



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.07.28 @ 09:51:00

End Date: 2015.07.28 @ 17:45:39

Job Ticket #: 60594 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:22:38



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
Job Ticket: 60594 **DST#: 1**
Test Start: 2015.07.28 @ 09:51:00

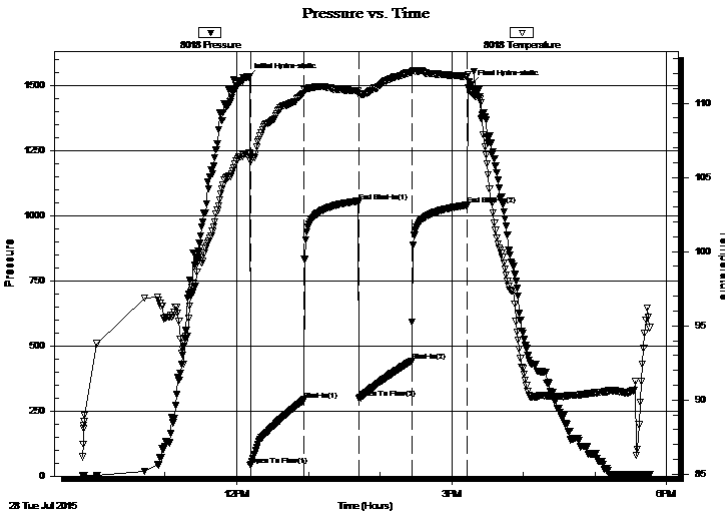
GENERAL INFORMATION:

Formation: **Shaw**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:11:25
Time Test Ended: 17:45:39
Interval: **3207.00 ft (KB) To 3254.00 ft (KB) (TVD)**
Total Depth: 3254.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 70

Serial #: 8018 Inside
Press@RunDepth: 443.12 psig @ 3214.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.07.28 End Date: 2015.07.28 Last Calib.: 2015.07.28
Start Time: 09:51:00 End Time: 17:45:39 Time On Btm: 2015.07.28 @ 12:08:55
Time Off Btm: 2015.07.28 @ 15:16:24

TEST COMMENT: 45-IFP-w k to strg in 8 min
45-ISIP-no bl
45-FFP-w k to strgf in 30 min
45-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1533.79	106.60	Initial Hydro-static
3	41.40	106.09	Open To Flow (1)
47	293.19	110.68	Shut-In(1)
93	1053.83	110.81	End Shut-In(1)
94	299.20	110.53	Open To Flow (2)
138	443.12	112.05	Shut-In(2)
184	1041.71	111.80	End Shut-In(2)
188	1504.42	110.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
620.00	Water	6.51
195.00	MW 25%M75%W w/show of oil	2.74
2.00	CO	0.03

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

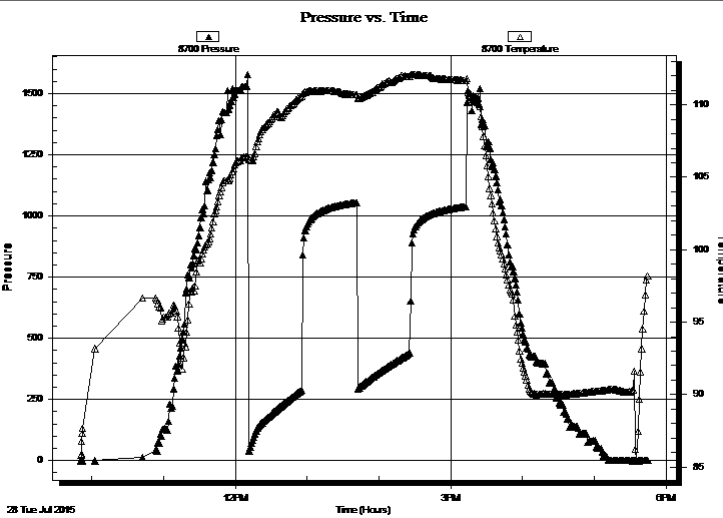
25-13s-19w Ellis,KS
Marlene #1
 Job Ticket: 60594 **DST#: 1**
 Test Start: 2015.07.28 @ 09:51:00

GENERAL INFORMATION:

Formation: Shaw			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Initial)	
Time Tool Opened: 12:11:25		Tester: Ray Schwager	
Time Test Ended: 17:45:39		Unit No: 70	
Interval: 3207.00 ft (KB) To 3254.00 ft (KB) (TVD)		Reference Elevations:	2019.00 ft (KB)
Total Depth: 3254.00 ft (KB) (TVD)			2014.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF:	5.00 ft

Serial #: 8700	Outside				
Press@RunDepth:	psig @	3214.00 ft (KB)	Capacity:	8000.00 psig	
Start Date: 2015.07.28	End Date:	2015.07.28	Last Calib.:	2015.07.28	
Start Time: 09:50:46	End Time:	17:45:10	Time On Btm:		
			Time Off Btm:		

TEST COMMENT: 45-IFP-w k to strg in 8 min
 45-ISIP-no bl
 45-FFP-w k to strgf in 30 min
 45-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
620.00	Water	6.51
195.00	MW 25%M75%W w/show of oil	2.74
2.00	CO	0.03

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60594

DST#: 1

ATTN: Bryan Hess, David Go

Test Start: 2015.07.28 @ 09:51:00

Tool Information

Drill Pipe:	Length: 2957.00 ft	Diameter: 3.80 inches	Volume: 41.48 bbl	Tool Weight: 2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 42.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	3207.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	75.00 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			3180.00	
Shut In Tool	5.00			3185.00	
Hydraulic tool	5.00			3190.00	
Jars	5.00			3195.00	
Safety Joint	2.00			3197.00	
Packer	5.00			3202.00	28.00 Bottom Of Top Packer
Packer	5.00			3207.00	
Stubb	1.00			3208.00	
Perforations	6.00			3214.00	
Recorder	0.00	8018	Inside	3214.00	
Recorder	0.00	8700	Outside	3214.00	
Blank Spacing	33.00			3247.00	
Perforations	4.00			3251.00	
Bullnose	3.00			3254.00	47.00 Bottom Packers & Anchor

Total Tool Length: 75.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60594

DST#: 1

ATTN: Bryan Hess, David Go

Test Start: 2015.07.28 @ 09:51:00

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:

96000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.83 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
620.00	Water	6.511
195.00	MW 25%M75%W w /show of oil	2.735
2.00	CO	0.028

Total Length: 817.00 ft Total Volume: 9.274 bbl

Num Fluid Samples: 0

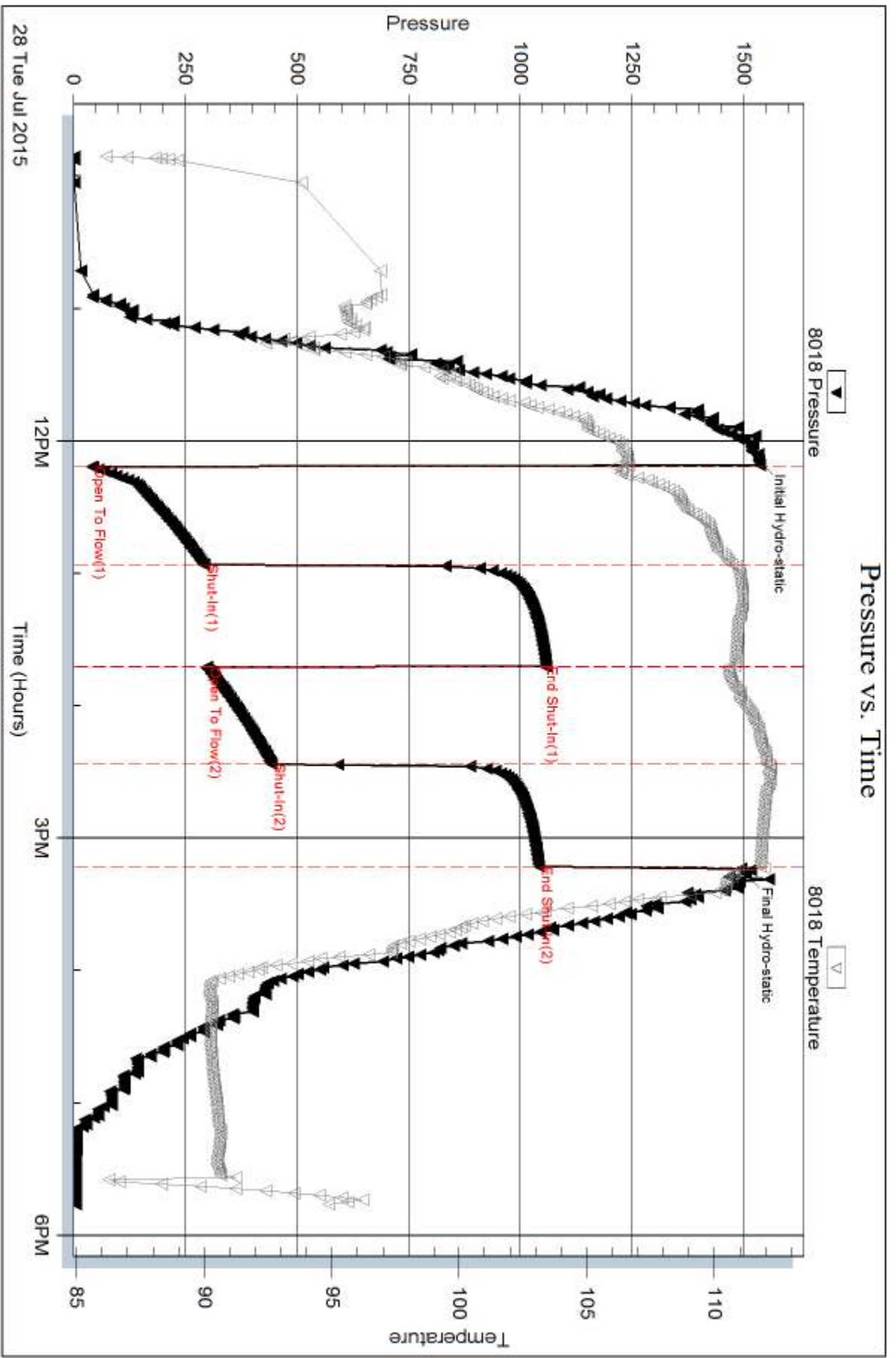
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .1 @ 55F

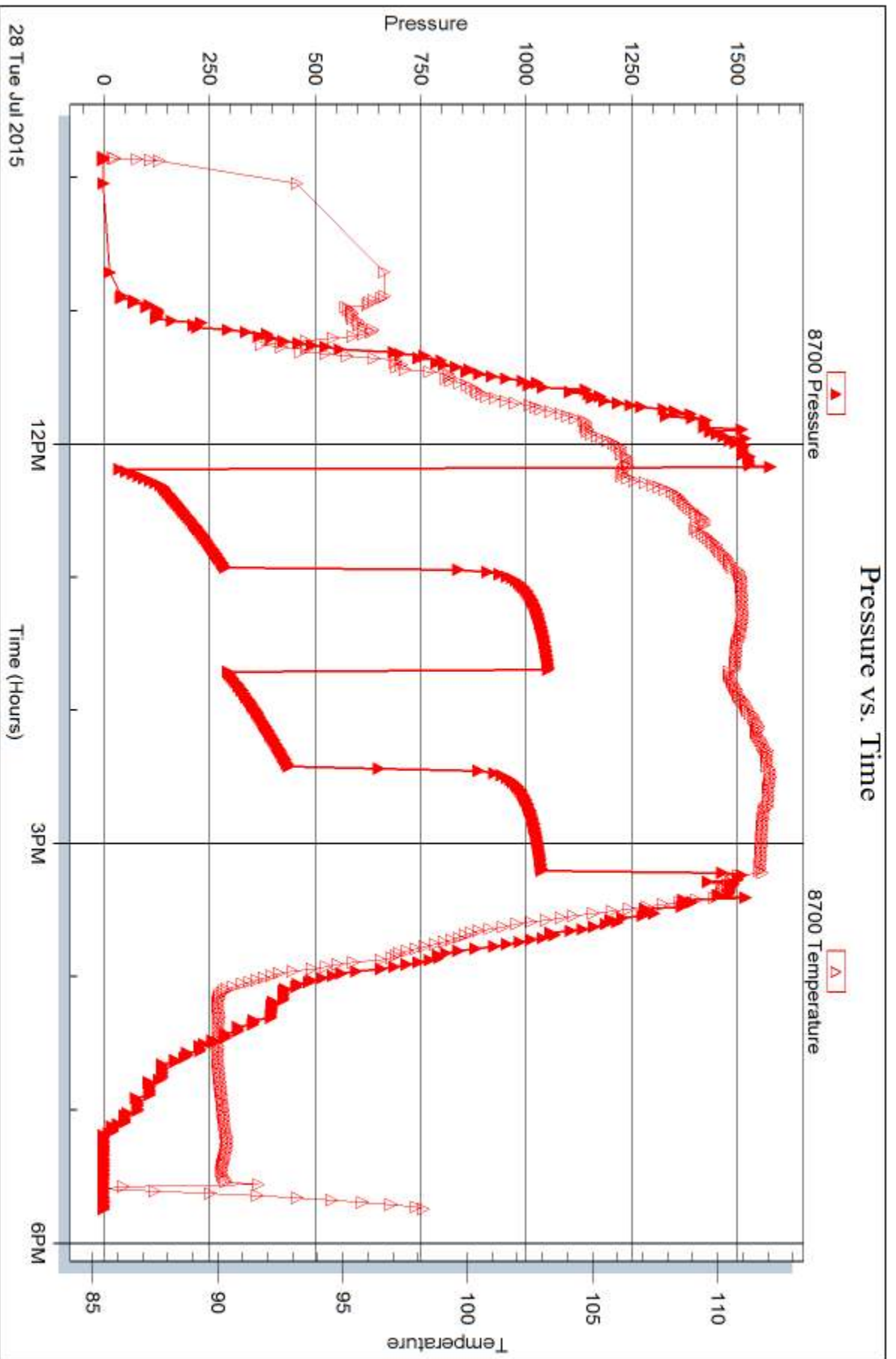


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60594

Printed: 2015.08.04 @ 09:22:40



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.07.29 @ 04:20:51

End Date: 2015.07.29 @ 10:39:15

Job Ticket #: 60595 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:22:15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

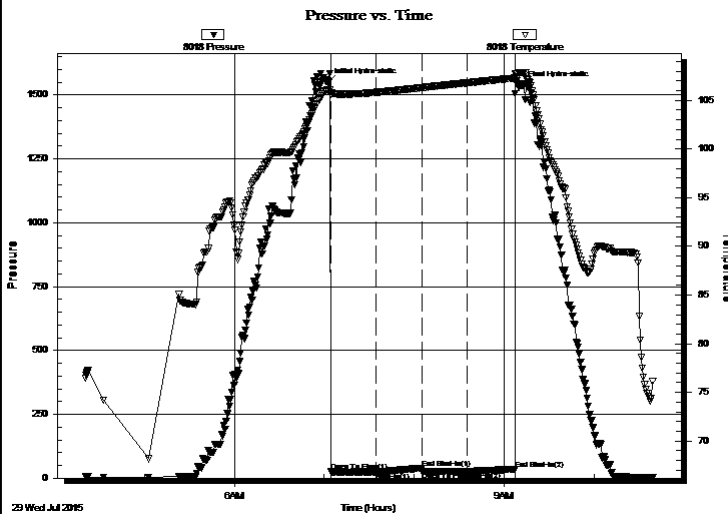
25-13s-19w Ellis,KS
Marlene #1
Job Ticket: 60595 **DST#: 2**
Test Start: 2015.07.29 @ 04:20:51

