

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
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278

ATTN: Max Lovely

### **Tubbs Unit #1**

#### **19-11s-35w Logan,KS**

Start Date: 2021.04.25 @ 19:11:00

End Date: 2021.04.26 @ 01:48:30

Job Ticket #: 66986                      DST #: 1

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.05.03 @ 11:51:25



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278  
ATTN: Max Lovely

**19-11s-35w Logan,KS**

**Tubbs Unit #1**

Job Ticket: 66986      **DST#: 1**  
Test Start: 2021.04.25 @ 19:11:00

## GENERAL INFORMATION:

Formation: **Topeka**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 21:46:00  
Time Test Ended: 01:48:30  
Interval: **3817.00 ft (KB) To 3870.00 ft (KB) (TVD)**  
Total Depth: 3870.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Bradley Walter  
Unit No: 78  
Reference Elevations: 3278.00 ft (KB)  
3273.00 ft (CF)  
KB to GR/CF: 5.00 ft

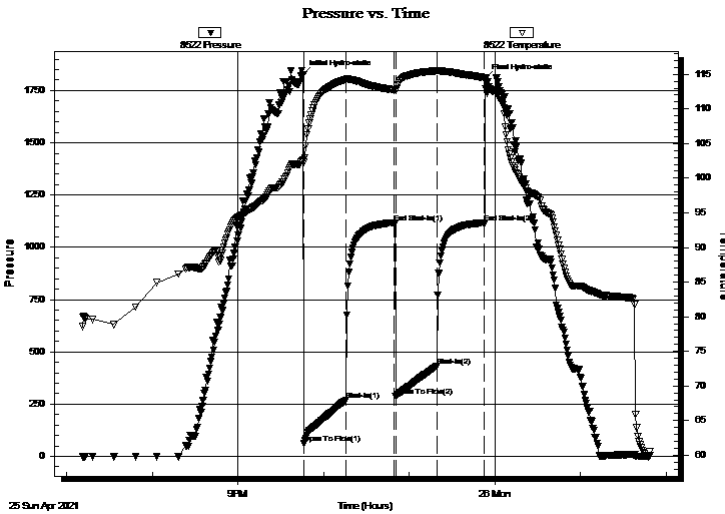
## Serial #: 8522

Inside

Press@RunDepth: 431.57 psig @ 3818.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2021.04.25      End Date: 2021.04.26      Last Calib.: 2021.04.26  
Start Time: 19:11:05      End Time: 01:48:29      Time On Btm: 2021.04.25 @ 21:45:30  
Time Off Btm: 2021.04.25 @ 23:53:15

TEST COMMENT: 30- IF: BOB @ 3.5 min. built to 49".  
30- IS: No return.  
30- FF: BOB @ 5 min. built to 43"  
30- FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1826.84	102.63	Initial Hydro-static
1	60.52	102.31	Open To Flow (1)
30	270.37	114.22	Shut-In(1)
64	1118.64	112.73	End Shut-In(1)
65	287.02	112.64	Open To Flow (2)
94	431.57	115.51	Shut-In(2)
127	1117.86	114.53	End Shut-In(2)
128	1806.06	114.51	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
900.00	mcw 5m 95w Oil spots on top	10.97

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66986

**DST#: 1**

ATTN: Max Lovely

Test Start: 2021.04.25 @ 19:11:00

## Tool Information

Drill Pipe:	Length: 3619.00 ft	Diameter: 3.80 inches	Volume: 50.77 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 51.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3817.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	80.00 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			3791.00	
Shut In Tool	5.00		Fluid	3796.00	
Hydraulic tool	5.00			3801.00	
Jars	5.00			3806.00	
Safety Joint	2.00			3808.00	
Packer	5.00		Inside	3813.00	27.00 Bottom Of Top Packer
Packer	4.00			3817.00	
Stubb	1.00			3818.00	
Recorder	0.00	8522	Inside	3818.00	
Recorder	0.00	8319	Outside	3818.00	
Perforations	16.00			3834.00	
Change Over Sub	1.00			3835.00	
Drill Pipe	31.00			3866.00	
Change Over Sub	1.00			3867.00	
Bullnose	3.00			3870.00	53.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66986

**DST#: 1**

ATTN: Max Lovely

Test Start: 2021.04.25 @ 19:11:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

40000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
900.00	mcw 5m 95w Oil spots on top	10.967

Total Length: 900.00 ft      Total Volume: 10.967 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

