



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc**

1310 Bison Rd.
Hays KS 67601-9696

ATTN: Tom Denning , Herb D

Bice #1

22-10s-17w Rooks,KS

Start Date: 2014.04.18 @ 02:55:42

End Date: 2014.04.18 @ 07:41:36

Job Ticket #: 55327 DST #: 1

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

Printed: 2014.04.23 @ 16:07:03

TDI, Inc
22-10s-17w Rooks,KS
Bice #1
DST # 1
LKC A-D
2014.04.18



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

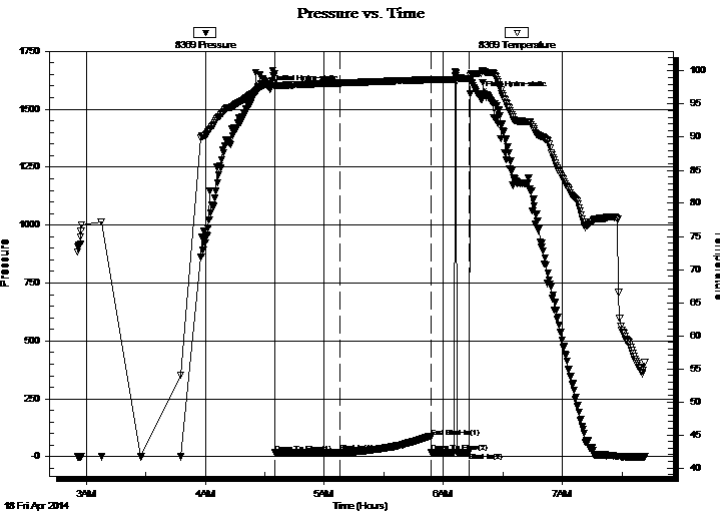
22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55327 **DST#: 1**
Test Start: 2014.04.18 @ 02:55:42

GENERAL INFORMATION:

Formation: **LKC A-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:35:07
Time Test Ended: 07:41:36
Interval: **3251.00 ft (KB) To 3336.00 ft (KB) (TVD)**
Total Depth: 3336.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 70
Reference Elevations: 2040.00 ft (KB)
2030.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8369 **Inside**
Press@RunDepth: 17.87 psig @ 3253.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.18 End Date: 2014.04.18 Last Calib.: 2014.04.18
Start Time: 02:55:42 End Time: 07:41:36 Time On Btm: 2014.04.18 @ 04:32:37
Time Off Btm: 2014.04.18 @ 06:18:07

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" to surface bl
45-ISIP-no bl
20-FFP-no bl, flushed tool, got surge
pulled tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1586.40	97.96	Initial Hydro-static
3	16.67	97.58	Open To Flow (1)
36	17.87	98.18	Shut-In(1)
81	86.32	98.69	End Shut-In(1)
82	17.97	98.66	Open To Flow (2)
101	20.07	98.87	Shut-In(2)
106	1556.57	99.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w/show of oil	0.14

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55327 **DST#: 1**
Test Start: 2014.04.18 @ 02:55:42

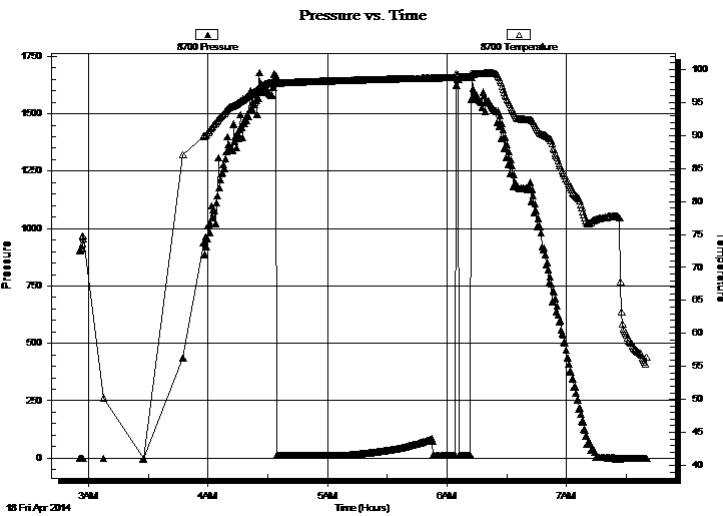
GENERAL INFORMATION:

Formation: **LKC A-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:35:07
Time Test Ended: 07:41:36
Interval: **3251.00 ft (KB) To 3336.00 ft (KB) (TVD)**
Total Depth: 3336.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches
Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 70
Reference Elevations: 2040.00 ft (KB)
2030.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3253.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.18 End Date: 2014.04.18 Last Calib.: 2014.04.18
Start Time: 02:55:33 End Time: 07:40:12 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" to surface bl
45-ISIP-no bl
20-FFP-no bl, flushed tool, got surge
pulled tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w/show of oil	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55327 **DST#: 1**
Test Start: 2014.04.18 @ 02:55:42

Tool Information

Drill Pipe:	Length: 3250.00 ft	Diameter: 3.80 inches	Volume: 45.59 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 45.59 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3251.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	86.00 ft			
Tool Length:	107.00 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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Change Over Sub	1.00			3231.00	
Shut In Tool	5.00			3236.00	
Hydraulic tool	5.00			3241.00	
Packer	5.00			3246.00	21.00 Bottom Of Top Packer
Packer	5.00			3251.00	
Stubb	1.00			3252.00	
Perforations	1.00			3253.00	
Recorder	0.00	8369	Inside	3253.00	
Recorder	0.00	8700	Outside	3253.00	
Blank Spacing	63.00			3316.00	
Perforations	18.00			3334.00	
Bullnose	3.00			3337.00	86.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55327 **DST#: 1**
Test Start: 2014.04.18 @ 02:55:42

Mud and Cushion Information

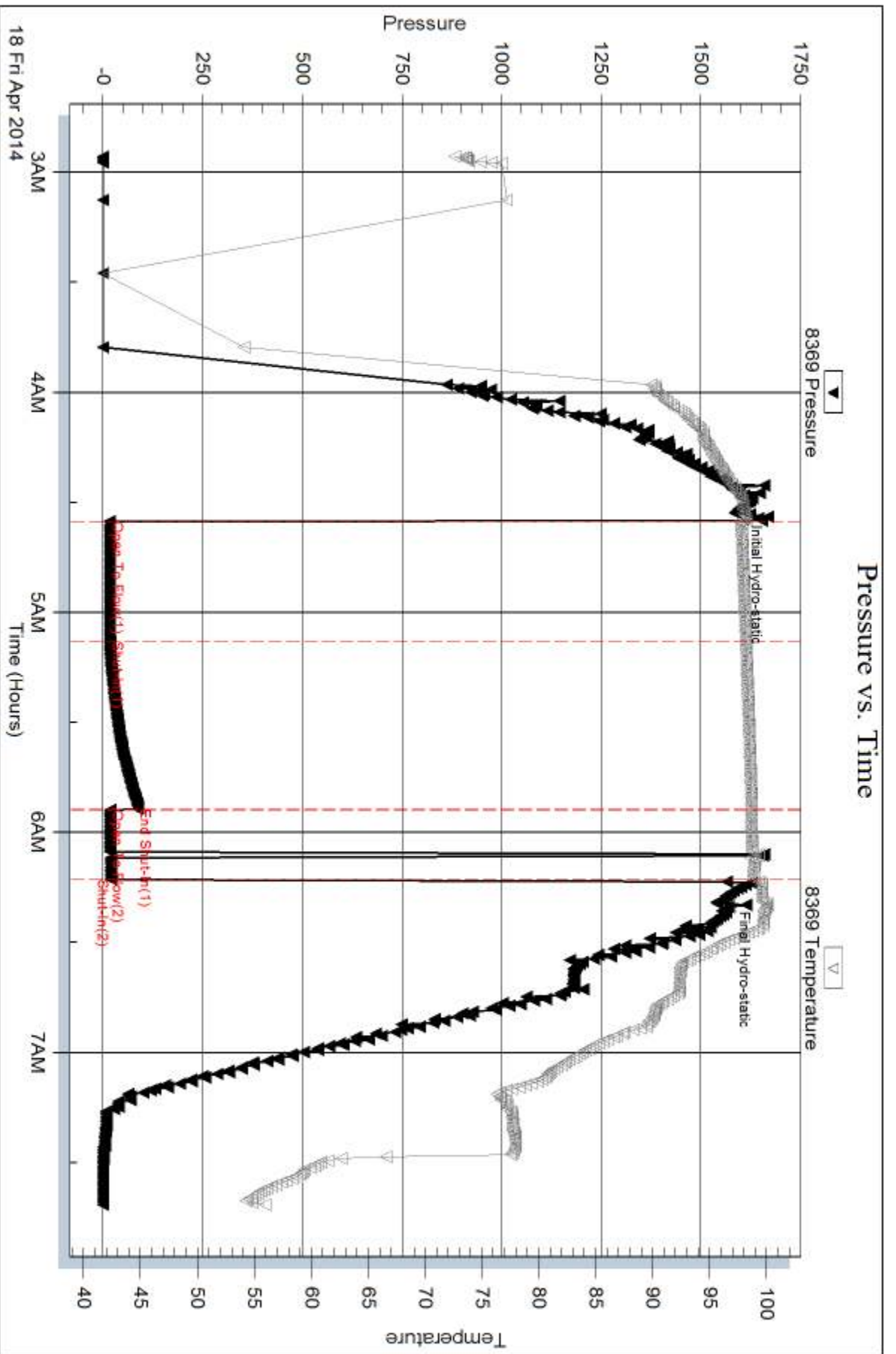
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.98 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3500.00 ppm			
Filter Cake: 1.00 inches			

