

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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Discovery Drilling

P.O. Box 763 • Hays, KS 67601 • OFFICE (785) 623-2920 • CELLULAR (785) 635-1511

DRILLER'S LOG

Operator: John O. Farmer, Inc. Lic# 5135 Contractor: Discovery Drilling Co., Inc. LIC#31548
370 West Wichita Avenue - P.O. Box 352 PO Box 763
Russell, KS 67665 + 0352 Hays, KS 67601

Lease: Reif # 1 Location: 882 FSL - 1968 FWL
SE/NW/SE/SW
Section 13/ 16S/ 14W
Barton County, KS

Loggers Total Depth: 3438' API#15- 009-26,270-00-00
Rotary Total Depth: 3438' Elevation: 1930 GL - 1935 KB
Commenced: 9/12/2019 Completed: 9/20/2019
Casing: 8 5/8" @ 472'W/225sks Status: D & A
KCC Contact: Case Morris
Plugging Info: (1st Plug @ 3361'W/50sks)(2nd Plug @ 950'W/50sks)
(3rd Plug @ 525'W/80sks)(4th Plug @ 40'W/10sks)
(30sks In Rat Hole)(15sks In Mouse Hole)(Total 235sks
60/40Poz 4%Gel-1/4#FS/sk-By Quality Oilwell)
(Completed @ 7:00AM 9/20-2019)

DEPTHS & FORMATIONS (All from KB)

Surface, Sand & Shale	<u>0'</u>	Shale	<u>923'</u>
Dakota Sand	<u>294'</u>	Shale & Lime	<u>1573'</u>
Shale	<u>395'</u>	Shale	<u>1876'</u>
Cedar Hill Sand	<u>445'</u>	Shale & Lime	<u>2452'</u>
Red Bed Shale	<u>589'</u>	Lime & Shale	<u>3083'</u>
Anhydrite	<u>895'</u>	RTD	<u>3438'</u>
Base Anhydrite	<u>923'</u>		

STATE OF KANSAS)
) ss
COUNTY OF ELLIS)

Thomas H. Alm of Discovery Drilling states that to the best of his knowledge the above and foregoing is a true and correct log of the above captioned well.

Thomas H. Alm

Subscribed and sworn to before me on 9-25-19

My Commission expires: 6-28-2022

(Place stamp or seal below)

Notary Public



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. 1708

Date	9-12-19	Sec.	13	Twp.	16	Range	14	County	Barton	State	KS	On Location		Finish	11:00 PM
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Lease Reif Well No. 1 Location Stickney Elevator, 1N, 1/2 E, N 1/4

Contractor Discovery #2 Owner To Quality Oilwell Cementing, Inc.
Type Job Surface 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 12 1/4" T.D. 472' Charge To John O Farmer

Csg. 8 5/8" Depth 472' 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. 15' Shoe Joint 15' Cement Amount Ordered 225 Com 3% CC 2% Gel

Meas Line Displace 29 BLS

EQUIPMENT

Pumptrk	16	No.	Cementer	Tim	Common	225
			Helper		Poz. Mix	
Bulktrk	3	No.	Driver	Tony L.	Gel.	4
			Driver		Calcium	8
Bulktrk	P.U.	No.	Driver	Rick		

JOB SERVICES & REMARKS

Remarks: Cement did Circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Handling 236

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

Pumptrk Charge Surface

Mileage 18

X Signature	<u>[Signature]</u>	Tax	
		Discount	
		Total Charge	

Thanks

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. 1585

Date	9-20-19	Sec.	13	Twp.	16	Range	14	County	Barton	State	Ks	On Location		Finish	7:30 AM
Lease								Well No.		Location					
Reif								A1		2015 to Galactic Blacktop					
Contractor								Owner							
Discovery Drilling #2								I.E. P & S info.							
Type Job								To Quality Oilwell Cementing, Inc.							
PTA								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							
7 7/8								John O'Farmer							
Csg.				Depth				Street							
DP				3375'											
Tbg. Size				Depth				City				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							
								235sk 60/40 4 1/2 gal							
Meas Line				Displace											
								1/4 lb Flo seal.							
EQUIPMENT								Common							
Pumptrk #17 No. Cementer/Helper Tony P								141							
Bulktrk No. Driver David L.								Poz. Mix 94							
Bulktrk #15 No. Driver Mike								Gel. B							
								Calcium							
JOB SERVICES & REMARKS								Hulls							
Remarks: USED: 235sk 60/40 4 1/2								Salt							
Rat Hole + 1/4 Flo seal								Flowseal 50#							
Mouse Hole 1 + 8 5/8 wooden plug								Kol-Seal							
Centralizers								Mud CLR 48							
Baskets								CFL-117 or CD110 CAF 38							
DNV or Port Collar								Sand							
P1 = 50sk @ 3375'								Handling 243							
60/40 4 1/2 gal 1/4 lb Flo								Mileage							
								FLOAT EQUIPMENT							
P2 = 50sk @ 950'								Guide Shoe 1 x 8 5/8 wooden plug							
60/40 4 1/2 gal 1/4 lb Flo								Centralizer							
								Baskets							
P3 = 80sk @ 525'								AFU Inserts							
60/40 4 1/2 gal 1/4 lb Flo								Float Shoe							
								Latch Down							
P4 = 10sk @ 40' + 8 5/8 wooden plug															
60/40 4 1/2 gal 1/4 lb Flo															
Cement to surface.								Pumptrk Charge 18 plug							
P5 = RAT HOLE = 30sk								Mileage							
P6 = Mouse hole = 15sk															
Signature: [Handwritten Signature]								Tax							
								Discount							
								Total Charge							



DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.16 @ 15:40:00

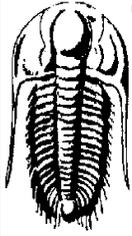
End Date: 2019.09.16 @ 21:59:50

Job Ticket #: 65818 DST #: 1

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

Printed: 2019.09.25 @ 12:11:18

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 1
LKC A-D
2019.09.16



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

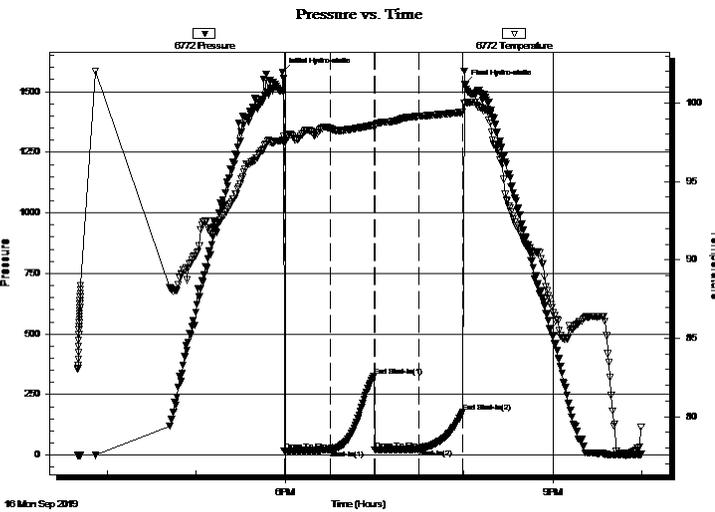
13-16s-14w Barton,KS
Reif #1
Job Ticket: 65818 **DST#: 1**
Test Start: 2019.09.16 @ 15:40:00

GENERAL INFORMATION:

Formation: **LKC A-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:59:10
Time Test Ended: 21:59:50
Interval: 3138.00 ft (KB) To 3196.00 ft (KB) (TVD)
Total Depth: 3196.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
Press@RunDepth: 24.72 psig @ 3139.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.16 End Date: 2019.09.16 Last Calib.: 2019.09.16
Start Time: 15:40:01 End Time: 21:59:50 Time On Btm: 2019.09.16 @ 17:58:00
Time Off Btm: 2019.09.16 @ 20:01:00

TEST COMMENT: IF-30- Built to 3/4"
ISI-30- No blow back
FF-30- No Blow
FSI-30- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1580.46	97.64	Initial Hydro-static
2	16.54	97.50	Open To Flow (1)
33	20.72	98.37	Shut-In(1)
62	326.25	98.58	End Shut-In(1)
63	21.49	98.51	Open To Flow (2)
92	24.72	99.15	Shut-In(2)
122	178.74	99.42	End Shut-In(2)
123	1529.76	99.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65818 **DST#: 1**
Test Start: 2019.09.16 @ 15:40:00

Tool Information

Drill Pipe:	Length: 2880.00 ft	Diameter: 3.80 inches	Volume: 40.40 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 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: 54000.00 lb
			<u>Total Volume: 42.33 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3138.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	78.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3119.00	
Shut In Tool	5.00			3124.00	
Hydraulic tool	5.00			3129.00	
Packer	5.00			3134.00	20.00 Bottom Of Top Packer
Packer	4.00			3138.00	
Stubb	1.00			3139.00	
Recorder	0.00	6772	Inside	3139.00	
Recorder	0.00	6769	Outside	3139.00	
Perforations	20.00			3159.00	
Change Over Sub	1.00			3160.00	
Drill Pipe	32.00			3192.00	
Change Over Sub	1.00			3193.00	
Bullnose	3.00			3196.00	58.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer

13-16s-14w Barton,KS

370 W. Wichita Ave
Russell KS 67665+0352

Reif #1

Job Ticket: 65818

DST#: 1

ATTN: Austin Klaus

Test Start: 2019.09.16 @ 15:40:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100%M	0.071

Total Length: 10.00 ft Total Volume: 0.071 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

