



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Pfannenstiel #1-12**

**12-14s-19w Ellis,KS**

Start Date: 2011.12.03 @ 10:08:30

End Date: 2011.12.03 @ 17:10:00

Job Ticket #: 44219                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.12.13 @ 16:13:46



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44219

**DST#: 1**

ATTN: Marc Downing

Test Start: 2011.12.03 @ 10:08:30

## GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:23:00

Time Test Ended: 17:10:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3379.00 ft (KB) To 3410.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3410.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8354 Inside**

Press @ Run Depth: 38.12 psig @ 3382.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.03

End Date: 2011.12.03

Last Calib.: 2011.12.03

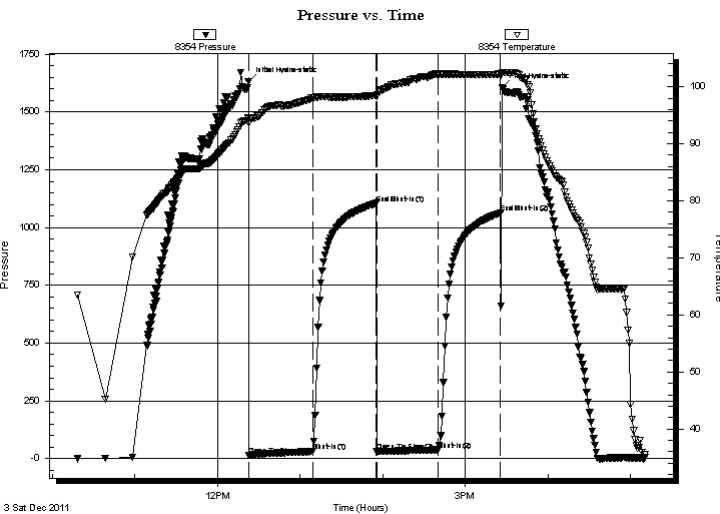
Start Time: 10:18:30

End Time: 17:10:00

Time On Btm: 2011.12.03 @ 12:22:30

Time Off Btm: 2011.12.03 @ 15:26:30

**TEST COMMENT:** IF-Very weak building blow . Built to 2 & 1/2 inches.  
IS-No Return.  
FF-Very weak building blow . Built to 2 inches.  
FS-No Return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1631.39	94.58	Initial Hydro-static
1	13.83	93.73	Open To Flow (1)
47	31.61	98.08	Shut-In(1)
93	1104.78	98.44	End Shut-In(1)
93	29.59	98.26	Open To Flow (2)
138	38.12	102.24	Shut-In(2)
183	1063.60	102.22	End Shut-In(2)
184	1605.75	102.53	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
50.00	50%Water/50%Mud	0.42

## Gas Rates

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



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**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44219

**DST#: 1**

ATTN: Marc Downing

Test Start: 2011.12.03 @ 10:08:30

## GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:23:00

Time Test Ended: 17:10:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3379.00 ft (KB) To 3410.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3410.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8520 Outside**

Press @ Run Depth: psig @ 3382.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.03

End Date: 2011.12.03

Last Calib.: 2011.12.03

Start Time: 10:18:45

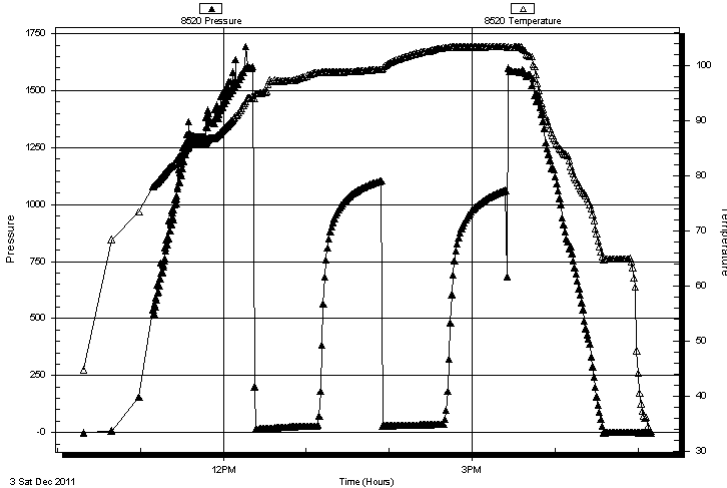
End Time: 17:09:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Very weak building blow . Built to 2 & 1/2 inches.  
IS-No Return.  
FF-Very weak building blow . Built to 2 inches.  
FS-No Return.

Pressure vs. Time



## PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
50.00	50%Water/50%Mud	0.42

## Gas Rates

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

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44219

**DST#: 1**

ATTN: Marc Downing

Test Start: 2011.12.03 @ 10:08:30

## Tool Information

Drill Pipe:	Length: 3359.00 ft	Diameter: 3.80 inches	Volume: 47.12 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 47.27 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3379.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	51.00 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			3360.00	
Shut In Tool	5.00			3365.00	
Hydraulic tool	5.00			3370.00	
Packer	5.00			3375.00	20.00 Bottom Of Top Packer
Packer	4.00			3379.00	
Stubb	1.00			3380.00	
Perforations	2.00			3382.00	
Recorder	0.00	8354	Inside	3382.00	
Recorder	0.00	8520	Outside	3382.00	
Perforations	25.00			3407.00	
Bullnose	3.00			3410.00	31.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE**  
TESTING, INC

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44219

**DST#: 1**

ATTN: Marc Downing

Test Start: 2011.12.03 @ 10:08:30

## 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:

73000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.25 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	50%Water/50%Mud	0.419

Total Length: 50.00 ft      Total Volume: 0.419 bbl

Num Fluid Samples: 0

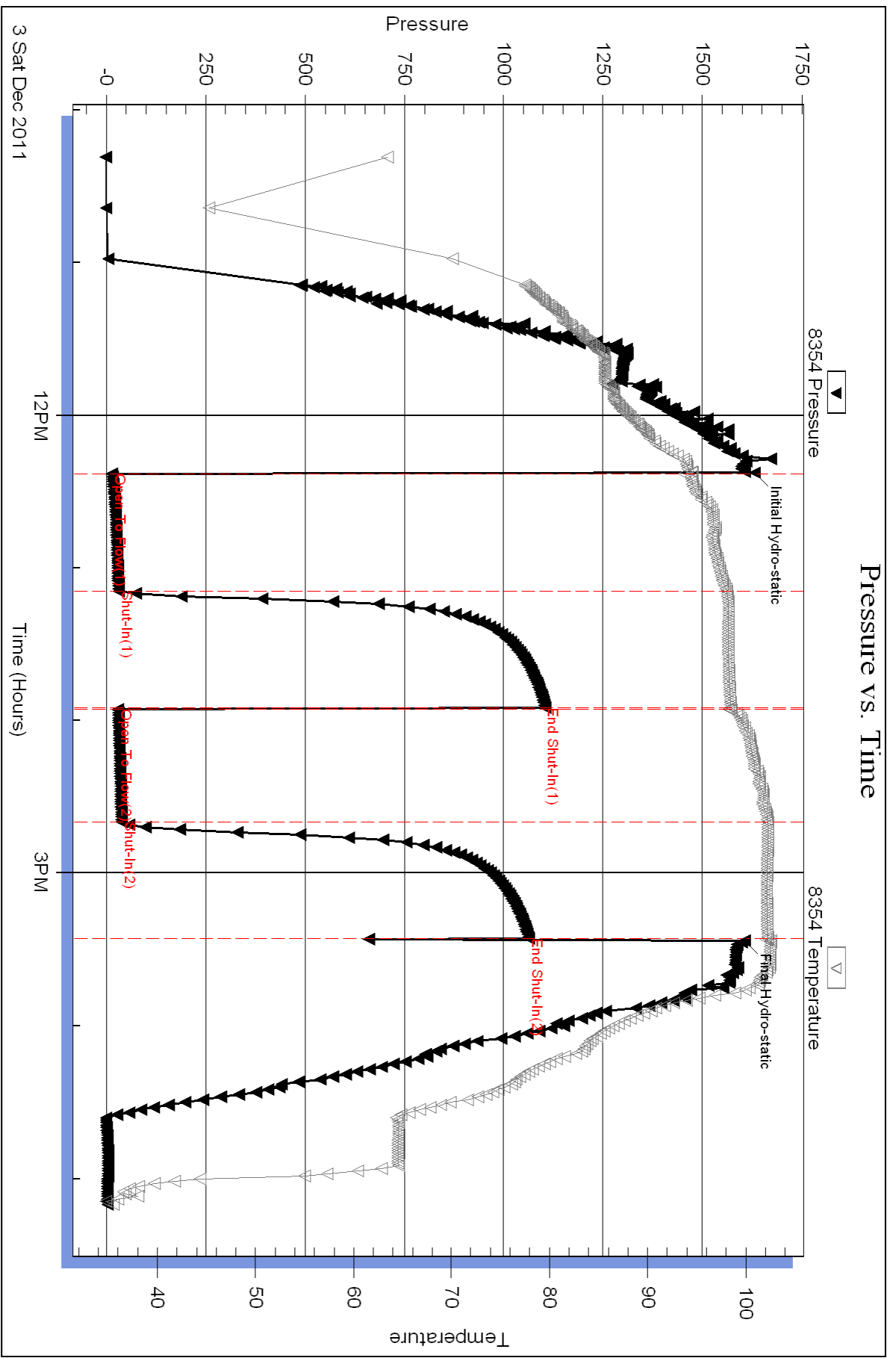
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

