

CONFIDENTIAL

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

6/9/12  
ORIGINAL

Form ACO-1  
June 2009

Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 9855  
Name: Grand Mesa Operating Company  
Address 1: 1700 N. Waterfront Pkwy, Bldg 600  
Address 2:  
City: Wichita State: KS Zip: 67206 + 5 5 1 4  
Contact Person: Ronald N. Sinclair  
Phone: ( 316 ) 265-3000  
CONTRACTOR: License # 30606  
Name: Murfin Drilling Company  
Wellsite Geologist: Steven P. Carl  
Purchaser: NCRA

Designate Type of Completion:

- New Well  Re-Entry  Workover
- Oil  WSW  SWD  SIOW
- Gas  D&A  ENHR  SIGW
- OG  GSW  Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic  Other (Core, Expl., etc.):

If Workover/Re-entry: Old Well Info as follows:

Operator:  
Well Name:  
Original Comp. Date: Original Total Depth:  
 Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD  
 Conv. to GSW  
 Plug Back: Plug Back Total Depth  
 Commingled Permit #:  
 Dual Completion Permit #:  
 SWD Permit #:  
 ENHR Permit #:  
 GSW Permit #:

04/20/2010 05/01/2010 06/02/2010  
Spud Date or Date Reached TD Completion Date or Recompletion Date

API No. 15 - 063-21838-00-00  
Spot Description: 2024' FSL & 866' FWL  
SW NE NW SW Sec. 31 Twp. 13 S. R. 31  East  West  
2,024 Feet from  North /  South Line of Section  
866 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW  
County: Gove  
Lease Name: Phelps Well #: 4-31  
Field Name: Maurice Northeast  
Producing Formation: Lansing KC zone  
Elevation: Ground: 2946' Kelly Bushing: 2951'  
Total Depth: 4700' Plug Back Total Depth: 4689'  
Amount of Surface Pipe Set and Cemented at: 5 jts. @ 209' Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: 2465' Feet  
If Alternate II completion, cement circulated from: 2465'  
feet depth to: Surface w/ 300 sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 8,800 ppm Fluid volume: 760 bbls  
Dewatering method used: Evaporation & backfill.  
Location of fluid disposal if hauled offsite:  
Operator Name:  
Lease Name: License #:  
Quarter Sec. Twp. S. R.  East  West  
County: Permit #:

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INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: Ronald N. Sinclair /Ronald N. Sinclair  
Title: President Date: 06/09/2010

KCC Office Use ONLY

Letter of Confidentiality Received  
Date: 6-10-2010  
 Confidential Release Date: 6-9-12  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: MS Date: 6-15-10

Operator Name: Grand Mesa Operating Company Lease Name: Phelps Well #: 4-31  
 Sec. 31 Twp. 13 S. R. 31  East  West County: Gove

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, lime tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum  "SEE ATTACHED SHEET FOR LOG TOPS" <b>CONFIDENTIAL</b> JUN 09 2012 <b>KCC</b>
Samples Sent to Geological Survey	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Electric Log Run	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Electric Log Submitted Electronically <i>(If no, Submit Copy)</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

List All E. Logs Run:  
 Compact Photo Density/Comp. Neutron Micro-Resistivity Log,  
 Array Ind. Shallow Focussed Elect. Log, Dual Receiver Cement  
 Bond Log

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12 1/4"	8 5/8"	24#	209	Common	165	3% CC, 2% Gel
Production	7 7/8"	5 1/2"	15.5#	4699	EA-2	175	

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone <input checked="" type="checkbox"/> Protect Fresh water	0-2465'	SMD	300sxs	

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth
4	4593-4598'	250 gal. MCA Acid 15%	4277-4280'
	4500' CIBP	650 gal. MCA Acid 15%	4176-4189'
4	4277-4280'; 4176-4189'; 4138-4141'		

TUBING RECORD:	Size: <u>2 7/8"</u>	Set At: <u>4475'</u>	Packer At:	Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR. <u>June 2, 2010</u>	Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____			
Estimated Production Per 24 Hours	Oil Bbls. <u>110</u>	Gas Mcf	Water Bbls. <u>20</u>	Gas-Oil Ratio <u>39.5</u>

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>Lansing KC zone</u>
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Phelps 4-31  
Sec. 31-13S-31W  
Gove County, Kansas  
Grand Mesa Operating Company  
Spud 04/20/10  
TD 05/01/10

LOG TOPS -- CONFIDENTIAL (2 YEAR)

Name	Top	Datum
Bs/Stone Corral	2452	+ 499
Heebner	3931	- 980
Lansing	3974	-1023
Muncie Creek	4132	-1181
Stark Shale	4217	-1266
Hushpuckney Shale	4252	-1301
Bs/KC	4286	-1335
Marmaton	4322	-1371
Little Osage Shale	4445	-1494
Excello Shale	4468	-1517
Johnson Zone	4545	-1594
Morrow Shale	4569	-1618
Morrow Sand	4593	-1642
Mississippian	4597	-1646
LTD	4701	

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CONSERVATION DIVISION  
WICHITA, KS

# ALLIED CEMENTING CO., LLC. 039279

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

**CONFIDENTIAL**

SERVICE POINT: Oakley

DATE <u>4-20-10</u>	SEC. <u>31</u>	TWP. <u>13</u>	RANGE <u>31</u>	CALLED OUT	ON LOCATION	JOB START <u>11:00pm</u>	JOB FINISH <u>11:30pm</u>
LEASE <u>Phelps</u>	WELL # <u>4-31</u>	LOCATION <u>Oakley 21S 2E 34W</u>		COUNTY <u>Gore</u>	STATE <u>KS</u>		
OLD OR <u>(NEW)</u> (Circle one)			<u>into</u>				

CONTRACTOR marfin Drilling Rig 24

TYPE OF JOB surface

HOLE SIZE 12 1/4 T.D. 209'

CASING SIZE 8 7/8 DEPTH 209'

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS.

DISPLACEMENT 12.35 BBL

OWNER same

CEMENT

AMOUNT ORDERED 165 sks com

390cc 290gel

**EQUIPMENT**

PUMP TRUCK # 423-281 CEMENTER Andrew  
HELPER Lorene

BULK TRUCK # 347 DRIVER Jerry

BULK TRUCK # DRIVER

COMMON <u>165</u>	@ <u>15.45</u>	<u>2549.25</u>
POZMIX	@	
GEL <u>3 sks</u>	@ <u>20.80</u>	<u>62.40</u>
CHLORIDE <u>6 sks</u>	@ <u>58.00</u>	<u>349.20</u>
ASC	@	
HANDLING <u>124 sks</u>	@ <u>2.90</u>	<u>417.60</u>
MILEAGE <u>109 sk/mile</u>		<u>435.00</u>
		TOTAL <u>3813.45</u>

**REMARKS:**

Cement did circulate

Thank you

CHARGE TO: Grand mesa

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

To Allied Cementing Co., LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Anthony Martin

SIGNATURE Anthony Martin

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**SERVICE**

DEPTH OF JOB 209'

PUMP TRUCK CHARGE 1018.00

EXTRA FOOTAGE @ \_\_\_\_\_

MILEAGE 25 miles @ 7.00 175.00

MANIFOLD @ \_\_\_\_\_

TOTAL 1193.00

**PLUG & FLOAT EQUIPMENT**

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

TOTAL \_\_\_\_\_

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES \_\_\_\_\_

DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAY



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SWIFT Services, Inc.

JOB LOG

DATE 05-01-10 PAGE NO. 1

CUSTOMER GRAND MESA WELL NO. 4-31 LEASE DHECRS JOB TYPE 2-SPACE TICKET NO. 17574

Table with columns: CHART NO., TIME, RATE (BPM), VOLUME (BBL/GAL), PUMPS (T, C), PRESSURE (PSI) (TUBING, CASING), DESCRIPTION OF OPERATION AND MATERIALS. Includes handwritten entries for operations like 'DN LOCATION', 'START CSG & FEED EQ', 'DROP PLUG', 'LAND PLUG', 'START D/S', etc.

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JOB COMPLETE

THANK YOU!

DAVE JESUP, ROB, POLK B

JOB LOG

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SWIFT Services, Inc.

DATE 5-17-10 PAGE NO. 9

CUSTOMER Grand Mesa WELL NO. LEASE JOB TYPE Acid TICKET NO. 17632

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1045					27/8	5 1/2	On location - Rig swabbing Set up Trk - Parts 4277-80
	1115		1					Spot 1 BBL 15% MCA Acid
	1125							Set PKR to treat @ 4240'
			6					Continue Acid - (250 gal 15% MCA total)
	1140		24					Fin Acid - Start 24 1/2 flush + 1 BBL
	1144	stage				200		Loaded Press up to 200
	1145	"				300		incr press 300
	1146	"				400		" " 400 - slight bleed off
	1150	"	24 1/4			300 500		incr press 500
	1203	"	24 1/2			400 600		" " 600
	1220	1/2	25 1/2			600 500		1 BBL in start Feeding
		1/2	27 1/2			400		3 BBL in
		1/2				300		5 BBL in
	12:30	0	32			300		Fin Flush (25 1/2 BBL)
						200		SID
	12:31					Var		1 min on Vae Job complete Rackup

Thanks  
Don & Doug

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JOB LOG

CONFIDENTIAL SWIFT Services, Inc.

DATE 5-24-10 PAGE NO.

CUSTOMER GRAND MESA WELL NO. 4-31 LEASE PHELPS JOB TYPE ACCEZE FORMATION TICKET NO. 17860

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL/GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1100							ON LOCATION 650 GAL ACID
								2 7/8 x 5 1/2 RBP = 4200 ± PERFS = 4176-89 FL = 3800' PKR = 4153 TREAT 4188 SPOT ACID
	1155	3	5	✓		0		SPOT ACID = 4188
	1205							PULL UP SET PKR = 4153
	1210	5	15 1/2	✓		0		PUMP ACID
	1212			✓				LOAD HOLE
			25	✓		VAC		TREAT
	1215	1/4	0	✓		0		"
		1/4	2	✓		0		"
		1/2	2 1/2	✓		150		"
		1/2	6	✓		400		"
		1/2	10	✓		500		"
		1/2	12	✓		200		"
		1	13	✓		0		"
	1240	1	16	✓		0		" SHUT DOWN - ACID CLEAR
						VAC		ISP
								LOAD = 41 BRIS SWAB TEST
	1300							JOB COMPLETE
								THANK YOU WAYNE ROGGE B.

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**TRILOBITE**  
**TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.24 @ 06:05:43

End Date: 2010.04.24 @ 14:40:52

Job Ticket #: 37796      DST #: 1

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CONSERVATION DIVISION  
WICHITA, KS

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Grand Mesa Operating Co.

