



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58763

DST#: 1

Test Start: 2014.04.25 @ 18:27:51

GENERAL INFORMATION:

Formation: **LaCompton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:05:21

Time Test Ended: 00:49:51

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan L

Unit No: 48

Interval: 3322.00 ft (KB) To 3340.00 ft (KB) (TVD)

Reference Elevations: 2101.00 ft (KB)

Total Depth: 3340.00 ft (KB) (TVD)

2096.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372

Inside

Press @ Run Depth: 37.79 psig @ 3323.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.25

End Date:

2014.04.26

Last Calib.:

2014.04.26

Start Time: 18:27:52

End Time:

00:49:51

Time On Btm:

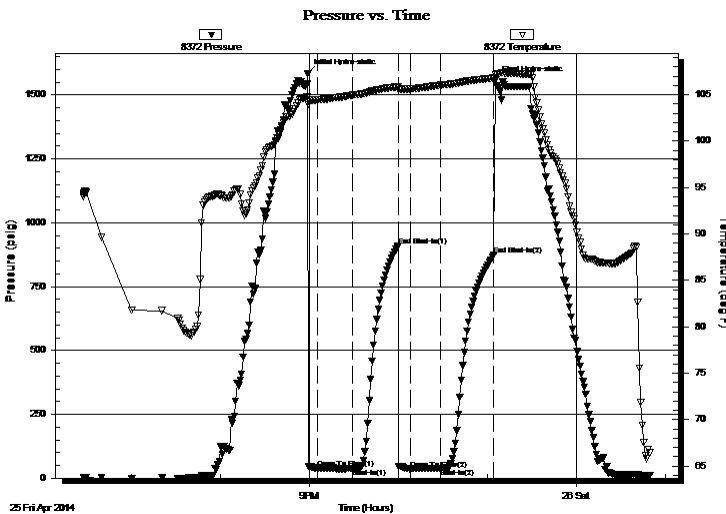
2014.04.25 @ 20:58:51

Time Off Btm:

2014.04.25 @ 23:05:21

TEST COMMENT: 30- IF- No blow
30- IS- No blow
30- FF- No blow
30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1584.92	104.79	Initial Hydro-static
7	37.91	104.42	Open To Flow (1)
30	38.04	104.94	Shut-In(1)
61	909.89	105.86	End Shut-In(1)
70	36.17	105.61	Open To Flow (2)
90	37.79	106.02	Shut-In(2)
126	873.52	106.79	End Shut-In(2)
127	1556.48	107.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mw / oil spots	0.01

Gas Rates

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



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FLUID SUMMARY

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27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58763 **DST#: 1**
Test Start: 2014.04.25 @ 18:27:51

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: 45.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.80 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2200.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mw / oil spots	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:

