



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

### **Steckline #2-34**

#### **34-13S-22W Trego,KS**

Start Date: 2019.03.11 @ 19:40:30

End Date: 2019.03.12 @ 03:27:06

Job Ticket #: 65525                      DST #: 1

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

Printed: 2019.03.14 @ 11:07:46



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65525

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2019.03.11 @ 19:40:30

## GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:12:36

Time Test Ended: 03:27:06

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

**Interval: 3809.00 ft (KB) To 3833.00 ft (KB) (TVD)**

Reference Elevations: 2358.00 ft (KB)

Total Depth: 3833.00 ft (KB) (TVD)

2350.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8700 Outside**

Press@RunDepth: 148.43 psig @ 3810.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.03.11

End Date:

2019.03.12

Last Calib.:

2019.03.12

Start Time: 19:40:31

End Time:

03:27:06

Time On Btm:

2019.03.11 @ 23:12:21

Time Off Btm:

2019.03.12 @ 01:45:06

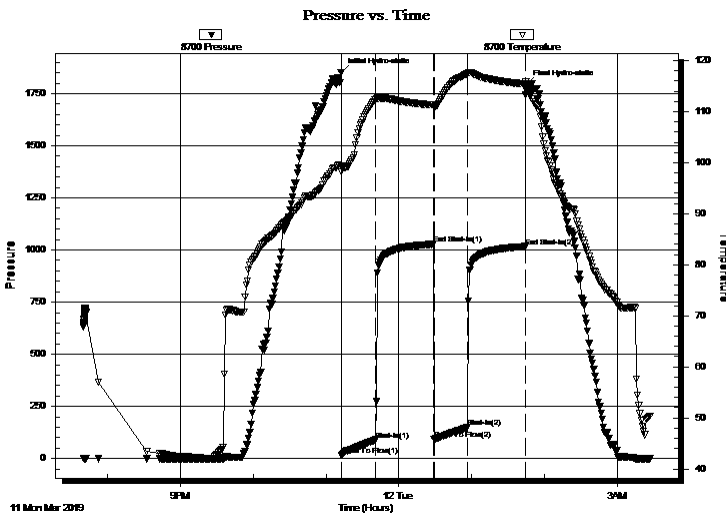
TEST COMMENT: 30- IF- BOB 16 mins. Built to 16.32"

45- IS- No blow

30- FF- BOB 22 mins. Built to 12.84"

45- FS- No blow

## PRESSURE SUMMARY



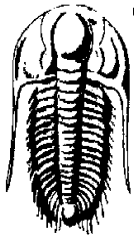
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1851.74	99.37	Initial Hydro-static
1	14.21	98.28	Open To Flow (1)
29	89.14	112.39	Shut-In(1)
76	1027.93	111.33	End Shut-In(1)
77	92.05	110.99	Open To Flow (2)
104	148.43	117.49	Shut-In(2)
152	1016.93	115.40	End Shut-In(2)
153	1790.98	114.12	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
285.00	MW, 30%M 70%W	3.74

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego, KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

ATTN: Marc Dow ning

Job Ticket: 65525

**DST#: 1**

Test Start: 2019.03.11 @ 19:40:30

### GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:12:36

Time Test Ended: 03:27:06

**Interval: 3809.00 ft (KB) To 3833.00 ft (KB) (TVD)**

Total Depth: 3833.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Reference Elevations: 2358.00 ft (KB)

2350.00 ft (CF)

KB to GR/CF: 8.00 ft

**Serial #: 6771** Inside

Press@RunDepth: psig @ 3810.00 ft (KB)

Start Date: 2019.03.11

End Date:

2019.03.12

Start Time: 19:40:41

End Time:

03:27:01

Capacity: 8000.00 psig

Last Calib.:

2019.03.12

Time On Btm:

