

DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Company Inc.**

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206

ATTN: Phil Askey

Hoffman-Busby #1-24

24-14s-45w Cheyenne,CO

Start Date: 2012.09.18 @ 22:58:00

End Date: 2012.09.19 @ 08:04:15

Job Ticket #: 50141 DST #: 1

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

Printed: 2012.09.24 @ 15:15:56



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Company Inc.

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

24-14s-45w Cheyenne, CO

Hoffman-Busby #1-24

Job Ticket: 50141

DST#: 1

Test Start: 2012.09.18 @ 22:58:00

GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:45:00

Time Test Ended: 08:04:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Sam Esparza

Unit No: 64

Interval: 5383.00 ft (KB) To 5480.00 ft (KB) (TVD)

Total Depth: 5480.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4307.00 ft (KB)

4296.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6772 Outside

Press @ Run Depth: 77.27 psig @ 5384.00 ft (KB)

Start Date: 2012.09.18

End Date:

2012.09.19

Start Time: 22:58:05

End Time:

08:04:15

Capacity: 8000.00 psig

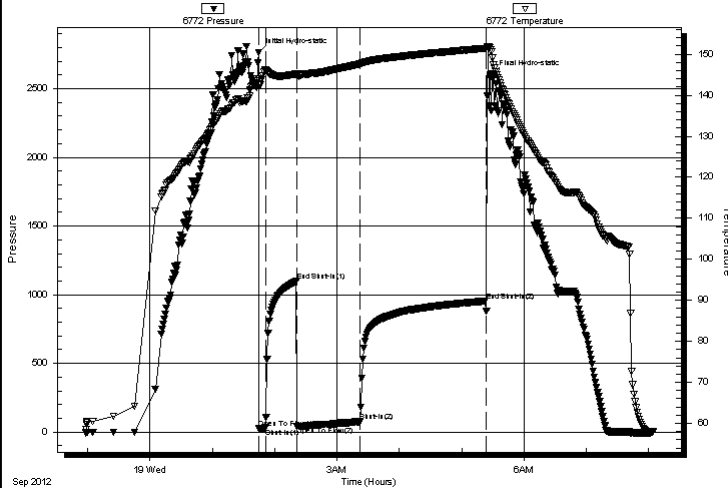
Last Calib.: 2012.09.19

Time On Btm: 2012.09.19 @ 01:44:45

Time Off Btm: 2012.09.19 @ 05:29:30

TEST COMMENT: IF: 1 1/4" blow.
IS: Weak surface return.
FF: 2 1/2" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2764.08	143.91	Initial Hydro-static
1	24.94	142.69	Open To Flow (1)
7	30.01	146.16	Shut-In(1)
37	1099.70	145.19	End Shut-In(1)
37	41.05	144.63	Open To Flow (2)
98	77.27	147.59	Shut-In(2)
219	953.43	151.46	End Shut-In(2)
225	2605.37	149.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM 10g 10o 80m	0.30
60.00	GMCO 5m 20g 75o	0.30
30.00	GO 15g 85o	0.15
0.00	200' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Mull Drilling Company Inc.

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

24-14s-45w Cheyenne, CO

Hoffman-Busby #1-24

Job Ticket: 50141

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Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4307.00 ft (KB)

4296.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6669 Outside

Press @ Run Depth: psig @ 5384.00 ft (KB)

Start Date: 2012.09.18

End Date:

2012.09.19

Start Time: 22:58:05

End Time:

08:04:00

Capacity: 8000.00 psig

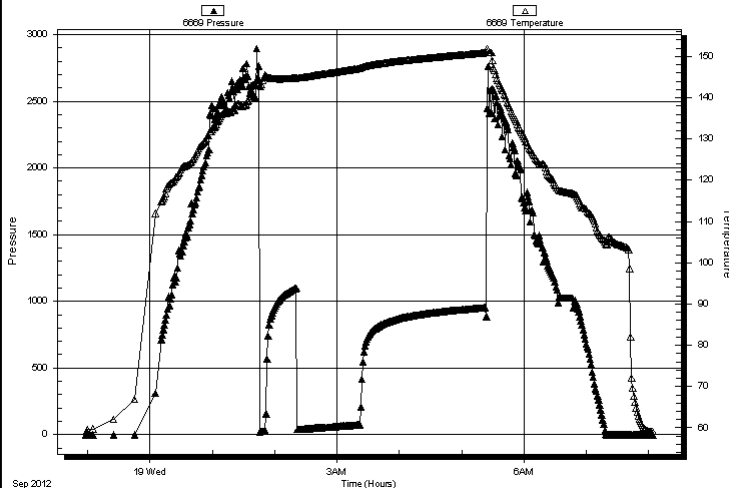
Last Calib.: 2012.09.19

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1 1/4" blow.
IS: Weak surface return.
FF: 2 1/2" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

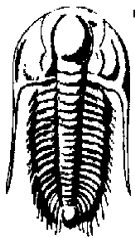
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM 10g 10o 80m	0.30
60.00	GMCO 5m 20g 75o	0.30
30.00	GO 15g 85o	0.15
0.00	200' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Company Inc.