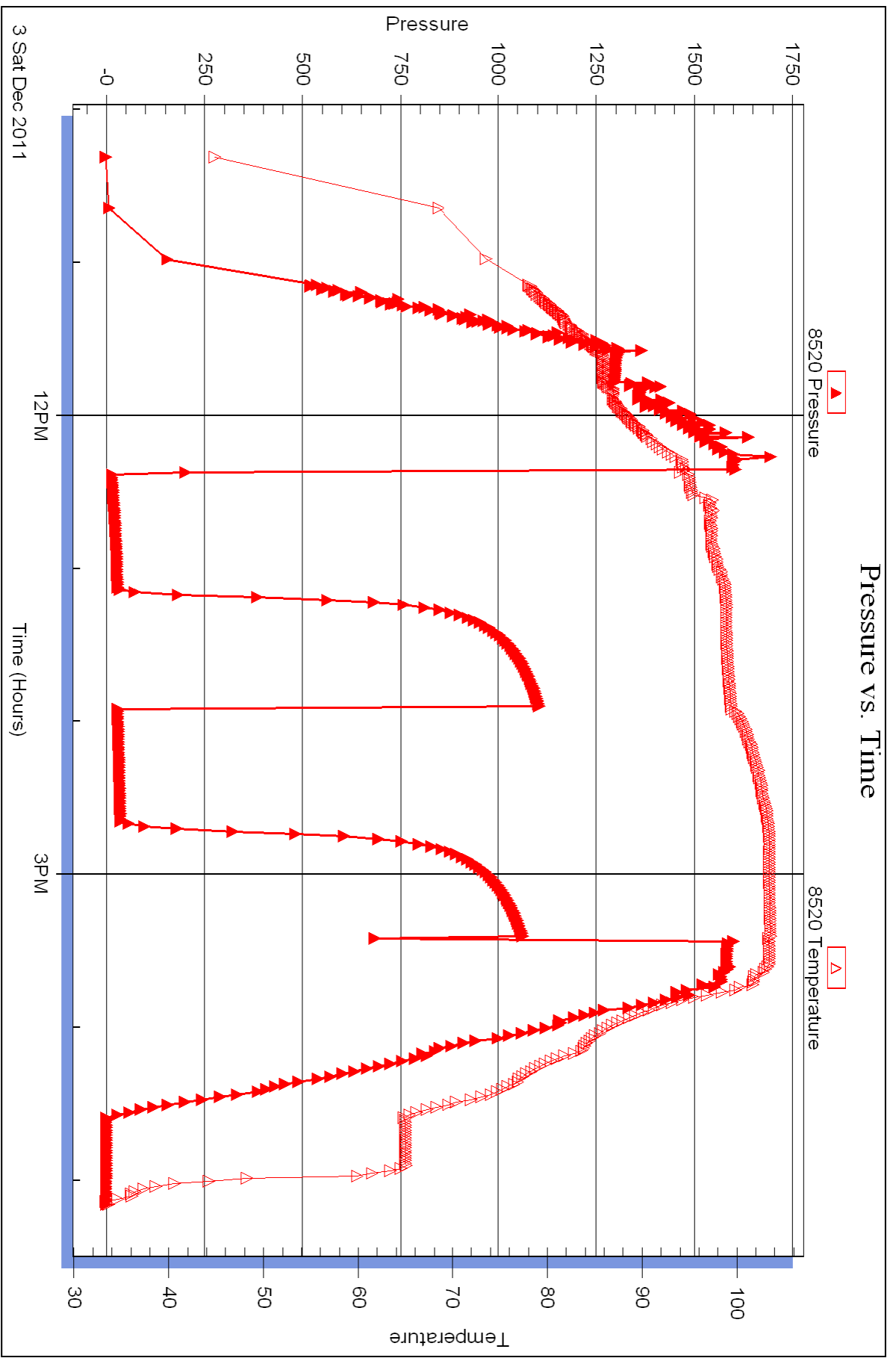


Serial #: 8520

Outside Dow nung-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 44219

Printed: 2011.12.13 @ 16:13:49



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Pfannenstiel #1-12**

**12-14s-19w Ellis,KS**

Start Date: 2011.12.04 @ 05:12:30

End Date: 2011.12.04 @ 11:28:30

Job Ticket #: 44220                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.12.13 @ 16:13:03





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44220

**DST#: 2**

ATTN: Marc Downing

Test Start: 2011.12.04 @ 05:12:30

## GENERAL INFORMATION:

Formation: **LKC "D"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 07:03:50  
 Tester: Dustin Rash  
 Time Test Ended: 11:28:30  
 Unit No: 38  
 Interval: **3500.00 ft (KB) To 3524.00 ft (KB) (TVD)**  
 Reference Elevations: 2159.00 ft (KB)  
 Total Depth: 3524.00 ft (KB) (TVD)  
 2151.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 8.00 ft

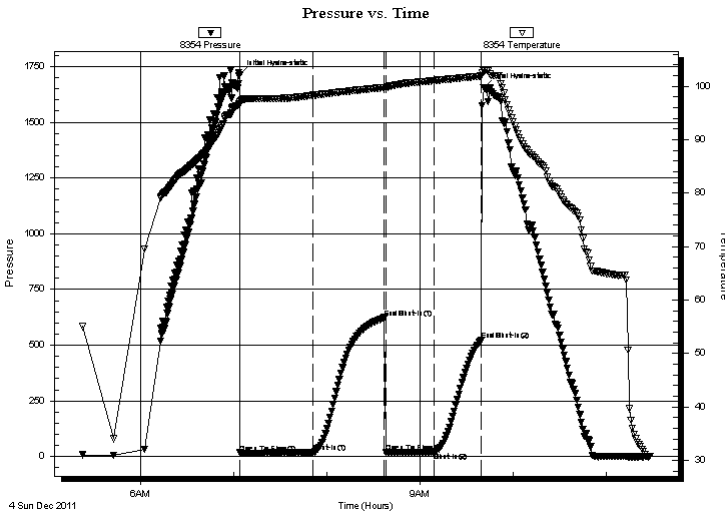
## Serial #: 8354

Inside

Press @ Run Depth: 19.93 psig @ 3501.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.12.04 End Date: 2011.12.04 Last Calib.: 2011.12.04  
 Start Time: 05:22:30 End Time: 11:28:30 Time On Btm: 2011.12.04 @ 07:03:40  
 Time Off Btm: 2011.12.04 @ 09:41:00

**TEST COMMENT:** IF-Very weak building blow. Built to 1 & 1/4 inch. Died to 1/2 inch.  
 IS-No Return.  
 FF-Very weak surface blow. Died @ 18 minutes.  
 FS-No Return.

