



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1231433  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       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
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

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

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1231433

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
--	---	---

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Heidi 1-31
Doc ID	1231433

All Electric Logs Run

Micro
Sonic
Dual Induction
Compensated Density Neutron

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 778

Cell 785-324-1041

Date	10-26-14	Sec.	31	Twp.	18	Range	17	County	Rush	State	KS	On Location	1.30pm	Finish	3.00pm
								Location	Bush Cent-E E to 280RD						

Lease Heidi Well No. 1-31 Owner 1/2 S Einto

Contractor Discover 3  
 Type Job Surface  
 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.

Hole Size 12 1/4 T.D. 1170 Chf To Downing Nelson

Csg. 8 5/8 Depth 1170 Street Downing Nelson

Tbg. Size 22.22 Depth 22.22 City Downing Nelson State KS

Tool 22.22 Depth 22.22 The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 0 Shoe Joint 0 Cement Amount Ordered 425 80/20

Meas Line 3%CC 2%gel Displace 1913 Common 340

EQUIPMENT  
 Pumptrk 17 No. 1 Cementer Matt Poz. Mix 85  
 Bulktrk 1 No. 1 Driver Lonnke Gel. 8  
 Bulktrk 1 No. 1 Driver 450h Calcium 15

JOB SERVICES & REMARKS  
 Hulls

Remarks: Salt

Rat Hole Flowseal

Mouse Hole Kol-Seal

Centralizers Mud CLR 48

Baskets CFL-117 or CD110 CAF 38

D/V or Port Collar Sand

Handling 438 Mileage 8 5/8 FLOAT EQUIPMENT

Guide Shoe Centralizer 3

Baskets AFU Inserts

Float Shoe Latch Down

Baffle plate

Rubber plug

Pumptrk Charge Mileage 31

Tax

Discount

Total Charge

X Signature Don Dasher

*Cement did  
 Circulate  
 Thank you*

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 833

11-1-2014

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-31-14	31	18	17	RUSH	KANSAS		1:00 AM

Location RUSH CENTER KS. 3E 1 1/2 S 1/4 E

Lease Heidi Well No. 1-31 Owner \_\_\_\_\_

Contractor Discovery DRIG. Rig #3 To Quality Oilwell Cementing, Inc.  
Type Job Rotary plug "Galen" You are hereby requested to rent cementing equipment and furnish  
Hole Size 7 7/8 T.D. 3895' cementer and helper to assist owner or contractor to do work as listed.

Csg. 8 5/8 Surface Depth 1169' Charge To Downing & Nelson Oil Co. Inc

Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_ Street \_\_\_\_\_

Tool 4 1/2 X-H Depth 3790 City \_\_\_\_\_ State \_\_\_\_\_

Cement Left in Csg. \_\_\_\_\_ Shoe Joint \_\_\_\_\_ The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line \_\_\_\_\_ Displace \_\_\_\_\_ Cement Amount Ordered 220 sx 1/40 48 gel

**EQUIPMENT**

Pumptrk <u>18</u> No. _____	Cementer	<u>Glenn G.</u>	Common <u>132</u>
	Helper		Poz. Mix <u>88</u>
Bulktrk <u>15</u> No. _____	Driver	<u>Cody B.</u>	Gel. <u>8</u>
	Driver		Calcium _____
Bulktrk _____ No. _____	Driver	<u>Doug H.</u>	Hulls _____
	Driver		Salt _____

**JOB SERVICES & REMARKS**

Remarks:	Flowseal <u>50#</u>
Rat Hole	Kol-Seal _____
Mouse Hole	Mud CLR 48 _____
Centralizers	CFL-117 or CD110 CAF 38 _____
Baskets	Sand _____
D/V or Port Collar	Handling <u>228</u>
	Mileage _____

**FLOAT EQUIPMENT**

<u>50 sx @ 3790'</u>	Guide Shoe _____
<u>50 sx @ 1200'</u>	Centralizer _____
<u>50 sx @ 390'</u>	Baskets _____
<u>20 sx @ 60'</u>	AFU Inserts _____
<u>30 sx @ Rat Hole</u>	Float Shoe _____
<u>20 sx @ Mouse Hole</u>	Latch Down _____

Pumptrk Charge <u>plug</u>	Tax _____
Mileage <u>31</u>	Discount _____
	Total Charge _____

THANKS  
Signature [Handwritten Signature]



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Heidi #1-31**

**31 18s 17w Rush,KS**

Start Date: 2014.10.30 @ 07:00:00

End Date: 2014.10.30 @ 12:16:00

Job Ticket #: 60610                      DST #: 1

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

Printed: 2014.11.05 @ 14:44:13



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60610

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 07:00:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:10:00

Time Test Ended: 12:16:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jim Svaty

Unit No: 76

**Interval: 3737.00 ft (KB) To 3812.00 ft (KB) (TVD)**

Reference Elevations: 2044.00 ft (KB)

Total Depth: 3812.00 ft (KB) (TVD)

2036.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6668 Outside**

Press@RunDepth: psig @ 3745.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.30

End Date:

2014.10.30

Last Calib.: 2014.10.30

Start Time: 07:00:02

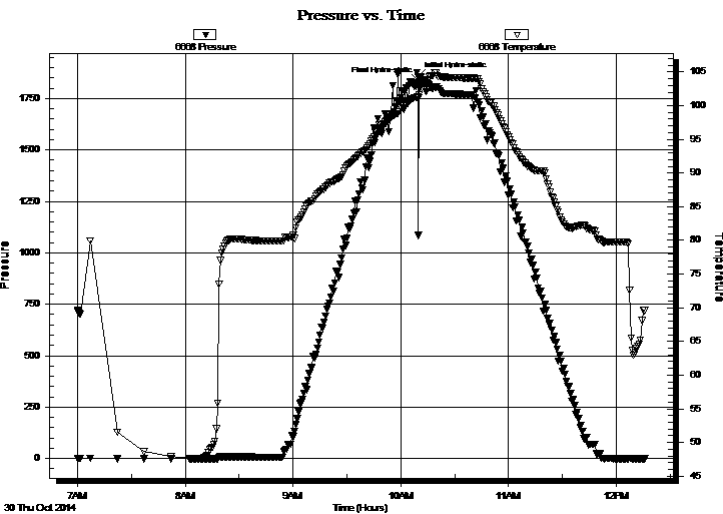
End Time:

12:16:00

Time On Btm: 2014.10.30 @ 10:09:30

Time Off Btm: 2014.10.30 @ 10:10:00

TEST COMMENT: Missrun Packer Failed.....



