



DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Steckline #1-34

34-13S-22W Trego,KS

Start Date: 2018.04.15 @ 04:56:00

End Date: 2018.04.15 @ 10:18:02

Job Ticket #: 63075 DST #: 1

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

Printed: 2018.04.18 @ 08:20:12

Downing Nelson Oil Company Inc

34-13S-22W Trego,KS

Steckline #1-34

DST # 1

LKC E - F

2018.04.15



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63075

DST#: 1

ATTN: Marc Dow ning

Test Start: 2018.04.15 @ 04:56:00

GENERAL INFORMATION:

Formation: **LKC E - F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:54:02

Time Test Ended: 10:18:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3834.00 ft (KB) To 3855.00 ft (KB) (TVD)

Reference Elevations: 2383.00 ft (KB)

Total Depth: 3855.00 ft (KB) (TVD)

2375.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 15.71 psig @ 3835.00 ft (KB)

Capacity: psig

Start Date: 2018.04.15

End Date:

2018.04.15

Last Calib.:

2018.04.15

Start Time: 04:56:01

End Time:

10:18:02

Time On Btm:

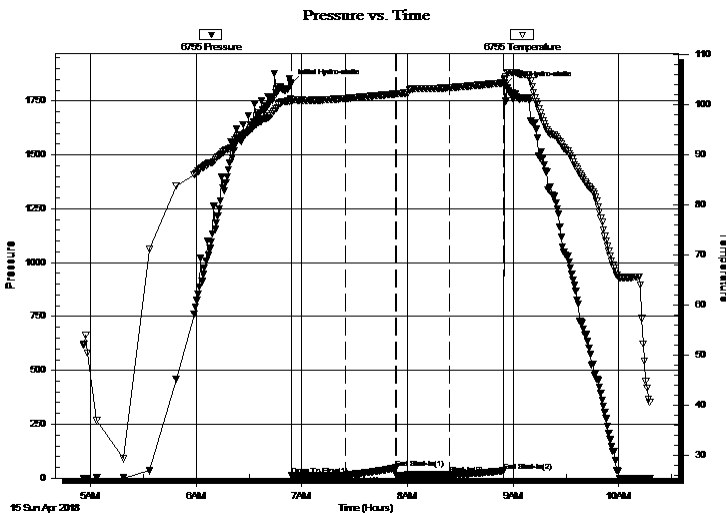
2018.04.15 @ 06:53:47

Time Off Btm:

2018.04.15 @ 08:55:17

TEST COMMENT: IFP 30 Minutes Light surface blow off and on throughout
ISI 30 Minutes No blow back
FFP 30 Minutes Dead no blow / Flush tool no help
FSI 30 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1831.14	101.23	Initial Hydro-static
1	13.61	100.50	Open To Flow (1)
31	13.95	101.23	Shut-In(1)
60	47.23	102.14	End Shut-In(1)
60	13.83	102.15	Open To Flow (2)
90	15.71	103.39	Shut-In(2)
121	33.98	104.34	End Shut-In(2)
122	1821.98	105.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w /show of oil in tool/ Mud 100%	0.02

Gas Rates

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



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DRILL STEM TEST REPORT

Downing Nelson Oil Company Inc

34-13S-22W Trego, KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63075

DST#: 1

ATTN: Marc Downing

Test Start: 2018.04.15 @ 04:56:00

GENERAL INFORMATION:

Formation: **LKC E - F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:54:02

Time Test Ended: 10:18:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3834.00 ft (KB) To 3855.00 ft (KB) (TVD)

Reference Elevations: 2383.00 ft (KB)

Total Depth: 3855.00 ft (KB) (TVD)

2375.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 35.08 psig @ 3836.00 ft (KB)