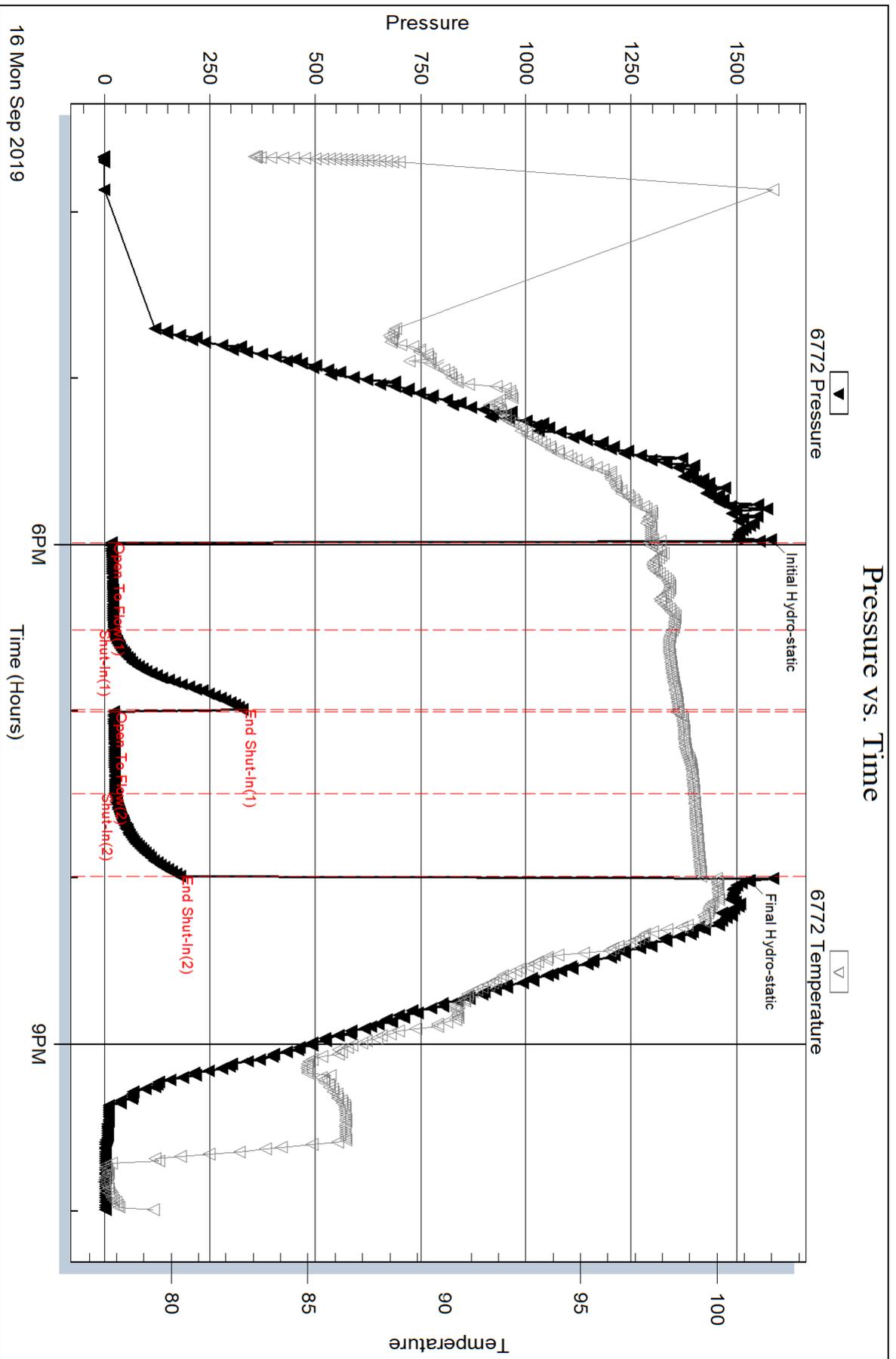
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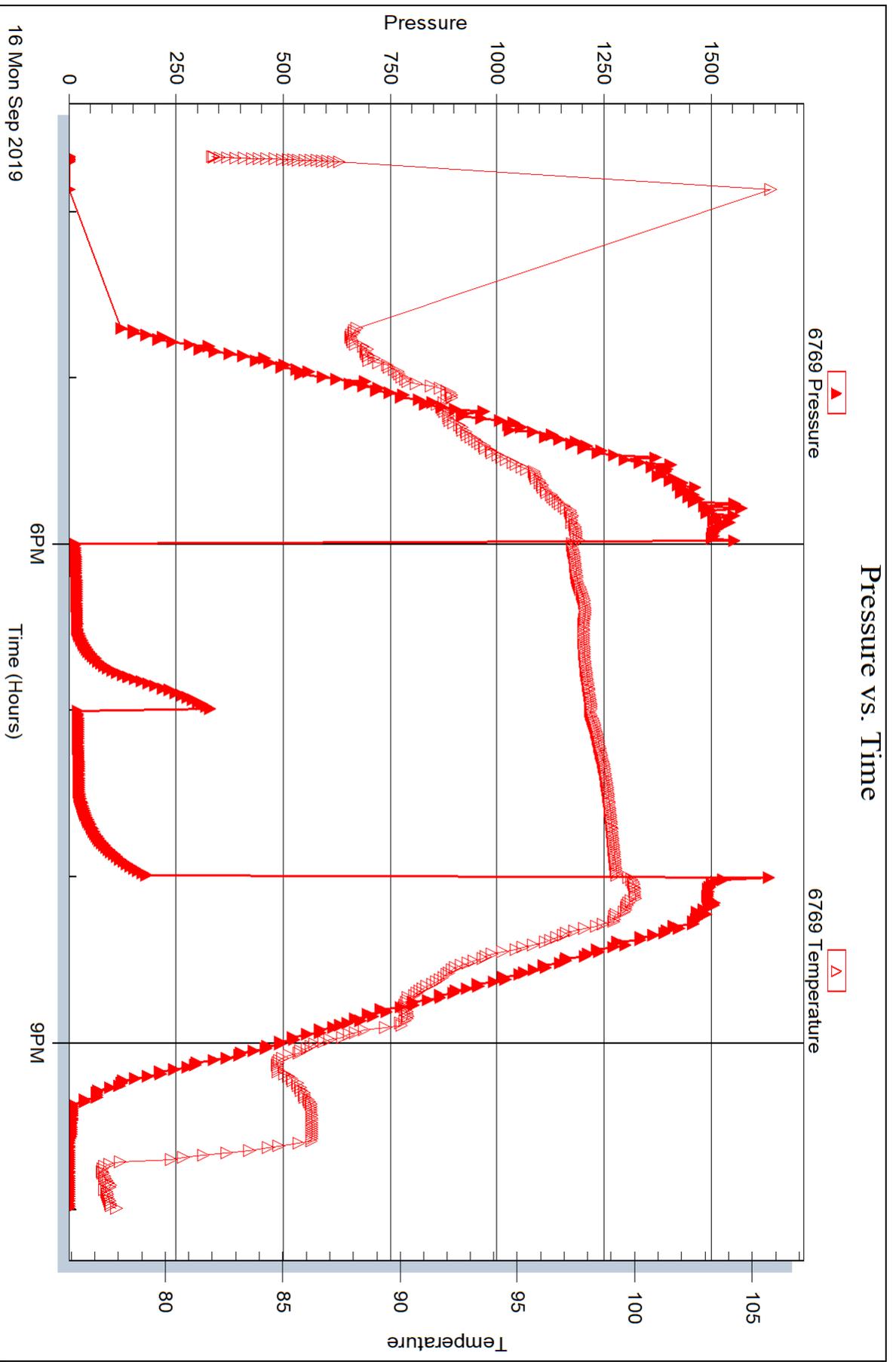
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.17 @ 12:13:00

End Date: 2019.09.17 @ 18:04:39

Job Ticket #: 65819 DST #: 2

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

Printed: 2019.09.25 @ 12:10:53

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 2
LKC E-G
2019.09.17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O Farmer
 370 W. Wichita Ave
 Russell KS 67665+0352
 ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
 Job Ticket: 65819 **DST#: 2**
 Test Start: 2019.09.17 @ 12:13:00

GENERAL INFORMATION:

Formation: **LKC E-G**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:17:10
 Time Test Ended: 18:04:39
 Interval: **3198.00 ft (KB) To 3244.00 ft (KB) (TVD)**
 Total Depth: 3244.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Benny Mulligan
 Unit No: 66
 Reference Elevations: 1938.00 ft (KB)
 1930.00 ft (CF)
 KB to GR/CF: 8.00 ft

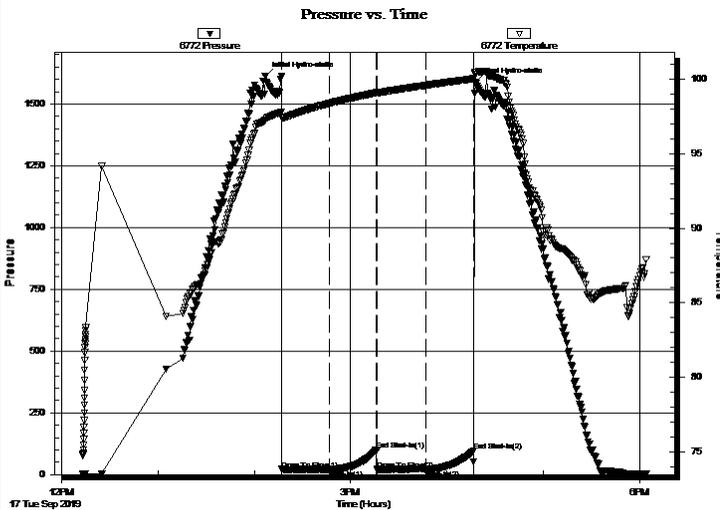
Serial #: 6772

Inside

Press@RunDepth: 21.15 psig @ 3199.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.09.17 End Date: 2019.09.17 Last Calib.: 2019.09.17
 Start Time: 12:13:01 End Time: 18:04:40 Time On Btm: 2019.09.17 @ 14:06:50
 Time Off Btm: 2019.09.17 @ 16:17:40

TEST COMMENT: IF-30- Weak surface blow
 IS-30- No blow back
 FF-30- No blow
 FS-30- No blow back

PRESSURE SUMMARY



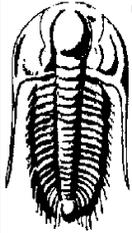
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1612.45	97.28	Initial Hydro-static
11	21.01	97.47	Open To Flow (1)
41	20.17	98.39	Shut-In(1)
69	100.32	99.09	End Shut-In(1)
70	20.24	99.08	Open To Flow (2)
101	21.15	99.59	Shut-In(2)
130	95.18	100.04	End Shut-In(2)
131	1588.27	100.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	MUD 100%M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65819 **DST#: 2**
Test Start: 2019.09.17 @ 12:13:00

Tool Information

Drill Pipe:	Length: 2939.00 ft	Diameter: 3.80 inches	Volume: 41.23 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 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: 43.16 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3198.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	66.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3179.00	
Shut In Tool	5.00			3184.00	
Hydraulic tool	5.00			3189.00	
Packer	5.00			3194.00	20.00 Bottom Of Top Packer
Packer	4.00			3198.00	
Stubb	1.00			3199.00	
Recorder	0.00	6772	Inside	3199.00	
Recorder	0.00	6769	Outside	3199.00	
Perforations	8.00			3207.00	
Change Over Sub	1.00			3208.00	
Drill Pipe	32.00			3240.00	
Change Over Sub	1.00			3241.00	
Bullnose	3.00			3244.00	46.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65819 **DST#: 2**
Test Start: 2019.09.17 @ 12:13:00

Mud and Cushion Information

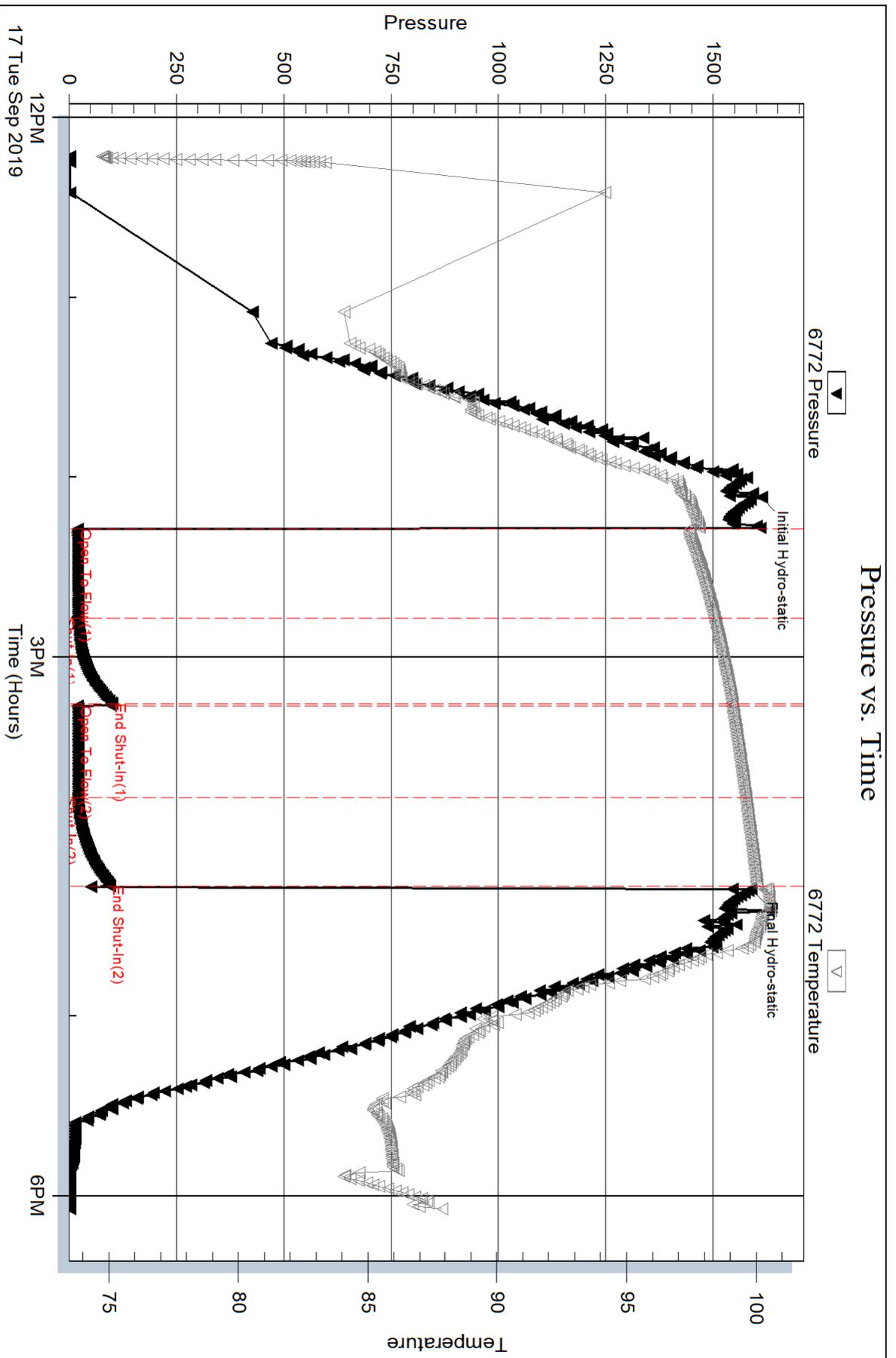
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.38 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6000.00 ppm			
Filter Cake: 1.00 inches			

