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig WW#8  
 Location: Sec. 22 Twp. 6S Rge. 20W Co. Rooks State Ks

Interval Tested 3610' - 3654' Zone Tested Conglomerate Sand  
 Anchor Length 44' Drill Pipe Run 3493' Mud Wt. 9.2  
 Top Packer Depth 3605' Drill Collars Run 121' Vis 51  
 Bottom Packer Depth 3610' Wt. Pipe Run - WL 6.8  
 Total Depth 3654' Chlorides 1500 ppm System LCM 1.5#

Blow Description 7- Strong Blow; Built from surface to BOB in 20 minutes  
DSD Weak Blow; Built from surface to 1/4"; died 20 minutes in  
77- Strong Blow; Built from surface to BOB in 23 minutes  
78D- Weak Blow; Built from surface to 1 1/4"; died back to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>MCO</u>	<u>95</u>	<u>5</u>	<u>5</u>	<u>5</u>
<u>20'</u>	<u>MCO</u>	<u>80</u>	<u>20</u>	<u>20</u>	<u>20</u>
<u>80'</u>	<u>OCM</u>	<u>30</u>	<u>70</u>	<u>70</u>	<u>70</u>
<u>120'</u>	<u>OWCM</u>	<u>10</u>	<u>25</u>	<u>65</u>	<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 240' BHT 109° Gravity 27° API RW 235 @ 50° F Chlorides 44,000 ppm

(A) Initial Hydrostatic 1772  Test 1050 T-On Location 17:12  
 (B) First Initial Flow 32  Jars \_\_\_\_\_ T-Started 18:03  
 (C) First Final Flow 81  Safety Joint \_\_\_\_\_ T-Open 19:56  
 (D) Initial Shut-In 1056  Circ Sub \_\_\_\_\_ T-Pulled 22:41  
 (E) Second Initial Flow 92  Hourly Standby \_\_\_\_\_ T-Out 00:44  
 (F) Second Final Flow 111  Mileage 128 RT 96 Comments \_\_\_\_\_  
 (G) Final Shut-In 1057  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1727  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  
 Final Shut-In 60  Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1146 Total 1146 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Spencer J. Jacob Thank-you!  
 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.

