



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1208292  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1208292

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	K-M Unit 1-20
Doc ID	1208292

All Electric Logs Run

Sonic
Micro
Dual Induction
Compensated Porosity

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	K-M Unit 1-20
Doc ID	1208292

Tops

Name	Top	Datum
Top Anhydrite	1384'	+821
Base Anhydrite	1409'	+798
Heebner	3718'	-1513
LKC	3768'	-1562
BKC	4079'	-1874
Fort Scott	4252'	-2047
Cherokee Shale	4279'	-2074
Detrital Mississippi	4338'	-2133
Osage	4364'	-2159
Gilmore City	4400'	-2195



# ALLIED OIL & GAS SERVICES, LLC 062952

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
Must Read

DATE <u>4-24-14</u>	SEC. <u>20</u>	TWP. <u>20</u>	RANGE <u>20</u>	CALLED OUT <u>3:30 PM</u>	ON LOCATION <u>5:30 PM</u>	JOB START <u>7:30 PM</u>	JOB FINISH <u>1:30 PM</u>
LEASE <u>KM 0077</u>		WELL # <u>1-20</u>		LOCATION <u>Alexander 115 Tow Rd.</u>		COUNTY <u>Pawnee</u>	STATE <u>KS</u>
OLD OR NEW (Circle one) <u>NEW</u>				<u>1 West, 1/2 South, East 1/4</u>			

CONTRACTOR Ducan 3  
 TYPE OF JOB Surface  
 HOLE SIZE 12 1/4 T.D. 1172'  
 CASING SIZE 8 5/8 DEPTH 171'  
 TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_  
 DRILL PIPE \_\_\_\_\_ DEPTH \_\_\_\_\_  
 TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_  
 PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_  
 MEAS. LINE \_\_\_\_\_ SHOE JOINT 22  
 CEMENT LEFT IN CSG 22  
 PERFS. \_\_\_\_\_  
 DISPLACEMENT 23 bbl

OWNER Same  
 CEMENT  
 AMOUNT ORDERED 475 lbs Class A 3% cc  
2% Ad

**EQUIPMENT**

PUMP TRUCK CEMENTER Tom Nelson  
 # 597 HELPER Mike Southern  
 BULK TRUCK  
 # 109-239 DRIVER Bruce Long  
 BULK TRUCK  
 # \_\_\_\_\_ DRIVER \_\_\_\_\_

COMMON	<u>475</u>	@ <u>17.90</u>	<u>8,502.50</u>
POZMIX		@	
GEL	<u>9</u>	@ <u>23.40</u>	<u>210.60</u>
CHLORIDE	<u>1335</u>	@ <u>.80</u>	<u>1,071.20</u>
ASC		@	
		@	<u>9,784.30</u>
		@ <u>25%</u>	<u>2,446.98</u>
		@	
		@	
		@	
		@	
HANDLING	<u>513.62</u>	@ <u>2.48</u>	<u>1,273.27</u>
MILEAGE	<u>23.44 x 35 x</u>	<u>2.60</u>	<u>2,133.99</u>
<b>TOTAL</b>			

**REMARKS:**  
Ran 1171' @ 8 5/8" Pipe. Bore circulation  
Pumped 5 HPD. Mixed 475 lbs class A  
3% cc 2% Ad. Released plug. Displaced  
with H<sub>2</sub>O. Loaded plug & #1  
Cement did circulate.

**SERVICE**

DEPTH OF JOB	<u>1171'</u>		
PUMP TRUCK CHARGE		<u>2213.75</u>	
EXTRA FOOTAGE		@	
MILEAGE	<u>HUM 35</u>	@ <u>7.70</u>	<u>269.50</u>
MANIFOLD		@	
	<u>HUM 35</u>	@ <u>4.40</u>	<u>154.00</u>
		@	

CHARGE TO: Nowling-Nelson  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**TOTAL** 4,851.00  
 (25%) 1,212.75

**PLUG & FLOAT EQUIPMENT**

<u>8 7/8 Raffle Plate</u>	@ <u>131.04</u>	<u>131.04</u>
<u>3 - Centrifuges</u>	@ <u>75.00</u>	<u>225.00</u>
<u>1 - Rubber Plug</u>	@ <u>131.04</u>	<u>131.04</u>
	@	
	@	

**TOTAL** 487.08

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES 15,122.38  
 25% 3,658.09  
 DISCOUNT \_\_\_\_\_ **IF PAID IN 30 DAYS**  
11,463.55

PRINTED NAME GALEN GASCHLER  
 SIGNATURE Galen Gaschler

# ALLIED OIL & GAS SERVICES, LLC 062899

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Oran

DATE <u>5-2-14</u>	SEC. <u>20</u>	TWP. <u>20</u>	RANGE <u>20</u>	CALLED OUT	ON LOCATION <u>1:30 pm</u>	JOB START <u>4:30 pm</u>	JOB FINISH <u>10:30 pm</u>
LEASE <u>Knivaf</u>		WELL# <u>1-20</u>	LOCATION <u>Alexander 115-1W-1ES-1100</u>		COUNTY <u>Garrett</u>	STATE <u>OK</u>	
OLD OR NEW (Circle one)							

CONTRACTOR Discovery 3

TYPE OF JOB Rotary plug

HOLE SIZE 7 7/8 T.D.

CASING SIZE DEPTH

TUBING SIZE DEPTH

DRILL PIPE 1 1/2 DEPTH 1410

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. All

PERFS.

DISPLACEMENT freshwater

OWNER

CEMENT AMOUNT ORDERED 210 66/4044961

1410

COMMON	<u>126</u>	@ <u>17.90</u>	<u>2,255.40</u>
POZMIX	<u>84</u>	@ <u>9.35</u>	<u>785.40</u>
GEL	<u>7</u>	@ <u>23.40</u>	<u>163.80</u>
CHLORIDE		@	
ASC		@	
<u>Flascol</u>	<u>53</u>	@ <u>2.97</u>	<u>157.41</u>
<u>Materials</u>		@ <u>25%</u>	<u>3,362.01</u>
<u>Dust</u>		@	<u>840.50</u>
<u>Service</u>		@	
HANDLING	<u>225.57</u>	@ <u>2.48</u>	<u>559.41</u>
MILEAGE	<u>9.41 x 35 x</u>	<u>2.60</u>	<u>856.31</u>

EQUIPMENT

PUMP TRUCK CEMENTER Josh Isaac

# 598 HELPER Ben Maxwell

BULK TRUCK

# 600 (70) DRIVER Madelyn Spangberg

BULK TRUCK

# DRIVER

**REMARKS:**

on location - plug up

ES - 1410 Ft - 60SKS

#2 - 1700 - 50

#3 - 450 - 40

#4 - 60 - 20

2H - 30SKS

mH - 20SKS

Plug down 1000 pm rig down

**SERVICE**

DEPTH OF JOB		
PUMP TRUCK CHARGE	<u>2249.84</u>	
EXTRA FOOTAGE	@	
MILEAGE <u>Hum 35</u>	@ <u>7.70</u>	<u>269.50</u>
MANIFOLD	@	
<u>Hum 35</u>	@ <u>4.40</u>	<u>154.00</u>
	@	

CHARGE TO: Dannery Nelson

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

(25%) TOTAL 4,089.06  
1,022.28

**PLUG & FLOAT EQUIPMENT**

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____

TOTAL \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME XGALYN GASCHLER

SIGNATURE XGALYN GASCHLER

Thank you!!

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 7,451.03

DISCOUNT 1,862.73

5,588.30 IE PAID IN 30 DAYS



## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co.**

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **K-M Unit #1-20**

#### **20-20s-20w Pawnee,KS**

Start Date: 2014.04.29 @ 21:55:43

End Date: 2014.04.30 @ 04:10:43

Job Ticket #: 56341                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.03 @ 10:22:18



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56341

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2014.04.29 @ 21:55:43

## GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:58:13

Time Test Ended: 04:10:43

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane McBride

Unit No: 55

**Interval: 4278.00 ft (KB) To 4348.00 ft (KB) (TVD)**

Reference Elevations: 2204.00 ft (KB)

Total Depth: 4348.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6771 Inside**

Press@RunDepth: 34.36 psig @ 4279.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.29

End Date:

2014.04.30

Last Calib.: 2014.04.30

Start Time: 21:55:43

End Time:

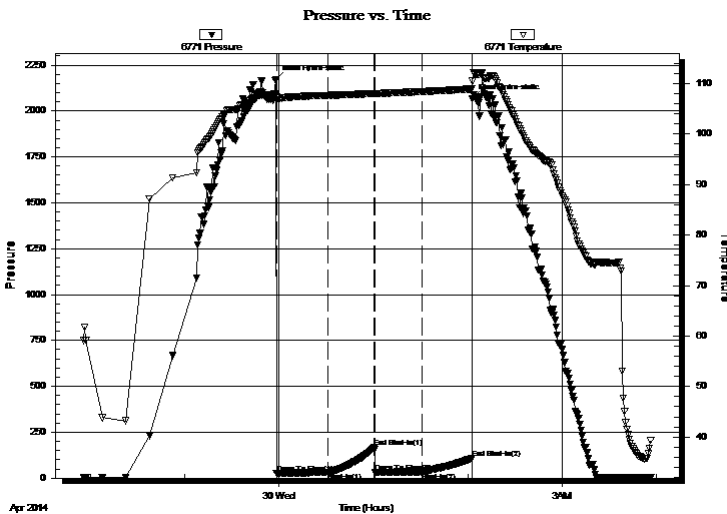
03:56:43

Time On Btm: 2014.04.29 @ 23:57:58

Time Off Btm: 2014.04.30 @ 02:02:58

TEST COMMENT: 1" blow  
No return  
Bubble to open tool , no blow  
No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2170.89	108.00	Initial Hydro-static
1	24.88	107.28	Open To Flow (1)
34	30.43	107.67	Shut-In(1)
63	166.67	108.05	End Shut-In(1)
63	32.42	108.02	Open To Flow (2)
93	34.36	108.42	Shut-In(2)
125	108.52	108.95	End Shut-In(2)
125	2067.09	110.52	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	mud 100%m	0.07

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56341

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2014.04.29 @ 21:55:43

## Tool Information

Drill Pipe:	Length: 4250.00 ft	Diameter: 3.80 inches	Volume: 59.62 bbl	Tool Weight: 2500.00 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: 59.77 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4278.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	70.00 ft			
Tool Length:	98.00 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			4251.00	
Shut In Tool	5.00			4256.00	
Hydraulic tool	5.00			4261.00	
Jars	5.00			4266.00	
Safety Joint	3.00			4269.00	
Packer	5.00			4274.00	28.00 Bottom Of Top Packer
Packer	4.00			4278.00	
Stubb	1.00			4279.00	
Recorder	0.00	6771	Inside	4279.00	
Recorder	0.00	8844	Outside	4279.00	
Perforations	31.00			4310.00	
Change Over Sub	1.00			4311.00	
Drill Pipe	31.00			4342.00	
Change Over Sub	1.00			4343.00	
Bullnose	5.00			4348.00	70.00 Bottom Packers & Anchor

