



## DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum, Inc.**

88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112

ATTN: Bob Elder

### **Curtis Unit #2-24**

#### **S24-10s-35w Thomas,KS**

Start Date: 2013.05.08 @ 13:56:00

End Date: 2013.05.08 @ 20:29:30

Job Ticket #: 51742                      DST #: 1

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

Printed: 2013.05.17 @ 08:29:36



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Norstar Petroleum, Inc.  
 88 Inverness Cir. E. Unit F 104  
 Englewood, CO 80112  
 ATTN: Bob Elder

**S24-10s-35w Thomas, KS**  
**Curtis Unit #2-24**  
 Job Ticket: 51742      **DST#: 1**  
 Test Start: 2013.05.08 @ 13:56:00

## GENERAL INFORMATION:

Formation: **Toronto**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:32:50  
 Time Test Ended: 20:29:30  
 Interval: **4108.00 ft (KB) To 4146.00 ft (KB) (TVD)**  
 Total Depth: 4146.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: ChuckSmith  
 Unit No: 62  
 Reference Elevations: 3247.00 ft (KB)  
 3242.00 ft (CF)  
 KB to GR/CF: 5.00 ft

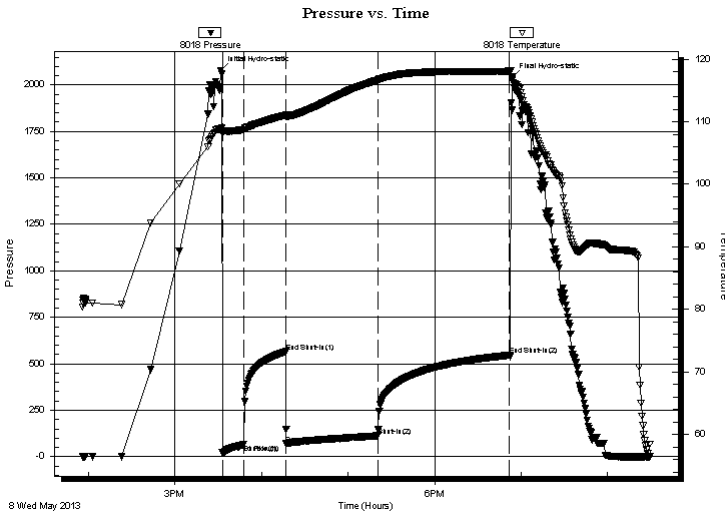
## Serial #: 8018

Inside

Press @ Run Depth: 112.34 psig @ 4109.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.05.08      End Date: 2013.05.08      Last Calib.: 2013.05.08  
 Start Time: 13:56:02      End Time: 20:29:30      Time On Btm: 2013.05.08 @ 15:31:40  
 Time Off Btm: 2013.05.08 @ 18:53:50

TEST COMMENT: 3 1/2" Blow .  
 No return.  
 6 1/2" Blow .  
 No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2077.99	108.80	Initial Hydro-static
2	21.51	108.12	Open To Flow (1)
16	66.15	108.77	Shut-In(1)
46	564.98	111.02	End Shut-In(1)
46	69.38	110.74	Open To Flow (2)
109	112.34	116.64	Shut-In(2)
200	546.37	118.08	End Shut-In(2)
203	2041.30	116.65	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	MW 50m 50w	0.61
61.00	WM 30w 70m	0.86
30.00	OSWM 15w 85m	0.42

## Gas Rates

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



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**

**Curtis Unit #2-24**

Job Ticket: 51742      **DST#: 1**  
Test Start: 2013.05.08 @ 13:56:00

**GENERAL INFORMATION:**

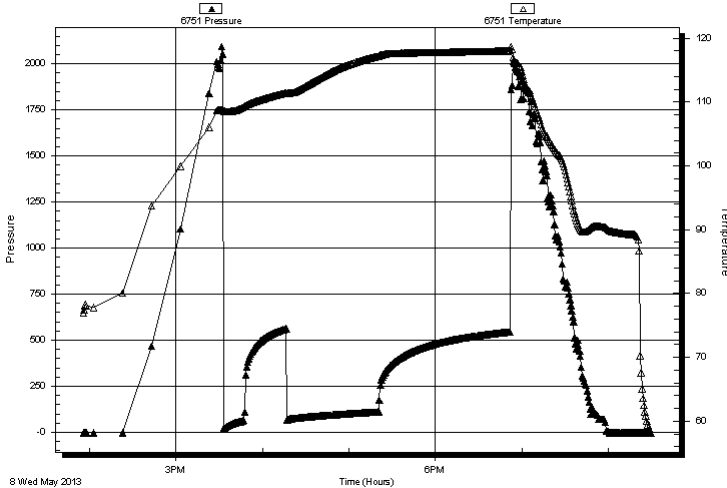
Formation: **Toronto**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 15:32:50  
Time Test Ended: 20:29:30  
Interval: **4108.00 ft (KB) To 4146.00 ft (KB) (TVD)**  
Total Depth: 4146.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Initial)  
Tester: ChuckSmith  
Unit No: 62  
Reference Elevations: 3247.00 ft (KB)  
3242.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6751      Outside**

Press @ Run Depth:      psig @      4109.00 ft (KB)      Capacity:      8000.00 psig  
Start Date:      2013.05.08      End Date:      2013.05.08      Last Calib.:      2013.05.08  
Start Time:      13:56:05      End Time:      20:29:29      Time On Btm:  
Time Off Btm:

**TEST COMMENT:** 3 1/2" Blow .  
No return.  
6 1/2" Blow .  
No return.

**Pressure vs. Time**



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
124.00	MW 50m 50w	0.61
61.00	WM 30w 70m	0.86
30.00	OSWM 15w 85m	0.42

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51742      **DST#: 1**  
Test Start: 2013.05.08 @ 13:56:00

**Tool Information**

Drill Pipe:	Length: 3966.00 ft	Diameter: 3.80 inches	Volume: 55.63 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 56.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.50 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	4108.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	65.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4081.50	
Shut In Tool	5.00			4086.50	
Hydraulic tool	5.00			4091.50	
Jars	5.00			4096.50	
Safety Joint	2.50			4099.00	
Packer	5.00			4104.00	27.50      Bottom Of Top Packer
Packer	4.00			4108.00	
Stubb	1.00			4109.00	
Recorder	0.00	8018	Inside	4109.00	
Recorder	0.00	6751	Outside	4109.00	
Perforations	2.00			4111.00	
Change Over Sub	1.00			4112.00	
Drill Pipe	30.00			4142.00	
Change Over Sub	1.00			4143.00	
Bullnose	3.00			4146.00	38.00      Bottom Packers & Anchor

**Total Tool Length: 65.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51742      **DST#: 1**  
Test Start: 2013.05.08 @ 13:56:00

## 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:	47000 ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.18 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	MW 50m 50w	0.610
61.00	WM 30w 70m	0.856
30.00	OSWM 15w 85m	0.421

Total Length: 215.00 ft      Total Volume: 1.887 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: RW: .200 @ 56 Degrees F = 47000 PPM