785-259-0056



# QUALITY OILWELL CEMENTING, INC.

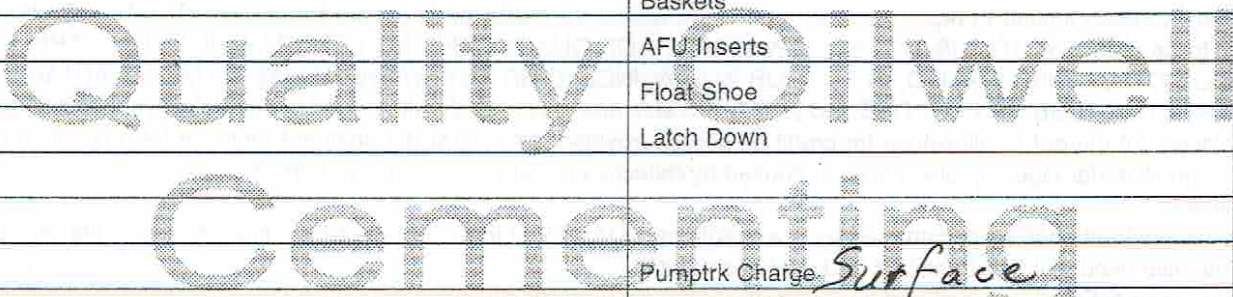
Federal Tax I.D.# 20-2886107

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

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

No. 216

Date	4-28-17	Sec.	22	Twp.	6	Range	20	County	Rock	State	KS	On Location		Finish	2:30pm
Lease								Well No.		Owner					
Contractor								Well No.		To Quality Oilwell Cementing, Inc.					
Type Job								Well No.		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Hole Size				T.D.				Charge To				To			
Csg.				Depth				Street				City			
Tbg. Size				Depth				State				State			
Tool				Depth				The above was done to satisfaction and supervision of owner agent or contractor.							
Cement Left in Csg.				Shoe Joint				Cement Amount Ordered							
Meas Line				Displace				Cement Amount Ordered							
<b>EQUIPMENT</b>															
Pumptrk				No.				Common				Poz. Mix			
Bulktrk				No.				Gel.				Calcium			
Bulktrk				No.				Hulls				Salt			
<b>JOB SERVICES &amp; REMARKS</b>															
Remarks:								Flowseal							
Rat Hole								Kol-Seal							
Mouse Hole								Mud CLR 48							
Centralizers								CFL-117 or CD110 CAF 38							
Baskets								Sand							
D/V or Port Collar								Handling							
8 5/8 on bottom. Best Circulation.								Mileage							
Mix 150SK + Displace								<b>FLOAT EQUIPMENT</b>							
Cement Circulated								Guide Shoe							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
Signature															



X Signature Walt Brown

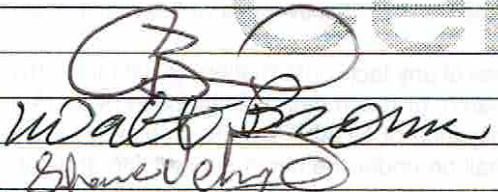
# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 221

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-5-17	22	6	20	Rooks	KS		6:45 am
Lease Garth Unit				Well No. 1		Owner	
Contractor W W #8				To Quality Oilwell Cementing, Inc.			
Type Job Production String				You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size 7 7/8		T.D. 3654		Charge To Jaspac Company			
Csg. 5 1/2 15.50		Depth 3647		Street			
Tbg. Size		Depth		City		State	
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. 42.42		Shoe Joint 42.42		Cement Amount Ordered 425 80/20 QMDC 1/4 #F10			
Meas Line		Displace 85 3/4 BL		150 gal 10% Salt 5% Gilsontite 500 gal mud clear			
<b>EQUIPMENT</b>				Common 150			
Pumptrk 5 No. Cementer		Helper		Poz. Mix 425 80/20 Qmix			
Bulktrk 9 No. Driver		Driver		Gel.			
Bulktrk 15 No. Driver		Driver		Calcium			
<b>JOB SERVICES &amp; REMARKS</b>				Hulls			
Remarks:				Salt 13			
Rat Hole 30SK				Flowseal 100#			
Mouse Hole				Kol-Seal 750#			
Centralizers				Mud CLR 48 500 gal			
Baskets				CFL-117 or CD110 CAF 38			
D/V or Port Collar				Sand			
5 1/2 set @ 3647. Balls @ 3604.58				Handling 596			
Est. Circulation - Pump 500 gal mud				Mileage			
Clear + 10 BL spacer.				<b>FLOAT EQUIPMENT</b>			
Cement patch hole with 30SK				Guide Shoe			
Cement 5 1/2 with 39.5SK QMDC @				Centralizer 7			
11.7 p. dig. @ 150SK @ 15 p. dig.				Baskets 6			
Clear lines & Displace Plug.				AFU Inserts			
Cement Circulated				Float Shoe 1			
Plug landed @ 1200#				Latch Down 1			
 Walt Brown Shaver Veng				Pumptrk Charge proel string			
				Mileage 55			
X Signature				Tax			
				Discount			
				Total Charge			

**CORRECTIVE  
DECLARATION OF UNITIZATION**

This Unitization Corrects and Replaces the Declaration of Unitization made the 20<sup>th</sup> day of September, 2016, recorded in book 480, page 270-273.

**DECLARATION OF UNITIZATION  
(Garth #1 Unit)**

**THIS DECLARATION OF UNITIZATION** is made this 20<sup>th</sup> day of September, 2016, by JASPAR CO., (hereinafter "Lessee"), WITNESSETH:

**WHEREAS**, the parties hereto desire the Oil and Gas Leases shown on Exhibit A, attached hereto and incorporated herein by reference, be consolidated and unitized into one operating unit according to, and in compliance with, the Rules and Regulations of the Kansas Corporation Commission.