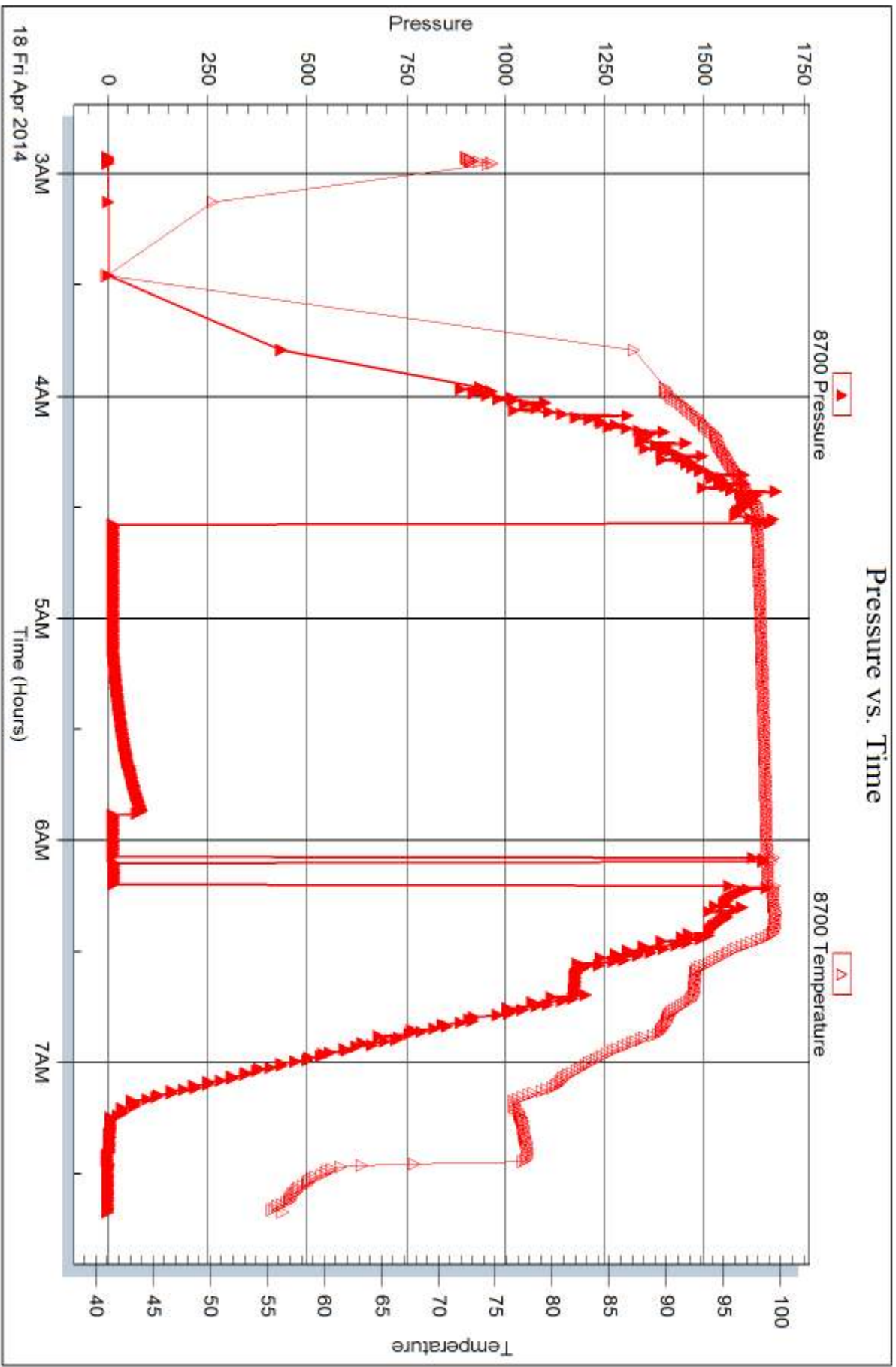
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud w/show of oil	0.140

