



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc**

250 N. Water STE 300
Wichita KS 67202

ATTN: Jeff Lawler

Berdie #2-21

21-1s-35w Rawlins,KS

Start Date: 2014.07.25 @ 17:38:00

End Date: 2014.07.26 @ 01:05:30

Job Ticket #: 58460 DST #: 1

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

Printed: 2014.07.31 @ 16:27:58



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58460

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.07.25 @ 17:38:00

GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:49:30

Time Test Ended: 01:05:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 3743.00 ft (KB) To 3840.00 ft (KB) (TVD)

Reference Elevations: 3185.00 ft (KB)

Total Depth: 3840.00 ft (KB) (TVD)

3180.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6753 Outside

Press@RunDepth: 24.15 psig @ 3744.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.25

End Date:

2014.07.26

Last Calib.:

2014.07.26

Start Time:

17:38:05

End Time:

01:05:29

Time On Btm:

2014.07.25 @ 19:49:15

Time Off Btm:

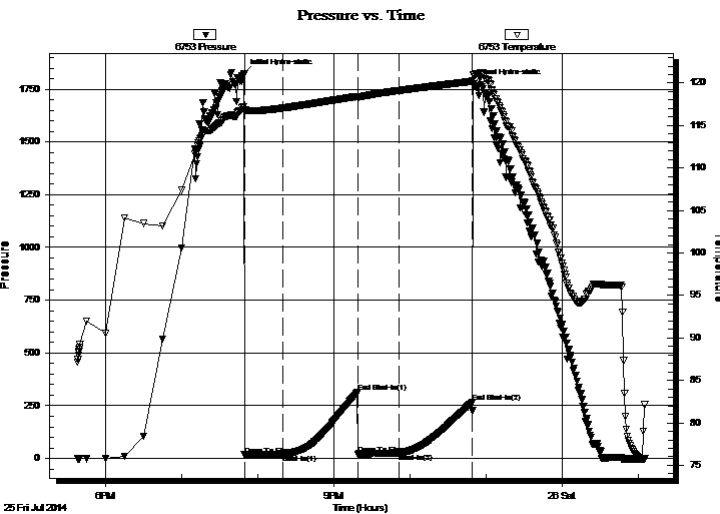
2014.07.25 @ 22:50:00

TEST COMMENT: 30 - IF - Weak surface blow dead in 12 min.

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1823.41	117.21	Initial Hydro-static
1	17.17	116.64	Open To Flow (1)
31	20.56	117.06	Shut-In(1)
90	313.43	118.43	End Shut-In(1)
90	20.08	118.26	Open To Flow (2)
123	24.15	119.13	Shut-In(2)
180	265.09	120.21	End Shut-In(2)
181	1774.55	120.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58460

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.07.25 @ 17:38:00

Tool Information

Drill Pipe:	Length: 3612.68 ft	Diameter: 3.80 inches	Volume: 50.68 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: 124.41 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 51.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.09 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3743.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	97.00 ft			
Tool Length:	124.00 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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Shut In Tool	5.00			3721.00	
Hydraulic tool	5.00			3726.00	
Jars	5.00			3731.00	
Safety Joint	3.00			3734.00	
Packer	4.00			3738.00	27.00 Bottom Of Top Packer
Packer	5.00			3743.00	
Stubb	1.00			3744.00	
Recorder	0.00	8368	Inside	3744.00	
Recorder	0.00	6753	Outside	3744.00	
Perforations	27.00			3771.00	
Change Over Sub	1.00			3772.00	
Drill Pipe	63.00			3835.00	
Change Over Sub	1.00			3836.00	
Bullnose	4.00			3840.00	97.00 Bottom Packers & Anchor

Total Tool Length: 124.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58460

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.07.25 @ 17:38:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 3.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud - 100M	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:

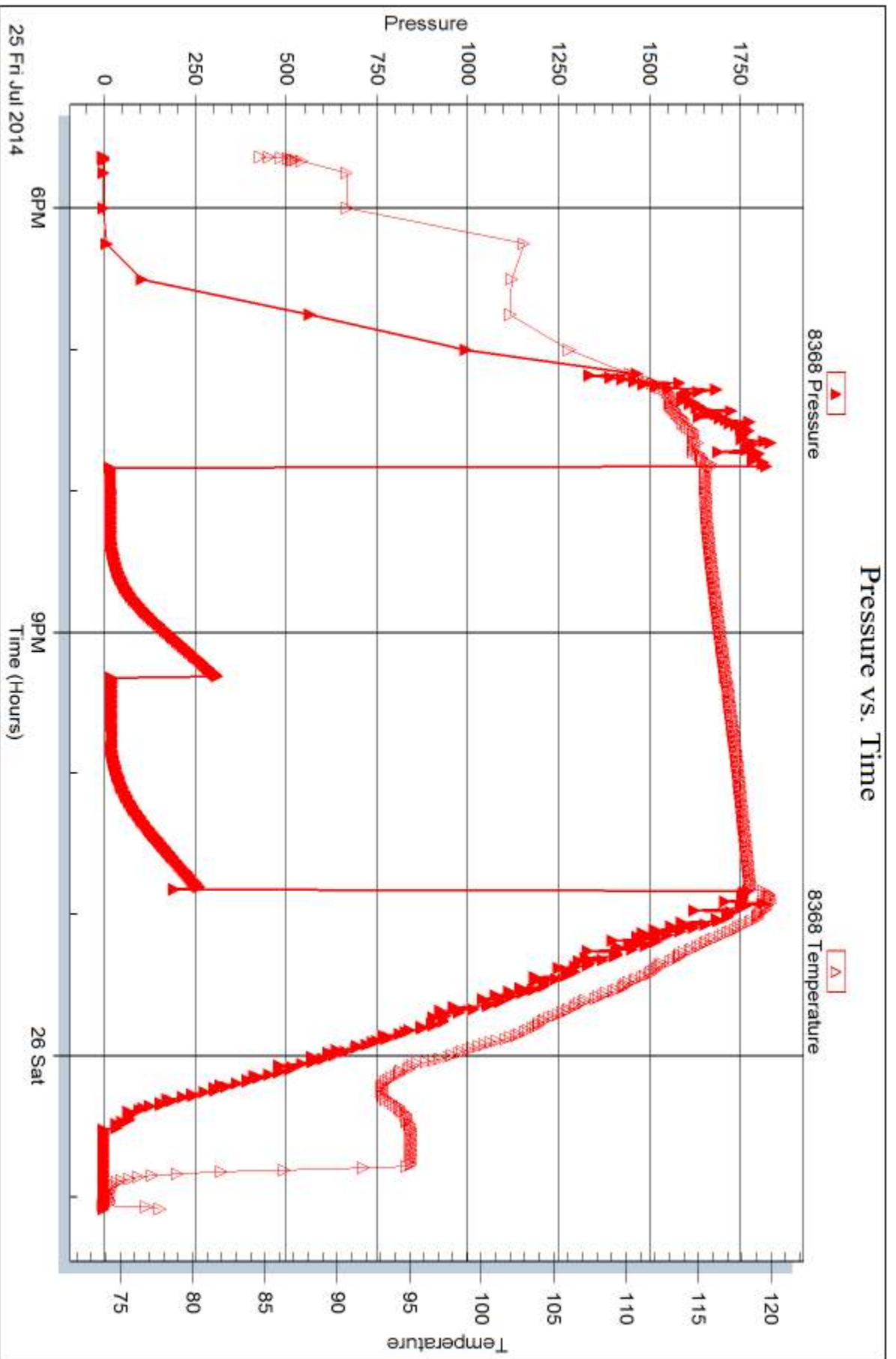
Recovery Comments:

Serial #: 8368

Murfin Drilling Co., Inc

Berdie #2-21

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 58460

Printed: 2014.07.31 @ 16:28:00



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc**

250 N. Water STE 300
Wichita KS 67202

ATTN: Jeff Lawler

Berdie #2-21

21-1s-35w Rawlins,KS

Start Date: 2014.07.27 @ 08:26:00

End Date: 2014.07.27 @ 16:52:30

Job Ticket #: 58461 DST #: 2

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

Printed: 2014.07.31 @ 16:27:31



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc
 250 N. Water STE 300
 Wichita KS 67202
 ATTN: Jeff Lawler

21-1s-35w Rawlins, KS

Berdie #2-21

Job Ticket: 58461

DST#: 2

Test Start: 2014.07.27 @ 08:26:00

GENERAL INFORMATION:

Formation: **LKC - A - D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:19:45
 Time Test Ended: 16:52:30
 Interval: **4055.00 ft (KB) To 4190.00 ft (KB) (TVD)**
 Total Depth: 4190.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: 54
 Reference Elevations: 3185.00 ft (KB)
 3180.00 ft (CF)
 KB to GR/CF: 5.00 ft

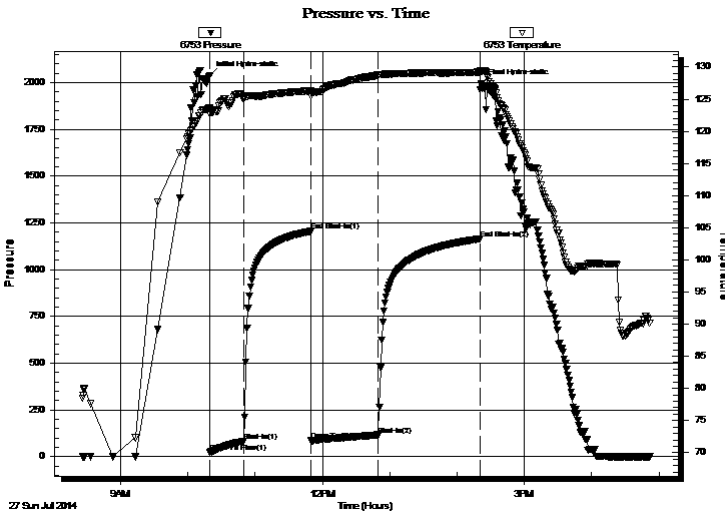
Serial #: 6753

Outside

Press@RunDepth: 116.34 psig @ 4056.00 ft (KB)
 Start Date: 2014.07.27 End Date: 2014.07.27
 Start Time: 08:26:05 End Time: 16:52:29
 Capacity: 8000.00 psig
 Last Calib.: 2014.07.27
 Time On Btm: 2014.07.27 @ 10:19:30
 Time Off Btm: 2014.07.27 @ 14:21:45

TEST COMMENT: IF - Surface blow built to 4 1/2"
 ISI - No return
 FF - Surface blow built to 4 3/4"
 FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2036.80	123.62	Initial Hydro-static
1	22.06	122.74	Open To Flow (1)
31	81.94	125.11	Shut-In(1)
91	1205.58	126.28	End Shut-In(1)
91	85.80	125.57	Open To Flow (2)
151	116.34	128.76	Shut-In(2)
241	1164.78	129.20	End Shut-In(2)
243	1992.93	129.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	OSWM - 65M - 35W - Oil Spots	0.31
63.00	OSWM - 55M - 45W - Oil Spots	0.32
63.00	OCWM - 80M - 15W - 5o	0.88
31.00	OCM - 95M - 5o	0.43

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58461

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.07.27 @ 08:26:00

Tool Information

Drill Pipe:	Length: 3929.14 ft	Diameter: 3.80 inches	Volume: 55.12 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: 124.41 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	78000.00 lb
			<u>Total Volume: 55.73 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.55 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4055.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	135.00 ft				
Tool Length:	162.00 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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Shut In Tool	5.00			4033.00	
Hydraulic tool	5.00			4038.00	
Jars	5.00			4043.00	
Safety Joint	3.00			4046.00	
Packer	4.00			4050.00	27.00 Bottom Of Top Packer
Packer	5.00			4055.00	
Stubb	1.00			4056.00	
Recorder	0.00	8368	Inside	4056.00	
Recorder	0.00	6753	Outside	4056.00	
Perforations	34.00			4090.00	
Change Over Sub	1.00			4091.00	
Drill Pipe	94.00			4185.00	
Change Over Sub	1.00			4186.00	
Bullnose	4.00			4190.00	135.00 Bottom Packers & Anchor

Total Tool Length: 162.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58461

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.07.27 @ 08:26:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
63.00	OSWM - 65M - 35W - Oil Spots	0.310
63.00	OSWM - 55M - 45W - Oil Spots	0.324
63.00	OCWM - 80M - 15W - 5o	0.884
31.00	OCM - 95M - 5o	0.435