Phelps #4-31

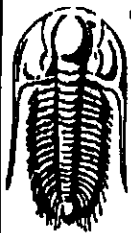
31-13s-31w Logan, KS

DST # 1

C

2010.04.24





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
 1700 N Waterfront Pkwy  
 Bldg 600  
 Wichita, KS 67206  
 ATTN: Steve Carl

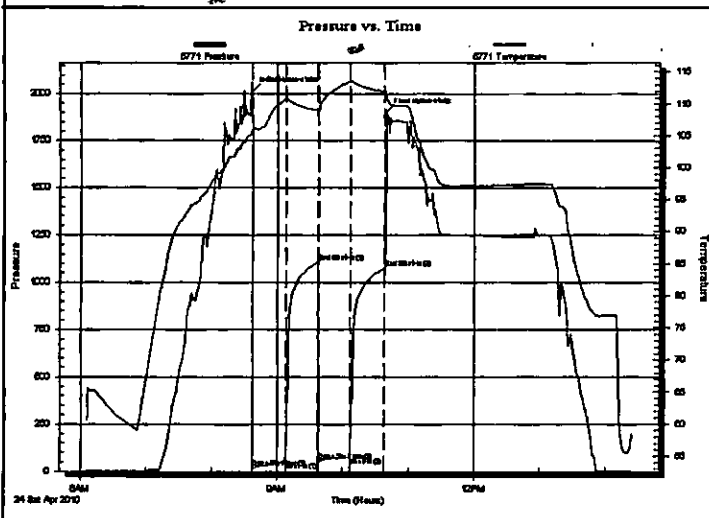
**Phelps #4-31**  
**31-13s-31w Logan, KS**  
 Job Ticket: 37796      DST#: 1  
 Test Start: 2010.04.24 @ 06:05:43

## GENERAL INFORMATION:

Formation: C  
 Deviated: No Whipstock      ft (KB)  
 Time Tool Opened: 08:37:08  
 Time Test Ended: 14:40:52  
 Interval: 3996.00 ft (KB) To 4017.00 ft (KB) (TVD)  
 Total Depth: 4017.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Shane McBride  
 Unit No: 40  
 Reference Elevations: 2951.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6771**      Inside  
 Press@RunDepth: 76.75 psig @ 3997.00 ft (KB)  
 Start Date: 2010.04.24      End Date: 2010.04.24  
 Start Time: 06:05:43      End Time: 14:24:52  
 Capacity: 8000.00 psig  
 Last Calib.: 2010.04.24  
 Time On Btrm: 2010.04.24 @ 08:36:53  
 Time Off Btrm: 2010.04.24 @ 10:39:23

**TEST COMMENT:** 1" in + blow  
 No return  
 3/4" in blow  
 No return



## PRESSURE SUMMARY

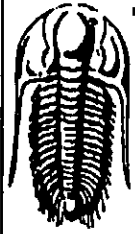
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2014.92	106.39	Initial Hydro-static
1	17.97	105.94	Open To Flow (1)
31	52.37	110.72	Shut-In(1)
61	1109.06	108.98	End Shut-In(1)
61	56.50	108.40	Open To Flow (2)
91	76.75	113.56	Shut-In(2)
121	1075.78	112.03	End Shut-In(2)
123	1904.94	110.72	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
130.00	m c w 20% m 80% w	0.69
0.00	show of free oil on top 2" in.	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating Co.

Phelps #4-31

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

31-13s-31w Logan, KS  
Job Ticket: 37796 DST#: 1  
Test Start: 2010.04.24 @ 06:05:43

## Tool Information

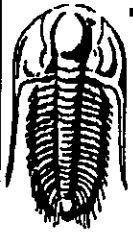
Drill Pipe:	Length: 3865.00 ft	Diameter: 3.80 inches	Volume: 54.22 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 54.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3996.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	43.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3975.00	
Shut In Tool	5.00			3980.00	
Hydraulic tool	5.00			3985.00	
Safety Joint	2.00			3987.00	
Packer	5.00			3992.00	22.00 Bottom Of Top Packer
Packer	4.00			3996.00	
Stubb	1.00			3997.00	
Recorder	0.00	6771	Inside	3997.00	
Recorder	0.00	8368	Outside	3997.00	
Perforations	15.00			4012.00	
Bullnose	5.00			4017.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 43.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 37796      DST#: 1  
Test Start: 2010.04.24 @ 06:05:43

## Mud and Cushion Information

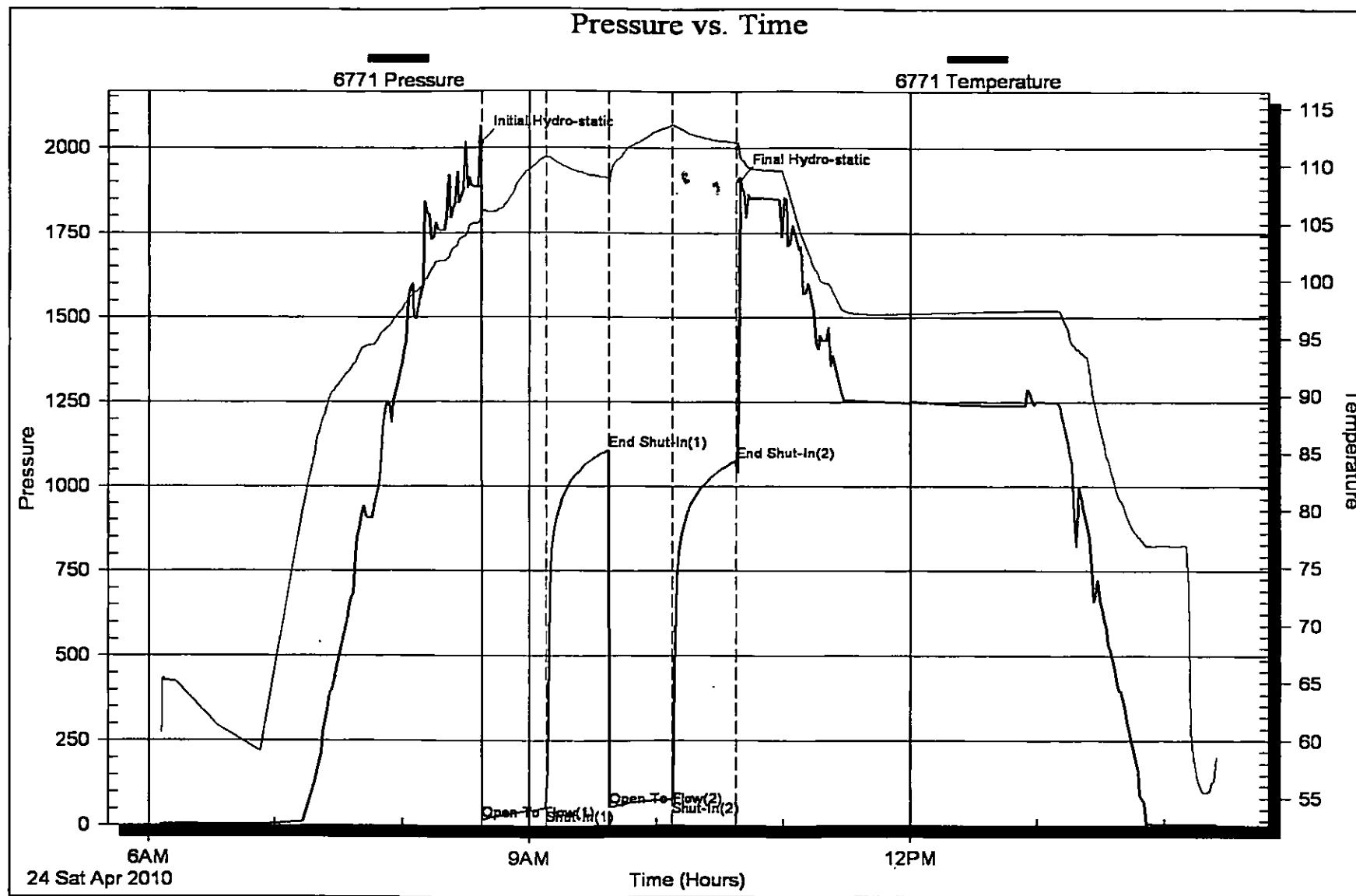
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	38000 ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.66 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2400.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

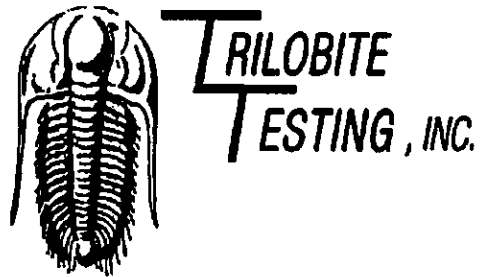
Recovery Table

Length ft	Description	Volume bbl
130.00	m c w 20%m 80%w	0.694
0.00	show of free oil on top 2" in.	0.000

Total Length: 130.00 ft      Total Volume: 0.694 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW .223 @ 60F = 38000 ppm chlorides







## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.25 @ 01:00:54

End Date: 2010.04.25 @ 08:30:03

Job Ticket #: 37797                      DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Grand Mesa Operating Co.

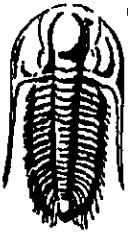
Phelps #4-31

31-13s-31w Logan, KS

DST # 2

D

2010.04.25



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**

**31-13s-31w Logan, KS**

Job Ticket: 37797

DST#: 2

Test Start: 2010.04.25 @ 01:00:54

## GENERAL INFORMATION:

Formation: D  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 02:36:04  
Time Test Ended: 08:30:03  
Interval: 4017.00 ft (KB) To 4040.00 ft (KB) (TVD)  
Total Depth: 4040.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole  
Tester: Shane McBride  
Unit No: 40

Reference Elevations: 2951.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 5.00 ft

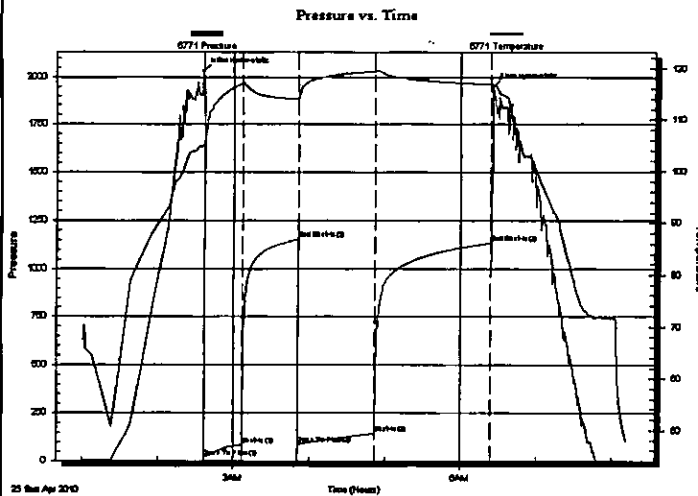
**Serial #: 6771**

Inside

Press@RunDepth: 145.68 psig @ 4018.00 ft (KB)  
Start Date: 2010.04.25 End Date: 2010.04.25  
Start Time: 01:00:54 End Time: 08:13:03

Capacity: 8000.00 psig  
Last Calib.: 2010.04.25  
Time On Btm: 2010.04.25 @ 02:35:04  
Time Off Btm: 2010.04.25 @ 06:24:34

**TEST COMMENT:** 5 1/2" in blow  
No return  
5 3/4" in blow  
No return



## PRESSURE SUMMARY

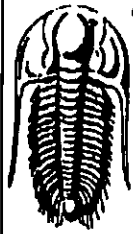
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2029.95	104.97	Initial Hydro-static
1	20.31	105.88	Open To Flow (1)
32	84.03	117.02	Shut-In(1)
76	1152.67	113.93	End Shut-In(1)
76	88.84	113.71	Open To Flow (2)
137	145.68	119.42	Shut-In(2)
229	1135.33	116.91	End Shut-In(2)
230	1947.07	117.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
270.00	s m c w 10% m 90% w	2.66
1.00	free oil 100% o	0.01

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating Co.

