

DRILL STEM TEST REPORT

Prepared For: **Bennett & Schulte Oil Company**

PO Box 329
Russell KS 67665+0329

ATTN: Bob Hopkins

Kuhlman #14-1

14-18S-15W Barton,KS

Start Date: 2017.04.14 @ 13:27:00

End Date: 2017.04.14 @ 17:05:00

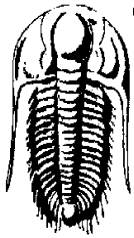
Job Ticket #: 64824 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.04.17 @ 16:40:31



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

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Russell KS 67665+0329

Kuhlman #14-1

Job Ticket: 64824

DST#: 1

ATTN: Bob Hopkins

Test Start: 2017.04.14 @ 13:27:00

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:45:30

Time Test Ended: 17:05:00

Test Type: Conventional Straddle (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3246.00 ft (KB) To 3257.00 ft (KB) (TVD)

Total Depth: 3285.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 1932.00 ft (KB)

1926.00 ft (CF)

KB to GR/CF: 6.00 ft

Serial #: 8648 Inside

Press@RunDepth: 118.37 psig @ 3246.00 ft (KB)

Start Date: 2017.04.14

End Date:

2017.04.14

Start Time: 13:27:05

End Time:

17:05:00

Capacity: 8000.00 psig

Last Calib.: 2017.04.14

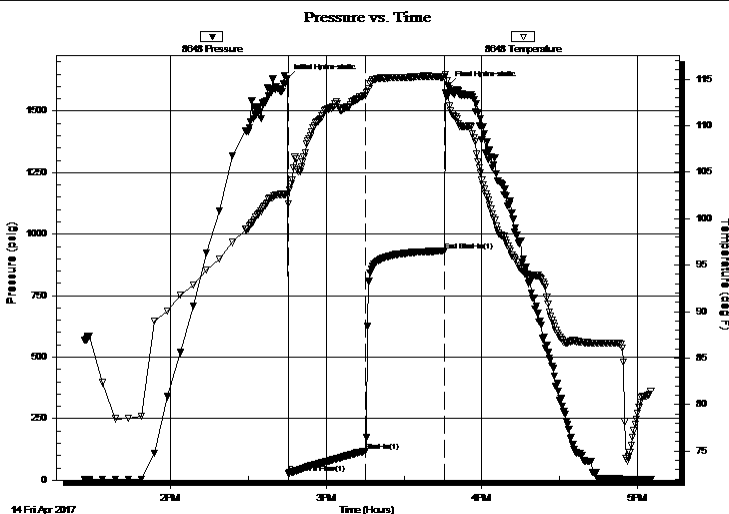
Time On Btm: 2017.04.14 @ 14:45:00

Time Off Btm: 2017.04.14 @ 15:47:00

TEST COMMENT: I.F. 30 Minutes/ Blow built to BOB in 13 1/2 minutes
I.S.I. 30 Minutes/ No blow back

Pull Test

PRESSURE SUMMARY



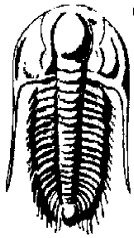
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1632.60	102.68	Initial Hydro-static
1	26.00	101.61	Open To Flow (1)
30	118.37	113.26	Shut-In(1)
61	932.01	115.22	End Shut-In(1)
62	1603.34	113.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	Muddy Water/ Mud 10% Water 90%	2.52

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Reference Elevations: 1932.00 ft (KB)

1926.00 ft (CF)

KB to GR/CF: 6.00 ft

Serial #: 8960 Outside

Press@RunDepth: 928.09 psig @ 3246.00 ft (KB)

Start Date: 2017.04.14

End Date:

2017.04.14

Start Time: 13:27:05

End Time:

17:05:00

Capacity: 8000.00 psig

Last Calib.: 2017.04.14

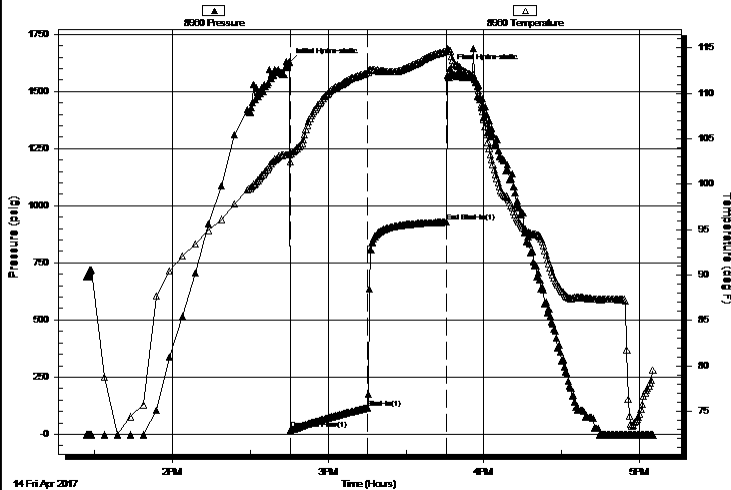
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Time Off Btm: 2017.04.14 @ 15:47:00

TEST COMMENT: I.F. 30 Minutes/ Blow built to BOB in 13 1/2 minutes
I.S.I. 30 Minutes/ No blow back

Pull Test

Pressure vs. Time



PRESSURE SUMMARY

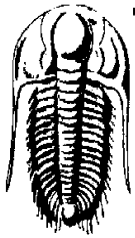
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1628.08	103.31	Initial Hydro-static
1	20.06	102.50	Open To Flow (1)
30	116.15	112.26	Shut-In(1)
61	928.09	114.61	End Shut-In(1)
62	1601.31	114.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	Muddy Water/ Mud 10% Water 90%	2.52

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Total Depth: 3285.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 1932.00 ft (KB)

1926.00 ft (CF)

KB to GR/CF: 6.00 ft

Serial #: 8354 Below (Straddle)

Press@RunDepth: psig @ 3280.25 ft (KB)

Start Date: 2017.04.14

End Date:

2017.04.14

Start Time: 13:30:05

End Time:

17:04:26

Capacity: 8000.00 psig

Last Calib.: 2017.04.14

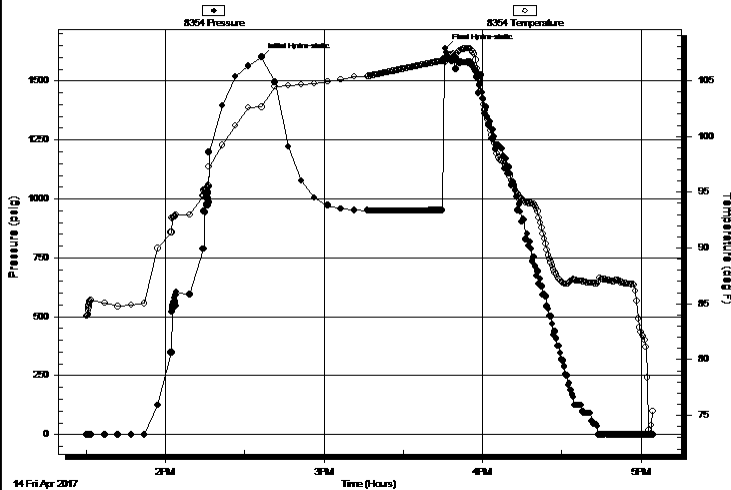
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Time Off Btm: 2017.04.14 @ 15:45:56

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I.S.I. 30 Minutes/ No blow back

Pull Test

Pressure vs. Time



PRESSURE SUMMARY

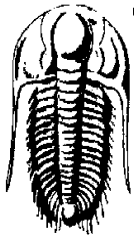
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1601.65	102.62	Initial Hydro-static
70	1638.65	106.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	Muddy Water/ Mud 10% Water 90%	2.52

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bennett & Schulte Oil Company