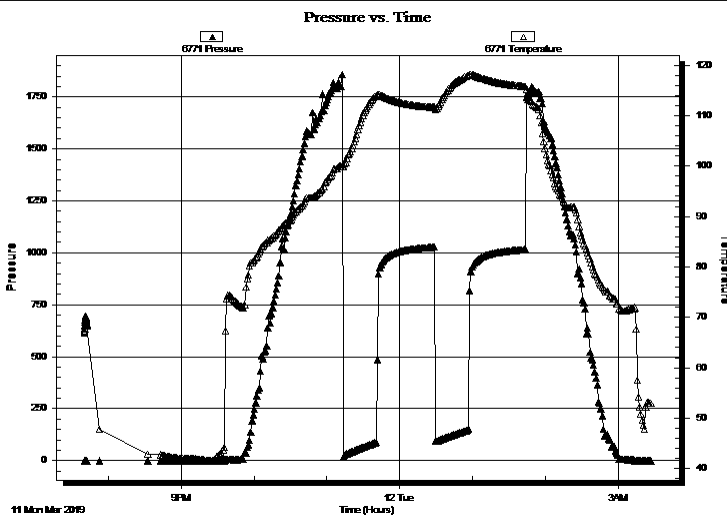
Time Off Btm:

**TEST COMMENT:** 30- IF- BOB 16 mins. Built to 16.32"

45- IS- No blow

30- FF- BOB 22 mins. Built to 12.84"

45- FS- No blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
285.00	MW, 30%M 70%W	3.74

### 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.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65525

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2019.03.11 @ 19:40:30

## Tool Information

Drill Pipe:	Length: 3772.00 ft	Diameter: 3.82 inches	Volume: 53.47 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3809.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een 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			3790.00	
Shut In Tool	5.00			3795.00	
Hydraulic tool	5.00			3800.00	
Packer	5.00			3805.00	20.00 Bottom Of Top Packer
Packer	4.00			3809.00	
Stubb	1.00			3810.00	
Recorder	0.00	6771	Inside	3810.00	
Recorder	0.00	8700	Outside	3810.00	
Perforations	20.00			3830.00	
Bullnose	3.00			3833.00	24.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>44.00</b>				



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65525

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2019.03.11 @ 19:40:30

**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:

83000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbf
285.00	MW, 30%M 70%W	3.744

Total Length: 285.00 ft Total Volume: 3.744 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

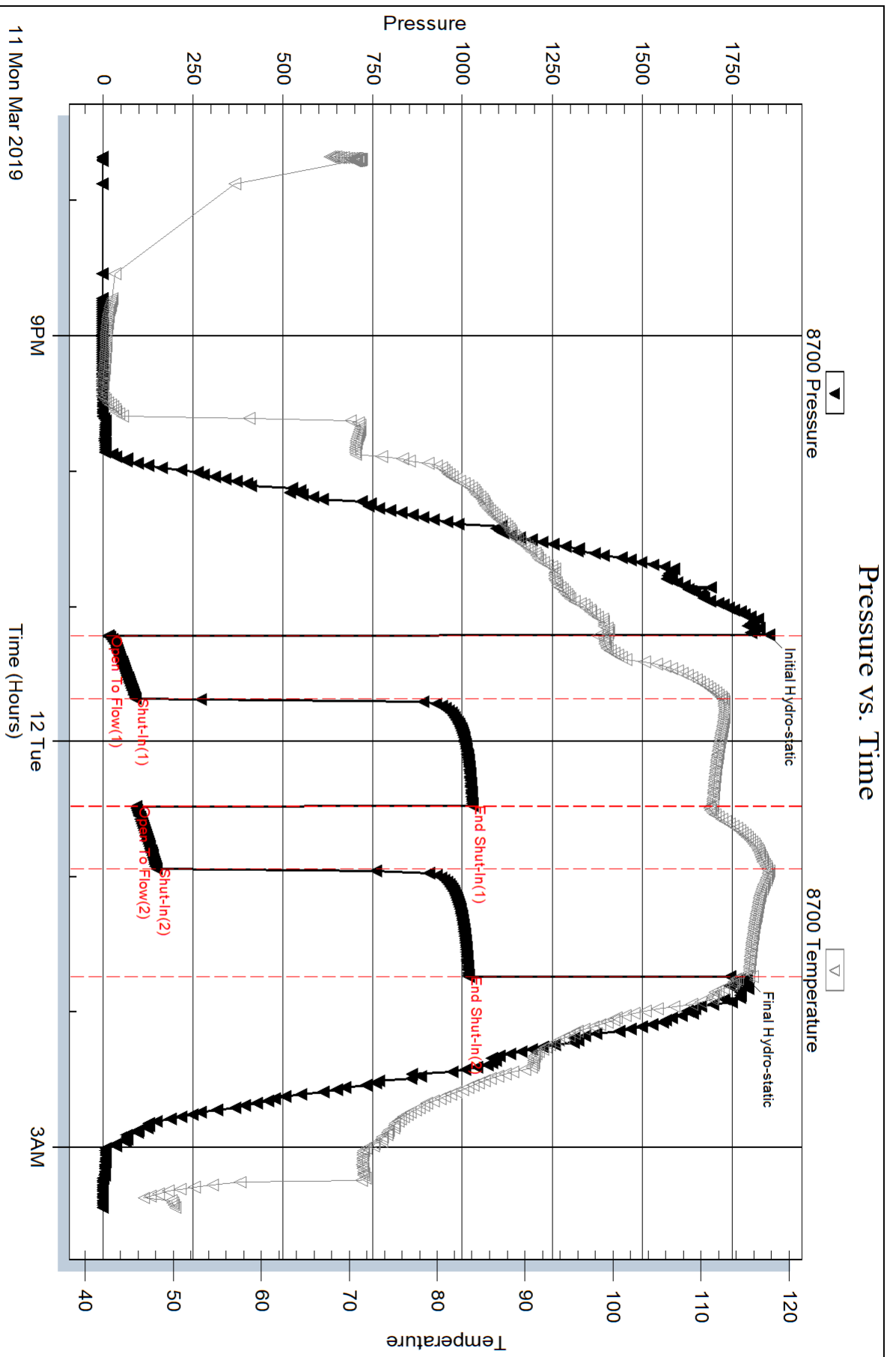
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .10@56deg