Capacity: psig

Start Date: 2018.04.15 End Date: 2018.04.15

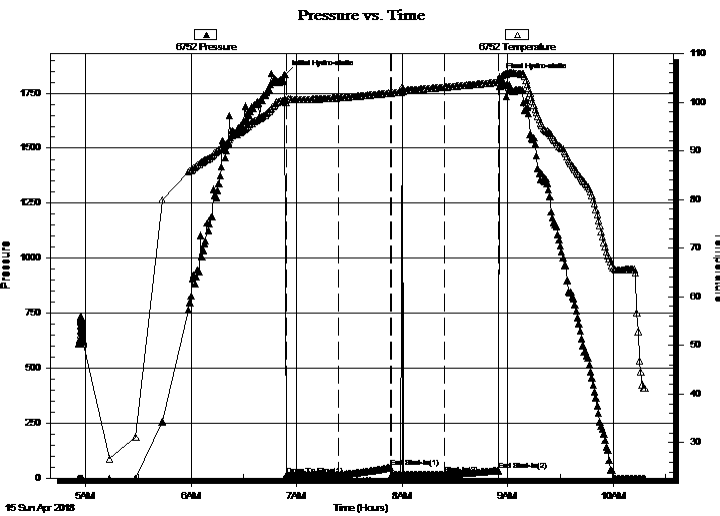
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Start Time: 04:56:01 End Time: 10:18:02

Time On Btm: 2018.04.15 @ 06:53:32

Time Off Btm: 2018.04.15 @ 08:55:17

TEST COMMENT: IFP 30 Minutes Light surface blow off and on throughout
ISI 30 Minutes No blow back
FFP 30 Minutes Dead no blow / Flush tool no help
FSI 30 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1833.03	100.47	Initial Hydro-static
1	13.77	99.86	Open To Flow (1)
31	14.66	100.90	Shut-In(1)
60	48.03	101.88	End Shut-In(1)
61	14.96	101.89	Open To Flow (2)
91	16.72	103.09	Shut-In(2)
121	35.08	104.09	End Shut-In(2)
122	1822.91	104.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w /show of oil in tool/ Mud 100%	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63075

DST#: 1

ATTN: Marc Downing

Test Start: 2018.04.15 @ 04:56:00

Tool Information

Drill Pipe:	Length: 3806.00 ft	Diameter: 3.80 inches	Volume: 53.39 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 53.54 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	3834.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	41.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3819.00	
Hydraulic tool	5.00			3824.00	
Top Packer	5.00			3829.00	
Packer	5.00			3834.00	20.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	3835.00	
Recorder	1.00	6752	Outside	3836.00	
Anchor	16.00			3852.00	
Bullnose	3.00			3855.00	21.00 Anchor Tool

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63075

DST#: 1

ATTN: Marc Downing

Test Start: 2018.04.15 @ 04:56:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w/show of oil in tool/ Mud 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