GENERAL INFORMATION:

Formation: **Toronto**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:04:16
Time Test Ended: 10:39:15
Interval: **3290.00 ft (KB) To 3325.00 ft (KB) (TVD)**
Total Depth: 3325.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 70

Serial #: 8018 **Inside**
Press@RunDepth: 26.02 psig @ 3297.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.07.29 End Date: 2015.07.29 Last Calib.: 2015.07.29
Start Time: 04:20:51 End Time: 10:39:15 Time On Btm: 2015.07.29 @ 07:02:31
Time Off Btm: 2015.07.29 @ 09:11:00

TEST COMMENT: 30-IFP-surface bl , died in 10 min
30-ISIP-no bl
30-FFP-no bl
30-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1546.76	106.05	Initial Hydro-static
2	24.94	105.62	Open To Flow (1)
32	24.54	105.82	Shut-In(1)
63	39.54	106.30	End Shut-In(1)
63	26.67	106.30	Open To Flow (2)
93	26.02	106.80	Shut-In(2)
125	34.85	107.28	End Shut-In(2)
129	1536.96	107.84	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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

**TRILOBITE
TESTING, INC****DRILL STEM TEST REPORT**

Hess Oil Company

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS**Marlene #1**

Job Ticket: 60595

DST#: 2

Test Start: 2015.07.29 @ 04:20:51

GENERAL INFORMATION:Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:04:16

Time Test Ended: 10:39:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3290.00 ft (KB) To 3325.00 ft (KB) (TVD)

Total Depth: 3325.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2019.00 ft (KB)

2014.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3297.00 ft (KB)

Start Date: 2015.07.29

End Date:

2015.07.29

Capacity: 8000.00 psig

Last Calib.:

2015.07.29

Start Time: 04:20:44

End Time:

10:39:08

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IFP-surface bl, died in 10 min

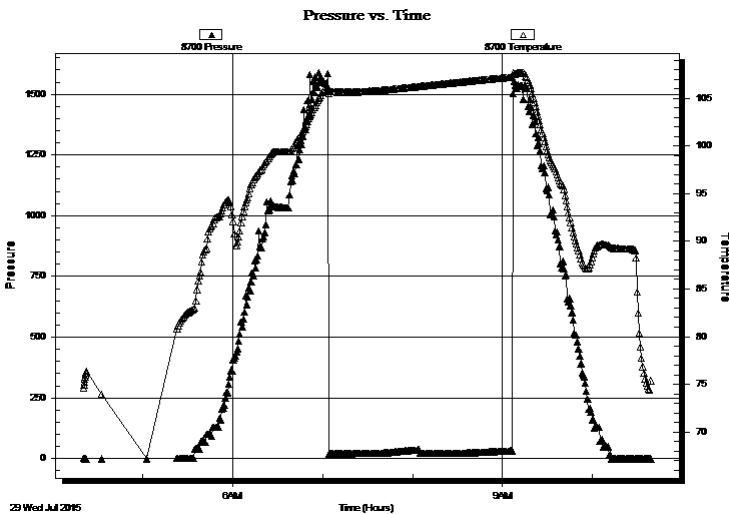
30-ISIP-no bl

30-FFP-no bl

30-FSIP-no bl

PRESSURE SUMMARY

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

**Recovery**

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

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60595

DST#: 2

ATTN: Bryan Hess, David Go

Test Start: 2015.07.29 @ 04:20:51

Tool Information

Drill Pipe:	Length: 3052.00 ft	Diameter: 3.80 inches	Volume: 42.81 bbl	Tool Weight:	2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 43.99 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	3290.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	35.00 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			3263.00	
Shut In Tool	5.00			3268.00	
Hydraulic tool	5.00			3273.00	
Jars	5.00			3278.00	
Safety Joint	2.00			3280.00	
Packer	5.00			3285.00	28.00 Bottom Of Top Packer
Packer	5.00			3290.00	
Stubb	1.00			3291.00	
Perforations	6.00			3297.00	
Recorder	0.00	8018	Inside	3297.00	
Recorder	0.00	8700	Outside	3297.00	
Perforations	25.00			3322.00	
Bullnose	3.00			3325.00	35.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60595

DST#: 2

ATTN: Bryan Hess, David Go

Test Start: 2015.07.29 @ 04:20:51

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: 42.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.83 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	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 #: 8018

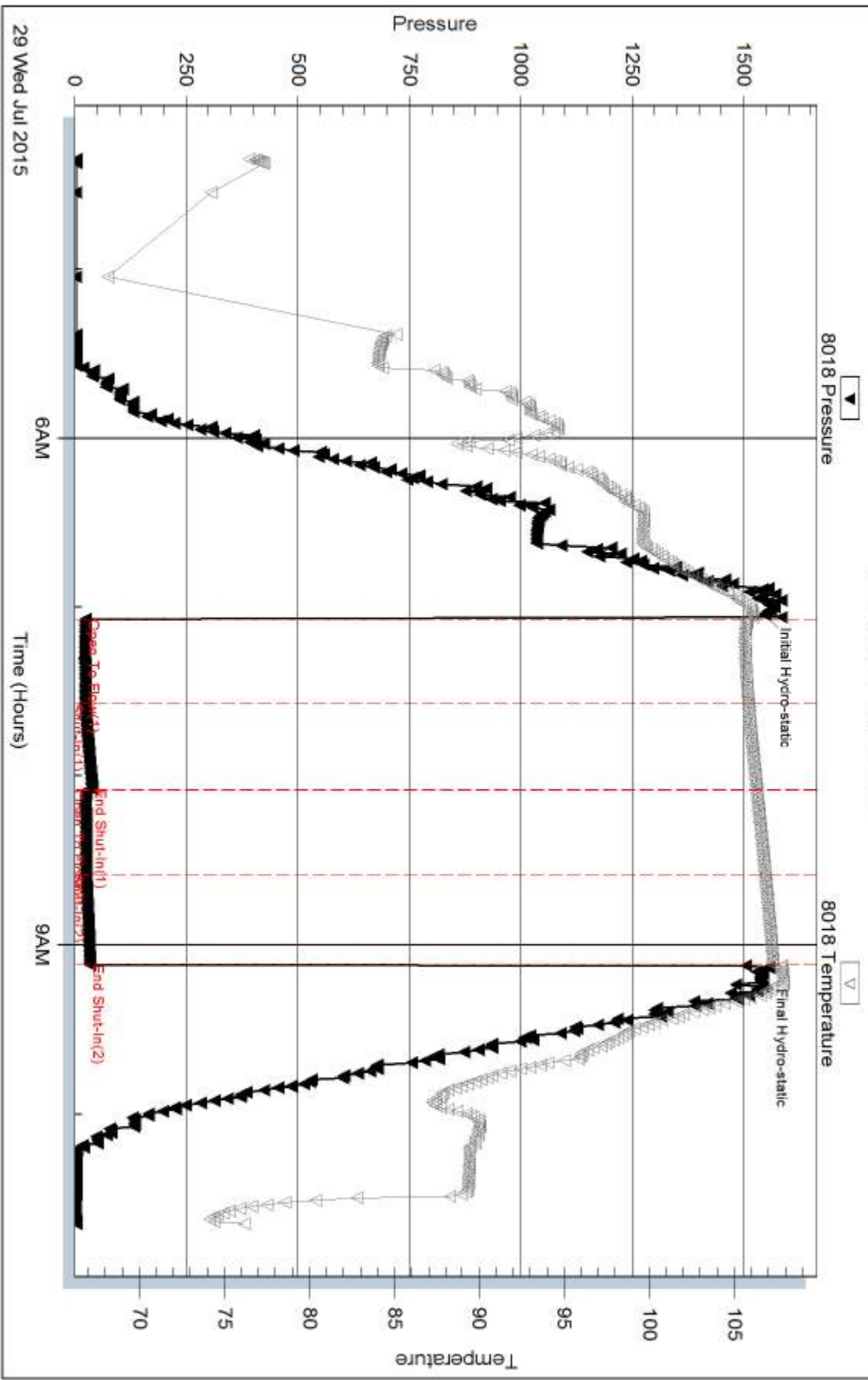
Inside

Hess Oil Company

Marlene #1

DST Test Number: 2

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 60595

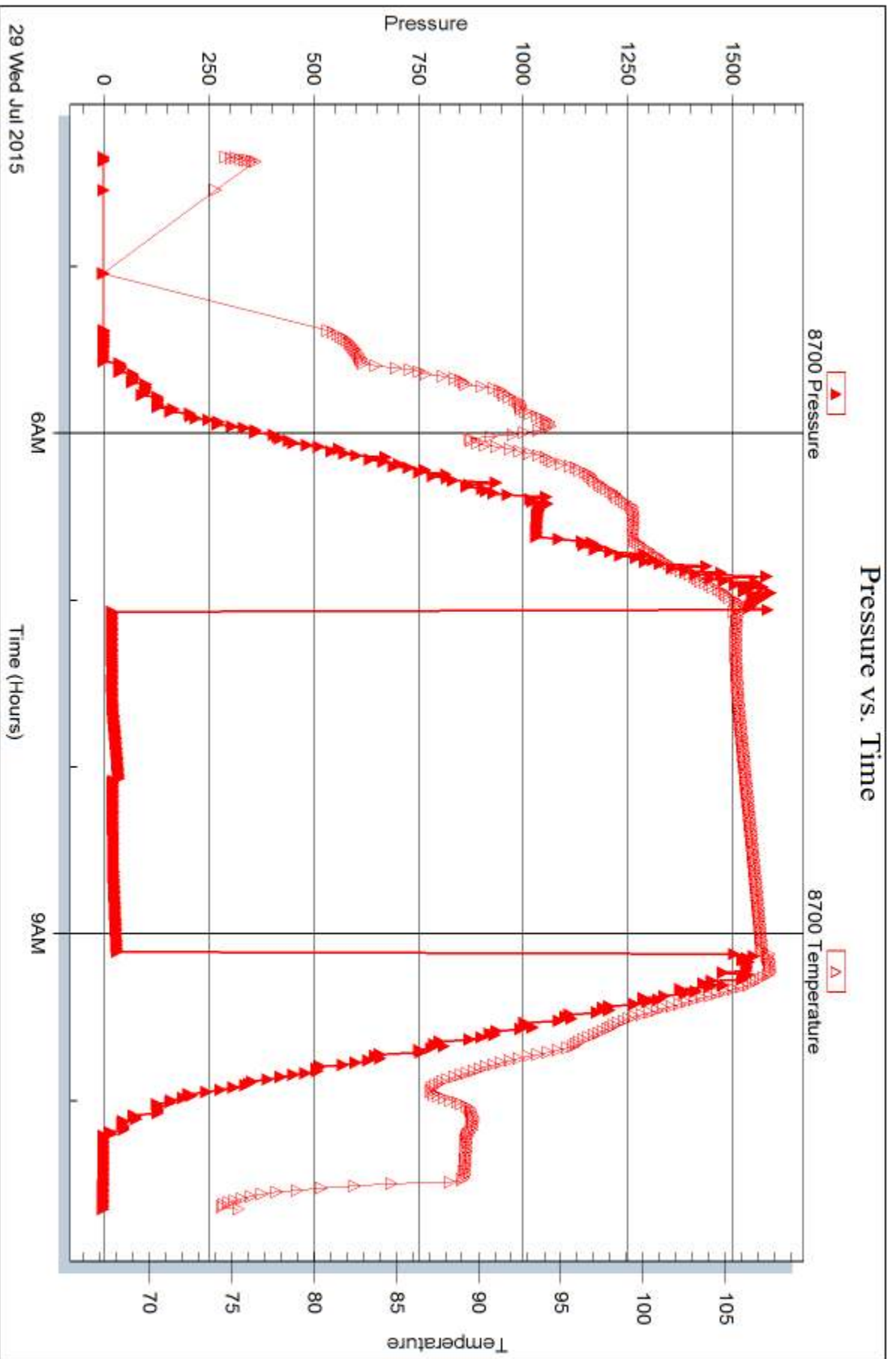
Printed: 2015.08.04 @ 09:22:16

Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 60595

Printed: 2015.08.04 @ 09:22:16



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.07.29 @ 18:00:48

End Date: 2015.07.30 @ 00:17:57

Job Ticket #: 60596 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:21:27



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
Job Ticket: 60596 **DST#: 3**
Test Start: 2015.07.29 @ 18:00:48

GENERAL INFORMATION:

Formation: **LKC**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:21:58
Time Test Ended: 00:17:57
Interval: **3336.00 ft (KB) To 3360.00 ft (KB) (TVD)**
Total Depth: 3360.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 70

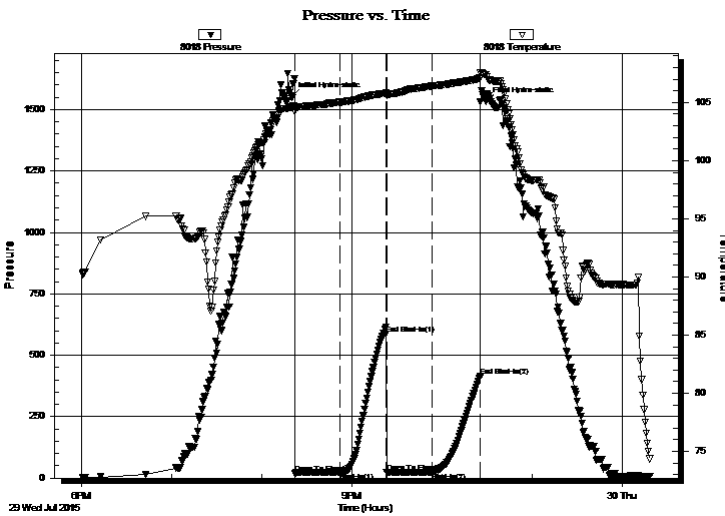
Serial #: 8018

Inside

Press@RunDepth: 23.72 psig @ 3337.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.07.29 End Date: 2015.07.30 Last Calib.: 2015.07.30
Start Time: 18:00:48 End Time: 00:17:57 Time On Btm: 2015.07.29 @ 20:19:58
Time Off Btm: 2015.07.29 @ 22:28:57

TEST COMMENT: 30-IFP-surface bl thru-out
30-ISIP-no bl
30-FFP-no bl
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1551.08	104.60	Initial Hydro-static
2	20.72	104.20	Open To Flow (1)
32	22.64	105.02	Shut-In(1)
63	586.82	105.78	End Shut-In(1)
63	23.44	105.61	Open To Flow (2)
93	23.72	106.40	Shut-In(2)
126	413.34	107.11	End Shut-In(2)
129	1533.42	107.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/show of oil	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

