



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Company LLC**

704 E 12 Th
Hays KS 67601

ATTN: Dave Hertel

Sophie #1

27-14s-18w Ellis,KS

Start Date: 2013.02.26 @ 15:45:45

End Date: 2013.02.27 @ 01:00:45

Job Ticket #: 50396 DST #: 1

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

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

27-14s-18w Ellis, KS

704 E 12 Th
Hays KS 67601

Sophie #1

Job Ticket: 50396

DST#: 1

ATTN: Dave Hertel

Test Start: 2013.02.26 @ 15:45:45

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:58:15

Time Test Ended: 01:00:45

Test Type: Conventional Straddle (Initial)

Tester: Jeff Brown

Unit No: 44

Interval: 3626.00 ft (KB) To 3678.00 ft (KB) (TVD)

Reference Elevations: 2073.00 ft (KB)

Total Depth: 3779.00 ft (KB) (TVD)

2065.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8679

Inside

Press @ Run Depth: 112.07 psig @ 3664.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.26

End Date:

2013.02.27

Last Calib.:

2013.02.27

Start Time: 15:45:46

End Time:

00:35:45

Time On Btm:

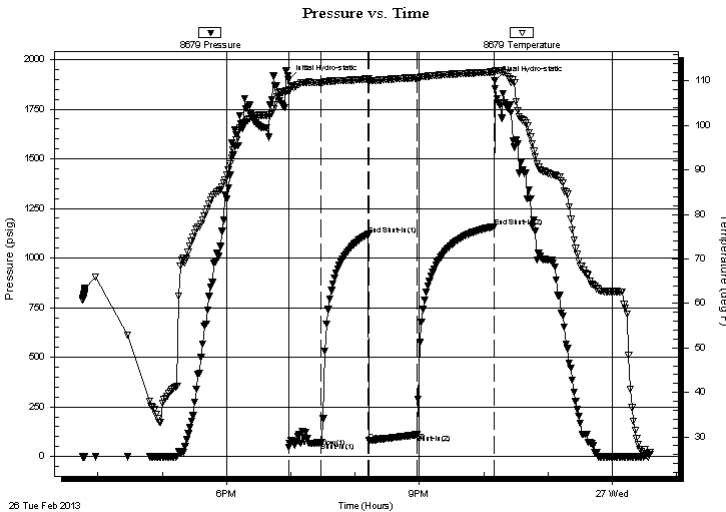
2013.02.26 @ 18:57:45

Time Off Btm:

2013.02.26 @ 22:10:15

TEST COMMENT: IFP=Fair blow built to 8 1/2"
ISI=Weak surface blow back died out in 15 min
FFP=Fair blow built to 8 1/2"
FSI=Dead no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1899.64	107.90	Initial Hydro-static
1	46.46	107.50	Open To Flow (1)
31	71.63	109.59	Shut-In(1)
75	1119.39	110.44	End Shut-In(1)
75	78.93	110.10	Open To Flow (2)
120	112.07	110.64	Shut-In(2)
192	1157.08	112.02	End Shut-In(2)
193	1892.75	112.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
61.00	OCM 25%O 75%M	0.59
62.00	HOCWM 48%O 2%W 50%M	0.87
62.00	MCO 50%O 50%M	0.87