**Total Tool Length: 98.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56341

**DST#: 1**

ATTN: Al Dow ning

Test Start: 2014.04.29 @ 21:55:43

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.12 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100%m	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

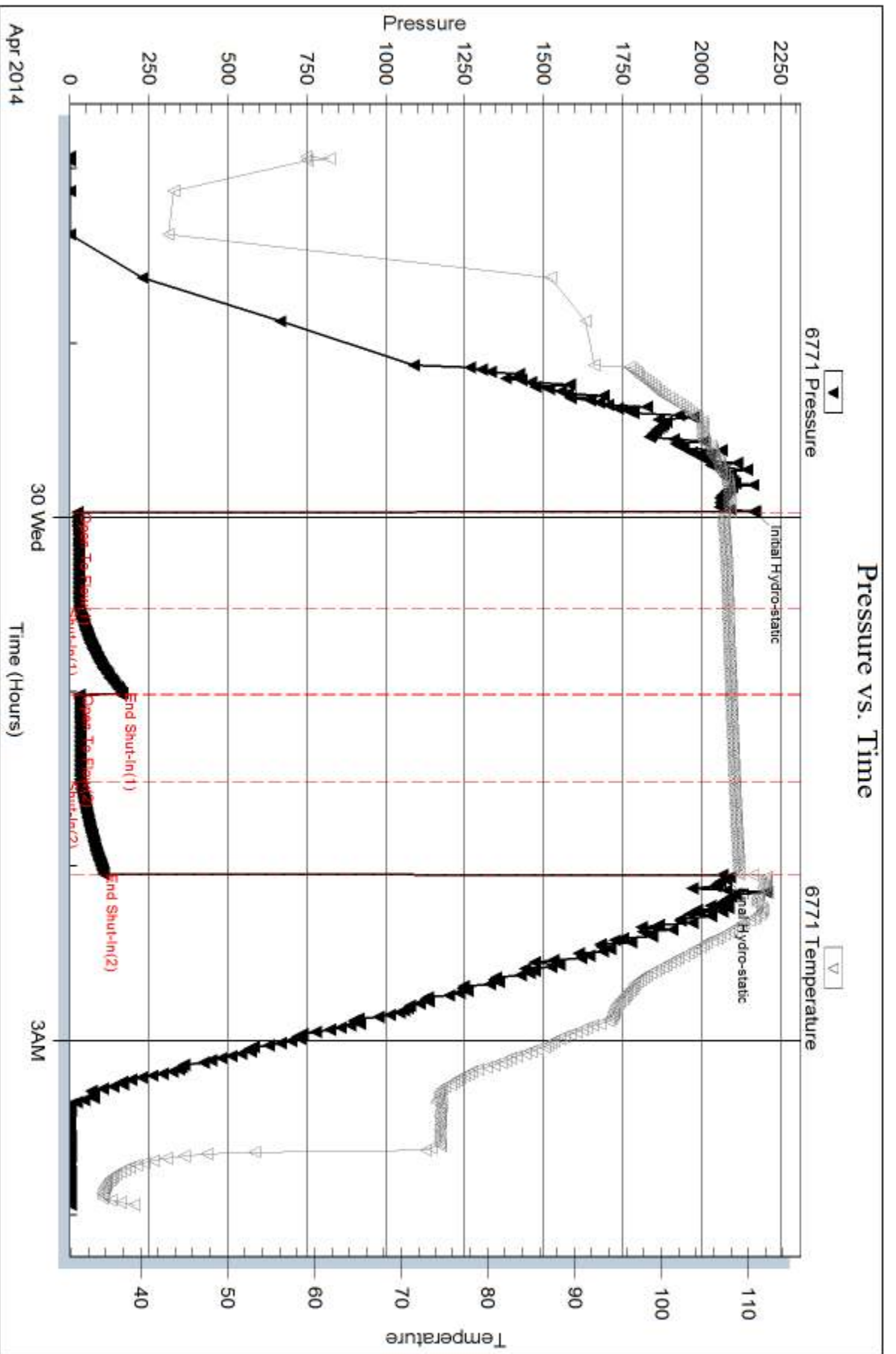
Serial #: 6771

Inside

Downing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56341

Printed: 2014.05.03 @ 10:22:19

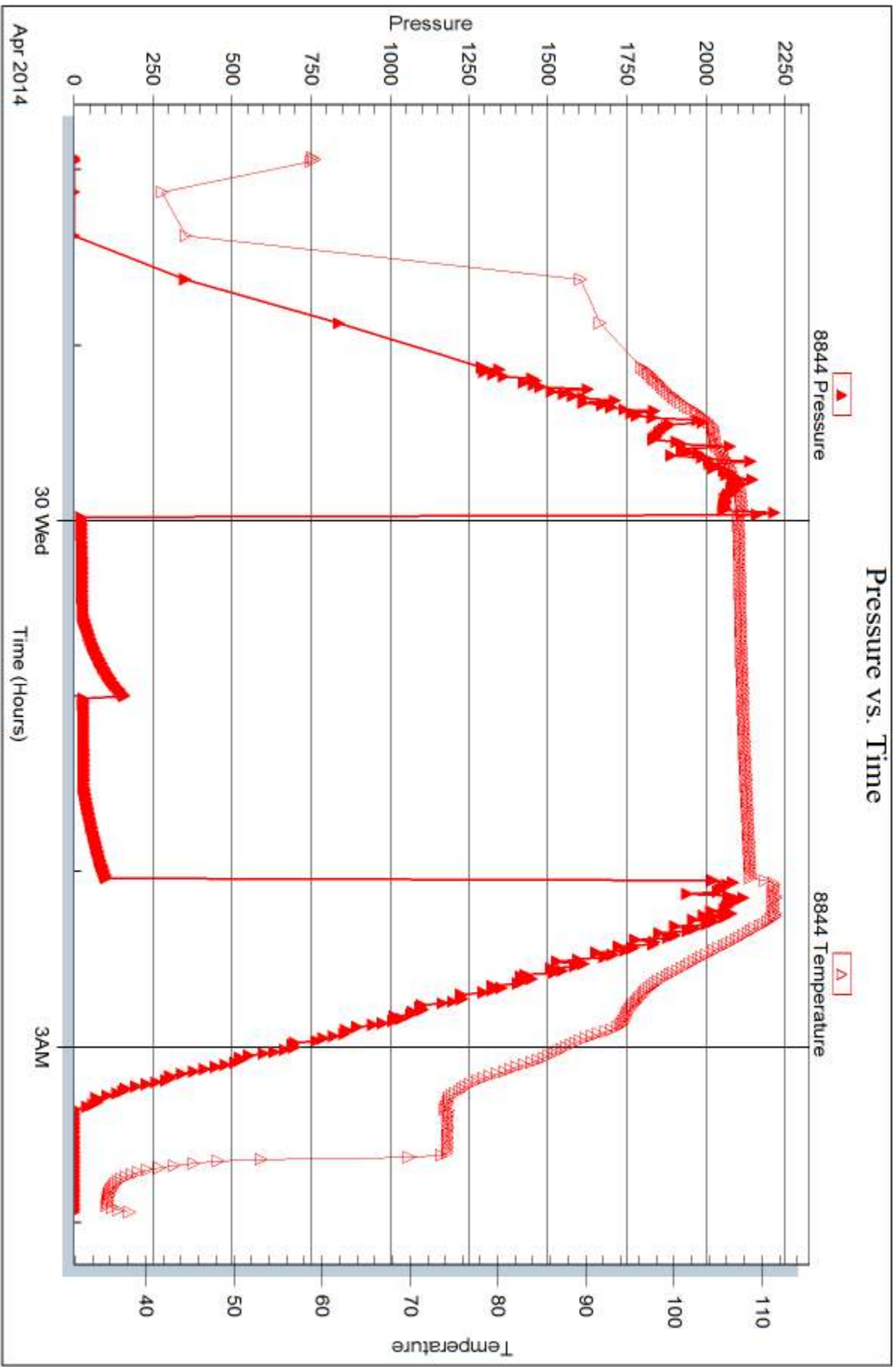


Serial #: 8844

Outside Dow ning Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 56341

Printed: 2014.05.03 @ 10:22:19



## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co.**

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **K-M Unit #1-20**

### **20-20s-20w Pawnee,KS**

Start Date: 2014.04.30 @ 10:21:09

End Date: 2014.04.30 @ 16:45:39

Job Ticket #: 56342                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.03 @ 10:21:57



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56342

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2014.04.30 @ 10:21:09

## GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:21:54

Time Test Ended: 16:45:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

**Interval: 4346.00 ft (KB) To 4359.00 ft (KB) (TVD)**

Reference Elevations: 2204.00 ft (KB)

Total Depth: 4359.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6771 Inside**

Press@RunDepth: 24.04 psig @ 4347.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.30

End Date:

2014.04.30

Last Calib.:

2014.04.30

Start Time:

10:21:09

End Time:

16:27:39

Time On Btm:

2014.04.30 @ 12:21:24

Time Off Btm:

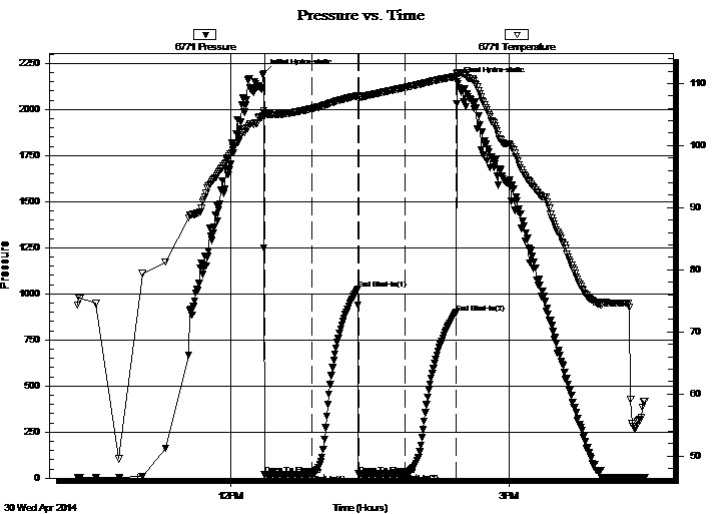
2014.04.30 @ 14:26:24

TEST COMMENT: 1/2" blow

No return

Bubble to open tool, no blow

No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2196.48	105.58	Initial Hydro-static
1	18.75	105.11	Open To Flow (1)
31	21.55	105.94	Shut-In(1)
61	1025.04	108.06	End Shut-In(1)
62	22.48	107.76	Open To Flow (2)
92	24.04	109.37	Shut-In(2)
125	897.97	111.13	End Shut-In(2)
125	2151.37	111.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	mud w /trace of water 3%w 97%m	0.01

