



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Red Oak Energy, Inc
7701 E Kellogg DR.
STE 710
Wichita KS, 67207-1738
ATTN: Sean Deenihan

1-14s-33w Logan Co, KS

Norma Jean 1-1

Job Ticket: 58533

DST#: 1

Test Start: 2015.03.02 @ 13:55:00

GENERAL INFORMATION:

Formation: **Kansas City 'I'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:40:15

Time Test Ended: 22:17:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jace McKinney

Unit No: 75

Interval: 3995.00 ft (KB) To 4061.00 ft (KB) (TVD)

Total Depth: 4061.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2862.00 ft (KB)

2852.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8675

Inside

Press @ Run Depth: 221.42 psig @ 4001.00 ft (KB)

Start Date: 2015.03.02

End Date: 2015.03.02

Start Time: 13:55:15

End Time: 22:17:30

Capacity: 8000.00 psig

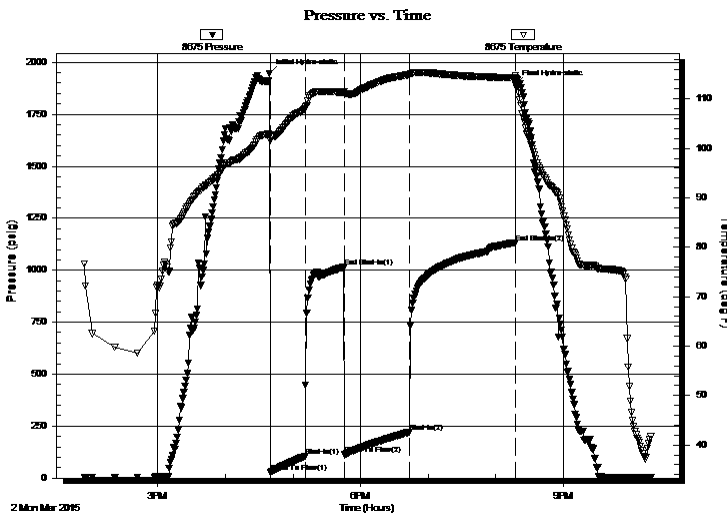
Last Calib.: 2015.03.02

Time On Btm: 2015.03.02 @ 16:39:15

Time Off Btm: 2015.03.02 @ 20:17:30

TEST COMMENT: B.O.B. in 13 1/2" min.
Bled off for 5 min, Built to 1" return blow
B.O.B. in 20 min.
Bled off for 5 min, Built to 1", dead after 80 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1947.21	102.71	Initial Hydro-static
1	27.32	101.60	Open To Flow (1)
32	104.58	108.09	Shut-In(1)
67	1016.36	111.36	End Shut-In(1)
67	113.01	110.98	Open To Flow (2)
124	221.42	114.92	Shut-In(2)
218	1132.60	114.25	End Shut-In(2)
219	1894.43	114.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% Oil	0.14
120.00	mcw with oil scum 40%M 60%W	1.68
315.00	100% W	4.42

Gas Rates

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



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Job Ticket: 58533

DST#: 1

Test Start: 2015.03.02 @ 13:55:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 7.20 in³
Resistivity: ohm.m
Salinity: 5000.00 ppm
Filter Cake: 1.00 inches

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

Oil API: 33 deg API
Water Salinity: 53000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% Oil	0.140
120.00	mcw with oil scum 40%M 60%W	1.683
315.00	100% W	4.419