24-14s-45w Cheyenne, CO

1700 N Waterfront Pkwy

Hoffman-Busby #1-24

B #1200

Job Ticket: 50141

DST#: 1

Wichita, KS 67206

Test Start: 2012.09.18 @ 22:58:00

ATTN: Phil Askey

Tool Information

Drill Pipe:	Length: 5180.00 ft	Diameter: 3.80 inches	Volume: 72.66 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 95000.00 lb
		Total Volume:	73.56 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	5383.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	97.00 ft			
Tool Length:	121.00 ft			
Number of Packers:	2	Diameter:	6.75 inches	
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			5360.00	
Shut In Tool	5.00			5365.00	
Hydraulic tool	5.00			5370.00	
Safety Joint	3.00			5373.00	
Packer	5.00			5378.00	24.00 Bottom Of Top Packer
Packer	5.00			5383.00	
Stubb	1.00			5384.00	
Recorder	0.00	6669	Outside	5384.00	
Recorder	0.00	6772	Outside	5384.00	
Perforations	27.00			5411.00	
Change Over Sub	1.00			5412.00	
Drill Pipe	63.00			5475.00	
Change Over Sub	1.00			5476.00	
Bullnose	4.00			5480.00	97.00 Bottom Packers & Anchor

Total Tool Length: 121.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Company Inc.

24-14s-45w Cheyenne, CO

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

Hoffman-Busby #1-24

Job Ticket: 50141

DST#: 1

Test Start: 2012.09.18 @ 22:58:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 7.19 in³

Resistivity: 0.00 ohm.m

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

37 deg API

ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOCM 10g 10o 80m	0.295
60.00	GMCO 5m 20g 75o	0.295
30.00	GO 15g 85o	0.148
0.00	200' GIP	0.000

Total Length: 150.00 ft Total Volume: 0.738 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

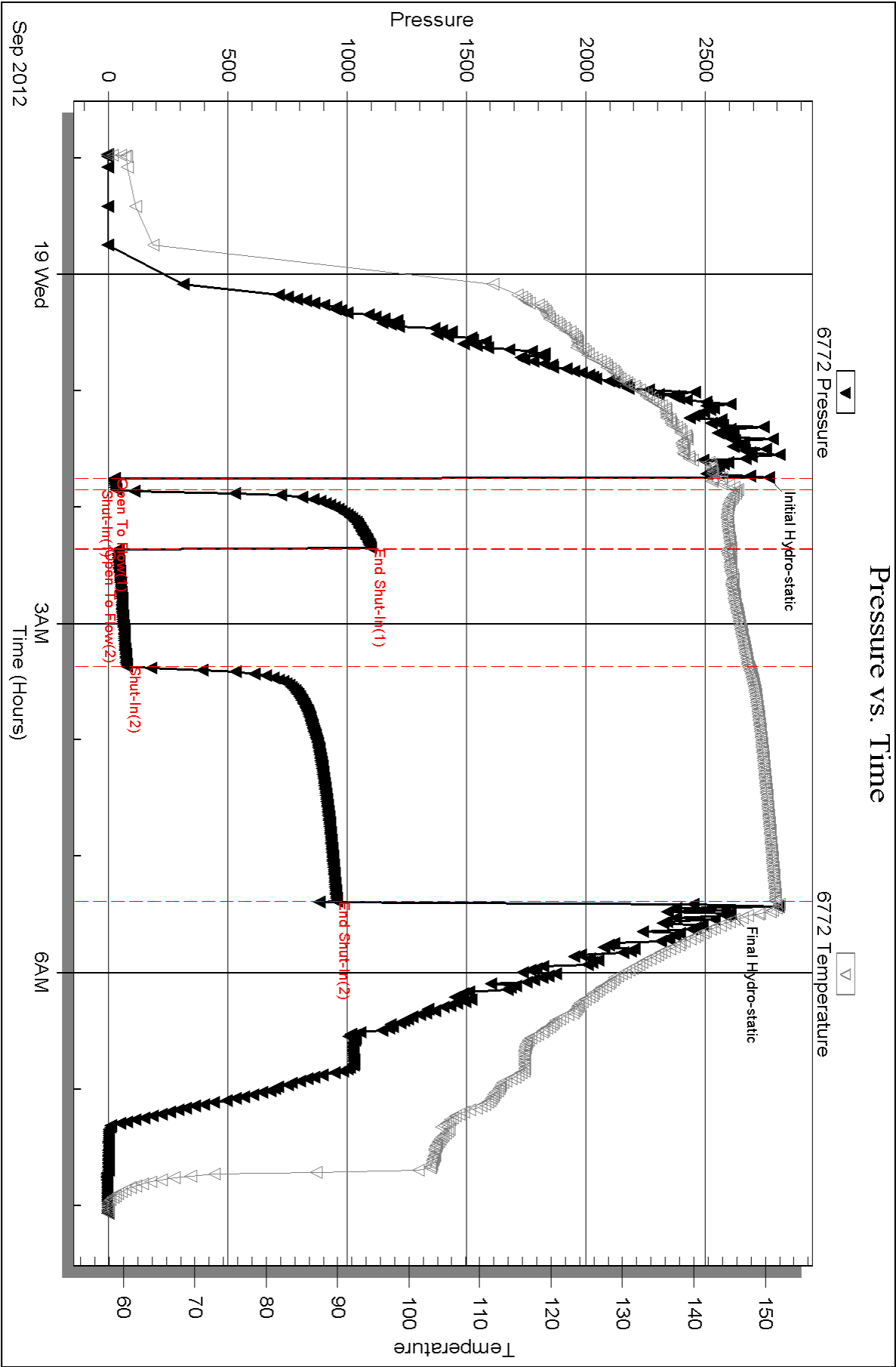
Recovery Comments: Oil API: 37 @ 60 degrees F= 37 API

