



DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

9-9s-24w Graham,KS

Hildebrand Heirs #1-19

Start Date: 2014.04.29 @ 14:39:06

End Date: 2014.04.29 @ 22:26:45

Job Ticket #: 57573 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.01 @ 14:45:20

Downing Nelson Oil Company

Hildebrand Heirs #1-19

9-9s-24w Graham,KS

DST # 1

"1"

2014.04.29



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

Job Ticket: 57573

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.04.29 @ 14:39:06

GENERAL INFORMATION:

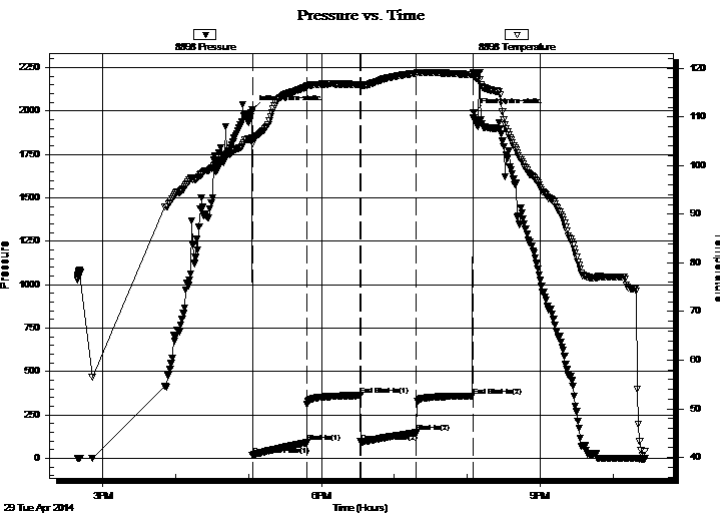
Formation: "I"
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:03:06
 Tester: Tate Lang
 Time Test Ended: 22:26:45
 Unit No: 49
 Interval: **3941.00 ft (KB) To 3860.00 ft (KB) (TVD)**
 Reference Elevations: 2463.00 ft (KB)
 Total Depth: 3960.00 ft (KB) (TVD)
 2455.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 8.00 ft

Serial #: 8898

Outside

Press@RunDepth: 147.80 psig @ 3942.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.29 End Date: 2014.04.29 Last Calib.: 2014.04.29
 Start Time: 14:39:07 End Time: 22:26:46 Time On Btm: 2014.04.29 @ 17:02:56
 Time Off Btm: 2014.04.29 @ 20:05:15

TEST COMMENT: B.O.B. In 30 mins
 Dead no blow back
 B.O.B. In 45 mins
 Dead no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2006.95	105.63	Initial Hydro-static
1	18.52	104.63	Open To Flow (1)
45	89.90	116.19	Shut-In(1)
89	361.87	116.64	End Shut-In(1)
90	93.08	116.52	Open To Flow (2)
136	147.80	118.98	Shut-In(2)
182	359.70	118.66	End Shut-In(2)
183	1989.22	118.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
260.00	90%W 10%M	3.37
30.00	20%G 80%O	0.42

Gas Rates

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



DRILL STEM TEST REPORT

Downing Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

ATTN: Ron Nelson

Job Ticket: 57573 **DST#: 1**

Test Start: 2014.04.29 @ 14:39:06

GENERAL INFORMATION:

Formation: "I"
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 17:03:06 Tester: Tate Lang
Time Test Ended: 22:26:45 Unit No: 49

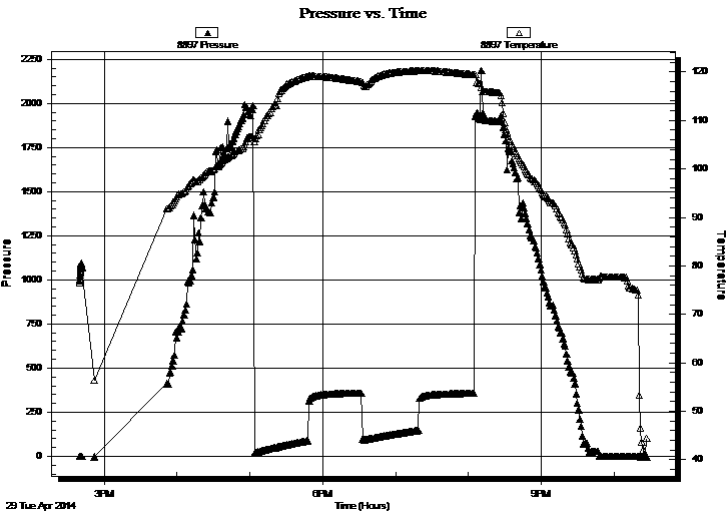
Interval: **3941.00 ft (KB) To 3860.00 ft (KB) (TVD)** Reference Elevations: 2463.00 ft (KB)
Total Depth: 3960.00 ft (KB) (TVD) 2455.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 8.00 ft

