



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Blackhawk Prod. Co
 1607 Oakmont
 Hays, KS 67601
 ATTN: Steve Reed

10-16s-19w Rush Co.
Carol #1
 Job Ticket: 52336 **DST#: 3**
 Test Start: 2013.07.04 @ 00:33:38

GENERAL INFORMATION:

Formation: **Congl. Sand**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 02:09:38
 Time Test Ended: 06:44:38
 Interval: **3635.00 ft (KB) To 3650.00 ft (KB) (TVD)**
 Total Depth: 3650.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ryan Reynolds
 Unit No: 48
 Reference Elevations: 2063.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 8.00 ft

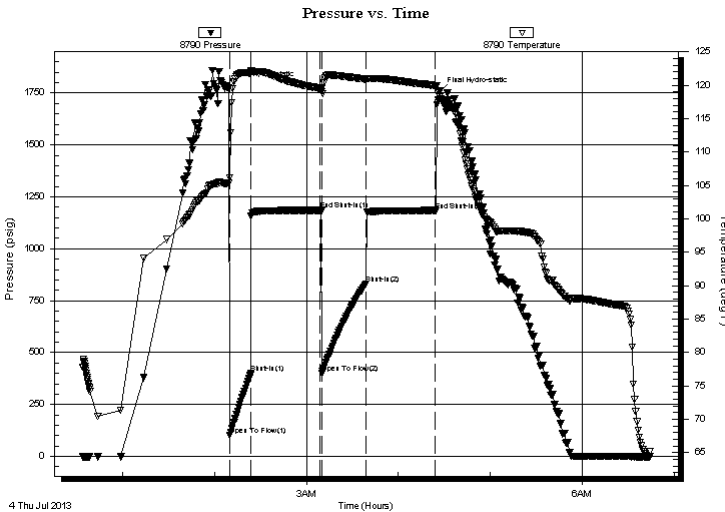
Serial #: 8790

Inside

Press @ Run Depth: 832.02 psig @ 3636.00 ft (KB)
 Start Date: 2013.07.04 End Date: 2013.07.04
 Start Time: 00:33:43 End Time: 06:44:37
 Capacity: 8000.00 psig
 Last Calib.: 2013.07.04
 Time On Btm: 2013.07.04 @ 02:07:08
 Time Off Btm: 2013.07.04 @ 04:26:53

TEST COMMENT: IF: Strong blow . BOB @ 2min.
 IS: No blow
 FF: Strong blow . BOB @ 2min.
 FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1785.71	105.32	Initial Hydro-static
3	101.35	106.10	Open To Flow (1)
17	398.85	121.78	Shut-In(1)
62	1185.17	119.50	End Shut-In(1)
63	398.81	119.07	Open To Flow (2)
92	832.02	120.90	Shut-In(2)
137	1184.28	119.95	End Shut-In(2)
140	1758.74	118.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1870.00	GMCW 5%gas, 5%mud, 90%w tr	26.23
0.00	130' GIP (Spts oil in hyd. tool)	0.00

* Recovery from multiple tests

Gas Rates

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



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1607 Oakmont
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Carol #1

Job Ticket: 52336

DST#: 3

ATTN: Steve Reed

Test Start: 2013.07.04 @ 00:33:38

GENERAL INFORMATION:

Formation: **Congl. Sand**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 02:09:38

Time Test Ended: 06:44:38

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Reynolds

Unit No: 48

Interval: 3635.00 ft (KB) To 3650.00 ft (KB) (TVD)

Total Depth: 3650.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2063.00 ft (KB)

2055.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8792 **Outside**

Press @ Run Depth: psig @ 3636.00 ft (KB)

Start Date: 2013.07.04

End Date: 2013.07.04

Capacity: 8000.00 psig

Last Calib.: 2013.07.04

Start Time: 00:29:31

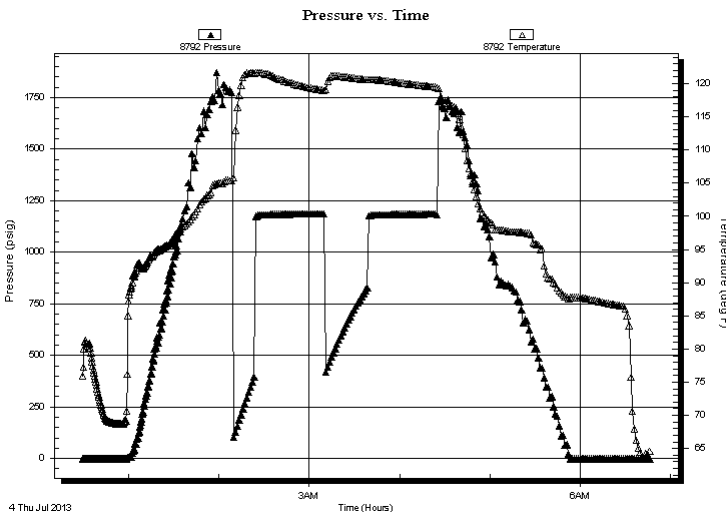
End Time: 06:46:40

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Strong blow . BOB @ 2min.
IS: No blow
FF: Strong blow . BOB @ 2min.
FS: No blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
1870.00	GMCW 5%gas, 5%mud, 90%w tr	26.23
0.00	130' GIP (Spts oil in hyd. tool)	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Blackhawk Prod. Co

10-16s-19w Rush Co.

