



KANSAS CORPORATION COMMISSION 1113798
OIL & GAS CONSERVATION DIVISION

Form ACO-1

June 2009

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
- Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date Date Reached TD Completion Date or Recompletion Date

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

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total 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

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1113798

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> 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
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

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 Bbbs.	Gas Mcf	Water Bbbs.	Gas-Oil Ratio	Gravity
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DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <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> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Roth-Robben 1-21
Doc ID	1113798

All Electric Logs Run

Sonic
Micro
Dual Induction
Compensated Density Neutron

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Roth-Robben 1-21
Doc ID	1113798

Tops

Name	Top	Datum
Top Anhydrite	1159'	+875
Base Anhydrite	1197'	+837
Topeka	3040'	-1004
Heebner	3270'	-1234
Toronto	3288'	-1254
LKC	3319'	-1285
BKC	3550'	-1514
Arbuckle	3591'	-1557

ALLIED OIL & GAS SERVICES, LLC 059198

Federal Tax I.D.# 20-5975804

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

SERVICE POINT: Great Bend

Roth Robben

DATE <u>1-23-13</u>	SEC. <u>21</u>	TWP. <u>16S</u>	RANGE <u>17W</u>	CALLED OUT <u>2:30 PM</u>	ON LOCATION <u>3:45 PM</u>	JOB START <u>5:25 PM</u>	JOB FINISH <u>6:13 PM</u>
LEASE <u>Roth Robben</u>		WELL# <u>1-21</u>	LOCATION <u>6 miles north of Bison</u>		COUNTY <u>Push</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)							

CONTRACTOR Discovery Drilling OWNER Downing-Nelson Oil Co.

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 1167 CEMENT AMOUNT ORDERED 2450 sks class A, 2 1/2 cc 2% Gr. 1

CASING SIZE 8 5/8 DEPTH 1167

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX 1,000 MINIMUM

MEAS. LINE SHOE JOINT 20'

CEMENT LEFT IN CSG. 1-272 bbl

PERFS.

DISPLACEMENT 73 bbl

EQUIPMENT

PUMP TRUCK CEMENTER Patrick Hodgeson 1

366 HELPER Kenn Biddy 1

BULK TRUCK

341 DRIVER Sash Isaac 2

BULK TRUCK

609 DRIVER Alan Gonzalez 3

HANDLING 497.50 @ 2.48 1209.00

MILEAGE 22.23 x 34 x 2.60 1966.13

TOTAL 12463.73

REMARKS:

Dumped 5 bbl water spacer,

Pumped 107 bbls of cement @ 15.2196,

Concrete rubber plug

Displaced casing with 73 bbls of

fresh water Bugnard plug & Baffle

plate set @ 1147, remainder 20 bbls

of cement to surface

CHARGE TO: Downing-Nelson Oil Co.

STREET P.O. Box 1019

CITY Hayes STATE KS ZIP 67601

PLUG & FLOAT EQUIPMENT

8 5/8

1 Rubber Plug @ 131.04 131.04

1 Baffle Plate @ 131.04 131.04

TOTAL 262.08

SALES TAX (If Any) 606.75

TOTAL CHARGES \$ 15,350.95 96

DISCOUNT 3684.23 IF PAID IN 30 DAYS

11,666.73

PRINTED NAME Mike Casillo R

SIGNATURE [Signature]

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.



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.26 @ 19:50:49

End Date: 2013.01.27 @ 02:02:58

Job Ticket #: 51639 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:30:20



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

ATTN: Ron Nelson

Job Ticket: 51639

DST#: 1

Test Start: 2013.01.26 @ 19:50:49

GENERAL INFORMATION:

Formation: **LKC A-C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:54:29

Time Test Ended: 02:02:58

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 42

Interval: 3300.00 ft (KB) To 3348.00 ft (KB) (TVD)

Reference Elevations: 2034.00 ft (KB)

Total Depth: 3348.00 ft (KB) (TVD)

2026.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369

Inside

Press @RunDepth: 163.25 psig @ 3312.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.26