14-18S-15W Barton, KS

PO Box 329
Russell KS 67665+0329

Kuhlman #14-1

Job Ticket: 64824

DST#: 1

ATTN: Bob Hopkins

Test Start: 2017.04.14 @ 13:27:00

Tool Information

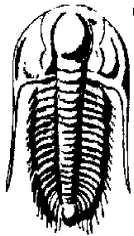
Drill Pipe:	Length:	3234.00 ft	Diameter:	3.80 inches	Volume:	45.36 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:	42000.00 lb
					Total Volume:	45.36 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.75 ft							
Depth to Top Packer:	3246.00 ft							
Depth to Bottom Packer:	3283.25 ft							
Interval between Packers:	37.25 ft							
Tool Length:	61.00 ft							
Number of Packers:	3		Diameter:	6.75 inches				
Tool Comments:								

Tool Description

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

Shut-In Tool	5.00			3227.25		
Hydraulic tool	5.00			3232.25		
Jars	5.00			3237.25		
Safety Joint	2.00			3239.25		
Top Packer	5.00			3244.25		
Packer	1.75			3246.00	23.75	Bottom Of Top Packer
Recorder	0.00	8648	Inside	3246.00		
Recorder	0.00	8960	Outside	3246.00		
Anchor	5.00			3251.00		
Blank Off Sub	1.00			3252.00		
Packer - Shale(test side)	3.38			3255.38		
Packer - Shale(tail side)	2.87			3258.25		
Perforations	22.00			3280.25		
Recorder	0.00	8354	Below	3280.25		
Bullnose	3.00			3283.25	37.25	Anchor Tool

Total Tool Length: 61.00



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FLUID SUMMARY

Bennett & Schulte Oil Company

14-18S-15W Barton, KS

PO Box 329
Russell KS 67665+0329

Kuhlman #14-1

Job Ticket: 64824

DST#: 1

ATTN: Bob Hopkins

Test Start: 2017.04.14 @ 13:27:00

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:

15000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	Muddy Water/ Mud 10% Water 90%	2.525

Total Length: 180.00 ft Total Volume: 2.525 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .365 ohms @ 83 deg.