## PRESSURE SUMMARY



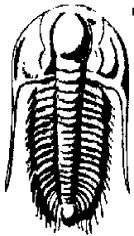
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1714.19	97.08	Initial Hydro-static
1	16.71	96.52	Open To Flow (1)
48	17.87	98.30	Shut-In(1)
94	623.27	99.75	End Shut-In(1)
95	18.76	99.70	Open To Flow (2)
126	19.93	101.02	Shut-In(2)
156	524.18	101.88	End Shut-In(2)
158	1656.59	102.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	100%Mud	0.10

## Gas Rates

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



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44220 **DST#: 2**

ATTN: Marc Downing

Test Start: 2011.12.04 @ 05:12:30

### GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: **No Whipstock:** ft (KB)

Time Tool Opened: 07:03:50

Time Test Ended: 11:28:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3500.00 ft (KB) To 3524.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3524.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8520 Outside**

Press@RunDepth: psig @ 3501.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.04 End Date: 2011.12.04

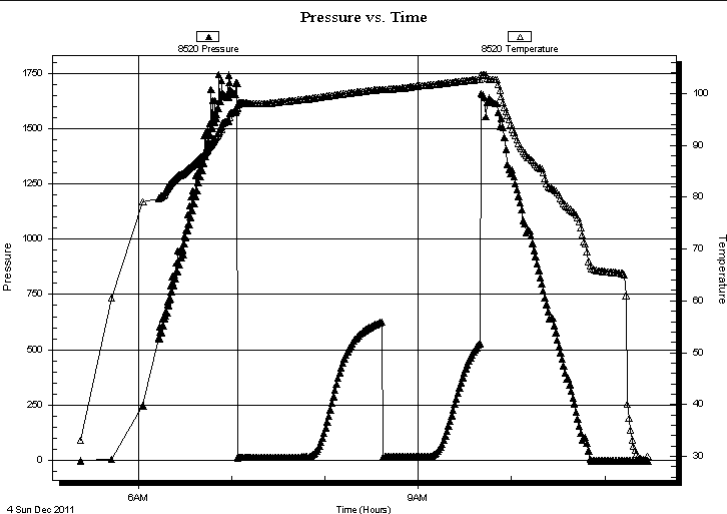
Last Calib.: 2011.12.04

Start Time: 05:23:00 End Time: 11:28:00

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Very weak building blow . Built to 1 & 1/4 inch. Died to 1/2 inch.  
ISI-No Return.  
FF-Very weak surface blow . Died @ 18 minutes.  
FSI-No Return.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
20.00	100%Mud	0.10

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44220

**DST#: 2**

ATTN: Marc Downing

Test Start: 2011.12.04 @ 05:12:30

## Tool Information

Drill Pipe:	Length: 3454.00 ft	Diameter: 3.80 inches	Volume: 48.45 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 48.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3500.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	44.00 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			3481.00	
Shut In Tool	5.00			3486.00	
Hydraulic tool	5.00			3491.00	
Packer	5.00			3496.00	20.00 Bottom Of Top Packer
Packer	4.00			3500.00	
Stubb	1.00			3501.00	
Recorder	0.00	8354	Inside	3501.00	
Recorder	0.00	8520	Outside	3501.00	
Perforations	20.00			3521.00	
Bullnose	3.00			3524.00	24.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>44.00</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44220

**DST#: 2**

ATTN: Marc Downing

Test Start: 2011.12.04 @ 05:12:30

**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: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 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
20.00	100%Mud	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