\* 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.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56342

**DST#: 2**

ATTN: Al Dow ning

Test Start: 2014.04.30 @ 10:21:09

## Tool Information

Drill Pipe:	Length: 4313.00 ft	Diameter: 3.80 inches	Volume: 60.50 bbl	Tool Weight: 2500.00 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: 85000.00 lb
			<u>Total Volume: 60.65 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4346.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	13.00 ft			
Tool Length:	41.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4319.00	
Shut In Tool	5.00			4324.00	
Hydraulic tool	5.00			4329.00	
Jars	5.00			4334.00	
Safety Joint	3.00			4337.00	
Packer	5.00			4342.00	28.00 Bottom Of Top Packer
Packer	4.00			4346.00	
Stubb	1.00			4347.00	
Recorder	0.00	6771	Inside	4347.00	
Recorder	0.00	8844	Outside	4347.00	
Perforations	7.00			4354.00	
Bullnose	5.00			4359.00	13.00 Bottom Packers & Anchor

**Total Tool Length: 41.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Downing Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56342

**DST#: 2**

ATTN: Al Downing

Test Start: 2014.04.30 @ 10:21:09

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.10 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	mud w /trace of water 3%w 97%m	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

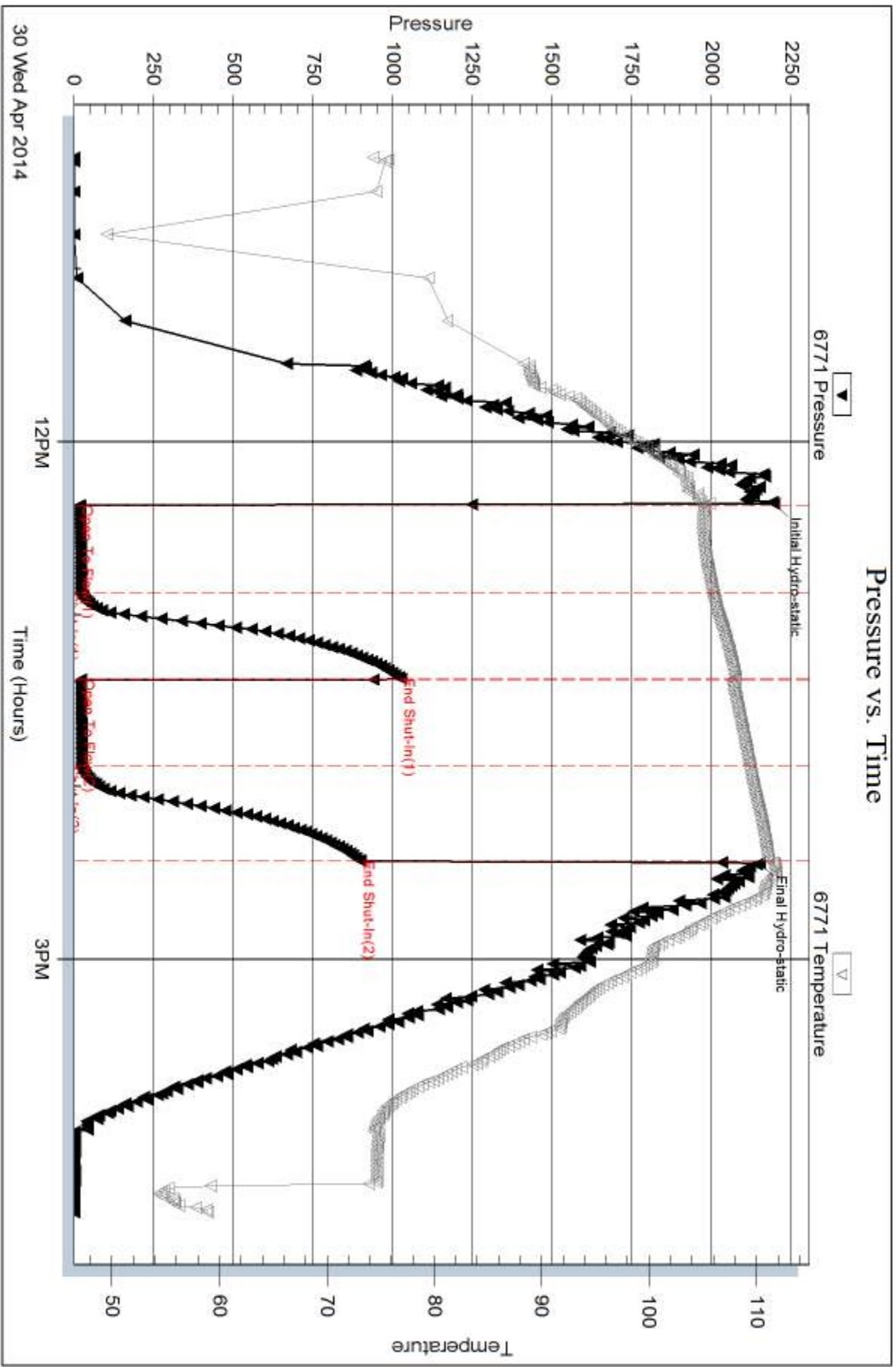
Serial #: 6771

Inside

Downing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56342

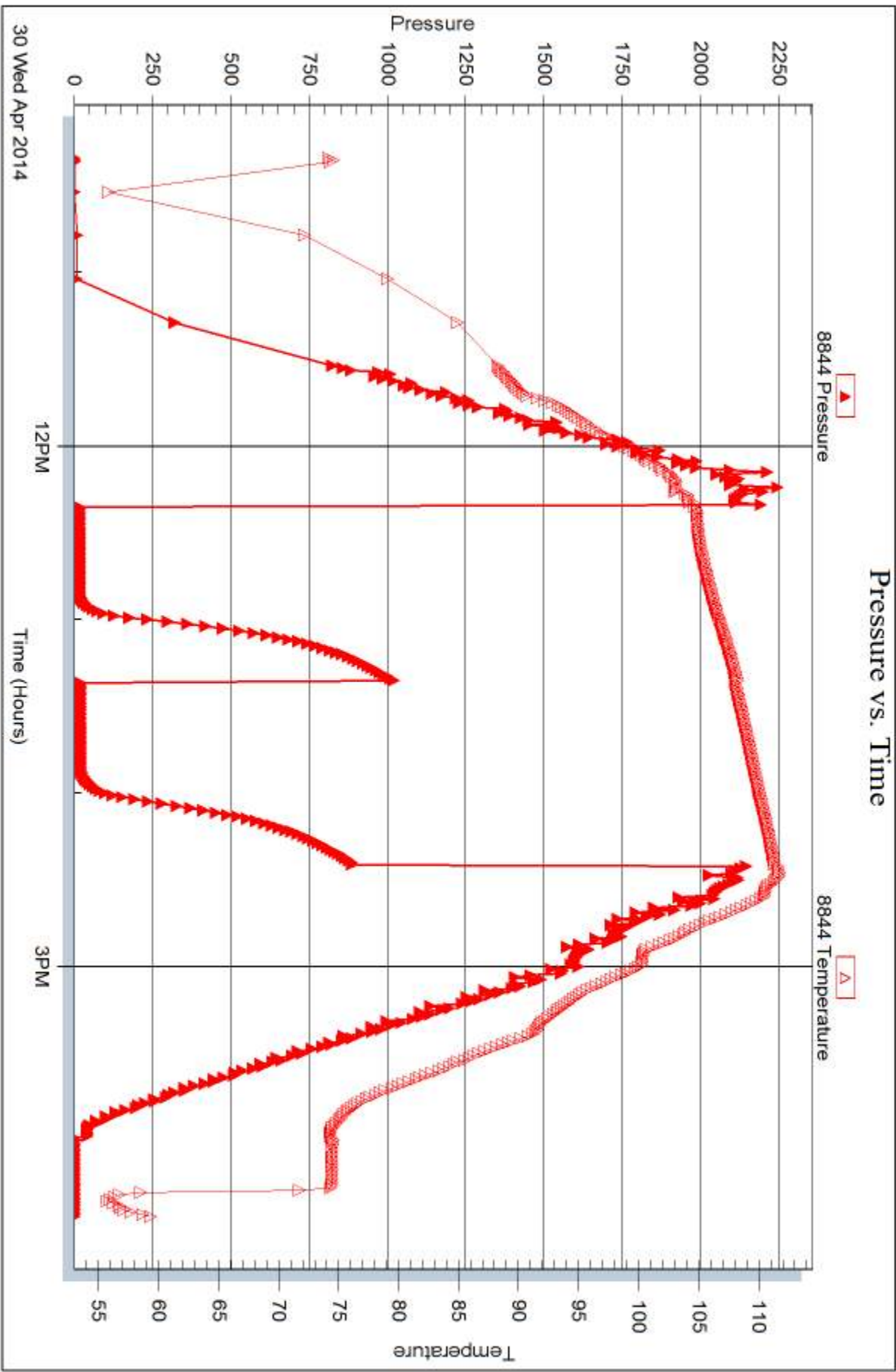
Printed: 2014.05.03 @ 10:21:58

Serial #: 8844

Outside Downing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56342

Printed: 2014.05.03 @ 10:21:59





## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co.**

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **K-M Unit #1-20**

#### **20-20s-20w Pawnee,KS**

Start Date: 2014.04.30 @ 22:38:24

End Date: 2014.05.01 @ 04:35:09

Job Ticket #: 56343                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.03 @ 10:21:35



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56343

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2014.04.30 @ 22:38:24

## GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:17:24

Time Test Ended: 04:35:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

**Interval: 4356.00 ft (KB) To 4369.00 ft (KB) (TVD)**

Reference Elevations: 2204.00 ft (KB)

Total Depth: 4369.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6771 Inside**

Press@RunDepth: 28.55 psig @ 4357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.30

End Date:

2014.05.01

Last Calib.:

2014.05.01

Start Time:

22:38:24

End Time:

04:19:09

Time On Btm:

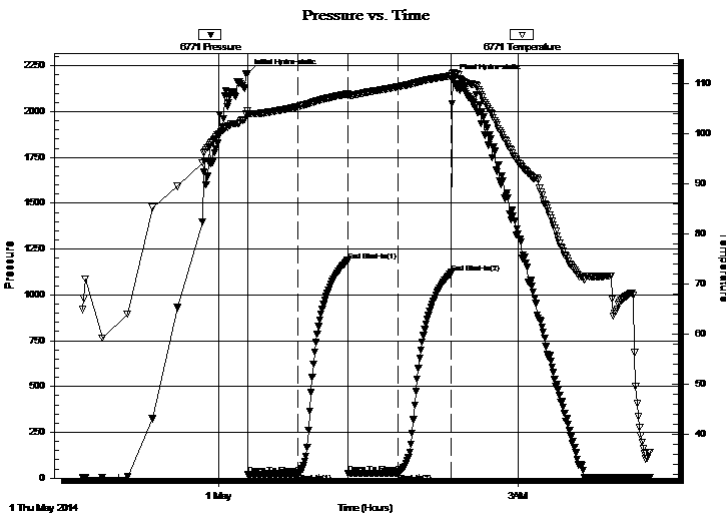
2014.05.01 @ 00:17:09

Time Off Btm:

2014.05.01 @ 02:20:39

TEST COMMENT: 1/2" blow  
No return  
Bubble to open tool , no blow  
No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2209.43	104.67	Initial Hydro-static
1	19.40	104.00	Open To Flow (1)
31	24.56	105.45	Shut-In(1)
61	1188.13	107.98	End Shut-In(1)
61	25.50	107.57	Open To Flow (2)
91	28.55	109.40	Shut-In(2)
123	1122.68	111.58	End Shut-In(2)
124	2178.81	112.28	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	mud w/oil spots on top 100%m	0.01

## 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.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56343

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2014.04.30 @ 22:38:24

## Tool Information

Drill Pipe:	Length: 4313.00 ft	Diameter: 3.80 inches	Volume: 60.50 bbl	Tool Weight: 2500.00 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: 85000.00 lb
			<u>Total Volume: 60.65 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4356.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	13.00 ft			
Tool Length:	41.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4329.00	
Shut In Tool	5.00			4334.00	
Hydraulic tool	5.00			4339.00	
Jars	5.00			4344.00	
Safety Joint	3.00			4347.00	
Packer	5.00			4352.00	28.00 Bottom Of Top Packer
Packer	4.00			4356.00	
Stubb	1.00			4357.00	
Recorder	0.00	6771	Inside	4357.00	
Recorder	0.00	8844	Outside	4357.00	
Perforations	7.00			4364.00	
Bullnose	5.00			4369.00	13.00 Bottom Packers & Anchor

**Total Tool Length: 41.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 56343

**DST#: 3**

ATTN: Al Dow ning

Test Start: 2014.04.30 @ 22:38:24

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
3.00	mud w /oil spots on top 100%m	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

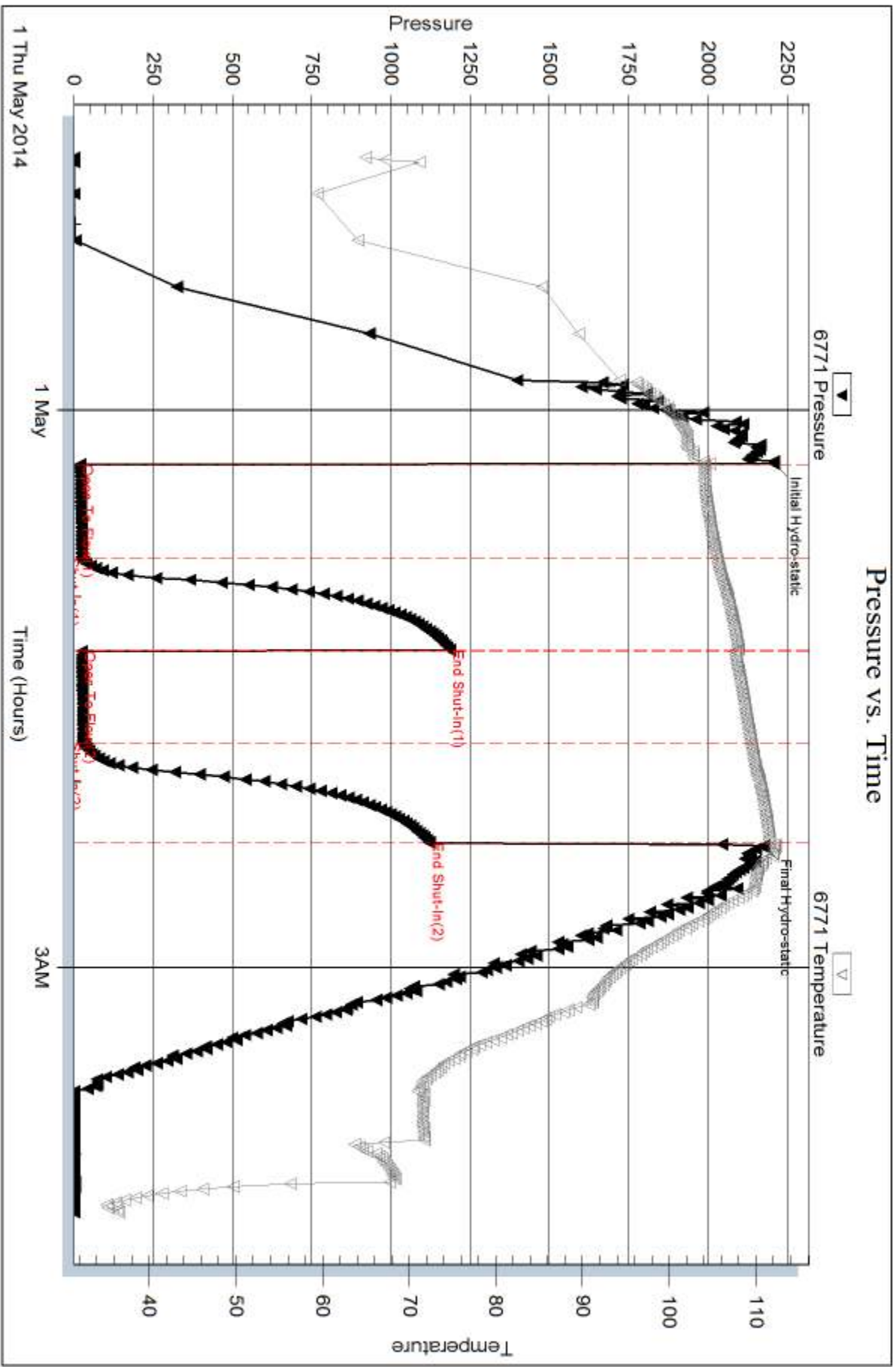
Serial #: 6771

Inside

Dow n ing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 56343

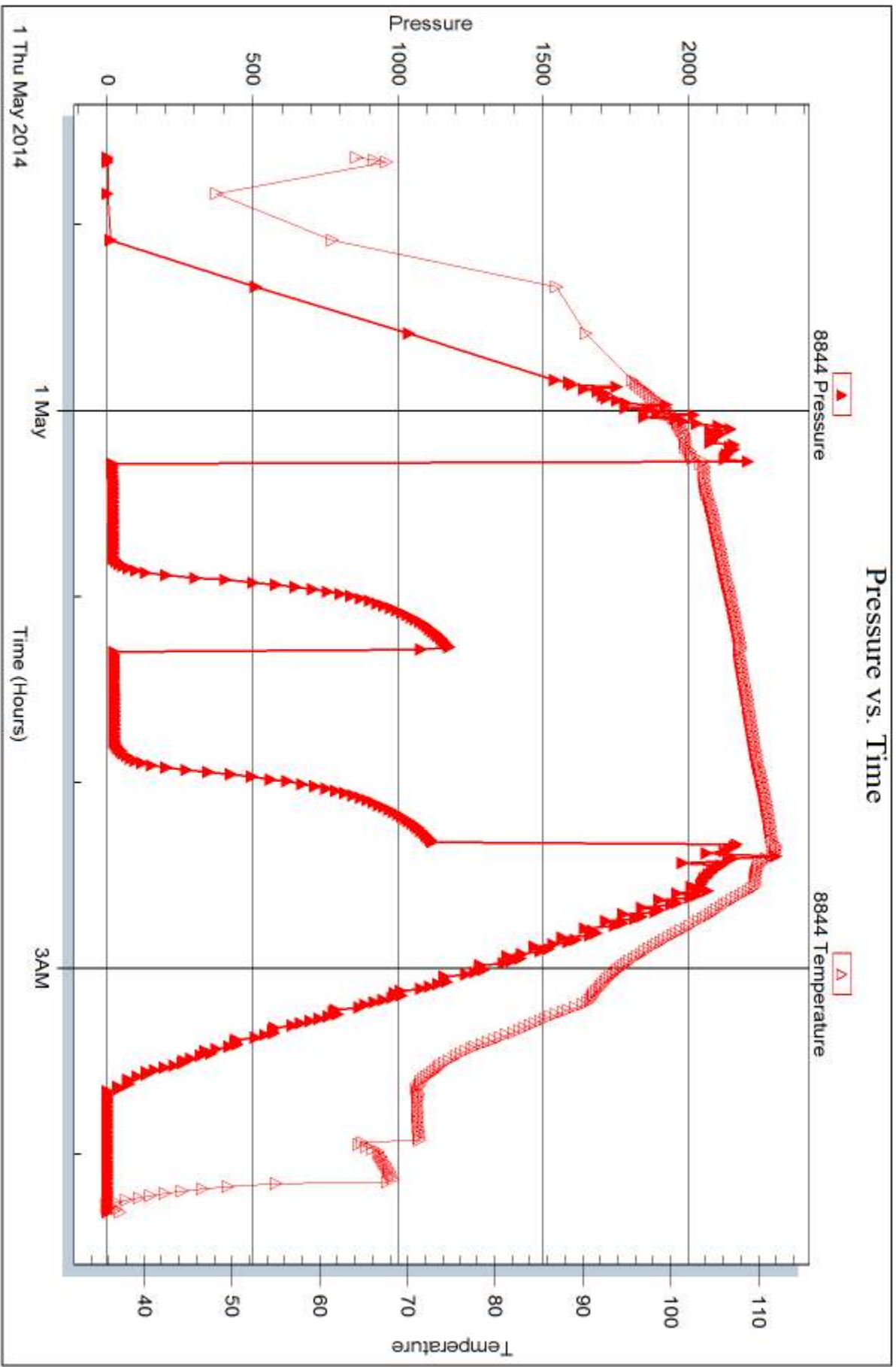
Printed: 2014.05.03 @ 10:21:36

Serial #: 8844

Outside Dow n ing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 56343

Printed: 2014.05.03 @ 10:21:36



## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co.**

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **K-M Unit #1-20**

### **20-20s-20w Pawnee,KS**

Start Date: 2014.05.01 @ 19:22:05

End Date: 2014.05.02 @ 03:28:35

Job Ticket #: 58770                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.03 @ 10:21:07