Total Length: 220.00 ft

Total Volume: 1.953 bbl

Num Fluid Samples: 0

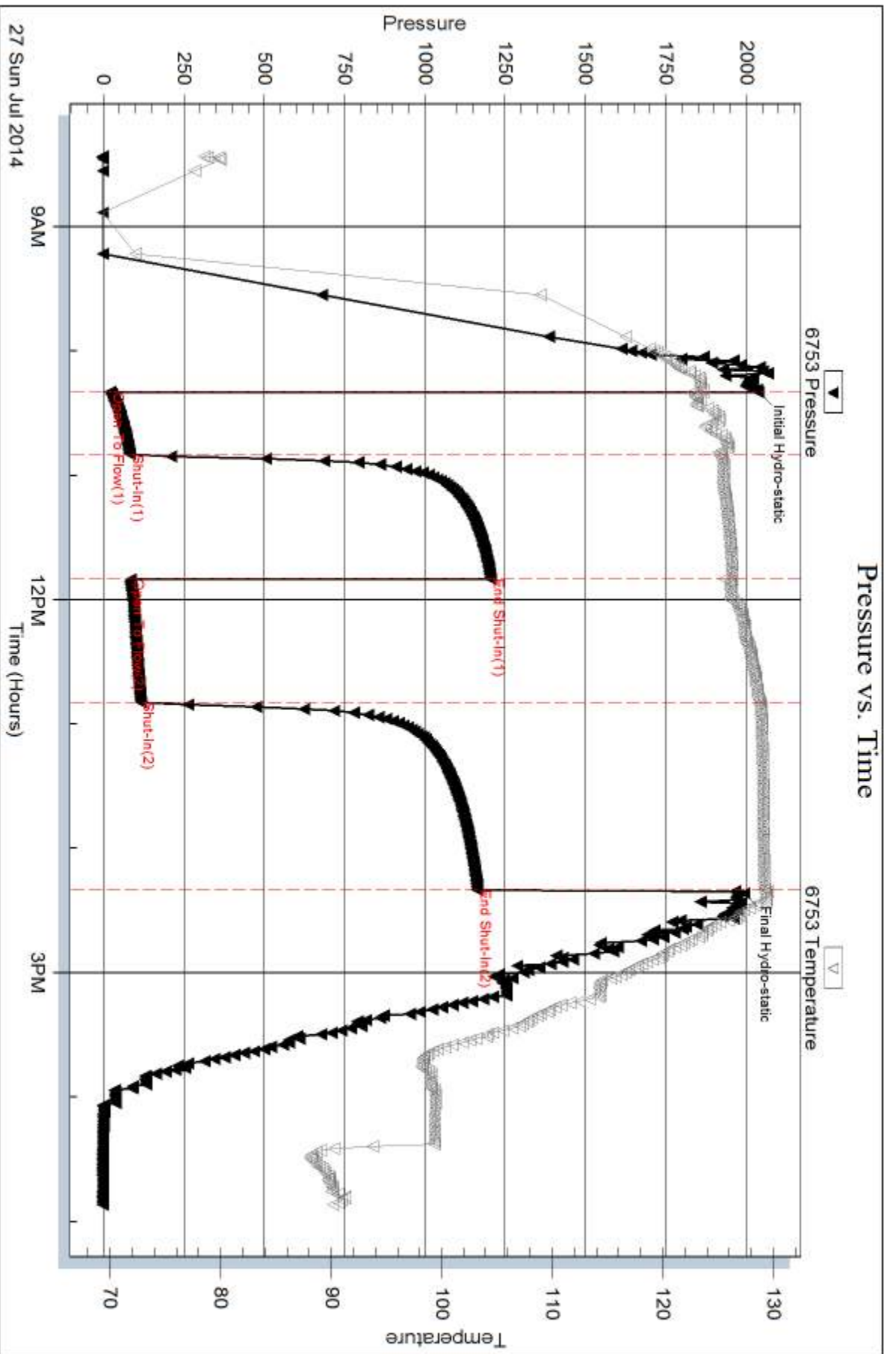
Num Gas Bombs: 0

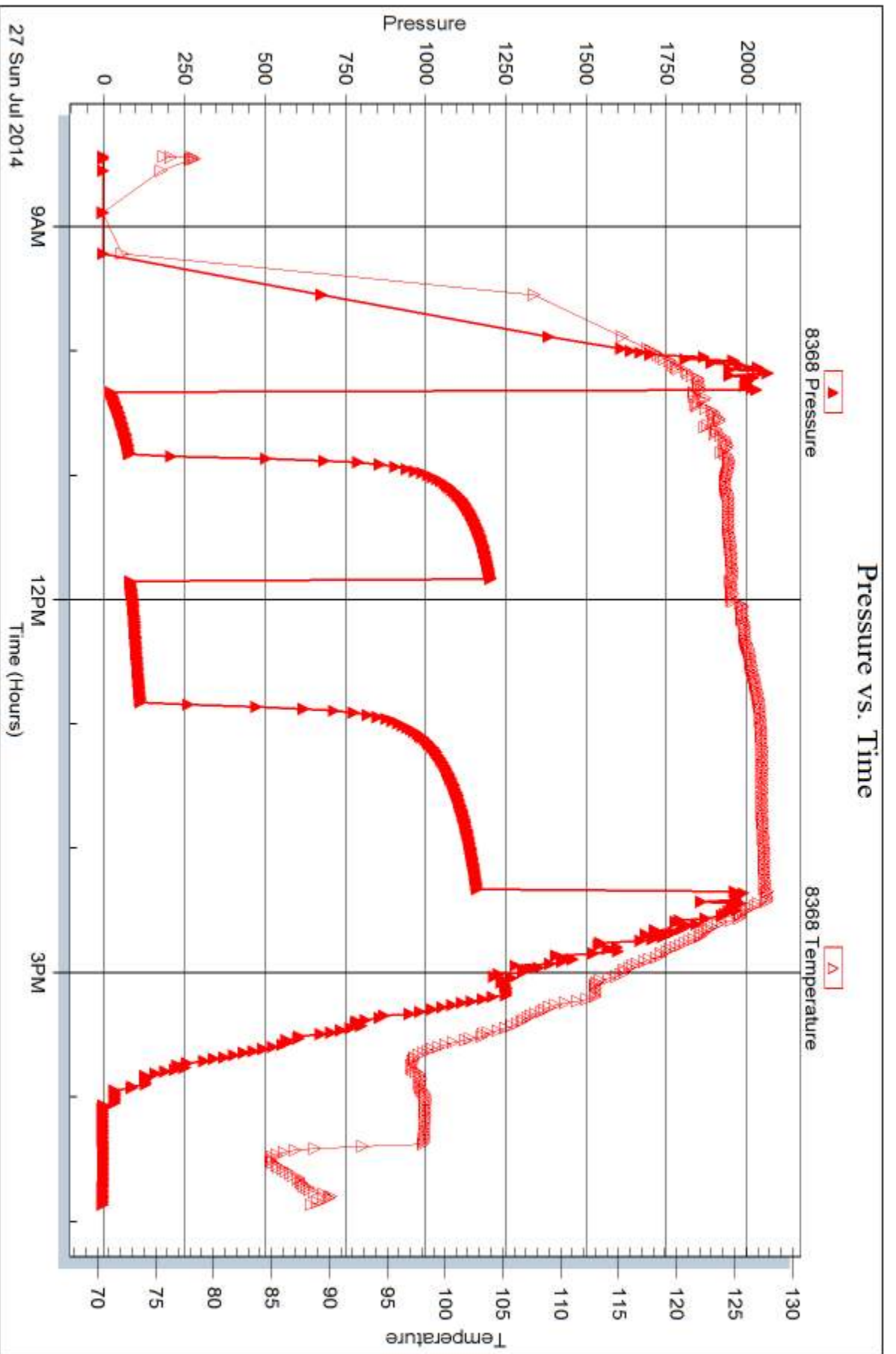
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc**