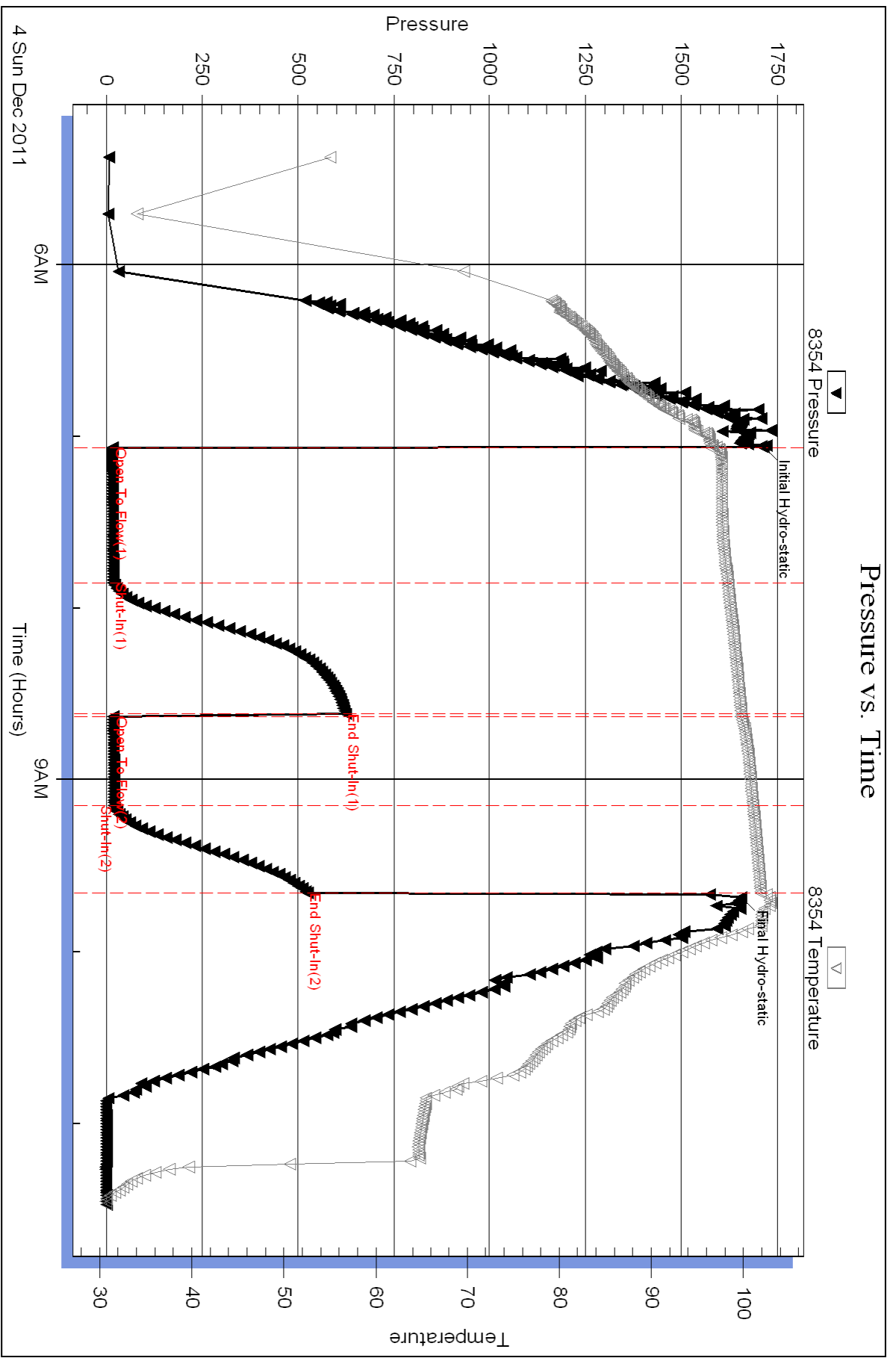
Serial #: 8354

Inside

Dow nings-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 2

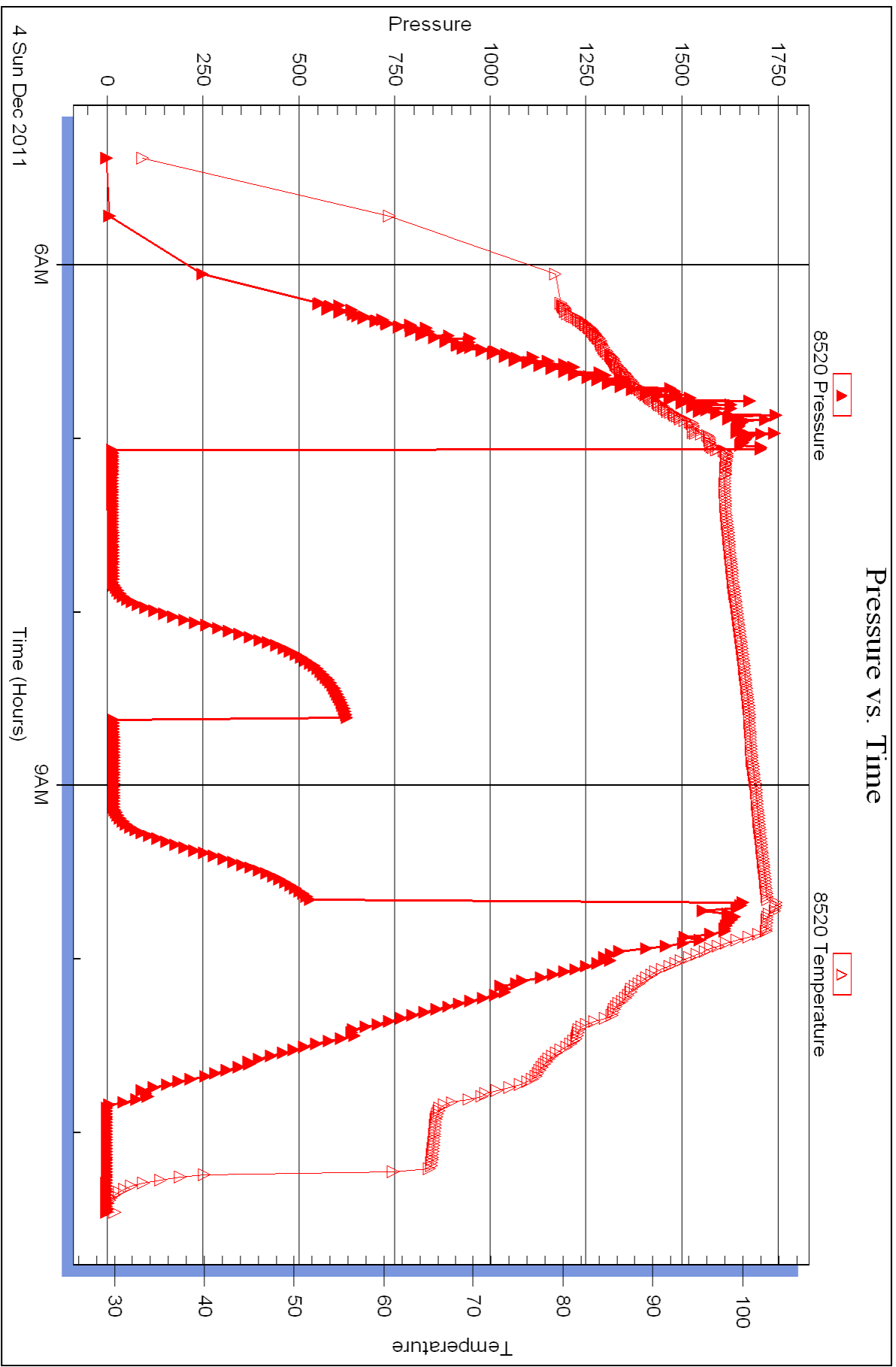


Serial #: 8520

Outside Dow nung-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 2





## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Pfannenstiel #1-12**

**12-14s-19w Ellis,KS**

Start Date: 2011.12.05 @ 03:00:15

End Date: 2011.12.05 @ 11:58:15

Job Ticket #: 44241                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.12.13 @ 16:12:15



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

ATTN: Marc Downing

Job Ticket: 44241

**DST#: 3**

Test Start: 2011.12.05 @ 03:00:15

## GENERAL INFORMATION:

Formation: **LKC "H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:19:45

Time Test Ended: 11:58:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3573.00 ft (KB) To 3656.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3656.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8354 Inside**

Press @ Run Depth: 102.77 psig @ 3643.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.05 End Date: 2011.12.05

Last Calib.: 2011.12.05

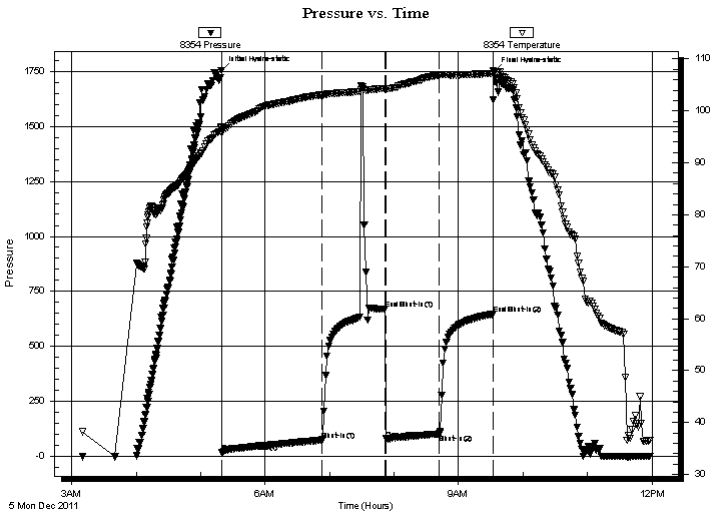
Start Time: 03:10:15 End Time: 11:58:15

Time On Btm: 2011.12.05 @ 05:19:15

Time Off Btm: 2011.12.05 @ 09:32:45

**TEST COMMENT:** IF-Very weak building blow. Built to 6 inches.  
IS-Weak return. Built to 1 inch. Tool torqued up on shut in.  
FF-Very weak building blow. Built to 5 inches.  
FS-No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1753.97	96.88	Initial Hydro-static
1	18.94	95.71	Open To Flow (1)
94	75.03	103.07	Shut-In(1)
153	670.67	104.32	End Shut-In(1)
154	80.11	104.20	Open To Flow (2)
203	102.77	106.93	Shut-In(2)
253	646.62	107.23	End Shut-In(2)
254	1749.24	107.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	50%Water/50%Mud	1.40
60.00	2%Oil/98%Mud	0.84

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44241

**DST#: 3**

ATTN: Marc Downing

Test Start: 2011.12.05 @ 03:00:15

## Tool Information

Drill Pipe:	Length: 3552.00 ft	Diameter: 3.80 inches	Volume: 49.83 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: 28000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 49.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3573.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	83.00 ft			
Tool Length:	103.00 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			3554.00	
Shut In Tool	5.00			3559.00	
Hydraulic tool	5.00			3564.00	
Packer	5.00			3569.00	20.00 Bottom Of Top Packer
Packer	4.00			3573.00	
Stubb	1.00			3574.00	
Perforations	5.00			3579.00	
Change Over Sub	1.00			3580.00	
Drill Pipe	62.00			3642.00	
Change Over Sub	1.00			3643.00	
Recorder	0.00	8354	Inside	3643.00	
Recorder	0.00	8520	Outside	3643.00	
Perforations	10.00			3653.00	
Bullnose	3.00			3656.00	83.00 Bottom Packers & Anchor

**Total Tool Length: 103.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44241

**DST#: 3**

ATTN: Marc Downing

Test Start: 2011.12.05 @ 03:00:15

## 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:

13000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 1.20 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	50%Water/50%Mud	1.401
60.00	2%Oil/98%Mud	0.842

Total Length: 180.00 ft      Total Volume: 2.243 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Tool torqued up hard on first shut in.