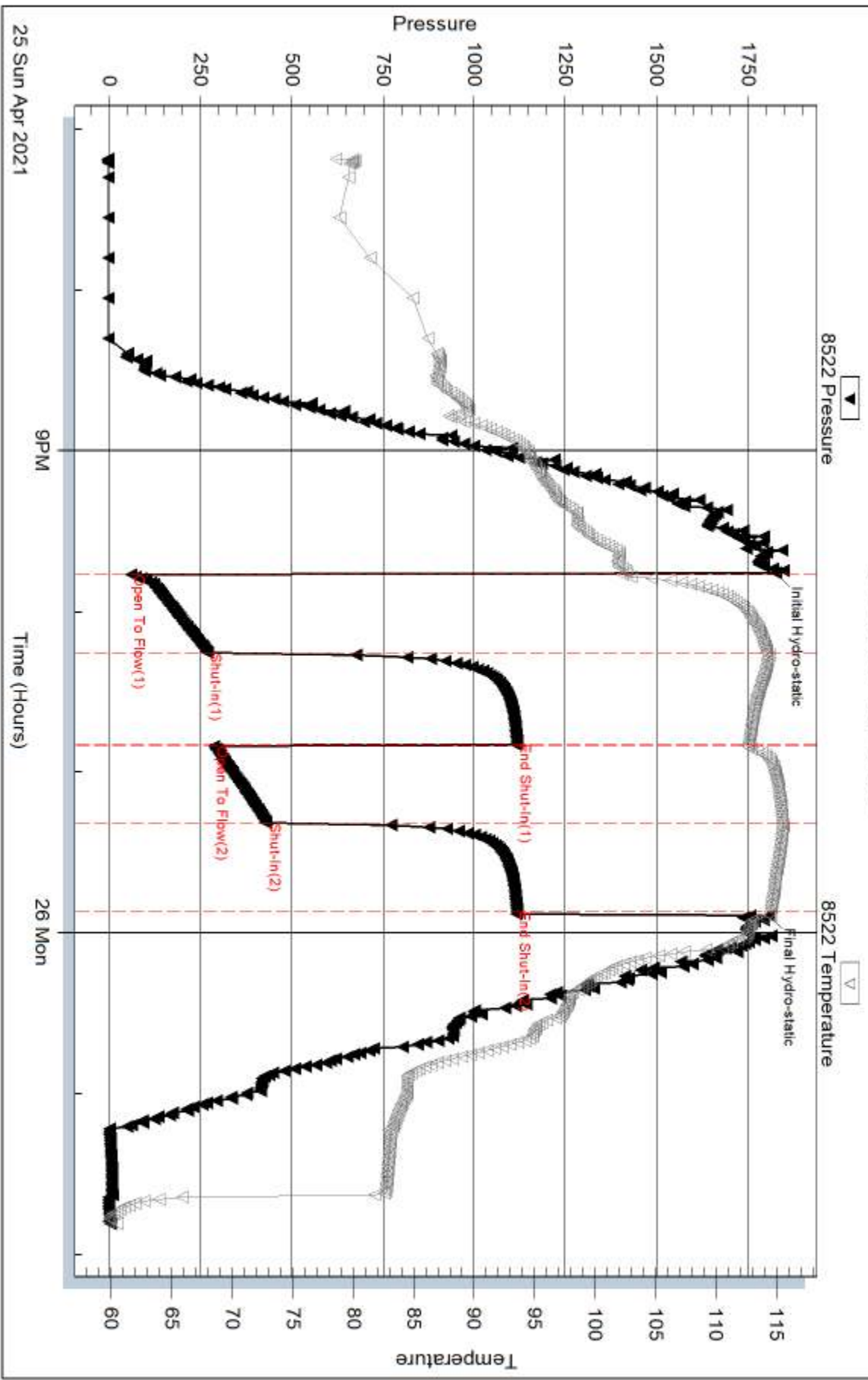
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .215 @ 57f = 40,000ppm

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278

ATTN: Max Lovely

### **Tubbs Unit #1**

### **19-11s-35w Logan,KS**

Start Date: 2021.04.27 @ 11:38:00

End Date: 2021.04.27 @ 18:28:00

Job Ticket #: 66987                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.05.03 @ 11:50:56

Ritchie Exploration  
19-11s-35w Logan,KS  
Tubbs Unit #1  
DST # 2  
LKC H - 1  
2021.04.27



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278  
ATTN: Max Lovely

**19-11s-35w Logan,KS**

**Tubbs Unit #1**

Job Ticket: 66987

**DST#: 2**

Test Start: 2021.04.27 @ 11:38:00

## GENERAL INFORMATION:

Formation: **LKC H-1**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:29:30

Time Test Ended: 18:28:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 78

**Interval: 4270.00 ft (KB) To 4330.00 ft (KB) (TVD)**

Reference Elevations: 3278.00 ft (KB)

Total Depth: 4330.00 ft (KB) (TVD)

3273.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8522**

**Inside**

Press@RunDepth: 112.06 psig @ 4271.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2021.04.27

End Date:

2021.04.27

Last Calib.: 2021.04.27

Start Time: 11:38:05

End Time:

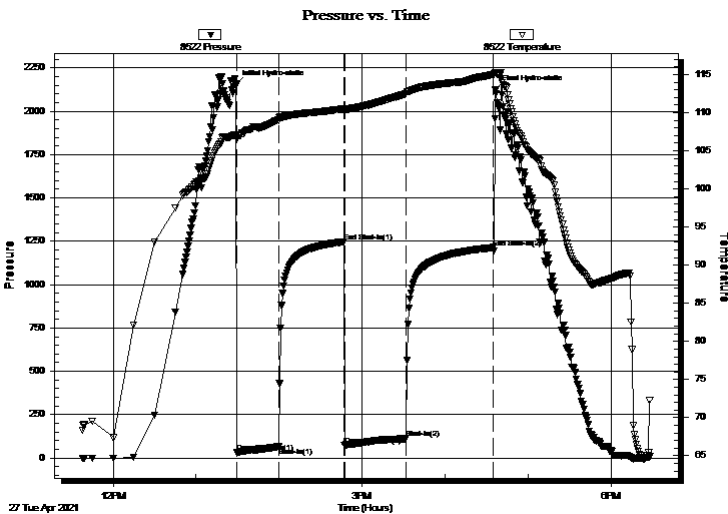
18:27:59

Time On Btm: 2021.04.27 @ 13:29:00

Time Off Btm: 2021.04.27 @ 16:36:30

**TEST COMMENT:** 30- IF: 4" blow .  
45- IS: No return.  
45- FF: 3.5" blow .  
60- FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2152.21	107.05	Initial Hydro-static
1	31.00	106.53	Open To Flow (1)
31	64.25	109.02	Shut-In(1)
78	1247.11	110.48	End Shut-In(1)
79	74.81	110.17	Open To Flow (2)
123	112.06	112.46	Shut-In(2)
186	1214.20	115.02	End Shut-In(2)
188	2123.15	115.27	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
210.00	mcw 35 65w Oil spots in tool	1.29

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66987

**DST#: 2**

ATTN: Max Lovely

Test Start: 2021.04.27 @ 11:38:00

## Tool Information

Drill Pipe:	Length: 4085.00 ft	Diameter: 3.80 inches	Volume: 57.30 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 58.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4270.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	77.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4244.00	
Shut In Tool	5.00		Fluid	4249.00	
Hydraulic tool	5.00			4254.00	
Jars	5.00			4259.00	
Safety Joint	2.00			4261.00	
Packer	5.00		Inside	4266.00	27.00 Bottom Of Top Packer
Packer	4.00			4270.00	
Stubb	1.00			4271.00	
Recorder	0.00	8522	Inside	4271.00	
Recorder	0.00	8319	Outside	4271.00	
Perforations	13.00			4284.00	
Change Over Sub	1.00			4285.00	
Drill Pipe	31.00			4316.00	
Change Over Sub	1.00			4317.00	
Bullnose	3.00			4320.00	50.00 Bottom Packers & Anchor

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66987

**DST#: 2**

ATTN: Max Lovely

Test Start: 2021.04.27 @ 11:38:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

28000 ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
210.00	mcw 35 65w Oil spots in tool	1.288

Total Length: 210.00 ft      Total Volume: 1.288 bbl

Num Fluid Samples: 0

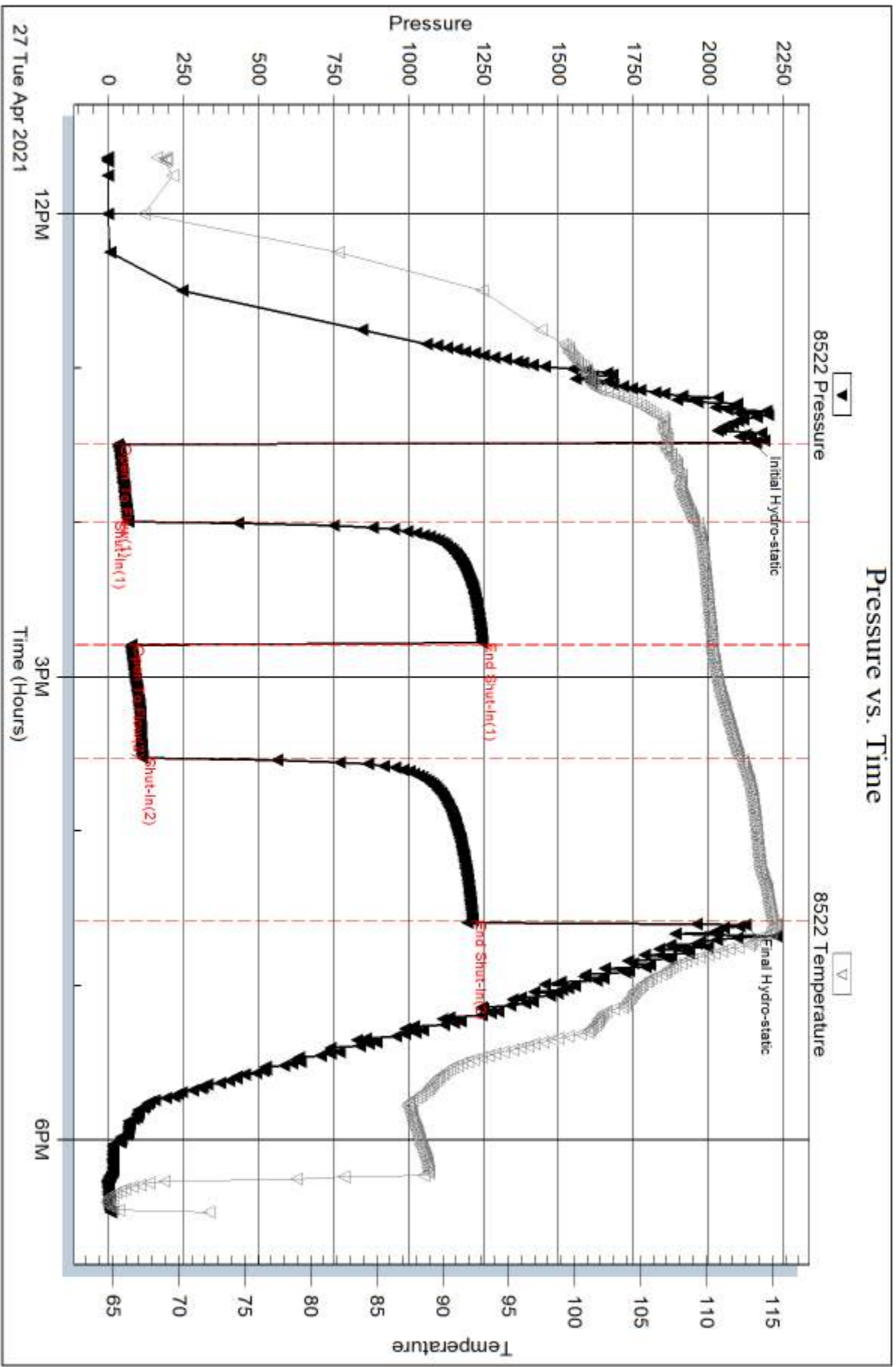
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .231 @ 74= 28000ppm