Phelps #4-31

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

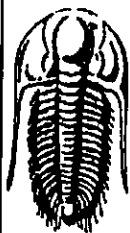
31-13s-31w Logan, KS  
Job Ticket: 37797      DST#: 2  
Test Start: 2010.04.25 @ 01:00:54

**Tool Information**

Drill Pipe:	Length: 3898.00 ft	Diameter: 3.80 inches	Volume: 54.68 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 55.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4017.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	43.00 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			3998.00	
Shut In Tool	5.00			4003.00	
Hydraulic tool	-			4008.00	
Packer	5.00			4013.00	20.00      Bottom Of Top Packer
Packer	4.00			4017.00	
Stubb	1.00			4018.00	
Recorder	0.00	6771	Inside	4018.00	
Recorder	0.00	8368	Outside	4018.00	
Perforations	17.00			4035.00	
Bullnose	5.00			4040.00	23.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>43.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.

**Phelps #4-31**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**31-13s-31w Logan, KS**

Job Ticket: 37797

DST#: 2

Test Start: 2010.04.25 @ 01:00:54

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

51000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.64 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	s m c w 10%m 90%w	2.658
1.00	free oil 100%o	0.014

Total Length: 271.00 ft      Total Volume: 2.672 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

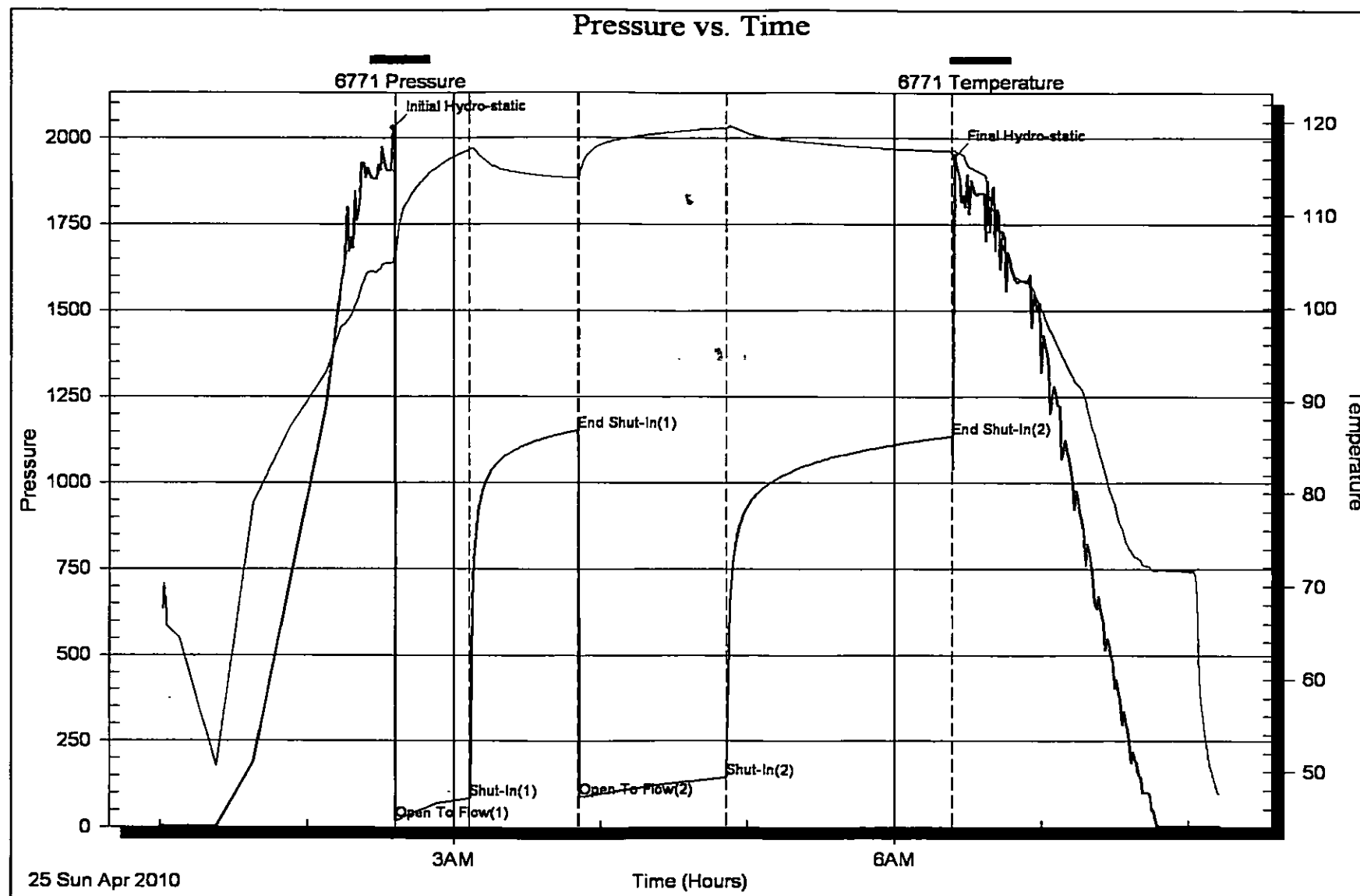
Serial #:

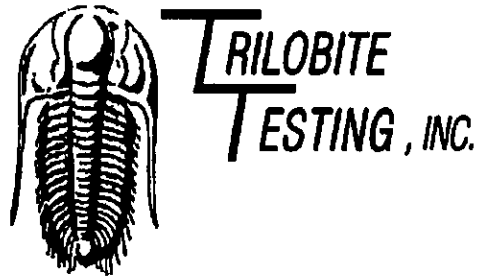
Laboratory Name:

Laboratory Location:

Recovery Comments: RW .163 @ 58F = 51000 ppm chlorides







## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.25 @ 14:35:53

End Date: 2010.04.25 @ 19:45:17

Job Ticket #: 37798                      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Grand Mesa Operating Co.

Phelps #4-31

31-13s-31w Logan, KS

DST # 3

E

2010.04.25



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
 1700 N Waterfront Pkwy  
 Bldg 600  
 Wichita, KS 67206  
 ATTN: Steve Carl

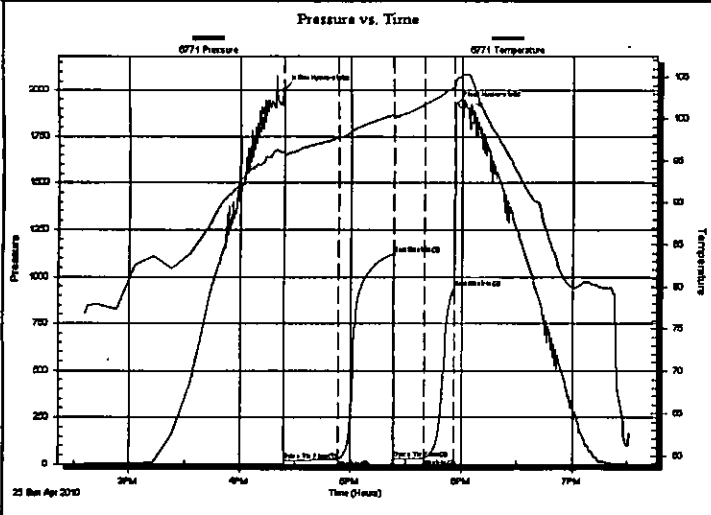
**Phelps #4-31**  
**31-13s-31w Logan, KS**  
 Job Ticket: 37798      DST#: 3  
 Test Start: 2010.04.25 @ 14:35:53

## GENERAL INFORMATION:

Formation: E  
 Deviated: No      Whipstock:      ft (KB)  
 Time Tool Opened: 16:23:48  
 Time Test Ended: 19:45:17  
 Interval: 4040.00 ft (KB) To 4052.00 ft (KB) (TVD)  
 Total Depth: 4052.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches      Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Shane McBride  
 Unit No: 40  
 Reference Elevations: 2951.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6771**      Inside  
 Press@RunDepth: 32.46 psig @ 4041.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.04.25      End Date: 2010.04.25      Last Calib.: 2010.04.25  
 Start Time: 14:35:53      End Time: 19:31:17      Time On Btm: 2010.04.25 @ 16:23:33  
 Time Off Btm: 2010.04.25 @ 17:56:33

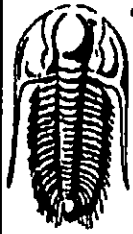
**TEST COMMENT:** 1/4" in blow  
 No return  
 Surface blow  
 No return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2006.10	96.09	Initial Hydro-static
1	17.56	95.67	Open To Flow (1)
30	24.76	97.67	Shut-In(1)
60	1121.95	100.41	End Shut-In(1)
60	28.86	100.16	Open To Flow (2)
77	32.46	101.66	Shut-In(2)
93	941.19	103.76	End Shut-In(2)
93	1916.48	104.29	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	mud 100% oil spots in tool	0.02

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 37798      DST#: 3  
Test Start: 2010.04.25 @ 14:35:53

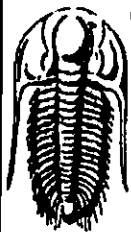
**Tool Information**

Drill Pipe:	Length: 3927.00 ft	Diameter: 3.80 inches	Volume: 55.09 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 55.70 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4040.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	32.00 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			4021.00	
Shut In Tool	5.00			4026.00	
Hydraulic tool	5.00			4031.00	
Packer	5.00			4036.00	20.00      Bottom Of Top Packer
Packer	4.00			4040.00	
Stubb	1.00			4041.00	
Recorder	0.00	6771	Inside	4041.00	
Recorder	0.00	8368	Outside	4041.00	
Perforations	6.00			4047.00	
Bullnose	5.00			4052.00	12.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>32.00</b>				





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 37798      **DST#: 3**  
Test Start: 2010.04.25 @ 14:35:53

## Mud and Cushion Information

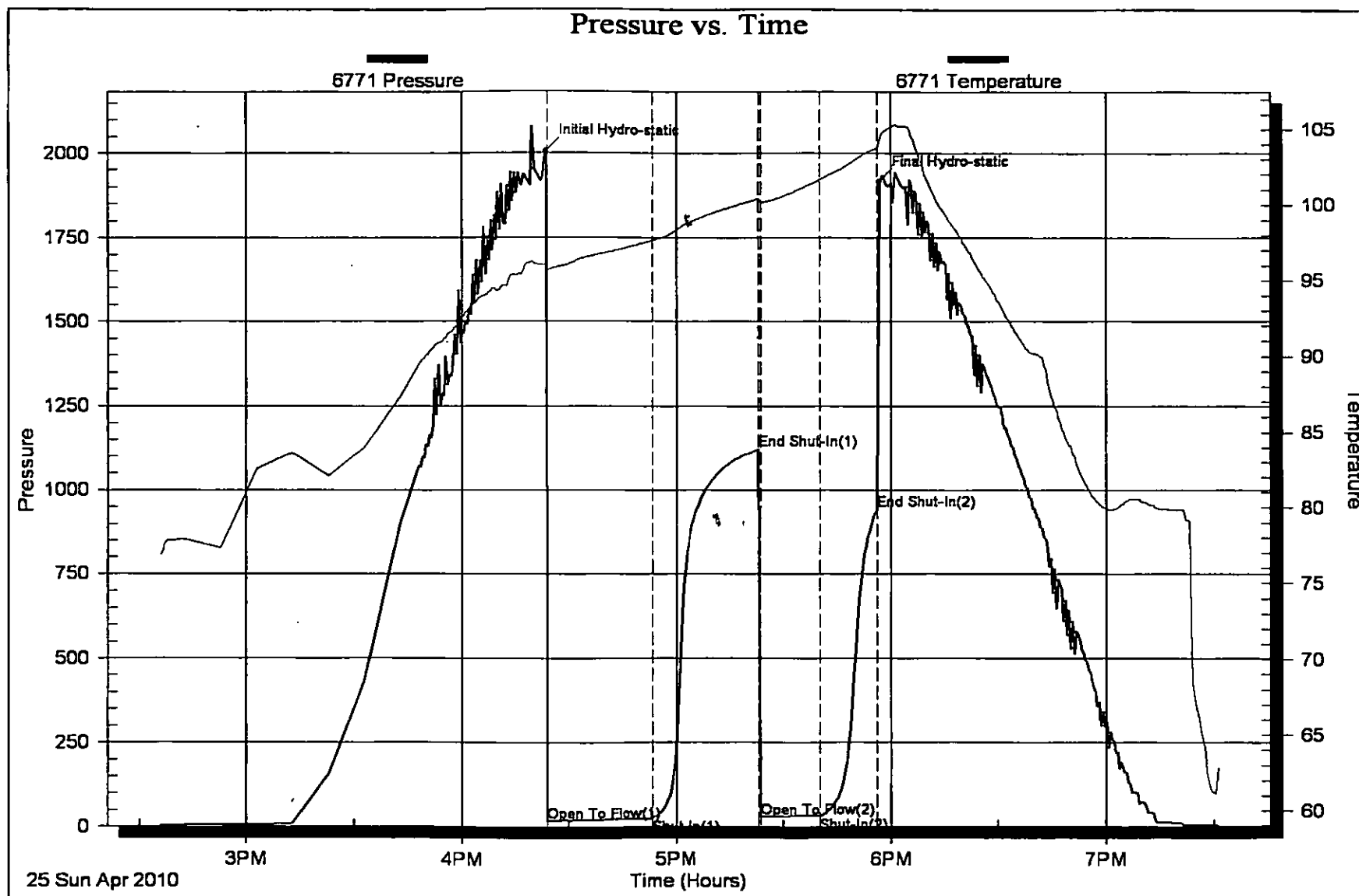
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.89 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 1.00 inches			