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58770

**DST#: 4**

ATTN: Al Dow ning

Test Start: 2014.05.01 @ 19:22:05

## GENERAL INFORMATION:

Formation: **Osage**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:49:05

Time Test Ended: 03:28:35

Test Type: Conventional Straddle (Initial)

Tester: Brannan L

Unit No: 48

**Interval: 4365.00 ft (KB) To 4380.00 ft (KB) (TVD)**

Reference Elevations: 2204.00 ft (KB)

Total Depth: 4437.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8647 Below (Straddle)**

Press@RunDepth: 1376.68 psig @ 4401.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.01

End Date:

2014.05.02

Last Calib.:

2014.05.02

Start Time: 19:22:06

End Time:

03:28:35

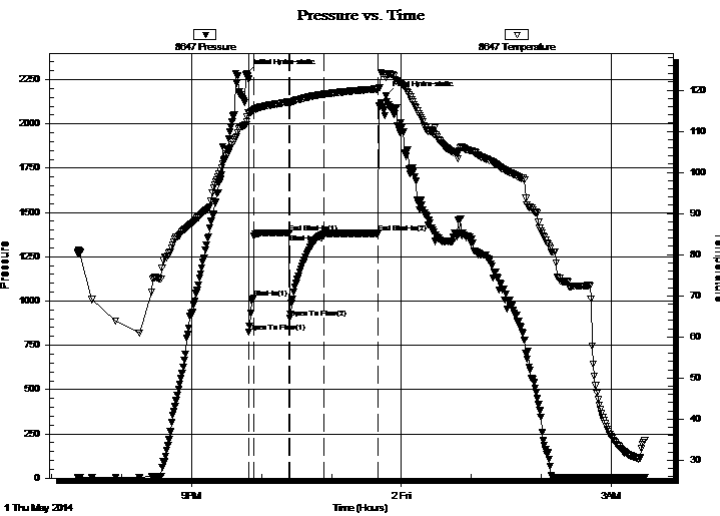
Time On Btm:

2014.05.01 @ 21:47:05

Time Off Btm:

2014.05.01 @ 23:46:35

**TEST COMMENT:** 05- IF- BOB 15 secs  
30- IS- Weak surface blow died in 14 mins  
30- FF- BOB 15 secs  
45- FS- No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2285.56	112.35	Initial Hydro-static
2	824.15	114.34	Open To Flow (1)
6	1018.63	115.09	Shut-In(1)
37	1385.24	117.15	End Shut-In(1)
37	904.70	116.94	Open To Flow (2)
66	1376.68	119.03	Shut-In(2)
113	1383.00	120.33	End Shut-In(2)
120	2157.84	123.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	M	3.83
2730.00	MW, 30%M 70%W	37.29

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58770

**DST#: 4**

ATTN: Al Dow ning

Test Start: 2014.05.01 @ 19:22:05

## Tool Information

Drill Pipe:	Length: 4312.00 ft	Diameter: 3.75 inches	Volume: 58.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	4365.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	4380.00 ft			
Interval betw een Packers:	15.00 ft			
Tool Length:	99.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Straddle Packer Failure

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4339.00	
Shut In Tool	5.00			4344.00	
Hydraulic tool	5.00			4349.00	
Jars	5.00			4354.00	
Safety Joint	2.00			4356.00	
Packer	5.00			4361.00	27.00 Bottom Of Top Packer
Packer	4.00			4365.00	
Stubb	1.00			4366.00	
Perforations	10.00			4376.00	
Recorder	0.00	8321	Inside	4376.00	
Recorder	0.00	8372	Outside	4376.00	
Blank Off Sub	1.00			4377.00	
Blank Spacing	3.00			4380.00	15.00 Tool Interval
Packer	1.00			4381.00	
Stubb	1.00			4382.00	
Perforations	18.00			4400.00	
Change Over Sub	1.00			4401.00	
Recorder	0.00	8647	Below	4401.00	
Blank Spacing	32.00			4433.00	
Change Over Sub	1.00			4434.00	
Bullnose	3.00			4437.00	57.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>99.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing Nelson Oil Co.

**20-20s-20w Pawnee, KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58770

**DST#: 4**

ATTN: Al Downing

Test Start: 2014.05.01 @ 19:22:05

## 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:

13000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 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 bbl
300.00	M	3.827
2730.00	MW, 30%M 70%W	37.294

Total Length: 3030.00 ft

Total Volume: 41.121 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

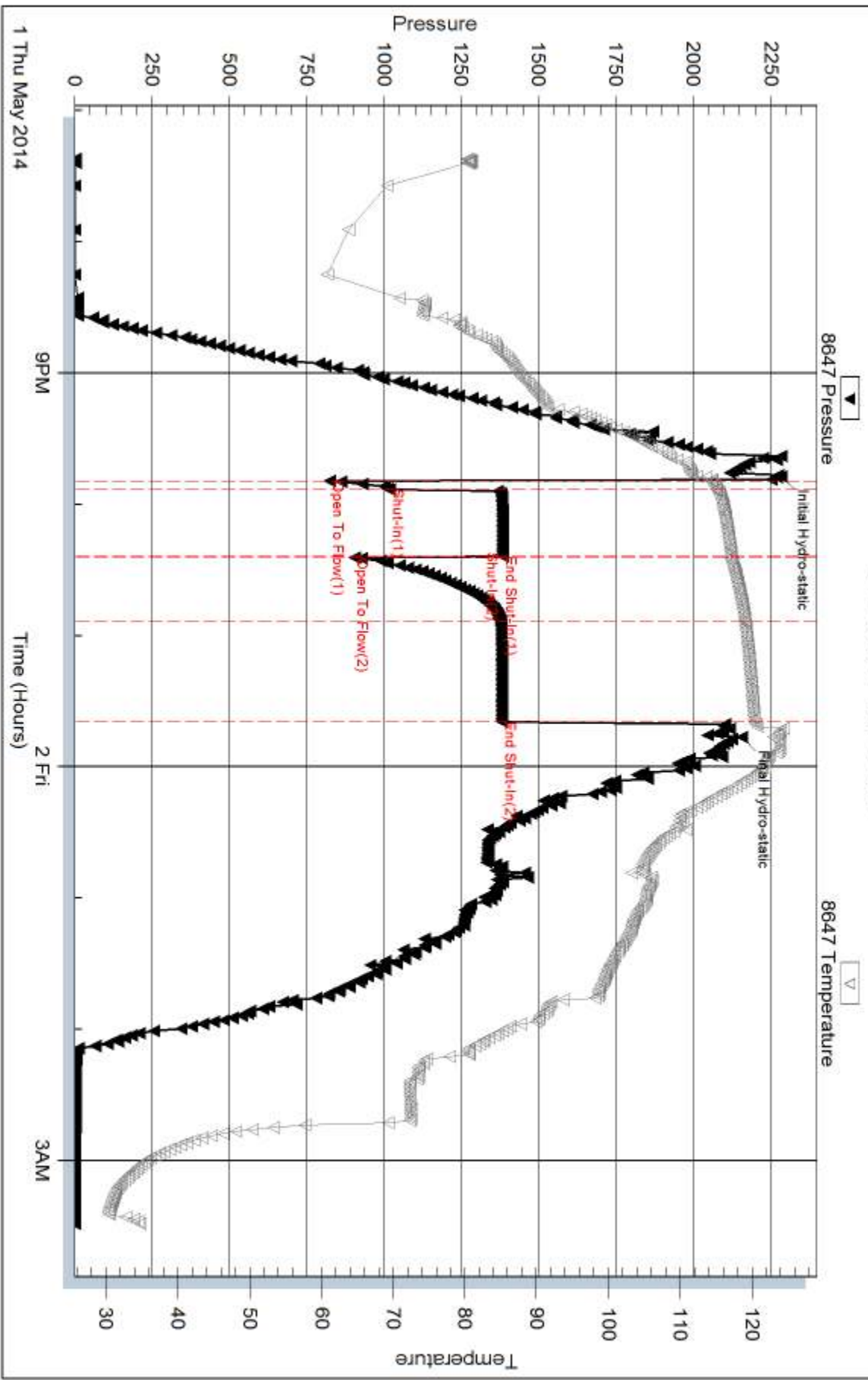
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

