



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.13 @ 02:08:00

End Date: 2012.01.13 @ 09:43:50

Job Ticket #: 45380 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:20:01



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45380

DST#: 1

ATTN: Tim Lauer

Test Start: 2012.01.13 @ 02:08:00

GENERAL INFORMATION:

Formation: **LKC 'C'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:42:40

Time Test Ended: 09:43:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 37

Interval: 3930.00 ft (KB) To 3956.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 3956.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 175.56 psig @ 3933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.13

End Date:

2012.01.13

Last Calib.:

2012.01.13

Start Time: 02:08:02

End Time:

09:43:49

Time On Btm:

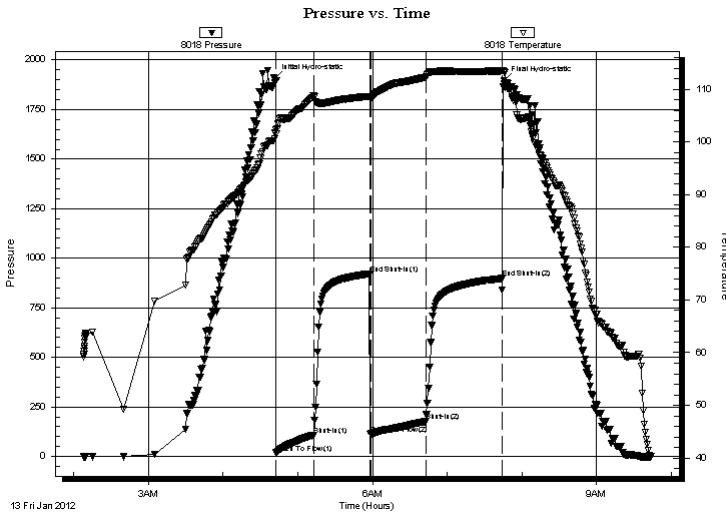
2012.01.13 @ 04:41:20

Time Off Btm:

2012.01.13 @ 07:45:30

TEST COMMENT: B.O.B. @ 22 min.
Surface return.
B.O.B. @ 37 min.
1" Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1905.26	100.56	Initial Hydro-static
2	18.53	101.59	Open To Flow (1)
32	108.36	108.78	Shut-In(1)
77	921.18	108.68	End Shut-In(1)
77	113.34	108.49	Open To Flow (2)
122	175.56	112.30	Shut-In(2)
183	897.96	113.51	End Shut-In(2)
185	1897.02	113.34	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
234.00	GO 15g 85o	1.15
88.00	GMCO 20g 30m 50o	0.43
88.00	GOCVM 20g 20o 20w 40m	0.43
0.00	30 Feet weak GIP	0.00

Gas Rates

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



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Job Ticket: 45380

DST#: 1

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Reference Elevations: 2880.00 ft (KB)

Total Depth: 3956.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6751

Outside

Press @ Run Depth: psig @ 3933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.13

End Date: 2012.01.13

Last Calib.: 2012.01.13

Start Time: 02:08:02

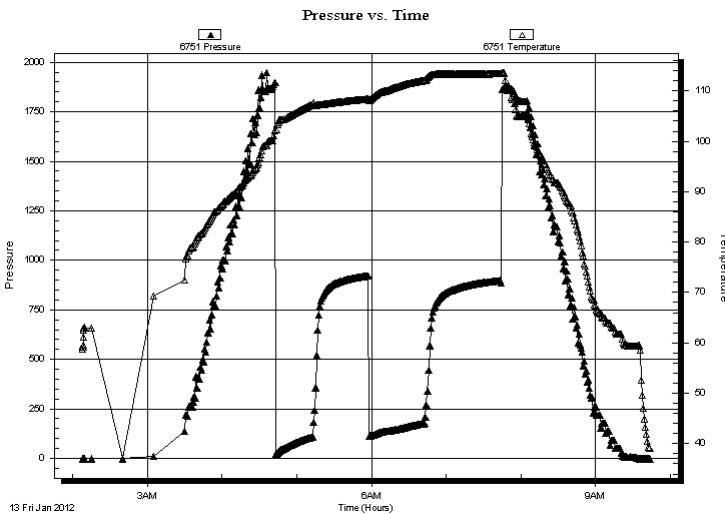
End Time: 09:43:49

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. @ 22 min.
Surface return.
B.O.B. @ 37 min.
1" Return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
234.00	GO 15g 85o	1.15
88.00	GMCO 20g 30m 50o	0.43
88.00	GOCVM 20g 20o 20w 40m	0.43
0.00	30 Feet weak GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45380

DST#: 1

ATTN: TimLauer

Test Start: 2012.01.13 @ 02:08:00

Tool Information

Drill Pipe:	Length: 3391.00 ft	Diameter: 3.80 inches	Volume: 47.57 bbl	Tool Weight: 2500.00 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: 530.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 50.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.50 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	3930.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	53.50 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			3903.50	
Shut In Tool	5.00			3908.50	
Hydraulic tool	5.00			3913.50	
Jars	5.00			3918.50	
Safety Joint	2.50			3921.00	
Packer	5.00			3926.00	27.50 Bottom Of Top Packer
Packer	4.00			3930.00	
Stubb	1.00			3931.00	
Perforations	2.00			3933.00	
Recorder	0.00	8018	Inside	3933.00	
Recorder	0.00	6751	Outside	3933.00	
Perforations	20.00			3953.00	
Bullnose	3.00			3956.00	26.00 Bottom Packers & Anchor

Total Tool Length: 53.50



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45380

DST#: 1

ATTN: Tim Lauer

Test Start: 2012.01.13 @ 02:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

41000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.33 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
234.00	GO 15g 85o	1.151
88.00	GMCO 20g 30m 50o	0.433
88.00	GOCWM 20g 20o 20w 40m	0.433
0.00	30 Feet weak GIP	0.000

Total Length: 410.00 ft

Total Volume: 2.017 bbl

Num Fluid Samples: 0

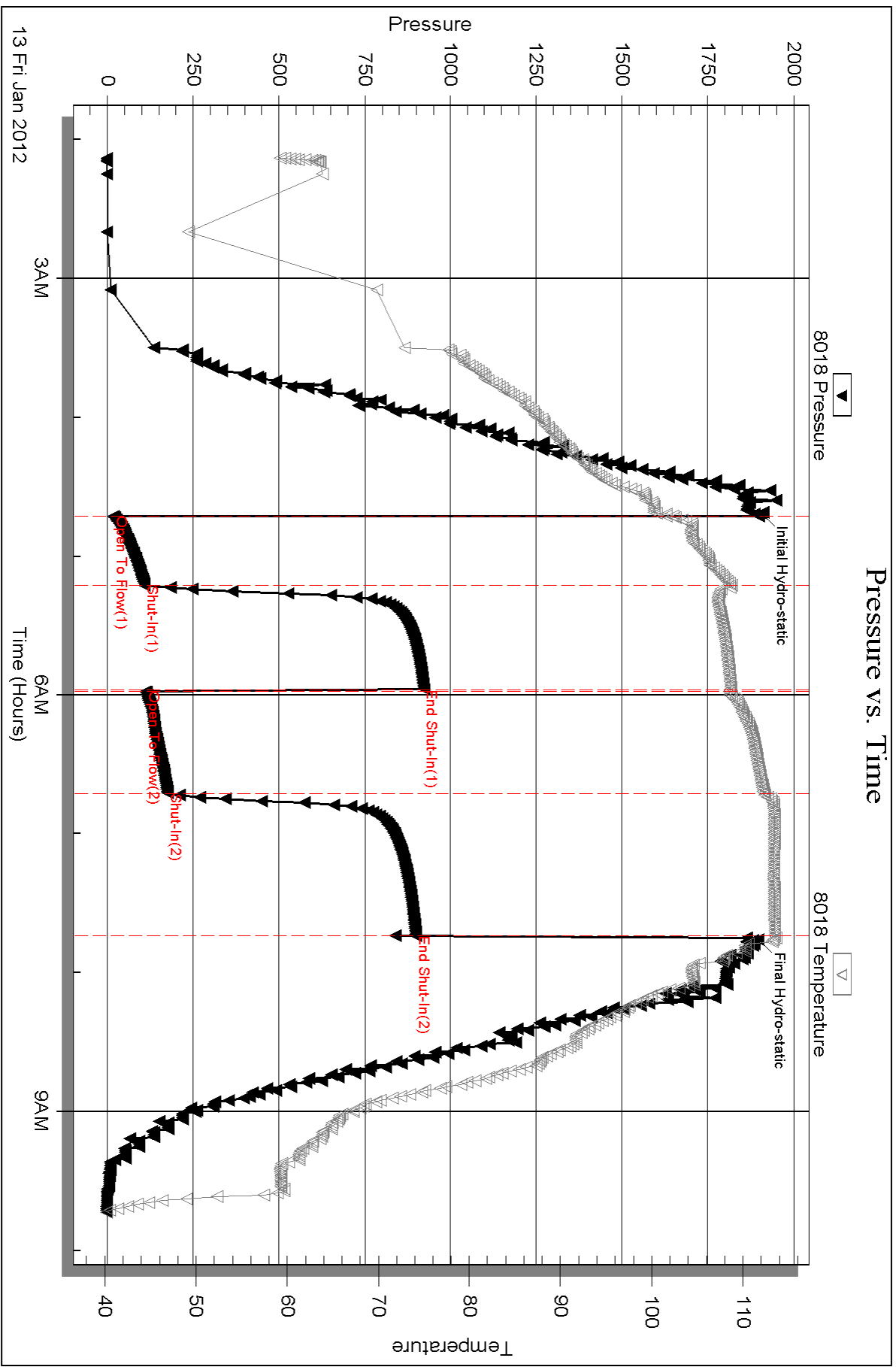
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API:33 @ 50 Degrees F = 34. Rw .190 @ 60 deg F



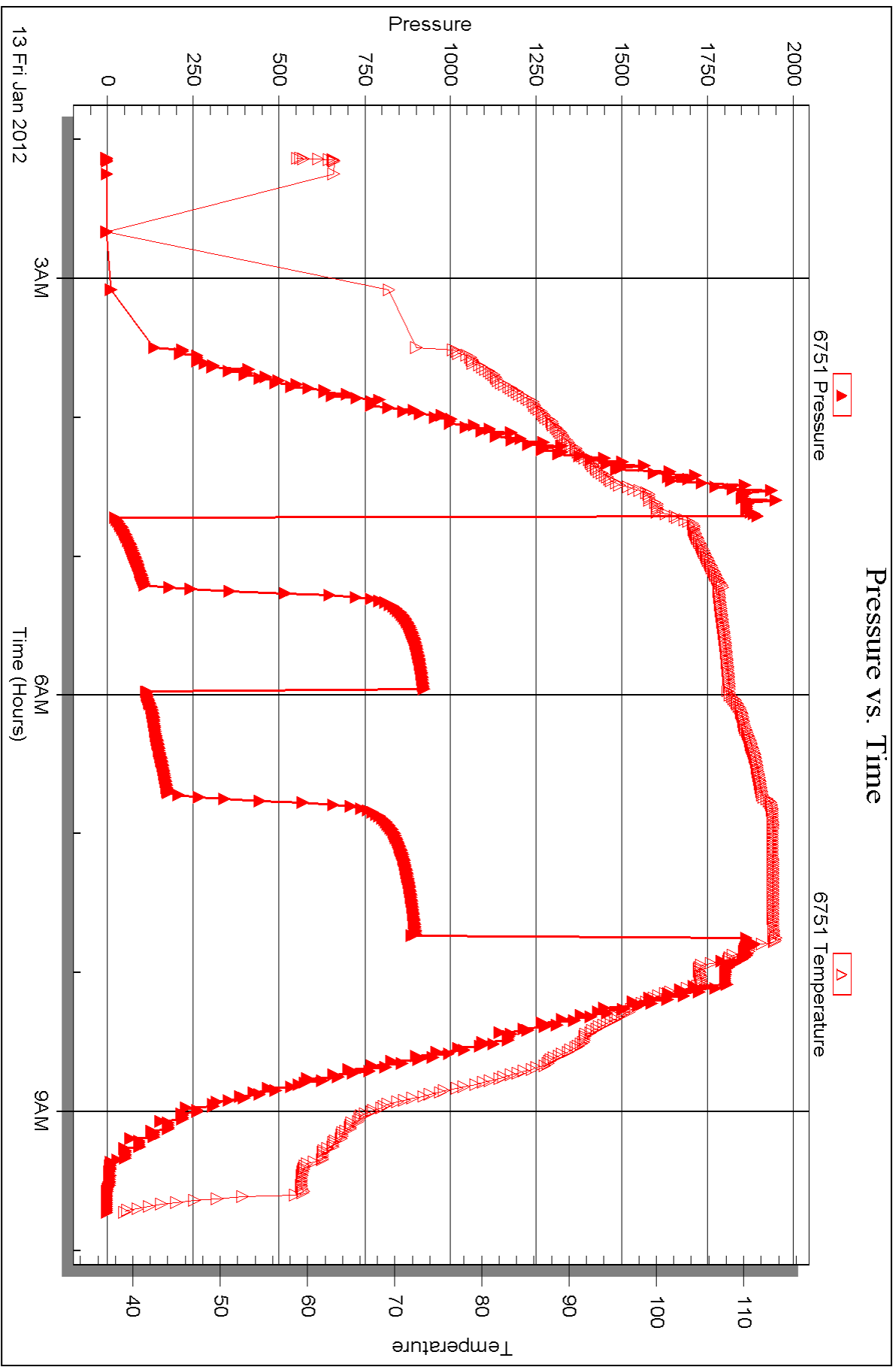
Serial #: 6751

Outside

Richie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.13 @ 16:21:00

End Date: 2012.01.13 @ 22:37:00

Job Ticket #: 45381 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:19:17



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DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45381

DST#: 2

ATTN: Tim Lauer

Test Start: 2012.01.13 @ 16:21:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:29:40

Time Test Ended: 22:37:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 3956.00 ft (KB) To 3967.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 3967.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 28.11 psig @ 3959.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.13

End Date:

2012.01.13

Last Calib.:

2012.01.13

Start Time: 16:21:02

End Time:

22:37:00

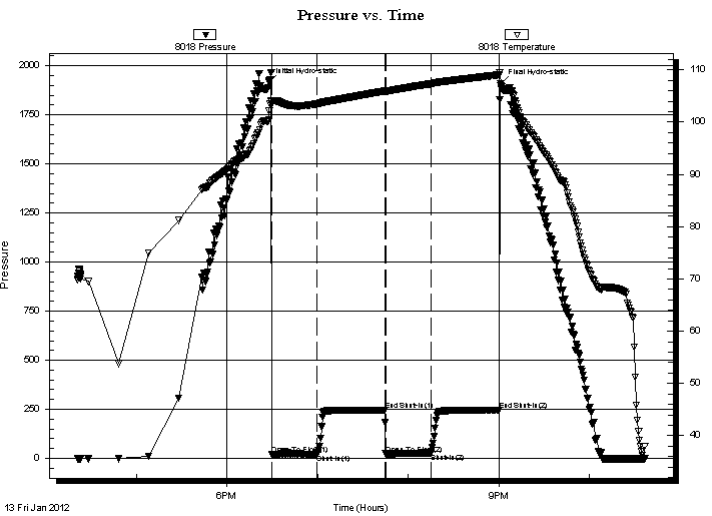
Time On Btm:

2012.01.13 @ 18:27:30

Time Off Btm:

2012.01.13 @ 21:01:10

TEST COMMENT: 1/2" Blow.
No return.
No blow.
No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1915.94	100.52	Initial Hydro-static
3	18.88	103.27	Open To Flow (1)
32	22.18	103.46	Shut-In(1)
77	246.69	105.94	End Shut-In(1)
78	23.39	105.84	Open To Flow (2)
108	28.11	107.30	Shut-In(2)
153	245.95	109.01	End Shut-In(2)
154	1908.34	107.01	Final Hydro-static

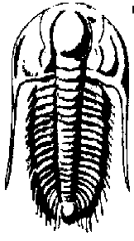
Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
20.00	OSMW 45m55w	0.10

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45381

DST#: 2

ATTN: Tim Lauer

Test Start: 2012.01.13 @ 16:21:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

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Time Tool Opened: 18:29:40

Time Test Ended: 22:37:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 3956.00 ft (KB) To 3967.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 3967.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 3959.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.13

End Date: 2012.01.13

Last Calib.: 2012.01.13

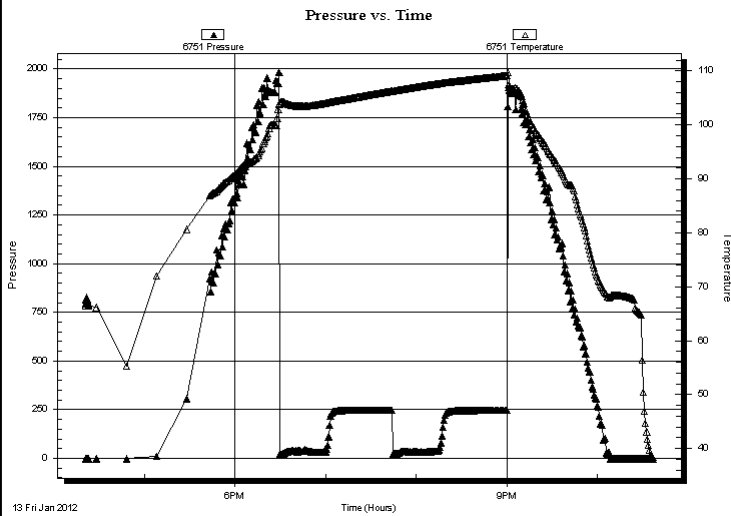
Start Time: 16:21:02

End Time: 22:37:00

Time On Btm

Time Off Btm

TEST COMMENT: 1/2" Blow .
No return.
No blow .
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OSMW 45m55w	0.10

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45381

DST#: 2

ATTN: TimLauer

Test Start: 2012.01.13 @ 16:21:00

Tool Information

Drill Pipe:	Length: 3426.00 ft	Diameter: 3.80 inches	Volume: 48.06 bbl	Tool Weight: 2500.00 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: 530.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 50.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.50 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	3956.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	11.00 ft			
Tool Length:	33.50 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			3934.50	
Shut In Tool	5.00			3939.50	
Hydraulic tool	5.00			3944.50	
Safety Joint	2.50			3947.00	
Packer	5.00			3952.00	22.50 Bottom Of Top Packer
Packer	4.00			3956.00	
Stubb	1.00			3957.00	
Perforations	2.00			3959.00	
Recorder	0.00	8018	Inside	3959.00	
Recorder	0.00	6751	Outside	3959.00	
Perforations	5.00			3964.00	
Bullnose	3.00			3967.00	11.00 Bottom Packers & Anchor

Total Tool Length: 33.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45381

DST#: 2

ATTN: TimLauer

Test Start: 2012.01.13 @ 16:21:00

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:

48000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.33 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OSMW 45m55w	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

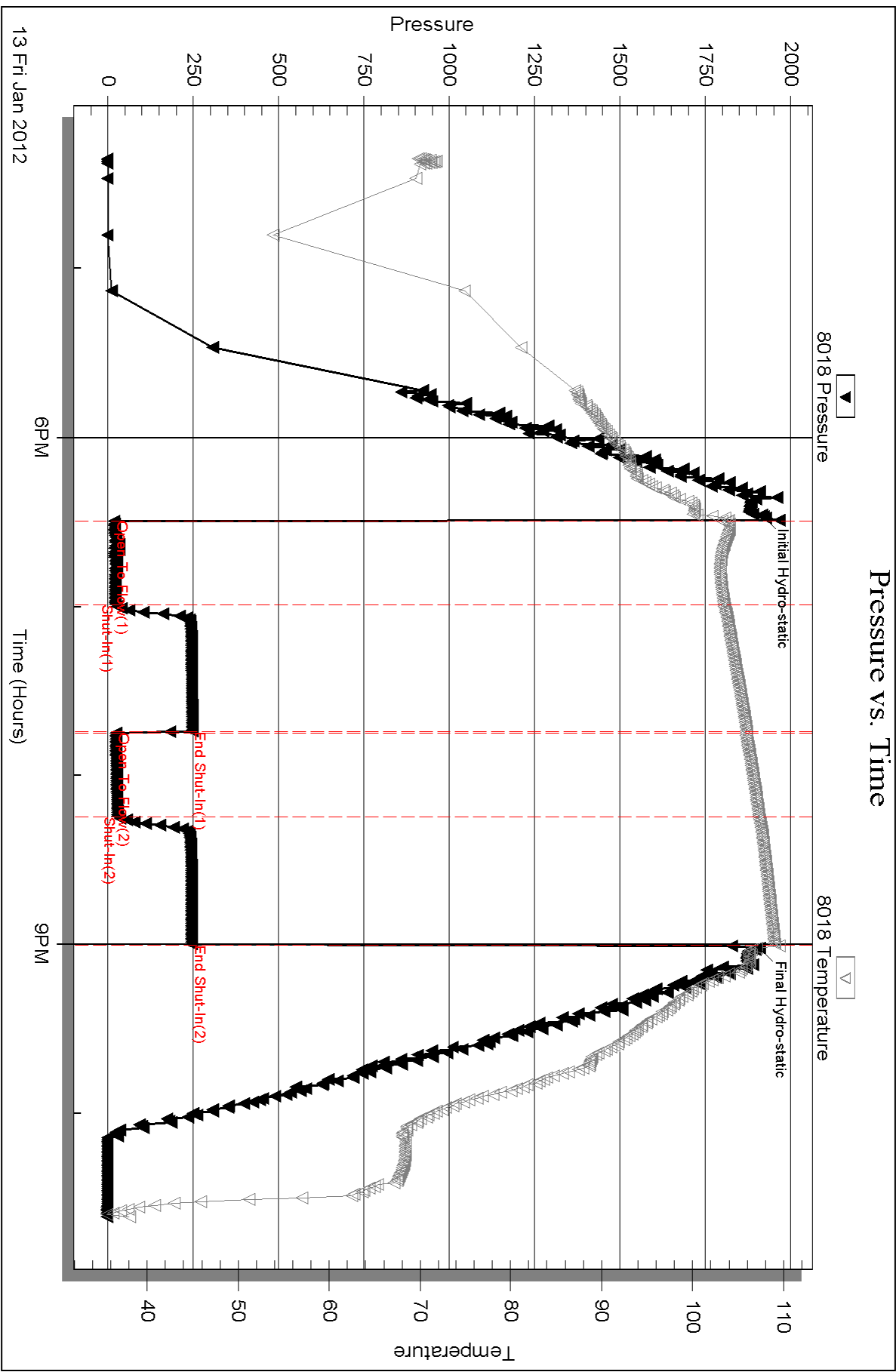
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Rw .230 @ 50 deg F

