



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **Holland #1-24**

### **24-16s-17w Rush,KS**

Start Date: 2012.10.26 @ 22:03:30

End Date: 2012.10.27 @ 03:45:30

Job Ticket #: 48601                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.01 @ 14:25:09

Downing-Nelson Oil Co., Inc.  
24-16s-17w Rush,KS  
Holland #1-24  
DST # 1  
LKC "C"  
2012.10.26



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48601

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2012.10.26 @ 22:03:30

## GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:06:30

Time Test Ended: 03:45:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3312.00 ft (KB) To 3335.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3335.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8354**

**Inside**

Press @ Run Depth: 51.47 psig @ 3315.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.26

End Date:

2012.10.27

Last Calib.:

2012.10.27

Start Time: 22:13:30

End Time:

03:45:30

Time On Btm:

2012.10.27 @ 00:05:30

Time Off Btm:

2012.10.27 @ 02:12:30

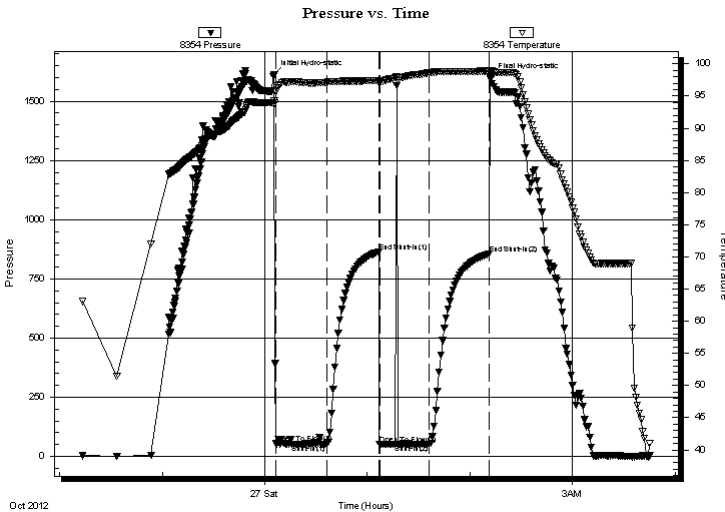
**TEST COMMENT:** IF-Weak blow . Built to 3 inches. Died off to surface. Slid 12'-15' after tool opening.

ISI-No Return.

FF-No Blow . Flushed Tool. Weak surface blow . Died @ 12 minutes.

FSI-No Return.

## PRESSURE SUMMARY



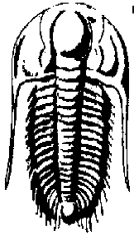
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1610.71	94.23	Initial Hydro-static
1	54.12	95.59	Open To Flow (1)
31	51.21	97.13	Shut-In(1)
61	863.95	97.40	End Shut-In(1)
62	51.68	97.04	Open To Flow (2)
91	51.47	98.65	Shut-In(2)
126	854.49	98.89	End Shut-In(2)
127	1600.48	98.94	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	100%Mud	0.71

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

24-16s-17w Rush,KS

PO Box 1019  
Hays, KS 67601

Holland #1-24

ATTN: Al Dow ning

Job Ticket: 48601                    **DST#: 1**

Test Start: 2012.10.26 @ 22:03:30

### GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock:                    ft (KB)

Time Tool Opened: 00:06:30

Time Test Ended: 03:45:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3312.00 ft (KB) To 3335.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3335.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8520 Outside**

Press @ RunDepth:                    psig @ 3315.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.26

End Date: 2012.10.27

Last Calib.: 2012.10.27

Start Time: 22:13:45

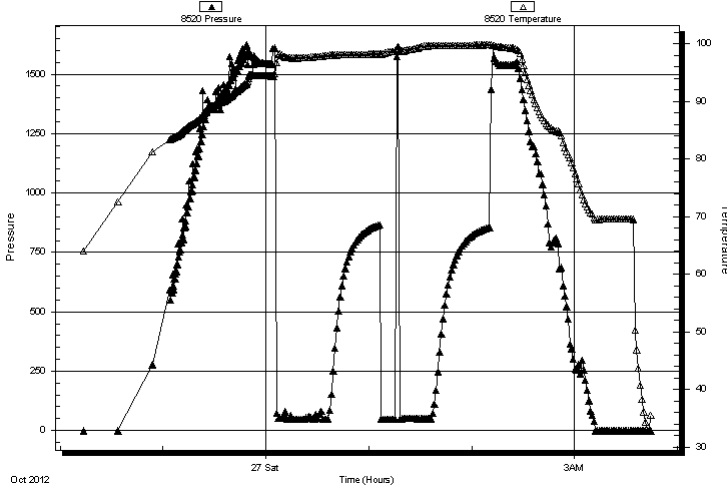
End Time: 03:44:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Weak blow . Built to 3 inches. Died off to surface. Slid 12'-15' after tool opening.  
ISI-No Return.  
FF-No Blow . Flushed Tool. Weak surface blow . Died @ 12 minutes.  
FSI-No Return.

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
70.00	100%Mud	0.71

### 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.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48601

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2012.10.26 @ 22:03:30

## Tool Information

Drill Pipe:	Length: 3290.00 ft	Diameter: 3.80 inches	Volume: 46.15 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:	15000.00 lb
			<u>Total Volume: 46.30 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3312.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	23.00 ft				
Tool Length:	43.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3293.00	
Shut In Tool	5.00			3298.00	
Hydraulic tool	5.00			3303.00	
Packer	5.00			3308.00	20.00 Bottom Of Top Packer
Packer	4.00			3312.00	
Stubb	1.00			3313.00	
Perforations	2.00			3315.00	
Recorder	0.00	8354	Inside	3315.00	
Recorder	0.00	8520	Outside	3315.00	
Perforations	17.00			3332.00	
Bullnose	3.00			3335.00	23.00 Bottom Packers & Anchor

**Total Tool Length: 43.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48601

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2012.10.26 @ 22:03:30

**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: 55.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 3000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
70.00	100%Mud	0.709

Total Length: 70.00 ft Total Volume: 0.709 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8354

