



DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays, KS 67601

ATTN: Al Downing

Middleton-Salm #1-8

8-18s-17w Rush,KS

Start Date: 2012.11.06 @ 05:37:28

End Date: 2012.11.06 @ 12:47:28

Job Ticket #: 48725 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.13 @ 16:10:28



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Downing Nelson Oil Company

8-18s-17w Rush, KS

PO Box 1019
Hays, KS 67601

Middleton-Salm #1-8

Job Ticket: 48725

DST#: 1

ATTN: Al Downing

Test Start: 2012.11.06 @ 05:37:28

GENERAL INFORMATION:

Formation: **Reagan Sand**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 08:50:28

Time Test Ended: 12:47:28

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

Interval: 3760.00 ft (KB) To 3790.00 ft (KB) (TVD)

Reference Elevations: 2088.00 ft (KB)

Total Depth: 3852.00 ft (KB) (TVD)

2078.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8366

Inside

Press @ Run Depth: 331.98 psig @ 3776.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.06

End Date:

2012.11.06

Last Calib.:

2012.11.06

Start Time: 05:37:30

End Time:

12:47:28

Time On Btm:

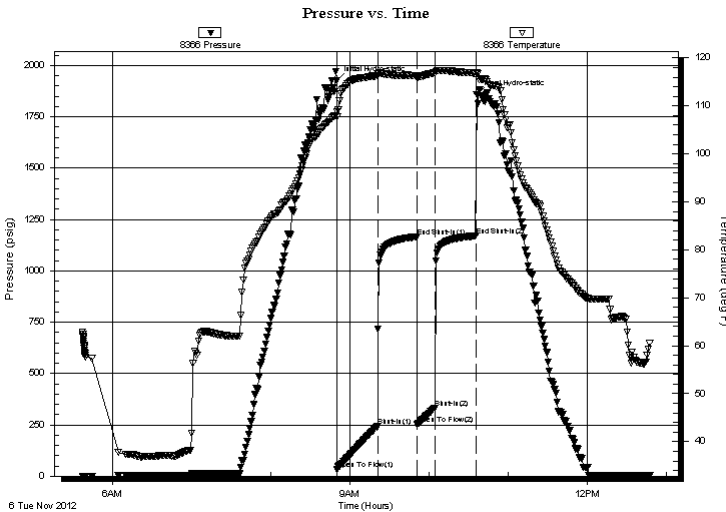
2012.11.06 @ 08:50:13

Time Off Btm:

2012.11.06 @ 10:36:13

TEST COMMENT: IFP-Good Blow, BOB in 7 Min.
ISI-Dead
FFP-Good Blow, BOB in 9 Min.
FSI-Dead

PRESSURE SUMMARY



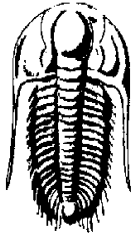
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1926.45 | 108.76 | Initial Hydro-static |
| 1 | 32.94 | 107.72 | Open To Flow (1) |
| 31 | 242.57 | 116.29 | Shut-In(1) |
| 61 | 1166.34 | 116.23 | End Shut-In(1) |
| 61 | 251.09 | 115.80 | Open To Flow (2) |
| 74 | 331.98 | 116.87 | Shut-In(2) |
| 106 | 1170.02 | 116.77 | End Shut-In(2) |
| 106 | 1857.06 | 116.93 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------------------|--------------|
| 660.00 | Muddy Water-95%W-5%M | 8.98 |
| 0.00 | Oil Scum on very top of fluid | 0.00 |
| | | |
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Gas Rates

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



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DRILL STEM TEST REPORT

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PO Box 1019
Hays, KS 67601

ATTN: Al Dow ning

8-18s-17w Rush,KS

Middleton-Salm #1-8

Job Ticket: 48725

DST#: 1

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Interval: **3760.00 ft (KB) To 3790.00 ft (KB) (TVD)**

Total Depth: 3852.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

Reference Elevations: 2088.00 ft (KB)

2078.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8789

Outside

Press @RunDepth: psig @ 3776.00 ft (KB)