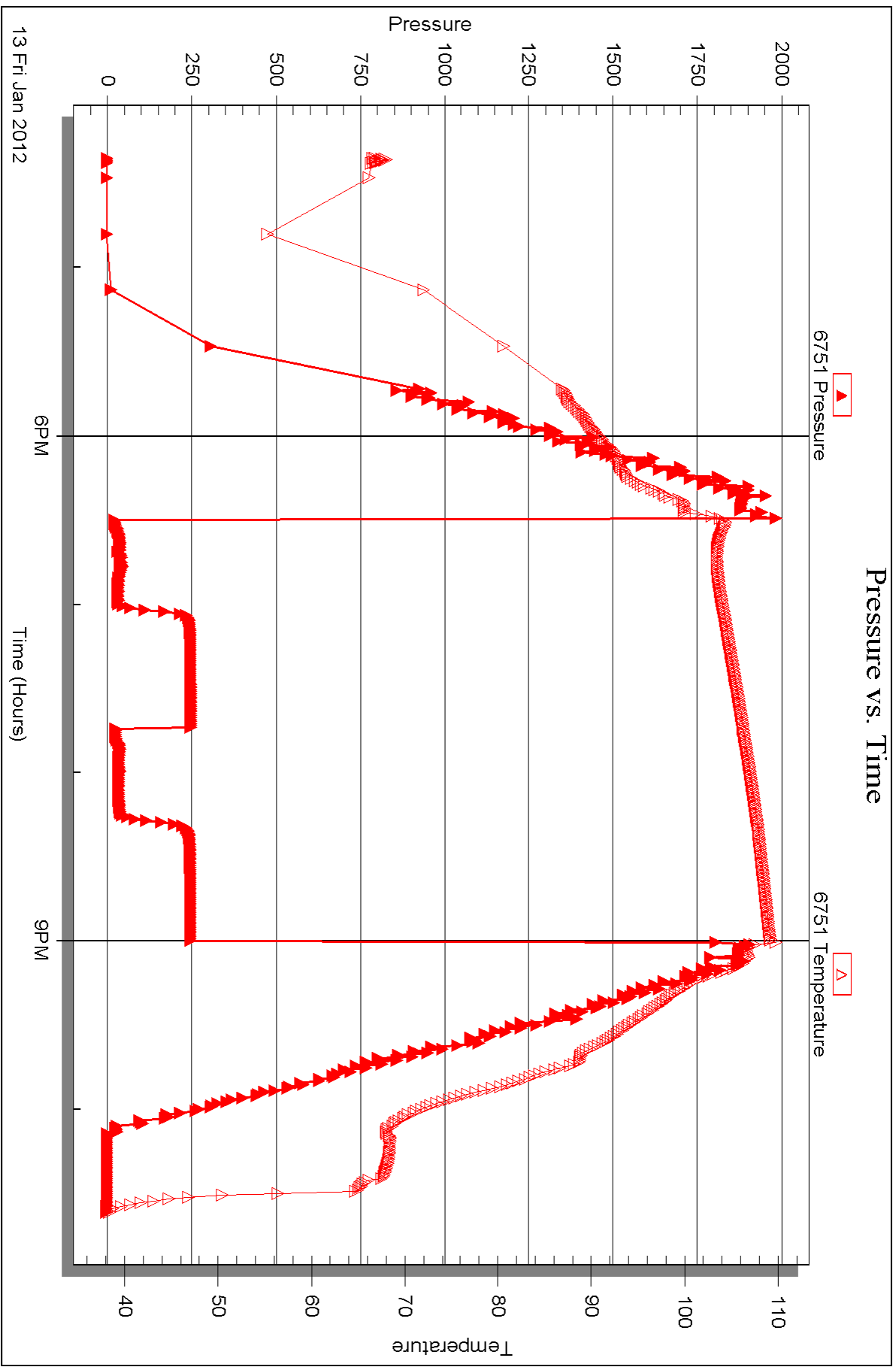


Serial #: 6751

Outside Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 45381

Printed: 2012.02.01 @ 11:19:20



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.17 @ 19:36:00

End Date: 2012.01.18 @ 02:51:09

Job Ticket #: 45382 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:18:25



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45382

DST#: 3

ATTN: Tim Lauer

Test Start: 2012.01.17 @ 19:36:00

GENERAL INFORMATION:

Formation: **LKC 'E'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:38:30

Time Test Ended: 02:51:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 3976.00 ft (KB) To 3999.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 3999.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 234.79 psig @ 3981.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.17

End Date:

2012.01.18

Last Calib.:

2012.01.18

Start Time: 19:36:02

End Time:

02:51:10

Time On Btm:

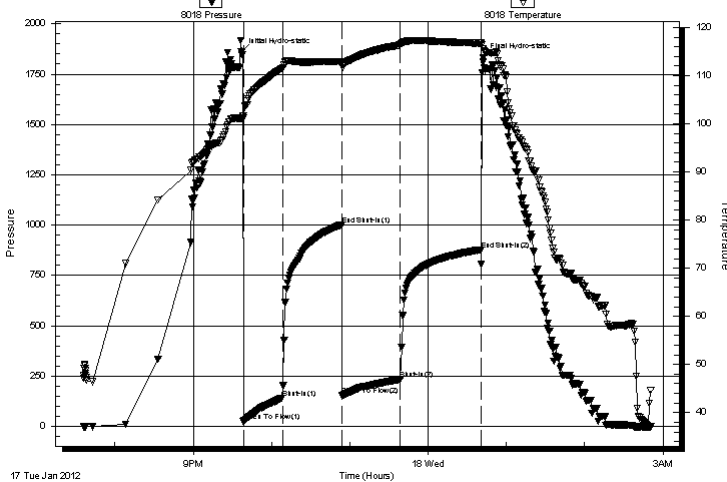
2012.01.17 @ 21:36:50

Time Off Btm:

2012.01.18 @ 00:42:00

TEST COMMENT: B.O.B. @ 15 min.
4" Return.
B.O.B. @ 24 min.
4" Return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1859.48	101.14	Initial Hydro-static
2	23.03	101.23	Open To Flow (1)
32	142.60	111.56	Shut-In (1)
77	1002.31	112.86	End Shut-In (1)
78	152.67	112.14	Open To Flow (2)
122	234.79	116.37	Shut-In (2)
184	878.18	116.73	End Shut-In (2)
186	1830.43	115.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
176.00	OSMW 30m 70w	0.87
176.00	GOCM10g 40o 50m	0.87
213.00	GO 20g 80o	1.37
0.00	150 Feet weak GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45382

DST#: 3

ATTN: Tim Lauer

Test Start: 2012.01.17 @ 19:36:00

GENERAL INFORMATION:

Formation: **LKC 'E'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:38:30

Time Test Ended: 02:51:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 3976.00 ft (KB) To 3999.00 ft (KB) (TVD)

Total Depth: 3999.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2880.00 ft (KB)

2870.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 3981.00 ft (KB)

Start Date: 2012.01.17 End Date: 2012.01.18

Start Time: 19:36:02 End Time: 02:51:19

Capacity: 8000.00 psig

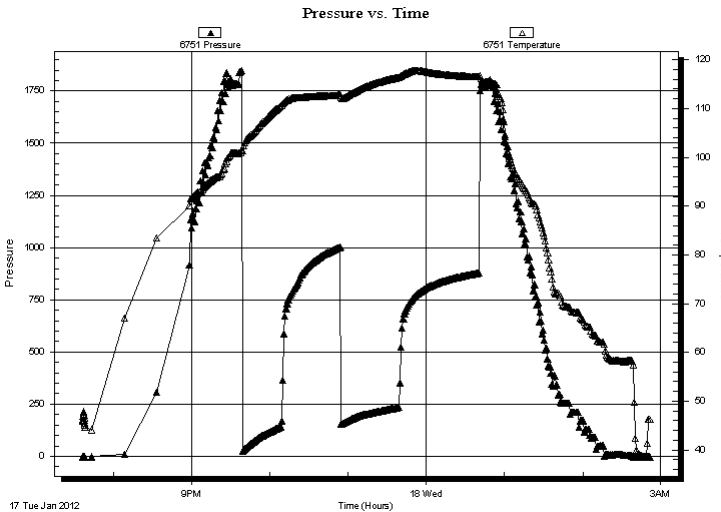
Last Calib.: 2012.01.18

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. @ 15 min.
4" Return.
B.O.B. @ 24 min.
4" Return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
176.00	OSMW 30m 70w	0.87
176.00	GOCM10g 40o 50m	0.87
213.00	GO 20g 80o	1.37
0.00	150 Feet weak GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45382

DST#: 3

ATTN: TimLauer

Test Start: 2012.01.17 @ 19:36:00

Tool Information

Drill Pipe:	Length: 3428.00 ft	Diameter: 3.80 inches	Volume: 48.09 bbl	Tool Weight: 2500.00 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: 530.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 50.70 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.50 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3976.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	50.50 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			3949.50	
Shut In Tool	5.00			3954.50	
Hydraulic tool	5.00			3959.50	
Jars	5.00			3964.50	
Safety Joint	2.50			3967.00	
Packer	5.00			3972.00	27.50 Bottom Of Top Packer
Packer	4.00			3976.00	
Stubb	1.00			3977.00	
Perforations	4.00			3981.00	
Recorder	0.00	8018	Inside	3981.00	
Recorder	0.00	6751	Outside	3981.00	
Perforations	15.00			3996.00	
Bullnose	3.00			3999.00	23.00 Bottom Packers & Anchor

Total Tool Length: 50.50



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45382

DST#: 3

ATTN: Tim Lauer

Test Start: 2012.01.17 @ 19:36:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

24000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.75 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
176.00	OSMW 30m 70w	0.866
176.00	GOCM10g 40o 50m	0.866
213.00	GO 20g 80o	1.366
0.00	150 Feet weak GIP	0.000

Total Length: 565.00 ft

Total Volume: 3.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

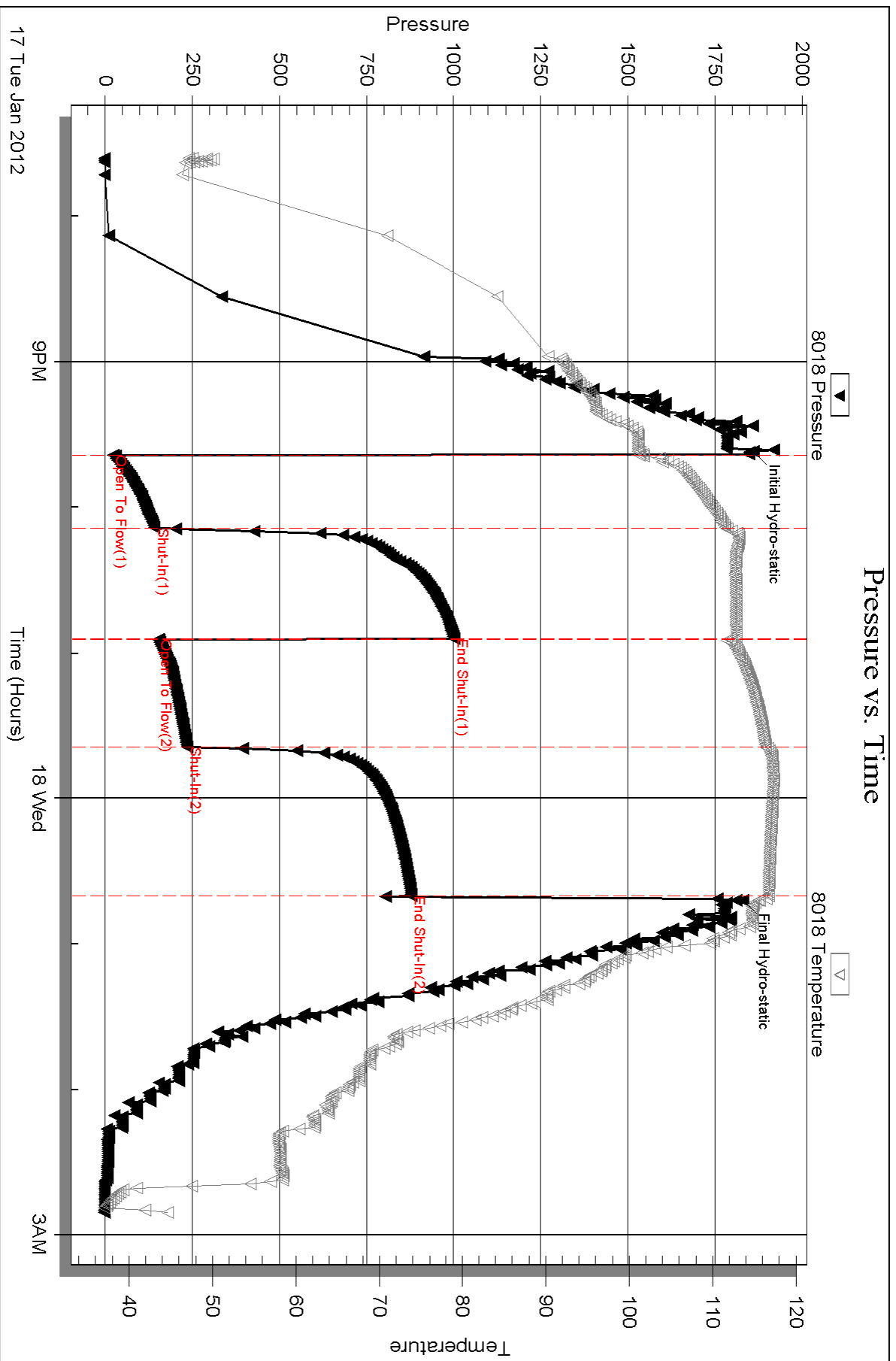
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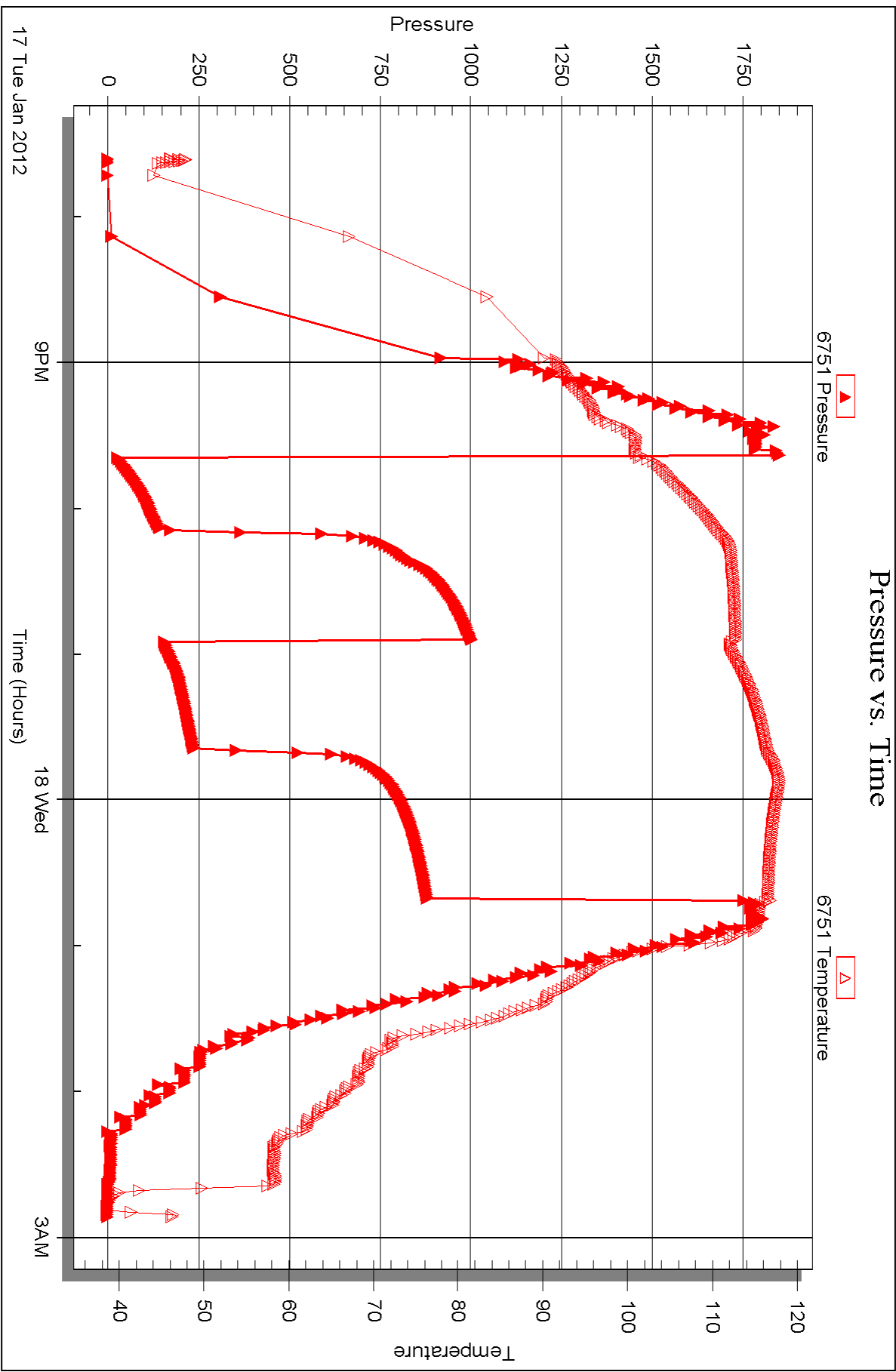
Laboratory Name:

Laboratory Location:

Recovery Comments: API:35 @ 20 Degrees = 39 Rw .340 @ 60 deg F

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.18 @ 11:07:00

End Date: 2012.01.18 @ 18:12:39

Job Ticket #: 45383 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:17:40



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45383

DST#: 4

ATTN: Tim Lauer

Test Start: 2012.01.18 @ 11:07:00

GENERAL INFORMATION:

Formation: **LKC 'F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:12:40

Time Test Ended: 18:12:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4002.00 ft (KB) To 4015.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4015.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 765.74 psig @ 4007.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.18

End Date:

2012.01.18

Last Calib.:

2012.01.18

Start Time: 11:07:02

End Time:

18:12:40

Time On Btm:

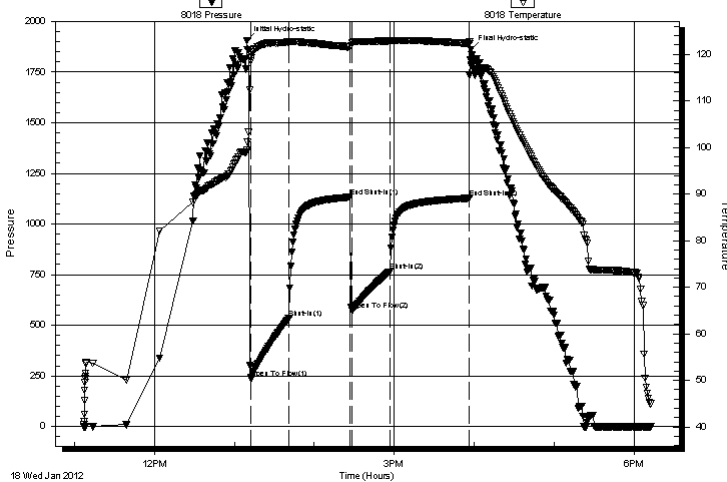
2012.01.18 @ 13:09:40

Time Off Btm:

2012.01.18 @ 15:57:39

TEST COMMENT: B.O.B. @ 1 1/2 min.
No return.
B.O.B. @ 2 1/2 min.
Surface return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1906.71	99.51	Initial Hydro-static
3	239.56	119.27	Open To Flow (1)
32	536.01	122.63	Shut-In(1)
77	1132.79	121.55	End Shut-In(1)
79	573.63	122.52	Open To Flow (2)
107	765.74	122.90	Shut-In(2)
167	1127.65	122.35	End Shut-In(2)
168	1860.84	117.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1388.00	MW 5m 95w	15.17
190.00	OSMW 20m 80w	2.67
30.00	OSWM 50w 50m	0.42

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45383

DST#: 4

ATTN: TimLauer

Test Start: 2012.01.18 @ 11:07:00

GENERAL INFORMATION:

Formation: **LKC 'F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:12:40

Time Test Ended: 18:12:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: **4002.00 ft (KB) To 4015.00 ft (KB) (TVD)**

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4015.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4007.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.18

End Date: 2012.01.18

Last Calib.: 2012.01.18

Start Time: 11:07:02

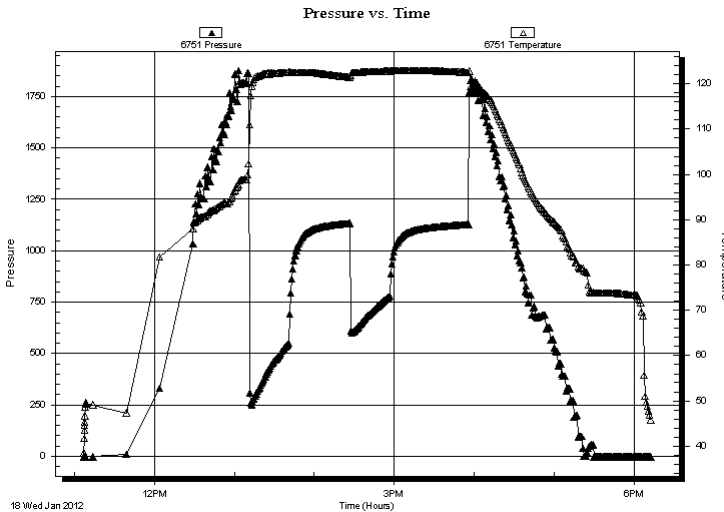
End Time: 18:12:40

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. @ 1 1/2 min.
No return.
B.O.B. @ 2 1/2 min.
Surface return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
1388.00	MW 5m 95w	15.17
190.00	OSMW 20m 80w	2.67
30.00	OSWM 50w 50m	0.42