Total Length: 445.00 ft Total Volume: 6.242 bbl

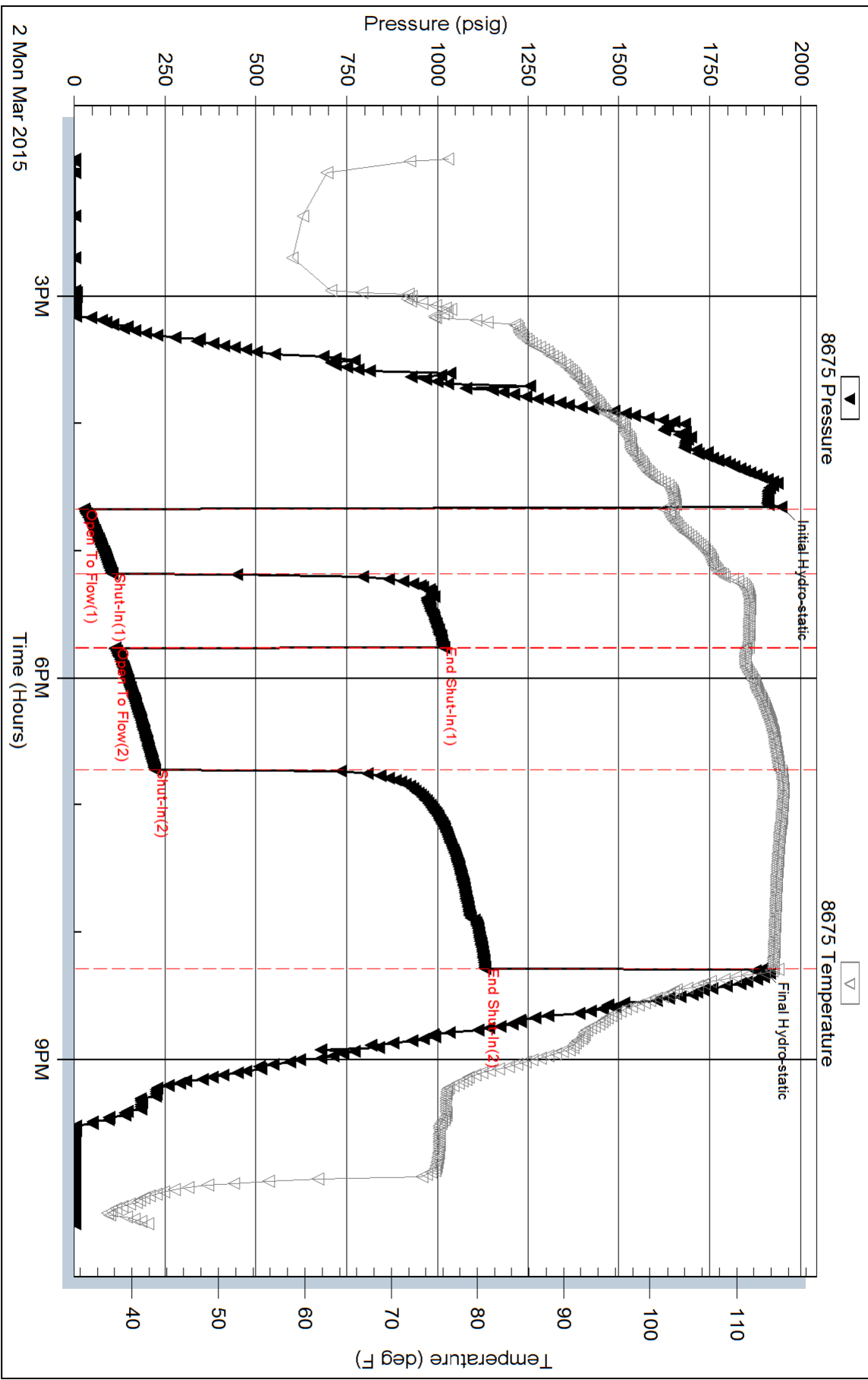
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: API: 31 @ 40 F = 33

RW: .35 @ 40 F= 53,000

Pressure vs. Time





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Job Ticket: 58534 **DST#: 2**

Test Start: 2015.03.03 @ 15:05:00

GENERAL INFORMATION:

Formation: **Kansas City ' L&M'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:03:15

Time Test Ended: 22:18:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

Interval: 4116.00 ft (KB) To 4178.00 ft (KB) (TVD)

Reference Elevations: 2862.00 ft (KB)

Total Depth: 4178.00 ft (KB) (TVD)

2852.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8675

Inside

Press @ Run Depth: 989.45 psig @ 4118.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.03.03