Serial #: 6772

Outside Mull Drilling Company Inc.

Hoffman-Busby #1-24

DST Test Number: 1

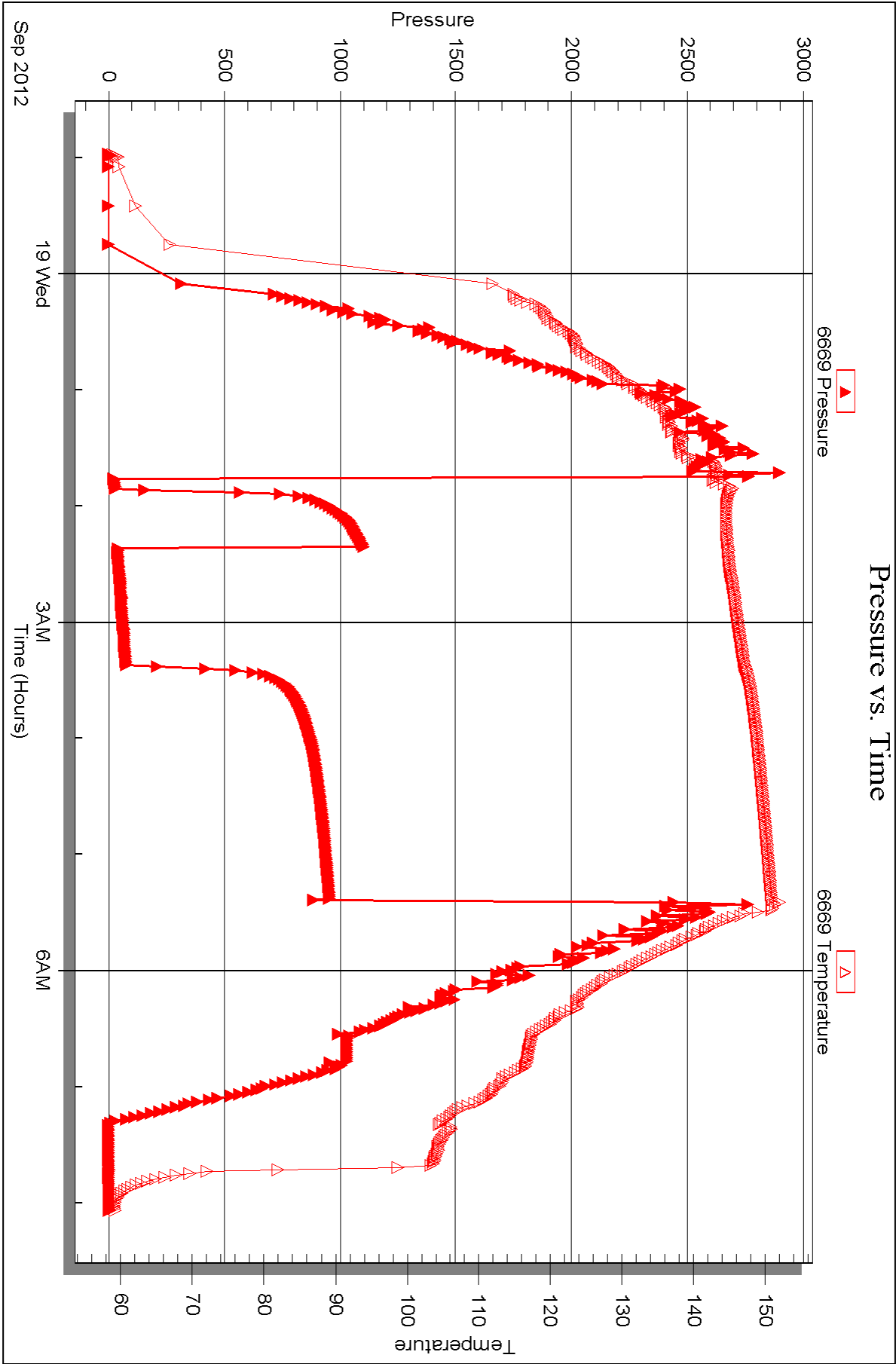


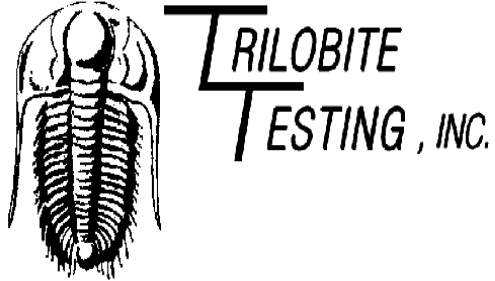
Serial #: 6669

Outside Mull Drilling Company Inc.

Hoffman-Busby #1-24

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Company Inc.**

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206

ATTN: Phil Askey

Hoffman-Busby #1-24

24-14s-45w Cheyenne,CO

Start Date: 2012.09.19 @ 21:15:00

End Date: 2012.09.20 @ 06:20:30

Job Ticket #: 50142 DST #: 2

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

Printed: 2012.09.24 @ 15:15:14



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Company Inc.

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

24-14s-45w Cheyenne, CO

Hoffman-Busby #1-24

Job Ticket: 50142

DST#: 2

Test Start: 2012.09.19 @ 21:15:00

GENERAL INFORMATION:

Formation: **Miss**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 23:59:30

Time Test Ended: 06:20:30

Test Type: **Conventional Bottom Hole (Reset)**

Tester: **Sam Esparza**

Unit No: **64**

Interval: 5375.00 ft (KB) To 5500.00 ft (KB) (TVD)

Total Depth: **5500.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Good**

Reference Elevations: **4307.00 ft (KB)**

4296.00 ft (CF)

KB to GR/CF: **11.00 ft**

Serial #: 6772 Outside

Press @ Run Depth: **73.48 psig @ 5376.00 ft (KB)**

Start Date: **2012.09.19**

End Date:

2012.09.20

Start Time: **21:15:05**

End Time:

06:20:30

Capacity: **8000.00 psig**

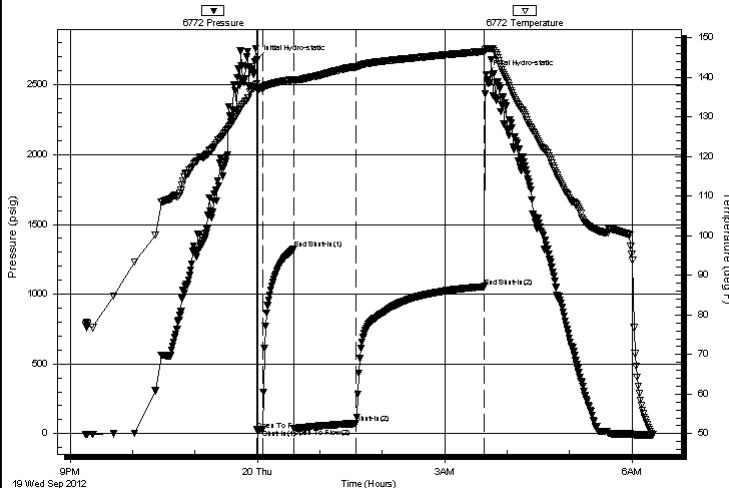
Last Calib.: **2012.09.20**

Time On Btm: **2012.09.19 @ 23:59:15**

Time Off Btm: **2012.09.20 @ 03:39:45**

TEST COMMENT: IF: 1" blow.
IS: Weak surface return.
FF: 4 1/4" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2678.71	138.36	Initial Hydro-static
1	27.39	137.31	Open To Flow (1)
6	32.36	137.39	Shut-In (1)
36	1323.03	139.48	End Shut-In (1)
36	38.43	139.14	Open To Flow (2)
96	73.48	142.60	Shut-In (2)
219	1053.44	146.60	End Shut-In (2)
221	2572.79	147.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM 10g 20o 70m	0.30
60.00	GOCM 10g 40o 50m	0.30
20.00	GO 10g 90o	0.10
0.00	100 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

Mull Drilling Company Inc.

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

24-14s-45w Cheyenne, CO

Hoffman-Busby #1-24

Job Ticket: 50142

DST#: 2

Test Start: 2012.09.19 @ 21:15:00

GENERAL INFORMATION:

Formation: **Miss**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 23:59:30

Time Test Ended: 06:20:30

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Tester: **Sam Esparza**

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Hole Diameter: **7.88 inches** Hole Condition: **Good**

Reference Elevations: **4307.00 ft (KB)**

4296.00 ft (CF)

KB to GR/CF: **11.00 ft**

Serial #: 6669 Outside

Press @ Run Depth: **psig @ 5376.00 ft (KB)**

Start Date: **2012.09.19**

End Date:

2012.09.20

Start Time: **21:15:05**

End Time:

06:20:45

Capacity: **8000.00 psig**

Last Calib.:

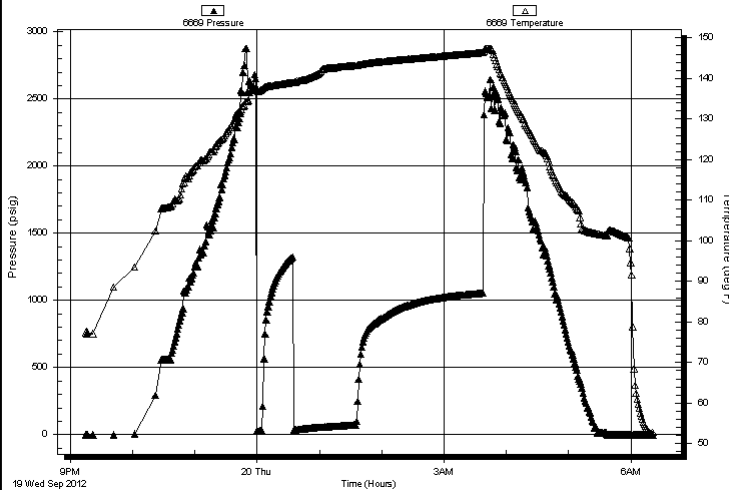
2012.09.20

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1" blow.
IS: Weak surface return.
FF: 4 1/4" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
60.00	GOCM 10g 20o 70m	0.30
60.00	GOCM 10g 40o 50m	0.30
20.00	GO 10g 90o	0.10
0.00	100 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

Mull Drilling Company Inc.

24-14s-45w Cheyenne, CO

1700 N Waterfront Pkwy
B #1200
Wichita, KS 67206
ATTN: Phil Askey

Hoffman-Busby #1-24

Job Ticket: 50142

DST#: 2

Test Start: 2012.09.19 @ 21:15:00

Tool Information

Drill Pipe:	Length: 5179.00 ft	Diameter: 3.80 inches	Volume: 72.65 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	95000.00 lb
		Total Volume:	73.55 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	70000.00 lb
Depth to Top Packer:	5375.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	125.00 ft				
Tool Length:	149.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			5352.00	
Shut In Tool	5.00			5357.00	
Hydraulic tool	5.00			5362.00	
Safety Joint	3.00			5365.00	
Packer	5.00			5370.00	24.00 Bottom Of Top Packer
Packer	5.00			5375.00	
Stubb	1.00			5376.00	
Recorder	0.00	6669	Outside	5376.00	
Recorder	0.00	6772	Outside	5376.00	
Perforations	22.00			5398.00	
Change Over Sub	1.00			5399.00	
Drill Pipe	96.00			5495.00	
Change Over Sub	1.00			5496.00	
Bullnose	4.00			5500.00	125.00 Bottom Packers & Anchor

Total Tool Length: 149.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Company Inc.