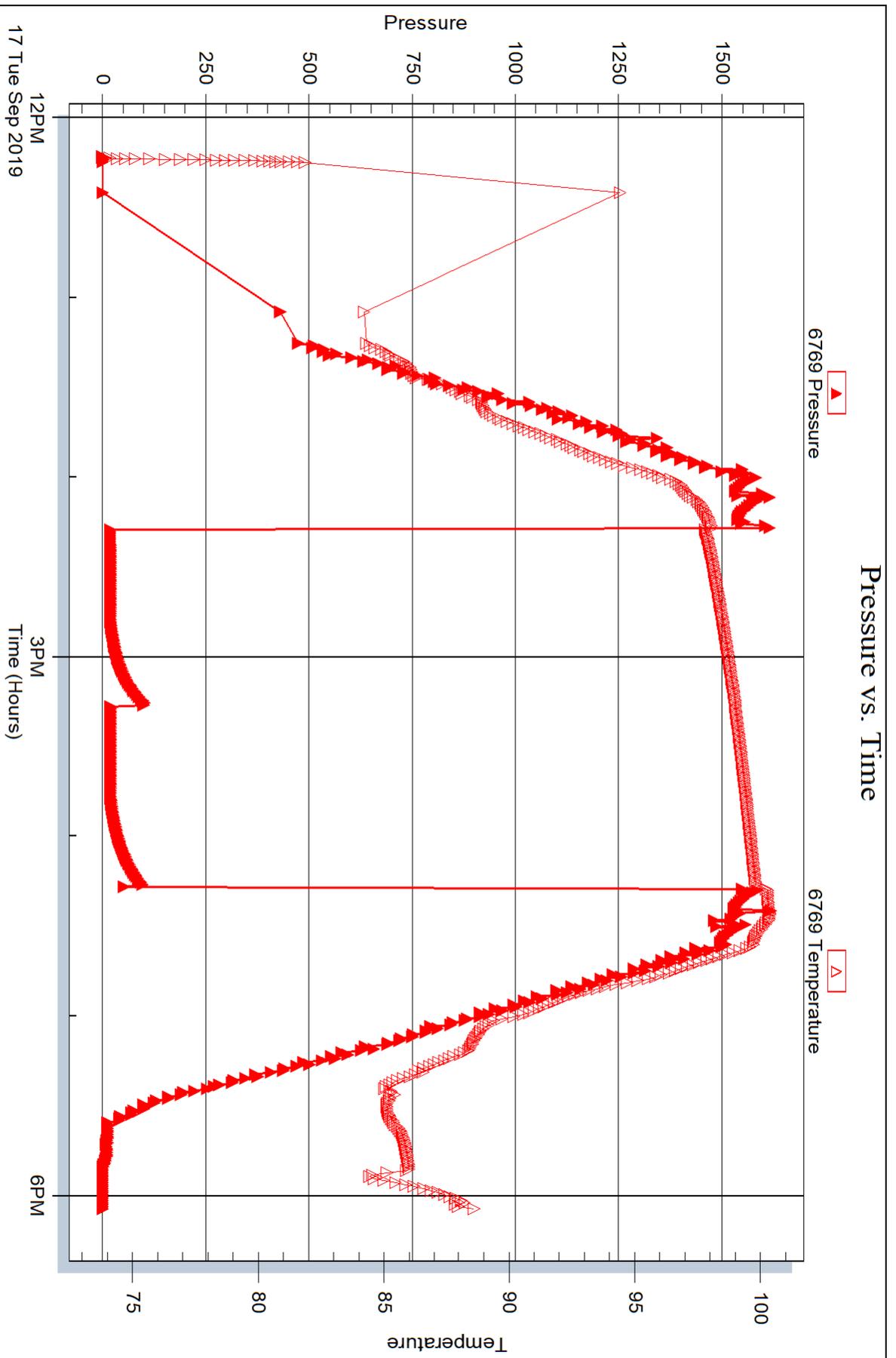
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	MUD 100%M	0.014

Total Length: 2.00 ft Total Volume: 0.014 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.18 @ 07:03:00

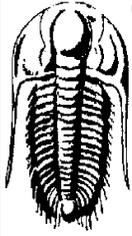
End Date: 2019.09.18 @ 13:04:20

Job Ticket #: 65820 DST #: 3

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

Printed: 2019.09.25 @ 12:10:24

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 3
LKC H-J
2019.09.18



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton, KS
Reif #1
Job Ticket: 65820 **DST#: 3**
Test Start: 2019.09.18 @ 07:03:00

GENERAL INFORMATION:

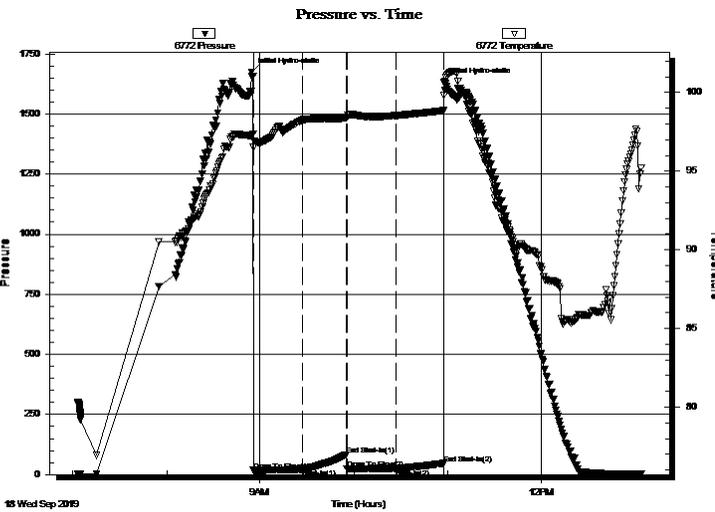
Formation: **LKC H-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:55:40
Time Test Ended: 13:04:20
Interval: **3270.00 ft (KB) To 3328.00 ft (KB) (TVD)**
Total Depth: 3328.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772

Inside

Press@RunDepth: 24.67 psig @ 3271.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.18 End Date: 2019.09.18 Last Calib.: 2019.09.18
Start Time: 07:03:01 End Time: 13:04:20 Time On Btm: 2019.09.18 @ 08:54:40
Time Off Btm: 2019.09.18 @ 10:57:50

TEST COMMENT: IF-30- Built to 1/2"
ISI-30- No blow back
FF-30- Very weak surface blow that died 9 mins into the flow
FSI-30- No blow back



PRESSURE SUMMARY

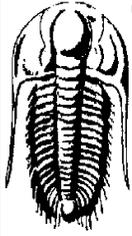
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1674.63	97.29	Initial Hydro-static
1	17.11	96.50	Open To Flow (1)
33	22.19	98.24	Shut-In(1)
61	82.34	98.37	End Shut-In(1)
61	23.59	98.46	Open To Flow (2)
93	24.67	98.53	Shut-In(2)
123	46.79	98.85	End Shut-In(2)
124	1633.34	99.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	O.S.M. 2%O 98%M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65820 **DST#: 3**
Test Start: 2019.09.18 @ 07:03:00

Tool Information

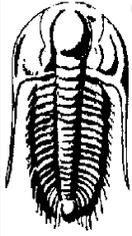
Drill Pipe:	Length: 3007.00 ft	Diameter: 3.80 inches	Volume: 42.18 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 44.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	57000.00 lb
Depth to Top Packer:	3270.00 ft			Final	57000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	78.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			3251.00	
Shut In Tool	5.00			3256.00	
Hydraulic tool	5.00			3261.00	
Packer	5.00			3266.00	20.00 Bottom Of Top Packer
Packer	4.00			3270.00	
Stubb	1.00			3271.00	
Recorder	0.00	6772	Inside	3271.00	
Recorder	0.00	6769	Outside	3271.00	
Perforations	20.00			3291.00	
Change Over Sub	1.00			3292.00	
Drill Pipe	32.00			3324.00	
Change Over Sub	1.00			3325.00	
Bullnose	3.00			3328.00	58.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer

13-16s-14w Barton,KS

370 W. Wichita Ave
Russell KS 67665+0352

Reif #1

Job Ticket: 65820

DST#: 3

ATTN: Austin Klaus

Test Start: 2019.09.18 @ 07:03:00

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:

bbf

Water Loss: 9.69 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
30.00	O.S.M. 2%O 98%M	0.212