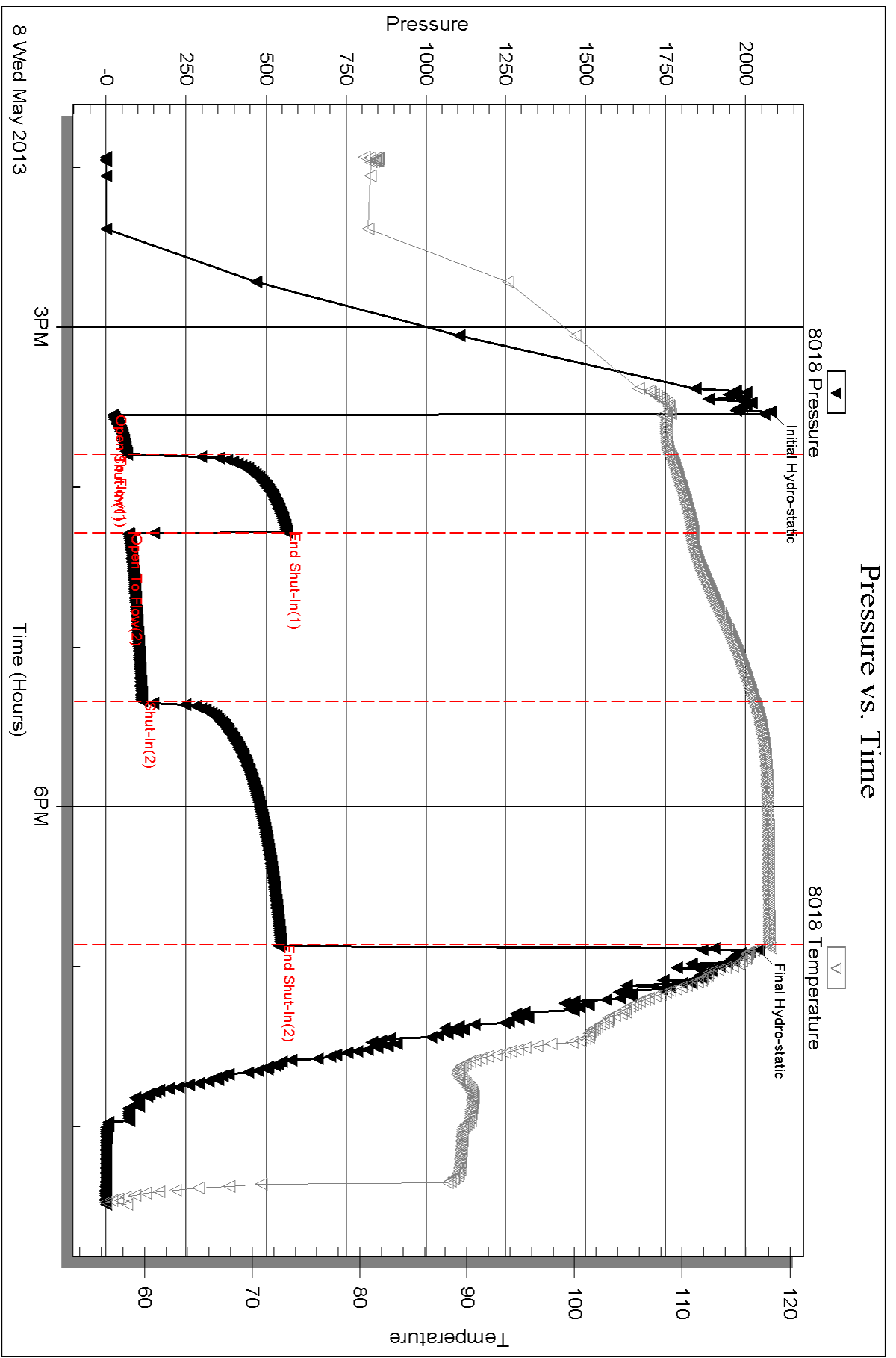
Serial #: 8018

Inside

Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 1

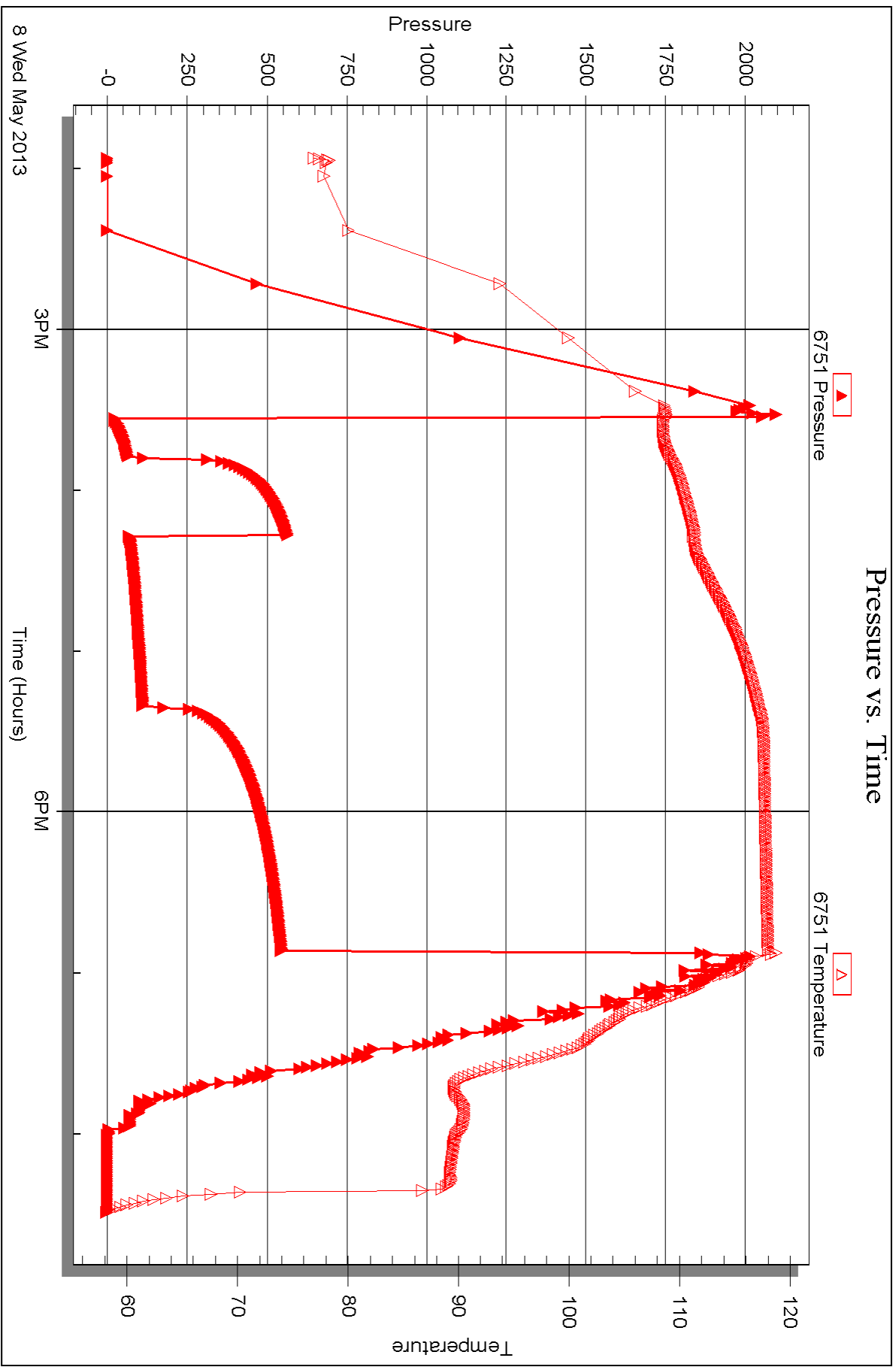


Serial #: 6751

Outside Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum, Inc.**

88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112

ATTN: Bob Elder

### **Curtis Unit #2-24**

#### **S24-10s-35w Thomas,KS**

Start Date: 2013.05.09 @ 16:01:00

End Date: 2013.05.09 @ 21:28:50

Job Ticket #: 51743                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.17 @ 08:28:49

Norstar Petroleum, Inc.

S24-10s-35w Thomas,KS

Curtis Unit #2-24

DST # 2

LKC 'H-J'

2013.05.09





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Norstar Petroleum, Inc.  
 88 Inverness Cir. E. Unit F 104  
 Englewood, CO 80112  
 ATTN: Bob Elder

**S24-10s-35w Thomas, KS**  
**Curtis Unit #2-24**  
 Job Ticket: 51743      **DST#: 2**  
 Test Start: 2013.05.09 @ 16:01:00

## GENERAL INFORMATION:

Formation: **LKC 'H-J'**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:01:30  
 Time Test Ended: 21:28:50  
 Interval: **4287.00 ft (KB) To 4372.00 ft (KB) (TVD)**  
 Total Depth: 4372.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: ChuckSmith  
 Unit No: 62  
 Reference Elevations: 3247.00 ft (KB)  
 3242.00 ft (CF)  
 KB to GR/CF: 5.00 ft

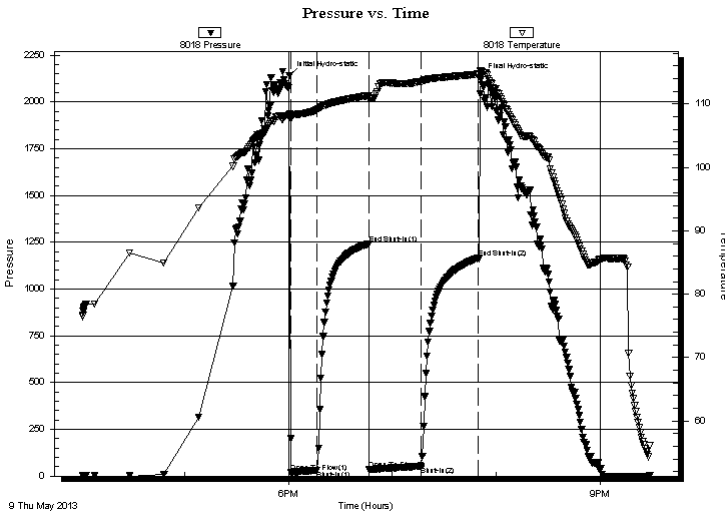
## Serial #: 8018

Inside

Press @ Run Depth: 53.43 psig @ 4290.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.05.09      End Date: 2013.05.09      Last Calib.: 2013.05.09  
 Start Time: 16:01:02      End Time: 21:28:49      Time On Btm: 2013.05.09 @ 18:00:30  