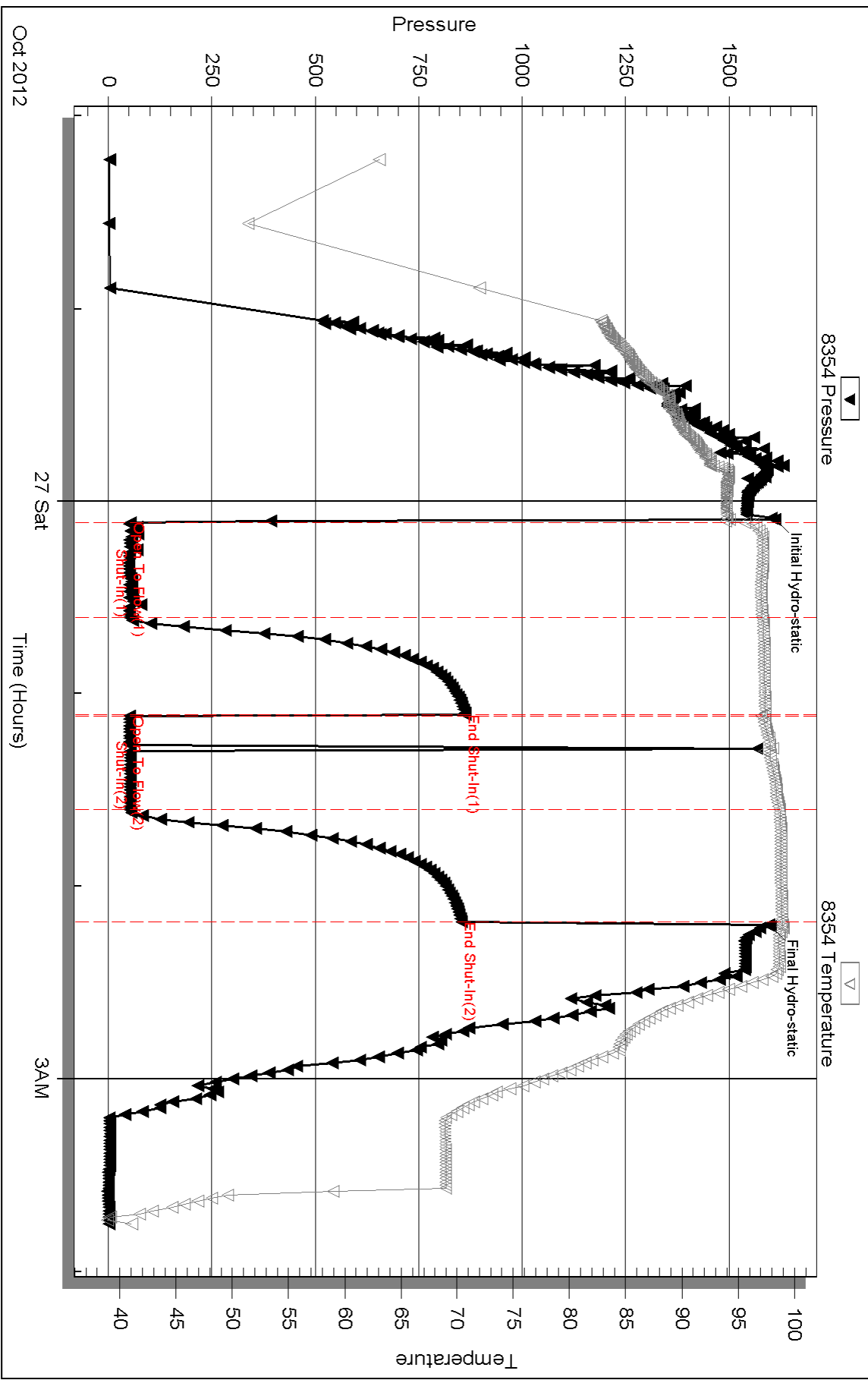
Inside

Dow nung-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 1

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 48601

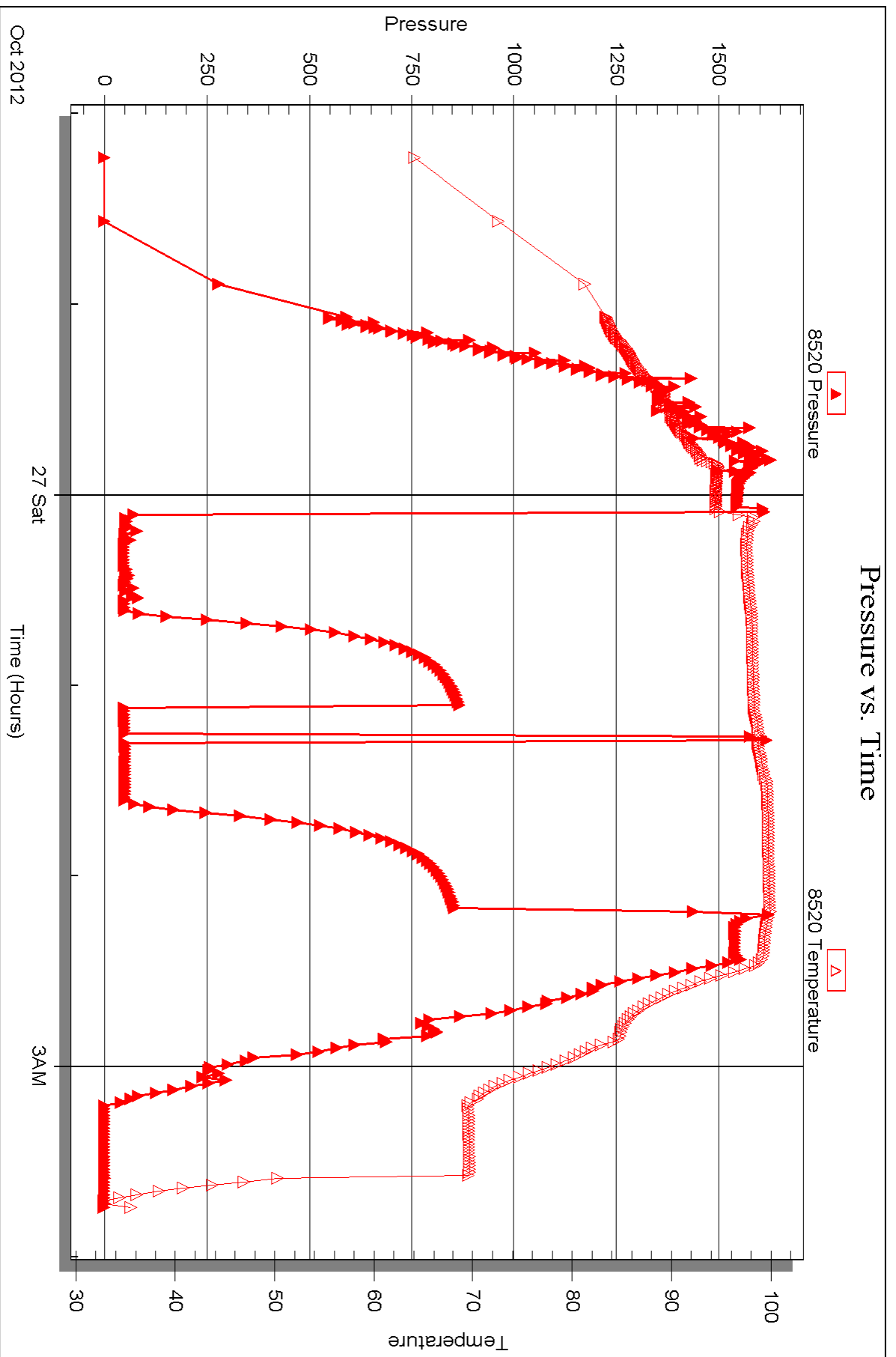
Printed: 2012.11.01 @ 14:25:13

Serial #: 8520

Outside Dow nting-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 48601

Printed: 2012.11.01 @ 14:25:14



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **Holland #1-24**

### **24-16s-17w Rush,KS**

Start Date: 2012.10.27 @ 13:18:30

End Date: 2012.10.27 @ 19:06:30

Job Ticket #: 48602                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.01 @ 14:24:23





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48602

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2012.10.27 @ 13:18:30

## GENERAL INFORMATION:

Formation: **LKC "E-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:55:30

Time Test Ended: 19:06:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3354.00 ft (KB) To 3386.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3386.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8354**

**Inside**

Press @ Run Depth: 139.76 psig @ 3357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.27

End Date:

2012.10.27

Last Calib.:

2012.10.27

Start Time:

13:28:30

End Time:

19:06:30

Time On Btm:

2012.10.27 @ 14:55:20

Time Off Btm:

2012.10.27 @ 17:31:30

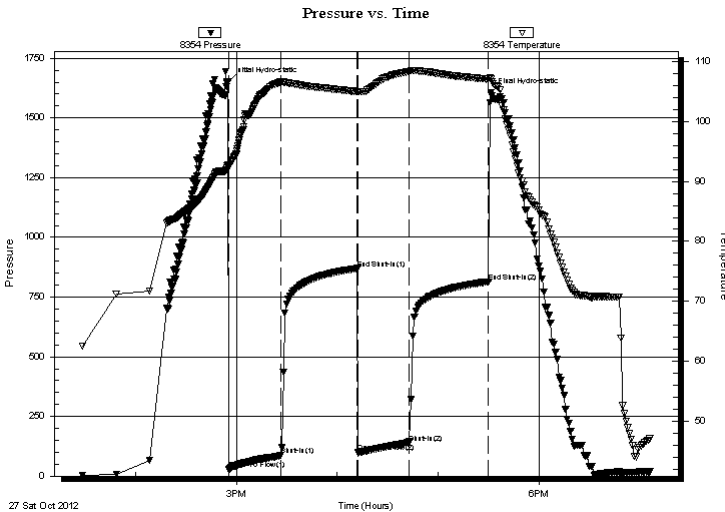
**TEST COMMENT:** IF-Weak building blow . BOB in 19 minutes 45 seconds.

ISI-No Return.

FF-Weak building blow . BOB in 30 minutes.

FSI-No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1653.00	92.73	Initial Hydro-static
1	27.36	92.24	Open To Flow (1)
32	87.51	106.58	Shut-In(1)
77	869.54	104.95	End Shut-In(1)
78	98.31	104.90	Open To Flow (2)
108	139.76	108.31	Shut-In(2)
155	814.05	107.05	End Shut-In(2)
157	1606.34	107.02	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
270.00	80%Water/20%Mud	3.51

## Gas Rates

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



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# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48602

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2012.10.27 @ 13:18:30

## GENERAL INFORMATION:

Formation: **LKC "E-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:55:30

Time Test Ended: 19:06:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3354.00 ft (KB) To 3386.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3386.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8520 Outside**

Press @ Run Depth: psig @ 3357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.27

End Date:

2012.10.27

Last Calib.:

2012.10.27

Start Time: 13:28:45

End Time:

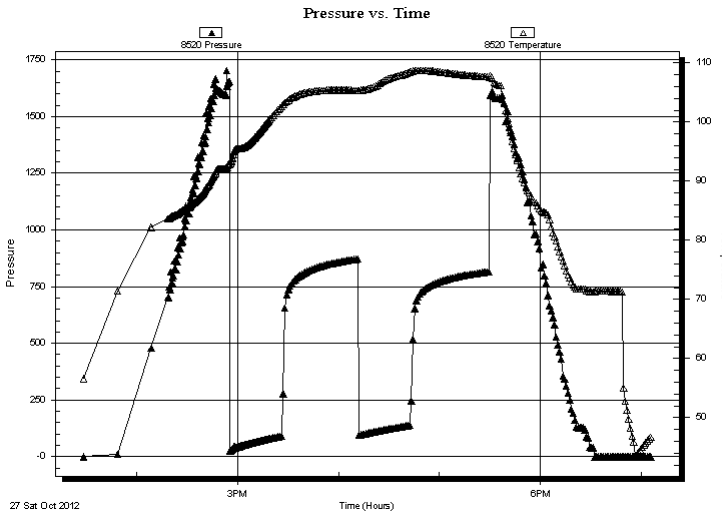
19:05:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Weak building blow . BOB in 19 minutes 45 seconds.  
 IS- No Return.  
 FF-Weak building blow . BOB in 30 minutes.  
 FS- No Return.

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
270.00	80%Water/20%Mud	3.51

## 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.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48602

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2012.10.27 @ 13:18:30

## Tool Information

Drill Pipe:	Length: 3322.00 ft	Diameter: 3.80 inches	Volume: 46.60 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:	10000.00 lb
			<u>Total Volume: 46.75 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3354.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	32.00 ft				
Tool Length:	52.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3335.00	
Shut In Tool	5.00			3340.00	
Hydraulic tool	5.00			3345.00	
Packer	5.00			3350.00	20.00 Bottom Of Top Packer
Packer	4.00			3354.00	
Stubb	1.00			3355.00	
Perforations	2.00			3357.00	
Recorder	0.00	8354	Inside	3357.00	
Recorder	0.00	8520	Outside	3357.00	
Perforations	26.00			3383.00	
Bullnose	3.00			3386.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 52.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48602

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2012.10.27 @ 13:18:30

## 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:

13500 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.81 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
270.00	80%Water/20%Mud	3.514