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45383

DST#: 4

ATTN: TimLauer

Test Start: 2012.01.18 @ 11:07:00

Tool Information

Drill Pipe:	Length: 3517.00 ft	Diameter: 3.80 inches	Volume: 49.33 bbl	Tool Weight: 2500.00 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: 472.00 ft	Diameter: 2.25 inches	Volume: 2.32 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 51.65 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.50 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4002.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	40.50 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			3975.50	
Shut In Tool	5.00			3980.50	
Hydraulic tool	5.00			3985.50	
Jars	5.00			3990.50	
Safety Joint	2.50			3993.00	
Packer	5.00			3998.00	27.50 Bottom Of Top Packer
Packer	4.00			4002.00	
Stubb	1.00			4003.00	
Perforations	4.00			4007.00	
Recorder	0.00	8018	Inside	4007.00	
Recorder	0.00	6751	Outside	4007.00	
Perforations	5.00			4012.00	
Bullnose	3.00			4015.00	13.00 Bottom Packers & Anchor

Total Tool Length: 40.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45383

DST#: 4

ATTN: Tim Lauer

Test Start: 2012.01.18 @ 11:07:00

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: 110000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.55 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1388.00	MW 5m 95w	15.170
190.00	OSMW 20m 80w	2.665
30.00	OSWM 50w 50m	0.421

Total Length: 1608.00 ft Total Volume: 18.256 bbl

Num Fluid Samples: 0

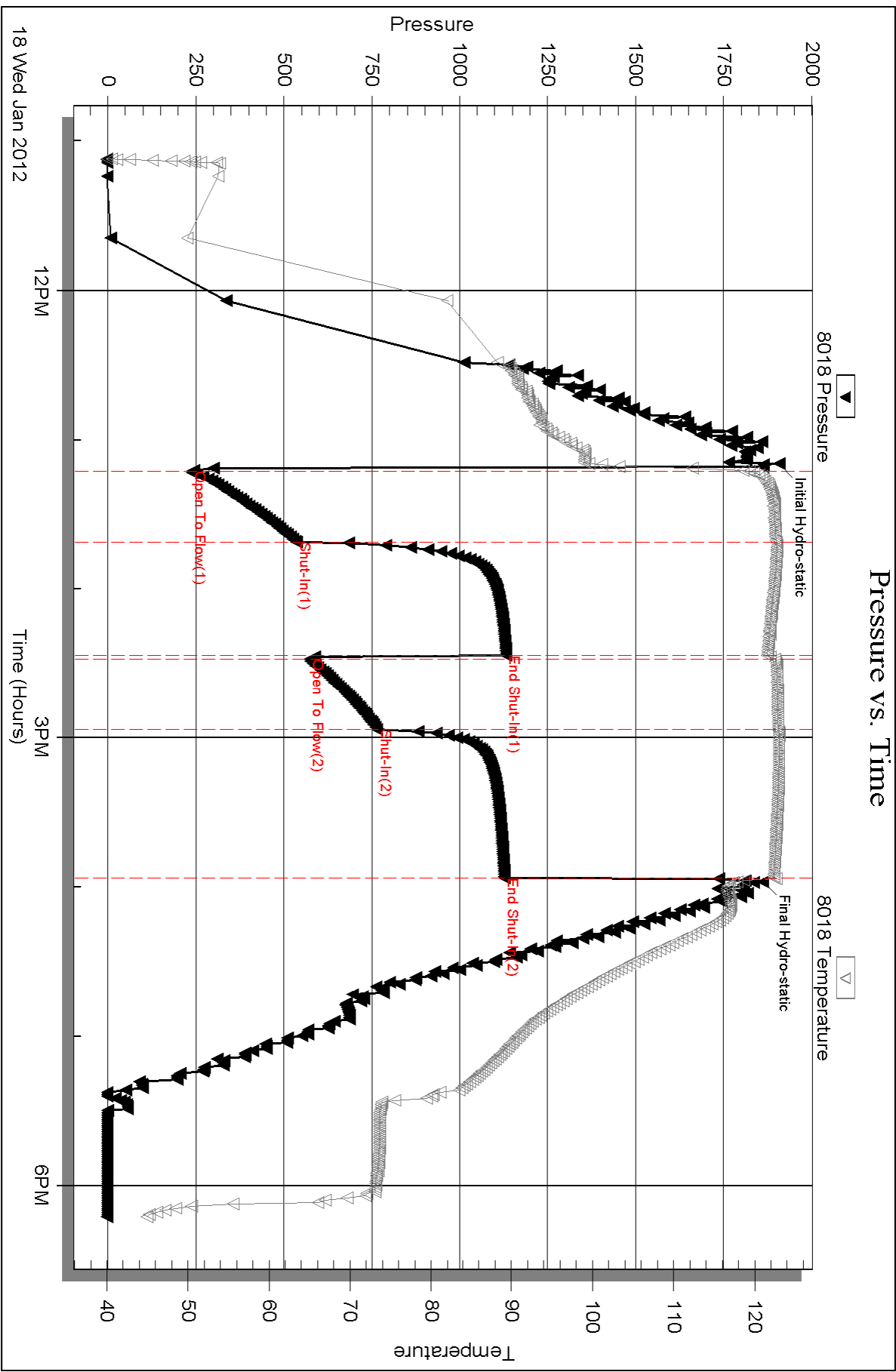
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Rw .105 @ 50 deg F

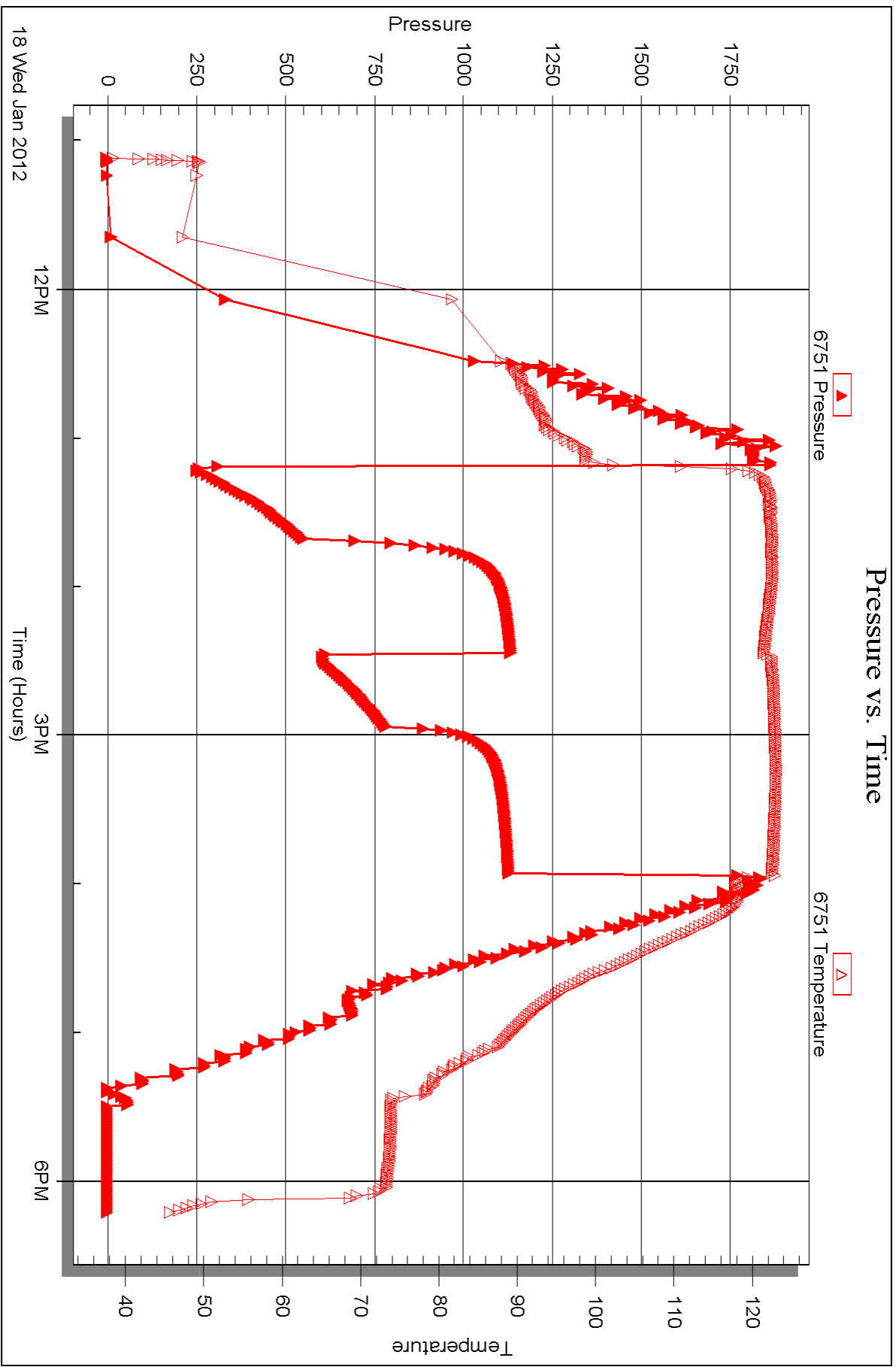


Serial #: 6751

Outside Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 45383

Printed: 2012.02.01 @ 11:17:43



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.19 @ 05:21:00

End Date: 2012.01.19 @ 13:06:09

Job Ticket #: 45384 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:16:14



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45384

DST#: 5

ATTN: Tim Lauer

Test Start: 2012.01.19 @ 05:21:00

GENERAL INFORMATION:

Formation: **LKC 'H'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:03:50

Time Test Ended: 13:06:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4050.00 ft (KB) To 4085.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4085.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018 Inside

Press @ Run Depth: 70.03 psig @ 4053.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.19

End Date:

2012.01.19

Last Calib.: 2012.01.19

Start Time: 05:21:02

End Time:

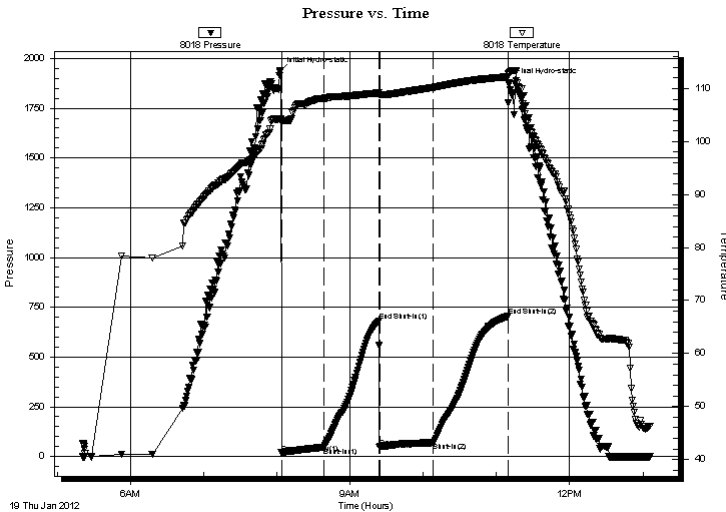
13:06:10

Time On Btm: 2012.01.19 @ 08:02:30

Time Off Btm: 2012.01.19 @ 11:10:09

TEST COMMENT: 10" Blow.
No return.
B.O.B. @ 33 min.
Weak surface return died @ 10 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1934.60	104.18	Initial Hydro-static
2	18.21	103.55	Open To Flow (1)
36	46.52	108.14	Shut-In(1)
82	680.40	109.18	End Shut-In(1)
82	47.77	108.88	Open To Flow (2)
126	70.03	110.22	Shut-In(2)
187	704.16	112.22	End Shut-In(2)
188	1876.22	112.62	Final Hydro-static

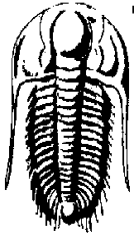
Recovery

Length (ft)	Description	Volume (bbl)
130.00	GOCM 5g 20o 75m	0.64
0.00	310 GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45384

DST#: 5

ATTN: Tim Lauer

Test Start: 2012.01.19 @ 05:21:00

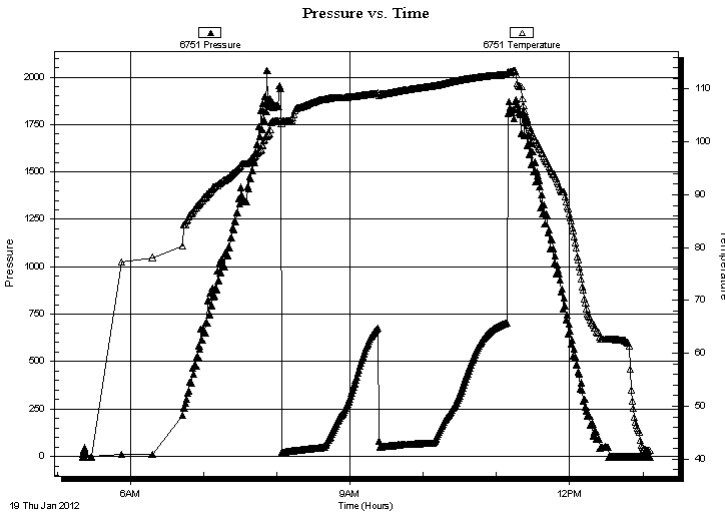
GENERAL INFORMATION:

Formation: **LKC 'H'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:03:50
 Time Test Ended: 13:06:09
 Interval: **4050.00 ft (KB) To 4085.00 ft (KB) (TVD)**
 Total Depth: 4085.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 37
 Reference Elevations: 2880.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6751 Outside
 Press @ Run Depth: psig @ 4053.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.19 End Date: 2012.01.19 Last Calib.: 2012.01.19
 Start Time: 05:21:02 End Time: 13:06:10 Time On Btm:
 Time Off Btm:

TEST COMMENT: 10" Blow.
 No return.
 B.O.B. @ 33 min.
 Weak surface return died @ 10 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
130.00	GOCM 5g 20o 75m	0.64
0.00	310 GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45384

DST#: 5

ATTN: TimLauer

Test Start: 2012.01.19 @ 05:21:00

Tool Information

Drill Pipe:	Length: 3582.00 ft	Diameter: 3.80 inches	Volume: 50.25 bbl	Tool Weight: 2500.00 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: 472.00 ft	Diameter: 2.25 inches	Volume: 2.32 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 52.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.50 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4050.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	62.50 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			4023.50	
Shut In Tool	5.00			4028.50	
Hydraulic tool	5.00			4033.50	
Jars	5.00			4038.50	
Safety Joint	2.50			4041.00	
Packer	5.00			4046.00	27.50 Bottom Of Top Packer
Packer	4.00			4050.00	
Stubb	1.00			4051.00	
Perforations	2.00			4053.00	
Recorder	0.00	8018	Inside	4053.00	
Recorder	0.00	6751	Outside	4053.00	
Perforations	29.00			4082.00	
Bullnose	3.00			4085.00	35.00 Bottom Packers & Anchor

Total Tool Length: 62.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45384

DST#: 5

ATTN: Tim Lauer

Test Start: 2012.01.19 @ 05:21:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.55 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
130.00	GOCM 5g 20o 75m	0.639
0.00	310 GIP	0.000

Total Length: 130.00 ft Total Volume: 0.639 bbl

Num Fluid Samples: 0

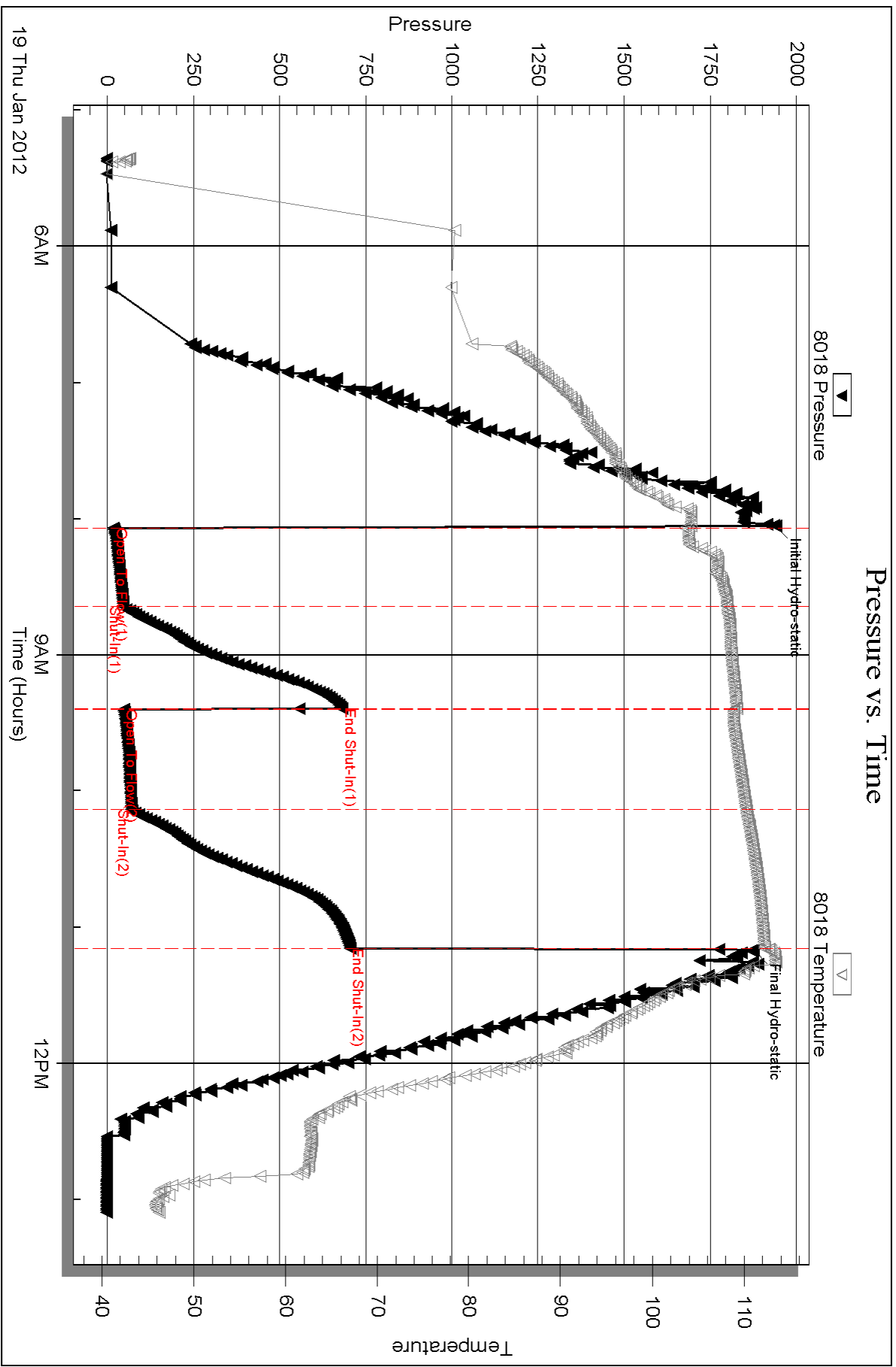
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API:37 @ 30 Degrees F=40.