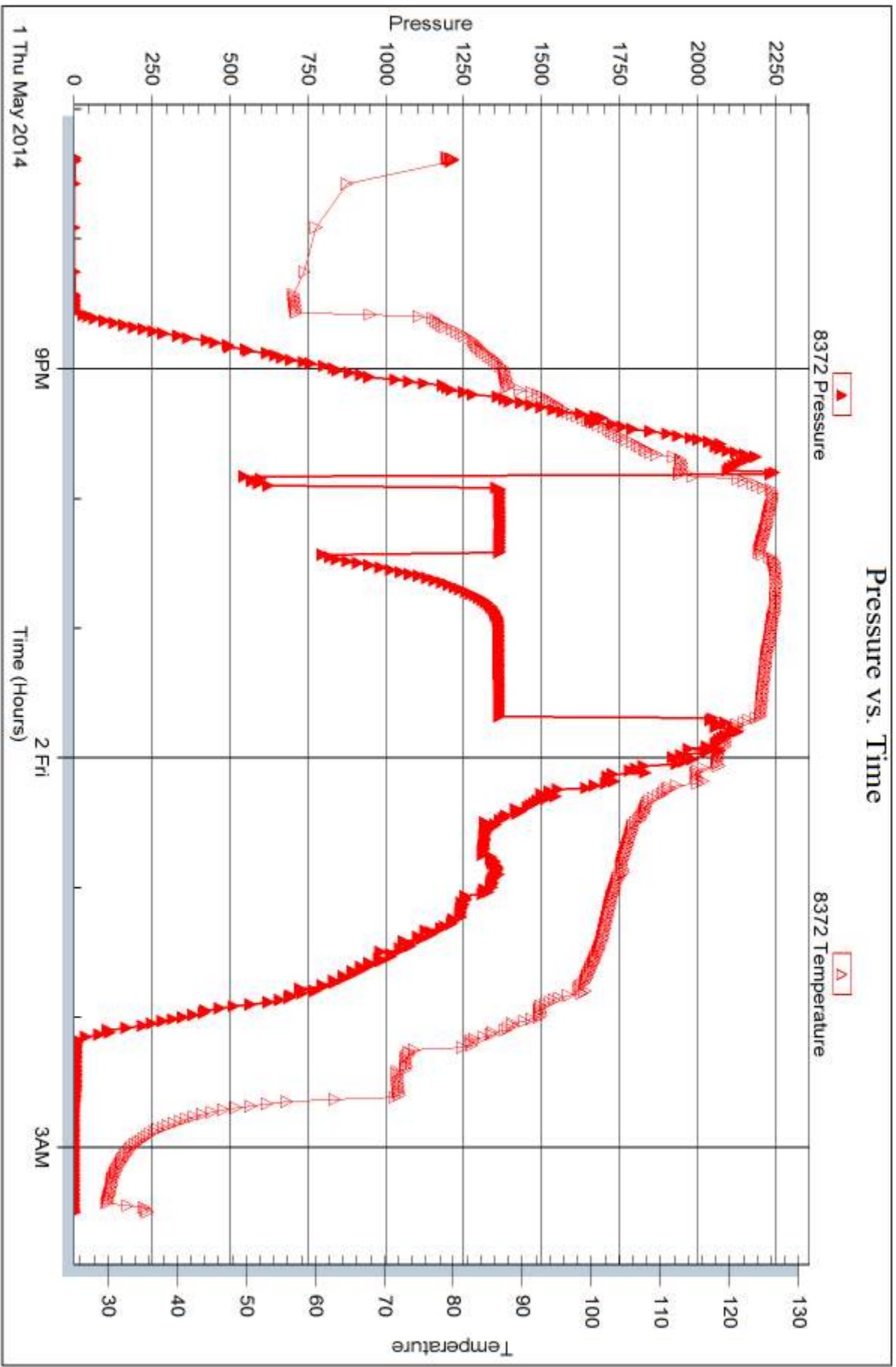


Serial #: 8372

Outside Downing Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 4



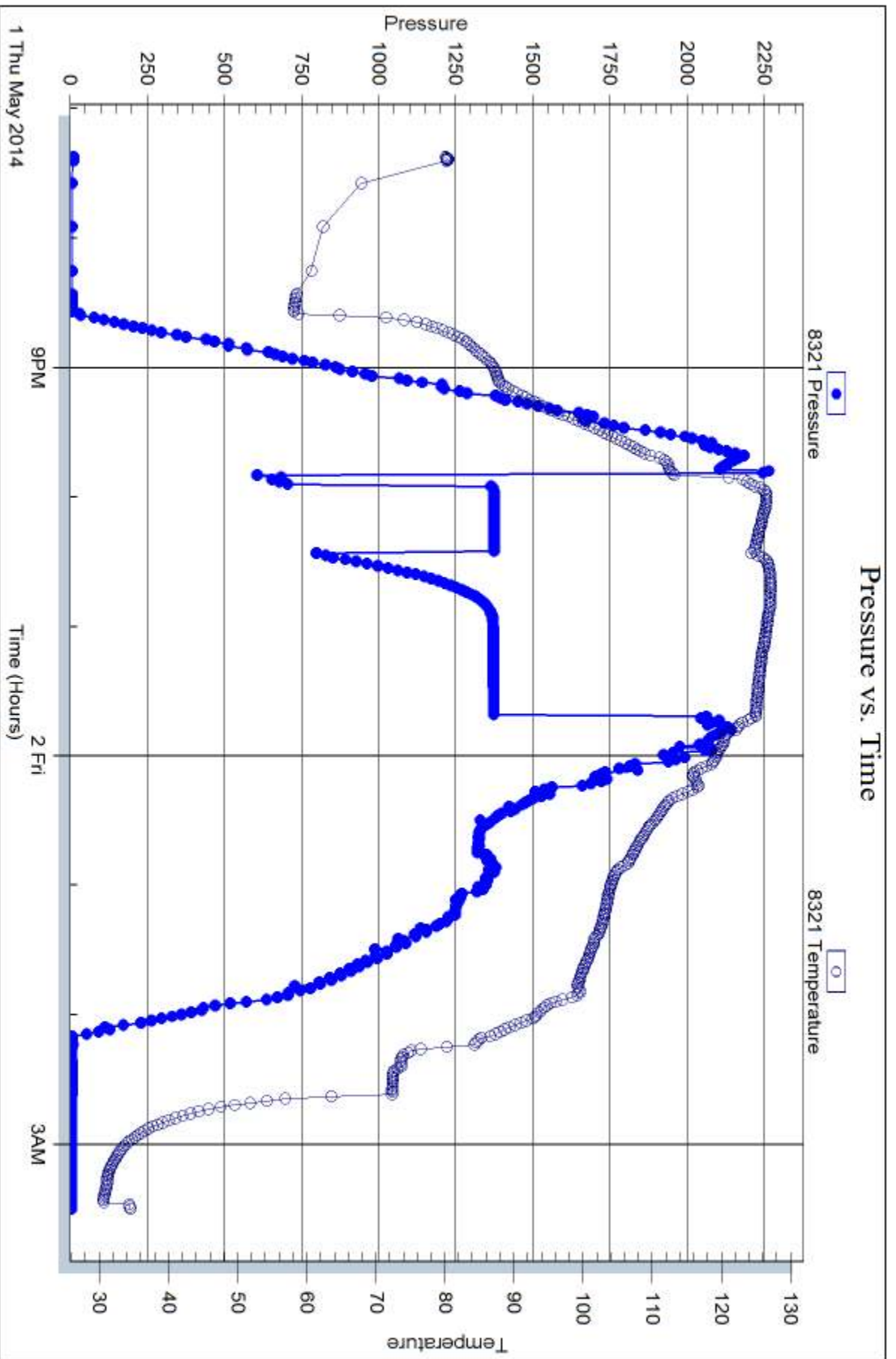
Serial #: 8321

Inside

Dowling Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 58770

Printed: 2014.05.03 @ 10:21:09





## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co.**

PO Box 1019  
Hays, KS 67601

ATTN: Al Downing

### **K-M Unit #1-20**

### **20-20s-20w Pawnee,KS**

Start Date: 2014.05.02 @ 06:58:41

End Date: 2014.05.02 @ 15:36:40

Job Ticket #: 58771                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.05.03 @ 10:20:29



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee, KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58771

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2014.05.02 @ 06:58:41

## GENERAL INFORMATION:

Formation: **Osage**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:56:10

Time Test Ended: 15:36:40

Test Type: Conventional Straddle (Reset)

Tester: Brannan L

Unit No: 48

**Interval: 4365.00 ft (KB) To 4378.00 ft (KB) (TVD)**

Reference Elevations: 2204.00 ft (KB)

Total Depth: 4437.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 8.00 ft

**Serial #: 8372 Outside**

Press@RunDepth: 786.42 psig @ 4374.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.02

End Date: 2014.05.02

Last Calib.: 2014.05.02

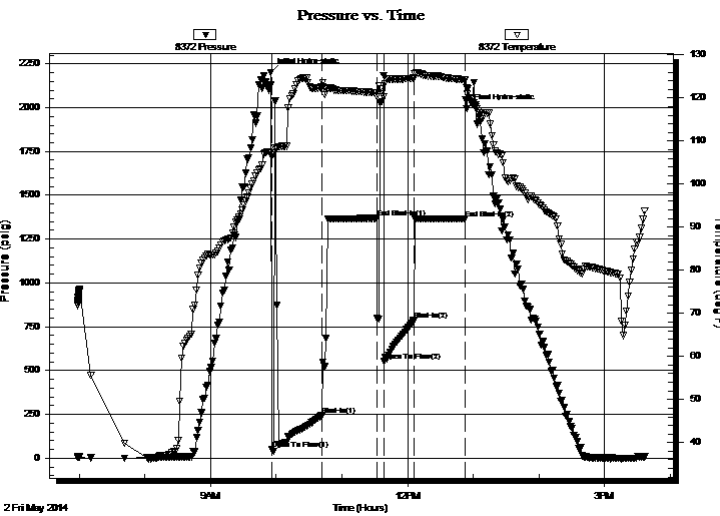
Start Time: 06:58:41

End Time: 15:36:40

Time On Btm: 2014.05.02 @ 09:55:10

Time Off Btm: 2014.05.02 @ 12:54:10

**TEST COMMENT:** 30- IF- BOB 12 mins  
45- IS- No blow  
30- FF- BOB 6 mins  
45- FS- No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.88	107.34	Initial Hydro-static
1	49.90	106.33	Open To Flow (1)
47	246.46	122.63	Shut-In(1)
97	1369.67	121.25	End Shut-In(1)
104	551.39	120.30	Open To Flow (2)
131	786.42	124.65	Shut-In(2)
178	1366.26	124.12	End Shut-In(2)
179	1994.84	122.33	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1650.00	MW, 30%M 70%W	22.27

\* 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.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58771

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2014.05.02 @ 06:58:41

## Tool Information

Drill Pipe:	Length: 4312.00 ft	Diameter: 3.75 inches	Volume: 58.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 7.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4365.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	4378.00 ft			
Interval betw een Packers:	13.00 ft			
Tool Length:	99.00 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			4339.00	
Shut In Tool	5.00			4344.00	
Hydraulic tool	5.00			4349.00	
Jars	5.00			4354.00	
Safety Joint	2.00			4356.00	
Packer	5.00			4361.00	27.00 Bottom Of Top Packer
Packer	4.00			4365.00	
Stubb	1.00			4366.00	
Perforations	8.00			4374.00	
Recorder	0.00	8321	Inside	4374.00	
Recorder	0.00	8372	Outside	4374.00	
Blank Off Sub	1.00			4375.00	
Blank Spacing	3.00			4378.00	13.00 Tool Interval
Packer	1.00			4379.00	
Packer - Shale	0.00			4379.00	
Stubb	1.00			4380.00	
Perforations	20.00			4400.00	
Change Over Sub	1.00			4401.00	
Recorder	0.00	8647	Below	4401.00	
Blank Spacing	32.00			4433.00	
Change Over Sub	1.00			4434.00	
Bullnose	3.00			4437.00	59.00 Bottom Packers & Anchor

**Total Tool Length: 99.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dow ning Nelson Oil Co.

**20-20s-20w Pawnee,KS**

PO Box 1019  
Hays, KS 67601

**K-M Unit #1-20**

Job Ticket: 58771

**DST#: 5**

ATTN: Al Dow ning

Test Start: 2014.05.02 @ 06:58:41

## 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:

bbbl

Water Loss: 8.75 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 bbl
1650.00	MW, 30%M 70%W	22.269

Total Length: 1650.00 ft      Total Volume: 22.269 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