Serial #: 8897

Inside

Press@RunDepth: psig @ 3942.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.29 End Date: 2014.04.29 Last Calib.: 2014.04.29
Start Time: 14:39:47 End Time: 22:27:26 Time On Btm:
Time Off Btm:

TEST COMMENT: B.O.B. In 30 mins
Dead no blow back
B.O.B. In 45 mins
Dead no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
260.00	90%W 10%M	3.37
30.00	20%G 80%O	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

Job Ticket: 57573

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.04.29 @ 14:39:06

Tool Information

Drill Pipe:	Length: 3918.00 ft	Diameter: 3.80 inches	Volume: 54.96 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:	66000.00 lb
			<u>Total Volume: 55.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	3941.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	19.00 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
Shut In Tool	5.00			3926.00	
Hydraulic tool	5.00			3931.00	
Packer	5.00			3936.00	20.00 Bottom Of Top Packer
Packer	5.00			3941.00	
Stubb	1.00			3942.00	
Recorder	0.00	8897	Inside	3942.00	
Recorder	0.00	8898	Outside	3942.00	
Perforations	15.00			3957.00	
Bullnose	3.00			3960.00	19.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

Job Ticket: 57573

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.04.29 @ 14:39:06

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:

78000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
260.00	90%W 10%M	3.374
30.00	20%G 80%O	0.421

Total Length: 290.00 ft Total Volume: 3.795 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

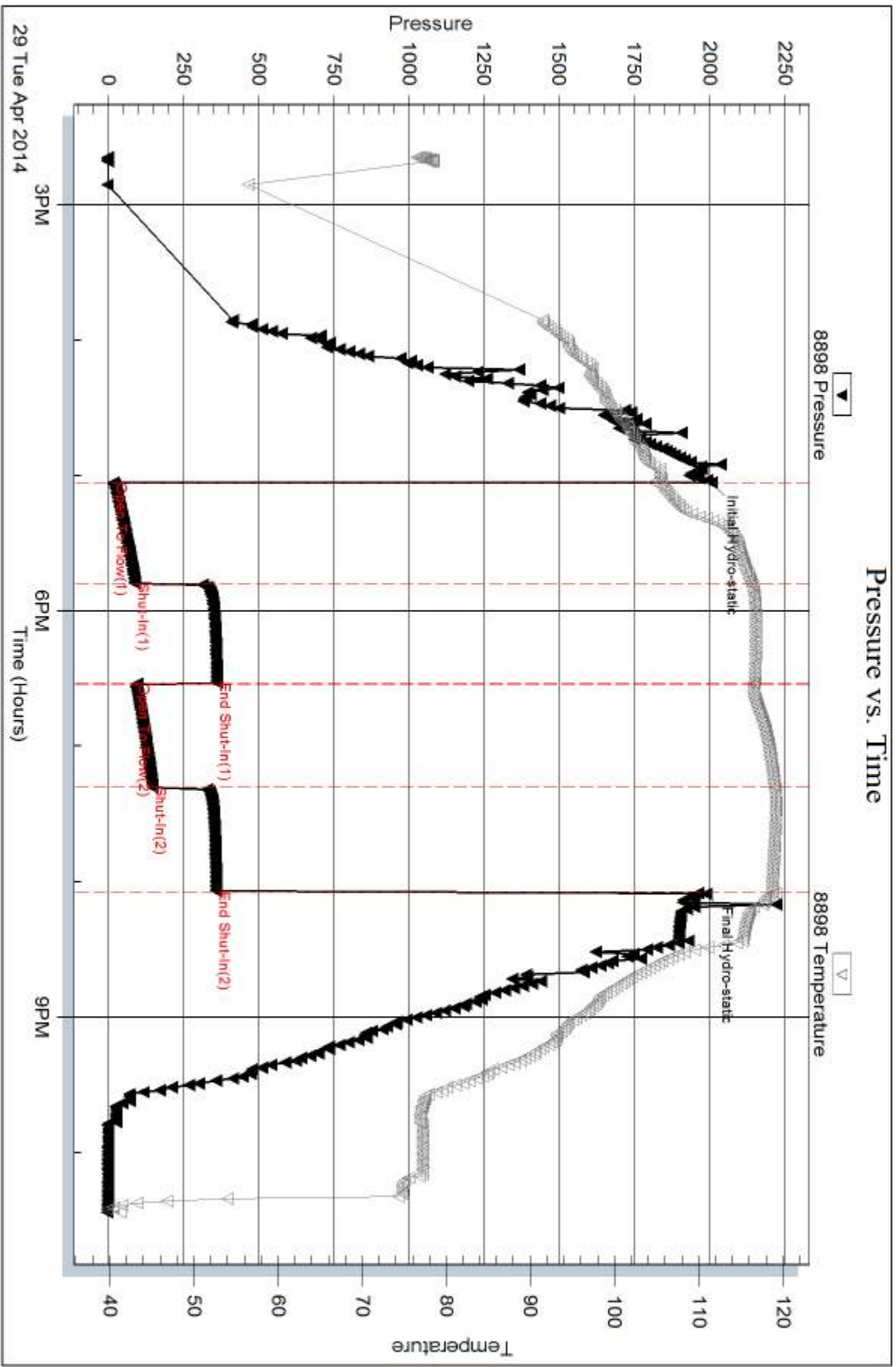
Recovery Comments:

Serial #: 8898

Outside Dow n ing Nelson Oil Company

9-9s-24w Graham,KS

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 57573

Printed: 2014.05.01 @ 14:45:21

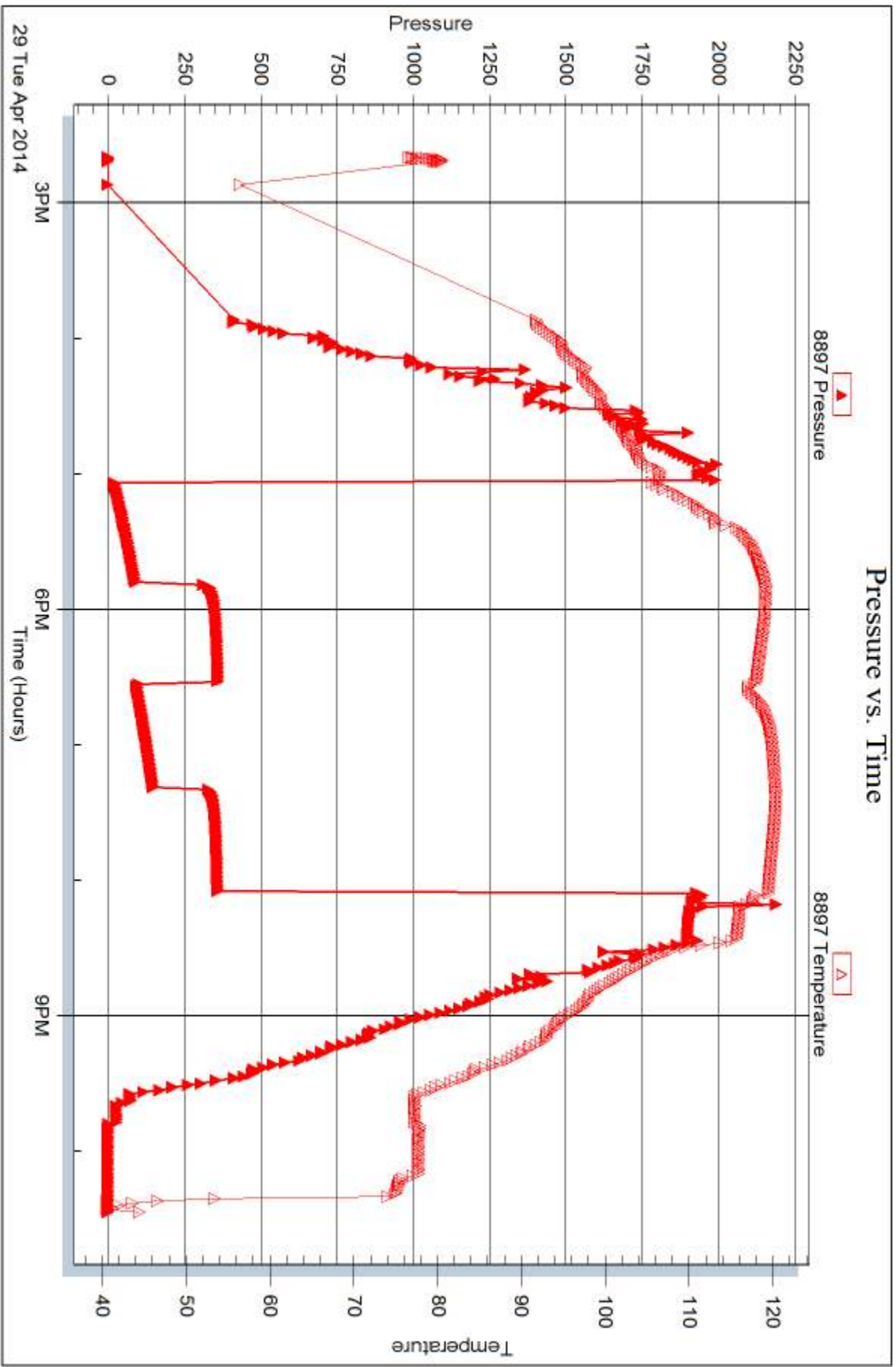
Serial #: 8897

Inside

Dow n ing Nelson Oil Company

9-9s-24w Graham,KS

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 57573

Printed: 2014.05.01 @ 14:45:21



DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

9-9s-24w Graham,KS

Hildebrand Heirs #1-19

Start Date: 2014.04.30 @ 16:34:28

End Date: 2014.05.01 @ 00:06:48

Job Ticket #: 57574 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.21 @ 14:42:15



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

ATTN: Ron Nelson

Job Ticket: 57574

DST#: 2

Test Start: 2014.04.30 @ 16:34:28

GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:39:48

Time Test Ended: 00:06:48

Test Type: Conventional Straddle (Reset)

Tester: Tate Lang

Unit No: 49

Interval: 3845.00 ft (KB) To 3900.00 ft (KB) (TVD)

Reference Elevations: 2463.00 ft (KB)

Total Depth: 4074.00 ft (KB) (TVD)

2455.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8898 Outside

Press@RunDepth: 118.59 psig @ 3851.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.30

End Date:

2014.05.01

Last Calib.: 2014.05.01

Start Time: 16:34:29

