



DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.07 @ 10:27:00

End Date: 2018.09.07 @ 16:46:00

Job Ticket #: 01011 DST #: 5

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

Printed: 2018.09.07 @ 17:01:30

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 5
Viola
2018.09.07



DRILL STEM TEST REPORT

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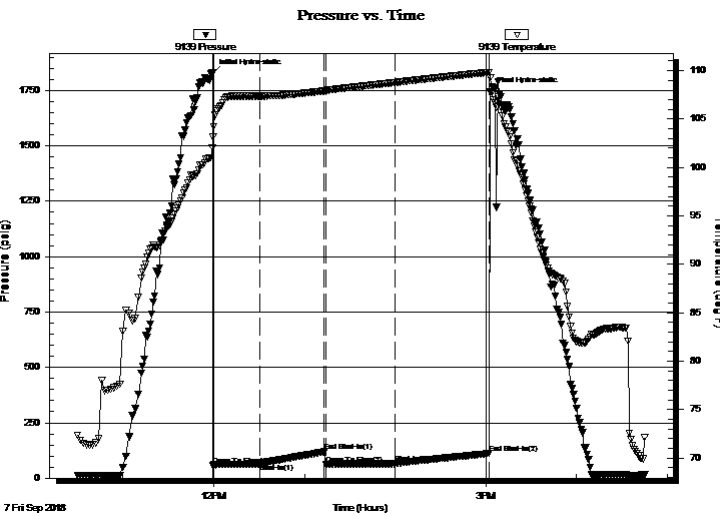
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 12:00:00 Tester: Gene Budig
 Time Test Ended: 16:46:00 Unit No: 1
 Interval: **3637.00 ft (KB) To 3665.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3665.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 111.25 psig @ 3660.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.07 End Date: 2018.09.07 Last Calib.: 2018.09.07
 Start Time: 10:27:00 End Time: 16:45:00 Time On Btm: 2018.09.07 @ 11:59:00
 Time Off Btm: 2018.09.07 @ 15:03:00

TEST COMMENT: 1st Opening 30 Minutes weak steady 3/4 inch blow through out
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak steady surface blow through out
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1827.89	102.06	Initial Hydro-static
1	59.00	103.15	Open To Flow (1)
32	65.14	107.37	Shut-In(1)
74	119.33	107.90	End Shut-In(1)
75	62.06	107.97	Open To Flow (2)
121	66.07	108.79	Shut-In(2)
183	111.25	109.83	End Shut-In(2)
184	1746.03	109.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	very slightly oil and gas cut mud	0.77
0.00	3%gAS 2%oIL 95% Mud	0.00

Gas Rates

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



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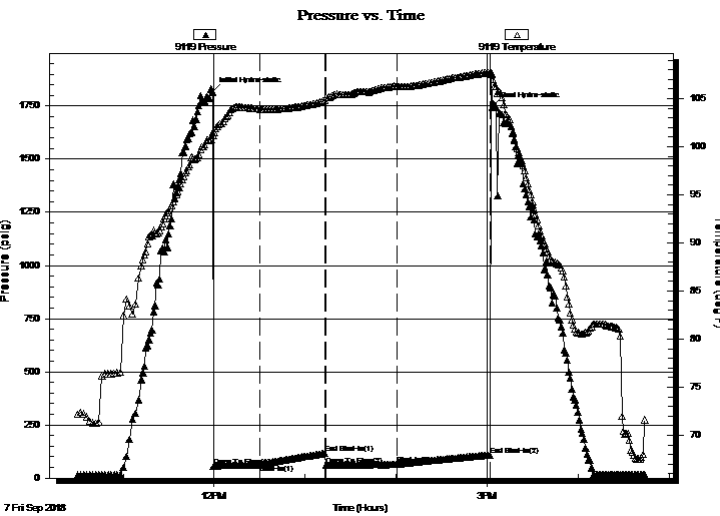
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 Time Test Ended: 16:46:00 Unit No: 1
Interval: 3637.00 ft (KB) To 3665.00 ft (KB) (TVD)
 Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3665.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 108.43 psig @ 3660.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.07 End Date: 2018.09.07 Last Calib.: 2018.09.07
 Start Time: 10:27:00 End Time: 16:44:30 Time On Btm: 2018.09.07 @ 11:59:00
 Time Off Btm: 2018.09.07 @ 15:03:30

TEST COMMENT: 1st Opening 30 Minutes weak steady 3/4 inch blow through out
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak steady surface blow through out
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1815.35	101.46	Initial Hydro-static
1	55.98	101.14	Open To Flow (1)
31	63.60	103.92	Shut-In(1)
74	116.99	104.83	End Shut-In(1)
75	58.78	105.07	Open To Flow (2)
122	65.81	106.23	Shut-In(2)
183	108.43	107.72	End Shut-In(2)
185	1745.42	107.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	very slightly oil and gas cut mud	0.77
0.00	3%gAS 2%oIL 95% Mud	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

Tool Information

Drill Pipe:	Length: 3612.00 ft	Diameter: 3.80 inches	Volume: 50.67 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:	78000.00 lb
			<u>Total Volume: 50.67 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3637.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	28.00 ft				
Tool Length:	58.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Hit a bridge 400 feet off bottom opened the tool to get through hit one at 350 never opened the tool hit 4-6 more going to bottom slid tool 6 feet to bottom

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3612.00	
Hydraulic tool	5.00			3617.00	
Jars	5.00			3622.00	
Safety Joint	5.00			3627.00	
Packer	5.00			3632.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3637.00	
Anchor	23.00			3660.00	
Recorder	0.00	9119	Inside	3660.00	
Recorder	0.00	9139	Outside	3660.00	
Bullnose	5.00			3665.00	28.00 Bottom Packers & Anchor
Total Tool Length:	58.00				



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FLUID SUMMARY

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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:	ppm
Viscosity: 42.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 11000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	very slightly oil and gas cut mud	0.772
0.00	3%gAS 2%oL 95% Mud	0.000

Total Length: 55.00 ft Total Volume: 0.772 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