Serial #: 8372

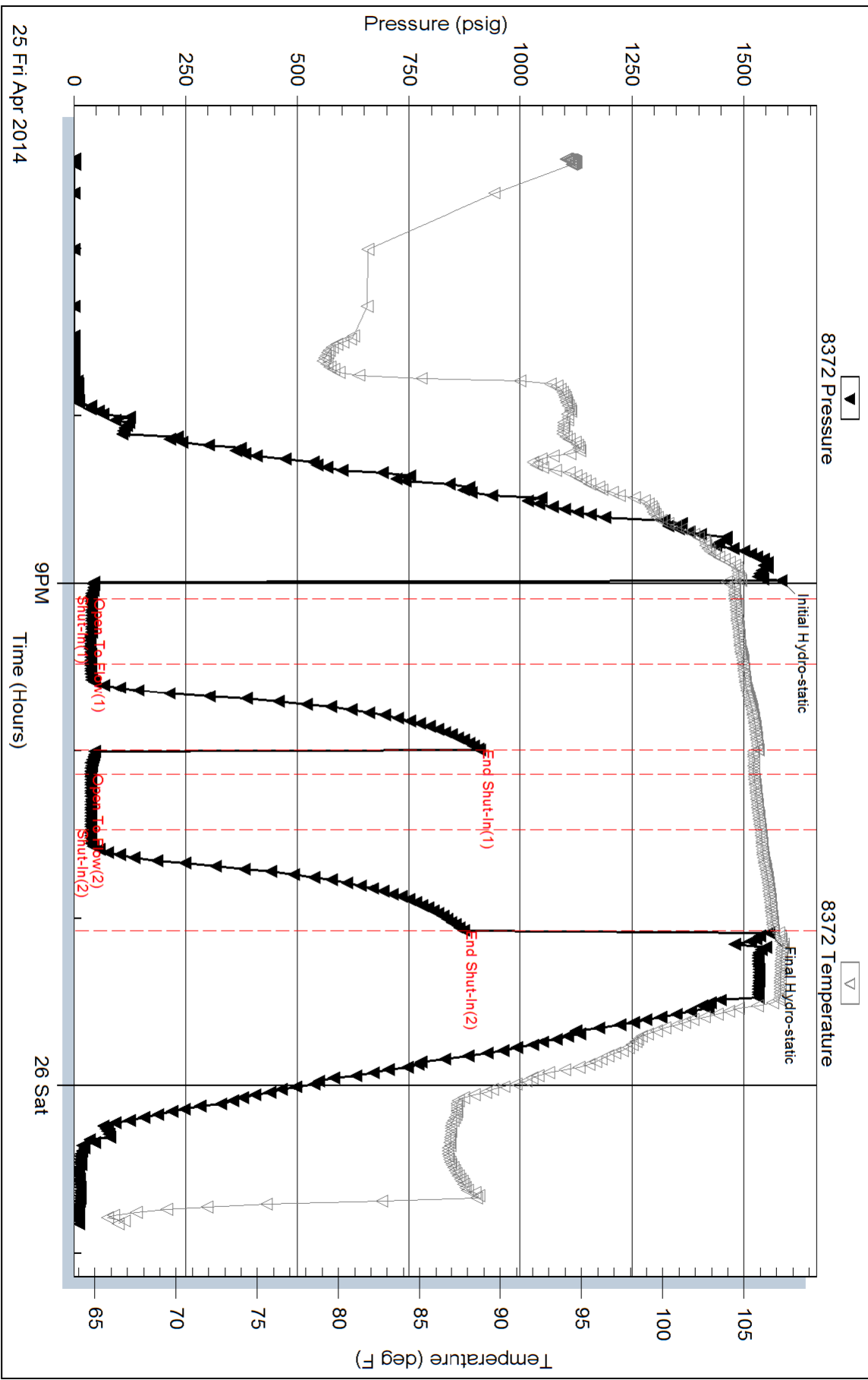
Inside

Hess Oil Company

Sack #1

DST Test Number: 1

Pressure vs. Time





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460
 ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58764

DST#: 2

Test Start: 2014.04.26 @ 14:13:22

GENERAL INFORMATION:

Formation: **Lansing**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:49:52
 Time Test Ended: 19:21:52
 Interval: **3409.00 ft (KB) To 3475.00 ft (KB) (TVD)**
 Total Depth: 3475.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan L
 Unit No: 48
 Reference Elevations: 2101.00 ft (KB)
 2096.00 ft (CF)
 KB to GR/CF: 5.00 ft

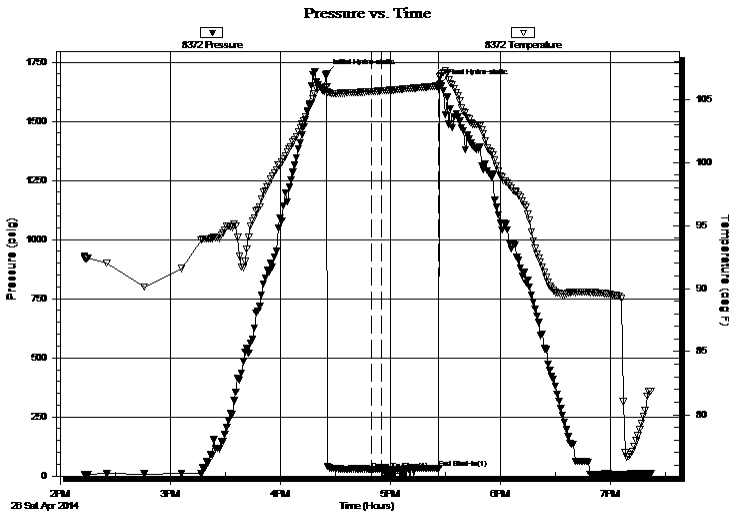
Serial #: 8372

Inside

Press @ Run Depth: 29.14 psig @ 3410.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.26 End Date: 2014.04.26 Last Calib.: 2014.04.26
 Start Time: 14:13:23 End Time: 19:21:52 Time On Btm: 2014.04.26 @ 16:25:22
 Time Off Btm: 2014.04.26 @ 17:27:22

TEST COMMENT: 30- IF- Weak surface blow Died in 15mins
 30- IS- No blow
 Pulled tool

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1699.70	105.98	Initial Hydro-static
25	25.77	105.60	Open To Flow (1)
30	29.14	105.66	Shut-In(1)
61	33.93	106.05	End Shut-In(1)
62	1660.16	106.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

* Recovery from multiple tests

Gas Rates

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



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FLUID SUMMARY

Hess Oil Company
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ATTN: David Gould

27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58764 **DST#: 2**
Test Start: 2014.04.26 @ 14:13:22

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: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	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:

Serial #: 8372

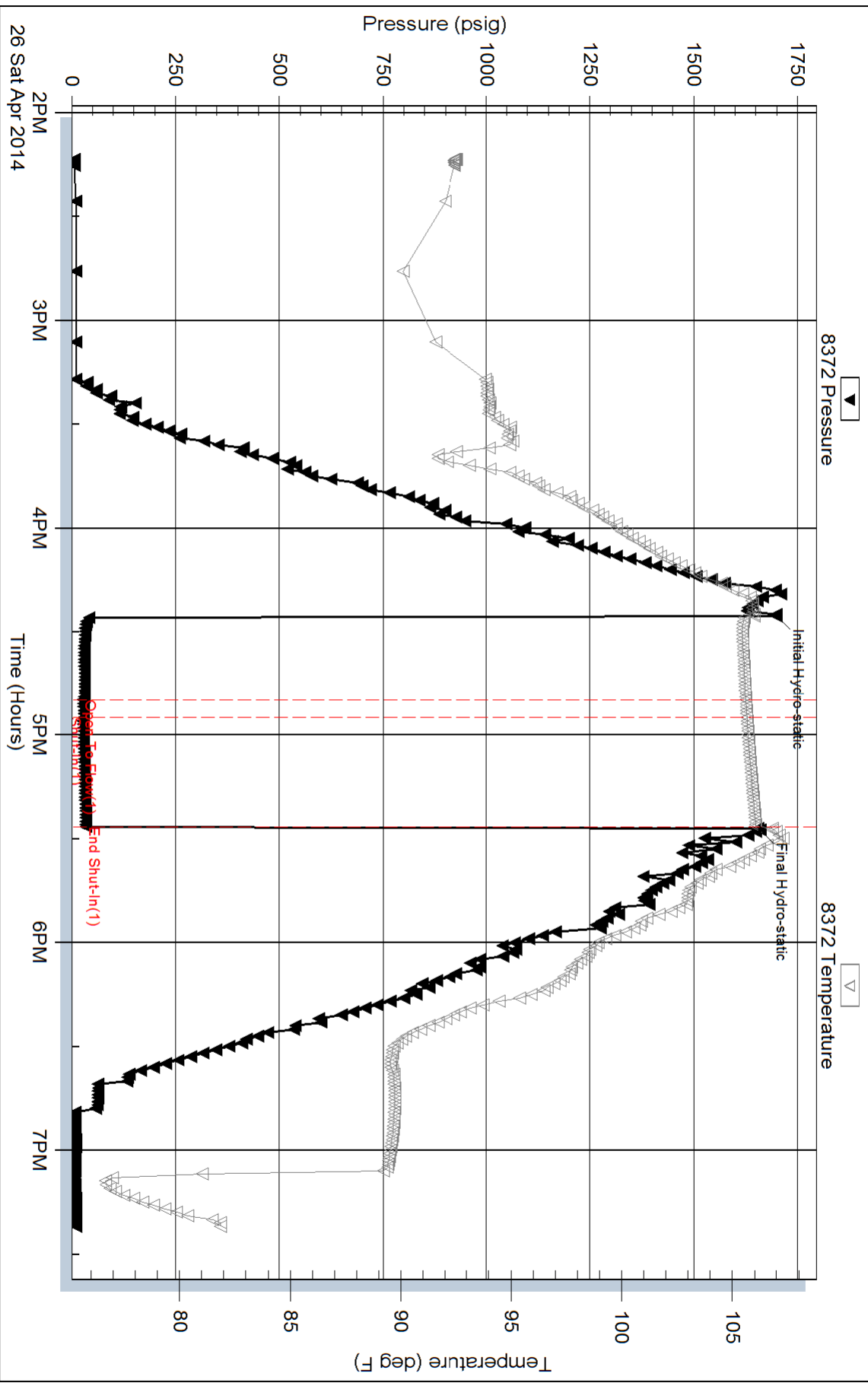
Inside

Hess Oil Company

Sack #1

DST Test Number: 2

Pressure vs. Time





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DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58765

DST#: 3

Test Start: 2014.04.27 @ 04:38:21

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:28:21
 Time Test Ended: 11:24:21
 Interval: **3474.00 ft (KB) To 3520.00 ft (KB) (TVD)**
 Total Depth: 3520.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan L
 Unit No: 48
 Reference Elevations: 2101.00 ft (KB)
 2096.00 ft (CF)
 KB to GR/CF: 5.00 ft

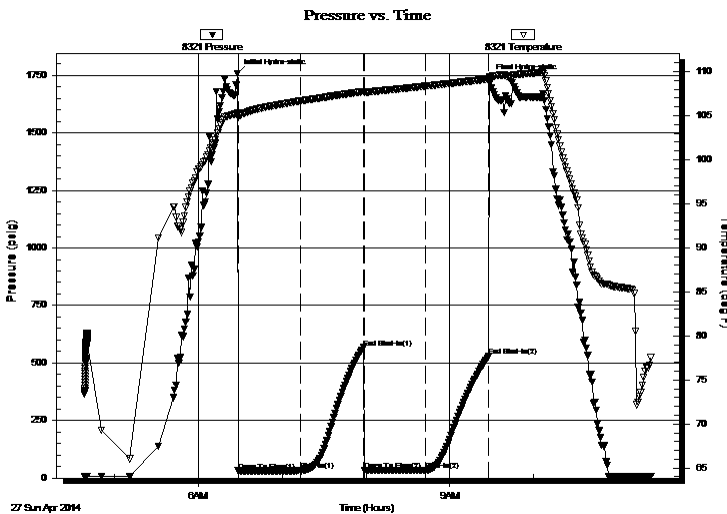
Serial #: 8321

Outside

Press @ Run Depth: 33.97 psig @ 3475.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.27 End Date: 2014.04.27 Last Calib.: 2014.04.27
 Start Time: 04:38:22 End Time: 11:24:21 Time On Btm: 2014.04.27 @ 06:27:51
 Time Off Btm: 2014.04.27 @ 09:28:21

TEST COMMENT: 45- IF- Maintained surface blow throughout
 45- IS- No blow
 45- FF- No blow
 45- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1759.06	105.29	Initial Hydro-static
1	31.17	104.78	Open To Flow (1)
45	32.51	106.67	Shut-In(1)
90	566.66	107.72	End Shut-In(1)
91	33.31	107.61	Open To Flow (2)
135	33.97	108.36	Shut-In(2)
180	528.85	109.14	End Shut-In(2)
181	1737.73	109.40	Final Hydro-static

