



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Flatirons Resources, LLC**

303 E. 17th Avenue  
Suite 940  
Denver, CO 80203

ATTN: Roger Moses

**36-7s-24w-Graham, KS**

**Chenowith #21-36**

Start Date: 2010.11.07 @ 19:38:01

End Date: 2010.11.08 @ 05:23:16

Job Ticket #: 40887                      DST #: 1

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JAN 06 2011  
KCC WICHITA

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

**ORIGINAL**



**TRIOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Flatirons Resources, LLC

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Suite 940  
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ATTN: Roger Moses

Chenowith #21-36

36-7s-24w-Graham, KS

Job Ticket: 40887 DST#: 1

Test Start: 2010.11.07 @ 19:38:01

## GENERAL INFORMATION:

Formation: LKC "C"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:13:16

Time Test Ended: 05:23:16

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 54

Interval: 3712.00 ft (KB) To 3745.00 ft (KB) (TVD)

Total Depth: 3745.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2415.00 ft (KB)

2408.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6668

Inside

Press@RunDepth: 488.14 psig @ 3714.00 ft (KB)

Start Date: 2010.11.07

End Date:

2010.11.08

Start Time: 19:38:03

End Time:

05:23:16

Capacity: 8000.00 psig

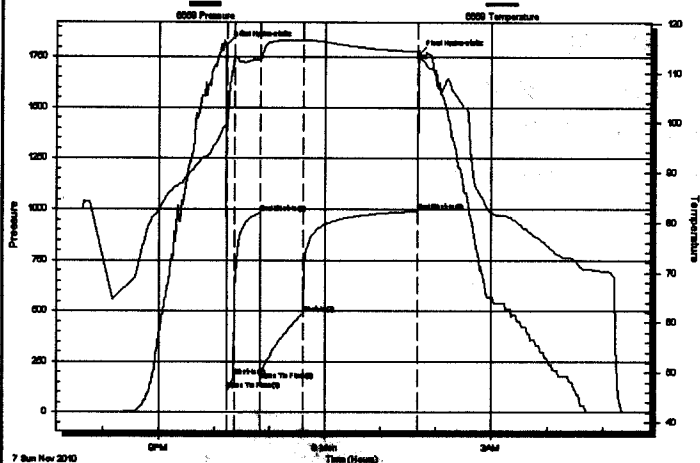
Last Calib.: 2010.11.08

Time On Btm: 2010.11.07 @ 22:13:01

Time Off Btm: 2010.11.08 @ 01:41:01

TEST COMMENT: FFP-Strong, BOB in 1 Min., 8 Seconds  
ISI-Dead  
FFP-Strong, BOB in 1 Min., 45 Seconds  
FSI-Blow back BOB in 20 Min., Lasted Throughout

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1810.92	100.01	Initial Hydro-static
1	109.06	99.41	Open To Flow (1)
9	175.04	112.30	Shut-In(1)
37	980.74	112.74	End Shut-In(1)
38	198.81	112.52	Open To Flow (2)
83	488.14	116.47	Shut-In(2)
208	990.93	114.30	End Shut-In(2)
208	1764.34	114.67	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	VSOCMW-2%O-95%W-3%M	2.94
180.00	Water Cut Oil-80%O-20%W	2.52
585.00	Clean Oil	8.21
0.00	6.5' Gas Pipe	0.00

## Gas Rates

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



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**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Flatirons Resources, LLC

Chenoweth #21-36

303 E. 17th Avenue  
Suite 940  
Denver, CO 80203  
ATTN: Roger Moses

36-7s-24w-Graham, KS

Job Ticket: 40887      DST#: 1

Test Start: 2010.11.07 @ 19:38:01

**Tool Information**

Drill Pipe:	Length: 3579.00 ft	Diameter: 3.80 inches	Volume: 50.20 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 139.00 ft	Diameter: 2.25 inches	Volume: 0.68 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 50.88 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3712.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 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			3692.00	
Shut In Tool	5.00			3697.00	
Hydraulic tool	5.00			3702.00	
Packer	5.00			3707.00	21.00      Bottom Of Top Packer
Packer	5.00			3712.00	
Stubb	1.00			3713.00	
Perforations	1.00			3714.00	
Recorder	0.00	6668	Inside	3714.00	
Recorder	0.00	8673	Outside	3714.00	
Perforations	28.00			3742.00	
Bullnose	3.00			3745.00	33.00      Bottom Packers & Anchor

**Total Tool Length: 54.00**



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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Flatirons Resources, LLC