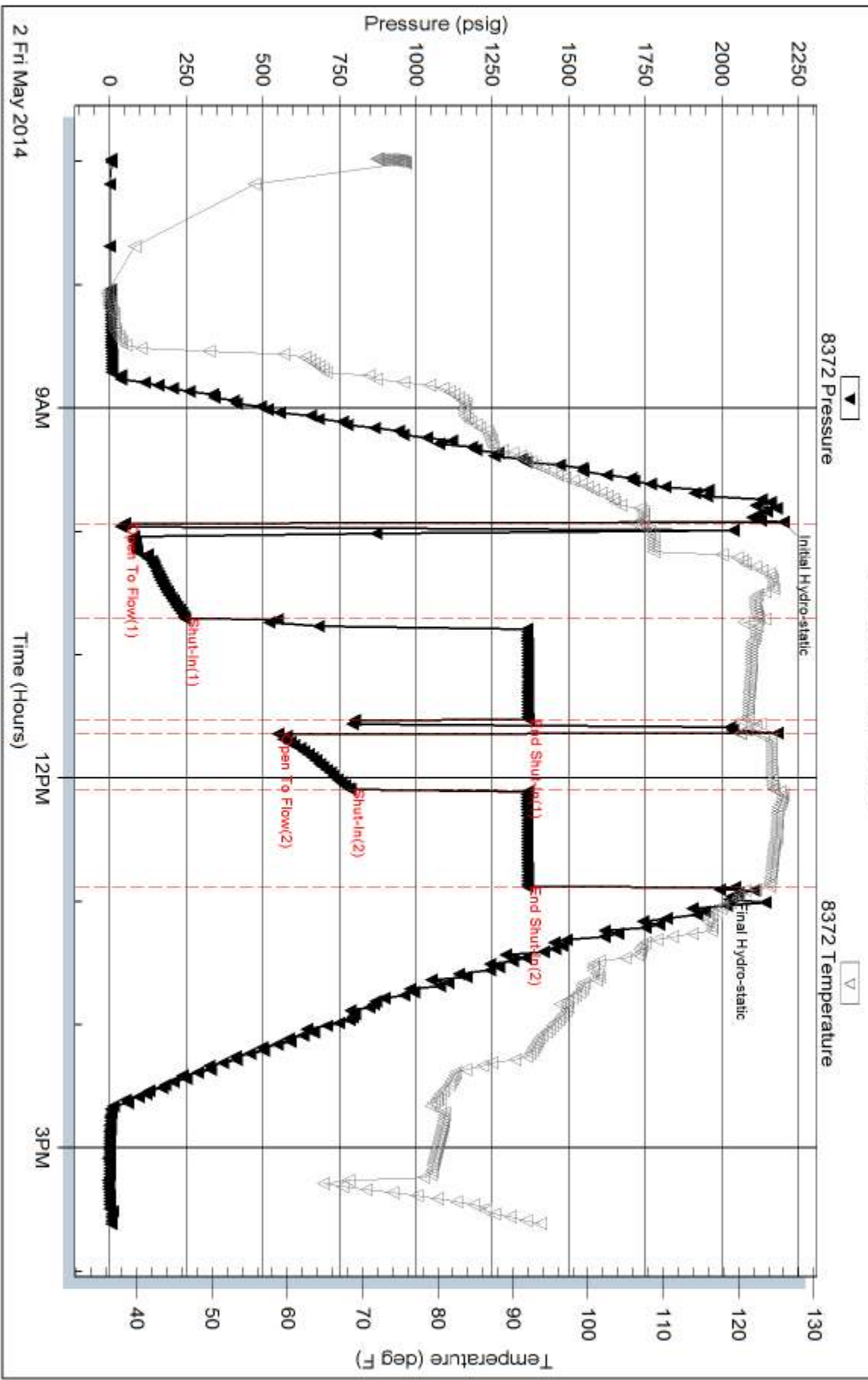
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

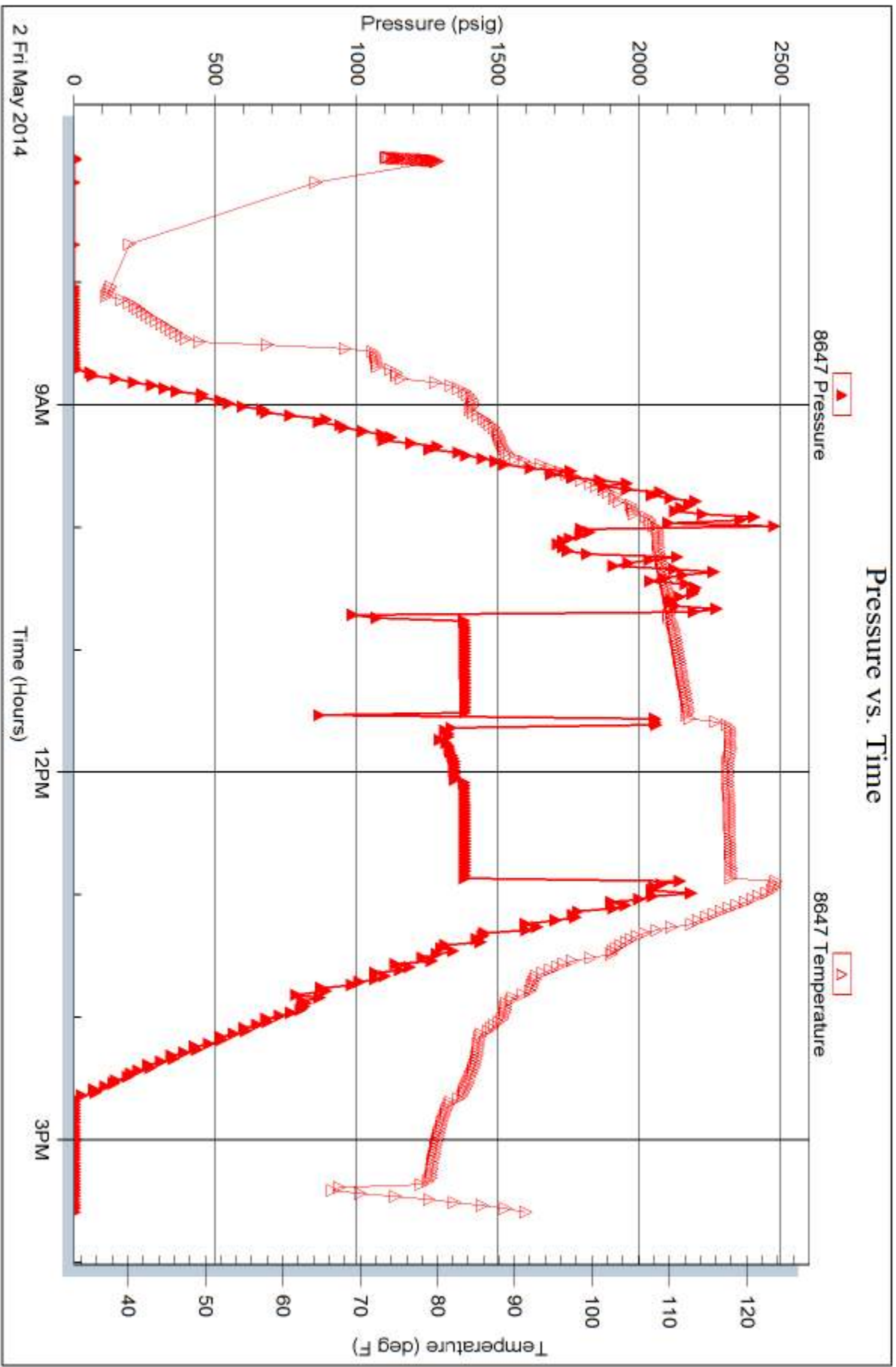


Serial #: 8647

Below (Stratton) Nelson Oil Co.

K-M Unit #1-20

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 58771

Printed: 2014.05.03 @ 10:20:30



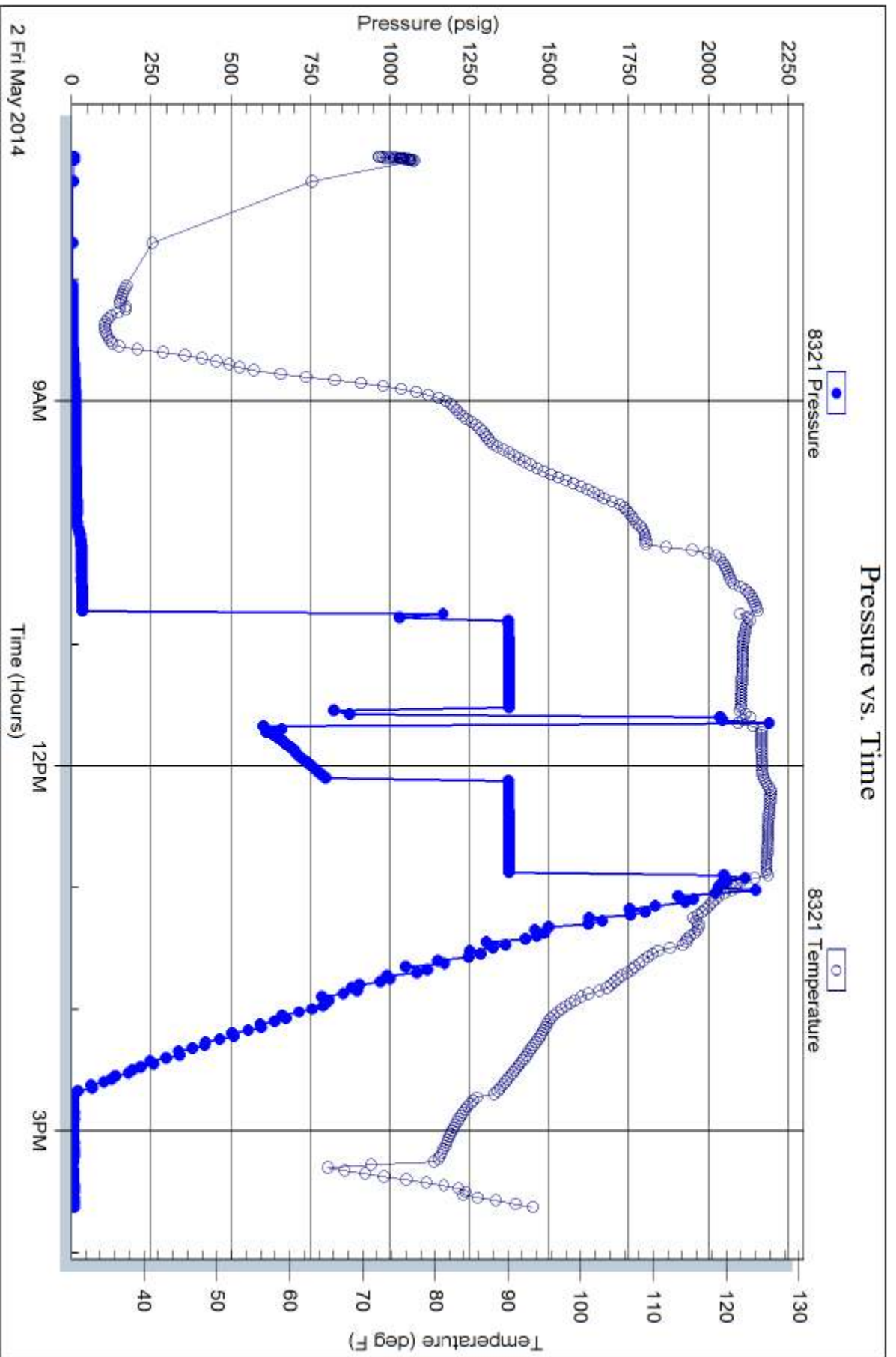
Serial #: 8321

Inside

Dow n ing Nelson Oil Co.