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1854.85	101.28	Initial Hydro-static
1	1831.64	101.58	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
150.00	Mud 100%	1.83

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60610

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 07:00:00

## Tool Information

Drill Pipe:	Length: 3710.00 ft	Diameter: 3.80 inches	Volume: 52.04 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 52000.00 lb
			<u>Total Volume: 52.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3737.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	75.00 ft			
Tool Length:	96.00 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			3717.00	
Shut In Tool	5.00			3722.00	
Hydraulic tool	5.00			3727.00	
Packer	5.00			3732.00	21.00 Bottom Of Top Packer
Packer	5.00			3737.00	
Stubb	1.00			3738.00	
Perforations	6.00			3744.00	
Change Over Sub	1.00			3745.00	
Recorder	0.00	8789	Inside	3745.00	
Recorder	0.00	6668	Outside	3745.00	
Blank Spacing	63.00			3808.00	
Change Over Sub	1.00			3809.00	
Bullnose	3.00			3812.00	75.00 Bottom Packers & Anchor

**Total Tool Length: 96.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60610

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 07:00:00

### 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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.50 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	Mud 100%	1.831

Total Length: 150.00 ft      Total Volume: 1.831 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

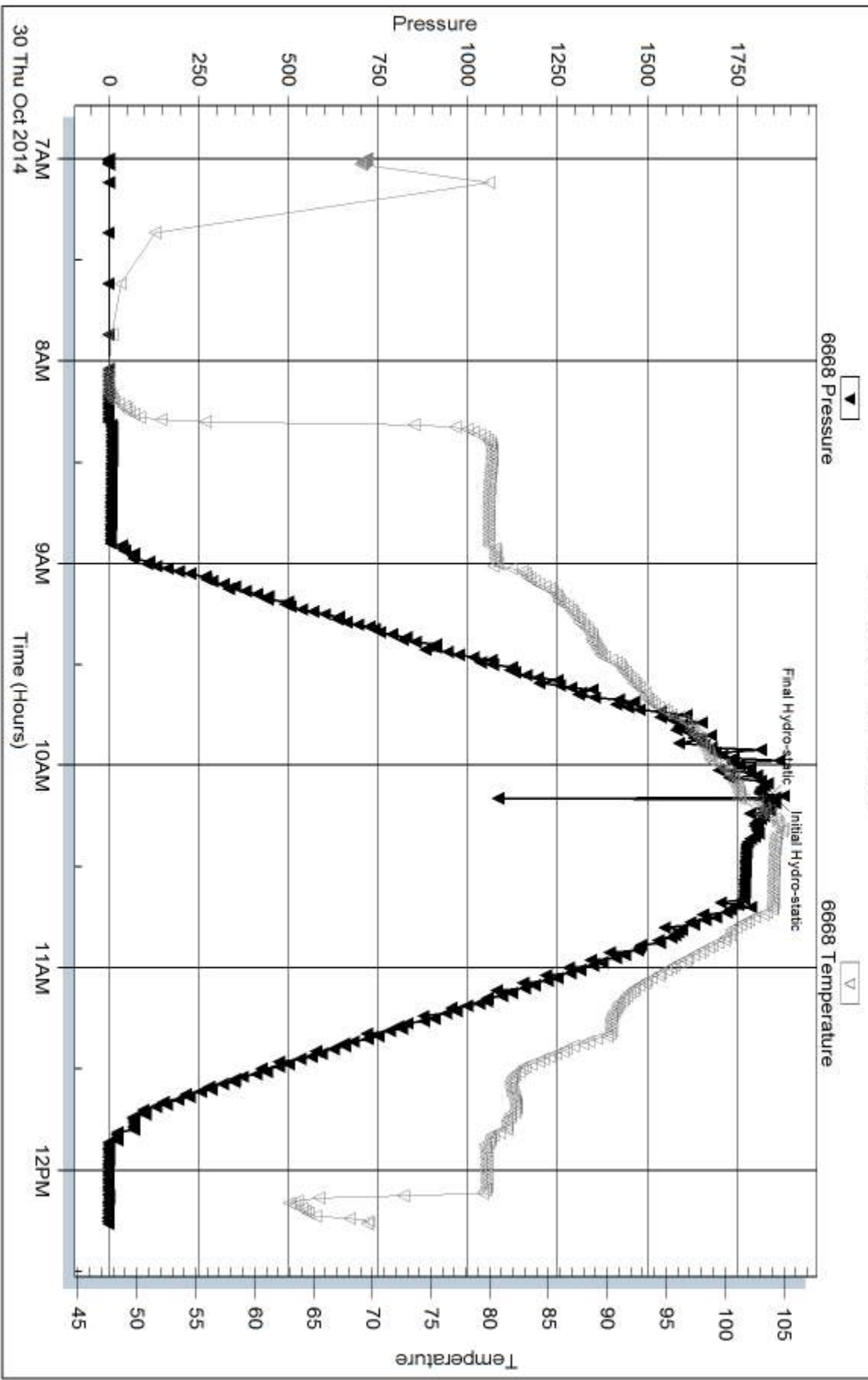
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