25-13s-19w Ellis, KS

Marlene #1

Job Ticket: 60596

DST#: 3

Test Start: 2015.07.29 @ 18:00:48

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:21:58
 Time Test Ended: 00:17:57
 Interval: **3336.00 ft (KB) To 3360.00 ft (KB) (TVD)**
 Total Depth: 3360.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 70
 Reference Elevations: 2019.00 ft (KB)
 2014.00 ft (CF)
 KB to GR/CF: 5.00 ft

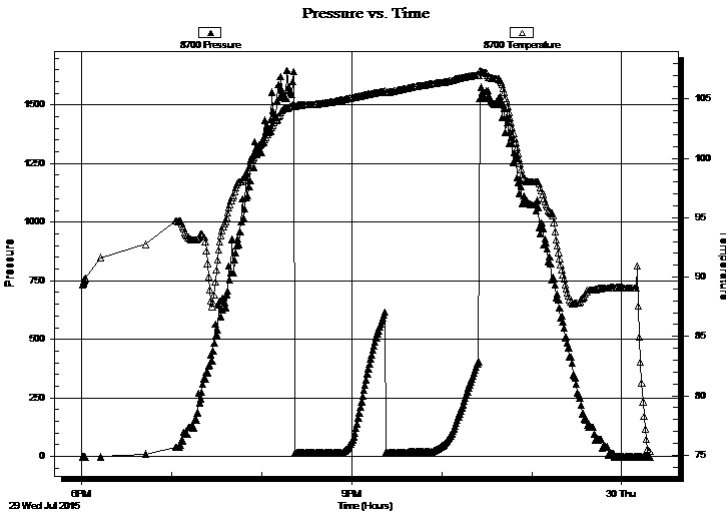
Serial #: 8700

Outside

Press@RunDepth: psig @ 3337.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.07.29 End Date: 2015.07.30 Last Calib.: 2015.07.30
 Start Time: 18:00:38 End Time: 00:19:02 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-surface bl thru-out
 30-ISIP-no bl
 30-FFP-no bl
 30-FSIP-no bl

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/show of oil	0.02

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60596

DST#: 3

ATTN: Bryan Hess, David Go

Test Start: 2015.07.29 @ 18:00:48

Tool Information

Drill Pipe:	Length: 3082.00 ft	Diameter: 3.80 inches	Volume: 43.23 bbl	Tool Weight:	2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 44.41 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	3336.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	52.00 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			3309.00	
Shut In Tool	5.00			3314.00	
Hydraulic tool	5.00			3319.00	
Jars	5.00			3324.00	
Safety Joint	2.00			3326.00	
Packer	5.00			3331.00	28.00 Bottom Of Top Packer
Packer	5.00			3336.00	
Stubb	1.00			3337.00	
Recorder	0.00	8018	Inside	3337.00	
Recorder	0.00	8700	Outside	3337.00	
Perforations	20.00			3357.00	
Bullnose	3.00			3360.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60596

DST#: 3

ATTN: Bryan Hess, David Go

Test Start: 2015.07.29 @ 18:00:48

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: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.85 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	Mud w/show of oil	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbf

Num Fluid Samples: 0

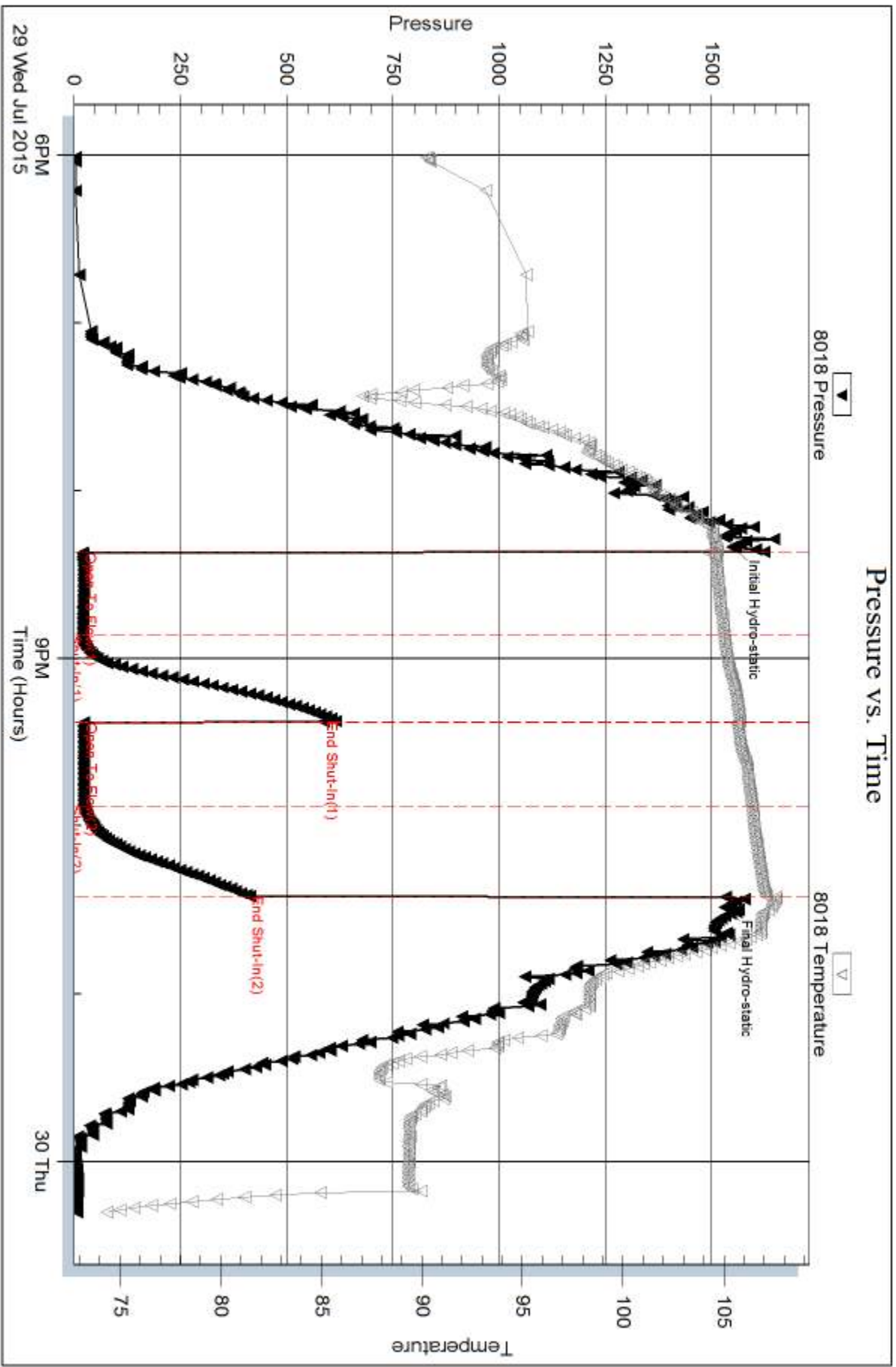
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

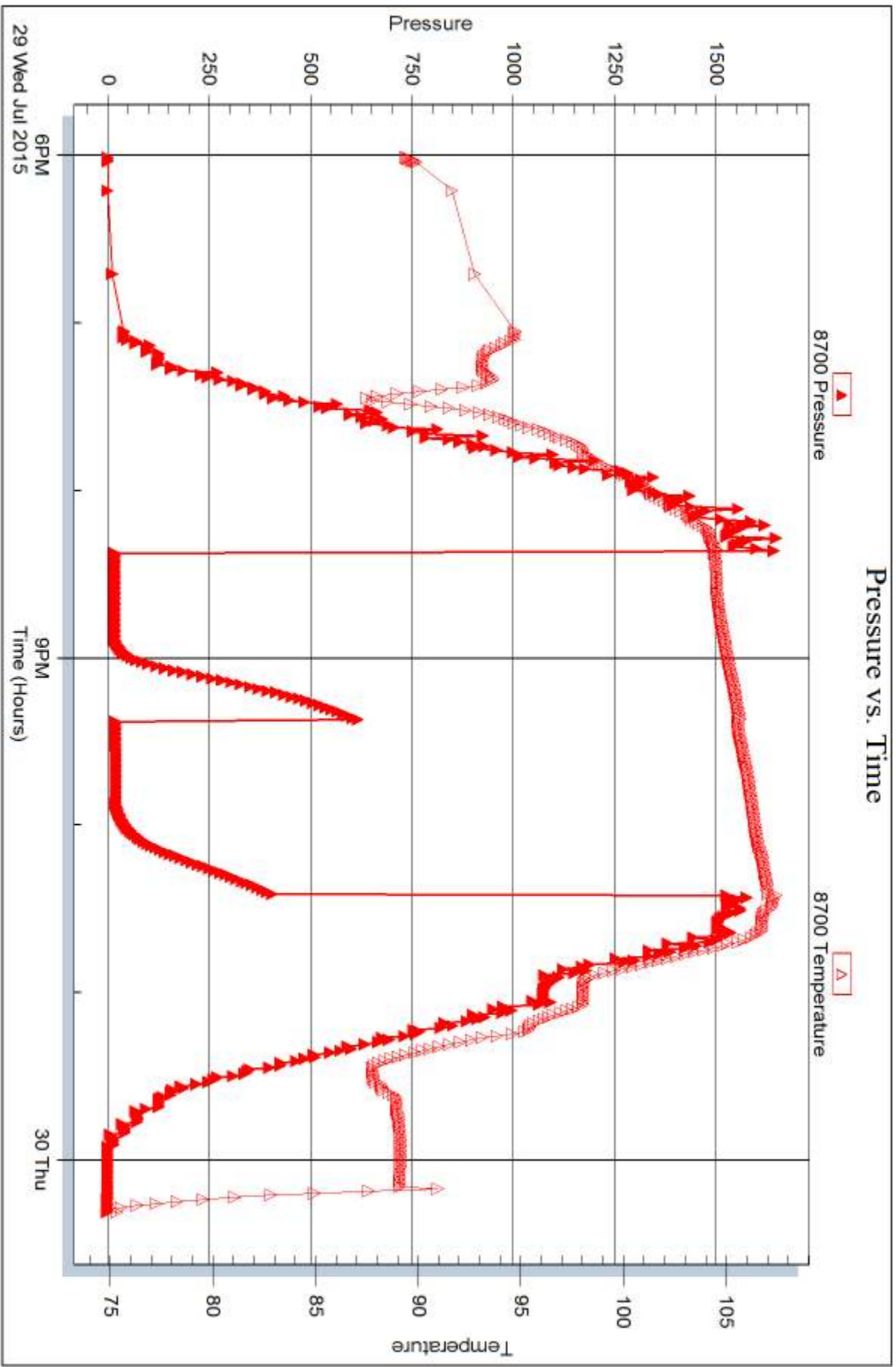


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 60596

Printed: 2015.08.04 @ 09:21:29



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.07.30 @ 10:40:35

End Date: 2015.07.30 @ 18:09:29

Job Ticket #: 60597 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:17:09



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
 Job Ticket: 60597 **DST#: 4**
 Test Start: 2015.07.30 @ 10:40:35

GENERAL INFORMATION:

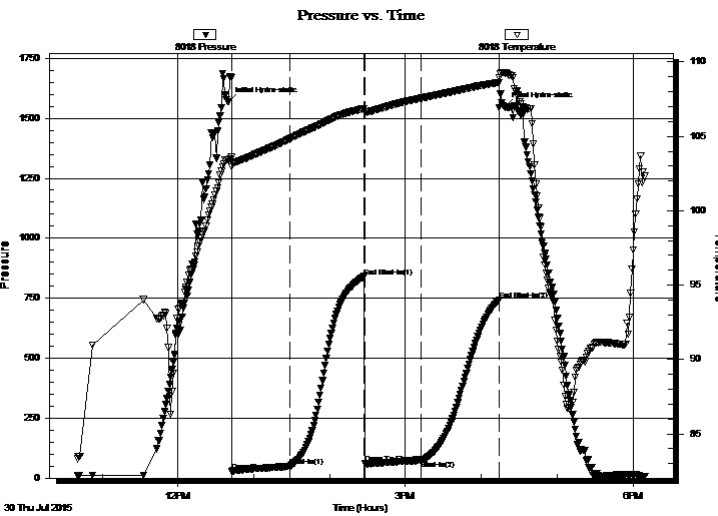
Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:42:30
 Time Test Ended: 18:09:29
 Interval: **3365.00 ft (KB) To 3414.00 ft (KB) (TVD)**
 Total Depth: 3414.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 70
 Reference Elevations: 2019.00 ft (KB)
 2014.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8018

Inside

Press@RunDepth: 73.80 psig @ 3374.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.07.30 End Date: 2015.07.30 Last Calib.: 2015.07.30
 Start Time: 10:40:35 End Time: 18:09:29 Time On Btm: 2015.07.30 @ 12:40:15
 Time Off Btm: 2015.07.30 @ 16:18:44

TEST COMMENT: 45-IFP-w k bl thru-out 1/2" to 1" bl
 60-ISIP-no bl
 45-FFP-no bl 1st 5 min, then w k bl thru-out 1/8" bl
 60-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1568.84	103.45	Initial Hydro-static
3	28.60	102.96	Open To Flow (1)
48	48.90	104.83	Shut-In(1)
107	840.30	106.87	End Shut-In(1)
108	61.76	106.62	Open To Flow (2)
152	73.80	107.57	Shut-In(2)
214	743.15	108.62	End Shut-In(2)
219	1546.85	109.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	O&GCM 5%G8%O87%M	0.30
60.00	O&GCM 5%G12%O83%M	0.30

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60597

DST#: 4

ATTN: Bryan Hess, David Go

Test Start: 2015.07.30 @ 10:40:35

Tool Information

Drill Pipe:	Length: 3113.00 ft	Diameter: 3.80 inches	Volume: 43.67 bbl	Tool Weight: 2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 44.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3365.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	49.00 ft			
Tool Length:	77.00 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			3338.00	
Shut In Tool	5.00			3343.00	
Hydraulic tool	5.00			3348.00	
Jars	5.00			3353.00	
Safety Joint	2.00			3355.00	
Packer	5.00			3360.00	28.00 Bottom Of Top Packer
Packer	5.00			3365.00	
Stubb	1.00			3366.00	
Perforations	8.00			3374.00	
Recorder	0.00	8018	Inside	3374.00	
Recorder	0.00	8700	Outside	3374.00	
Blank Spacing	33.00			3407.00	
Perforations	4.00			3411.00	
Bullnose	3.00			3414.00	49.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60597

DST#: 4

ATTN: Bryan Hess, David Go

Test Start: 2015.07.30 @ 10:40:35

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 51.00 sec/qt
Water Loss: 7.83 in³
Resistivity: ohm.m
Salinity: 8800.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	O&GCM 5%G8%O87%M	0.295
60.00	O&GCM 5%G12%O83%M	0.295