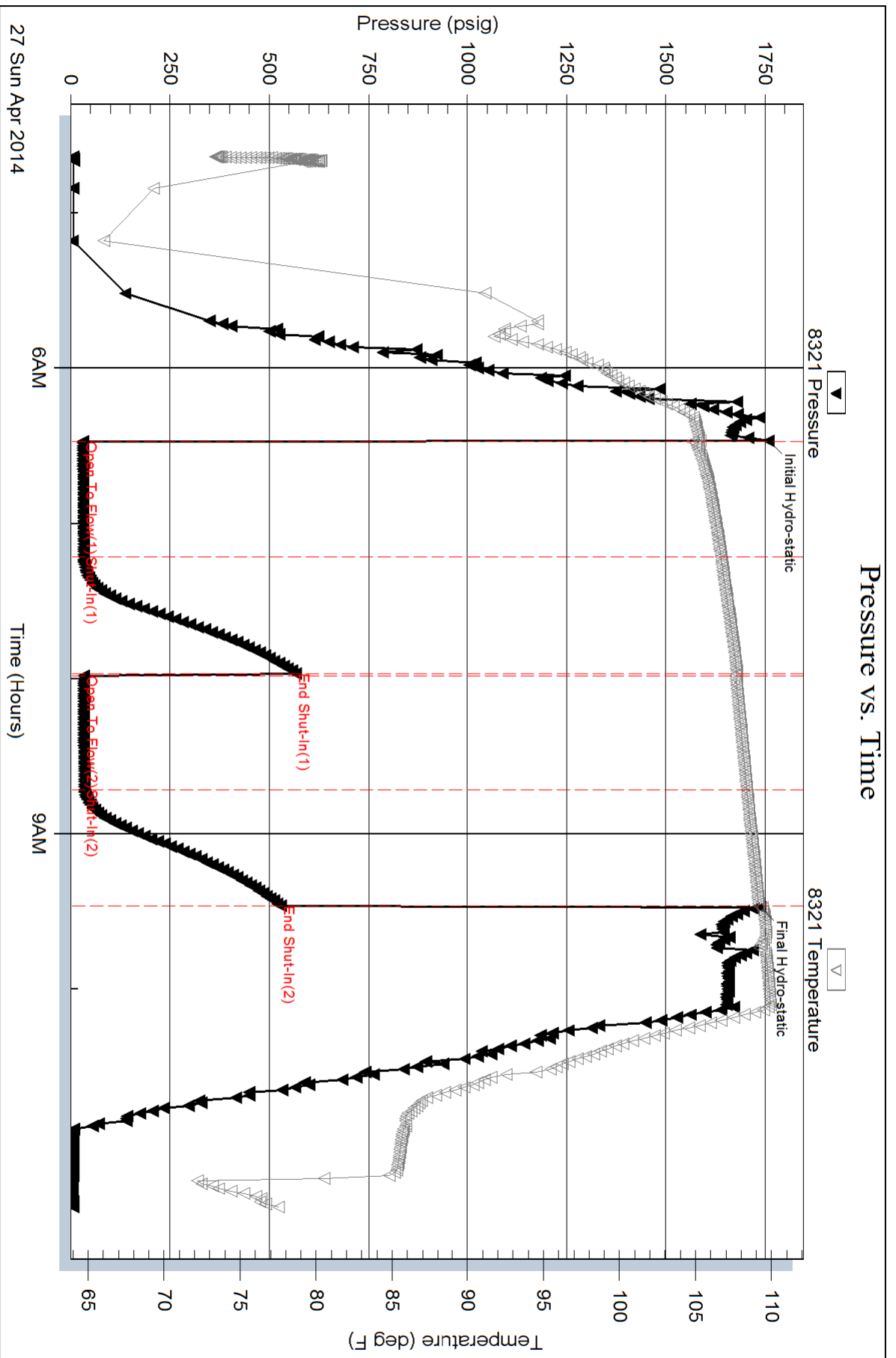
Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