250 N. Water STE 300
Wichita KS 67202

ATTN: Jeff Lawler

Berdie #2-21

21-1s-35w Rawlins,KS

Start Date: 2014.07.28 @ 02:43:00

End Date: 2014.07.28 @ 11:43:45

Job Ticket #: 58462 DST #: 3

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

Printed: 2014.07.31 @ 16:27:09



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58462

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 02:43:00

GENERAL INFORMATION:

Formation: **LKC - G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:33:45

Time Test Ended: 11:43:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4184.00 ft (KB) To 4241.00 ft (KB) (TVD)

Reference Elevations: 3185.00 ft (KB)

Total Depth: 4241.00 ft (KB) (TVD)

3180.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6753

Outside

Press@RunDepth: 120.85 psig @ 4185.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.28

End Date:

2014.07.28

Last Calib.:

2014.07.28

Start Time: 02:43:05

End Time:

11:43:45

Time On Btm:

2014.07.28 @ 05:33:30

Time Off Btm:

2014.07.28 @ 09:34:45

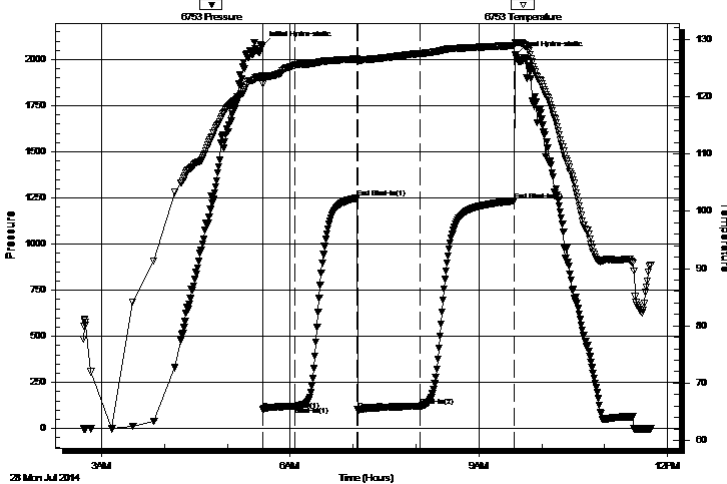
TEST COMMENT: 30 - IF - Surface blow built to 3"

60 - ISI - No return

60 - FF - Surface blow built to 6 3/4"

90 - FSI - No return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2076.95	123.56	Initial Hydro-static
1	101.17	122.20	Open To Flow (1)
31	121.05	125.51	Shut-In(1)
91	1250.24	126.60	End Shut-In(1)
91	101.10	126.19	Open To Flow (2)
151	120.85	127.53	Shut-In(2)
241	1234.57	128.93	End Shut-In(2)
242	2024.06	129.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	MCO - 50M - 50o	0.31
63.00	MCO - 10M - 90o	0.32

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58462

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 02:43:00

Tool Information

Drill Pipe:	Length: 4055.15 ft	Diameter: 3.80 inches	Volume: 56.88 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: 124.41 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 57.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.56 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4184.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4162.00	
Hydraulic tool	5.00			4167.00	
Jars	5.00			4172.00	
Safety Joint	3.00			4175.00	
Packer	4.00			4179.00	27.00 Bottom Of Top Packer
Packer	5.00			4184.00	
Stubb	1.00			4185.00	
Recorder	0.00	8368	Inside	4185.00	
Recorder	0.00	6753	Outside	4185.00	
Perforations	19.00			4204.00	
Change Over Sub	1.00			4205.00	
Drill Pipe	31.00			4236.00	
Change Over Sub	1.00			4237.00	
Bullnose	4.00			4241.00	57.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58462

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 02:43:00

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: 67.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
63.00	MCO - 50M - 50o	0.310
63.00	MCO - 10M - 90o	0.324