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

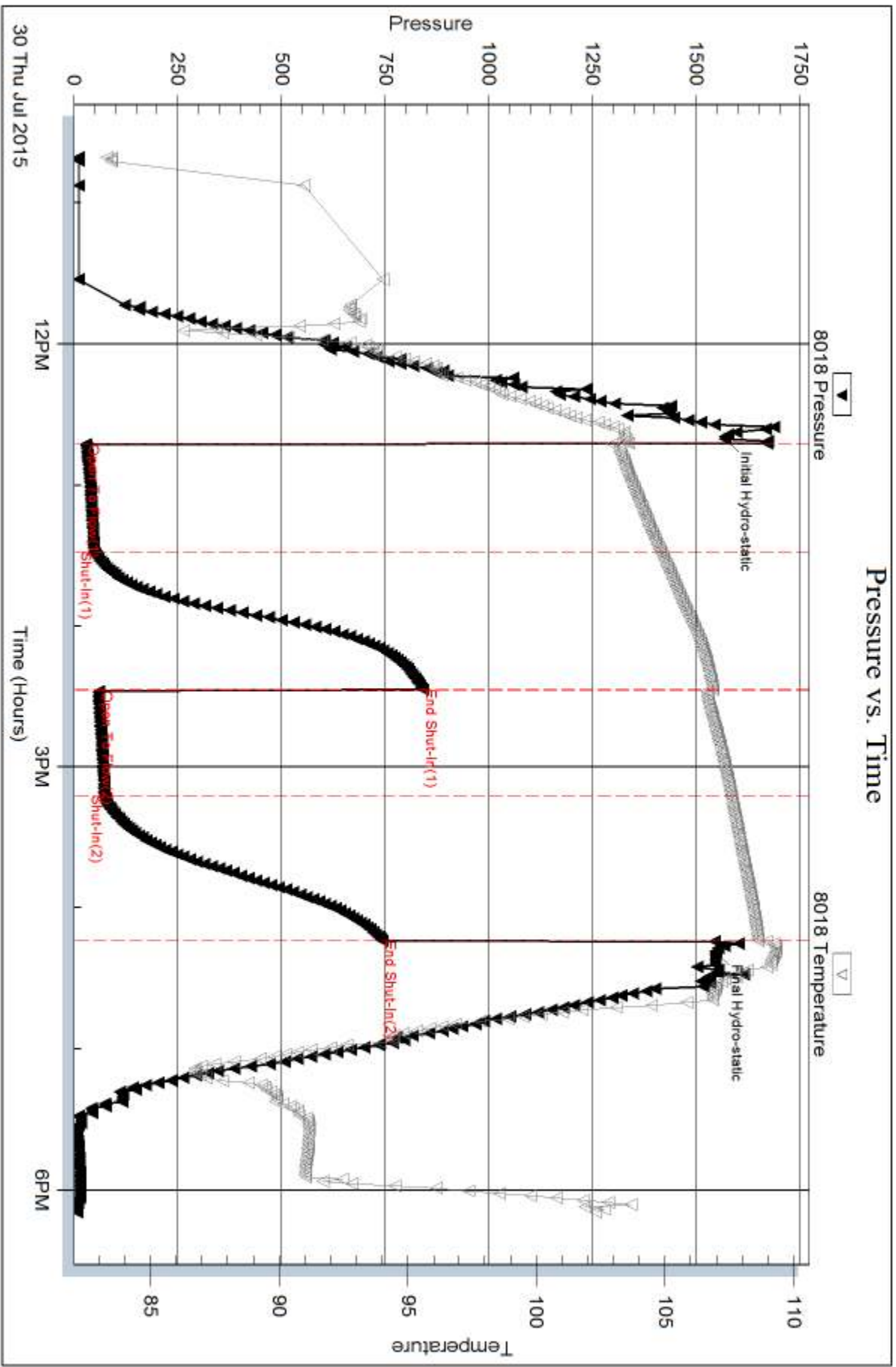
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

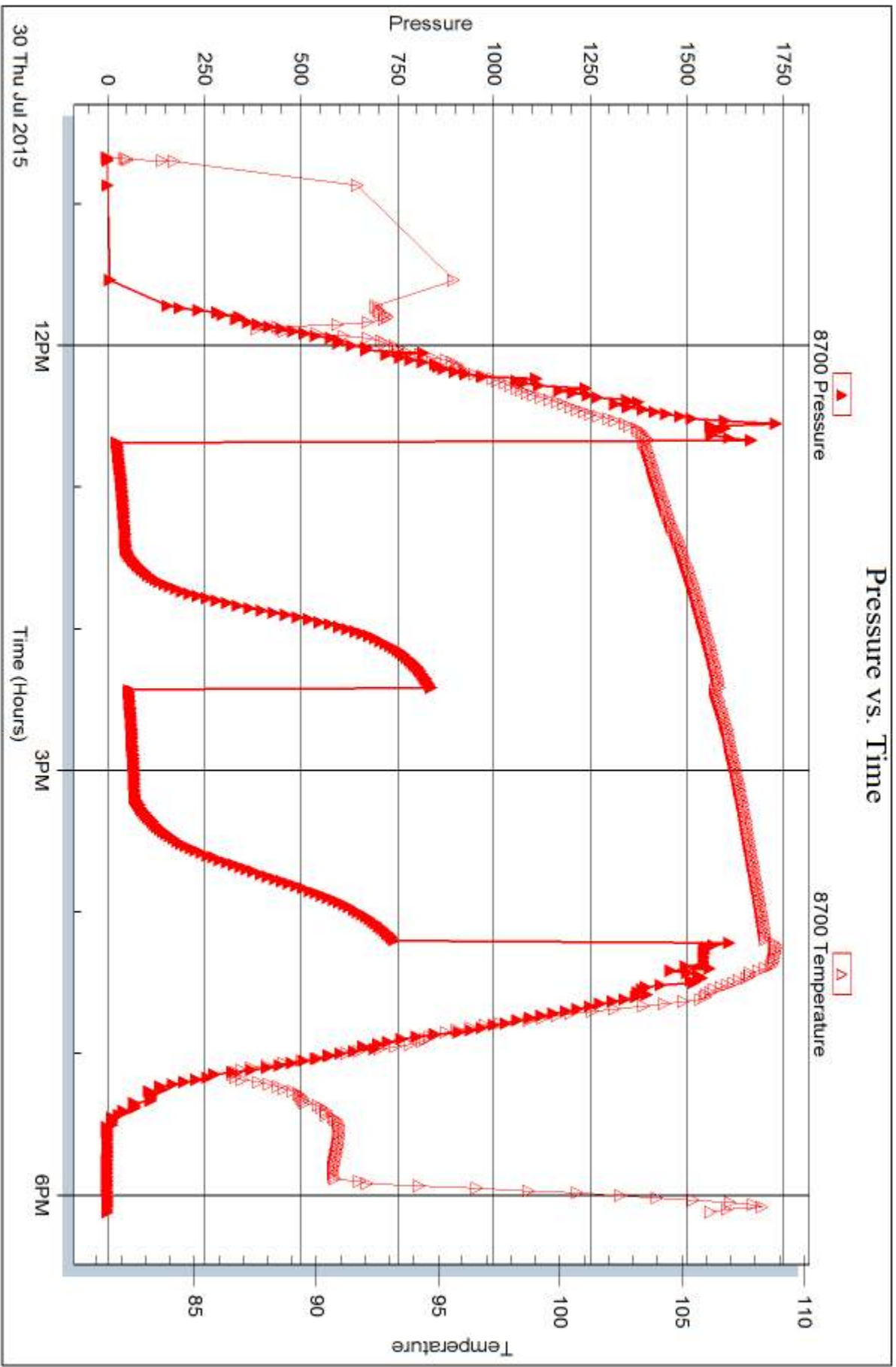


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.07.31 @ 06:20:58

End Date: 2015.07.31 @ 14:02:22

Job Ticket #: 60598 DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:15:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
Job Ticket: 60598 **DST#: 5**
Test Start: 2015.07.31 @ 06:20:58

GENERAL INFORMATION:

Formation: **LKC**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:43:08
Time Test Ended: 14:02:22
Interval: **3413.00 ft (KB) To 3426.00 ft (KB) (TVD)**
Total Depth: 3426.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 70

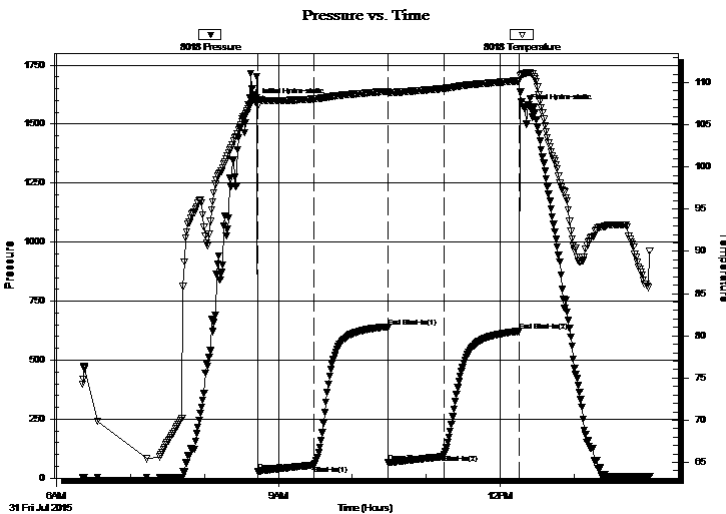
Serial #: 8018

Inside

Press@RunDepth: 99.10 psig @ 3418.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.07.31 End Date: 2015.07.31 Last Calib.: 2015.07.31
Start Time: 06:20:58 End Time: 14:02:22 Time On Btm: 2015.07.31 @ 08:41:53
Time Off Btm: 2015.07.31 @ 12:19:52

TEST COMMENT: 45-IFP-w k bl thru-out 1/2" to 2" bl
60-ISIP-no bl
45-FFP-w k bl thru-out 1/4" to 2" bl
60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1592.06	108.19	Initial Hydro-static
2	27.39	107.20	Open To Flow (1)
47	56.05	108.05	Shut-In(1)
107	638.68	108.96	End Shut-In(1)
108	68.11	108.76	Open To Flow (2)
153	99.10	109.29	Shut-In(2)
214	622.94	110.21	End Shut-In(2)
218	1566.49	111.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	O&GCMW 10%O10%G10%M70%W	0.30
30.00	HO&GCWM 10%G20%O20%W50%M	0.15
35.00	MGO 15%G40%M45%O	0.17
0.00	240' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis, KS

Marlene #1

Job Ticket: 60598

DST#: 5

Test Start: 2015.07.31 @ 06:20:58

GENERAL INFORMATION:

Formation: **LKC**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:43:08
Time Test Ended: 14:02:22
Interval: **3413.00 ft (KB) To 3426.00 ft (KB) (TVD)**
Total Depth: 3426.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 70
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft

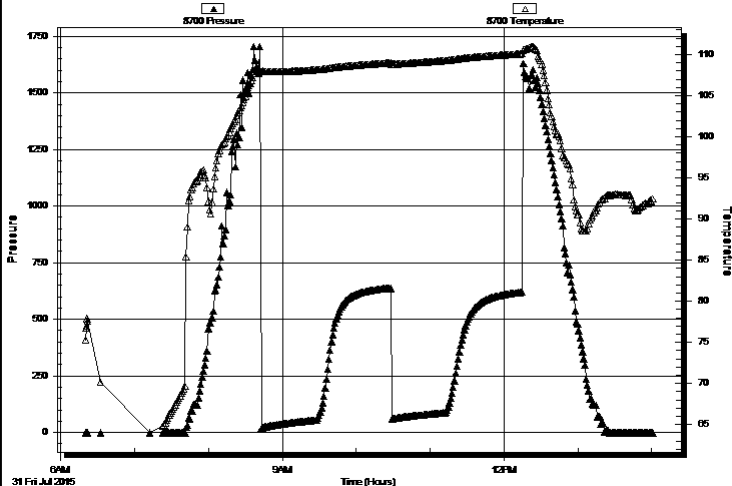
Serial #: 8700

Outside

Press@RunDepth: psig @ 3418.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.07.31 End Date: 2015.07.31 Last Calib.: 2015.07.31
Start Time: 06:20:09 End Time: 14:01:33 Time On Btm:
Time Off Btm:

TEST COMMENT: 45-IFP-w k bl thru-out 1/2" to 2" bl
60-ISIP-no bl
45-FFP-w k bl thru-out 1/4" to 2" bl
60-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	O&GCMW 10%O10%G10%M70%W	0.30
30.00	HO&GCWM 10%G20%O20%W50%M	0.15
35.00	MGO 15%G40%M45%O	0.17
0.00	240' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60598

DST#: 5

ATTN: Bryan Hess, David Go

Test Start: 2015.07.31 @ 06:20:58

Tool Information

Drill Pipe:	Length: 3175.00 ft	Diameter: 3.80 inches	Volume: 44.54 bbl	Tool Weight:	2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 45.72 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	63000.00 lb
Depth to Top Packer:	3413.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	13.00 ft				
Tool Length:	41.00 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			3386.00	
Shut In Tool	5.00			3391.00	
Hydraulic tool	5.00			3396.00	
Jars	5.00			3401.00	
Safety Joint	2.00			3403.00	
Packer	5.00			3408.00	28.00 Bottom Of Top Packer
Packer	5.00			3413.00	
Stubb	1.00			3414.00	
Perforations	4.00			3418.00	
Recorder	0.00	8018	Inside	3418.00	
Recorder	0.00	8700	Outside	3418.00	
Perforations	5.00			3423.00	
Bullnose	3.00			3426.00	13.00 Bottom Packers & Anchor

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60598

DST#: 5

ATTN: Bryan Hess, David Go

Test Start: 2015.07.31 @ 06:20:58

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 11.07 in³
Resistivity: ohm.m
Salinity: 9200.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	O&GCMW 10%O10%G10%M70%W	0.295
30.00	HO&GCWM 10%G20%O20%W50%M	0.148
35.00	MGO 15%G40%M45%O	0.172
0.00	240' GIP	0.000