Serial #: 8354

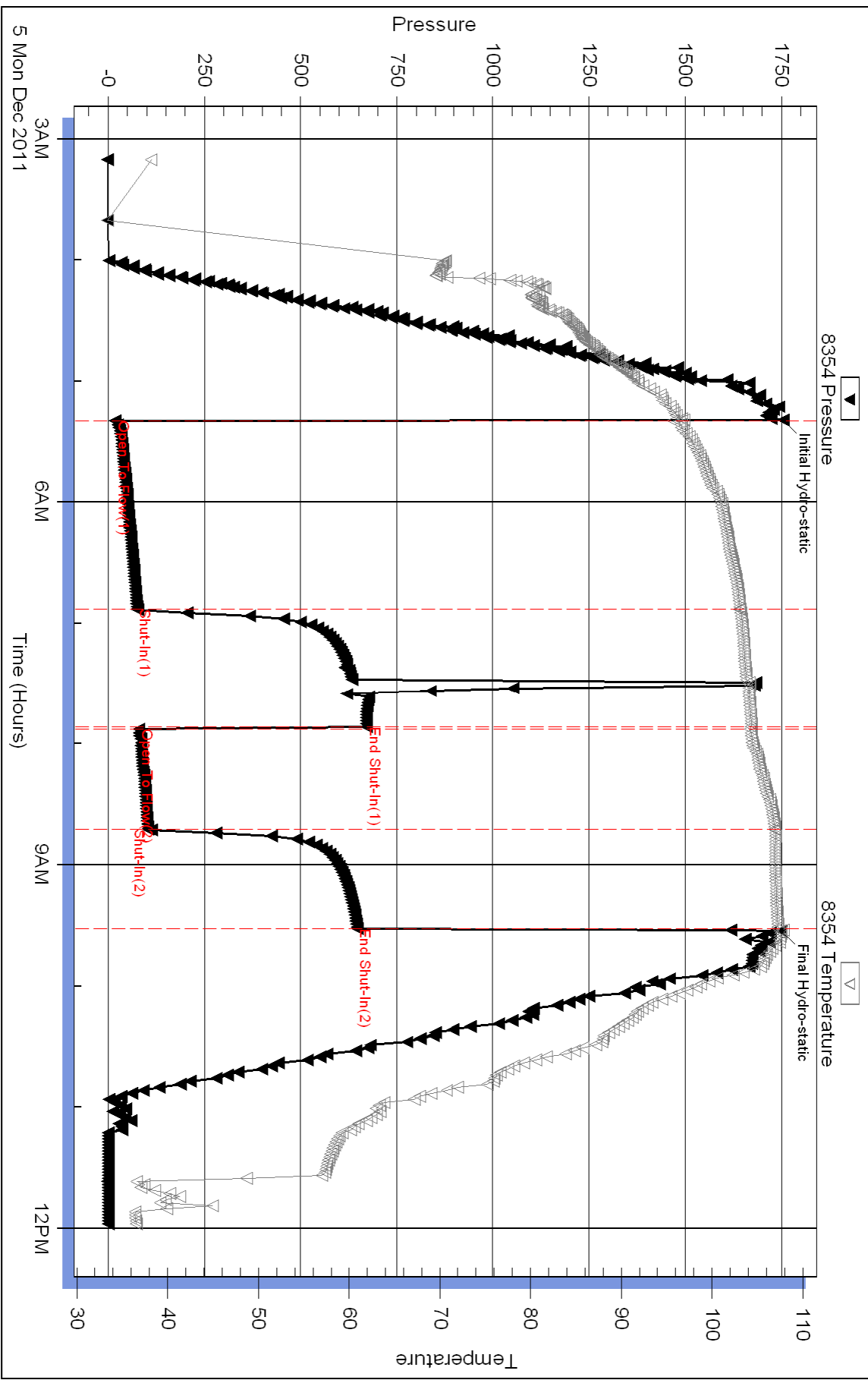
Inside

Dow nung-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 3

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 44241

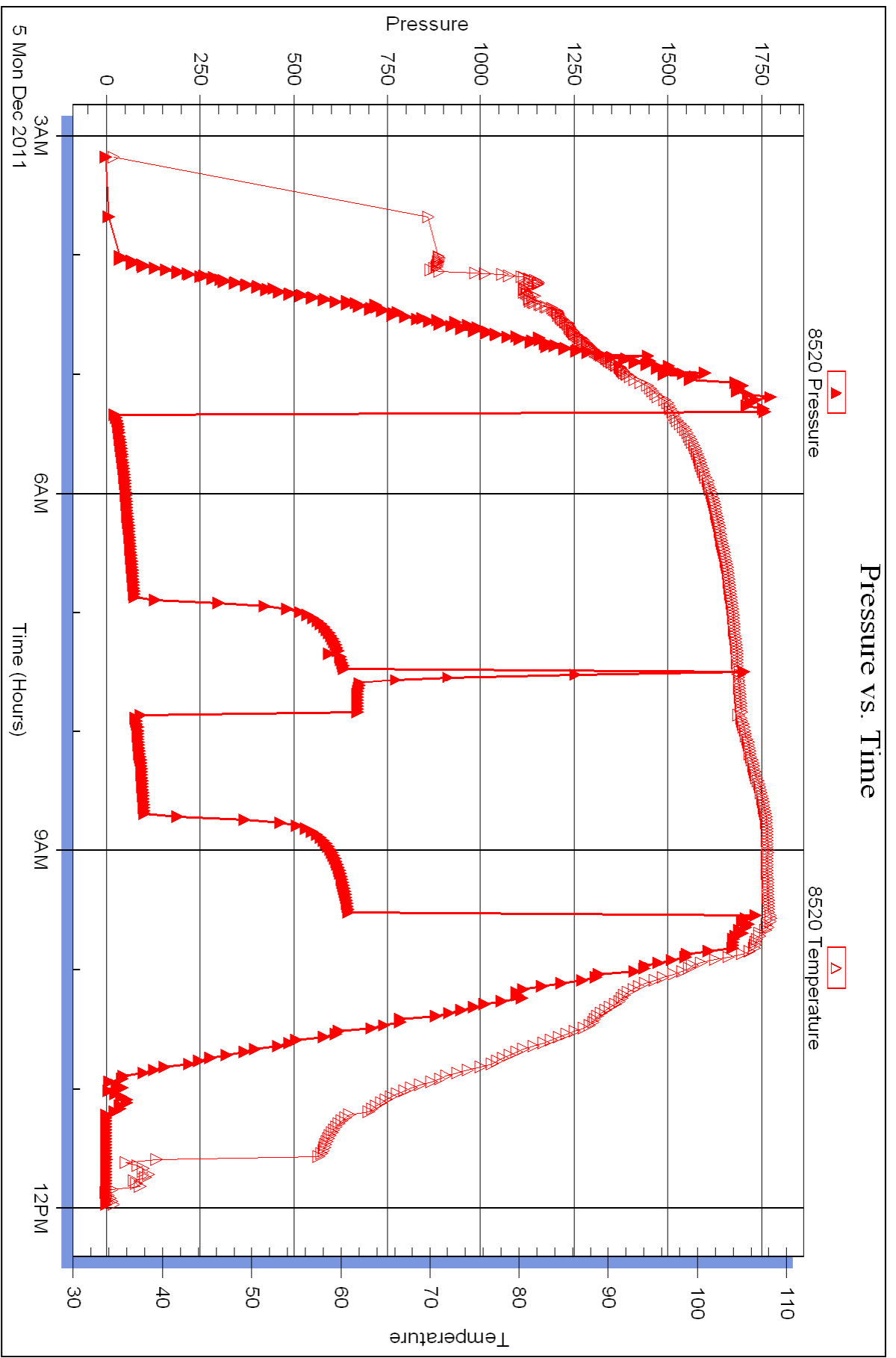
Printed: 2011.12.13 @ 16:12:17

Serial #: 8520

Outside Dow nging-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 3





## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Pfannenstiel #1-12**

**12-14s-19w Ellis,KS**

Start Date: 2011.12.06 @ 13:34:15

End Date: 2011.12.06 @ 20:40:15

Job Ticket #: 44222                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.12.13 @ 16:08:36



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

ATTN: Marc Downing

Job Ticket: 44222

**DST#: 4**

Test Start: 2011.12.06 @ 13:34:15

## GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:19:35

Time Test Ended: 20:40:15

Test Type: Conventional Straddle (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3413.00 ft (KB) To 3443.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3894.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8354 Inside**

Press @ Run Depth: 33.54 psig @ 3414.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.06

End Date: 2011.12.06

Last Calib.: 2011.12.06

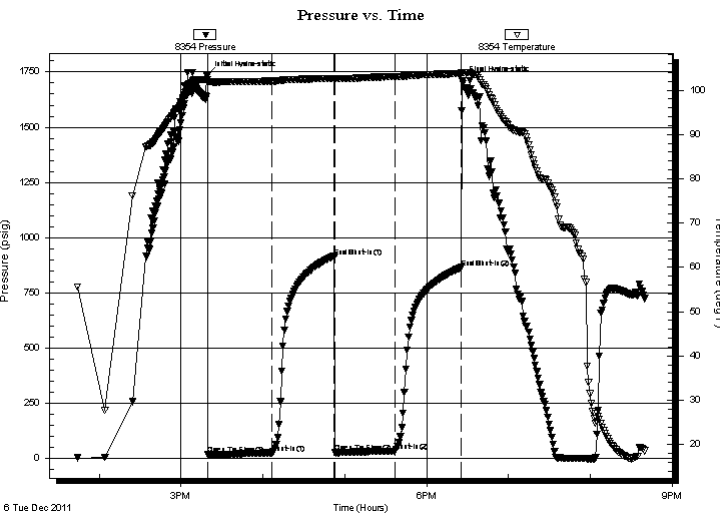
Start Time: 13:44:15

End Time: 20:40:15

Time On Btm: 2011.12.06 @ 15:19:25

Time Off Btm: 2011.12.06 @ 18:26:15

**TEST COMMENT:** IF-Very weak building blow . Built to 4 inches.  
IS-No Return.  
FF-Very weak building blow . Built to 1 & 1/2 inches. Died to 1 inch.  
FS-No Return.