 Time Off Btm: 2013.05.09 @ 19:51:10

TEST COMMENT: 1 1/4" Blow .  
 No return.  
 1" Blow .  
 No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2140.77	108.33	Initial Hydro-static
1	20.18	107.90	Open To Flow (1)
16	31.19	109.06	Shut-In(1)
46	1242.25	111.35	End Shut-In(1)
47	34.31	110.76	Open To Flow (2)
77	53.43	113.54	Shut-In(2)
110	1167.09	114.71	End Shut-In(2)
111	2129.16	115.31	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	M 100m Oil spots in tool.	0.44

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51743      **DST#: 2**  
Test Start: 2013.05.09 @ 16:01:00

**Tool Information**

Drill Pipe:	Length: 4155.00 ft	Diameter: 3.80 inches	Volume: 58.28 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 58.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.50 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4287.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.00 ft			
Tool Length:	112.50 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			4260.50	
Shut In Tool	5.00			4265.50	
Hydraulic tool	5.00			4270.50	
Jars	5.00			4275.50	
Safety Joint	2.50			4278.00	
Packer	5.00			4283.00	27.50      Bottom Of Top Packer
Packer	4.00			4287.00	
Stubb	1.00			4288.00	
Perforations	2.00			4290.00	
Recorder	0.00	8018	Inside	4290.00	
Recorder	0.00	6751	Outside	4290.00	
Perforations	14.00			4304.00	
Change Over Sub	1.00			4305.00	
Drill Pipe	63.00			4368.00	
Change Over Sub	1.00			4369.00	
Bullnose	3.00			4372.00	85.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>112.50</b>				



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51743      **DST#: 2**  
Test Start: 2013.05.09 @ 16:01:00

