



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

SDK Unit #1-14

14-14s-19w Ellis,KS

Start Date: 2014.06.07 @ 02:54:00

End Date: 2014.06.07 @ 10:09:15

Job Ticket #: 54053 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.06.10 @ 14:25:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54053

DST#: 1

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 02:54:00

GENERAL INFORMATION:

Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:31:45

Time Test Ended: 10:09:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3432.00 ft (KB) To 3472.00 ft (KB) (TVD)

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3472.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8648

Inside

Press@RunDepth: 48.65 psig @ 3469.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.07

End Date:

2014.06.07

Last Calib.:

2014.06.07

Start Time: 02:54:05

End Time:

10:09:14

Time On Btm:

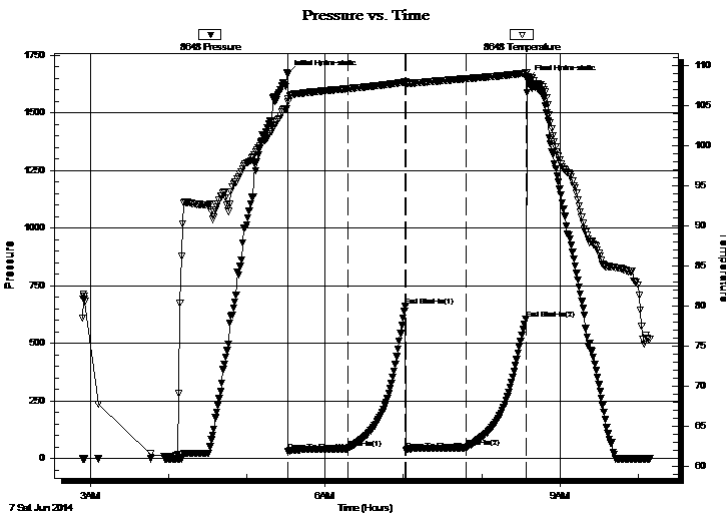
2014.06.07 @ 05:31:30

Time Off Btm:

2014.06.07 @ 08:35:15

TEST COMMENT: 45 - IF- 4" blow
45 - IS- No return
45 - FF- 5.5" blow
45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1668.49	105.84	Initial Hydro-static
1	31.92	105.50	Open To Flow (1)
46	42.93	107.13	Shut-In(1)
90	662.00	107.97	End Shut-In(1)
91	37.45	107.74	Open To Flow (2)
137	48.65	108.38	Shut-In(2)
183	605.47	109.07	End Shut-In(2)
184	1643.30	108.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	GHOCM, 5%G, 35%O, 60%M	0.29
0.00	93' of G.I.P.	0.00

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

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54053

DST#: 1

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 02:54:00

Tool Information

Drill Pipe:	Length: 3391.00 ft	Diameter: 3.80 inches	Volume: 47.57 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: 30000.00 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: 47.72 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3432.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	40.00 ft			
Tool Length:	61.00 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			3412.00	
Shut In Tool	5.00			3417.00	
Hydraulic tool	5.00			3422.00	
Packer	5.00			3427.00	21.00 Bottom Of Top Packer
Packer	5.00			3432.00	
Perforations	4.00			3436.00	
Change Over Sub	1.00			3437.00	
Drill Pipe	31.00			3468.00	
Change Over Sub	1.00			3469.00	
Recorder	0.00	8648	Inside	3469.00	
Recorder	0.00	8940	Outside	3469.00	
Bullnose	3.00			3472.00	40.00 Bottom Packers & Anchor

Total Tool Length: 61.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54053

DST#: 1

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 02:54:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
40.00	GHOCM, 5%G, 35%O, 60%M	0.288
0.00	93' of G.I.P.	0.000

Total Length: 40.00 ft Total Volume: 0.288 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