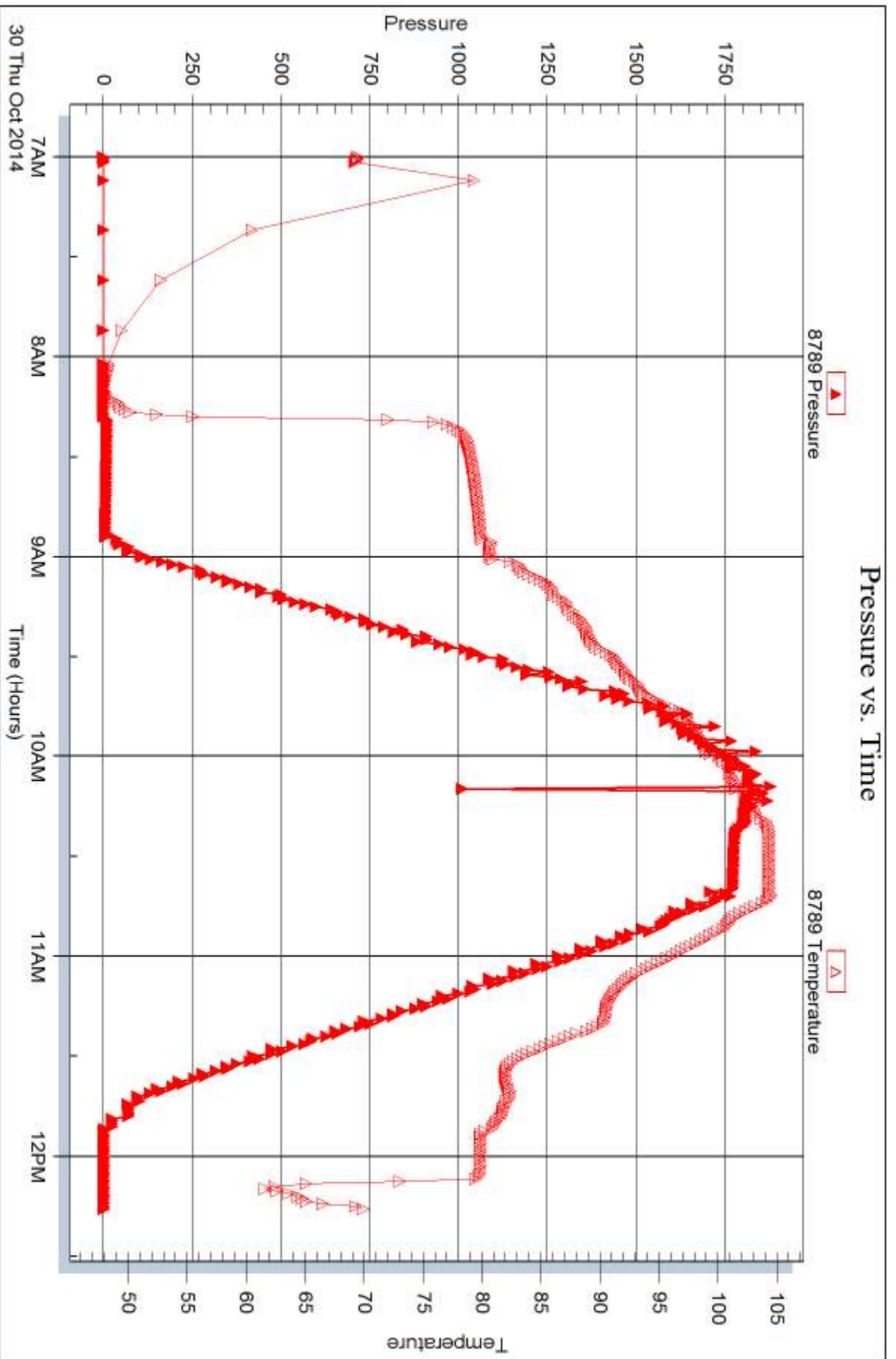
Serial #: 8789

Inside

Dow nting-Nelson Oil Co Inc

Heidi #1-31

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60610

Printed: 2014.11.05 @ 14:44:14



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Heidi #1-31**

**31 18s 17w Rush,KS**

Start Date: 2014.10.30 @ 12:39:00

End Date: 2014.10.30 @ 19:29:00

Job Ticket #: 60611                      DST #: 2

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

Printed: 2014.11.05 @ 14:43:52



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60611

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 12:39:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:07:00

Time Test Ended: 19:29:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

**Interval: 3682.00 ft (KB) To 3812.00 ft (KB) (TVD)**

Reference Elevations: 2044.00 ft (KB)

Total Depth: 3812.00 ft (KB) (TVD)

2036.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6668 Outside**

Press@RunDepth: 128.47 psig @ 3689.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.30

End Date:

2014.10.30

Last Calib.:

2014.10.30

Start Time: 12:39:02

End Time:

19:29:00

Time On Btm:

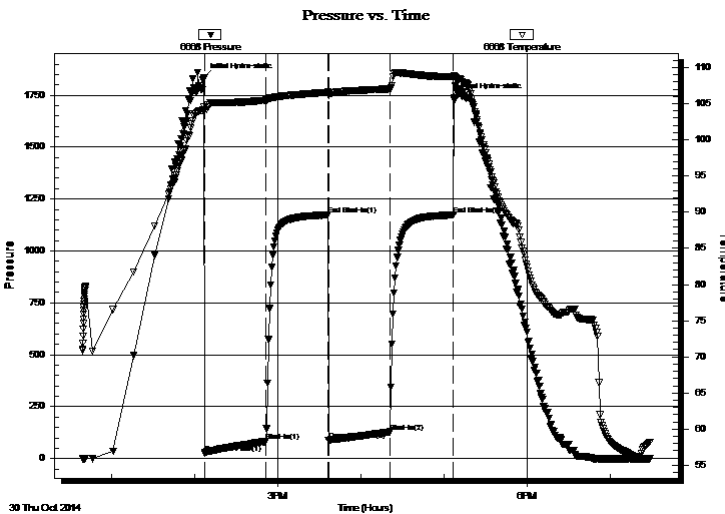
2014.10.30 @ 14:06:45

Time Off Btm:

2014.10.30 @ 17:07:15

**TEST COMMENT:** 45-IFP- Surface Blow Building to 7 3/4"  
45-ISIP- No Blow  
45-FFP- Surface Blow Building to 9"  
45-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1836.76	104.52	Initial Hydro-static
1	24.16	104.12	Open To Flow (1)
45	82.33	105.47	Shut-In(1)
90	1173.22	106.58	End Shut-In(1)
90	89.22	106.10	Open To Flow (2)
135	128.47	107.05	Shut-In(2)
180	1173.52	108.71	End Shut-In(2)
181	1736.82	108.82	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
126.00	OSWCM 3%o 32%w 65%m	1.49
63.00	OSM 3%o 97%m	0.88
55.00	OCM 30%o 70%m	0.77
3.00	CO 100%	0.04

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60611

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 12:39:00

## Tool Information

Drill Pipe:	Length: 3647.00 ft	Diameter: 3.80 inches	Volume: 51.16 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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:	55000.00 lb
			<u>Total Volume: 51.31 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3682.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	130.00 ft				
Tool Length:	151.00 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			3662.00	
Shut In Tool	5.00			3667.00	
Hydraulic tool	5.00			3672.00	
Packer	5.00			3677.00	21.00 Bottom Of Top Packer
Packer	5.00			3682.00	
Stubb	1.00			3683.00	
Perforations	6.00			3689.00	
Recorder	0.00	8789	Inside	3689.00	
Recorder	0.00	6668	Outside	3689.00	
Perforations	23.00			3712.00	
Change Over Sub	1.00			3713.00	
Blank Spacing	95.00			3808.00	
Change Over Sub	1.00			3809.00	
Bullnose	3.00			3812.00	130.00 Bottom Packers & Anchor