Total Length: 30.00 ft Total Volume: 0.212 bbf

Num Fluid Samples: 0

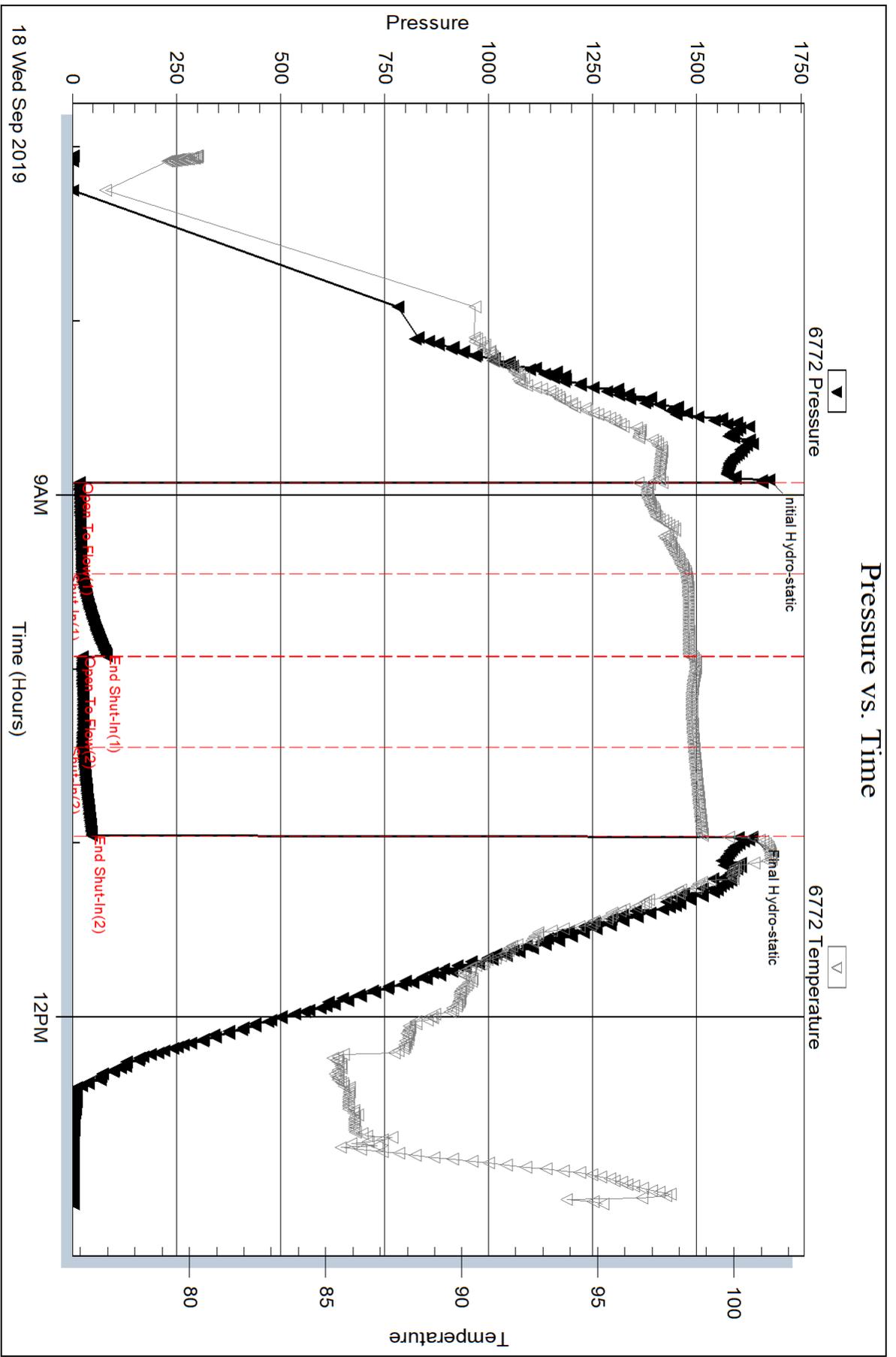
Num Gas Bombs: 0

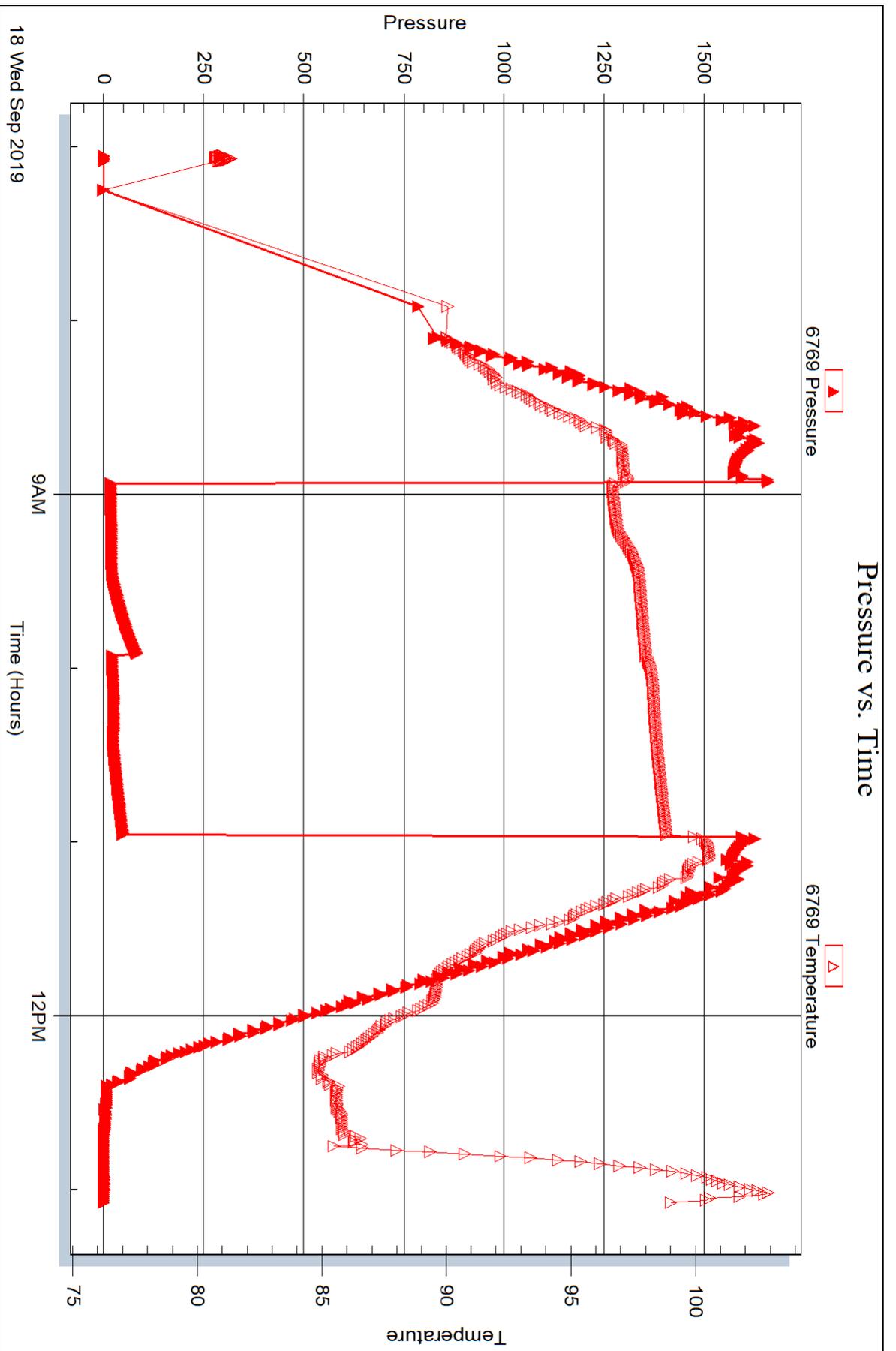
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

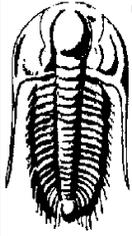
Start Date: 2019.09.19 @ 09:18:00

End Date: 2019.09.19 @ 15:54:30

Job Ticket #: 65821 DST #: 4

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

Printed: 2019.09.25 @ 12:09:59



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O Farmer
 370 W. Wichita Ave
 Russell KS 67665+0352
 ATTN: Austin Klaus

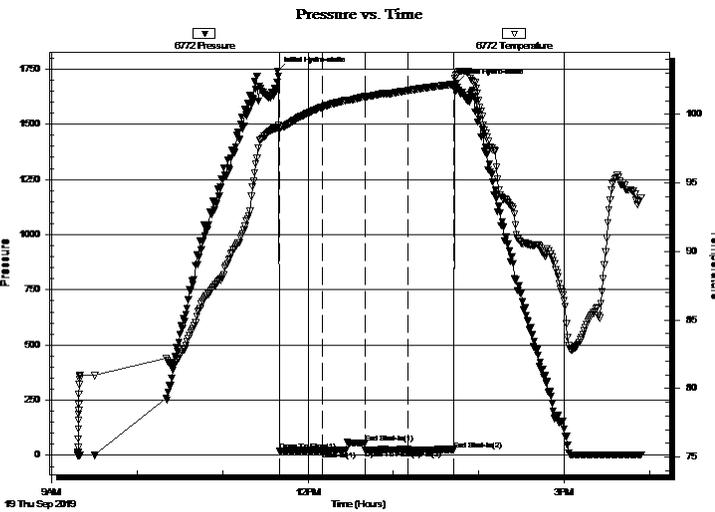
13-16s-14w Barton, KS
Reif #1
 Job Ticket: 65821 **DST#: 4**
 Test Start: 2019.09.19 @ 09:18:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:40:00
 Time Test Ended: 15:54:30
 Interval: **3347.00 ft (KB) To 3388.00 ft (KB) (TVD)**
 Total Depth: 3438.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Benny Mulligan
 Unit No: 66
 Reference Elevations: 1938.00 ft (KB)
 1930.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
 Press@RunDepth: 25.63 psig @ 3349.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.09.19 End Date: 2019.09.19 Last Calib.: 2019.09.19
 Start Time: 09:18:01 End Time: 15:54:30 Time On Btm: 2019.09.19 @ 11:38:30
 Time Off Btm: 2019.09.19 @ 13:44:20

TEST COMMENT: IF-30- Built to 1/2" then started to weaken
 IS-30- No blow back
 FF-30- No blow
 FS-30- No blow back



PRESSURE SUMMARY

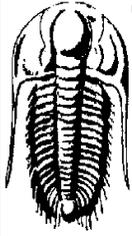
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1740.89	98.98	Initial Hydro-static
2	18.90	98.97	Open To Flow (1)
32	21.83	100.54	Shut-In(1)
62	54.82	101.30	End Shut-In(1)
62	23.88	101.29	Open To Flow (2)
92	25.63	101.76	Shut-In(2)
124	26.35	102.21	End Shut-In(2)
126	1686.21	102.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud 100%M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65821 **DST#: 4**
Test Start: 2019.09.19 @ 09:18:00

Tool Information

Drill Pipe:	Length: 3069.00 ft	Diameter: 3.80 inches	Volume: 43.05 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 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: 70000.00 lb
			<u>Total Volume: 44.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3347.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	3384.00 ft			
Interval between Packers:	37.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3328.00	
Shut In Tool	5.00			3333.00	
Hydraulic tool	5.00			3338.00	
Packer	5.00			3343.00	20.00 Bottom Of Top Packer
Packer	4.00			3347.00	
Stubb	1.00			3348.00	
Change Over Sub	1.00			3349.00	
Recorder	0.00	6772	Inside	3349.00	
Recorder	0.00	6769	Inside	3349.00	
Drill Pipe	32.00			3381.00	
Perforations	2.00			3383.00	
Blank Spacing	1.00			3384.00	37.00 Tool Interval
Packer	3.00			3387.00	
Stubb	2.00			3389.00	
Recorder	0.00	9058	Below	3389.00	
Perforations	11.00			3400.00	
Change Over Sub	1.00			3401.00	
Drill Pipe	32.00			3433.00	
Change Over Sub	1.00			3434.00	
Bullnose	3.00			3437.00	53.00 Bottom Packers & Anchor

Total Tool Length: 110.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65821 **DST#: 4**
Test Start: 2019.09.19 @ 09:18:00

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: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: 1.00 inches			

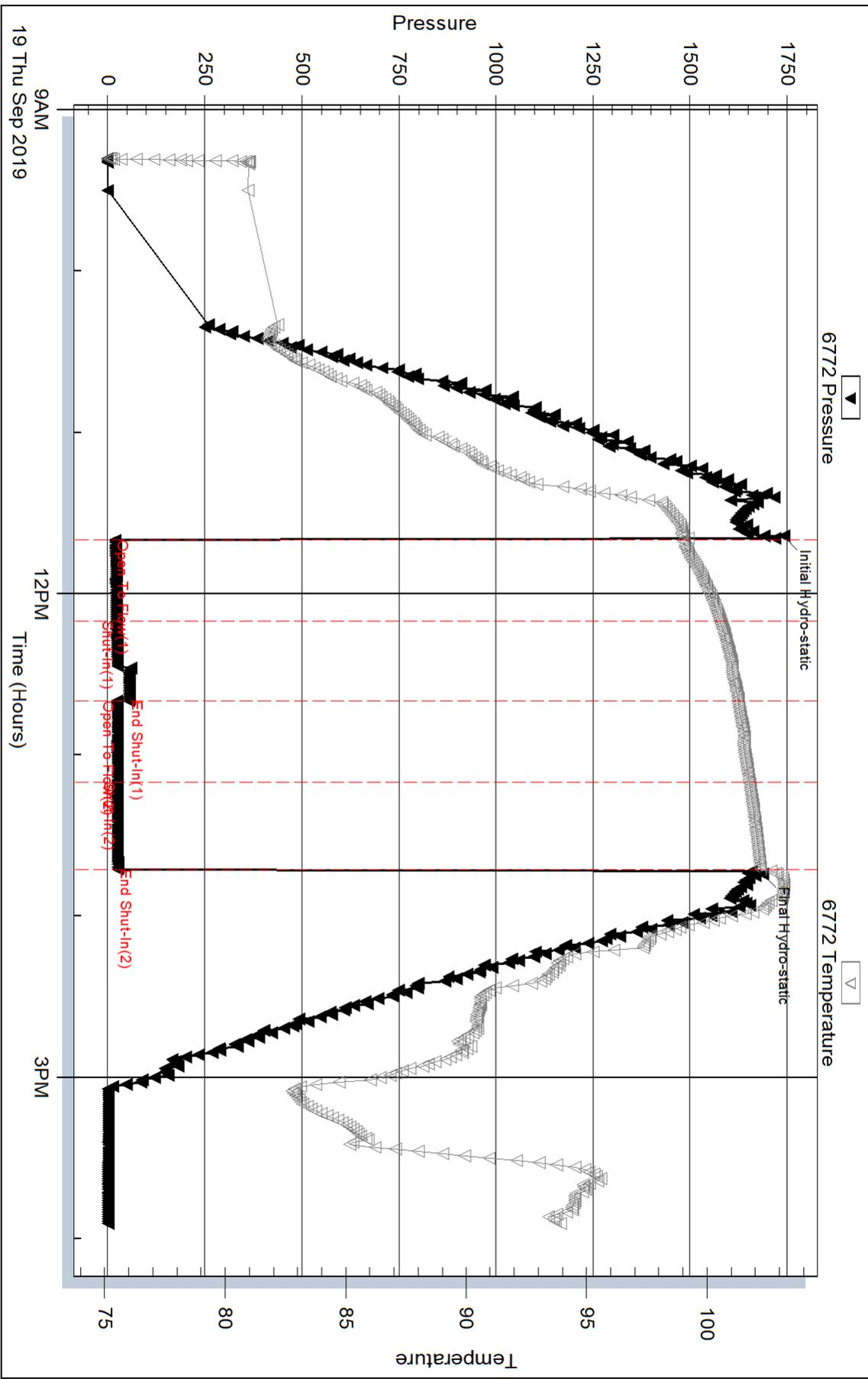
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud 100%M	0.212