Total Length: 270.00 ft

Total Volume: 3.514 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

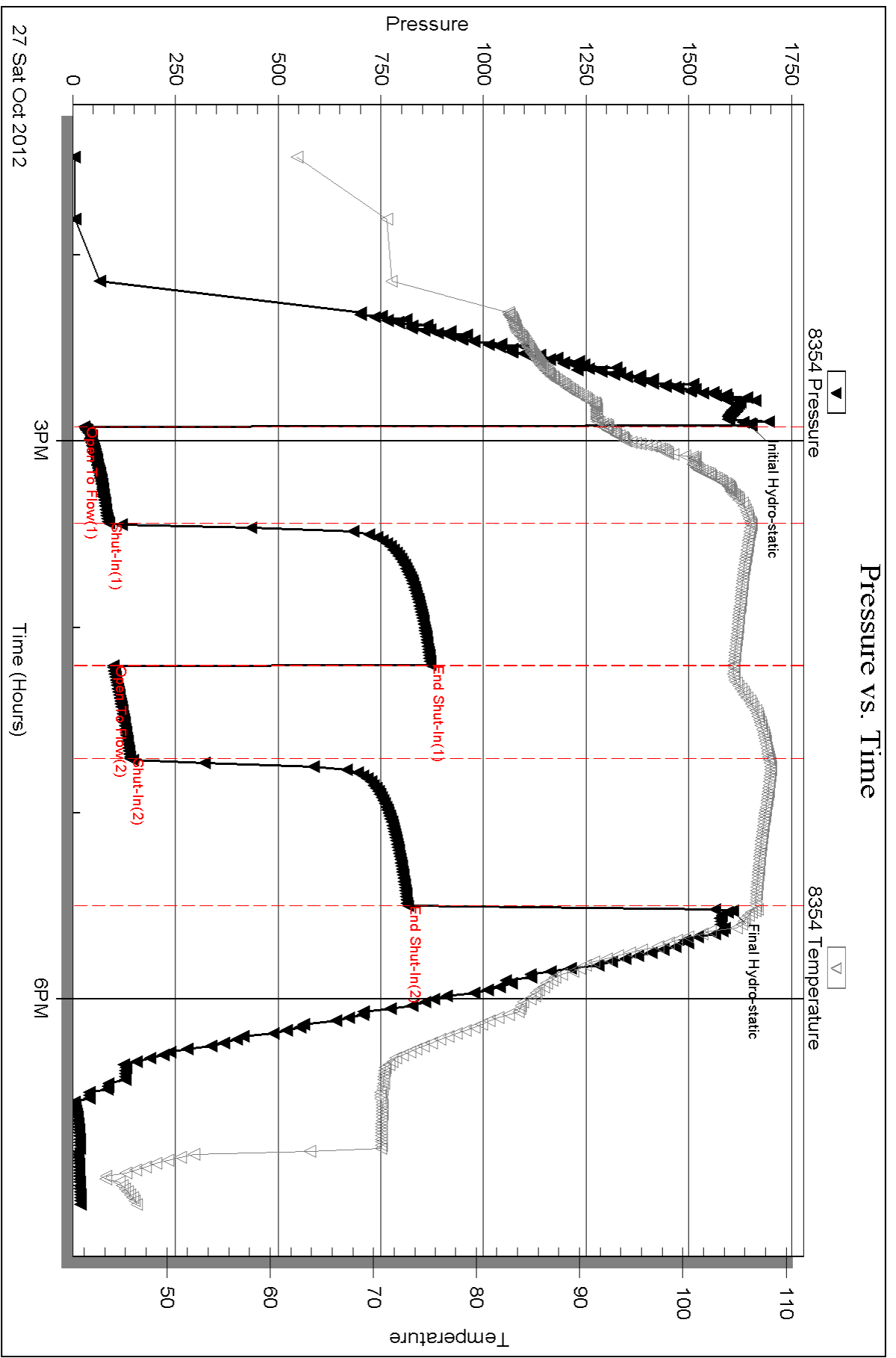
Serial #: 8354

Inside

Dow nting-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 48602

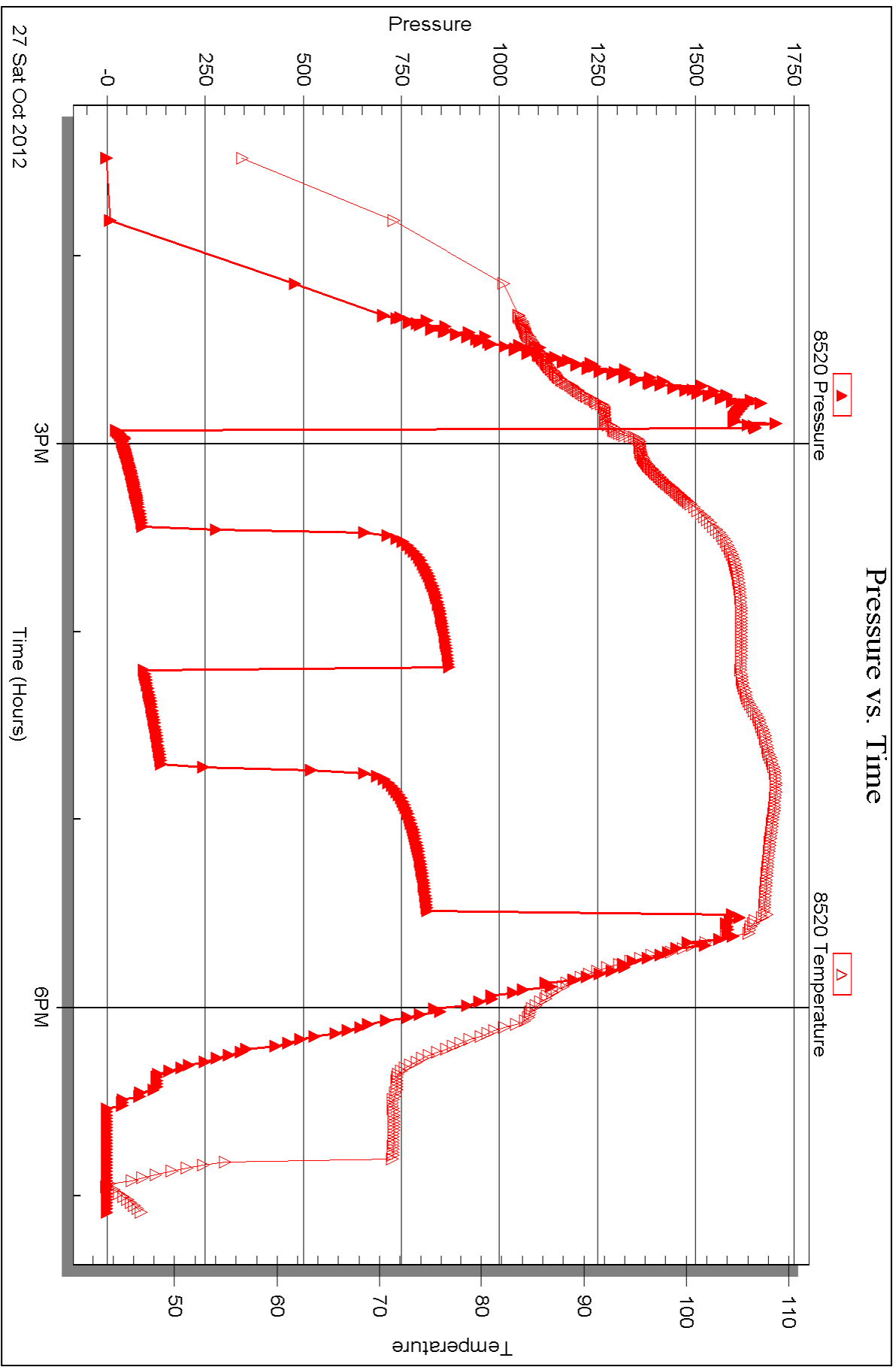
Printed: 2012.11.01 @ 14:24:27

Serial #: 8520

Outside Dow nging-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 2





## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **Holland #1-24**

### **24-16s-17w Rush,KS**

Start Date: 2012.10.28 @ 09:46:30

End Date: 2012.10.28 @ 15:16:30

Job Ticket #: 48603                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.01 @ 14:23:35



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48603

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 09:46:30

## GENERAL INFORMATION:

Formation: **LKC "K&L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:31:30

Time Test Ended: 15:16:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3485.00 ft (KB) To 3525.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3525.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8354**

**Inside**

Press @ Run Depth: 19.62 psig @ 3488.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.28

End Date:

2012.10.28

Last Calib.:

2012.10.28

Start Time:

09:46:30

End Time:

15:16:30

Time On Btm:

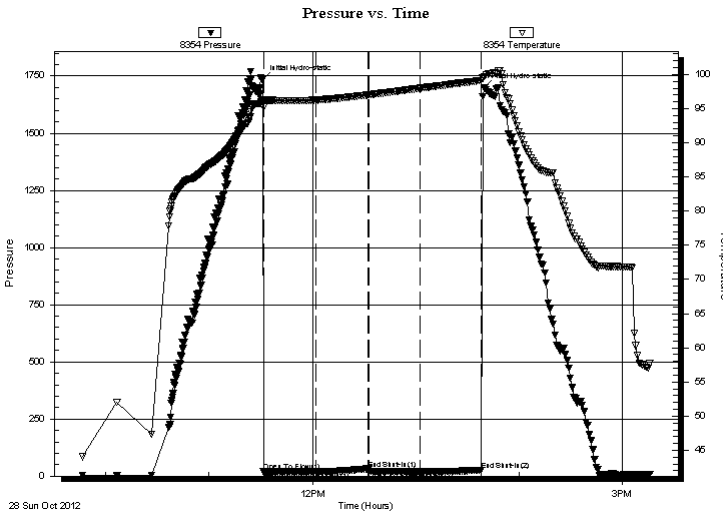
2012.10.28 @ 11:31:20

Time Off Btm:

2012.10.28 @ 13:40:00

**TEST COMMENT:** IF-Weak surface blow . Surging @ 25 minutes.  
IS- No Return.  
FF-Weak surface blow . Surging @ 21 minutes.  
FS- No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1735.66	96.30	Initial Hydro-static
1	18.80	95.21	Open To Flow (1)
31	19.55	96.25	Shut-In(1)
62	32.07	97.02	End Shut-In(1)
62	21.55	97.03	Open To Flow (2)
92	19.62	97.98	Shut-In(2)
127	25.69	99.12	End Shut-In(2)
129	1699.93	99.68	Final Hydro-static

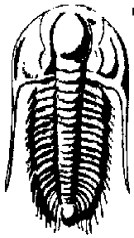
## Recovery

Length (ft)	Description	Volume (bbl)
3.00	10%Oil/90%Mud	0.01
1.00	100%Oil	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48603

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 09:46:30

## GENERAL INFORMATION:

Formation: **LKC "K&L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:31:30

Time Test Ended: 15:16:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3485.00 ft (KB) To 3525.00 ft (KB) (TVD)**

Total Depth: 3525.00 ft (KB) (TVD)

Hole Diameter: 7.88 inchesHole Condition: Fair

Reference Elevations: 2009.00 ft (KB)

2004.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8520 Outside**

Press @ RunDepth: psig @ 3488.00 ft (KB)

Start Date: 2012.10.28 End Date: 2012.10.28

Start Time: 09:46:45 End Time: 15:16:15

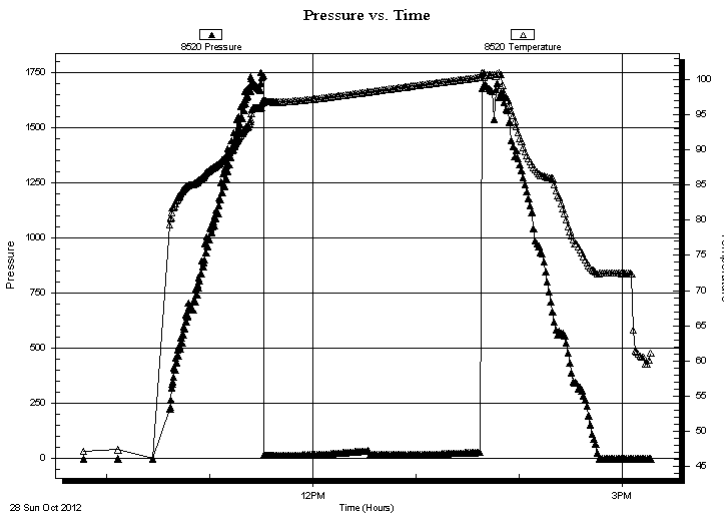
Capacity: 8000.00 psig

Last Calib.: 2012.10.28

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Weak surface blow . Surging @ 25 minutes.  
IS-No Return.  
FF-Weak surface blow . Surging @ 21 minutes.  
FS-No Return.



## PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
3.00	10%Oil/90%Mud	0.01
1.00	100%Oil	0.00

## Gas Rates

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

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48603

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 09:46:30

## Tool Information

Drill Pipe:	Length: 3446.00 ft	Diameter: 3.80 inches	Volume: 48.34 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:	24000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	5000.00 lb
			<u>Total Volume: 48.49 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3485.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	40.00 ft				
Tool Length:	60.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3466.00	
Shut In Tool	5.00			3471.00	
Hydraulic tool	5.00			3476.00	
Packer	5.00			3481.00	20.00 Bottom Of Top Packer
Packer	4.00			3485.00	
Stubb	1.00			3486.00	
Perforations	2.00			3488.00	
Recorder	0.00	8354	Inside	3488.00	
Recorder	0.00	8520	Outside	3488.00	
Perforations	34.00			3522.00	
Bullnose	3.00			3525.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48603

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 09:46:30

## 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: 51.00 sec/qt

Cushion Volume: bbl

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

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
3.00	10%Oil/90%Mud	0.015
1.00	100%Oil	0.005

Total Length: 4.00 ft      Total Volume: 0.020 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

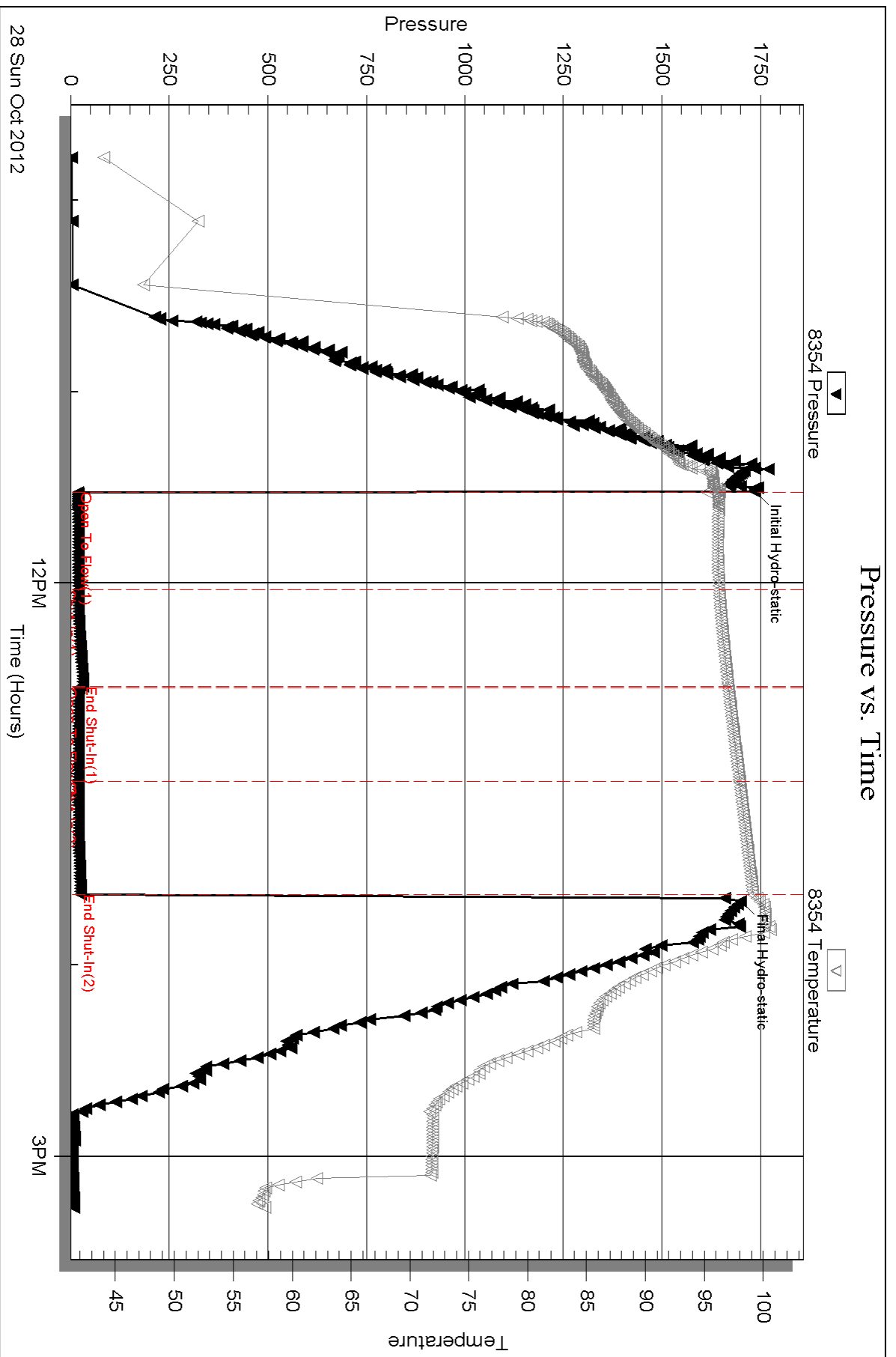
Serial #: 8354

Inside

Dow n/g-nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 48603

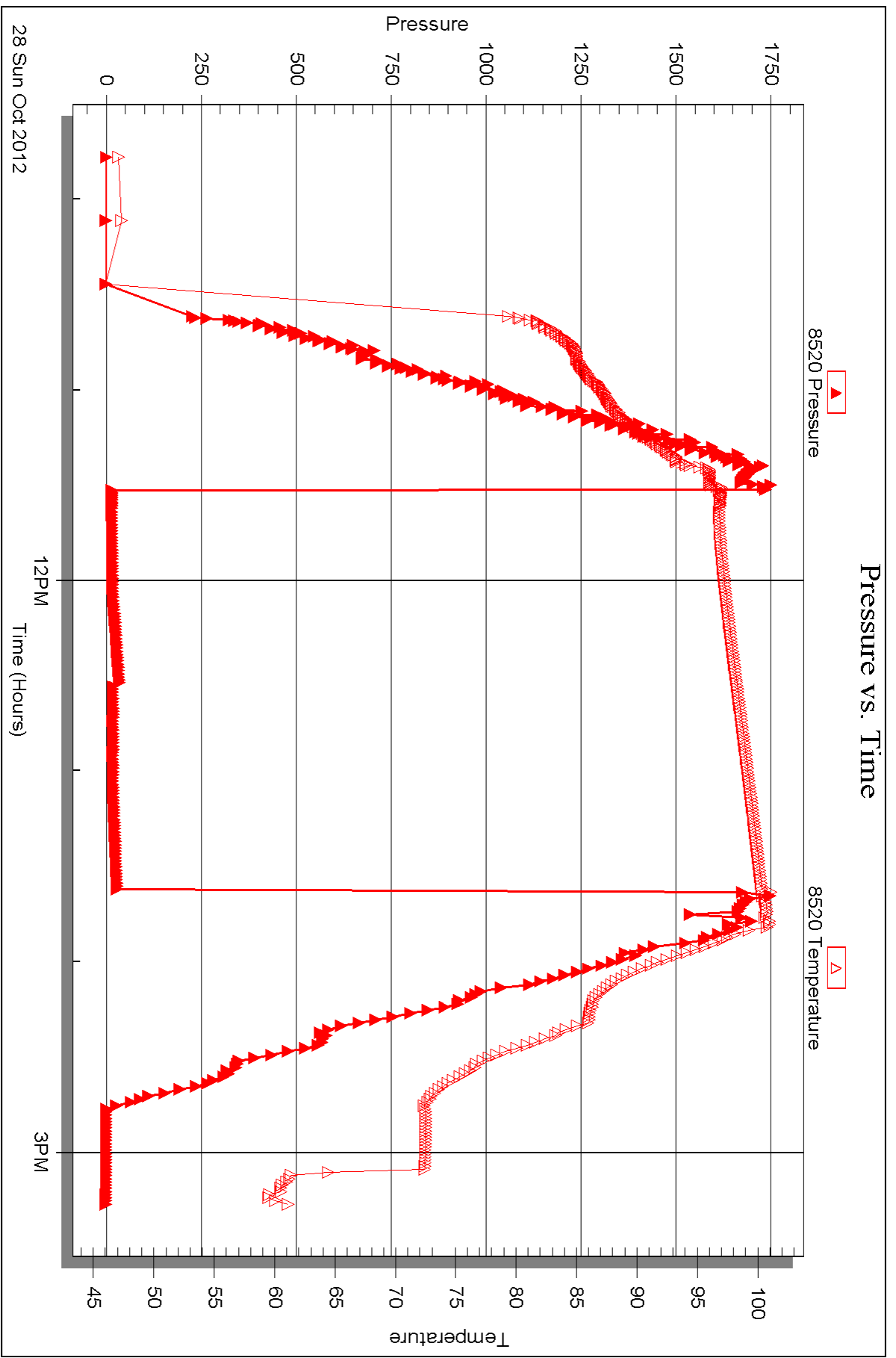
Printed: 2012.11.01 @ 14:23:40

Serial #: 8520

Outside Dow nging-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 48603

Printed: 2012.11.01 @ 14:23:40



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **Holland #1-24**

### **24-16s-17w Rush,KS**

Start Date: 2012.10.28 @ 21:53:30

End Date: 2012.10.29 @ 04:27:00

Job Ticket #: 48604                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.01 @ 14:22:42



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48604

**DST#: 4**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 21:53:30

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:30:40

Time Test Ended: 04:27:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3520.00 ft (KB) To 3560.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3560.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8354**

**Inside**

Press @ Run Depth: 1057.84 psig @ 3523.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.28

End Date:

2012.10.29

Last Calib.:

2012.10.29

Start Time: 21:53:30

End Time:

04:27:00

Time On Btm:

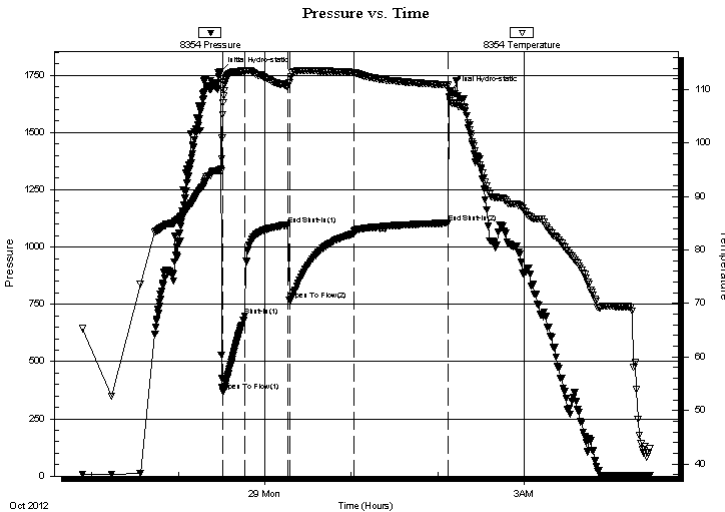
2012.10.28 @ 23:29:30

Time Off Btm:

2012.10.29 @ 02:08:30

**TEST COMMENT:** IF-Strong building blow . BOB in 30 seconds.  
ISI-Return @ 1 minute. Built to 1 & 1/2 inches.  
FF-Strong building blow . BOB in 30 seconds.  
FSI-No Return.