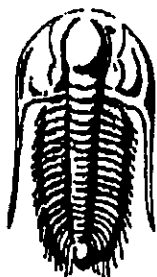
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100% m oil spots in tool	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.26 @ 11:25:20

End Date: 2010.04.26 @ 19:05:14

Job Ticket #: 37799                      DST #: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**

**31-13s-31w Logan, KS**

Job Ticket: 37799

DST#: 4

Test Start: 2010.04.26 @ 11:25:20

## GENERAL INFORMATION:

Formation: H-I

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:23:15

Time Test Ended: 19:05:14

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 40

Interval: 4122.00 ft (KB) To 4188.00 ft (KB) (TVD)

Total Depth: 4188.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2951.00 ft (KB)

2946.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 6771**

Inside

Press@RunDepth: 149.13 psig @ 4123.00 ft (KB)

Start Date: 2010.04.26

End Date: 2010.04.26

Start Time: 11:25:20

End Time: 18:45:14

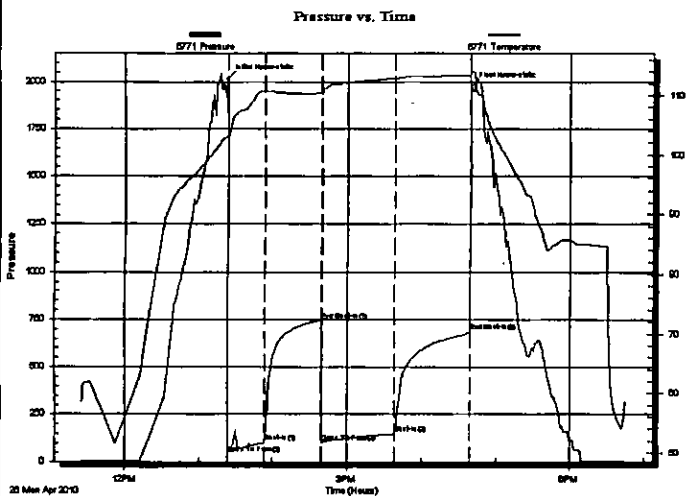
Capacity: 8000.00 psig

Last Calib.: 2010.04.26

Time On Btm: 2010.04.26 @ 13:23:00

Time Off Btm: 2010.04.26 @ 16:39:45

**TEST COMMENT:** B.O.B. in 17 min.  
Surface return  
B.O.B. in 27 min.  
Weak surface return died in 15 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2018.39	103.25	Initial Hydro-static
1	42.64	102.58	Open To Flow (1)
31	103.14	110.76	Shut-In (1)
77	746.25	110.42	End Shut-In (1)
77	106.96	110.19	Open To Flow (2)
136	149.13	112.96	Shut-In (2)
196	688.07	113.43	End Shut-In (2)
197	1979.12	114.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
134.00	s g o c m 5%g 45%o 50%m	0.75
186.00	w & m c g o 10%w 20%m 30%g 40%o	2.61
0.00	360 weak gas in pipe	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Co.

**Phelps #4-31**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**31-13s-31w Logan, KS**

Job Ticket: 37799      DST#: 4  
Test Start: 2010.04.26 @ 11:25:20

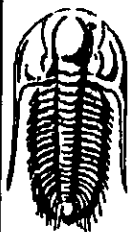
**Tool Information**

Drill Pipe:	Length: 3992.00 ft	Diameter: 3.80 inches	Volume: 56.00 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 56.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4122.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	86.00 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			4103.00	
Shut In Tool	5.00			4108.00	
Hydraulic tool	5.00			4113.00	
Packer	5.00			4118.00	20.00 Bottom Of Top Packer
Packer	4.00			4122.00	
Stubb	1.00			4123.00	
Recorder	0.00	6771	Inside	4123.00	
Recorder	0.00	8368	Outside	4123.00	
Perforations	27.00			4150.00	
Change Over Sub	1.00			4151.00	
Drill Pipe	31.00			4182.00	
Change Over Sub	1.00			4183.00	
Bullnose	5.00			4188.00	66.00 Bottom Packers & Anchor

**Total Tool Length: 86.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

Phelps #4-31  
31-13s-31w Logan, KS  
Job Ticket: 37799      DST#: 4  
Test Start: 2010.04.26 @ 11:25:20

**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	46000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.69 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: 1.00 inches			

**Recovery Information**

Recovery Table

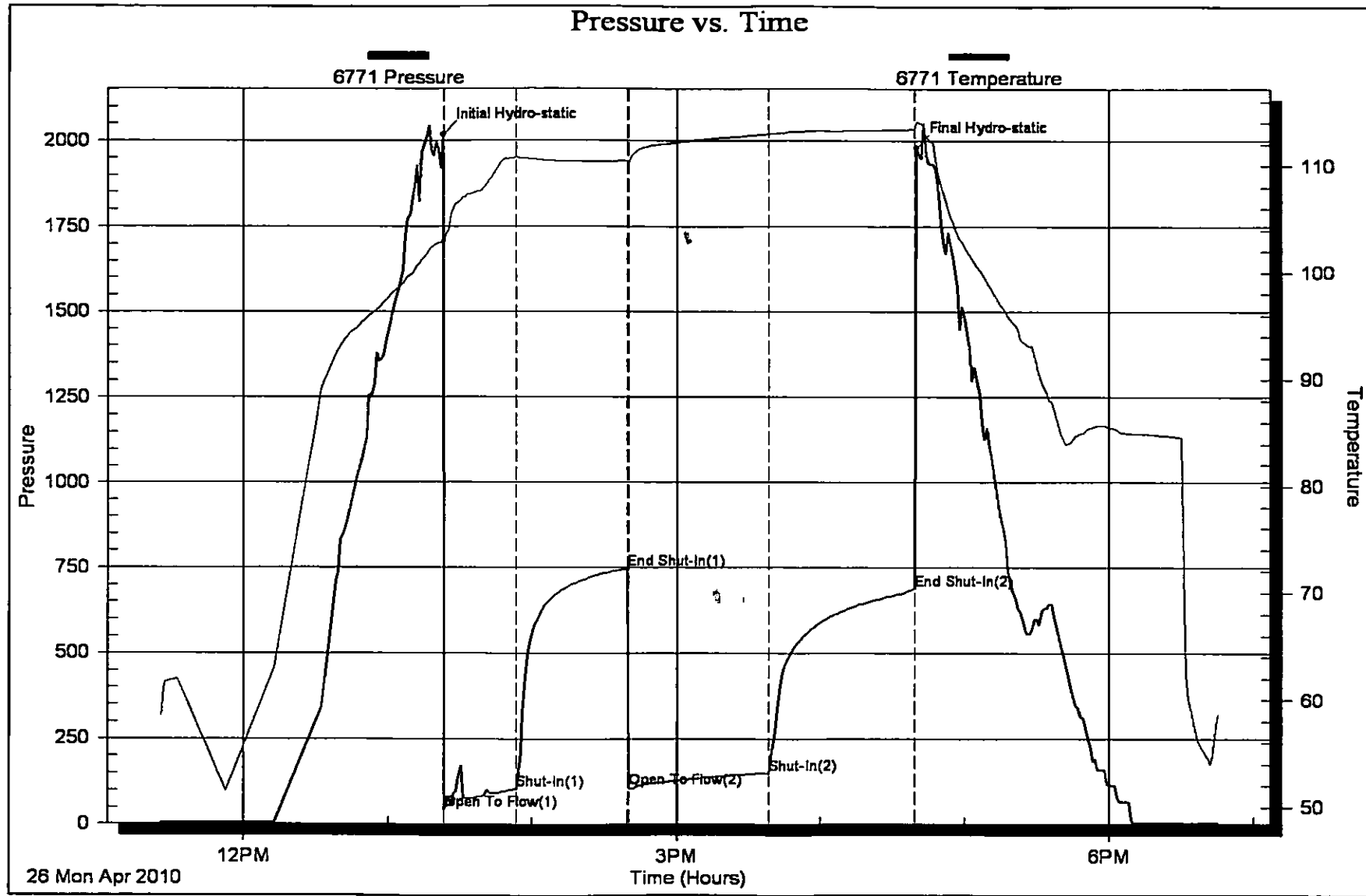
Length ft	Description	Volume bbl
134.00	s g o c m 5%g 45%o 50%m	0.750
186.00	w & m c g o 10%w 20%m 30%g 40%o	2.609
0.00	360 weak gas in pipe	0.000

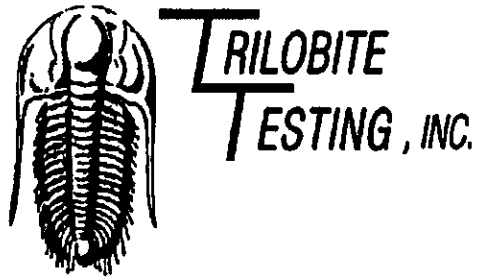
Total Length: 320.00 ft      Total Volume: 3.359 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: RW, 158 @ 68F = 46000 chlorides





## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

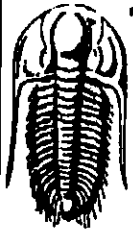
Start Date: 2010.04.27 @ 01:46:06

End Date: 2010.04.27 @ 06:55:21

Job Ticket #: 37800                      DST #: 5

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
 1700 N Waterfront Pkwy  
 Bldg 600  
 Wichita, KS 67206  
 ATTN: Steve Carl