**Total Tool Length: 151.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60611

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2014.10.30 @ 12:39:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

14000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.50 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
126.00	OSWCM 3%o 32%w 65%m	1.494
63.00	OSM 3%o 97%m	0.884
55.00	OCM 30%o 70%m	0.772
3.00	CO 100%	0.042

Total Length: 247.00 ft

Total Volume: 3.192 bbf

Num Fluid Samples: 0

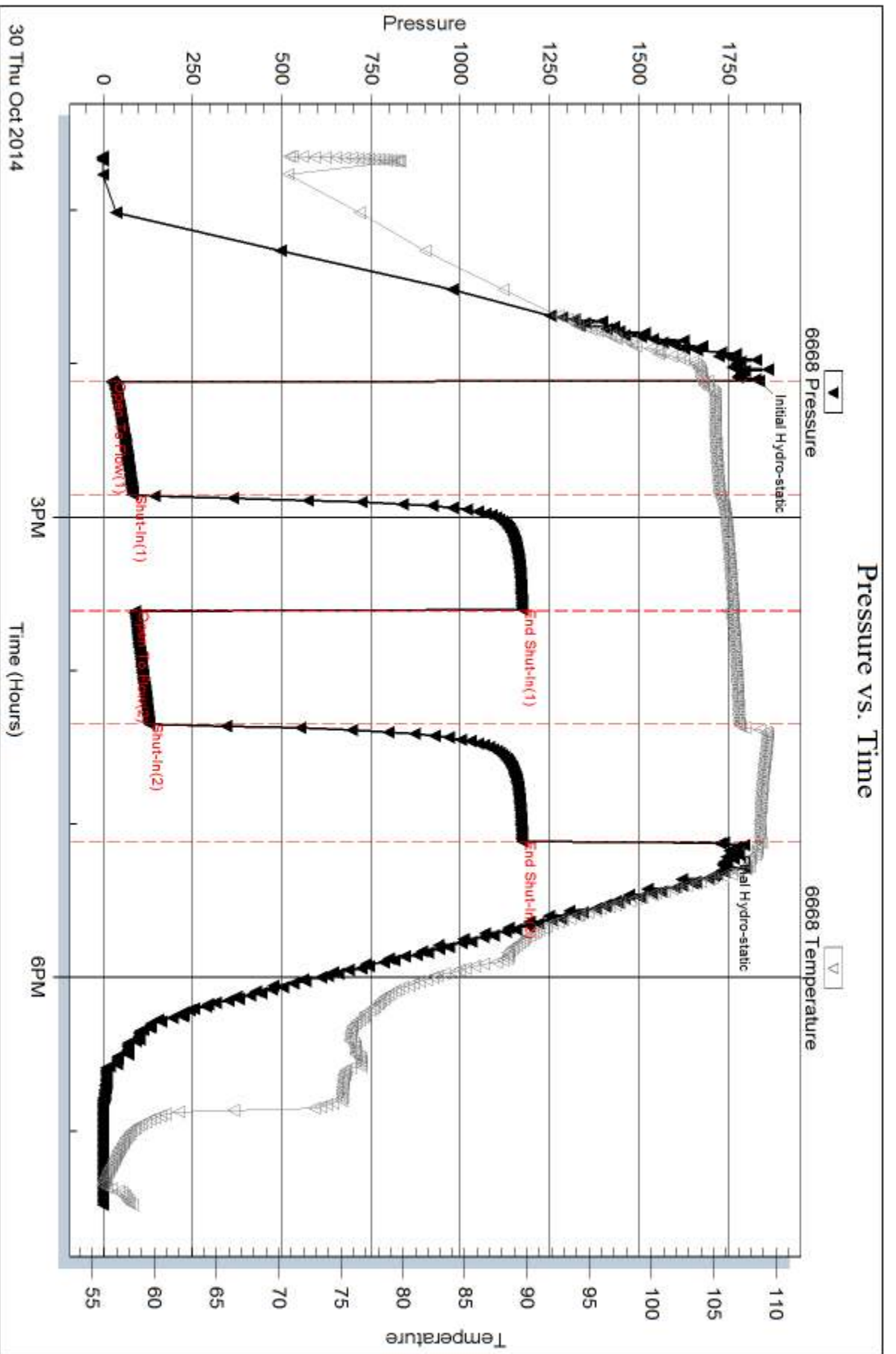
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .510 @ 64