Serial #: 8648

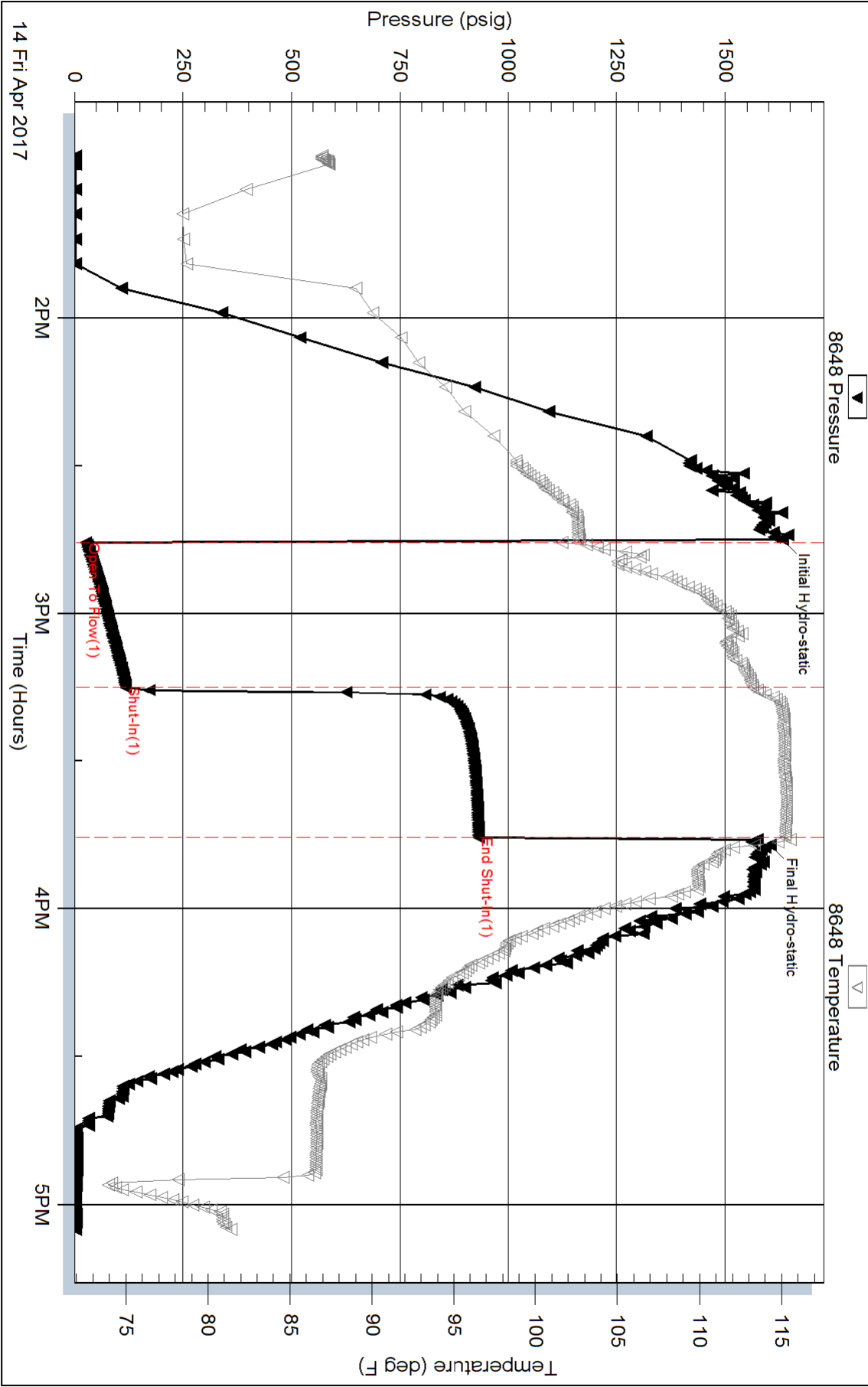
Inside

Bennett & Schulte Oil Company

Kuhlman #14-1

DST Test Number: 1

Pressure vs. Time

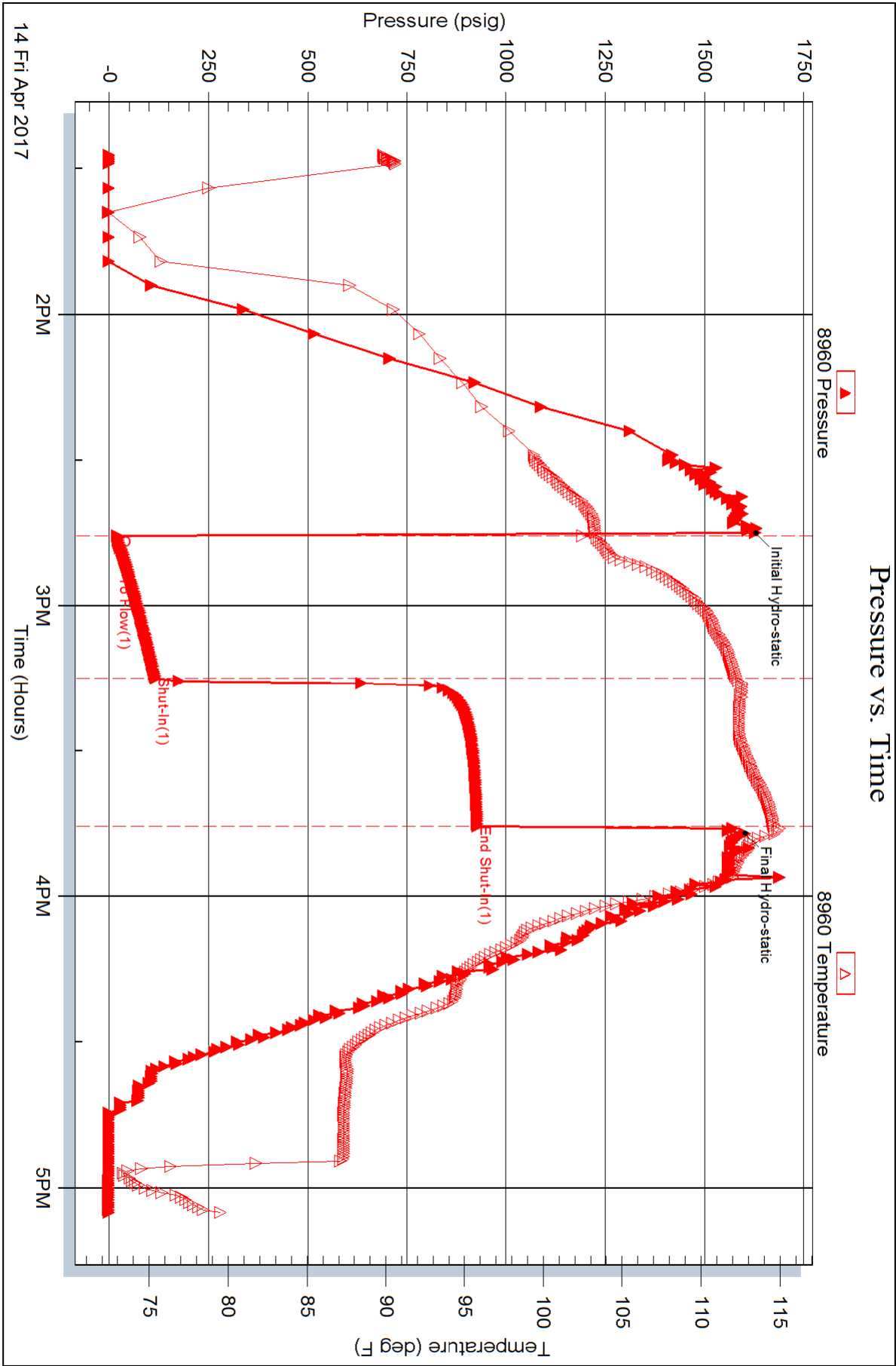


Serial #: 8960

Outside Bennett & Schulte Oil Company

Kuhlman #14-1

DST Test Number: 1

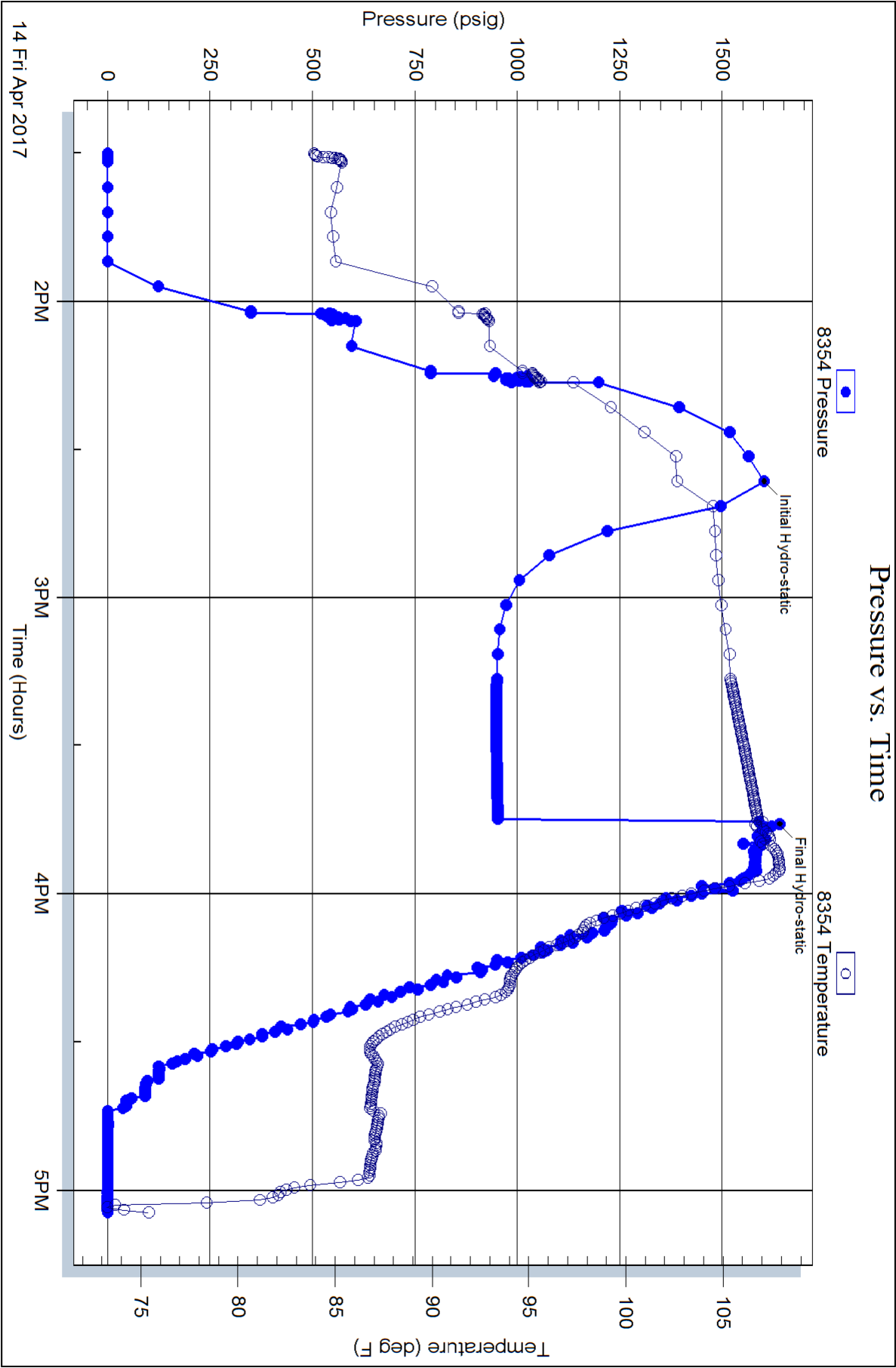


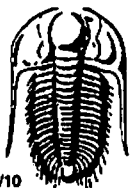
Serial #: 8354

Below (Stratton) & Schulte Oil Company

Kuhman #14-1

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64824

Well Name & No. Kuhlman #14-1 Test No. 1 Date 14 APR 17
 Company Bennett + Schulte Oil Company Elevation 1932 KB 1926 GL
 Address PO Box 329 Russell KS 67665-0329
 Co. Rep / Geo. Bob Hopkins Rig Royal Rig 1
 Location: Sec. 14 Twp. 18S Rge. 15W Co. Barton State KS

