



DRILL STEM TEST REPORT

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

P.O. Box 1019
Hays, KS 67601

ATTN: Al Downing

Hillman-Dubach #1-31

31-12s-21w Trego,KS

Start Date: 2012.10.05 @ 13:29:15

End Date: 2012.10.05 @ 19:43:45

Job Ticket #: 47941 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.10.09 @ 11:38:54



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

31-12s-21w Trego,KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

ATTN: Al Dow ning

Job Ticket: 47941

DST#: 1

Test Start: 2012.10.05 @ 13:29:15

GENERAL INFORMATION:

Formation: **LKC "A-D"**

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

Time Tool Opened: 15:41:15

Time Test Ended: 19:43:45

Test Type: **Conventional Bottom Hole (Initial)**

Tester: **Dustin Rash**

Unit No: **38**

Interval: 3578.00 ft (KB) To 3654.00 ft (KB) (TVD)

Reference Elevations: **2283.00 ft (KB)**

Total Depth: **3654.00 ft (KB) (TVD)**

2275.00 ft (CF)

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

KB to GR/CF: **8.00 ft**

Serial #: 8354

Inside

Press @ Run Depth: **169.85 psig @ 3646.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2012.10.05**

End Date:

2012.10.05

Last Calib.: **2012.10.05**

Start Time: **13:39:15**

End Time:

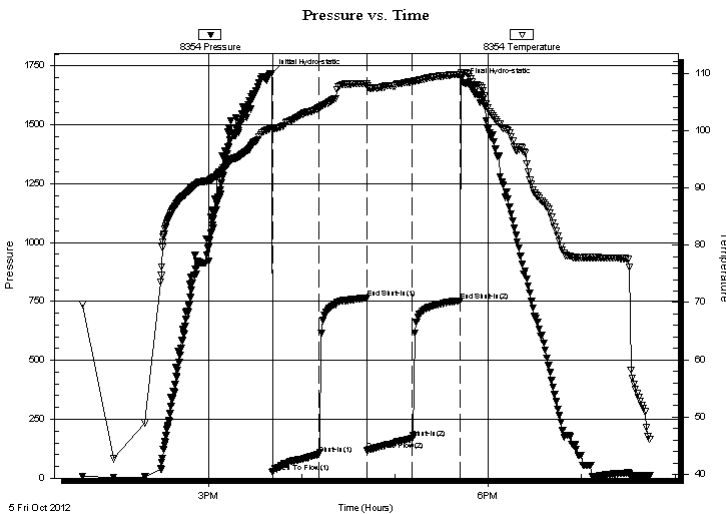
19:43:45

Time On Btm: **2012.10.05 @ 15:40:45**

Time Off Btm: **2012.10.05 @ 17:43:45**

TEST COMMENT: IF-Fair building blow . BOB in 16 minutes 30 seconds.
ISI-No Return.
FF-Fair building blow . BOB in 20 minutes.
FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1717.58	100.45	Initial Hydro-static
1	23.81	100.18	Open To Flow (1)
31	102.62	104.02	Shut-In(1)
61	764.79	108.28	End Shut-In(1)
62	119.02	107.85	Open To Flow (2)
91	169.85	108.59	Shut-In(2)
121	753.16	109.84	End Shut-In(2)
123	1678.36	110.18	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
330.00	85%Water/15%Mud	4.36

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.

31-12s-21w Trego,KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

Job Ticket: 47941

DST#: 1

ATTN: Al Dow ning

Test Start: 2012.10.05 @ 13:29:15

Tool Information

Drill Pipe:	Length: 3551.00 ft	Diameter: 3.80 inches	Volume: 49.81 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: 49.96 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3578.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	76.00 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			3559.00	
Shut In Tool	5.00			3564.00	
Hydraulic tool	5.00			3569.00	
Packer	5.00			3574.00	20.00 Bottom Of Top Packer
Packer	4.00			3578.00	
Stubb	1.00			3579.00	
Perforations	3.00			3582.00	
Change Over Sub	1.00			3583.00	
Drill Pipe	62.00			3645.00	
Change Over Sub	1.00			3646.00	
Recorder	0.00	8354	Inside	3646.00	
Recorder	0.00	8520	Outside	3646.00	
Perforations	5.00			3651.00	
Bullnose	3.00			3654.00	76.00 Bottom Packers & Anchor