Total Length: 10.00 ft Total Volume: 0.140 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **TDI, Inc**

1310 Bison Rd.
Hays KS 67601-9696

ATTN: Tom Denning , Herb D

Bice #1

22-10s-17w Rooks,KS

Start Date: 2014.04.18 @ 21:15:12

End Date: 2014.04.19 @ 03:44:36

Job Ticket #: 55328 DST #: 2

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

Printed: 2014.04.23 @ 16:06:40

TDI, Inc
22-10s-17w Rooks,KS
Bice #1
DST # 2
LKC H-J
2014.04.18



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TDI, Inc
 1310 Bison Rd.
 Hays KS 67601-9696
 ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
 Job Ticket: 55328 **DST#: 2**
 Test Start: 2014.04.18 @ 21:15:12

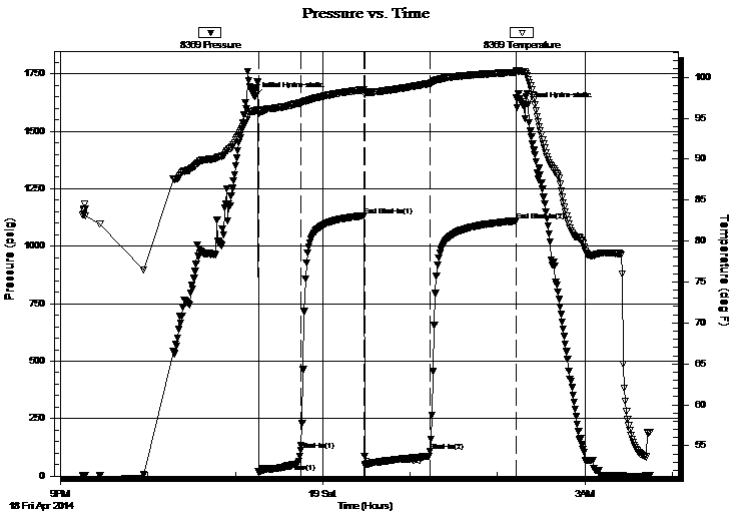
GENERAL INFORMATION:

Formation: **LKC H-J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 23:15:52 Tester: Ray Schwager
 Time Test Ended: 03:44:36 Unit No: 70
 Interval: **3376.00 ft (KB) To 3460.00 ft (KB) (TVD)** Reference Elevations: 2040.00 ft (KB)
 Total Depth: 3460.00 ft (KB) (TVD) 2030.00 ft (CF)
 Hole Diameter: 7.85 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8369 Inside
 Press@RunDepth: 107.49 psig @ 3378.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.18 End Date: 2014.04.19 Last Calib.: 2014.04.19
 Start Time: 21:15:12 End Time: 03:44:36 Time On Btm: 2014.04.18 @ 23:13:37
 Time Off Btm: 2014.04.19 @ 02:18:06