Chenowith #21-36

303 E. 17th Avenue  
Suite 940  
Denver, CO 80203  
ATTN: Roger Moses

36-7s-24w-Graham, KS  
Job Ticket: 40887      DST#: 1  
Test Start: 2010.11.07 @ 19:38:01

**Mud and Cushion Information**

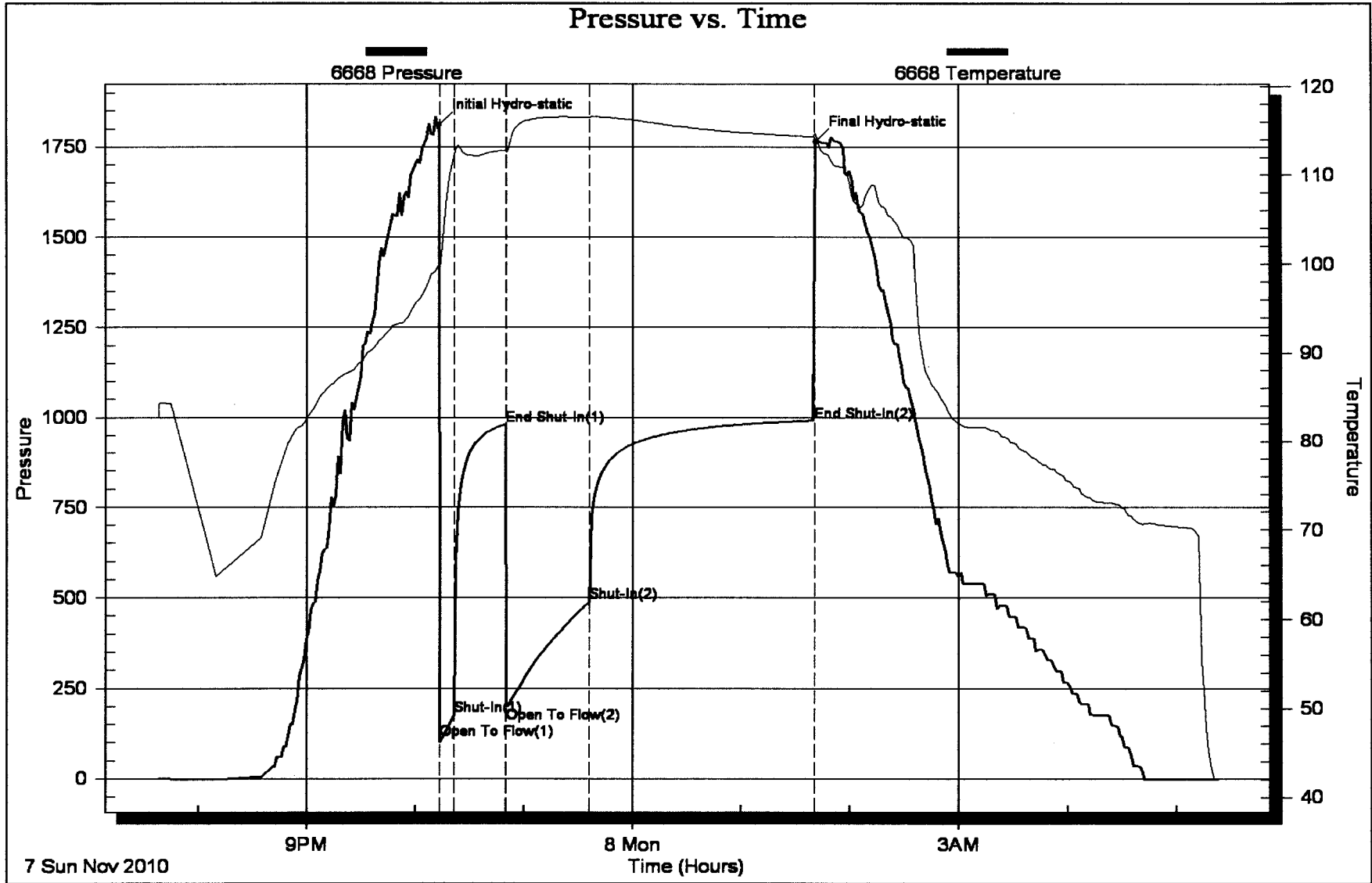
Mud Type: Gel Chem	Cushion Type:	Oil API: 33 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 81000 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1400.00 ppm		
Filter Cake: inches		

