



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Herman L. Loeb, LLC.
P.O. Box 838
Lawrenceville, IL. 62439
ATTN: Jon Christensen

32-27s-18w Kiowa Co., Ks.
Naumann #2-32
Job Ticket: 54195 **DST#: 4**
Test Start: 2014.07.11 @ 06:27:28

GENERAL INFORMATION:

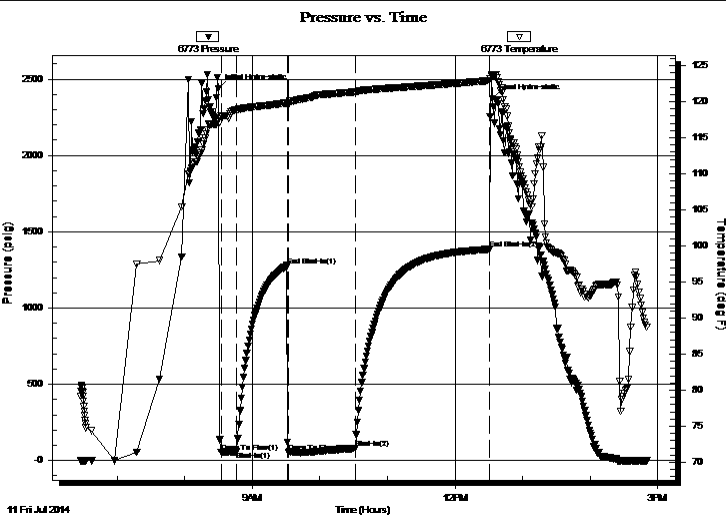
Formation: **Mississippi Chert**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 08:32:28
Time Test Ended: 14:50:58
Interval: **4764.00 ft (KB) To 4824.00 ft (KB) (TVD)**
Total Depth: 4824.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Matt Smith
Unit No: 53
Reference Elevations: 2223.00 ft (KB)
2210.00 ft (CF)
KB to GR/CF: 13.00 ft

Serial #: 6773

Outside

Press @ Run Depth: 79.99 psig @ 4765.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.07.11 End Date: 2014.07.11 Last Calib.: 2014.07.11
Start Time: 06:27:33 End Time: 14:50:57 Time On Btm: 2014.07.11 @ 08:30:13
Time Off Btm: 2014.07.11 @ 12:33:13

TEST COMMENT: IF: Strong blow . B.O.B. in 1 min.
IS: No blow .
FF: Strong blow . B.O.B. in 10 secs. G.T.S. in 4 mins. Gauged gas, see gas report.
FS: No blow .



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2436.73	117.39	Initial Hydro-static
3	53.26	118.06	Open To Flow (1)
16	57.50	118.87	Shut-In(1)
61	1277.86	119.83	End Shut-In(1)
63	54.93	119.71	Open To Flow (2)
121	79.99	121.33	Shut-In(2)
241	1384.91	122.90	End Shut-In(2)
243	2373.03	123.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOWCM 1%w 2%o12%g 85%m	0.30
20.00	GWCM 1%g 1%w 98%m w / trc oil	0.10
0.00	4674' G.I.P. 100%g	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	3.00	6.51
Last Gas Rate	0.13	17.00	11.75
Max. Gas Rate	0.13	17.00	11.75

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Herman L. Loeb, LLC.
P.O. Box 838
Lawrenceville, IL. 62439
ATTN: Jon Christensen

32-27s-18w Kiowa Co., Ks.
Naumann #2-32
Job Ticket: 54195 **DST#: 4**
Test Start: 2014.07.11 @ 06:27:28

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	9000 ppm
Viscosity: 66.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: 0.20 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOWCM 1%w 2%o12%g 85%m	0.295
20.00	GWCM 1%g 1%w 98%mw / trc oil	0.098
0.00	4674' G.I.P. 100%g	0.000

Total Length: 80.00 ft Total Volume: 0.393 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #: MAS/Pratt

Laboratory Name: Caraway Laboratory Location: Liberal, KS

Recovery Comments: Gas to surface, gauged gas and took gas sample.