TEST COMMENT: 30-IFP-w k to strg in 20 min
 45-ISIP-no bl
 45-FFP-w k to strg in 40 min
 60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1651.30	95.87	Initial Hydro-static
3	18.07	95.51	Open To Flow (1)
32	113.11	96.86	Shut-In(1)
75	1133.21	98.48	End Shut-In(1)
76	48.27	98.18	Open To Flow (2)
120	107.49	99.25	Shut-In(2)
179	1110.53	100.58	End Shut-In(2)
185	1606.24	100.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	270°GIP	0.00
60.00	CO	0.84
45.00	GMO 20%G40%M40%O	0.63
60.00	GMO 20%G10%M70%O	0.84

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696

ATTN: Tom Denning, Herb D

22-10s-17w Rooks, KS

Bice #1

Job Ticket: 55328

DST#: 2

Test Start: 2014.04.18 @ 21:15:12

GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:15:52

Time Test Ended: 03:44:36

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3376.00 ft (KB) To 3460.00 ft (KB) (TVD)

Total Depth: 3460.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 2040.00 ft (KB)

2030.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: psig @ 3378.00 ft (KB)

Start Date: 2014.04.18

End Date:

2014.04.19

Capacity: 8000.00 psig

Last Calib.:

2014.04.19

Start Time: 21:15:46

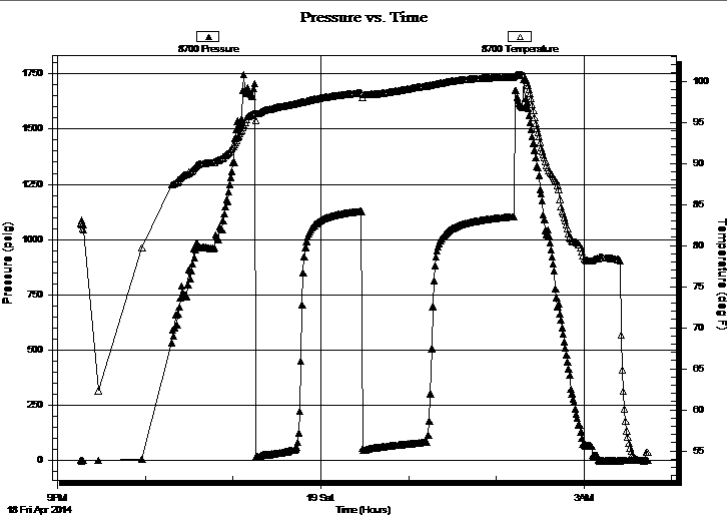
End Time:

03:43:55

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IFP-w k to strg in 20 min
45-ISIP-no bl
45-FFP-w k to strg in 40 min
60-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	270'GIP	0.00
60.00	CO	0.84
45.00	GMO 20%G40%M40%O	0.63
60.00	GMO 20%G10%M70%O	0.84

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55328 **DST#: 2**
Test Start: 2014.04.18 @ 21:15:12

Tool Information

Drill Pipe:	Length: 3379.00 ft	Diameter: 3.80 inches	Volume: 47.40 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 47.40 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3376.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	84.00 ft				
Tool Length:	105.00 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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Change Over Sub	1.00			3356.00	
Shut In Tool	5.00			3361.00	
Hydraulic tool	5.00			3366.00	
Packer	5.00			3371.00	21.00 Bottom Of Top Packer
Packer	5.00			3376.00	
Stubb	1.00			3377.00	
Perforations	1.00			3378.00	
Recorder	0.00	8369	Inside	3378.00	
Recorder	0.00	8700	Outside	3378.00	
Blank Spacing	63.00			3441.00	
Perforations	16.00			3457.00	
Bullnose	3.00			3460.00	84.00 Bottom Packers & Anchor

Total Tool Length: 105.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

TDI, Inc
1310 Bison Rd.
Hays KS 67601-9696
ATTN: Tom Denning, Herb D

22-10s-17w Rooks,KS
Bice #1
Job Ticket: 55328 **DST#: 2**
Test Start: 2014.04.18 @ 21:15:12

