



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

O'Brien Resources LLC

27-14-30 Gove, KS

P.O. Box 6149  
Shreveport, LA 71136

Hayes 27 #1

ATTN: Sean Deenihan

Job Ticket: 48000

DST#: 1

Test Start: 2012.07.03 @ 04:45:33

## GENERAL INFORMATION:

Formation: **Lansing D&E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:41:43

Time Test Ended: 11:39:12

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: **3877.00 ft (KB) To 3926.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 3926.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: **8373**

Inside

Press @ Run Depth: 163.28 psig @ 3878.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.03

End Date:

2012.07.03

Last Calib.: 2012.07.03

Start Time: 04:45:33

End Time:

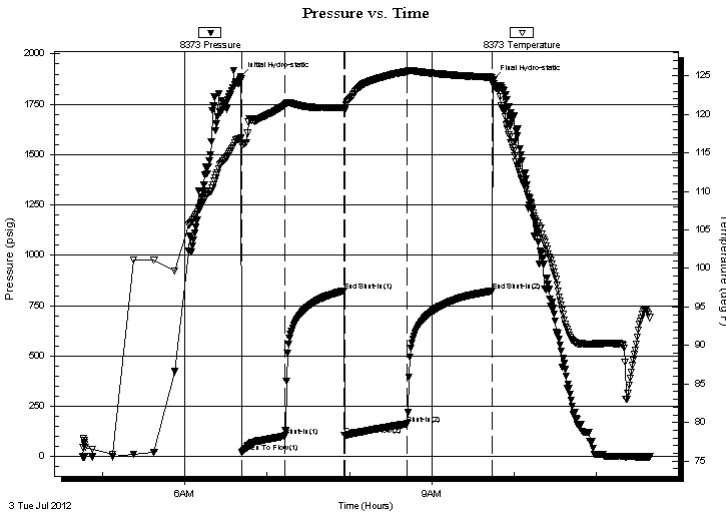
11:39:12

Time On Btm: 2012.07.03 @ 06:40:43

Time Off Btm: 2012.07.03 @ 09:44:57

TEST COMMENT: IF: 1/4 blow built to 9 1/2 in 30 min.  
IS: No return.  
FF: Surface blow BOB in 41 min.  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1888.57	116.90	Initial Hydro-static
1	21.43	115.98	Open To Flow (1)
33	103.13	121.16	Shut-In(1)
76	824.24	120.90	End Shut-In(1)
76	106.05	120.53	Open To Flow (2)
122	163.28	125.55	Shut-In(2)
184	822.94	124.80	End Shut-In(2)
185	1872.37	124.02	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 90%w 10%m	1.49
129.00	w cm 40%w 60%m	1.81
5.00	free oil 100%o	0.07

\* Recovery from multiple tests

## Gas Rates

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



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**FLUID SUMMARY**

O'Brien Resources LLC

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P.O. Box 6149  
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**Hayes 27 #1**

Job Ticket: 48000

**DST#: 1**

ATTN: Sean Deenihan

Test Start: 2012.07.03 @ 04:45:33

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

53000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw 90%w 10%m	1.489
129.00	w cm 40%w 60%m	1.810
5.00	free oil 100%o	0.070

Total Length: 320.00 ft      Total Volume: 3.369 bbl

Num Fluid Samples: 0

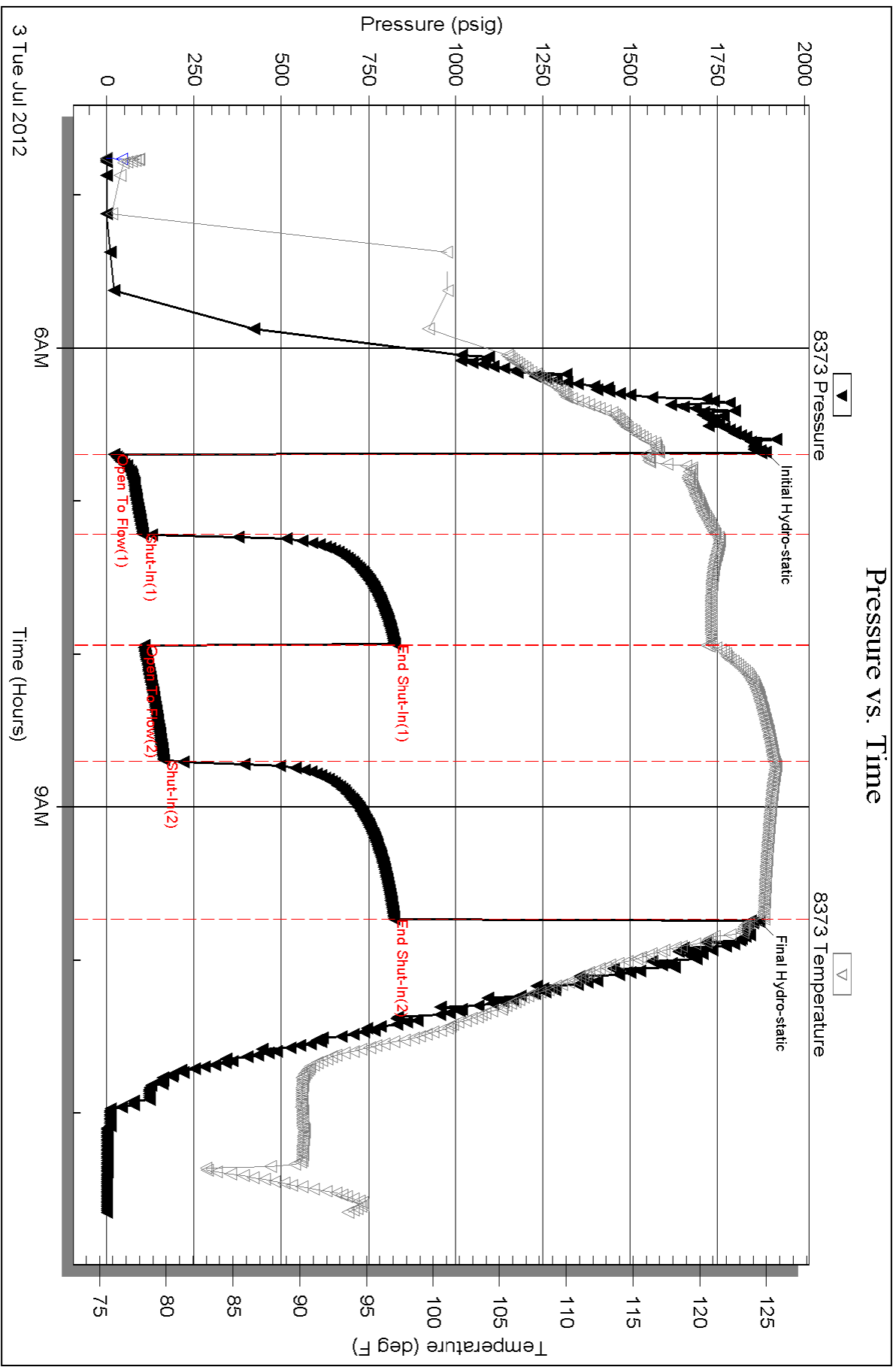
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .12@91=53000