## PRESSURE SUMMARY



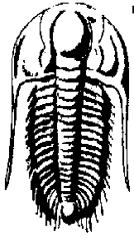
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.75	95.11	Initial Hydro-static
2	370.61	105.28	Open To Flow (1)
17	698.71	113.43	Shut-In(1)
47	1095.36	110.55	End Shut-In(1)
48	768.66	111.30	Open To Flow (2)
92	1057.84	113.19	Shut-In(2)
158	1104.49	110.82	End Shut-In(2)
159	1682.10	107.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2079.00	95%Water/5%Mud	28.89
504.00	90%Water/10%Mud	7.07

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush, KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48604

**DST#: 4**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 21:53:30

### GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:30:40

Time Test Ended: 04:27:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3520.00 ft (KB) To 3560.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3560.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8520 Outside**

Press @ RunDepth: psig @ 3523.00 ft (KB)

Start Date: 2012.10.28

End Date: 2012.10.29

Capacity: 8000.00 psig

Last Calib.: 2012.10.29

Start Time: 21:53:45

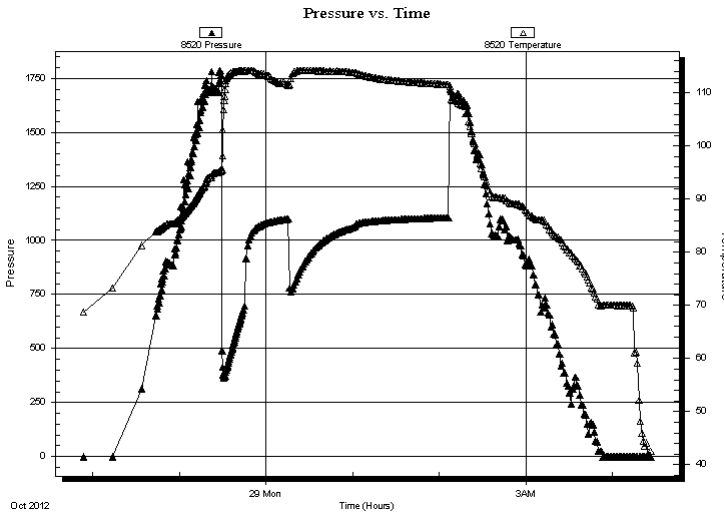
End Time: 04:26:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Strong building blow . BOB in 30 seconds.  
ISI-Return @ 1 minute. Built to 1 & 1/2 inches.  
FF-Strong building blow . BOB in 30 seconds.  
FSI-No Return.

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
2079.00	95%Water/5%Mud	28.89
504.00	90%Water/10%Mud	7.07

### 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.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48604

**DST#: 4**

ATTN: Al Dow ning

Test Start: 2012.10.28 @ 21:53:30

## Tool Information

Drill Pipe:	Length: 3477.00 ft	Diameter: 3.80 inches	Volume: 48.77 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: 24000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 48.92 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3520.00 ft			Final lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	40.00 ft			
Tool Length:	60.00 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			3501.00	
Shut In Tool	5.00			3506.00	
Hydraulic tool	5.00			3511.00	
Packer	5.00			3516.00	20.00 Bottom Of Top Packer
Packer	4.00			3520.00	
Stubb	1.00			3521.00	
Perforations	2.00			3523.00	
Recorder	0.00	8354	Inside	3523.00	
Recorder	0.00	8520	Outside	3523.00	
Perforations	34.00			3557.00	
Bullnose	3.00			3560.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**24-16s-17w Rush, KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48604

**DST#: 4**

ATTN: Al Downing

Test Start: 2012.10.28 @ 21:53:30

## 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:

20000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.17 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.56 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
2079.00	95%Water/5%Mud	28.890
504.00	90%Water/10%Mud	7.070