**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4400.00 ppm			
Filter Cake: 1.00 inches			

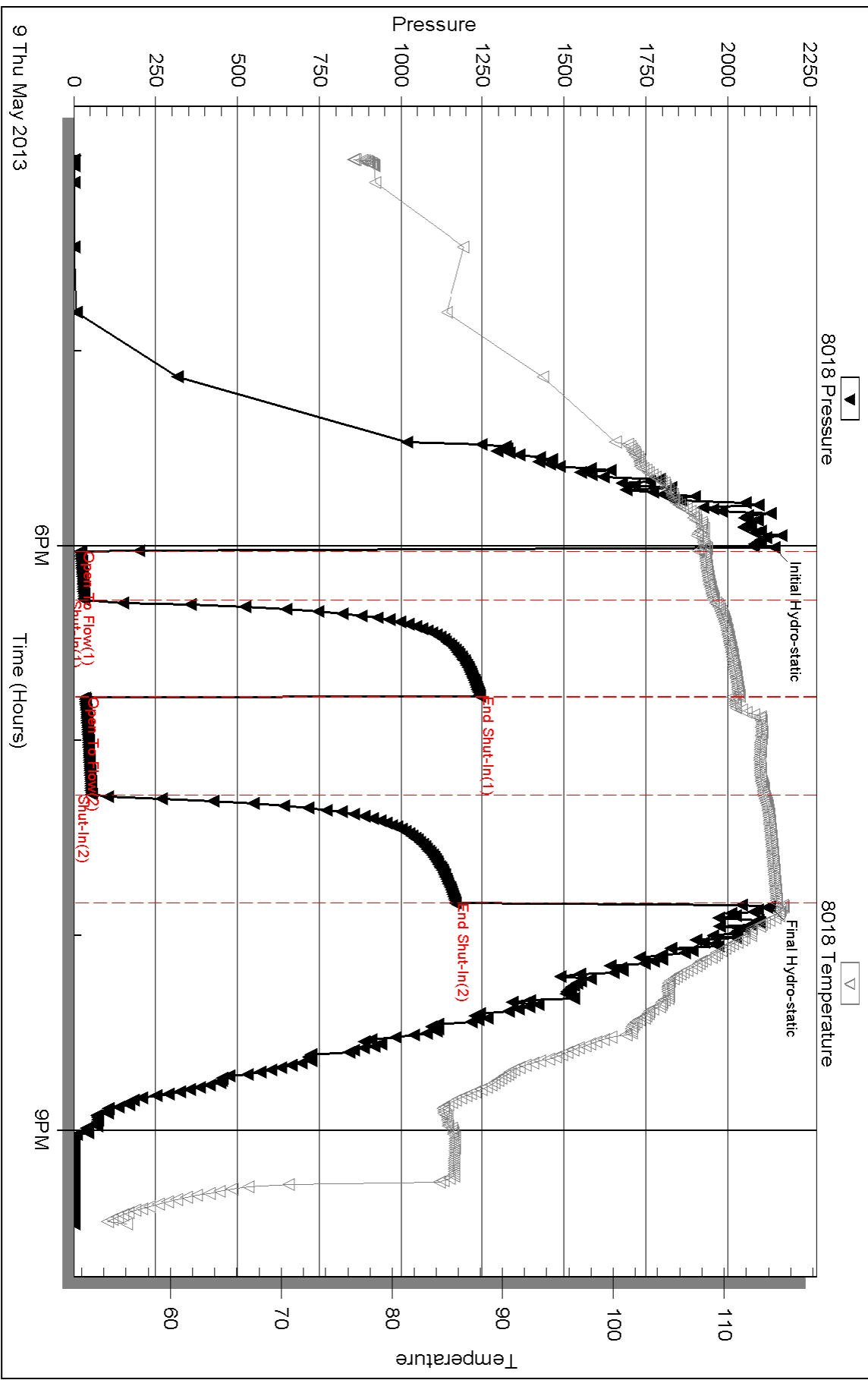
**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
90.00	M 100m Oil spots in tool.	0.443

Total Length: 90.00 ft      Total Volume: 0.443 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time

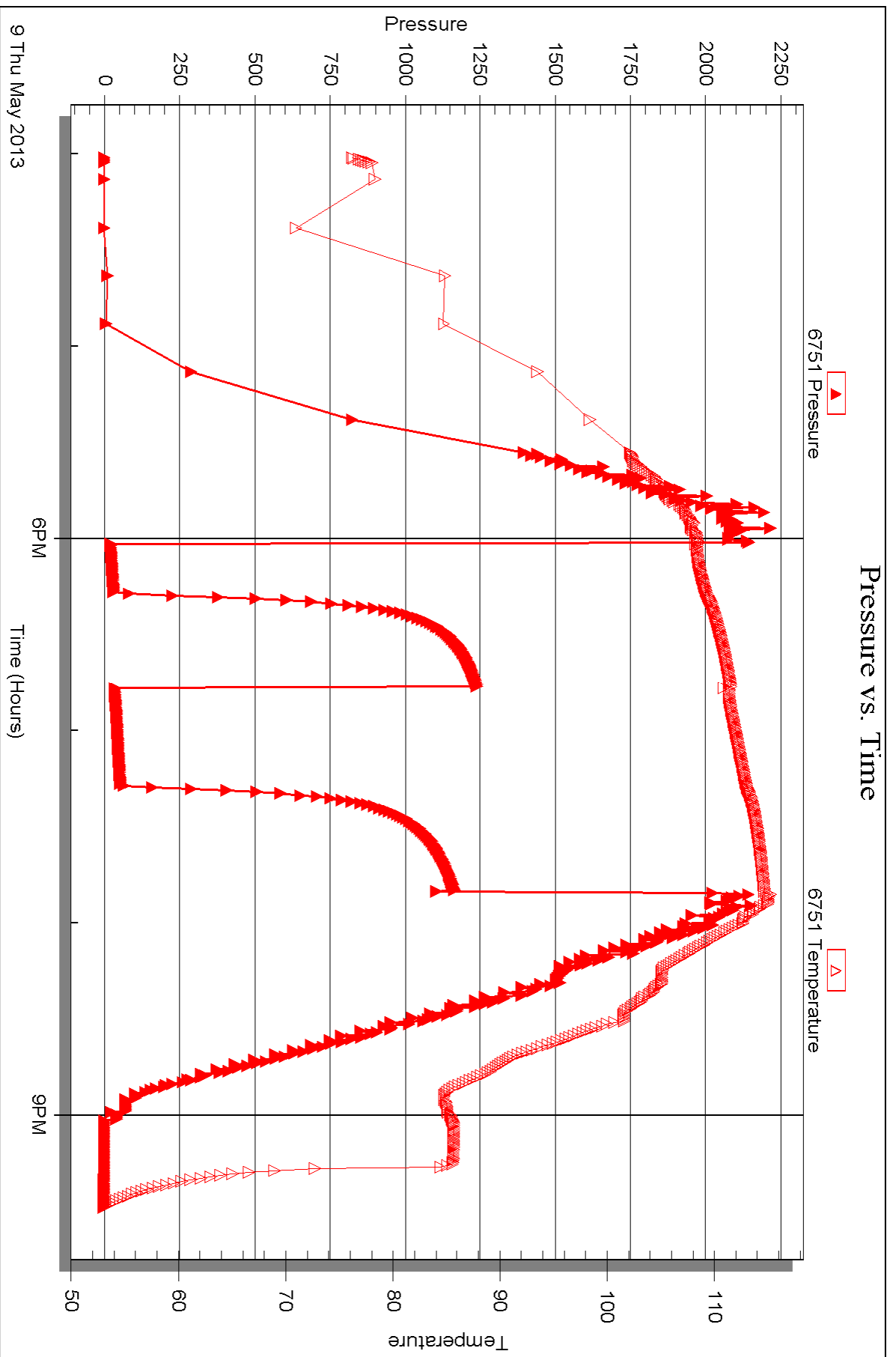


Serial #: 6751

Outside Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum, Inc.**

88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112

ATTN: Bob Elder

### **Curtis Unit #2-24**

#### **S24-10s-35w Thomas,KS**

Start Date: 2013.05.10 @ 04:33:00

End Date: 2013.05.10 @ 10:01:39

Job Ticket #: 51744                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.17 @ 08:28:06

Norstar Petroleum, Inc.

