KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1102861

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

# WELL COMPLETION FORM
## WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30717
Name: Downing-Nelson Oil Co Inc
Address 1: PO BOX 1019
Address 2:
City: HAYS State: KS Zip: 67601 + __ __ __ __
Contact Person: Ron Nelson
Phone: ( 785 ) 621-2610
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Marc Downing
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [x] D&A
- [ ] ENHR
- [ ] SIGW
- [ ] OG
- [ ] GSW
- [ ] Temp. Abd.
- [ ] CM *(Coal Bed Methane)*
- [ ] Cathodic
- [ ] Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

- [ ] Deepening
- [ ] Re-perf.
- [ ] Conv. to ENHR
- [ ] Conv. to SWD
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

| 11/15/2012 | 11/20/2012 | 11/21/2012 |
|---|---|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |

API No. 15 - 15-065-23880-00-00
Spot Description:
NE - NW - SE - SW Sec. 27 Twp. 9 S. R. 24 [ ] East [x] West
1080 Feet from [ ] North / [x] South Line of Section
1915 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [ ] NW [ ] SE [x] SW
County: Graham
Lease Name: Robert Nickelson 'B' Well #: 1-27
Field Name:
Producing Formation: None
Elevation: Ground: 2521 Kelly Bushing: 2529
Total Depth: 4075 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 218 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

**Drilling Fluid Management Plan**
*(Data must be collected from the Reserve Pit)*

Chloride content: 16000 ppm Fluid volume: 320 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. [ ] East [ ] West
County: Permit #:

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**

- [ ] **Letter of Confidentiality Received**
  Date:
- [ ] **Confidential Release Date:**
- [ ] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

**ALT** [ ] I [x] II [ ] III **Approved by:** Deanna Garrisor **Date:** 12/04/2012

*Side Two*

1102861

Operator Name: Downing-Nelson Oil Co Inc Lease Name: Robert Nickelson 'B' Well #: 1-27

Sec. 27 Twp. 9 S. R. 24 ☐ East ☑ West County: Graham

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken ☑ Yes ☐ No
*(Attach Additional Sheets)*

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

Electric Log Submitted Electronically ☐ Yes ☐ No
*(If no, Submit Copy)*

List All E. Logs Run:

☐ Log Formation (Top), Depth and Datum ☑ Sample

| Name | Top | Datum |
|---|---|---|
| Top Anhydrite | 2177' | +353 |
| Base Anhydrite | 2215' | +315 |
| Topeka | 3621' | -1091 |
| Heebner | 3837' | -1307 |
| Toronto | 3859' | -1329 |
| LKC | 3874' | -1344 |

CASING RECORD ☑ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface pipe | 12.25 | 8.625 | 23 | 217.56 | Common | 150 | 2% Gel & 3% CC |
| | | | | | | | |
| | | | | | | | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

| Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|
| - | | | |
| - | | | |

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)* | Depth |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

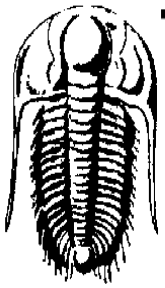
| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | | | | | |

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
*(If vented, Submit ACO-18.)*

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:

**Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202**



TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co. Inc.**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**27-9s-24w Graham,KS**

**Robert Nickelson #1-27**

Start Date: 2012.11.19 @ 09:20:00
End Date: 2012.11.19 @ 16:04:00
Job Ticket #: 51228 DST #: 1

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

Printed: 2012.11.26 @ 13:06:49

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Dow ning

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51228 **DST#: 1**

Test Start: 2012.11.19 @ 09:20:00

## GENERAL INFORMATION:

Formation: **KC "E-F"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:08:30
Time Test Ended: 16:04:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Brett Dickinson
Unit No: 59

**Interval: 3935.00 ft (KB) To 3957.00 ft (KB) (TVD)**
Total Depth: 3957.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

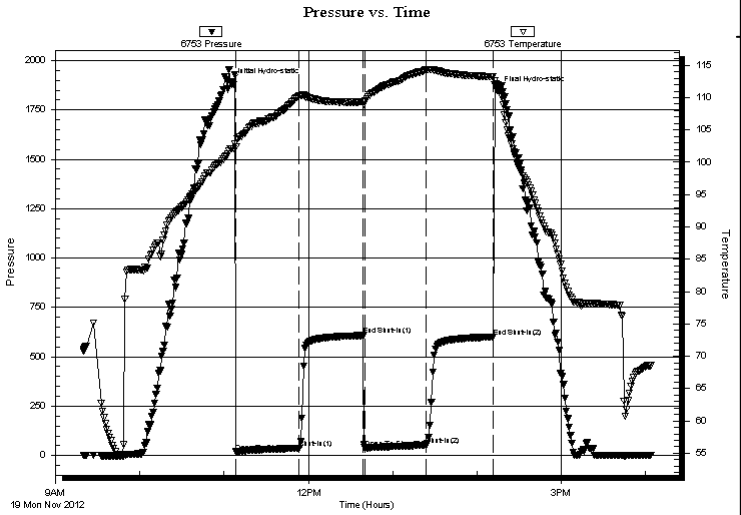
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 6753** **Outside**

Press@RunDepth: 53.79 psig @ 3939.00 ft (KB)
Start Date: 2012.11.19 End Date: 2012.11.19
Start Time: 09:20:05 End Time: 16:03:59

Capacity: 8000.00 psig
Last Calib.: 2012.11.19
Time On Btm: 2012.11.19 @ 11:04:30
Time Off Btm: 2012.11.19 @ 14:14:30

TEST COMMENT: IF-5 3/4" blow
ISI-No blow
FF-3 1/2" blow
FSI-No blow




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1890.53 | 102.09 | Initial Hydro-static |
| 4 | 18.72 | 102.44 | Open To Flow (1) |
| 49 | 37.88 | 110.27 | Shut-In(1) |
| 95 | 607.93 | 109.33 | End Shut-In(1) |
| 96 | 39.36 | 109.35 | Open To Flow (2) |
| 140 | 53.79 | 114.30 | Shut-In(2) |
| 187 | 601.13 | 113.25 | End Shut-In(2) |
| 190 | 1846.79 | 111.94 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 78.00 | Oil spotted WCM 30%W 70%M | 0.82 |
| 2.00 | SGO 5%G 95%O | 0.03 |
| | | |
| | | |
| | | |
| | | |

## Gas Rates

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

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51228 **DST#: 1**

Test Start: 2012.11.19 @ 09:20:00

## GENERAL INFORMATION:

Formation: **KC "E-F"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:08:30
Time Test Ended: 16:04:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Brett Dickinson
Unit No: 59

**Interval: 3935.00 ft (KB) To 3957.00 ft (KB) (TVD)**
Total Depth: 3957.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

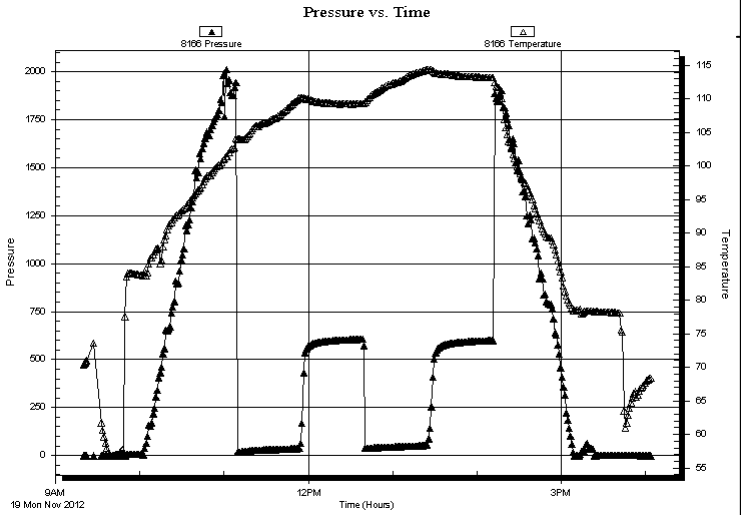
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8166** **Inside**

Press@RunDepth: psig @ 3939.00 ft (KB)
Start Date: 2012.11.19 End Date: 2012.11.19
Start Time: 09:20:05 End Time: 16:03:59

Capacity: 8000.00 psig
Last Calib.: 2012.11.19
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-5 3/4" blow
ISI-No blow
FF-3 1/2" blow
FSI-No blow




## PRESSURE SUMMARY

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

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 78.00 | Oil spotted WCM 30%W 70%M | 0.82 |
| 2.00 | SGO 5%G 95%O | 0.03 |
| | | |
| | | |
| | | |
| | | |