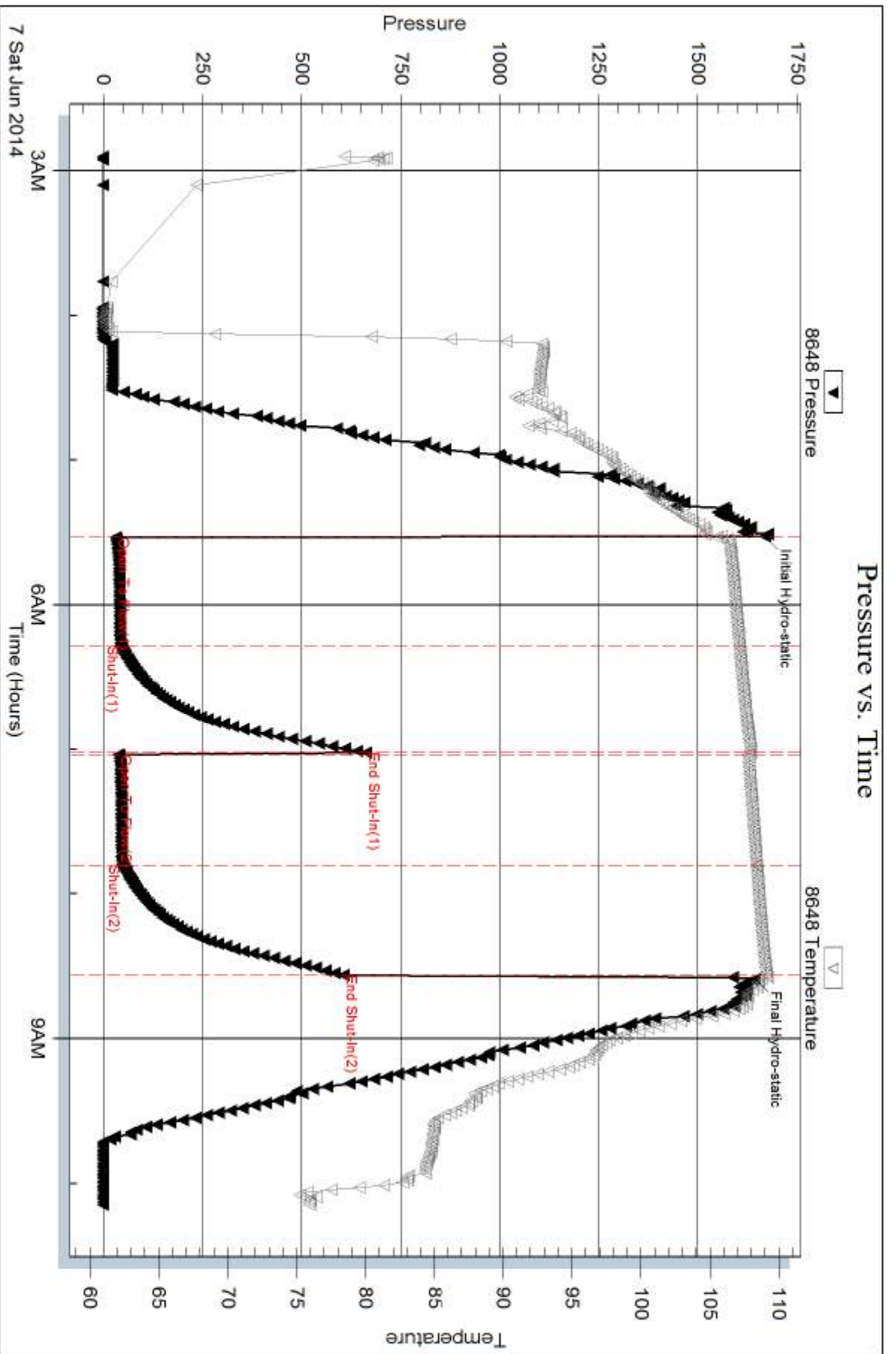
Serial #: 8648

Inside

Dow nng-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 54053

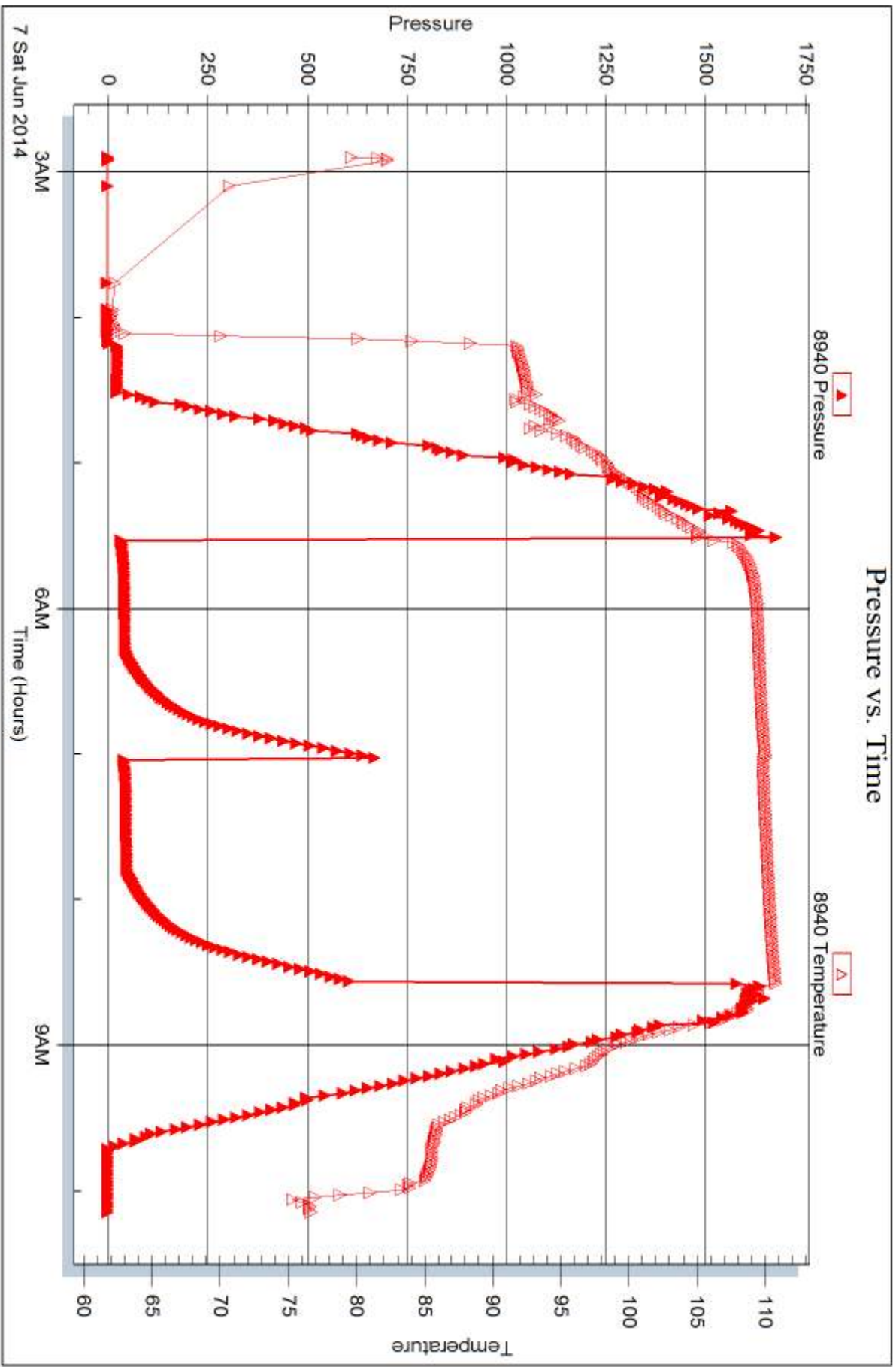
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Serial #: 8940

Outside Dow n/ing-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 54053

Printed: 2014.06.10 @ 14:25:58



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

SDK Unit #1-14

14-14s-19w Ellis,KS

Start Date: 2014.06.07 @ 17:47:00

End Date: 2014.06.08 @ 00:45:00

Job Ticket #: 54054 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.06.10 @ 14:25:29



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54054

DST#: 2

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 17:47:00

GENERAL INFORMATION:

Formation: **LKC "C&D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:01:15

Time Test Ended: 00:45:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3498.00 ft (KB) To 3547.00 ft (KB) (TVD)

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3547.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8648

Inside

Press@RunDepth: 64.37 psig @ 3535.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.07

End Date:

2014.06.08

Last Calib.:

2014.06.08

Start Time: 17:47:05

End Time:

00:44:59

Time On Btm:

2014.06.07 @ 20:01:00

Time Off Btm:

2014.06.07 @ 23:00:30

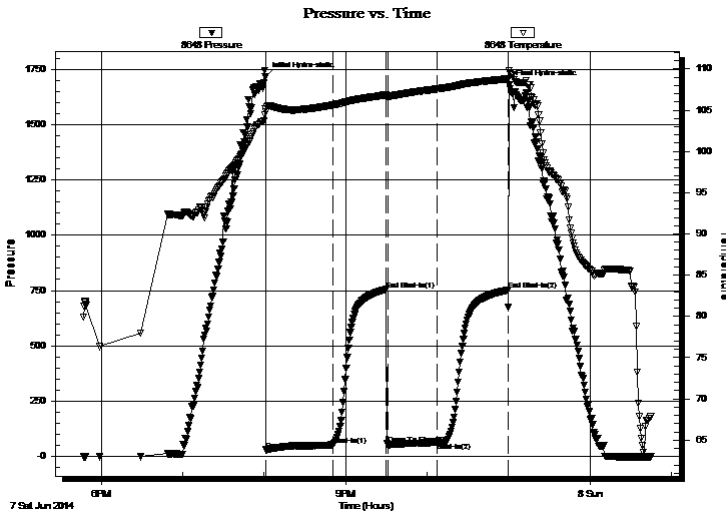
TEST COMMENT: 45 - IF- 2 1/4" blow

45 - IS- No return

45 - FF- 1" blow

45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.80	105.18	Initial Hydro-static
1	30.11	104.78	Open To Flow (1)
50	52.93	105.62	Shut-In(1)
89	755.05	106.86	End Shut-In(1)
90	53.75	106.70	Open To Flow (2)
127	64.37	107.59	Shut-In(2)
179	752.13	108.80	End Shut-In(2)
180	1677.99	109.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
87.00	GOCM, 5%G, 15%O, 80%M	0.95
0.00	124' of G.I.P.	0.00

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

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54054

DST#: 2

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 17:47:00

Tool Information

Drill Pipe:	Length: 3453.00 ft	Diameter: 3.80 inches	Volume: 48.44 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: 30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 48.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3498.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	49.00 ft			
Tool Length:	70.00 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			3478.00	
Shut In Tool	5.00			3483.00	
Hydraulic tool	5.00			3488.00	
Packer	5.00			3493.00	21.00 Bottom Of Top Packer
Packer	5.00			3498.00	
Perforations	4.00			3502.00	
Change Over Sub	1.00			3503.00	
Drill Pipe	31.00			3534.00	
Change Over Sub	1.00			3535.00	
Recorder	0.00	8648	Inside	3535.00	
Recorder	0.00	8940	Outside	3535.00	
Perforations	9.00			3544.00	
Bullnose	3.00			3547.00	49.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54054

DST#: 2

ATTN: Marc Dow ning

Test Start: 2014.06.07 @ 17:47:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 7.18 in³

Resistivity: ohm.m

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
87.00	GOCM, 5%G, 15%O, 80%M	0.947
0.00	124' of G.I.P.	0.000

Total Length: 87.00 ft Total Volume: 0.947 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