End Date: 2015.03.03

Last Calib.: 2015.03.03

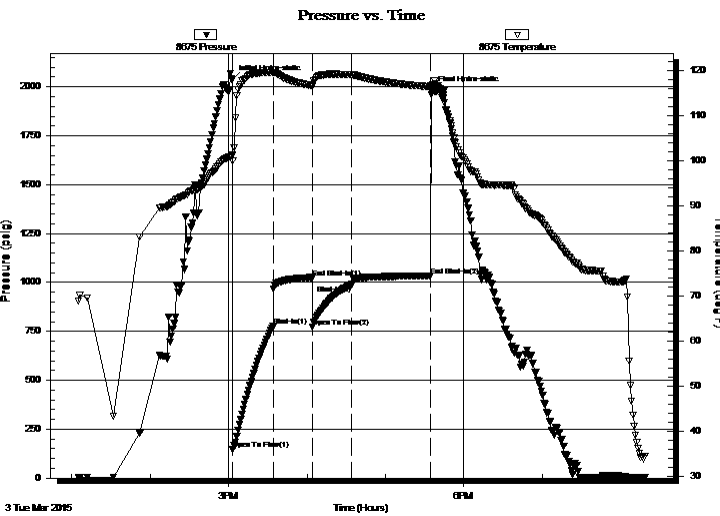
Start Time: 13:05:15

End Time: 20:18:30

Time On Btm: 2015.03.03 @ 15:03:00

Time Off Btm: 2015.03.03 @ 17:34:45

TEST COMMENT: B.O.B. in 1 min.
 Bled off for 5 min, Built to 1" return blow
 B.O.B. in 2 min.
 Bled off for 5 min, Built to surface in 20 min, dead after 30 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2036.34	101.23	Initial Hydro-static
1	146.90	99.98	Open To Flow (1)
31	774.71	119.52	Shut-In(1)
61	1025.56	116.69	End Shut-In(1)
62	771.50	116.50	Open To Flow (2)
92	989.45	119.03	Shut-In(2)
151	1034.32	116.42	End Shut-In(2)
152	1981.58	116.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
360.00	mcw 40%M 60%W	5.05
315.00	mcw 20%M 80%W	4.42
1449.00	100% Water	20.33

* Recovery from multiple tests

Gas Rates

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



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Job Ticket: 58534

DST#: 2

Test Start: 2015.03.03 @ 15:05:00

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:

53000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
360.00	mcw 40%M 60%W	5.050
315.00	mcw 20%M 80%W	4.419
1449.00	100% Water	20.326

Total Length: 2124.00 ft Total Volume: 29.795 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

