



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Younger #1-2

2-14s-22w Trego,KS

Start Date: 2016.11.09 @ 00:35:49

End Date: 2016.11.09 @ 06:44:02

Job Ticket #: 63537 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.11.14 @ 09:25:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63537

DST#: 1

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 00:35:49

GENERAL INFORMATION:

Formation: **LKC " E"**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 02:50:00 Tester: Ray Schw ager
Time Test Ended: 06:44:02 Unit No: 77
Interval: 3765.00 ft (KB) To 3783.00 ft (KB) (TVD) Reference Elevations: 2325.00 ft (KB)
Total Depth: 3783.00 ft (KB) (TVD) 2317.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: KB to GR/CF: 8.00 ft

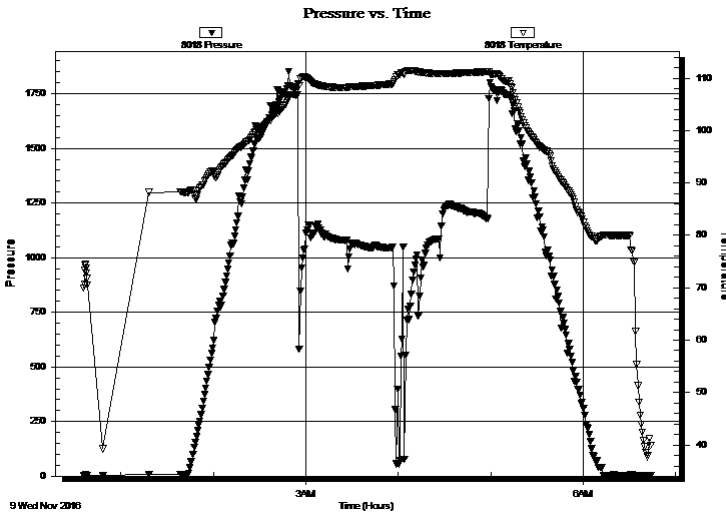
Serial #: 8018

Inside

Press@RunDepth: psig @ 3766.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2016.11.09 End Date: 2016.11.09 Last Calib.: 2016.11.09
Start Time: 00:35:49 End Time: 06:44:02 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP-w k bl , died in 15 min , slid tool 10' to bottom
30-ISIP-no bl
30-FFP-no bl , flushed tool
30-FSIP-no bl

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
65.00	Mud	0.64

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63537

DST#: 1

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 00:35:49

GENERAL INFORMATION:

Formation: **LKC " E"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:50:00

Time Test Ended: 06:44:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 77

Interval: **3765.00 ft (KB) To 3783.00 ft (KB) (TVD)**

Reference Elevations: 2325.00 ft (KB)

Total Depth: 3783.00 ft (KB) (TVD)

2317.00 ft (CF)

Hole Diameter: 7.88 inchesHole Condition:

KB to GR/CF: 8.00 ft

Serial #: 8374 Outside

Press@RunDepth: psig @ 3766.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.09 End Date: 2016.11.09

Last Calib.: 2016.11.09

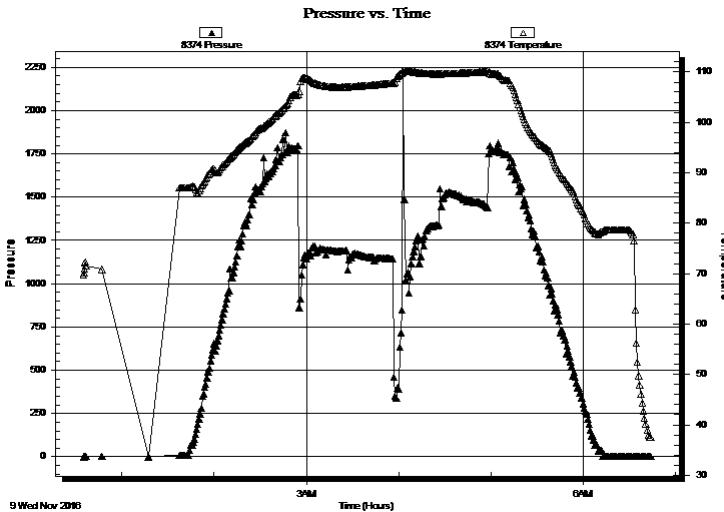
Start Time: 00:35:12 End Time: 06:44:06

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IFP-w k bl , died in 15 min , slid tool 10' to bottom
30-ISIP-no bl
30-FFP-no bl , flushed tool
30-FSIP-no bl

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
65.00	Mud	0.64

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

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63537

DST#: 1

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 00:35:49

Tool Information

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 52.60 bbl</u>	Tool Chased	10.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	3765.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	39.00 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			3745.00	
Shut In Tool	5.00			3750.00	
Hydraulic tool	5.00			3755.00	
Packer	5.00			3760.00	21.00 Bottom Of Top Packer
Packer	5.00			3765.00	
Stubb	1.00			3766.00	
Recorder	0.00	8018	Inside	3766.00	
Recorder	0.00	8374	Outside	3766.00	
Perforations	14.00			3780.00	
Bullnose	3.00			3783.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63537

DST#: 1

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 00:35:49

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: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.54 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
65.00	Mud	0.638

Total Length: 65.00 ft Total Volume: 0.638 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