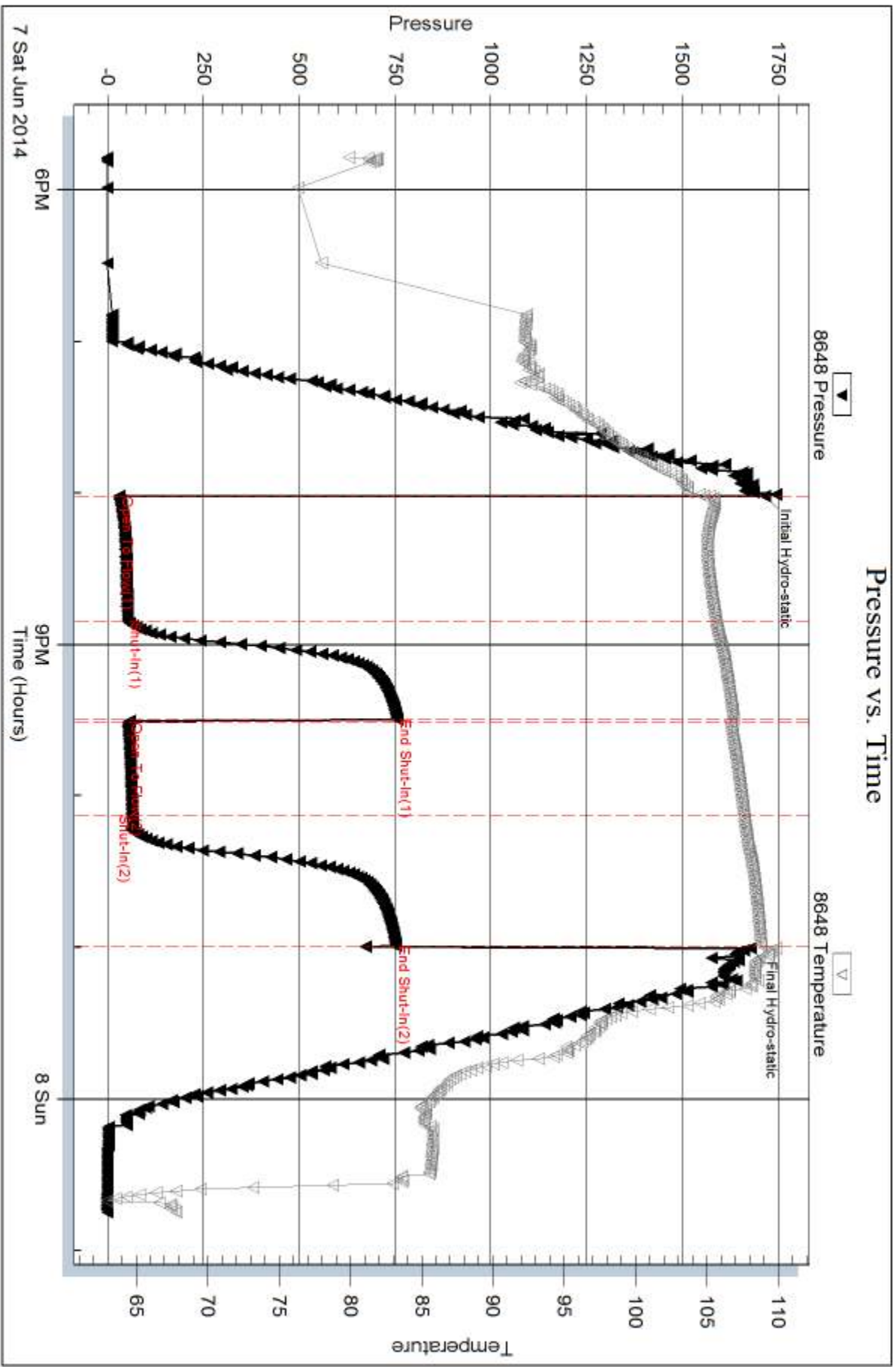
Serial #: 8648

Inside

Dow n/g-nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 54054

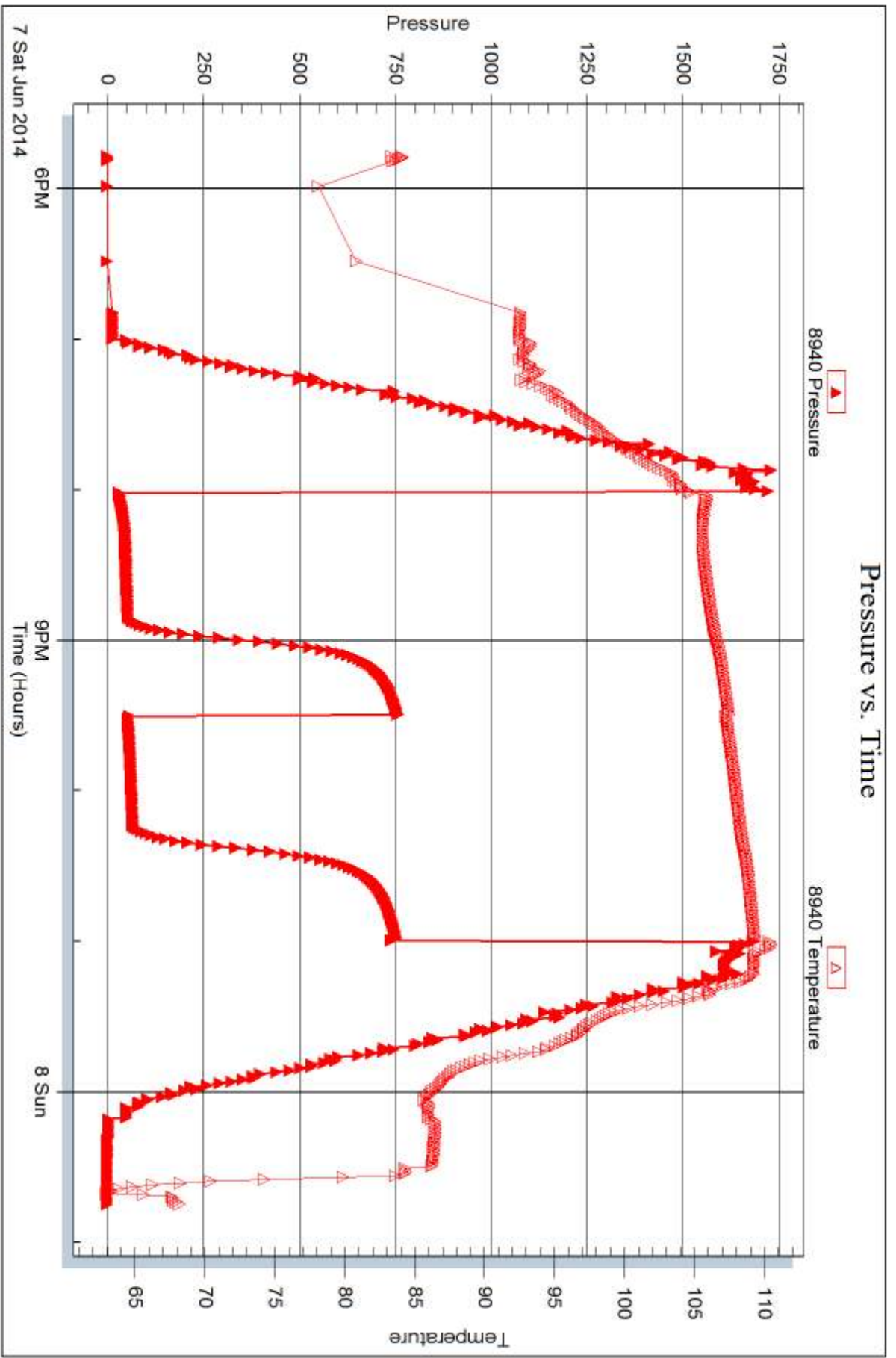
Printed: 2014.06.10 @ 14:25:30

Serial #: 8940

Outside Dow nng-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 54054

Printed: 2014.06.10 @ 14:25:30



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

SDK Unit #1-14

14-14s-19w Ellis,KS

Start Date: 2014.06.08 @ 07:08:00

End Date: 2014.06.08 @ 12:32:30

Job Ticket #: 54055 DST #: 3

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

Printed: 2014.06.10 @ 14:25:04

Downing-Nelson Oil Co Inc
14-14s-19w Ellis,KS
SDK Unit #1-14
DST # 3
LKC "E-F"
2014.06.08



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54055

DST#: 3

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 07:08:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:08:00

Time Test Ended: 12:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3545.00 ft (KB) To 3569.00 ft (KB) (TVD)

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3569.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8648

Inside

Press@RunDepth: 20.97 psig @ 3566.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.08

End Date:

2014.06.08

Last Calib.:

2014.06.08

Start Time: 07:08:05

End Time:

12:32:29

Time On Btm:

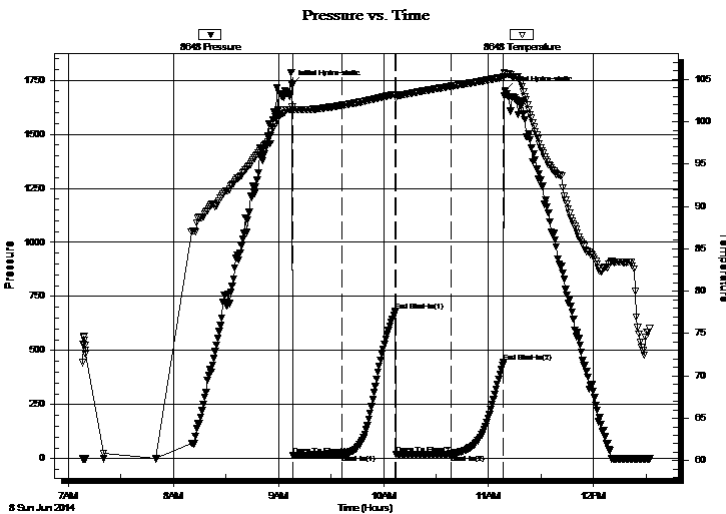
2014.06.08 @ 09:07:45

Time Off Btm:

2014.06.08 @ 11:09:15

TEST COMMENT: 30 - IF- 1/2" blow
30 - IS- No return
30 - FF- No blow
30 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1727.69	101.73	Initial Hydro-static
1	15.02	101.17	Open To Flow (1)
29	18.15	101.93	Shut-In(1)
59	681.76	103.23	End Shut-In(1)
60	18.88	102.80	Open To Flow (2)
91	20.97	104.19	Shut-In(2)
121	445.28	105.26	End Shut-In(2)
122	1701.38	105.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud - Oil spots, 100%M	0.07

