



DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037
Wichita KS. 67208

ATTN: Paul Gunzelman

Boyd " A" #1-16

16-11s-34w Logan,KS

Start Date: 2014.10.17 @ 23:32:00

End Date: 2014.10.18 @ 06:02:54

Job Ticket #: 57743 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.22 @ 08:43:45

Cobalt Energy LLC
16-11s-34w Logan,KS
Boyd " A" #1-16
DST # 1
LKC " K "
2014.10.17



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Cobalt Energy LLC

16-11s-34w Logan,KS

PO Box 8037
Wichita KS. 67208

Boyd " A " #1-16

Job Ticket: 57743

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2014.10.17 @ 23:32:00

GENERAL INFORMATION:

Formation: **LKC " K "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:55:55

Time Test Ended: 06:02:54

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Interval: 4337.00 ft (KB) To 4370.00 ft (KB) (TVD)

Reference Elevations: 3200.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3189.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press@RunDepth: 22.42 psig @ 4340.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.17

End Date:

2014.10.18

Last Calib.:

2014.10.18

Start Time: 23:32:00

End Time:

06:02:54

Time On Btm:

2014.10.18 @ 01:55:40

Time Off Btm:

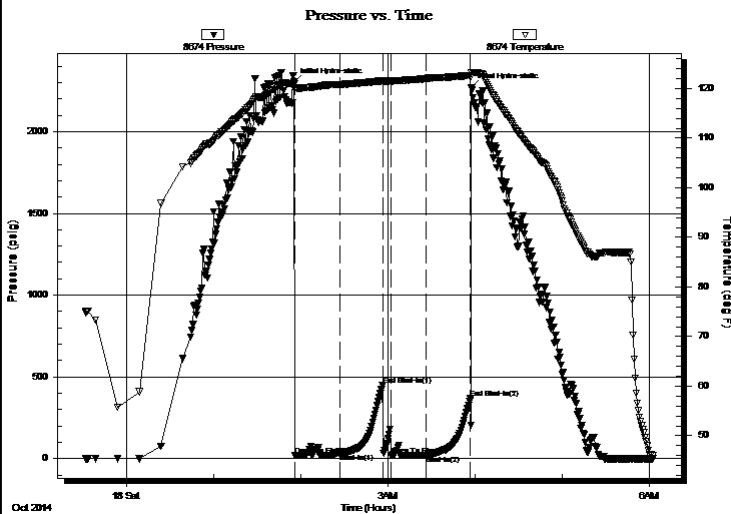
2014.10.18 @ 03:57:39

TEST COMMENT: IF- Weak Surface Blow Died in 14 min

IS- No Blow

FF- No Blow

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2302.65	120.92	Initial Hydro-static
1	19.33	119.83	Open To Flow (1)
32	29.95	120.79	Shut-In(1)
61	447.67	121.55	End Shut-In(1)
67	21.80	121.46	Open To Flow (2)
91	22.42	121.99	Shut-In(2)
122	367.75	122.64	End Shut-In(2)
122	2271.06	123.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% mud with Oil Spots	0.02

Gas Rates

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



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DRILL STEM TEST REPORT

Cobalt Energy LLC

16-11s-34w Logan,KS

PO Box 8037
Wichita KS. 67208

Boyd " A " #1-16

Job Ticket: 57743

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2014.10.17 @ 23:32:00

GENERAL INFORMATION:

Formation: **LKC " K "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:55:55

Time Test Ended: 06:02:54

Interval: **4337.00 ft (KB) To 4370.00 ft (KB) (TVD)**

Total Depth: 4370.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Reference Elevations: 3200.00 ft (KB)

3189.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4340.00 ft (KB)

Start Date: 2014.10.17

End Date: 2014.10.18

Capacity: 8000.00 psig

Last Calib.: 2014.10.18

Start Time: 23:32:05

End Time: 06:04:14

Time On Btm:

Time Off Btm:

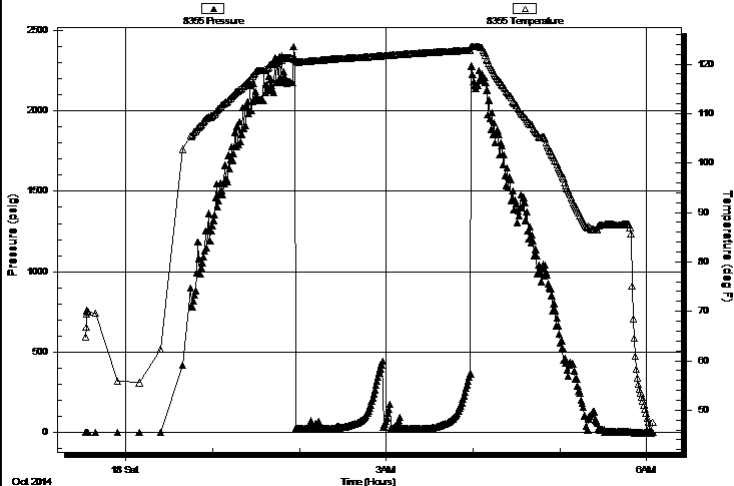
TEST COMMENT: IF- Weak Surface Blow Died in 14 min

IS- No Blow

FF- No Blow

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% mud w with Oil Spots	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cobalt Energy LLC

16-11s-34w Logan,KS

PO Box 8037
Wichita KS. 67208

Boyd "A" #1-16

Job Ticket: 57743

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2014.10.17 @ 23:32:00

Tool Information

Drill Pipe:	Length: 4103.00 ft	Diameter: 3.80 inches	Volume: 57.55 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: 28000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 12000.00 lb
			<u>Total Volume: 58.71 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4337.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4311.00	
Shut In Tool	5.00			4316.00	
Hydraulic tool	5.00			4321.00	
Jars	5.00			4326.00	
Safety Joint	2.00			4328.00	
Packer	5.00			4333.00	27.00 Bottom Of Top Packer
Packer	4.00			4337.00	
Stubb	1.00			4338.00	
Perforations	2.00			4340.00	
Recorder	0.00	8355	Outside	4340.00	
Recorder	0.00	8674	Inside	4340.00	
Perforations	25.00			4365.00	
Bullnose	5.00			4370.00	33.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Cobalt Energy LLC

16-11s-34w Logan,KS

PO Box 8037
Wichita KS. 67208

Boyd " A" #1-16

Job Ticket: 57743

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2014.10.17 @ 23:32:00

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:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% mud with Oil Spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