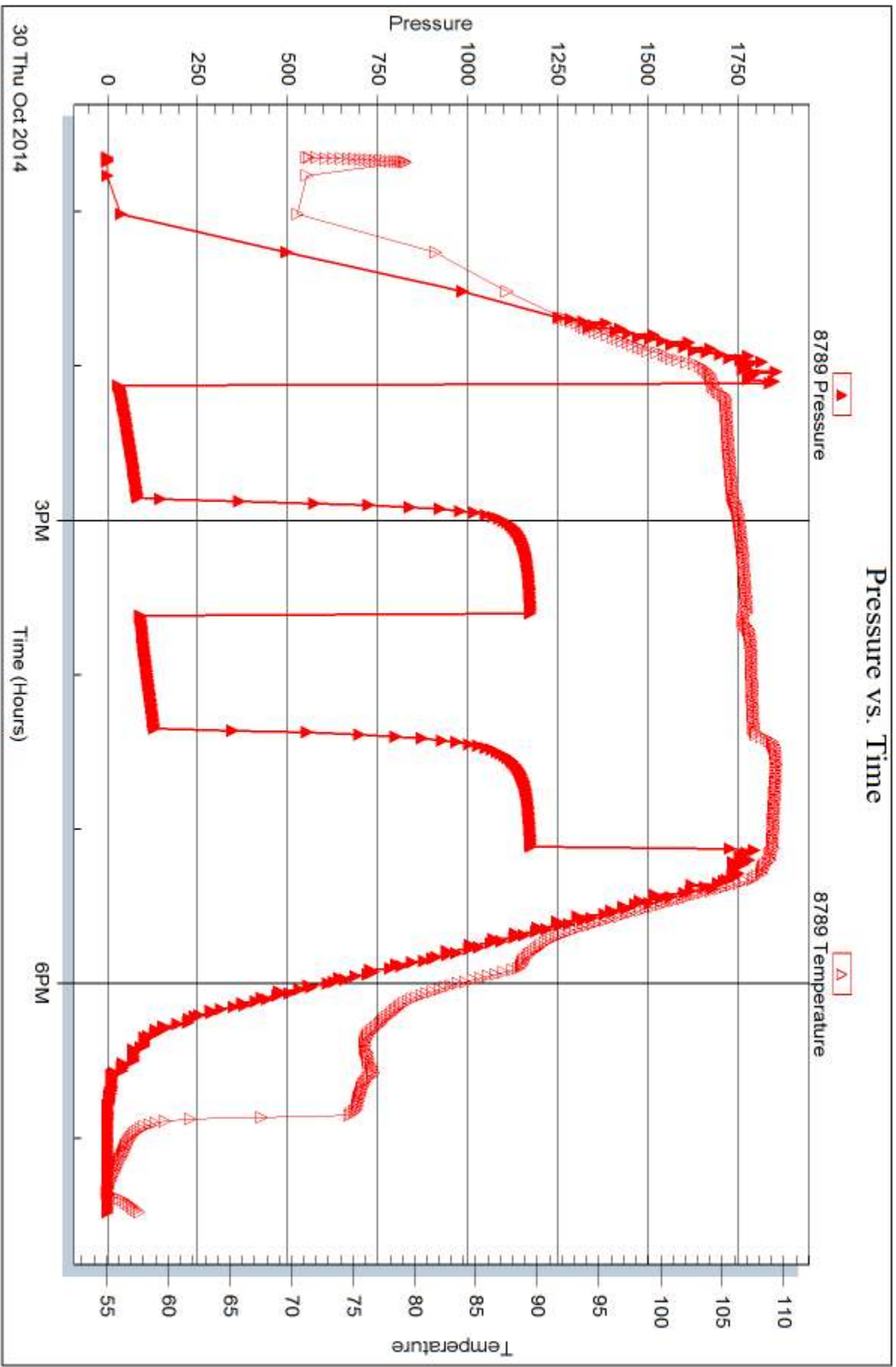
Serial #: 8789

Inside

Dow nng-Nelson Oil Co Inc

Heidi #1-31

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 60611

Printed: 2014.11.05 @ 14:43:53



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Heidi #1-31**

**31 18s 17w Rush,KS**

Start Date: 2014.10.31 @ 10:26:00

End Date: 2014.10.31 @ 18:01:00

Job Ticket #: 60612                      DST #: 3

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

Printed: 2014.11.05 @ 14:43:12



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60612

**DST#: 3**

ATTN: Marc Dow ning

Test Start: 2014.10.31 @ 10:26:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:58:00

Time Test Ended: 18:01:00

Test Type: Conventional Straddle (Reset)

Tester: Jim Svaty

Unit No: 76

**Interval: 3797.00 ft (KB) To 3808.00 ft (KB) (TVD)**

Reference Elevations: 2044.00 ft (KB)

Total Depth: 3895.00 ft (KB) (TVD)

2036.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8289 Outside**

Press@RunDepth: 36.42 psig @ 3804.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.31

End Date:

2014.10.31

Last Calib.:

2014.10.31

Start Time: 10:26:02

End Time:

18:01:15

Time On Btm:

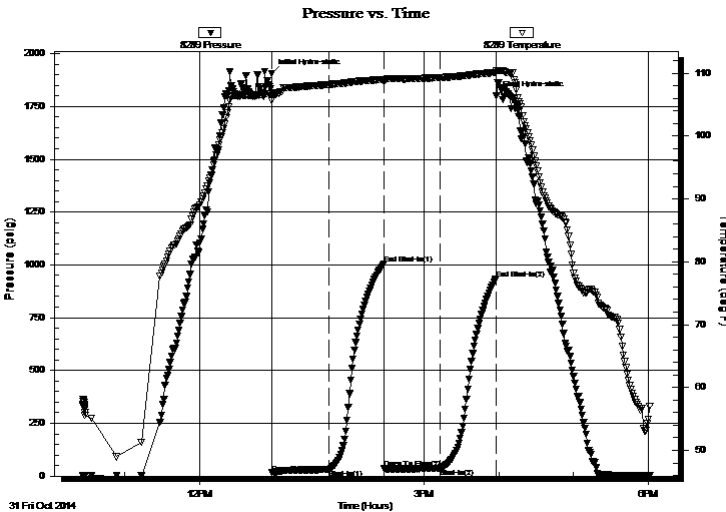
2014.10.31 @ 12:57:45

Time Off Btm:

2014.10.31 @ 15:58:15

**TEST COMMENT:** 45-IFP- Surface Blow Building to 2"  
45-ISIP- No Blow  
45-FFP- Surface Blow Building to 1" In 15 min. Died Back in 30 min.  
45-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1904.16	106.83	Initial Hydro-static
1	15.26	105.60	Open To Flow (1)
46	31.09	108.20	Shut-In(1)
90	1004.02	109.02	End Shut-In(1)
91	35.55	108.69	Open To Flow (2)
136	36.42	109.31	Shut-In(2)
180	932.92	110.11	End Shut-In(2)
181	1800.71	110.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	OCM 45% o 55% m	0.36
10.00	CO 100%	0.14

## Gas Rates

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

\* Recovery from multiple tests







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60612

**DST#: 3**

ATTN: Marc Dow ning

Test Start: 2014.10.31 @ 10:26:00

## Tool Information

Drill Pipe:	Length: 3773.00 ft	Diameter: 3.80 inches	Volume: 52.93 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 55000.00 lb
			<u>Total Volume: 53.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3797.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	3808.00 ft			
Interval betw een Packers:	11.00 ft			
Tool Length:	118.00 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			3777.00	
Shut In Tool	5.00			3782.00	
Hydraulic tool	5.00			3787.00	
Packer	5.00			3792.00	21.00 Bottom Of Top Packer
Packer	5.00			3797.00	
Stubb	1.00			3798.00	
Perforations	6.00			3804.00	
Recorder	0.00	6668	Inside	3804.00	
Recorder	0.00	8289	Outside	3804.00	
Blank Off Sub	1.00			3805.00	
Blank Spacing	3.00			3808.00	11.00 Tool Interval
Packer	1.00			3809.00	
Perforations	17.00			3826.00	
Change Over Sub	1.00			3827.00	
Recorder	0.00	8789	Below	3827.00	
Blank Spacing	63.00			3890.00	
Change Over Sub	1.00			3891.00	
Bullnose	3.00			3894.00	86.00 Bottom Packers & Anchor