* 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

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54055

DST#: 3

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 07:08:00

Tool Information

Drill Pipe:	Length: 3516.00 ft	Diameter: 3.80 inches	Volume: 49.32 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:	30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	58000.00 lb
			<u>Total Volume: 49.47 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3545.00 ft			Final	53000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	24.00 ft				
Tool Length:	45.00 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			3525.00	
Shut In Tool	5.00			3530.00	
Hydraulic tool	5.00			3535.00	
Packer	5.00			3540.00	21.00 Bottom Of Top Packer
Packer	5.00			3545.00	
Perforations	21.00			3566.00	
Recorder	0.00	8648	Inside	3566.00	
Recorder	0.00	8940	Outside	3566.00	
Bullnose	3.00			3569.00	24.00 Bottom Packers & Anchor
Total Tool Length:	45.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54055

DST#: 3

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 07:08:00

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: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
15.00	Mud - Oil spots, 100%M	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbf

Num Fluid Samples: 0

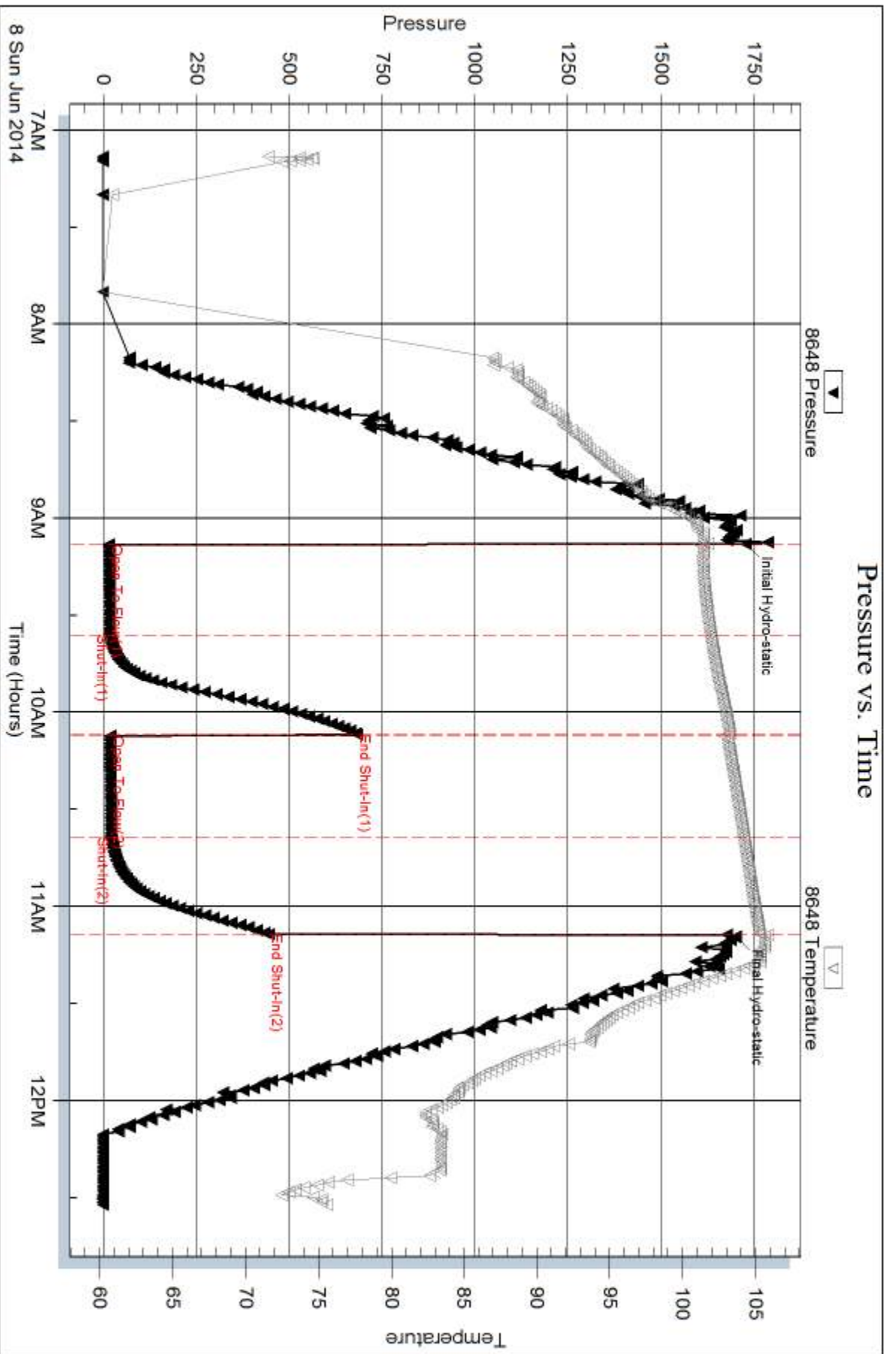
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

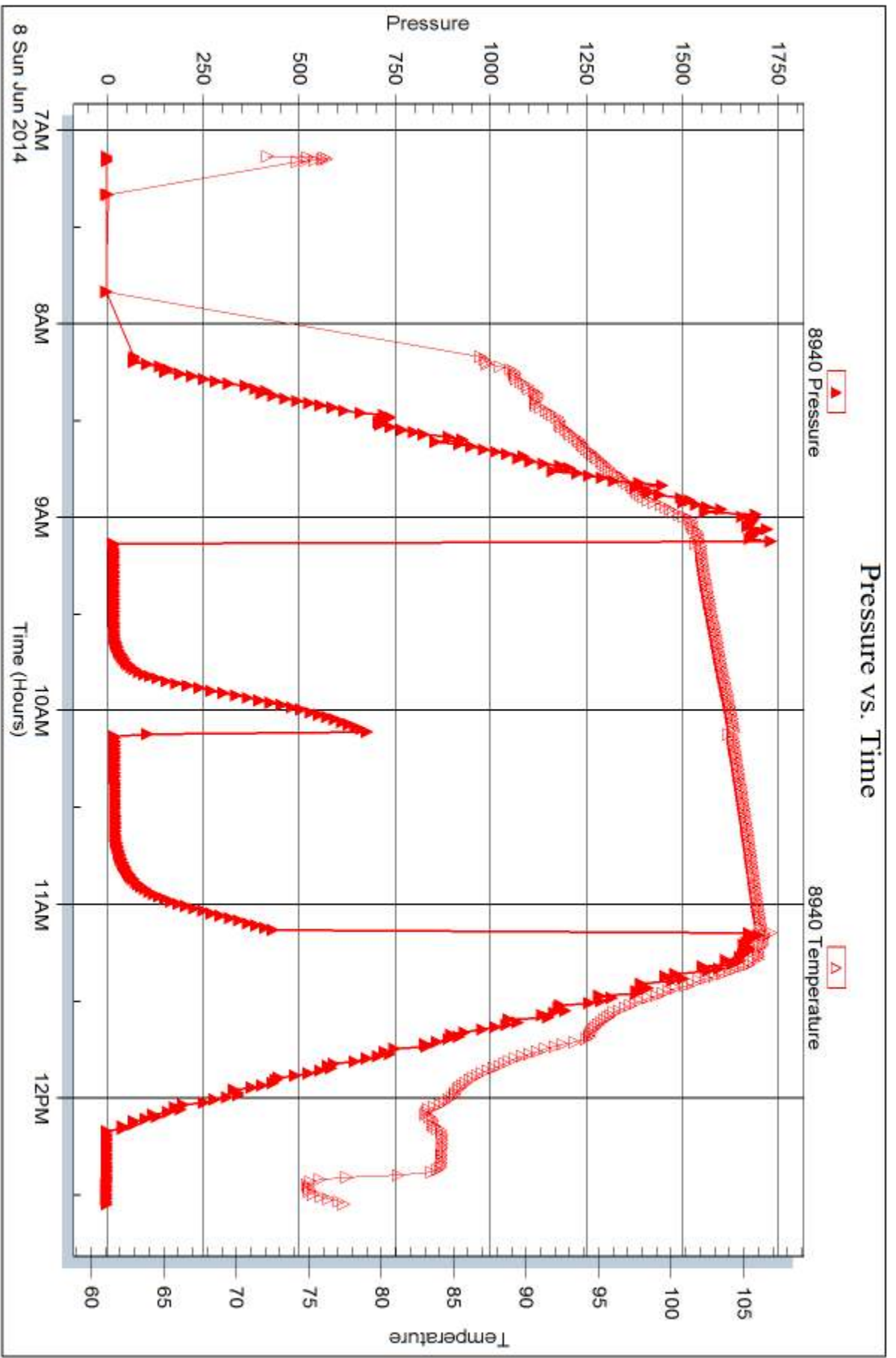


Serial #: 8940

Outside Dow nrg-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 54055

Printed: 2014.06.10 @ 14:25:05



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

SDK Unit #1-14

14-14s-19w Ellis,KS

Start Date: 2014.06.08 @ 22:00:00

End Date: 2014.06.09 @ 05:10:15

Job Ticket #: 54056 DST #: 4

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

Printed: 2014.06.10 @ 14:24:41

Downing-Nelson Oil Co Inc
14-14s-19w Ellis,KS
SDK Unit #1-14
DST # 4
LKC "H,J"
2014.06.08