## Gas Rates

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

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Dow ning

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51228 **DST#: 1**

Test Start: 2012.11.19 @ 09:20:00

## Tool Information

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3890.00 ft | Diameter: | 3.80 | inches | Volume: | 54.57 | bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: | ft | Diameter: | 2.70 | inches | Volume: | - | 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: | 65000.00 lb |
| | | | | | | Total Volume: | - | bbl | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | | 5.00 ft | | | | | | | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer: | | 3935.00 ft | | | | | | | Final | 45000.00 lb |
| Depth to Bottom Packer: | | ft | | | | | | | | |
| Interval betw een Packers: | | 22.00 ft | | | | | | | | |
| Tool Length: | | 42.00 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 | | | 3916.00 | | |
| Shut In Tool | 5.00 | | | 3921.00 | | |
| Hydraulic tool | 5.00 | | | 3926.00 | | |
| Packer | 4.00 | | | 3930.00 | 20.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 3935.00 | | |
| Stubb | 1.00 | | | 3936.00 | | |
| Perforations | 3.00 | | | 3939.00 | | |
| Recorder | 0.00 | 8166 | Inside | 3939.00 | | |
| Recorder | 0.00 | 6753 | Outside | 3939.00 | | |
| Perforations | 15.00 | | | 3954.00 | | |
| Bullnose | 3.00 | | | 3957.00 | 22.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **42.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51228 **DST#: 1**

Test Start: 2012.11.19 @ 09:20:00

## 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: | 88000 ppm |
| Viscosity: | 60.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 7.98 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psig | | |
| Salinity: | 800.00 ppm | | | | |
| Filter Cake: | inches | | | | |

## Recovery Information

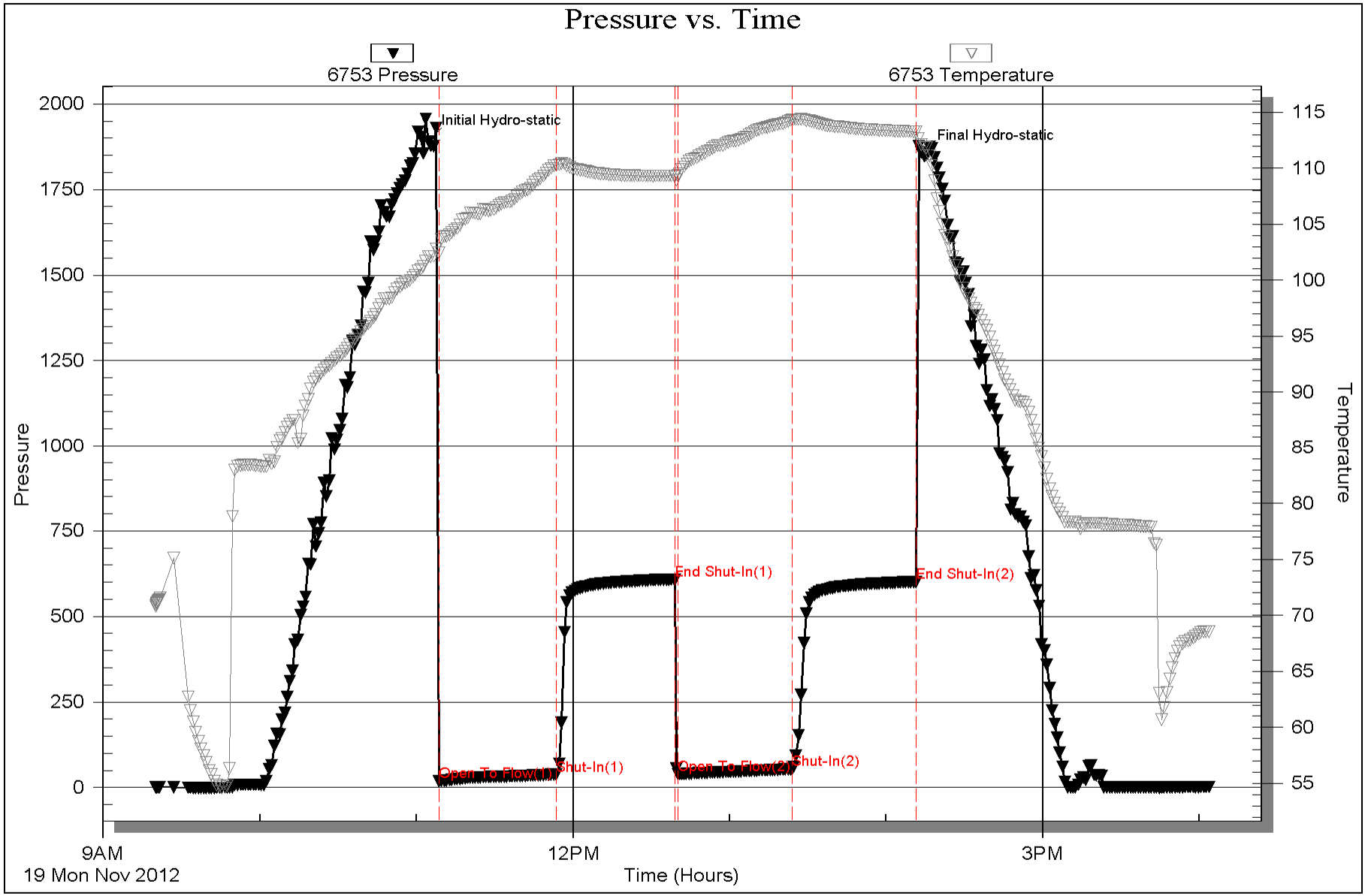
Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 78.00 | Oil spotted WCM 30%W 70%M | 0.821 |
| 2.00 | SGO 5%G 95%O | 0.028 |

Total Length: 80.00 ft Total Volume: 0.849 bbl

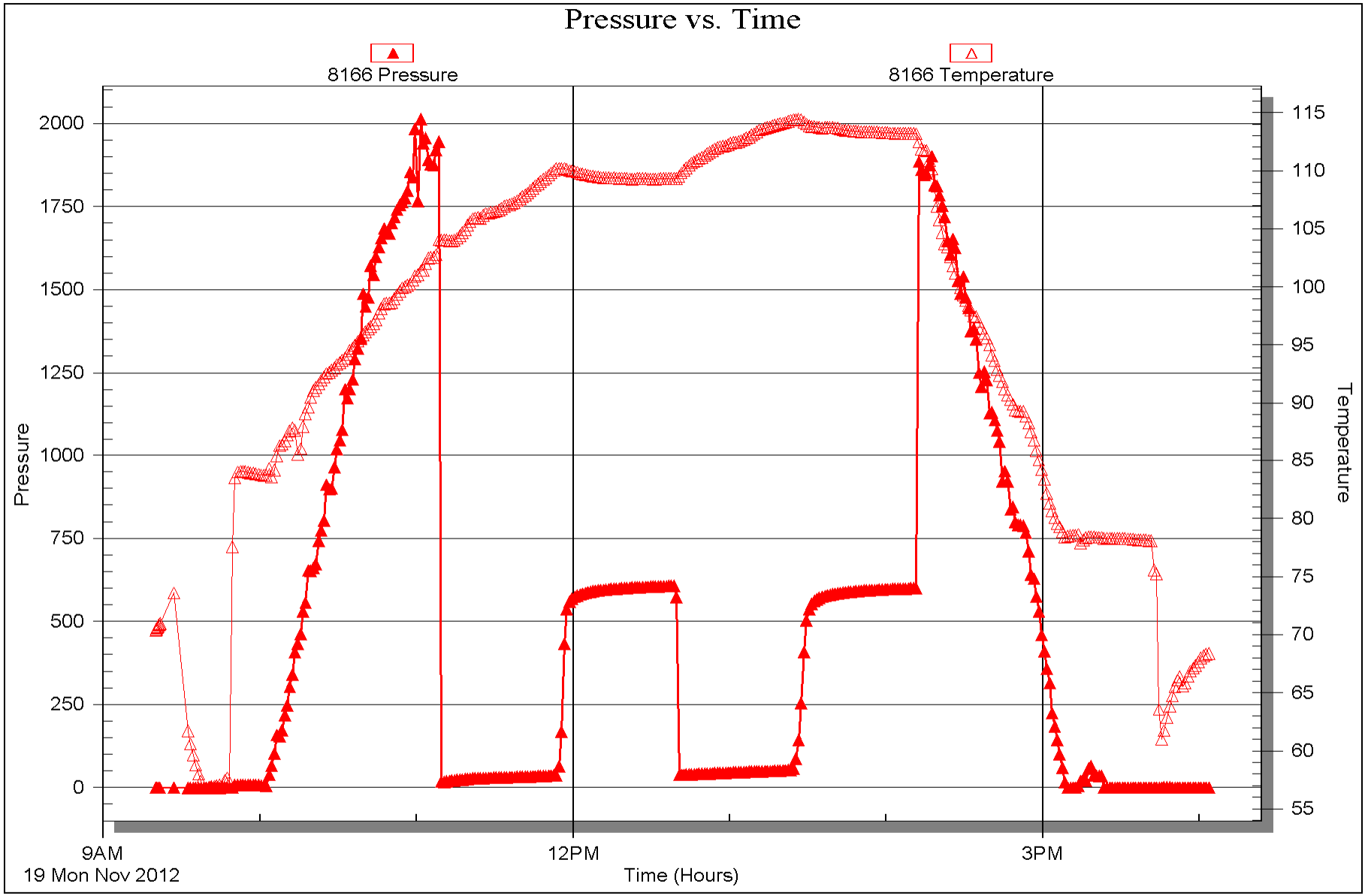
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 6753 **Outside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 1