## PRESSURE SUMMARY

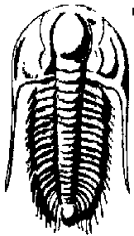
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1736.17	102.35	Initial Hydro-static
1	20.12	101.70	Open To Flow (1)
48	25.43	102.05	Shut-In(1)
93	913.98	102.66	End Shut-In(1)
94	28.87	102.43	Open To Flow (2)
138	33.54	103.03	Shut-In(2)
186	864.90	103.71	End Shut-In(2)
187	1712.36	104.00	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	1%Oil/99%Mud	0.63

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

12-14s-19w Ellis, KS

PO Box 1019  
Hays, KS 67601

Pfannenstiel #1-12

Job Ticket: 44222

DST#: 4

ATTN: Marc Downing

Test Start: 2011.12.06 @ 13:34:15

### GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:19:35

Time Test Ended: 20:40:15

Test Type: Conventional Straddle (Initial)

Tester: Dustin Rash

Unit No: 38

Interval: **3413.00 ft (KB) To 3443.00 ft (KB) (TVD)**

Total Depth: 3894.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2159.00 ft (KB)

2151.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: **8520** Outside

Press @ Run Depth: psig @ 3414.00 ft (KB)

Start Date: 2011.12.06

End Date: 2011.12.06

Start Time: 13:44:45

End Time: 20:39:45

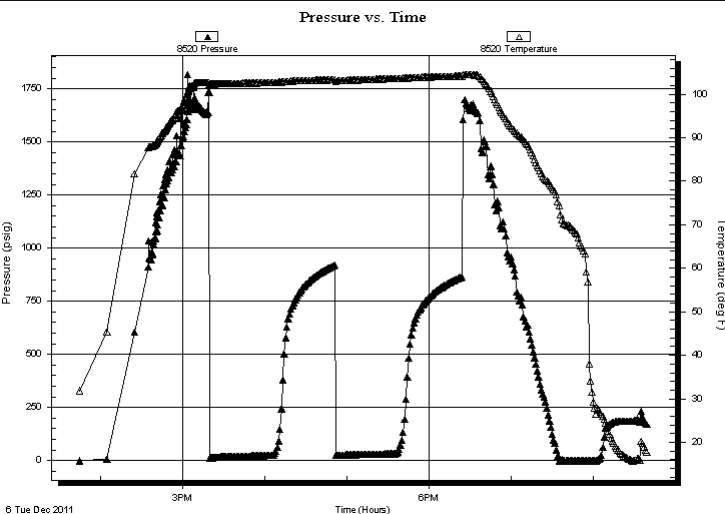
Capacity: 8000.00 psig

Last Calib.: 2011.12.06

Time On Btm

Time Off Btm

TEST COMMENT: IF-Very weak building blow. Built to 4 inches.  
IS-No Return.  
FF-Very weak building blow. Built to 1 & 1/2 inches. Died to 1 inch.  
FS-No Return.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
45.00	1%Oil/99%Mud	0.63

### Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44222

**DST#: 4**

ATTN: Marc Downing

Test Start: 2011.12.06 @ 13:34:15

## GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:19:35

Time Test Ended: 20:40:15

Test Type: Conventional Straddle (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3413.00 ft (KB) To 3443.00 ft (KB) (TVD)**

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3894.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8653 Below (Straddle)**

Press @ Run Depth: psig @ 3448.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.06

End Date: 2011.12.06

Last Calib.: 2011.12.06

Start Time: 13:44:45

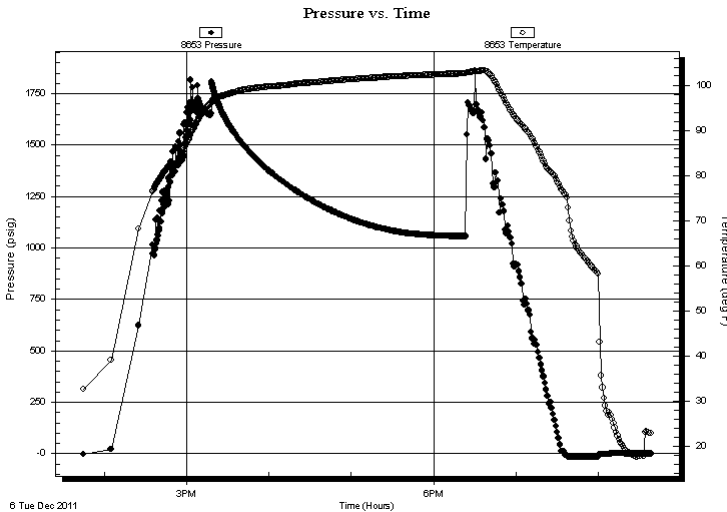
End Time: 20:38:15

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-Very weak building blow . Built to 4 inches.  
IS-No Return.  
FF-Very weak building blow . Built to 1 & 1/2 inches. Died to 1 inch.  
FS-No Return.

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	1%Oil/99%Mud	0.63

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis, KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44222

**DST#: 4**

ATTN: Marc Downing

Test Start: 2011.12.06 @ 13:34:15

## Tool Information

Drill Pipe:	Length: 3423.00 ft	Diameter: 3.80 inches	Volume: 48.02 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 48.02 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3413.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	3443.00 ft			
Interval between Packers:	30.00 ft			
Tool Length:	504.00 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			3394.00	
Shut In Tool	5.00			3399.00	
Hydraulic tool	5.00			3404.00	
Packer	5.00			3409.00	20.00 Bottom Of Top Packer
Packer	4.00			3413.00	
Stubb	1.00			3414.00	
Recorder	0.00	8354	Inside	3414.00	
Recorder	0.00	8520	Outside	3414.00	
Perforations	25.00			3439.00	
Blank Off Sub	1.00			3440.00	
Blank Spacing	3.00			3443.00	30.00 Tool Interval
Packer	2.00			3445.00	
Stubb	1.00			3446.00	
Perforations	1.00			3447.00	
Change Over Sub	1.00			3448.00	
Recorder	0.00	8653	Below	3448.00	
Drill Pipe	353.00			3801.00	
Drill Collar	90.00			3891.00	
Change Over Sub	1.00			3892.00	
Perforations	2.00			3894.00	
Bullnose	3.00			3897.00	454.00 Bottom Packers & Anchor

**Total Tool Length: 504.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**12-14s-19w Ellis,KS**

PO Box 1019  
Hays, KS 67601

**Pfannenstiel #1-12**

Job Ticket: 44222

**DST#: 4**

ATTN: Marc Downing

Test Start: 2011.12.06 @ 13:34:15

**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: ppm

Viscosity: 48.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 6000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
45.00	1%Oil/99%Mud	0.631

Total Length: 45.00 ft      Total Volume: 0.631 bbl

Num Fluid Samples: 0

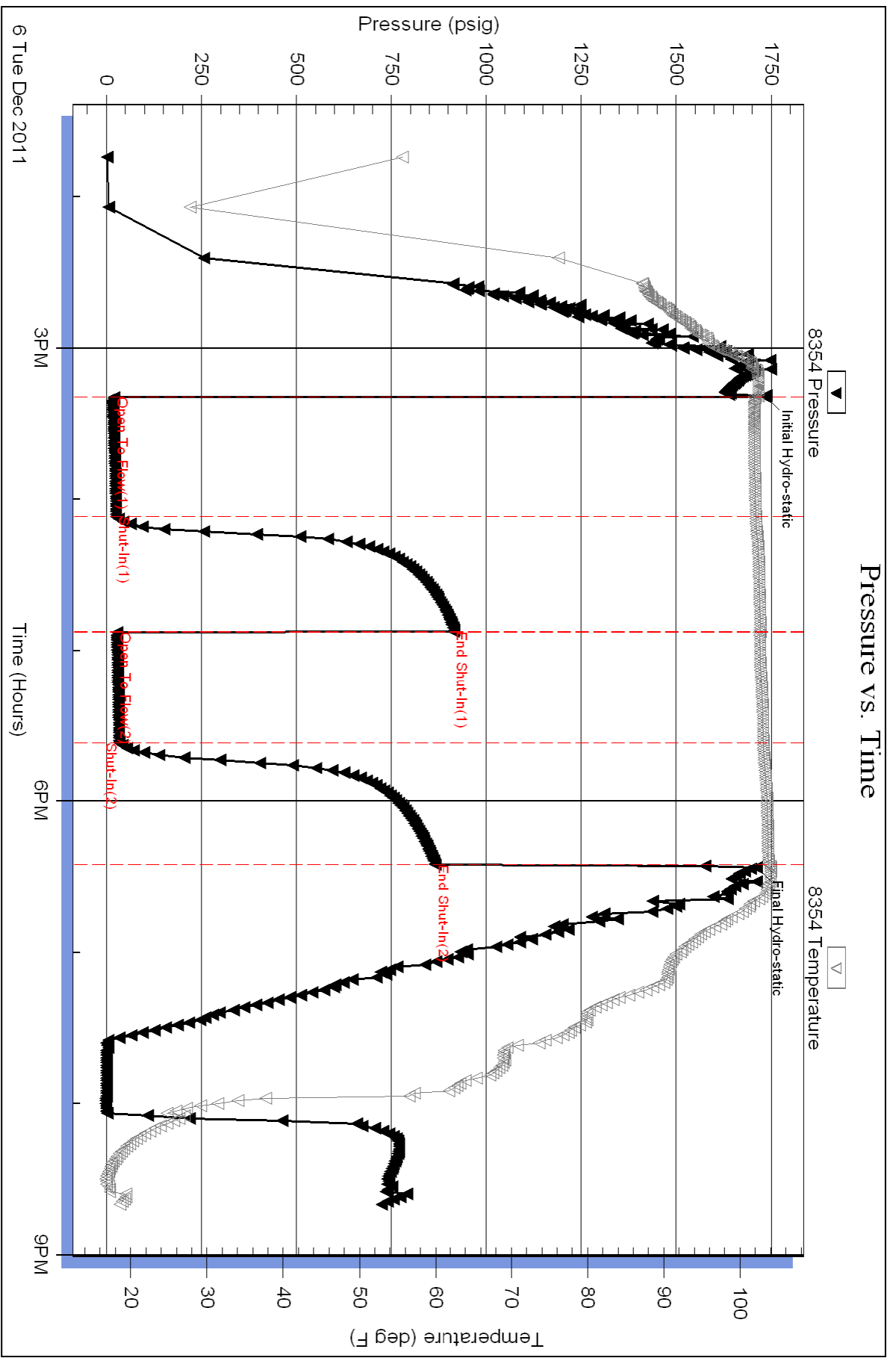
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