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# DRILL STEM TEST REPORT

O'Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48351

**DST#: 2**

ATTN: Sean Deenihan

Test Start: 2012.07.03 @ 17:25:24

## GENERAL INFORMATION:

Formation: **Geo did not give me**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:07:39

Time Test Ended: 22:16:24

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

**Interval: 3924.00 ft (KB) To 3852.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 3852.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8373 Inside**

Press @ Run Depth: 27.82 psig @ 3925.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.03

End Date:

2012.07.03

Last Calib.:

2012.07.03

Start Time:

17:25:29

End Time:

22:16:23

Time On Btm:

2012.07.03 @ 19:06:24

Time Off Btm:

2012.07.03 @ 20:41:54

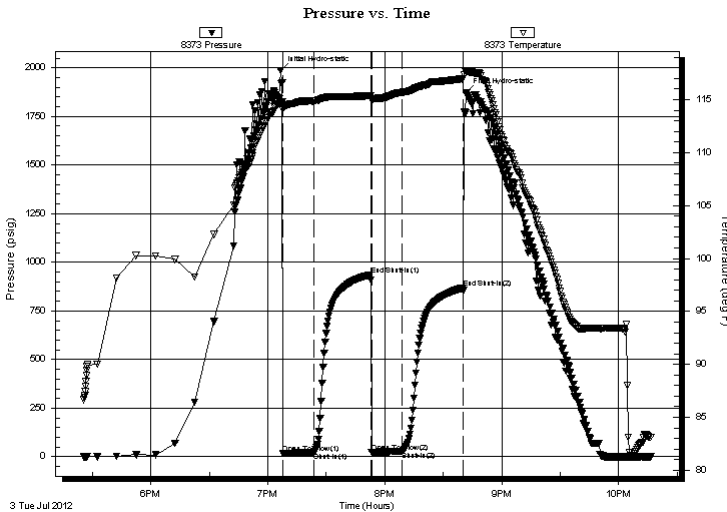
TEST COMMENT: IF: Surface blow died in 6 min.

IS: No return.

FF: No blow.

FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1986.92	114.67	Initial Hydro-static
2	17.36	114.03	Open To Flow (1)
17	22.18	114.88	Shut-In(1)
47	935.04	115.37	End Shut-In(1)
47	23.35	114.95	Open To Flow (2)
63	27.82	115.68	Shut-In(2)
94	869.05	116.96	End Shut-In(2)
96	1871.30	117.68	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

\* Recovery from multiple tests

## Gas Rates

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



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

O'Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48351

**DST#: 2**

ATTN: Sean Deenihan

Test Start: 2012.07.03 @ 17:25:24

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	mud 100% <sub>m</sub>	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