Total Tool Length: 96.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

31-12s-21w Trego,KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

Job Ticket: 47941

DST#: 1

ATTN: Al Dow ning

Test Start: 2012.10.05 @ 13:29:15

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:

16000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.72 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
330.00	85%Water/15%Mud	4.356

Total Length: 330.00 ft

Total Volume: 4.356 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8354

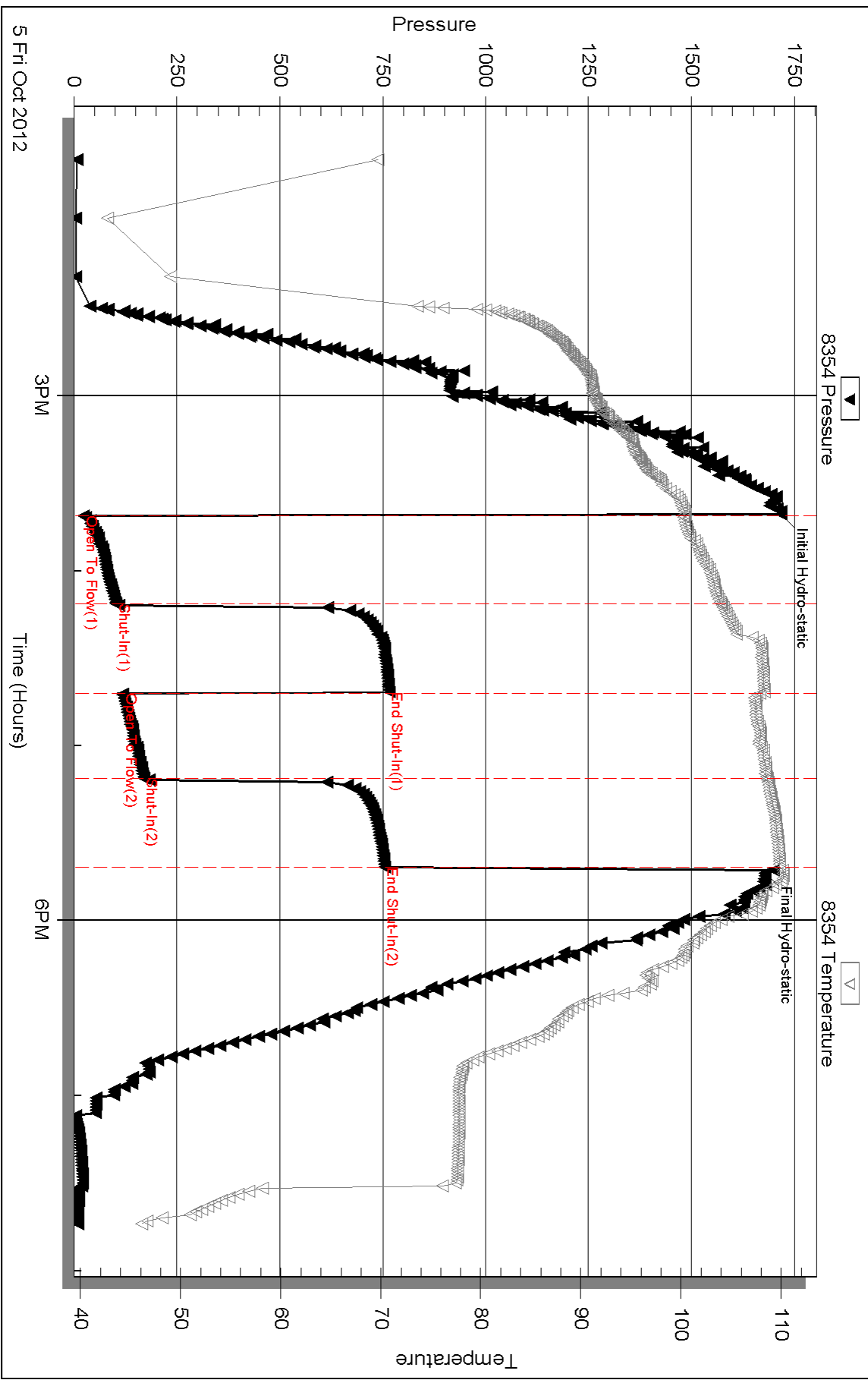
Inside

Dow nting-Nelson Oil Co., Inc.