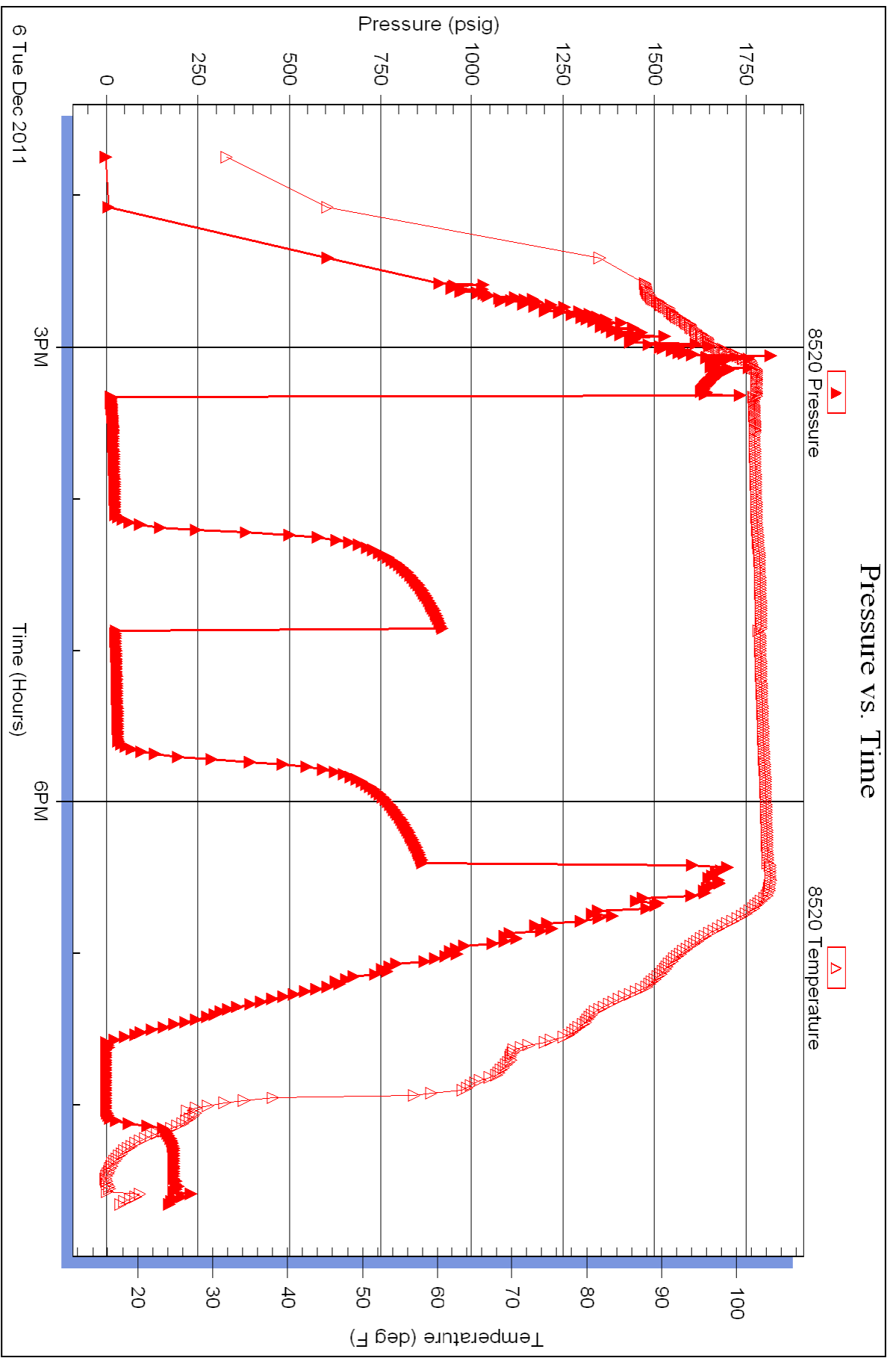


Serial #: 8520

Outside Dow nung-Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 44222

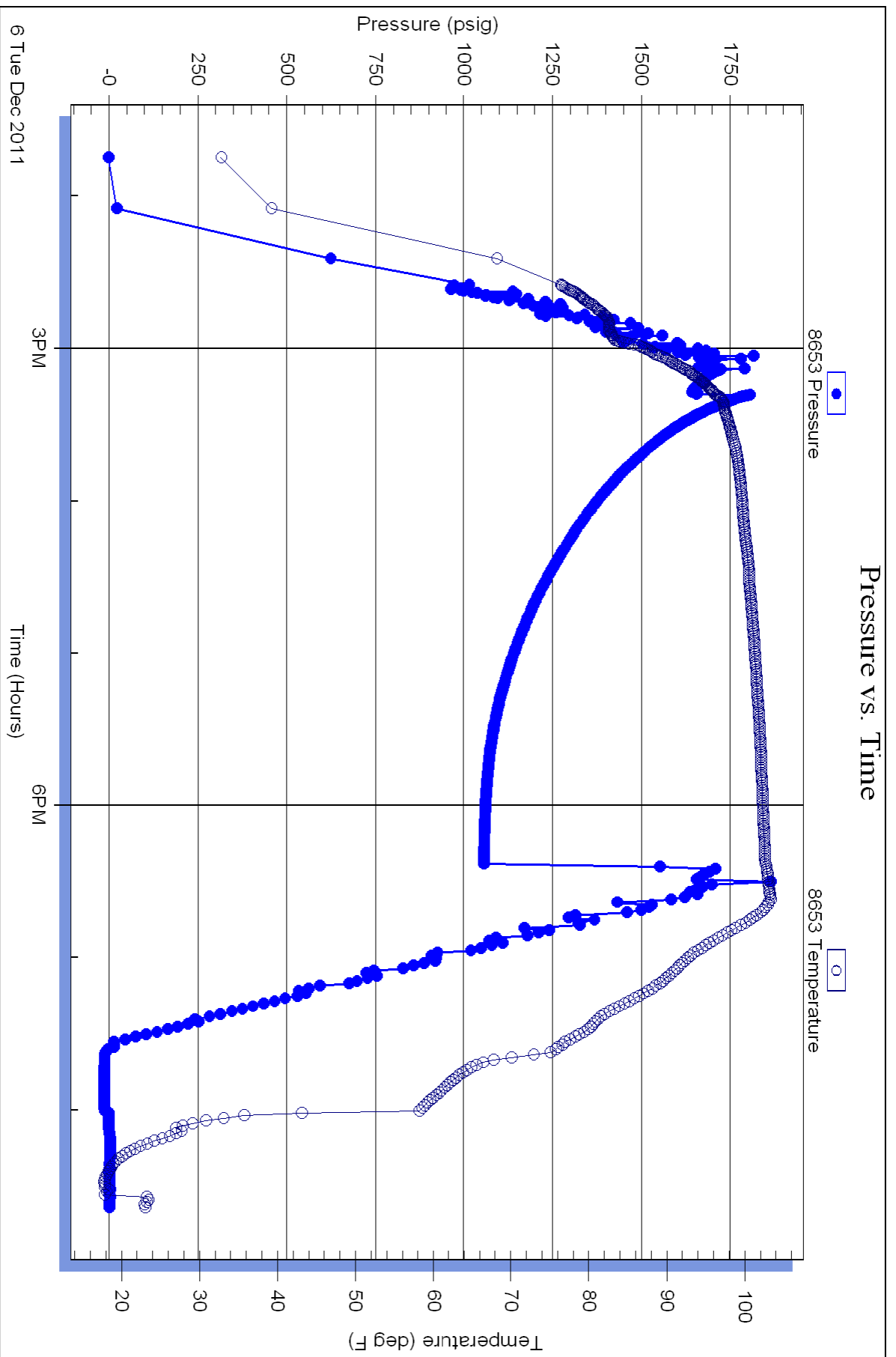
Printed: 2011.12.13 @ 16:08:40

Serial #: 8653

Below (Straburg) - Nelson Oil Co., Inc.