End Time:

00:06:48

Time On Btm: 2014.04.30 @ 18:39:38

Time Off Btm: 2014.04.30 @ 21:41:28

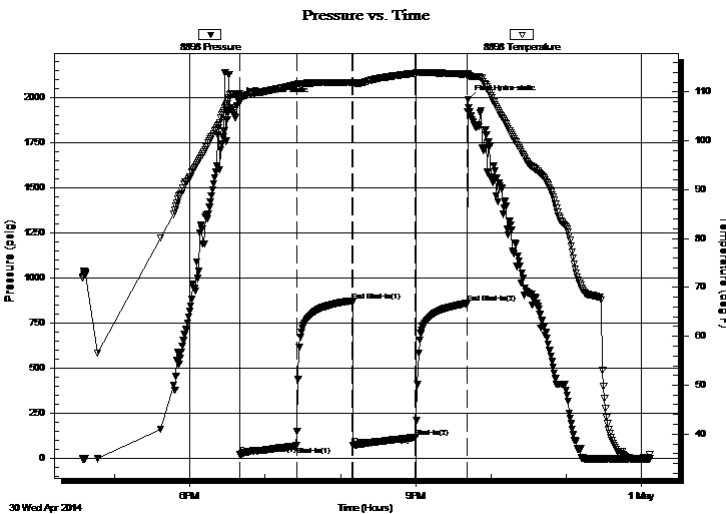
TEST COMMENT: Strong blow built to 10"

Dead no blow back

Good blow built to 8"

Dead no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1976.27	109.72	Initial Hydro-static
1	25.66	108.32	Open To Flow (1)
46	70.78	111.48	Shut-In(1)
90	875.84	111.94	End Shut-In(1)
91	75.15	111.75	Open To Flow (2)
140	118.59	113.83	Shut-In(2)
181	860.13	113.63	End Shut-In(2)
182	1990.80	113.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
220.00	85%W 15%M	2.81

* 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 Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

ATTN: Ron Nelson

Job Ticket: 57574

DST#: 2

Test Start: 2014.04.30 @ 16:34:28

GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:39:48

Time Test Ended: 00:06:48

Test Type: Conventional Straddle (Reset)

Tester: Tate Lang

Unit No: 49

Interval: 3845.00 ft (KB) To 3900.00 ft (KB) (TVD)

Total Depth: 4074.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2463.00 ft (KB)

2455.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8897

Inside

Press@RunDepth: psig @ 3851.00 ft (KB)

Start Date: 2014.04.30

End Date:

2014.05.01

Capacity: 8000.00 psig

Last Calib.:

2014.05.01

Start Time: 16:34:20

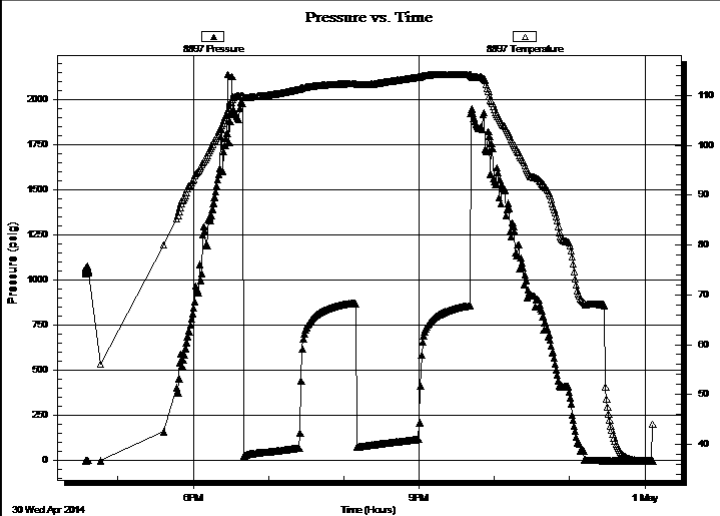
End Time:

00:06:49

Time On Btm:

Time Off Btm:

TEST COMMENT: Strong blow built to 10"
Dead no blow back
Good blow built to 8"
Dead no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
220.00	85%W 15%M	2.81

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Hildebrand Heirs #1-19

9-9s-24w Graham,KS

Job Ticket: 57574

DST#: 2

Test Start: 2014.04.30 @ 16:34:28

GENERAL INFORMATION:

Formation: **LKC E-F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:39:48
 Time Test Ended: 00:06:48
Interval: 3845.00 ft (KB) To 3900.00 ft (KB) (TVD)
 Total Depth: 4074.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Tate Lang
 Unit No: 49
 Reference Elevations: 2463.00 ft (KB)
 2455.00 ft (CF)
 KB to GR/CF: 8.00 ft

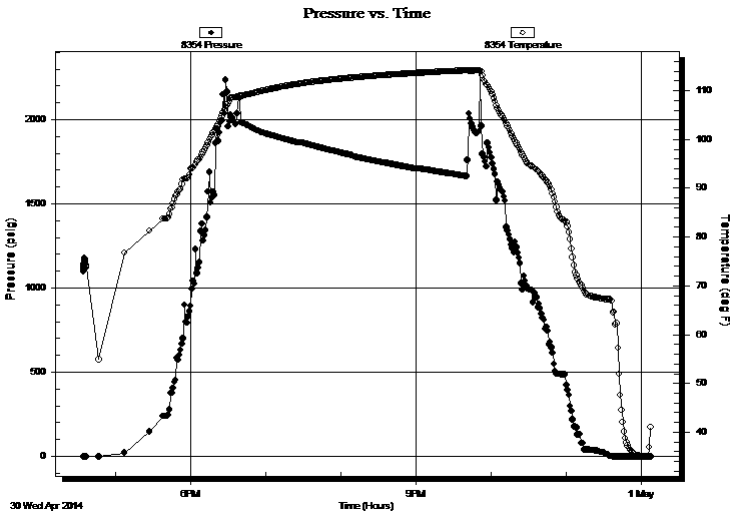
Serial #: 8354

Below (Straddle)

Press@RunDepth: psig @ 3916.00 ft (KB)
 Start Date: 2014.04.30 End Date: 2014.05.01
 Start Time: 16:34:50 End Time: 00:07:19
 Capacity: 8000.00 psig
 Last Calib.: 2014.05.01
 Time On Btm:
 Time Off Btm:

TEST COMMENT: Strong blow built to 10"
 Dead no blow back
 Good blow built to 8"
 Dead no blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
220.00	85%W 15%M	2.81