* Recovery from multiple tests

Gas Rates

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



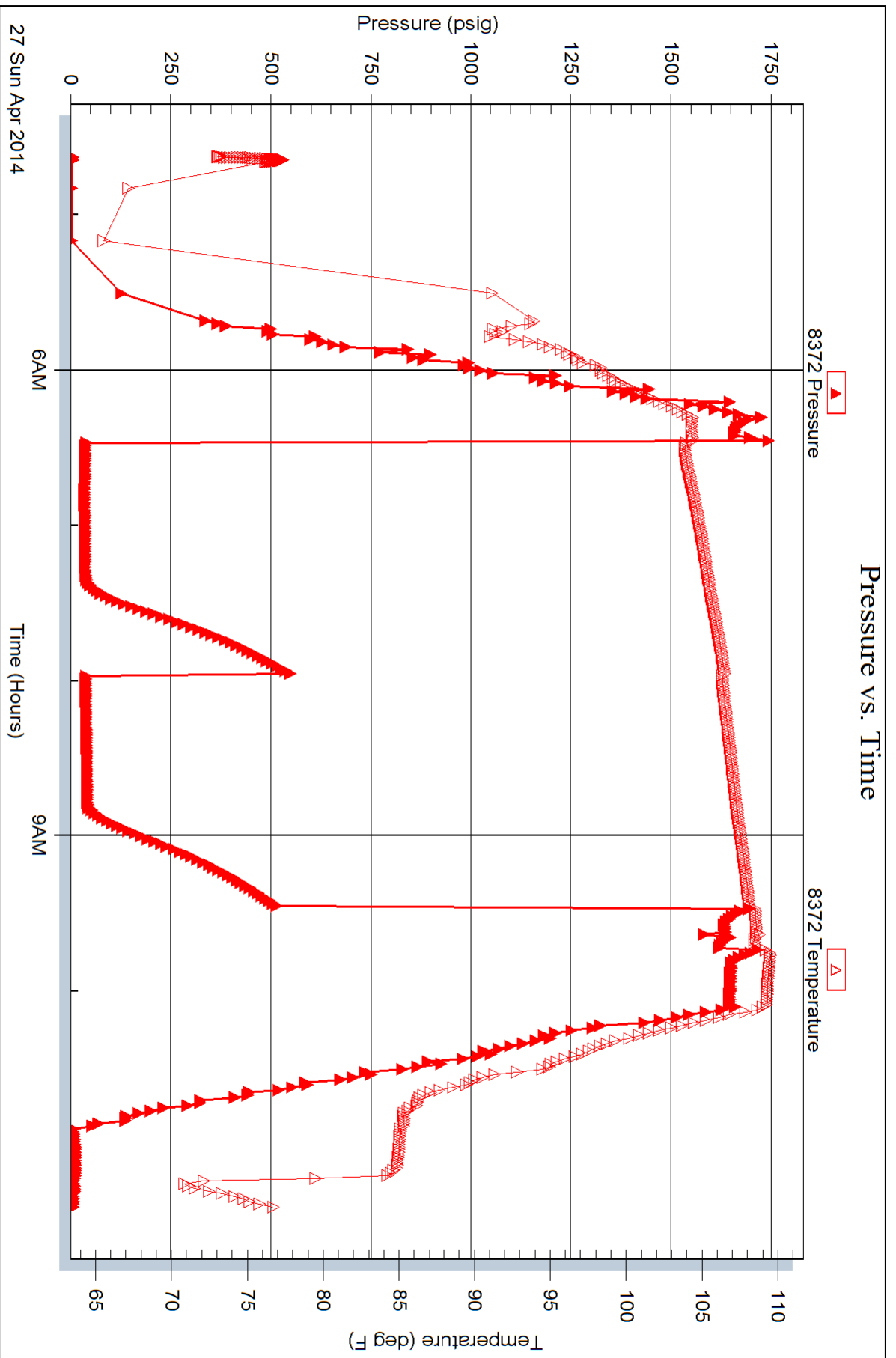
Serial #: 8372

Inside

Hess Oil Company

Sack #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 58765

Printed: 2014.04.27 @ 12:32:19



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Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58766

DST#: 4

Test Start: 2014.04.27 @ 20:51:00

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:19:30
 Time Test Ended: 05:32:00
 Interval: **3539.00 ft (KB) To 3604.00 ft (KB) (TVD)**
 Total Depth: 3604.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan L
 Unit No: 48
 Reference Elevations: 2101.00 ft (KB)
 2096.00 ft (CF)
 KB to GR/CF: 5.00 ft

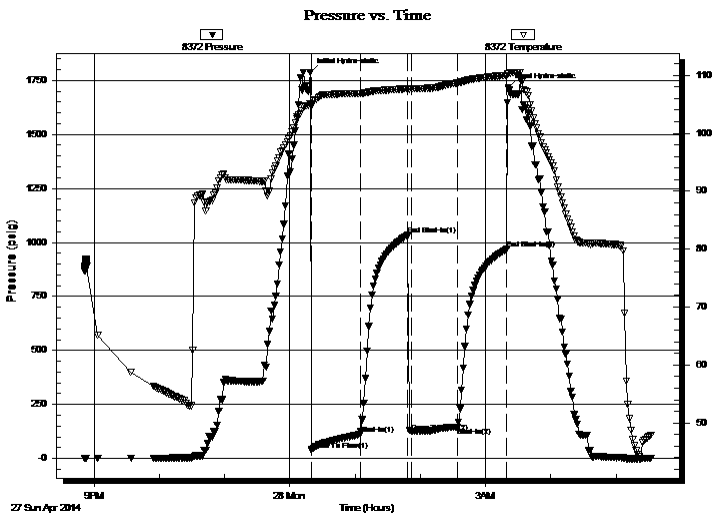
Serial #: 8372

Inside

Press @ Run Depth: 145.72 psig @ 3540.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.27 End Date: 2014.04.28 Last Calib.: 2014.04.28
 Start Time: 20:51:01 End Time: 05:32:00 Time On Btm: 2014.04.28 @ 00:18:30
 Time Off Btm: 2014.04.28 @ 03:21:00

TEST COMMENT: 45- IF- BOB 20mins
 45- ISI- No blow
 45- FF- BOB 20mins
 45- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1787.28	105.09	Initial Hydro-static
1	37.72	104.56	Open To Flow (1)
46	112.09	106.85	Shut-In(1)
90	1033.58	107.69	End Shut-In(1)
94	123.76	107.65	Open To Flow (2)
136	145.72	108.68	Shut-In(2)
181	969.37	109.98	End Shut-In(2)
183	1718.29	110.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	MCO, 30%M 70%O	1.93

* Recovery from multiple tests

Gas Rates

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



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PO Box 1009
McPherson, KS 67460
ATTN: David Gould

27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58766 **DST#: 4**
Test Start: 2014.04.27 @ 20:51:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.99 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 7300.00 ppm			
Filter Cake: inches			