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Herman L. Loeb, LLC.
P.O. Box 838
Lawrenceville, IL. 62439
ATTN: Jon Christensen

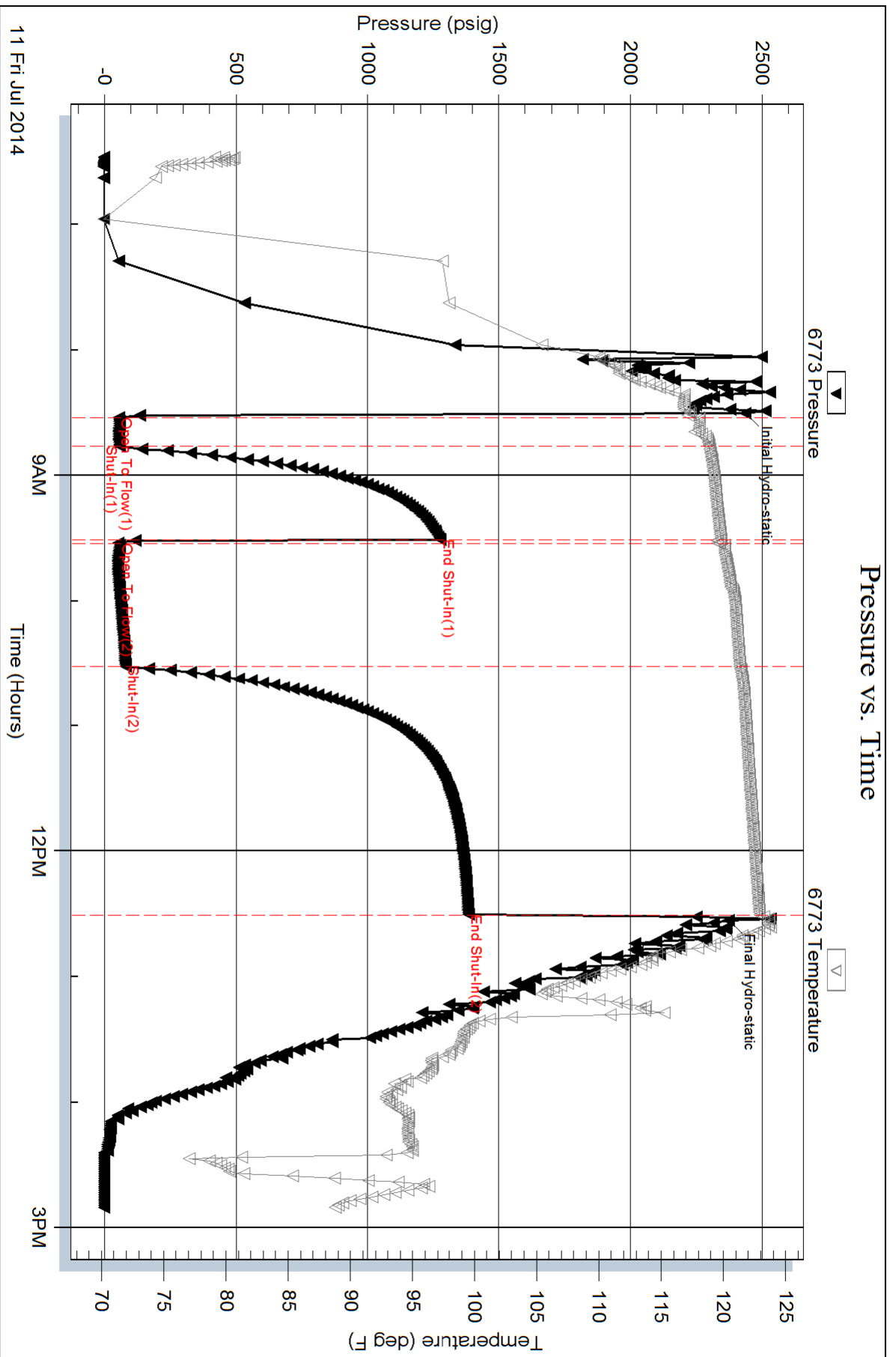
32-27s-18w Kiowa Co., Ks.
Naumann #2-32
Job Ticket: 54195 **DST#: 4**
Test Start: 2014.07.11 @ 06:27:28

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	10	0.13	3.00	6.51
2	20	0.13	4.50	7.07
2	30	0.13	8.00	8.38
2	40	0.13	11.00	9.51
2	50	0.13	15.00	11.00
2	60	0.13	17.00	11.75



Serial #: 6719

Inside

Herrman L. Loeb, LLC.

Naumann #2-32

DST Test Number: 4