24-14s-45w Cheyenne, CO

1700 N Waterfront Pkwy

Hoffman-Busby #1-24

B #1200

Job Ticket: 50142

DST#: 2

Wichita, KS 67206

Test Start: 2012.09.19 @ 21:15:00

ATTN: Phil Askey

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:

ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOCM 10g 20o 70m	0.295
60.00	GOCM 10g 40o 50m	0.295
20.00	GO 10g 90o	0.098
0.00	100 GIP	0.000

Total Length: 140.00 ft

Total Volume: 0.688 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

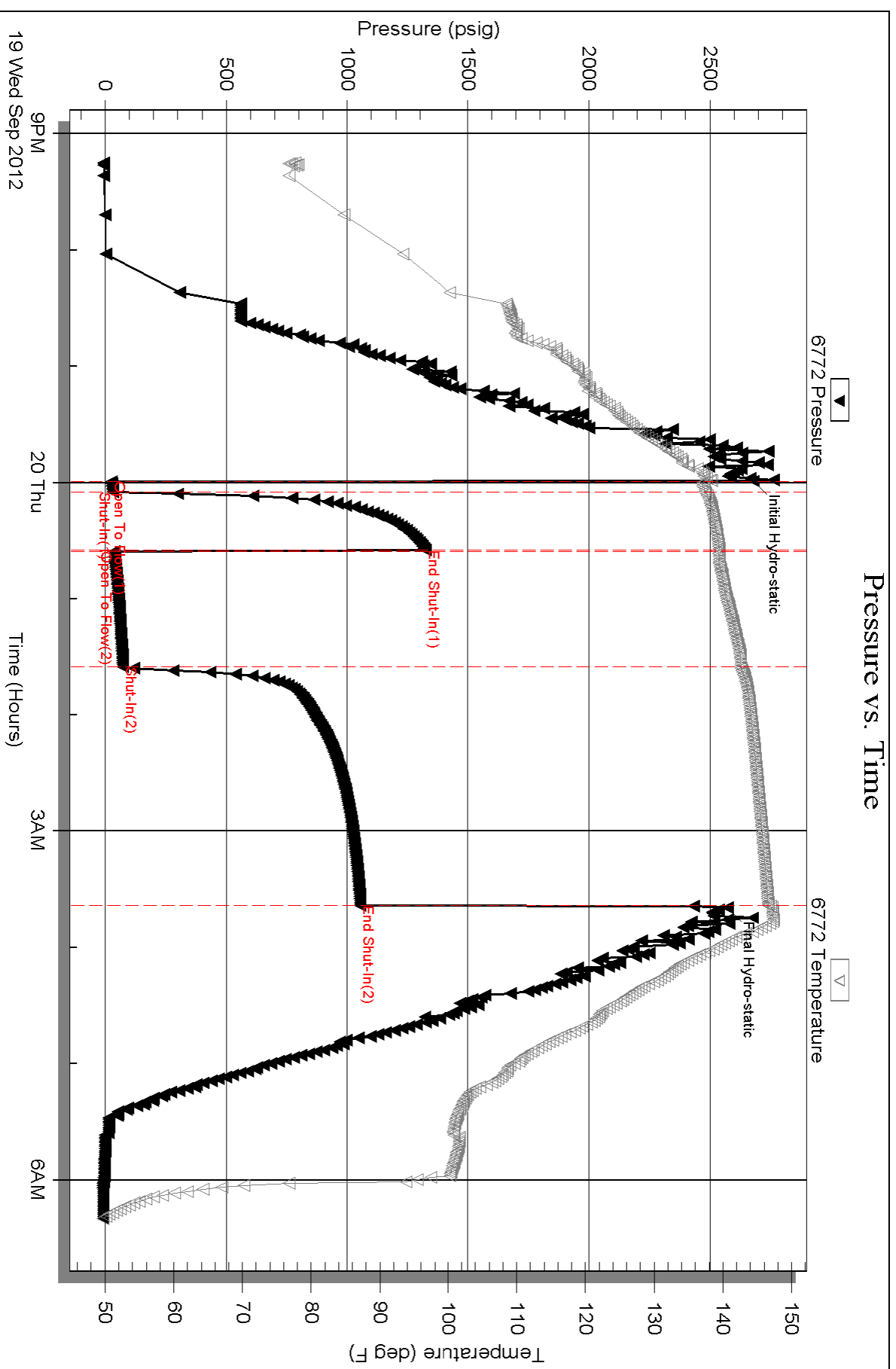
Recovery Comments: Oil API 37 @ 60 degrees F= 37

Serial #: 6772

Outside Mull Drilling Company Inc.