S24-10s-35w Thomas,KS

Curtis Unit #2-24

DST # 3

LKC:K

2013.05.10









**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51744      **DST#: 3**  
Test Start: 2013.05.10 @ 04:33:00

**Tool Information**

Drill Pipe:	Length: 4251.00 ft	Diameter: 3.80 inches	Volume: 59.63 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 60.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.50 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4375.00 ft			Final 48000.00 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:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4348.50	
Shut In Tool	5.00			4353.50	
Hydraulic tool	5.00			4358.50	
Jars	5.00			4363.50	
Safety Joint	2.50			4366.00	
Packer	5.00			4371.00	27.50      Bottom Of Top Packer
Packer	4.00			4375.00	
Stubb	1.00			4376.00	
Perforations	1.00			4377.00	
Recorder	0.00	8018	Inside	4377.00	
Recorder	0.00	6751	Outside	4377.00	
Perforations	30.00			4407.00	
Bullnose	3.00			4410.00	35.00      Bottom Packers & Anchor

**Total Tool Length: 62.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51744      **DST#: 3**  
Test Start: 2013.05.10 @ 04:33:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4400.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 30o 70m	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

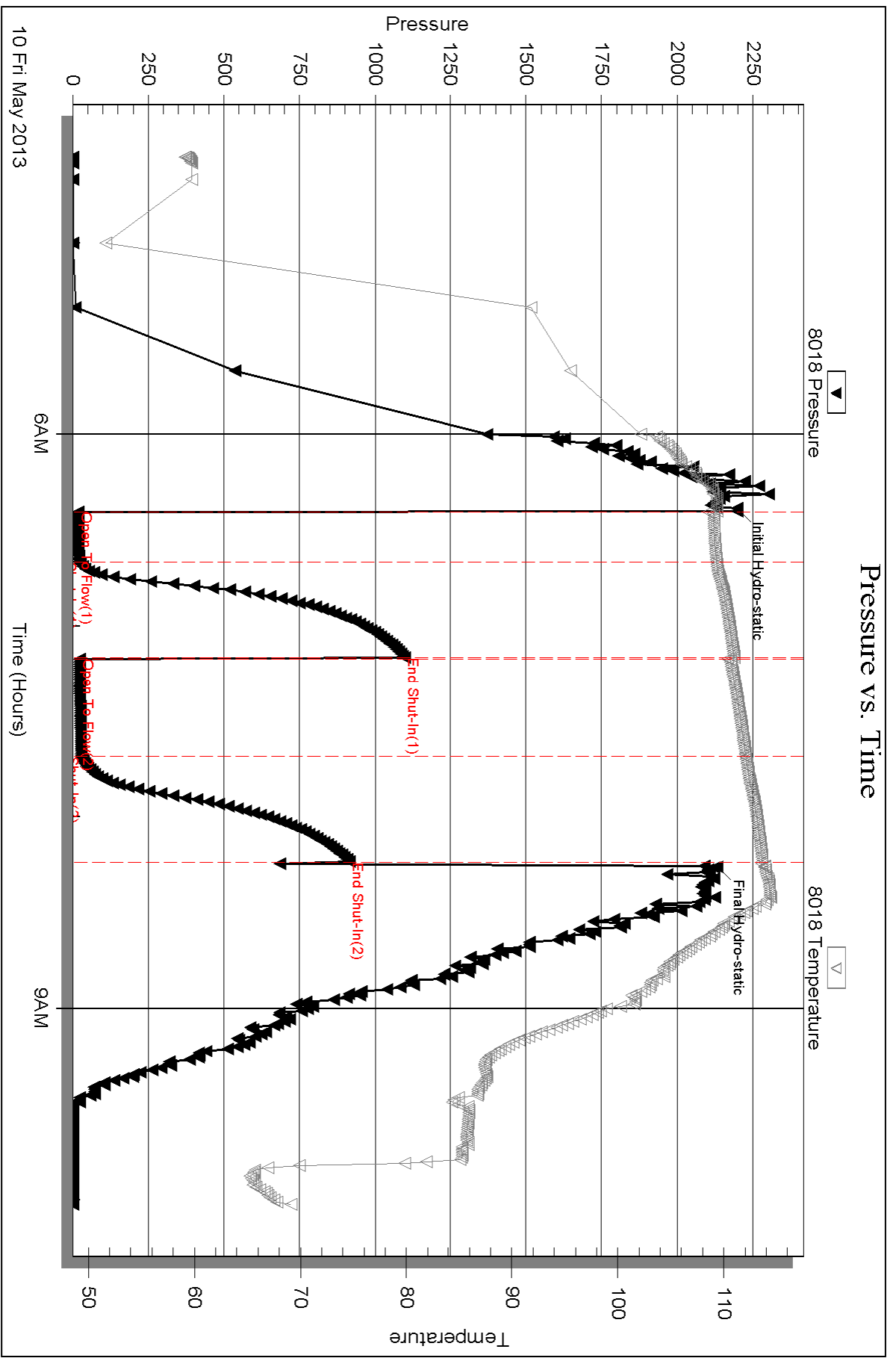
Serial #: 8018

Inside

Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 3

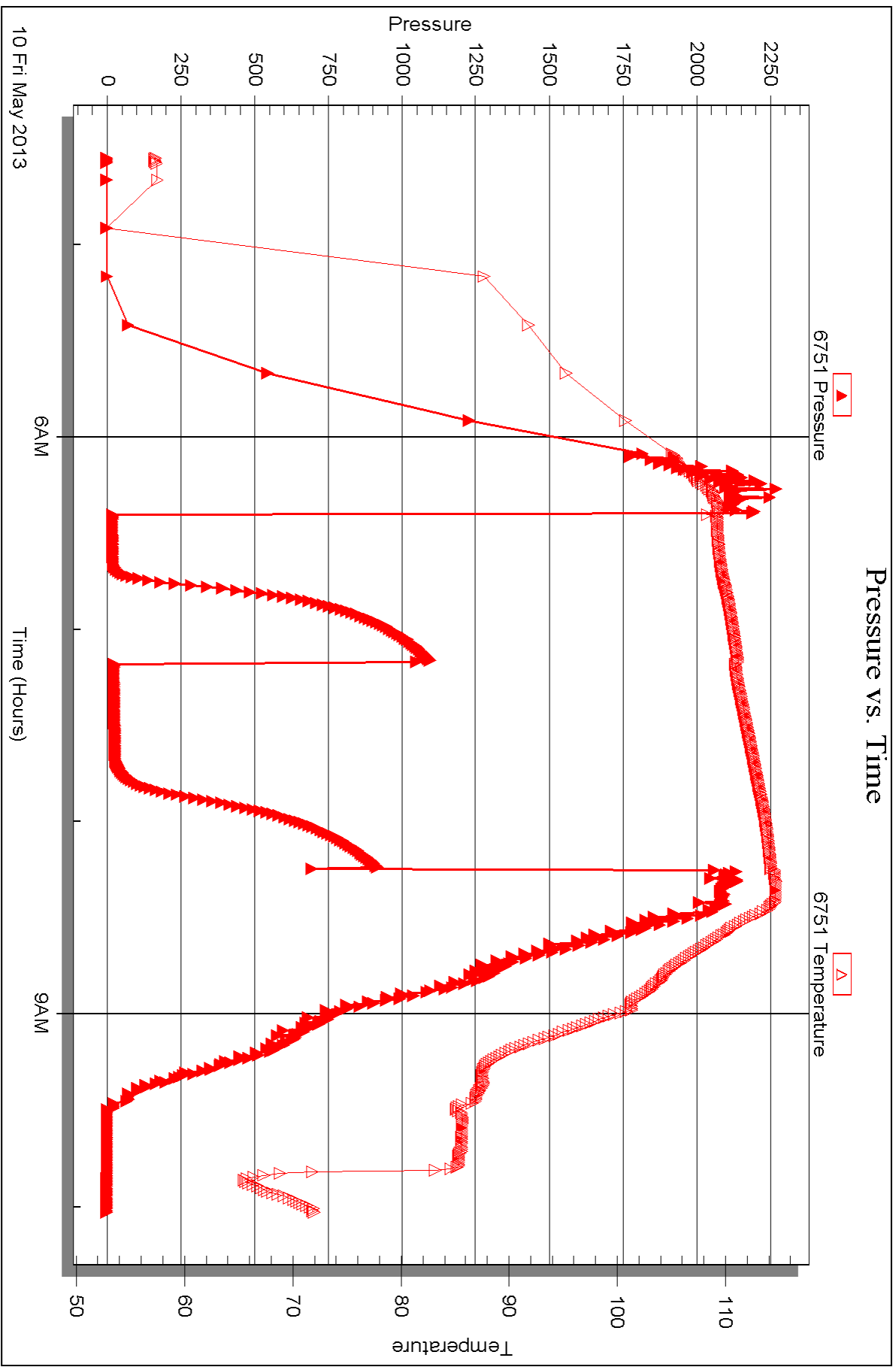


Serial #: 6751

Outside Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum, Inc.**

88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112

ATTN: Bob Elder

### **Curtis Unit #2-24**

#### **S24-10s-35w Thomas,KS**

Start Date: 2013.05.11 @ 19:38:00

End Date: 2013.05.12 @ 02:42:09

Job Ticket #: 51745                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.17 @ 08:26:33

Norstar Petroleum, Inc.

S24-10s-35w Thomas,KS

Curtis Unit #2-24

DST # 4

Johnson

2013.05.11



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Norstar Petroleum, Inc.  
 88 Inverness Cir. E. Unit F 104  
 Englewood, CO 80112  
 ATTN: Bob Elder

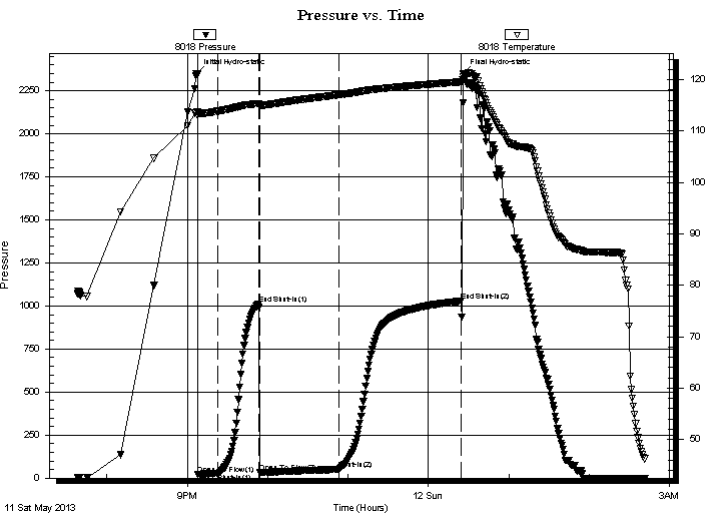
**S24-10s-35w Thomas, KS**  
**Curtis Unit #2-24**  
 Job Ticket: 51745      **DST#: 4**  
 Test Start: 2013.05.11 @ 19:38:00

## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 21:07:50  