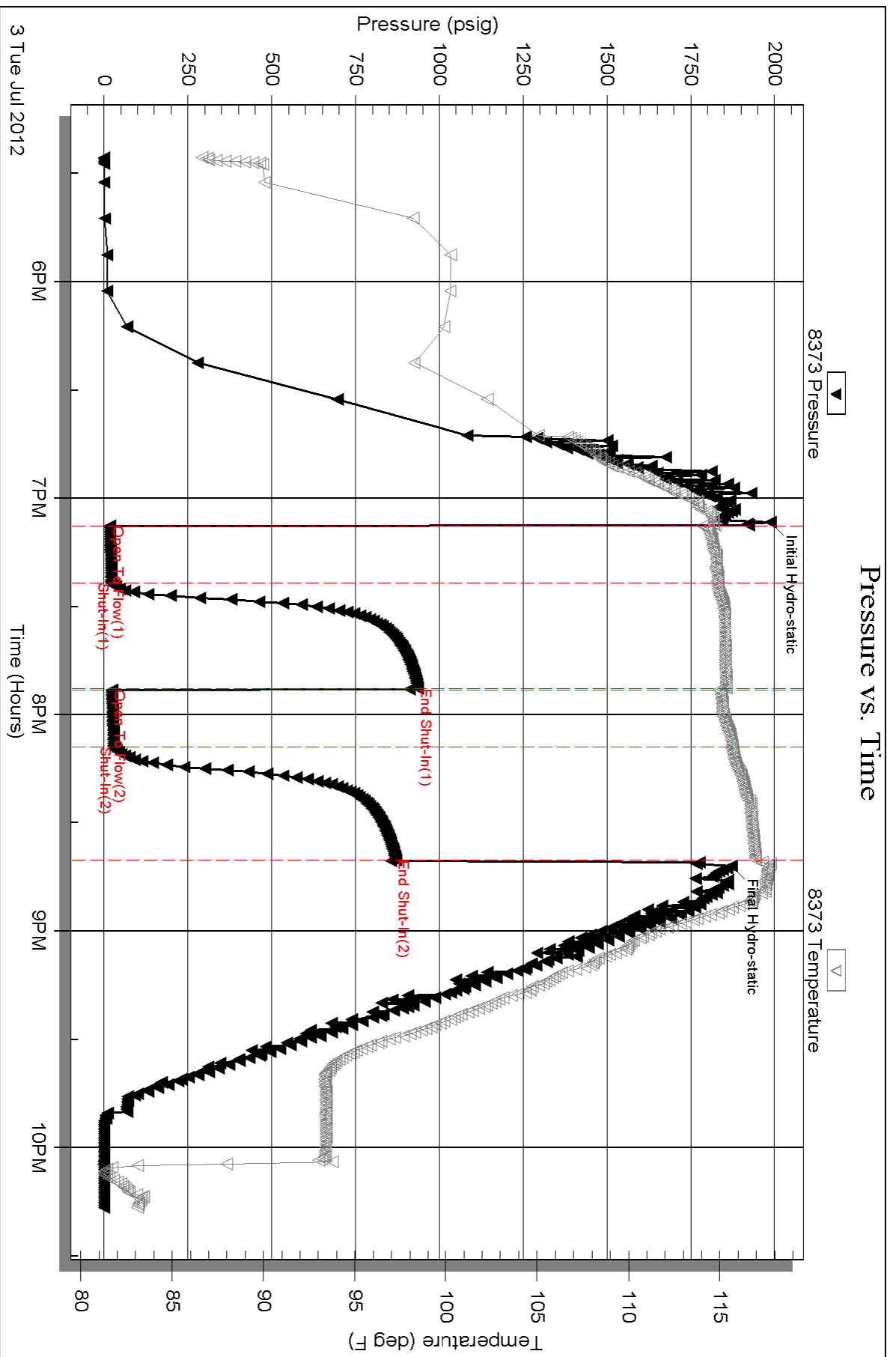
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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# DRILL STEM TEST REPORT

O'Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48352

**DST#: 3**

ATTN: Sean Deenihan

Test Start: 2012.07.04 @ 12:18:40

## GENERAL INFORMATION:

Formation: **Lansing K&L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:12:25

Time Test Ended: 18:14:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

**Interval: 4096.00 ft (KB) To 4148.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 4148.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8373**

**Inside**

Press @ Run Depth: 226.26 psig @ 4097.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.04

End Date:

2012.07.04

Last Calib.:

2012.07.04

Start Time: 12:18:45

End Time:

18:14:39

Time On Btm:

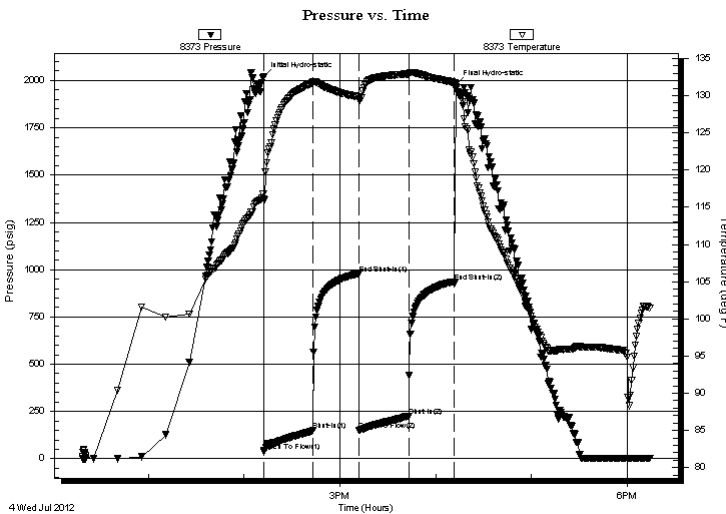
2012.07.04 @ 14:12:10

Time Off Btm:

2012.07.04 @ 16:12:55

**TEST COMMENT:** IF: BOB in 14 min.  
IS: No return.  
FF: BOB in 18 min.  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2019.45	116.77	Initial Hydro-static
1	40.78	116.03	Open To Flow (1)
31	149.57	131.69	Shut-In(1)
60	979.15	129.82	End Shut-In(1)
60	151.84	129.40	Open To Flow (2)
91	226.26	132.91	Shut-In(2)
120	936.72	131.79	End Shut-In(2)
121	1979.18	130.85	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 95%w 5%m	1.49
268.00	mcw 70%w 30%m	3.76

\* Recovery from multiple tests

## Gas Rates

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



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**FLUID SUMMARY**

O Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48352

**DST#: 3**

ATTN: Sean Deenihan

Test Start: 2012.07.04 @ 12:18:40

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

50000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw 95%w 5%m	1.489
268.00	mcw 70%w 30%m	3.759

Total Length: 454.00 ft      Total Volume: 5.248 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