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
300.00	VSOCMW-2%O-95%W-3%M	2.942
180.00	Water Cut Oil-80%O-20%W	2.525
585.00	Clean Oil	8.206
0.00	615' Gas In Pipe	0.000

Total Length: 1065.00 ft      Total Volume: 13.673 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





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## DRILL STEM TEST REPORT

Prepared For: **Flatirons Resources, LLC**

303 E. 17th Avenue  
Suite 940  
Denver, CO 80203

ATTN: Roger Moses

**36-7s-24w-Graham, KS**

**Chenowith #21-36**

Start Date: 2010.11.08 @ 21:16:28

End Date: 2010.11.09 @ 03:55:28

Job Ticket #: 40888                      DST #: 2

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# DRILL STEM TEST REPORT

Flatirons Resources, LLC

303 E. 17th Avenue  
Suite 940  
Denver, CO 80203  
ATTN: Roger Moses

Chenoweth #21-36

36-7s-24w-Graham, KS

Job Ticket: 40888      DST#: 2  
Test Start: 2010.11.08 @ 21:16:28

## GENERAL INFORMATION:

Formation: LKC "J"  
Deviated: No Whipstock      ft (KB)  
Time Tool Opened: 23:51:43  
Time Test Ended: 03:55:28

Test Type: Conventional Bottom Hole  
Tester: Jason McLemore  
Unit No: 54

Interval: 3840.00 ft (KB) To 3862.00 ft (KB) (TVD)  
Total Depth: 3862.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2415.00 ft (KB)  
2408.00 ft (CF)  
KB to GR/CF: 7.00 ft

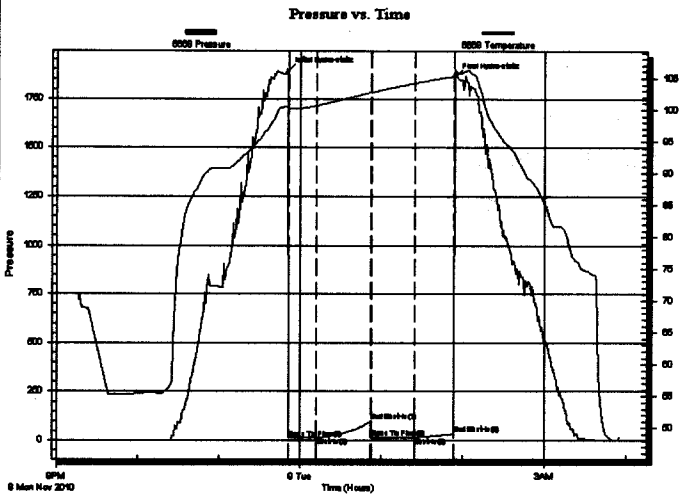
Serial #: 6668

Inside

Press@RunDepth: 16.23 psig @ 3844.00 ft (KB)  
Start Date: 2010.11.08      End Date: 2010.11.09  
Start Time: 21:16:30      End Time: 03:55:28

Capacity: 8000.00 psig  
Last Calib.: 2010.11.09  
Time On Btm: 2010.11.08 @ 23:50:58  
Time Off Btm: 2010.11.09 @ 01:53:58

TEST COMMENT: IFP-Weak Blow, Built to 1/4"  
ISI-Dead  
FFP-Dead  
FSI-Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1889.65	100.43	Initial Hydro-static
1	12.82	99.84	Open To Flow (1)
21	13.82	100.59	Shut-in(1)
62	97.30	102.72	End Shut-in(1)
62	14.24	102.71	Open To Flow (2)
94	16.23	104.19	Shut-in(2)
123	33.79	105.32	End Shut-in(2)
123	1864.36	106.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud W/Oil Specks-2%O-98%M	0.01

## Gas Rates

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



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Flatirons Resources, LLC

303 E. 17th Avenue  
Suite 940  
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ATTN: Roger Moses

Chenoweth #21-36

36-7s-24w-Graham, KS

Job Ticket: 40888

DST#: 2

Test Start: 2010.11.08 @ 21:16:28

## Tool Information

Drill Pipe:	Length: 3713.00 ft	Diameter: 3.80 inches	Volume: 52.08 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 139.00 ft	Diameter: 2.25 inches	Volume: 0.68 bbl	Weight to Pull Loose: 600000.0 lb
			<u>Total Volume: 52.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3840.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 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			3820.00	
Shut In Tool	5.00			3825.00	
Hydraulic tool	5.00			3830.00	
Packer	5.00			3835.00	21.00 Bottom Of Top Packer
Packer	5.00			3840.00	
Stubb	1.00			3841.00	
Perforations	3.00			3844.00	
Recorder	0.00	6668	Inside	3844.00	
Recorder	0.00	8673	Outside	3844.00	
Perforations	15.00			3859.00	
Bullnose	3.00			3862.00	22.00 Bottom Packers & Anchor