Hillman-Dubach #1-31

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 47941

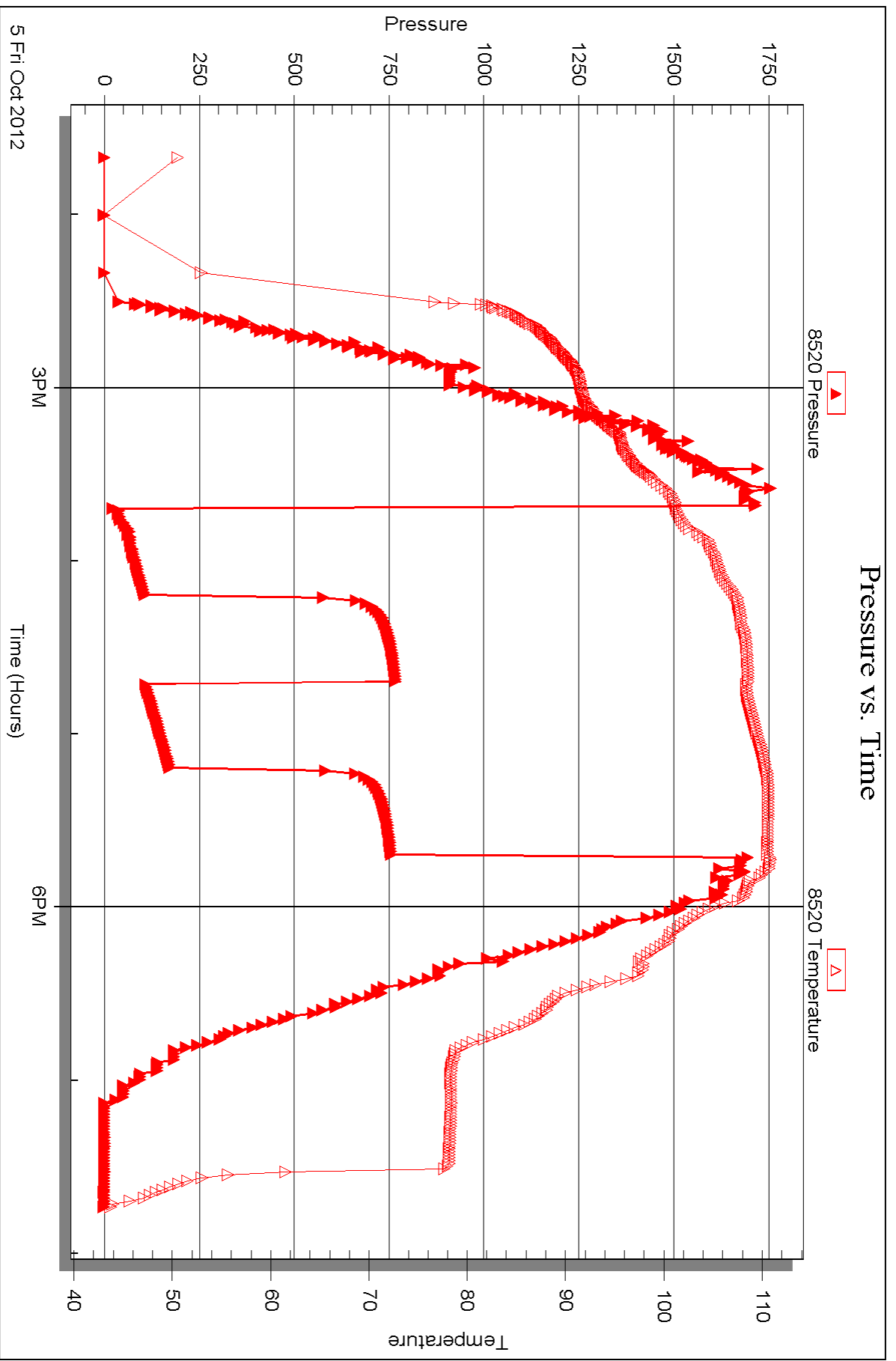
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Serial #: 8520

Outside Dow nung-Nelson Oil Co., Inc.