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54056

DST#: 4

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 22:00:00

GENERAL INFORMATION:

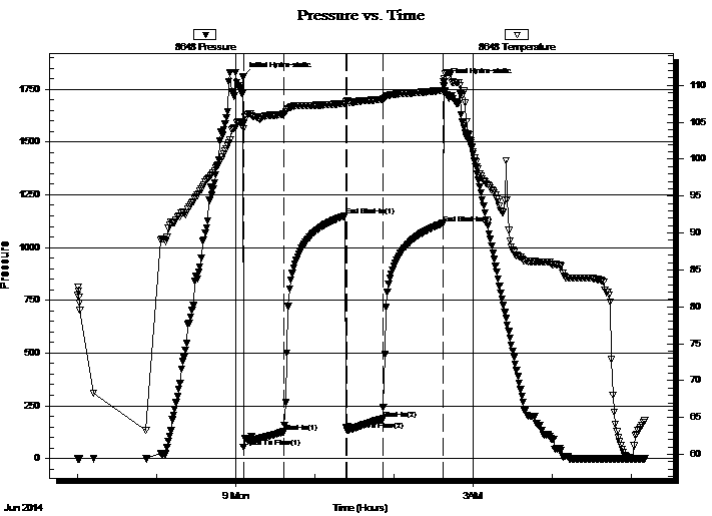
Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:05:45
 Time Test Ended: 05:10:15
 Interval: **3600.00 ft (KB) To 3669.00 ft (KB) (TVD)**
 Total Depth: 3669.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 73
 Reference Elevations: 2159.00 ft (KB)
 2151.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8648

Inside

Press@RunDepth: 188.34 psig @ 3636.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.06.08 End Date: 2014.06.09 Last Calib.: 2014.06.09
 Start Time: 22:00:05 End Time: 05:10:14 Time On Btm: 2014.06.09 @ 00:05:30
 Time Off Btm: 2014.06.09 @ 02:37:30

TEST COMMENT: 30 - IF- B.O.B. in 3 minutes
 45 - ISI- 2 1/4" return
 30 - FF- B.O.B. in 2 minutes
 45 - FSI- B.O.B. in 6 minutes, died back to 7" blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1808.01	104.76	Initial Hydro-static
1	53.95	104.10	Open To Flow (1)
31	126.90	106.09	Shut-In(1)
78	1150.93	107.57	End Shut-In(1)
79	134.15	107.90	Open To Flow (2)
106	188.34	108.11	Shut-In(2)
152	1114.12	109.32	End Shut-In(2)
152	1783.49	109.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GHOCM, 30%G, 30%O, 40%M	0.60
248.00	GHOCM, 20%M, 30%G, 50%O	3.48
124.00	GOCM, 20%O, 30%M, 50%G	1.74
0.00	2728' of G.I.P.	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

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54056

DST#: 4

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 22:00:00

Tool Information

Drill Pipe:	Length: 3579.00 ft	Diameter: 3.80 inches	Volume: 50.20 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:	30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 50.35 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	3600.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	69.00 ft				
Tool Length:	90.00 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			3580.00	
Shut In Tool	5.00			3585.00	
Hydraulic tool	5.00			3590.00	
Packer	5.00			3595.00	21.00 Bottom Of Top Packer
Packer	5.00			3600.00	
Perforations	3.00			3603.00	
Change Over Sub	1.00			3604.00	
Drill Pipe	31.00			3635.00	
Change Over Sub	1.00			3636.00	
Recorder	0.00	8648	Inside	3636.00	
Recorder	0.00	8940	Outside	3636.00	
Perforations	30.00			3666.00	
Bullnose	3.00			3669.00	69.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54056

DST#: 4

ATTN: Marc Dow ning

Test Start: 2014.06.08 @ 22:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 46.00 sec/qt
Water Loss: 7.39 in³
Resistivity: ohm.m
Salinity: 5000.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 34 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	GHOCM, 30%G, 30%O, 40%M	0.596
248.00	GHOCM, 20%M, 30%G, 50%O	3.479
124.00	GOCM, 20%O, 30%M, 50%G	1.739
0.00	2728' of G.I.P.	0.000

Total Length: 434.00 ft Total Volume: 5.814 bbl

Num Fluid Samples: 0

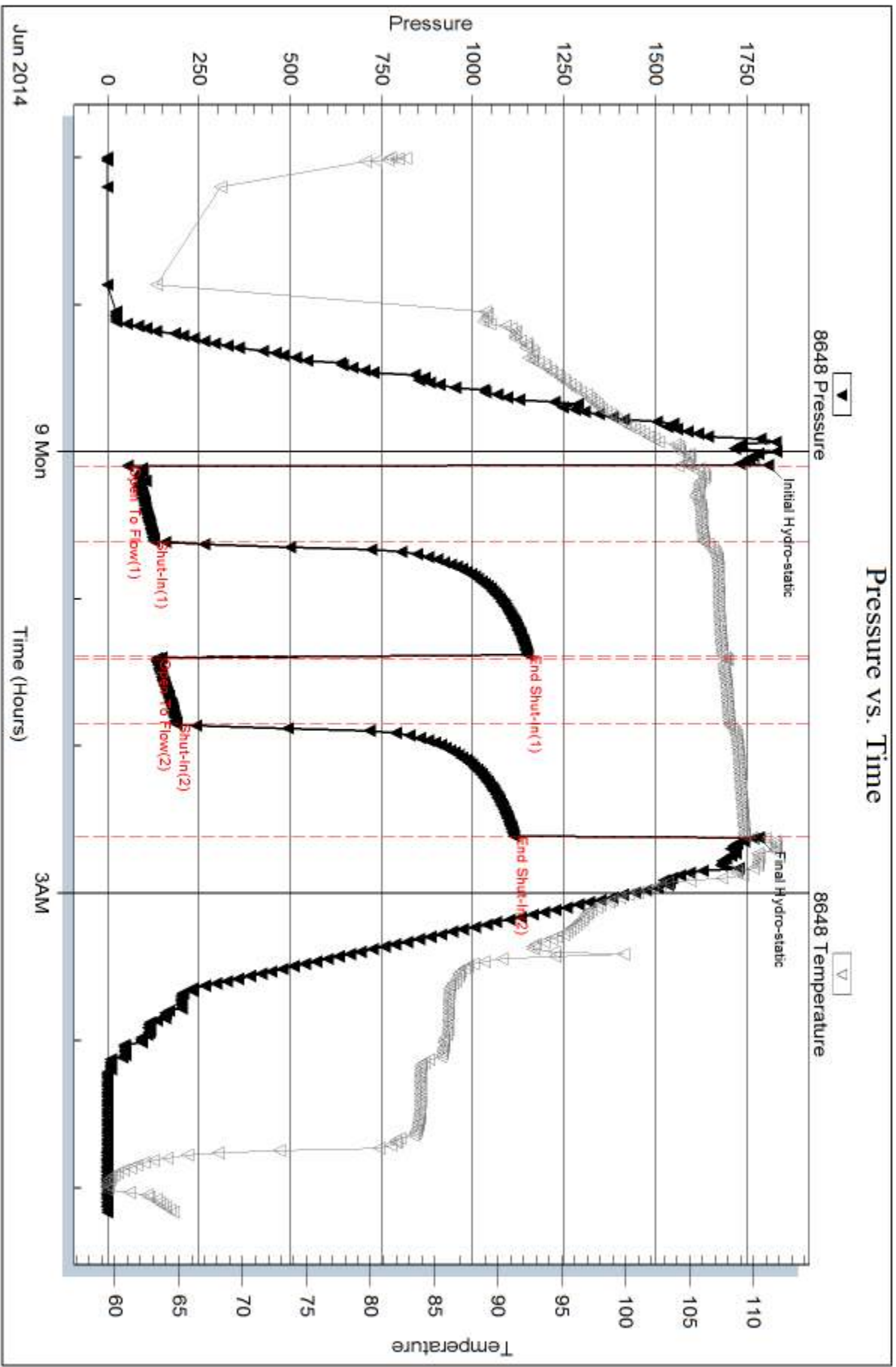
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity: 34 @ 60 Degrees = 34