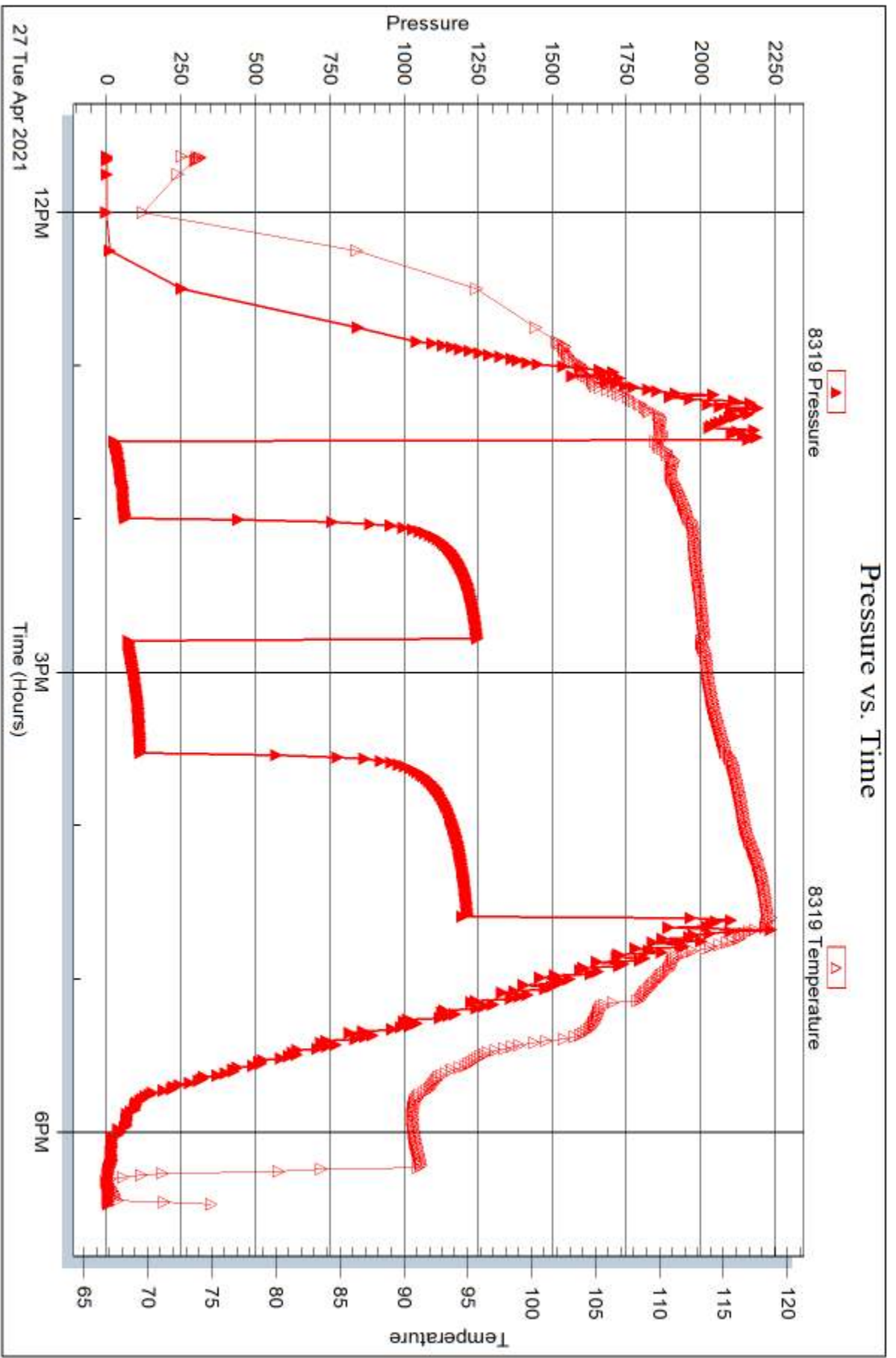


Serial #: 8319

Outside Ritchie Exploration

Tubbs Unit #1

DST Test Number: 2







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278

ATTN: Max Lovely

### **Tubbs Unit #1**

### **19-11s-35w Logan,KS**

Start Date: 2021.04.29 @ 13:20:00

End Date: 2021.04.29 @ 21:22:30

Job Ticket #: 66988                      DST #: 3

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.05.03 @ 11:47:29



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278  
ATTN: Max Lovely

**19-11s-35w Logan,KS**

**Tubbs Unit #1**

Job Ticket: 66988      **DST#: 3**  
Test Start: 2021.04.29 @ 13:20:00

## GENERAL INFORMATION:

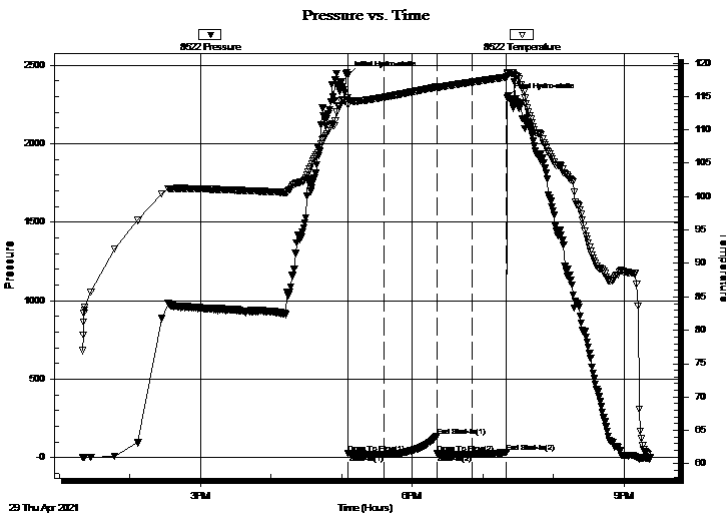
Formation: **Johnson**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 17:05:45  
Time Test Ended: 21:22:30  
Interval: **4692.00 ft (KB) To 4716.00 ft (KB) (TVD)**  
Total Depth: 4716.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Reference Elevations: 3278.00 ft (KB)  
3273.00 ft (CF)  
KB to GR/CF: 5.00 ft

## Serial #: 8522      Inside

Press@RunDepth: 21.37 psig @ 4693.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2021.04.29      End Date: 2021.04.29      Last Calib.: 2021.04.29  
Start Time: 13:20:05      End Time: 21:22:29      Time On Btm: 2021.04.29 @ 17:05:30  
Time Off Btm: 2021.04.29 @ 19:21:00

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

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2436.68	114.79	Initial Hydro-static
1	29.18	113.76	Open To Flow (1)
31	21.35	114.87	Shut-In(1)
76	136.36	116.42	End Shut-In(1)
76	25.85	116.24	Open To Flow (2)
106	21.37	117.15	Shut-In(2)
135	35.26	117.90	End Shut-In(2)
136	2291.79	118.37	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100m (oil puddle on top)	0.05

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66988

**DST#: 3**

ATTN: Max Lovely

Test Start: 2021.04.29 @ 13:20:00

## Tool Information

Drill Pipe:	Length: 4505.00 ft	Diameter: 3.80 inches	Volume: 63.19 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 64.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	4692.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	51.00 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			4666.00	
Shut In Tool	5.00		Fluid	4671.00	
Hydraulic tool	5.00			4676.00	
Jars	5.00			4681.00	
Safety Joint	2.00			4683.00	
Packer	5.00		Inside	4688.00	27.00 Bottom Of Top Packer
Packer	4.00			4692.00	
Stubb	1.00			4693.00	
Recorder	0.00	8522	Inside	4693.00	
Recorder	0.00	8319	Outside	4693.00	
Perforations	20.00			4713.00	
Bullnose	3.00			4716.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration

**19-11s-35w Logan,KS**

PO Box 783188  
Wichita, KS 67278

**Tubbs Unit #1**

Job Ticket: 66988

**DST#: 3**

ATTN: Max Lovely

Test Start: 2021.04.29 @ 13:20:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100m (oil puddle on top)	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