 Tester: ChuckSmith  
 Time Test Ended: 02:42:09  
 Unit No: 62  
**Interval: 4657.00 ft (KB) To 4733.00 ft (KB) (TVD)**  
 Reference Elevations: 3247.00 ft (KB)  
 Total Depth: 4733.00 ft (KB) (TVD)      3242.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 5.00 ft

**Serial #: 8018      Inside**  
 Press @ RunDepth: 51.69 psig @ 4660.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.05.11      End Date: 2013.05.12      Last Calib.: 2013.05.12  
 Start Time: 19:38:02      End Time: 02:42:10      Time On Btm: 2013.05.11 @ 21:06:40  
 Time Off Btm: 2013.05.12 @ 00:26:00

**TEST COMMENT:** 1 1/2" Blow .  
 No return.  
 7" Blow .  
 No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2351.31	113.63	Initial Hydro-static
2	19.91	112.96	Open To Flow (1)
16	27.11	113.85	Shut-In(1)
47	1010.30	115.34	End Shut-In(1)
48	31.63	114.99	Open To Flow (2)
107	51.69	117.03	Shut-In(2)
198	1028.11	119.57	End Shut-In(2)
200	2350.92	120.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	MCO 35m 65o	0.07
60.00	MCO 45m 55o	0.30

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51745      **DST#: 4**  
Test Start: 2013.05.11 @ 19:38:00

**Tool Information**

Drill Pipe:	Length: 4537.00 ft	Diameter: 3.80 inches	Volume: 63.64 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 64.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4657.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	103.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Tool opened briefly during make-up of head joint.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4630.50	
Shut In Tool	5.00			4635.50	
Hydraulic tool	5.00			4640.50	
Jars	5.00			4645.50	
Safety Joint	2.50			4648.00	
Packer	5.00			4653.00	27.50      Bottom Of Top Packer
Packer	4.00			4657.00	
Stubb	1.00			4658.00	
Perforations	2.00			4660.00	
Recorder	0.00	8018	Inside	4660.00	
Recorder	0.00	6751	Outside	4660.00	
Perforations	5.00			4665.00	
Change Over Sub	1.00			4666.00	
Drill Pipe	63.00			4729.00	
Change Over Sub	1.00			4730.00	
Bullnose	3.00			4733.00	76.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>103.50</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Norstar Petroleum, Inc.  
88 Inverness Cir. E. Unit F 104  
Englewood, CO 80112  
ATTN: Bob Elder

**S24-10s-35w Thomas,KS**  
**Curtis Unit #2-24**  
Job Ticket: 51745      **DST#: 4**  
Test Start: 2013.05.11 @ 19:38:00