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

Job Ticket: 57574

DST#: 2

ATTN: Ron Nelson

Test Start: 2014.04.30 @ 16:34:28

Tool Information

Drill Pipe:	Length: 3815.00 ft	Diameter: 3.80 inches	Volume: 53.51 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: 66000.00 lb
			<u>Total Volume: 53.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3845.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	3900.00 ft			
Interval between Packers:	55.00 ft			
Tool Length:	261.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3823.00	
Hydraulic tool	5.00			3828.00	
Jars	5.00			3833.00	
Safety Joint	2.00			3835.00	
Packer	5.00			3840.00	27.00 Bottom Of Top Packer
Packer	5.00			3845.00	
Stubb	1.00			3846.00	
Perforations	5.00			3851.00	
Recorder	0.00	8897	Inside	3851.00	
Recorder	0.00	8898	Outside	3851.00	
Change Over Sub	1.00			3852.00	
Drill Pipe	32.00			3884.00	
Change Over Sub	1.00			3885.00	
Perforations	10.00			3895.00	
Blank Off Sub	1.00			3896.00	
Blank Spacing	4.00			3900.00	55.00 Tool Interval
Packer	5.00			3905.00	
Stubb	1.00			3906.00	
Perforations	10.00			3916.00	
Recorder	0.00	8354	Below	3916.00	
Change Over Sub	1.00			3917.00	
Blank Spacing	158.00			4075.00	
Change Over Sub	1.00			4076.00	
Bullnose	3.00			4079.00	179.00 Bottom Packers & Anchor
Total Tool Length:	261.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

Hildebrand Heirs #1-19

PO Box 1019
Hays KS 67601

9-9s-24w Graham,KS

Job Ticket: 57574

DST#: 2

ATTN: Ron Nelson

Test Start: 2014.04.30 @ 16:34:28

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:

60000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
220.00	85%W 15%M	2.813

Total Length: 220.00 ft

Total Volume: 2.813 bbl

Num Fluid Samples: 0

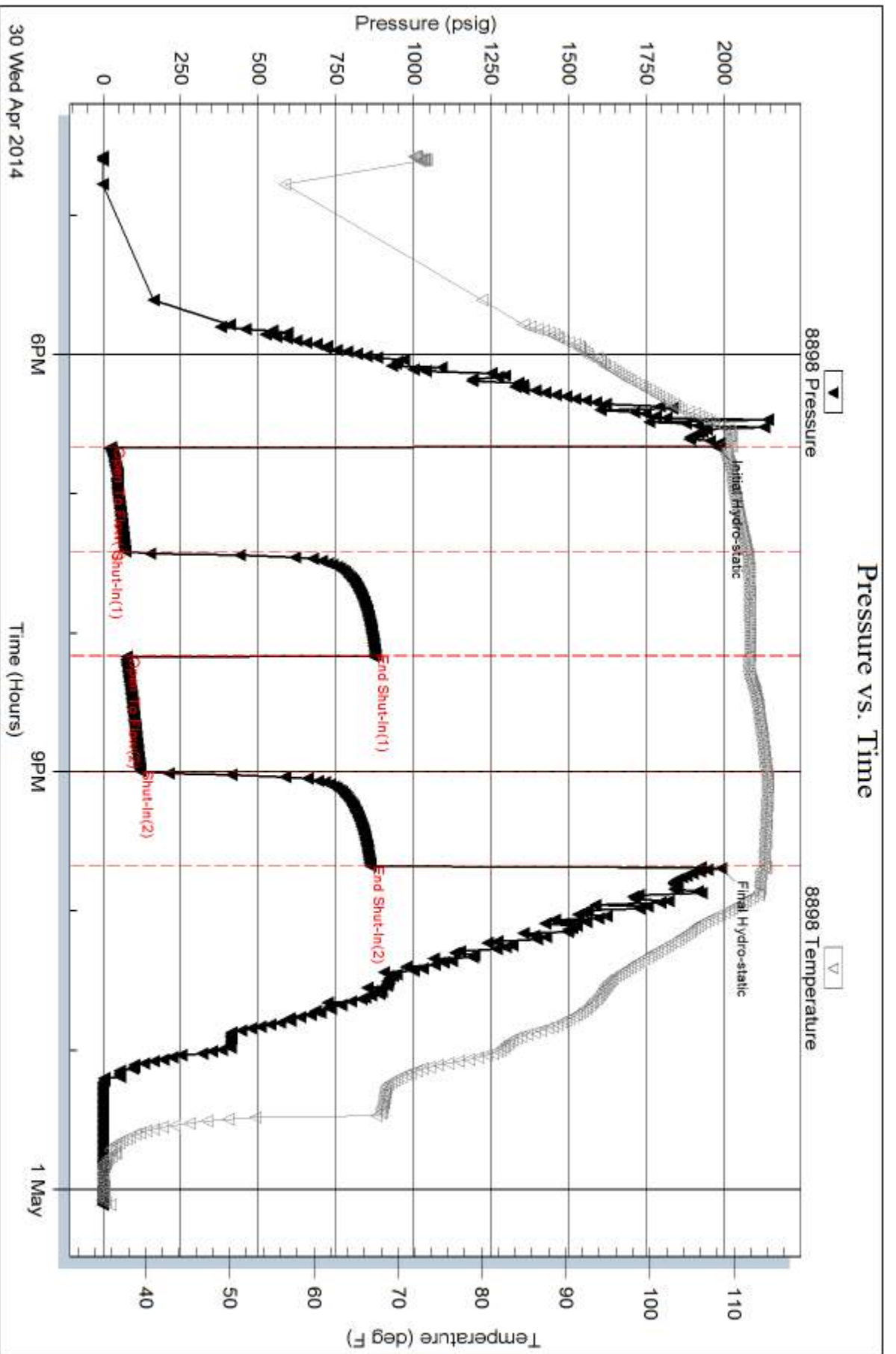
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