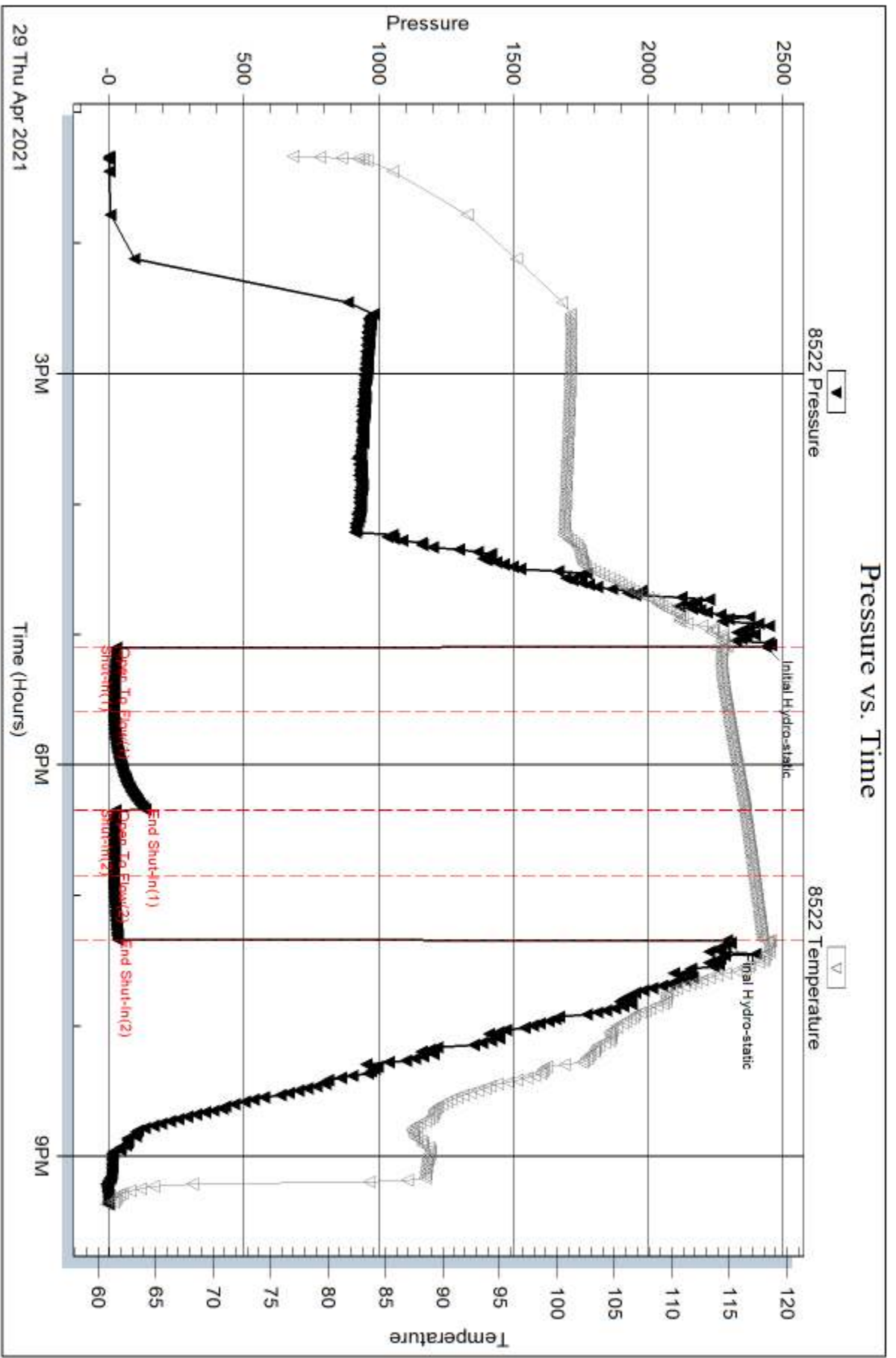
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



