



DRILL STEM TEST REPORT

Prepared For: **Discovery Natural Resources, llc**

410 17St STE 900
Denver CO 80202-4420

ATTN: Jim Musgrove/Gary Do

30-18s-31w Scot,KS

Pfenninger #10D-30-1831

Start Date: 2014.06.21 @ 02:45:00

End Date: 2014.06.21 @ 09:13:30

Job Ticket #: 57022 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.06.26 @ 11:16:17



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57022

DST#: 1

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 02:45:00

GENERAL INFORMATION:

Formation: **LKC "L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:09:45

Time Test Ended: 09:13:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jace McKinney

Unit No: 75

Interval: 4291.00 ft (KB) To 4320.00 ft (KB) (TVD)

Reference Elevations: 2993.00 ft (KB)

Total Depth: 4320.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8675

Inside

Press@RunDepth: 21.80 psig @ 4292.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.21

End Date:

2014.06.21

Last Calib.:

2014.06.21

Start Time: 02:45:15

End Time:

09:13:30

Time On Btm:

2014.06.21 @ 05:09:00

Time Off Btm:

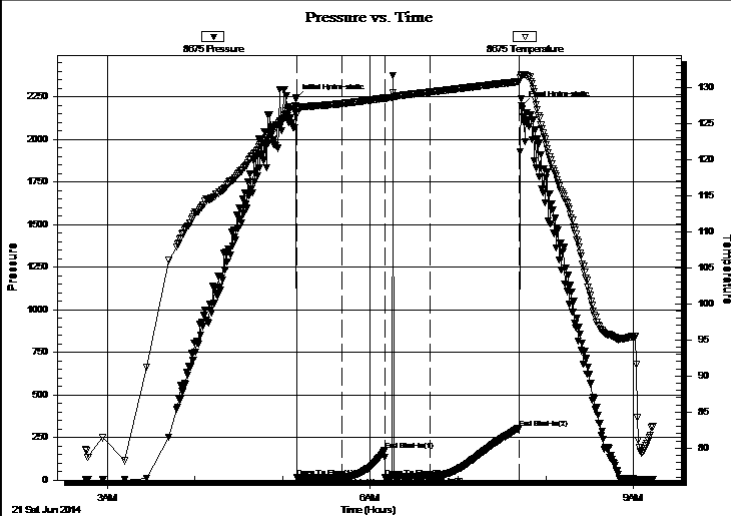
2014.06.21 @ 07:43:30

TEST COMMENT: Weak blow , died in 20 min.

No return blow

No blow , Flushed tool, Surge blow

No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2238.90	127.45	Initial Hydro-static
1	16.67	126.19	Open To Flow (1)
32	16.46	127.72	Shut-In(1)
61	175.48	128.50	End Shut-In(1)
62	17.30	128.43	Open To Flow (2)
92	21.80	129.33	Shut-In(2)
153	306.06	130.76	End Shut-In(2)
155	2199.24	131.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w ith oil spots	0.05

Gas Rates

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



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DRILL STEM TEST REPORT

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57022 **DST#: 1**

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 02:45:00

GENERAL INFORMATION:

Formation: **LKC "L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:09:45

Time Test Ended: 09:13:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jace McKinney

Unit No: 75

Interval: 4291.00 ft (KB) To 4320.00 ft (KB) (TVD)

Reference Elevations: 2993.00 ft (KB)

Total Depth: 4320.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8650 Outside

Press@RunDepth: psig @ 4292.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.21

End Date:

2014.06.21

Last Calib.:

2014.06.21

Start Time: 02:45:15

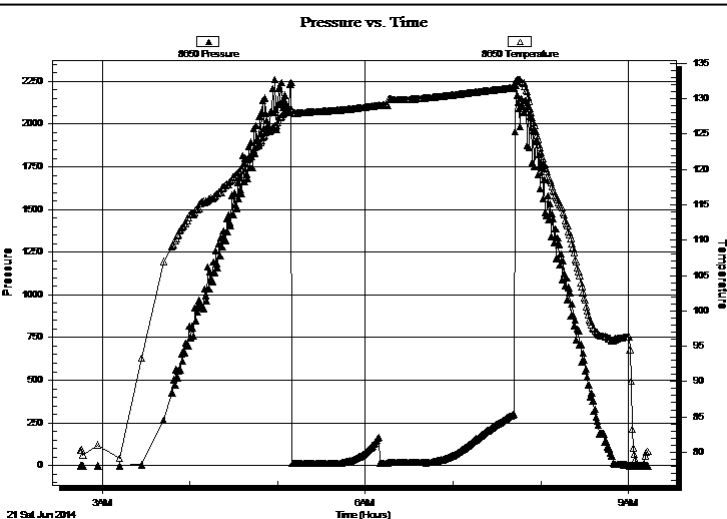
End Time:

09:13:15

Time On Btm:

Time Off Btm:

TEST COMMENT: Weak blow , died in 20 min.
No return blow
No blow , Flushed tool, Surge blow
No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w ith oil spots	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57022

DST#: 1

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 02:45:00

Tool Information

Drill Pipe:	Length: 3932.38 ft	Diameter: 3.80 inches	Volume: 55.16 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: 30000.00 lb
Drill Collar:	Length: 364.53 ft	Diameter: 2.25 inches	Volume: 1.79 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 56.95 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.91 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4291.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	49.00 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			4272.00	
Shut In Tool	5.00			4277.00	
Hydraulic tool	5.00			4282.00	
Packer	5.00			4287.00	20.00 Bottom Of Top Packer
Packer	4.00			4291.00	
Stubb	1.00			4292.00	
Recorder	0.00	8675	Inside	4292.00	
Recorder	0.00	8650	Outside	4292.00	
perforations	25.00			4317.00	
Change Over Sub	0.00			4317.00	
Drill Pipe	0.00			4317.00	
Change Over Sub	0.00			4317.00	
Bullnose	3.00			4320.00	29.00 Bottom Packers & Anchor

Total Tool Length: 49.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57022

DST#: 1

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 02:45:00

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: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	Mud w ith oil spots	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