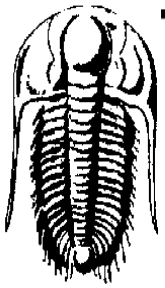



Trilobite Testing, Inc Ref. No: 51228 Printed: 2012.11.26 @ 13:06:53

Serial #: 8166 **Inside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 1




Trilobite Testing, Inc Ref. No: 51228 Printed: 2012.11.26 @ 13:06:54



TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co. Inc.**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**27-9s-24w Graham,KS**

**Robert Nickelson #1-27**

Start Date: 2012.11.20 @ 01:50:00
End Date: 2012.11.20 @ 07:01:30
Job Ticket #: 51229 DST #: 2

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

Printed: 2012.11.26 @ 13:05:57

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51229 **DST#: 2**

Test Start: 2012.11.20 @ 01:50:00

## GENERAL INFORMATION:

Formation: **KC "I"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:28:00
Time Test Ended: 07:01:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Brett Dickinson
Unit No: 59

**Interval: 4017.00 ft (KB) To 4036.00 ft (KB) (TVD)**
Total Depth: 4036.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

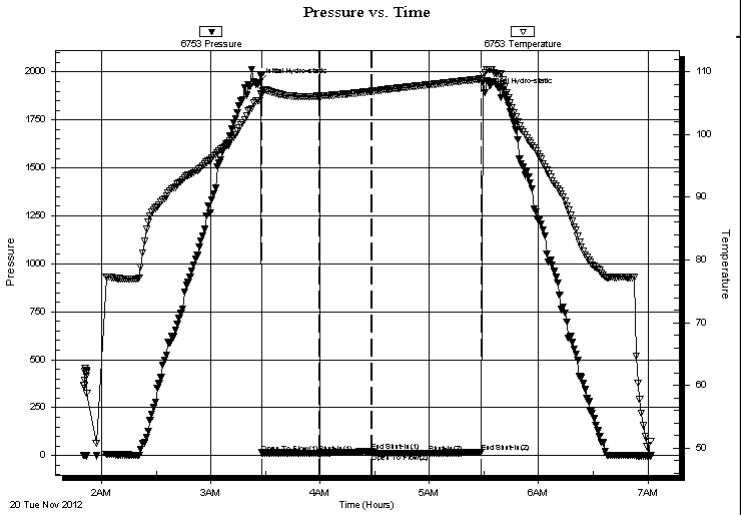
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 6753** **Outside**

Press@RunDepth: 13.00 psig @ 4018.00 ft (KB)
Start Date: 2012.11.20 End Date: 2012.11.20
Start Time: 01:50:05 End Time: 07:01:29

Capacity: 8000.00 psig
Last Calib.: 2012.11.20
Time On Btm: 2012.11.20 @ 03:26:30
Time Off Btm: 2012.11.20 @ 05:30:30

TEST COMMENT: IF-1/2" blow
ISI-No blow
FF-No blow
FSI-No blow




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1945.03 | 105.37 | Initial Hydro-static |
| 2 | 14.10 | 106.31 | Open To Flow (1) |
| 33 | 13.71 | 106.11 | Shut-In(1) |
| 62 | 20.69 | 106.87 | End Shut-In(1) |
| 62 | 14.21 | 106.89 | Open To Flow (2) |
| 94 | 13.00 | 107.95 | Shut-In(2) |
| 122 | 16.71 | 108.85 | End Shut-In(2) |
| 124 | 1892.90 | 109.85 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 1.00 | Mud | 0.00 |
| | | |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

## Gas Rates

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

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51229 **DST#: 2**

Test Start: 2012.11.20 @ 01:50:00

## GENERAL INFORMATION:

Formation: **KC "I"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:28:00
Time Test Ended: 07:01:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Brett Dickinson
Unit No: 59

**Interval: 4017.00 ft (KB) To 4036.00 ft (KB) (TVD)**
Total Depth: 4036.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

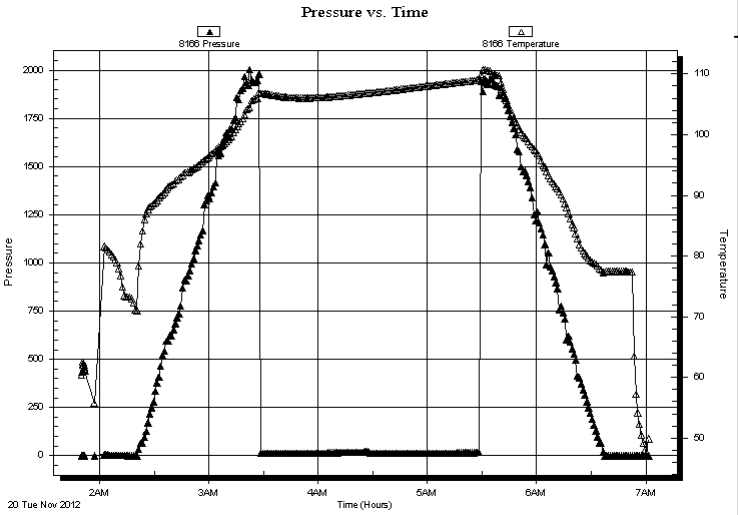
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8166** **Inside**

Press@RunDepth: psig @ 4018.00 ft (KB)
Start Date: 2012.11.20 End Date: 2012.11.20
Start Time: 01:50:05 End Time: 07:01:29

Capacity: 8000.00 psig
Last Calib.: 2012.11.20
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-1/2" blow
ISI-No blow
FF-No blow
FSI-No blow




## PRESSURE SUMMARY

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

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 1.00 | Mud | 0.00 |
| | | |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

## Gas Rates

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

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Dow ning

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51229 **DST#: 2**

Test Start: 2012.11.20 @ 01:50:00

## Tool Information

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3983.00 ft | Diameter: | 3.80 | inches | Volume: | 55.87 | bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: | ft | Diameter: | 2.70 | inches | Volume: | - | 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: | 65000.00 lb |
| | | | | | | Total Volume: | - | bbl | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | | 16.00 ft | | | | | | | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer: | | 4017.00 ft | | | | | | | Final | 45000.00 lb |
| Depth to Bottom Packer: | | ft | | | | | | | | |
| Interval betw een Packers: | | 19.00 ft | | | | | | | | |
| Tool Length: | | 39.00 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 | | | 3998.00 | | |
| Shut In Tool | 5.00 | | | 4003.00 | | |
| Hydraulic tool | 5.00 | | | 4008.00 | | |
| Packer | 4.00 | | | 4012.00 | 20.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 4017.00 | | |
| Stubb | 1.00 | | | 4018.00 | | |
| Recorder | 0.00 | 8166 | Inside | 4018.00 | | |
| Recorder | 0.00 | 6753 | Outside | 4018.00 | | |
| Perforations | 15.00 | | | 4033.00 | | |
| Bullnose | 3.00 | | | 4036.00 | 19.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **39.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51229 **DST#: 2**

Test Start: 2012.11.20 @ 01:50:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | ppm |
| Viscosity: | 60.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 7.97 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psig | | |
| Salinity: | 800.00 ppm | | | | |
| Filter Cake: | inches | | | | |