Hillman-Dubach #1-31

DST Test Number: 1





DRILL STEM TEST REPORT

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

P.O. Box 1019
Hays, KS 67601

ATTN: Al Downing

Hillman-Dubach #1-31

31-12s-21w Trego,KS

Start Date: 2012.10.07 @ 11:19:15

End Date: 2012.10.07 @ 17:59:15

Job Ticket #: 47942 DST #: 2

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

Printed: 2012.10.09 @ 11:38:11



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

31-12s-21w Trego,KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

ATTN: Al Dow ning

Job Ticket: 47942

DST#: 2

Test Start: 2012.10.07 @ 11:19:15

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:17:25

Time Test Ended: 17:59:15

Test Type: Conventional Straddle (Initial)

Tester: Dustin Rash

Unit No: 38

Interval: 3910.00 ft (KB) To 3934.00 ft (KB) (TVD)

Reference Elevations: 2283.00 ft (KB)

Total Depth: 4048.00 ft (KB) (TVD)

2275.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8354

Inside

Press @ Run Depth: 42.15 psig @ 3911.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.07

End Date:

2012.10.07

Last Calib.: 2012.10.07

Start Time: 11:29:15

End Time:

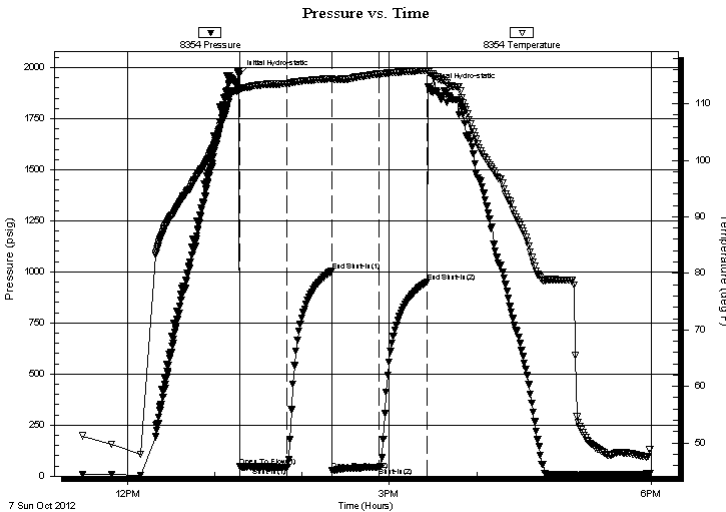
17:59:15

Time On Btm: 2012.10.07 @ 13:17:05

Time Off Btm: 2012.10.07 @ 15:26:45

TEST COMMENT: IF-Very weak building blow . Built to 1 1/2 inches.
ISI-No Return.
FF-Very weak surface blow throughout.
FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.23	112.96	Initial Hydro-static
1	48.18	112.55	Open To Flow (1)
33	44.33	113.56	Shut-In(1)
64	1003.81	114.50	End Shut-In(1)
64	28.22	114.29	Open To Flow (2)
96	42.15	115.27	Shut-In(2)
129	951.63	115.91	End Shut-In(2)
130	1904.18	115.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	5%Water/95%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.

31-12s-21w Trego, KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

Job Ticket: 47942

DST#: 2

ATTN: Al Downing

Test Start: 2012.10.07 @ 11:19:15

Tool Information

Drill Pipe:	Length: 3869.00 ft	Diameter: 3.80 inches	Volume: 54.27 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: 30000.00 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: 54.42 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3910.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	3932.00 ft			
Interval between Packers:	22.00 ft			
Tool Length:	160.00 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			3891.00	
Shut In Tool	5.00			3896.00	
Hydraulic tool	5.00			3901.00	
Packer	5.00			3906.00	20.00 Bottom Of Top Packer
Packer	4.00			3910.00	
Stubb	1.00			3911.00	
Recorder	0.00	8354	Inside	3911.00	
Recorder	0.00	8520	Outside	3911.00	
Perforations	20.00			3931.00	
Blank Off Sub	1.00			3932.00	22.00 Tool Interval
Packer	4.00			3936.00	
Stubb	1.00			3937.00	
Perforations	13.00			3950.00	
Change Over Sub	1.00			3951.00	
Recorder	0.00	8653	Below	3951.00	
Drill Pipe	95.00			4046.00	
Change Over Sub	1.00			4047.00	
Bullnose	3.00			4050.00	118.00 Bottom Packers & Anchor