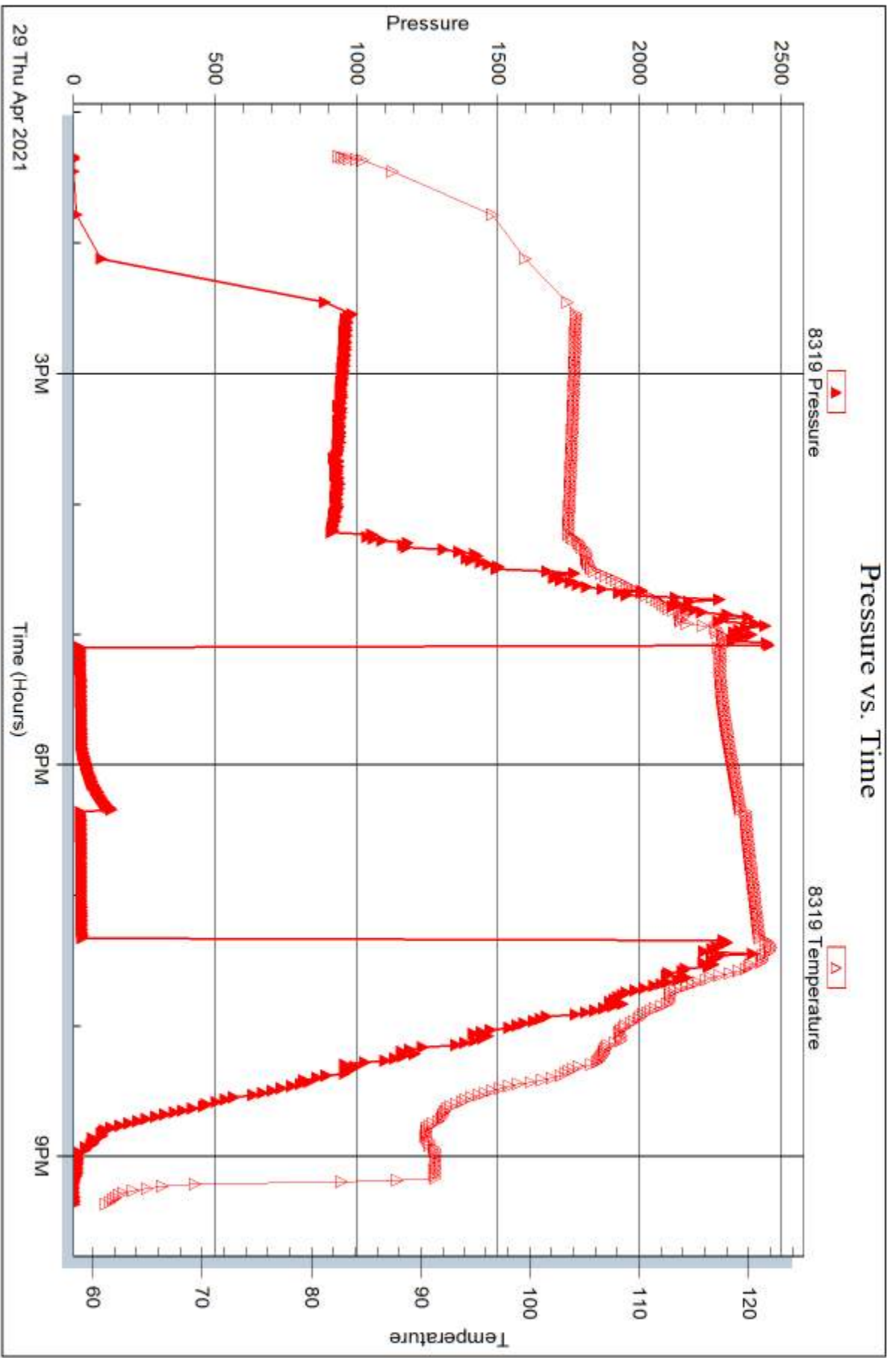


Serial #: 8319

Outside Ritchie Exploration

Tubbs Unit #1

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 66988

Printed: 2021.05.03 @ 11:47:30



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 66986

Well Name & No. Tubbs Unit #1 Test No. 1 Date 04/25/2021  
 Company Ritchie Exploration Elevation 3278 KB 3273 GL  
 Address PO Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig Murphy 110  
 Location: Sec. 19 Twp 11s Rge. 35w Co. Logan State KS

Interval Tested 3817-3870 Zone Tested Topoka  
 Anchor Length 53 Drill Pipe Run 3619 Mud Wt. 8.8  
 Top Packer Depth 3812 Drill Collars Run 182 Vis 56  
 Bottom Packer Depth 3817 Wt. Pipe Run 0 WL 7.2  
 Total Depth 3870 Chlorides 2,000 ppm System LCM 1#

Blow Description IF: BOB @ 3.5 min. Built to 49"  
ISI: No return  
FF: BOB @ 5 min, Built to 43"  
PSI: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>900</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	
	<u>oil spots on top</u>				

Rec Total 900 BHT 114 Gravity — API RW .215 @ 568° F Chlorides 40,000 ppm

(A) Initial Hydrostatic <u>1827</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>1730</u>
(B) First Initial Flow <u>60</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1911</u>
(C) First Final Flow <u>270</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2146</u>
(D) Initial Shut-In <u>1118</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2350</u>
(E) Second Initial Flow <u>287</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0148 @ 426</u>
(F) Second Final Flow <u>431</u>	<input checked="" type="checkbox"/> Mileage <u>143 RT</u> <del>178.75</del>	Comments <u>PU Tools</u>
(G) Final Shut-In <u>1117</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1806</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1703.75</u>	Total <u>1703.75</u>

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





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **66987**

Well Name & No. Tubbs Unit #1 Test No. 2 Date 04/27/2021  
 Company Ritchie Exploration Elevation 3278 KB 3273 GL  