End Date: 2013.01.27

Last Calib.: 2013.01.27

Start Time: 19:50:49

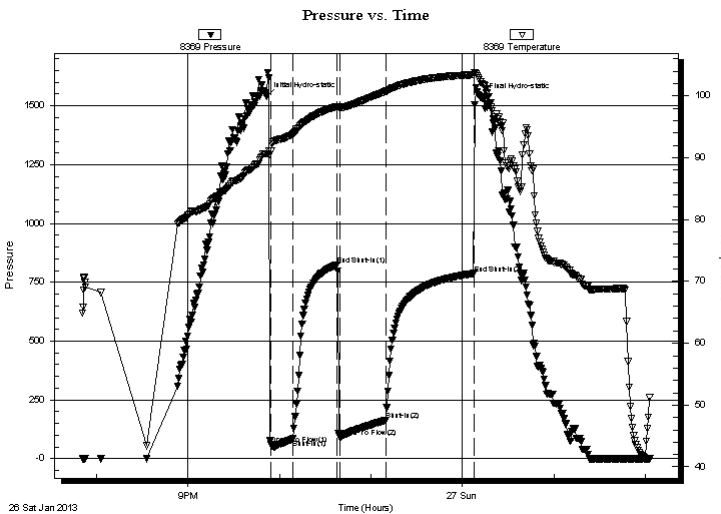
End Time: 02:02:58

Time On Btm: 2013.01.26 @ 21:51:29

Time Off Btm: 2013.01.27 @ 00:12:28

TEST COMMENT: 15-IFP-strg bl thru-out
30-ISIP-no bl
30-FFP-strg bl thru-out GTS to weak to gauge 28 min into
60-FSIP-surface bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1540.94	90.64	Initial Hydro-static
3	59.91	91.11	Open To Flow (1)
18	84.33	93.83	Shut-In(1)
47	824.70	98.29	End Shut-In(1)
48	92.60	98.11	Open To Flow (2)
78	163.25	100.70	Shut-In(2)
136	787.65	103.43	End Shut-In(2)
141	1533.45	101.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	GMO 30%G10%M60%O	0.99
470.00	CO	6.59
0.00	GTS	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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51639

DST#: 1

ATTN: Ron Nelson

Test Start: 2013.01.26 @ 19:50:49

Tool Information

Drill Pipe:	Length: 3269.00 ft	Diameter: 3.80 inches	Volume: 45.86 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 46.01 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3300.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	48.00 ft				
Tool Length:	69.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3280.00	
Shut In Tool	5.00			3285.00	
Hydraulic tool	5.00			3290.00	
Packer	5.00			3295.00	21.00 Bottom Of Top Packer
Packer	5.00			3300.00	
Stubb	1.00			3301.00	
Perforations	11.00			3312.00	
Recorder	0.00	8369	Inside	3312.00	
Recorder	0.00	8700	Outside	3312.00	
Blank Spacing	33.00			3345.00	
Bullnose	3.00			3348.00	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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51639

DST#: 1

ATTN: Ron Nelson

Test Start: 2013.01.26 @ 19:50:49

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.88 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	GMO 30%G10%M60%O	0.989
470.00	CO	6.593
0.00	GTS	0.000