**Total Tool Length: 118.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

**31 18s 17w Rush,KS**

PO Box 1019  
Hays KS 67601

**Heidi #1-31**

Job Ticket: 60612

**DST#: 3**

ATTN: Marc Dow ning

Test Start: 2014.10.31 @ 10:26:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.50 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	OCM 45%o 55%m	0.358
10.00	CO 100%	0.140

Total Length: 55.00 ft      Total Volume: 0.498 bbl

Num Fluid Samples: 0

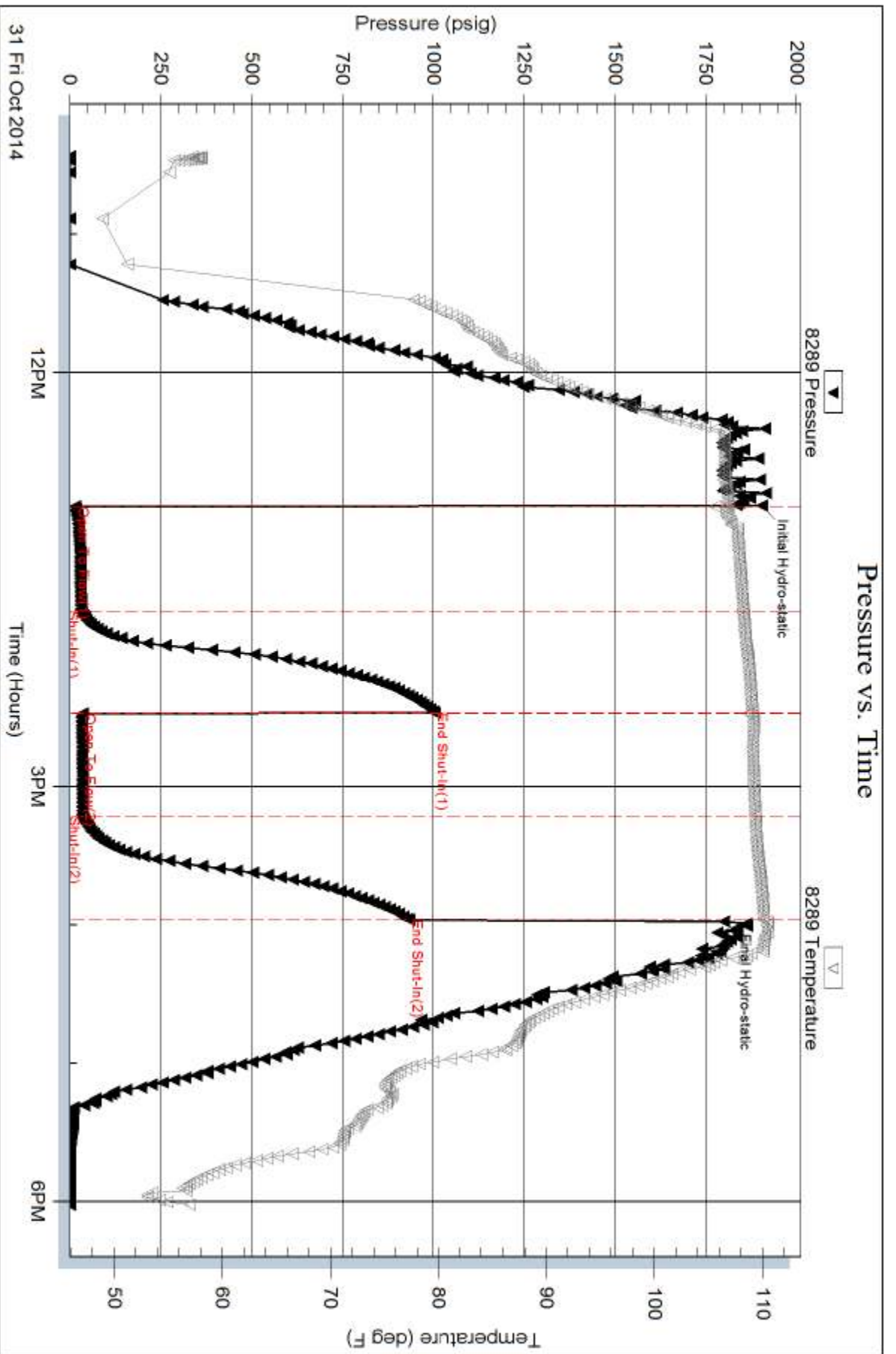
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