Phelps #4-31

31-13s-31w Logan, KS

Job Ticket: 37800

DST#: 5

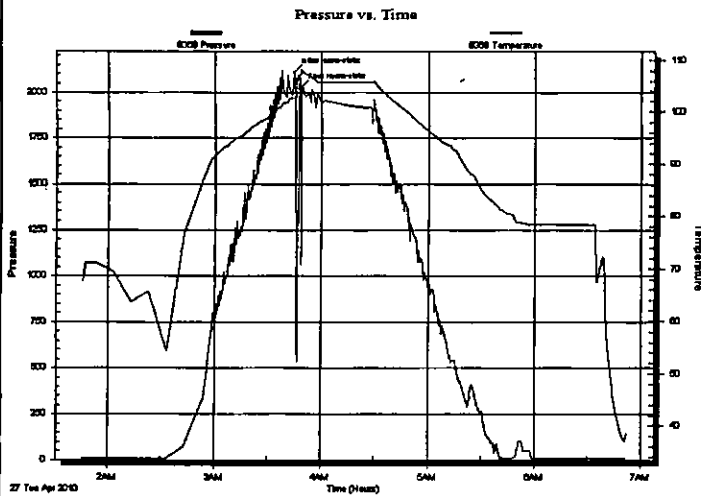
Test Start: 2010.04.27 @ 01:46:06

## GENERAL INFORMATION:

Formation: J  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:45:00  
 Time Test Ended: 06:55:21  
 Interval: 4190.00 ft (KB) To 4214.00 ft (KB) (TVD)  
 Total Depth: 4214.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Shane McBride  
 Unit No: 40  
 Reference Elevations: 2951.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 5.00 ft

Serial #: 8368 Outside  
 Press@RunDepth: psig @ 4191.00 ft (KB)  
 Start Date: 2010.04.27 End Date: 2010.04.27  
 Start Time: 01:46:06 End Time: 06:52:21  
 Capacity: 8000.00 psig  
 Last Calib.: 2010.04.27  
 Time On Btm: 2010.04.27 @ 03:44:51  
 Time Off Btm: 2010.04.27 @ 03:48:51

TEST COMMENT: Packers failed @ open reset failed again pull tool



## PRESSURE SUMMARY

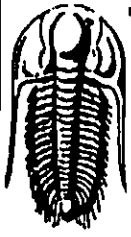
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2113.26	102.65	Initial Hydro-static
4	2031.13	108.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
240.00	mud 100% m	2.24

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 37800      DST#: 5  
Test Start: 2010.04.27 @ 01:46:06

**Tool Information**

Drill Pipe:	Length: 4052.00 ft	Diameter: 3.80 inches	Volume: 56.84 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 57.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4190.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	44.00 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			4171.00	
Shut In Tool	5.00			4176.00	
Hydraulic tool	5.00			4181.00	
Packer	5.00			4186.00	20.00      Bottom Of Top Packer
Packer	4.00			4190.00	
Stubb	1.00			4191.00	
Recorder	0.00	6771	Inside	4191.00	
Recorder	0.00	8368	Outside	4191.00	
Perforations	18.00			4209.00	
Bullnose	5.00			4214.00	24.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>44.00</b>				



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.

**Phelps #4-31**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**31-13s-31w Logan, KS**

Job Ticket: 37800

**DST#: 5**

Test Start: 2010.04.27 @ 01:46:06

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.71 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	mud 100%m	2.237

Total Length: 240.00 ft      Total Volume: 2.237 bbl

Num Fluid Samples: 0

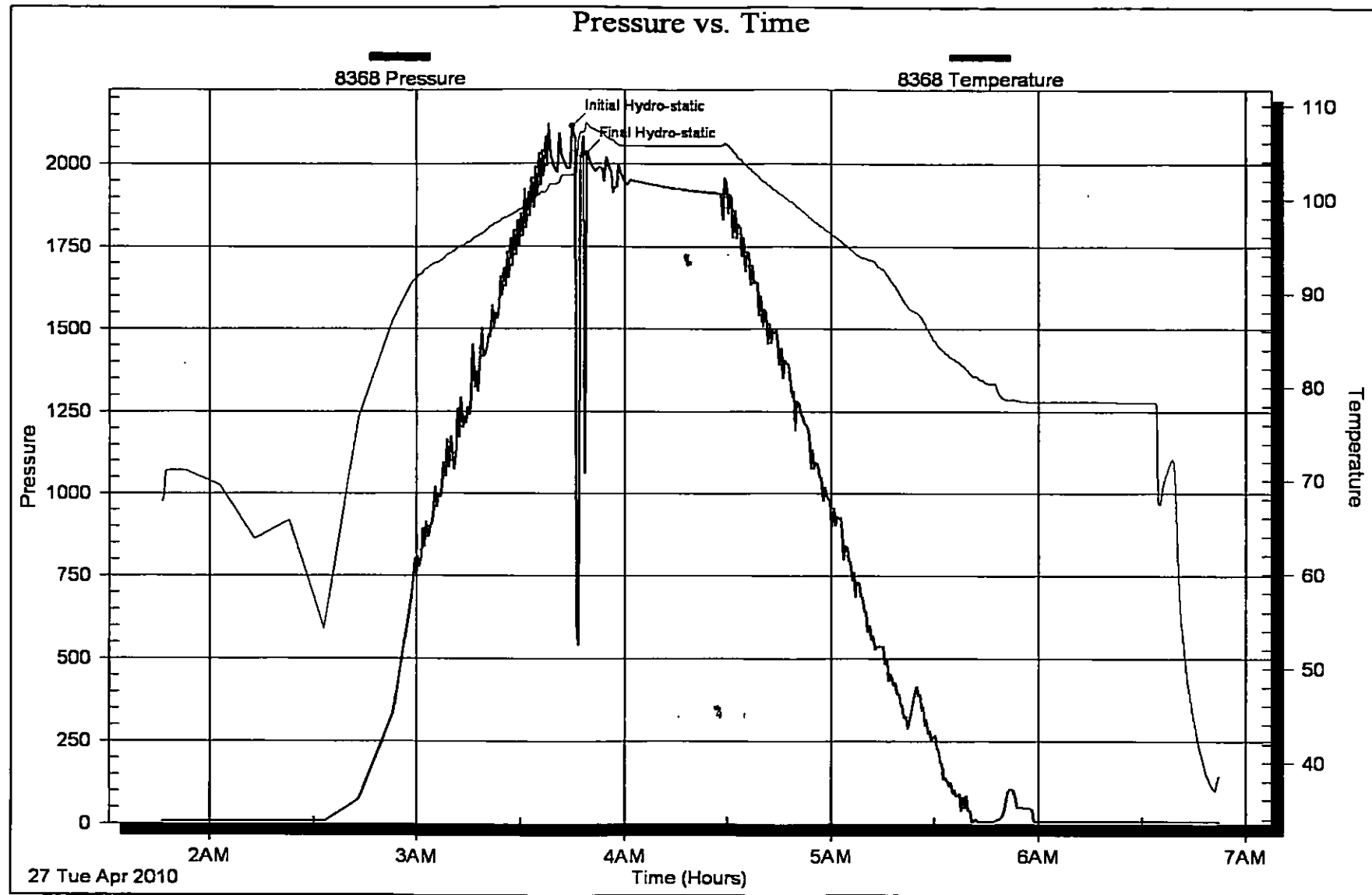
Num Gas Bombs: 0

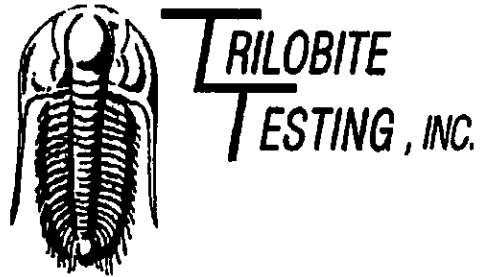
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.27 @ 07:00:13

End Date: 2010.04.27 @ 11:50:37

Job Ticket #: 38826                      DST #: 6

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Grand Mesa Operating Co.

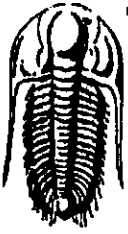
Phelps #4-31

31-13s-31w Logan, KS

DST # 6

J

2010.04.27



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

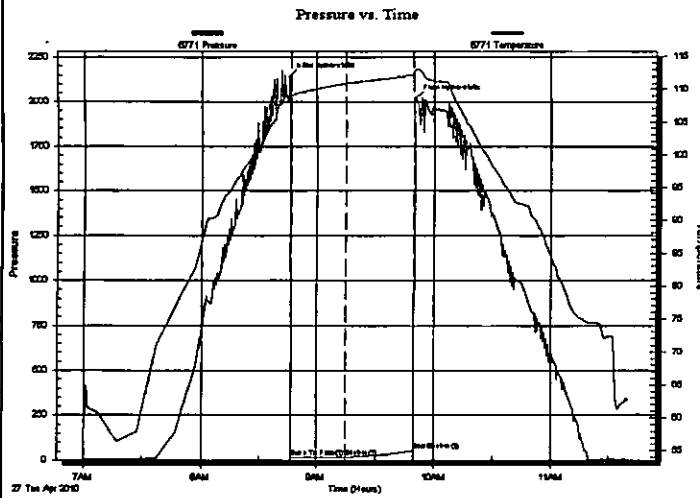
**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38826      DST#: 6  
Test Start: 2010.04.27 @ 07:00:13

## GENERAL INFORMATION:

Formation: J  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 08:46:23  
Time Test Ended: 11:50:37  
Interval: 4202.00 ft (KB) To 4214.00 ft (KB) (TVD)  
Total Depth: 4214.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Fair  
Reference Elevations: 2951.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 5.00 ft  
Test Type: Conventional Bottom Hole  
Tester: Shane McBride  
Unit No: 40

**Serial #: 6771**      Inside  
Press@RunDepth: 16.85 psig @ 4203.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.04.27      End Date: 2010.04.27      Last Calib.: 2010.04.27  
Start Time: 07:00:13      End Time: 11:40:37      Time On Btm: 2010.04.27 @ 08:45:38  
Time Off Btm: 2010.04.27 @ 09:50:08

**TEST COMMENT:** 1/4" in died in 16 min.  
No return



## PRESSURE SUMMARY

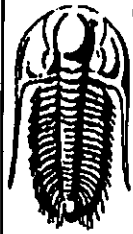
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2142.23	109.11	Initial Hydro-static
1	14.68	109.06	Open To Flow (1)
30	16.85	110.86	Shut-In(1)
64	50.40	112.22	End Shut-In(1)
65	2018.18	112.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100% m	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating Co.

