



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61355

DST#: 5

Test Start: 2017.04.25 @ 11:56:00

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:03:15
 Time Test Ended: 19:20:45
 Interval: **4402.00 ft (KB) To 4472.00 ft (KB) (TVD)**
 Total Depth: 4472.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 78
 Reference Elevations: 2845.00 ft (KB)
 2837.00 ft (CF)
 KB to GR/CF: 8.00 ft

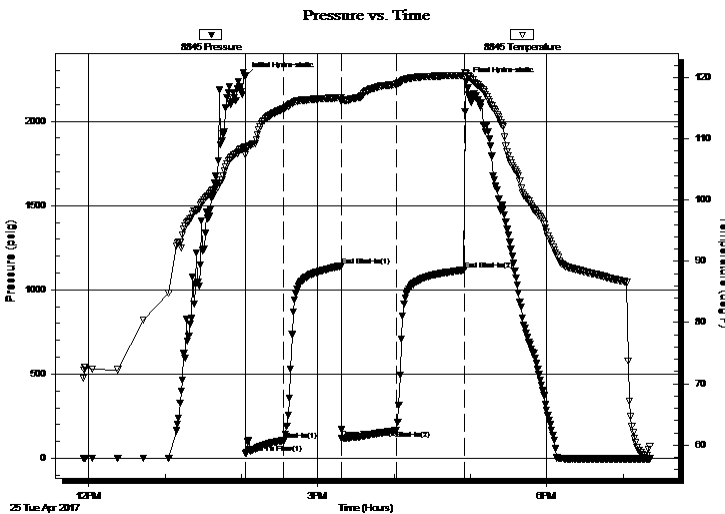
Serial #: 8845

Outside

Press@RunDepth: 164.89 psig @ 4403.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.25 End Date: 2017.04.25 Last Calib.: 2017.04.25
 Start Time: 11:56:05 End Time: 19:20:44 Time On Btm: 2017.04.25 @ 14:03:00
 Time Off Btm: 2017.04.25 @ 16:56:45

TEST COMMENT: IF: BOB @ 10 min.
 IS: 2 1/2" return, receded to 2".
 FF: BOB @ 4 min.
 FS: 3" return.

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2263.95 | 108.63 | Initial Hydro-static |
| 1 | 30.38 | 107.40 | Open To Flow (1) |
| 30 | 104.89 | 114.80 | Shut-In(1) |
| 76 | 1141.80 | 116.70 | End Shut-In(1) |
| 76 | 118.20 | 116.40 | Open To Flow (2) |
| 119 | 164.89 | 118.92 | Shut-In(2) |
| 172 | 1118.52 | 120.27 | End Shut-In(2) |
| 174 | 2235.86 | 120.63 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------|--------------|
| 180.00 | gmco 35g 30m 35o | 1.32 |
| 230.00 | gmco 25g 15m 60o | 3.00 |
| 0.00 | 1100' GIP | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



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FLUID SUMMARY

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Knopp #7

Job Ticket: 61355

DST#: 5

Test Start: 2017.04.25 @ 11:56:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 52.00 sec/qt
Water Loss: 9.59 in³
Resistivity: ohm.m
Salinity: 10000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 30 deg API
Water Salinity: 0 ppm

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------|---------------|
| 180.00 | gmco 35g 30m 35o | 1.322 |
| 230.00 | gmco 25g 15m 60o | 2.999 |
| 0.00 | 1100' GIP | 0.000 |

Total Length: 410.00 ft Total Volume: 4.321 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