Total Length: 30.00 ft Total Volume: 0.212 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

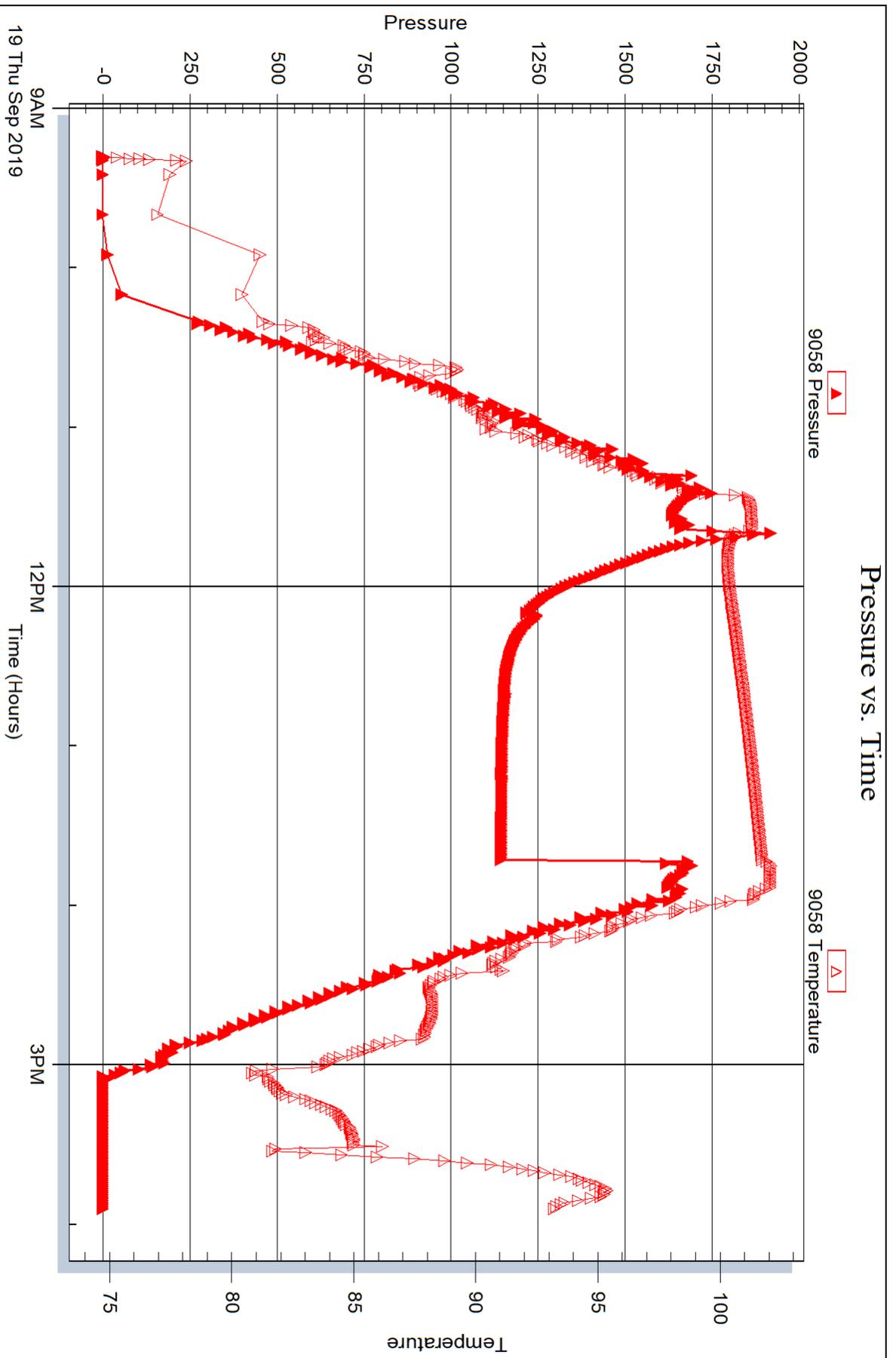


Serial #: 9058

Below (Straddled) Farmer

Ref #1

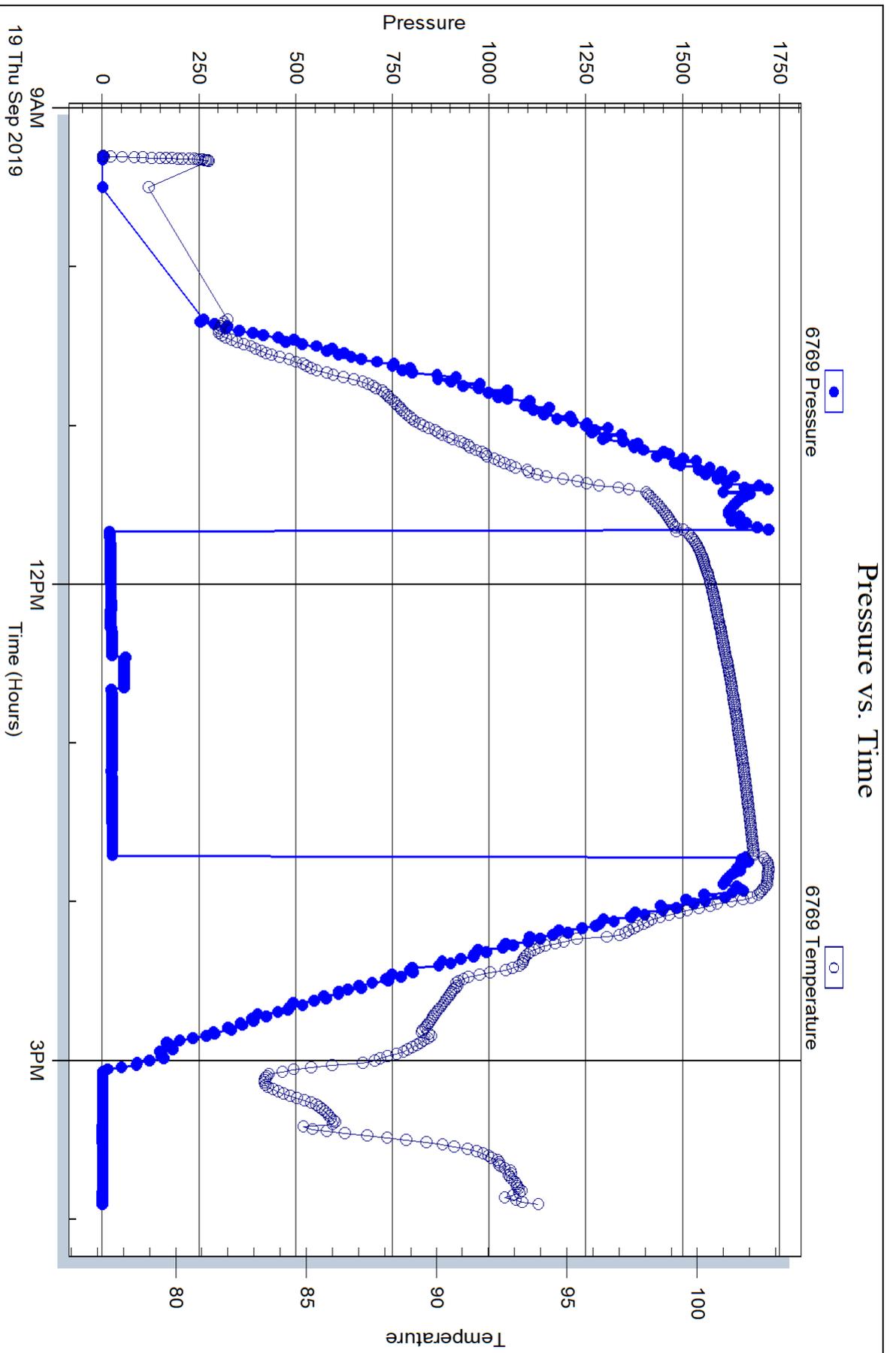
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 65821

Printed: 2019.09.25 @ 12:10:00





DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.19 @ 16:19:00

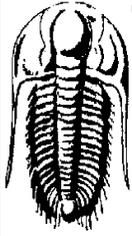
End Date: 2019.09.19 @ 23:07:09

Job Ticket #: 65822 DST #: 5

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

Printed: 2019.09.25 @ 12:07:19

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 5
Arbuckle
2019.09.19



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

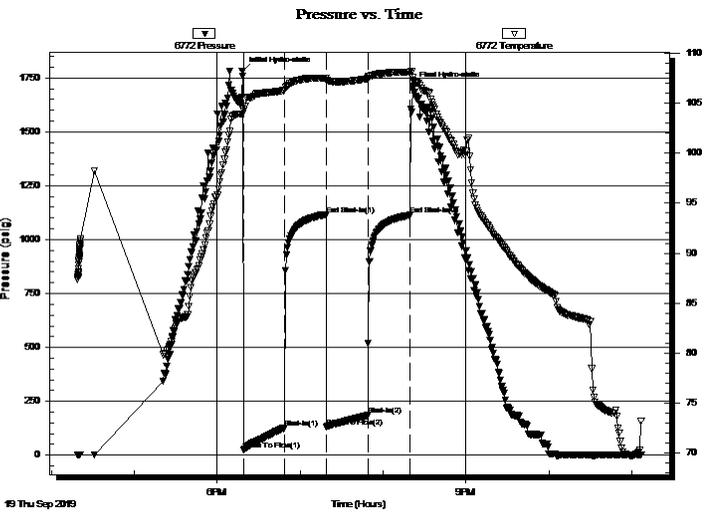
13-16s-14w Barton, KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:19:20
Time Test Ended: 23:07:09
Interval: **3387.00 ft (KB) To 3407.00 ft (KB) (TVD)**
Total Depth: 3438.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Straddle (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
Press@RunDepth: 184.98 psig @ 3388.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.19 End Date: 2019.09.19 Last Calib.: 2019.09.19
Start Time: 16:19:01 End Time: 23:07:10 Time On Btm: 2019.09.19 @ 18:18:10
Time Off Btm: 2019.09.19 @ 20:21:30

TEST COMMENT: IF-30- BOB 18 mins 20 secs Built to 17 1/2 "
ISI-30- No blow back
FF-30- BOB 23 mins Built to 15 1/2"
FSI-30- Weak surface blow back