1607 Oakmont
Hays, KS 67601

Carol #1

Job Ticket: 52336

DST#: 3

ATTN: Steve Reed

Test Start: 2013.07.04 @ 00:33:38

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:

61000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.80 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3100.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
1870.00	GMCW 5%gas, 5%mud, 90%w tr	26.231
0.00	130' GIP (Spts oil in hyd. tool)	0.000

Total Length: 1870.00 ft Total Volume: 26.231 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

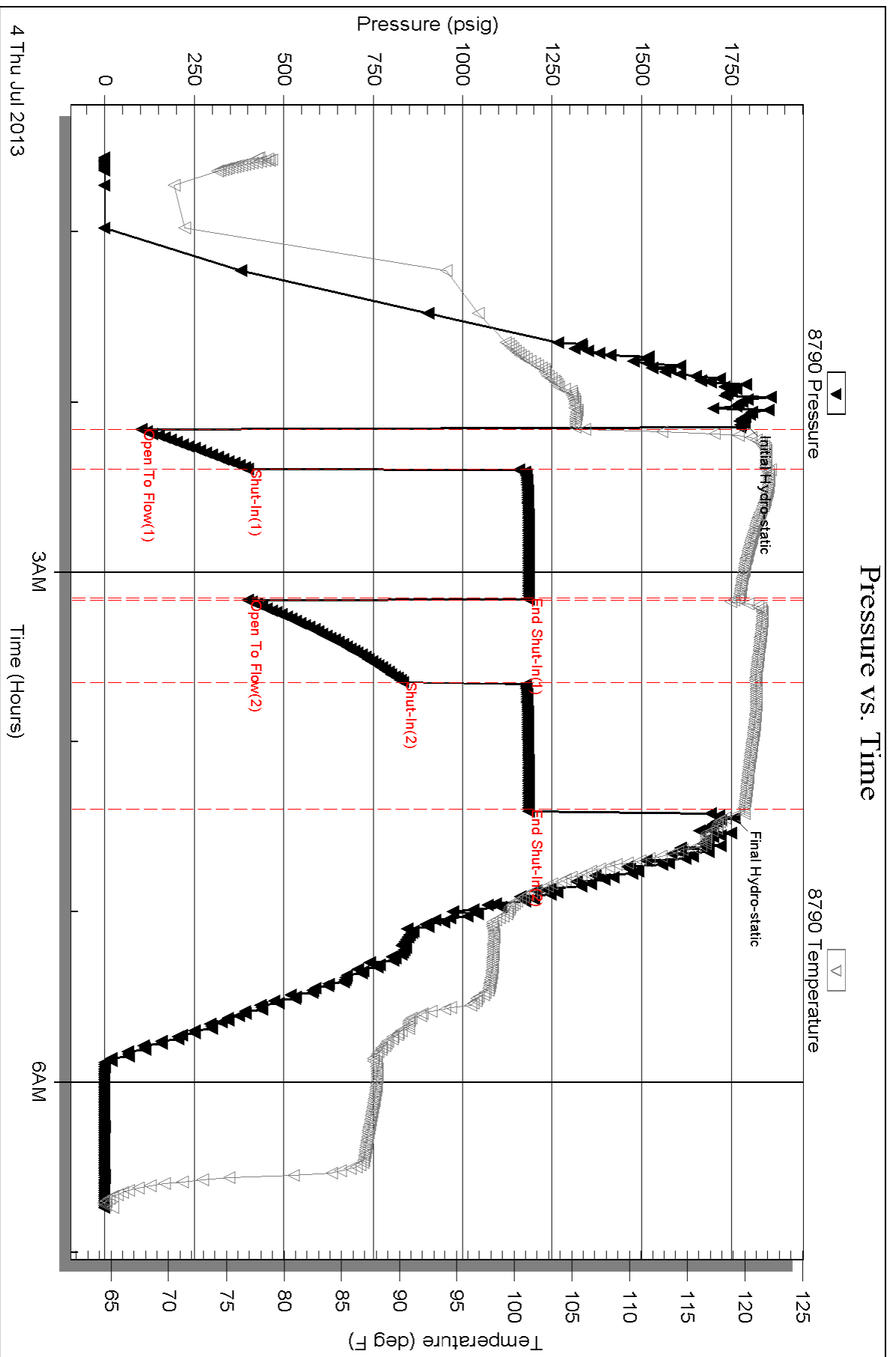
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Inside

Blackhawk Prod. Co

Carol #1

DST Test Number: 3



Serial #: 8792

Outside Blackhawk Prod. Co

Carol #1

DST Test Number: 3