Mud and Cushion Information

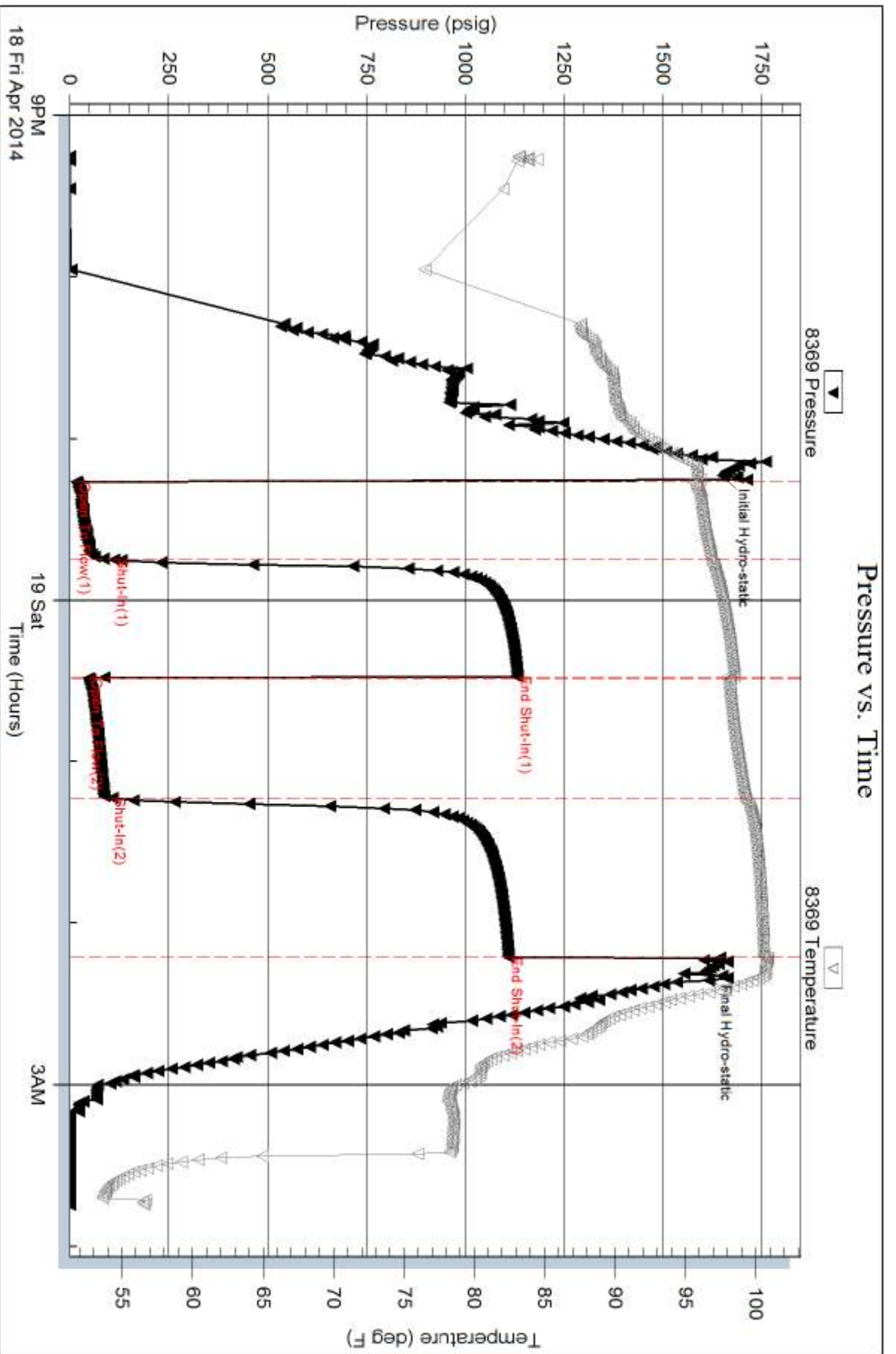
Mud Type: Gel Chem	Cushion Type:	Oil API: 28 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.98 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3200.00 ppm		
Filter Cake: 1.00 inches		