## Recovery Information

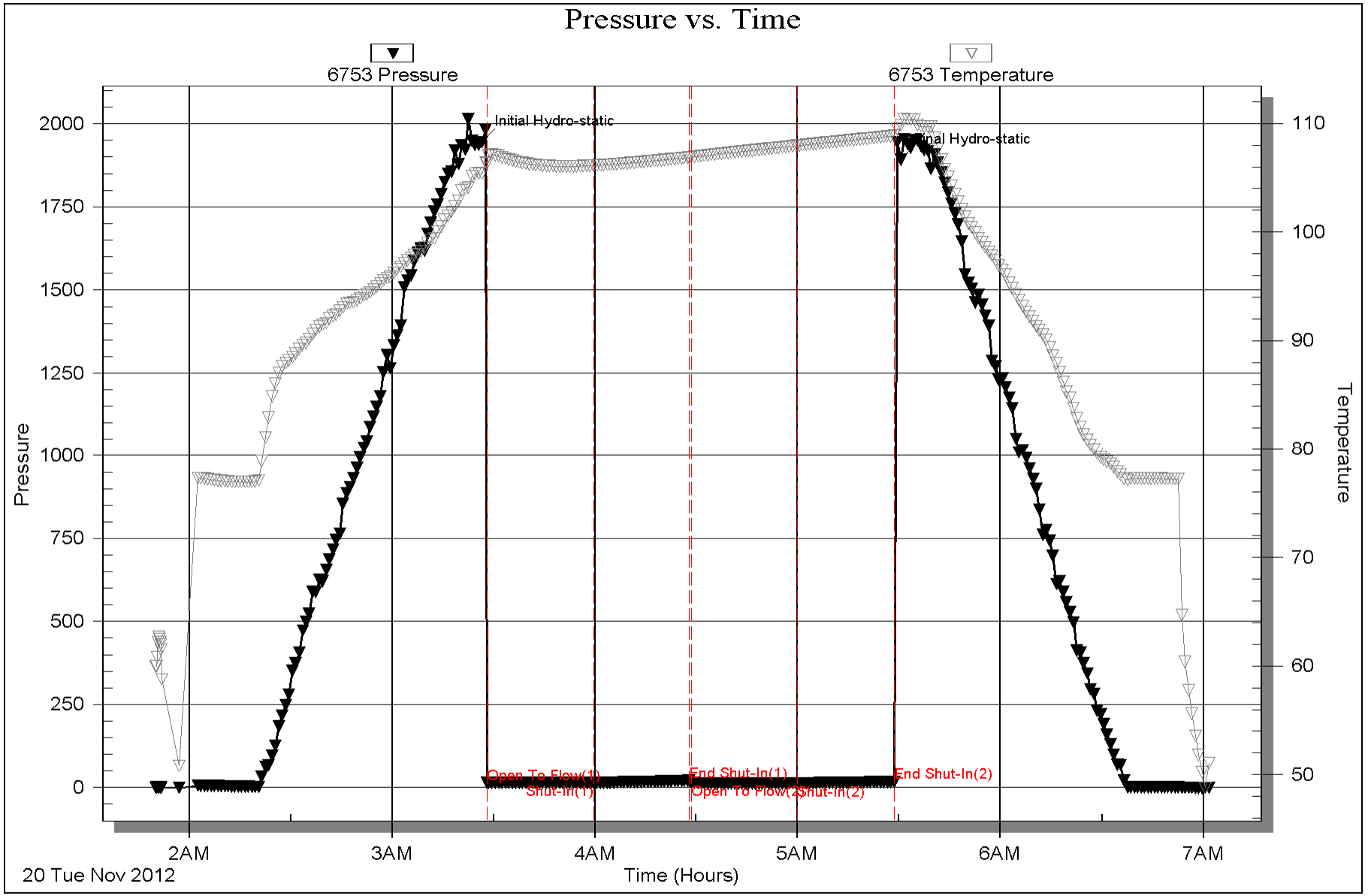
Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 1.00 | Mud | 0.005 |

Total Length: 1.00 ft Total Volume: 0.005 bbl

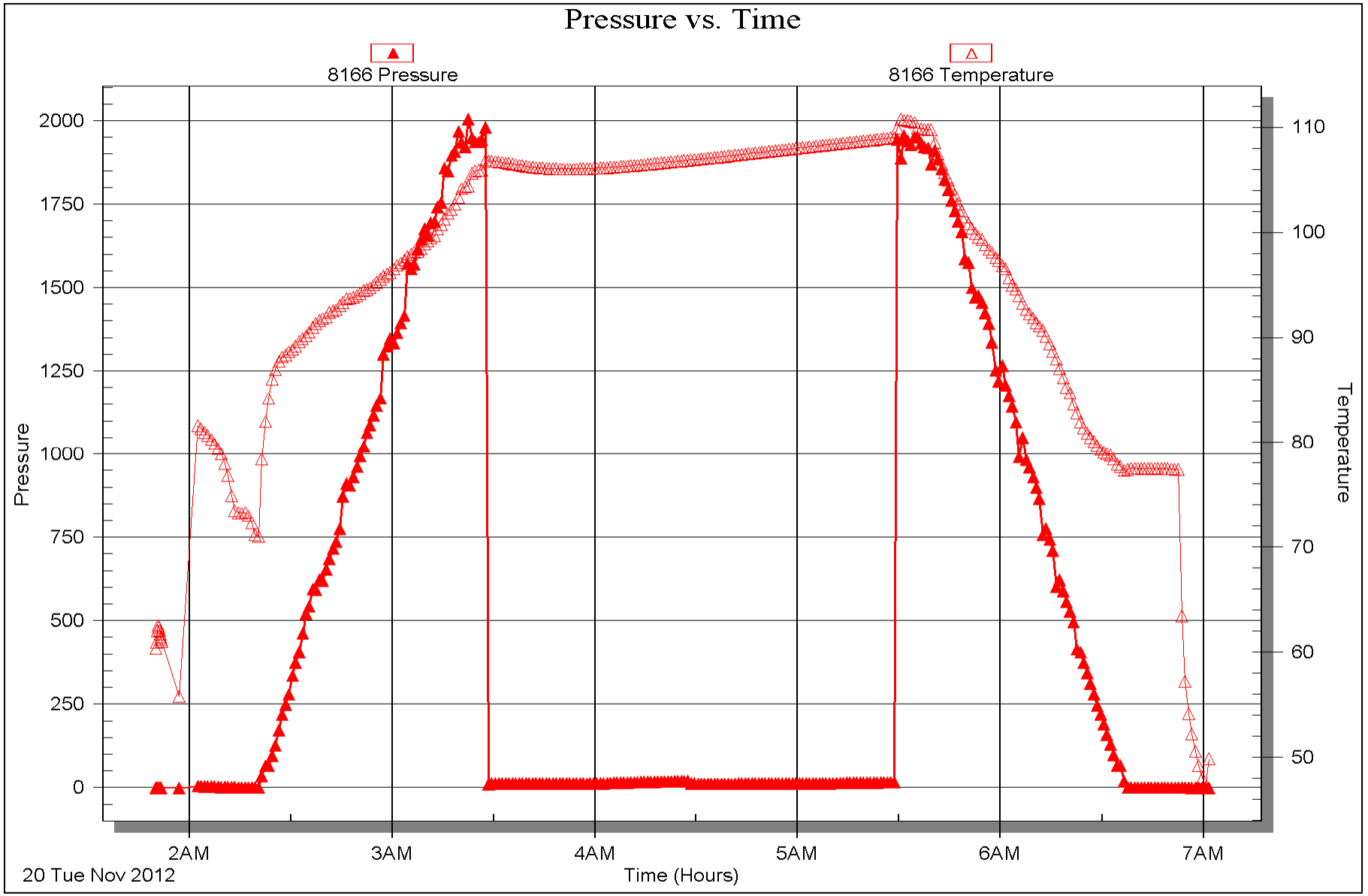
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 6753 **Outside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 2

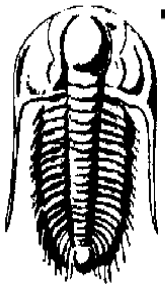



Trilobite Testing, Inc Ref. No: 51229 Printed: 2012.11.26 @ 13:06:01

Serial #: 8166 **Inside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 2




Trilobite Testing, Inc Ref. No: 51229 Printed: 2012.11.26 @ 13:06:02



TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co. Inc.**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**27-9s-24w Graham,KS**

**Robert Nickelson #1-27**

Start Date: 2012.11.20 @ 14:35:00
End Date: 2012.11.20 @ 19:55:00
Job Ticket #: 51230 DST #: 3

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

Printed: 2012.11.26 @ 13:05:03

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51230 **DST#: 3**

Test Start: 2012.11.20 @ 14:35:00

## GENERAL INFORMATION:

Formation: **KC" I-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:19:00
Time Test Ended: 19:55:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Brett Dickinson
Unit No: 59

**Interval: 4016.00 ft (KB) To 4075.00 ft (KB) (TVD)**
Total Depth: 4075.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

