



DRILL STEM TEST REPORT

Prepared For: **Thoroughbred Associates, LLC**

8100 E 22nd St.
Bldg. 600 Ste F
Wichita, KS 67226

ATTN: Rob Patton

Com Co.21-32S-19W

Tunnel Walk #1

Start Date: 2001.12.18 @ 00:57:06

End Date: 2001.12.18 @ 12:05:06

Job Ticket #: 15365 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



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TESTING, INC.**

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GENERAL INFORMATION:

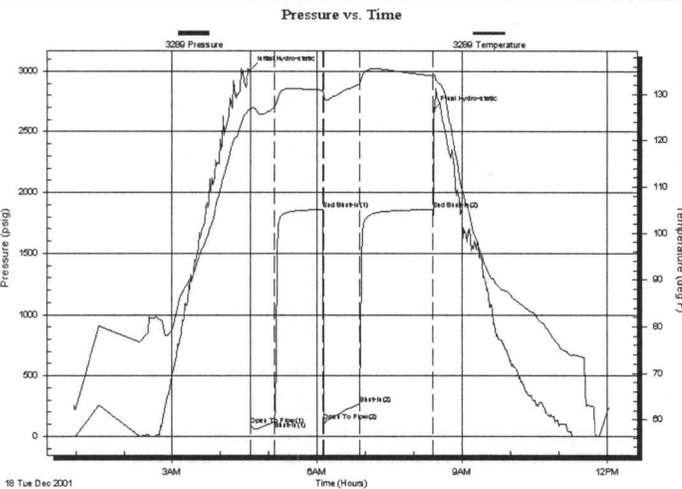
Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:37:36
 Time Test Ended: 12:05:06
 Test Type: Conventional Straddle
 Tester: Lanny Saloga
 Unit No: 14
 Interval: **5796.00 ft (KB) To 5816.00 ft (KB) (TVD)**
 Total Depth: 5919.00 ft (KB) (TVD)
 Reference Elevations: 1981.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 3289

Inside

Press@RunDepth: 269.71 psig @ 5798.00 ft (KB) Capacity: 7000.00 psig
 Start Date: 2001.12.18 End Date: 2001.12.18 Last Calib.: 1899.12.30
 Start Time: 00:57:11 End Time: 12:05:06 Time On Btm: 2001.12.18 @ 04:37:21
 Time Off Btm: 2001.12.18 @ 08:25:05

TEST COMMENT: Strong OBB in 1 min. GTS in 15 min. See flow chart. I.F.P.
 8" blow-back. I.S.I.P.
 See flow chart. F.F.P. "Gas burned."
 8" blow-back. F.S.I.P.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3011.28	126.78	Initial Hydro-static
1	91.11	126.43	Open To Flow (1)
30	123.31	127.30	Shut-In (1)
90	1860.05	130.85	End Shut-In (1)
91	122.61	129.50	Open To Flow (2)
135	269.71	132.19	Shut-In (2)
227	1859.99	133.96	End Shut-In (2)
228	2687.40	134.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	M&Wc Gassy Oil 18%G 35%O 17%W 30%M	0.59
185.00	Gassy McOil 53%G 37%O 10%M	2.00
380.00	Cln Gassy Oil 30%G 70%O 44 Gravity	5.33
0.00	5105 ft. GIP	0.00
0.00	RW 0.34 at 65 F. 22,000 PPM.	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	4.00	6.89
Last Gas Rate	0.13	22.00	13.62
Max. Gas Rate	0.13	22.00	13.62