PRESSURE SUMMARY

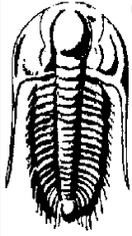
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1781.81	103.93	Initial Hydro-static
2	24.42	104.20	Open To Flow (1)
31	126.45	106.29	Shut-In(1)
61	1116.97	107.52	End Shut-In(1)
62	131.80	107.28	Open To Flow (2)
91	184.98	107.45	Shut-In(2)
122	1113.23	108.11	End Shut-In(2)
124	1713.05	107.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MW 20%M 80%W	0.85
240.00	MW 40%M 60%W	2.30
10.00	CO 100%O	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

Tool Information

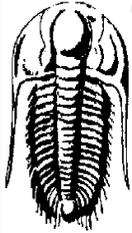
Drill Pipe:	Length: 3100.00 ft	Diameter: 3.80 inches	Volume: 43.48 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 45.41 bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3387.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	3407.00 ft				
Interval between Packers:	20.00 ft				
Tool Length:	73.00 ft				
Number of Packers:	3	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			3368.00		
Shut In Tool	5.00			3373.00		
Hydraulic tool	5.00			3378.00		
Packer	5.00			3383.00	20.00	Bottom Of Top Packer
Packer	4.00			3387.00		
Stubb	1.00			3388.00		
Recorder	0.00	6772	Inside	3388.00		
Recorder	0.00	6769	Outside	3388.00		
Perforations	15.00			3403.00		
Blank Off Sub	1.00			3404.00		
Stubb	3.00			3407.00	20.00	Tool Interval
Packer	1.00			3408.00		
Stubb	2.00			3410.00		
Perforations	27.00			3437.00		
Recorder	0.00	9058	Below	3437.00		
Bullnose	3.00			3440.00	33.00	Bottom Packers & Anchor
Total Tool Length:	73.00					



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

Mud and Cushion Information

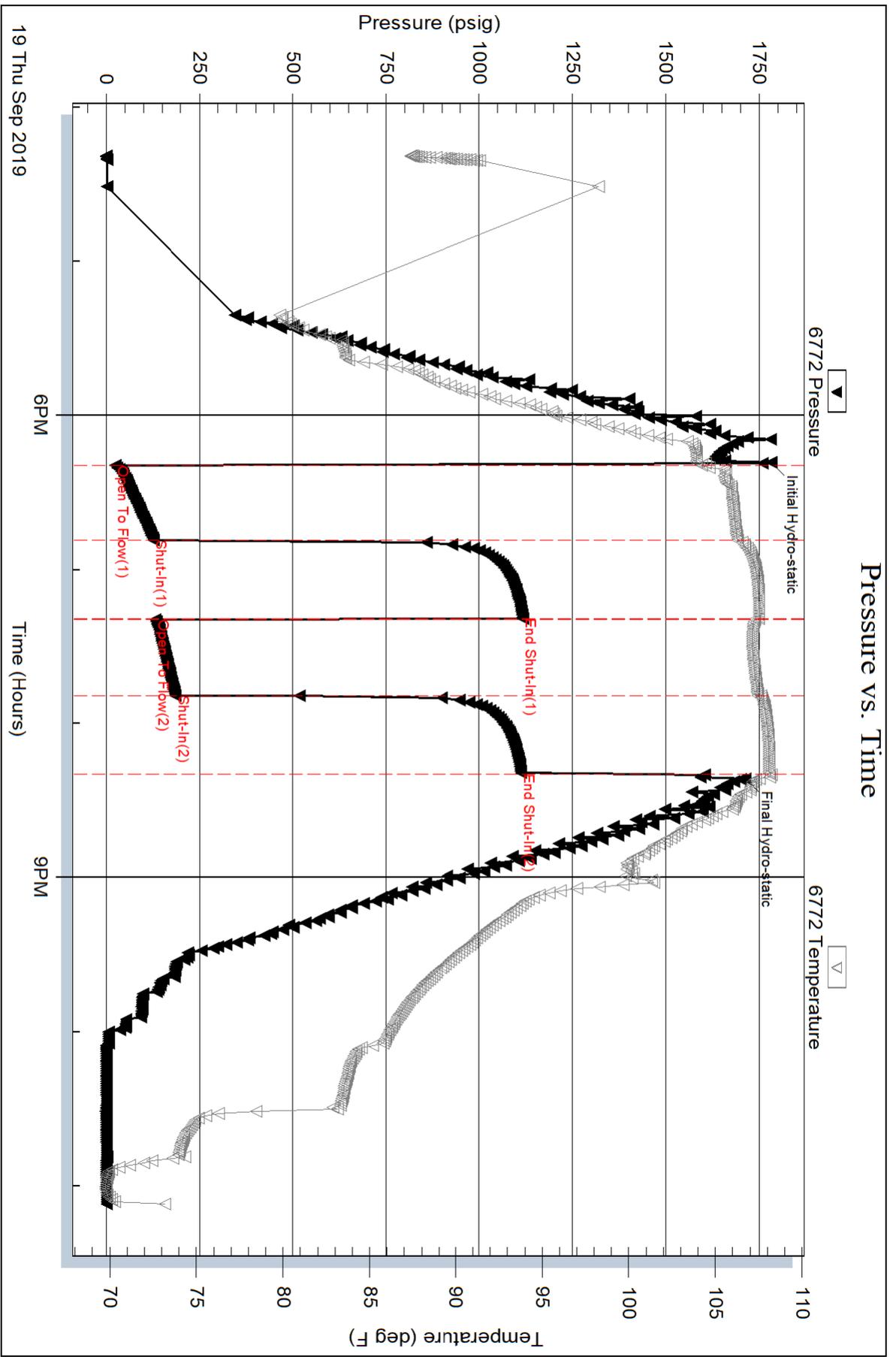
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	27000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: 1.00 inches			

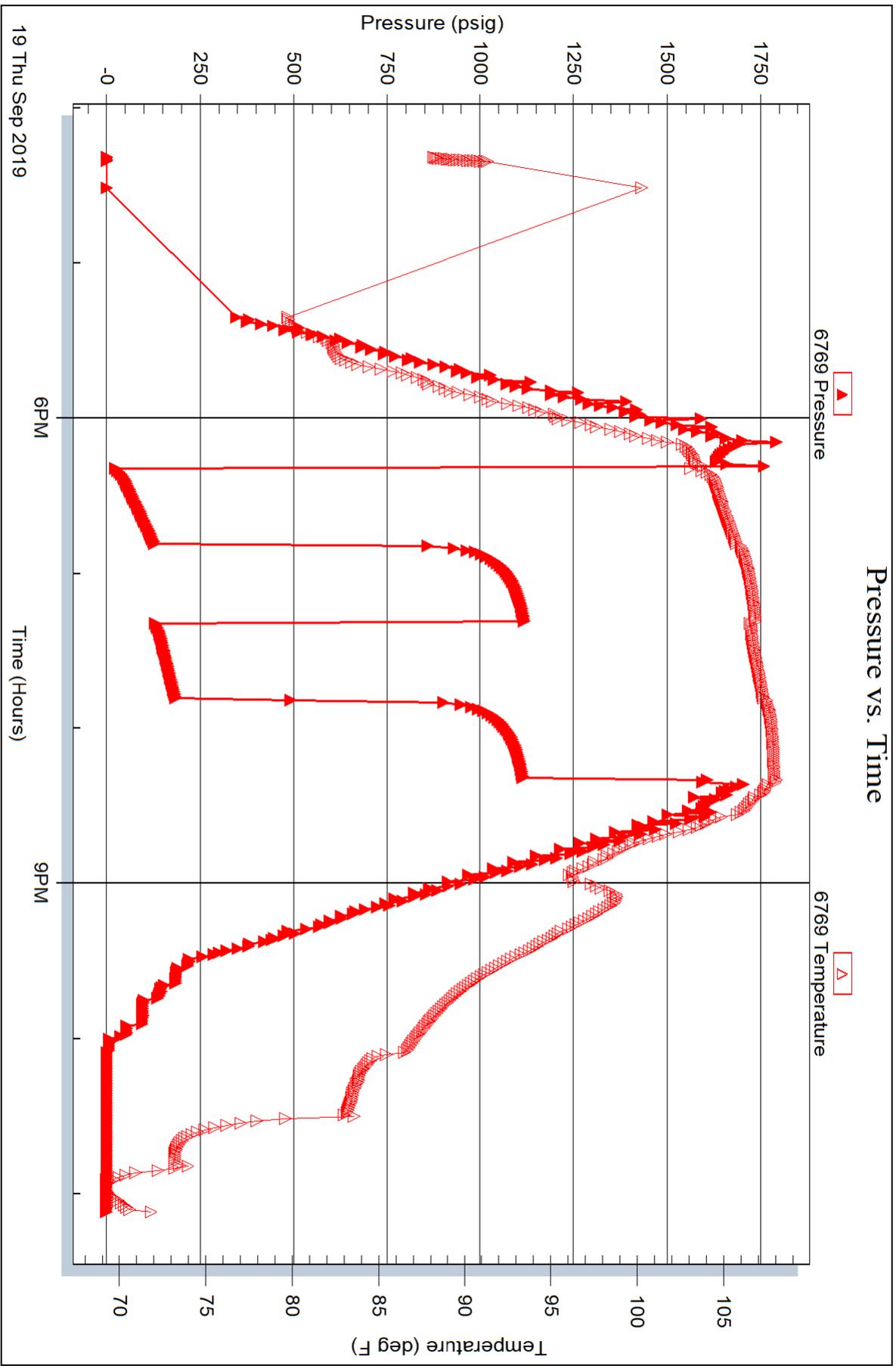
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	MW 20%M 80%W	0.850
240.00	MW 40%M 60%W	2.304
10.00	CO 100%O	0.140

Total Length: 370.00 ft Total Volume: 3.294 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



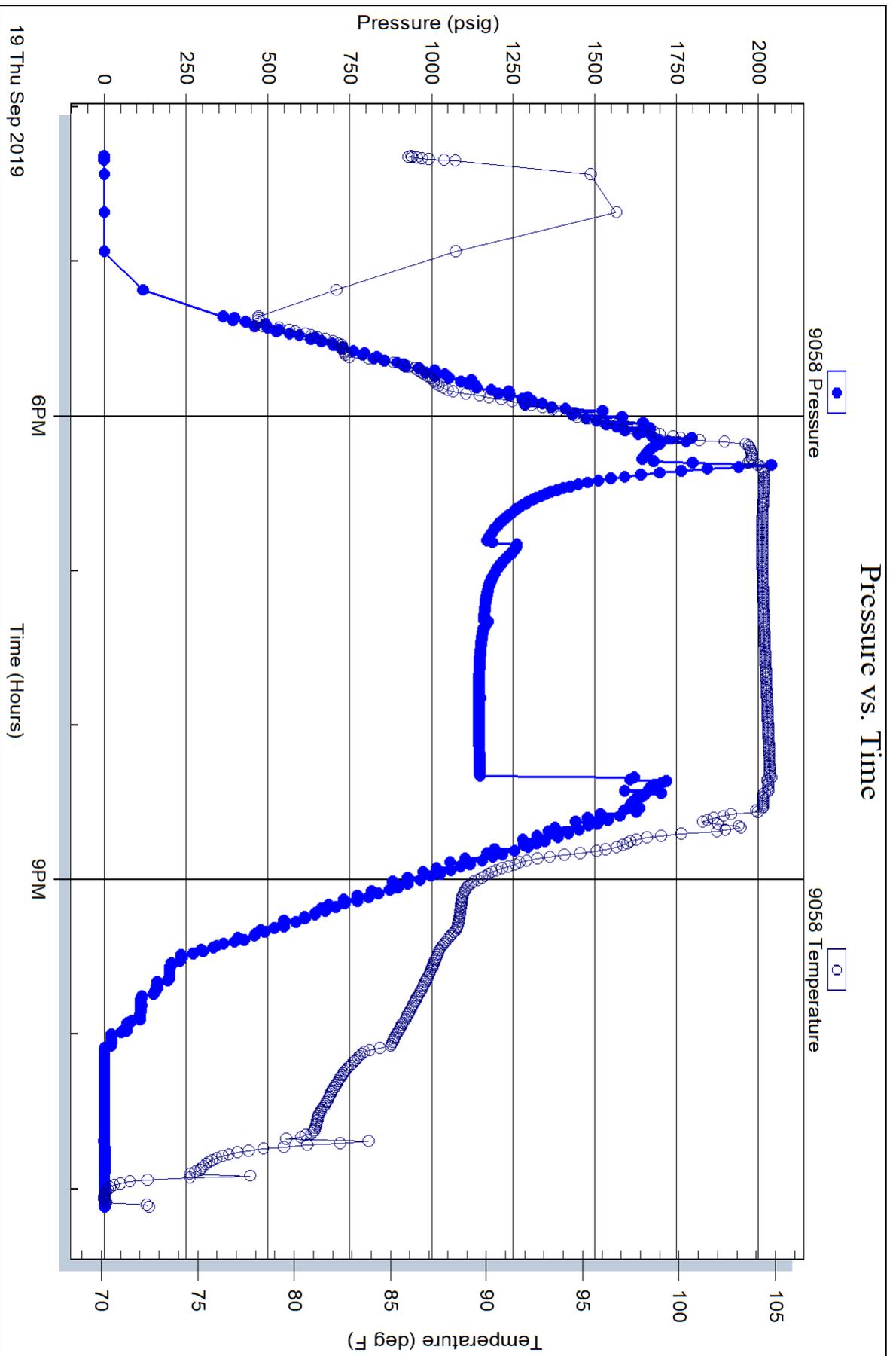


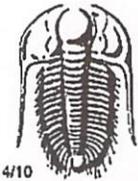
Serial #: 9058

Below (Straddled) Farmer

Ref #1

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65818

NO.