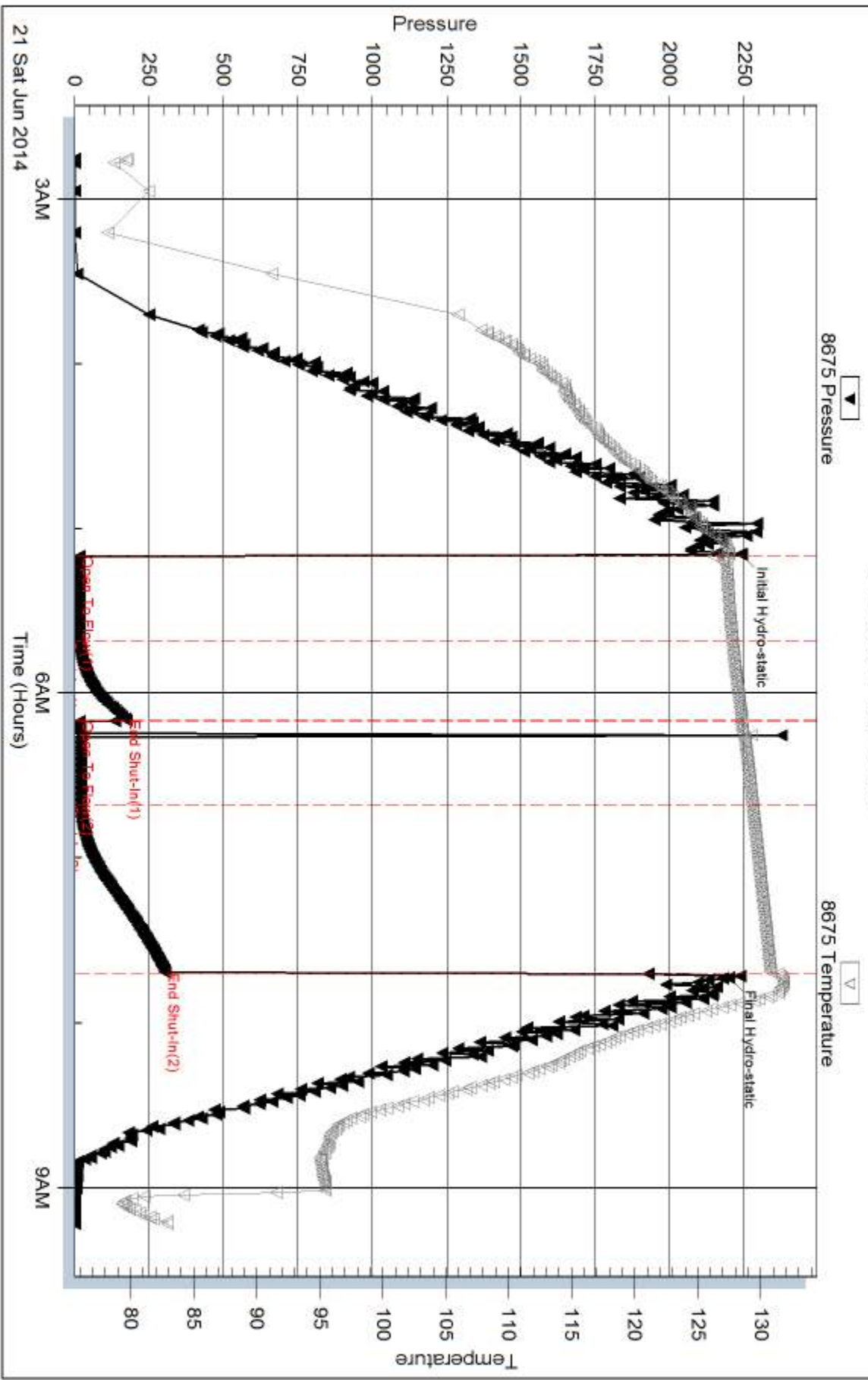
Serial #:

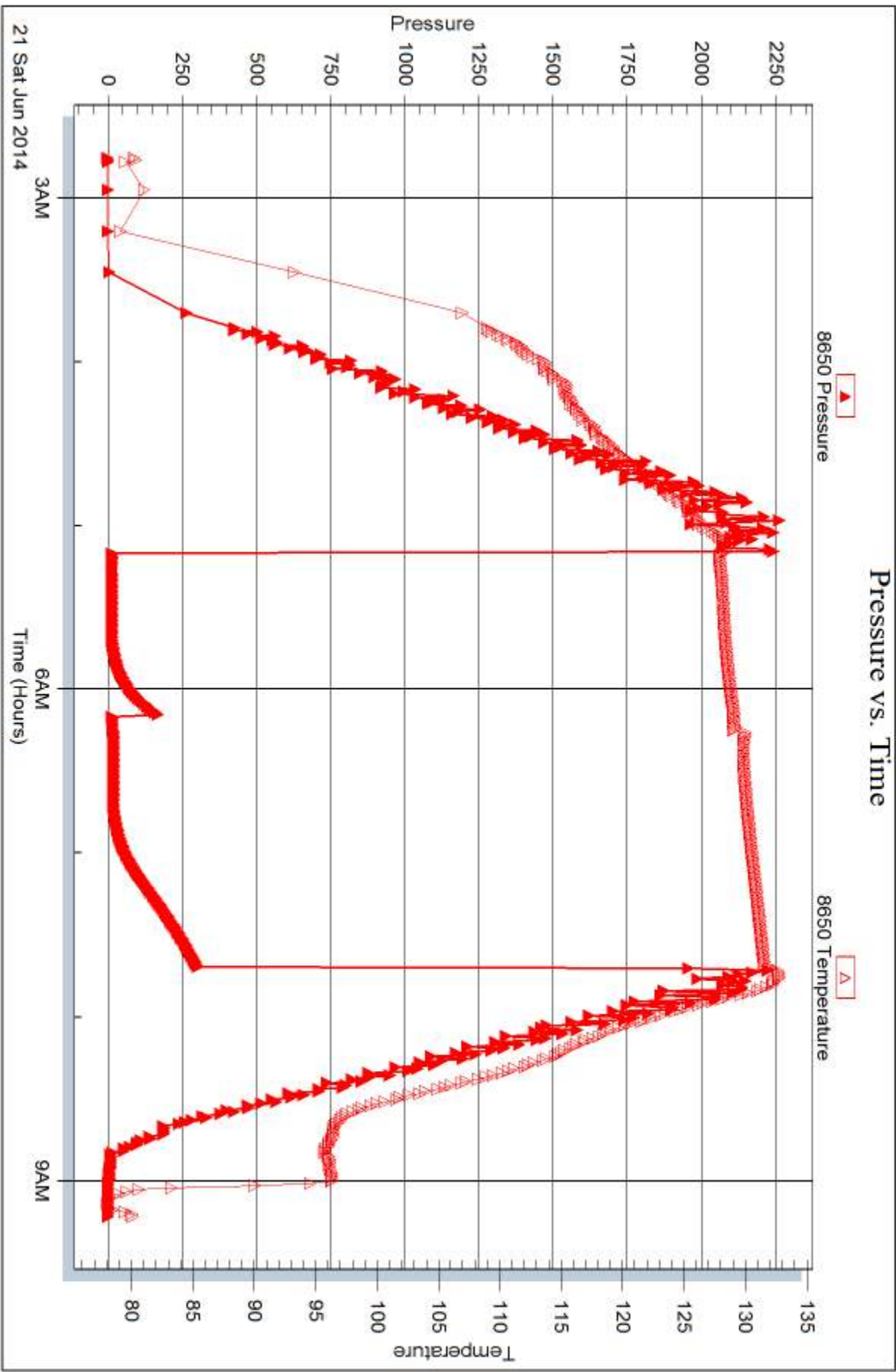
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Discovery Natural Resources, llc**