Total Length: 126.00 ft Total Volume: 0.634 bbf

Num Fluid Samples: 0

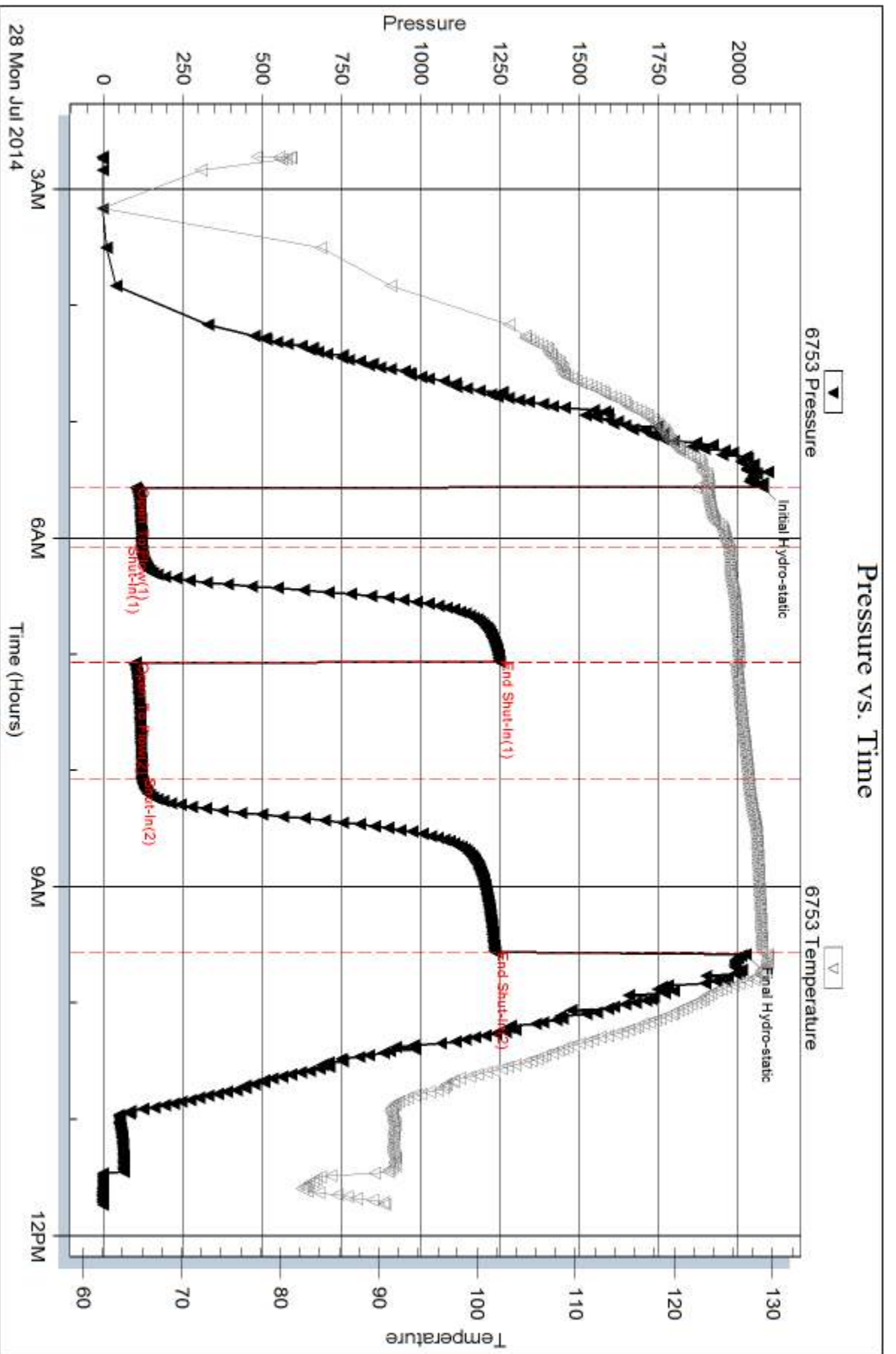
Num Gas Bombs: 0

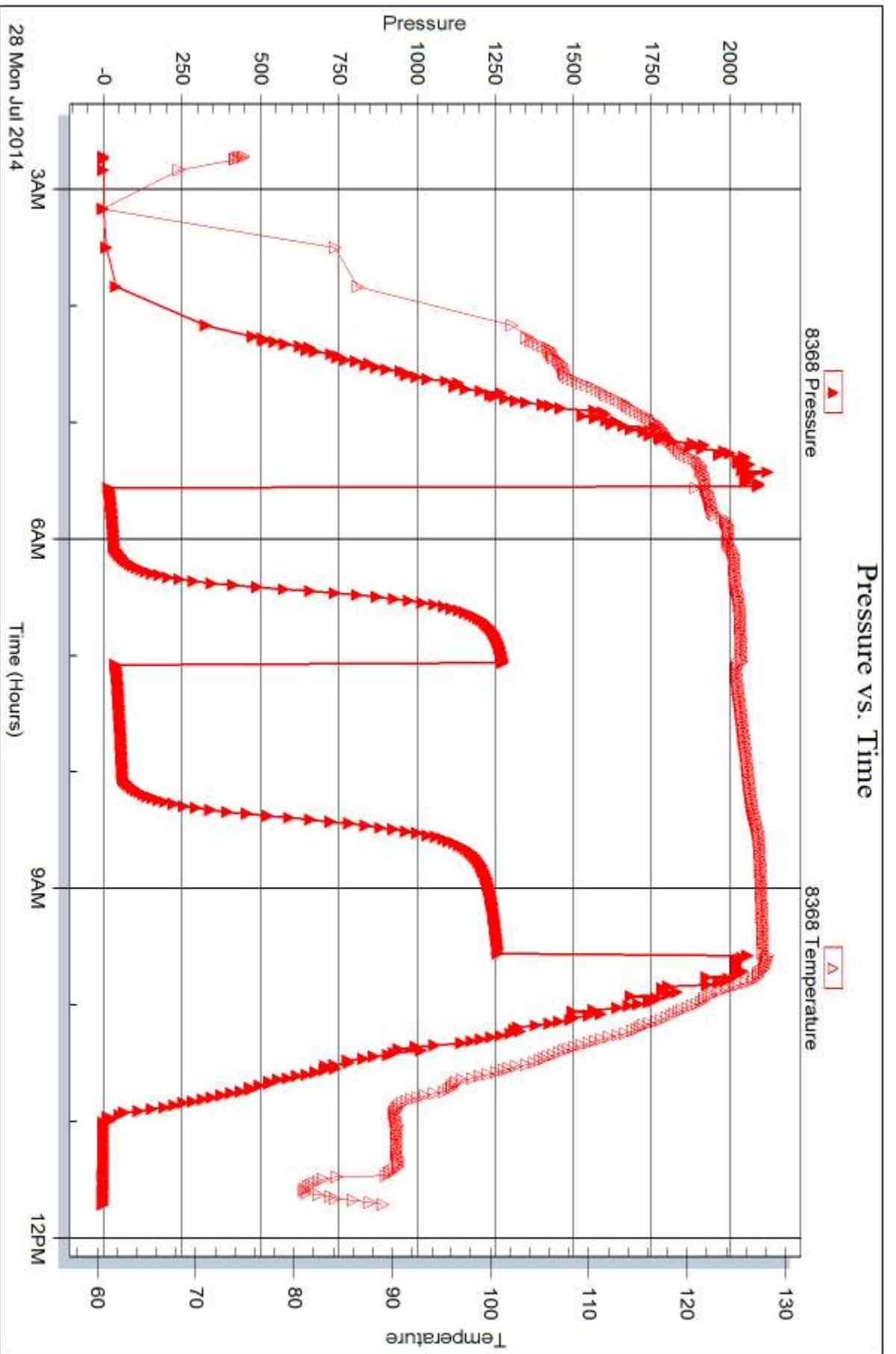
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc**

250 N. Water STE 300
Wichita KS 67202

ATTN: Jeff Lawler

Berdie #2-21

21-1s-35w Rawlins,KS

Start Date: 2014.07.28 @ 23:57:00

End Date: 2014.07.29 @ 09:09:45

Job Ticket #: 58463 DST #: 4

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

Printed: 2014.07.31 @ 16:26:05



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58463

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 23:57:00

GENERAL INFORMATION:

Formation: **LKC - H & J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:47:30

Time Test Ended: 09:09:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4239.00 ft (KB) To 4331.00 ft (KB) (TVD)

Reference Elevations: 3185.00 ft (KB)

Total Depth: 4331.00 ft (KB) (TVD)

3180.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6753 Outside

Press@RunDepth: 49.62 psig @ 4240.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.28

End Date:

2014.07.29

Last Calib.:

2014.07.29

Start Time: 23:57:05

End Time:

09:09:45

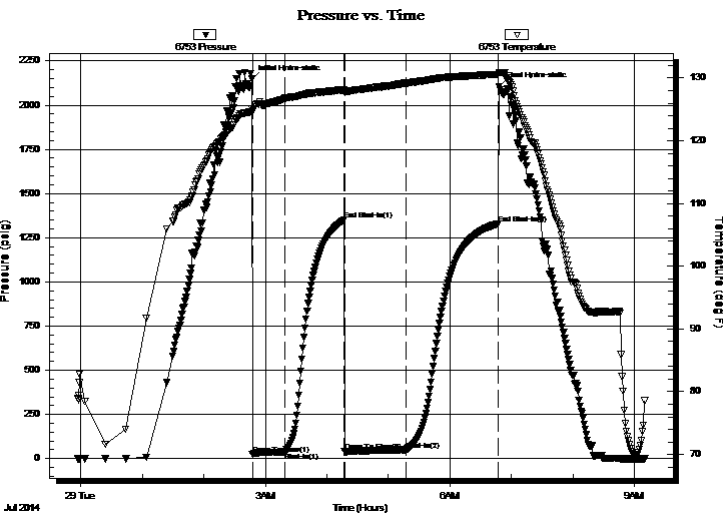
Time On Btm:

2014.07.29 @ 02:47:00

Time Off Btm:

2014.07.29 @ 06:47:45

TEST COMMENT: 30 - IF - Surface blow built to 2 1/2"
60 - ISI - No return
60 - FF - Surface blow built to 2 1/2"
90 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2146.15	125.15	Initial Hydro-static
1	24.94	124.65	Open To Flow (1)
32	37.40	126.77	Shut-In(1)
90	1349.48	128.09	End Shut-In(1)
91	39.56	127.72	Open To Flow (2)
151	49.62	129.15	Shut-In(2)
240	1329.84	130.60	End Shut-In(2)
241	2104.27	130.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	OCM - 55M - 45o	0.32

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58463

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 23:57:00

Tool Information

Drill Pipe:	Length: 4119.31 ft	Diameter: 3.80 inches	Volume: 57.78 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: 124.41 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.39 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.72 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4239.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	92.00 ft			
Tool Length:	119.00 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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Shut In Tool	5.00			4217.00	
Hydraulic tool	5.00			4222.00	
Jars	5.00			4227.00	
Safety Joint	3.00			4230.00	
Packer	4.00			4234.00	27.00 Bottom Of Top Packer
Packer	5.00			4239.00	
Stubb	1.00			4240.00	
Recorder	0.00	8368	Inside	4240.00	
Recorder	0.00	6753	Outside	4240.00	
Perforations	22.00			4262.00	
Change Over Sub	1.00			4263.00	
Drill Pipe	63.00			4326.00	
Change Over Sub	1.00			4327.00	
Bullnose	4.00			4331.00	92.00 Bottom Packers & Anchor

Total Tool Length: 119.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc

21-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Berdie #2-21

Job Ticket: 58463

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.07.28 @ 23:57:00

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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
65.00	OCM - 55M - 45o	0.320