 Address PO Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig Martin 110  
 Location: Sec. 19 Twp 16s Rge. 35w Co. Logan State Ks

Interval Tested 4270 - 4330 Zone Tested 9 LKC H-I  
 Anchor Length 50 Drill Pipe Run 4065 Mud Wt. 9.2  
 Top Packer Depth 4265 Drill Collars Run 182 Vis 66  
 Bottom Packer Depth 4270 Wt. Pipe Run 0 WL 10.4  
 Total Depth 4330 Chlorides 3500 ppm System LCM B 2<sup>#</sup>  
 Blow Description IF 4" blow  
ISI No return.  
FF 3 1/2" blow  
FSI No return.

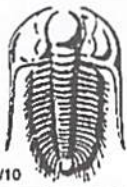
Rec	Feet of	%gas	%oil	%water	%mud
<u>210</u>	<u>wcm</u>		<u>65</u>	<u>35</u>	
	<u>oil spots in tool</u>				

Rec Total 210 BHT 115 Gravity — API RW .231 @ 74 °F Chlorides 28,000 ppm

(A) Initial Hydrostatic <u>2152</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>1100</u>
(B) First Initial Flow <u>31</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1138</u>
(C) First Final Flow <u>64</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1331</u>
(D) Initial Shut-In <u>1247</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1635</u>
(E) Second Initial Flow <u>74</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1828</u>
(F) Second Final Flow <u>112</u>	<input checked="" type="checkbox"/> Mileage <u>14327</u> 178.75	Comments
(G) Final Shut-In <u>1214</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2123</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>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1803.75</u>
	Sub Total <u>1803.75</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 66988

Well Name & No. Tubbs Unit #1 Test No. 3 Date 04/29/2021  
 Company Ritchie Exploration Elevation 3278 KB 3273 GL  
 Address PO Box 783188 Wichita, Ks 67278  
 Co. Rep / Geo. Max Lovely Rig Mutan 110  
 Location: Sec. 19 Twp 11S Rge. 35W Co. Logan State Ks

Interval Tested 4692-4716 Zone Tested Johnson  
 Anchor Length 24' Drill Pipe Run 4505 Mud Wt. 9.3  
 Top Packer Depth 4087 Drill Collars Run 182 Vis 51  
 Bottom Packer Depth 4692 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4716 Chlorides 3300 ppm System LCM 2#  
 Blow Description IF 1/4" blow  
ISI No return  
FF No blow  
FST No return