410 17St STE 900
Denver CO 80202-4420

ATTN: Jim Musgrove/Gary Do

30-18s-31w Scot,KS

Pfenninger #10D-30-1831

Start Date: 2014.06.21 @ 18:50:00

End Date: 2014.06.22 @ 01:26:45

Job Ticket #: 57023 DST #: 2

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

Printed: 2014.06.26 @ 11:15:51



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57023

DST#: 2

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 18:50:00

GENERAL INFORMATION:

Formation: **Pleasaton - Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:57:30

Time Test Ended: 01:26:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

Interval: 4312.00 ft (KB) To 4385.00 ft (KB) (TVD)

Reference Elevations: 2993.00 ft (KB)

Total Depth: 4385.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8675

Inside

Press@RunDepth: 62.90 psig @ 4313.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.21

End Date:

2014.06.22

Last Calib.:

2014.06.22

Start Time: 18:50:15

End Time:

01:26:45

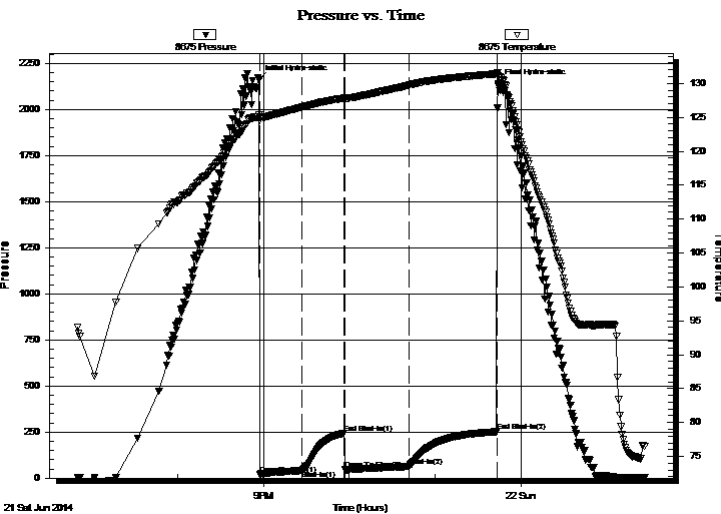
Time On Btm:

2014.06.21 @ 20:57:00

Time Off Btm:

2014.06.21 @ 23:44:00

TEST COMMENT: Built to 3" blow
No return blow
Built to 2" blow
No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2160.61	125.34	Initial Hydro-static
1	20.83	124.52	Open To Flow (1)
30	40.74	126.48	Shut-In(1)
60	243.43	127.81	End Shut-In(1)
60	46.41	127.74	Open To Flow (2)
105	62.90	129.72	Shut-In(2)
166	251.72	131.41	End Shut-In(2)
167	2140.95	131.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	gco 10%G 90%O	0.25
50.00	gcom 10%G 40%O 50%M	0.25

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Discovery Natural Resources, llc
 410 17St STE 900
 Denver CO 80202-4420
 ATTN: Jim Musgrove/Gary Do

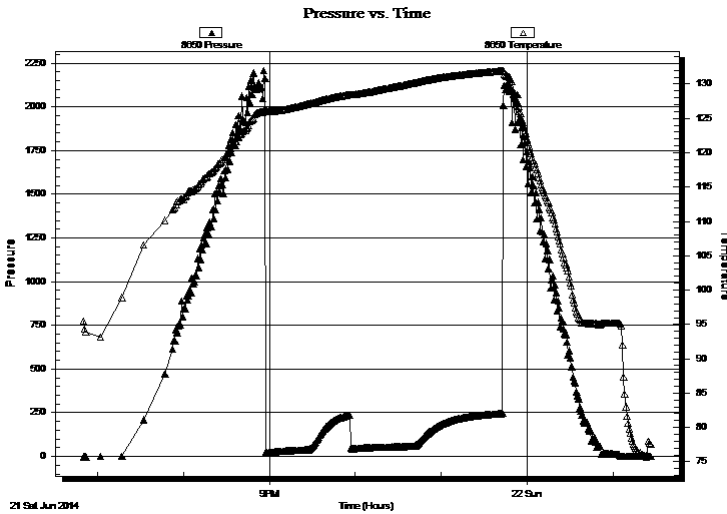
Pfenninger #10D-30-1831
30-18s-31w Scot,KS
 Job Ticket: 57023 **DST#: 2**
 Test Start: 2014.06.21 @ 18:50:00

GENERAL INFORMATION:

Formation: **Pleasanton - Marmaton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:57:30
 Time Test Ended: 01:26:45
 Interval: **4312.00 ft (KB) To 4385.00 ft (KB) (TVD)**
 Total Depth: 4385.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jace McKinney
 Unit No: 75
 Reference Elevations: 2993.00 ft (KB)
 2983.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8650 Outside
 Press@RunDepth: psig @ 4313.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.06.21 End Date: 2014.06.22 Last Calib.: 2014.06.22
 Start Time: 18:50:15 End Time: 01:26:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: Built to 3" blow
 No return blow
 Built to 2" blow
 No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	gco 10%G 90%O	0.25
50.00	gcom 10%G 40%O 50%M	0.25

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57023

DST#: 2

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 18:50:00

Tool Information

Drill Pipe:	Length: 3932.28 ft	Diameter: 3.80 inches	Volume: 55.16 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:	30000.00 lb
Drill Collar:	Length: 364.53 ft	Diameter: 2.25 inches	Volume: 1.79 bbl	Weight to Pull Loose:	91000.00 lb
			<u>Total Volume: 56.95 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	4.81 ft			String Weight: Initial	70000.00 lb
Depth to Top Packer:	4312.00 ft			Final	71000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	73.00 ft				
Tool Length:	93.00 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			4293.00	
Shut In Tool	5.00			4298.00	
Hydraulic tool	5.00			4303.00	
Packer	5.00			4308.00	20.00 Bottom Of Top Packer
Packer	4.00			4312.00	
Stubb	1.00			4313.00	
Recorder	0.00	8675	Inside	4313.00	
Recorder	0.00	8650	Outside	4313.00	
perforations	36.00			4349.00	
Change Over Sub	1.00			4350.00	
Drill Pipe	31.00			4381.00	
Change Over Sub	1.00			4382.00	
Bullnose	3.00			4385.00	73.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57023

DST#: 2

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.21 @ 18:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
50.00	gco 10%G 90%O	0.246
50.00	gcom 10%G 40%O 50%M	0.246

Total Length: 100.00 ft Total Volume: 0.492 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

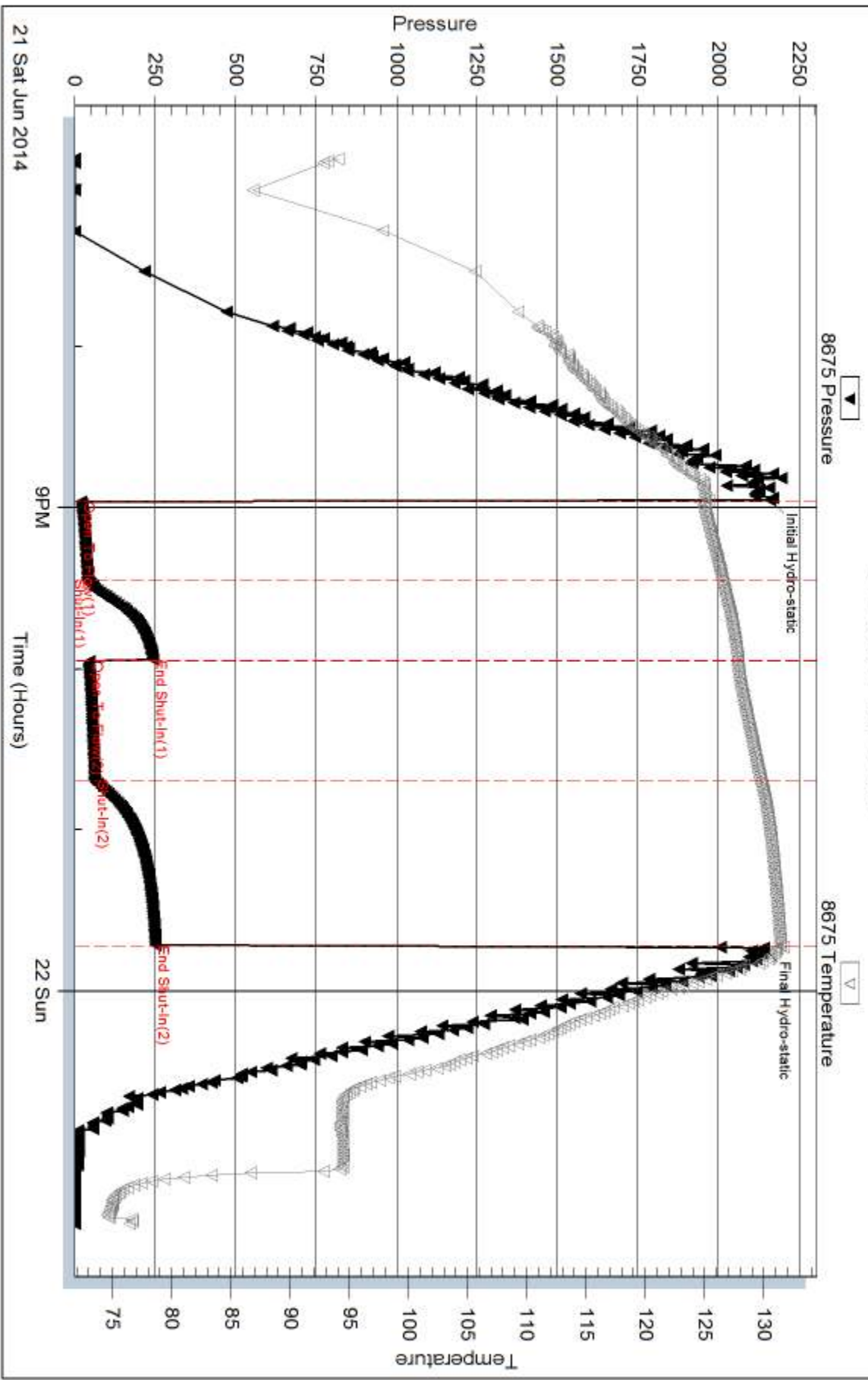
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 31 @ 70 F = 30

