



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Woolsey Operating Company, LLC

11-29S-19W Kiowa, KS

125 N. Market
Ste. 1000
Wichita, KS 67202
ATTN: B. Klaver

Unruh A #1

Job Ticket: 63121

DST#: 4

Test Start: 2017.12.01 @ 17:01:55

GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:02:16

Time Test Ended: 01:51:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 5046.00 ft (KB) To 5061.00 ft (KB) (TVD)

Total Depth: 5061.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2339.00 ft (KB)

2327.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 8524 Outside

Press@RunDepth: 173.12 psig @ 5058.00 ft (KB)

Start Date: 2017.12.01

End Date:

2017.12.02

Start Time: 17:01:56

End Time:

01:51:15

Capacity: 8000.00 psig

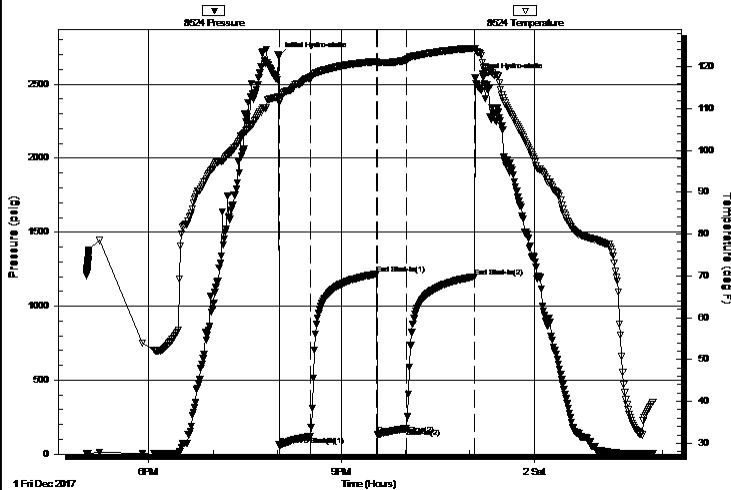
Last Calib.: 2017.12.02

Time On Btm: 2017.12.01 @ 20:01:31

Time Off Btm: 2017.12.01 @ 23:04:46

TEST COMMENT: 30- IF- BOB 5mins
60- ISL- 1.75" blow
60- FF- BOB 7mins
60- FSL- 1" blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2689.47	112.56	Initial Hydro-static
1	58.50	111.97	Open To Flow (1)
30	118.78	117.32	Shut-In(1)
92	1219.37	121.27	End Shut-In(1)
93	130.87	121.00	Open To Flow (2)
120	173.12	121.71	Shut-In(2)
183	1199.19	124.39	End Shut-In(2)
184	2542.18	124.29	Final Hydro-static

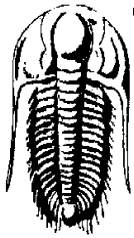
Recovery

Length (ft)	Description	Volume (bbl)
248.00	MW, 15%M 85%W	1.59
47.00	M	0.51
0.00	141' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



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2327.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6771 Inside

Press@RunDepth: psig @ 5058.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.12.01

End Date:

2017.12.02

Last Calib.:

2017.12.02

Start Time: 17:02:49

End Time:

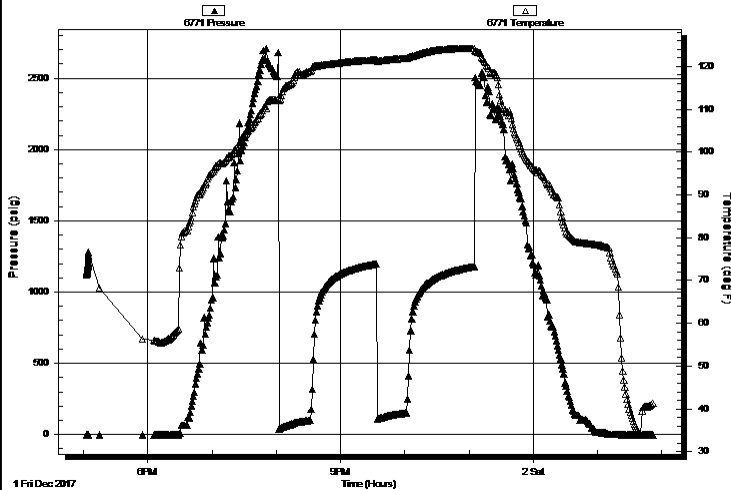
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Time On Btm:

Time Off Btm:

TEST COMMENT: 30- IF- BOB 5mins
60- ISL- 1.75" blow
60- FF- BOB 7mins
60- FSL- 1" blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