Pfannenstiel #1-12

DST Test Number: 4





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
DEC 13 2011

## Test Ticket

NO. 44219

4/10

BY: \_\_\_\_\_

Well Name & No. Plannersiel #1-12 Test No. 2 Date 12-3-11  
 Company Downing-Nelson Oil Co., Inc. Elevation 2159 KB 2151 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Mark Downing Rig Discovery 3  
 Location: Sec. 12 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3379 3410 Zone Tested Plattsmouth  
 Anchor Length 31' Drill Pipe Run 3359 Mud Wt. 8.9  
 Top Packer Depth 3374 Drill Collars Run 31.54 Vis 48  
 Bottom Packer Depth 3379 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3410 Chlorides 4000 ppm System LCM 2#

Blow Description IF - Very weak building blow. Built to 2 1/2 inches.  
IST - No Return.  
FF - Very weak building blow. Built to 2 inches.  
FST - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>Muddy Water</u>		<u>50</u>		<u>50</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 50 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW 1253 @ 31 °F Chlorides 73000 ppm

(A) Initial Hydrostatic 1631  Test 1125 T-On Location 0830  
 (B) First Initial Flow 14  Jars \_\_\_\_\_ T-Started 1015  
 (C) First Final Flow 32  Safety Joint \_\_\_\_\_ T-Open 1224  
 (D) Initial Shut-In 1105  Circ Sub \_\_\_\_\_ T-Pulled 1525  
 (E) Second Initial Flow 30  Hourly Standby \_\_\_\_\_ T-Out 1715  
 (F) Second Final Flow 38  Mileage 4x2 11.20 Comments BWT-1008  
 (G) Final Shut-In 1064  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1606  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 45  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Ruined Packer \_\_\_\_\_  
 Final Flow 45  Extra Copies \_\_\_\_\_  
 Final Shut-In 45  Sub Total 0  
 Sub Total 1136.20 Total 1136.20  
 MP/DST Disc't \_\_\_\_\_

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

Trilobite Testing Inc. shall not be liable for damaged or 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

RECEIVED  
DEC 13 2011

## Test Ticket

NO. 44220

BY: \_\_\_\_\_

Well Name & No. Prannenstiel #1-12 Test No. 2 Date 12-4-11  
 Company Downing-Nelson Oil Co., Inc. Elevation 2159 KB 2151 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery 3  
 Location: Sec. 12 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3500-3524 Zone Tested LKC "D"  
 Anchor Length 24' Drill Pipe Run 34.54 Mud Wt. 8.9  
 Top Packer Depth 3495 Drill Collars Run 31.54 Vis 48  
 Bottom Packer Depth 3500 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3524 Chlorides 4000 ppm System LCM 2#  
 Blow Description IF - Very weak budding flow. Burst to 1 1/4 inch. Died to 1/2 inch.  
FSI - No Return.  
FF - Very weak surface flow. Died @ 18 minutes.  
FSI - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</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 20 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

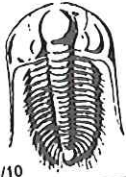
(A) Initial Hydrostatic 1714  Test 1125 T-On Location 0345  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 0515  
 (C) First Final Flow 18  Safety Joint \_\_\_\_\_ T-Open 0705  
 (D) Initial Shut-In 623  Circ Sub \_\_\_\_\_ T-Pulled 0935  
 (E) Second Initial Flow 19  Hourly Standby \_\_\_\_\_ T-Out 1130  
 (F) Second Final Flow 20  Mileage 4X2 11.20 Comments Best-0512  
 (G) Final Shut-In 524  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1657  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 45  Extra Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_  
 Final Flow 30  Day Standby \_\_\_\_\_  
 Final Shut-In 30  Accessibility \_\_\_\_\_  
 Sub Total 1136.20 Total 1136.20 MP/DST Disc't \_\_\_\_\_

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

RECEIVED  
DEC 13 2011

Test Ticket

NO. 44221

BY: \_\_\_\_\_

Well Name & No. Pfannerstiel #1-12 Test No. 3 Date 12-5-11  
 Company Downing-Nelson Oil Co., Inc. Elevation 2159 KB 2151 GL  
 Address P.O. Box 1019 Hays, KS 67601 Rig Discovery 3  
 Co. Rep / Geo. Marc Downing Rge. 19W Co. Ellis State KS  
 Location: Sec. 12 Twp. 14S

Interval Tested 3573-3656 Zone Tested LKC "H-K" Mud Wt. 8.9  
 Anchor Length 83' Drill Pipe Run 3552 Vis 48  
 Top Packer Depth ~~3651~~ 3568 Drill Collars Run 31.54 WL 8.0  
 Bottom Packer Depth ~~3656~~ 3573 Wt. Pipe Run 0 LCM 2#  
 Total Depth 3656 Chlorides 5000 ppm System

Blow Description VF - Very weak building blow, Built to 6 inches,  
VF - Weak return, Built to 1 inch. Tool fouled up on shut-in,  
FF - Very weak building blow, Built to 5 inches,  
FST - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>USOCM</u>	<u>2</u>		<u>98</u>	
<u>120</u>	<u>Muddy Water</u>		<u>50</u>	<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 180 BHT \_\_\_\_\_ Gravity 1125 API RW 120 @ 20 °F Chlorides 13000 ppm  
 (A) Initial Hydrostatic 1754  Test  
 (B) First Initial Flow 19  Jars  
 (C) First Final Flow 75  Safety Joint  
 (D) Initial Shut-In 671  Circ Sub  
 (E) Second Initial Flow 80  Hourly Standby 1/2 hr 50  
 (F) Second Final Flow 103  Mileage 4x2 11.20  
 (G) Final Shut-In 647  Sampler  
 (H) Final Hydrostatic 1749  Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

T-On Location 0215  
 T-Started 0315  
 T-Open 0520  
 T-Pulled 1025  
 T-Out 1145  
 Comments Barf-0300

Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1161.20  
 MP/DST Disc't

Initial Open ~~45~~ 90  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45

Sub Total 1161.20  
 Our Representative D. Rash

Approved By \_\_\_\_\_  
 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 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

RECEIVED  
DEC 13 2011

## Test Ticket

NO. 44222

4/10

BY:

Well Name & No. Pfannenstiel # 1-12 Test No. 4 Date 12-6-11  
 Company Downing-Nelson Oil Co, Inc. Elevation 2159 KB 2151 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Male Downing Rig Discovery 3  
 Location: Sec. 12 Twp. 14S. Rge. 19W. Co. Ellis State KS

Interval Tested 3413-3443 Zone Tested Toman  
 Anchor Length 30' 451' TP Drill Pipe Run \_\_\_\_\_ Mud Wt. 8.9  
 Top Packer Depth 3408 Drill Collars Run 93 Vis 48  
 Bottom Packer Depth 3413 3443 SP Wt. Pipe Run 0 WL 8.8  
 Total Depth 3894 Chlorides 6000 ppm System LCM 1.5#

Blow Description IF - Very weak building blow. Built to 4 inches.  
ISF - No Return.  
FF - Very weak building blow. Built to 1 1/2 inches. Died off to 1 inch.  
FST - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Mud w/ Oil Specs</u>		<u>1</u>		<u>99</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 45 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1736  Test 1125' T-On Location 1200  
 (B) First Initial Flow 20  Jars \_\_\_\_\_ T-Started 1315  
 (C) First Final Flow 25  Safety Joint \_\_\_\_\_ T-Open 1520  
 (D) Initial Shut-In 914  Circ Sub \_\_\_\_\_ T-Pulled 1825  
 (E) Second Initial Flow 29  Hourly Standby \_\_\_\_\_ T-Out 2040  
 (F) Second Final Flow 34  Mileage ERT 11.20 Comments Bart-1334  
 (G) Final Shut-In 865  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1712  Straddle 600'  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 1736.20  
 Final Shut-In 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1736.20

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

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