**AND WHEREAS**, the Lessors of the **Clark Trust Lease** covering the W2NW4 Sec. 22-6-20 and the **Gartrell Lease** covering the E2NW4 Sec. 22-6-20 have previously authorized Lessee to pool and unitize said lease so that each Lessor would receive pro rata division of all royalties from the sale of oil or gas or either of them produced from the Unitized Area in the proportion that each Lessor's mineral interest bears to the total minerals within the Unitized Area as set forth in Exhibit A.

**NOW, THEREFORE**, in consideration of these premises and of the mutual benefits hereinafter contained, Lessee does hereby pool and unitize the oil and gas leases set forth in Exhibit A in accordance with the following terms and conditions:

1. By virtue of the power and authority granted by each landowner/lessor to the Lessee, Lessee declares for all purposes that the oil and gas leases set forth in Exhibit A are pooled and unitized forming the Unitized Area described therein. The Unitized Area shall be developed and operated as one leased tract regardless of how the same or the minerals thereunder may be divided in ownership, just as though such Unitized Area had originally been covered by a single oil and gas lease. The oil, gas or either of them in, under or produced from said Unitized Area is pooled and unitized and shall be treated as an entirety and the royalties thereon shall be paid ratably to the owners of each particular tract in such Unitized Area in accordance with Exhibit A and as their interest in each such particular tract may appear and according to the applicable royalty provisions and other terms of the oil and gas lease covering that particular tract.

2. Exhibit A sets forth and establishes the total acreage owned by each Lessor. Royalty, overriding royalty, and working interest payments will be based upon the decimal interest in production from said Unitized Area as is also shown thereon and on the Division Order when issued.

Page 1 of 2

Received for record at 9:00 o'clock A M. on 12 day  
 State of Kansas) July 20 17, and recorded in Book 487 of  
 Rooks County) Records at Page 76  
 Register of Deeds Rosalee Sprick

3. Any oil or gas well producing in commercial quantities under the terms of this agreement, or the oil and gas leases subject to this agreement, shall be deemed to be drilled under the terms of and located on the lands covered by each of said oil and gas lease and operations for the drilling, reworking of or production of all oil or gas from any such well or wells shall operate to keep in force the entire oil and gas leasehold estate under each of said leases, just as though such well or wells were located on particular land covered by each particular lease. The drilling of or production from any well capable of producing oil or gas in commercial quantities upon the Unitized Area shall constitute full and complete development of each of the oil and gas leases hereby unitized.

4. This declaration and the oil and gas leasehold rights of Lessee under all leases covering the tracts of land within the Unitized Area shall be and remain in full force and effect so long as oil or gas or either of them can be produced in commercial quantities from any well in said Unitized Area and shall not be effected by the expiration of the primary term of any of said leases.

5. This declaration and all of the terms and conditions hereof shall be considered as covenants running with the land and shall likewise extend to and be binding upon the heirs, successors, and assigns of all parties hereto.

IN WITNESS WHEREOF, the Lessee has executed this Declaration of Unitization as of the date first above written.

JASPAR CO.

Attest: Jada Vehige  
Jada Vehige, Secretary

Shane Vehige  
Shane Vehige, President

ACKNOWLEDGMENT FOR CORPORATION

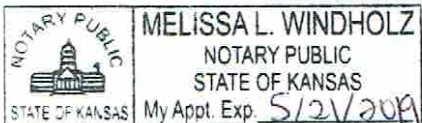
STATE OF KANSAS)

) ss:  
COUNTY OF ELLIS )

The foregoing instrument was acknowledged before me this 6<sup>th</sup> day of July, 2017, by Shane Vehige, President of JASPAR CO., a Kansas corporation, on behalf of the corporation.

My commission expires: 5/21/2019

Melissa L. Windholz  
Notary Public



## EXHIBIT A

UNIT AREA  
(Garth Unit)

A TRACT IN THE NORTHWEST QUARTER (NW4) OF SECTION 22, TOWNSHIP 6 SOUTH, RANGE 20 WEST OF THE SIXTH P.M., Rooks County, Kansas, Beginning 750 feet East and 270 feet North of the Southwest Corner of said NW4, thence North 1,320 feet, thence East 1,320 feet, thence South 1,320 feet, thence West 1,320 feet to the place to the beginning.