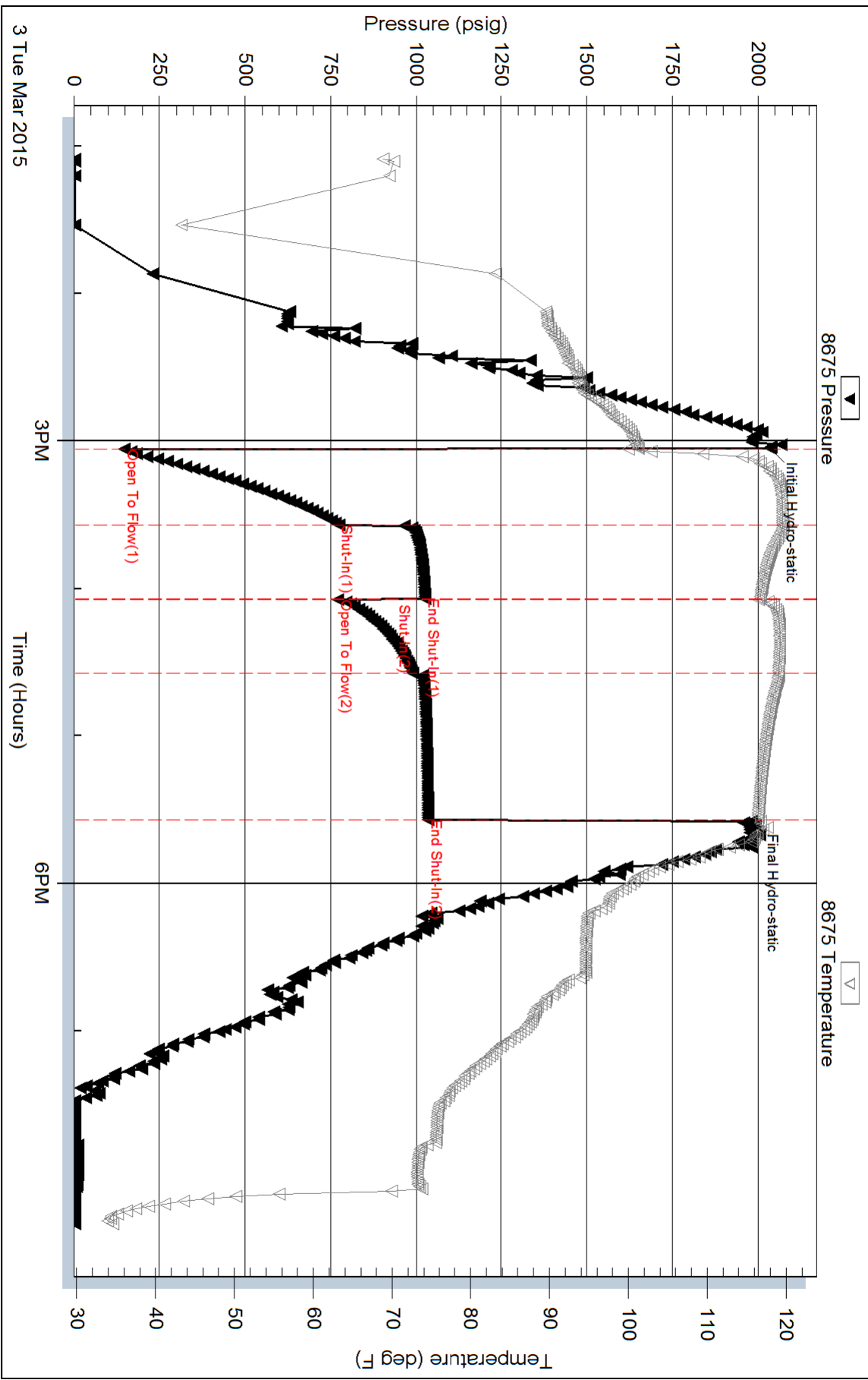
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .35 @ 40 F = 53000

Pressure vs. Time





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Job Ticket: 58535 **DST#: 3**

Test Start: 2015.03.05 @ 05:25:00

GENERAL INFORMATION:

Formation: **Johnson Zone**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:06:45
 Time Test Ended: 12:18:15
 Interval: **4400.00 ft (KB) To 4476.00 ft (KB) (TVD)**
 Total Depth: 4476.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jace McKinney
 Unit No: 75
 Reference Elevations: 2862.00 ft (KB)
 2852.00 ft (CF)
 KB to GR/CF: 10.00 ft

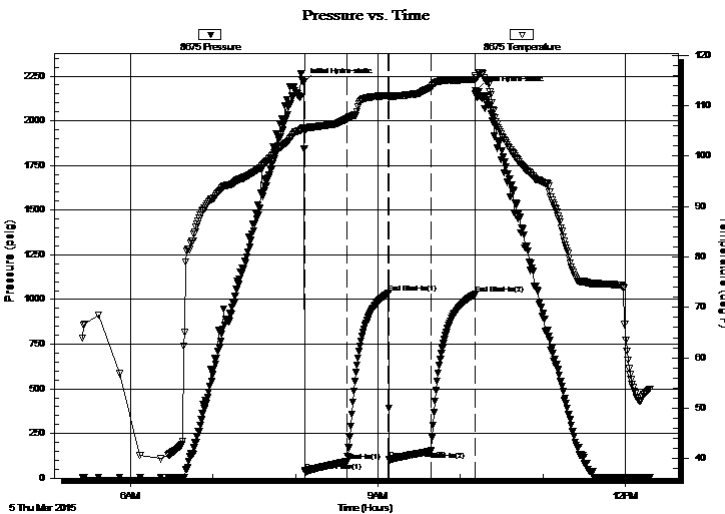
Serial #: 8675

Inside

Press@RunDepth: 150.48 psig @ 4415.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.03.05 End Date: 2015.03.05 Last Calib.: 2015.03.05
 Start Time: 05:25:15 End Time: 12:18:15 Time On Btm: 2015.03.05 @ 08:06:15
 Time Off Btm: 2015.03.05 @ 10:11:15