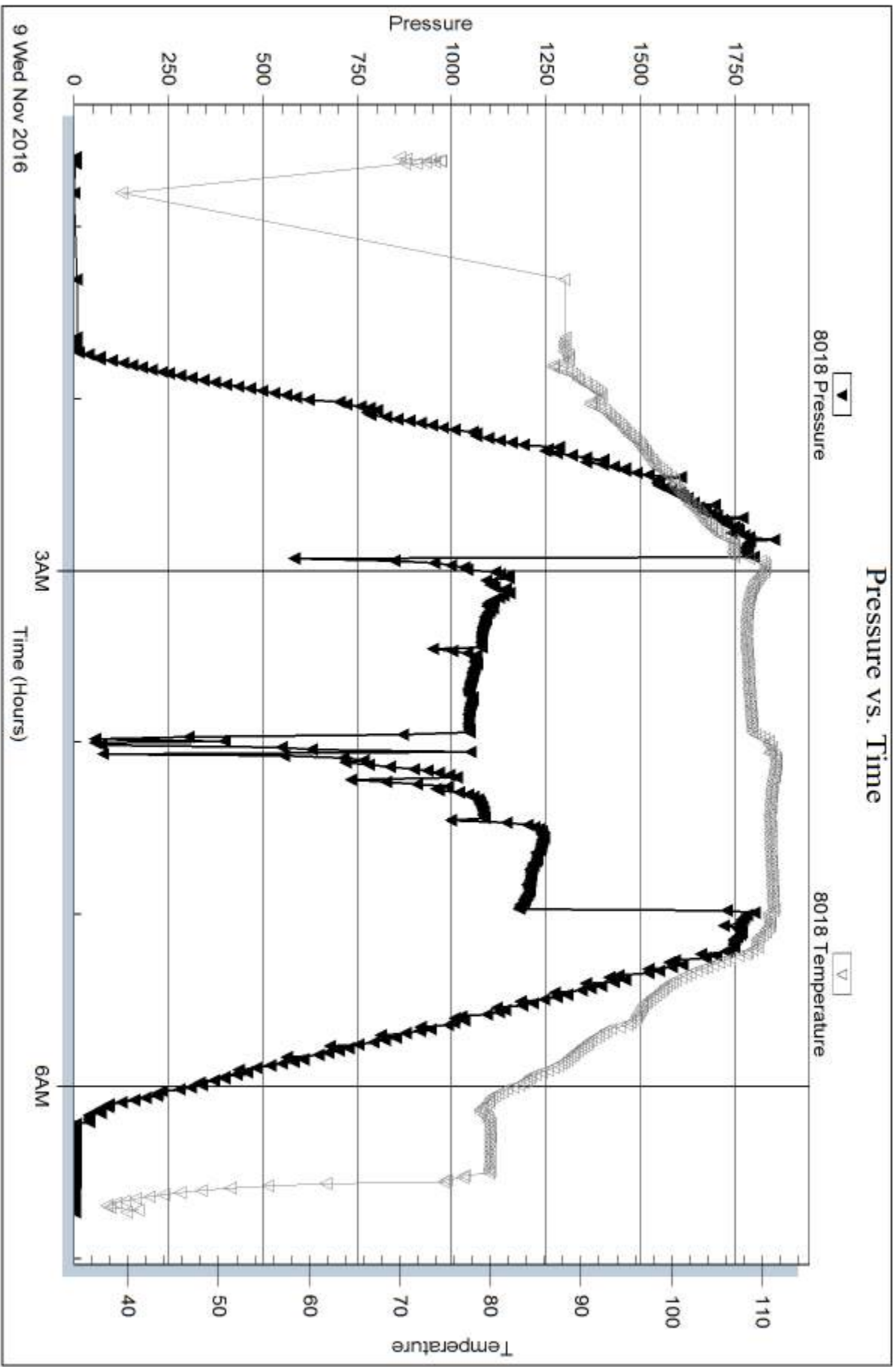
Serial #: 8018

Inside

Dow nrg-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63537

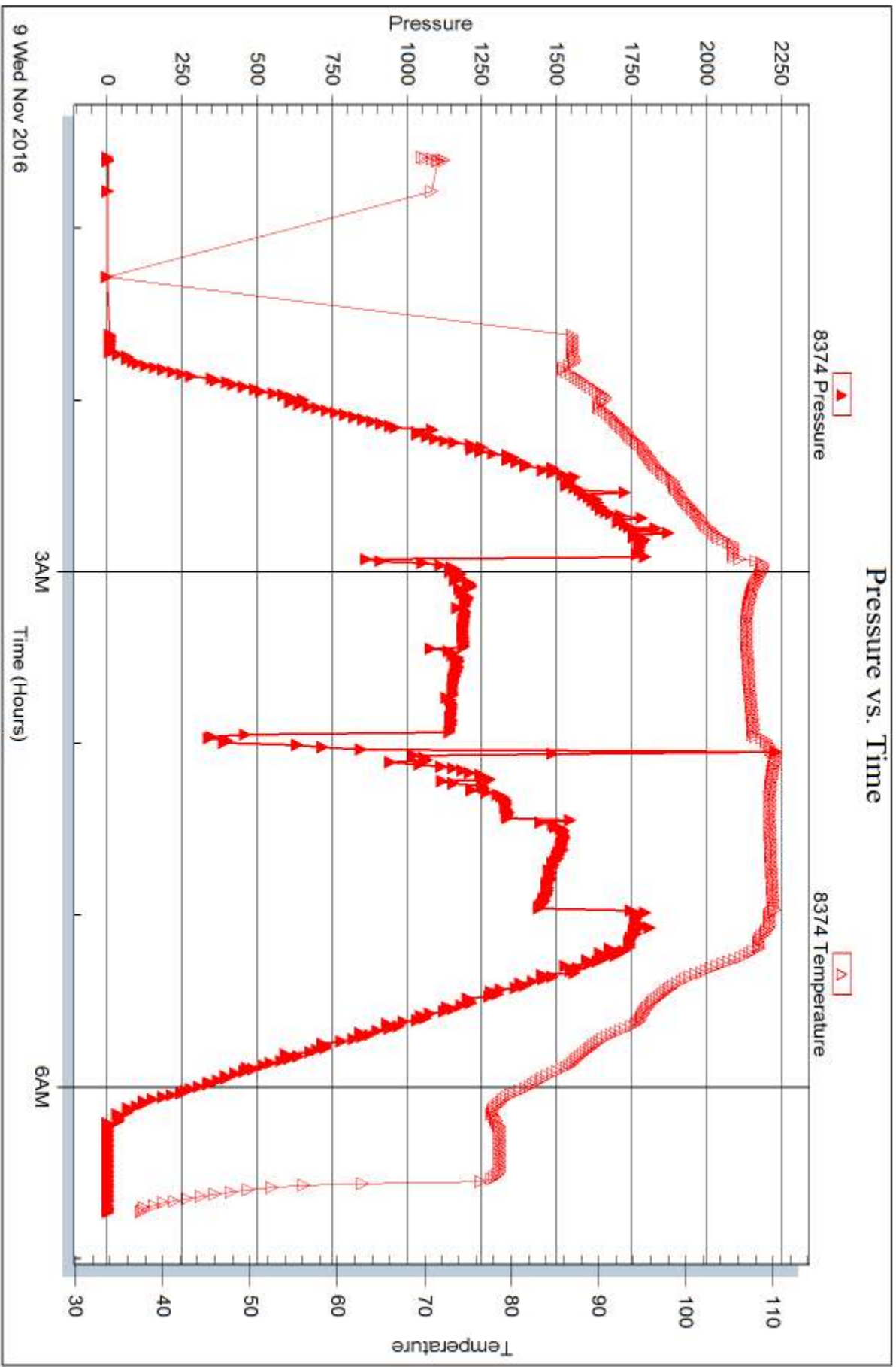
Printed: 2016.11.14 @ 09:25:46

Serial #: 8374

Outside Dow nmg-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63537

Printed: 2016.11.14 @ 09:25:46



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Younger #1-2

2-14s-22w Trego,KS

Start Date: 2016.11.09 @ 12:15:32

End Date: 2016.11.09 @ 17:53:56

Job Ticket #: 63538 DST #: 2

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

Printed: 2016.11.14 @ 09:25:24



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63538

DST#: 2

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 12:15:32

GENERAL INFORMATION:

Formation: **LKC "E"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:17:42

Time Test Ended: 17:53:56

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: 3765.00 ft (KB) To 3783.00 ft (KB) (TVD)

Reference Elevations: 2325.00 ft (KB)

Total Depth: 3783.00 ft (KB) (TVD)

2317.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 35.28 psig @ 3766.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.09

End Date:

2016.11.09

Last Calib.:

2016.11.09

Start Time:

12:15:32

End Time:

17:53:56

Time On Btm:

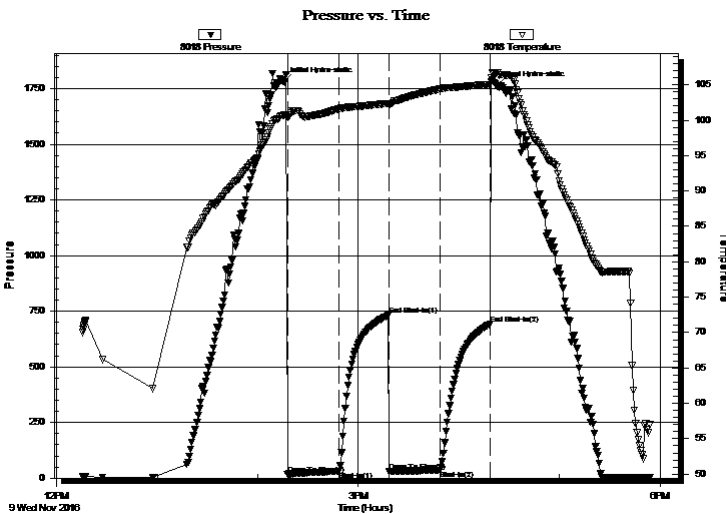
2016.11.09 @ 14:15:42

Time Off Btm:

2016.11.09 @ 16:22:27

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" to 1" bl
30-ISIP-no bl
30-FFP-w k surface bl thru-out
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.49	100.72	Initial Hydro-static
2	17.99	100.37	Open To Flow (1)
33	30.27	101.59	Shut-In(1)
63	731.41	102.39	End Shut-In(1)
63	30.80	102.10	Open To Flow (2)
93	35.28	104.39	Shut-In(2)
123	691.77	105.07	End Shut-In(2)
127	1762.48	106.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Mud w/show of oil	0.36

* Recovery from multiple tests

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

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63538

DST#: 2

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 12:15:32

Tool Information

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 52.60 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	3765.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	18.00 ft				
Tool Length:	39.00 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			3745.00	
Shut In Tool	5.00			3750.00	
Hydraulic tool	5.00			3755.00	
Packer	5.00			3760.00	21.00 Bottom Of Top Packer
Packer	5.00			3765.00	
Stubb	1.00			3766.00	
Recorder	0.00	8018	Inside	3766.00	
Recorder	0.00	8700	Outside	3766.00	
Perforations	14.00			3780.00	
Bullnose	3.00			3783.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63538

DST#: 2

ATTN: Ron Nelson

Test Start: 2016.11.09 @ 12:15:32

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: 52.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.53 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	Mud w/show of oil	0.358

Total Length: 45.00 ft Total Volume: 0.358 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