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 118 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2436</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>1300</u>
(B) First Initial Flow <u>29</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1521</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1721</u>
(D) Initial Shut-In <u>136</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1937</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2140</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>143 RT X2</u> 357.50	Comments <u>P/U Tools</u>
(G) Final Shut-In <u>35</u>	<input type="checkbox"/> Sampler	<u>@ 0500 05/01/2021</u>
(H) Final Hydrostatic <u>2291</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>45</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>1982.50</u>
	Sub Total <u>1982.50</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative [Signature]  
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### #1 Tubbs Unit

218' FNL & 159' FEL

112' N & 171' E of NE/4 NE/4 NE/4 Section 19-11S-35W

Logan County, Kansas

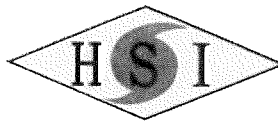
API# 15-109-21615-0000

Elevation: GL: 3,273', KB: 3,278'

Sample Tops			Ref. Well
Anhydrite	2733	+545	+1
B/Anhydrite	2757	+521	+1
Stotler	3491	-213	+7
Heebner Shale	4083	-805	+8
Toronto	4106	-828	+9
Lansing	4210	-842	+9
Muncie Shale	4272	-994	+6
Stark Shale	4358	-1080	+6
Hushpuckney	4389	-1111	+8
BKC	4423	-1145	+8
Marmaton	4458	-1180	+6
Pawnee	4479	-1201	+5
Myrick	4587	-1270	+2
Ft Scott	4600	-1322	+9
Cherokee Shale	4637	-1359	+6
Johnson	4696	-1418	+6
Morrow Shale	4748	-1470	+1
Mississippi	4849	-1571	Flat
RTD	4950	-1672	







**CEMENT TREATMENT REPORT**

Customer:	Ritchie Exploration	Well:	Tubbs unit #1	Ticket:	WP1352
City, State:		County:	Logan KS	Date:	5/1/1931
Field Rep:	Fennis Garduno	S-T-R:	19-11S-35W	Service:	PTA

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	12.25 in	Blend:	H-Plug	Blend:	
Hole Depth:	4200 ft	Weight:	13.8 ppg	Weight:	ppg
Casing Size:	8 5/8 in	Water / Sx:	6.9 gal / sx	Water / Sx:	gal / sx
Casing Depth:	218 ft	Yield:	1.42 ft <sup>3</sup> / sx	Yield:	ft <sup>3</sup> / sx
Tubing / Liner:	4 1/2 in	Annular Bbls / Ft.:	bbs / ft.	Annular Bbls / Ft.:	bbs / ft.
Depth:	2750 ft	Depth:	ft	Depth:	ft
Tool / Packer:	DP	Annular Volume:	0.0 bbls	Annular Volume:	0 bbls
Tool Depth:	2750 ft	Excess:		Excess:	
Displacement:	bbls	Total Slurry:	60.7 bbls	Total Slurry:	0.0 bbls
		Total Sacks:	240 sx	Total Sacks:	0 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
5:45 AM			-	-	Journey management meeting
6:00 AM				-	Convoy to location
6:45 AM				-	Arrive on location
6:50 AM				-	Safety meeting
6:20 AM				-	Spot in / rig up equipment
				-	1st plug 50 sx @ 2750' HOC - 211' TOC - 2539'
8:48 AM	3.5	350.0	5.0	5.0	Pump fresh water ahead
8:50 AM	4.0	450.0	12.7	17.7	Mix 50 sx H-Plug @ 13.8 ppg
8:55 AM	2.5	140.0	2.0	19.7	Pump fresh water behind
8:57 AM	8.0	200.0	34.0	53.7	Balance plug with mud using rig
				53.7	2nd plug 100 sx @ 1700' HOC - 415' TOC - 1285'
9:30 AM	4.0	320.0	5.0		Pump fresh water ahead
9:35 AM	4.0	400.0	25.0		Mix 100 sx H-Plug @ 13.8 ppg
9:41 AM	4.5	200.0	16.5		Balance plug with fresh water
					3rd plug 50sx @ 275' HOC - 203' TOC - 72'
10:23 AM	4.0	130.0	5.0		Pump fresh water ahead
10:26 AM	4.3	280.0	12.7		Mix 50 sx H-Plug @ 13.8 ppg
10:30 AM	1.0	40.0	0.5		Balance plug with fresh water
11:05 AM	2.0	50.0	7.5		Plug rat hole with 30sx H-Plug @ 13.8 ppg
11:15 AM	2.0	50.0	2.5		Run wooden plug to 40' plug surface with plug 10sx H-Plug @ 13.8 ppg
11:30 AM					Rig down
12:00 PM					Leave location
					Total H-Plug mixed 240 sx
					THANK YOU FOR YOUR BUSINESS FROM FENNIS MIKE & KALE SEE YOU ON THE NEXT ONE !!!!!

Cement:	CREW	UNIT	SUMMARY		
	Average Rate	Average Pressure	Total Fluid		
Pump Operator:	Fennis	78	3.7 bpm	218 psi	128 bbls
Bulk #1:	Mike	230			
Bulk #2:	Kale	180/250			