Phelps #4-31

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

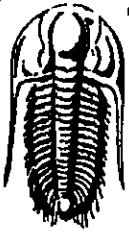
31-13s-31w Logan, KS  
Job Ticket: 38826      DST#: 6  
Test Start: 2010.04.27 @ 07:00:13

## Tool Information

Drill Pipe:	Length: 4084.00 ft	Diameter: 3.80 inches	Volume: 57.29 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 57.90 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4202.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	32.00 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			4183.00	
Shut In Tool	5.00			4188.00	
Hydraulic tool	5.00			4193.00	
Packer	5.00			4198.00	20.00      Bottom Of Top Packer
Packer	4.00			4202.00	
Stubb	1.00			4203.00	
Recorder	0.00	6771	Inside	4203.00	
Recorder	0.00	8368	Outside	4203.00	
Perforations	6.00			4209.00	
Bullnose	5.00			4214.00	12.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>32.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38826      DST#: 6  
Test Start: 2010.04.27 @ 07:00:13

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.72 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: 1.00 inches			

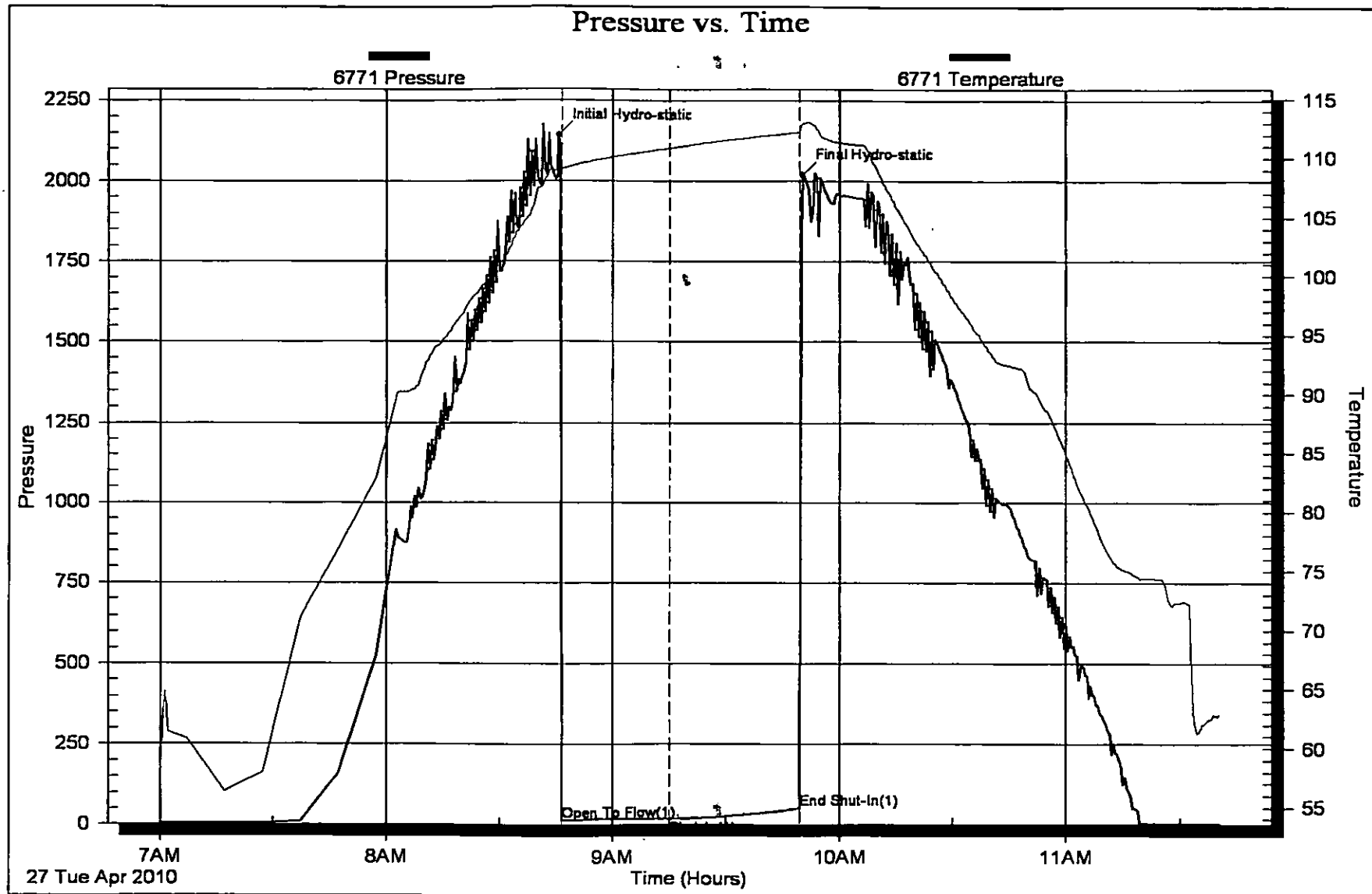
## Recovery Information

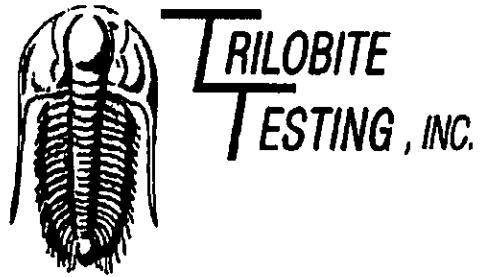
Recovery Table

Length ft	Description	Volume bbl
1.00	mud 100%m	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: ..







## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.27 @ 18:30:50

End Date: 2010.04.28 @ 02:20:20

Job Ticket #: 38827                      DST #: 7

Trilobite Testing, Inc

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

Grand Mesa Operating Co.

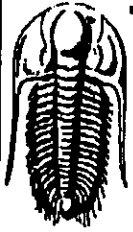
Phelps #4-31

31-13s-31w Logan, KS

DST # 7

K

2010.04.27



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

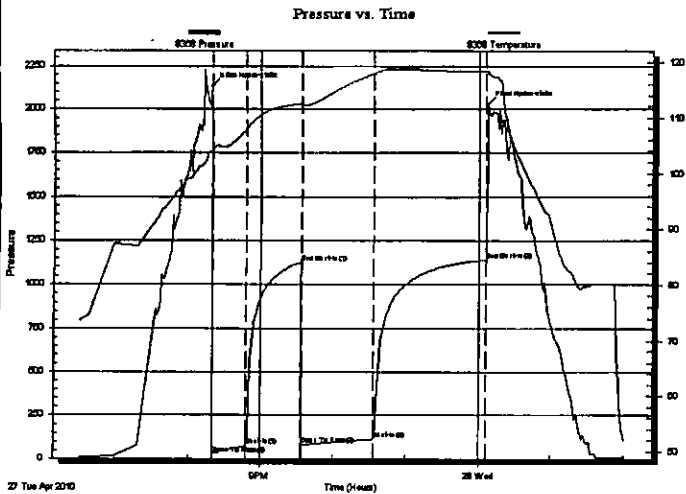
**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38827      DST#: 7  
Test Start: 2010.04.27 @ 18:30:50

## GENERAL INFORMATION:

Formation: K  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 20:20:05  
Time Test Ended: 02:20:20  
Test Type: Conventional Bottom Hole  
Tester: Shane McBride  
Unit No: 40  
Interval: 4212.00 ft (KB) To 4246.00 ft (KB) (TVD)  
Reference Elevations: 2951.00 ft (KB)  
Total Depth: 4246.00 ft (KB) (TVD)      2946.00 ft (CF)  
Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 5.00 ft

**Serial #: 8368**      Outside  
Press@RunDepth: 112.33 psig @ 4213.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.04.27      End Date: 2010.04.28      Last Calib.: 2010.04.28  
Start Time: 18:31:05      End Time: 02:01:20      Time On Btm: 2010.04.27 @ 20:19:05  
Time Off Btm: 2010.04.28 @ 00:07:05

**TEST COMMENT:** 3 1/2" in blow  
No return  
3" in blow  
No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2134.88	103.96	Initial Hydro-static
1	24.95	104.43	Open To Flow (1)
29	74.67	108.02	Shut-In(1)
75	1124.90	112.49	End Shut-In(1)
75	80.24	112.14	Open To Flow (2)
135	112.33	117.95	Shut-In(2)
227	1140.85	118.41	End Shut-In(2)
228	2025.22	118.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
193.00	m c w 20% m 80% w	1.58
2.00	free oil	0.03

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

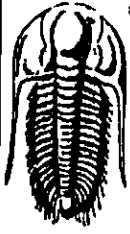
Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38827      DST#: 7  
Test Start: 2010.04.27 @ 18:30:50

**Tool Information**

Drill Pipe:	Length: 4085.00 ft	Diameter: 3.80 inches	Volume: 57.30 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 57.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4212.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	54.00 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			4193.00	
Shut In Tool	5.00			4198.00	
Hydraulic tool	5.00			4203.00	
Packer	5.00			4208.00	20.00* Bottom Of Top Packer
Packer	4.00			4212.00	
Stubb	1.00			4213.00	
Recorder	0.00	6771	Inside	4213.00	
Recorder	0.00	8368	Outside	4213.00	
Perforations	28.00			4241.00	
Bullnose	5.00			4246.00	34.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38827      DST#: 7  
Test Start: 2010.04.27 @ 18:30:50

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	52000 ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.73 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

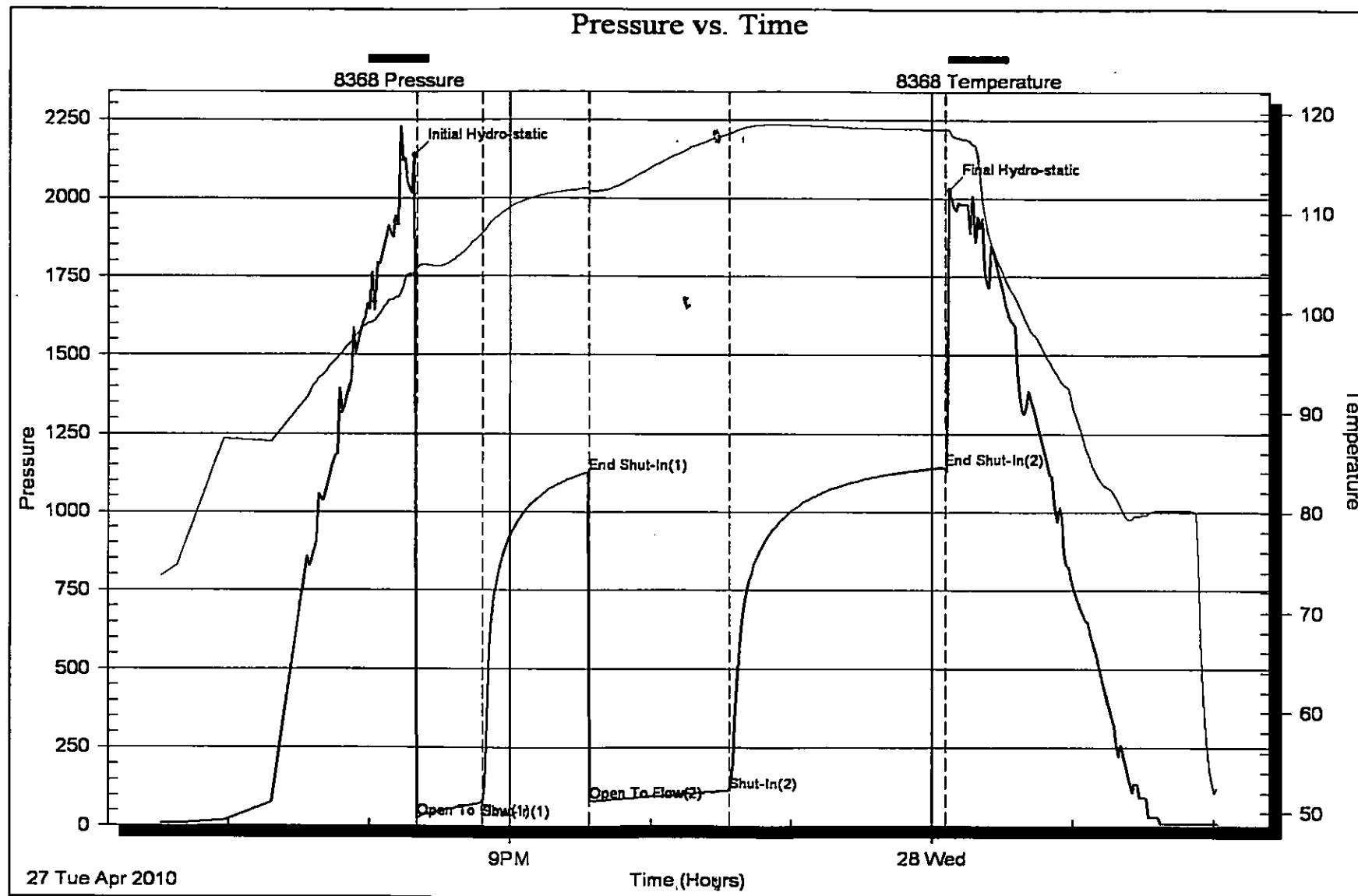
Length ft	Description	Volume bbl
193.00	m c w 20% m 80% w	1.578
2.00	free oil	0.028

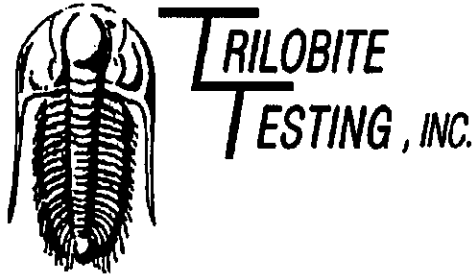
Total Length: 195.00 ft      Total Volume: 1.606 bbl

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

Laboratory Name: - Laboratory Location:

Recovery Comments: RW .182 @ 50F = 52000 chlorides





## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl\_

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.28 @ 12:55:59

End Date: 2010.04.28 @ 21:35:14

Job Ticket #: 38828                      DST #: 8

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Grand Mesa Operating Co.