TEST COMMENT: B.O.B. in 19 min.
 Bled off for 5 min, No return blow
 Built to 9" blow
 Bled off for 5 min, No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2215.15	105.63	Initial Hydro-static
1	41.00	104.92	Open To Flow (1)
32	91.53	107.38	Shut-In(1)
62	1034.62	111.94	End Shut-In(1)
62	104.49	111.60	Open To Flow (2)
93	150.48	113.63	Shut-In(2)
125	1027.88	115.13	End Shut-In(2)
125	2168.10	115.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
146.00	100% Mud	2.05
126.00	w cm 10%W 90%M	1.77

* Recovery from multiple tests

Gas Rates

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



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Job Ticket: 58535

DST#: 3

Test Start: 2015.03.05 @ 05:25:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 10.19 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: deg API
Water Salinity: 11000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
146.00	100% Mud	2.048
126.00	w cm 10%W 90%M	1.767

Total Length: 272.00 ft Total Volume: 3.815 bbl

Num Fluid Samples: 0

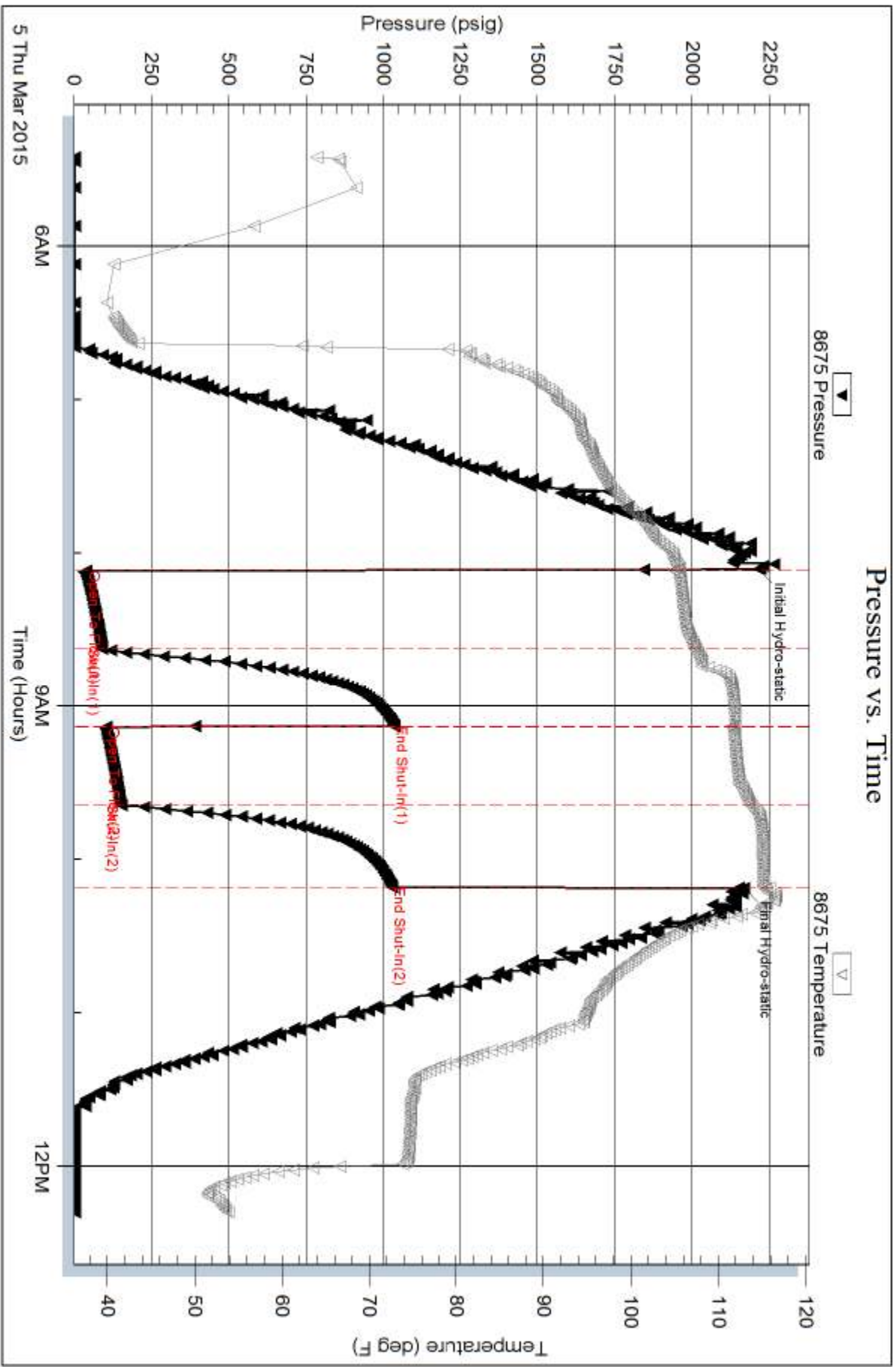
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .75 @ 55 F = 11,000