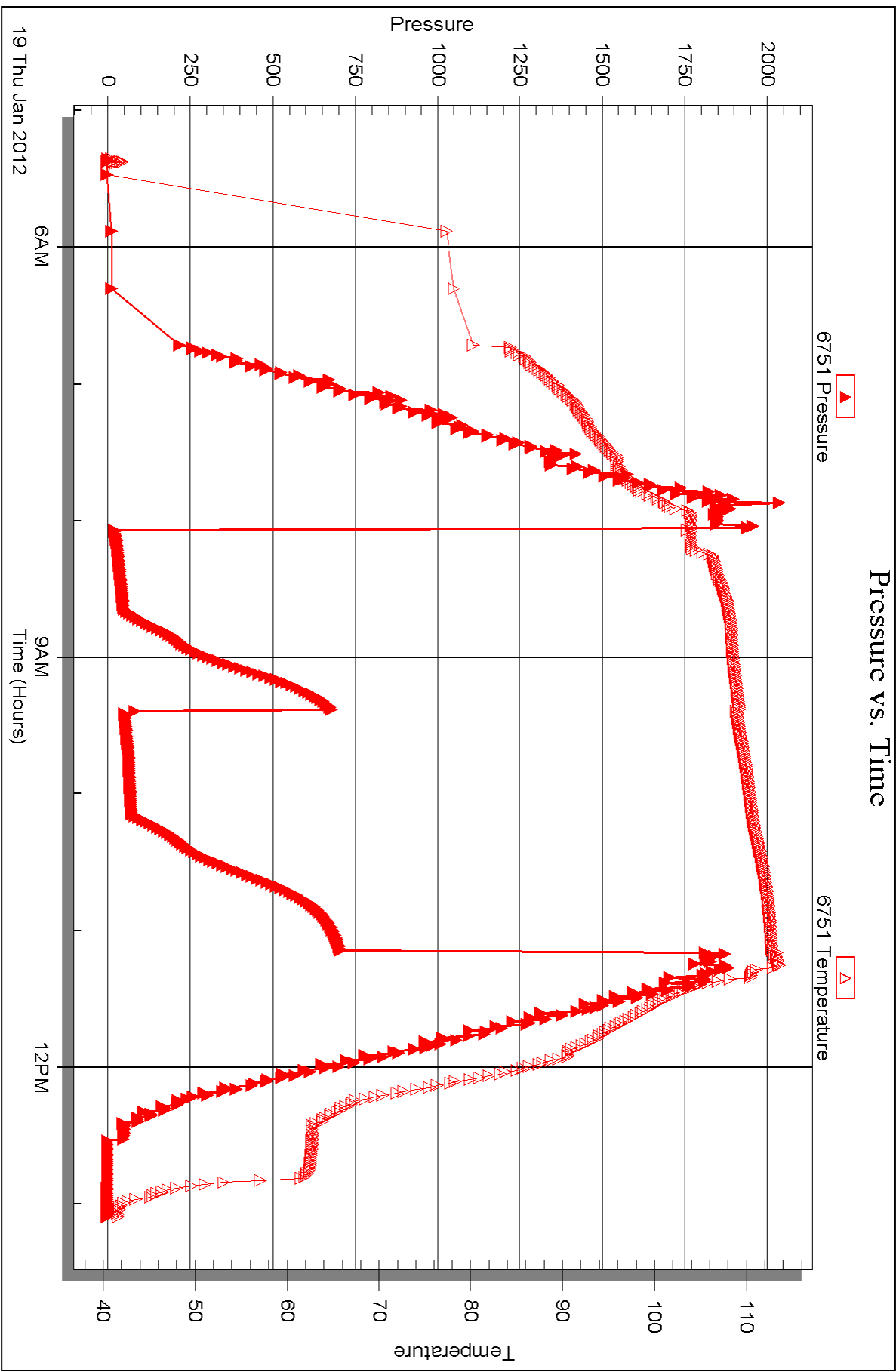


Serial #: 6751

Outside Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 5





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.19 @ 21:40:00

End Date: 2012.01.20 @ 05:48:20

Job Ticket #: 45385 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:15:17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45385

DST#: 6

ATTN: Tim Lauer

Test Start: 2012.01.19 @ 21:40:00

GENERAL INFORMATION:

Formation: **LKC 'I'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:19:40
 Time Test Ended: 05:48:20
 Interval: **4085.00 ft (KB) To 4120.00 ft (KB) (TVD)**
 Total Depth: 4120.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 37
 Reference Elevations: 2880.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 10.00 ft

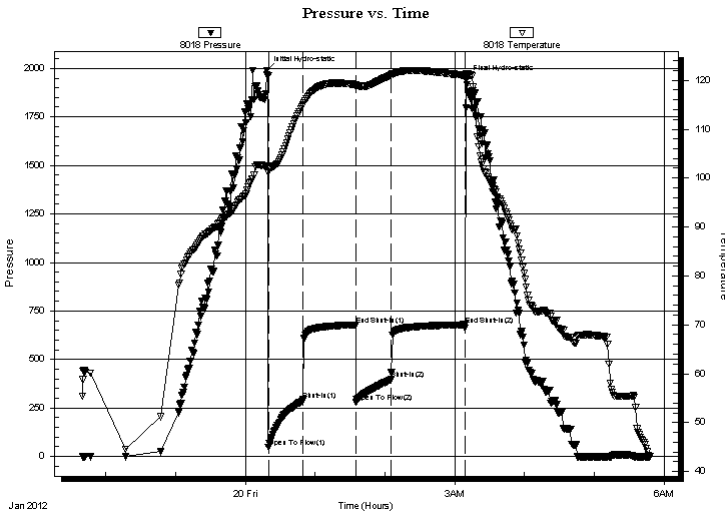
Serial #: 8018

Inside

Press @ Run Depth: 396.73 psig @ 4090.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.19 End Date: 2012.01.20 Last Calib.: 2012.01.20
 Start Time: 21:40:02 End Time: 05:48:19 Time On Btm: 2012.01.20 @ 00:18:10
 Time Off Btm: 2012.01.20 @ 03:10:00

TEST COMMENT: B.O.B. @ 6 1/2 min.
 B.O.B. @ 16 min.
 B.O.B. @ 8 1/2 min.
 B.O.B. @ 20 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1988.55	102.40	Initial Hydro-static
2	48.29	101.17	Open To Flow (1)
32	287.74	114.87	Shut-In(1)
77	678.98	119.08	End Shut-In(1)
78	280.75	118.78	Open To Flow (2)
108	396.73	121.05	Shut-In(2)
171	679.42	121.02	End Shut-In(2)
172	1941.70	121.28	Final Hydro-static

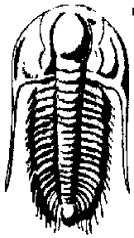
Recovery

Length (ft)	Description	Volume (bbl)
440.00	MW 10m 90w Oil in tool.	2.16
280.00	GOCWM 5g 5o 10w 80m	3.64
190.00	GO 30g 70o	2.67
0.00	855 Feet GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

ATTN: Tim Lauer

Job Ticket: 45385

DST#: 6

Test Start: 2012.01.19 @ 21:40:00

GENERAL INFORMATION:

Formation: **LKC 'I'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:19:40
Time Test Ended: 05:48:20
Interval: **4085.00 ft (KB) To 4120.00 ft (KB) (TVD)**
Total Depth: 4120.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Chuck Smith
Unit No: 37
Reference Elevations: 2880.00 ft (KB)
2870.00 ft (CF)
KB to GR/CF: 10.00 ft

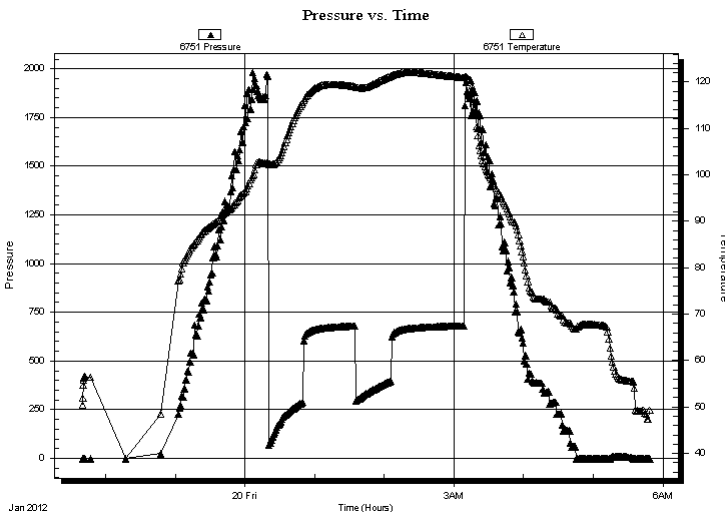
Serial #: 6751

Outside

Press @ Run Depth: psig @ 4090.00 ft (KB)
Start Date: 2012.01.19 End Date: 2012.01.20
Start Time: 21:40:02 End Time: 05:48:30
Capacity: 8000.00 psig
Last Calib.: 2012.01.20
Time On Btm:
Time Off Btm:

TEST COMMENT: B.O.B. @ 6 1/2 min.
B.O.B. @ 16 min.
B.O.B. @ 8 1/2 min.
B.O.B. @ 20 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
440.00	MW 10m 90w Oil in tool.	2.16
280.00	GOCVM 5g 5o 10w 80m	3.64
190.00	GO 30g 70o	2.67
0.00	855 Feet GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45385

DST#: 6

ATTN: TimLauer

Test Start: 2012.01.19 @ 21:40:00

Tool Information

Drill Pipe:	Length: 3614.00 ft	Diameter: 3.80 inches	Volume: 50.69 bbl	Tool Weight: 2500.00 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: 472.00 ft	Diameter: 2.25 inches	Volume: 2.32 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 53.01 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.50 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4085.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	62.50 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			4058.50	
Shut In Tool	5.00			4063.50	
Hydraulic tool	5.00			4068.50	
Jars	5.00			4073.50	
Safety Joint	2.50			4076.00	
Packer	5.00			4081.00	27.50 Bottom Of Top Packer
Packer	4.00			4085.00	
Stubb	1.00			4086.00	
Perforations	4.00			4090.00	
Recorder	0.00	8018	Inside	4090.00	
Recorder	0.00	6751	Outside	4090.00	
Perforations	27.00			4117.00	
Bullnose	3.00			4120.00	35.00 Bottom Packers & Anchor

Total Tool Length: 62.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45385

DST#: 6

ATTN: TimLauer

Test Start: 2012.01.19 @ 21:40:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

60000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.74 in³

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 bbbl
440.00	MW 10m 90w Oil in tool.	2.164
280.00	GOCWM 5g 5o 10w 80m	3.636
190.00	GO 30g 70o	2.665
0.00	855 Feet GIP	0.000

Total Length: 910.00 ft

Total Volume: 8.465 bbl

Num Fluid Samples: 0

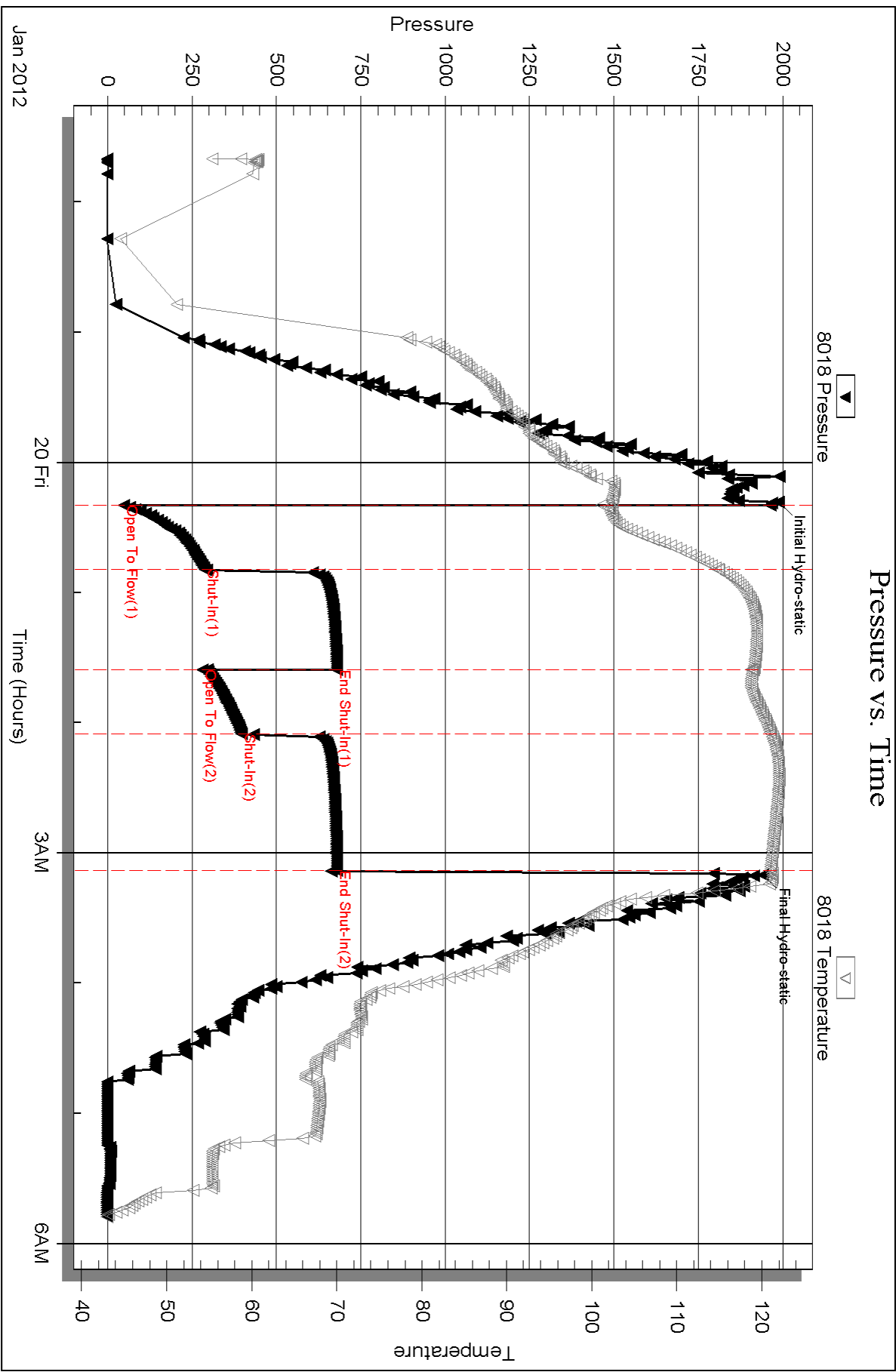
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API:36 @ 20 Degrees F = 40 Rw .142 @ 65 deg F

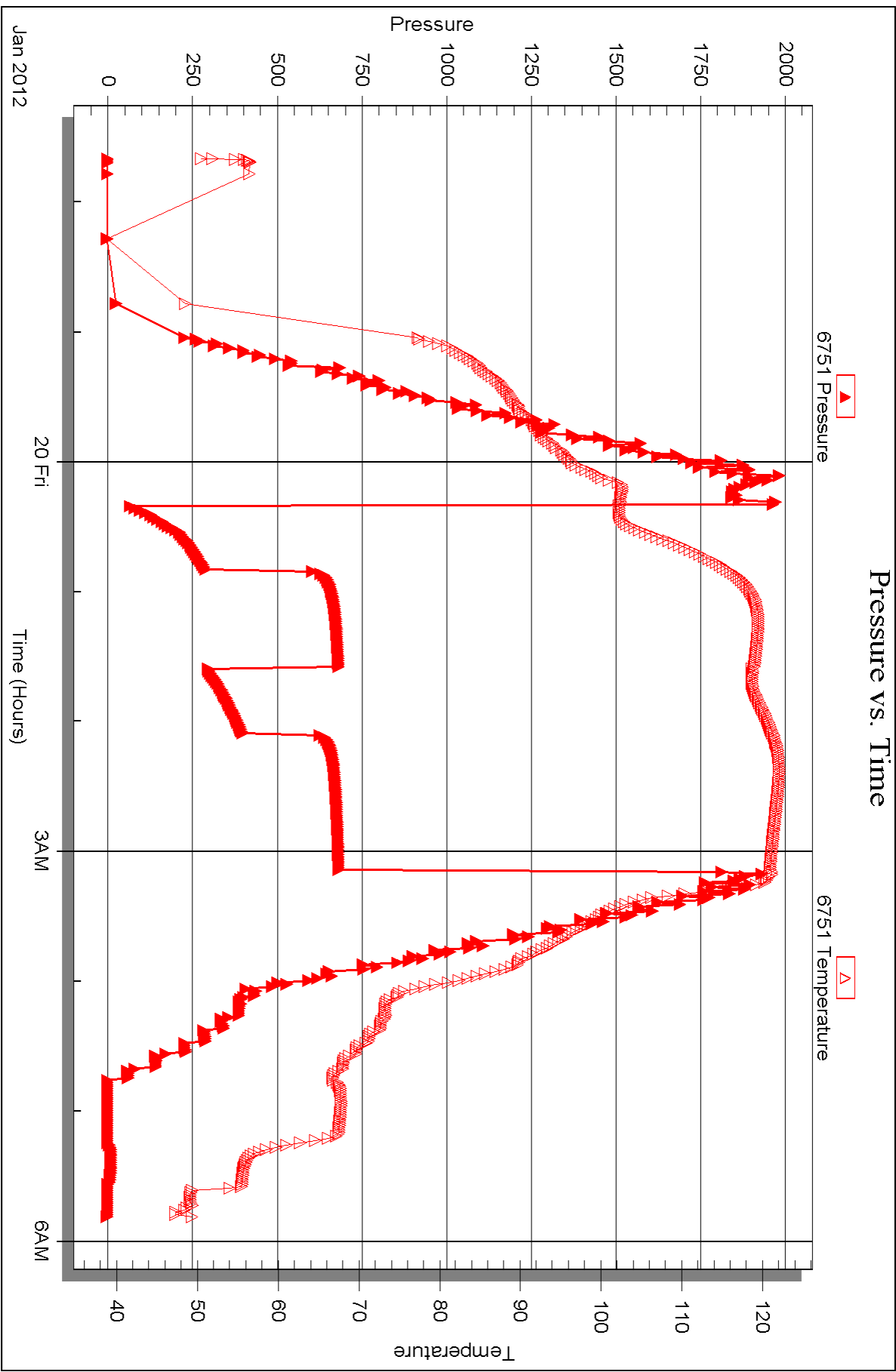


Serial #: 6751

Outside Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 45385

Printed: 2012.02.01 @ 11:15:20



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.20 @ 14:00:00

End Date: 2012.01.20 @ 21:32:39

Job Ticket #: 45386 DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:14:15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45386

DST#: 7

ATTN: Tim Lauer

Test Start: 2012.01.20 @ 14:00:00

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:25:10

Time Test Ended: 21:32:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4127.00 ft (KB) To 4140.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4140.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 166.08 psig @ 4132.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.20

End Date:

2012.01.20

Last Calib.:

2012.01.20

Start Time: 14:00:02

End Time:

21:32:40

Time On Btm:

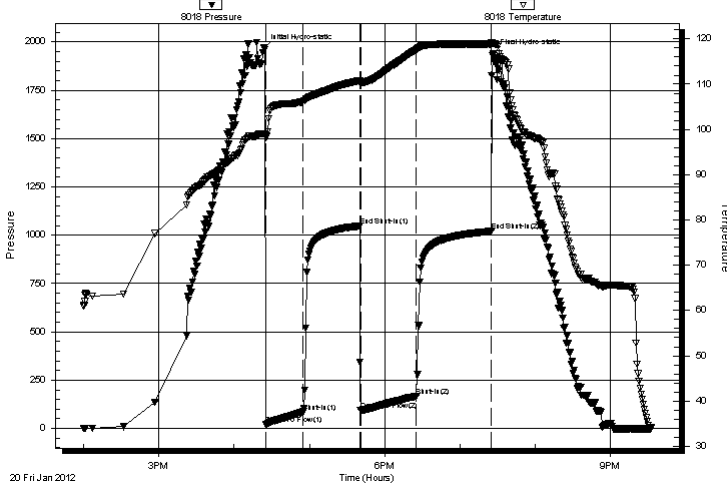
2012.01.20 @ 16:23:40

Time Off Btm:

2012.01.20 @ 19:26:20

TEST COMMENT: B.O.B. @ 13 min.
2" Return, recede to weak surface return.
B.O.B. @ 12 min.
4" Return, recede to 1/2" return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.90	99.08	Initial Hydro-static
2	19.24	98.28	Open To Flow (1)
32	85.48	106.13	Shut-In(1)
77	1047.88	110.78	End Shut-In(1)
78	94.25	110.43	Open To Flow (2)
122	166.08	117.55	Shut-In(2)
182	1020.58	118.81	End Shut-In(2)
183	1938.53	118.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
176.00	GOCM 25g 25o 50m	0.87
224.00	GO 50g 50o	1.10
0.00	520 Feet GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45386

DST#: 7

ATTN: Tim Lauer

Test Start: 2012.01.20 @ 14:00:00

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:25:10

Time Test Ended: 21:32:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4127.00 ft (KB) To 4140.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4140.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4132.00 ft (KB)

Start Date: 2012.01.20

End Date: 2012.01.20

Capacity: 8000.00 psig

Last Calib.: 2012.01.20

Start Time: 14:00:02

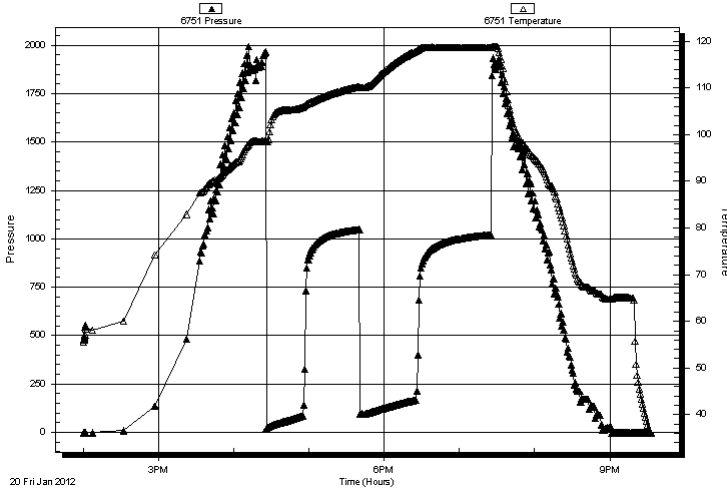
End Time: 21:32:40

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. @ 13 min.
2" Return, recede to weak surface return.
B.O.B. @ 12 min.
4" Return, recede to 1/2" return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
176.00	GOCM 25g 25o 50m	0.87
224.00	GO 50g 50o	1.10
0.00	520 Feet GIP	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45386

DST#: 7

ATTN: TimLauer

Test Start: 2012.01.20 @ 14:00:00

Tool Information

Drill Pipe:	Length: 3642.00 ft	Diameter: 3.80 inches	Volume: 51.09 bbl	Tool Weight: 2500.00 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: 472.00 ft	Diameter: 2.25 inches	Volume: 2.32 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 53.41 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.50 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4127.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	40.50 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			4100.50	
Shut In Tool	5.00			4105.50	
Hydraulic tool	5.00			4110.50	
Jars	5.00			4115.50	
Safety Joint	2.50			4118.00	
Packer	5.00			4123.00	27.50 Bottom Of Top Packer
Packer	4.00			4127.00	
Stubb	1.00			4128.00	
Perforations	4.00			4132.00	
Recorder	0.00	8018	Inside	4132.00	
Recorder	0.00	6751	Outside	4132.00	
Perforations	5.00			4137.00	
Bullnose	3.00			4140.00	13.00 Bottom Packers & Anchor

Total Tool Length: 40.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45386

DST#: 7

ATTN: TimLauer

Test Start: 2012.01.20 @ 14:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
176.00	GOCM 25g 25o 50m	0.866
224.00	GO 50g 50o	1.102
0.00	520 Feet GIP	0.000