### Pressure vs. Time



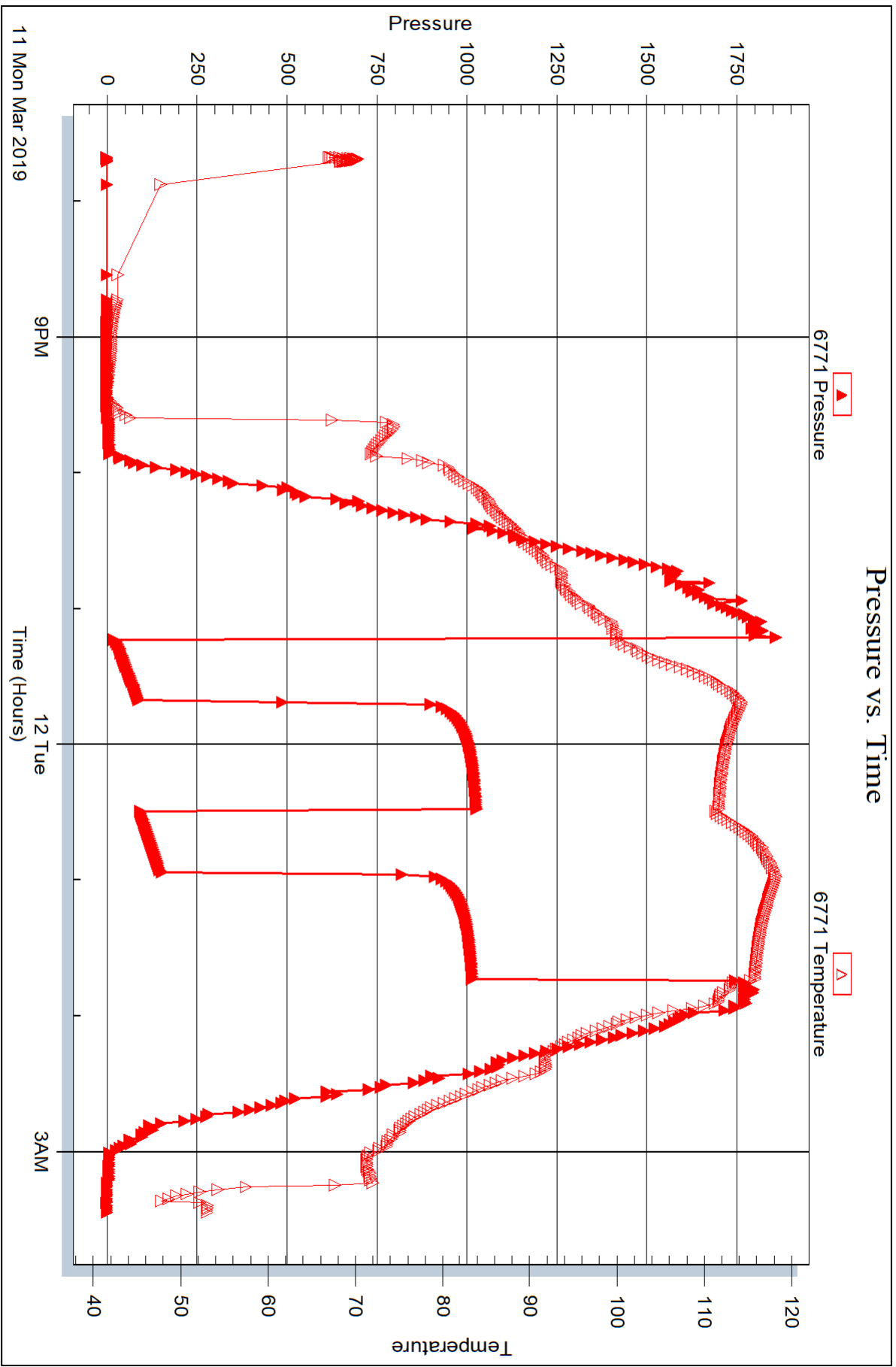
Serial #: 6771

Inside

Dow nting-Nelson Oil Co., Inc.

Seckline #2-34

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65525

Printed: 2019.03.14 @ 11:07:47



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

### **Steckline #2-34**

### **34-13S-22W Trego,KS**

Start Date: 2019.03.13 @ 05:09:48

End Date: 2019.03.13 @ 12:21:24

Job Ticket #: 65676                      DST #: 2

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

Printed: 2019.03.14 @ 11:05:01





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65676

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2019.03.13 @ 05:09:48

## GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:41:39

Time Test Ended: 12:21:24

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

**Interval: 4132.00 ft (KB) To 4190.00 ft (KB) (TVD)**

Reference Elevations: 2358.00 ft (KB)

Total Depth: 4190.00 ft (KB) (TVD)

2350.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8700 Outside**

Press@RunDepth: 154.02 psig @ 4133.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.03.13

End Date:

2019.03.13

Last Calib.:

2019.03.13

Start Time: 05:09:49

End Time:

12:21:24

Time On Btm:

2019.03.13 @ 07:41:24

Time Off Btm:

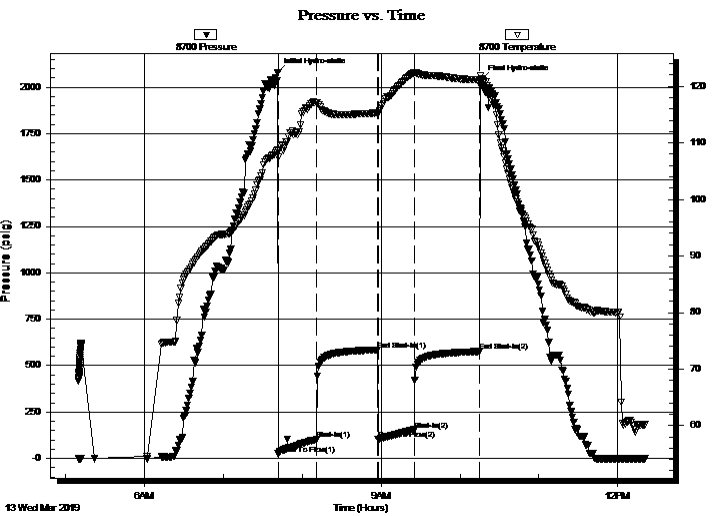
2019.03.13 @ 10:16:24

TEST COMMENT: 30- IF- BOB 15 mins. Built to 16.46"