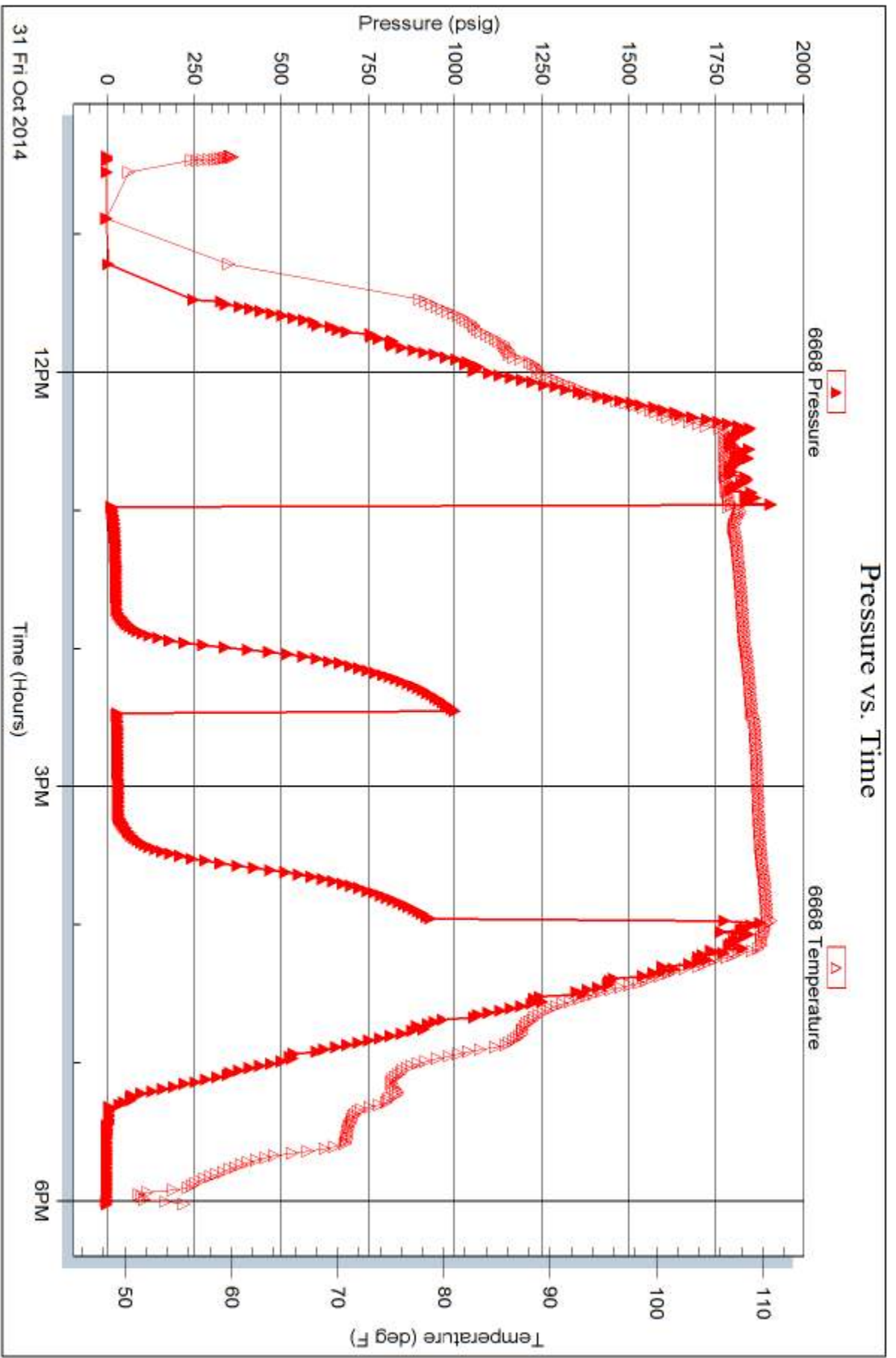
Serial #: 6668

Inside

Dow nrg-Nelson Oil Co Inc

Heidi #1-31

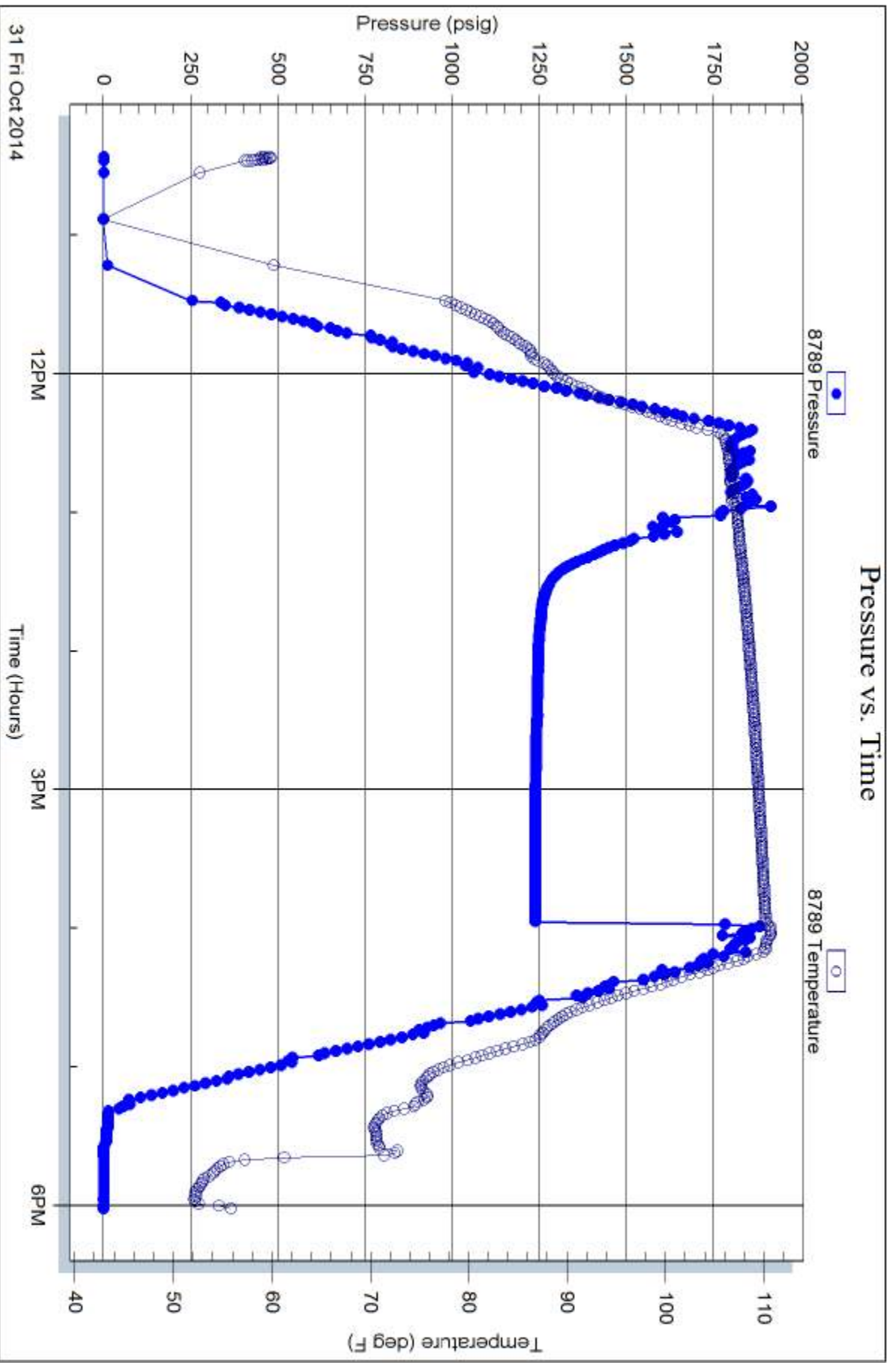
DST Test Number: 3

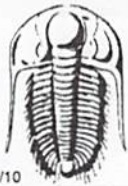


Trilobite Testing, Inc

Ref. No: 60612

Printed: 2014.11.05 @ 14:43:14





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **60610**

Well Name & No. Heidi 1-31 Test No. 1 Date 10-30-14  
 Company Downing-Nelson Oil Co. Inc. Elevation 2044 KB 2036 GL  
 Address P.O. Box 1019 HAYS KS 67601  
 Co. Rep / Geo. MARC Downing Rig Discovery #3  
 Location: Sec. 31 Twp. 18<sup>s</sup> Rge. 17<sup>w</sup> Co. Rush State KS