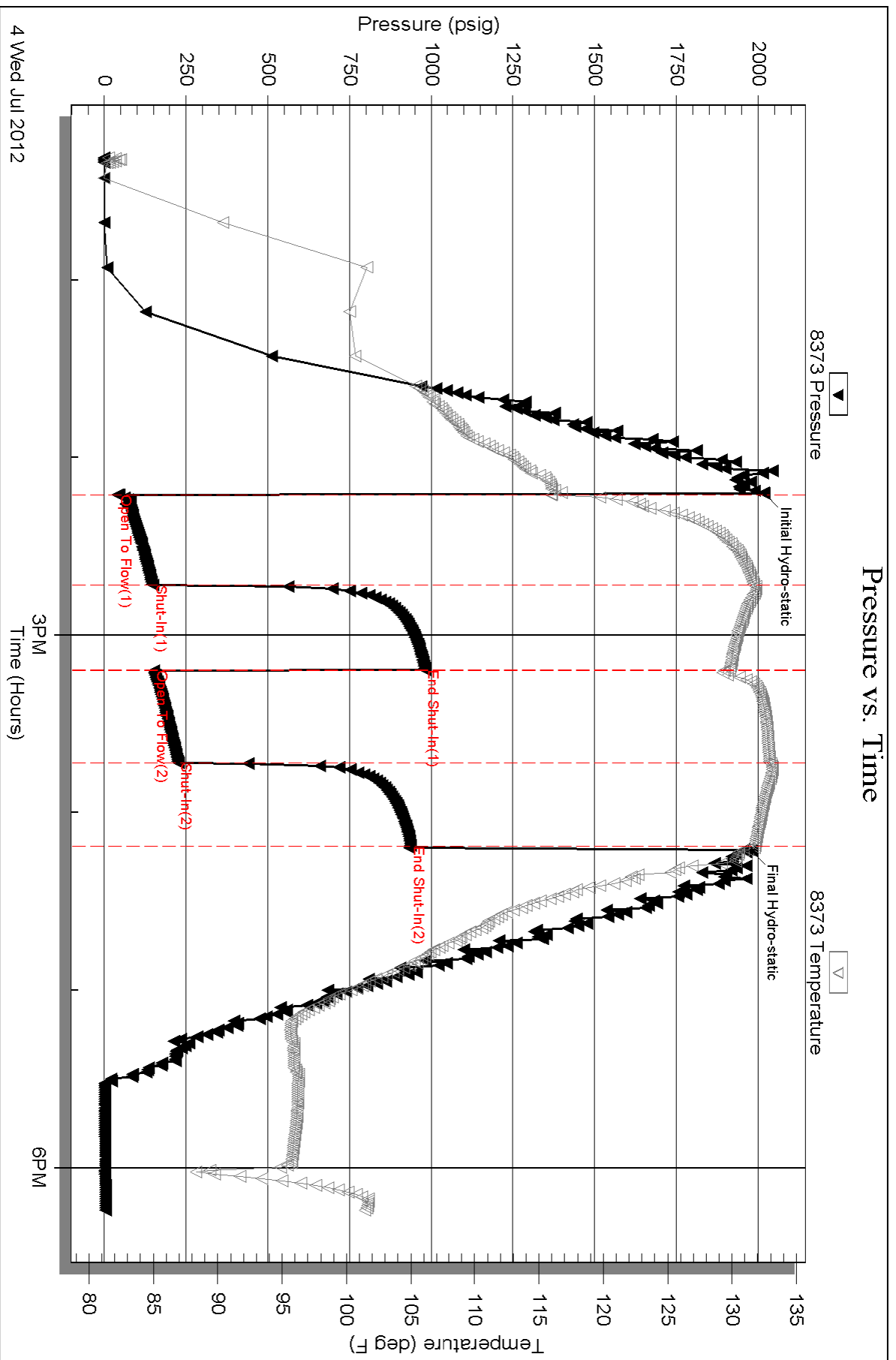
Laboratory Name:

Laboratory Location:

Recovery Comments: .10@103=50000



### Pressure vs. Time





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# DRILL STEM TEST REPORT

O'Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

ATTN: Sean Deenihan

Job Ticket: 48353

**DST#: 4**

Test Start: 2012.07.05 @ 11:07:17

## GENERAL INFORMATION:

Formation: **Myric Station**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:10:02

Time Test Ended: 18:03:17

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

**Interval: 4316.00 ft (KB) To 4348.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 4348.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8373 Inside**

Press @ Run Depth: 116.90 psig @ 4317.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.05

End Date:

2012.07.05

Last Calib.: 2012.07.05

Start Time: 11:07:22

End Time:

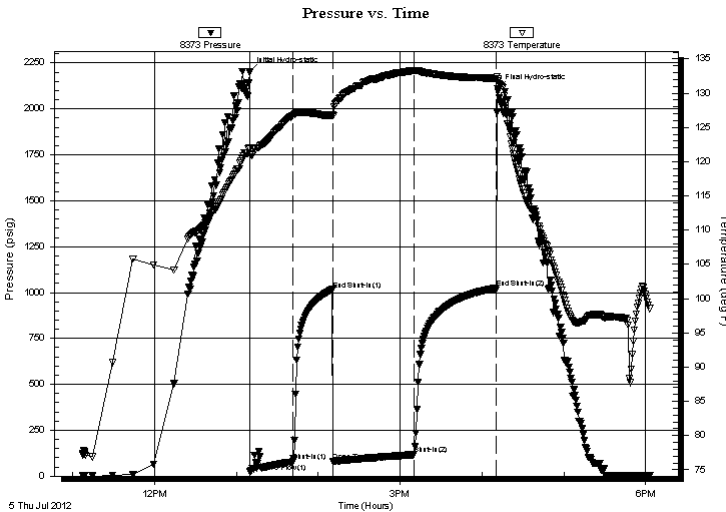
18:03:16

Time On Btm: 2012.07.05 @ 13:09:32

Time Off Btm: 2012.07.05 @ 16:11:32

**TEST COMMENT:** IF: 1/4 blow built to 4 in 30 min.  
IS: No return.  
FF: Surface blow built to 5 in 60 min.  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.83	121.96	Initial Hydro-static
1	23.31	121.10	Open To Flow (1)
32	78.05	126.77	Shut-In(1)
61	1016.76	126.77	End Shut-In(1)
62	81.24	126.70	Open To Flow (2)
121	116.90	133.30	Shut-In(2)
181	1024.44	132.16	End Shut-In(2)
182	2111.29	132.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 85%w 15%m	0.62
82.00	mcw 60%w 40%m	1.15
1.00	free oil 100%o	0.01