45- IS- No blow

30- FF- BOB 22 mins. Built to 12.60"

45- FS- No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2079.70	108.70	Initial Hydro-static
1	24.48	107.43	Open To Flow (1)
30	100.98	117.07	Shut-In(1)
76	584.90	115.33	End Shut-In(1)
77	102.83	115.36	Open To Flow (2)
104	154.02	122.39	Shut-In(2)
154	576.00	121.14	End Shut-In(2)
155	2042.29	121.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
125.00	OCMW, 10%O 25%M 65%W	1.48
160.00	OCM, 10%O 90%M	2.27
15.00	CO	0.21

\* Recovery from multiple tests

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

ATTN: Marc Dow ning

Job Ticket: 65676

**DST#: 2**

Test Start: 2019.03.13 @ 05:09:48

### GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:41:39

Time Test Ended: 12:21:24

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

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Reference Elevations: 2358.00 ft (KB)

Total Depth: 4190.00 ft (KB) (TVD)

2350.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6771 Inside**

Press@RunDepth: psig @ 4133.00 ft (KB)

Start Date: 2019.03.13

End Date: 2019.03.13

Capacity: 8000.00 psig

Last Calib.: 2019.03.13

Start Time: 05:09:26

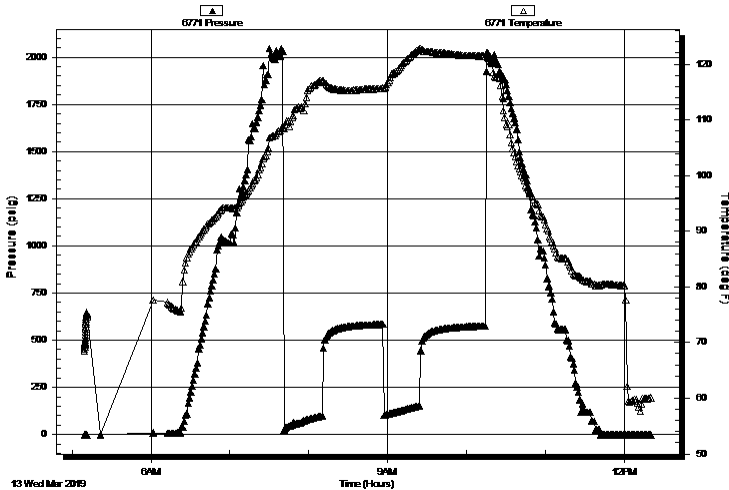
End Time: 12:21:01

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30- IF- BOB 15 mins. Built to 16.46"  
45- IS- No blow  
30- FF- BOB 22 mins. Built to 12.60"  
45- FS- No blow

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
125.00	OCMW, 10%O 25%M 65%W	1.48
160.00	OCM, 10%O 90%M	2.27
15.00	CO	0.21

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65676

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2019.03.13 @ 05:09:48

### Tool Information

Drill Pipe:	Length: 4090.00 ft	Diameter: 3.82 inches	Volume: 57.98 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 63000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	4132.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	58.00 ft			
Tool Length:	86.00 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			4105.00	
Shut In Tool	5.00			4110.00	
Hydraulic tool	5.00			4115.00	
Jars	5.00			4120.00	
Safety Joint	3.00			4123.00	
Packer	5.00			4128.00	28.00 Bottom Of Top Packer
Packer	4.00			4132.00	
Stubb	1.00			4133.00	
Recorder	0.00	6771	Inside	4133.00	
Recorder	0.00	8700	Outside	4133.00	
Perforations	20.00			4153.00	
Change Over Sub	1.00			4154.00	
Drill Pipe	32.00			4186.00	
Change Over Sub	1.00			4187.00	
Bullnose	3.00			4190.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 86.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing-Nelson Oil Co., Inc.