## Mud and Cushion Information

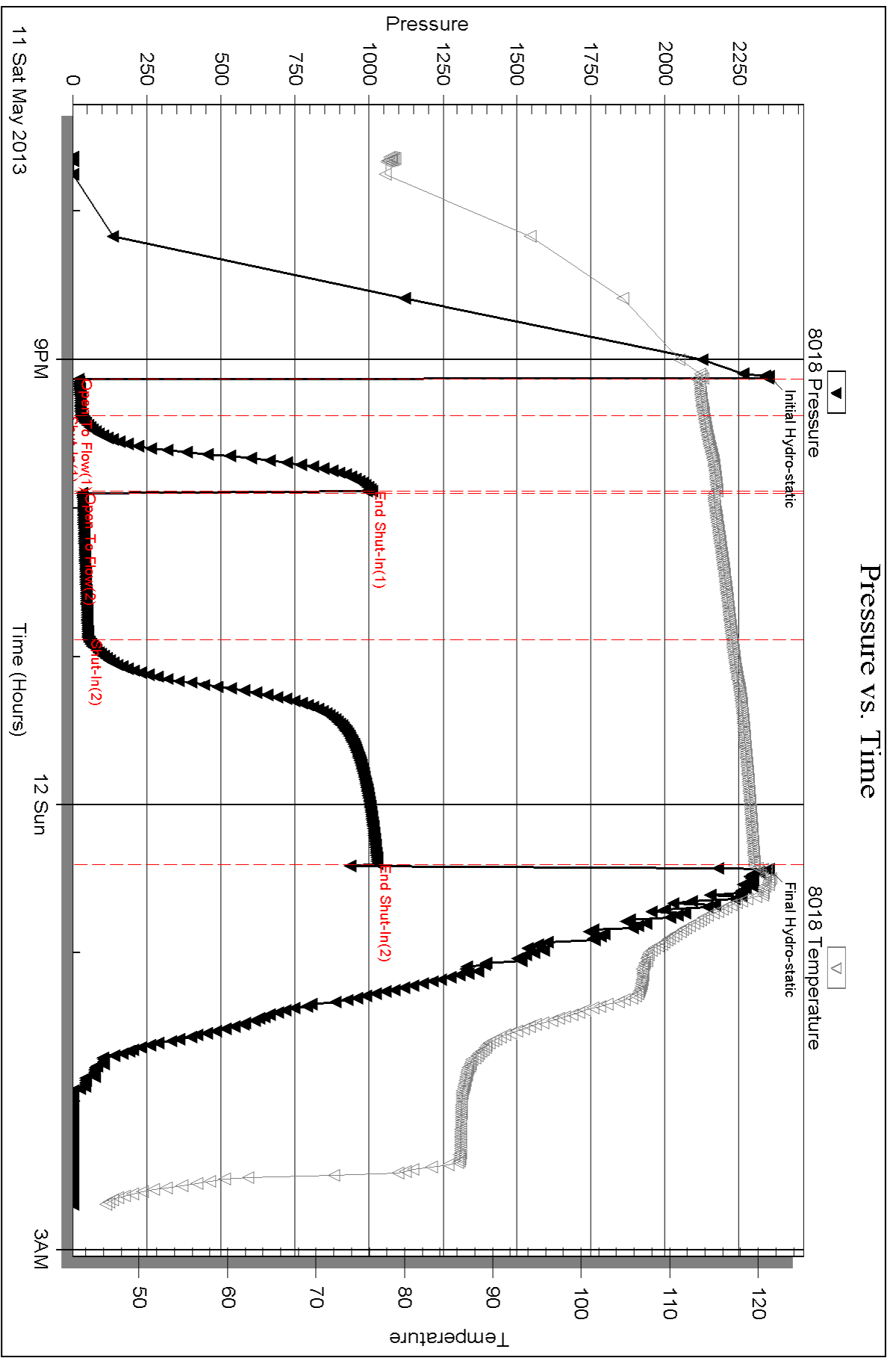
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 62.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	MCO 35m 65o	0.074
60.00	MCO 45m 55o	0.295

Total Length: 75.00 ft      Total Volume: 0.369 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

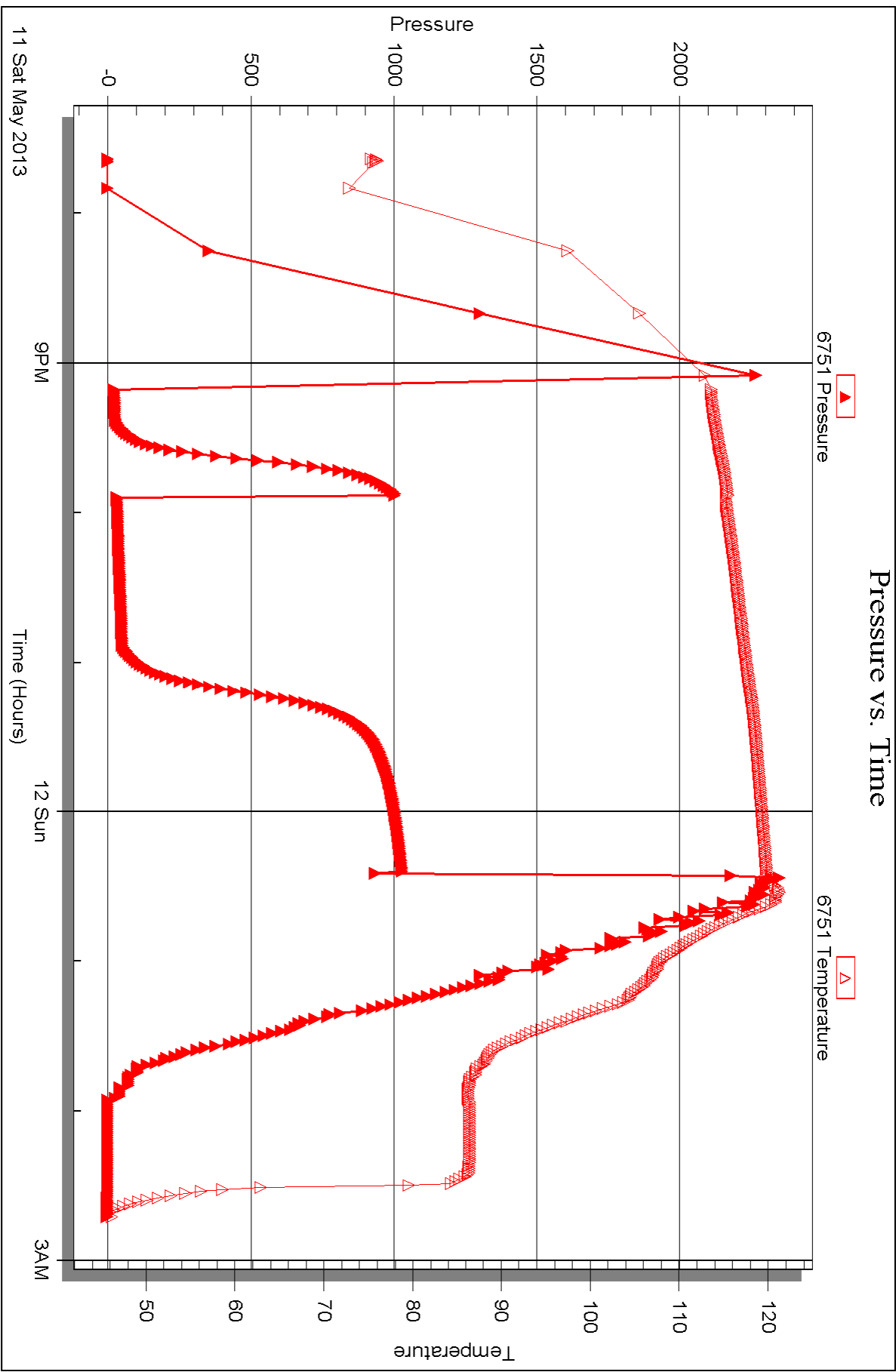


Serial #: 6751

Outside Norstar Petroleum, Inc.