Pressure vs. Time

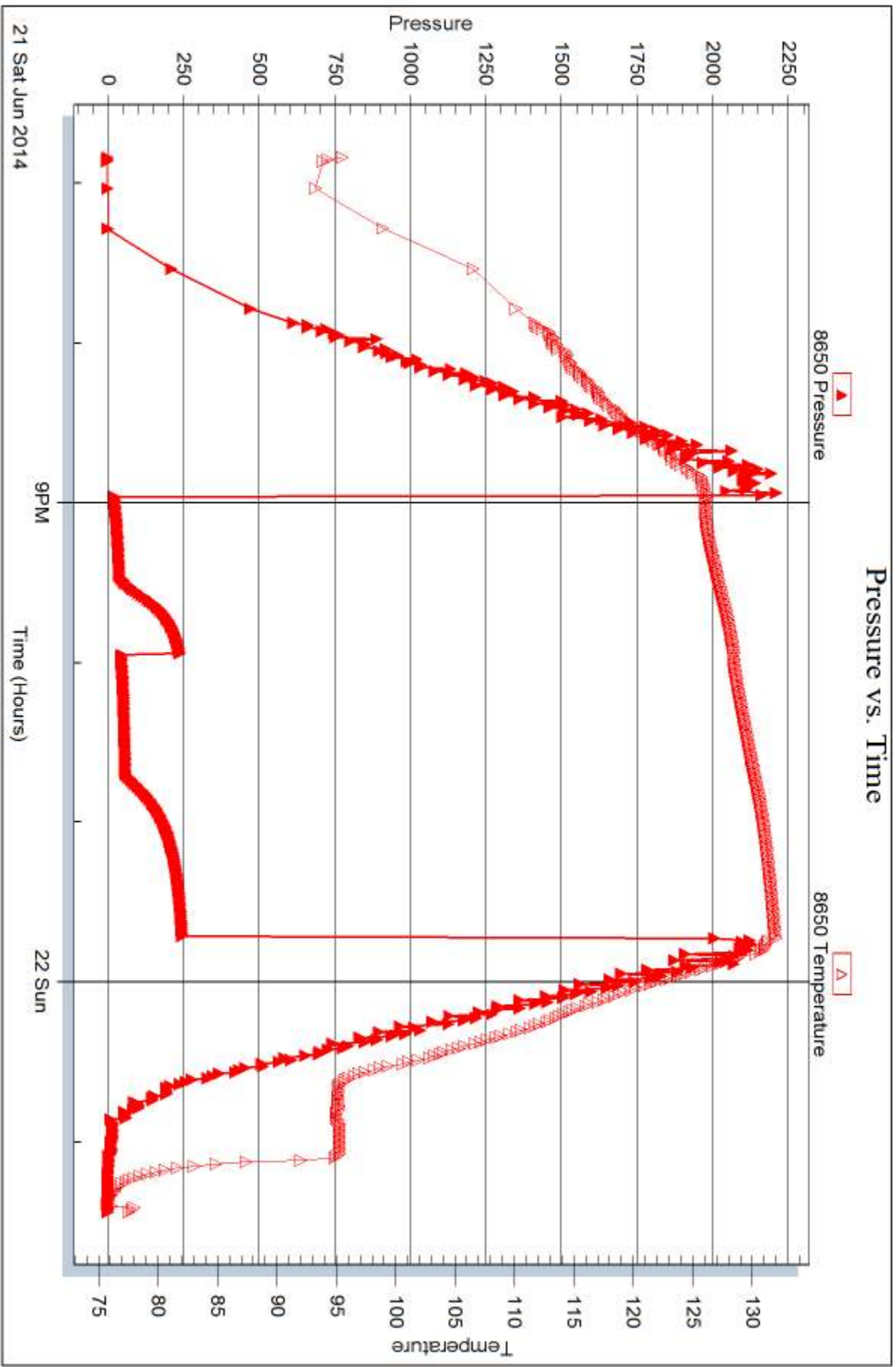


Serial #: 8650

Outside Discovery Natural Resources, Inc

30-18s-31w Scot,K5

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 57023

Printed: 2014.06.26 @ 11:15:52



DRILL STEM TEST REPORT

Prepared For: **Discovery Natural Resources, llc**

410 17St STE 900
Denver CO 80202-4420

ATTN: Jim Musgrove/Gary Do

30-18s-31w Scot,KS

Pfenninger #10D-30-1831

Start Date: 2014.06.22 @ 23:08:00

End Date: 2014.06.23 @ 06:26:00

Job Ticket #: 57024 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.06.26 @ 11:15:04



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,Ks

Job Ticket: 57024

DST#: 3

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.22 @ 23:08:00

GENERAL INFORMATION:

Formation: **Fort Scott - Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:48:15

Time Test Ended: 06:26:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

Interval: 4450.00 ft (KB) To 4572.00 ft (KB) (TVD)

Reference Elevations: 2993.00 ft (KB)

Total Depth: 4572.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8675

Inside

Press@RunDepth: 184.75 psig @ 4451.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.22

End Date:

2014.06.23

Last Calib.:

2014.06.23

Start Time: 23:08:15

End Time:

06:26:00

Time On Btm:

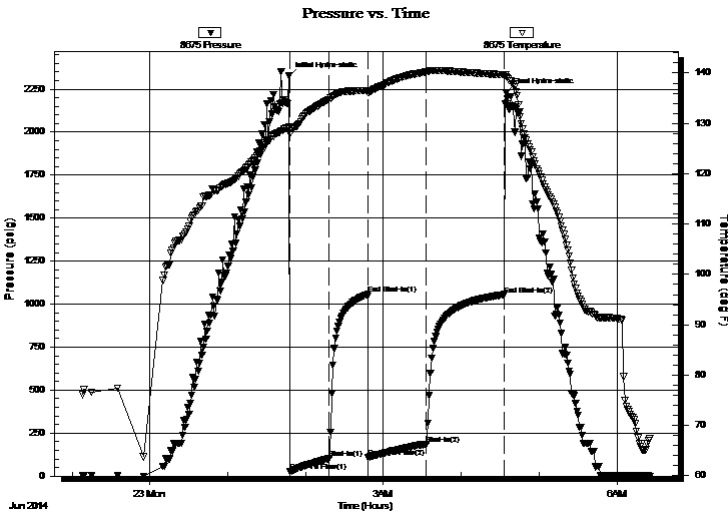
2014.06.23 @ 01:47:15

Time Off Btm:

2014.06.23 @ 04:34:45

TEST COMMENT: Built to 5" blow
Bled off for 3 min. No return blow
Built to 4 1/2" blow
Bled off for 3 min. No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2325.88	129.28	Initial Hydro-static
1	27.95	127.94	Open To Flow (1)
31	101.12	134.77	Shut-In(1)
61	1057.57	136.46	End Shut-In(1)
62	109.75	136.08	Open To Flow (2)
106	184.75	140.24	Shut-In(2)
166	1055.87	139.66	End Shut-In(2)
168	2227.72	139.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
182.00	mcw 10%M 90%W	0.90
183.00	w cm 40%W 60%M	0.90

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
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DRILL STEM TEST REPORT

Discovery Natural Resources, llc

410 17St STE 900
Denver CO 80202-4420

ATTN: Jim Musgrove/Gary Do

Pfenninger #10D-30-1831

30-18s-31w Scot,KS

Job Ticket: 57024

DST#: 3

Test Start: 2014.06.22 @ 23:08:00

GENERAL INFORMATION:

Formation: **Fort Scott - Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:48:15

Time Test Ended: 06:26:00

Interval: **4450.00 ft (KB) To 4572.00 ft (KB) (TVD)**

Total Depth: 4572.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

Reference Elevations: 2993.00 ft (KB)

2983.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8650 Outside

Press@RunDepth: psig @ 4451.00 ft (KB)

Start Date: 2014.06.22

End Date: 2014.06.23

Start Time: 23:08:15

End Time: 06:26:00

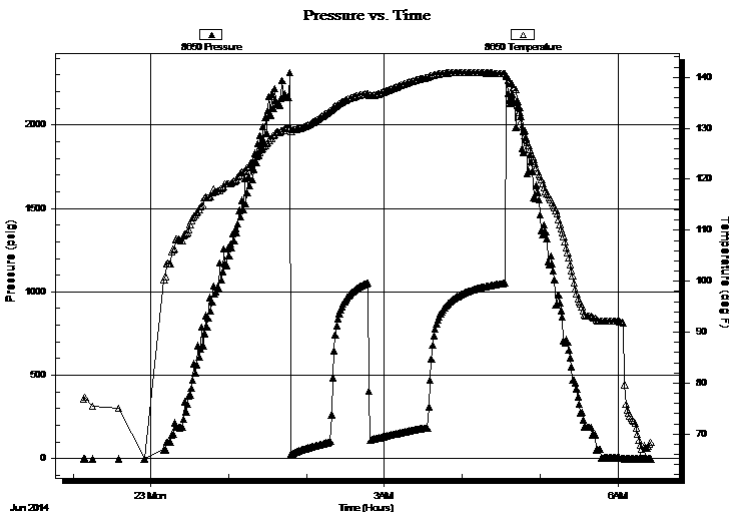
Capacity: 8000.00 psig

Last Calib.: 2014.06.23

Time On Btm:

Time Off Btm:

TEST COMMENT: Built to 5" blow
Bled off for 3 min. No return blow
Built to 4 1/2" blow
Bled off for 3 min. No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
182.00	mcw 10%M 90%W	0.90
183.00	w cm 40%W 60%M	0.90

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57024

DST#: 3

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.22 @ 23:08:00

Tool Information

Drill Pipe:	Length: 4090.88 ft	Diameter: 3.80 inches	Volume: 57.38 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: 30000.00 lb
Drill Collar:	Length: 364.53 ft	Diameter: 2.25 inches	Volume: 1.79 bbl	Weight to Pull Loose: 93000.00 lb
			<u>Total Volume: 59.17 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.41 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4450.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	122.00 ft			
Tool Length:	142.00 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			4431.00	
Shut In Tool	5.00			4436.00	
Hydraulic tool	5.00			4441.00	
Packer	5.00			4446.00	20.00 Bottom Of Top Packer
Packer	4.00			4450.00	
Stubb	1.00			4451.00	
Recorder	0.00	8675	Inside	4451.00	
Recorder	0.00	8650	Outside	4451.00	
perforations	21.00			4472.00	
Change Over Sub	1.00			4473.00	
Drill Pipe	95.00			4568.00	
Change Over Sub	1.00			4569.00	
Bullnose	3.00			4572.00	122.00 Bottom Packers & Anchor

Total Tool Length: 142.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Discovery Natural Resources, llc

Pfenninger #10D-30-1831

410 17St STE 900
Denver CO 80202-4420

30-18s-31w Scot,KS

Job Ticket: 57024

DST#: 3

ATTN: Jim Musgrove/Gary Do

Test Start: 2014.06.22 @ 23:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
182.00	mcw 10%M 90%W	0.895
183.00	w cm 40%W 60%M	0.904

Total Length: 365.00 ft Total Volume: 1.799 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