Interval Tested 3246-3257 Zone Tested Lansing/Kansas City zone C
 Anchor Length 11 Drill Pipe Run 3234 Mud Wt. 9.2
 Top Packer Depth 3241 Drill Collars Run — Vis 50
 Bottom Packer Depth 3246 Wt. Pipe Run — WL 9.2
 Total Depth 3285 Chlorides 4,000 ppm System LCM 1#
 Blow Description IF Blow built to B.O.B in 13 1/2 minutes
I.S.I No blow back
Pull test

Rec	Feet of	%gas	%oil	%water	%mud
<u>180</u>	<u>Muddy Water</u>			<u>90</u>	<u>10</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 180 BHT 115 Gravity — API RW 365 @ 83 °F Chlorides 15,000 ppm

(A) Initial Hydrostatic <u>1632</u>	☒ Test <u>1050</u>	T-On Location <u>12:20 pm</u>
(B) First Initial Flow <u>26</u>	☒ Jars <u>250</u>	T-Started <u>1:27 pm</u>
(C) First Final Flow <u>118</u>	☒ Safety Joint <u>75</u>	T-Open <u>2:46 pm</u>
(D) Initial Shut-In <u>932</u>	☐ Circ Sub	T-Pulled <u>3:46 pm</u>
(E) Second Initial Flow <u>—</u>	☐ Hourly Standby	T-Out <u>5:05 pm</u>
(F) Second Final Flow <u>—</u>	☒ Mileage <u>30</u> 45	Comments
(G) Final Shut-In <u>—</u>	☐ Sampler	
(H) Final Hydrostatic <u>1603</u>	☒ Straddle <u>600</u>	
	☒ Shale Packer <u>250</u>	☐ Ruined Shale Packer
Initial Open <u>30</u>	☐ Extra Packer	☐ Ruined Packer
Initial Shut-In <u>30</u>	☐ Extra Recorder	☐ Extra Copies
Final Flow <u>—</u>	☐ Day Standby	Sub Total <u>0</u>
Final Shut-In <u>—</u>	☐ Accessibility	Total <u>2270</u>
	Sub Total <u>2270</u>	MP/DST Disc't

Approved By Robert Hopkins

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.