



DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company**

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

Knop #1-27

27-19s-12w Barton

Start Date: 2017.07.18 @ 08:30:00

End Date: 2017.07.19 @ 03:03:00

Job Ticket #: 01179 DST #: 2

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2017.07.19 @ 03:19:00



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DST#: 2

Test Start: 2017.07.18 @ 08:30:00

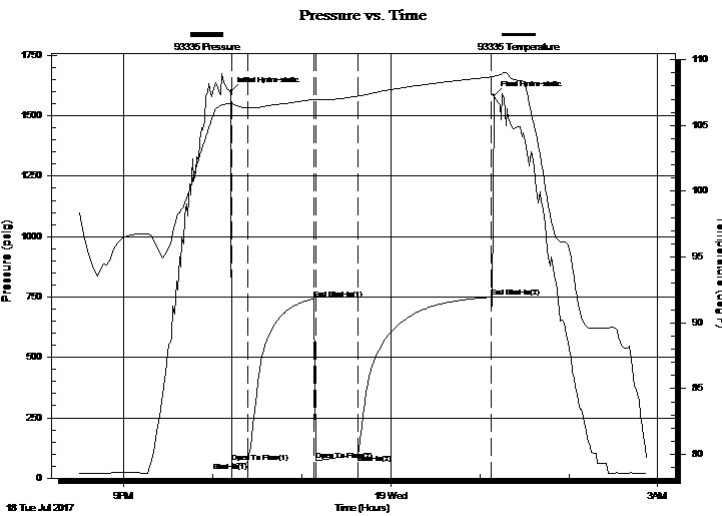
GENERAL INFORMATION:

Formation: **Kansas City "I&J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:13:00
 Time Test Ended: 03:03:00
 Interval: **3294.00 ft (KB) To 3330.00 ft (KB) (TVD)**
 Total Depth: 3330.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1832.00 ft (KB)
 1823.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 93335 Outside

Press@RunDepth: 749.26 psig @ 3325.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2017.07.18 End Date: 2017.07.19 Last Calib.: 2017.07.19
 Start Time: 20:30:00 End Time: 02:52:59 Time On Btm: 2017.07.18 @ 22:12:29
 Time Off Btm: 2017.07.19 @ 01:09:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 2 1/2 minutes
 1st Shut-In 45 Minutes no blow back
 2nd opening 30 Minutes good blow built to the bottom of a 5 gallon bucket in 1 minute
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.19	106.70	Initial Hydro-static
1	67.56	106.71	Open To Flow (1)
12	64.22	106.34	Shut-In(1)
57	742.78	106.98	End Shut-In(1)
58	73.86	106.99	Open To Flow (2)
86	97.10	107.23	Shut-In(2)
176	749.26	108.69	End Shut-In(2)
178	1583.81	108.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1200 feet of gas in the pipe	0.00
80.00	mud and w ater cut gassy oil	1.12
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.00
30.00	Oil ans gas cut muddy w ater	0.42
0.00	5%Gas 15%oil 5% Mud 75% Water	0.00
0.00	Chlorides 58000	0.00

Gas Rates

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



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DST#: 2

Test Start: 2017.07.18 @ 08:30:00

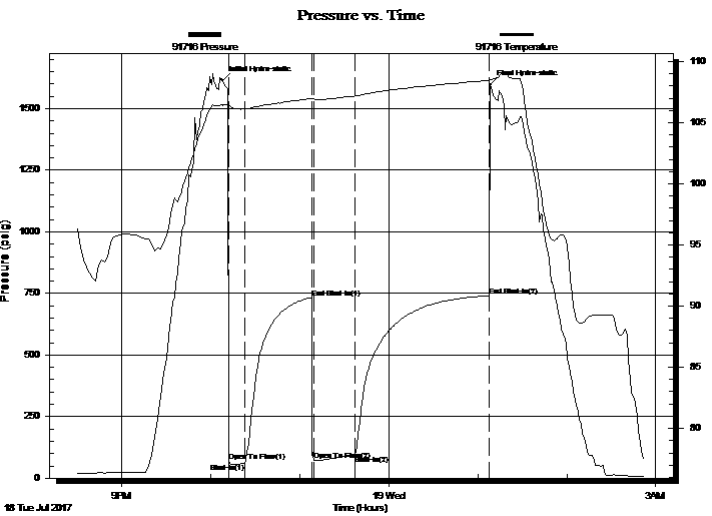
GENERAL INFORMATION:

Formation: **Kansas City "I&J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:13:00
 Time Test Ended: 03:03:00
 Interval: **3294.00 ft (KB) To 3330.00 ft (KB) (TVD)**
 Total Depth: 3330.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1832.00 ft (KB)
 1823.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 91716 Inside

Press@RunDepth: 741.16 psig @ 3325.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2017.07.18 End Date: 2017.07.19 Last Calib.: 1899.12.30
 Start Time: 20:30:00 End Time: 02:52:30 Time On Btm: 2017.07.18 @ 22:08:00
 Time Off Btm: 2017.07.19 @ 01:08:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 2 1/2 minutes
 1st Shut-In 45 Minutes no blow back
 2nd opening 30 Minutes good blow built to the bottom of a 5 gallon bucket in 1 minute
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1615.09	106.42	Initial Hydro-static
5	68.54	106.47	Open To Flow (1)
15	60.21	106.12	Shut-In(1)
60	733.38	106.98	End Shut-In(1)
62	71.53	106.92	Open To Flow (2)
90	93.39	107.18	Shut-In(2)
180	741.16	108.46	End Shut-In(2)
181	1596.82	108.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1200 feet of gas in the pipe	0.00
80.00	mud and water cut gassy oil	1.12
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.00
30.00	Oil ans gas cut muddy w ater	0.42
0.00	5%Gas 15%oil 5% Mud 75% Water	0.00
0.00	Chlorides 58000	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Edison Operating Company