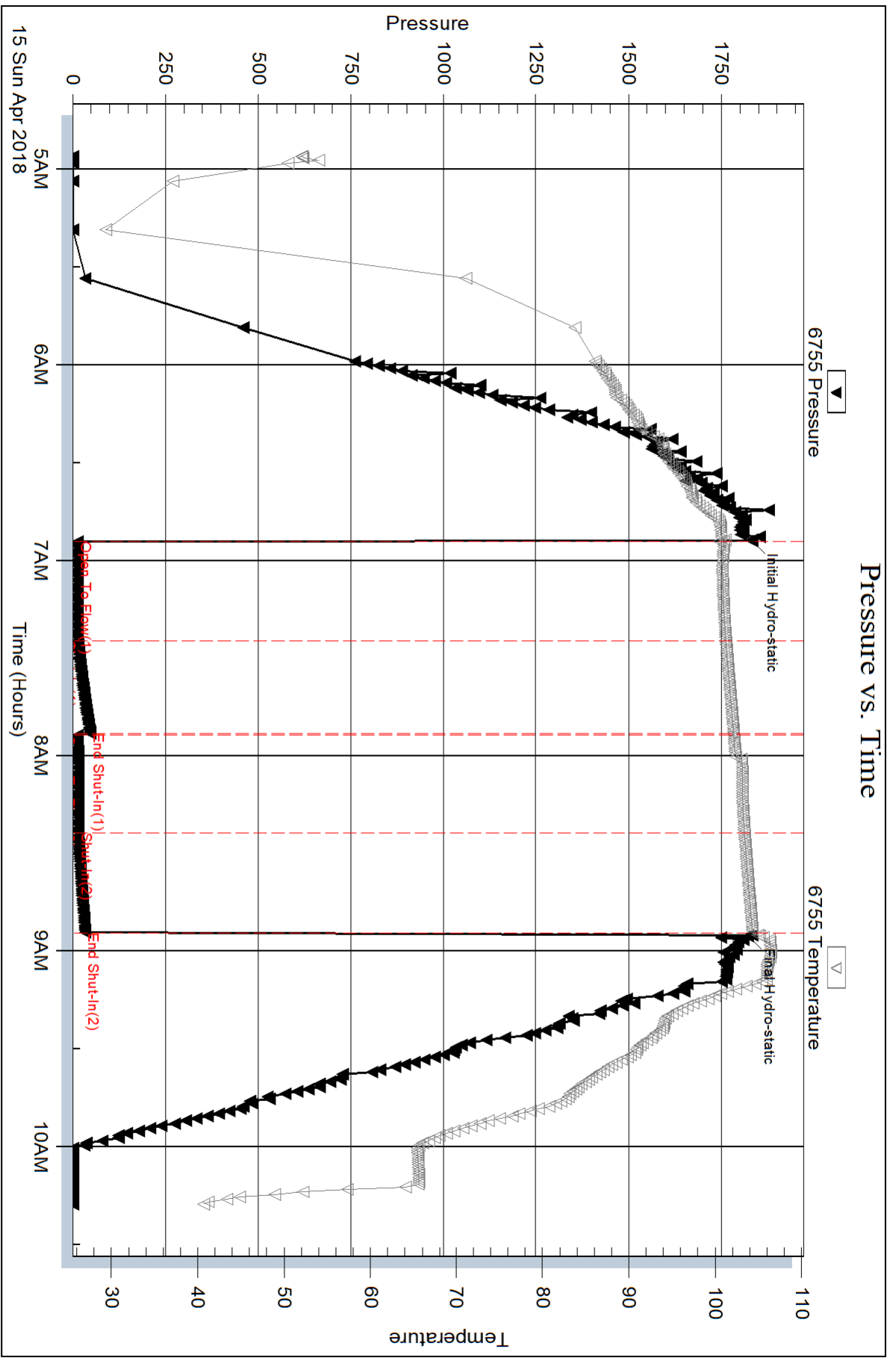
Serial #: 6755

Inside

Downing Nelson Oil Company Inc

Seckline #1-34

DST Test Number: 1

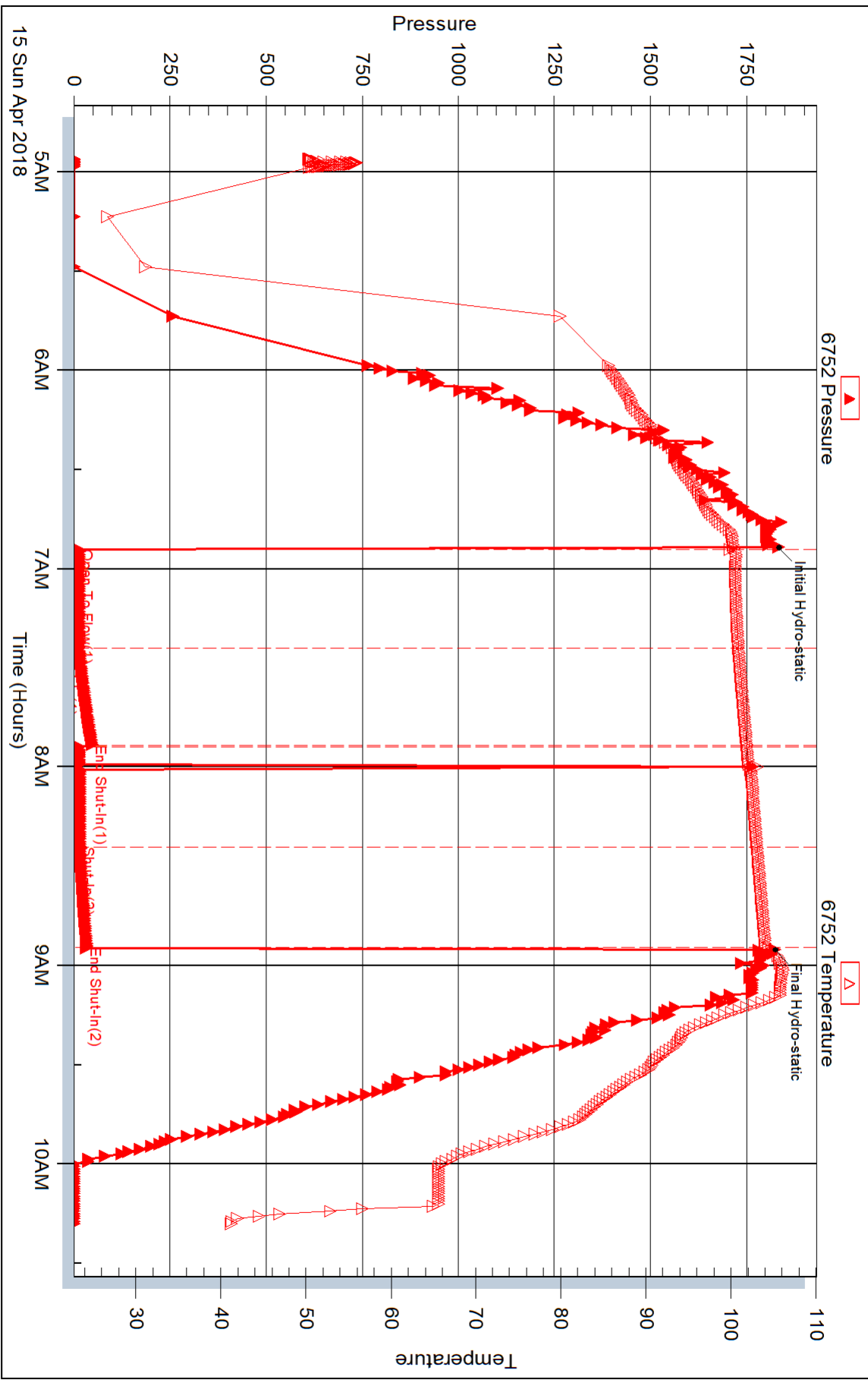


Triobite Testing, Inc

Ref. No: 63075

Printed: 2018.04.18 @ 08:20:13

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Steckline #1-34

34-13S-22W Trego,KS

Start Date: 2018.04.16 @ 18:50:00

End Date: 2018.04.17 @ 01:16:02

Job Ticket #: 63477 DST #: 2

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

Printed: 2018.04.18 @ 08:19:23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63477