Total Length: 125.00 ft Total Volume: 0.615 bbl

Num Fluid Samples: 0

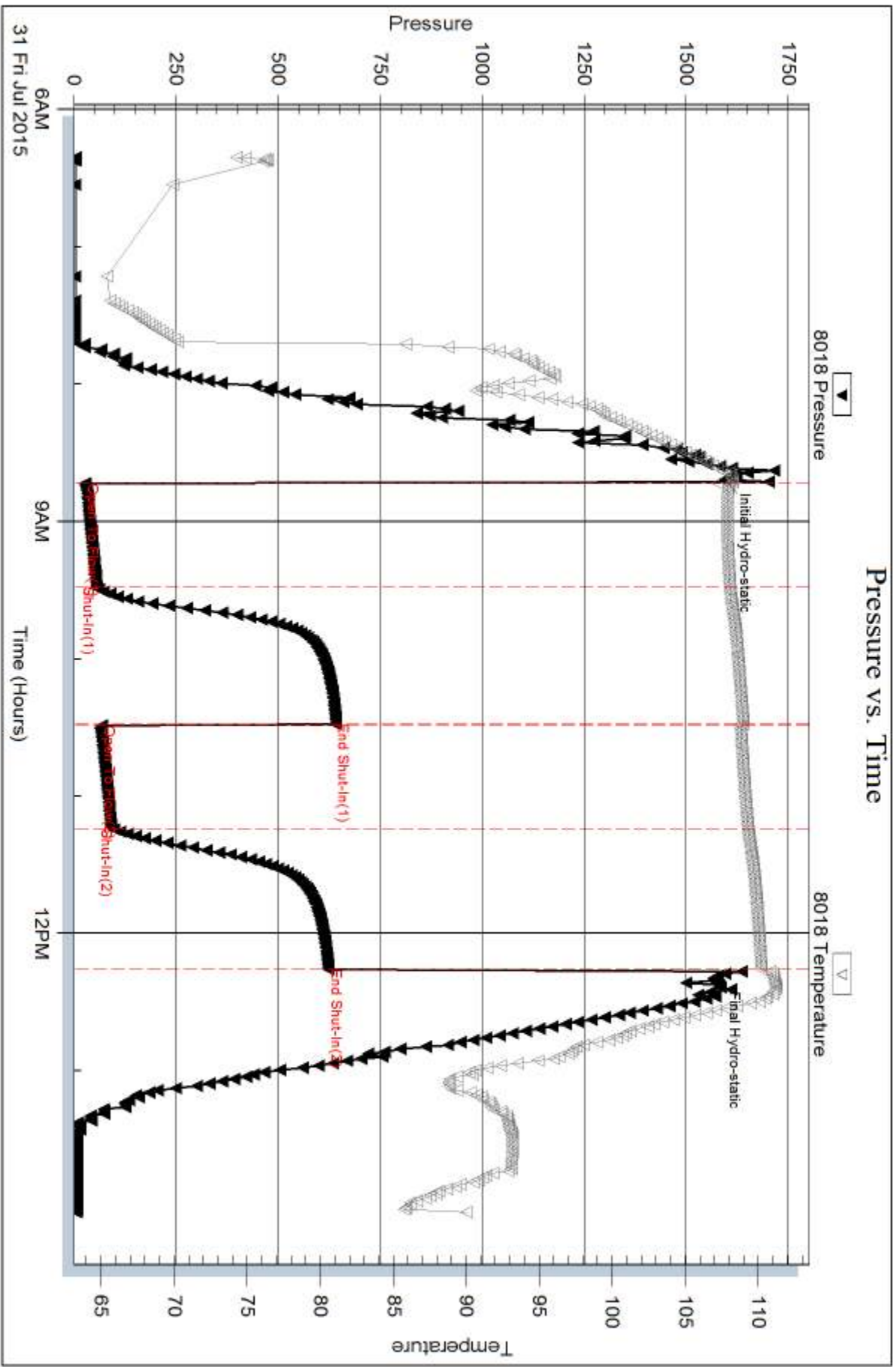
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

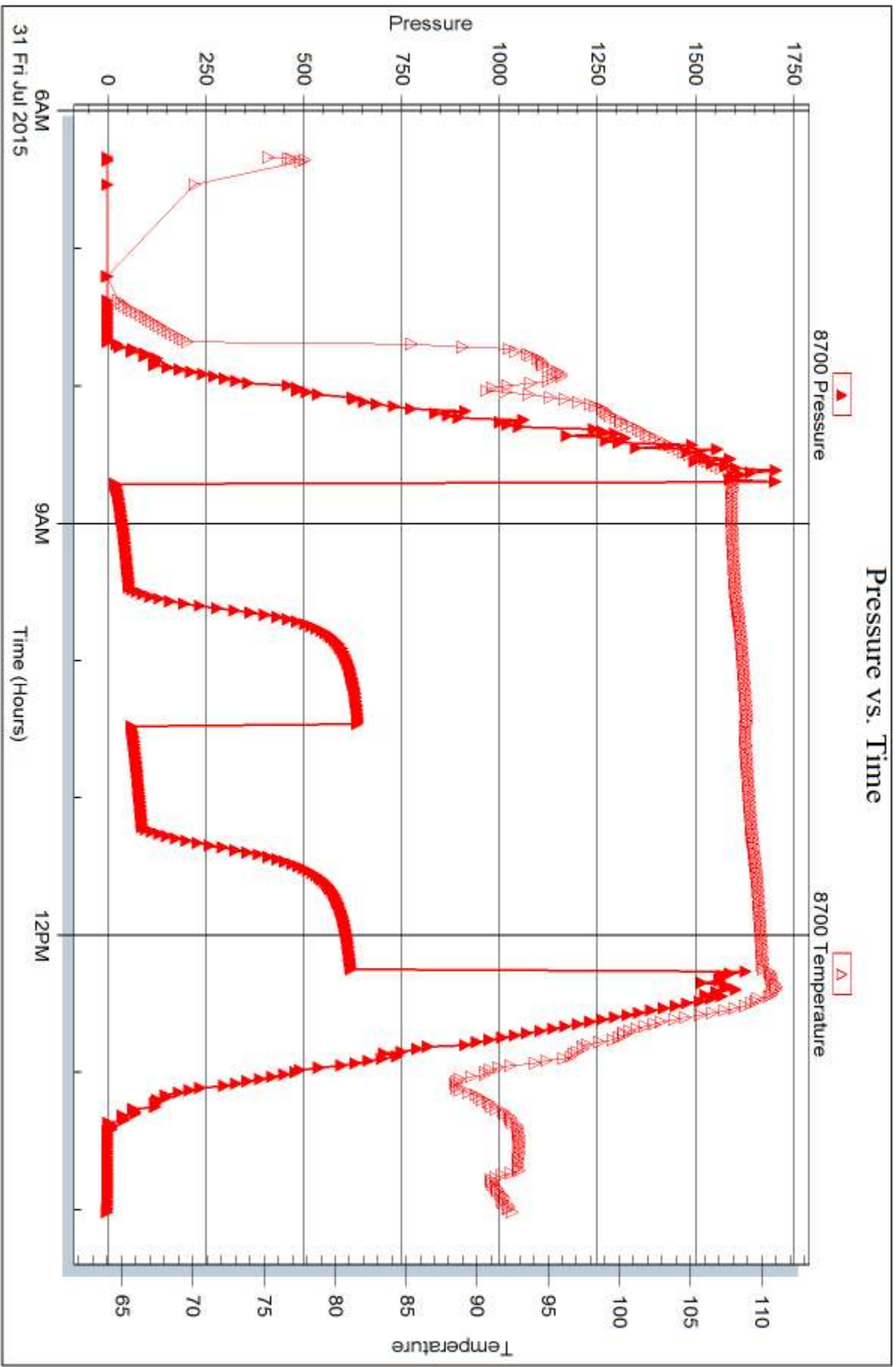


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 60598

Printed: 2015.08.04 @ 09:15:53



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.08.01 @ 06:20:28

End Date: 2015.08.02 @ 00:39:22

Job Ticket #: 60599 DST #: 6

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:15:17



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
 Job Ticket: 60599 **DST#: 6**
 Test Start: 2015.08.01 @ 06:20:28

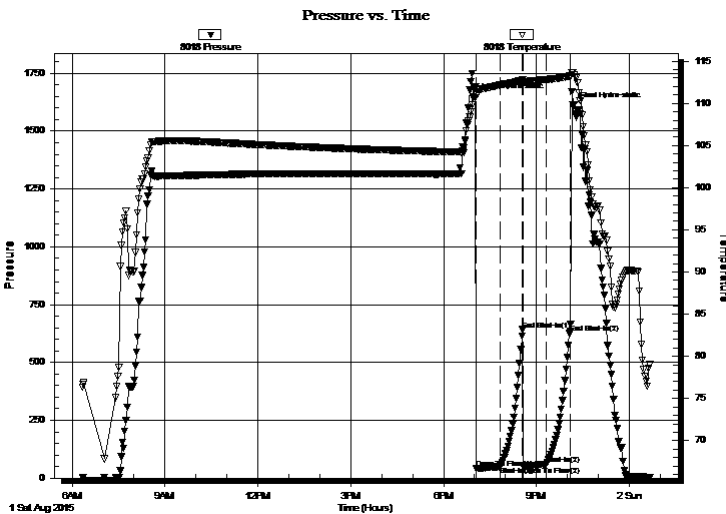
GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 19:03:08 Tester: Ray Schwager
 Time Test Ended: 00:39:22 Unit No: 70
 Interval: **3448.00 ft (KB) To 3530.00 ft (KB) (TVD)** Reference Elevations: 2019.00 ft (KB)
 Total Depth: 3530.00 ft (KB) (TVD) 2014.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8018 Inside
 Press@RunDepth: 60.63 psig @ 3450.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.01 End Date: 2015.08.02 Last Calib.: 2015.08.02
 Start Time: 06:20:28 End Time: 00:39:22 Time On Btm: 2015.08.01 @ 19:01:38
 Time Off Btm: 2015.08.01 @ 22:11:08

TEST COMMENT: 45-IFP-w k bl thru-out 1/8" to 1/2" bl
 45-ISIP-no bl
 45-FFP-w k bl thru-out 1/2" to 1" bl
 45-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1645.24	111.91	Initial Hydro-static
2	41.03	111.56	Open To Flow (1)
48	49.77	112.15	Shut-In(1)
92	641.89	112.74	End Shut-In(1)
92	50.01	112.56	Open To Flow (2)
137	60.63	112.80	Shut-In(2)
185	665.63	113.23	End Shut-In(2)
190	1607.33	113.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	GIP	0.44
30.00	O&GCM 5%G10%O85%M	0.15
60.00	MGO 40%G40%O20&M	0.30

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

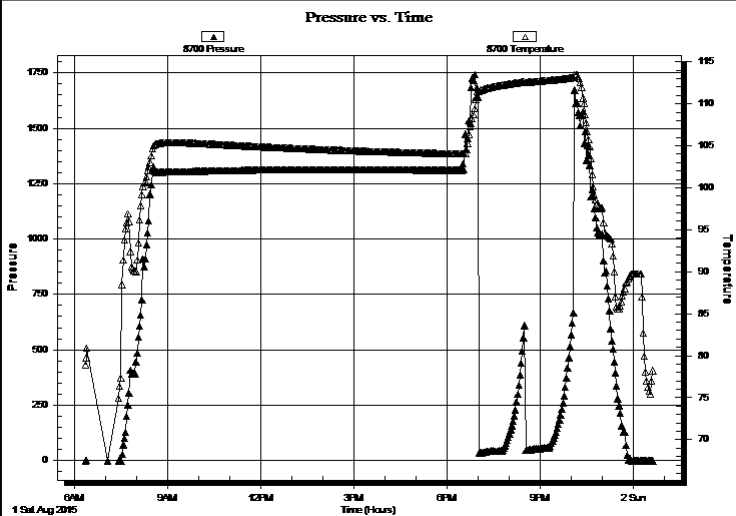
25-13s-19w Ellis, KS
Marlene #1
 Job Ticket: 60599 **DST#: 6**
 Test Start: 2015.08.01 @ 06:20:28

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 19:03:08 Tester: Ray Schwager
 Time Test Ended: 00:39:22 Unit No: 70
 Interval: **3448.00 ft (KB) To 3530.00 ft (KB) (TVD)** Reference Elevations: 2019.00 ft (KB)
 Total Depth: 3530.00 ft (KB) (TVD) 2014.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8700 **Outside**
 Press@RunDepth: psig @ 3450.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.01 End Date: 2015.08.02 Last Calib.: 2015.08.02
 Start Time: 06:20:47 End Time: 00:37:26 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45-IFP-w k bl thru-out 1/8" to 1/2" bl
 45-ISIP-no bl
 45-FFP-w k bl thru-out 1/2" to 1" bl
 45-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
90.00	GIP	0.44
30.00	O&GCM 5%G10%O85%M	0.15
60.00	MGO 40%G40%O20&M	0.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60599

DST#: 6

ATTN: Bryan Hess, David Go

Test Start: 2015.08.01 @ 06:20:28

Tool Information

Drill Pipe:	Length: 3208.00 ft	Diameter: 3.80 inches	Volume: 45.00 bbl	Tool Weight:	2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 46.18 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	61000.00 lb
Depth to Top Packer:	3448.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	82.00 ft				
Tool Length:	110.00 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			3421.00	
Shut In Tool	5.00			3426.00	
Hydraulic tool	5.00			3431.00	
Jars	5.00			3436.00	
Safety Joint	2.00			3438.00	
Packer	5.00			3443.00	28.00 Bottom Of Top Packer
Packer	5.00			3448.00	
Stubb	1.00			3449.00	
Perforations	1.00			3450.00	
Recorder	0.00	8018	Inside	3450.00	
Recorder	0.00	8700	Outside	3450.00	
Blank Spacing	64.00			3514.00	
Perforations	13.00			3527.00	
Bullnose	3.00			3530.00	82.00 Bottom Packers & Anchor

Total Tool Length: 110.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60599

DST#: 6

ATTN: Bryan Hess, David Go

Test Start: 2015.08.01 @ 06:20:28

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 59.00 sec/qt
Water Loss: 7.83 in³
Resistivity: ohm.m
Salinity: 7000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	GIP	0.443
30.00	O&GCM 5%G10%O85%M	0.148
60.00	MGO 40%G40%O20&M	0.295

Total Length: 180.00 ft Total Volume: 0.886 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: rig broke down, shiv in blocks siezed up, down approx 8 hours, changed out blocks