Total Tool Length: 160.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

31-12s-21w Trego,KS

P.O. Box 1019
Hays, KS 67601

Hillman-Dubach #1-31

Job Ticket: 47942

DST#: 2

ATTN: Al Dow ning

Test Start: 2012.10.07 @ 11:19:15

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: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
20.00	5%Water/95%Mud	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

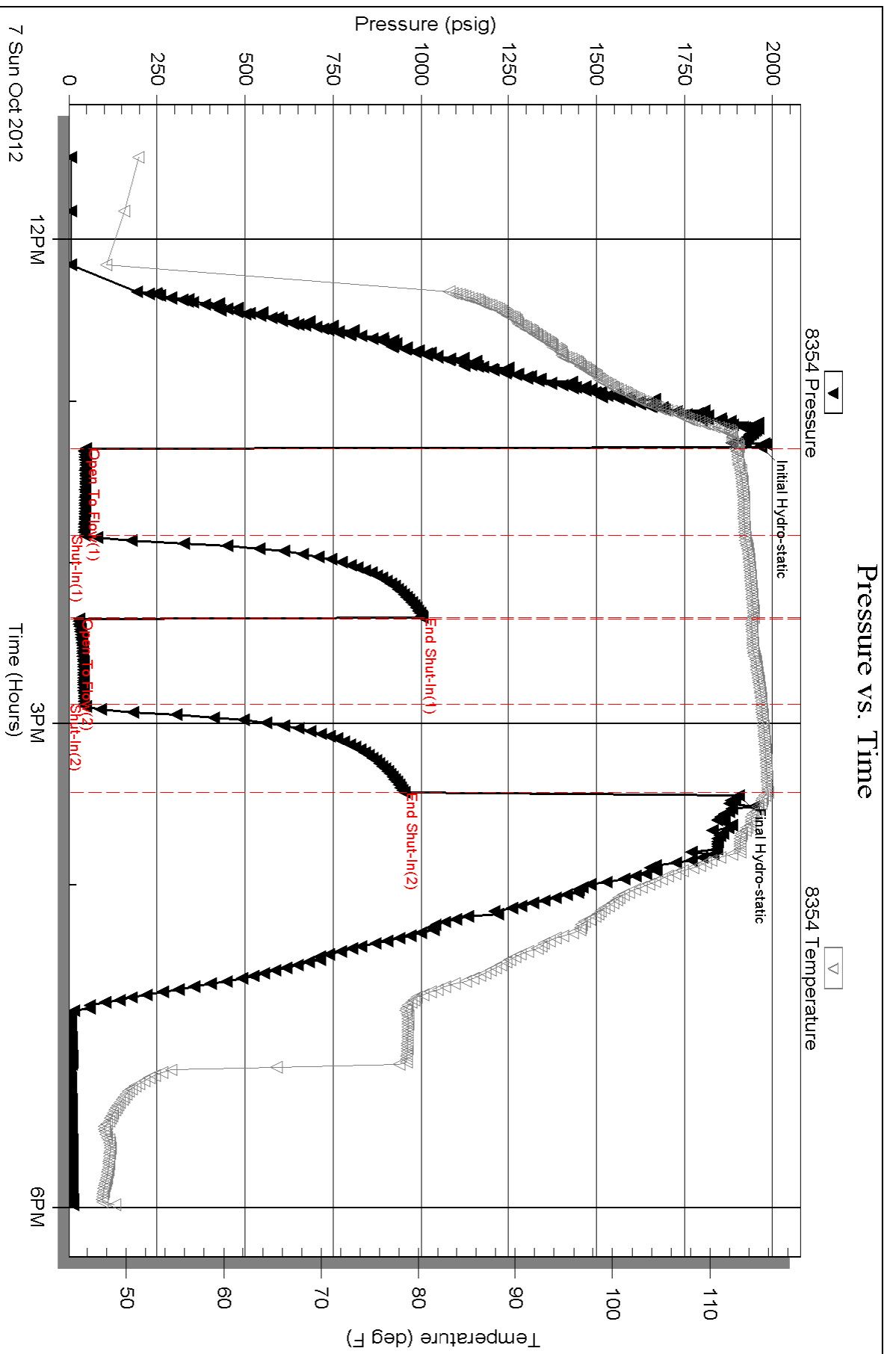
Serial #: 8354

Inside

Dow nung-Nelson Oil Co., Inc.