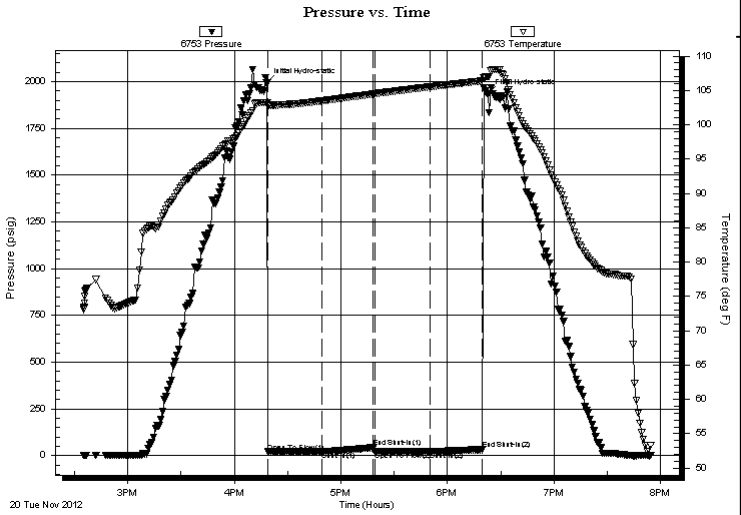
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 6753** **Outside**

Press@RunDepth: 21.46 psig @ 4020.00 ft (KB)
Start Date: 2012.11.20 End Date: 2012.11.20
Start Time: 14:35:05 End Time: 19:54:59

Capacity: 8000.00 psig
Last Calib.: 2012.11.20
Time On Btm: 2012.11.20 @ 16:18:00
Time Off Btm: 2012.11.20 @ 18:23:00

TEST COMMENT: IF-3/4" blow
ISI-No blow
FF-No blow
FSI-No blow




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1992.70 | 103.18 | Initial Hydro-static |
| 1 | 19.78 | 102.75 | Open To Flow (1) |
| 32 | 20.59 | 103.48 | Shut-In(1) |
| 60 | 42.79 | 104.46 | End Shut-In(1) |
| 61 | 21.72 | 104.50 | Open To Flow (2) |
| 92 | 21.46 | 105.51 | Shut-In(2) |
| 122 | 32.08 | 106.38 | End Shut-In(2) |
| 125 | 1933.16 | 107.01 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 5.00 | Oil spotted mud | 0.02 |
| | | |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

## Gas Rates

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

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51230 **DST#: 3**

Test Start: 2012.11.20 @ 14:35:00

## GENERAL INFORMATION:

Formation: **KC" I-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:19:00
Time Test Ended: 19:55:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Brett Dickinson
Unit No: 59

**Interval: 4016.00 ft (KB) To 4075.00 ft (KB) (TVD)**
Total Depth: 4075.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

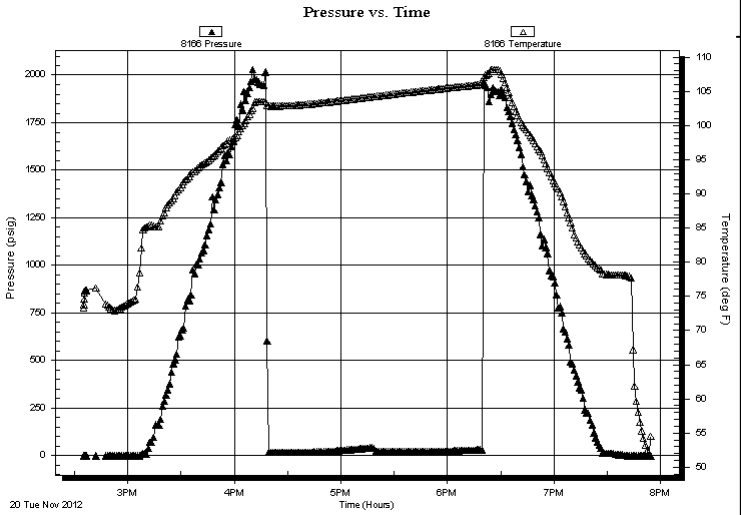
Reference Elevations: 2532.00 ft (KB)
2524.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8166** **Inside**

Press@RunDepth: psig @ 4020.00 ft (KB)
Start Date: 2012.11.20 End Date: 2012.11.20
Start Time: 14:35:05 End Time: 19:54:59

Capacity: 8000.00 psig
Last Calib.: 2012.11.20
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-3/4" blow
ISI-No blow
FF-No blow
FSI-No blow




## PRESSURE SUMMARY

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

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 5.00 | Oil spotted mud | 0.02 |
| | | |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

## Gas Rates

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

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Dow ning

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51230 **DST#: 3**

Test Start: 2012.11.20 @ 14:35:00

## Tool Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3981.00 ft | Diameter: | 3.80 inches | Volume: | 55.84 bbl | Tool Weight: | | 2000.00 lb |
| Heavy Wt. Pipe: | Length: | ft | Diameter: | 2.70 inches | Volume: | - 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 |
| | | | | | Total Volume: | - bbl | Tool Chased | | 0.00 ft |
| Drill Pipe Above KB: | | 15.00 ft | | | | | String Weight: | Initial | 45000.00 lb |
| Depth to Top Packer: | | 4016.00 ft | | | | | | Final | 45000.00 lb |
| Depth to Bottom Packer: | | ft | | | | | | | |
| Interval betw een Packers: | | 59.00 ft | | | | | | | |
| Tool Length: | | 79.00 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 | | | 3997.00 | | |
| Shut In Tool | 5.00 | | | 4002.00 | | |
| Hydraulic tool | 5.00 | | | 4007.00 | | |
| Packer | 4.00 | | | 4011.00 | 20.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 4016.00 | | |
| Stubb | 1.00 | | | 4017.00 | | |
| Perforations | 3.00 | | | 4020.00 | | |
| Recorder | 0.00 | 8166 | Inside | 4020.00 | | |
| Recorder | 0.00 | 6753 | Outside | 4020.00 | | |
| Change Over Sub | 1.00 | | | 4021.00 | | |
| Blank Spacing | 31.00 | | | 4052.00 | | |
| Change Over Sub | 1.00 | | | 4053.00 | | |
| Perforations | 19.00 | | | 4072.00 | | |
| Bullnose | 3.00 | | | 4075.00 | 59.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **79.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co. Inc.

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

**Robert Nickelson #1-27**

**27-9s-24w Graham,KS**

Job Ticket: 51230 **DST#: 3**

Test Start: 2012.11.20 @ 14:35:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | ppm |
| Viscosity: | 54.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 7.97 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psig | | |
| Salinity: | 1000.00 ppm | | | | |
| Filter Cake: | inches | | | | |

## Recovery Information

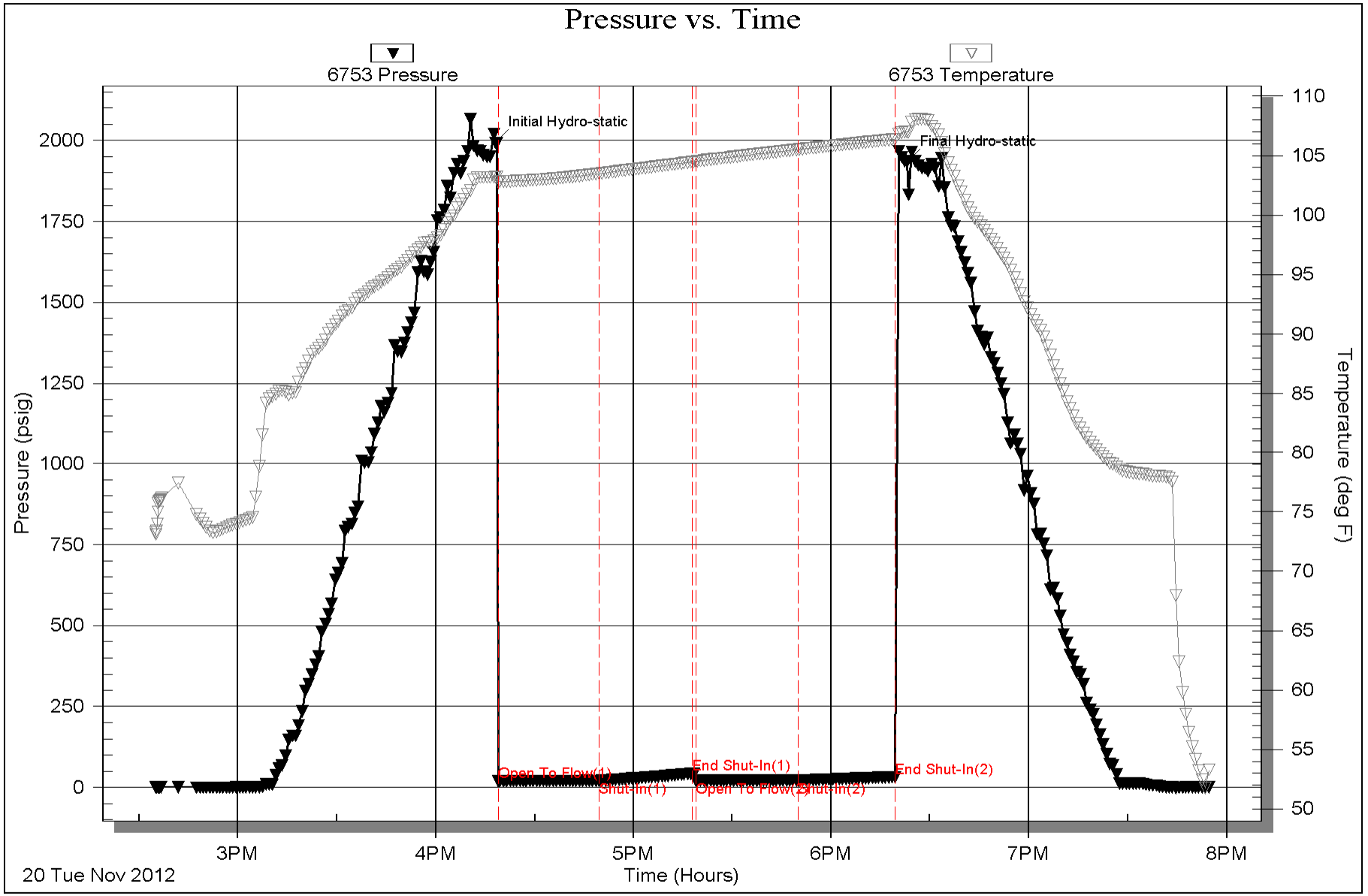
Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 5.00 | Oil spotted mud | 0.025 |