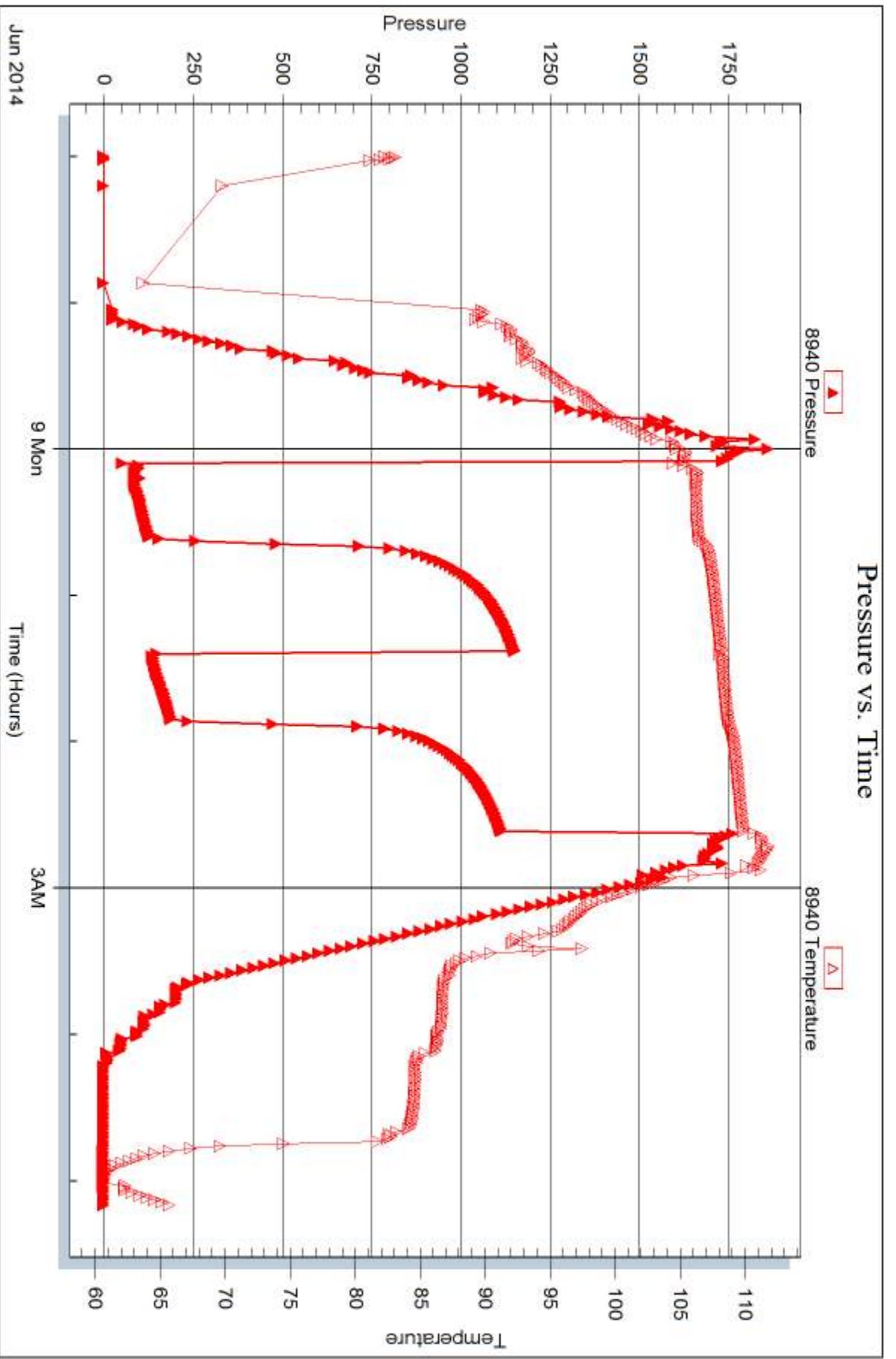


Serial #: 8940

Outside Dow n/mg-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 54056

Printed: 2014.06.10 @ 14:24:43



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

SDK Unit #1-14

14-14s-19w Ellis,KS

Start Date: 2014.06.09 @ 22:15:00

End Date: 2014.06.10 @ 06:01:30

Job Ticket #: 54057 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.06.10 @ 14:23:56



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54057

DST#: 5

ATTN: Marc Dow ning

Test Start: 2014.06.09 @ 22:15:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:36:30

Time Test Ended: 06:01:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3766.00 ft (KB) To 3814.00 ft (KB) (TVD)

Reference Elevations: 2159.00 ft (KB)

Total Depth: 3814.00 ft (KB) (TVD)

2151.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8648 Inside

Press@RunDepth: 137.27 psig @ 3803.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.09 End Date: 2014.06.10

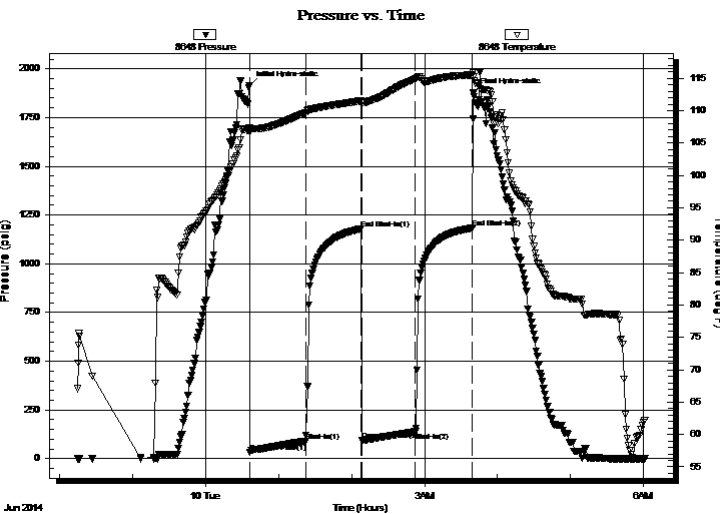
Last Calib.: 2014.06.10

Start Time: 22:15:05 End Time: 06:01:29

Time On Btm: 2014.06.10 @ 00:36:15

Time Off Btm: 2014.06.10 @ 03:40:15

TEST COMMENT: 45 - IF- B.O.B. in 18 minutes
45 - IS- Surface return
45 - FF- B.O.B. in 27 minutes
45 - FS- 1" return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1913.51	107.37	Initial Hydro-static
1	33.62	106.69	Open To Flow (1)
46	89.98	109.69	Shut-In(1)
92	1178.54	111.50	End Shut-In(1)
93	94.91	111.22	Open To Flow (2)
137	137.27	114.89	Shut-In(2)
183	1182.48	115.52	End Shut-In(2)
184	1878.60	115.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GHOCM, 10%G, 40%M, 50%O	0.60
248.00	GO, 10%G, 90%O	3.48
35.00	GO, 50%G, 50%O	0.49
0.00	434' of G.I.P.	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

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54057

DST#: 5

ATTN: Marc Dow ning

Test Start: 2014.06.09 @ 22:15:00

Tool Information

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 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: 30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 52.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3766.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	48.00 ft			
Tool Length:	69.00 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			3746.00	
Shut In Tool	5.00			3751.00	
Hydraulic tool	5.00			3756.00	
Packer	5.00			3761.00	21.00 Bottom Of Top Packer
Packer	5.00			3766.00	
Perforations	4.00			3770.00	
Change Over Sub	1.00			3771.00	
Drill Pipe	31.00			3802.00	
Change Over Sub	1.00			3803.00	
Recorder	0.00	8648	Inside	3803.00	
Recorder	0.00	8940	Outside	3803.00	
Perforations	8.00			3811.00	
Bullnose	3.00			3814.00	48.00 Bottom Packers & Anchor

Total Tool Length: 69.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

14-14s-19w Ellis,KS

PO Box 1019
Hays KS 67601

SDK Unit #1-14

Job Ticket: 54057

DST#: 5

ATTN: Marc Dow ning

Test Start: 2014.06.09 @ 22:15:00

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: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	GHOCM, 10%G, 40%M, 50%O	0.596
248.00	GO, 10%G, 90%O	3.479
35.00	GO, 50%G, 50%O	0.491
0.00	434' of G.I.P.	0.000