Total Length: 65.00 ft Total Volume: 0.320 bbl

Num Fluid Samples: 0

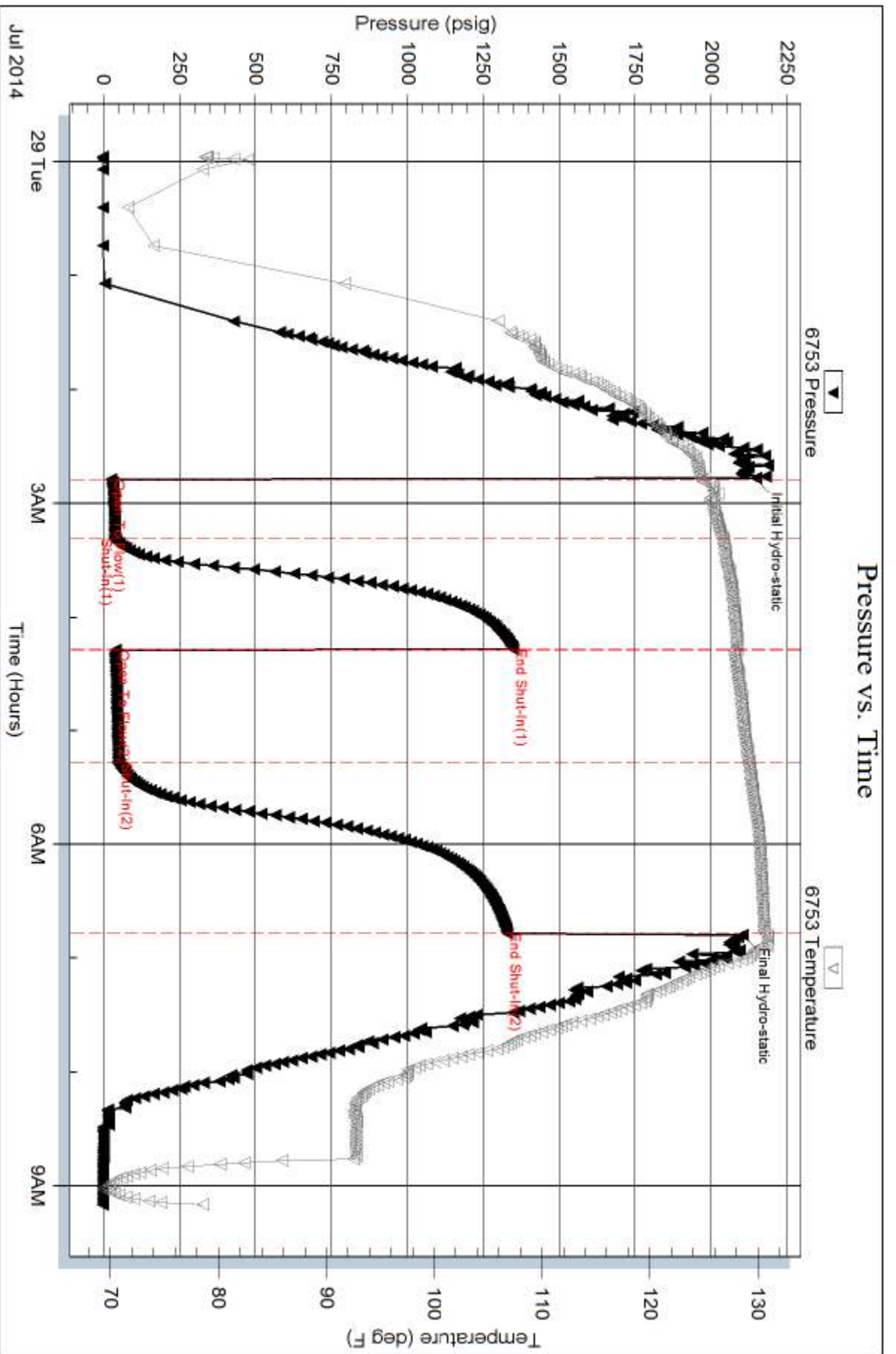
Num Gas Bombs: 0

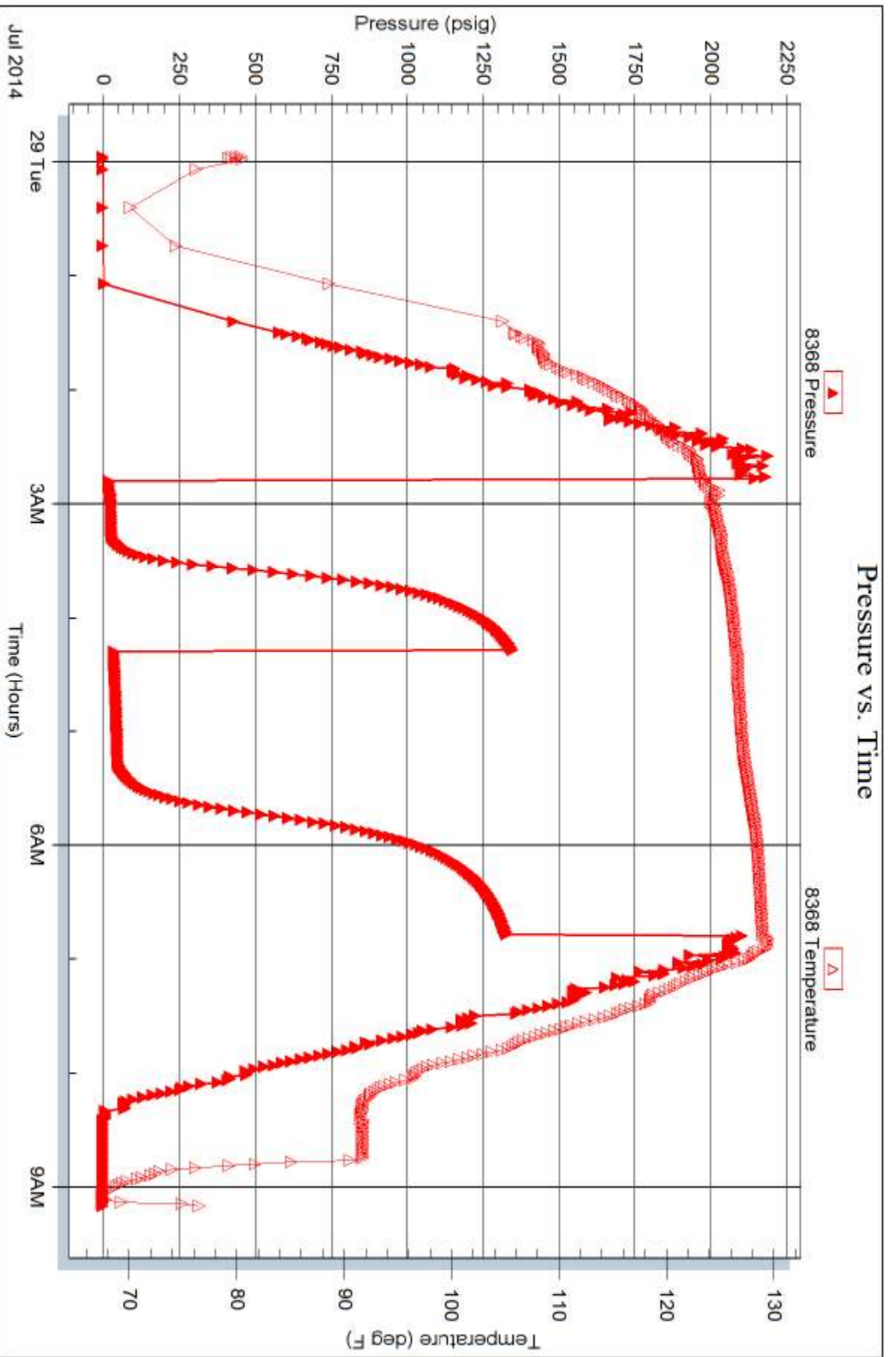
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58460

Well Name & No. Berdie #2-21 Test No. 1 Date 7-25-14
 Company Murfin Drilling Co., Inc. Elevation ~~3180~~ 3185 KB ~~3185~~ 3180 GL
 Address 250 N. Water, Ste. 300 Wichita Ks 67202
 Co. Rep / Geo. Jeff Lawler Rig Murfin #7
 Location: Sec. 21 Twp. 1 S Rge. 35 W Co. Rawlins State Ks

Interval Tested 3743 - 3840 Zone Tested Stotler
 Anchor Length 97' Drill Pipe Run 3612.68' Mud Wt. 8.8
 Top Packer Depth 3738 Drill Collars Run ~~124.41'~~ Vis 55
 Bottom Packer Depth 3743 Wt. Pipe Run 0 WL 6
 Total Depth 3840 Chlorides 500 ppm System LCM 3#

Blow Description IF - Surface blow built to a weak blow died off in 12 mins.
ISI - No return
FF - No Surface blow
FSL - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 120.2°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1823.41 Test 1150 T-On Location 3:40 pm
 (B) First Initial Flow 17.17 Jars 250 T-Started 5:38 pm
 (C) First Final Flow 20.56 Safety Joint 75 T-Open 7:48 pm
 (D) Initial Shut-In 313.43 Circ Sub N/C T-Pulled 10:49 pm
 (E) Second Initial Flow 20.08 Hourly Standby _____ T-Out 1:06 a.m.
 (F) Second Final Flow 24.15 Mileage 100 R/T 155 Comments _____
 (G) Final Shut-In 245.09 Sampler _____
 (H) Final Hydrostatic 1774.55 Straddle _____

Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1880
 Sub Total 1880 MP/DST Disc't _____

Approved By _____ Our Representative Dan Baumann / Jeff Lawler

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. 58461

4/10

Well Name & No. Berdie #2-21 Test No. 2 Date 7-27-14
 Company Murfin Drilling Co., Inc. Elevation ~~3185~~ 3185 KB ~~3185~~ 3180 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Jeff Lawler Rig Murfin #7
 Location: Sec. 21 Twp. 1S Rge. 35W Co. Rawlins State Ks

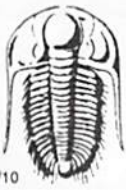
Interval Tested 4055-4190 Zone Tested LKC - 'A-D'
 Anchor Length 135' Drill Pipe Run 3929.14' Mud Wt. ~~8.8~~ 9.1
 Top Packer Depth 4050 Drill Collars Run 124.41' Vis ~~57~~ 58
 Bottom Packer Depth 4055 Wt. Pipe Run 0 WL ~~5.6~~ 5.2
 Total Depth 4190 Chlorides 500 ppm System LCM ~~5#~~ 6#
 Blow Description IF- Surface blow built to 4 1/2"
ISI- No Return
FF- Surface blow built to 4 3/4"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>31'</u>	<u>OCM</u>	<u>5</u>		<u>95</u>	
<u>63'</u>	<u>OCWM</u>	<u>5</u>	<u>15</u>	<u>80</u>	
<u>63'</u>	<u>OSWM</u>	<u>Spots</u>	<u>45</u>	<u>55</u>	
<u>63'</u>	<u>OSWM</u>	<u>Spots</u>	<u>35</u>	<u>65</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 220' BHT 129.2°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2036.80 Test 1250 T-On Location 7:10am
 (B) First Initial Flow 22.06 Jars 250 T-Started 8:26am
 (C) First Final Flow 81.94 Safety Joint 75 T-Open 10:20 a.m.
 (D) Initial Shut-In 1205.58 Circ Sub N/C T-Pulled 2:20 pm
 (E) Second Initial Flow 85.80 Hourly Standby _____ T-Out 4:53pm
 (F) Second Final Flow 116.34 Mileage 100 R/T 155 Comments _____
 (G) Final Shut-In 1164.78 Sampler _____
 (H) Final Hydrostatic 1992.93 Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1980
 Sub Total 1980 MP/DST Disc't _____

Approved By _____ Our Representative *Genean Peterson*
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58462

Well Name & No. Berdie #2-21 Test No. 3 Date 1-28-14
 Company Murfin Drilling Co, Inc Elevation ~~3180~~ 3185 KB ~~3185~~ 3180 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Jeff Lawler Rig Murfin #7
 Location: Sec. 21 Twp. 1S Rge. 35W Co. Rawlin S State KS

Interval Tested 4184-4241 Zone Tested LKC-"G"
 Anchor Length 57' Drill Pipe Run 4055.15' Mud Wt. 9.1
 Top Packer Depth 4179 Drill Collars Run 124.41 Vis ~~58~~ 67
 Bottom Packer Depth 4184 Wt. Pipe Run 0 WL ~~52~~ 7.2
 Total Depth 4241 Chlorides ~~500~~ 900 ppm System LCM ~~6#~~ 4#
 Blow Description IF- Surface blow built to 3"
ISI- NO return
FF- Surface blow built to 6 3/4"
FSI- NO return

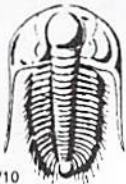
Rec	Feet of	%gas	%oil	%water	%mud
<u>63'</u>	<u>63' mco</u>		<u>90</u>	<u>10</u>	
<u>63'</u>	<u>mco</u>		<u>50</u>	<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 126' BHT 128.9 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2076.95</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>11:32 a.m.</u>
(B) First Initial Flow <u>101.17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2:43 a.m.</u>
(C) First Final Flow <u>121.05</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:34 a.m.</u>
(D) Initial Shut-In <u>1250.24</u>	<input checked="" type="checkbox"/> Circ Sub <u>n/c</u>	T-Pulled <u>9:34 a.m.</u>
(E) Second Initial Flow <u>101.10</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>11:44 a.m.</u>
(F) Second Final Flow <u>120.85</u>	<input checked="" type="checkbox"/> Mileage <u>100 R/T</u> 155	Comments _____
(G) Final Shut-In <u>1234.57</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2024.06</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1980</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1980</u>	

Approved By _____ Our Representative Donovan Paurorena

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58463

Well Name & No. Berdie #2-21 Test No. 4 Date 7-28-14
 Company Murfin Drilling Co., Inc. Elevation 3185 KB 3180 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Jeff Lawler Rig Murfin #7
 Location: Sec. 21 Twp. 1S Rge. 35W Co. Rawlins State Ks

Interval Tested 4239 - 4331 Zone Tested LKC - H+J
 Anchor Length 92' Drill Pipe Run 4119.31' Mud Wt. 9.1
 Top Packer Depth 4234 Drill Collars Run 124.41' Vis 67
 Bottom Packer Depth 4239 Wt. Pipe Run 0 WL 7.2
 Total Depth 4331 Chlorides 900 ppm System LCM 4#

Blow Description IF - Surface blow built to 2 1/2"
ISI - NO return
FF - Surface blow built to 2 1/2"
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>65'</u>	<u>OCM</u>	<u>45</u>		<u>55</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65' BHT 130.6 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2146.15 Test 1250 T-On Location 11:10 p.m.
 (B) First Initial Flow 24.94 Jars 250 T-Started 11:57 pm
 (C) First Final Flow 37.40 Safety Joint 75 T-Open 2:47 a.m.
 (D) Initial Shut-In 1319.48 Circ Sub N/C T-Pulled 6:47 am
 (E) Second Initial Flow 39.56 Hourly Standby _____ T-Out 9:10 am
 (F) Second Final Flow 49.62 Mileage 100 R/T 310 Comments _____
 (G) Final Shut-In 1329.84 Sampler _____ loaded tools 7/29 23:30
 (H) Final Hydrostatic 2104.27 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 0
 Final Flow 60 Day Standby _____ Total 2135
 Final Shut-In 90 Accessibility _____ MP/DST Disc't _____
 Sub Total 2135

Approved By _____ Our Representative Donovan Baumann / Paul Foster

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