Curtis Unit #2-24

DST Test Number: 4





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51742

Well Name & No. Curtis Unit #2-24 Test No. 1 Date 5-8-13  
 Company Norstar Petroleum, Inc. Elevation 3247 KB 3242 GL  
 Address 88 Inverness Cir. E. Unit F104 Englewood, CO 80112  
 Co. Rep / Geo. Bob Elder Rig WW#8  
 Location: Sec. 24 Twp. 10 Rge. 35 Co. Thomas State KS

Interval Tested 4108-4146 Zone Tested Toronto  
 Anchor Length 38 Drill Pipe Run 3966 Mud Wt. 9.0  
 Top Packer Depth 4104 Drill Collars Run 124 Vis 61  
 Bottom Packer Depth 4108 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4146 Chlorides 4000 ppm System LCM 1<sup>st</sup>

Blow Description 3 1/2" Blow.  
No return.  
4 1/2" Blow.  
No return.

Rec	Feet of	%gas	%oil	%water	%mud
30	OSWM			15	85
61	WM			30	70
124	MW			50	50

Rec Total 215 BHT 118 Gravity 200 API RW 200 @ 56 °F Chlorides 47,000 ppm

(A) Initial Hydrostatic 2078  Test 1250 T-On Location 13:25  
 (B) First Initial Flow 22  Jars 250 T-Started 13:56  
 (C) First Final Flow 66  Safety Joint 75 T-Open 15:33  
 (D) Initial Shut-In 565  Circ Sub N/C T-Pulled 18:52  
 (E) Second Initial Flow 69  Hourly Standby \_\_\_\_\_ T-Out 20:30  
 (F) Second Final Flow 112  Mileage 137RT 212.35 Comments \_\_\_\_\_  
 (G) Final Shut-In 546  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2041  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 15  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 60  Day Standby \_\_\_\_\_ Total 2037.35  
 Final Shut-In 90  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 2037.35

Approved By Ray Elder 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.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51743

Well Name & No. Curtis Unit #2-24 Test No. 2 Date 5-9-13  
 Company Norstar Petroleum, Inc. Elevation 3247 KB 3242 GL  
 Address 88 Inverness Cir. E. Unit F104 Englewood, CO 80112  
 Co. Rep / Geo. Bob Elder Rig WW#8  
 Location: Sec. 24 Twp. 10 Rge. 35 Co. Thomas State K5

Interval Tested 4287-4372 Zone Tested LIKc 'H, I, J'  
 Anchor Length 85 Drill Pipe Run 4155 Mud Wt. 9.2  
 Top Packer Depth 4283 Drill Collars Run 124 Vis 57  
 Bottom Packer Depth 4287 Wt. Pipe Run 0 WL 8.8  
 Total Depth 4372 Chlorides 4400 ppm System LCM 1\*  
 Blow Description 1 1/4" Blow.  
No return.  
1" Blow.  
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	<u>90</u> Feet of <u>M Oil spots in tool.</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 90 BHT 115 Gravity - API RW - @ - °F Chlorides - ppm

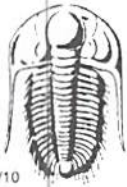
(A) Initial Hydrostatic <u>2141</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>16:00</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>16:01</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>18:02</u>
(D) Initial Shut-In <u>1242</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>19:50</u>
(E) Second Initial Flow <u>34</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>21:29</u>
(F) Second Final Flow <u>53</u>	<input checked="" type="checkbox"/> Mileage <u>137RT</u> 212.35	Comments
(G) Final Shut-In <u>1167</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2129</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1787.35</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1787.35</u>	

Approved By

*Ray Elder*

Our Representative

*Chuck Smith*



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51744

Well Name & No. Curtis Unit #224 Test No. 3 Date 5-10-13  
 Company Norstar Petroleum, Inc. Elevation 3247 KB 3242 GL  
 Address 88 Inverness Cir. E, Unit F104 Englewood, CO 80112  
 Co. Rep / Geo. Bob Elder Rig WW#8  
 Location: Sec. 24 Twp. 10 Rge. 35 Co. Thomas State KS

Interval Tested 4375-4410 Zone Tested LKC 'K'  
 Anchor Length 35 Drill Pipe Run 4251 Mud Wt. 9.2  
 Top Packer Depth 4371 Drill Collars Run 124 Vis 65  
 Bottom Packer Depth 4375 Wt. Pipe Run 0 WL 8.8  
 Total Depth 4410 Chlorides 4400 ppm System LCM 1 1/2"  
 Blow Description 1/2" Blow.  
No return.  
Surface blow.  
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>10</u>	Feet of <u>OCM</u>	%gas <u>30</u>	%oil <u>70</u>	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 114 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2198</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>4:00</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>4:33</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:24</u>
(D) Initial Shut-In <u>1098</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>8:14</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:02</u>
(F) Second Final Flow <u>28</u>	<input checked="" type="checkbox"/> Mileage <u>212.35</u>	Comments <u>1nite motel</u>
(G) Final Shut-In <u>916</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2133</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Total <u>1787.35</u>
Final Shut-In <u>33</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1787.35</u>	

Approved By Ray Gear Our Representative Chuck Amick

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51745

4/10

Well Name & No. Curtis Unit #2-24 Test No. 4 Date 5-11-13  
 Company Norstar Petroleum, Inc. Elevation 3247 KB 3242 GL  
 Address 88 Inverness Cir. E. Unit F104 Englewood, CO 80112  
 Co. Rep / Geo. Bob Elder Rig WW#8  
 Location: Sec. 24 Twp. 10 Rge. 35 Co. Thomas State K5

Interval Tested 4657 - 4733 Zone Tested Johnson  
 Anchor Length 76 Drill Pipe Run 4537 Mud Wt. 9.2  
 Top Packer Depth 4653 Drill Collars Run 124 Vis 62  
 Bottom Packer Depth 4657 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4733 Chlorides 8000 ppm System LCM 1#  
 Blow Description 1 1/2" Blow  
No return.  
7" Blow  
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>15</u>	Feet of <u>MCO</u>	%gas <u>65</u>	%oil	%water <u>35</u>	%mud
Rec <u>60</u>	Feet of <u>MCO</u>	%gas <u>55</u>	%oil	%water <u>45</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 75 BHT 120 Gravity - API RW @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2351</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>19:30</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>19:30</u>
(C) First Final Flow <u>27</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>21:08</u>
(D) Initial Shut-In <u>1010</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>00:24</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2:42</u>
(F) Second Final Flow <u>52</u>	<input checked="" type="checkbox"/> Mileage 212.35	Comments
(G) Final Shut-In <u>1028</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2351</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total 316.67
Final Flow <u>60</u>	<input checked="" type="checkbox"/> Day Standby <u>9 1/2</u> 1d 9.5h	Total 2104.02
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total 1787.35	

Approved By Ray Our Representative Chuck Smith

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