Well Name & No. Reif #1 Test No. 1 Date 9-16-2019
 Company John O. Farmer Inc Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665-0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16s Rge. 14w Co. Barton State KS

Interval Tested 3138 - 3196 Zone Tested LKC A-D
 Anchor Length 58' Drill Pipe Run 2880 Mud Wt. 8.7
 Top Packer Depth 3133 Drill Collars Run _____ Vis 52
 Bottom Packer Depth 3138 Wt. Pipe Run 273 WL 10.4
 Total Depth 3196 Chlorides 6000 ppm System LCM 1 1/2 #

Blow Description If - built to 3/4"
FSTI - no blow back
FF - was dead on open
FSTI - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</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 10' BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1580 Test 1200 T-On Location 2:40 P.M.
 (B) First Initial Flow 16 Jars T-Started 3:40
 (C) First Final Flow 20 Safety Joint T-Open 6:00
 (D) Initial Shut-In 326 Circ Sub T-Pulled 8:00
 (E) Second Initial Flow 21 Hourly Standby T-Out 10:00
 (F) Second Final Flow 24 Mileage 50 mi RT 50 Comments _____
 (G) Final Shut-In 178 Sampler _____
 (H) Final Hydrostatic 1529 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 30 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 30 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1250
 Sub Total 1250 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 65819

NO.

Well Name & No. Reif #1 Test No. 2 Date 9-17-2019
 Company John O Farmer Inc Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665 + 0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3198-3244 Zone Tested LKC E-G
 Anchor Length ~~3198~~ 46' Drill Pipe Run 2939 Mud Wt. 8.9
 Top Packer Depth ~~3198~~ 3193 Drill Collars Run — Vls 52
 Bottom Packer Depth ~~3198~~ 3198 Wt. Pipe Run 273 WL 10.4
 Total Depth 3244 Chlorides 6,000 ppm System LCM 1 1/2 #

Blow Description IF - weak surface blow
LSI - no blow back
FE - was dead when opened
FST - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</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 2' BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1612 1612</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>8:20 AM</u>
(B) First Initial Flow <u>21 21</u>	<input type="checkbox"/> Jars _____	T-Started <u>12:13 P.M.</u>
(C) First Final Flow <u>20 20</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>2:17</u>
(D) Initial Shut-In <u>100 100</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>4:17</u>
(E) Second Initial Flow <u>21 20</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:05</u>
(F) Second Final Flow <u>21 21</u>	<input checked="" type="checkbox"/> Mileage <u>50 mi RT</u> 50	Comments _____
(G) Final Shut-In <u>95</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1588</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1250</u>
	Sub Total <u>1250</u>	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 65820

NO.

Well Name & No. Reif #1 Test No. 3 Date 9-18-2019
 Company John O Farmer Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665+0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3270 - 3328 Zone Tested LKC H-J
 Anchor Length 58' Drill Pipe Run 3007' Mud Wt. 9.1
 Top Packer Depth 3265 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3270 Wt. Pipe Run 273' WL 9.6
 Total Depth 3328 Chlorides 9000 ppm System LCM 1 1/2 #

Blow Description IF - built to 1/2"
ISI - no blow back
FF - very weak surface blow died 9mins into the flow
FSA - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>OS.M.</u>	<u>2</u>		<u>98</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

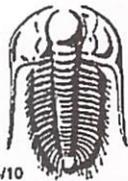
Rec Total 30' BHT 99 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1674 Test 1200 T-On Location 6:40 AM
 (B) First Initial Flow 17 Jars _____ T-Started 7:03
 (C) First Final Flow 22 Safety Joint _____ T-Open 8:56
 (D) Initial Shut-In 82 Circ Sub _____ T-Pulled 10:56
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 1:04 P.M.
 (F) Second Final Flow 24 Mileage 50mi RT 50 Comments _____
 (G) Final Shut-In 46 Sampler _____
 (H) Final Hydrostatic 1633 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 30 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 30 Day Standby _____ Extra Copies _____
 Sub Total 1250 Accessibility _____ Sub Total 0
 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 65821

NO.

Well Name & No. Reif #1 Test No. 4 Date 9-19-2019
 Company John O Farmer Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665+0352
 Co. Rep / Geo. Austin Klaus Rig DISCO Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3347-3388 Zone Tested Arbuckle
 Anchor Length 41' Drill Pipe Run 3069 Mud Wt. 9.1
 Top Packer Depth 3342 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3347 Wt. Pipe Run 273 WL 9.6
 Total Depth 3438 Chlorides 9,000 ppm System LCM 1 1/2 #

Blow Description IF - built to 1/2" then started to weaken
ISI - no blow back
FF - was dead when opened
FST - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</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	Feet of	%gas	%oil	%water	%mud

Rec Total 301 BHT 102 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1740 Test 1200 T-On Location 8:05
 (B) First Initial Flow 18 Jars _____ T-Started 9:18 AM
 (C) First Final Flow 21 Safety Joint _____ T-Open 11:42
 (D) Initial Shut-In 54 Circ Sub _____ T-Pulled 1:42
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 3:56
 (F) Second Final Flow 25 Mileage 50 mi RT 50 Comments _____
 (G) Final Shut-In 26 Sampler _____
 (H) Final Hydrostatic 1686 Straddle 600 EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1850
 Sub Total 1850 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 65822

NO.

Well Name & No. Reif #1 Test No. 5 Date 9-19-2019
 Company John O Farmer Elevation 1938 KB 1936 GL
 Address 370 W. Wichita Ave Russell KS 67665 +0352
 Co. Rep / Geo. Austin Rig Disc 2 Rig 2
 Location: Sec. 13 Twp 16s Rge. 14w Co. Barton State KS

Interval Tested 3387-3407 Zone Tested Arbuckle
 Anchor Length 20' Drill Pipe Run 3100' Mud Wt. 9.1
 Top Packer Depth 3382 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3387 Wt. Pipe Run 273' WL 9.6
 Total Depth 3438 Chlorides 9000 ppm System LCM 1 1/2#
 Blow Description IF - BOB 18 mins 20secs total build of
FSI - no blow back
FF - BOB 23 mins total build of 15 1/2"
FSI - weak surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>C.O.</u>	<u>100</u>			
<u>240</u>	<u>M.W.</u>		<u>60</u>	<u>40</u>	
<u>120</u>	<u>M.W.</u>		<u>80</u>	<u>20</u>	

Rec Total 370' BHT 107 Gravity _____ API RW 0.242 @ 75.2 °F Chlorides 27,000 ppm

(A) Initial Hydrostatic 1781 Test 1200 T-On Location _____
 (B) First Initial Flow 24 Jars _____ T-Started 4:19 P.M.
 (C) First Final Flow 126 Safety Joint _____ T-Open 6:20
 (D) Initial Shut-In 1116 Circ Sub _____ T-Pulled 8:20
 (E) Second Initial Flow 131 Hourly Standby _____ T-Out 11:08
 (F) Second Final Flow 184 Mileage _____ Comments Loaded tools
 (G) Final Shut-In 1113 Sampler _____ after test
 (H) Final Hydrostatic 1713 Straddle 600 EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Initial Open 30 Day Standby _____ Sub Total 0
 Initial Shut-In 30 Accessibility _____ Total 1800
 Final Flow 30 Sub Total 1800 MP/DST Disc't _____
 Final Shut-In 30

Approved By _____ Our Representative Benny Mulligan

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AUSTIN B. KLAUS



Cell 785.650.3629
Work 785.483.3145
Ext 225

PO BOX 352
Russell, KS 67665
austin.klaus@johnofarmer.com

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Reif #1
Location: Barton County
License Number: API #15-009-26,270-0000
Spud Date: 9/12/2019
Surface Coordinates: Section 13, Township 16 South, Range 14 West
Bottom Hole Coordinates: Vertical well w/ minimal deviation, same as above
Ground Elevation (ft): 1,930
Logged Interval (ft): 2,800
Formation: LKC-Arbuckle
Type of Drilling Fluid: Chemical (Andy's Mud)

Region: Kansas
Drilling Completed: 9/20/2019
882' FSL & 1,968' FWL
K.B. Elevation (ft): 1,938
Total Depth (ft): 3,438
To: RTD

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: John O. Farmer, Inc.
Address: 370 W. Wichita Ave.
Russell, KS 67665

Comments

The Reif #1 well was drilled by Discovery Drilling Rig #2 (Tool Pusher: Terry Wickham).

The location for the Reif #1 was discovered via 3D seismic survey. Rock samples were gathered and evaluated from 2,800' - 3,438'. Oil shows were encountered in the LKC A,B,C,E,J, & Arbuckle. Structurally, the Lansing top was picked 16' high to the comparison well, Eckart #1 (Shell Oil Co.). Structural thinning occurred throughout the LKC and below, which resulted in the Arbuckle being picked 25' high to the comparison well. Three bottom-hole tests were conducted over the Lansing, all yielding negative results. Two straddle tests were conducted over the Arbuckle, which were also negative. After evaluation of all oil shows, drill stem test results, & electric logs, the decision was made to plug and abandon the Reif #1 on 9/20/2019.