Total Length: 400.00 ft Total Volume: 1.968 bbl

Num Fluid Samples: 0

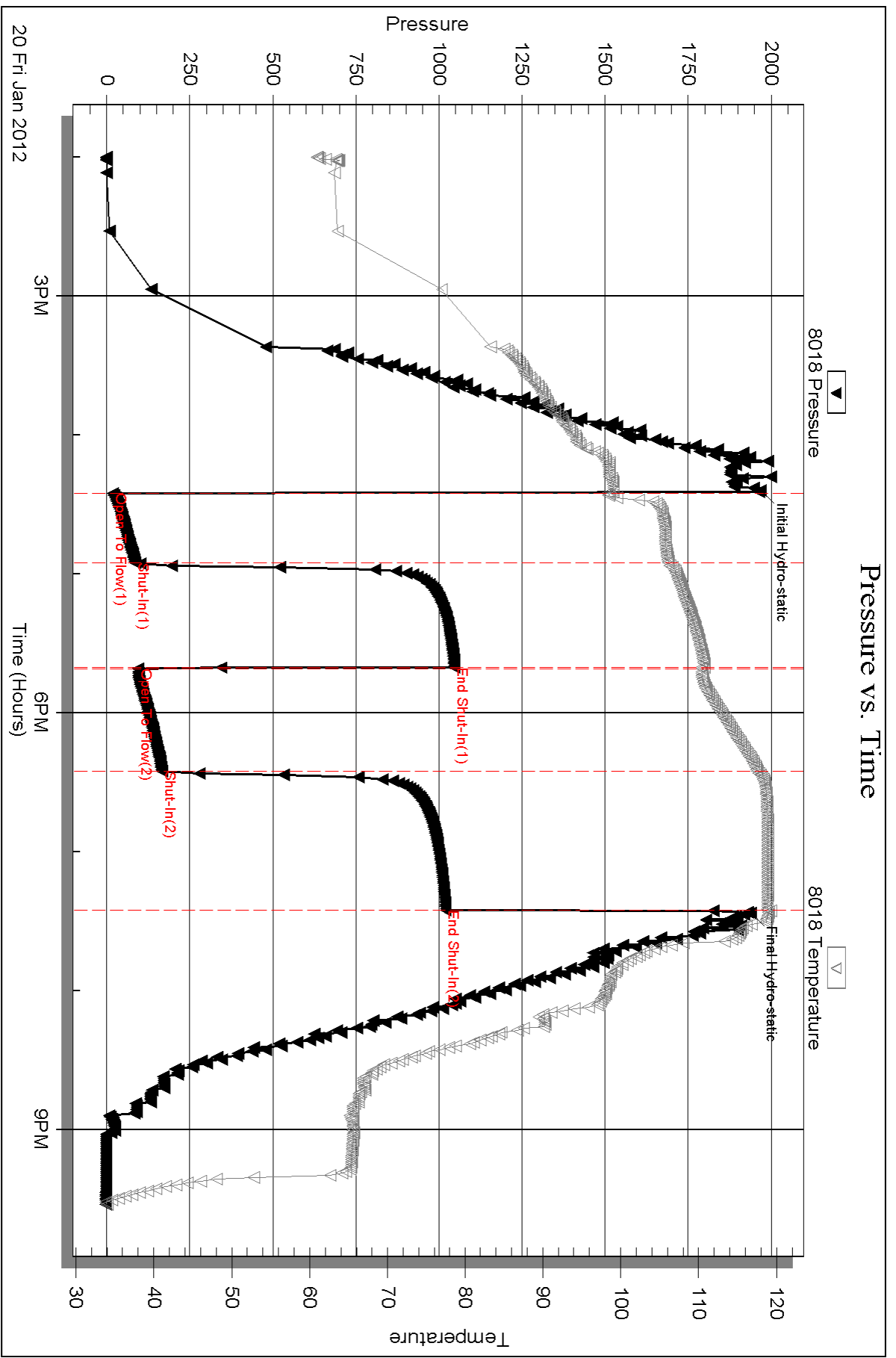
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API:37 @ 30 Degrees F = 40.



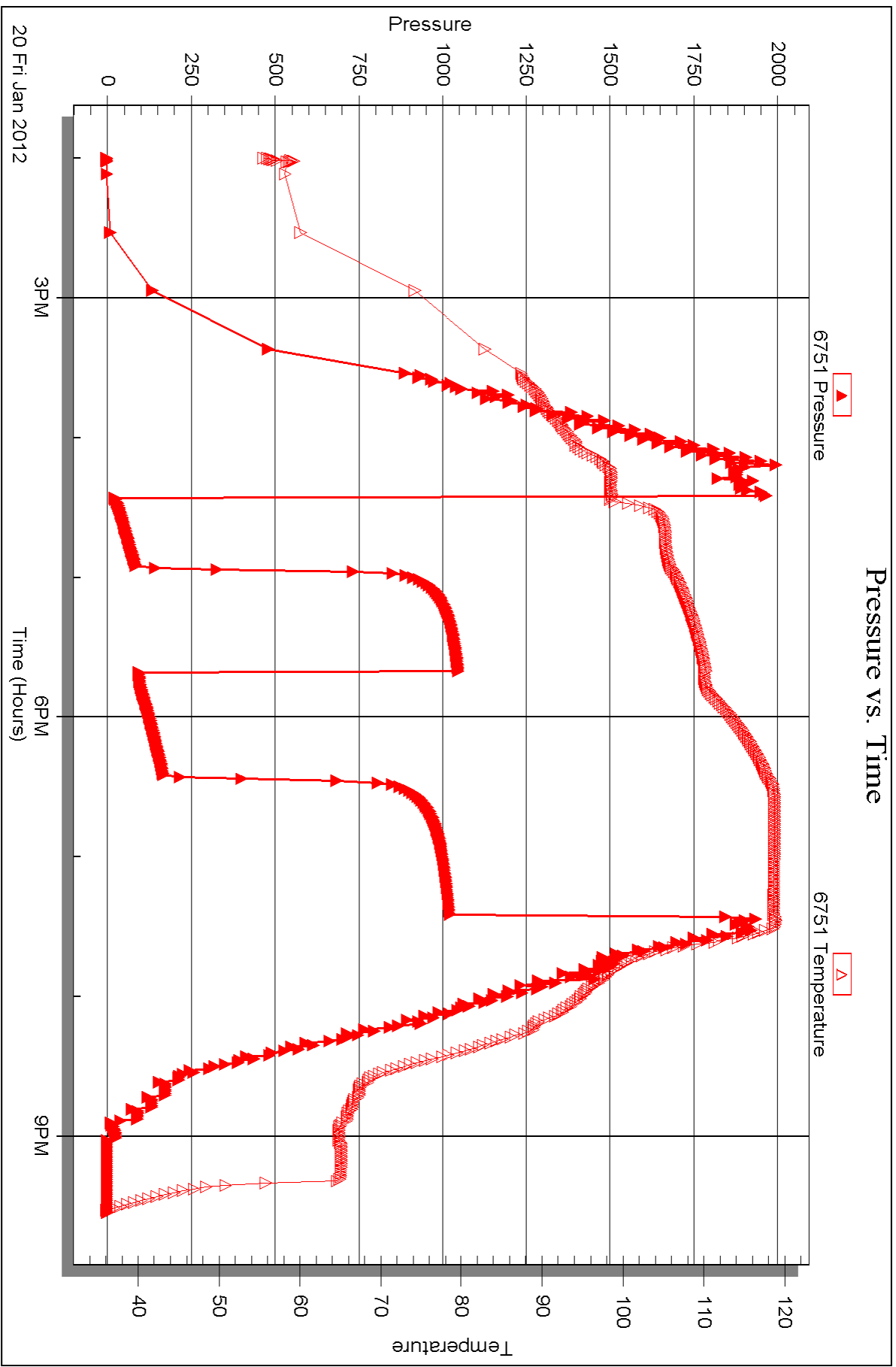
Serial #: 6751

Outside

Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 7





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.21 @ 06:36:00

End Date: 2012.01.21 @ 14:49:30

Job Ticket #: 45387 DST #: 8

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

Printed: 2012.02.01 @ 11:13:23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45387

DST#: 8

ATTN: Tim Lauer

Test Start: 2012.01.21 @ 06:36:00

GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:51:30

Time Test Ended: 14:49:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4140.00 ft (KB) To 4174.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4174.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 582.77 psig @ 4145.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.21

End Date: 2012.01.21

Last Calib.: 2012.01.21

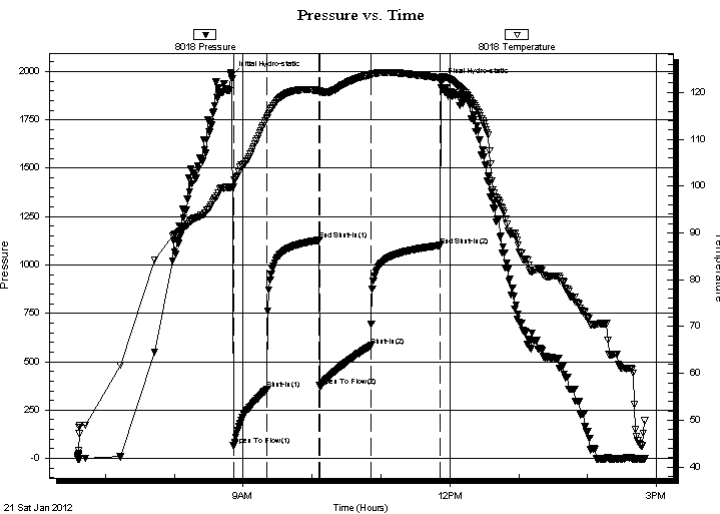
Start Time: 06:36:02

End Time: 14:49:30

Time On Btm: 2012.01.21 @ 08:49:40

Time Off Btm: 2012.01.21 @ 11:52:39

TEST COMMENT: B.O.B. @ 4 min.
B.O.B. @ 29 min.
B.O.B. @ 5 1/2 min.
B.O.B. @ 15 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1979.69	99.70	Initial Hydro-static
2	65.78	99.81	Open To Flow (1)
32	359.62	114.65	Shut-In(1)
77	1128.62	120.39	End Shut-In(1)
77	372.87	120.14	Open To Flow (2)
122	582.77	123.77	Shut-In(2)
182	1100.61	123.13	End Shut-In(2)
183	1941.51	123.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
757.00	OSMW 5m 95w Popping gas	6.32
344.00	GOSMW 5g 15m 80w	4.83
95.00	GMOCW 10g 15m 25o 50w	1.33
31.00	GO 40g 60o	0.43
0.00	634 Feet GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45387

DST#: 8

ATTN: Tim Lauer

Test Start: 2012.01.21 @ 06:36:00

GENERAL INFORMATION:

Formation: **LKC 'K'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 08:51:30 Tester: Chuck Smith
 Time Test Ended: 14:49:30 Unit No: 37
 Interval: **4140.00 ft (KB) To 4174.00 ft (KB) (TVD)**
 Reference Elevations: 2880.00 ft (KB)
 Total Depth: 4174.00 ft (KB) (TVD) 2870.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

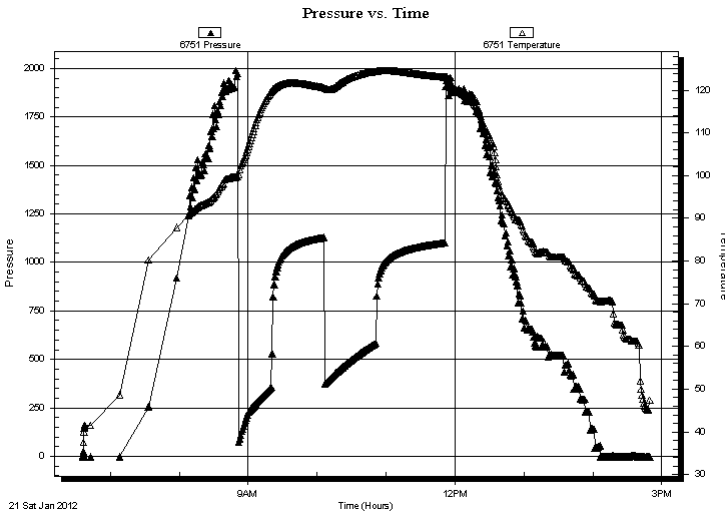
Serial #: 6751

Outside

Press@RunDepth: psig @ 4145.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.21 End Date: 2012.01.21 Last Calib.: 2012.01.21
 Start Time: 06:36:02 End Time: 14:49:19 Time On Btm:
 Time Off Btm:

TEST COMMENT: B.O.B. @ 4 min.
 B.O.B. @ 29 min.
 B.O.B. @ 5 1/2 min.
 B.O.B. @ 15 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
757.00	OSMW 5m 95w Popping gas	6.32
344.00	GOSMW 5g 15m 80w	4.83
95.00	GMOCW 10g 15m 25o 50w	1.33
31.00	GO 40g 60o	0.43
0.00	634 Feet GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45387

DST#: 8

ATTN: TimLauer

Test Start: 2012.01.21 @ 06:36:00

Tool Information

Drill Pipe:	Length: 3645.00 ft	Diameter: 3.80 inches	Volume: 51.13 bbl	Tool Weight: 2500.00 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: 472.00 ft	Diameter: 2.25 inches	Volume: 2.32 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 53.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	4.50 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4140.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	61.50 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			4113.50	
Shut In Tool	5.00			4118.50	
Hydraulic tool	5.00			4123.50	
Jars	5.00			4128.50	
Safety Joint	2.50			4131.00	
Packer	5.00			4136.00	27.50 Bottom Of Top Packer
Packer	4.00			4140.00	
Stubb	1.00			4141.00	
Perforations	4.00			4145.00	
Recorder	0.00	8018	Inside	4145.00	
Recorder	0.00	6751	Outside	4145.00	
Perforations	26.00			4171.00	
Bullnose	3.00			4174.00	34.00 Bottom Packers & Anchor

Total Tool Length: 61.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 45387

DST#: 8

ATTN: TimLauer

Test Start: 2012.01.21 @ 06:36:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

68000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
757.00	OSMW 5m 95w Popping gas	6.319
344.00	GOSMW 5g 15m 80w	4.825
95.00	GMOCW 10g 15m 25o 50w	1.333
31.00	GO 40g 60o	0.435
0.00	634 Feet GIP	0.000

Total Length: 1227.00 ft Total Volume: 12.912 bbl

Num Fluid Samples: 0

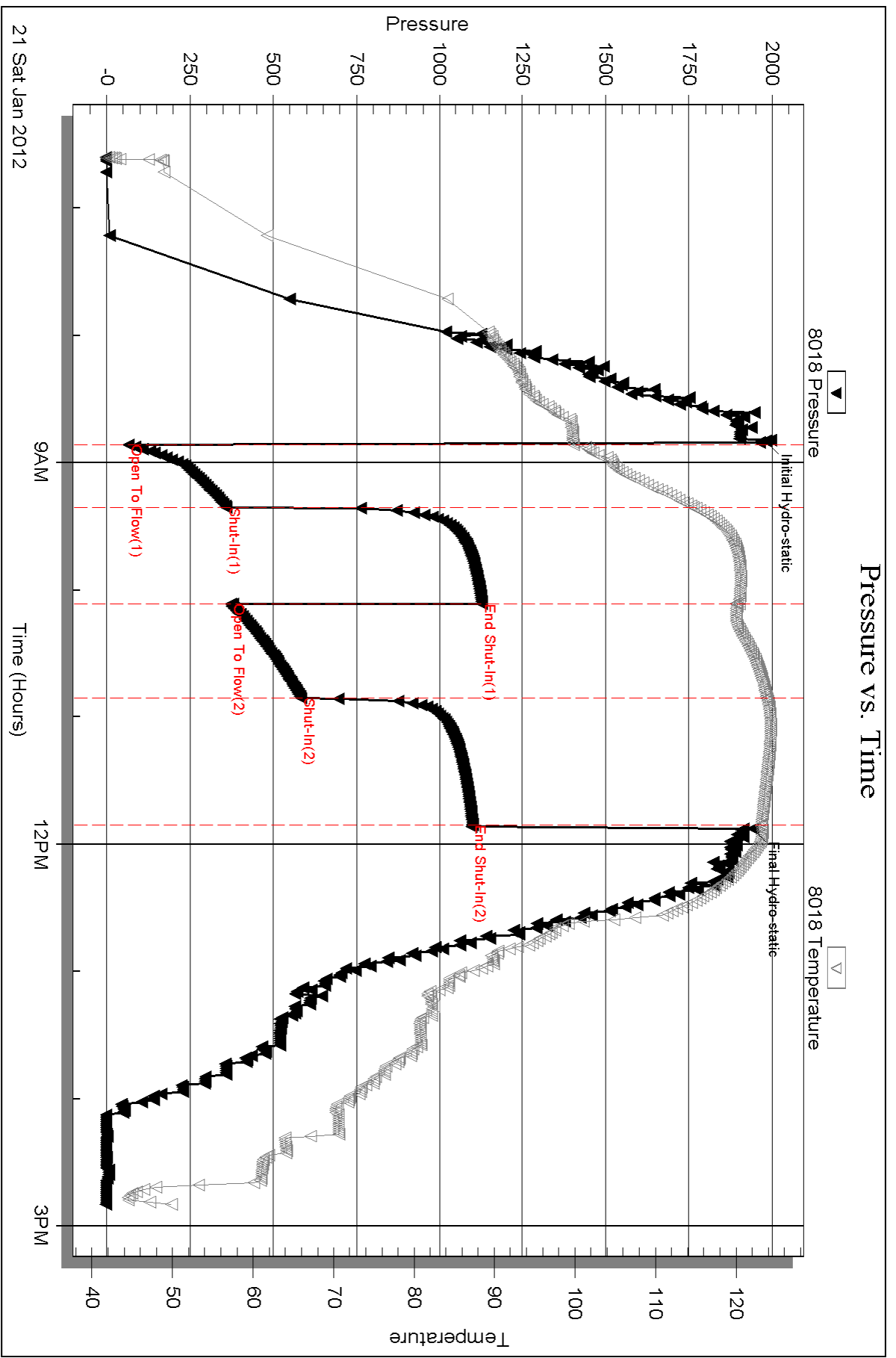
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 36 @ 50 Degrees F = 37 Rw .160 @ 51 deg F

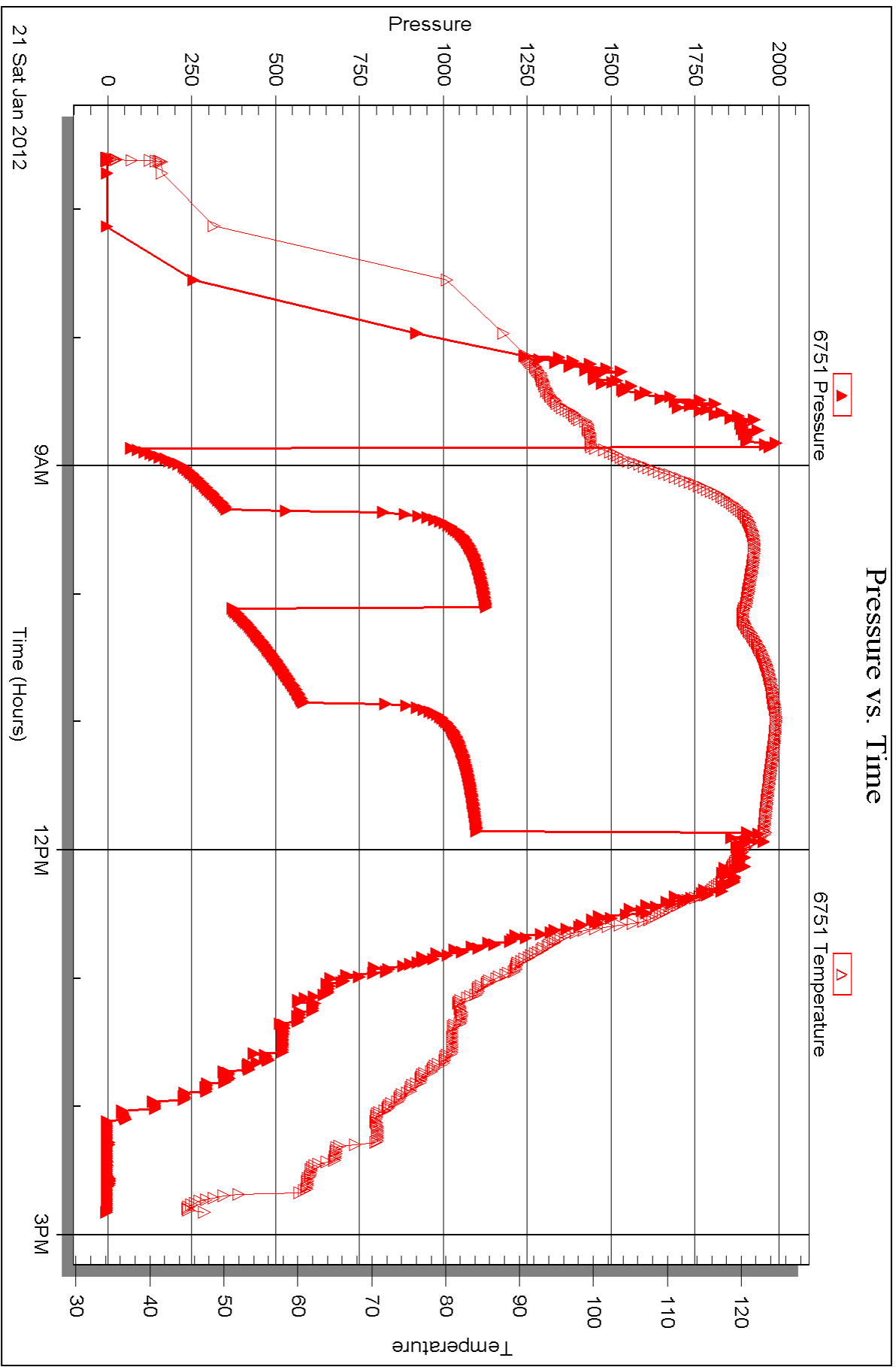


Serial #: 6751

Outside Ritchie Exploration, Inc.