27-19s-12w Barton

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

Knop #1-27

Job Ticket: 01179

DST#:2

ATTN: Derek Patterson

Test Start: 2017.07.18 @ 08:30:00

Tool Information

Drill Pipe:	Length: 3298.00 ft	Diameter: 3.80 inches	Volume: 46.26 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 46.26 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3294.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	63.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3272.00	
Hydraulic tool	5.00			3277.00	
Jars	5.00			3282.00	
Safety Joint	2.00			3284.00	
Top Packer	5.00			3289.00	
Packer	5.00			3294.00	27.00 Bottom Of Top Packer
Anchor	31.00			3325.00	
Recorder	0.00	91716	Inside	3325.00	
Recorder	0.00	093335	Outside	3325.00	
Bullnose	5.00			3330.00	36.00 Anchor Tool
Total Tool Length:	63.00				



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FLUID SUMMARY

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DST#:2

ATTN: Derek Patterson

Test Start: 2017.07.18 @ 08:30:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 67.00 sec/qt
Water Loss: 9.20 in³
Resistivity: ohm.m
Salinity: 9600.00 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: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1200 feet of gas in the pipe	0.000
80.00	mud and water cut gassy oil	1.122
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.000
30.00	Oil ans gas cut muddy water	0.421
0.00	5%Gas 15%oil 5% Mud 75% Water	0.000
0.00	Chlorides 58000	0.000

Total Length: 110.00 ft Total Volume: 1.543 bbl

Num Fluid Samples: 0

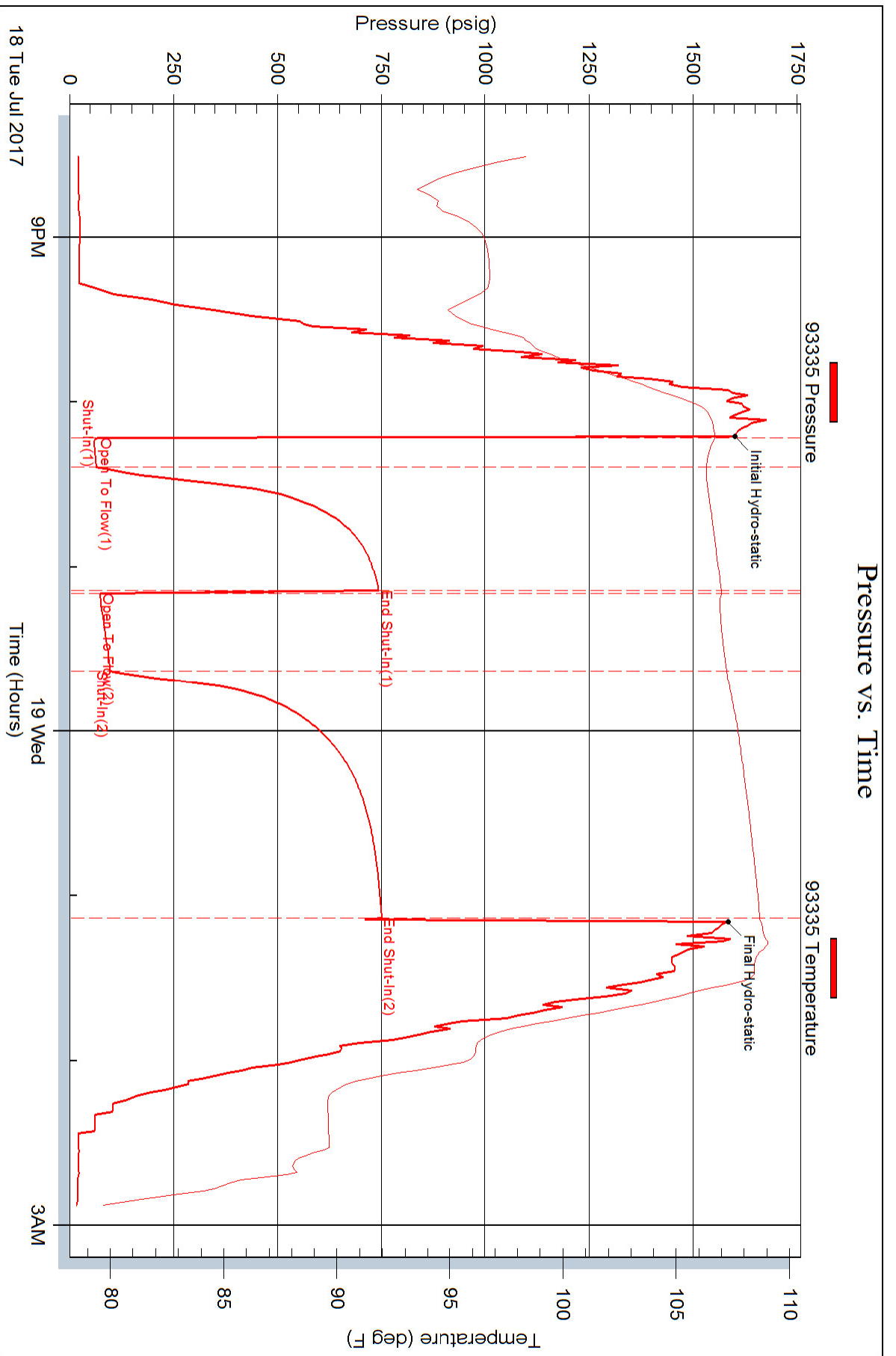
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Pressure vs. Time