Hoffman-Busby #1-24

DST Test Number: 2



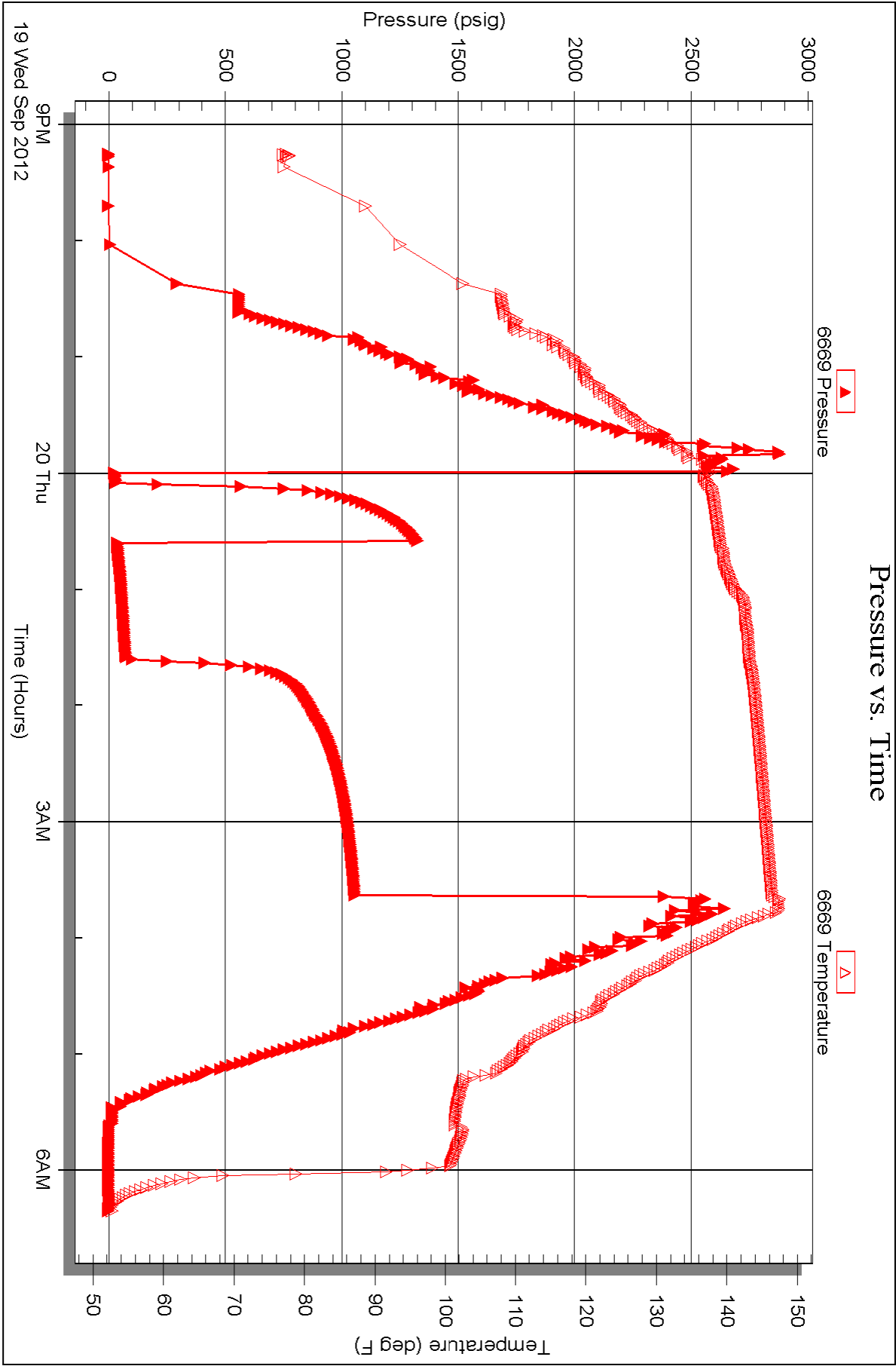
Serial #: 6669

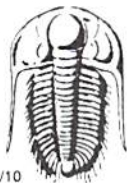
Outside

Mull Drilling Company Inc.