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.04.16 @ 18:50:00

GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:37:02

Time Test Ended: 01:16:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4159.00 ft (KB) To 4214.00 ft (KB) (TVD)

Reference Elevations: 2383.00 ft (KB)

Total Depth: 4214.00 ft (KB) (TVD)

2375.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 169.72 psig @ 4160.00 ft (KB)

Capacity: psig

Start Date: 2018.04.16

End Date:

2018.04.17

Last Calib.:

2018.04.17

Start Time:

18:50:01

End Time:

01:16:02

Time On Btm:

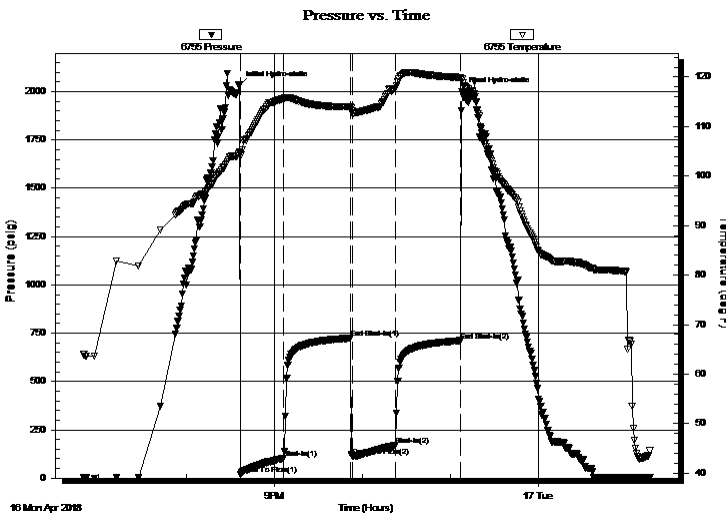
2018.04.16 @ 20:36:32

Time Off Btm:

2018.04.16 @ 23:08:02

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 12 minutes
ISI 45 Minutes Light surface blow back for 20 minutes
FFP 30 Minutes Blow built to 10"
FSI 45 Minutes Light surface blow back for 10 minutes

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2032.33	105.03	Initial Hydro-static
1	19.62	104.74	Open To Flow (1)
30	103.79	115.69	Shut-In(1)
76	723.89	114.01	End Shut-In(1)
77	112.54	113.11	Open To Flow (2)
106	169.72	117.67	Shut-In(2)
151	711.36	119.91	End Shut-In(2)
152	1998.10	119.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Muddy Oil/ Mud 40% Oil 60%	3.21
169.00	Clean Oil 10%	2.37

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63477

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.04.16 @ 18:50:00

GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:37:02

Time Test Ended: 01:16:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4159.00 ft (KB) To 4214.00 ft (KB) (TVD)

Reference Elevations: 2383.00 ft (KB)

Total Depth: 4214.00 ft (KB) (TVD)

2375.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 712.27 psig @ 4161.00 ft (KB)

Capacity: psig

Start Date: 2018.04.16

End Date: 2018.04.17

Last Calib.: 2018.04.17

Start Time: 18:50:01

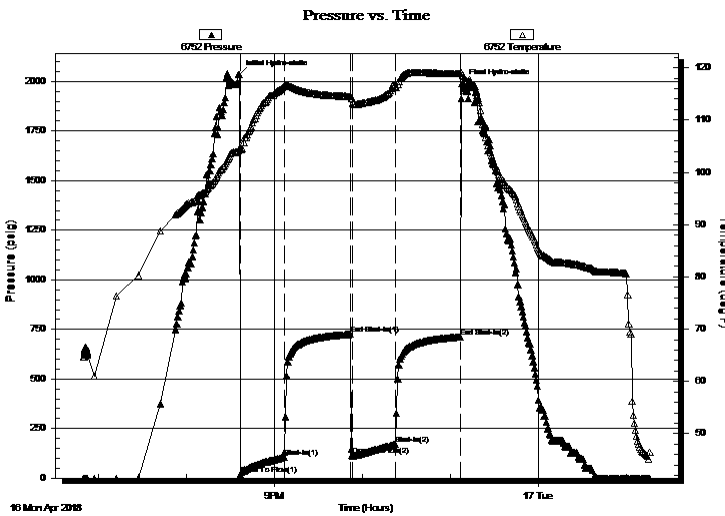
End Time: 01:16:02

Time On Btm: 2018.04.16 @ 20:36:32

Time Off Btm: 2018.04.16 @ 23:08:02

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 12 minutes
ISI 45 Minutes Light surface blow back for 20 minutes
FFP 30 Minutes Blow built to 10"
FSI 45 Minutes Light surface blow back for 10 minutes

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2033.04	104.61	Initial Hydro-static
1	20.21	104.45	Open To Flow (1)
31	106.46	116.49	Shut-In(1)
76	724.69	114.51	End Shut-In(1)
77	114.61	114.09	Open To Flow (2)
107	171.18	116.22	Shut-In(2)
151	712.27	118.90	End Shut-In(2)
152	1990.50	119.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Muddy Oil/ Mud 40% Oil 60%	3.21
169.00	Clean Oil 10%	2.37