Hillman-Dubach #1-31

DST Test Number: 2

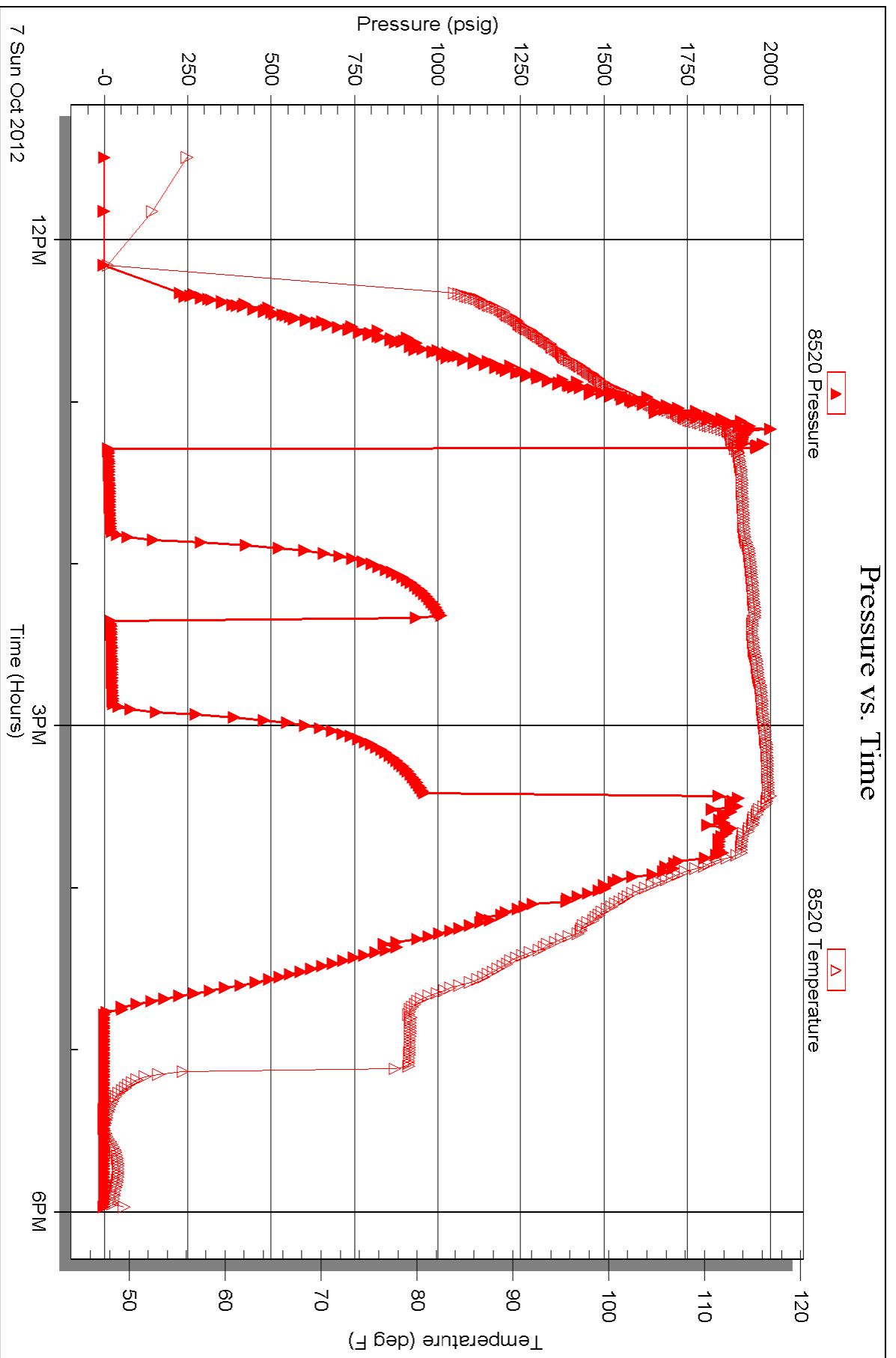


Serial #: 8520

Outside Dow nting-Nelson Oil Co., Inc.