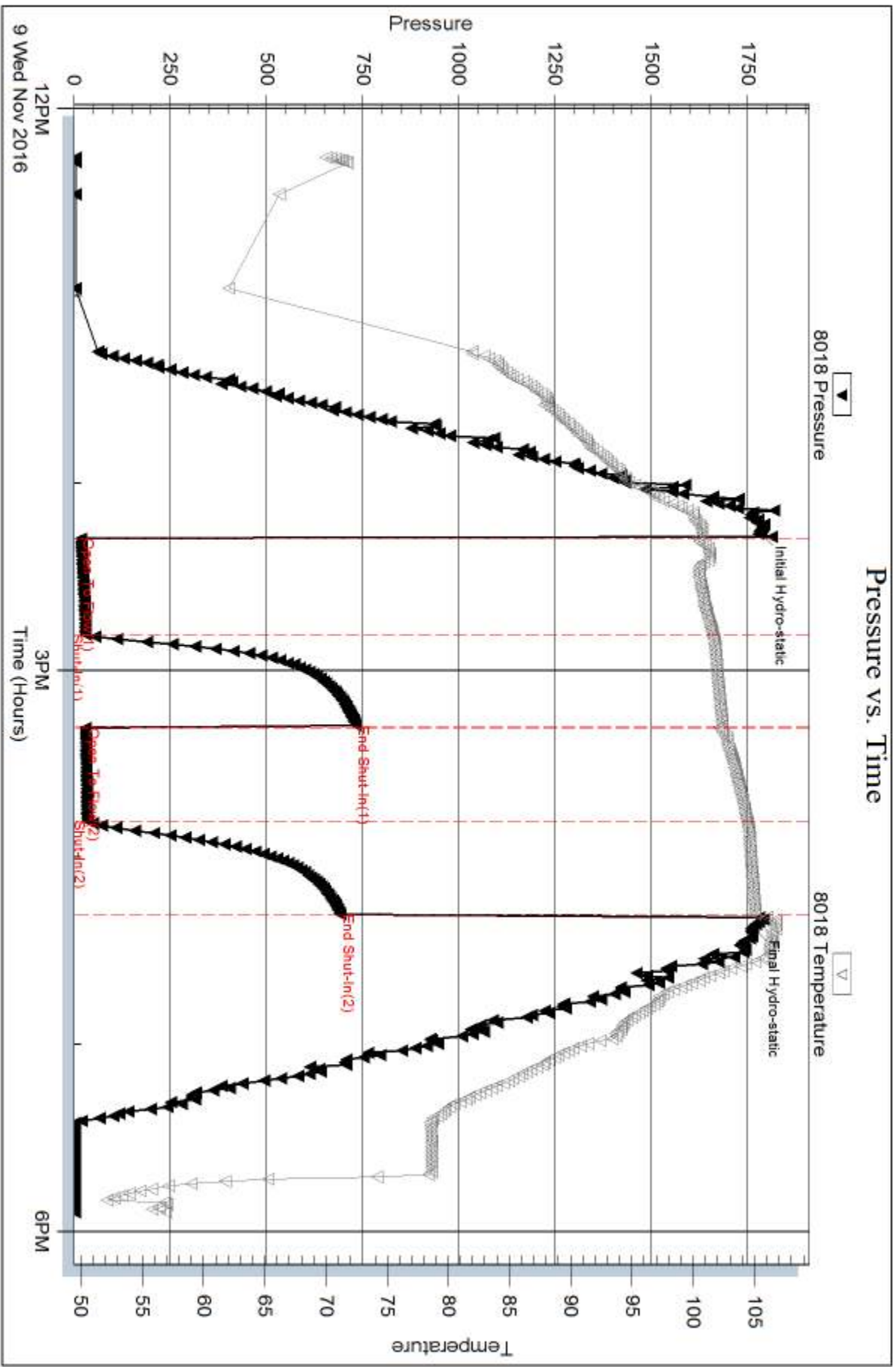
Serial #: 8018

Inside

Dow nging-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63538

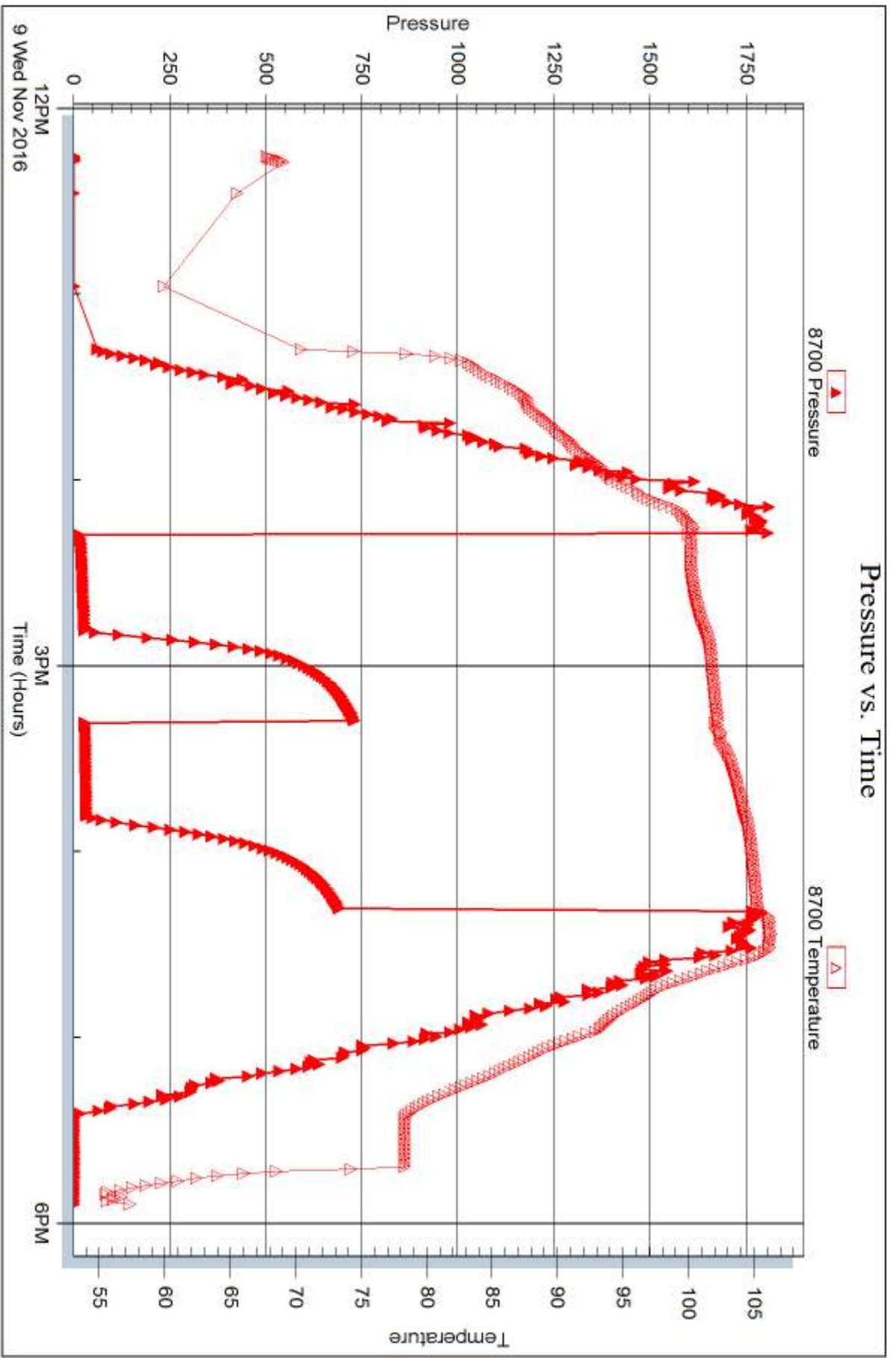
Printed: 2016.11.14 @ 09:25:25

Serial #: 8700

Outside Dow n/ing-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63538

Printed: 2016.11.14 @ 09:25:25



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Younger #1-2

2-14s-22w Trego,KS

Start Date: 2016.11.10 @ 23:45:19

End Date: 2016.11.11 @ 06:51:58

Job Ticket #: 63539 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.11.14 @ 09:25:03

Downing-Nelson Oil Co Inc

2-14s-22w Trego,KS

Younger #1-2

DST # 3

Conglomerate Sand

2016.11.10



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63539

DST#: 3

ATTN: Ron Nelson

Test Start: 2016.11.10 @ 23:45:19

GENERAL INFORMATION:

Formation: **Conglomerate Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:48:14

Time Test Ended: 06:51:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: 4092.00 ft (KB) To 4153.00 ft (KB) (TVD)

Reference Elevations: 2325.00 ft (KB)

Total Depth: 4153.00 ft (KB) (TVD)

2317.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018 Inside

Press@RunDepth: 275.34 psig @ 4098.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.10

End Date:

2016.11.11

Last Calib.: 2016.11.11

Start Time: 23:45:19

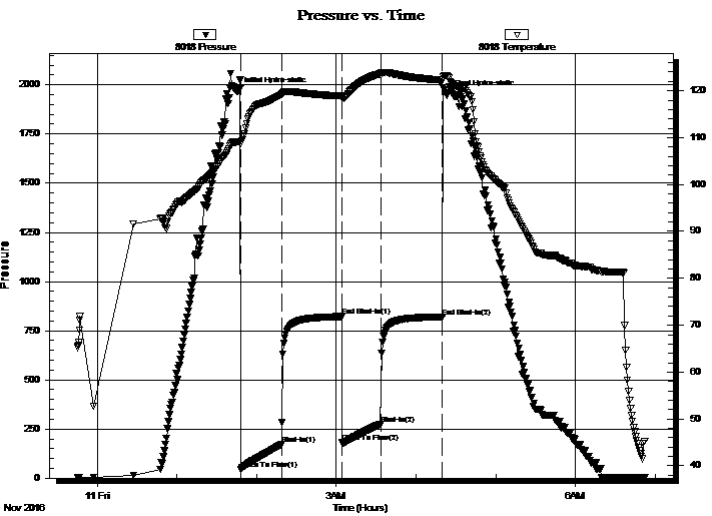
End Time:

06:51:58

Time On Btm: 2016.11.11 @ 01:45:29

Time Off Btm: 2016.11.11 @ 04:22:58

TEST COMMENT: 30-IFP-w k to strg in 10 min
45-ISIP-2" bl bk
30-FFP-w k to strg in 7 min
45-FSIP-1" bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.24	109.06	Initial Hydro-static
3	44.62	108.82	Open To Flow (1)
34	171.80	119.19	Shut-In(1)
79	822.37	118.87	End Shut-In(1)
79	183.76	118.45	Open To Flow (2)
108	275.34	123.60	Shut-In(2)
155	821.20	122.24	End Shut-In(2)
158	1950.33	123.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	MGO 25%G20%M55%O	2.34
496.00	CO	6.96
0.00	495' GIP	0.00

* Recovery from multiple tests

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

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63539

DST#: 3

ATTN: Ron Nelson

Test Start: 2016.11.10 @ 23:45:19

Tool Information

Drill Pipe:	Length: 4066.00 ft	Diameter: 3.80 inches	Volume: 57.04 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 57.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4092.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	61.00 ft			
Tool Length:	82.00 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			4072.00	
Shut In Tool	5.00			4077.00	
Hydraulic tool	5.00			4082.00	
Packer	5.00			4087.00	21.00 Bottom Of Top Packer
Packer	5.00			4092.00	
Stubb	1.00			4093.00	
Perforations	5.00			4098.00	
Recorder	0.00	8018	Inside	4098.00	
Recorder	0.00	8700	Outside	4098.00	
Blank Spacing	33.00			4131.00	
Perforations	19.00			4150.00	
Bullnose	3.00			4153.00	61.00 Bottom Packers & Anchor