Total Length: 5.00 ft Total Volume: 0.025 bbl

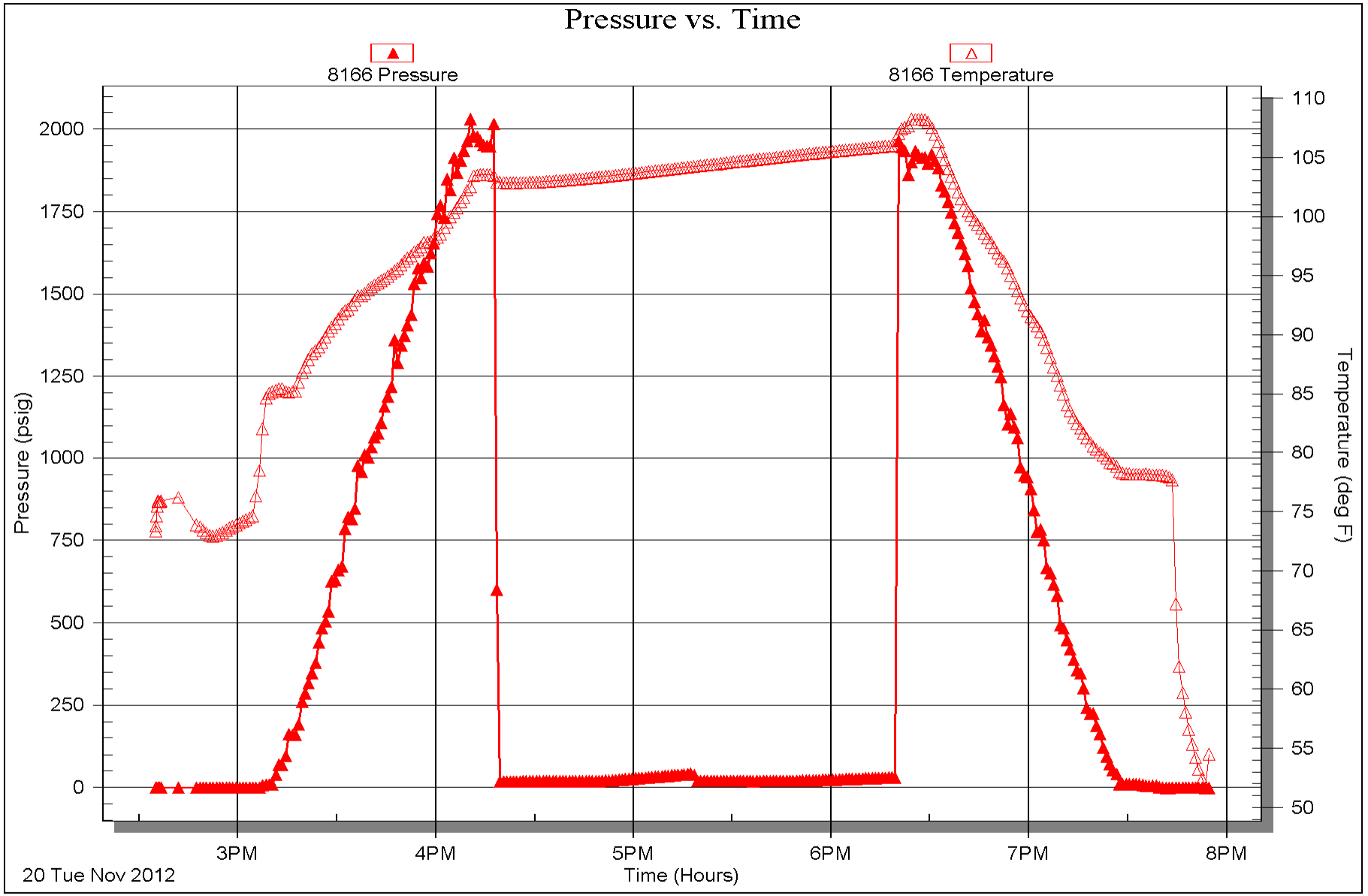
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 6753 **Outside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 3




Trilobite Testing, Inc Ref. No: 51230 Printed: 2012.11.26 @ 13:05:07

Serial #: 8166 **Inside** Dow ning-Nelson Oil Co. Inc. 27-9s-24w Graham,KS DST Test Number: 3




Trilobite Testing, Inc Ref. No: 51230 Printed: 2012.11.26 @ 13:05:08

TRILOBITE TESTING INC.
1515 Commerce Parkway • Hays, Kansas 67601

4/10

# Test Ticket

NO. 51228

Well Name & No. Robert Nickelson "B" 1-27 Test No. 1 Date 11/19/12
Company Downing-Nelson Oil Co Inc Elevation 2532 KB 2524 GL
Address PO Box 1019 Hays KS 67601
Co. Rep / Geo. Rig Discovery #1
Location: Sec. 27 Twp. 9 Rge. 24 Co. Graham State KS

Interval Tested 3935 - 3957 Zone Tested KC "E, F"
Anchor Length 22 Drill Pipe Run 3890 Mud Wt. 8.9
Top Packer Depth 3930 Drill Collars Run 30 Vis 60
Bottom Packer Depth 3935 Wt. Pipe Run — WL 8.0
Total Depth 3957 Chlorides 800 ppm System LCM 2

Blow Description IF - 5 3/4 in blow
ISI - No blow
FF - 3½ in blow
FSI - No blow

| | | | | | | |
|---|---|---|---|---|---|---|
| Rec 2 | Feet of SGO | 5 %gas | 95 %oil | %water | %mud | |
| Rec 78 | Feet of oil spotted wcm | %gas | %oil | 30 %water | 70 %mud | |
| Rec | Feet of | %gas | %oil | %water | %mud | |
| Rec | Feet of | %gas | %oil | %water | %mud | |
| Rec | Feet of | %gas | %oil | %water | %mud | |

Rec Total 80 BHT 113 Gravity API RW .09 @ 70 °F Chlorides 88,000 ppm

| | | | |
|---|---|---|---|
| (A) Initial Hydrostatic | 1,891 | ☒ Test 1150 | T-On Location 8:40 |
| (B) First Initial Flow | 19 | ☐ Jars | T-Started 9:20 |
| (C) First Final Flow | 38 | ☐ Safety Joint | T-Open 11:10 |
| (D) Initial Shut-In | 608 | ☐ Circ Sub | T-Pulled 14:10 |
| (E) Second Initial Flow | 39 | ☐ Hourly Standby | T-Out 16:00 |
| (F) Second Final Flow | 54 | ☒ Mileage 112 r T 173.60 | Comments |
| (G) Final Shut-In | 601 | ☐ Sampler | |
| (H) Final Hydrostatic | 1,847 | ☐ Straddle | ☐ Ruined Shale Packer |
| | | ☐ Shale Packer | ☐ Ruined Packer |
| Initial Open | 45 | ☐ Extra Packer | ☐ Extra Copies |
| Initial Shut-In | 45 | ☐ Extra Recorder | Sub Total 0 |
| Final Flow | 45 | ☐ Day Standby | Total 1323.60 |
| Final Shut-In | 45 | ☐ Accessibility | MP/DST Disc't |
| | | Sub Total 1323.60 | |