**34-13S-22W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Steckline #2-34**

Job Ticket: 65676

**DST#: 2**

ATTN: Marc Downing

Test Start: 2019.03.13 @ 05:09:48

**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:

29000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbbl
125.00	OCMW, 10%O 25%M 65%W	1.476
160.00	OCM, 10%O 90%M	2.268
15.00	CO	0.213

Total Length: 300.00 ft      Total Volume: 3.957 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

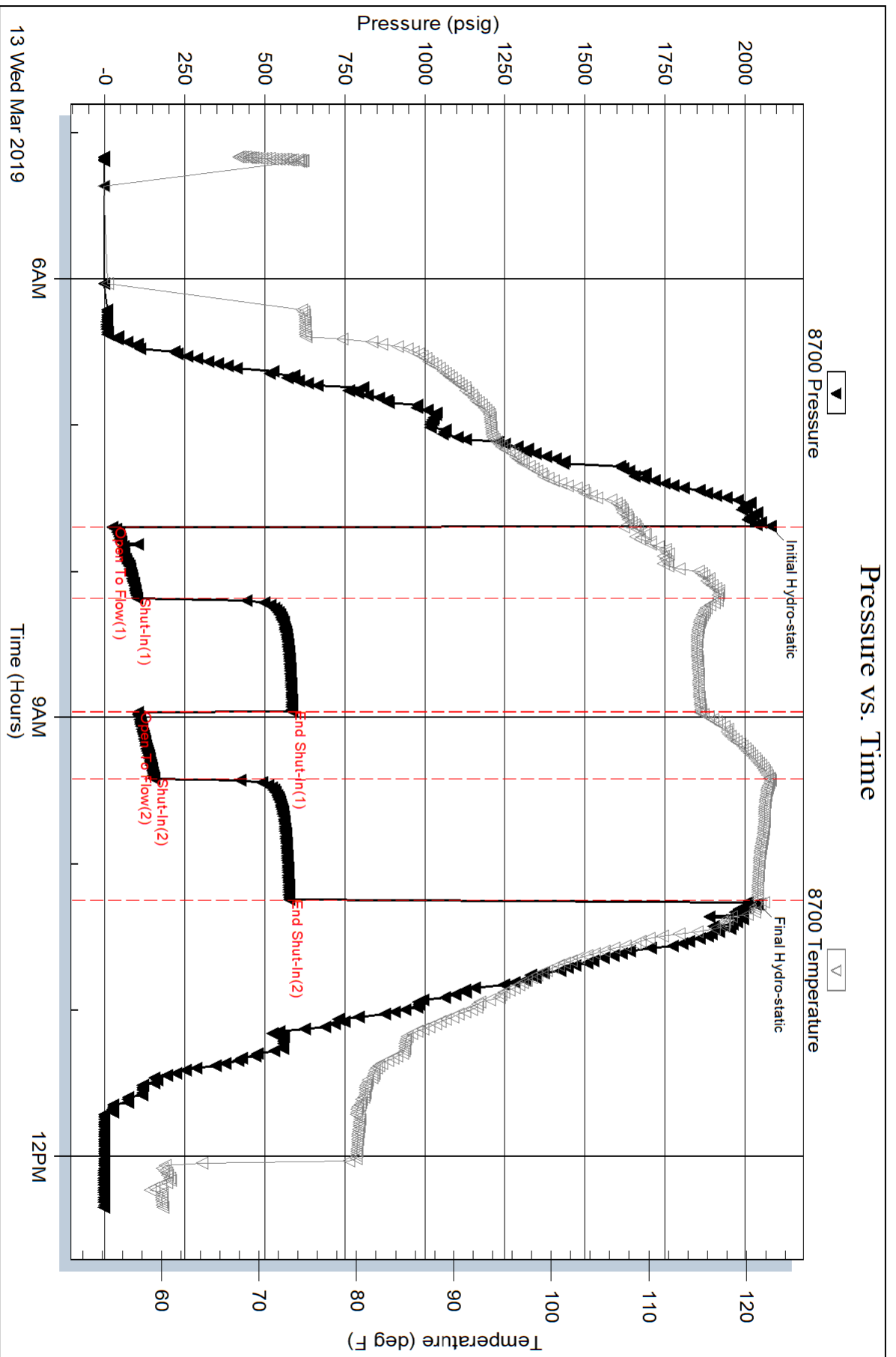
Recovery Comments: RW: .28@55deg

Serial #: 8700

Outside Dow nting-Nelson Oil Co., Inc.