K-M Unit #1-20

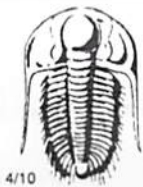
DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 58771

Printed: 2014.05.03 @ 10:20:30



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **56341**

Well Name & No. K-M-Unit # 1-20 Test No. #1 Date 4/30/13  
 Company Downing Nelson Co Elevation 2204 KB 2196 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Ah Downing Rig Discovery #3  
 Location: Sec. 20 Twp. 20 Rge. 20W Co. Lawrence State KS

Interval Tested 4278 4348 Zone Tested Miss  
 Anchor Length 70 Drill Pipe Run 4250' Mud Wt. 9.4  
 Top Packer Depth 4273 Drill Collars Run 30' Vis 51  
 Bottom Packer Depth 4278 Wt. Pipe Run --- WL 8.2  
 Total Depth 4348 Chlorides 3600 ppm System LCM #2

Blow Description 1" blow  
No return  
Bubble to open tool No blow  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>mud</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 111° Gravity --- API RW --- @ --- °F Chlorides --- ppm

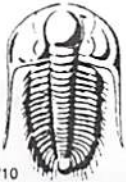
(A) Initial Hydrostatic <u>2170</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>21:20</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>21:55</u>
(C) First Final Flow <u>30</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:58</u>
(D) Initial Shut-In <u>166</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>01:58</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby <u>---</u>	T-Out <u>04:10</u>
(F) Second Final Flow <u>34</u>	<input checked="" type="checkbox"/> Mileage <u>176 RT</u> <u>182.90</u>	Comments <u>---</u>
(G) Final Shut-In <u>108</u>	<input type="checkbox"/> Sampler <u>---</u>	
(H) Final Hydrostatic <u>2067</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>
	<input type="checkbox"/> Extra Packer <u>---</u>	<input type="checkbox"/> Extra Copies <u>---</u>
	<input type="checkbox"/> Extra Recorder <u>---</u>	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby <u>---</u>	Total <u>1757.90</u>
	<input type="checkbox"/> Accessibility <u>---</u>	MP/DST Disc't <u>---</u>
	Sub Total <u>1757.90</u>	

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

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56342

4/10

Well Name & No. K-m-unit #1-20 Test No. #2 Date 4/30/14  
 Company Downing Nelson Co Elevation 2204 KB 2196 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. AL Downing Rig Discovery #3  
 Location: Sec. 20 Twp. 20 Rge. 20w Co. Jawnee State Ks

Interval Tested 4346 4359 Zone Tested M.S.S  
 Anchor Length 13 Drill Pipe Run 4313' Mud Wt. 9.4  
 Top Packer Depth 4341 Drill Collars Run 30' Vis 51  
 Bottom Packer Depth 4346 Wt. Pipe Run 3000 WL 8.0  
 Total Depth 4359 Chlorides 3000 ppm System LCM #2

Blow Description 1/2" in blow  
No return  
Bubble to open foot, No blow  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>3'</u>	<u>Mud Trace of Water</u>			<u>3</u>	<u>97</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

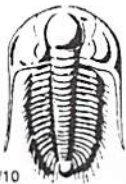
Rec Total 3' BHT 112° Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 2196  Test 1250 T-On Location Stayed on loc  
 (B) First Initial Flow 18  Jars 250 T-Started 10:20  
 (C) First Final Flow 21  Safety Joint 75 T-Open 12:22  
 (D) Initial Shut-In 1025  Circ Sub N/C T-Pulled 14:22  
 (E) Second Initial Flow 22  Hourly Standby — T-Out 16:45  
 (F) Second Final Flow 24  Mileage 182.90 Comments —  
 (G) Final Shut-In 897  Sampler —  
 (H) Final Hydrostatic 2151  Straddle —  Ruined Shale Packer —

Initial Open 30  Shale Packer —  Ruined Packer —  
 Initial Shut-In 30  Extra Packer —  Extra Copies —  
 Final Flow 30  Extra Recorder — Sub Total 0  
 Final Shut-In 30  Day Standby — Total 1757.90  
 Accessibility — MP/DST Disc't —  
 Sub Total 1757.90

Approved By — Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **56343**

4/10

Well Name & No. K-M Unit # 1-20 Test No. # 3 Date 5/1/14  
 Company Downing Nelson Co Elevation 2204 KB 2196 GL  
 Address P.O. Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery #3  
 Location: Sec. 20 Twp. 20 Rge. 20w Co. Pawnee State Ks

Interval Tested 4356 4369 Zone Tested M55  
 Anchor Length 13 Drill Pipe Run 4313 Mud Wt. 9.4  
 Top Packer Depth 4351 Drill Collars Run 30' Vis 51  
 Bottom Packer Depth 4356 Wt. Pipe Run --- WL 8.8  
 Total Depth 4369 Chlorides 3000 ppm System LCM #1

Blow Description 1/2" in blow  
No return  
Bubble to open tool, No blow  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>Mud w/oil spots on top</u>	<u>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 3' BHT 112° Gravity --- API RW --- @ ---° F Chlorides --- ppm

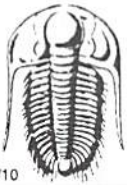
(A) Initial Hydrostatic 2209  Test 1250 T-On Location 22:30  
 (B) First Initial Flow 19  Jars 250 T-Started 22:38  
 (C) First Final Flow 24  Safety Joint 75 T-Open 00:15  
 (D) Initial Shut-In 1188  Circ Sub N/C T-Pulled 02:15  
 (E) Second Initial Flow 25  Hourly Standby --- T-Out 04:35  
 (F) Second Final Flow 28  Mileage 182.90 Comments Diked up tools  
 (G) Final Shut-In 1122  Sampler --- @ 10:00 AM 5/1/14  
 (H) Final Hydrostatic 2178  Straddle --- turned well over to days

Initial Open 30  Shale Packer ---  Ruined Shale Packer ---  
 Initial Shut-In 30  Shale Packer ---  Ruined Packer ---  
 Final Flow 30  Extra Packer ---  Extra Copies ---  
 Final Shut-In 30  Extra Recorder --- Sub Total 0  
 Day Standby --- Total 1757.90  
 Accessibility --- MP/DST Disc't ---  
 Sub Total 1757.90

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 58770

Well Name & No. K-M Unit #1-20 Test No. 4 Date 5/1/14  
 Company Downing-Nelson Oil Co. Elevation 2204 KB 2196 GL  
 Address PO Box 1019 Hays, KS 67601  
 Co. Rep / Geo. Al Downing Rig Discovery #3  
 Location: Sec. 20 Twp. 20S Rge. 20W Co. Pawnee State KS

Interval Tested 4365 - 4380 Zone Tested Osage  
 Anchor Length 15' Teal: 57 Drill Pipe Run 4312 Mud Wt. 9.4  
 Top Packer Depth 4360 - 4365 Drill Collars Run 31 Vis 50  
 Bottom Packer Depth 4380 Wt. Pipe Run                      WL 8.8  
 Total Depth 4437 Chlorides 5,000 ppm System LCM 1#

Blow Description IF-BOB 15 secs  
ISI-Weak surface blow died in 14 mins  
FF-BOB 15 secs  
FSI-No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>300</u>	<u>M</u>				
<u>2730</u>	<u>MW</u>			<u>20</u>	<u>30</u>

Rec Total 3030' BHT 120° Gravity                      API RW 1.0 @ 37° F Chlorides 13,000 ppm

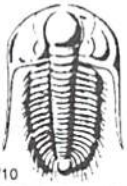
(A) Initial Hydrostatic <u>2286</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>1755</u>
(B) First Initial Flow <u>824</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1922</u>
(C) First Final Flow <u>1019</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2149</u>
(D) Initial Shut-In <u>1385</u>	<input checked="" type="checkbox"/> Circ Sub <u>50</u>	T-Pulled <u>2339</u>
(E) Second Initial Flow <u>905</u>	<input type="checkbox"/> Hourly Standby <u>                    </u>	T-Out <u>0330 5/2</u>
(F) Second Final Flow <u>1377</u>	<input checked="" type="checkbox"/> Mileage <u>118 RT</u> <u>182.90</u>	Comments <u>Straddle Packer Failure</u>
(G) Final Shut-In <u>1383</u>	<input type="checkbox"/> Sampler <u>                    </u>	
(H) Final Hydrostatic <u>2158</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer <u>                    </u>
	<input type="checkbox"/> Shale Packer <u>                    </u>	<input type="checkbox"/> Ruined Packer <u>                    </u>
	<input type="checkbox"/> Extra Packer <u>                    </u>	<input type="checkbox"/> Extra Copies <u>                    </u>

Initial Open 5  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 45

Sub Total 2207.90

Approved By                      Our Representative Brannan L

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 58771

4/10

Well Name & No. K-M Unit #1-20 Test No. 5 Date 5/2/14  
 Company Downing - Nelson Oil Co Elevation 2204 KB 2196 GL  
 Address PO Box 1019 Hays, KS 67601  
 Co. Rep / Geo. AI Downing Rig Discovery #3  
 Location: Sec. 20 Twp. 20S Rge. 20W Co. Pawnee State KS

Interval Tested 4365 - 4378 Zone Tested Osage  
 Anchor Length 13' Drill Pipe Run 4312 Mud Wt. 9.4  
 Top Packer Depth 4360 - 4365 Drill Collars Run 31 Vis 50  
 Bottom Packer Depth 4378 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4437 Chlorides 5,000 ppm System LCM 1#  
 Blow Description IF - BOB 12 mins  
ISI - No Blow  
FF - BOB 6 mins  
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1656</u>	<u>MW</u>			<u>70</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	Feet of	%gas	%oil	%water	%mud

Rec Total 1650 BHT \_\_\_\_\_ Gravity 1.81 API RW 79 ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2201</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0655</u>
(B) First Initial Flow <u>50</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0659</u>
(C) First Final Flow <u>247</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1017</u>
(D) Initial Shut-In <u>1370</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1252</u>
(E) Second Initial Flow <u>551</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1537</u>
(F) Second Final Flow <u>786</u>	<input checked="" type="checkbox"/> Mileage <u>118 RT</u> 182.90	Comments <u>Straddle</u>
(G) Final Shut-In <u>1366</u>	<input type="checkbox"/> Sampler _____	<u>Packer Failure</u>
(H) Final Hydrostatic <u>1994</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input checked="" type="checkbox"/> Ruined Shale Packer <u>350</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby _____	Total <u>2757.90</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>2407.90</u>	

Approved By \_\_\_\_\_ Our Representative Brogan L

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