#3 Phillips 20C

DST Test Number: 8





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.23 @ 00:54:00

End Date: 2012.01.23 @ 08:32:08

Job Ticket #: 44993 DST #: 9

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:12:33



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44993

DST#: 9

ATTN: Tim Lauer

Test Start: 2012.01.23 @ 00:54:00

GENERAL INFORMATION:

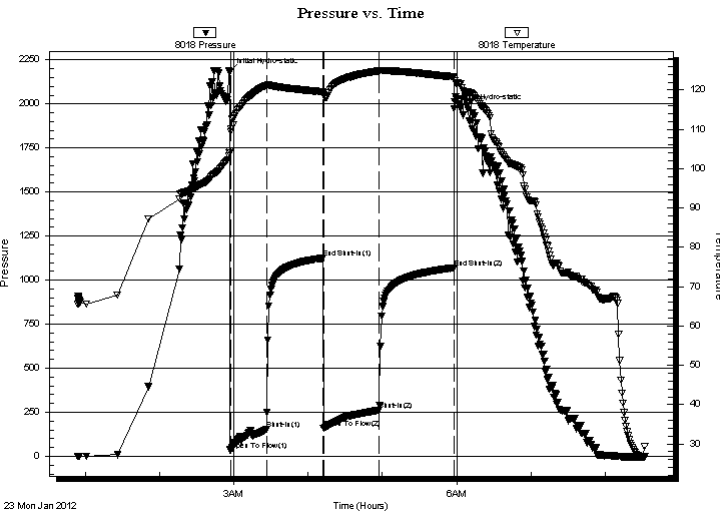
Formation: **Myric / Ft. Scott /**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 02:57:28 Tester: Will MacLean
 Time Test Ended: 08:32:08 Unit No: 37
 Interval: **4370.00 ft (KB) To 4454.00 ft (KB) (TVD)** Reference Elevations: 2880.00 ft (KB)
 Total Depth: 4454.00 ft (KB) (TVD) 2870.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 262.12 psig @ 4371.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.23 End Date: 2012.01.23 Last Calib.: 2012.01.23
 Start Time: 00:54:00 End Time: 08:32:08 Time On Btm: 2012.01.23 @ 02:56:28
 Time Off Btm: 2012.01.23 @ 05:57:58

TEST COMMENT: IF- BOB in 25 min
 IS- Weak Surface Blow in 9 min
 FF- BOB in 29 min
 FS- Weak Surface Blow in 8 min



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2180.90	103.94	Initial Hydro-static
1	32.89	109.36	Open To Flow (1)
30	154.15	121.24	Shut-In(1)
76	1124.79	119.56	End Shut-In(1)
76	160.74	118.85	Open To Flow (2)
121	262.12	124.87	Shut-In(2)
182	1069.63	123.37	End Shut-In(2)
182	1972.52	123.47	Final Hydro-static

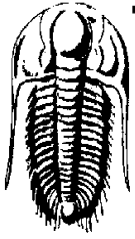
Recovery

Length (ft)	Description	Volume (bbl)
270.00	MCW 20%w 80%w	1.33
180.00	OGWCM 4%oil 10%g 15%w 71%m	0.89
94.00	OWGCM 4%oil 5%w 10%g 81%m	1.14
15.00	GO 5%g 95%oil	0.21
0.00	175' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44993

DST#: 9

ATTN: TimLauer

Test Start: 2012.01.23 @ 00:54:00

GENERAL INFORMATION:

Formation: **Myric / Ft. Scott /**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:57:28
 Time Test Ended: 08:32:08
Interval: 4370.00 ft (KB) To 4454.00 ft (KB) (TVD)
 Total Depth: 4454.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 37
 Reference Elevations: 2880.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 10.00 ft

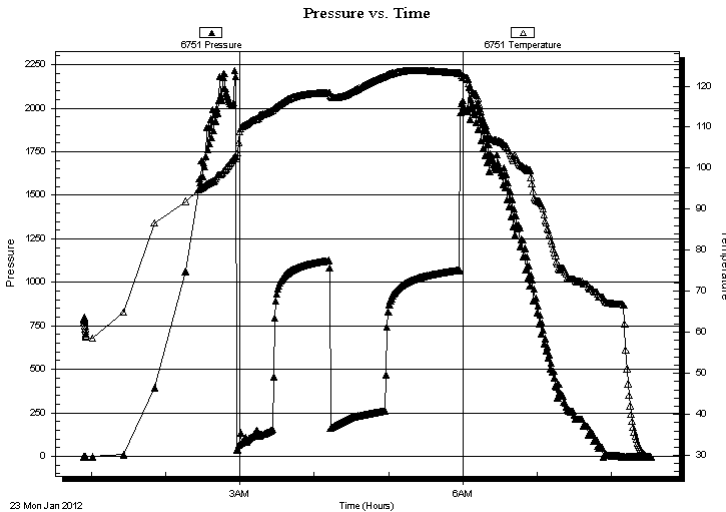
Serial #: 6751

Outside

Press @ Run Depth: psig @ 4371.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.23 End Date: 2012.01.23 Last Calib.: 2012.01.23
 Start Time: 00:54:02 End Time: 08:32:10 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF- BOB in 25 min
 IS- Weak Surface Blow in 9 min
 FF- BOB in 29 min
 FS- Weak Surface Blow in 8 min

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
270.00	MCW 20%w 80%w	1.33
180.00	OGWCM 4%oil 10%g 15%w 71%m	0.89
94.00	OWGCM 4%oil 5%w 10%g 81%m	1.14
15.00	GO 5%g 95%oil	0.21
0.00	175' of GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44993

DST#: 9

ATTN: TimLauer

Test Start: 2012.01.23 @ 00:54:00

Tool Information

Drill Pipe:	Length: 3899.00 ft	Diameter: 3.80 inches	Volume: 54.69 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 470.00 ft	Diameter: 2.25 inches	Volume: 2.31 bbl	Weight to Pull Loose: 8000.00 lb
			<u>Total Volume: 57.00 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	26.50 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4370.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	111.50 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			4343.50	
Shut In Tool	5.00			4348.50	
Hydraulic tool	5.00			4353.50	
Jars	5.00			4358.50	
Safety Joint	2.50			4361.00	
Packer	5.00			4366.00	27.50 Bottom Of Top Packer
Packer	4.00			4370.00	
Stubb	1.00			4371.00	
Recorder	0.00	8018	Inside	4371.00	
Recorder	0.00	6751	Outside	4371.00	
Perforations	15.00			4386.00	
Change Over Sub	1.00			4387.00	
Drill Pipe	63.00			4450.00	
Change Over Sub	1.00			4451.00	
Bullnose	3.00			4454.00	84.00 Bottom Packers & Anchor

Total Tool Length: 111.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44993

DST#: 9

ATTN: TimLauer

Test Start: 2012.01.23 @ 00:54:00

Mud and Cushion Information

Mud Type: Invert	Cushion Type:	Oil API: 32 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 90000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl	
Water Loss: 4.78 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 5600.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

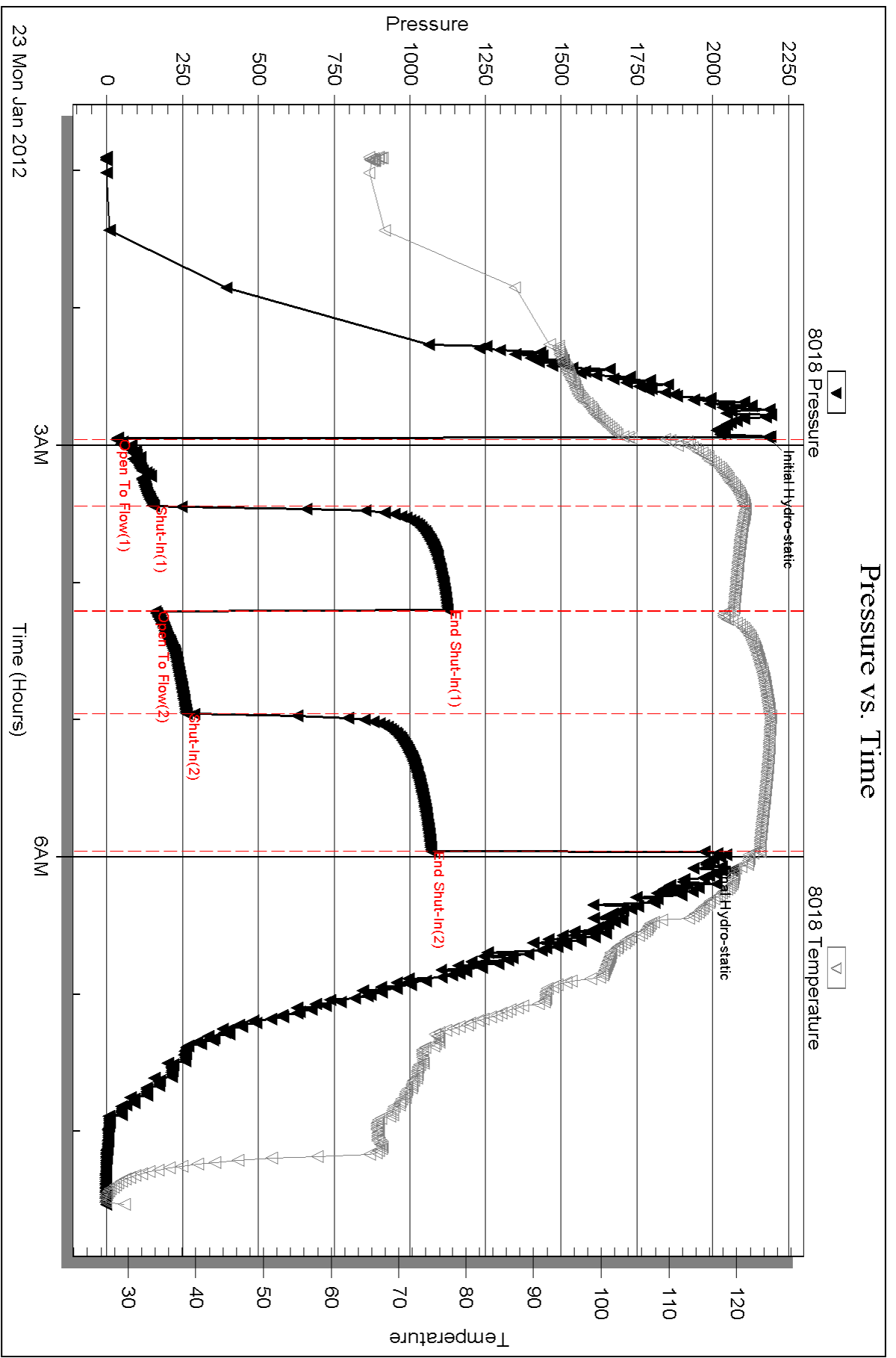
Length ft	Description	Volume bbl
270.00	MCW 20% <i>m</i> 80% <i>w</i>	1.328
180.00	OGWCM 4% <i>oil</i> 10% <i>g</i> 15% <i>w</i> 71% <i>m</i>	0.885
94.00	OWGCM 4% <i>oil</i> 5% <i>w</i> 10% <i>g</i> 81% <i>m</i>	1.136
15.00	GO 5% <i>g</i> 95% <i>oil</i>	0.210
0.00	175' of GIP	0.000

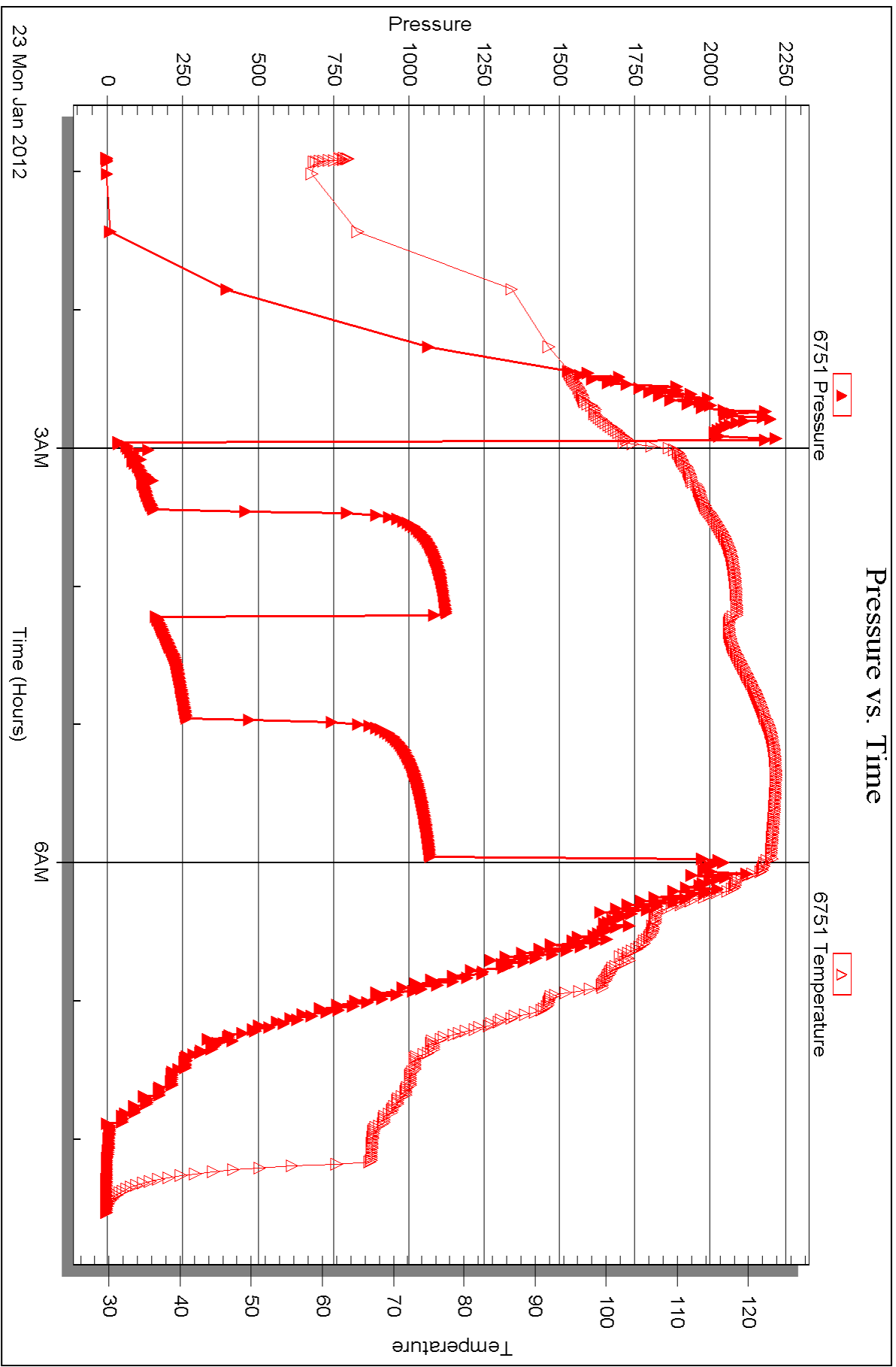
Total Length: 559.00 ft Total Volume: 3.559 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: API is 29 @ 30f = 32
RW is .175 @ 34f = 90000







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.23 @ 15:54:00

End Date: 2012.01.23 @ 23:29:48

Job Ticket #: 44994 DST #: 10

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:06:34



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44994

DST#: 10

ATTN: Tim Lauer

Test Start: 2012.01.23 @ 15:54:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:55:18

Time Test Ended: 23:29:48

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 37

Interval: 4452.00 ft (KB) To 4485.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4485.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 252.13 psig @ 4454.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.23

End Date:

2012.01.23

Last Calib.:

2012.01.24

Start Time: 15:54:00

End Time:

23:29:47

Time On Btm:

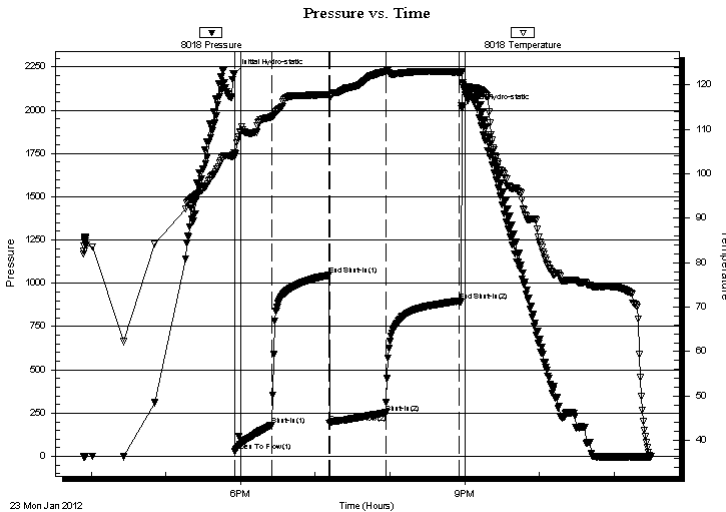
2012.01.23 @ 17:55:08

Time Off Btm:

2012.01.23 @ 20:57:28

TEST COMMENT: IF- BOB in 10 min
IS- Weak Surface Blow in 6min Built to 1 1/2"
FF- BOB in 15 min
FS- Weak Surface Blow in 4 1/2 min Built to 2"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2210.42	104.66	Initial Hydro-static
1	27.65	103.86	Open To Flow (1)
30	182.05	112.80	Shut-In(1)
76	1046.29	117.85	End Shut-In(1)
77	192.17	117.48	Open To Flow (2)
122	252.13	123.07	Shut-In(2)
180	897.38	122.82	End Shut-In(2)
183	2009.27	122.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
84.00	GO 25%g 75%oil	0.41
90.00	OGCM 20%oil 30%g 50%m	0.44
90.00	GOCM 15%g 20%oil 65%m	0.44
90.00	GMCO 15%g 60%oil 25%m	0.44
274.00	GO 35%g 65%oil	2.79
0.00	668' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44994

DST#: 10

ATTN: Tim Lauer

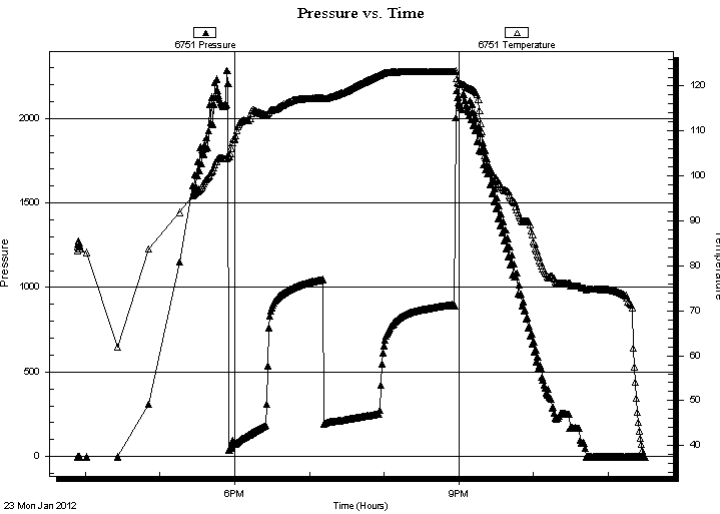
Test Start: 2012.01.23 @ 15:54:00

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:55:18 Tester: Will MacLean
 Time Test Ended: 23:29:48 Unit No: 37
Interval: 4452.00 ft (KB) To 4485.00 ft (KB) (TVD) Reference Elevations: 2880.00 ft (KB)
 Total Depth: 4485.00 ft (KB) (TVD) 2870.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 6751 Outside
 Press @ Run Depth: psig @ 4454.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.01.23 End Date: 2012.01.23 Last Calib.: 2012.01.24
 Start Time: 15:54:02 End Time: 23:29:40 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF- BOB in 10 min
 IS- Weak Surface Blow in 6min Built to 1 1/2"
 FF- BOB in 15 min
 FS- Weak Surface Blow in 4 1/2 min Built to 2"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
84.00	GO 25%g 75%oil	0.41
90.00	OGCM 20%oil 30%g 50%m	0.44
90.00	GOCM 15%g 20%oil 65%m	0.44
90.00	GMCO 15%g 60%oil 25%m	0.44
274.00	GO 35%g 65%oil	2.79
0.00	668' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44994

DST#: 10

ATTN: TimLauer

Test Start: 2012.01.23 @ 15:54:00

Tool Information

Drill Pipe:	Length: 3965.00 ft	Diameter: 3.80 inches	Volume: 55.62 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 470.00 ft	Diameter: 2.25 inches	Volume: 2.31 bbl	Weight to Pull Loose: 6000.00 lb
			<u>Total Volume: 57.93 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.50 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4452.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	60.50 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			4425.50	
Shut In Tool	5.00			4430.50	
Hydraulic tool	5.00			4435.50	
Jars	5.00			4440.50	
Safety Joint	2.50			4443.00	
Packer	5.00			4448.00	27.50 Bottom Of Top Packer
Packer	4.00			4452.00	
Stubb	1.00			4453.00	
Perforations	1.00			4454.00	
Recorder	0.00	8018	Inside	4454.00	
Recorder	0.00	6751	Outside	4454.00	
Perforations	28.00			4482.00	
Bullnose	3.00			4485.00	33.00 Bottom Packers & Anchor

Total Tool Length: 60.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44994

DST#: 10

ATTN: TimLauer

Test Start: 2012.01.23 @ 15:54:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 58.00 sec/qt
Water Loss: 7.95 in³
Resistivity: ohm.m
Salinity: 8000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 30 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