Seckline #2-34

DST Test Number: 2



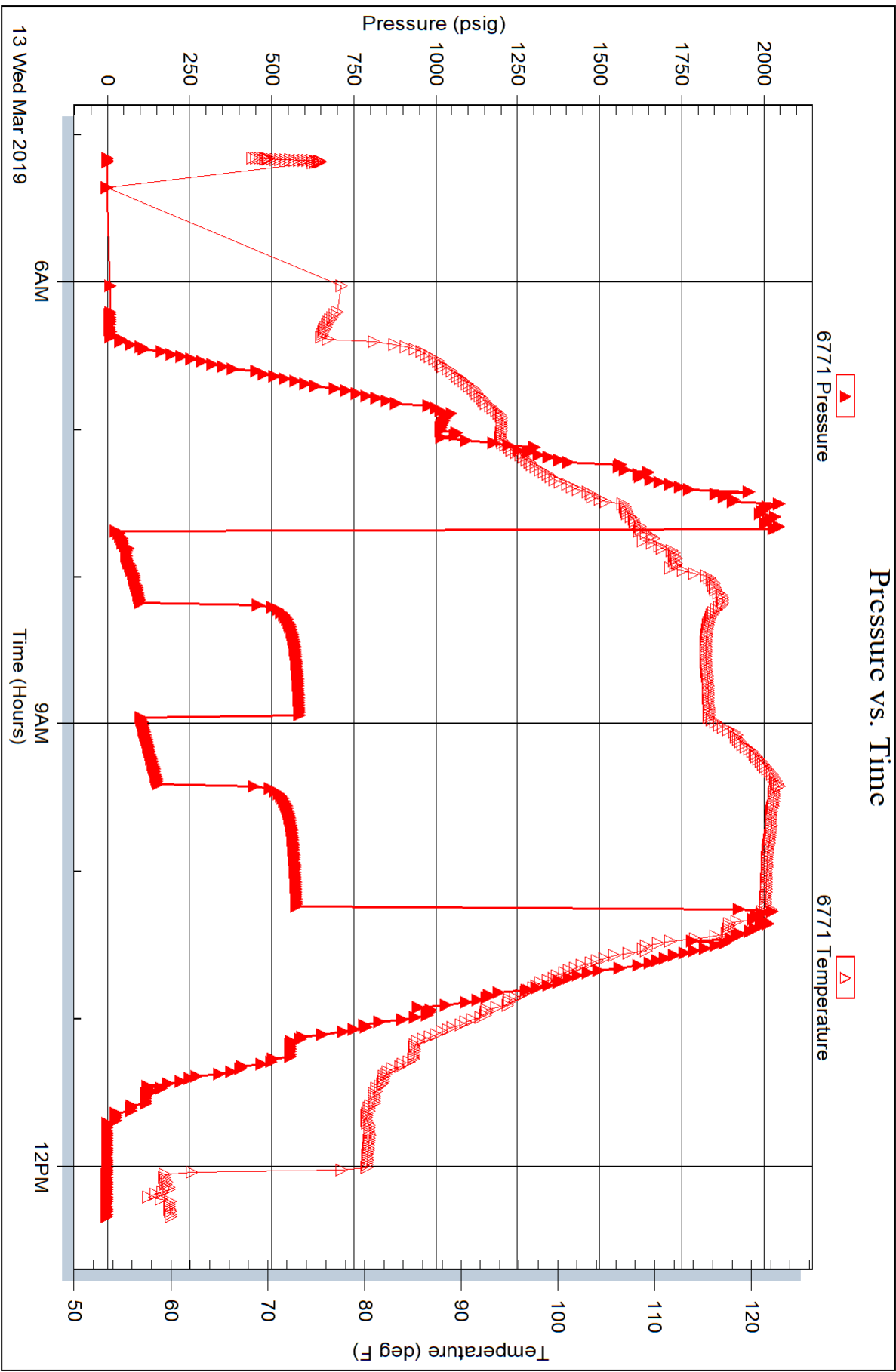
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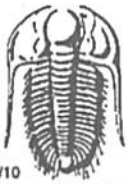
Inside

Dow nng-Nelson Oil Co., Inc.