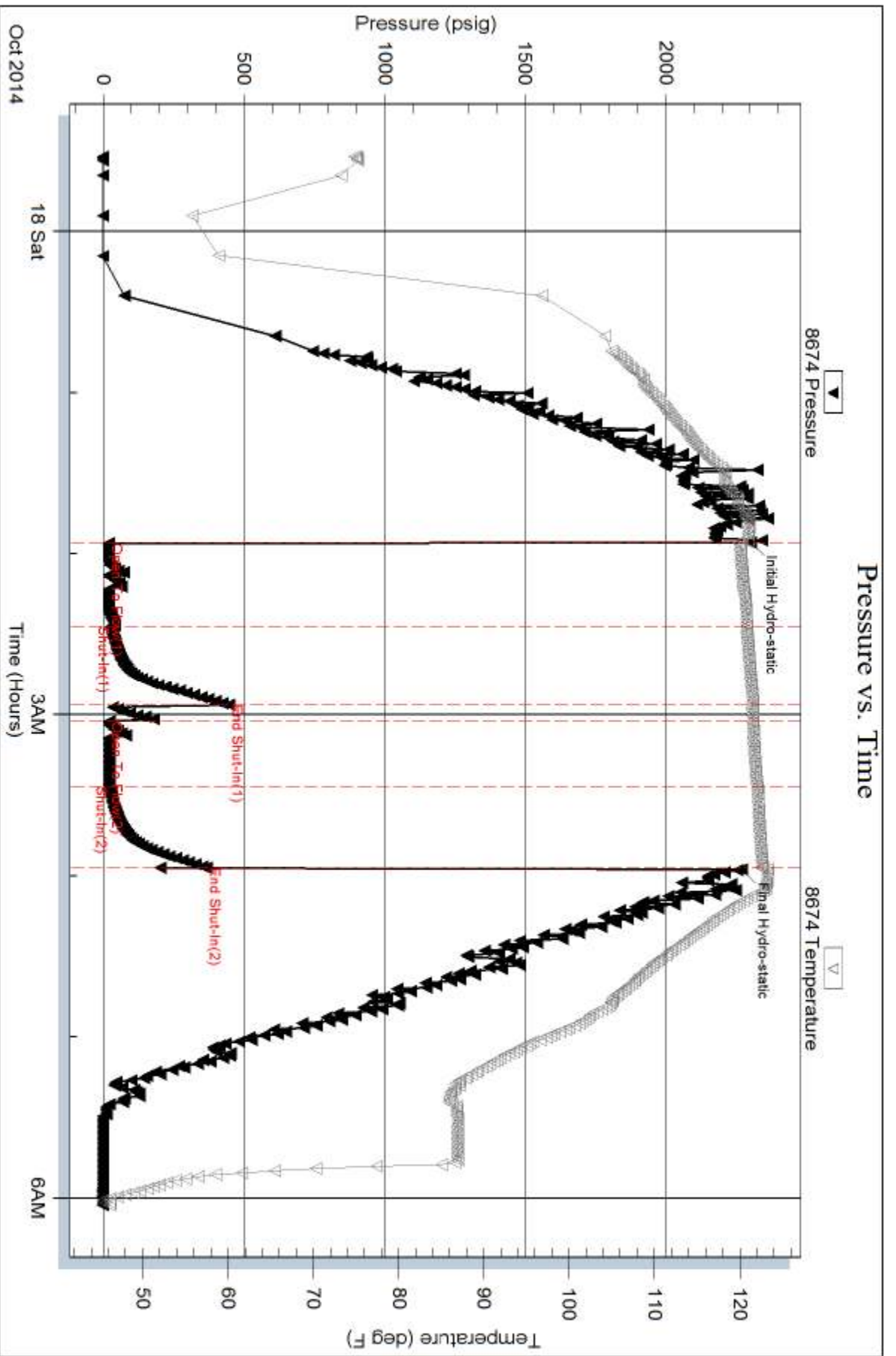
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Inside