Total Length: 2583.00 ft

Total Volume: 35.960 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

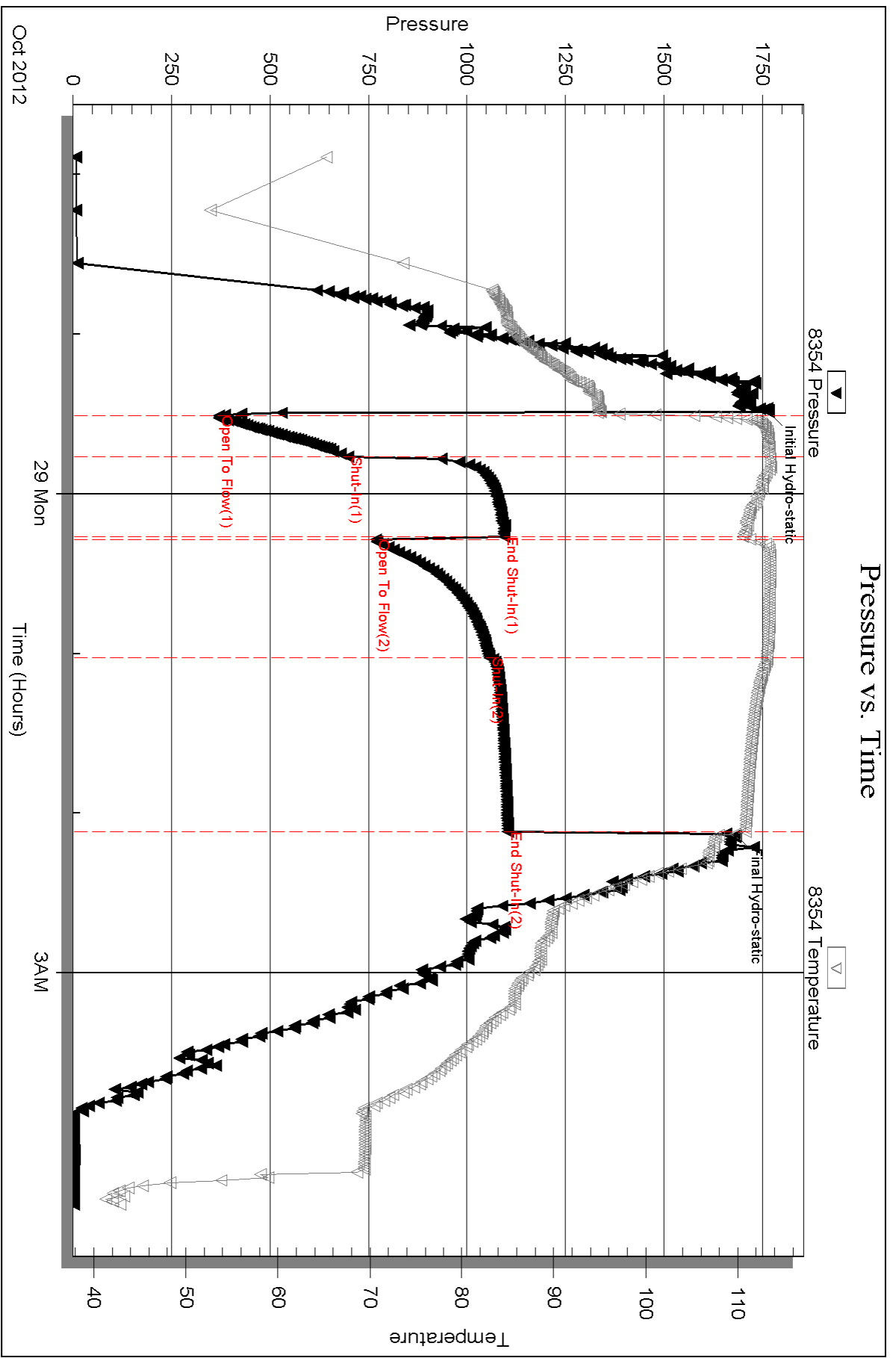
Serial #: 8354

Inside

Downing-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 48604

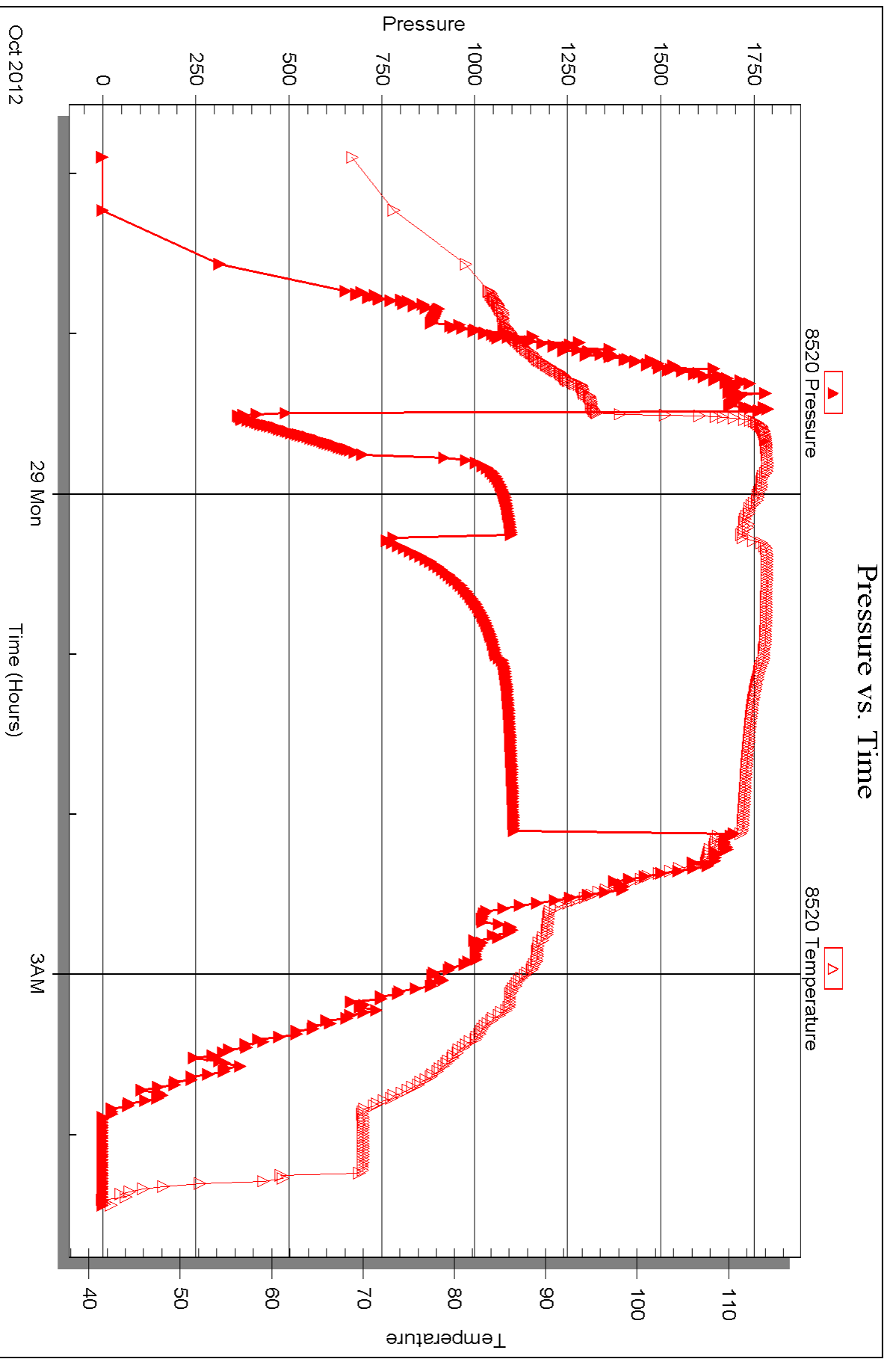
Printed: 2012.11.01 @ 14:22:47

Serial #: 8520

Outside Dow nting-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 4





## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **Holland #1-24**

### **24-16s-17w Rush,KS**

Start Date: 2012.10.29 @ 18:12:15

End Date: 2012.10.29 @ 23:54:45

Job Ticket #: 48605                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.01 @ 14:21:07



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48605

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2012.10.29 @ 18:12:15

## GENERAL INFORMATION:

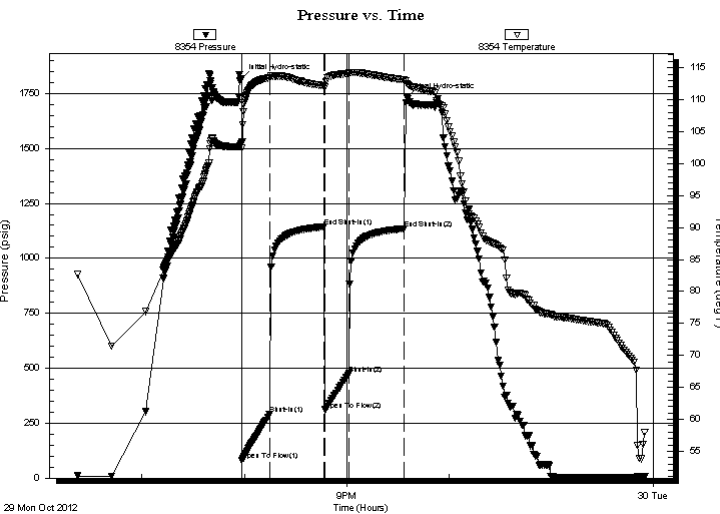
Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:58:35  
 Time Test Ended: 23:54:45  
 Interval: **3586.00 ft (KB) To 3593.00 ft (KB) (TVD)**  
 Total Depth: 3660.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Dustin Rash  
 Unit No: 38  
 Reference Elevations: 2009.00 ft (KB)  
 2004.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8354

Inside

Press @ Run Depth: 475.29 psig @ 3587.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.10.29 End Date: 2012.10.29 Last Calib.: 2012.10.29  
 Start Time: 18:22:15 End Time: 23:54:45 Time On Btm: 2012.10.29 @ 19:58:25  
 Time Off Btm: 2012.10.29 @ 21:35:15

**TEST COMMENT:** IF-Strong building blow . BOB in 1 minute 45 seconds.  
 ISI-Return @ 1 minute. Built to 1&1/2 inches.  
 FF-Strong building blow . BOB in 1 minute 45 seconds.  
 FSI-No Return.



## PRESSURE SUMMARY

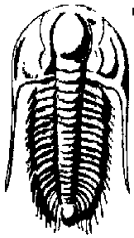
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1816.82	103.19	Initial Hydro-static
1	81.87	102.39	Open To Flow (1)
17	289.47	113.46	Shut-In(1)
49	1143.48	112.19	End Shut-In(1)
49	311.13	111.99	Open To Flow (2)
63	475.29	114.10	Shut-In(2)
96	1135.02	113.06	End Shut-In(2)
97	1730.03	112.57	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
960.00	95%Water/5%Mud	13.19

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48605

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2012.10.29 @ 18:12:15

### GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:58:35

Time Test Ended: 23:54:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3586.00 ft (KB) To 3593.00 ft (KB) (TVD)**

Total Depth: 3660.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2009.00 ft (KB)

2004.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8520 Outside**

Press @RunDepth: psig @ 3587.00 ft (KB)

Start Date: 2012.10.29

End Date: 2012.10.29

Start Time: 18:22:30

End Time: 23:54:30

Capacity: 8000.00 psig

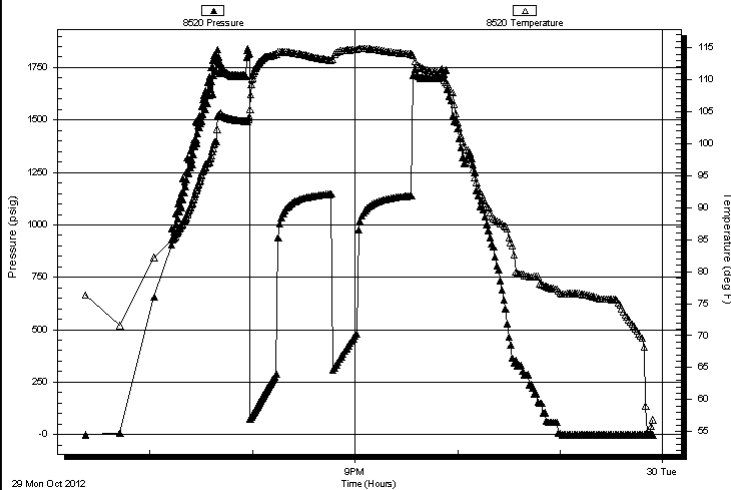
Last Calib.: 2012.10.29

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Strong building blow . BOB in 1 minute 45 seconds.  
ISI-Return @ 1 minute. Built to 1&1/2 inches.  
FF-Strong building blow . BOB in 1 minute 45 seconds.  
FSI-No Return.

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
960.00	95%Water/5%Mud	13.19

### Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48605

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2012.10.29 @ 18:12:15

### GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:58:35

Time Test Ended: 23:54:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3586.00 ft (KB) To 3593.00 ft (KB) (TVD)**

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3660.00 ft (KB) (TVD)

2004.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

### Serial #: 8653 Below (Straddle)

Press @ RunDepth: psig @ 3597.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.29

End Date:

2012.10.29

Last Calib.:

2012.10.29

Start Time: 18:12:46

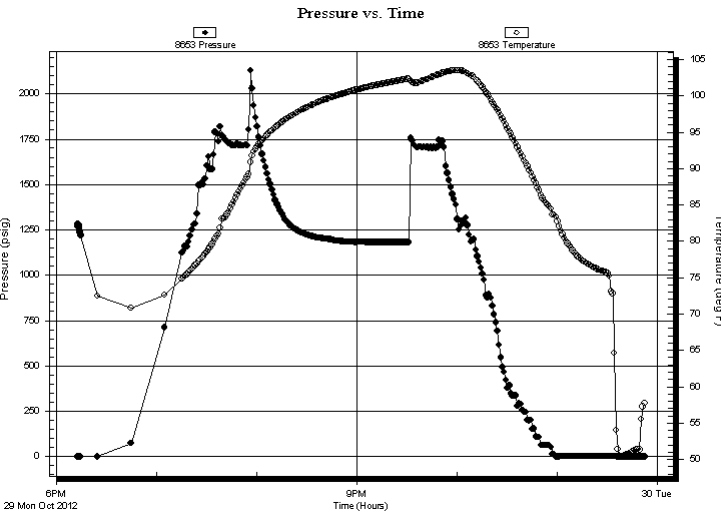
End Time:

23:52:15

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Strong building blow . BOB in 1 minute 45 seconds.  
ISI-Return @ 1 minute. Built to 1&1/2 inches.  
FF-Strong building blow . BOB in 1 minute 45 seconds.  
FSI-No Return.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
960.00	95%Water/5%Mud	13.19

### Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co., Inc.