Approved By Our Representative Bill Dickinson

# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

## Test Ticket

NO. 51229

Well Name & No. Robert Nickelson "B" 1-27 Test No. 2 Date 11/20/12

Company Downing-Nelson Oil Co Inc. Elevation 2532 KB 2524 GL

Address PO Box 1014 Hays KS 67601

Co. Rep / Geo. _____ Rig Discovery #1

Location: Sec. 27 Twp. 9 Rge. 24 Co. Graham State KS

Interval Tested 4017-4036 Zone Tested KC "I"

Anchor Length 19 Drill Pipe Run 3983 Mud Wt. 8.9

Top Packer Depth 4012 Drill Collars Run 30 Vis 60

Bottom Packer Depth 4017 Wt. Pipe Run — WL 8.0

Total Depth 4036 Chlorides 800 ppm System LCM 2

Blow Description IF - ½ in blow
ISI - No blow
FF - No blow
FSI - No blow

| | | | | | |
|---|---|---|---|---|---|
| Rec 1 | Feet of Mud | %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 | Feet of | %gas | %oil | %water | %mud |

Rec Total 1 BHT 109 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

| | | | |
|---|---|---|---|
| (A) Initial Hydrostatic 1945 | ☒ Test 1250 | T-On Location 1:35 | |
| (B) First Initial Flow 14 | ☐ Jars | T-Started 1:50 | |
| (C) First Final Flow 14 | ☐ Safety Joint | T-Open 3:30 | |
| (D) Initial Shut-In 21 | ☐ Circ Sub | T-Pulled 5:30 | |
| (E) Second Initial Flow 14 | ☐ Hourly Standby | T-Out 7:05 | |
| (F) Second Final Flow 13 | ☒ Mileage 1 1/2 rt 173.60 | Comments | |
| (G) Final Shut-In 17 | ☐ Sampler | | |
| (H) Final Hydrostatic 1,893 | ☐ Straddle | ☐ Ruined Shale Packer | |
| | ☐ Shale Packer | ☐ Ruined Packer | |
| Initial Open 30 | ☐ Extra Packer | ☐ Extra Copies | |
| Initial Shut-In 30 | ☐ Extra Recorder | Sub Total 0 | |
| Final Flow 30 | ☐ Day Standby | Total 1423.60 | |
| Final Shut-In 30 | ☐ Accessibility | MP/DST Disc't | |
| | Sub Total 1423.60 | | |

Approved By _____ Our Representative _____

# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

## Test Ticket

NO. 51230

Well Name & No. Robert Nickelson "B" #1-27 Test No. 3 Date 11/20/12

Company Downing-Nelson Oil Co Inc. Elevation 2532 KB 2524 GL

Address PO Box 1019 Hays KS 67601

Co. Rep / Geo. _____ Rig Discovery #1

Location: Sec. 27 Twp. 9 Rge. 24 Co. Graham State KS

Interval Tested 4016-4075 Zone Tested LKC "J-K"

Anchor Length 59 Drill Pipe Run 3981 Mud Wt. 8.9

Top Packer Depth 4011 Drill Collars Run 30 Vis 54

Bottom Packer Depth 4016 Wt. Pipe Run — WL 8.0

Total Depth 4075 Chlorides 1000 ppm System LCM 1½#

Blow Description IF - ¾ in blow
ISI - No blow
FF - No blow
FSI - No blow

| | | | | | |
|---|---|---|---|---|---|
| Rec 5 | Feet of oil spotted mud | %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 | Feet of | %gas | %oil | %water | %mud |

Rec Total 5 BHT 106 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

| | | | |
|---|---|---|---|
| (A) Initial Hydrostatic | 1993 | ☒ Test 1250 | T-On Location 14:30 |
| (B) First Initial Flow | 20 | ☐ Jars | T-Started 14:35 |
| (C) First Final Flow | 21 | ☐ Safety Joint | T-Open 16:15 |
| (D) Initial Shut-In | 43 | ☐ Circ Sub | T-Pulled 18:15 |
| (E) Second Initial Flow | 22 | ☐ Hourly Standby | T-Out 19:55 |
| (F) Second Final Flow | 21 | ☒ Mileage 112r7 173.60 | Comments |
| (G) Final Shut-In | 32 | ☐ Sampler | |
| (H) Final Hydrostatic | 1933 | ☐ Straddle | ☐ Ruined Shale Packer |
| | | ☐ Shale Packer | ☐ Ruined Packer |
| Initial Open | 30 | ☐ Extra Packer | ☐ Extra Copies |
| Initial Shut-In | 30 | ☐ Extra Recorder | Sub Total 0 |
| Final Flow | 30 | ☐ Day Standby | Total 1423.60 |
| Final Shut-In | 30 | ☐ Accessibility | MP/DST Disc't |
| | | Sub Total 1423.60 | |

Approved By _____ Our Representative Bill Dunn

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 6253

Cell 785-324-1041

| Date | Sec. | Twp. | Range | County | State | On Location | Finish |
|---|---|---|---|---|---|---|---|
| 11-15-12 | 27 | 9 | 24 | GRAHAM | KANSAS | | 5:15 PM |

Location WAKEENEY N TO REDLINE - 1/2 W - N/INTO "B"

Lease ROBERT NICKELSON Well No. # 1-27

Owner DOWNING & NELSON

Contractor D.D #1

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job SURFACE

Hole Size 12¼" T.D. 218'

Charge To DOWNING & NELSON

Csg. 8⅝" - 23LB - NEW Depth 218'

Street 111 WEST 10TH - PO BOX 1019

Tbg. Size Depth

City HAYS State KS, 67601

Tool Depth

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. Shoe Joint 15'

Cement Amount Ordered 150 com · 3% CC · 2% GEL

Meas Line Displace 13 BBLS

**EQUIPMENT**

| | | |
|---|---|---|
| Pumptrk # 116 | No. | Cementer / Helper TRAVIS |
| Bulktrk # 14 | No. | Driver / Driver DOUG |
| Bulktrk PU | No. | Driver / Driver CISCO |

**JOB SERVICES & REMARKS**

Remarks: SWEDGE ON LOCATION!

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

CEMENT DID CIRCULATE!

THANK YOU!

X Signature Cliff Mayfield

| | |
|---|---|
| Common | 150 |
| Poz. Mix | |
| Gel. | 3 |
| Calcium | 5 |
| Hulls | |
| Salt | |
| Flowseal | |
| Kol-Seal | |
| Mud CLR 48 | |
| CFL-117 or CD110 CAF 38 | |
| Sand | |
| Handling | 158 |
| Mileage | |

**FLOAT EQUIPMENT**

| | |
|---|---|
| Guide Shoe | |
| Centralizer | |
| Baskets | |
| AFU Inserts | |
| Float Shoe | |
| Latch Down | |
| Pumptrk Charge | Surface |
| Mileage | 36 |
| Tax | |
| Discount | |
| Total Charge | |

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 6229

Cell 785-324-1041

| Date | Sec. | Twp. | Range | County | State | On Location | Finish |
|---|---|---|---|---|---|---|---|
| 11-21-12 | 27 | 9 | 24 | Gram | KS | | 3:45 AM |

Location Wakeeney N to RL 6 ½ w

Lease Robert Nickelson B Well No. 1-27

Contractor Discovery 1

Type Job plug

Hole Size 7 7/8 T.D. 4075

Csg. Depth 2200

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint

Meas Line Displace

**EQUIPMENT**

Pumptrk 16 No. Cementer Travis / Helper

Bulktrk 9 No. Driver Matt / Driver

Bulktrk PU No. Driver Lonney W / Driver

**JOB SERVICES & REMARKS**

Remarks:

Rat Hole 30 sks

Mouse Hole 15 sks

Centralizers

Baskets

D/V or Port Collar

#1 2200' 25 sks

#2 1300' 100 sks

#3 275' 40 sks

#4 40' 10 sks

Owner

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To

Street Downing Nelson

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered

220 60/40 4% gel ¼# flow

Common 132

Poz. Mix 88

Gel. 8

Calcium

Hulls

Salt

Flowseal 55#

Kol-Seal

Mud CLR 48

CFL-117 or CD110 CAF 38

Sand

Handling

Mileage

**FLOAT EQUIPMENT**

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

~~Plug~~ 6⅝ wood plug

Pumptrk Charge plug

Mileage 36

Tax

Discount

Total Charge

X Signature Cliff Mayfield

# Marc Downing

Consulting Petroleum Geologist
1411 Washington Circle
Hays, Ks 67601
Phone: 620-428-1356 (cell) 785-621-2286


## GEOLOGIC REPORT LOG

COMPANY Downing-Nelson Oil Co, Inc.