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Company LLC

27-14s-18w Ellis,KS

704 E 12 Th
Hays KS 67601

Sophie #1

Job Ticket: 50396

DST#: 1

ATTN: Dave Hertel

Test Start: 2013.02.26 @ 15:45:45

Tool Information

Drill Pipe:	Length: 3609.00 ft	Diameter: 3.80 inches	Volume: 50.62 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 50.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 41000.00 lb
Depth to Top Packer:	3626.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	3678.00 ft			
Interval between Packers:	52.00 ft			
Tool Length:	173.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			3607.00	
Shut In Tool	5.00			3612.00	
Hydraulic tool	5.00			3617.00	
Packer	4.00			3621.00	20.00 Bottom Of Top Packer
Packer	5.00			3626.00	
Stubb	1.00			3627.00	
Perforations	4.00			3631.00	
Change Over Sub	1.00			3632.00	
Drill Pipe	31.00			3663.00	
Change Over Sub	1.00			3664.00	
Recorder	0.00	8679	Inside	3664.00	
Recorder	0.00	8321	Outside	3664.00	
Perforations	10.00			3674.00	
Blank Off Sub	1.00			3675.00	
Stubb	3.00			3678.00	52.00 Tool Interval
Packer	1.00			3679.00	
Stubb	1.00			3680.00	
Recorder	0.00	6625	Below	3680.00	
Change Over Sub	1.00			3681.00	
Drill Pipe	94.00			3775.00	
Change Over Sub	1.00			3776.00	
Bullnose	3.00			3779.00	101.00 Bottom Packers & Anchor

Total Tool Length: 173.00



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TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Company LLC

27-14s-18w Ellis,KS

704 E 12 Th
Hays KS 67601

Sophie #1

Job Ticket: 50396

DST#: 1

ATTN: Dave Hertel

Test Start: 2013.02.26 @ 15:45:45

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
61.00	OCM 25%O 75%M	0.591
62.00	HOCWM 48%O 2%W 50%M	0.870
62.00	MCO 50%O 50%M	0.870