Start Date: 2012.11.06

End Date: 2012.11.06

Start Time: 05:36:30

End Time: 12:47:43

Capacity: 8000.00 psig

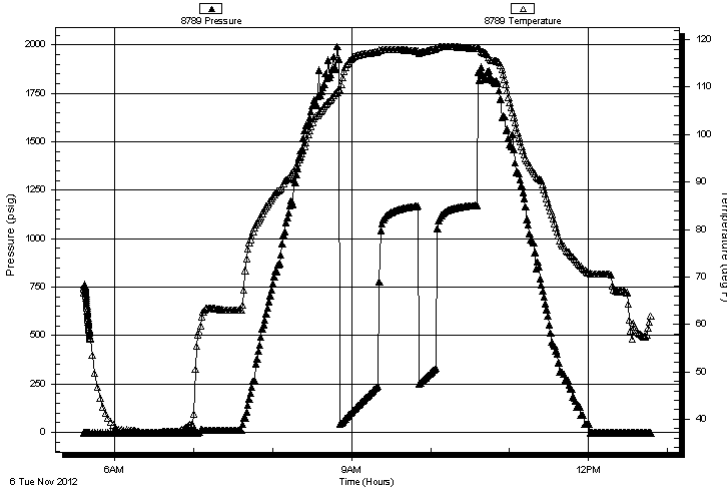
Last Calib.: 1899.12.30

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Good Blow , BOB in 7 Min.
ISI-Dead
FFP-Good Blow , BOB in 9 Min.
FSI-Dead

Pressure vs. Time



PRESSURE SUMMARY

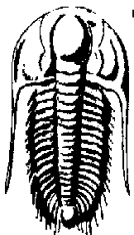
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
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Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------------------|--------------|
| 660.00 | Muddy Water-95%W-5%M | 8.98 |
| 0.00 | Oil Scum on very top of fluid | 0.00 |
| | | |
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Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Downing Nelson Oil Company

8-18s-17w Rush, KS

PO Box 1019
Hays, KS 67601

Middleton-Salm #1-8

Job Ticket: 48725

DST#: 1

ATTN: Al Downing

Test Start: 2012.11.06 @ 05:37:28

GENERAL INFORMATION:

Formation: **Reagan Sand**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 08:50:28

Time Test Ended: 12:47:28

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

Interval: **3760.00 ft (KB) To 3790.00 ft (KB) (TVD)**

Total Depth: 3852.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2088.00 ft (KB)

2078.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8289 Below (Straddle)

Press @ Run Depth: psig @ 3811.00 ft (KB)

Start Date: 2012.11.06

End Date: 2012.11.06

Start Time: 05:33:57

End Time: 12:44:25

Capacity: 8000.00 psig

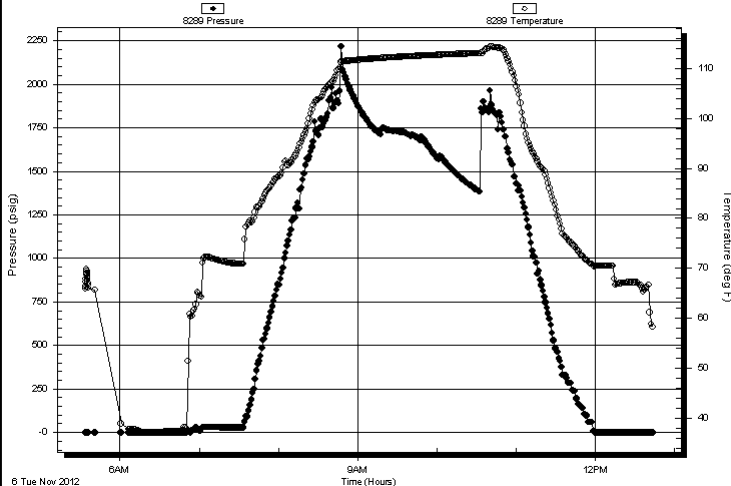
Last Calib.: 2012.11.06

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Good Blow , BOB in 7 Min.
ISI-Dead
FFP-Good Blow , BOB in 9 Min.
FSI-Dead

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
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Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------------------|--------------|
| 660.00 | Muddy Water-95%W-5%M | 8.98 |
| 0.00 | Oil Scum on very top of fluid | 0.00 |
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Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