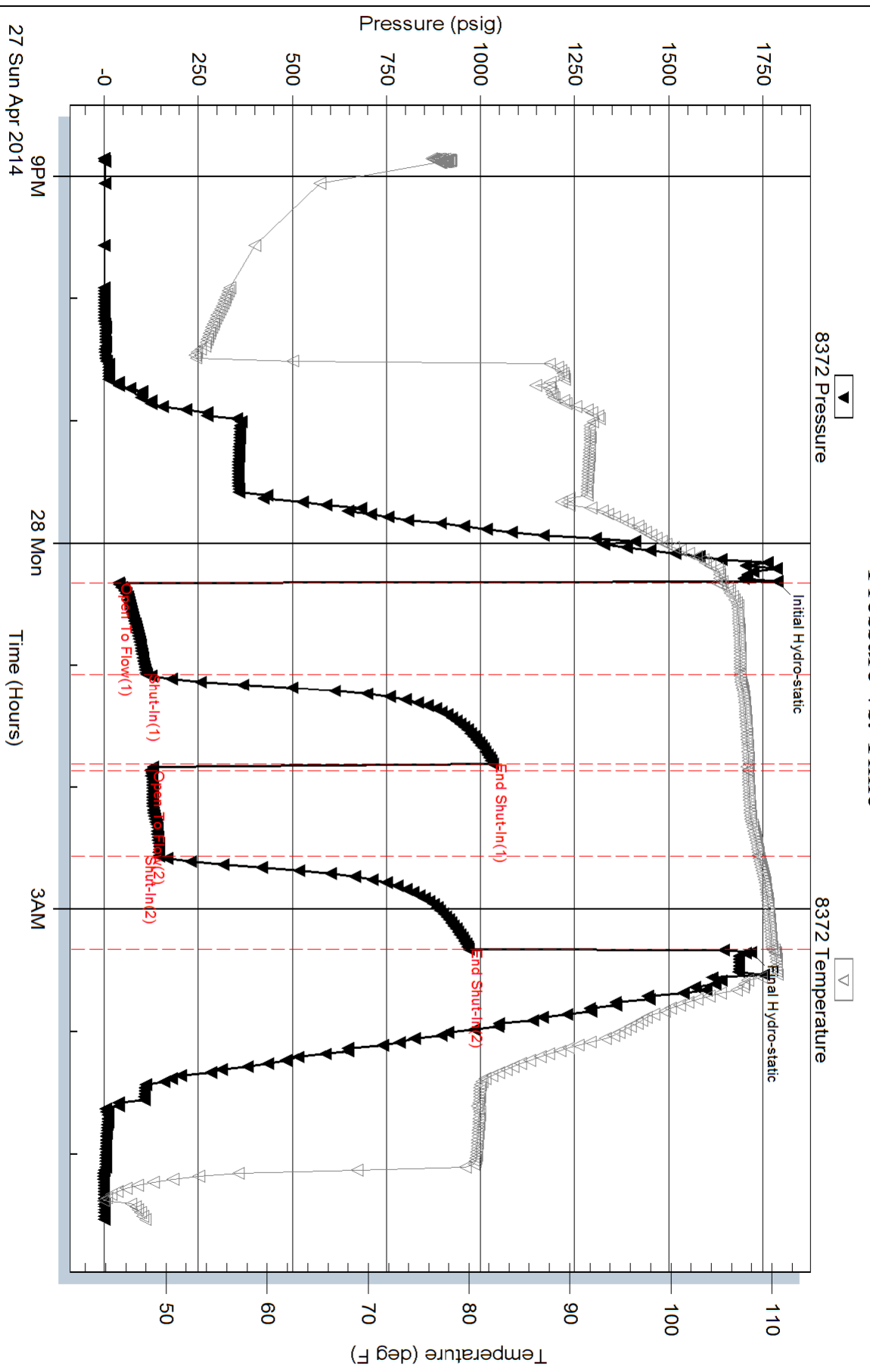
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	MCO, 30%M 70%O	1.930

Total Length: 300.00 ft Total Volume: 1.930 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time





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FLUID SUMMARY

Hess Oil Company
PO Box 1009
McPherson, KS 67460
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27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58767 **DST#: 5**
Test Start: 2014.04.25 @ 18:27:51

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	M	0.984

Total Length: 200.00 ft Total Volume: 0.984 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