\* Recovery from multiple tests

## Gas Rates

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





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O Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48353

**DST#: 4**

ATTN: Sean Deenihan

Test Start: 2012.07.05 @ 11:07:17

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

53000 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	mcw 85%w 15%m	0.619
82.00	mcw 60%w 40%m	1.150
1.00	free oil 100%o	0.014

Total Length: 207.00 ft      Total Volume: 1.783 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

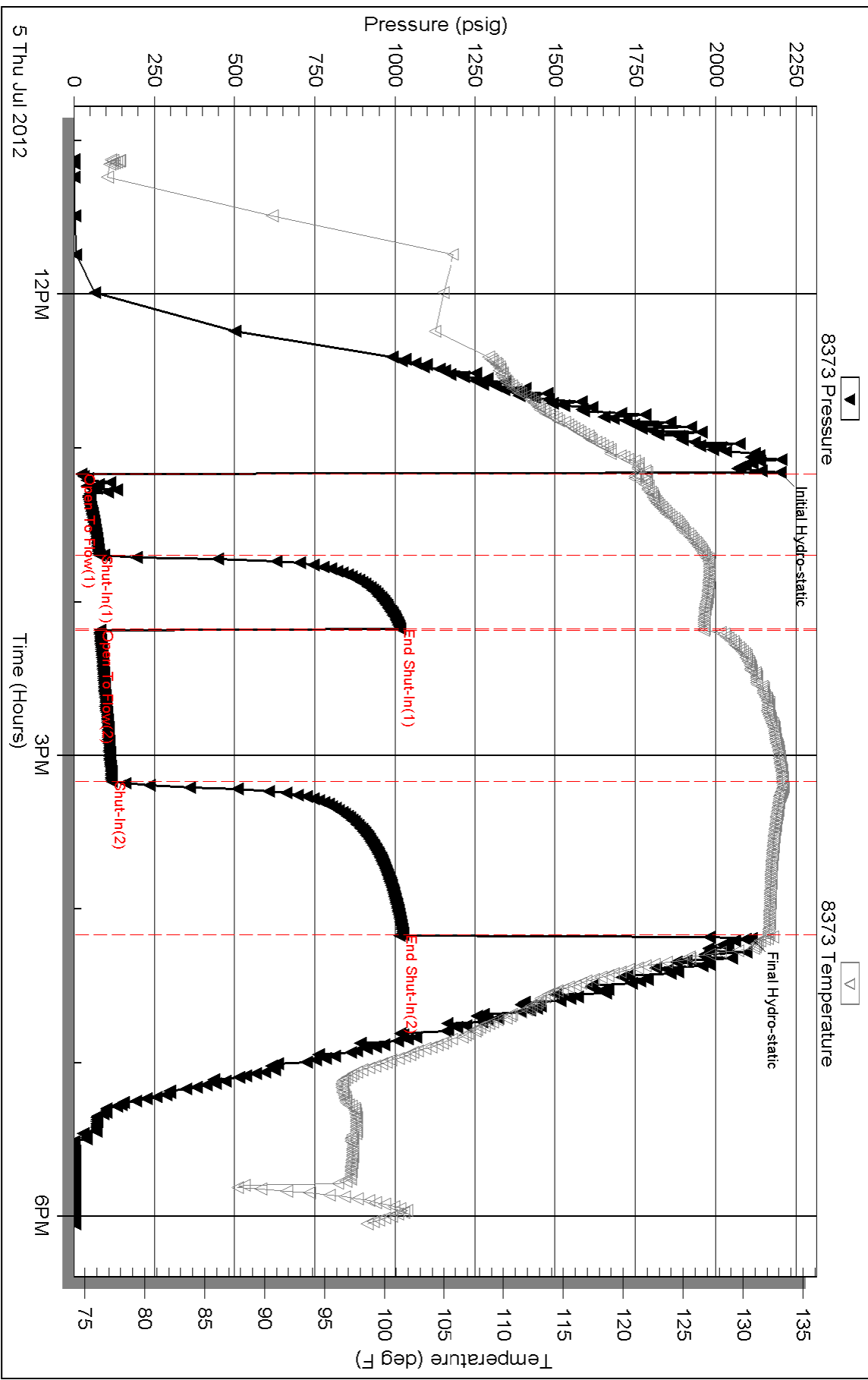
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .10@100=53000