8-18s-17w Rush,KS

PO Box 1019
Hays, KS 67601

Middleton-Salm #1-8

Job Ticket: 48725

DST#: 1

ATTN: Al Downing

Test Start: 2012.11.06 @ 05:37:28

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3729.00 ft | Diameter: 3.80 inches | Volume: 52.31 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.70 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 60000.00 lb |
| | | | <u>Total Volume: 52.46 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 20.00 ft | | | String Weight: Initial 49000.00 lb |
| Depth to Top Packer: | 3760.00 ft | | | Final 53000.00 lb |
| Depth to Bottom Packer: | 3790.00 ft | | | |
| Interval between Packers: | 30.00 ft | | | |
| Tool Length: | 112.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

| | | | | | |
|-----------------|-------|------|---------|---------|-------------------------------|
| Change Over Sub | 1.00 | | | 3740.00 | |
| Shut In Tool | 5.00 | | | 3745.00 | |
| Hydraulic tool | 5.00 | | | 3750.00 | |
| Packer | 5.00 | | | 3755.00 | 21.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3760.00 | |
| Stubb | 1.00 | | | 3761.00 | |
| Perforations | 15.00 | | | 3776.00 | |
| Recorder | 0.00 | 8366 | Inside | 3776.00 | |
| Recorder | 0.00 | 8789 | Outside | 3776.00 | |
| Perforations | 10.00 | | | 3786.00 | |
| Blank Off Sub | 1.00 | | | 3787.00 | |
| Blank Spacing | 3.00 | | | 3790.00 | 30.00 Tool Interval |
| Packer | 1.00 | | | 3791.00 | |
| Perforations | 19.00 | | | 3810.00 | |
| Change Over Sub | 1.00 | | | 3811.00 | |
| Recorder | 0.00 | 8289 | Below | 3811.00 | |
| Blank Spacing | 32.00 | | | 3843.00 | |
| Change Over Sub | 1.00 | | | 3844.00 | |
| Perforations | 4.00 | | | 3848.00 | |
| Bullnose | 3.00 | | | 3851.00 | 61.00 Bottom Packers & Anchor |

Total Tool Length: 112.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

8-18s-17w Rush,KS

PO Box 1019
Hays, KS 67601

Middleton-Salm #1-8

Job Ticket: 48725

DST#: 1

ATTN: Al Downing

Test Start: 2012.11.06 @ 05:37:28

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:

19500 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------------------------|---------------|
| 660.00 | Muddy Water-95%W-5%M | 8.985 |
| 0.00 | Oil Scum on very top of fluid | 0.000 |