Total Length: 560.00 ft

Total Volume: 7.582 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

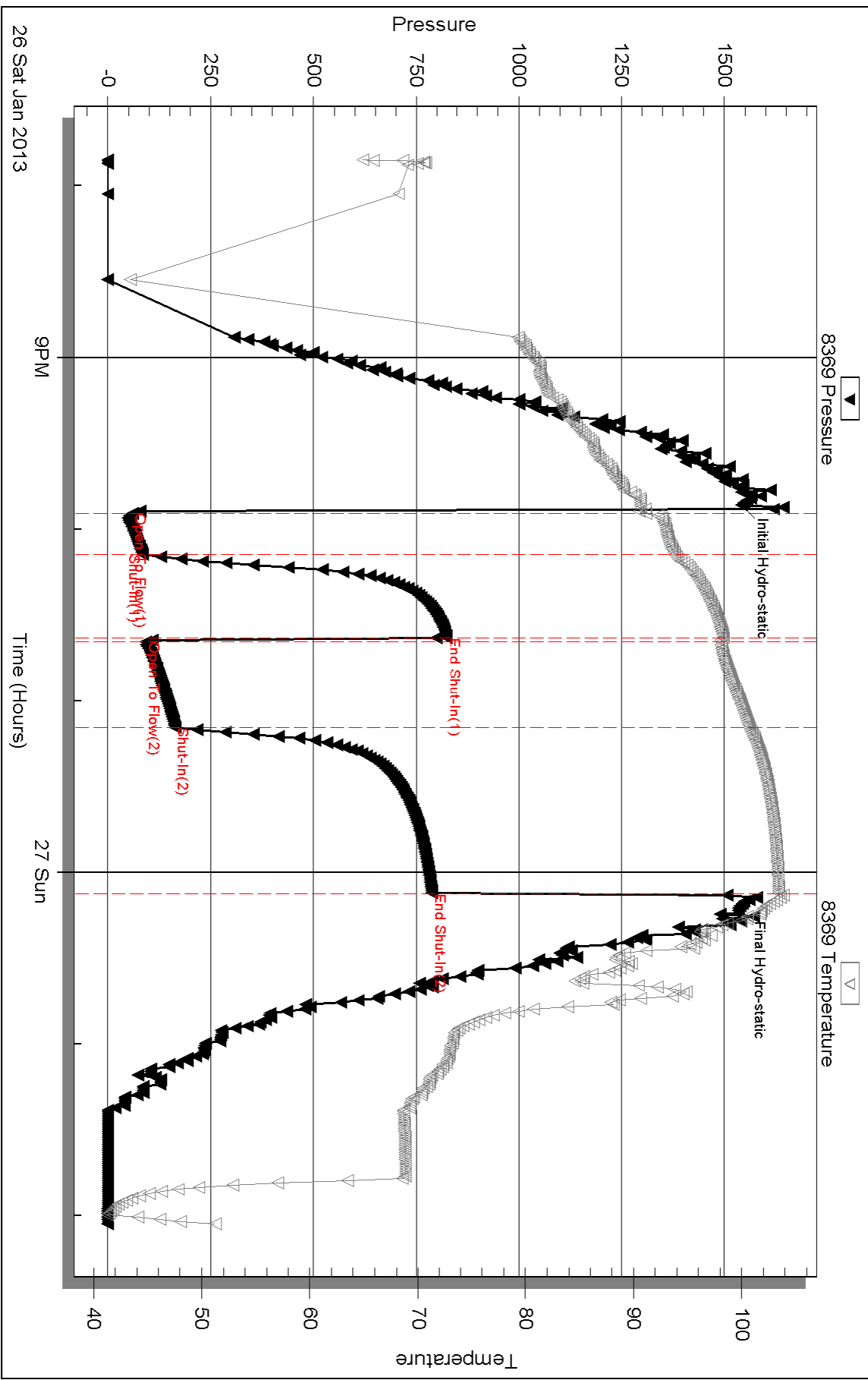
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