Seckline #2-34

DST Test Number: 2





# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65525

Well Name & No. Stockline #2-34 Test No. 1 Date 3/11/19  
 Company Downing-Nelson Oil Co., Inc. Elevation 2358 KB 2350 GL  
 Address PO Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery 4  
 Location: Sec. 34 Twp 13 S Rge. 22 W Co. Troy State KS

Interval Tested 3809-3833 Zone Tested LKC "E+F"  
 Anchor Length 24' Drill Pipe Run 3772 Mud Wt. 8.9  
 Top Packer Depth 3804 Drill Collars Run 32 Vis 48  
 Bottom Packer Depth 3809 Wt. Pipe Run --- WL 7.6  
 Total Depth 3833 Chlorides 5,000 ppm System LCM 2#

Blow Description IF-BOB 16mins Built to 16.32"  
FSI- No blow  
FF-BOB 22 mins Built to 12.84"  
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>285'</u>	<u>MW</u>			<u>20</u>	<u>30</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

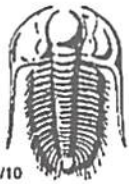
Rec Total 285' BHT 115° Gravity \_\_\_\_\_ API RW .10 @ 56° F Chlorides 83,000 ppm

(A) Initial Hydrostatic <u>1852</u>	<input checked="" type="checkbox"/> Test 1200	T-On Location <u>1911</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars	T-Started <u>1940</u>
(C) First Final Flow <u>89</u>	<input type="checkbox"/> Safety Joint	T-Open <u>2312</u>
(D) Initial Shut-In <u>1028</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>3/12</u> <u>0142</u>
(E) Second Initial Flow <u>92</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0327</u>
(F) Second Final Flow <u>148</u>	<input checked="" type="checkbox"/> Mileage <u>72 RT</u> 72	Comments _____
(G) Final Shut-In <u>1017</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>1791</u>	<input type="checkbox"/> Straddle	_____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
Sub Total <u>1272</u>	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
		Total <u>1272</u>

Approved By \_\_\_\_\_ Our Representative Brennan Lousdale

Tribolite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **65676**

Well Name & No. Stockline #2-34 Test No. 2 Date 3/13/19  
 Company Downing-Nelson Oil Co, Inc. Elevation 2358 KB 2350 GL  
 Address PO Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery 4  
 Location: Sec. 34 Twp 13 S Rge. 22 W Co. Trego State KS

Interval Tested 4132-4190 Zone Tested Cherokee Sand  
 Anchor Length 58' Drill Pipe Run 4090 Mud Wt. 8.9  
 Top Packer Depth 4127 Drill Collars Run 32 Vis 52  
 Bottom Packer Depth 4132 Wt. Pipe Run --- WL 7.6  
 Total Depth 4190 Chlorides 5,000 ppm System LCM 2<sup>nd</sup>

Blow Description IF-BOB 15 mins. Built to 16.46"  
ISI- No blow  
FF-BOB 22 mins. Built to 12.60"  
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>129</u>	<u>OCMW</u>		<u>10%</u>	<u>65%</u>	<u>25%</u>
<u>160</u>	<u>OCM</u>		<u>10%</u>		<u>90%</u>
<u>15</u>	<u>CO</u>				

Rec Total 300' BHT 121° Gravity 36 API RW 28 @ 55° F Chlorides 29,000 ppm

(A) Initial Hydrostatic <u>2080</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>0329</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0510</u>
(C) First Final Flow <u>101</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0741</u>
(D) Initial Shut-In <u>585</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1011</u>
(E) Second Initial Flow <u>103</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1221</u>
(F) Second Final Flow <u>154</u>	<input checked="" type="checkbox"/> Mileage <u>22 RT 72</u>	Comments
(G) Final Shut-In <u>576</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2042</u>	<input type="checkbox"/> Straddle	
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1697</u>	Total <u>1697</u>

Approved By \_\_\_\_\_ Our Representative Brunner Lansdale

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.