### Pressure vs. Time

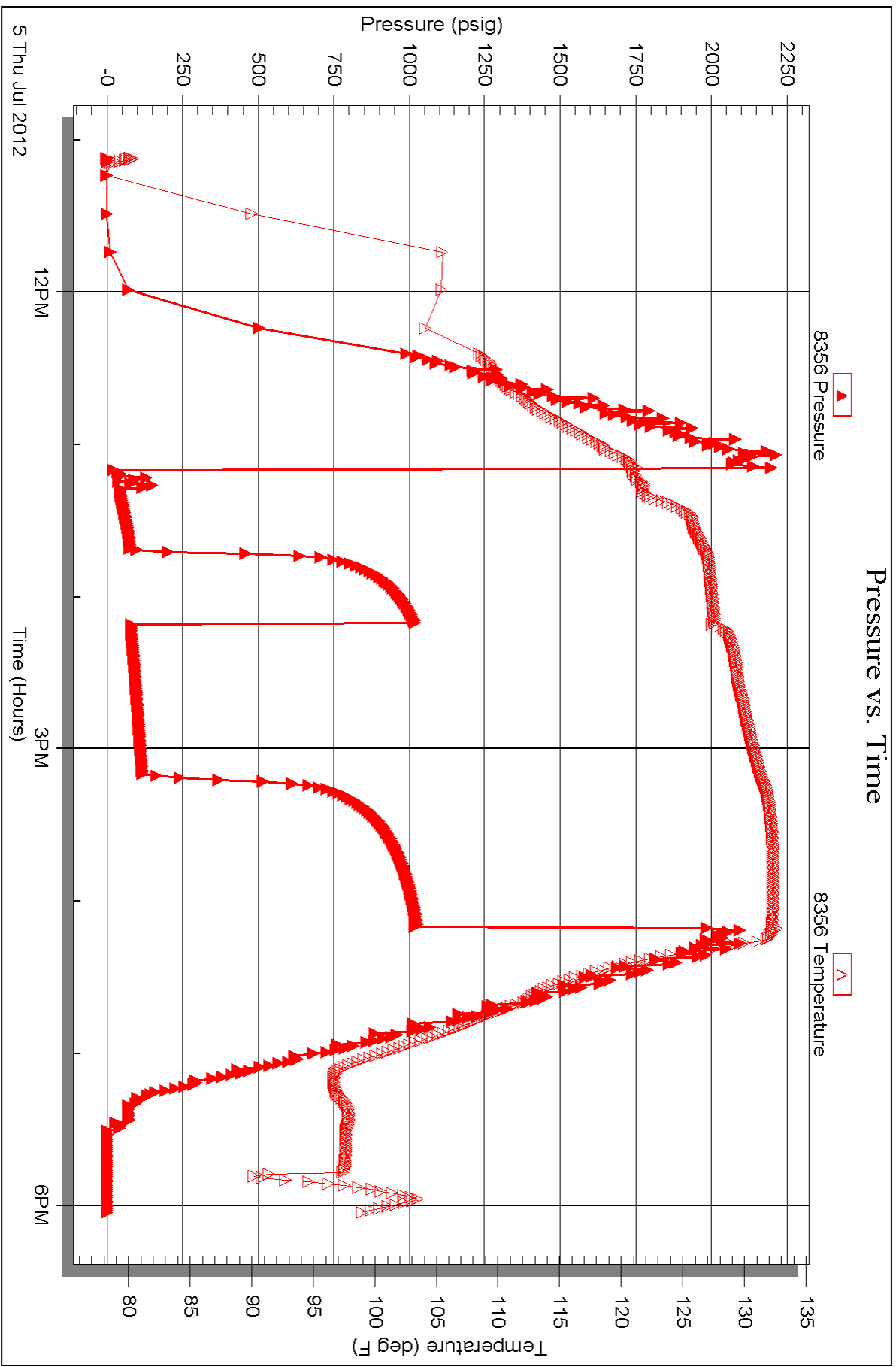


Serial #: 8356

Outside O'Brien Resources LLC

Hayes 27 #1

DST Test Number: 4





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

O'Brien Resources LLC

27-14-30 Gove, KS

P.O. Box 6149  
Shreveport, LA 71136

Hayes 27 #1

ATTN: Sean Deenihan

Job Ticket: 48354

DST#: 5

Test Start: 2012.07.06 @ 05:47:08

## GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:56:38

Time Test Ended: 13:22:38

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: **4377.00 ft (KB) To 4446.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 4446.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: **8373**

Inside

Press @ Run Depth: 209.33 psig @ 4378.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.06

End Date:

2012.07.06

Last Calib.:

2012.07.06

Start Time: 05:47:13

End Time:

13:22:37

Time On Btm:

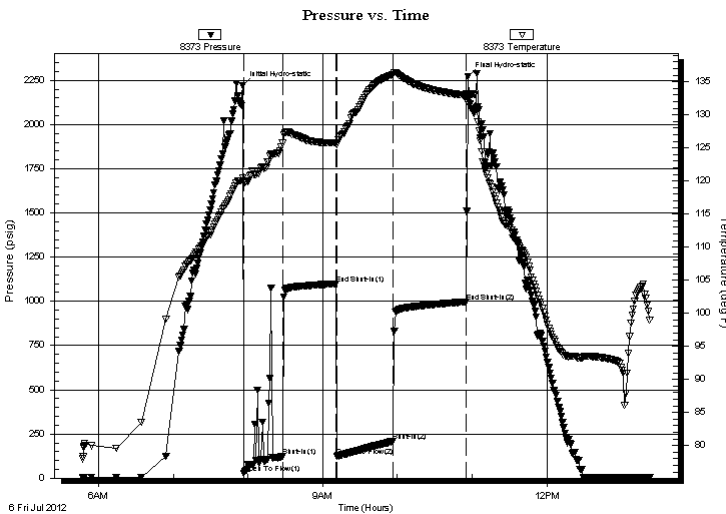
2012.07.06 @ 07:55:38

Time Off Btm:

2012.07.06 @ 10:56:38

TEST COMMENT: IF: BOB in 29 min.  
IS: No return.  
FF: BOB in 34 min.  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2218.79	120.39	Initial Hydro-static
1	26.25	119.88	Open To Flow (1)
32	122.25	125.70	Shut-In(1)
76	1099.98	125.78	End Shut-In(1)
76	124.34	125.48	Open To Flow (2)
122	209.33	136.17	Shut-In(2)
180	997.39	132.94	End Shut-In(2)
181	2270.34	131.82	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 90%w 10%m	0.62
124.00	mcw 60%w 40%m	1.74
186.00	mud 100%m	2.61