Total Tool Length: 82.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63539

DST#: 3

ATTN: Ron Nelson

Test Start: 2016.11.10 @ 23:45:19

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.54 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	MGO 25%G20%M55%O	2.336
496.00	CO	6.958
0.00	495' GIP	0.000

Total Length: 682.00 ft Total Volume: 9.294 bbl

Num Fluid Samples: 0

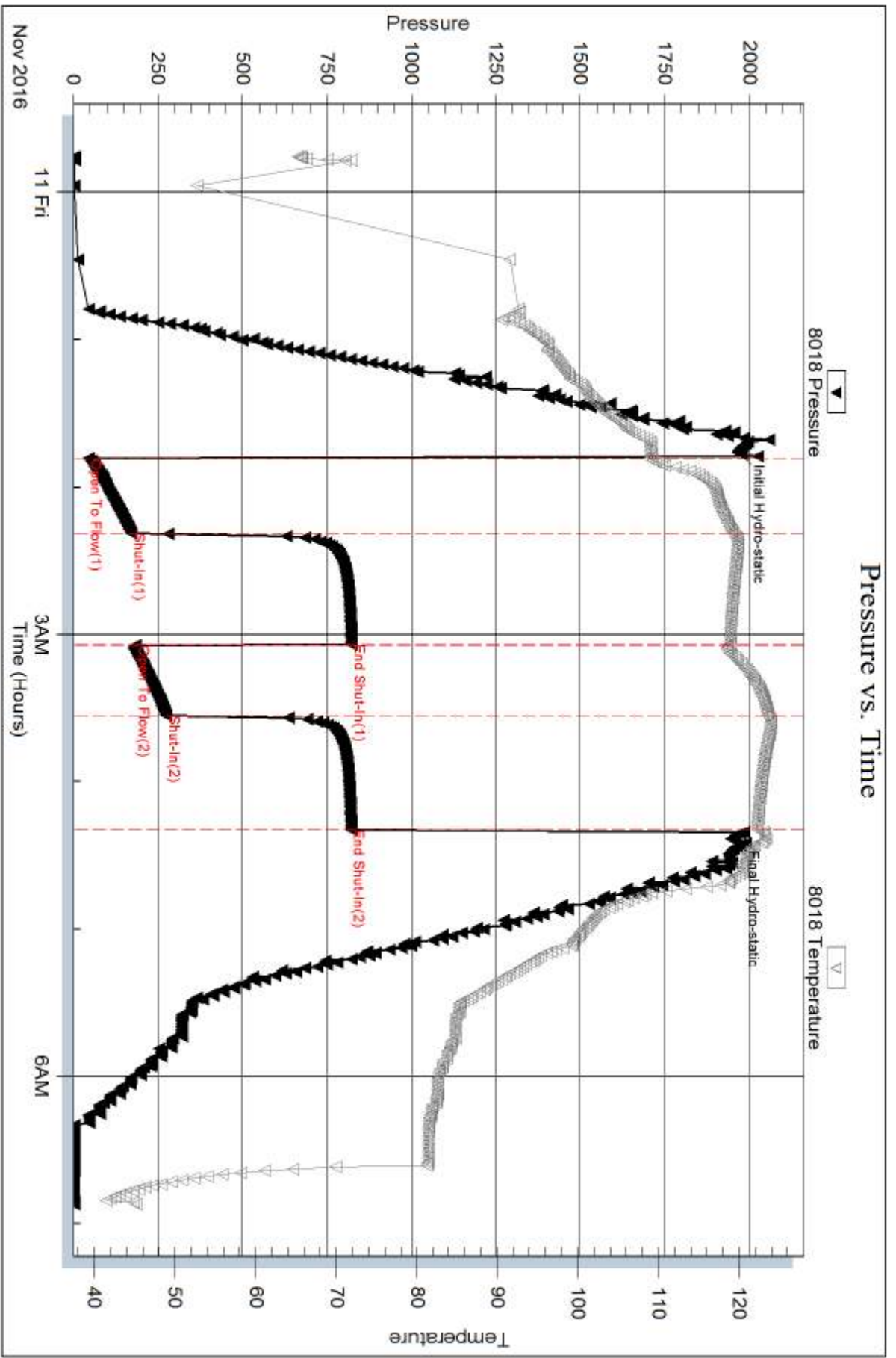
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