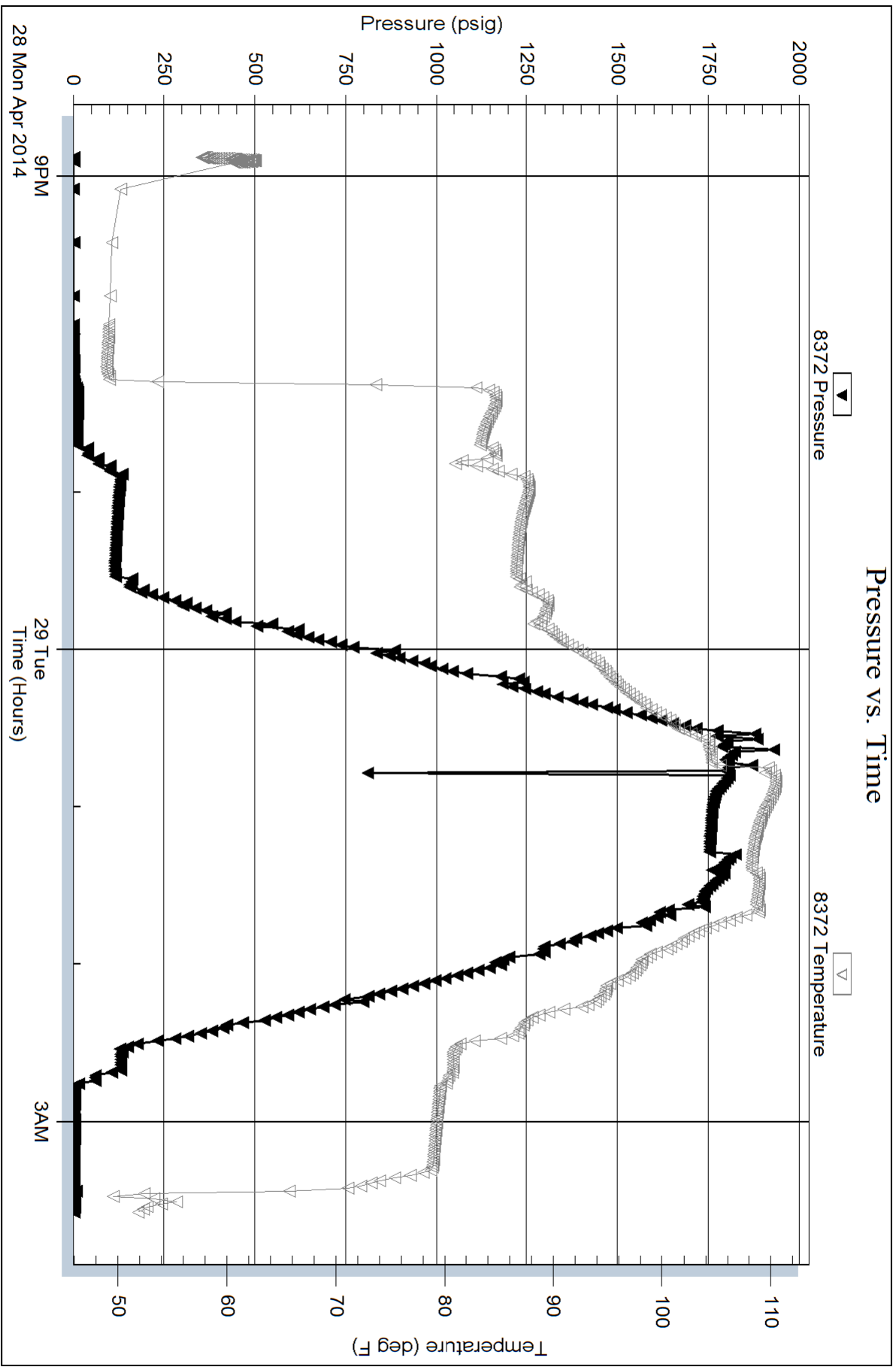
Serial #: 8372

Inside

Hess Oil Company

Sack #1

DST Test Number: 5





**TRILOBITE
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DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58768

DST#: 6

Test Start: 2014.04.29 @ 03:59:26

GENERAL INFORMATION:

Formation: **Marmaton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:21:56
 Time Test Ended: 09:43:26
 Interval: **3655.00 ft (KB) To 3710.00 ft (KB) (TVD)**
 Total Depth: 3710.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan L
 Unit No: 48
 Reference Elevations: 2101.00 ft (KB)
 2096.00 ft (CF)
 KB to GR/CF: 5.00 ft

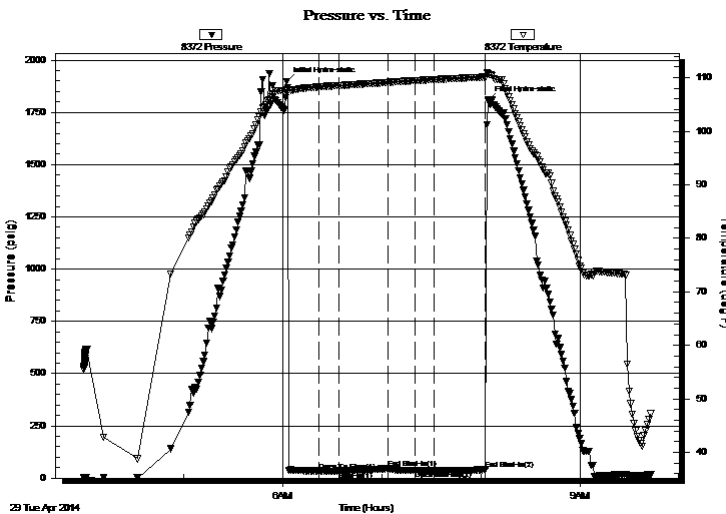
Serial #: 8372

Inside

Press@RunDepth: 35.45 psig @ 3656.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.29 End Date: 2014.04.29 Last Calib.: 2014.04.29
 Start Time: 03:59:27 End Time: 09:43:26 Time On Btm: 2014.04.29 @ 06:02:26
 Time Off Btm: 2014.04.29 @ 08:04:26

TEST COMMENT: 30- IF- Surface blow
 30- IS- No blow
 30- FF- No blow
 30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1896.36	107.61	Initial Hydro-static
20	34.49	108.30	Open To Flow (1)
32	34.08	108.52	Shut-In(1)
62	46.89	109.13	End Shut-In(1)
78	35.45	109.46	Open To Flow (2)
90	35.45	109.65	Shut-In(2)
121	40.84	110.14	End Shut-In(2)
122	1807.89	110.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

Gas Rates

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

* Recovery from multiple tests



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FLUID SUMMARY

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27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58768 **DST#: 6**
Test Start: 2014.04.29 @ 03:59:26

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8000.00 ppm			
Filter Cake: inches			