## Gas Rates

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

\* Recovery from multiple tests



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**FLUID SUMMARY**

O Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48354

**DST#: 5**

ATTN: Sean Deenihan

Test Start: 2012.07.06 @ 05:47:08

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

26000 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	mcw 90%w 10%m	0.619
124.00	mcw 60%w 40%m	1.739
186.00	mud 100%m	2.609

Total Length: 434.00 ft      Total Volume: 4.967 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

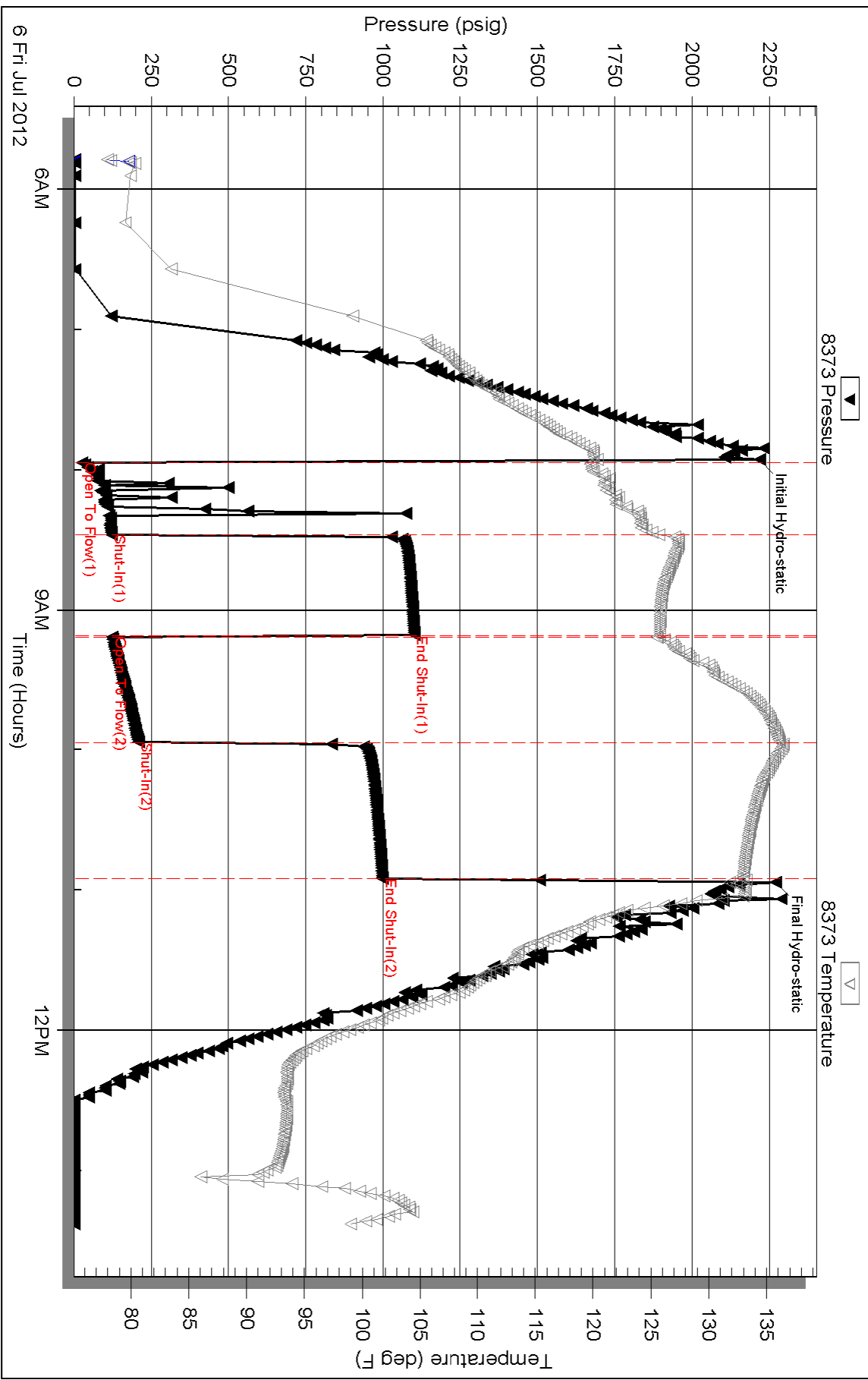
Laboratory Name:

Laboratory Location:

Recovery Comments: .18@98=26000



# Pressure vs. Time





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

O'Brien Resources LLC

27-14-30 Gove, KS

P.O. Box 6149  
Shreveport, LA 71136

Hayes 27 #1

ATTN: Sean Deenihan

Job Ticket: 48355

DST#: 6

Test Start: 2012.07.07 @ 13:10:28

## GENERAL INFORMATION:

Formation: **Lansing J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:06:58

Time Test Ended: 18:02:58

Test Type: Conventional Straddle (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: **4074.00 ft (KB) To 4089.00 ft (KB) (TVD)**

Reference Elevations: 2755.00 ft (KB)

Total Depth: 4626.00 ft (KB) (TVD)

2750.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **8373**

Inside

Press @ Run Depth: 28.58 psig @ 4075.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.07

End Date:

2012.07.07

Last Calib.:

2012.07.07

Start Time: 13:10:33

End Time:

18:02:57

Time On Btm:

2012.07.07 @ 15:06:43

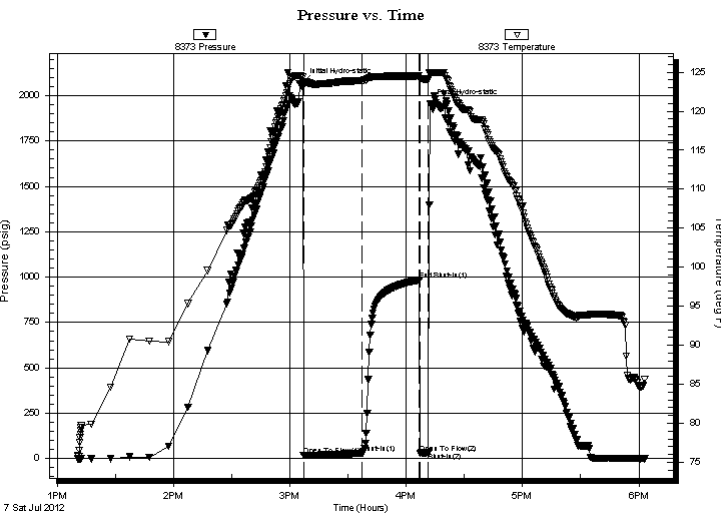
Time Off Btm:

2012.07.07 @ 16:12:28

TEST COMMENT: IF: Surface blow died in 7 min.