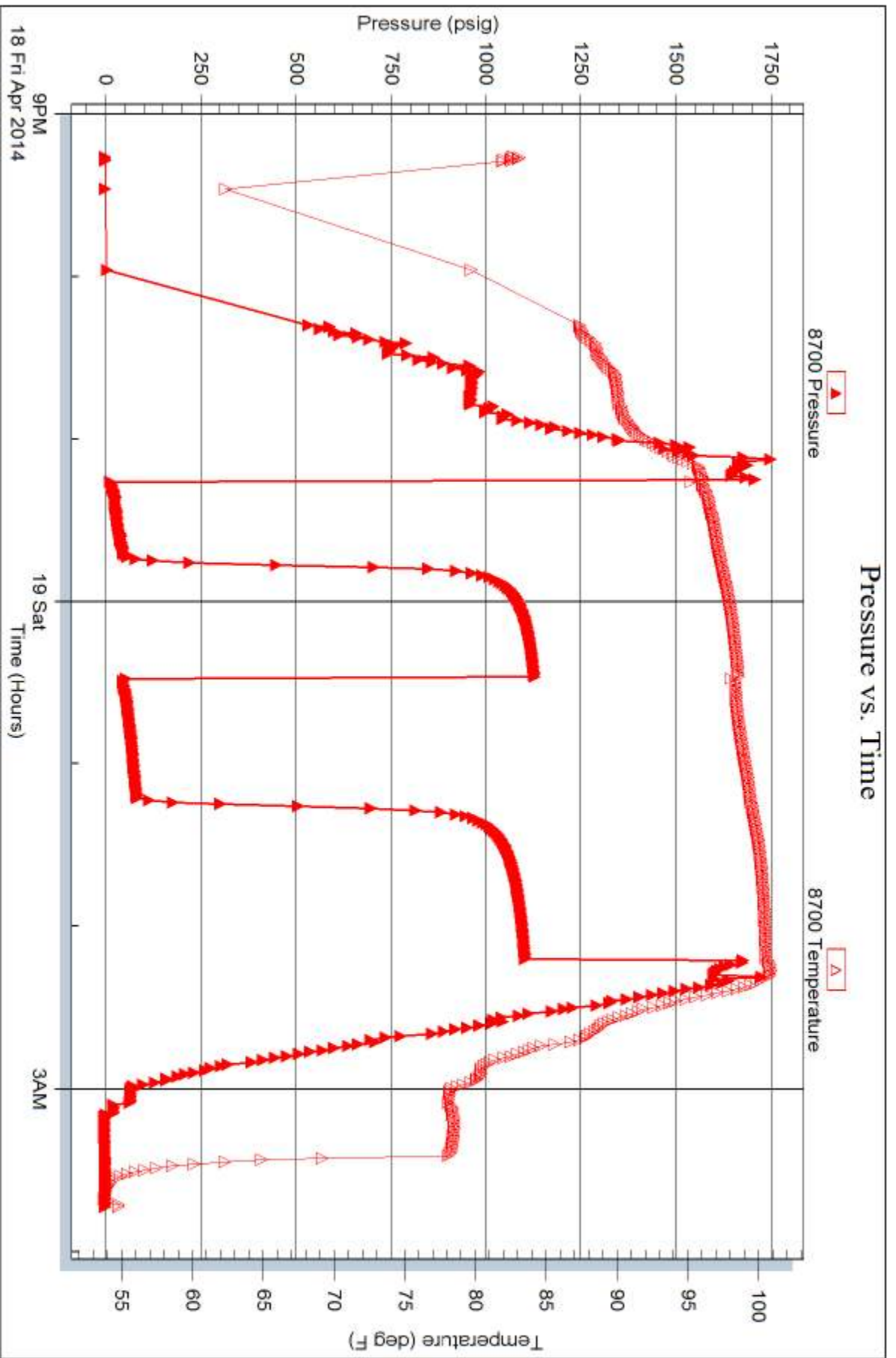
Recovery Information

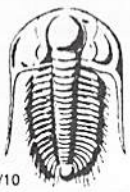
Recovery Table

Length ft	Description	Volume bbl
0.00	270'GIP	0.000
60.00	CO	0.842
45.00	GMO 20%G40%M40%O	0.631
60.00	GMO 20%G10%M70%O	0.842