## OIL AND GAS LEASES POOLED AND UNITIZED

## CLARK LEASES

**Oil and Gas Lease** dated May 28, 2015, recorded in Book 470, pages 105-6, from Barbara R. Clark, widow, Lessor, to and in favor of JASPAR Co. **ONLY IN SO FAR AS** said lease covers the land described below.

**A TRACT IN THE WEST HALF OF THE NORTHWEST QUARTER (W2-NW4) OF SECTION 22, TOWNSHIP 6 SOUTH, RANGE 20 WEST OF THE SIXTH P.M., Rooks County, Kansas, Beginning 270 feet North of the Southeast Corner of the W2NW4 Sec. 22-6-20, thence North 1,320 feet, thence West 750 feet, thence South 1,320 feet, thence East 750 feet to the place of beginning.**

**Oil and Gas Lease** dated May 28, 2015, recorded in Book 469, pages 275-6, from Susan K. Thayer and Kevin L. Thayer, her husband, Lessors, to and in favor of JASPAR Co. **ONLY IN SO FAR AS** said lease covers the land described below.

**A TRACT IN THE WEST HALF OF THE NORTHWEST QUARTER (W2-NW4) OF SECTION 22, TOWNSHIP 6 SOUTH, RANGE 20 WEST OF THE SIXTH P.M., Rooks County, Kansas, Beginning 270 feet North of the Southeast Corner of the W2NW4 Sec. 22-6-20, thence North 1,320 feet, thence West 750 feet, thence South 1,320 feet, thence East 750 feet to the place of beginning.**

**Oil and Gas Lease** dated May 28, 2015, recorded in Book 470, pages 103-4, from Gregory A. Gartrell and Susan R. Gartrell, his wife, Lessors, to and in favor of JASPAR Co. **ONLY IN SO FAR AS** said lease covers the land described below.

**A TRACT IN THE WEST HALF OF THE NORTHWEST QUARTER (W2-NW4) OF SECTION 22, TOWNSHIP 6 SOUTH, RANGE 20 WEST OF THE SIXTH P.M., Rooks County, Kansas, Beginning 270 feet North of the Southeast Corner of the W2NW4 Sec. 22-6-20, thence North 1,320 feet, thence West 750 feet, thence South 1,320 feet, thence East 750 feet to the place of beginning.**

## GARTRELL LEASE

**Oil and Gas Lease** dated May 28, 2015, recorded in Book 470, page 101-2, from Gregory A. Gartrell and Susan R. Gartrell, his wife, Lessors, to and in favor of JASPAR Co. **ONLY IN SO FAR AS** said lease covers the land described below.

**A TRACT IN THE EAST HALF OF THE NORTHWEST QUARTER (E2-NW4) OF SECTION 22, TOWNSHIP 6 SOUTH, RANGE 20 WEST OF THE SIXTH P.M., Rooks County, Kansas, Beginning at 270 feet North of the Southwest Corner of the E2NW4 Sec. 22-6-20, thence North 1,320 feet, thence East 750 feet, thence South 1,320 feet, thence West 750 feet to the place of beginning.**

## TRACT PARTICIPATION

Each of the above tracts will participate in the production of oil, gas and other minerals proportionately based on square footage contribution to the from the Unit Area with the Clark Trust Leases covering 43% of the Unit Area and the Gartrell Lease covering 57% of the Unit Area.

## ROYALTY PARTICIPATION

Gregory A. Gartrell and Susan K. Thayer AS Co-Executors of the estate of Barbara R. Clark, deceased Rooks County District Court Case No. 16 PR 29 415 6 Road Stockton, KS 67669	0.026875 Royalty
Susan K. Thayer and Kevin L. Thayer 410 South 5 <sup>th</sup> St. Stockton, KS 67669	0.0134375 Royalty
Gregory A. Gartrell and Susan R. Gartrell As Trustees of the Gregory and Susan Gartrell Trust u/a/d March 3, 2015 415 6 Road Stockton, KS 67669	0.0845875 Royalty