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Job Ticket: 58536 **DST#: 4**
 Test Start: 2015.03.06 @ 10:45:00

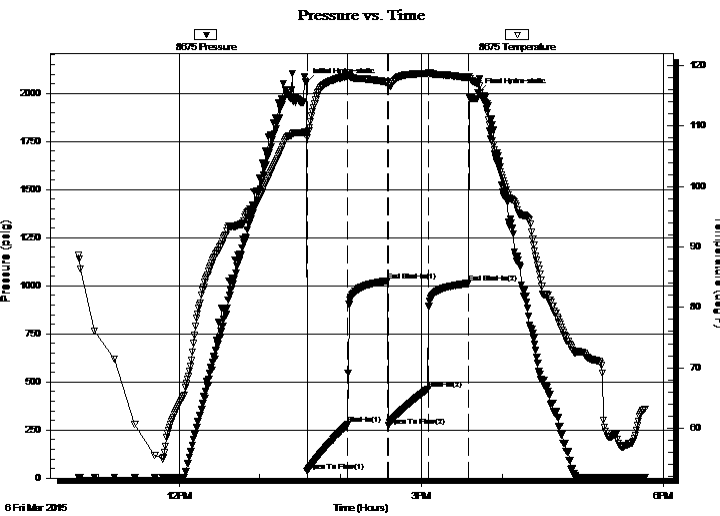
GENERAL INFORMATION:

Formation: **Kansas City 'K'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:35:00
 Time Test Ended: 17:46:00
 Interval: **4086.00 ft (KB) To 4110.00 ft (KB) (TVD)**
 Total Depth: 4579.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Straddle (Reset)
 Tester: Jace McKinney
 Unit No: 75
 Reference Elevations: 2862.00 ft (KB)
 2852.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8675

Press @ Run Depth: 463.40 psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.03.06 End Date: 2015.03.06 Last Calib.: 2015.03.06
 Start Time: 10:45:15 End Time: 17:46:00 Time On Btm: 2015.03.06 @ 13:34:45
 Time Off Btm: 2015.03.06 @ 15:42:15

TEST COMMENT: B.O.B. in 4 min.
 Bled off for 5 min, No return blow
 B.O.B. in 6 min.
 Bled off for 5 min, No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2056.49	109.00	Initial Hydro-static
1	36.98	108.07	Open To Flow (1)
31	277.92	118.23	Shut-In(1)
61	1025.82	117.21	End Shut-In(1)
61	272.07	116.62	Open To Flow (2)
91	463.40	118.70	Shut-In(2)
121	1012.75	117.94	End Shut-In(2)
128	2002.40	116.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil	0.07
204.00	w cm 40%W 60%M With oil scum	2.86
315.00	mcw 20%M 80%W	4.42
441.00	100% Water	6.19

* Recovery from multiple tests

Gas Rates

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



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Job Ticket: 58536

DST#: 4

Test Start: 2015.03.06 @ 10:45:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 7.99 in³
Resistivity: ohm.m
Salinity: 8000.00 ppm
Filter Cake: 1.00 inches

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

Oil API: deg API
Water Salinity: 68000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Clean Oil	0.070
204.00	w cm 40%W 60%M With oil scum	2.862
315.00	mcw 20%M 80%W	4.419
441.00	100% Water	6.186

Total Length: 965.00 ft Total Volume: 13.537 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .18 @ 65 F = 68,000