Total Length: 345.00 ft

Total Volume: 4.566 bbl

Num Fluid Samples: 0

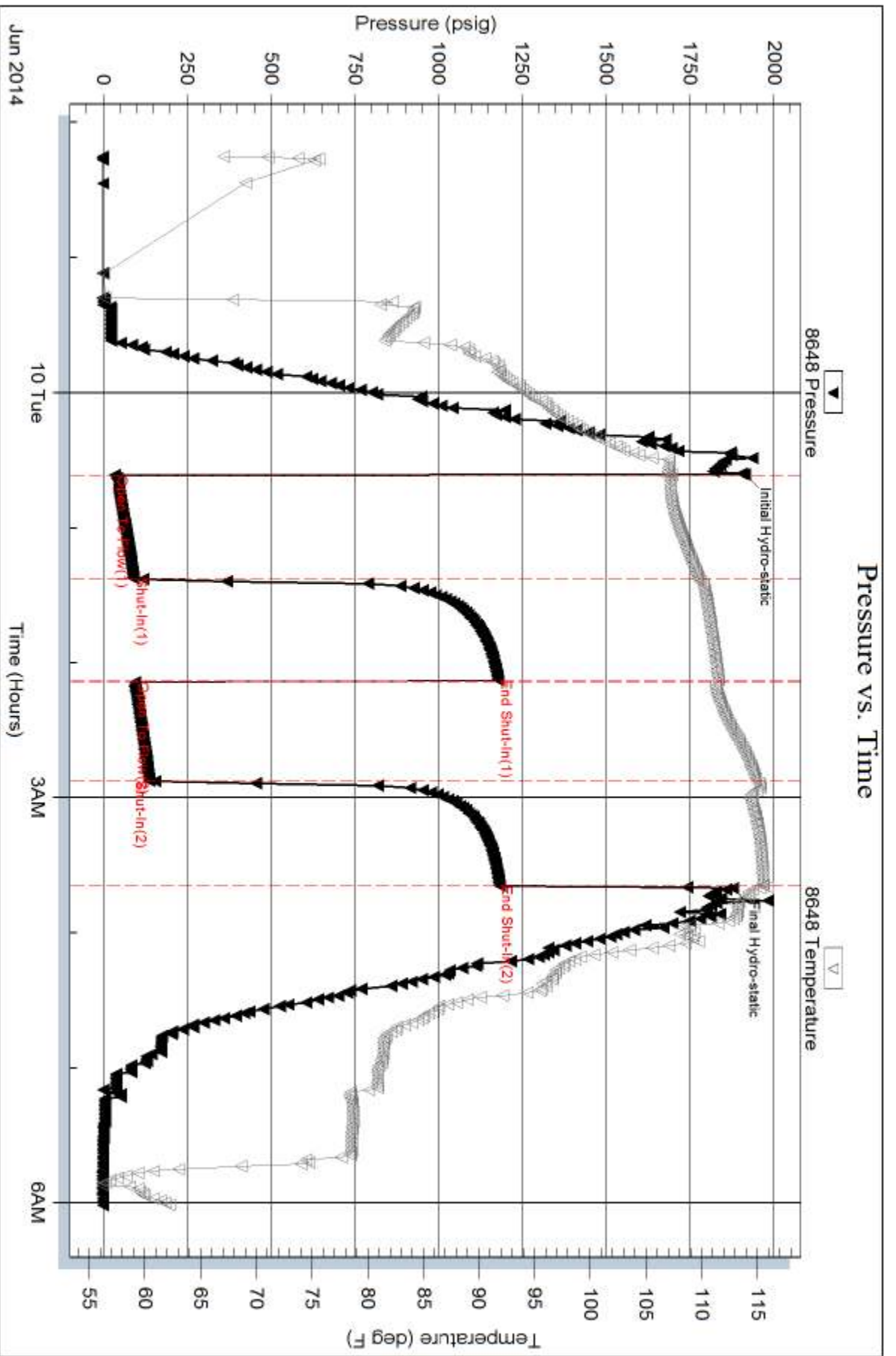
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

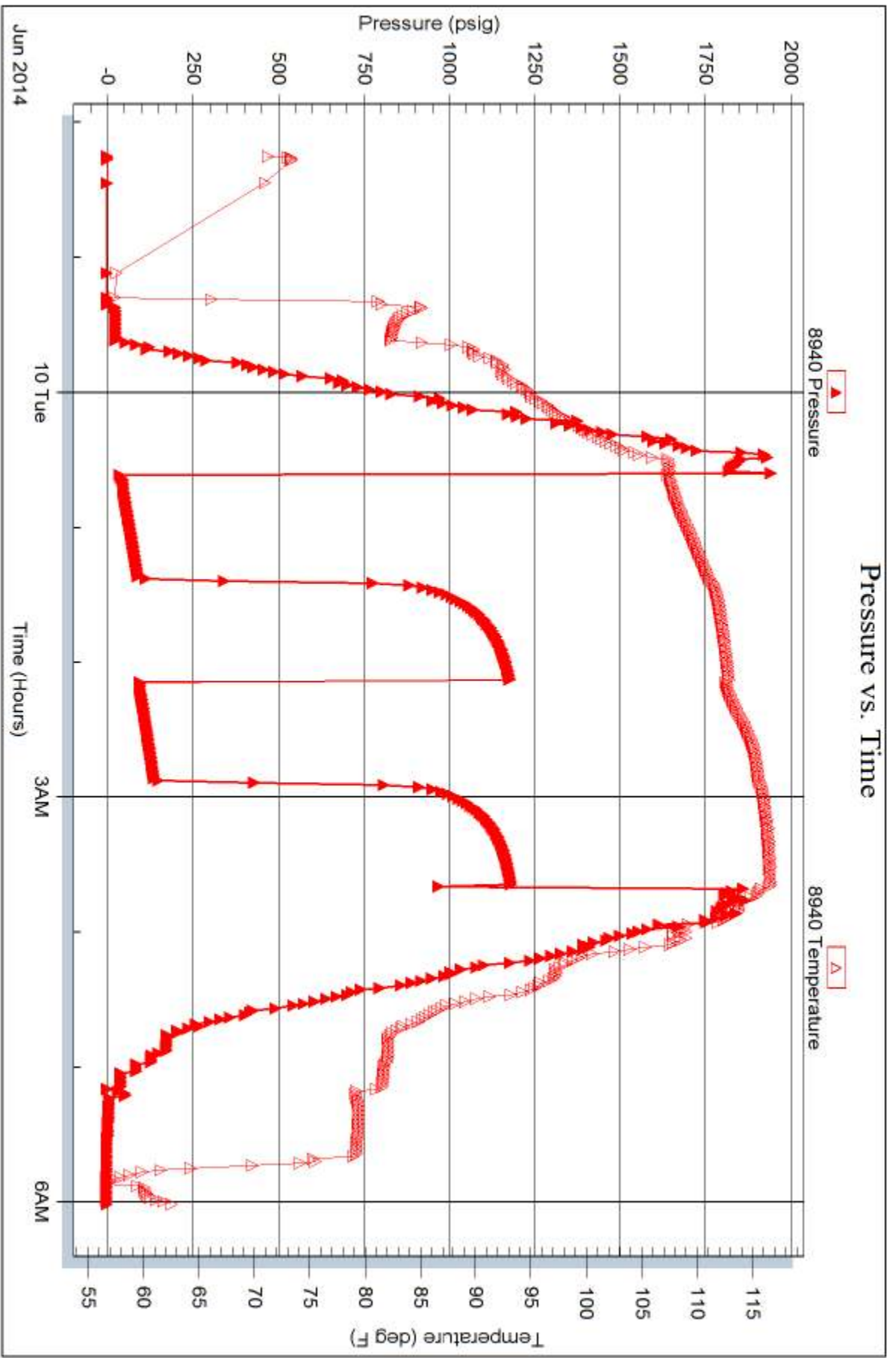


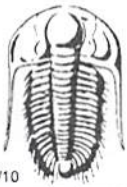
Serial #: 8940

Outside Dow nging-Nelson Oil Co Inc

SDK Unit #1-14

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54053

Well Name & No. SDK unit 1-14 Test No. 1 Date 6-7-14
 Company Downing - Nelson Oil Co Inc Elevation 2159 KB 2151 GL
 Address Po Box 1019, Hays KS, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 14 Twp. 14S Rge. 19W Co. ELLIS State KS

Interval Tested 3432 - 3472 Zone Tested Toronto
 Anchor Length 40' Drill Pipe Run 3391' Mud Wt. 8.7
 Top Packer Depth 3428 Drill Collars Run 30' Vis 56
 Bottom Packer Depth 3432 Wt. Pipe Run — WL 6.8
 Total Depth 3472 Chlorides 1,200 ppm System LCM —
 Blow Description IF- 4" blow
ISI - No return
FF- 5.5" blow
FSI -