**Total Tool Length: 43.00**



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**FLUID SUMMARY**

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Denver, CO 80203  
ATTN: Roger Moses

36-7s-24w-Graham, KS  
Job Ticket: 40888      DST#: 2  
Test Start: 2010.11.08 @ 21:16:28

## 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: 63.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.58 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1400.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

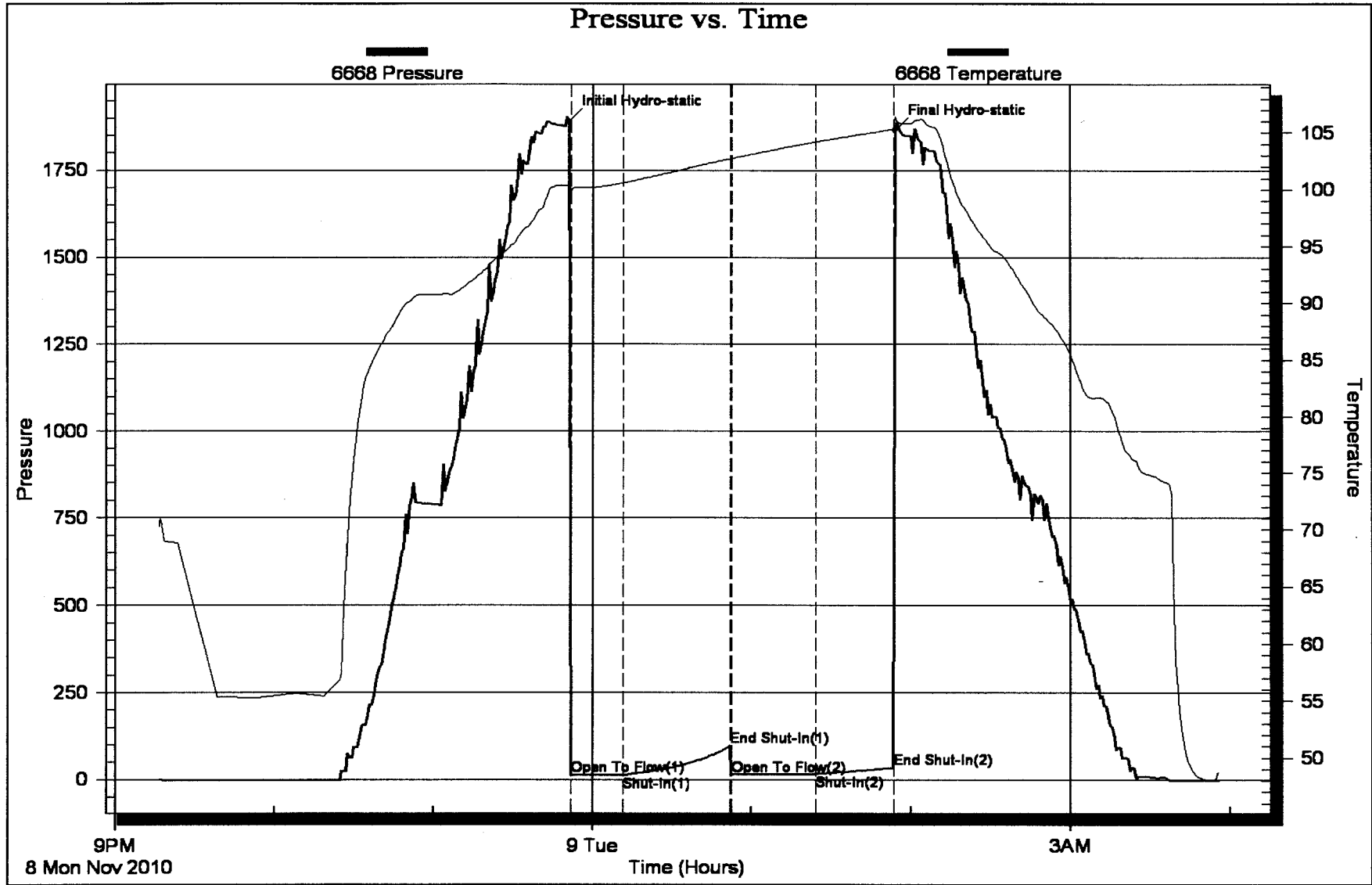
Length ft	Description	Volume bbl
2.00	Mud W/Oil Specks-2%O-98%M	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:





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P.O. Box 1733 • Hays, Kansas 67601

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## Test Ticket

NO. 040887

Well Name & No. Cherowith #21-36 BY: \_\_\_\_\_ Test No. 1 Date 11-7-10  
 Company Flatirons Resources LLC Elevation 2415 KB 2408 GL  
 Address 303 E 17th Avenue, Suite 940, Denver, CO, 80203  
 Co. Rep / Geo. Roger Moses Rig HD #3  
 Location: Sec. 36 Twp. 7S Rge. 24W Co. Graham State KS

Interval Tested 3712-3745 Zone Tested C zone  
 Anchor Length 33 Drill Pipe Run 3579 Mud Wt. 8.8  
 Top Packer Depth 3707 Drill Collars Run 139 Vis 63  
 Bottom Packer Depth 3712 Wt. Pipe Run 0 WL 7.6  
 Total Depth 3745 Chlorides 1,400 ppm System LCM 2\*  
 Blow Description IFP - Strong, BOB in 1 min, 8 seconds  
ISI - Dead  
FFP - Strong, BOB in 1 min 45 seconds  
FSI - Blowback BOB in 20 min.

Rec	Feet of	%gas	%oil	%water	%mud
585	Clean Oil				
180	Water Cut Oil		80	20	
300	VSOCMW		2	95	3
	615' GFP				

Rec Total \_\_\_\_\_ BHT 114° Gravity 33 API RW 126 @ 46 ° F Chlorides 81,000 ppm

(A) Initial Hydrostatic 1811  Test 1125- T-On Location 18:49  
 (B) First Initial Flow 109  Jars \_\_\_\_\_ T-Started 19:38  
 (C) First Final Flow 175  Safety Joint \_\_\_\_\_ T-Open 22:20  
 (D) Initial Shut-In 981  Circ Sub \_\_\_\_\_ T-Pulled 1:40  
 (E) Second Initial Flow 199  Hourly Standby 1 1/4 hrs 125 T-Out 5:35  
 (F) Second Final Flow 488  Mileage 132 rt 165- Comments \_\_\_\_\_  
 (G) Final Shut-In 991  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1764  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 5  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1415-  
 Final Flow 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 120 Sub Total 1415-

Approved By Roger Moses Our Representative Jason McLawton 11/7/10

Trilobite Testing Inc. shall not be liable for damaged or any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



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RECEIVED  
NOV 10 2010

## Test Ticket

NO. 040888

Well Name & No. Cherowith # 21-36 Test No. 2 Date 11-8-10  
 Company Flatirons Resources, LLC Elevation 2415 KB 2408 GL  
 Address 303 E 17th Avenue, Suite 940, Denver, CO, 80203  
 Co. Rep / Geo. Roger Moses Rig HD #3  
 Location: Sec. 36 Twp. 7s Rge. 29w Co. Graham State KS

Interval Tested 3840-3862 Zone Tested LKC-"J"  
 Anchor Length 22 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.0  
 Top Packer Depth 3835 Drill Collars Run 139 Vis 55  
 Bottom Packer Depth 3840 Wt. Pipe Run 0 WL 7.2  
 Total Depth 3862 Chlorides 1600 ppm System LCM 2<sup>#</sup>  
 Blow Description IFP - Weak Blow, 1/4"  
ISI - Dead  
FFP - Dead  
F SI - Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud w/oil specks</u>	<u>2</u>	<u>98</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 2' BHT 105' Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic 1890  Test 1125' T-On Location 20:53  
 (B) First Initial Flow 13  Jars \_\_\_\_\_ T-Started 21:16  
 (C) First Final Flow 14  Safety Joint \_\_\_\_\_ T-Open 23:58  
 (D) Initial Shut-In 97  Circ Sub \_\_\_\_\_ T-Pulled 1:58  
 (E) Second Initial Flow 14  Hourly Standby \_\_\_\_\_ T-Out 3:57  
 (F) Second Final Flow 16  Mileage 132 RT 165' Comments \_\_\_\_\_  
 (G) Final Shut-In 34  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1864  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 20  Shale Packer \_\_\_\_\_  
 Initial Shut-In 40  Extra Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Total 1290'  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1290'

Approved By \_\_\_\_\_ Our Representative Jason McElroy  
 Trilobite Testing Inc. shall not be liable for damaged or any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.