Total Length: 165.00 ft Total Volume: 2.315 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55327

Well Name & No. Bice #1 Test No. 1 Date 4-18-14
 Company TOI, Inc Elevation 2040 KB 2030 GL
 Address 1310 Bison Rd. Hays, Ks 67601-9696
 Co. Rep / Geo. Herb Deines Rig Southwind rig 1
 Location: Sec. 22 Twp. 10^s Rge. 17^w Co. Rooks State Ks

Interval Tested 3251-3336 Zone Tested LKC A-D
 Anchor Length 85 Drill Pipe Run 3250 Mud Wt. 9.1
 Top Packer Depth 3246 Drill Collars Run — Vis 50
 Bottom Packer Depth 3251 Wt. Pipe Run — WL 6
 Total Depth 3336 Chlorides 3500 ppm System LCM 3#

Blow Description IFP - Weak Blow 1/4" To surface Blow
ISIP - NO Blow
FFP - NO Blow flushed Tool, got surge
FSIP - pulled Tool

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</u>				
	<u>w/show foil</u>				

Rec Total 10 BHT _____ Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 1586 Test 1150 T-On Location 0210
 (B) First Initial Flow 16 Jars _____ T-Started 0455
 (C) First Final Flow 17 Safety Joint _____ T-Open 0635
 (D) Initial Shut-In 86 Circ Sub _____ T-Pulled _____
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out _____
 (F) Second Final Flow 20 Mileage 58RT 89.90 Comments _____
 (G) Final Shut-In — Sampler _____
 (H) Final Hydrostatic 1556 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1239.90
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 20
 Final Shut-In —

Sub Total 1239.90

Approved By _____ Our Representative Ray Schwager Thank you
 TriLOBITE TESTING Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **55328**

Well Name & No. Bice #1 Test No. 2 Date 4-18-14
 Company T.O.I., Inc Elevation 2040 KB 2030 GL
 Address 1310 Bison Rd. Hays, Ko 67601-9696
 Co. Rep / Geo. Herb Deines Rig Southwind rig 1
 Location: Sec. 22 Twp. 10^s Rge. 17^w Co. Rooks State Ko

Interval Tested 3376-3460 Zone Tested LKC H-5
 Anchor Length 84 Drill Pipe Run 3379 Mud Wt. 9.3
 Top Packer Depth 3371 Drill Collars Run - Vis 48
 Bottom Packer Depth 3376 Wt. Pipe Run - WL 6
 Total Depth 3460 Chlorides 3200 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 20 MIN
TSIP - NO BLOW
FFP - WEAK TO A STRONG BLOW IN 40 MIN
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>270</u>	<u>GIP</u>				
<u>60</u>	<u>CO</u>				
<u>45</u>	<u>GMO</u>	<u>20</u>	<u>40</u>		<u>40</u>
<u>60</u>	<u>GMO</u>	<u>20</u>	<u>70</u>		<u>10</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 165 BHT 100 Gravity 28 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1651 Test 1150 T-On Location 2045
 (B) First Initial Flow 18 Jars - T-Started 2115
 (C) First Final Flow 113 Safety Joint - T-Open 2315
 (D) Initial Shut-In 1133 Circ Sub - T-Pulled 0215
 (E) Second Initial Flow 48 Hourly Standby - T-Out 0344
 (F) Second Final Flow 107 Mileage SBRT 179.80 Comments Loaded Tool, 4-19-14
 (G) Final Shut-In 1110 Sampler - 1845
 (H) Final Hydrostatic 1606 Straddle - Ruined Shale Packer -
 Shale Packer - Ruined Packer -

Initial Open 30 Extra Packer - Extra Copies -
 Initial Shut-In 45 Extra Recorder - Sub Total 0
 Final Flow 45 Day Standby - Total 1329.80
 Final Shut-In 60 Accessibility - MP/DST Disc't -
 Sub Total 1329.80

Approved By _____ Our Representative Ray Schwager *Thank you*

TriLOBITE TESTING INC. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.