Hillman-Dubach #1-31

DST Test Number: 2

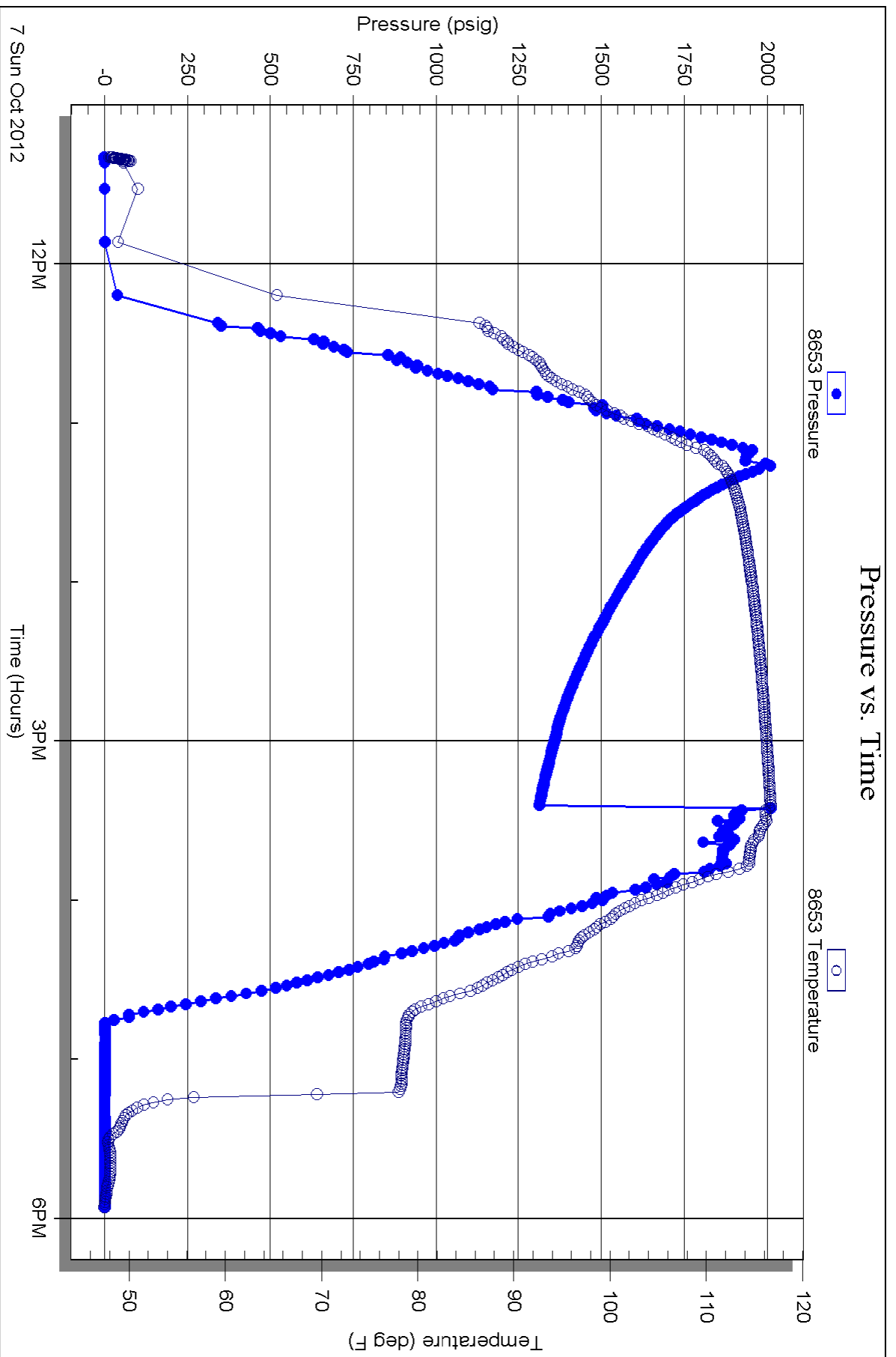


Serial #: 8653

Below (Stratton)ng-Nelson Oil Co., Inc.

Hillman-Dubach #1-31

DST Test Number: 2





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 47941

Well Name & No. Hillman-Dubach #1-31 Test No. 7 Date 10-5-12
 Company Downing-Nelson Oil Co., Inc. Elevation 2283 KB 2275 GL
 Address P.O. Box 1019 Hays, KS 67601
 Co. Rep / Geo. AI Downing Rig Discovery 3
 Location: Sec. 31 Twp. 12S Rge. 21W Co. Trego State KS

Interval Tested 3578-3654 Zone Tested LRC "A-D"
 Anchor Length 76' Drill Pipe Run 3551 Mud Wt. 8.7
 Top Packer Depth 3573 Drill Collars Run 29.70 Vis 56
 Bottom Packer Depth 3578 Wt. Pipe Run 0 WL 7.6
 Total Depth 3654 Chlorides 800 ppm System LCM 2#

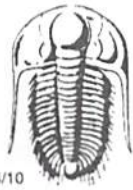
Blow Description IF- Fair building blow, BOB in 16 minutes 30 seconds.
ISI- No Return.
FF- Fair building blow, BOB in 20 minutes.
FBI- No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>330</u>	<u>Muddy Water</u>			<u>85</u>	<u>15</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 330 BHT 110 Gravity API RW .719 @ 40 ° F Chlorides 16000 ppm
 Test 1150 T-On Location 1130
 Jars _____ T-Started 1345
 Safety Joint _____ T-Open 1541
 Circ Sub _____ T-Pulled 1745
 Hourly Standby _____ T-Out 1945
 Mileage 26X2 80.60 Comments BOBT-1329
 Sampler _____
 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1230.60
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1230.60

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 47942