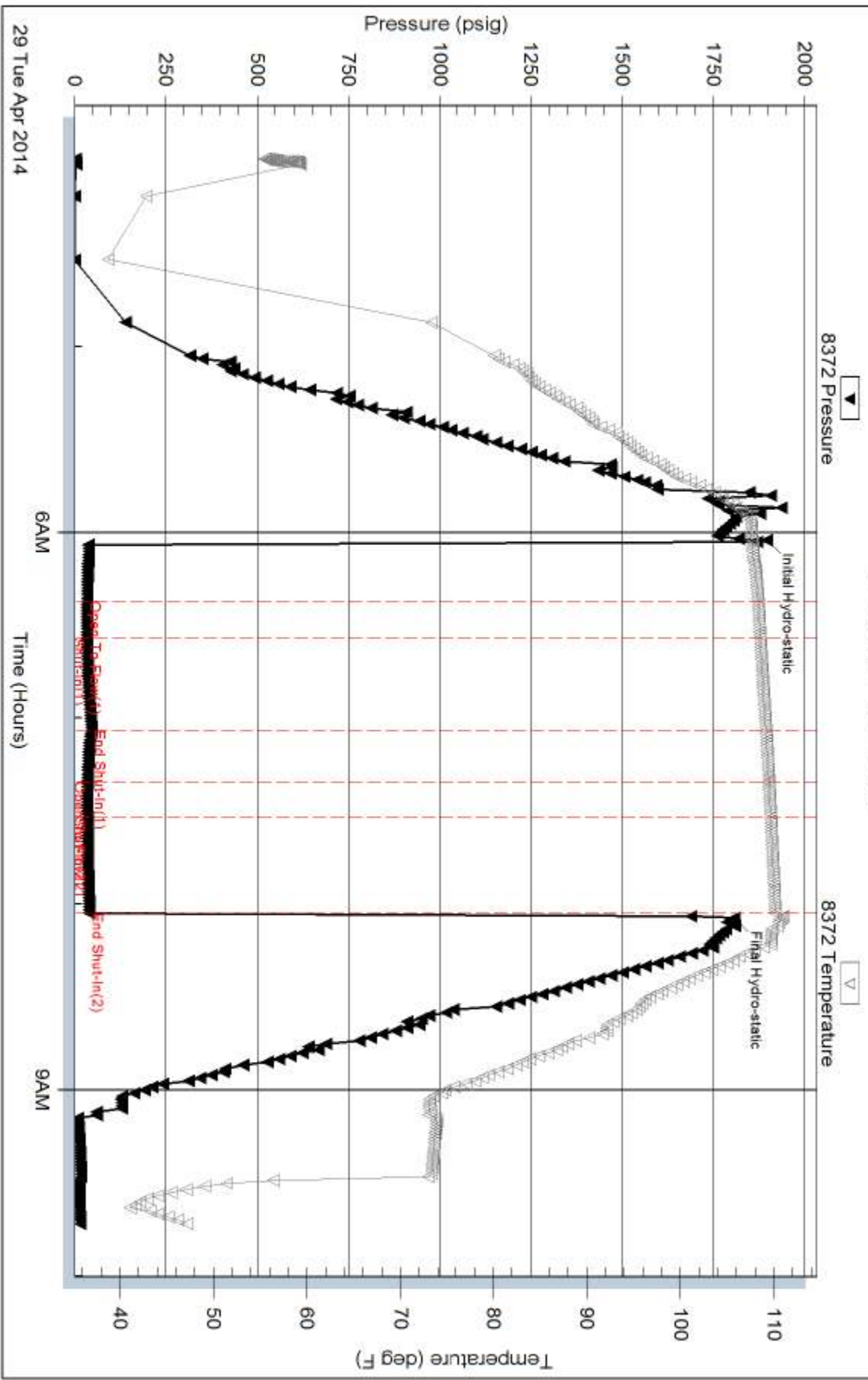
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	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:

Pressure vs. Time





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460
 ATTN: David Gould

27-13S-19W Ellis, KS

Sack #1

Job Ticket: 58769

DST#: 7

Test Start: 2014.04.29 @ 21:02:26

GENERAL INFORMATION:

Formation: **Cong.**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:03:56
 Time Test Ended: 03:20:56
 Interval: **3722.00 ft (KB) To 3760.00 ft (KB) (TVD)**
 Total Depth: 3760.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan L
 Unit No: 48
 Reference Elevations: 2101.00 ft (KB)
 2096.00 ft (CF)
 KB to GR/CF: 5.00 ft

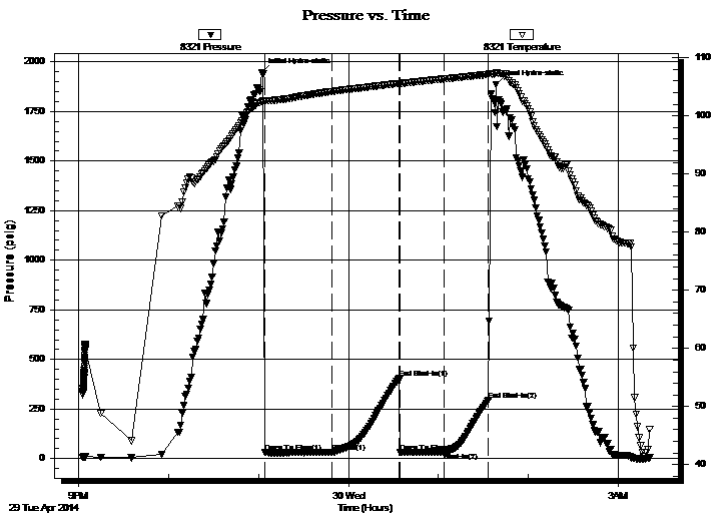
Serial #: 8321

Outside

Press@RunDepth: 33.21 psig @ 3723.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.29 End Date: 2014.04.30 Last Calib.: 2014.04.30
 Start Time: 21:02:27 End Time: 03:20:56 Time On Btm: 2014.04.29 @ 23:01:56
 Time Off Btm: 2014.04.30 @ 01:38:26

TEST COMMENT: 45- IF- Surface blow
 45- IS- No blow
 30- FF- No blow
 30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1947.32	102.44	Initial Hydro-static
2	30.32	102.48	Open To Flow (1)
47	32.61	104.19	Shut-In(1)
92	405.07	105.57	End Shut-In(1)
93	32.79	105.52	Open To Flow (2)
122	33.21	106.35	Shut-In(2)
152	293.08	107.12	End Shut-In(2)
157	1886.21	107.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

* Recovery from multiple tests

Gas Rates

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



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PO Box 1009
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ATTN: David Gould

27-13S-19W Ellis, KS
Sack #1
Job Ticket: 58769 **DST#: 7**
Test Start: 2014.04.29 @ 21:02:26

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: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.99 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	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:

Serial #: 8321

Outside Hess Oil Company

Sack #1

DST Test Number: 7

Pressure vs. Time