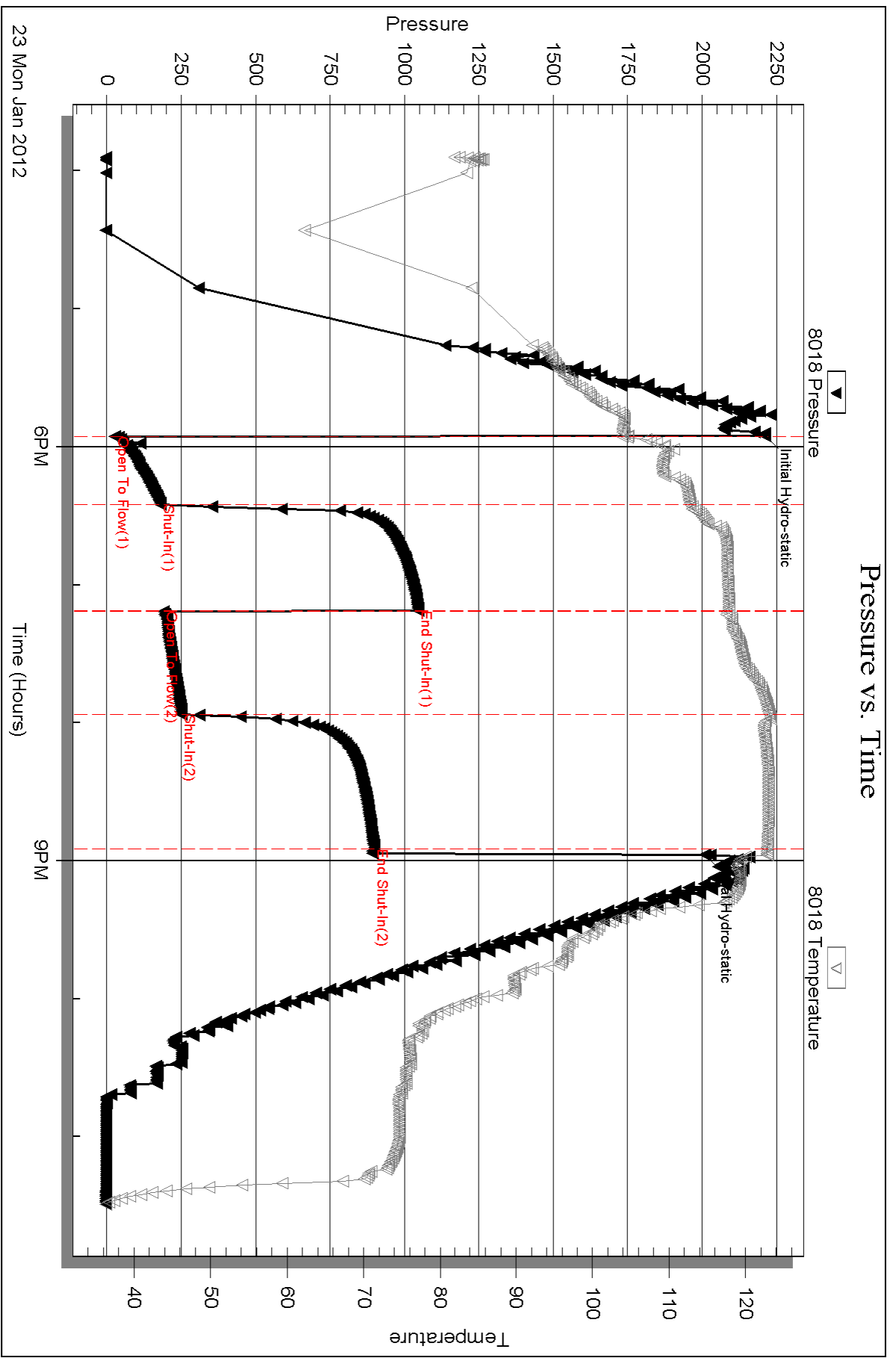
Length ft	Description	Volume bbl
84.00	GO 25%g 75%oil	0.413
90.00	OGCM 20%oil 30%g 50%m	0.443
90.00	GOCM 15%g 20%oil 65%m	0.443
90.00	GMCO 15%g 60%oil 25%m	0.443
274.00	GO 35%g 65%oil	2.787
0.00	668' of GIP	0.000

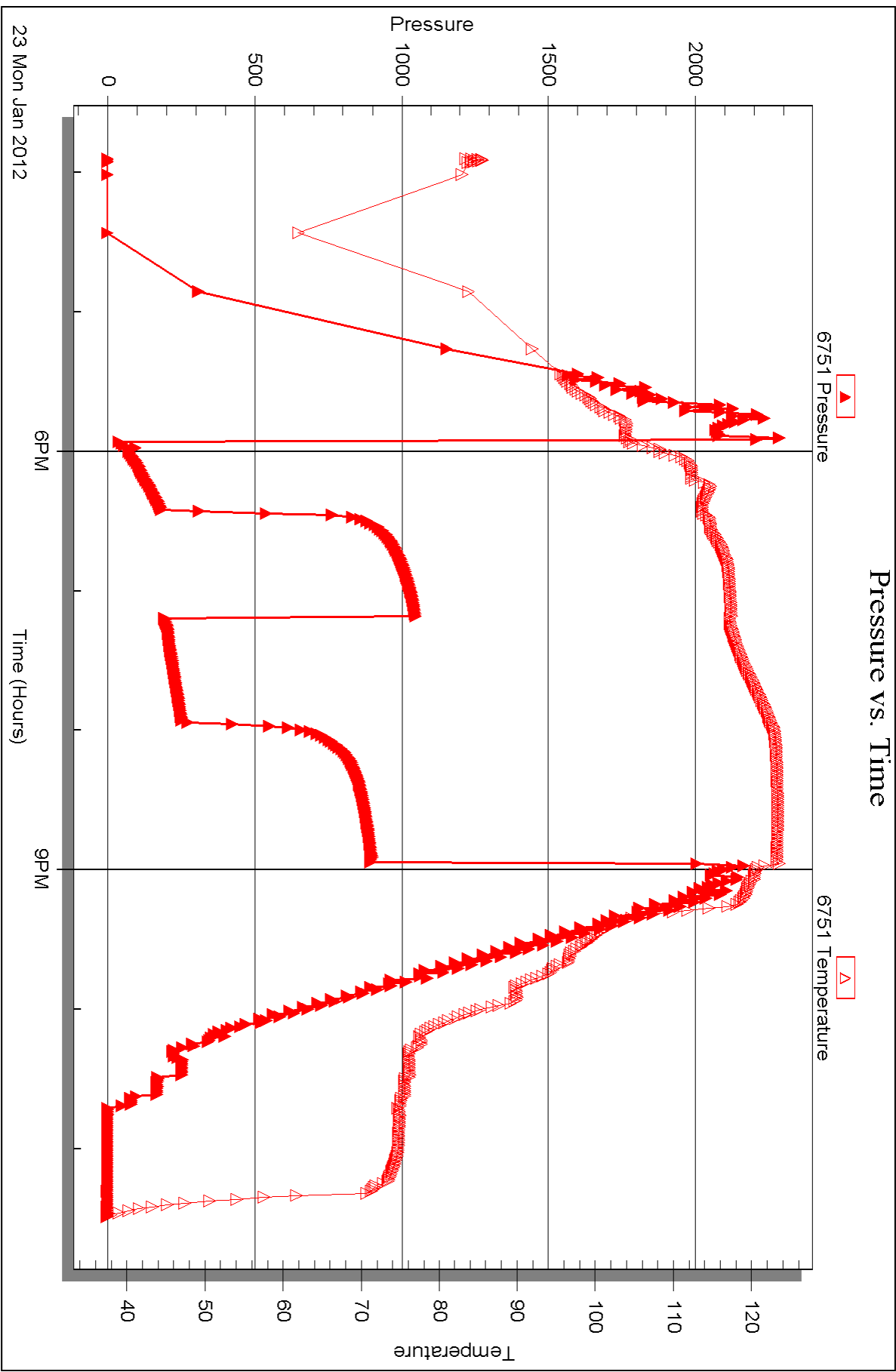
Total Length: 628.00 ft Total Volume: 4.529 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: API is 27 @ 30f = 30







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: Tim Lauer

#3 Phillips 20C

20-13s-31w Gove,KS

Start Date: 2012.01.24 @ 08:39:00

End Date: 2012.01.24 @ 16:18:48

Job Ticket #: 44995 DST #: 11

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.02.01 @ 11:05:49

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

#3 Phillips 20C

DST # 11

Lower Johnson / Morr

2012.01.24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44995

DST#: 11

ATTN: Tim Lauer

Test Start: 2012.01.24 @ 08:39:00

GENERAL INFORMATION:

Formation: **Lower Johnson / Morr**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:02:17

Time Test Ended: 16:18:48

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 37

Interval: 4486.00 ft (KB) To 4515.00 ft (KB) (TVD)

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4515.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8018 Inside

Press @ Run Depth: 179.93 psig @ 4488.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.24

End Date:

2012.01.24

Last Calib.:

2012.01.24

Start Time: 08:39:00

End Time:

16:18:47

Time On Btm:

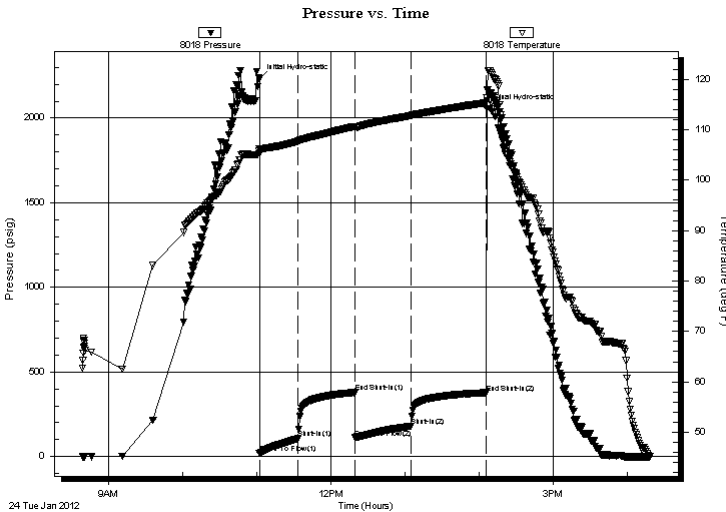
2012.01.24 @ 11:02:08

Time Off Btm:

2012.01.24 @ 14:06:28

TEST COMMENT: IF- Weak Surface Blow Built to 2"
IS- Weak Surface Blow in 12 min
FF- Weak Surface Blow Built to 1 3/4"
FS- Weak Surface Blow in 10 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.70	106.24	Initial Hydro-static
1	18.20	105.28	Open To Flow (1)
32	106.01	107.70	Shut-In(1)
78	378.02	110.60	End Shut-In(1)
78	110.47	110.44	Open To Flow (2)
123	179.93	112.78	Shut-In(2)
184	377.40	115.34	End Shut-In(2)
185	2054.84	116.31	Final Hydro-static

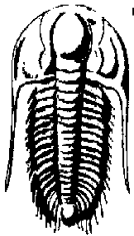
Recovery

Length (ft)	Description	Volume (bbl)
90.00	GOMCW 5%g 5%oil 20%m 70%w	0.44
100.00	GO 5%g 95%oil	0.49
180.00	OGMCW 1%oil 4%g 15%m 80%w	0.89
0.00	170' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

ATTN: Tim Lauer

Job Ticket: 44995

DST#: 11

Test Start: 2012.01.24 @ 08:39:00

GENERAL INFORMATION:

Formation: **Lower Johnson / Morr**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:02:17

Time Test Ended: 16:18:48

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 37

Interval: **4486.00 ft (KB) To 4515.00 ft (KB) (TVD)**

Reference Elevations: 2880.00 ft (KB)

Total Depth: 4515.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6751 **Outside**

Press @ Run Depth: psig @ 4488.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.24

End Date: 2012.01.24

Last Calib.: 2012.01.24

Start Time: 08:39:00

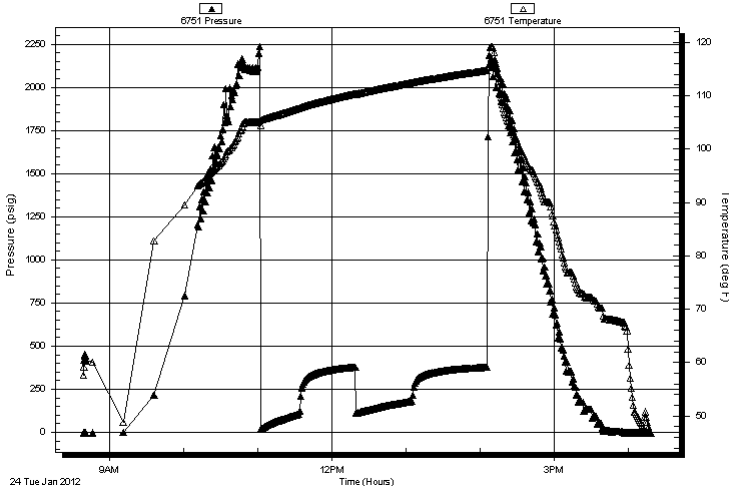
End Time: 16:18:47

Time On Btm

Time Off Btm

TEST COMMENT: IF- Weak Surface Blow Built to 2"
IS- Weak Surface Blow in 12 min
FF- Weak Surface Blow Built to 1 3/4"
FS- Weak Surface Blow in 10 min

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
90.00	GOMCW 5%g 5%oil 20%m 70%w	0.44
100.00	GO 5%g 95%oil	0.49
180.00	OGMCW 1%oil 4%g 15%m 80%w	0.89
0.00	170' of GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

20-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44995

DST#: 11

ATTN: Tim Lauer

Test Start: 2012.01.24 @ 08:39:00

Tool Information

Drill Pipe:	Length: 3995.00 ft	Diameter: 3.80 inches	Volume: 56.04 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 470.00 ft	Diameter: 2.25 inches	Volume: 2.31 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 58.35 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	6.50 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4486.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	56.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4459.50	
Shut In Tool	5.00			4464.50	
Hydraulic tool	5.00			4469.50	
Jars	5.00			4474.50	
Safety Joint	2.50			4477.00	
Packer	5.00			4482.00	27.50 Bottom Of Top Packer
Packer	4.00			4486.00	
Stubb	1.00			4487.00	
Perforations	1.00			4488.00	
Recorder	0.00	8018	Inside	4488.00	
Recorder	0.00	6751	Outside	4488.00	
Perforations	24.00			4512.00	
Bullnose	3.00			4515.00	29.00 Bottom Packers & Anchor

Total Tool Length: 56.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

20-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

#3 Phillips 20C

Job Ticket: 44995

DST#: 11

ATTN: TimLauer

Test Start: 2012.01.24 @ 08:39:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

29 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

98000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
90.00	GOMCW 5%g 5%oil 20%m 70%w	0.443
100.00	GO 5%g 95%oil	0.492
180.00	OGMCW 1%oil 4%g 15%m 80%w	0.885
0.00	170' of GIP	0.000

Total Length: 370.00 ft Total Volume: 1.820 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

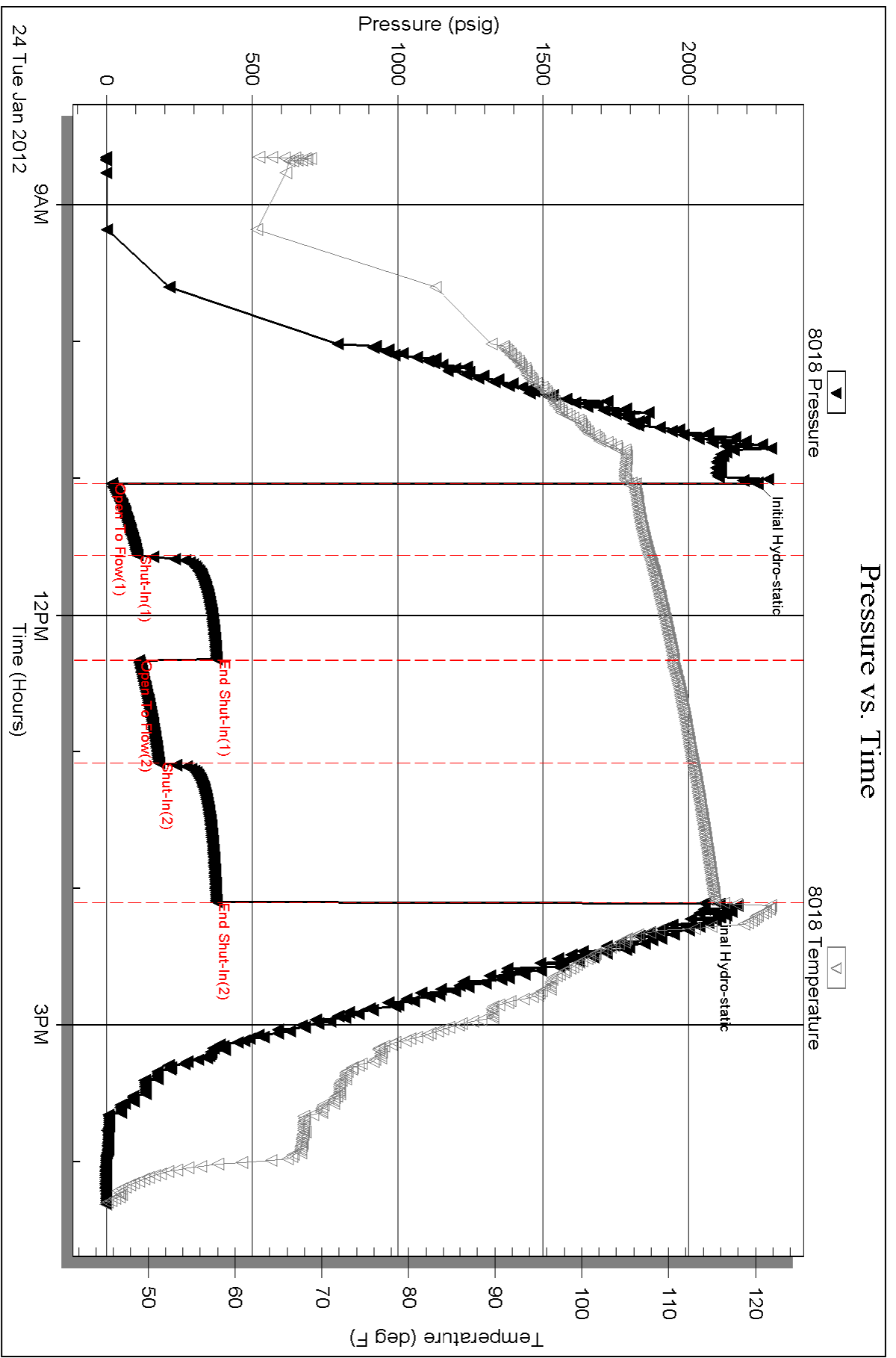
Serial #:

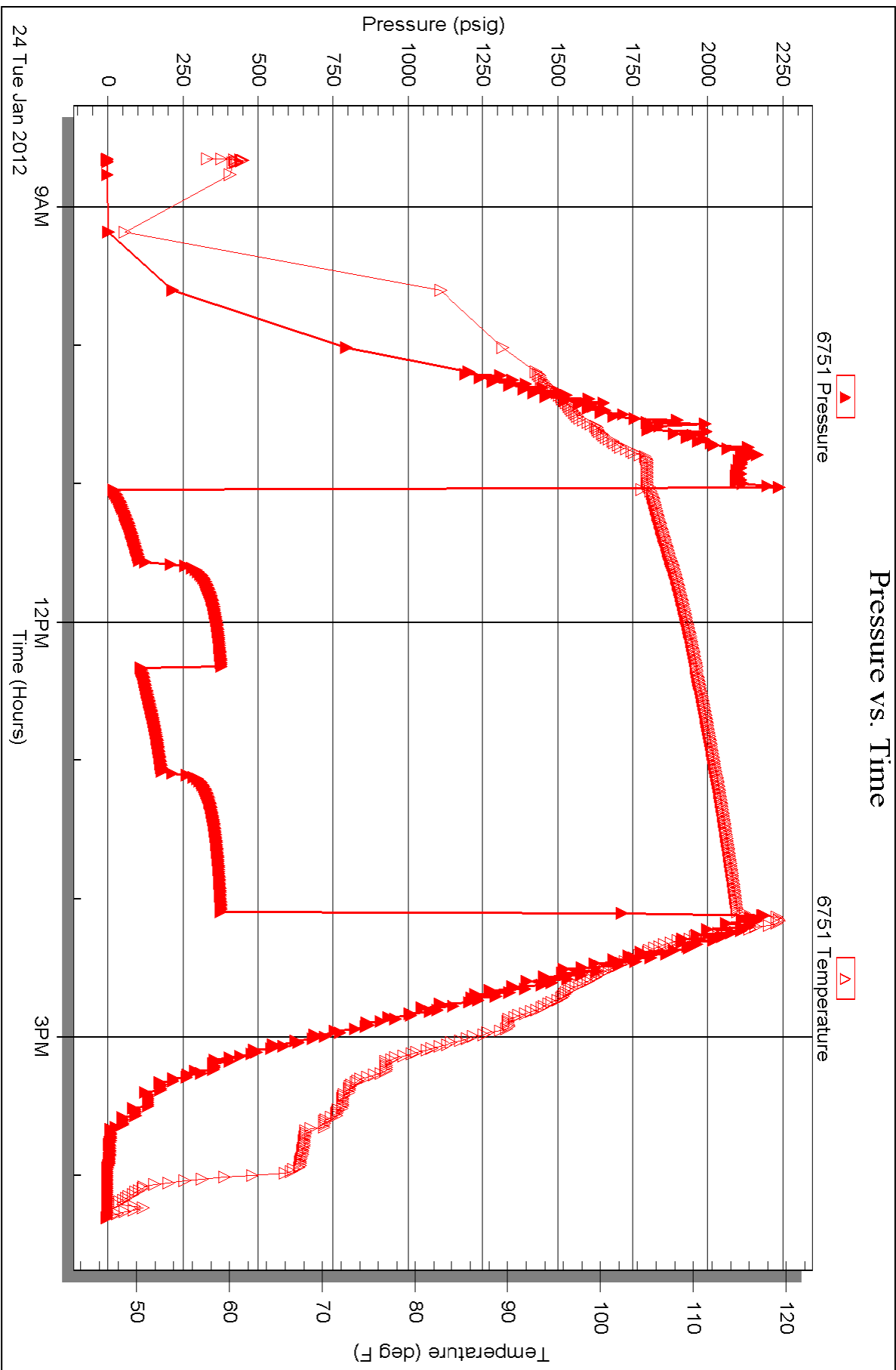
Laboratory Name:

Laboratory Location:

Recovery Comments: API is 28 @ 50f = 29

RW is .139 @ 41f = 98000







TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 16 2012

Test Ticket

NO. 45380

4/10

BY:

Well Name & No. #3 Phillips 20c Test No. 1 Date 1-13-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lauer Rig MDC #14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Gove State KS

Interval Tested 3930-3956 Zone Tested LKC 'C'
 Anchor Length 26 Drill Pipe Run 3391 Mud Wt. 9.2
 Top Packer Depth 3926 Drill Collars Run 530 Vis 53
 Bottom Packer Depth 3930 Wt. Pipe Run 0 WL 6.4
 Total Depth 3956 Chlorides 2400 ppm System LCM 2
 Blow Description B.O.B. @ 22 min
Surface return.
B.O.B. @ 37 min
1" Return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>234</u>	Feet of <u>GO</u>	<u>15%</u>	<u>85%</u>	<u>0%</u>	<u>0%</u>
Rec <u>88</u>	Feet of <u>G.MCO</u>	<u>20%</u>	<u>50%</u>	<u>0%</u>	<u>30%</u>
Rec <u>88</u>	Feet of <u>GOCWM</u>	<u>20%</u>	<u>20%</u>	<u>20%</u>	<u>40%</u>
Rec	Feet of <u>30 Feet weak GIP</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>

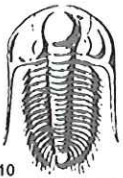
Rec Total 410 BHT 114 Gravity 34 API RW .190 @ 60 °F Chlorides 41000 ppm

(A) Initial Hydrostatic 1905 Test 1125 T-On Location 12:45
 (B) First Initial Flow 19 Jars 250 T-Started 2:08
 (C) First Final Flow 108 Safety Joint 75' T-Open 4:43
 (D) Initial Shut-In 921 Circ Sub 50' T-Pulled 7:44
 (E) Second Initial Flow 113 Hourly Standby _____ T-Out 9:44
 (F) Second Final Flow 176 Mileage 76RT 100.40
 (G) Final Shut-In 898 Sampler _____
 (H) Final Hydrostatic 1897 Straddle _____

Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Initial Open 30 Day Standby _____ Sub Total 0
 Initial Shut-In 45 Accessibility _____ Total 1006.40
 Final Flow 45 Sub Total 1006.40 MP/DST Disc't _____
 Final Shut-In 60

Approved By Tim Lauer Our Representative Chuck Smith

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.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 16 2012

Test Ticket

NO. 45381

Well Name & No. #3 Phillips 20C Test No. 2 Date 1-13-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, Ks 67278
 Co. Rep / Geo. Tim Lauer Rig MDC #14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Gove State Ks

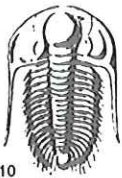
Interval Tested 3956-3967 Zone Tested LKC 'D'
 Anchor Length 11 Drill Pipe Run 3426 Mud Wt. 9.1
 Top Packer Depth 3952 Drill Collars Run 530 Vis 53
 Bottom Packer Depth 3956 Wt. Pipe Run 0 WL 6.4
 Total Depth 3967 Chlorides 2500 ppm System LCM 2
 Blow Description 1/2" Blow
No return.
No blow.
No return

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>20</u>	Feet of <u>05 MW</u>			<u>55</u>	<u>45</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 109 Gravity - API RW 230 @ 50 ° F Chlorides 48,000 ppm
 (A) Initial Hydrostatic 1916 Test 1125 T-On Location 16:15
 (B) First Initial Flow 19 Jars T-Started 16:21
 (C) First Final Flow 22 Safety Joint 75' T-Open 18:30
 (D) Initial Shut-In 247 Circ Sub N/C T-Pulled 21:00
 (E) Second Initial Flow 23 Hourly Standby T-Out 22:37
 (F) Second Final Flow 28 Mileage 76 RT 100.40 Comments _____
 (G) Final Shut-In 246 Sampler _____
 (H) Final Hydrostatic 1908 Straddle _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1300.40
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Sub Total 1300.40
 Approved By Tim Lauer Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 20 2012
BY: _____

Test Ticket

NO. 45382

Well Name & No. #3 Phillips 20C Test No. 3 Date 1-17-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lauer Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 3W Co. Gove State KS

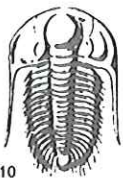
Interval Tested 3976-3999 Zone Tested LKC 'E'
 Anchor Length 23 Drill Pipe Run 3428 Mud Wt. 8.6
 Top Packer Depth 3972 Drill Collars Run 472 Vis 53
 Bottom Packer Depth 3976 Wt. Pipe Run 0 WL 4.8
 Total Depth 3999 Chlorides 4200 ppm System LCM 5
 Blow Description B.O.B. @ 15 min.
4" Return
B.O.B. @ 24 min.
4" Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>213</u>	<u>GO</u>	<u>20</u>	<u>80</u>		
<u>176</u>	<u>GOCM</u>	<u>10</u>	<u>40</u>		<u>50</u>
<u>176</u>	<u>OSMW</u>			<u>70</u>	<u>30</u>
<u>150</u>	<u>150 feet weak grip.</u>				

Rec Total 565 BHT _____ Gravity 39 API RW 340 @ 60 °F Chlorides 24,000 ppm
 (A) Initial Hydrostatic 1859 Test 1125' T-On Location 19:00
 (B) First Initial Flow 23 Jars 250' T-Started 19:36
 (C) First Final Flow 143 Safety Joint 75' T-Open 21:39
 (D) Initial Shut-In 1002 Circ Sub N/C T-Pulled 00:40
 (E) Second Initial Flow 153 Hourly Standby _____ T-Out 2:51
 (F) Second Final Flow 235 Mileage 76RT 106.40 Comments _____
 (G) Final Shut-In 878 Sampler _____
 (H) Final Hydrostatic 1830 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 2283.80
 Day Standby 3 days + 20.5 hrs Total 3840.20
 Accessibility _____ (68.5 hrs) MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60
 Sub Total 1556.40
 Approved By Tim J. Lauer Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 20 2012
BY: _____

Test Ticket

NO. 45383

Well Name & No. #3 Phillips 20C Test No. 4 Date 1-18-12
 Company Ritchie Exploration, Inc Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Laver Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Gove State KS

Interval Tested 4002-4015 Zone Tested LKC 'F'
 Anchor Length 13 Drill Pipe Run 3517 Mud Wt. 8.7
 Top Packer Depth 3998 Drill Collars Run 472 Vis 53
 Bottom Packer Depth 4002 Wt. Pipe Run 0 WL 5.6
 Total Depth 4015 Chlorides 3400 ppm System LCM 4

Blow Description B.O.B. @ 1 1/2 min.
No return
B.O.B. @ 2 1/2 min.
Surface return.

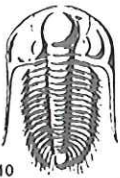
Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>OSWM</u>		<u>50</u>	<u>50</u>	
<u>190</u>	<u>OSMW</u>		<u>80</u>	<u>20</u>	
<u>1388</u>	<u>MW Popping gas</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1608 BHT 122 Gravity - API RW 105 @ 50 °F Chlorides 110,000 ppm

(A) Initial Hydrostatic 1907 Test 1225 T-On Location 11:00
 (B) First Initial Flow 240 Jars 250 T-Started 11:07
 (C) First Final Flow 536 Safety Joint 75 T-Open 13:13
 (D) Initial Shut-In 1133 Circ Sub N/C T-Pulled 15:56
 (E) Second Initial Flow 574 Hourly Standby _____ T-Out 18:13
 (F) Second Final Flow 766 Mileage 76RT 106.40 Comments _____
 (G) Final Shut-In 1128 Sampler _____
 (H) Final Hydrostatic 1861 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 30 Extra Copies _____
 Final Shut-In 60 Sub Total 0
 Total 11656.40
 MP/DST Disc't _____

Approved By Tim J. Laver Sub Total 11656.40 Our Representative Chuck Amick



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 23 2012

Test Ticket

NO. 45384

BY:

Well Name & No. #3 Phillips 20C Test No. 5 Date 1-19-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lauer Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 3W Co. Gove State KS

Interval Tested 4050-4085 Zone Tested LKC'H'
 Anchor Length 35 Drill Pipe Run 3582 Mud Wt. 8.8
 Top Packer Depth 4046 Drill Collars Run 472 Vis 65
 Bottom Packer Depth 4050 Wt. Pipe Run 0 WL 5.6
 Total Depth 4085 Chlorides 3400 ppm System LCM 4
 Blow Description 10" Blow.
No return.
B.o.B. @ 33 min.
Weak surface return died @ 10 min.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>130</u>	Feet of <u>60CM</u>	<u>5</u>	<u>20</u>	<u>75</u>	<u>75</u>
Rec	Feet of <u>310 feet GIP</u>				
Rec	Feet of				
Rec	Feet of				

Rec Total 130 BHT 112 Gravity 40 API RW @ °F Chlorides ppm

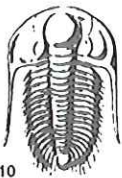
(A) Initial Hydrostatic 1935 Test 1225 T-On Location 5:00
 (B) First Initial Flow 18 Jars 250 T-Started 5:21
 (C) First Final Flow 47 Safety Joint 45 T-Open 8:04
 (D) Initial Shut-In 680 Circ Sub N/C T-Pulled 11:09
 (E) Second Initial Flow 48 Hourly Standby _____ T-Out 13:06
 (F) Second Final Flow 70 Mileage 76 RT 1020.40 Comments _____
 (G) Final Shut-In 704 Sampler _____
 (H) Final Hydrostatic 1876 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 35
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Sub Total 1656.40

Approved By [Signature] Our Representative Chuck Amick

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 23 2012
BY: _____

Test Ticket

NO. 45385

Well Name & No. #3 Phillips 20C Test No. 6 Date 1-19-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lauer Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Gove State KS

Interval Tested 4085-4120 Zone Tested LKC 'I'
 Anchor Length 35 Drill Pipe Run 3614 Mud Wt. 8.6
 Top Packer Depth 4081 Drill Collars Run 472 Vis 59
 Bottom Packer Depth 4085 Wt. Pipe Run 0 WL 6.8
 Total Depth 4120 Chlorides 3500 ppm System LCM 4
 Blow Description B.O.B. @ 6 1/2 min.
B.O.B. @ 16 min.
B.O.B. @ 8 1/2 min.
B.O.B. @ 20 min.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>190</u>	Feet of <u>G-O</u>	<u>30</u> %gas	<u>70</u> %oil	%water	%mud
Rec <u>280</u>	Feet of <u>GOCWM</u>	<u>5</u> %gas	<u>5</u> %oil	<u>10</u> %water	<u>80</u> %mud
Rec <u>440</u>	Feet of <u>MW Oil in tool</u>	%gas	%oil	<u>90</u> %water	<u>10</u> %mud
Rec _____	Feet of <u>855 Feet GIP</u>	%gas	%oil	%water	%mud

Rec Total 910 BHT 121 Gravity 40 API RW .142 @ 65 °F Chlorides 60,000 ppm
 (A) Initial Hydrostatic 1989 Test 1225 T-On Location 21:00
 (B) First Initial Flow 48 Jars 250 T-Started 21:40
 (C) First Final Flow 288 Safety Joint 75 T-Open 00:20
 (D) Initial Shut-In 679 Circ Sub N/C T-Pulled 3:08
 (E) Second Initial Flow 281 Hourly Standby _____ T-Out 5:48
 (F) Second Final Flow 397 Mileage 76RT 106.40 Comments _____
 (G) Final Shut-In 679 Sampler _____
 (H) Final Hydrostatic 1942 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1056.40
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1056.40

Approved By Tim J. Lauer Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 23 2012

Test Ticket

NO. 45386

4/10

BY:

Well Name & No. #13 Phillips 20C Test No. 7 Date 1-20-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lower Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 3W Co. Gove State KS

Interval Tested 4127-4140 Zone Tested LKC 'J'
 Anchor Length 13 Drill Pipe Run 3642 Mud Wt. 8.8
 Top Packer Depth 4123 Drill Collars Run 472 Vis 44
 Bottom Packer Depth 4127 Wt. Pipe Run 0 WL 4.8
 Total Depth 4140 Chlorides 8000 ppm System LCM 2

Blow Description B.O.B. @ 13 min.
2" Return, receded to surface return.
B.O.B. @ 12 min.
4" Return, receded to 1/2" return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>224</u>	Feet of <u>60</u>	<u>50</u> %gas	<u>50</u> %oil	%water	%mud
Rec <u>176</u>	Feet of <u>60CM</u>	<u>25</u> %gas	<u>25</u> %oil	%water	<u>50</u> %mud
Rec	Feet of <u>520 Feet G-IP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 400 BHT 119 Gravity 40 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 1968 Test 1225" T-On Location 14:00
 (B) First Initial Flow 19 Jars 250" T-Started 14:00
 (C) First Final Flow 85 Safety Joint 75" T-Open 16:25
 (D) Initial Shut-In 1048 Circ Sub N/C T-Pulled 19:25
 (E) Second Initial Flow 94 Hourly Standby T-Out 21:33

(F) Second Final Flow 166 Mileage 76RT 106.40 Comments
 (G) Final Shut-In 1021 Sampler
 (H) Final Hydrostatic 1939 Straddle

Shale Packer Ruined Shale Packer
 Extra Packer Ruined Packer

Initial Open 30 Extra Recorder Sub Total 0
 Initial Shut-In 45 Day Standby Total 106.40

Final Flow 45 Accessibility MP/DST Disc't
 Final Shut-In 60 Sub Total 106.40

Approved By Tim Lower Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45387

RECEIVED
JAN 23 2012

Well Name & No. #3 Phillips 200 BY: _____ Test No. 8 Date 1-21-12
 Company Ritchie Exploration, Inc Elevation 2880 KB 2870 GL _____
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Tim Lauer Rig MDC#14
 Location: Sec. 20 Twp. 13s Rge. 3W Co. Gove State KS

Interval Tested 4140-4174 Zone Tested LKC 'K'
 Anchor Length 34 Drill Pipe Run 3645 Mud Wt. 8.8
 Top Packer Depth 4136 Drill Collars Run 472 Vis 54
 Bottom Packer Depth 4140 Wt. Pipe Run 0 WL 4.8
 Total Depth 4174 Chlorides 8000 ppm System LCM 4
 Blow Description B.O.B. @ 4 min.
B.O.B. @ 29 min.
B.O.B. @ 5 1/2 min.
B.O.B. @ 15 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>31</u>	<u>60</u>	<u>40</u>	<u>60</u>		
<u>95</u>	<u>G.MOCW</u>	<u>10</u>	<u>25</u>	<u>50</u>	<u>15.25</u>
<u>344</u>	<u>G.O.S.M.W</u>	<u>5</u>		<u>80</u>	<u>15</u>
<u>757</u>	<u>0.5 m.w Popping gas</u>			<u>95</u>	<u>5</u>
	<u>634' GIP</u>				

Rec Total 1227 BHT 123 Gravity 37 API RW .160 @ 51 °F Chlorides 68000 ppm

(A) Initial Hydrostatic 1980 Test 1225" T-On Location 6:00
 (B) First Initial Flow 66 Jars 250" T-Started 6:36
 (C) First Final Flow 360 Safety Joint 75" T-Open 8:52
 (D) Initial Shut-In 1129 Circ Sub NIC T-Pulled 11:51
 (E) Second Initial Flow 373 Hourly Standby _____ T-Out 14:49
 (F) Second Final Flow 583 Mileage 76 RT 106.40 Comments _____
 (G) Final Shut-In 1101 Sampler _____
 (H) Final Hydrostatic 1942 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 11656.40
 Accessibility _____ MP/DST Disc't _____
 Sub Total 11656.40

Approved By Tim Lauer Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 30 2012

Test Ticket

NO. 44993

Well Name & No. #3 Phillips 20C Test No. DST #9 Date 1-22-12
 Company Ritchie Exploration, Inc. Elevation 2880 KB 2870 GL
 Address P.O. Box 783188 Wichita KS 67278
 Co. Rep / Geo. Tim Lauer Rig Murfin Rigs #14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Grove State KS

Interval Tested 4370-4454 Zone Tested Myric, Ft. Scott, Cherokee
 Anchor Length 84 Drill Pipe Run 3899 Mud Wt. 8.9
 Top Packer Depth 4366 Drill Collars Run 530 470 Vis 52
 Bottom Packer Depth 4370 Wt. Pipe Run 0 WL 4.8
 Total Depth 4454 Chlorides 5600 ppm System LCM 416
 Blow Description IF-BOB in 25 min
ISI-Weak Surface Blow in 9 min
EF-BOB in 29 min
FSI-Weak Surface Blow in 8 min

Rec	Feet of	%gas	%oil	%water	%mud
15	G-O	5	95		
94	OWG-CM	10	4	5	81
180	OGW-CM	10	4	15	71
270	MCW			80	20
	175' of GIP				

Rec Total 559 BHT 116 Gravity 32 API RW 175 @ 34 °F Chlorides 90000 ppm
 Test 1225 T-On Location 21:08
 Jars 250 T-Started 0:54
 Safety Joint 75 T-Open 2:57 AM
 Circ Sub N/C T-Pulled 5:58
 Hourly Standby T-Out 8:32 AM
 Mileage 76 R/T 106.40 Comments API is 29 @ 30F = 32
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1656.40

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 30 2012

Test Ticket

NO. 44994

Well Name & No. #3 Phillips 20C Test No. DST #10 Date 1-23-12
 Company Ritchie Exploration Inc Elevation 2880 KB 2870 GL
 Address P.O. Box 783188 Wichita KS 67278
 Co. Rep / Geo. Tim Lauer Rig Murfin Rig #14
 Location: Sec. 20 Twp. 13S Rge. 3/W Co. Gove State KS

Interval Tested 4452-4485 Zone Tested Johnson
 Anchor Length 33 Drill Pipe Run 3965 Mud Wt. 9.0
 Top Packer Depth 4448 Drill Collars Run 470 Vis 58
 Bottom Packer Depth 4452 Wt. Pipe Run 0 WL 8.0
 Total Depth 4485 Chlorides 8000 ppm System LCM 4/b

Blow Description IF - BOB in 10 min
ISF - Weak Surface Blow in 6 min Built to 1 1/2
FF - BOB in 15 min
FST - Weak Surface Blow in 4 1/2 min Built to 2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>274</u>	<u>G-O</u>	<u>35</u>	<u>65</u>		
<u>90</u>	<u>G-MCO</u>	<u>15</u>	<u>60</u>		<u>25</u>
<u>90</u>	<u>G-OCM</u>	<u>15</u>	<u>20</u>		<u>65</u>
<u>90</u>	<u>OG-CM</u>	<u>30</u>	<u>20</u>		<u>50</u>
<u>84</u>	<u>G-O</u>	<u>25</u>	<u>75</u>		

Rec Total 628 BHT 114 Gravity 30 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2210
 (B) First Initial Flow 27
 (C) First Final Flow 182
 (D) Initial Shut-In 1046
 (E) Second Initial Flow 192
 (F) Second Final Flow 252
 (G) Final Shut-In 897
 (H) Final Hydrostatic 2009

Test 1225
 Jars 250
 Safety Joint 75
 Circ Sub NC
 Hourly Standby
 Mileage 76 R/T 106.40
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

T-On Location 15:20
 T-Started 15:54
 T-Open 17:55
 T-Pulled 20:55
 T-Out 23:29
 Comments 668' of G-IP

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

API is 27 @ 30f = 30
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 11656.40
 MP/DST Disc't

Approved By Tim Lauer Sub Total 11656.40 Our Representative Will Mas

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.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
JAN 30 2012

Test Ticket

NO. 44996

Well Name & No. #3 Phillips 20C Test No. DST #11 Date 1-24-12
 Company Ritchie Exploration, Inc Elevation 2880 KB 2870 GL
 Address P.O. Box 783188 Wichita KS 67278
 Co. Rep / Geo. Tim Lauer Rig Murtin Rig #14
 Location: Sec. 20 Twp. 13s Rge. 31w Co. Gove State KS

Interval Tested 4486-4515 Zone Tested Lower Johnson - Marrow
 Anchor Length 29 Drill Pipe Run 3995 Mud Wt. 9.0
 Top Packer Depth 4482 Drill Collars Run 470 Vis 58
 Bottom Packer Depth 4486 Wt. Pipe Run 0 WL 8.0
 Total Depth 4515 Chlorides 8000 ppm System LCM 41b
 Blow Description IF - Weak Surface Blow Built to 2"
ISI - Weak Surface Blow in 12 min
FF - Weak Surface Blow Built to 1 3/4"
FSI - Weak Surface Blow in 10 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>180</u>	<u>OG-MCW</u>	<u>4</u>	<u>1</u>	<u>80</u>	<u>15</u>
<u>100</u>	<u>GO</u>	<u>5</u>	<u>95</u>	<u>%</u>	<u>%</u>
<u>90</u>	<u>G-OMCW</u>	<u>5</u>	<u>5</u>	<u>70</u>	<u>20</u>
<u>Rec</u>	<u>Feet of 170' of G-IP</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>Rec</u>	<u>Feet of</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>

Rec Total 370 BHT 114 Gravity 29 API RW 139 @ 41 °F Chlorides 98000 ppm
 Test 1225 T-On Location 8:16 AM
 Jars 250 T-Started 8:39 AM
 Safety Joint 175 T-Open 11:02 AM
 Circ Sub N/C T-Pulled 14:06
 Hourly Standby T-Out 16:18

(A) Initial Hydrostatic 2234
 (B) First Initial Flow 18
 (C) First Final Flow 106
 (D) Initial Shut-In 378
 (E) Second Initial Flow 110
 (F) Second Final Flow 179
 (G) Final Shut-In 377
 (H) Final Hydrostatic 2054

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Sub Total 1762.80
 Approved By Tim Lauer Our Representative Will Mas
 Total 1762.80
 MP/DST Disc't _____

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