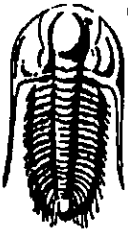
Phelps #4-31

31-13s-31w Logan, KS

DST # 8

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2010.04.28



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**

**31-13s-31w Logan, KS**

Job Ticket: 38828

DST#: 8

Test Start: 2010.04.28 @ 12:55:59

## GENERAL INFORMATION:

Formation: L

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:03:44

Time Test Ended: 21:35:14

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 40

Interval: 4250.00 ft (KB) To 4293.00 ft (KB) (TVD)

Reference Elevations: 2951.00 ft (KB)

Total Depth: 4293.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8368

Outside

Press@RunDepth: 339.15 psig @ 4251.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.04.28

End Date: 2010.04.28

Last Calib.: 2010.04.28

Start Time: 12:55:59

End Time: 21:17:14

Time On Btm: 2010.04.28 @ 15:03:29

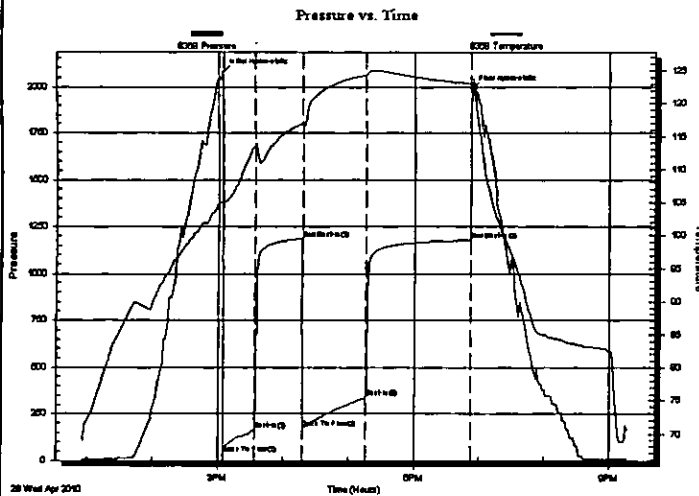
Time Off Btm: 2010.04.28 @ 18:52:14

TEST COMMENT: B.O.B. in 7 min.

4" in return

4" in @ open B.O.B. in 5 1/2 min.

B.O.B. return in 18 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2075.87	105.65	Initial Hydro-static
1	40.69	104.86	Open To Flow (1)
30	165.53	113.79	Shut-In(1)
74	1184.15	116.99	End Shut-In(1)
75	175.01	116.69	Open To Flow (2)
133	339.15	124.39	Shut-In(2)
229	1177.96	123.10	End Shut-In(2)
229	1988.77	123.34	Final Hydro-static

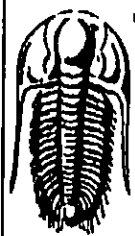
## Recovery

Length (ft)	Description	Volume (bbl)
186.00	g m c w 10%g 10%m 80%w	1.48
186.00	g m c o 30g 25%m 45%o	2.61
444.00	c g o 20%g 80%o	6.23
0.00	1228' gas in pipe	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating Co.

Phelps #4-31

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

31-13s-31w Logan, KS

Job Ticket: 38828 DST#: 8

Test Start: 2010.04.28 @ 12:55:59

## Tool Information

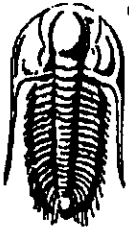
Drill Pipe:	Length: 4111.00 ft	Diameter: 3.80 inches	Volume: 57.67 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 58.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4250.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4231.00	
Shut In Tool	5.00			4236.00	
Hydraulic tool	5.00			4241.00	
Packer	5.00			4246.00	20.00 Bottom Of Top Packer
Packer	4.00			4250.00	
Stubb	1.00			4251.00	
Recorder	0.00	6771	Inside	4251.00	
Recorder	0.00	8368	Outside	4251.00	
Perforations	4.00			4255.00	
Change Over Sub	1.00			4256.00	
Drill Pipe	31.00			4287.00	
Change Over Sub	1.00			4288.00	
Bullnose	5.00			4293.00	43.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkw y  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38828      **DST#: 8**  
Test Start: 2010.04.28 @ 12:55:59

## Mud and Cushion Information

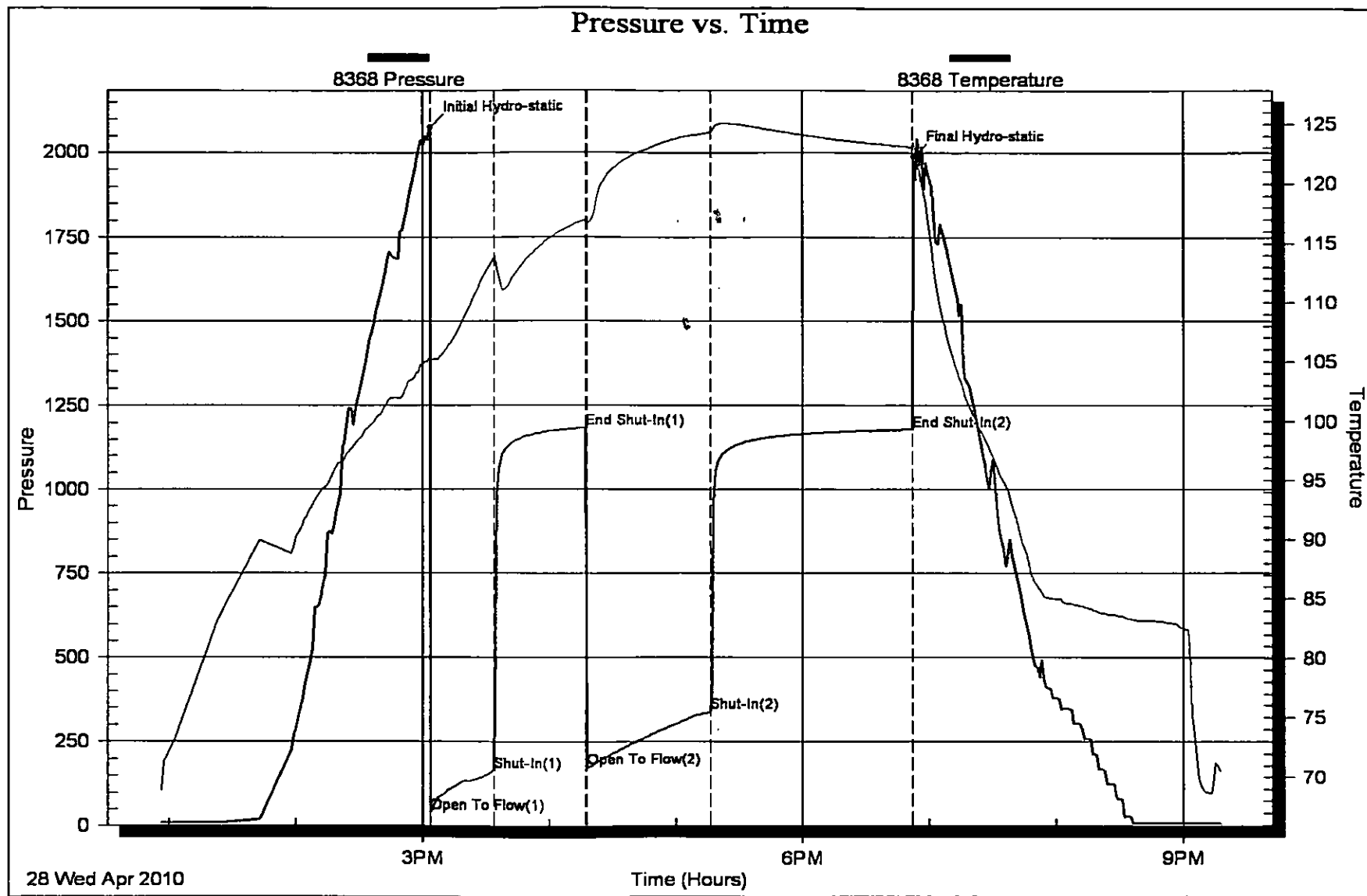
Mud Type: Gel Chem	Cushion Type:	Oil API:	35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	42000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.17 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3400.00 ppm			
Filter Cake: 1.00 inches			

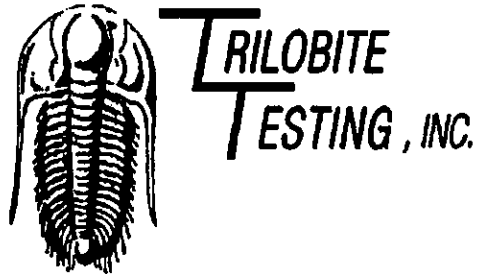
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	g m c w 10%g 10%m 80%w	1.480
186.00	g m c o 30g 25%m 45%o	2.609
444.00	c g o 20%g 80%o	6.228
0.00	1228' gas in pipe	0.000

Total Length: 816.00 ft      Total Volume: 10.317 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW .151 @ 76°F = 42000 ppm chlorides





## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

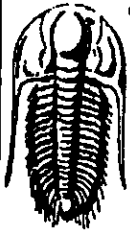
**Phelps #4-31**

Start Date: 2010.04.29 @ 13:40:17

End Date: 2010.04.29 @ 17:35:42

Job Ticket #: 38829                      DST #: 9

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**

**31-13s-31w Logan, KS**

Job Ticket: 38829

DST#: 9

Test Start: 2010.04.29 @ 13:40:17

## GENERAL INFORMATION:

Formation: **Ft Scott**  
Deviated: **No** Whipstock: **ft (KB)**  
Time Tool Opened: 15:16:57  
Time Test Ended: 17:35:42  
Interval: **4442.00 ft (KB) To 4468.00 ft (KB) (TVD)**  
Total Depth: **4468.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Test Type: **Conventional Bottom Hole**  
Tester: **Shane McBride**  
Unit No: **40**

Reference Elevations: **2951.00 ft (KB)**  
**2946.00 ft (CF)**  
KB to GR/CF: **5.00 ft**

**Serial #: 6771**

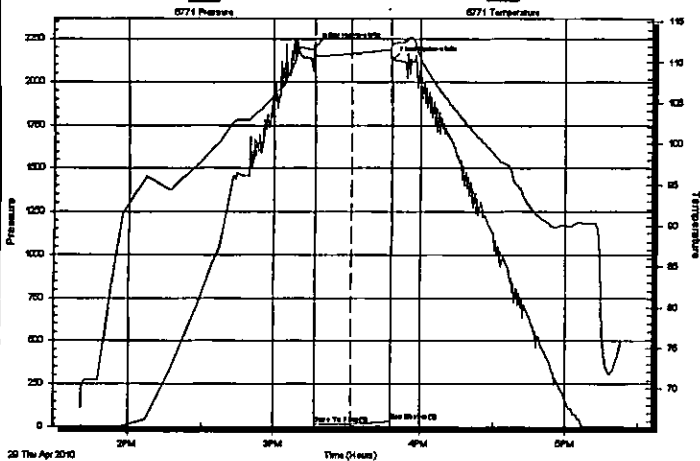
**Inside**

Press@RunDepth: **17.41 psig @ 4443.00 ft (KB)**  
Start Date: **2010.04.29** End Date: **2010.04.29**  
Start Time: **13:40:17** End Time: **17:24:42**