Interval Tested 3737-3812 Zone Tested Arbuckle  
 Anchor Length 75 Drill Pipe Run \_\_\_\_\_ Mud Wt. 8.9  
 Top Packer Depth 3732 Drill Collars Run 30 Vis 52  
 Bottom Packer Depth 3737 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3812 Chlorides 3000 ppm System LCM 1.5  
 Blow Description MISS RUN packer failed.

Rec	Feet of	%gas	%oil	%water	%mud
<u>150</u>	<u>MUD</u>			<u>100</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 150 BHT 102 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1854  Test 950 T-On Location 5:15  
 (B) First Initial Flow \_\_\_\_\_  Jars \_\_\_\_\_ T-Started 7:00  
 (C) First Final Flow \_\_\_\_\_  Safety Joint \_\_\_\_\_ T-Open 10:10  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled 10:15  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 12:16  
 (F) Second Final Flow \_\_\_\_\_  Mileage RT 71 110.05 Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1831  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open \_\_\_\_\_  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In \_\_\_\_\_  Day Standby \_\_\_\_\_ Total 1060.05  
 Final Flow \_\_\_\_\_  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In \_\_\_\_\_ Sub Total 1060.05

Approved By \_\_\_\_\_ Our Representative [Signature]  
 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. 60611

4/10

Well Name & No. Heidi 1-31 Test No. 2 Date 10-30-14  
 Company Downing-Nelson Oil Co. Inc. Elevation 2044 KB 2036 GL  
 Address P.O. BOX 1019 HAYS KS 67601  
 Co. Rep / Geo. MARC DOWNING Rig Discovery #3  
 Location: Sec. 31 Twp. 18<sup>S</sup> Rge. 17<sup>W</sup> Co. Rush State KS

Interval Tested 3682-3812 Zone Tested Arbuckle  
 Anchor Length 130 Drill Pipe Run 3647 Mud Wt. 8.9  
 Top Packer Depth 3677 Drill Collars Run 30 Vis 52  
 Bottom Packer Depth 3682 Wt. Pipe Run 80 WL 8.8  
 Total Depth 3812 Chlorides 3000 ppm System LCM 1.5

Blow Description IFP - Surface Blow Building to 7 3/4 in.  
ISIP - No Blow  
FFP - Surface Blow Building to 9 in.  
F5IP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>126</u>	<u>0.5 WCM</u>	<u>3</u>	<u>32</u>	<u>65</u>	
<u>63</u>	<u>0.5 m</u>	<u>3</u>		<u>97</u>	
<u>55</u>	<u>0 cm</u>	<u>30</u>		<u>70</u>	
<u>3</u>	<u>CO</u>	<u>100</u>			

Rec Total 247 BHT 109 Gravity 40 API RW 510 @ 64 °F Chlorides 14000 ppm

(A) Initial Hydrostatic 1836  Test 1150 T-On Location 5:15  
 (B) First Initial Flow 24  Jars \_\_\_\_\_ T-Started 12:39  
 (C) First Final Flow 82  Safety Joint \_\_\_\_\_ T-Open 14:07  
 (D) Initial Shut-In 1173  Circ Sub \_\_\_\_\_ T-Pulled 17:07  
 (E) Second Initial Flow 89  Hourly Standby \_\_\_\_\_ T-Out 19:29  
 (F) Second Final Flow 128  Mileage \_\_\_\_\_  
 (G) Final Shut-In 1173  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1736  Straddle \_\_\_\_\_

Initial Open 45  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Ruined Packer \_\_\_\_\_  
 Final Flow 45  Extra Packer \_\_\_\_\_  
 Final Shut-In 45  Extra Recorder \_\_\_\_\_  
 Sub Total 0  
 Total 1150  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1150

Approved By \_\_\_\_\_ Our Representative [Signature]

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. 60612

4/10

Well Name & No. Heidi 1-31 Test No. 3 Date 10-31-14  
 Company Downing-Nelson Oil Co. Inc. Elevation 2044 KB 2036 GL  
 Address P.O. Box 1019 Hays KS 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery #3  
 Location: Sec. 31 Twp. 18<sup>s</sup> Rge. 17w Co. Rush State KS

Interval Tested 3797-3808 Zone Tested Arbuckle  
 Anchor Length 11 (87TP) Drill Pipe Run 2773 Mud Wt. 8.9  
 Top Packer Depth 3797 Drill Collars Run 30 Vis 52  
 Bottom Packer Depth 3808 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3895 Chlorides 3000 ppm System LCM 1.5

Blow Description IFP - Surface Blow Building to 2 in.  
ISIP - No Blow  
FFP - Surface Blow Building to 1 in in 15 min. Died Back in 30 min.  
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>0 cm</u>	<u>45</u>		<u>55</u>	
<u>10</u>	<u>00</u>	<u>100</u>			

Rec Total 55 BHT 110 Gravity 40 API RW @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1904  Test 1150 T-On Location 9:22  
 (B) First Initial Flow 15  Jars \_\_\_\_\_ T-Started 10:26  
 (C) First Final Flow 31  Safety Joint \_\_\_\_\_ T-Open 12:58  
 (D) Initial Shut-In 1004  Circ Sub \_\_\_\_\_ T-Pulled 15:58  
 (E) Second Initial Flow 35  Hourly Standby \_\_\_\_\_ T-Out 18:01  
 (F) Second Final Flow 36  Mileage 110.05 Comments \_\_\_\_\_  
 (G) Final Shut-In 932  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1800  Straddle 600  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1860.05  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1860.05

Approved By \_\_\_\_\_ Our Representative [Signature]

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.