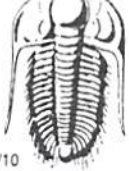
Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>6HOC M</u>	<u>5</u>	<u>35</u>	<u>60</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of <u>93' G.I.P.</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 40' BHT 109° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1668 Test 1150 T-On Location 0231
 (B) First Initial Flow 31 Jars — T-Started 0254
 (C) First Final Flow 42 Safety Joint — T-Open 0532
 (D) Initial Shut-In 662 Circ Sub — T-Pulled 0832
 (E) Second Initial Flow 37 Hourly Standby — T-Out 10:10
 (F) Second Final Flow 48 Mileage 18RT 27.90 Comments —
 (G) Final Shut-In 605 Sampler —
 (H) Final Hydrostatic 1643 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 45 Extra Recorder — Sub Total 0
 Initial Shut-In 45 Day Standby — Total 1177.90
 Final Flow 45 Accessibility — MP/DST Disc't —
 Final Shut-In 45 Sub Total 1177.90

Approved By _____ Our Representative Cody B. [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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54054

Well Name & No. SDK Unit 1-14 Test No. 2 Date 6-7-14
 Company Downing - Nelson Oil Co INC Elevation 2159 KB 2151 GL
 Address Po Box 1019, Hays KS, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 14 Twp. 14s Rge. 19w Co. Ellis State KS

Interval Tested 3498-3547 Zone Tested LKC "C&D"
 Anchor Length 49' Drill Pipe Run 3453' Mud Wt. 9.1
 Top Packer Depth 3493 Drill Collars Run 30' Vis 54
 Bottom Packer Depth 3498 Wt. Pipe Run — WL 7.2
 Total Depth 3547 Chlorides 3,600 ppm System LCM 1# 3,600

Blow Description IF - 2.25" blow
ISI - No return
FF - 1" blow
FSI - No return

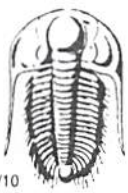
Rec	Feet of	%gas	%oil	%water	%mud
<u>87</u>	<u>60CM</u>	<u>5</u>	<u>15</u>	<u>80</u>	<u>—</u>
Rec	Feet of <u>124' G.I.P.</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 87' BHT 108° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1715</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1730</u>
(B) First Initial Flow <u>30</u>	<input type="checkbox"/> Jars	T-Started <u>1747</u>
(C) First Final Flow <u>52</u>	<input type="checkbox"/> Safety Joint	T-Open <u>2001</u>
(D) Initial Shut-In <u>755</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2300</u>
(E) Second Initial Flow <u>53</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1245</u>
(F) Second Final Flow <u>64</u>	<input checked="" type="checkbox"/> Mileage <u>18RT 27.90</u>	Comments
(G) Final Shut-In <u>752</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1677</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1177.90</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1177.90</u>	

Approved By _____ Our Representative Cody B. Boedon

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54055

Well Name & No. SDK Unit 1-14 Test No. 3 Date 6-8-14
 Company Downing-Nelson Oil Co INC Elevation 2159 KB 2151 GL
 Address Po Box 1019, Hays KS, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 14 Twp. 14s Rge. 19w Co. Ellis State KS

Interval Tested 3545-3569 Zone Tested LKC "E & F"
 Anchor Length 24' Drill Pipe Run 3516' Mud Wt. 9.1
 Top Packer Depth 3540 Drill Collars Run 30' Vis 54
 Bottom Packer Depth 3545 Wt. Pipe Run — WL 7.2
 Total Depth 3569 Chlorides 3,600 ppm System LCM 1#

Blow Description IF - 1/2" blow
ISI - No return
FF - No blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud-oil Spots</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

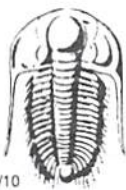
Rec Total 15' BHT 105° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1727 Test 1150 T-On Location 0650
 (B) First Initial Flow 15 Jars — T-Started 0708
 (C) First Final Flow 18 Safety Joint — T-Open 0908
 (D) Initial Shut-In 681 Circ Sub — T-Pulled 1108
 (E) Second Initial Flow 18 Hourly Standby — T-Out 1233
 (F) Second Final Flow 20 Mileage 18RT 27.90 Comments —
 (G) Final Shut-In 445 Sampler —
 (H) Final Hydrostatic 1701 Straddle —
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30
 Sub Total 1177.90
 Total 1177.90
 MP/DST Disc't —

Approved By _____ Our Representative Cody Blum

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54056

Well Name & No. SDK unit 1-14 Test No. 4 Date 6-8-14
 Company Downing-Nelson oil Co INC Elevation 2159 KB 2151 GL
 Address Po Box 1019 Hays KS, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 14 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3600-3669 Zone Tested LKC "H,I,J"
 Anchor Length 69' Drill Pipe Run 3579' Mud Wt. 9.1
 Top Packer Depth 3595 Drill Collars Run 30' Vis 46
 Bottom Packer Depth 3600 Wt. Pipe Run - WL 7.4
 Total Depth 3669 Chlorides 5,000 ppm System LCM 2#

Blow Description IF - B.O.B. in 3 minutes
ISF - 2 1/4" return
FF - B.O.B. in 2 minutes
FSI - B.O.B. in 6 minutes, died back to 7" blow

Rec	Feet of	%gas	%oil	%water	%mud
62	6 HOCM	30	30	40	
248	6 HOCM	30	50	20	
124	6 OCM	50	20	30	
Rec Total	434	BHT 1090	Gravity 34	API RW	@ _____ ° F Chlorides _____ ppm

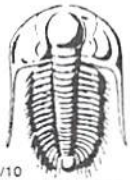
(A) Initial Hydrostatic 1808 Test 1150 T-On Location 2145
 (B) First Initial Flow 53 Jars _____ T-Started 2200
 (C) First Final Flow 126 Safety Joint _____ T-Open 1207
 (D) Initial Shut-In 1150 Circ Sub _____ T-Pulled 0237
 (E) Second Initial Flow 134 Hourly Standby _____ T-Out 0511
 (F) Second Final Flow 188 Mileage 18RT 27.90 Comments 34@60°
 (G) Final Shut-In 1114 Sampler _____
 (H) Final Hydrostatic 1783 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Sub Total 1177.90
 Total 1177.90
 MP/DST Disc't _____

Approved By _____ Our Representative Cody B...

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54057

Well Name & No. SDK Unit 1-14 Test No. 5 Date 6-9-14
 Company Downing - Nelson Oil Co Inc Elevation 2159 KB 2151 GL
 Address Po Box 1019, Hays KS, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 14 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3766-3814 Zone Tested Arbuckle
 Anchor Length 48' Drill Pipe Run 3739' Mud Wt. 9
 Top Packer Depth 3761 Drill Collars Run 30' Vis 46
 Bottom Packer Depth 3766 Wt. Pipe Run — WL 8.8
 Total Depth 3814 Chlorides 5,000 ppm System LCM 1 1/2#

Blow Description ±F - B.O.B. in 18 minutes
ISI - Surface return
FF - B.O.B. in 27 minutes
FSI - 1" return

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>6 HOCM</u>	<u>10</u>	<u>50</u>	<u>40</u>	
<u>248</u>	<u>60</u>	<u>10</u>	<u>90</u>		
<u>35</u>	<u>60</u>	<u>50</u>	<u>50</u>		
	<u>434' G.I.P.</u>				

Rec Total 345' BHT 115° Gravity — API RW — @ —° F Chlorides — ppm

(A) Initial Hydrostatic <u>1913</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2200</u>
(B) First Initial Flow <u>33</u>	<input type="checkbox"/> Jars <u>—</u>	T-Started <u>2215</u>
(C) First Final Flow <u>89</u>	<input type="checkbox"/> Safety Joint <u>—</u>	T-Open <u>12:39</u>
(D) Initial Shut-In <u>1178</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>0340</u>
(E) Second Initial Flow <u>94</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>0604</u>
(F) Second Final Flow <u>137</u>	<input checked="" type="checkbox"/> Mileage <u>18RT</u> <u>27.90</u>	Comments <u>—</u>
(G) Final Shut-In <u>1182</u>	<input type="checkbox"/> Sampler <u>—</u>	
(H) Final Hydrostatic <u>1878</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
	<input type="checkbox"/> Shale Packer <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby <u>—</u>	Total <u>1177.90</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility <u>—</u>	MP/DST Disc't <u>—</u>
	Sub Total <u>1177.90</u>	

Approved By _____ Our Representative Cody Blum

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