Total Length: 660.00 ft

Total Volume: 8.985 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8366

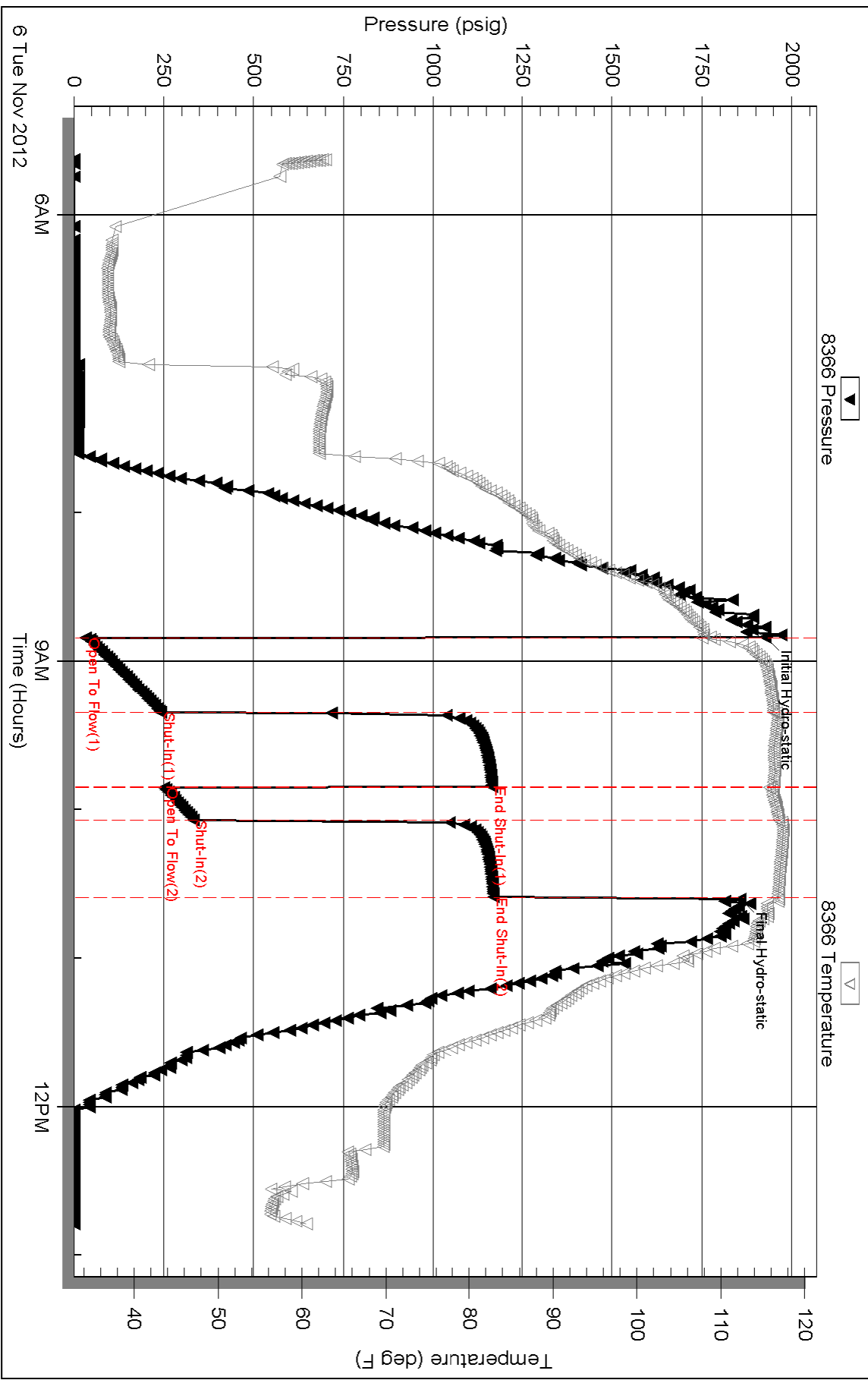
Inside

Downing Nelson Oil Company

Middleton-Salm #1-8

DST Test Number: 1

Pressure vs. Time

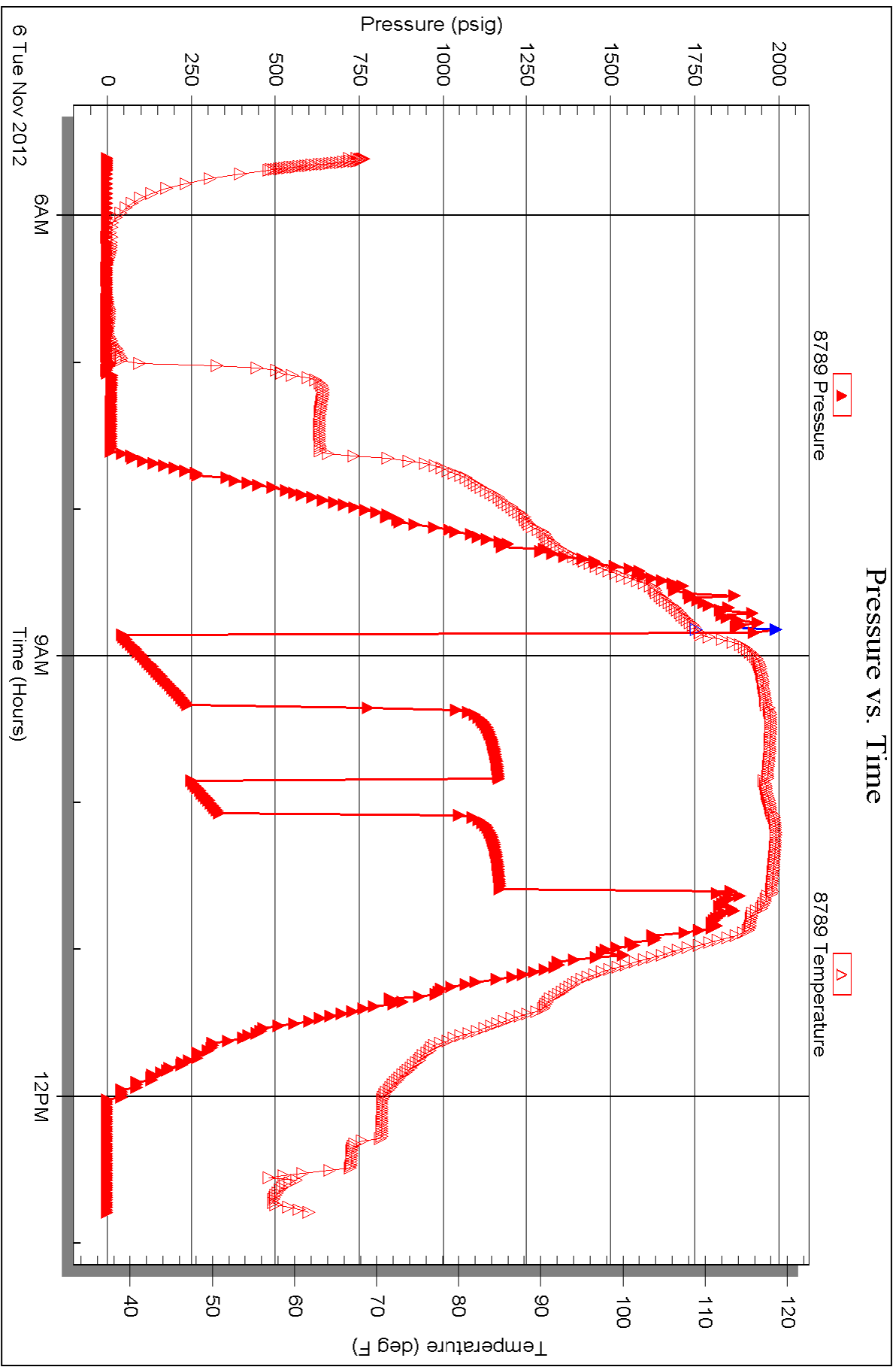


Serial #: 8789

Outside Downing Nelson Oil Company

Middleton-Salm #1-8

DST Test Number: 1

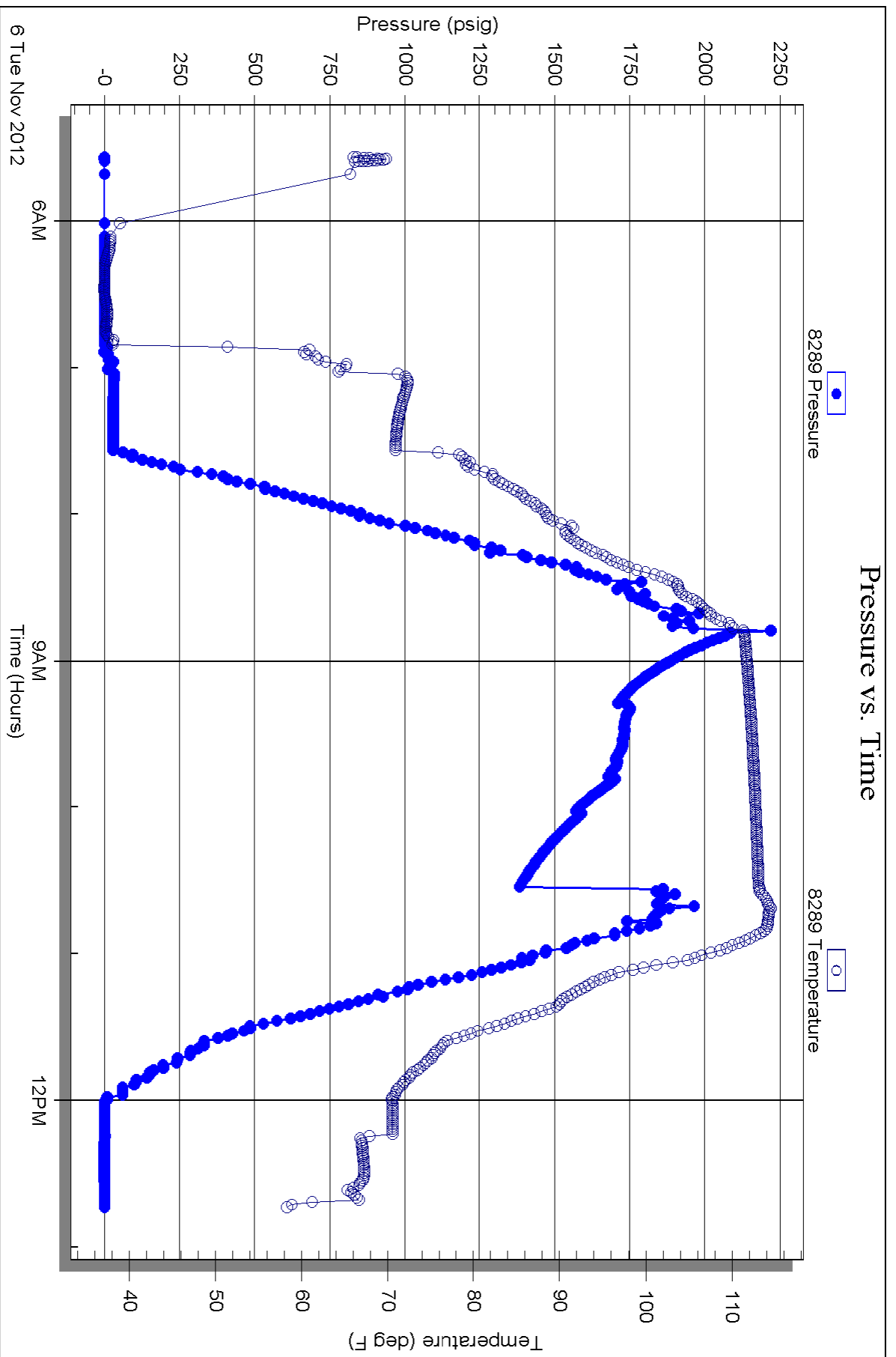


Serial #: 8289

Below (Stratton) Nelson Oil Company

Middleton-Salm #1-8

DST Test Number: 1





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48725

4/10

Well Name & No. Middleton - Salm #1-8 Test No. 1 Date 11-6-12
 Company Downing Nelson Oil Company Elevation 2088 KB 2078 GL
 Address PO Box 1019, Hays, KS, 67601