Total Length: 185.00 ft

Total Volume: 2.331 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8679

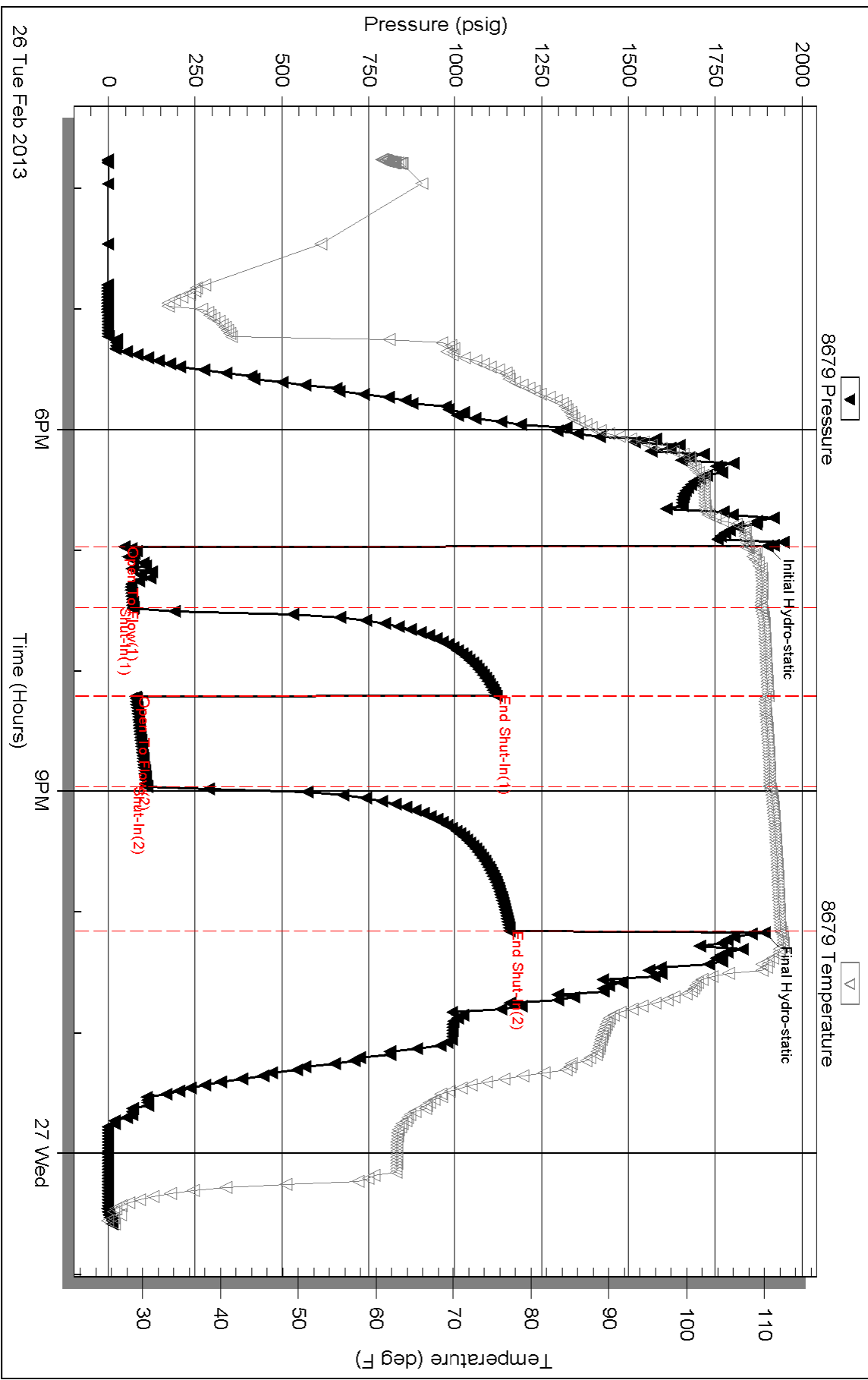
Inside

Hertel Oil Company LLC