Hoffman-Busby #1-24

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50141

Well Name & No. Hoffman-Busby #1-24 Test No. 1 Date 9/18/12
 Company Mull Drilling Company Inc. Elevation 4357 KB 4296 GL
 Address 1700 N Waterfront Pkwy B #1200 Wichita, KS 67206
 Co. Rep / Geo. Phil Askey Rig Murphy #20
 Location: Sec. 24 Twp. 14S Rge. 45W Co. Cherokee State Colorado

Interval Tested 5383-5480 Zone Tested M.55
 Anchor Length 97' Drill Pipe Run 5180 Mud Wt. 9.2
 Top Packer Depth 5379 Drill Collars Run 184 Vis 60
 Bottom Packer Depth 5383 Wt. Pipe Run Ø WL 7.2
 Total Depth 5480 Chlorides 2000 ppm System LCM 8

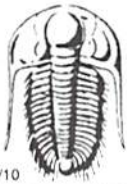
Blow Description 1 1/2" blow.
Weak surface return.
2 1/2" blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
30	60	15	85		
60	GMC	20	75		5
60	70CM	10	10		80
	200' GIP				

Rec Total 150 BHT 152 Gravity 37 API RW - @ - °F Chlorides - ppm
 (A) Initial Hydrostatic 2764 ☒ Test 1350 T-On Location 20:30
 (B) First Initial Flow 25 ☐ Jars T-Started 22:58
 (C) First Final Flow 30 ☒ Safety Joint 75 T-Open 1:45
 (D) Initial Shut-In 1100 ☒ Circ Sub N/C T-Pulled 5:22
 (E) Second Initial Flow 41 ☐ Hourly Standby T-Out 8:04
 (F) Second Final Flow 77 ☒ Mileage 218 R/T 337.90
 (G) Final Shut-In 953 ☐ Sampler
 (H) Final Hydrostatic 2605 ☐ Straddle

☐ Ruined Shale Packer
☐ Ruined Packer
☐ Extra Copies
 Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility
 Sub Total 1762.90
 Sub Total 1762.90

Approved By Phil Askey Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged or 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. 50142

4/10

Well Name & No. Hoffman-Bashy #1-24 Test No. 2 Date 9/19/12
 Company Mull Drilling Company Inc. Elevation 4307 KB 4296 GL
 Address 1700 N Waterfront pkwy B #1200 Wichita, KS 67206
 Co. Rep / Geo. Phil Askey Rig Murfin #20
 Location: Sec. 24 Twp. H# Rge. 45W Co. Cheyenne State Colorado

Interval Tested 5375-5500 Zone Tested Miss
 Anchor Length 125' Drill Pipe Run 5179 Mud Wt. 9.1
 Top Packer Depth 5371 Drill Collars Run 184 Vis 70
 Bottom Packer Depth 5375 Wt. Pipe Run Ø WL 8.0
 Total Depth 5500 Chlorides 2800 ppm System LCM 7

Blow Description 1" blow.
Weak surface return
4 1/4" blow.
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>60</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>60m</u>	<u>10</u>	<u>40</u>		<u>50</u>
<u>60</u>	<u>60m</u>	<u>10</u>	<u>20</u>		<u>70</u>
	<u>100' GIP</u>				

Rec Total 140 BHT 143 Gravity 37 API RW ✓ @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2679 ☒ Test 1350 T-On Location 20:45
 (B) First Initial Flow 27 ☐ Jars — T-Started 21:15
 (C) First Final Flow 32 ☒ Safety Joint 75 T-Open ~~00:00~~ 12:00 am
 (D) Initial Shut-In 1323 ☒ Circ Sub N/C T-Pulled 3:36
 (E) Second Initial Flow 38 ☐ Hourly Standby — T-Out 6:20
 (F) Second Final Flow 73 ☒ Mileage 218 R/T X2 675.80 Comments Loaded tools @
 (G) Final Shut-In 1053 ☐ Sampler — 7:30 am 9/21/12
 (H) Final Hydrostatic 2573 ☐ Straddle —

☐ Ruined Shale Packer —
☒ Ruined Packer 320
☐ Extra Copies —
 Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120
☐ Extra Recorder —
☐ Day Standby —
☐ Accessibility —
 Sub Total 2100.80
 Sub Total 2420.80
 MP/DST Disc't —

Approved By Phil Askey Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged or destroyed 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.