Cobalt Energy LLC

Boyd "A" #1-16

DST Test Number: 1

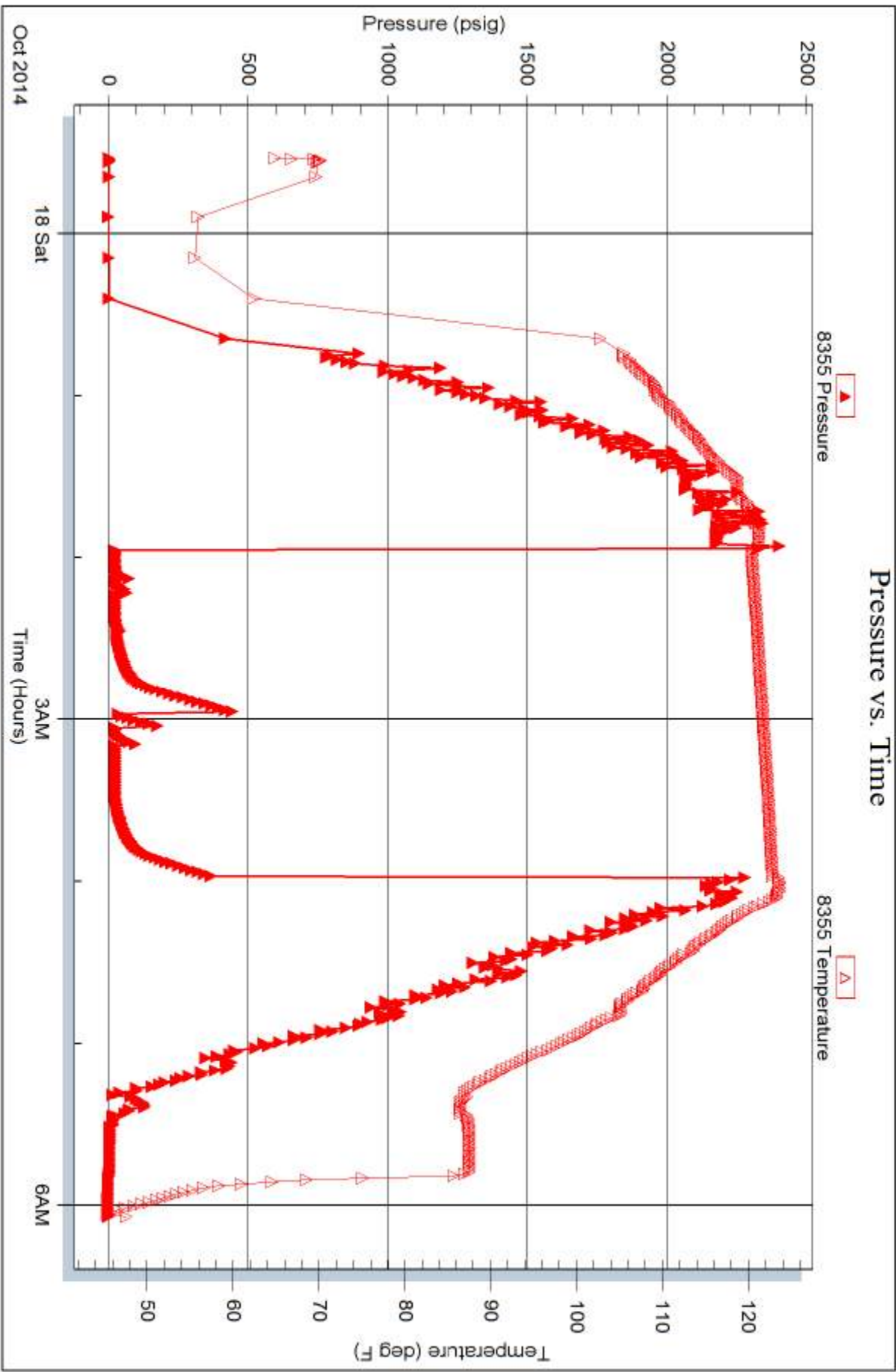


Serial #: 8355

Outside Cobalt Energy LLC

Boyd "A" #1-16

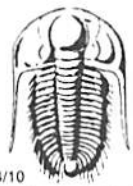
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 57743

Printed: 2014, 10, 22 @ 08:43:46



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57743

Well Name & No. Boyd "A" #1-16 Test No. DST #1 Date 10-17-14
 Company Cobalt Energy LLC Elevation 3200 KB 3189 GL
 Address P.O. Box 8037 Wichita KS 67208
 Co. Rep / Geo. Paul Gunzelman Rig Martin 22
 Location: Sec. 16 Twp. 11S Rge. 34W Co. Logan State KS

Interval Tested 4337-4370 Zone Tested LRC "K"
 Anchor Length 33 Drill Pipe Run 4103 Mud Wt. 9.2
 Top Packer Depth 4333 Drill Collars Run 235 Vis 55
 Bottom Packer Depth 4337 Wt. Pipe Run 0 WL 6.4
 Total Depth 4370 Chlorides 2800 ppm System LCM 515

Blow Description IF-Weak Surface Blow Died in 14min
ISI- No Blow
FF- No Blow
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud with Oil Spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 123 Gravity 1250 API RW @ °F Chlorides ppm
 (A) Initial Hydrostatic 2302 Test 1250 T-On Location 21:46
 (B) First Initial Flow 19 Jars 250 T-Started 23:32
 (C) First Final Flow 29 Safety Joint 75 T-Open 1:55
 (D) Initial Shut-In 447 Circ Sub _____ T-Pulled 3:57
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 6:02
 (F) Second Final Flow 22 Mileage 122 RIT x2 Comments _____
 (G) Final Shut-In 367 Sampler 189.10+189.10 He called at 7:40 AM
 (H) Final Hydrostatic 2271 Straddle _____ 10-19-14 to load tools
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1953.20 MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Approved By Paul Gunzelman Our Representative Wim Ma

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