Sophie #1

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 50396

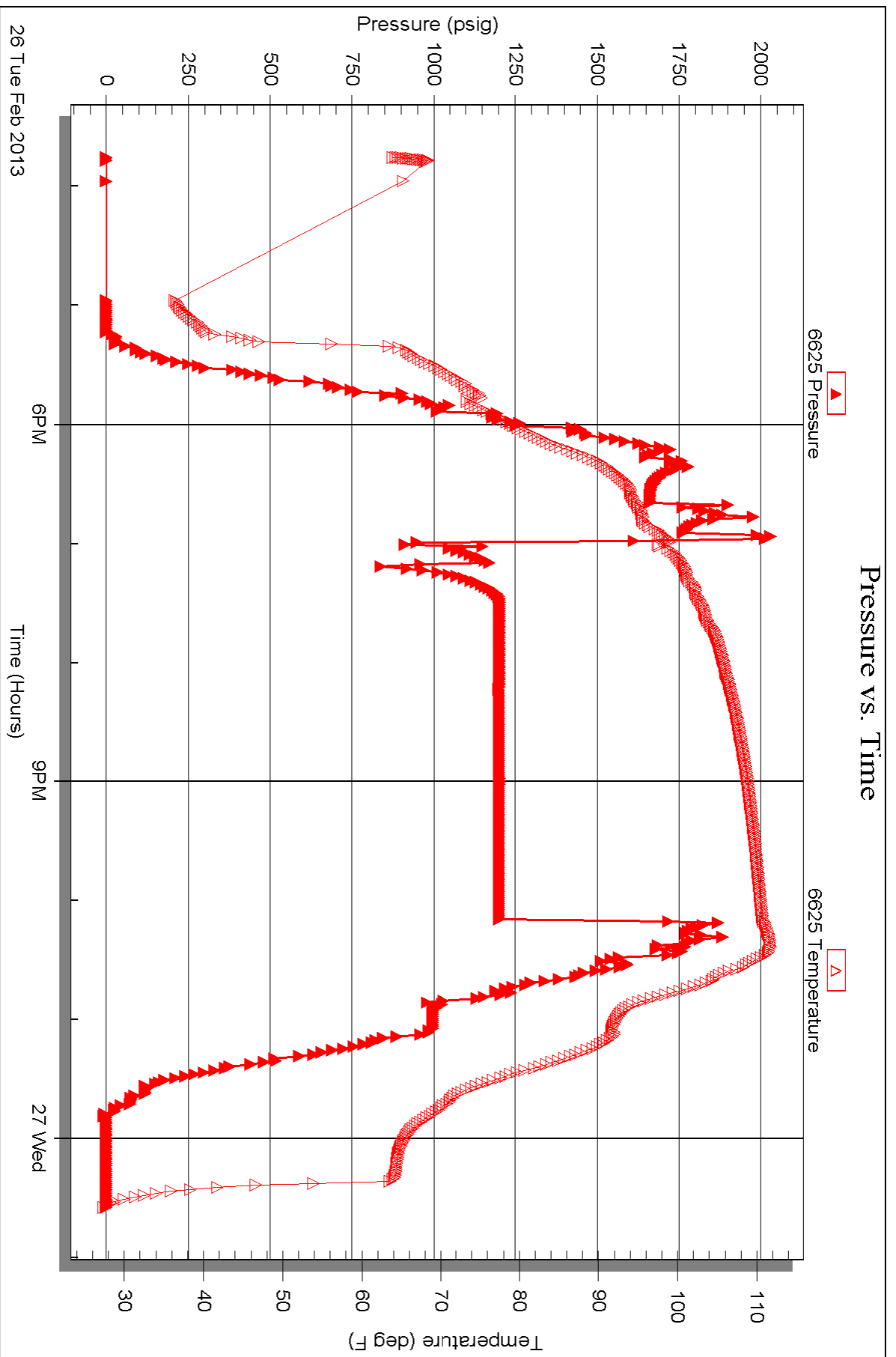
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Serial #: 6625