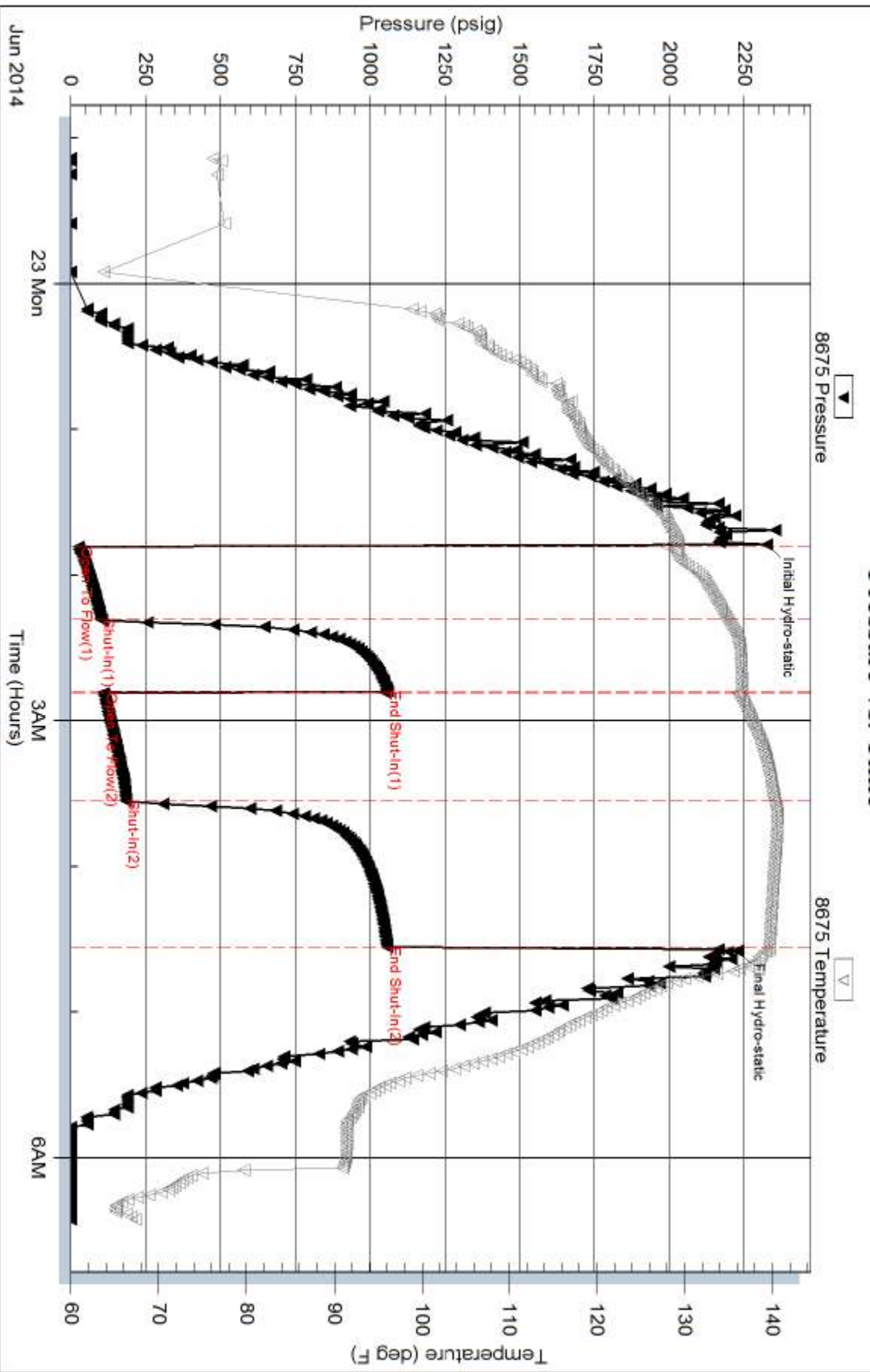
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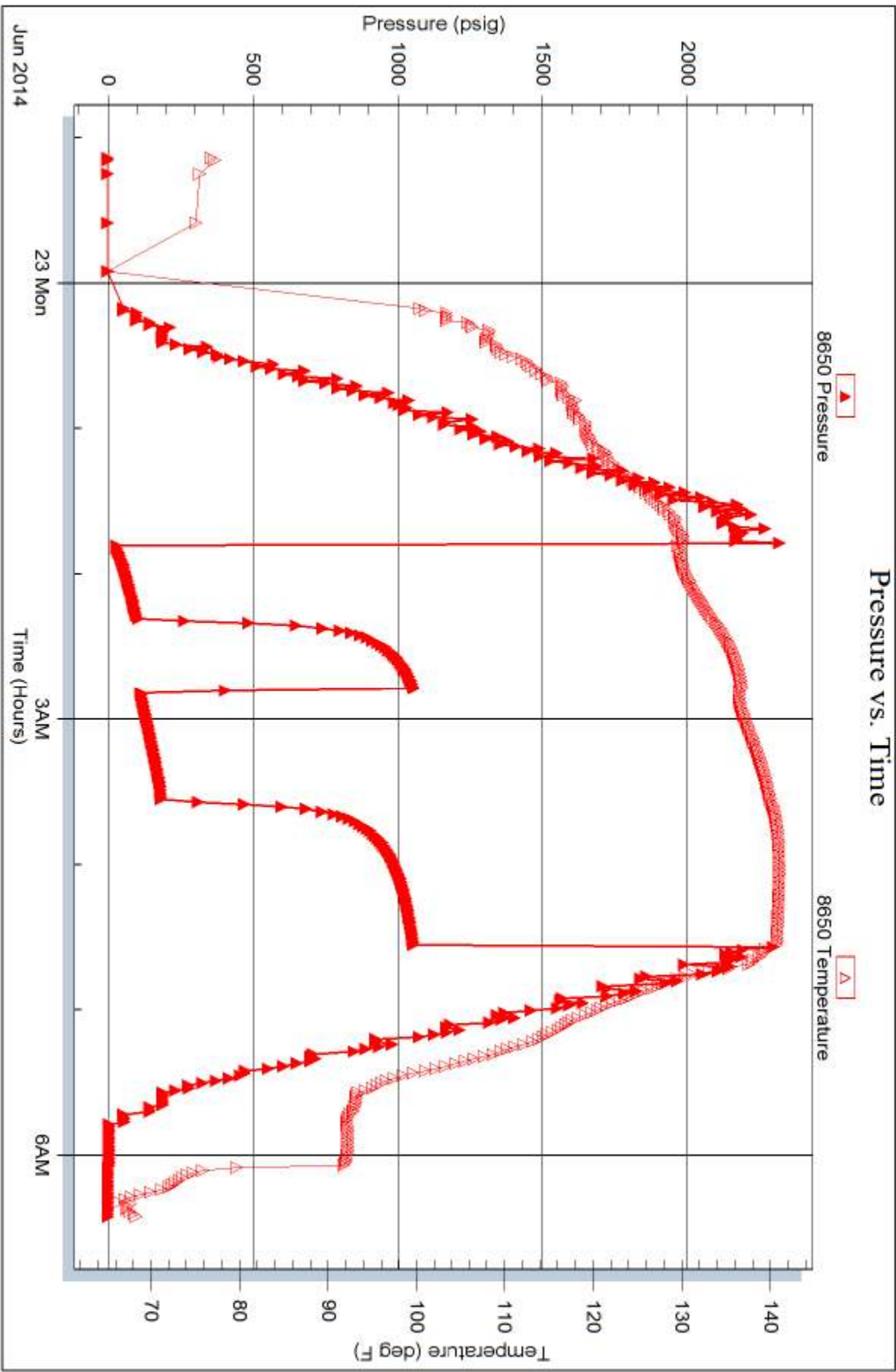
Laboratory Name:

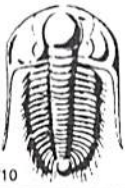
Laboratory Location:

Recovery Comments: RW: .23 @ 60 F = 40,000

Pressure vs. Time







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57022

Well Name & No. Pfenninger 100-30-1831 Test No. 1 Date 6/21/14
 Company Discovery Natural Resources, LLC Elevation 2493 KB 2483 GL
 Address 410 17th ST STE 900, Denver CO, 80202-4420
 Co. Rep / Geo. Jim Musgrove + Gary Duke Rig H&J Drilling Rig 1
 Location: Sec. 30 Twp. 18s Rge. 3lw Co. Scott County State K5

Interval Tested 4291-4320 Zone Tested Lansing "L"
 Anchor Length 29 Drill Pipe Run 3932.38 Mud Wt. 9.3
 Top Packer Depth 4287 Drill Collars Run 364.53 Vis 52
 Bottom Packer Depth 4291 Wt. Pipe Run _____ WL 7.2
 Total Depth 4320 Chlorides 2,000 ppm System LCM 4

Blow Description Weak surface died in 20 mins
No return below
No blow, Flushed tool, Surge below
No return below

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud with oil spots</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 130 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm
 (A) Initial Hydrostatic 2,239 Test 1250 T-On Location 02:15
 (B) First Initial Flow 17 Jars _____ T-Started 02:45
 (C) First Final Flow 16 Safety Joint _____ T-Open 05:08
 (D) Initial Shut-In 175 Circ Sub N/C T-Pulled 07:38
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 09:13
 (F) Second Final Flow 22 Mileage 18 BT 27.90 Comments _____
 (G) Final Shut-In 306 Sampler _____
 (H) Final Hydrostatic 2,199 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 60
 Day Standby _____
 Accessibility 150
 Sub Total 1427.90
 Sub Total 1427.90

Approved By [Signature] Our Representative [Signature]

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. 57023

4/10

Well Name & No. Pfennings 100-30-1831 Test No. 2 Date 6/21/14 6/22/14
 Company Discovering Natural Resources, LLC Elevation 2993 KB 2983 GL
 Address 410 17th ST STE 900, Denver CO, 80202-4420
 Co. Rep / Geo. Jim Minsgrove / Corey Duke Rig H2 Drilling Rig 1
 Location: Sec. 30 Twp. 18s Rge. 31w Co. Scott County State K5

Interval Tested 4312-4385 Zone Tested Pleasanton, Marmaton 'A+B'
 Anchor Length 73 Drill Pipe Run 3932.28 Mud Wt. 9.4
 Top Packer Depth 4308 Drill Collars Run 364.53 Vis 60
 Bottom Packer Depth 4312 Wt. Pipe Run WL 8.4
 Total Depth 4385 Chlorides 2,000 ppm System LCM 4#

Blow Description Built to 3" below
No return below
Built to 2" below
No return below

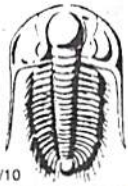
Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>600</u>	<u>10</u>	<u>90</u>		
<u>50</u>	<u>600M</u>	<u>10</u>	<u>40</u>		<u>50</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 100 BHT 131 Gravity 30 API RW @ ° F Chlorides ppm
 (A) Initial Hydrostatic 2,161 Test 1250 T-On Location 18:40
 (B) First Initial Flow 21 Jars T-Started 18:50
 (C) First Final Flow 41 Safety Joint T-Open 20:56
 (D) Initial Shut-In 243 Circ Sub W/C T-Pulled 23:41
 (E) Second Initial Flow 46 Hourly Standby T-Out 01:26
 (F) Second Final Flow 63 Mileage 18 BT 27.90 Comments
 (G) Final Shut-In 252 Sampler
 (H) Final Hydrostatic 2,141 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder Sub Total 0
 Day Standby Total 1427.90
 Accessibility 150 MP/DST Disc't
 Sub Total 1427.90

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 60

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57024

Well Name & No. Penninger 100-30-1831 Test No. 3 Date 6/22/14 6/23/14
 Company Discovery Natural Resources, LLC Elevation 2993 KB 2983 GL
 Address 410 17th ST STE 900, Denver CO. 80202-4420
 Co. Rep / Geo. Jim Musgrave / Gary Duke Rig H2 Drilling Rig I
 Location: Sec. 30 Twp. 18S Rge. 3W Co. Scott County State KS

Interval Tested 4450-4572 Zone Tested Fort Scott - Johnson
 Anchor Length 122 Drill Pipe Run 4090.88 Mud Wt. 9.3
 Top Packer Depth 4446 Drill Collars Run 364.53 Vis 65
 Bottom Packer Depth 4450 Wt. Pipe Run _____ WL 7.6
 Total Depth 4572 Chlorides 1,500 ppm System LCM 4

Blow Description Built to 5" below
Bled off for 3 min. No return below
Built to 4 1/2" below

Bled off for 3 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>183</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	
<u>182</u>	<u>MCM</u>		<u>90</u>	<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 365 BHT 140 Gravity _____ API RW 0.23 @ 60 °F Chlorides 40,000 ppm
 (A) Initial Hydrostatic 2,326 Test 1250 T-On Location 23:00
 (B) First Initial Flow 28 Jars _____ T-Started 23:08
 (C) First Final Flow 101 Safety Joint _____ T-Open 01:48
 (D) Initial Shut-In 1,058 Circ Sub N/C T-Pulled 04:33
 (E) Second Initial Flow 110 Hourly Standby _____ T-Out 06:26
 (F) Second Final Flow 185 Mileage 18 AT X2 55.80 Comments Loaded tools
 (G) Final Shut-In 1,056 Sampler _____ 6/23 @ 19:30
 (H) Final Hydrostatic 2,228 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1455.80
 Accessibility 150 MP/DST Disc't _____
 Sub Total 1455.80

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 60

Approved By [Signature] Our Representative [Signature]

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