Serial #: 8018

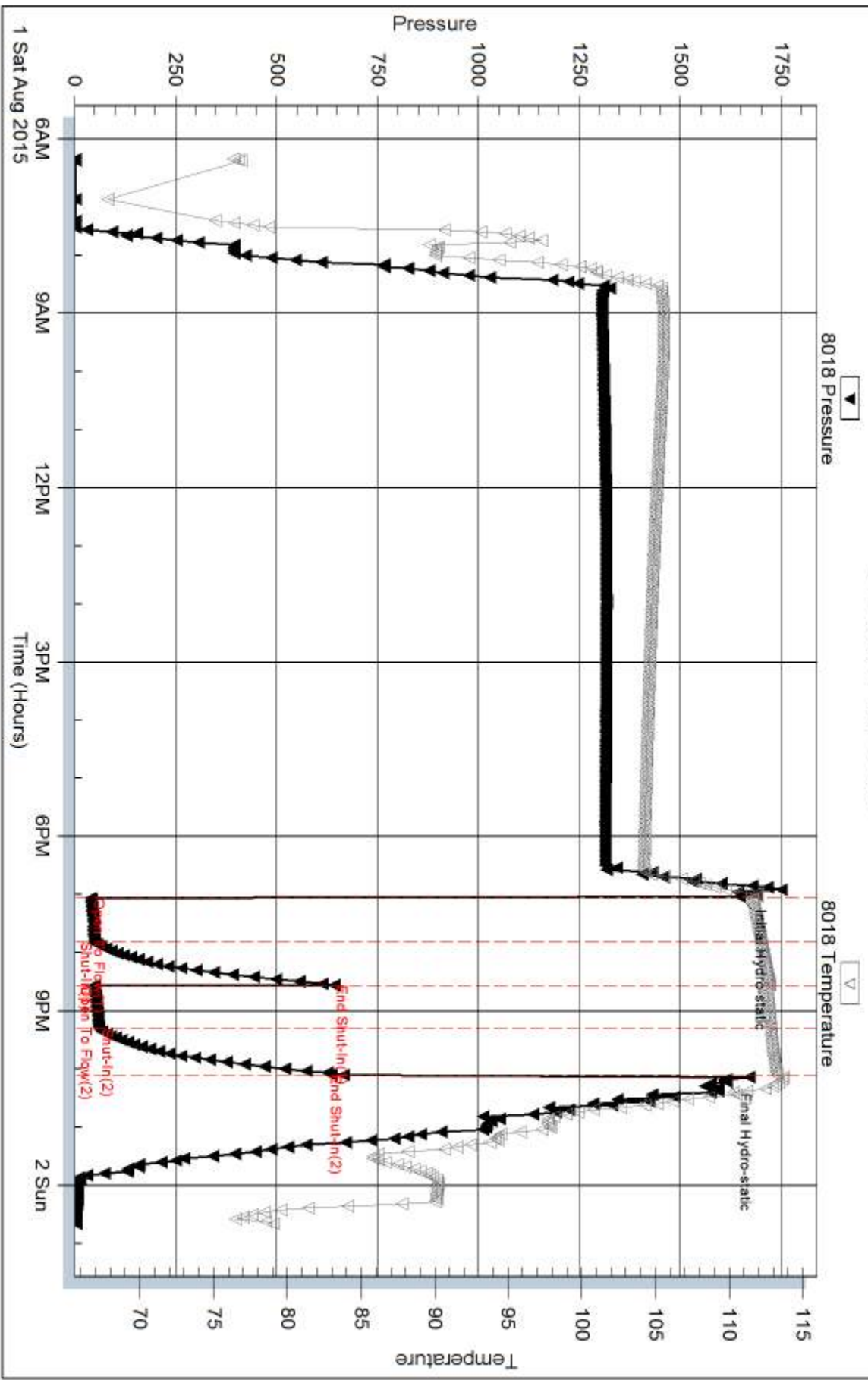
Inside

Hess Oil Company

Marlene #1

DST Test Number: 6

Pressure vs. Time

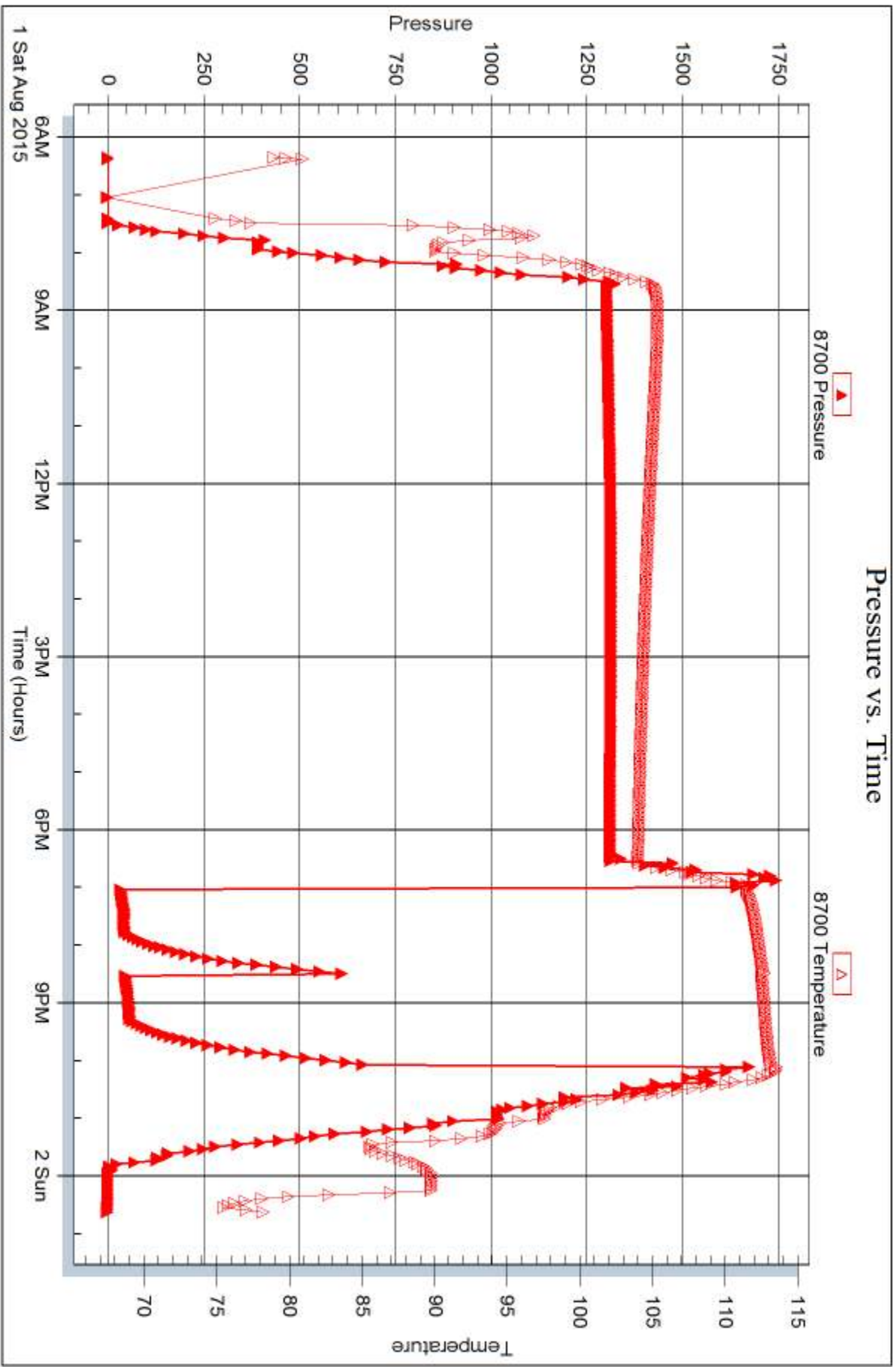


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 6





DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.08.02 @ 18:35:24

End Date: 2015.08.03 @ 01:50:03

Job Ticket #: 60600 DST #: 7

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:14:50



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis,KS
Marlene #1
Job Ticket: 60600 **DST#: 7**
Test Start: 2015.08.02 @ 18:35:24

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:34:49
Time Test Ended: 01:50:03
Interval: **3643.00 ft (KB) To 3670.00 ft (KB) (TVD)**
Total Depth: 3670.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 70
Reference Elevations: 2019.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 5.00 ft

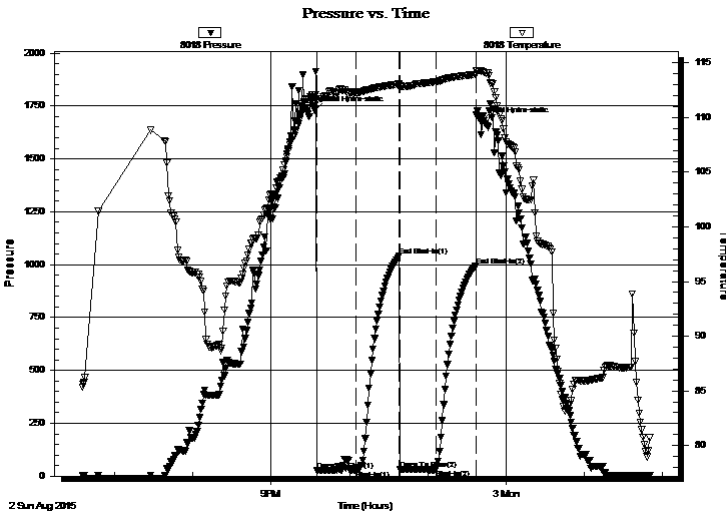
Serial #: 8018

Inside

Press@RunDepth: 34.08 psig @ 3644.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.08.02 End Date: 2015.08.03 Last Calib.: 2015.08.03
Start Time: 18:35:24 End Time: 01:50:03 Time On Btm: 2015.08.02 @ 21:33:19
Time Off Btm: 2015.08.02 @ 23:40:33

TEST COMMENT: 30-IFP-surface bl , died in 5 min
30-ISIP-no bl
30-FFP-no bl
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1727.32	112.06	Initial Hydro-static
2	28.21	111.49	Open To Flow (1)
32	29.93	112.25	Shut-In(1)
65	1041.13	113.07	End Shut-In(1)
66	31.59	112.65	Open To Flow (2)
93	34.08	113.28	Shut-In(2)
124	994.28	113.93	End Shut-In(2)
128	1676.19	114.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

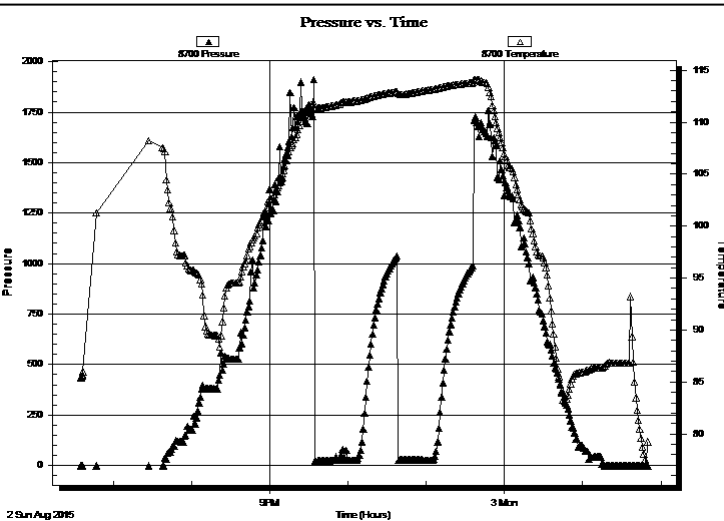
25-13s-19w Ellis,KS
Marlene #1
 Job Ticket: 60600 **DST#: 7**
 Test Start: 2015.08.02 @ 18:35:24

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:34:49
 Time Test Ended: 01:50:03
Interval: 3643.00 ft (KB) To 3670.00 ft (KB) (TVD)
 Total Depth: 3670.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 70
 Reference Elevations: 2019.00 ft (KB)
 2014.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8700 Outside
 Press@RunDepth: psig @ 3644.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.02 End Date: 2015.08.03 Last Calib.: 2015.08.03
 Start Time: 18:35:10 End Time: 01:49:49 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-surface bl , died in 5 min
 30-ISIP-no bl
 30-FFP-no bl
 30-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60600

DST#: 7

ATTN: Bryan Hess, David Go

Test Start: 2015.08.02 @ 18:35:24

Tool Information

Drill Pipe:	Length: 3395.00 ft	Diameter: 3.80 inches	Volume: 47.62 bbl	Tool Weight: 2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 48.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3643.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	55.00 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			3616.00	
Shut In Tool	5.00			3621.00	
Hydraulic tool	5.00			3626.00	
Jars	5.00			3631.00	
Safety Joint	2.00			3633.00	
Packer	5.00			3638.00	28.00 Bottom Of Top Packer
Packer	5.00			3643.00	
Stubb	1.00			3644.00	
Recorder	0.00	8018	Inside	3644.00	
Recorder	0.00	8700	Outside	3644.00	
Perforations	23.00			3667.00	
Bullnose	3.00			3670.00	27.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 60600

DST#: 7

ATTN: Bryan Hess, David Go

Test Start: 2015.08.02 @ 18:35:24

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: 8.72 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

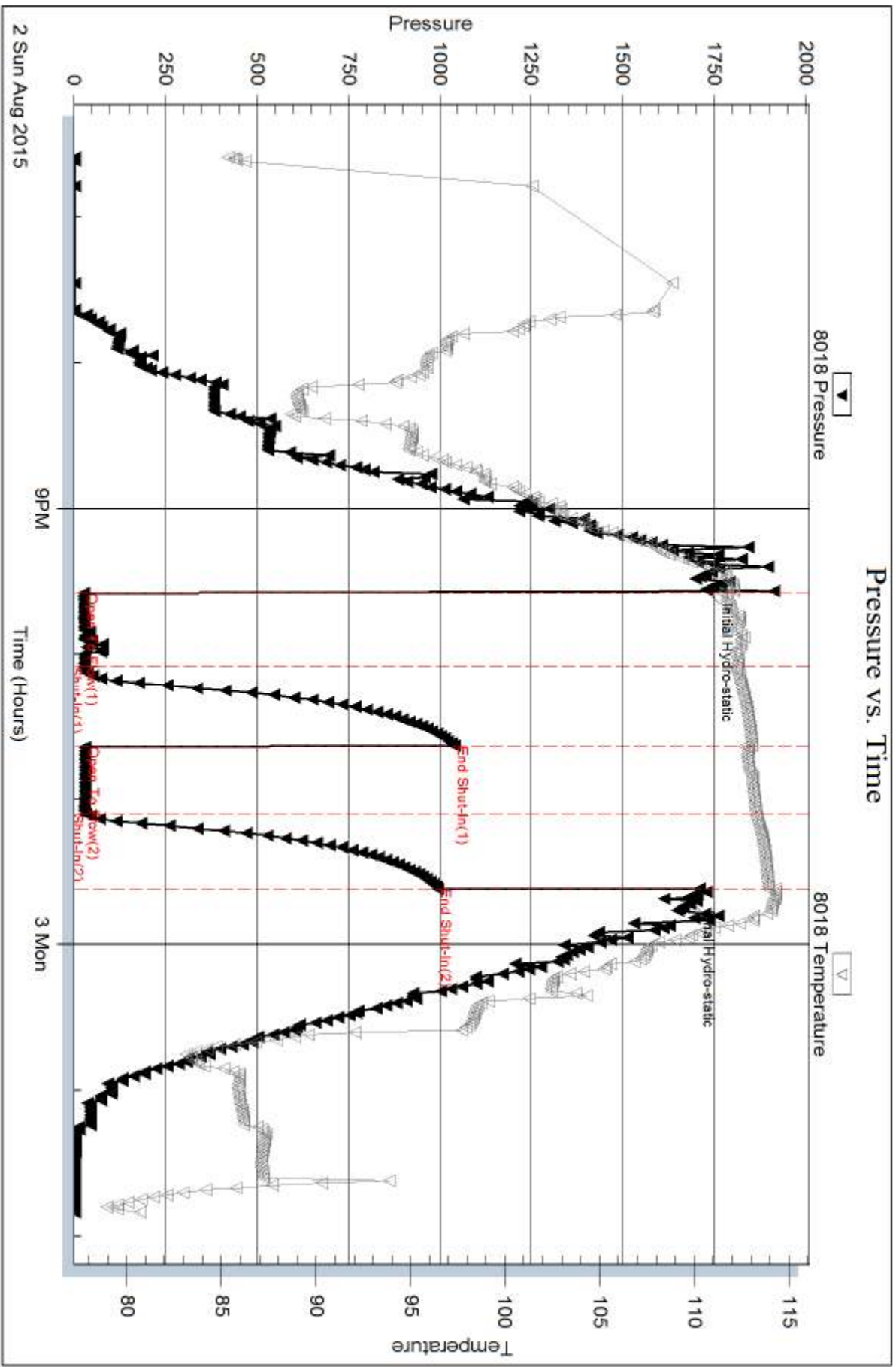
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