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TOOL DIAGRAM

Thoroughbred Associates, LLC

Tunnel Walk #1

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ATTN: Rob Patton

Com Co.21-32S-19W

Job Ticket: 15365

DST#: 1

Test Start: 2001.12.18 @ 00:57:06

Tool Information

Drill Pipe:	Length: 5605.00 ft	Diameter: 3.80 inches	Volume: 78.62 bbl	Tool Weight: 3300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 40000.00 lb
Drill Collar:	Length: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 4000.00 lb
			<u>Total Volume: 79.53 bbl</u>	Tool Chased: ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	5796.00 ft			Final 86000.00 lb
Depth to Bottom Packer:	5816.00 ft			
Interval between Packers:	20.00 ft			
Tool Length:	150.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			5770.00	
S.I. Tool	5.00			5775.00	
HMV	5.00			5780.00	
Jars	5.00			5785.00	
Safety Joint	2.00			5787.00	
Packer	4.00			5791.00	27.00 Bottom Of Top Packer
Packer	5.00			5796.00	
Stubb	1.00			5797.00	
Perforations	1.00			5798.00	
Recorder	0.00	3289	Inside	5798.00	
Perforations	10.00			5808.00	
Recorder	0.00	10242	Inside	5808.00	
Perforations	5.00			5813.00	
Blank Off Sub	0.00			5813.00	
T.C.	3.00			5816.00	20.00 Tool Interval
Packer	1.00			5817.00	
Stubb	1.00			5818.00	
Perforations	4.00			5822.00	
C.O. Sub	1.00			5823.00	
Blank Spacing	93.00			5916.00	
Recorder	0.00	13630	Below	5916.00	
C.O. Sub	1.00			5917.00	
Bullnose	2.00			5919.00	103.00 Bottom Packers & Anchor
Total Tool Length:	150.00				



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FLUID SUMMARY

Thoroughbred Associates, LLC

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ATTN: Rob Patton

Com Co.21-32S-19W

Job Ticket: 15365

DST#: 1

Test Start: 2001.12.18 @ 00:57:06

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 44 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 22000 ppm
Viscosity: 68.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.76 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 4000.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	M&WcGassyOil 18%G 35%O 17%W 30%M	0.590
185.00	Gassy McOil 53%G 37%O 10%M	2.003
380.00	Cln Gassy Oil 30%G 70%O 44 Gravity at	5.330
0.00	5105 ft. GIP	0.000
0.00	RW 0.34 at 65 F. 22,000 PPM.	0.000

Total Length: 685.00 ft Total Volume: 7.923 bbl

Num Fluid Samples: 1

Num Gas Bombs: 1

Serial #: 1

Laboratory Name: Caraway

Laboratory Location: Liberal KS

Recovery Comments:



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GAS RATES

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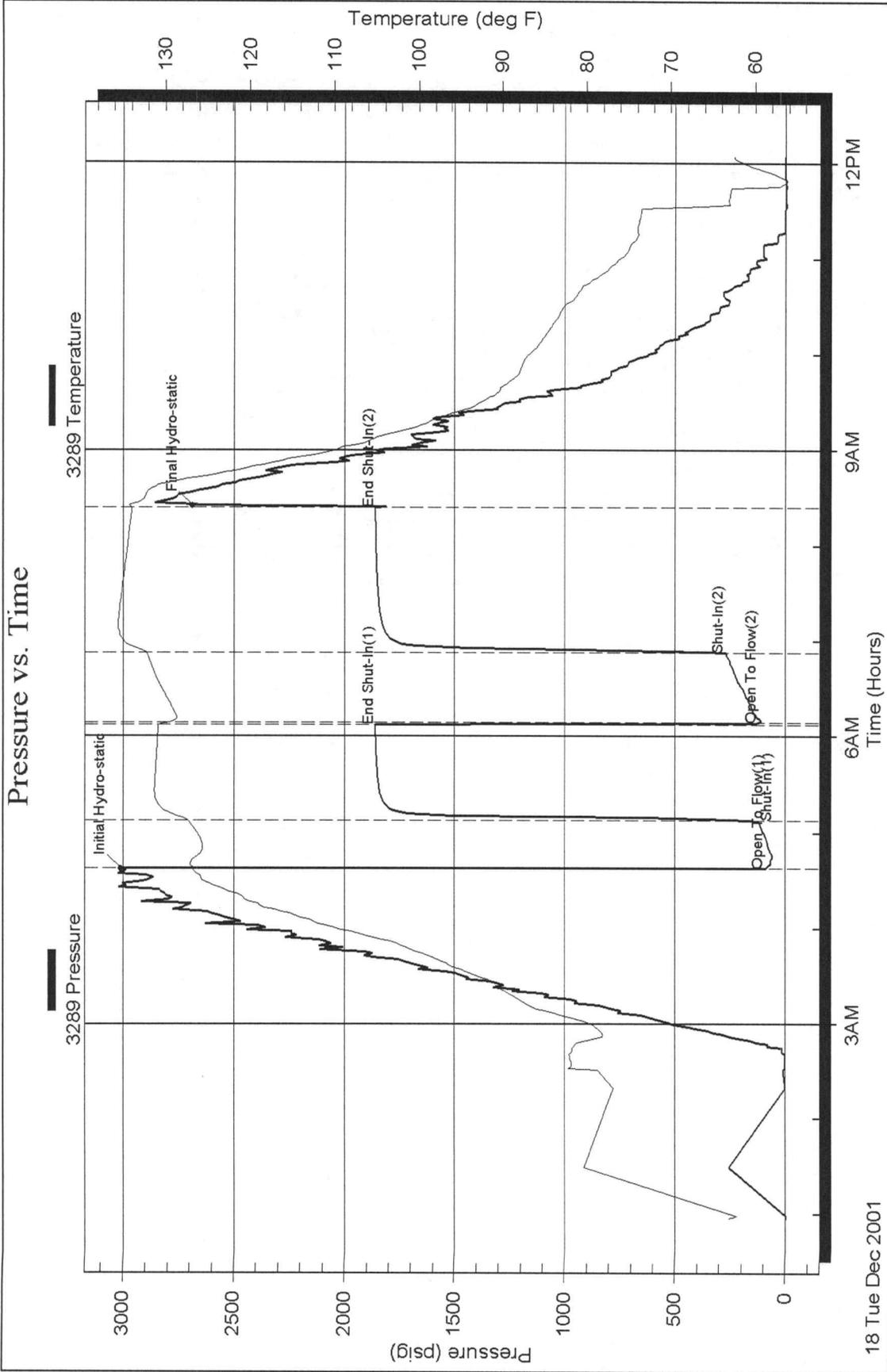
Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
1	20	0.13	4.00	6.89
1	20	0.13	4.00	6.89
1	20	0.13	4.00	6.89
1	30	0.13	10.00	9.13
2	10	0.13	10.00	9.13
2	20	0.13	16.00	11.38
2	30	0.13	22.00	13.62

Pressure vs. Time



NATURAL GAS ANALYSIS REPORT

Sampled by:

Trilobite Testing, Inc.
 Hays, Kansas
 Scott City, Kansas
 Phone: 800-728-5369
 Fax: 785-625-5620

Analyzed by:

Caraway Analytical, Inc
 P. O. Box 2137
 Liberal, Kansas 67905
 Phone: 620-624-5389
 Fax: 620-626-7108

Lab Number: 20016418	Analyzed: 12/19/01
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Sample From: Tunnel Walk #1 DST 1	Pressure:	
Producer: Thoroughbred Assoc.	Temperature:	

Date: 12/18/01	Location: 21-32-19
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Time:	County:	Comanche
Sampler: Lanny	State:	Kansas
Source:	Formation:	Viola

	Mole %	GPM
Helium	He: 0.045	0.000
Hydrogen	H2: 0.000	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 4.184	0.000
Carbon Dioxide	CO2: 0.078	0.000
Methane	C1: 68.637	0.000
Ethane	C2: 9.515	2.545
Propane	C3: 6.574	1.811
Iso Butane	iC4: 1.366	0.447
Normal Butane	nC4: 4.047	1.276
Iso Pentane	iC5: 1.231	0.450
Normal Pentane	nC5: 1.928	0.698
Hexanes Plus	C6+: 2.395	1.045

TOTAL: 100.000 8.273

Z Fact: 0.9948

SP.GR.: 0.8902

BTU (SAT): 1438.3 @ 14.73 psia

BTU (DRY): 1463.8 @ 14.73 psia

OCTANE RATING: 113.0

COMMENTS:

0.000