Capacity: **8000.00 psig**  
Last Calib.: **2010.04.29**  
Time On Btm: **2010.04.29 @ 15:16:42**  
Time Off Btm: **2010.04.29 @ 15:48:42**

**TEST COMMENT:** Weak blow died in 6 min.  
NoI return

Pressure vs. Time



## PRESSURE SUMMARY

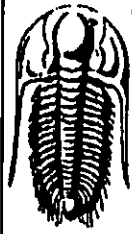
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2208.90	111.53	Initial Hydro-static
1	16.08	110.63	Open To Flow (1)
16	17.41	111.05	Shut-In(1)
32	31.60	111.57	End Shut-In(1)
32	2129.65	112.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.50	mud 100%m	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38829      DST#: 9  
Test Start: 2010.04.29 @ 13:40:17

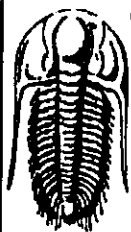
**Tool Information**

Drill Pipe:	Length: 4330.00 ft	Diameter: 3.80 inches	Volume: 60.74 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 61.35 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4442.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

**Tool Description**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4423.00	
Shut In Tool	5.00			4428.00	
Hydraulic tool	-			4433.00	
Packer	5.00			4438.00	20.00      Bottom Of Top Packer
Packer	4.00			4442.00	
Stubb	1.00			4443.00	
Recorder	0.00	6771	Inside	4443.00	
Recorder	0.00	8368	Outside	4443.00	
Perforations	20.00			4463.00	
Bullnose	5.00			4468.00	26.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>46.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38829      DST#: 9  
Test Start: 2010.04.29 @ 13:40:17

## Mud and Cushion Information

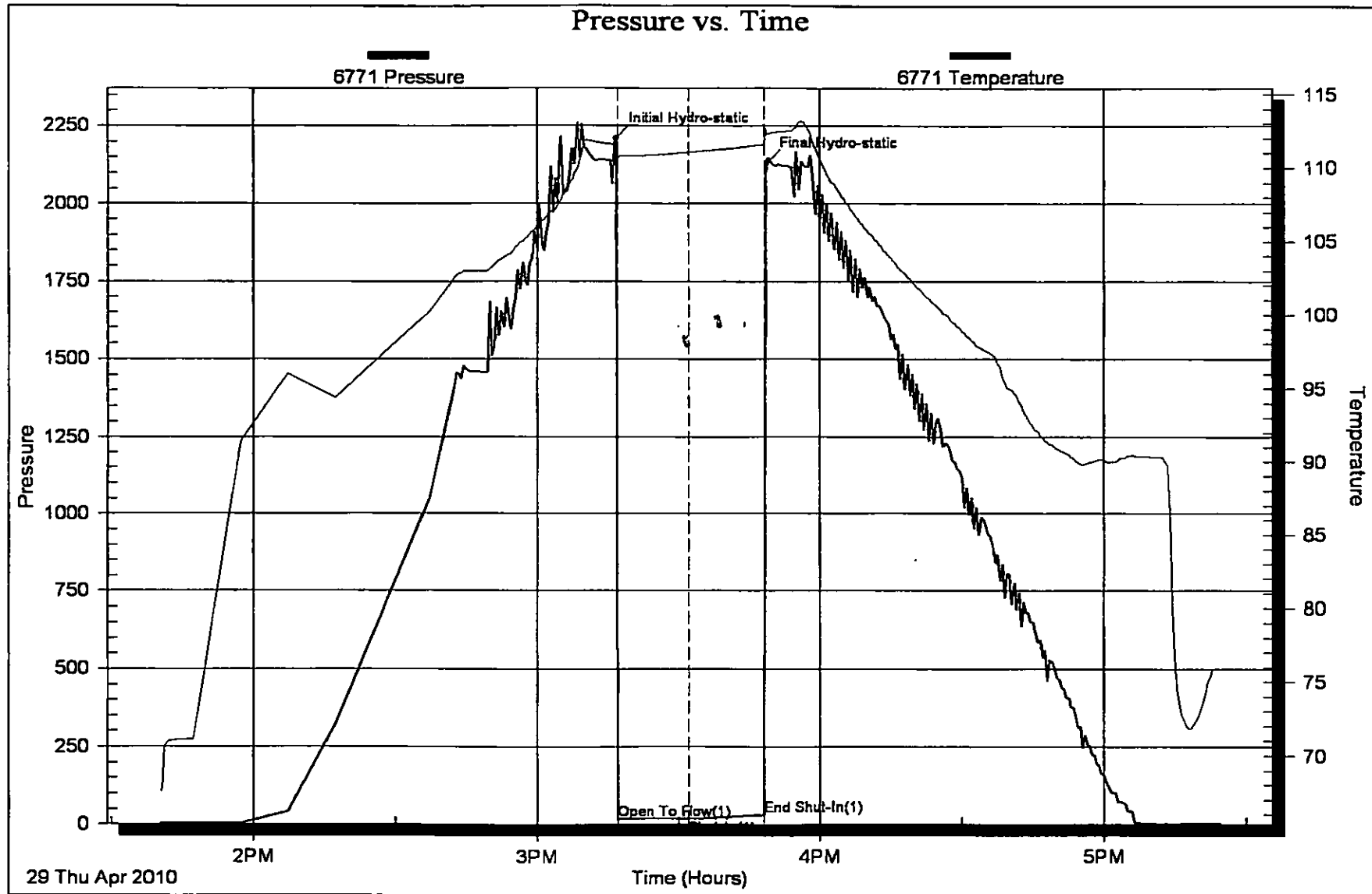
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.65 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2400.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

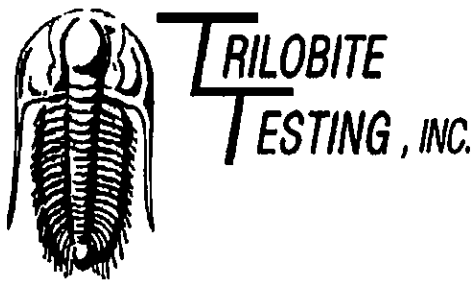
Recovery Table

Length ft	Description	Volume bbl
0.50	mud 100%m	0.002

Total Length: 0.50 ft      Total Volume: 0.002 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Co.**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206

ATTN: Steve Carl

**31-13s-31w Logan, KS**

**Phelps #4-31**

Start Date: 2010.04.30 @ 04:35:19

End Date: 2010.04.30 @ 11:10:58

Job Ticket #: 38830                      DST #: 10

Trilobite Testing, Inc

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

Grand Mesa Operating Co.

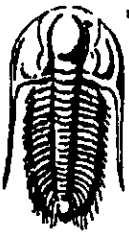
Phelps #4-31

31-13s-31w Logan, KS

DST # 10

Johnson

2010.04.30



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co.

Phelps #4-31

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**31-13s-31w Logan, KS**  
Job Ticket: 38830 DST#: 10  
Test Start: 2010.04.30 @ 04:35:19

**GENERAL INFORMATION:**

Formation: **Johnson**

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

Time Tool Opened: 06:59:29

Time Test Ended: 11:10:58

Test Type: **Conventional Bottom Hole**

Tester: **Shane McBride**

Unit No: **40**

Interval: **4520.00 ft (KB) To 4567.00 ft (KB) (TVD)**

Total Depth: **4017.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2951.00 ft (KB)**

**2946.00 ft (CF)**

KB to GR/CF: **5.00 ft**

Serial #: **6771** Inside

Press@RunDepth: **28.07 psig @ 4521.00 ft (KB)**

Start Date: **2010.04.30**

End Date: **2010.04.30**

Start Time: **04:35:19**

End Time: **10:58:58**

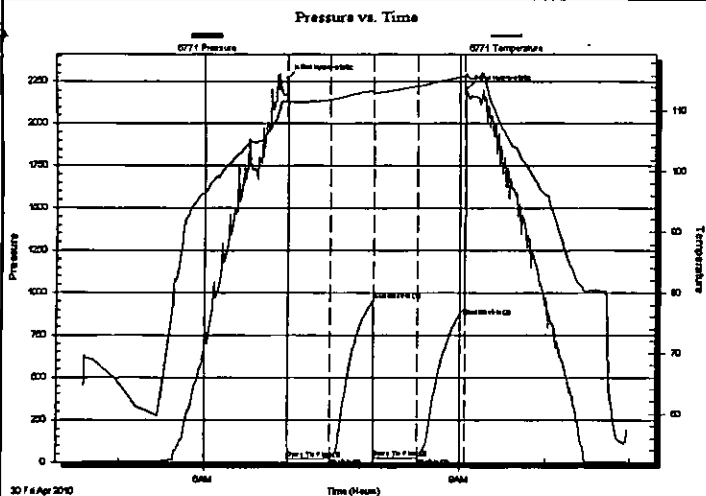
Capacity: **8000.00 psig**

Last Calib.: **2010.04.30**

Time On Btm: **2010.04.30 @ 06:58:59**

Time Off Btm: **2010.04.30 @ 09:04:14**

**TEST COMMENT:** Weak blow  
No return  
Weak blow died in 10 min.  
No return



**PRESSURE SUMMARY**

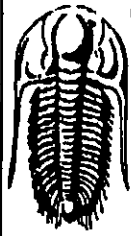
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2271.06	111.86	Initial Hydro-static
1	19.45	110.57	Open To Flow (1)
31	24.53	111.94	Shut-In(1)
61	951.70	113.47	End Shut-In(1)
61	25.25	112.93	Open To Flow (2)
91	28.07	114.17	Shut-In(2)
125	857.59	115.74	End Shut-In(2)
126	2206.60	116.24	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
3.00	mud 100%m	0.01

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Co.  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38830      DST#: 10  
Test Start: 2010.04.30 @ 04:35:19

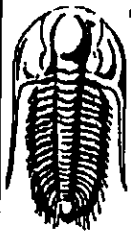
**Tool Information**

Drill Pipe:	Length: 4396.00 ft	Diameter: 3.80 inches	Volume: 61.66 bbl	Tool Weight: 1500.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 62.27 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4520.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	67.00 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			4501.00	
Shut In Tool	5.00			4506.00	
Hydraulic tool	5.00			4511.00	
Packer	5.00			4516.00	20.00      Bottom Of Top Packer
Packer	4.00			4520.00	
Stubb	1.00			4521.00	
Recorder	0.00	6771	Inside	4521.00	
Recorder	0.00	8368	Outside	4521.00	
Perforations	8.00			4529.00	
Change Over Sub	1.00			4530.00	
Drill Pipe	31.00			4561.00	
Change Over Sub	1.00			4562.00	
Bullnose	5.00			4567.00	47.00      Bottom Packers & Anchor

**Total Tool Length: 67.00**



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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1700 N Waterfront Pkwy  
Bldg 600  
Wichita, KS 67206  
ATTN: Steve Carl

**Phelps #4-31**  
**31-13s-31w Logan, KS**  
Job Ticket: 38830      DST#: 10  
Test Start: 2010.04.30 @ 04:35:19

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.97 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	mud 100%m	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