IS: No return.

FF: No blow. Pulled tool.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2072.69	124.39	Initial Hydro-static
1	17.97	123.78	Open To Flow (1)
31	28.58	123.94	Shut-In(1)
60	984.95	124.53	End Shut-In(1)
61	30.51	124.00	Open To Flow (2)
65	32.13	124.12	Shut-In(2)
66	1956.30	124.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud some oil spots 100%m	0.02

\* Recovery from multiple tests

## Gas Rates

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







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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

O'Brien Resources LLC

**27-14-30 Gove, KS**

P.O. Box 6149  
Shreveport, LA 71136

**Hayes 27 #1**

Job Ticket: 48355

**DST#: 6**

ATTN: Sean Deenihan

Test Start: 2012.07.07 @ 13:10:28

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	mud some oil spots 100%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 #: 8373

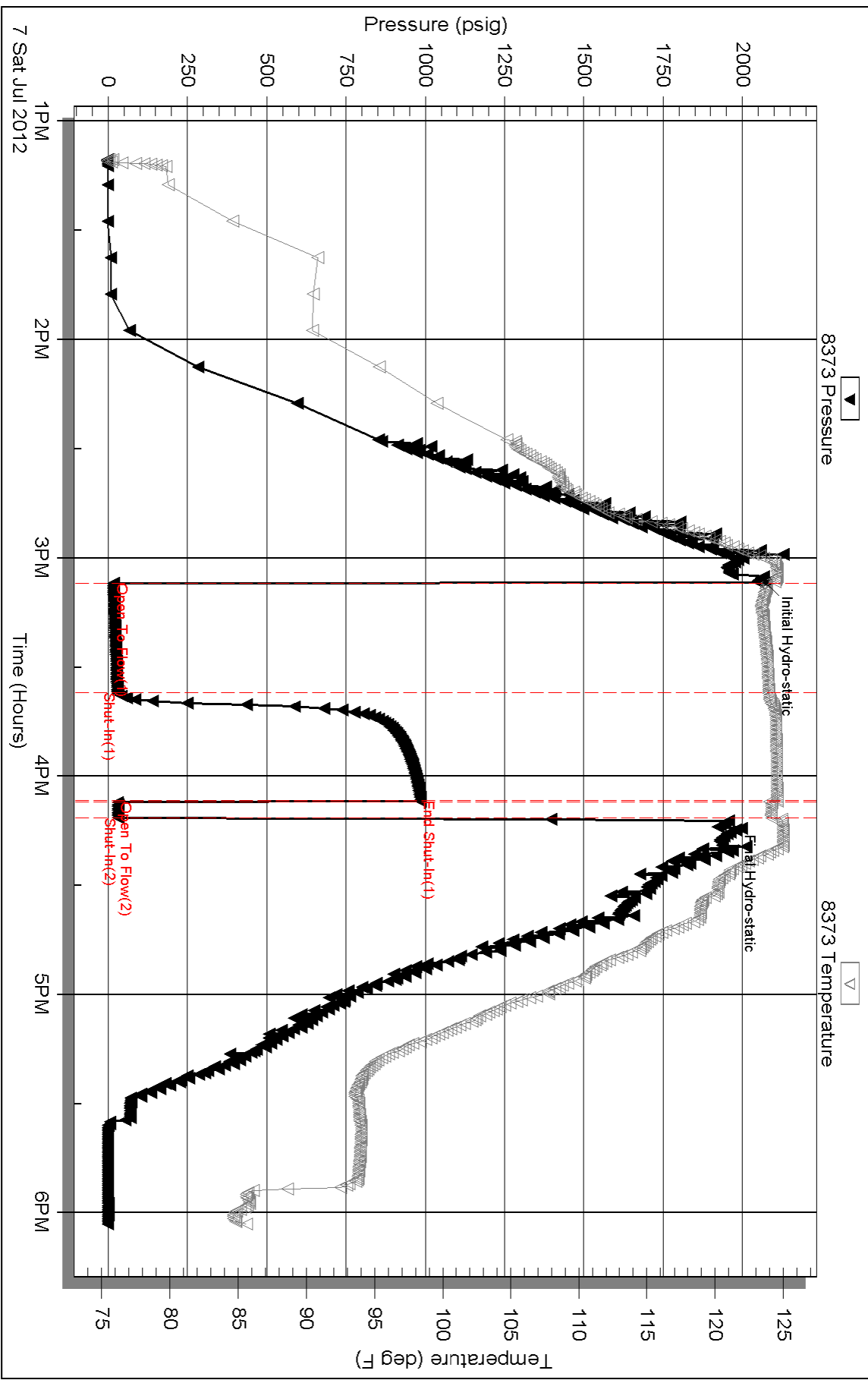
Inside

O'Brien Resources LLC

Hayes 27 #1

DST Test Number: 6

# Pressure vs. Time



Serial #: 8356

Outside O'Brien Resources LLC

Hayes 27 #1

DST Test Number: 6