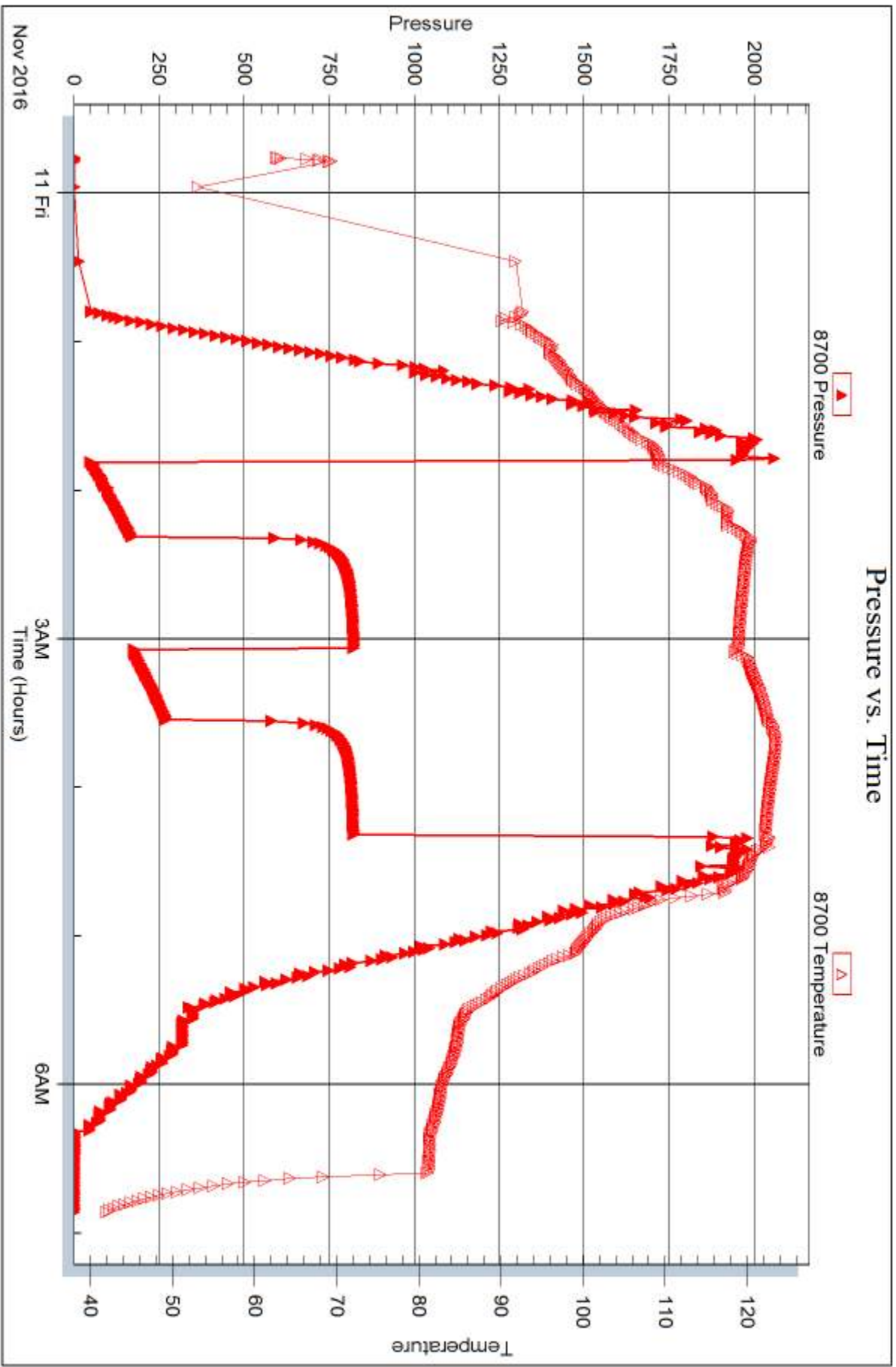


Serial #: 8700

Outside Dow nrg-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 63539

Printed: 2016.11.14 @ 09:25:05



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Younger #1-2

2-14s-22w Trego,KS

Start Date: 2016.11.11 @ 13:50:24

End Date: 2016.11.11 @ 21:04:48

Job Ticket #: 63540 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.11.14 @ 09:24:11

Downing-Nelson Oil Co Inc

2-14s-22w Trego,KS

Younger #1-2

DST # 4

Conglomerate Sand

2016.11.11



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63540

DST#: 4

ATTN: Ron Nelson

Test Start: 2016.11.11 @ 13:50:24

GENERAL INFORMATION:

Formation: **Conglomerate Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:08:49

Time Test Ended: 21:04:48

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: 4162.00 ft (KB) To 4170.00 ft (KB) (TVD)

Reference Elevations: 2325.00 ft (KB)

Total Depth: 4170.00 ft (KB) (TVD)

2317.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 451.02 psig @ 4163.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.11

End Date:

2016.11.11

Last Calib.:

2016.11.11

Start Time: 13:50:24

End Time:

21:04:48

Time On Btm:

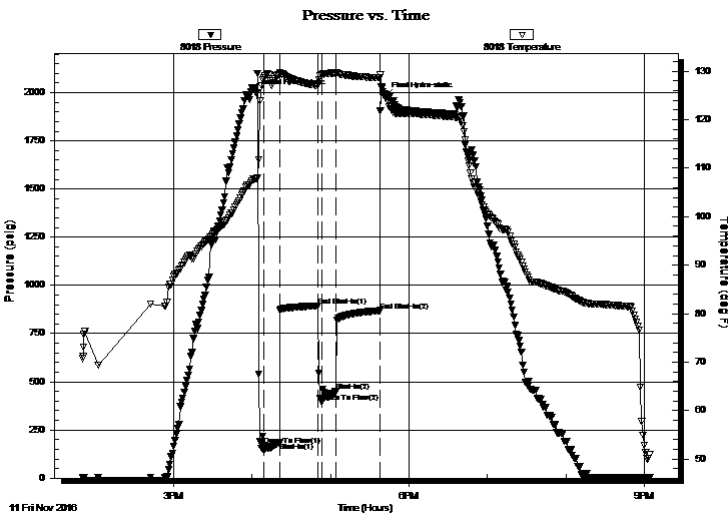
2016.11.11 @ 16:03:34

Time Off Btm:

2016.11.11 @ 17:41:49

TEST COMMENT: 15-IFP-strg bl in 45 sec
30-ISIP-no bl bk
15-FFP-strg bl in 2 min
30-FSIP-no bl 1st 15 min, then surface bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1995.46	107.76	Initial Hydro-static
6	168.52	128.69	Open To Flow (1)
18	183.87	129.28	Shut-In(1)
47	893.76	127.03	End Shut-In(1)
50	393.31	129.39	Open To Flow (2)
61	451.02	129.64	Shut-In(2)
95	869.11	128.66	End Shut-In(2)
99	1977.23	125.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
620.00	Water	8.42
124.00	O&GCMW 10%G20%O30%M40%W	1.74
124.00	MG&WCO 10%G5%M15%W70%O	1.74
165.00	CO	2.31

* Recovery from multiple tests

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

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63540

DST#: 4

ATTN: Ron Nelson

Test Start: 2016.11.11 @ 13:50:24

Tool Information

Drill Pipe:	Length: 4127.00 ft	Diameter: 3.80 inches	Volume: 57.89 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 58.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4162.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	29.00 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			4142.00	
Shut In Tool	5.00			4147.00	
Hydraulic tool	5.00			4152.00	
Packer	5.00			4157.00	21.00 Bottom Of Top Packer
Packer	5.00			4162.00	
Stubb	1.00			4163.00	
Recorder	0.00	8018	Inside	4163.00	
Recorder	0.00	8700	Outside	4163.00	
Perforations	4.00			4167.00	
Bullnose	3.00			4170.00	8.00 Bottom Packers & Anchor
Total Tool Length:	29.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

2-14s-22w Trego,KS

PO Box 1019
Hays KS 67601

Younger #1-2

Job Ticket: 63540

DST#: 4

ATTN: Ron Nelson

Test Start: 2016.11.11 @ 13:50:24

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

27000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
620.00	Water	8.424
124.00	O&GCMW 10%G20%O30%M40%W	1.739
124.00	MG&WCO 10%G5%M15%W70%O	1.739
165.00	CO	2.315

Total Length: 1033.00 ft Total Volume: 14.217 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