Topeka 2838' (-900)

Ls: tan-lt gry, fn-sub xln, mostly DNS

Sh: lt-drk gry

Ls: tan-lt gry, fn-sub xln, mostly DNS

Ls: off wh-tan-lt gry, fn xln, scat foss, poor-fair int xln porosity, scat dead oil stn, NSFO

Ls: tan-lt gry, fn-sub xln, mostly DNS

Ls: ala

Sh: drk gry-blk

Ls: tan-gry, fn-sub xln, mostly DNS

Sh: lt-drk gry-brn

Ls: tan-lt gry, fn xln, scat foss, poor-fair int xln porosity, scat edge stn, NSFO, scat chalk

Sh: lt-drk gry

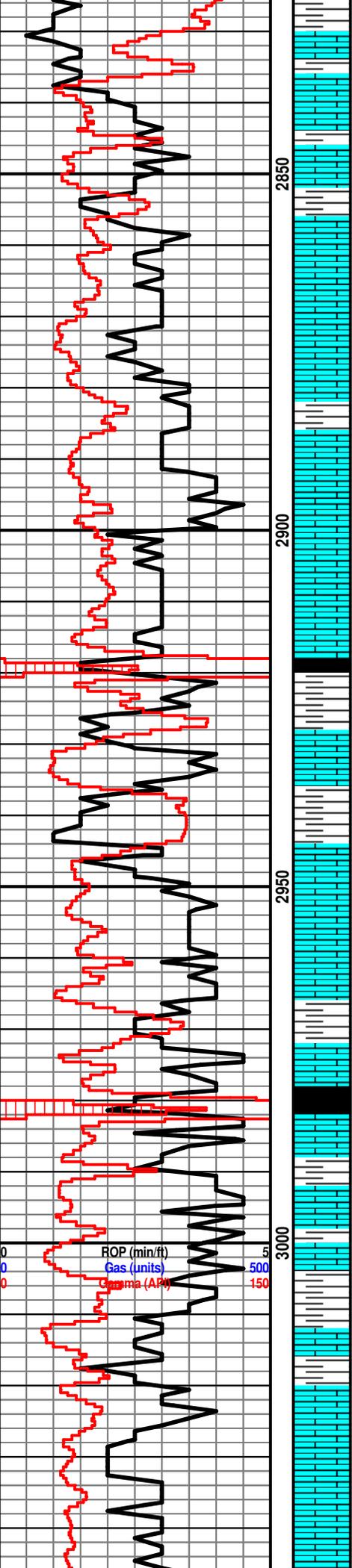
Sh: drk gry-blk

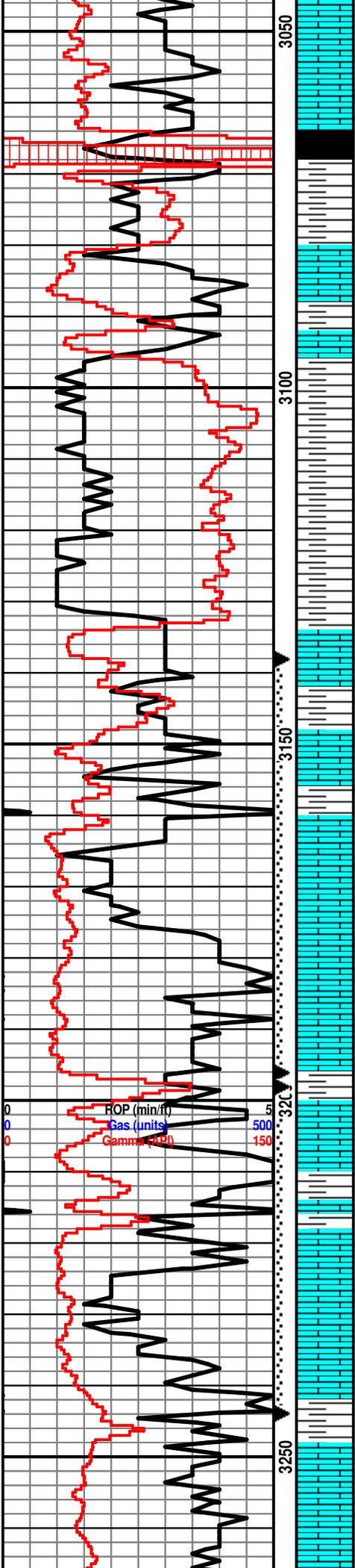
Ls: off wh-tan-gry, fn xln, scat foss, scat fair int xln & pp vuggy porosity, NSFO, scat chert-off wh

Sh: lt-drk gry

Ls: tan-gry, fn xln, poor int xln porosity, NSFO

Ls: off wh-tan-lt gry, fn xln, poor-fair int xln porosity, NSFO, scat chalk





Ls: ala

Heebner 3064' (-1126)

Sh: blk, carb, fissile

Sh: lt gry-brn

Ls:

Sh: lt gry, soft

Sh: ala

Ls:

Sh: lt-drk gry

Lansing 3150' (-1212)

Ls: off wh-tan, fn xln, poor-fair int xln porosity, sl edge stn, VSSFO, scat chalk

Ls: off wh-tan, fn xln, foss, poor, scat fair int xln porosity, scat oil stn, VSSFO, scat chert-off wh

Ls: off wh-tan, fn xln, ool, few rxns w/ fair oom porosity, scat edge stn, vry fnt odor

Ls: off wh-tan, fn-sub xln, mostly DNS, NSFO

Ls: off wh-tan, fn xln, scat poor int xln porosity, NSFO, scat chalk

Sh: lt-drk gry

Ls: off wh-tan, fn xln, scat foss, poor int xln & scat int foss porosity, fair oil stn, VSSFO, sl odor

Sh: lt-drk gry

Ls: off wh-tan, fn xln, poor int xln porosity, NSFO

Ls: off wh-tan, fn xln, ool, fair oom & scat ool porosity, mostly barren

Ls: off wh-tan, fn xln, mostly DNS, NSFO

Sh: lt-drk gry

Ls: off wh-tan, fn xln, mostly DNS, NSFO

DST #1 3,138-3,196' (LKC A-D)

30"-30"-30"-30"

IF: weak blow built to .75"

FF: no blow

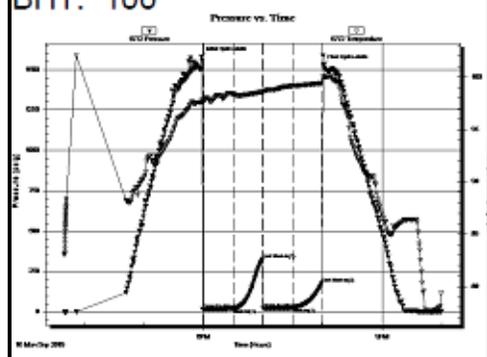
Rec: 10' Mud

FP: 17-21, 21-25#

SIP: 326-179#

HP: 1,580- 1,530#

BHT: 100°



DST #2 3,198-3,244' (LKC E-G)

30"-30"-30"-30"

IF: weak surface blow

FF: no blow

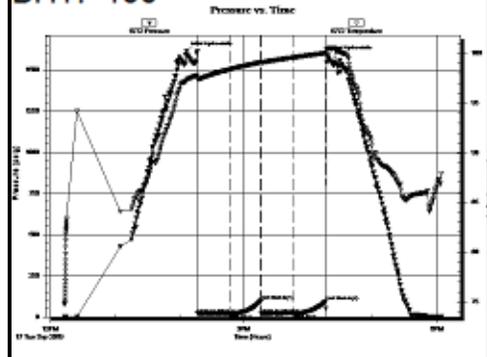
Rec: 2' Mud

FP: 21-20, 20-21#

SIP: 100-95#

HP: 1,612- 1,588#

BHT: 100°



DST #3 3,270-3,328' (LKC H-J)

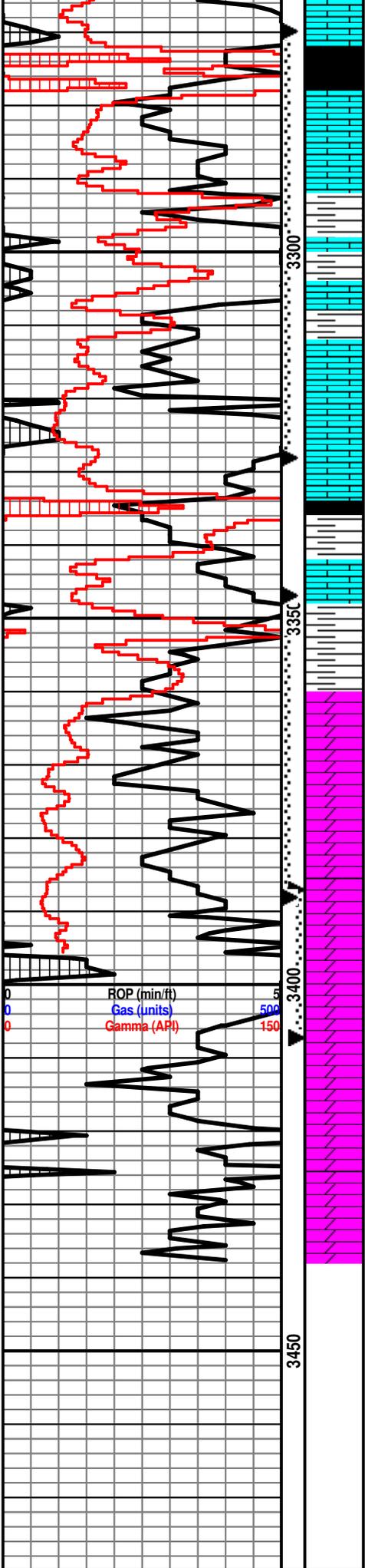
30"-30"-30"-30"

IF: weak blow built to .5"

FF: surface blow died in 9 minutes

Rec: 30' Slight Oil Cut Mud (2% O, 98% M)

FP: 17-22, 24-25#



Sh: drk gry-blk

Ls: tan-lt gry, fn-sub xln, mostly DNS, barren, scat chert-off wh

Sh: lt-drk gry

Ls: off wh-tan, fn xln, poor int xln & scat pp vuggy porosity, fair oil sat in few rxns, VSSFO, sl odor

Sh: lt-drk gry

Ls: off wh-tan, fn xln, ool, fair oom porosity, fair-good oil sat, SSFO, fair odor

Ls: off wh-tan, fn-sub xln, mostly DNS, NSFO

Sh: lt-drk gry-brn

Ls: tan-lt gry, fn-sub xln, mostly DNS

B/KC 3354' (-1416)

Sh: lt-drk gry-grn

Arbuckle 3361' (-1423)

Dolo: off wh-tan, fn xln, poor int xln porosity, sl oil stn, VSSFO, fnt odor

Dolo: off wh-tan, fn-md xln, fair sucrosic xln porosity, fair oil sat, SSFO, fair odor, scat chert-off wh

Dolo: off wh-tan, fn-md xln, fair sucrosic xln porosity, fair-good oil sat, SSFO, fair-good odor

Dolo: off wh-tan, fn-md xln, poor-fair int xln porosity, scat-fair oil sat, SSFO, fnt odor, scat chert-off wh

Dolo: off wh-tan, md-crs xln, poor-fair int xln & scat vuggy porosity, sl-fair oil sat, SSFO, sl odor

Dolo: off wh, md-crs xln, fair int xln porosity, mostly barren

Dolo: ala

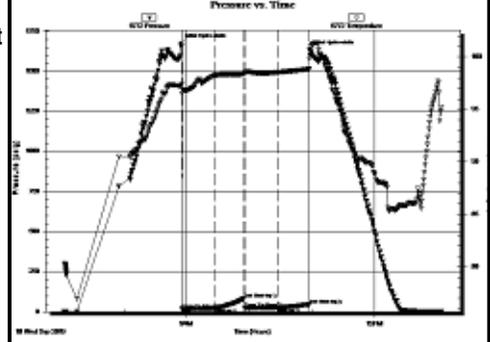
RTD @ 3,438'

SIP: 82-47#

BHT: 97°

HP: 1,675- 1,633#

BHT: 100°



DST #4 3,347-3,388' (Top 27' of Arbuckle)

30"-30"-30"-30"

IF: weak surface blow built to .5"

FF: no blow

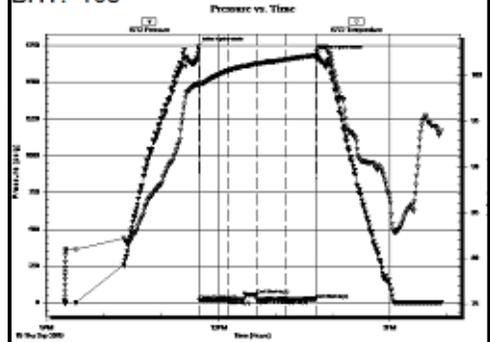
Rec: 30' Mud

FP: 19-22, 24-26#

SIP: 55-26#

HP: 1,741- 1,686#

BHT: 103°



DST #5 3,387-3,407' (26-46' into Arbuckle)

30"-30"-30"-30"

IF: BOB in 18 minutes, no blow on shut in

FF: BOB in 23 minutes, no blow back on shut in

Rec: 10' Clean Oil

240' Mud Cut Water (40% M, 60% W)

120' Mud Cut Water (20% M, 80% W)

370' Total Fluid Recovery

FP: 24-126, 132-185#

SIP: 1,117-1,113#

HP: 1,782- 1,713#

BHT: 108°