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0.00	141' GIP	0.00

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FLUID SUMMARY

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DST#: 4

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Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 55.00 sec/qt

Water Loss: 10.39 in³

Resistivity: ohm.m

Salinity: 9100.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API: deg API

Water Salinity: 85000 ppm

ft
bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	MW, 15%M 85%W	1.593
47.00	M	0.509
0.00	141' GIP	0.000

Total Length: 295.00 ft

Total Volume: 2.102 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .12@46deg

Serial #: 8524

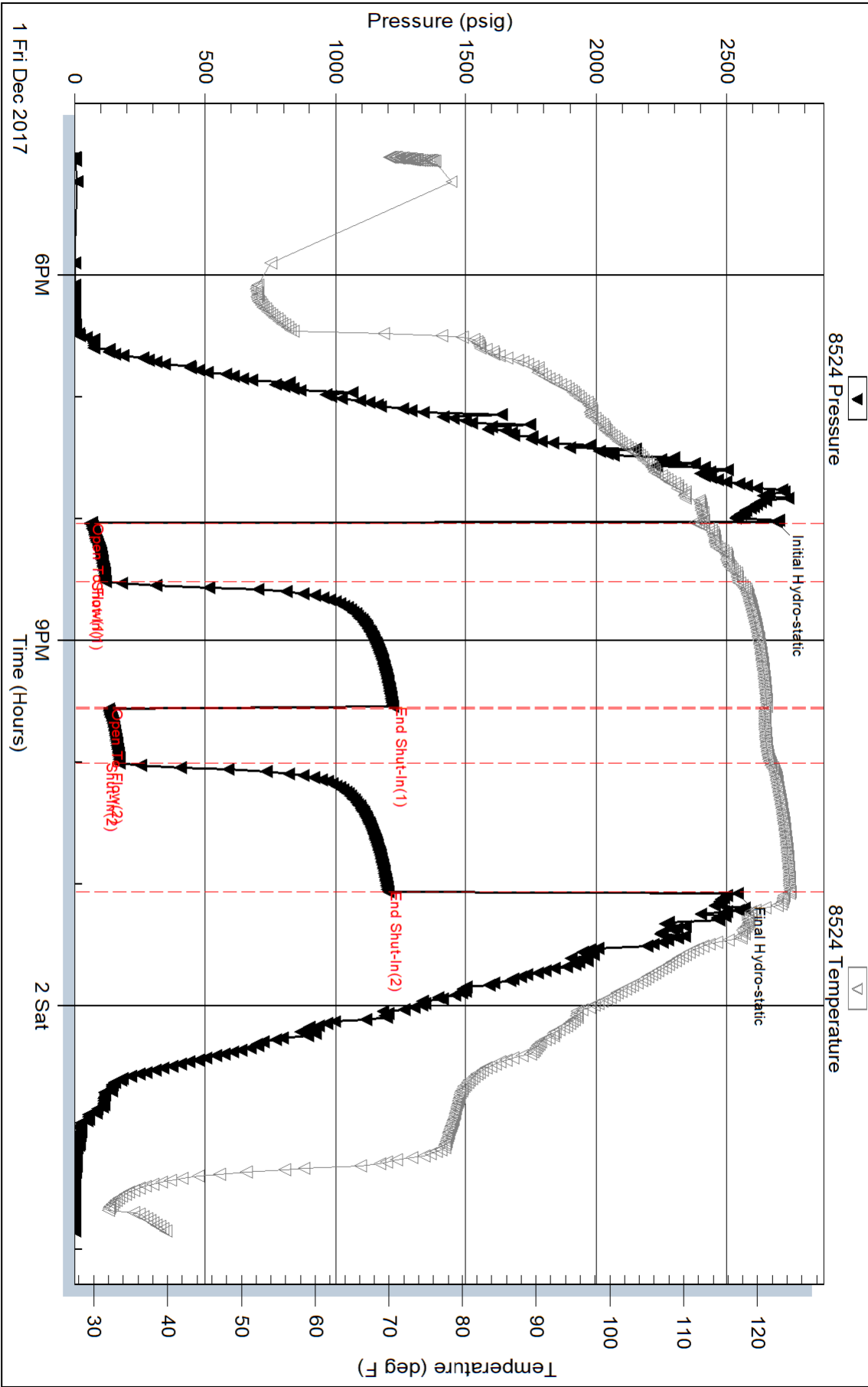
Outside

Woodsey Operating Company, LLC

Unruh A #1

DST Test Number: 4

Pressure vs. Time



Serial #: 6771

Inside

Woodsey Operating Company, LLC

Unruh A #1

DST Test Number: 4