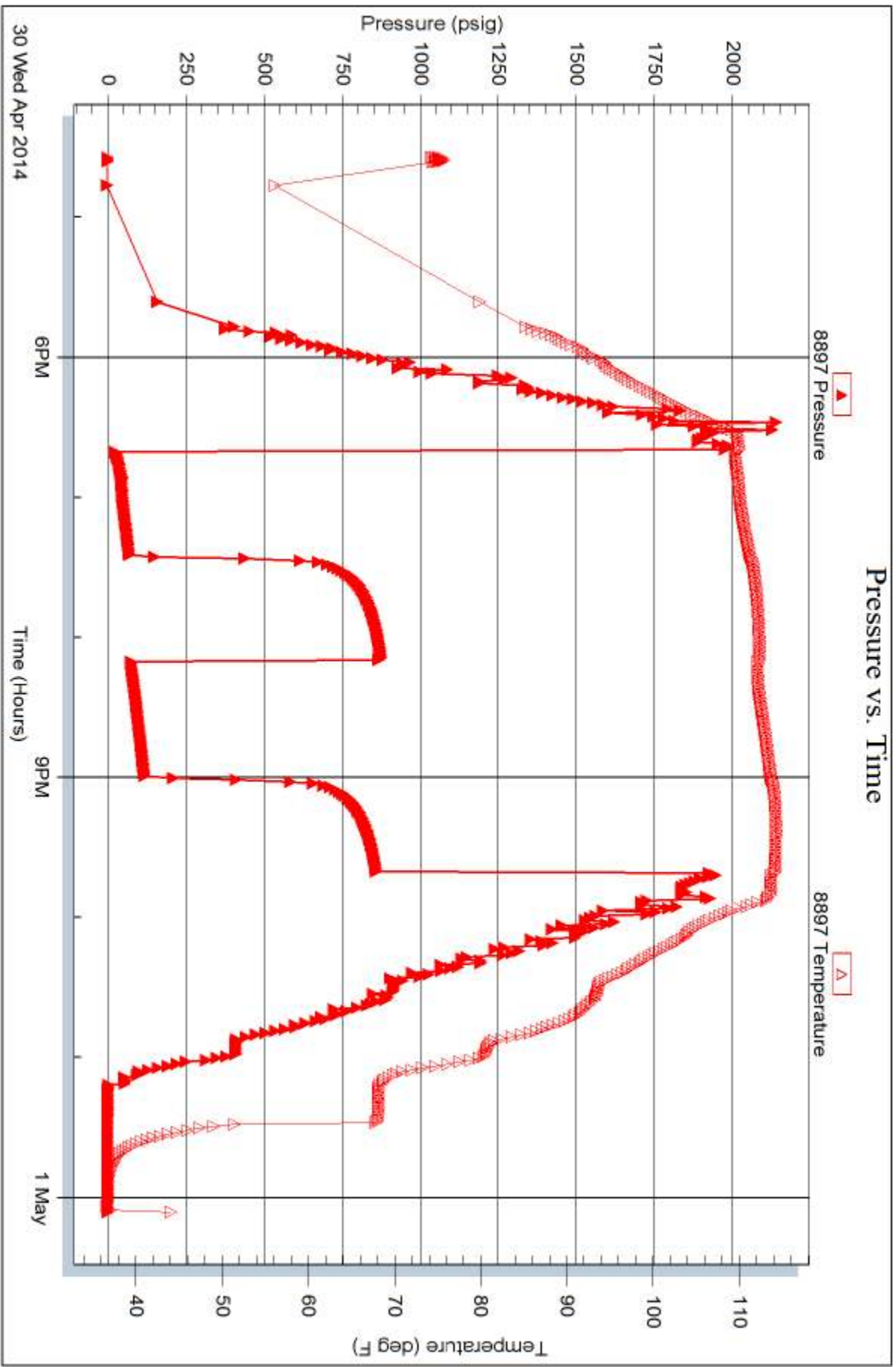
Serial #: 8897

Inside

Dow n ing Nelson Oil Company

9-9s-24w Graham,KS

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 57574

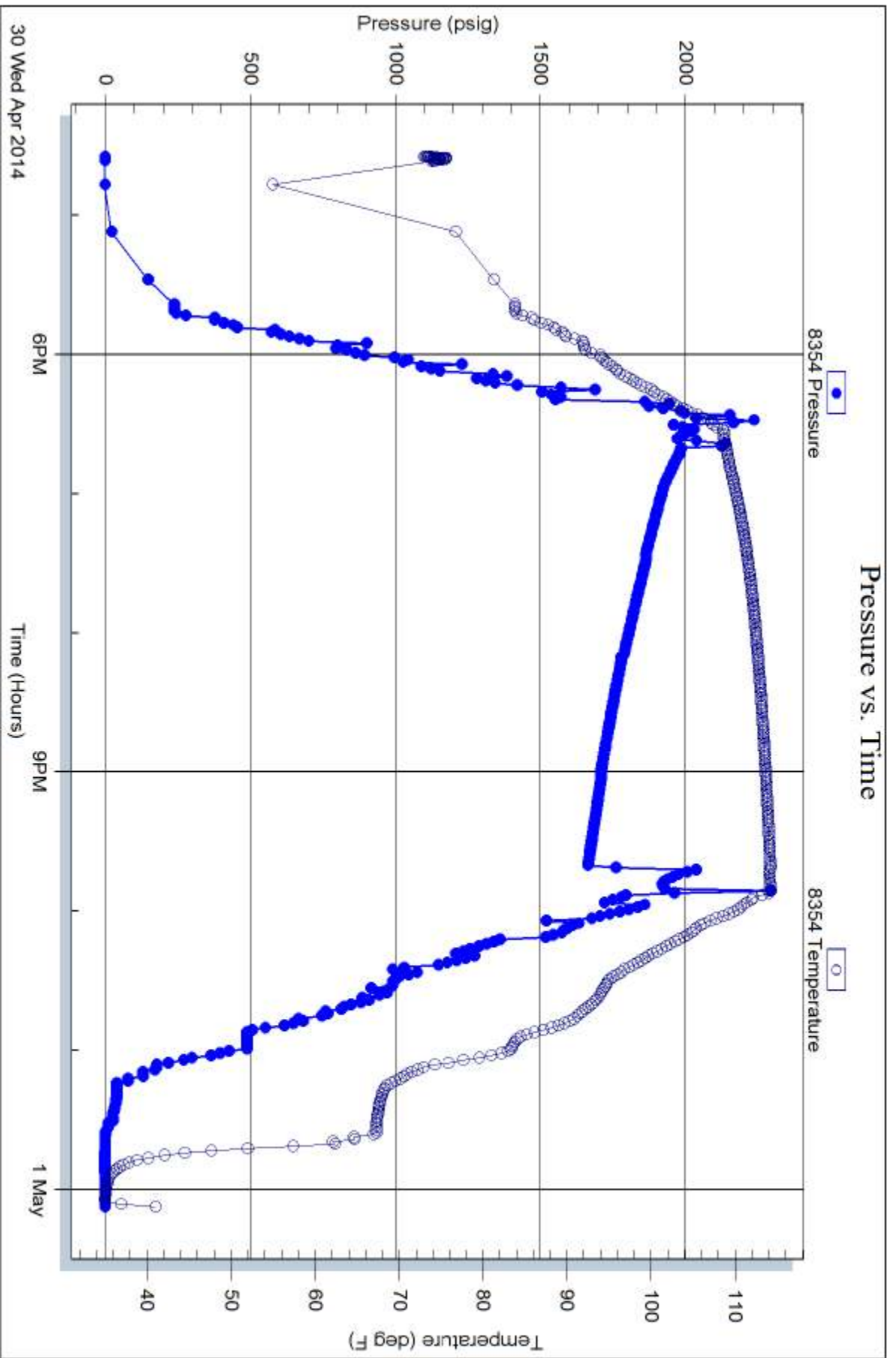
Printed: 2014.05.21 @ 14:42:16

Serial #: 8354

Below (Stratton) Nelson Oil Company

9-9s-24w Graham, KS

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 57574

Printed: 2014.05.21 @ 14:42:16