**24-16s-17w Rush, KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48605

**DST#: 5**

ATTN: Al Downing

Test Start: 2012.10.29 @ 18:12:15

## Tool Information

Drill Pipe:	Length: 3543.00 ft	Diameter: 3.80 inches	Volume: 49.70 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: 5000.00 lb
			<u>Total Volume: 49.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3586.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	75.00 ft			
Tool Length:	95.00 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			3567.00	
Shut In Tool	5.00			3572.00	
Hydraulic tool	5.00			3577.00	
Packer	5.00			3582.00	20.00 Bottom Of Top Packer
Packer	4.00			3586.00	
Stubb	1.00			3587.00	
Recorder	0.00	8354	Inside	3587.00	
Recorder	0.00	8520	Outside	3587.00	
Perforations	3.00			3590.00	
Blank Off Sub	1.00			3591.00	75.00 Tool Interval
Packer	4.00			3595.00	
Stubb	1.00			3596.00	
Change Over Sub	1.00			3597.00	
Recorder	0.00	8653	Below	3597.00	
Drill Pipe	31.00			3628.00	
Change Over Sub	1.00			3629.00	
Perforations	29.00			3658.00	
Bullnose	3.00			3661.00	1000094.00 Bottom Packers & Anchor

**Total Tool Length: 95.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Dow ning-Nelson Oil Co., Inc.

**24-16s-17w Rush,KS**

PO Box 1019  
Hays, KS 67601

**Holland #1-24**

Job Ticket: 48605

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2012.10.29 @ 18:12:15

**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:

22000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.45 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
960.00	95%Water/5%Mud	13.193

Total Length: 960.00 ft      Total Volume: 13.193 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8354

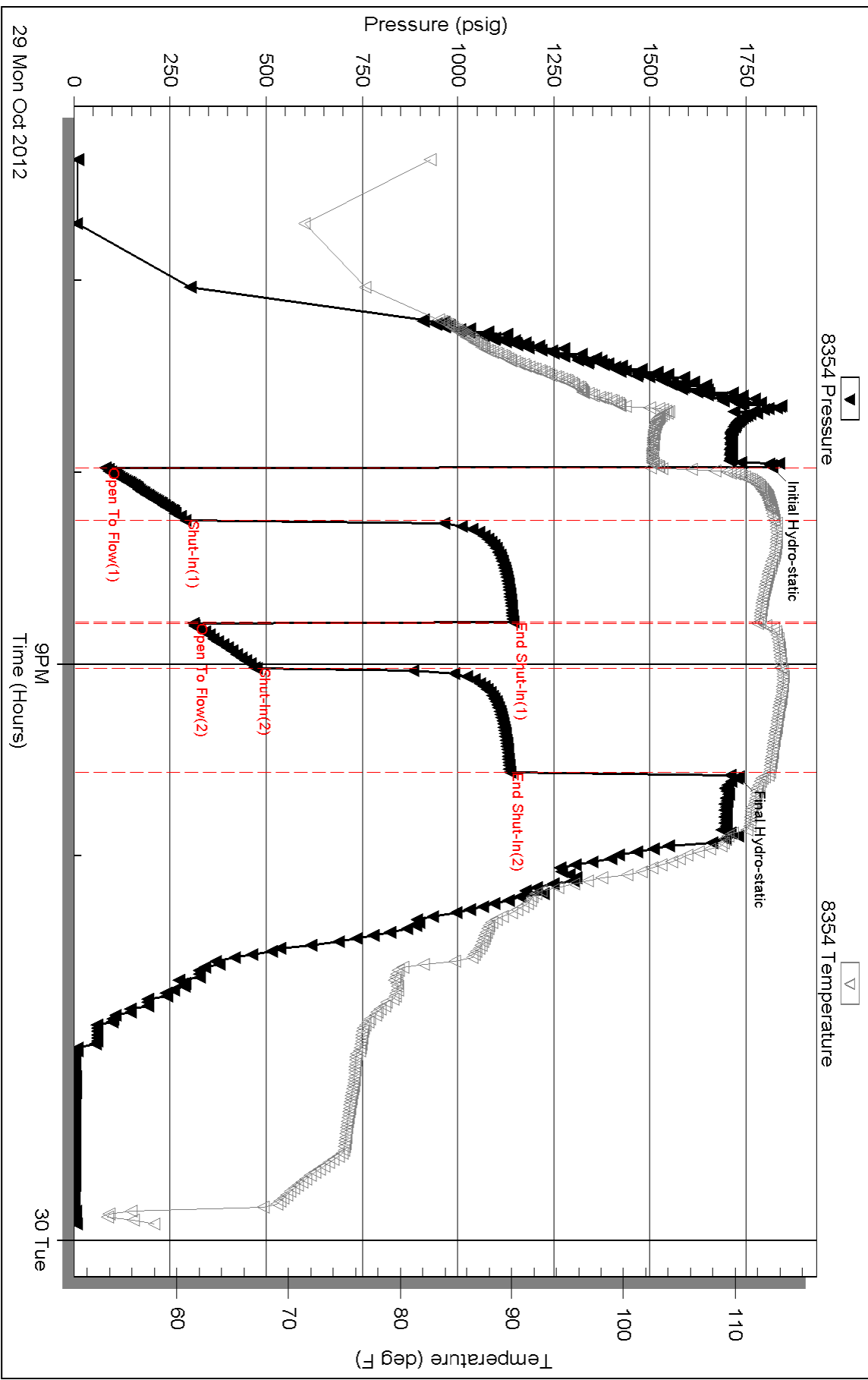
Inside

Dow nung-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 5

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 48605

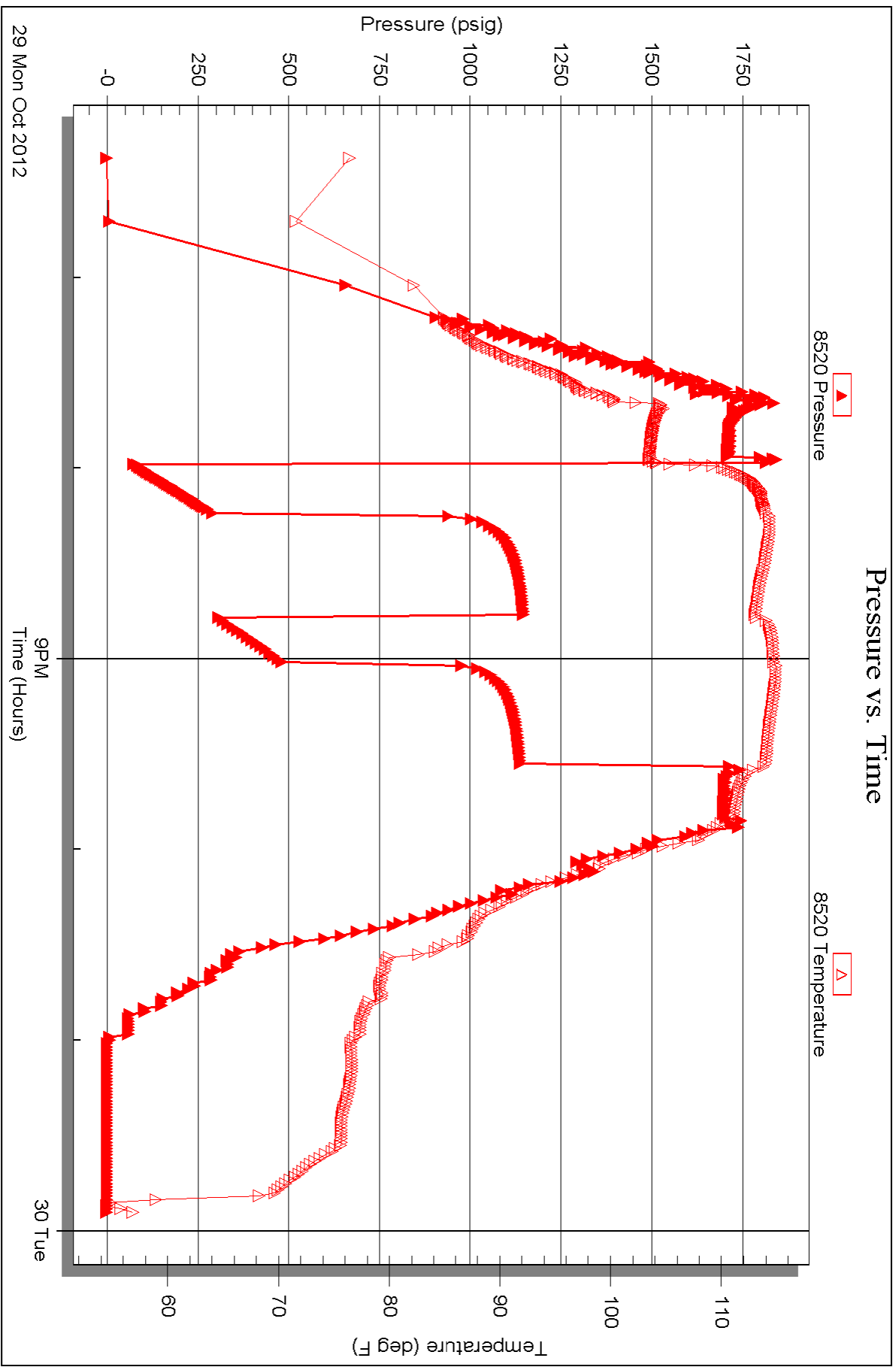
Printed: 2012.11.01 @ 14:21:12

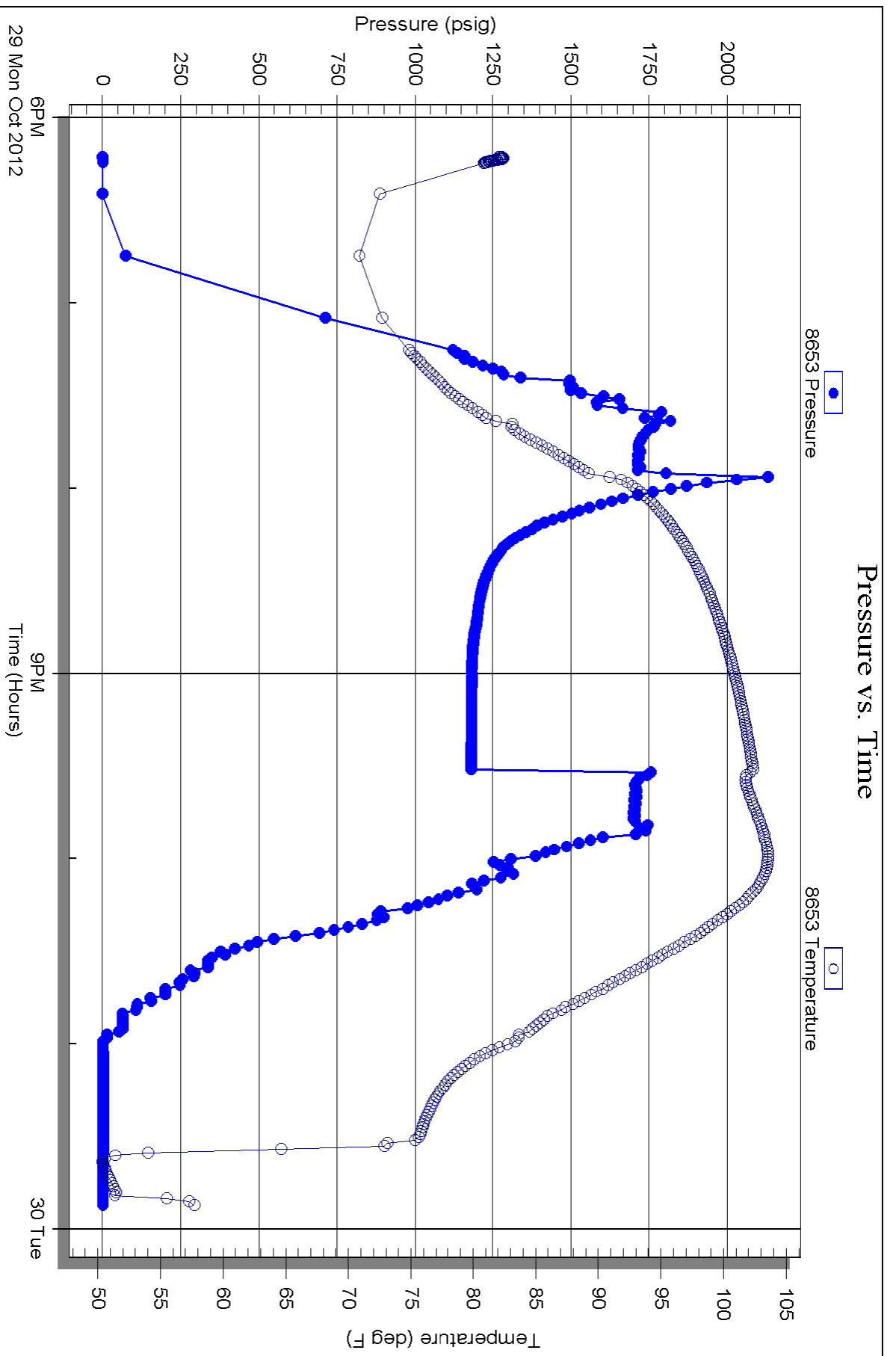
Serial #: 8520

Outside Dow nting-Nelson Oil Co., Inc.