Well Name & No. Hillman-Dubach #1-31 Test No. 2 Date 10-7-12
 Company Downing-Nelson Oil Co., Inc. Elevation 2283 KB 2275 GL
 Address P.O. Box 1019 Hays, KS 67601
 Co. Rep / Geo. Al Downing Rig Discovery 3
 Location: Sec. 31 Twp. 12S Rge. 21W Co. Trego State KS

Interval Tested 3910-3934 Zone Tested Marmaton
 Anchor Length 24' 114' TP Drill Pipe Run 3869 Mud Wt. 9.0
 Top Packer Depth 3905 Drill Collars Run 29.70 Vis 53
 Bottom Packer Depth 3910 3934 SP Wt. Pipe Run Ø WL 8.0
 Total Depth 4048 Chlorides 1000 ppm System LCM 1 1/2 #

Blow Description VF- Very weak building blow, Built to 1 1/2 inches,
VST- No Return,
FF- Very weak surface blow throughout,
FST- No Return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>Wetly Mud</u>		<u>5</u>	<u>95</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 N/A @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1967 Test 1150 T-On Location 1030
 (B) First Initial Flow 48 Jars _____ T-Started 1200
 (C) First Final Flow 44 Safety Joint _____ T-Open 1318
 (D) Initial Shut-In 1004 Circ Sub _____ T-Pulled 1525
 (E) Second Initial Flow 28 Hourly Standby _____ T-Out 1800
 (F) Second Final Flow 42 Mileage 26X2 80.60 Comments Batt-1119
 (G) Final Shut-In 952 Sampler _____
 (H) Final Hydrostatic 1904 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 491.67
 Initial Shut-In 30 Day Standby 1d 14.75hrs Total 2322.27
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1830.60

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.