Below (Stratfield) Oil Company LLC

Sophie #1

DST Test Number: 1

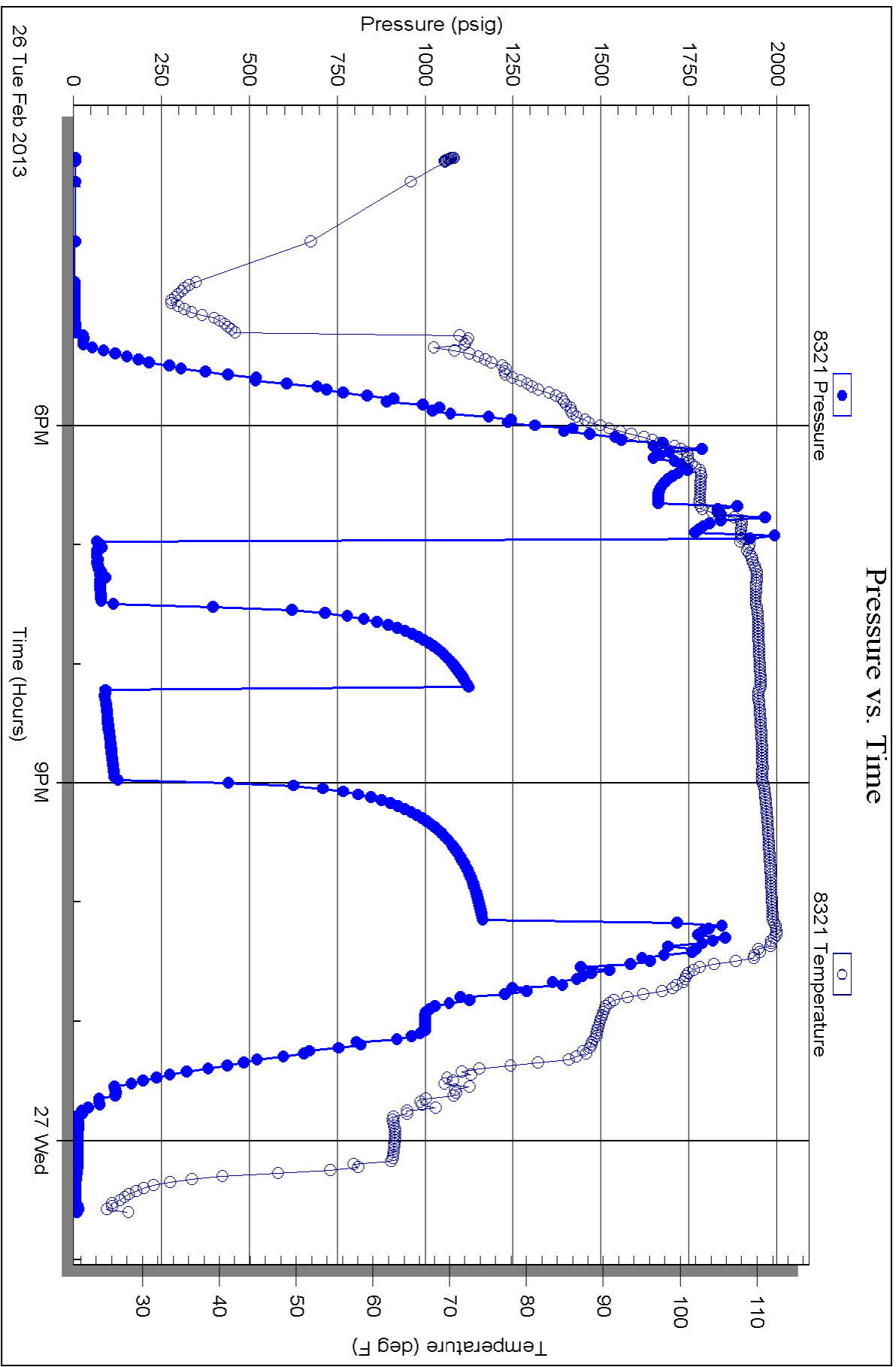


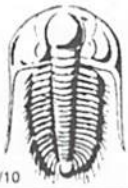
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Outside Hertel Oil Company LLC

Sophie #1

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50396

Well Name & No. Sophie #1 Test No. 1 Date 2-26-13
 Company Hertel Oil Company LLC Elevation 2073 KB 2065 GL
 Address 704 E 12th St Hays KS 67601 + 3440
 Co. Rep / Geo. Herb Deines Rig Discovery #1
 Location: Sec. 27 Twp. 14S Rge. 18W Co. ELLIS State KS

Interval Tested 3626-3678 Zone Tested Ar Buckle
 Anchor Length 52' Air 101' Tail Drill Pipe Run 3609 Mud Wt. 8.9
 Top Packer Depth 3621 Drill Collars Run 29 Vis 60
 Bottom Packer Depth 3626 Wt. Pipe Run 0 WL 7.8
 Total Depth 3779 Chlorides 3900 ppm System LCM 2

Blow Description IFF-Fair Blow Built To 8 1/2 IN
ISI-Weak Surface Blow Back
FFF-Fair Blow Built To 8 1/2 IN
FSI-Dead NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>601</u>	<u>OCM</u>	<u>25</u>	<u>75</u>	<u>0</u>	<u>0</u>
<u>602</u>	<u>Hochwm</u>	<u>48</u>	<u>2</u>	<u>50</u>	<u>0</u>
<u>602</u>	<u>MCO</u>	<u>50</u>	<u>50</u>	<u>0</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 185 BHT 112 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1900 Test 1150 T-On Location 14:53
 (B) First Initial Flow 46 Jars _____ T-Started 15:45
 (C) First Final Flow 72 Safety Joint _____ T-Open 18:58
 (D) Initial Shut-In 1119 Circ Sub _____ T-Pulled 21:58
 (E) Second Initial Flow 79 Hourly Standby _____ T-Out 1:00
 (F) Second Final Flow 112 Mileage 16 RT 24.80 Comments _____
 (G) Final Shut-In 1157 Sampler _____
 (H) Final Hydrostatic 1893 Straddle 600 Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 45 Extra Packer _____ Extra Copies _____
 Final Flow 45 Extra Recorder _____ Sub Total 0
 Final Shut-In 60 Day Standby _____ Total 1774.80
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1774.80

Approved By _____ Our Representative Jeff Brown

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