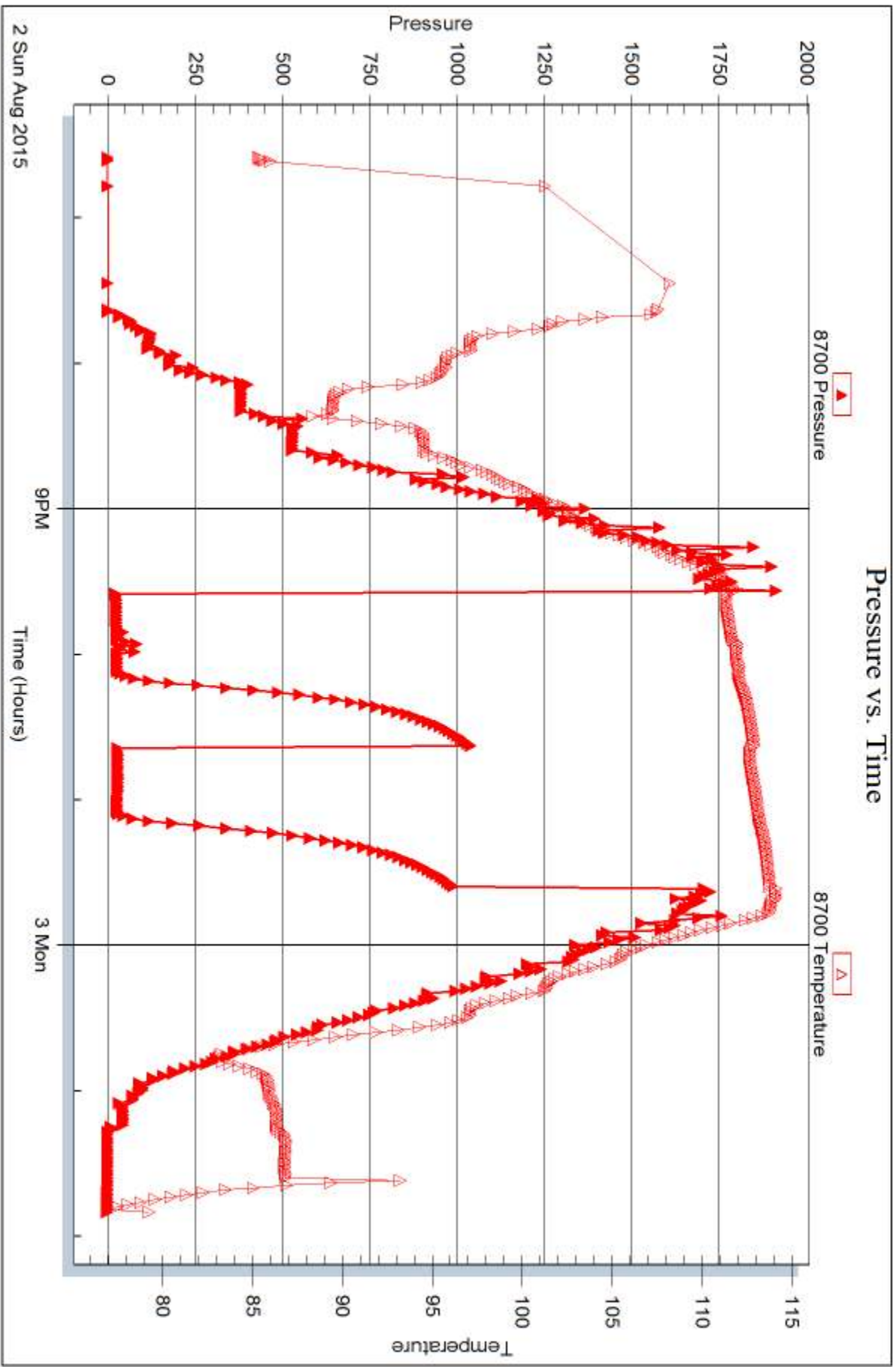


Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 60600

Printed: 2015.08.04 @ 09:14:52



DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460-1009

ATTN: Bryan Hess, David Go

Marlene #1

25-13s-19w Ellis,KS

Start Date: 2015.08.03 @ 12:15:10

End Date: 2015.08.03 @ 18:32:19

Job Ticket #: 62651 DST #: 8

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.04 @ 09:14:04



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460-1009
ATTN: Bryan Hess, David Go

25-13s-19w Ellis, KS

Marlene #1

Job Ticket: 62651

DST#: 8

Test Start: 2015.08.03 @ 12:15:10

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 14:29:35 Tester: Ray Schwager
Time Test Ended: 18:32:19 Unit No: 70
Interval: 3643.00 ft (KB) To 3675.00 ft (KB) (TVD) Reference Elevations: 2019.00 ft (KB)
Total Depth: 3675.00 ft (KB) (TVD) 2014.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8018

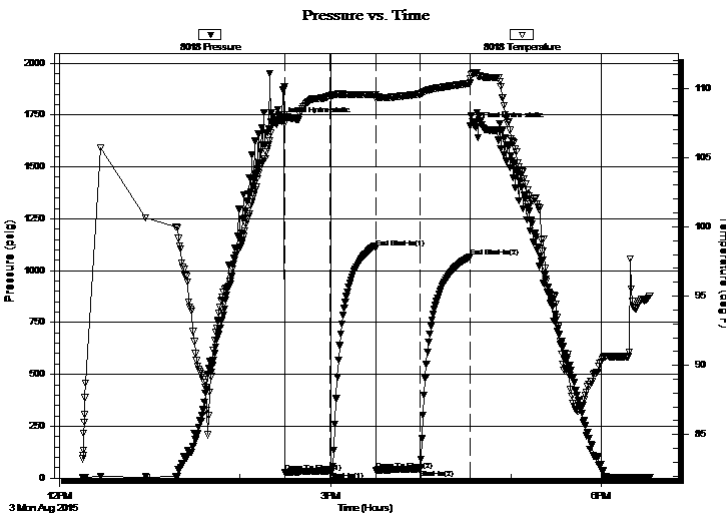
Inside

Press@RunDepth: 43.98 psig @ 3644.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.08.03 End Date: 2015.08.03 Last Calib.: 2015.08.03
Start Time: 12:15:10 End Time: 18:32:19 Time On Btm: 2015.08.03 @ 14:27:50
Time Off Btm: 2015.08.03 @ 16:36:34

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" bl
30-ISIP-no bl
30-FFP-no bl
30-FSIP-no bl

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1716.37	107.71	Initial Hydro-static
2	27.36	107.46	Open To Flow (1)
32	33.91	109.44	Shut-In(1)
63	1109.12	109.54	End Shut-In(1)
63	39.25	109.21	Open To Flow (2)
92	43.98	109.58	Shut-In(2)
125	1067.39	110.37	End Shut-In(2)
129	1691.68	111.13	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM 25%W75%M w /show of oil	0.30

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Hess Oil Company
 PO Box 1009
 McPherson, KS 67460-1009
 ATTN: Bryan Hess, David Go

25-13s-19w Ellis, KS

Marlene #1

Job Ticket: 62651 **DST#: 8**

Test Start: 2015.08.03 @ 12:15:10

GENERAL INFORMATION:

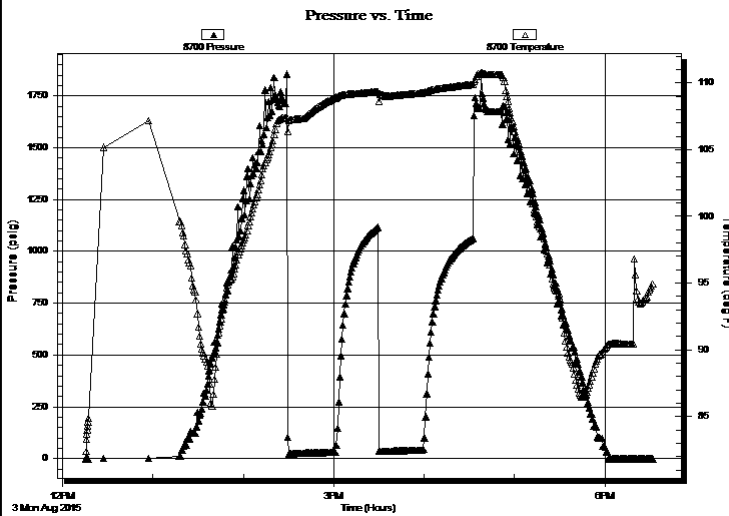
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 14:29:35 Tester: Ray Schwager
 Time Test Ended: 18:32:19 Unit No: 70
 Interval: **3643.00 ft (KB) To 3675.00 ft (KB) (TVD)** Reference Elevations: 2019.00 ft (KB)
 Total Depth: 3675.00 ft (KB) (TVD) 2014.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8700

Outside

Press@RunDepth: psig @ 3644.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.03 End Date: 2015.08.03 Last Calib.: 2015.08.03
 Start Time: 12:15:11 End Time: 18:32:05 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" bl
 30-ISIP-no bl
 30-FFP-no bl
 30-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM 25%W75%M w /show of oil	0.30

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 62651

DST#: 8

ATTN: Bryan Hess, David Go

Test Start: 2015.08.03 @ 12:15:10

Tool Information

Drill Pipe:	Length: 3396.00 ft	Diameter: 3.80 inches	Volume: 47.64 bbl	Tool Weight: 2200.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 48.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3643.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	60.00 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			3616.00	
Shut In Tool	5.00			3621.00	
Hydraulic tool	5.00			3626.00	
Jars	5.00			3631.00	
Safety Joint	2.00			3633.00	
Packer	5.00			3638.00	28.00 Bottom Of Top Packer
Packer	5.00			3643.00	
Stubb	1.00			3644.00	
Recorder	0.00	8018	Inside	3644.00	
Recorder	0.00	8700	Outside	3644.00	
Perforations	28.00			3672.00	
Bullnose	3.00			3675.00	32.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

25-13s-19w Ellis,KS

PO Box 1009
McPherson, KS 67460-1009

Marlene #1

Job Ticket: 62651

DST#: 8

ATTN: Bryan Hess, David Go

Test Start: 2015.08.03 @ 12:15:10

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:

27000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	WM 25%W75%M w /show of oil	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .23 @ 80F