 Co. Rep / Geo. Al Downing Rig Discovery #4
 Location: Sec. 8 Twp. 18s Rge. 17w Co. Rush State KS

Interval Tested 3760-3790 Zone Tested Reagan Sand
 Anchor Length 30 Drill Pipe Run 3729 Mud Wt. 9.4
 Top Packer Depth 3755 Drill Collars Run 30 Vis 55
 Bottom Packer Depth 3760 straddle @ 3790 Wt. Pipe Run 0 WL 9.6
 Total Depth 3852 Chlorides 4,000 ppm System LCM 2*
 Blow Description IFP - Good Blow, BOB in 7 min.
ISI - Dead
FFP - Good Blow, BOB in 9 min.
FSI - Dead

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|---------------------------------|------|-----------|----------|------|
| <u>660</u> | <u>Muddy Water (w/oil seam)</u> | | <u>95</u> | <u>5</u> | |
| | <u>on top</u> | | | | |
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Rec Total 660 BHT _____ Gravity _____ API RW 333 @ 71 °F Chlorides 19,500 ppm

(A) Initial Hydrostatic 1926 Test 1150 T-On Location 5:14
 (B) First Initial Flow 33 Jars _____ T-Started 5:33
 (C) First Final Flow 243 Safety Joint _____ T-Open 8:49
 (D) Initial Shut-In 1166 Circ Sub _____ T-Pulled 10:34
 (E) Second Initial Flow 251 Hourly Standby _____ T-Out 12:43
 (F) Second Final Flow 332 Mileage 74rt 114.70 Comments _____
 (G) Final Shut-In 1170 Sampler _____
 (H) Final Hydrostatic 1857 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1864.70
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1864.70

Approved By _____ Our Representative Jason McDaniel *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.