



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Culbreath Oil And Gas Company

4-12s-32w Logan Co KS

3501 S Yale Ave.

Voth #1-4

Tulsa OK

Job Ticket: 63718

DST#: 3

74135

ATTN: Larry Nicholson

Test Start: 2017.04.19 @ 10:02:15

GENERAL INFORMATION:

Formation: **I-J**
 Deviated: **No** Whipstock: **ft (KB)** Test Type: **Conventional Bottom Hole (Reset)**
 Time Tool Opened: **12:30:00** Tester: **Mike Roberts**
 Time Test Ended: **18:26:30** Unit No: **81**
Interval: 4234.00 ft (KB) To 4286.00 ft (KB) (TVD) Reference Elevations: **3050.00 ft (KB)**
 Total Depth: **4286.00 ft (KB) (TVD)** **3040.00 ft (CF)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **10.00 ft**

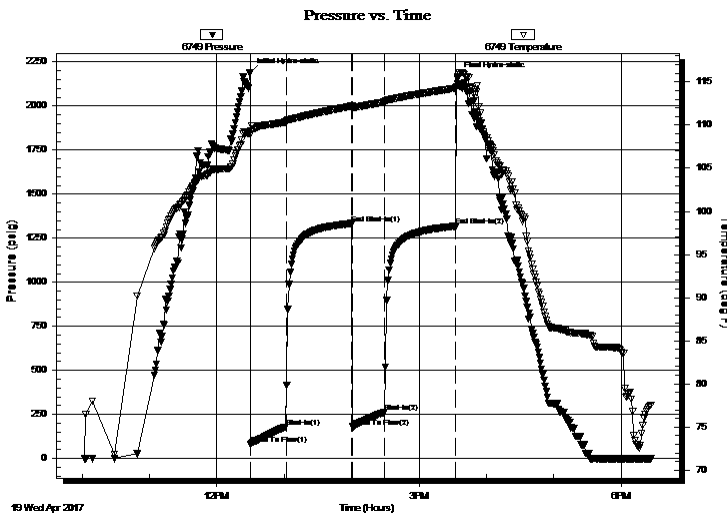
Serial #: 6749

Outside

Press@RunDepth: **262.99 psig @ 4281.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2017.04.19** End Date: **2017.04.19** Last Calib.: **2017.04.19**
 Start Time: **10:02:15** End Time: **18:26:30** Time On Btm: **2017.04.19 @ 12:29:30**
 Time Off Btm: **2017.04.19 @ 15:34:00**

TEST COMMENT: IF:BOB in 5 min.
 IS:Built to 1" blow died back to weak surface blow
 FF:BOB in 6 min.
 FS:BOB in 43 min. gas to surface at 60 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2191.17	109.28	Initial Hydro-static
1	80.60	108.85	Open To Flow (1)
32	179.78	110.35	Shut-In(1)
91	1333.74	112.21	End Shut-In(1)
92	180.01	111.94	Open To Flow (2)
120	262.99	112.68	Shut-In(2)
184	1318.18	114.27	End Shut-In(2)
185	2165.56	114.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GlP= 1736	0.00
62.00	gco 30%g 70%o	0.87
186.00	gco 20%g 80%o	2.61
124.00	ocgm 5%o 45%g 50%m	1.74
124.00	w cmog 5%w 15%m 30%g 50%o	1.74
124.00	ocgw m 5%o 5%g 30%w 60%m	1.74

Gas Rates

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

* Recovery from multiple tests



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Voth #1-4

Job Ticket: 63718

DST#: 3

Test Start: 2017.04.19 @ 10:02:15

GENERAL INFORMATION:

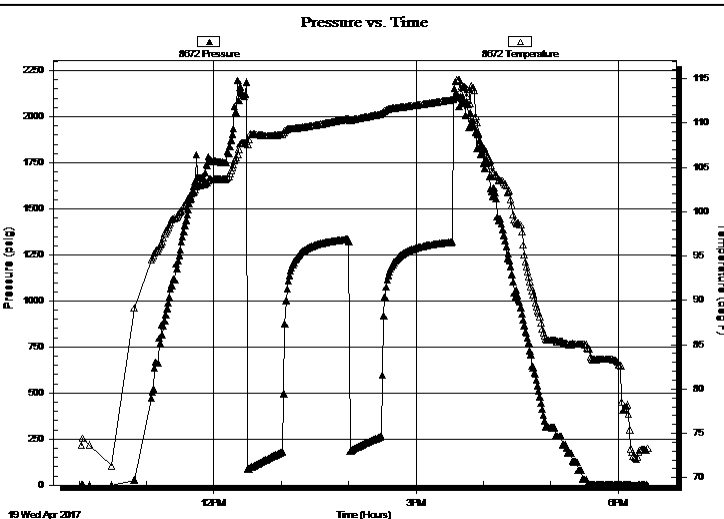
Formation: **I-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:30:00
Time Test Ended: 18:26:30
Interval: **4234.00 ft (KB) To 4286.00 ft (KB) (TVD)**
Total Depth: 4286.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 3050.00 ft (KB)
3040.00 ft (CF)
KB to GR/CF: 10.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Mike Roberts
Unit No: 81

Serial #: 8672

Inside

Press@RunDepth: psig @ 4281.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.04.19 End Date: 2017.04.19 Last Calib.: 1899.12.30
Start Time: 10:02:15 End Time: 18:26:15 Time On Btm:
Time Off Btm:

TEST COMMENT: IF:BOB in 5 min.
IS:Built to 1" blow died back to weak surface blow
FF:BOB in 6 min.
FS:BOB in 43 min. gas to surface at 60 min



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	Glp= 1736	0.00
62.00	gco 30%g 70%o	0.87
186.00	gco 20%g 80%o	2.61
124.00	ocgm 5%o 45%g 50%m	1.74
124.00	w cmog 5%w 15%m 30%g 50%o	1.74
124.00	ocgw m 5%o 5%g 30%w 60%m	1.74

Gas Rates

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

* Recovery from multiple tests



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FLUID SUMMARY

Culbreath Oil And Gas Company

4-12s-32w Logan Co KS

3501 S Yale Ave.
Tulsa OK
74135

Voth #1-4

Job Ticket: 63718

DST#: 3

ATTN: Larry Nicholson

Test Start: 2017.04.19 @ 10:02:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

29000 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
0.00	Glp= 1736	0.000
62.00	gco 30%g 70%o	0.870
186.00	gco 20%g 80%o	2.609
124.00	ocgm 5%o 45%g 50%m	1.739
124.00	w cmog 5%w 15%m 30%g 50%o	1.739
124.00	ocgw m 5%o 5%g 30%w 60%m	1.739

Total Length: 620.00 ft Total Volume: 8.696 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

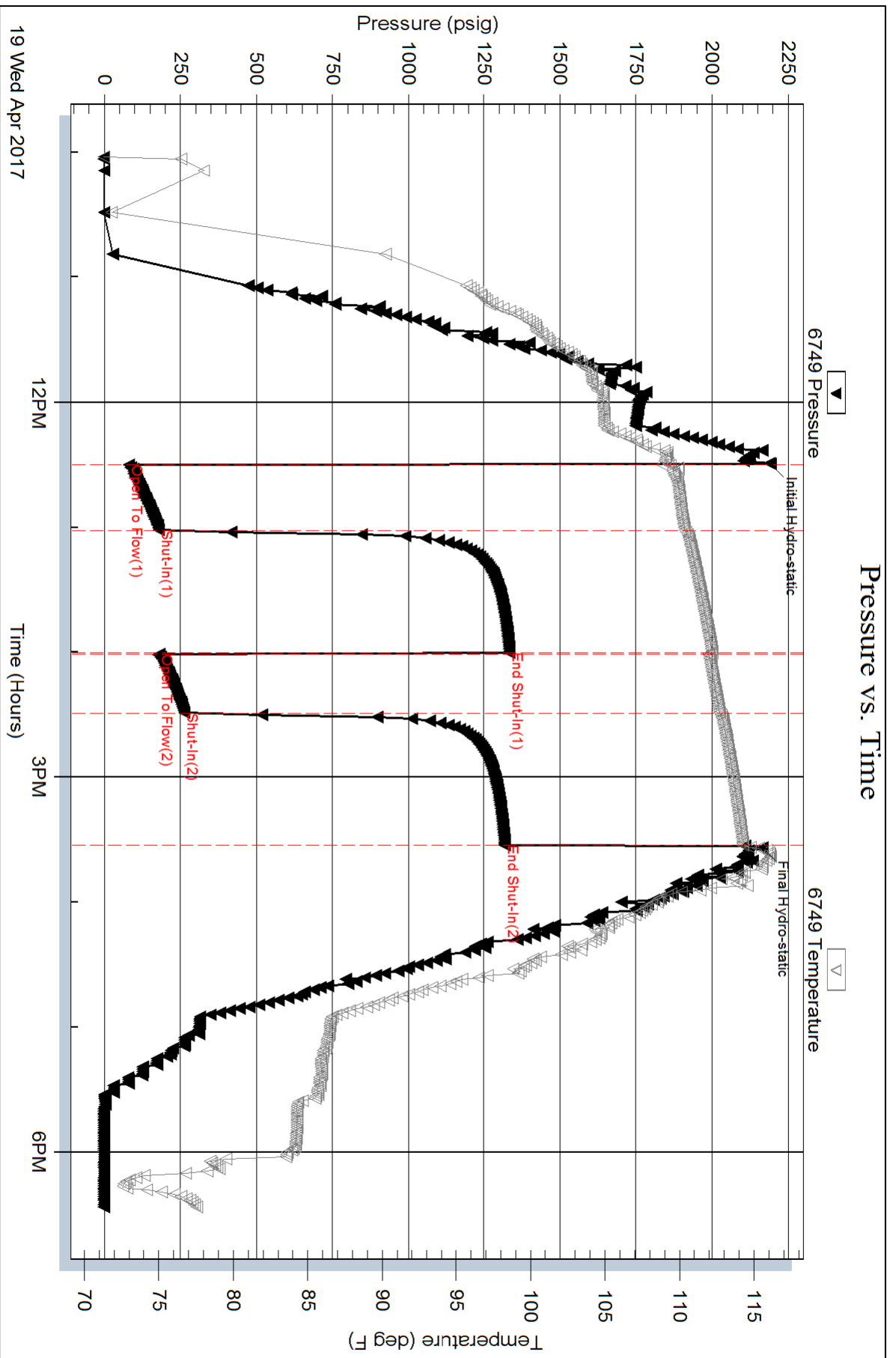
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API= 40@ 60

RW= .228 @ 85.8= 29,000 ppm



Serial #: 8672

Inside

Culbreath Oil And Gas Company

Voith #1-4

DST Test Number: 3