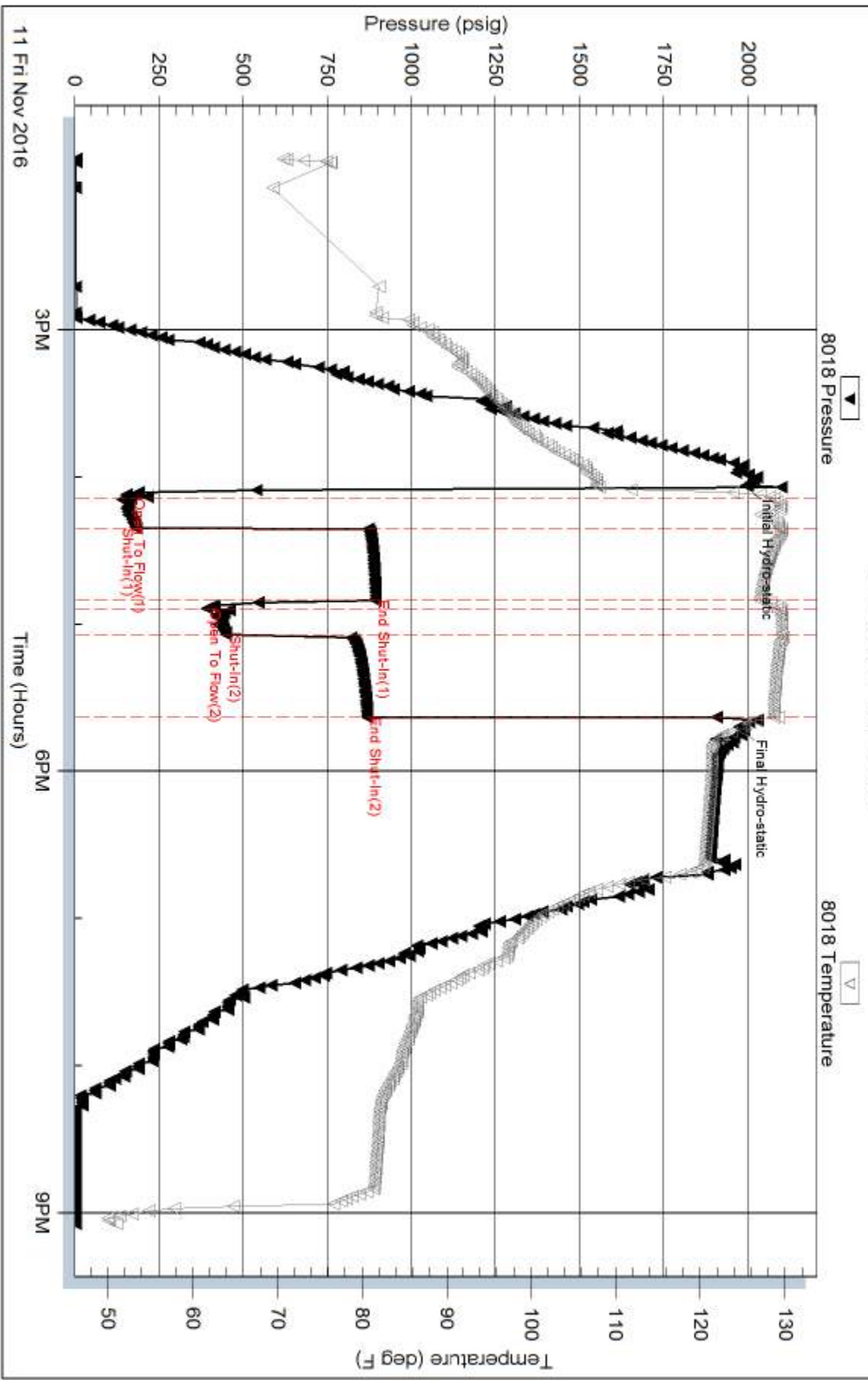
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .27@65F

Pressure vs. Time

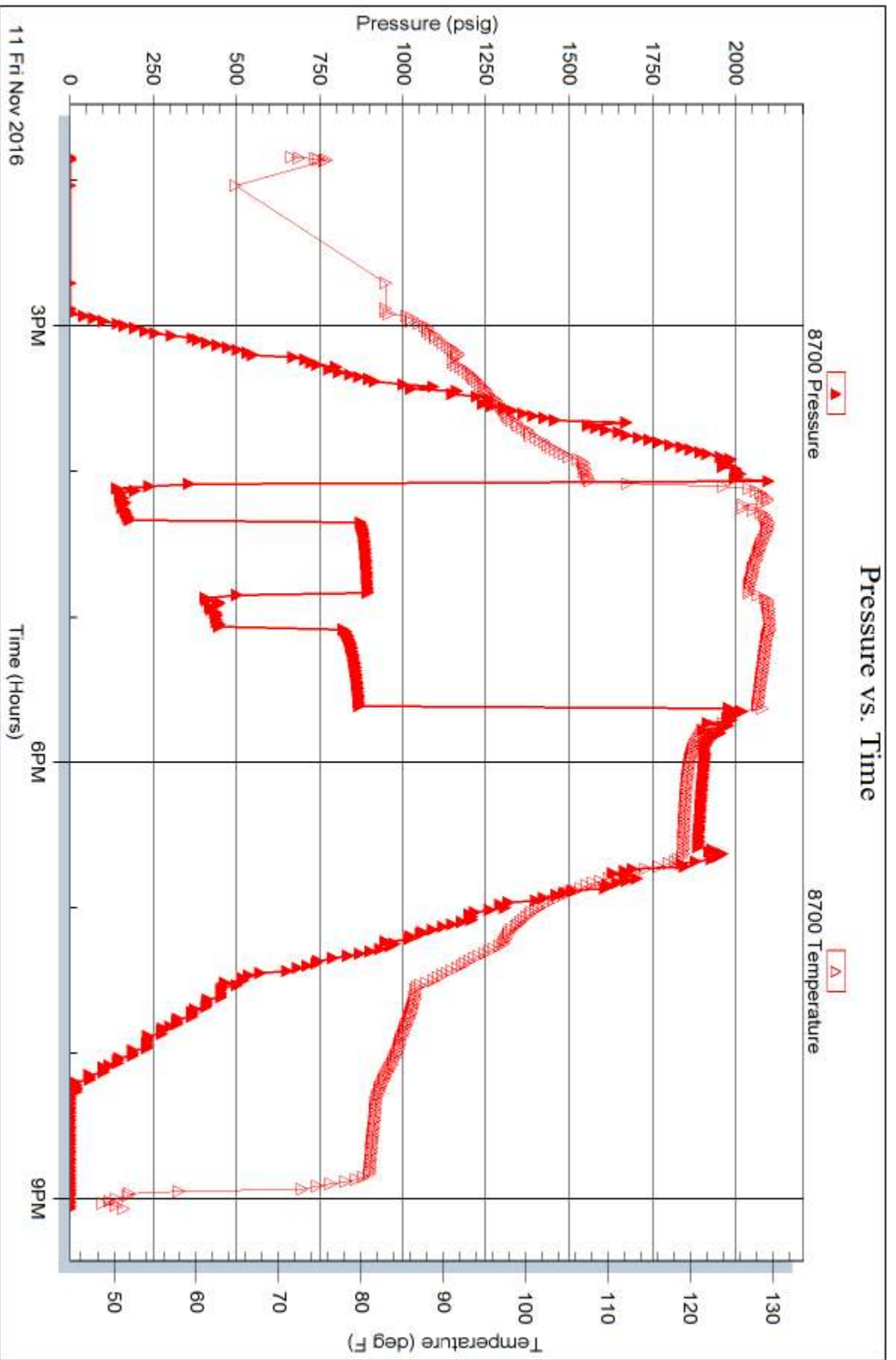


Serial #: 8700

Outside Dow nrg-Nelson Oil Co Inc

Younger #1-2

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 63540

Printed: 2016.11.14 @ 09:24:12



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63537**

Well Name & No. Younger 1-2 Test No. 1 Date 11-8-16
 Company Downing-Nelson Oil Co. Inc Elevation 2325 KB 2317 GL
 Address Po Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig DISCOVERY rig 3
 Location: Sec. 2 Twp. 14ⁿ Rge. 22^w Co. Trego State Ks