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63477

DST#: 2

ATTN: Marc Downing

Test Start: 2018.04.16 @ 18:50:00

Tool Information

Drill Pipe:	Length: 4122.00 ft	Diameter: 3.80 inches	Volume: 57.82 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4159.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.74 ft			
Tool Length:	74.74 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			4144.00	
Hydraulic tool	5.00			4149.00	
Top Packer	5.00			4154.00	
Packer	5.00			4159.00	20.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	4160.00	
Recorder	1.00	6752	Outside	4161.00	
Anchor	16.00			4177.00	
Change Over Sub	1.00			4178.00	
Drill Pipe	31.74			4209.74	
Change Over Sub	1.00			4210.74	
Bullnose	3.00			4213.74	54.74 Anchor Tool

Total Tool Length: 74.74



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

34-13S-22W Trego,KS

PO Box 1019
Hays, KS 67601

Steckline #1-34

Job Ticket: 63477

DST#: 2

ATTN: Marc Downing

Test Start: 2018.04.16 @ 18:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
248.00	Muddy Oil/ Mud 40% Oil 60%	3.206
169.00	Clean Oil 10%	2.371

Total Length: 417.00 ft

Total Volume: 5.577 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

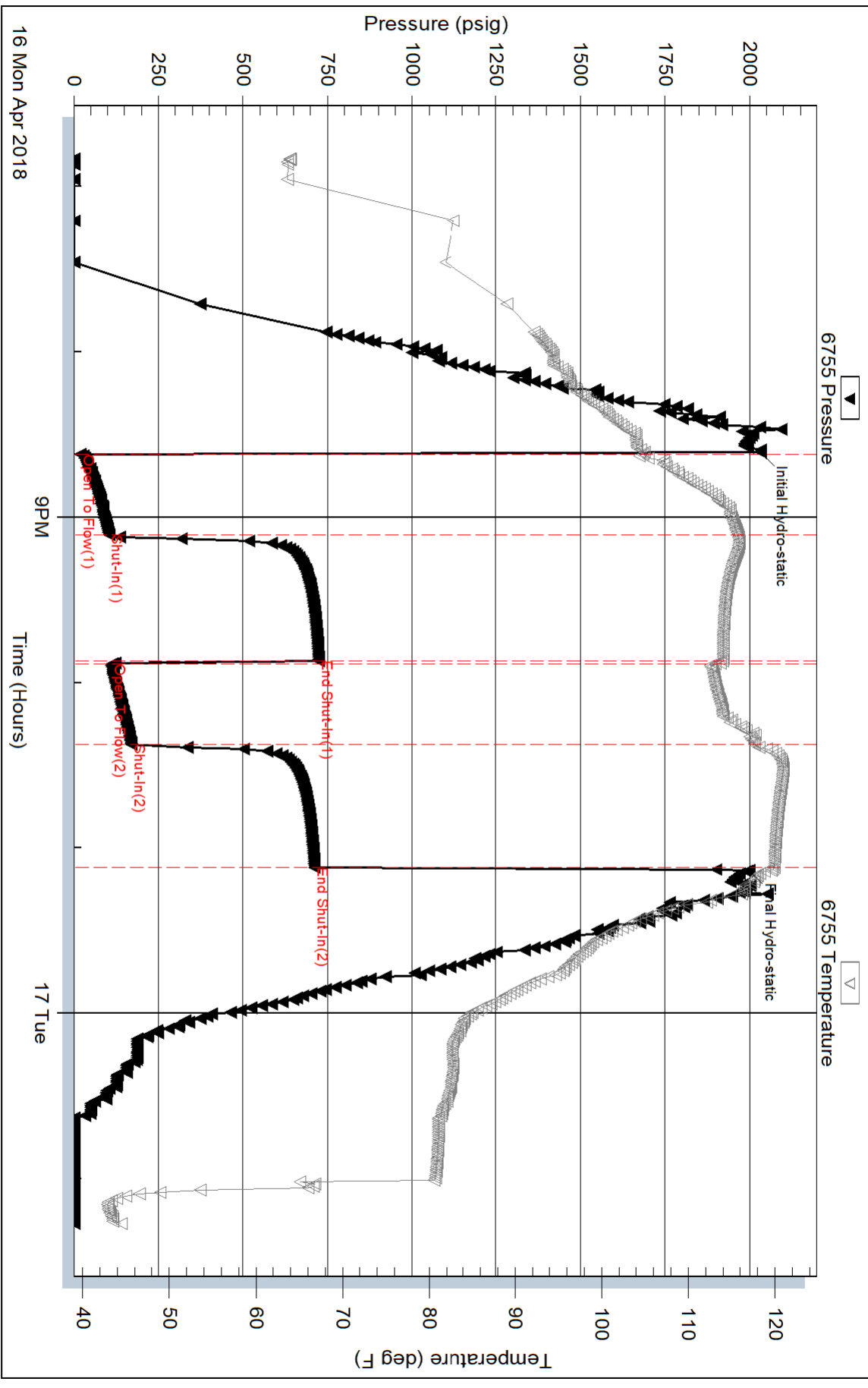
Serial #:

Laboratory Name:

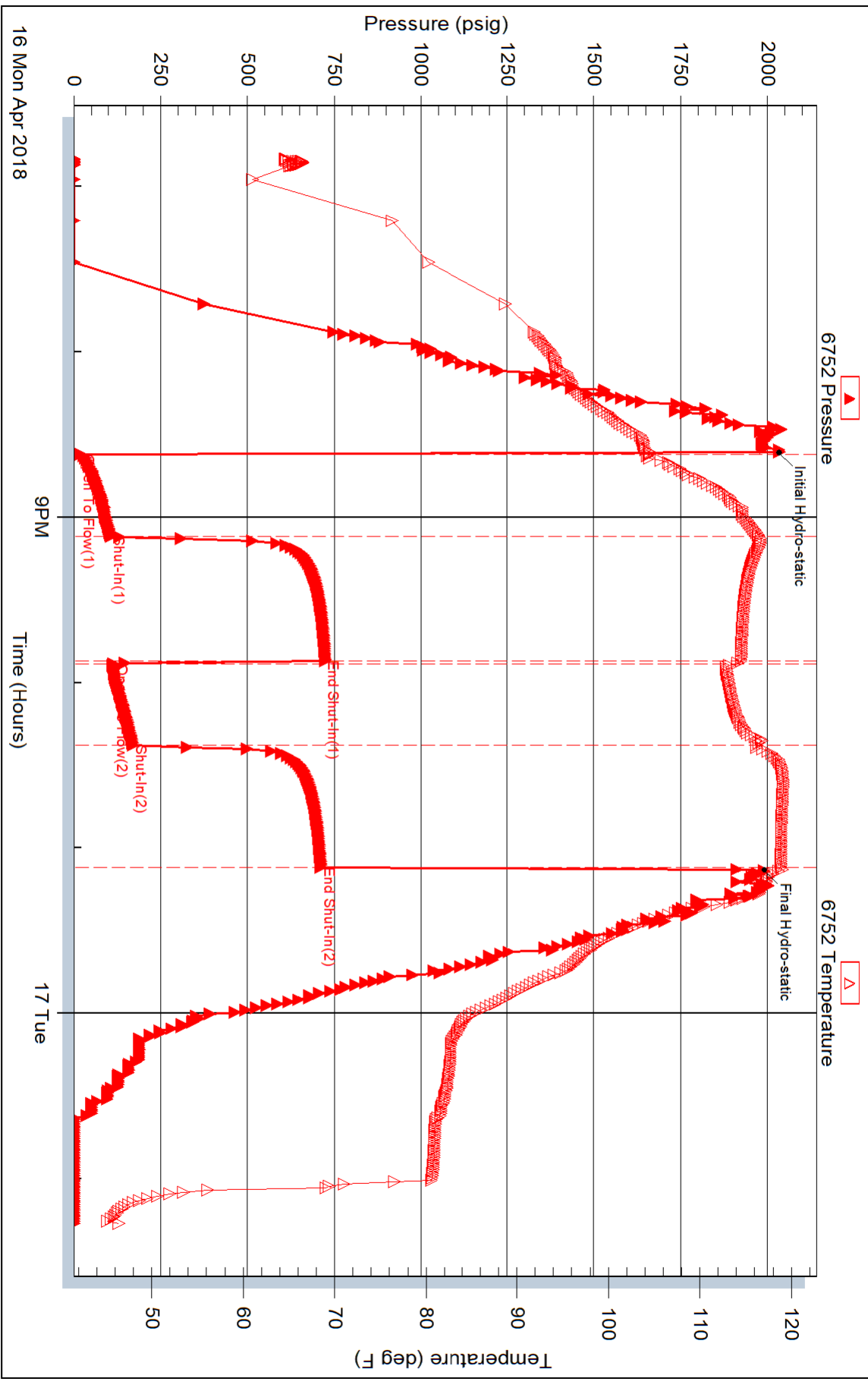
Laboratory Location:

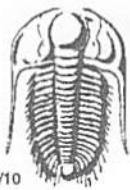
Recovery Comments:

Pressure vs. Time



Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63075**

Well Name & No. Steckline #1-34 Test No. 1 Date 15 Apr 18
 Company Downing-Nelson O.I. Company Inc Elevation 2383 KB 2375 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 34 Twp. 135 Rge. 22W Co. Trego State KS

Interval Tested 3834-3855 Zone Tested Lansing/Kansas City zones E&F
 Anchor Length 21 Drill Pipe Run 3806 Mud Wt. 8.7
 Top Packer Depth 3829 Drill Collars Run 30 Vis 53
 Bottom Packer Depth 3834 Wt. Pipe Run - WL 7.2
 Total Depth 3855 Chlorides 4000 ppm System LCM 1#

Blow Description I.F. Right surface blow off w/ on throughout
I.S.I. No blow back
FF Dead no blow / Flush tool no help
F.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud w/show oil in tool</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 5 BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1831</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>3:08 am</u>
(B) First Initial Flow <u>13</u>	<input type="checkbox"/> Jars _____	T-Started <u>4:56 am</u>
(C) First Final Flow <u>13</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>6:54 am</u>
(D) Initial Shut-In <u>47</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>8:54 am</u>
(E) Second Initial Flow <u>13</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>10:18 am</u>
(F) Second Final Flow <u>15</u>	<input type="checkbox"/> Mileage <u>68 68 mi</u>	Comments _____
(G) Final Shut-In <u>33</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1821</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1118

Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1118
 MP/DST Disc't _____

Approved By _____

Our Representative



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63477**

Well Name & No. Steckline #1-34 Test No. 2 Date 16 Apr 15
 Company Downing Nelson Oil Company Inc Elevation 2383 KB 2375 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 34 Twp 13S Rge. 22W Co. Trego State KS

Interval Tested 4159-4214 Zone Tested Cherokee Sand
 Anchor Length 55 Drill Pipe Run 4122 Mud Wt. 9.1
 Top Packer Depth 4154 Drill Collars Run 30 Vis 48
 Bottom Packer Depth 4159 Wt. Pipe Run - WL 7.2
 Total Depth 4214 Chlorides 2000 ppm System LCM 2#

Blow Description I.F. Blow built to BOB in 12 minutes
I.S.I Light surface blow back for 20 minutes
FF Blow built to 10 inches
F.S.I Light surface blow back for 10 minutes

Rec	Feet of	%gas	%oil	%water	%mud
<u>248</u>	<u>Muddy Oil</u>	<u>60</u>	<u>oil</u>	<u>40</u>	<u>mud</u>
<u>169</u>	<u>Clean Oil</u>	<u>100</u>	<u>oil</u>	<u>0</u>	<u>mud</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 417 BHT 119 Gravity 36 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2032 Test 1150 T-On Location 3:30 pm
 (B) First Initial Flow 19 Jars _____ T-Started 6:50 pm
 (C) First Final Flow 103 Safety Joint _____ T-Open 8:36 pm
 (D) Initial Shut-In 723 Circ Sub _____ T-Pulled 11:06 pm
 (E) Second Initial Flow 112 Hourly Standby _____ T-Out 1:15 pm
 (F) Second Final Flow 169 Mileage 136 68 Comments _____
 (G) Final Shut-In 711 Sampler _____ loaded tools 4/17 17:15
 (H) Final Hydrostatic 1998 Straddle _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 45 Extra Recorder _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1286
 Sub Total 1286 MP/DST Disc't _____

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.