Serial #: 8018

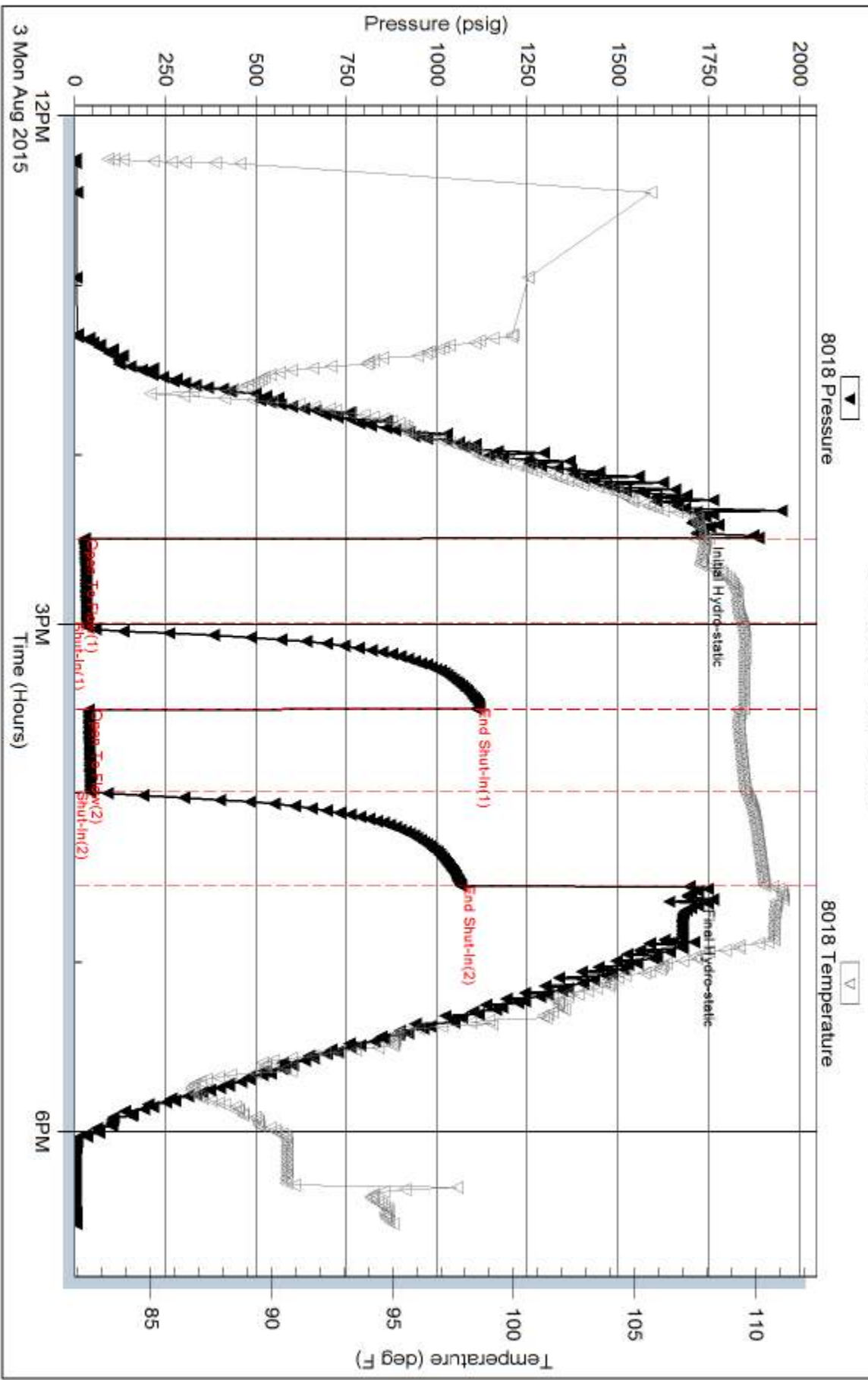
Inside

Hess Oil Company

Marlene #1

DST Test Number: 8

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 62851

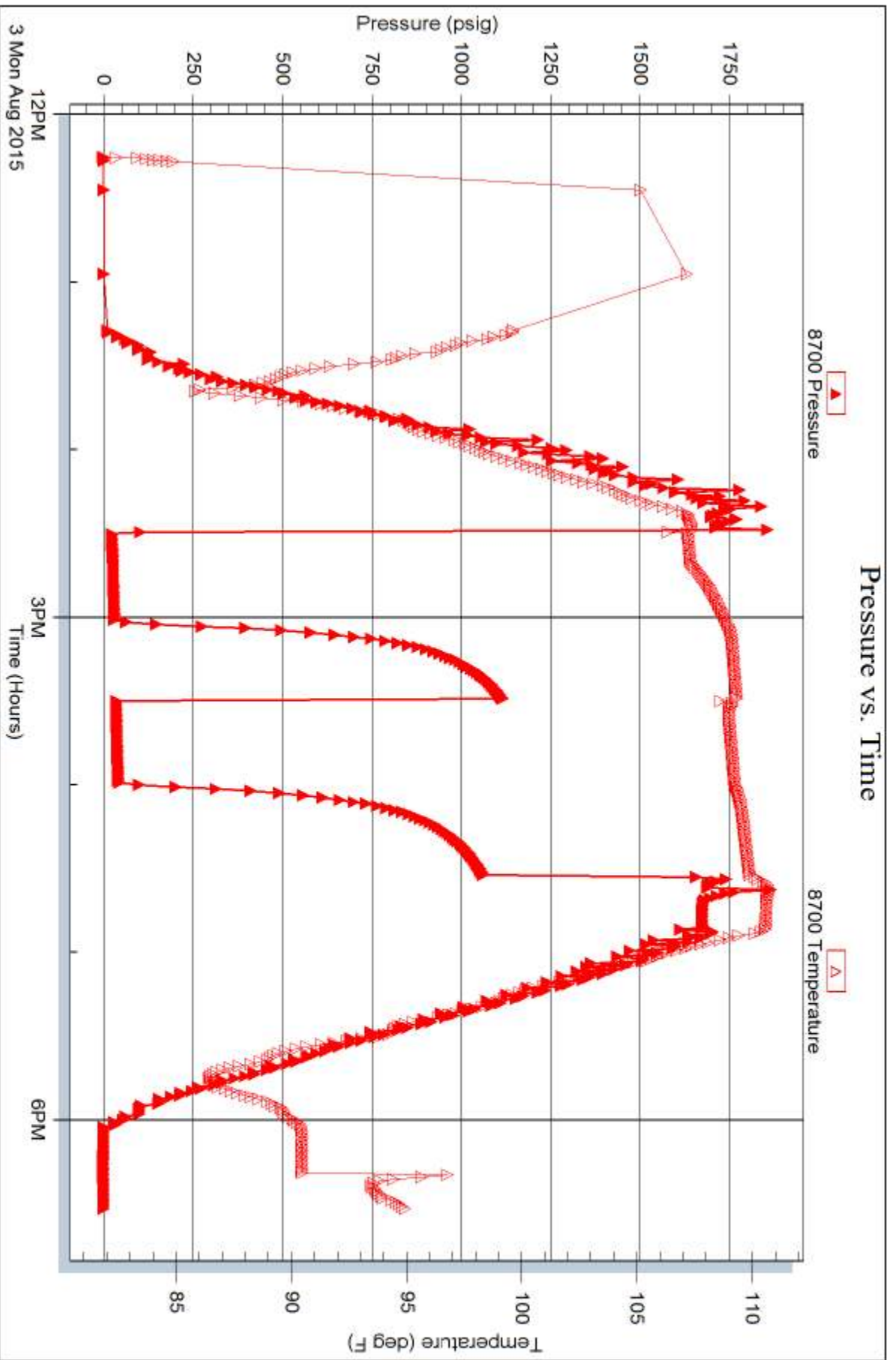
Printed: 2015.08.04 @ 09:14:06

Serial #: 8700

Outside Hess Oil Company

Marlene #1

DST Test Number: 8



Trilobite Testing, Inc

Ref. No: 62851

Printed: 2015.08.04 @ 09:14:07



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60594

Well Name & No. Malene #1 Test No. 1 Date 7-28-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ko 67460-1009
 Co. Rep / Geo. David Gould Rig MALLARD rig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ko

Interval Tested 3207-3254 Zone Tested SHAW
 Anchor Length 47 Drill Pipe Run 2957 Mud Wt. 9.1
 Top Packer Depth 3202 Drill Collars Run 240 Vis 58
 Bottom Packer Depth 3207 Wt. Pipe Run - WL 8
 Total Depth 3254 Chlorides 5000 ppm System LCM 1#
 Blow Description TFP - WEAK TO STRONG IN 8 MIN
ISIP - NO BLOW
FFP - WEAK TO STRONG IN 30 MIN
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>CO</u>				
<u>195</u>	<u>MW w/show of oil</u>			<u>75</u>	<u>25</u>
<u>620</u>	<u>WATER</u>				

Rec Total 817 BHT 111 Gravity - API RW .1 @ 55 ° F Chlorides 96000 ppm
 (A) Initial Hydrostatic 1533 Test 1050 T-On Location 0830
 (B) First Initial Flow 41 Jars 250 T-Started 0950
 (C) First Final Flow 293 Safety Joint 75 T-Open 1210
 (D) Initial Shut-In 1053 Circ Sub _____ T-Pulled 1510
 (E) Second Initial Flow 299 Hourly Standby _____ T-Out 1
 (F) Second Final Flow 443 Mileage 14 RT Comments _____
 (G) Final Shut-In 1041 Sampler _____
 (H) Final Hydrostatic 1504 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1389

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Approved By David Gould Our Representative Ray Schwager *Thank you*
 Sub Total 1389 MP/DST Disc't _____

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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60595

4/10

Well Name & No. Malene #1 Test No. 2 Date 7-29-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. David Gould Rig MALLARDrig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3290-3325 Zone Tested TORONTO
 Anchor Length 35 Drill Pipe Run 3052 Mud Wt. 9.1
 Top Packer Depth 3285 Drill Collars Run 240 Vis 42
 Bottom Packer Depth 3290 Wt. Pipe Run - WL 8
 Total Depth 3325 Chlorides 5000 ppm System LCM 1#
 Blow Description IFP - SURFACE Blow, died in 10 min
T5IP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</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 5 BHT 107 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1546</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0300</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0420</u>
(C) First Final Flow <u>24</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0705</u>
(D) Initial Shut-In <u>39</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0905</u>
(E) Second Initial Flow <u>26</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1039</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>14RT</u>	Comments
(G) Final Shut-In <u>34</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1536</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1389</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1389</u>	

Approved By _____ Our Representative RAY SCHWAGER Thank you

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. 60596

Well Name & No. Malene #1 Test No. 3 Date 7-29-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. DAVID GOULD Rig MALLARD rig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3336-3360 Zone Tested LKC
 Anchor Length 24 Drill Pipe Run 3082 Mud Wt. 9.1
 Top Packer Depth 3331 Drill Collars Run 240 Vis 50
 Bottom Packer Depth 3336 Wt. Pipe Run - WL 8
 Total Depth 3360 Chlorides 6700 ppm System LCM 1#

Blow Description TFP - SURFACE Blow thru-out
TSIP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud w/shale gl</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 5 BHT 107 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1551</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>1710</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1800</u>
(C) First Final Flow <u>22</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2020</u>
(D) Initial Shut-In <u>586</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2220</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0017</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>14</u>	Comments
(G) Final Shut-In <u>413</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1533</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1389</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1389</u>	

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

Approved By _____ Our Representative RAY SCHWAGER *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60597

Well Name & No. Makene #1 Test No. 4 Date 7-30-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address Po Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. DAVID GOULD Rig MALLARD rig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3365-3414 Zone Tested LKC
 Anchor Length 49 Drill Pipe Run 3113 Mud Wt. 9.1
 Top Packer Depth 3360 Drill Collars Run 240 Vis 51
 Bottom Packer Depth 3365 Wt. Pipe Run — WL 10
 Total Depth 3414 Chlorides 8800 ppm System LCM 1#
 Blow Description IFP - WEAK Blow thru-out 1/2" to 1" Blow
ISIP - NO Blow
FFP - NO Blow 1st 5min, Then WEAK Blow thru-out 1/8" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>0+6CM</u>	<u>5</u>	<u>8</u>	<u>87</u>	<u>—</u>
<u>60</u>	<u>0+6CM</u>	<u>5</u>	<u>12</u>	<u>83</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 120 BHT 108 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1568</u>	<input checked="" type="checkbox"/> Test 1050	T-On Location <u>1010</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>1040</u>
(C) First Final Flow <u>48</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>1245</u>
(D) Initial Shut-In <u>840</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1615</u>
(E) Second Initial Flow <u>61</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1809</u>
(F) Second Final Flow <u>73</u>	<input checked="" type="checkbox"/> Mileage 14	Comments
(G) Final Shut-In <u>743</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>1546</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Total <u>1389</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1389</u>	

Approved By _____ Our Representative Ray Schwager Thank you

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60598

Well Name & No. Marlene #1 Test No. 5 Date 7-31-15
 Company Hess O.L Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. David Gould Rig MALLARD rig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3413-3426 Zone Tested LKC
 Anchor Length 13 Drill Pipe Run 3175 Mud Wt. 9.1
 Top Packer Depth 3408 Drill Collars Run 240 Vis 48
 Bottom Packer Depth 3413 Wt. Pipe Run - WL 11.2
 Total Depth 3426 Chlorides 9200 ppm System LCM 1#
 Blow Description IFP - WEAK Blow thru-out 1/2" To 2" Blow
ISIP - NO Blow
FFP - WEAK Blow thru-out 1/4" To 2" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>240</u>	<u>GTP</u>				
<u>3.5</u>	<u>MGO</u>	<u>15</u>	<u>45</u>	<u>40</u>	
<u>30</u>	<u>H0+6CWM</u>	<u>10</u>	<u>20</u>	<u>20</u>	<u>50</u>
<u>60</u>	<u>0+6CMW</u>	<u>10</u>	<u>10</u>	<u>70</u>	<u>10</u>

Rec Total 125 BHT 110 Gravity - API RW .15 @ 65 ° F Chlorides 55000 ppm

(A) Initial Hydrostatic 1592 Test 1050 T-On Location 0550
 (B) First Initial Flow 27 Jars 250 T-Started 0620
 (C) First Final Flow 56 Safety Joint 75 T-Open 0840
 (D) Initial Shut-In 638 Circ Sub T-Pulled 1210
 (E) Second Initial Flow 68 Hourly Standby T-Out 1402
 (F) Second Final Flow 99 Mileage 14 Comments
 (G) Final Shut-In 622 Sampler
 (H) Final Hydrostatic 1566 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Initial Open 45 Extra Recorder Sub Total 0
 Initial Shut-In 60 Day Standby Total 1389
 Final Flow 45 Accessibility MP/DST Disc't
 Final Shut-In 60 Sub Total 1389

Approved By _____ Our Representative RAY SCHWAGER THANK YOU
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60599

4/10

Well Name & No. Marlene #1 Test No. 6 Date 8-1-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address P O Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. DAVID GOULD Rig MALLARD #191
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3448-3530 Zone Tested LKC
 Anchor Length 82 Drill Pipe Run 3268 Mud Wt. 9.1
 Top Packer Depth 3443 Drill Collars Run 240 Vis 59
 Bottom Packer Depth 3448 Wt. Pipe Run - WL 8.8
 Total Depth 3530 Chlorides 7000 ppm System LCM 1#

Blow Description IFP - WEAK Blow thru-out 1/8" To 1/2" Blow
ISIP - NO Blow
FFP - WEAK Blow thru-out 1/2" To 1" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>GIP</u>				
<u>30</u>	<u>0+6CM</u>	<u>5</u>	<u>10</u>		<u>85</u>
<u>60</u>	<u>MGO</u>	<u>40</u>	<u>40</u>		<u>20</u>

Rec Total 90 BHT 113 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1645 Test 1050 T-On Location 0555
 (B) First Initial Flow 41 Jars 250 T-Started 0620
 (C) First Final Flow 49 Safety Joint 75 T-Open 0905
 (D) Initial Shut-In 641 Circ Sub T-Pulled 2205
 (E) Second Initial Flow 50 Hourly Standby T-Out 0039
 (F) Second Final Flow 60 Mileage 14 14 Comments
 (G) Final Shut-In 665 Sampler blocks broke down
 (H) Final Hydrostatic 1607 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 1403 Total 1403
 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager THANK YOU

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60600

4/10

Well Name & No. MARLENE #1 Test No. 7 Date 8-2-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. DAVID GOULD Rig MALLARD rig 1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State Ks

Interval Tested 3643 - 3670 Zone Tested ARBUCKLE
 Anchor Length 27 Drill Pipe Run 3395 Mud Wt. 8.9
 Top Packer Depth 3638 Drill Collars Run 240 Vis 48
 Bottom Packer Depth 3643 Wt. Pipe Run — WL 8.8
 Total Depth 3670 Chlorides 8000 ppm System LCM 1#

Blow Description IFP - surface Blow, died in 5 min
TSIP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</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 114 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 1727 Test 1050 T-On Location 1735
 (B) First Initial Flow 28 Jars 250 T-Started 1835
 (C) First Final Flow 29 Safety Joint 75 T-Open 2135
 (D) Initial Shut-In 1041 Circ Sub _____ T-Pulled 2335
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 0150
 (F) Second Final Flow 34 Mileage 14 Comments _____
 (G) Final Shut-In 994 Sampler _____
 (H) Final Hydrostatic 1676 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 30 Extra Packer _____ Extra Copies _____
 Final Flow 30 Extra Recorder _____ Sub Total 0
 Final Shut-In 30 Day Standby _____ Total 1389
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1389

Approved By _____ Our Representative RAY SCHWAGER *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62651

Well Name & No. MARlene #1 Test No. 8 Date 8-3-15
 Company Hess Oil Company Elevation 2019 KB 2014 GL
 Address PO Box 1009 McPherson, Ks 67460-1009
 Co. Rep / Geo. DAVID Gould Rig Mallardrig1
 Location: Sec. 25 Twp. 13^s Rge. 19^w Co. ELLIS State K

Interval Tested 3643-3675 Zone Tested Arbuckle
 Anchor Length 32 Drill Pipe Run 3396 Mud Wt. 9.1
 Top Packer Depth 3638 Drill Collars Run 240 Vis 50
 Bottom Packer Depth 3643 Wt. Pipe Run - WL 8
 Total Depth 3675 Chlorides 7700 ppm System LCM 1#
 Blow Description IFP - WEAK Blow then-out 1/4" Blow
ISIP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>WM</u>		<u>2.5</u>	<u>75</u>	
	<u>w/slow flow</u>				

Rec Total 60 BHT 110 Gravity - API RW .23 @ 80 °F Chlorides 27000 ppm
 (A) Initial Hydrostatic 1716 Test 1050 T-On Location 1030
 (B) First Initial Flow 27 Jars 250 T-Started 1215
 (C) First Final Flow 33 Safety Joint 75 T-Open 1415
 (D) Initial Shut-In 1109 Circ Sub T-Pulled 1615
 (E) Second Initial Flow 39 Hourly Standby T-Out 1832
 (F) Second Final Flow 43 Mileage 14 Comments _____
 (G) Final Shut-In 1067 Sampler _____
 (H) Final Hydrostatic 1691 Straddle _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 30 Shale Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 30 Extra Recorder _____
 Sub Total 0
 Total 1389
 Sub Total 1389 Day Standby _____
 Accessibility _____
 MP/DST Disc't _____

Approved By _____ Our Representative RAY SCHWAGN *Thank you*
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