Interval Tested 3765-3783 Zone Tested LKC "E"
 Anchor Length 18 Drill Pipe Run 3739 Mud Wt. 9
 Top Packer Depth 3760 Drill Collars Run 30 Vis 50
 Bottom Packer Depth 3765 Wt. Pipe Run — WL 7.6
 Total Depth 3783 Chlorides 2500 ppm System LCM 2 1/2#

Blow Description IIFP - WEAK Blow, died in 15 min
ISIP - NO Blow
FFP - NO Blow, flushed Tool got surge
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>Mud</u>				
	<u>plugged Tool</u>				

Rec Total 65 BHT _____ Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test 850 T-On Location 2230
 (B) First Initial Flow _____ Jars _____ T-Started 0035
 (C) First Final Flow _____ Safety Joint _____ T-Open 0250
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled 0450
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 0640
 (F) Second Final Flow _____ Mileage 70 RT 52.50 Comments slid Tool 10' TO BOTTOM
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 902.50
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 902.50

Approved By _____ Our Representative Ray Schwager **THANK YOU**

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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63538**

Well Name & No. Younger #1-2 Test No. 2 Date 11-9-16
 Company Downing-Nelson Oil Co Inc Elevation 2325 KB 2317 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 3
 Location: Sec. 2 Twp. 14th Rge. 22nd Co. Trego State Ks

Interval Tested 3765-3783 Zone Tested LKC "E"
 Anchor Length 18 Drill Pipe Run 3739 Mud Wt. 9
 Top Packer Depth 3760 Drill Collars Run 30 Vis 52
 Bottom Packer Depth 3765 Wt. Pipe Run - WL 7.6
 Total Depth 3783 Chlorides 5500 ppm System LCM 2#

Blow Description IFP - WEAK Blow thru-out 1/4" To 1" Blow
ISIP - NO Blow
FFP - WEAK surface Blow thru-out
FSIP - NO Blow

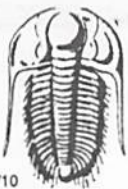
Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Mud</u>				
	<u>w/show gas</u>				

Rec Total 45 BHT 105 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1779 Test 1050 T-On Location 1145
 (B) First Initial Flow 17 Jars - T-Started 1215
 (C) First Final Flow 30 Safety Joint - T-Open 1415
 (D) Initial Shut-In 731 Circ Sub - T-Pulled 1615
 (E) Second Initial Flow 30 Hourly Standby - T-Out 1753
 (F) Second Final Flow 35 Mileage 70 RT 52.50
 (G) Final Shut-In 691 Sampler -
 (H) Final Hydrostatic 1762 Straddle - Ruined Shale Packer -
 Shale Packer - Ruined Packer -
 Extra Packer - Extra Copies -
 Extra Recorder - Sub Total 0
 Day Standby - Total 1102.50
 Accessibility - MP/DST Disc't -
 Sub Total 1102.50

Approved By _____ Our Representative RAY SCHWAGN **THANK YOU**

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63539**

Well Name & No. Younger #1-2 Test No. 3 Date 11-10-16
 Company Downing-Nelson Oil Co Inc Elevation 2325 KB 2317 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 3
 Location: Sec. 2 Twp. 14^s Rge. 22^w Co. Trego State Ks

Interval Tested 4092-4153 Zone Tested Cond. sd.
 Anchor Length 61 Drill Pipe Run 4066 Mud Wt. 9.3
 Top Packer Depth 4087 Drill Collars Run 30 Vis 55
 Bottom Packer Depth 4092 Wt. Pipe Run — WL 7.6
 Total Depth 4153 Chlorides 6000 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 10 MIN
ISIP - 2" Blow Back
FFP - WEAK TO STRONG IN 7 MIN
FSIP - 1" Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>495</u>	<u>GIP</u>				
<u>496</u>	<u>CO</u>				
<u>186</u>	<u>MGO</u>	<u>25</u>	<u>55</u>		<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

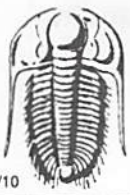
Rec Total 682 BHT 122 Gravity 38 API RW — @ —° F Chlorides — ppm

(A) Initial Hydrostatic 1967 Test 1150 T-On Location 2305
 (B) First Initial Flow 44 Jars 250 T-Started 2345
 (C) First Final Flow 171 Safety Joint 75 T-Open 0150
 (D) Initial Shut-In 822 Circ Sub _____ T-Pulled 0420
 (E) Second Initial Flow 183 Hourly Standby _____ T-Out 0651
 (F) Second Final Flow 275 Mileage 70 RT 52.50
 (G) Final Shut-In 821 Sampler _____
 (H) Final Hydrostatic 1950 Straddle _____

Ruined Shale Packer _____
 Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1427.50 Total 1427.50 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager Thank you

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63540**

Well Name & No. Younger #1-2 Test No. 4 Date 11-11-16
 Company Downing-Nelson Oil Co Inc Elevation 2325 KB 2317 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 3
 Location: Sec. 2 Twp. 14th Rge. 22nd Co. Trego State Ks

Interval Tested 4162-4170 Zone Tested Congl 5d
 Anchor Length 8 Drill Pipe Run 4127 Mud Wt. 9.3
 Top Packer Depth 4157 Drill Collars Run 30 Vis 54
 Bottom Packer Depth 4162 Wt. Pipe Run - WL 6.8
 Total Depth 4170 Chlorides 6000 ppm System LCM 2[#]

Blow Description IFP - Strong Blow in 45 sec
ISIP - NO Blow
FFP - Strong Blow in 2 min
FSIP - NO Blow first 15 min, then surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>6IP</u>				
<u>165</u>	<u>CO</u>				
<u>124</u>	<u>MG+WCOIL</u>	<u>10</u>	<u>70</u>	<u>15</u>	<u>5</u>
<u>124</u>	<u>046CMW</u>	<u>10</u>	<u>20</u>	<u>40</u>	<u>30</u>
<u>620</u>	<u>WATER</u>				

Rec Total 1033 BHT 127' Gravity 38 API RW .27 @ 65 °F Chlorides 27000 ppm

(A) Initial Hydrostatic 1995 Test 1150 T-On Location 1320
 (B) First Initial Flow 168 Jars 250 T-Started 1350
 (C) First Final Flow 183 Safety Joint 75 T-Open 1605
 (D) Initial Shut-In 893 Circ Sub _____ T-Pulled 1735
 (E) Second Initial Flow 393 Hourly Standby _____ T-Out 2104
 (F) Second Final Flow 451 Mileage 70 RT 52.50 Comments _____
 (G) Final Shut-In 869 Sampler _____
 (H) Final Hydrostatic 1977 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1427.50
 Accessibility _____ MP/DST Disc't _____

Initial Open 15
 Initial Shut-In 30
 Final Flow 15
 Final Shut-In 30
 Sub Total 1427.50

Approved By _____ Our Representative RAY SCHWAGER *Thank you*

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