WELL Robert Nickelson "B" # 1-27
FIELD Wildcat
LOCATION 1080' FSL + 1915' FWL
SEC. 27 TWP. 9s RGE. 24w
COUNTY Graham
STATE Kansas

9s 24w
27

PRODUCTION D+A

ELEVATION KB 2530
DF
GL 2522
Drilling Measured From: KB

Samples Saved From 3850 To: TD
Drilling Time From 3500 To: TD
Samples Examined From 3850 To: TD
Geological Supervision From 3850 To Total Depth
Wellsite Geologist Marc Downing
Electrical Surveys None

OPERATOR DNOCI
CONTRACTOR Discovery Drilling, Rig #1
COMM: 11-15-12 COMP: 11-20-12

### CASING RECORD

SURF: 8 5/8" @ 218' PROD: None
TOTAL DEPTH DRILLERS: 4075'
TOTAL DEPTH LOG:

### FORMATION TOPS AND STRUCTURAL POSITION

| FORMATION | SAMPLE TOP | ELECTRIC LOG TOP | SUB-SEA DATUM | STRUCTURAL POSITION |
|---|---|---|---|---|
| Top Anhydrite | 2177 | | +353 | NA |
| Base Anhydrite | 2215 | | +315 | NA |
| Topeka | 3421 | | -1091 | -2 |
| HEEBNER | 3837 | | -1307 | FL |
| Toronto | 3859 | | -1329 | FL |
| LKC | 3874 | | -1344 | FL |
| BKC | | | | |

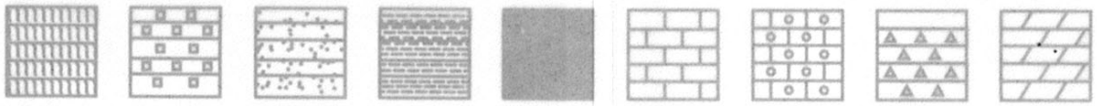
REFERENCE WELL FOR STRUCTURE Petroleum Management, Inc.
Moore #2 SE-SW-SW Sec. 27-9s-24w

### DRILL STEM TESTS

| No. | Interval | IFP/Time | ISIP/Time | FFP/Time | FSIP/Time | IHP-FHP | RECOVERY |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

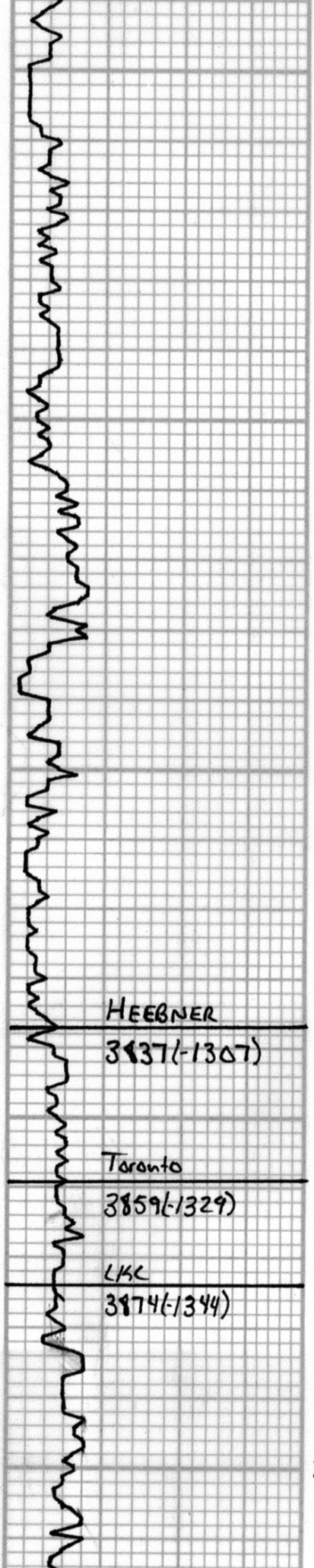
REMARKS AND RECOMMENDATIONS

# LEGEND



Anhydrite | Salt | Sandstone | Shale | Carb sh | Limestone | Ool.Lime | Chert | Dolomite

| DRILLING TIME IN MINUTES PER FOOT<br>Rate of Penetration Decreases<br>5″ 10″ 15″ | DEPTH | LITHOLOGY | SAMPLE DESCRIPTIONS | OIL SHOWS | REMARKS |
|---|---|---|---|---|---|
| | 3500 | | | | |
| | 50 | | | | |
| | 3600 | | | | |
| Topeka<br>3621(-1091) | | | | | |
| | 50 | | | | |




3700

50

3800

50

Sh: gry wl brn

LS: wht, fn xln, sme. Few Sml foss. poro, NS.

Sh: lt gry, sltly silty

LS: wht, fn xln, few chlky ex. Mostly vporo + vdns. All NS.

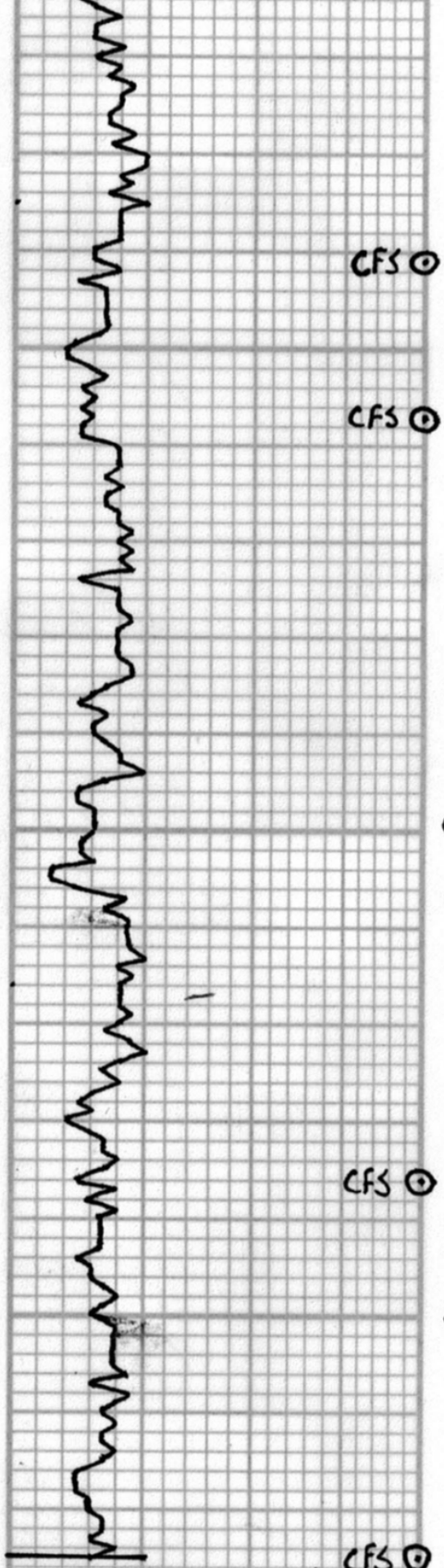
3900

Sh: gry

LS: wht-tan, sml ool. Few subxln ex, mostly poro, NS, No od.

Vis: 60 Wt: 8.9

DST #1
3935-3957
45-45-45-45




RTD: 4075(-1545)

LS: wht, Fn-md xln, scat md-lrg Foss. Mostly prsx, scat subxln-chlky rx, Totally barren, No Od.

LS: wht-tan, prsx, vdms,

Sh: NS Black Carb

DST #1

LS: wht, mdxln, Foss. Fr int xln ⊗, few sml vugs. fr lt brn stn wl spttd SFO. fnt-lt Od. wht Shp cht ⊙.

LS: wht, fn-vfn xln, suc. All prsx + dms, Totally barren, No Od.

Sh: Black Carb

Sh: gry wl lt gry.

LS: wht-tan, fn-md xln, scat Foss. All prsx + dms, NS, No Od.

DST #2

Sh: gry

LS: tan-brn, md xln, scat Foss. Scat fr int xln + ppsx, many tite rx. gd brn sat stn wl fr gd SFO, gssy in prt. fr-gd Od. fr amt mtld-dirty rx.

DST #3

Sh: gry-brn

LS: wht-tan, md-crs xln, Foss. Scat fr ppsx wl sml vugs, mostly tite. fr-gd sat stn wl gd SFO. gd Od, much free oil on cup.

Sh: gry wl brn

LS: wht, fn xln, subxln in prt. Mostly prsx + barren. rare stn, NSFO. No Od.

I.F.- 5 3/4" blow
F.F.- 3 1/2" blow
IFP: 19-38
FFP: 39-54
SIP: 608-601
HP: 1991-1947
Rec:
2' GO 95%o
78' OSWM 30%w
BHT: 113° Chlor: 88K

OST #2
4017 - 4036
30-30-30-30
IFP: 14-14
FFP: 14-13
SIP: 21-17
HP: 1945-1993
Rec:
1' mud
BHT: 109°

OST #3
4016 - 4075
30-30-30-30
IFP: 20-21
FFP: 22-21
SIP: 43-32
HP: 1993-1933
Rec:
5' OSM
BHT: 106°