Holland #1-24

DST Test Number: 5







# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48601

Well Name & No. Holland #1-24 Test No. 1 Date 10-26-12  
 Company Downing-Nelson Oil Co., Inc. Elevation 2009 KB 2004 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery 4  
 Location: Sec. 24 Twp. 16S Rge. 17W Co. Rush State KS

Interval Tested 3312-3335 Zone Tested LKC "C"  
 Anchor Length 23' Drill Pipe Run 3290 Mud Wt. 8.8  
 Top Packer Depth 3307 Drill Collars Run 30.47 Vis 55  
 Bottom Packer Depth 3312 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3335 Chlorides 3000 ppm System LCM 2#

Blow Description IF - Weak blow. Built to 3 inches. Died to surface. Slid 12'-15'  
~~ISL - No Return.~~  
FF - No Blow. Flushed tool. Weak surface blow. Died @ 12 minutes.  
~~FSL - No Return.~~

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</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 70 BHT 99 Gravity ✓ API RW @ °F Chlorides ppm  
 (A) Initial Hydrostatic 1611  Test 1150 T-On Location 2100  
 (B) First Initial Flow 54  Jars \_\_\_\_\_ T-Started 2230  
 (C) First Final Flow 51  Safety Joint \_\_\_\_\_ T-Open 0006  
 (D) Initial Shut-In 864  Circ Sub \_\_\_\_\_ T-Pulled 0210  
 (E) Second Initial Flow 52  Hourly Standby \_\_\_\_\_ T-Out 0345  
 (F) Second Final Flow 51  Mileage 25X2 77.50 Comments BHT-2203  
 (G) Final Shut-In 854  Sampler \_\_\_\_\_ Slid 12'-15'  
 (H) Final Hydrostatic 1600  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1227.50  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1227.50

Approved By \_\_\_\_\_ Our Representative D. Rash

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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48602

Well Name & No. Holland #1-24 Test No. 2 Date 10-27-12  
 Company Downing-Nelson Oil Co., Inc. Elevation 2009 KB 2004 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery 4  
 Location: Sec. 24 Twp. 16S Rge. 17W Co. Rush State KS

Interval Tested 3354-3386 Zone Tested LKC "E-F"  
 Anchor Length 32' Drill Pipe Run 3322 Mud Wt. 8.8  
 Top Packer Depth 3349 Drill Collars Run 30.47 Vis 51  
 Bottom Packer Depth 3354 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3386 Chlorides 4000 ppm System LCM 2#

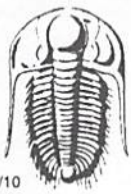
Blow Description IF - Weak building blow, BOB in 19 minutes 45 seconds.  
IST - No Return.  
FF - Weak building blow. BOB in 30 minutes.  
FSE - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>270</u>	<u>Muddy water</u>		<u>80</u>	<u>20</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 270 BHT 108 Gravity 1150 API RW 1814 @ 42 °F Chlorides 13500 ppm  
 (A) Initial Hydrostatic 1653  Test 1150 T-On Location 1245  
 (B) First Initial Flow 27  Jars \_\_\_\_\_ T-Started 1330  
 (C) First Final Flow 88  Safety Joint \_\_\_\_\_ T-Open 1455  
 (D) Initial Shut-In 870  Circ Sub \_\_\_\_\_ T-Pulled 1730  
 (E) Second Initial Flow 98  Hourly Standby \_\_\_\_\_ T-Out 1900  
 (F) Second Final Flow 140  Mileage 25X2 77.50 Comments BATT-1318  
 (G) Final Shut-In 814  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1606  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 45  
 Sub Total 0  
 Total 1227.50  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1227.50

Approved By \_\_\_\_\_ Our Representative

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48603

Well Name & No. Holland #1-24 Test No. 3 Date 10-28-12  
 Company Downing-Nelson Oil Co., Inc. Elevation 2009 KB 2004 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery 4  
 Location: Sec. 24 Twp. 16S Rge. 17W Co. Rush State KS

Interval Tested 3485-3525 Zone Tested LKC "K-L"  
 Anchor Length 40' Drill Pipe Run 3446 Mud Wt. 8.8  
 Top Packer Depth 3480 Drill Collars Run 30.47 Vis 51  
 Bottom Packer Depth ~~3480~~ 3485 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3525 Chlorides 4000 ppm System LCM 2#

Blow Description IF-Weak surface blow, Surging @ 25 minutes,  
ISI- No Return.  
FF- Weak surface blow, Surging @ 21 minutes,  
FBI- No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>0.1</u>	<u>100</u>			
<u>3</u>	<u>SOCM</u>	<u>10</u>			<u>90</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 4 BHT 100 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1736  Test 1150 T-On Location 0845  
 (B) First Initial Flow 19  Jars \_\_\_\_\_ T-Started 0945  
 (C) First Final Flow 20  Safety Joint \_\_\_\_\_ T-Open 1132  
 (D) Initial Shut-In 32  Circ Sub \_\_\_\_\_ T-Pulled 1335  
 (E) Second Initial Flow 22  Hourly Standby \_\_\_\_\_ T-Out 1515  
 (F) Second Final Flow 20  Mileage 25X2 77.50 Comments BHT-0936  
 (G) Final Shut-In 26  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1700  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1227.50  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1227.50

Approved By \_\_\_\_\_ Our Representative [Signature]  
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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48604

Well Name & No. Holland #1-24 Test No. 4 Date 10-28-12  
 Company Downing-Nelson Oil Co., Inc. Elevation 2009 KB 2004 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery 4  
 Location: Sec. 24 Twp. 18S Rge. 17W Co. Rush State KS

Interval Tested 3520-3560 Zone Tested Arbuckle  
 Anchor Length 40' Drill Pipe Run 3477 Mud Wt. 9.3  
 Top Packer Depth 3515 Drill Collars Run 30.47 Vis 44  
 Bottom Packer Depth 3520 Wt. Pipe Run 0 WL 10.2  
 Total Depth 3560 Chlorides 4000 ppm System LCM 2#

Blow Description IF - Strong building blow, BOB in 30 seconds.  
IF - Return @ 1 minute. Built to 1 1/2 inches.  
FF - Strong building blow, BOB in 30 seconds.  
FST - No Return.

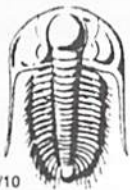
Rec	Feet of	%gas	%oil	%water	%mud
<u>504</u>	<u>Muddy water</u>			<u>90%</u>	<u>10%</u>
<u>2079</u>	<u>Muddy water</u>			<u>95%</u>	<u>5%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2583 BHT 113 Gravity 1150 API RW 1562 @ 41 °F Chlorides 20,000 ppm

(A) Initial Hydrostatic 1767  Test 1150 T-On Location 2130  
 (B) First Initial Flow 371  Jars \_\_\_\_\_ T-Started 2200  
 (C) First Final Flow 699  Safety Joint \_\_\_\_\_ T-Open 2330  
 (D) Initial Shut-In 1095  Circ Sub \_\_\_\_\_ T-Pulled 0205  
 (E) Second Initial Flow 769  Hourly Standby \_\_\_\_\_ T-Out 0430  
 (F) Second Final Flow 1058  Mileage 25X2 77.50 Comments Best-2143  
 (G) Final Shut-In 1104  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1682  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 15  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1227.50  
 Final Flow 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1227.50

Approved By \_\_\_\_\_ Our Representative

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48605

Well Name & No. Holland #1-24 Test No. 5 Date 10-29-12  
 Company Downing-Nelson Oil Co., Inc. Elevation 2009 KB 2004 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery 4  
 Location: Sec. 24 Twp. 16S Rge. 17W Co. Rush State KS

Interval Tested 3586-3593 Zone Tested Ambuckle  
 Anchor Length 7' 66' TP Drill Pipe Run 3543 Mud Wt. 9.3  
 Top Packer Depth 3581 Drill Collars Run 30.47 Vis 44  
 Bottom Packer Depth 3586 Wt. Pipe Run 0 WL 10.2  
 Total Depth 3659 Chlorides 4000 ppm System LCM 2#

Blow Description IF- Spring building blow. BOB in 1 minute 45 seconds,  
IST- Return @ 1 minute, Built to 1 1/2 inches,  
FF- Spring building blow. BOB in 1 minute 45 seconds,  
FST- No Return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>960</u>	<u>Muddy water</u>			<u>95%</u>	<u>5%</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 960 BHT 114 Gravity \_\_\_\_\_ API RW 454 @ 48 ° F Chlorides 22000 ppm

(A) Initial Hydrostatic 1817  Test 1150 T-On Location 1715  
 (B) First Initial Flow 82  Jars \_\_\_\_\_ T-Started 1815  
 (C) First Final Flow 289  Safety Joint \_\_\_\_\_ T-Open 1959  
 (D) Initial Shut-In 1143  Circ Sub \_\_\_\_\_ T-Pulled 2130  
 (E) Second Initial Flow 311  Hourly Standby \_\_\_\_\_ T-Out 2400  
 (F) Second Final Flow 475  Mileage 25X2 77.50 Comments Batt-1812  
 (G) Final Shut-In 1135  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1730  Straddle 600  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 15  
 Initial Shut-In 30  
 Final Flow 15  
 Final Shut-In 30  
 Sub Total 1827.50  
 Total 1827.50  
 MP/DST Disc't \_\_\_\_\_

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

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