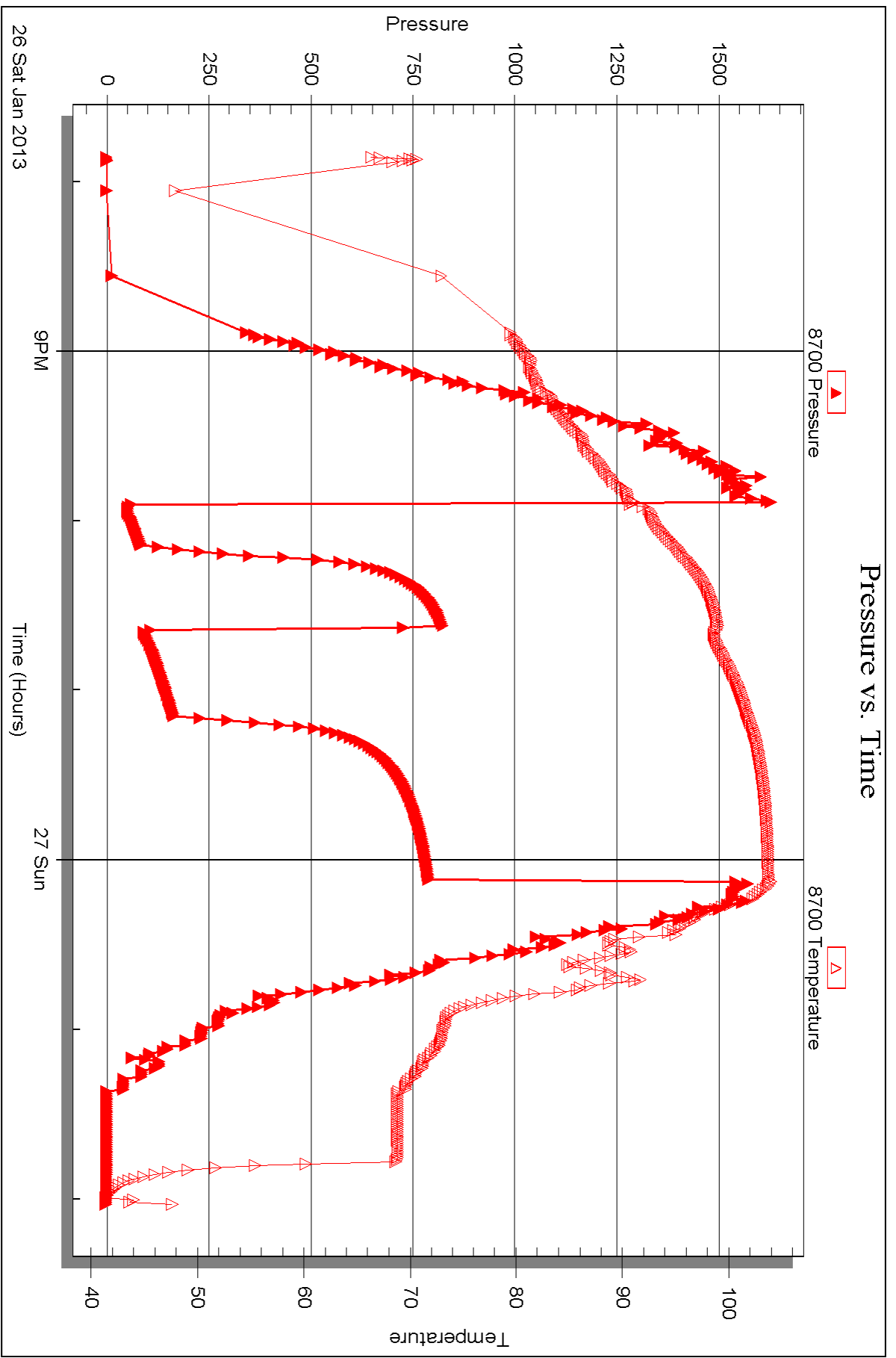


Serial #: 8700

Outside Dow nting-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 51639

Printed: 2013.02.04 @ 10:30:23



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.27 @ 08:45:14

End Date: 2013.01.27 @ 15:18:53

Job Ticket #: 51640 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:29:33



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

ATTN: Ron Nelson

Job Ticket: 51640

DST#: 2

Test Start: 2013.01.27 @ 08:45:14

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:51:09

Time Test Ended: 15:18:53

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 3355.00 ft (KB) To 3375.00 ft (KB) (TVD)

Reference Elevations: 2034.00 ft (KB)

Total Depth: 3375.00 ft (KB) (TVD)

2026.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369

Inside

Press @RunDepth: 49.59 psig @ 3356.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.27

End Date:

2013.01.27

Last Calib.:

2013.01.27

Start Time: 08:45:14

End Time:

15:18:53

Time On Btm:

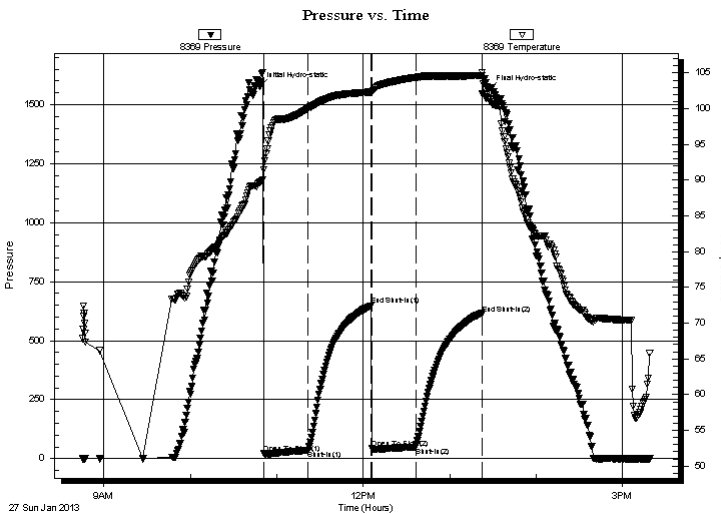
2013.01.27 @ 10:48:24

Time Off Btm:

2013.01.27 @ 13:27:08

TEST COMMENT: 30-IFP-strg bl in 4 min
45-ISIP-surface bl bk
30-FFP-w k to strg in 25 min
45-FSIP-no bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1576.38	89.69	Initial Hydro-static
3	22.30	91.41	Open To Flow (1)
34	35.99	100.04	Shut-In(1)
78	649.29	102.33	End Shut-In(1)
78	44.79	102.20	Open To Flow (2)
108	49.59	104.38	Shut-In(2)
154	613.09	104.62	End Shut-In(2)
159	1565.11	101.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	465'GIP	0.00
60.00	OCMW 8%O10%M82%W	0.57
25.00	HO&GCM 20%G25%O55%M	0.35

* 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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51640

DST#: 2

ATTN: Ron Nelson

Test Start: 2013.01.27 @ 08:45:14

Tool Information

Drill Pipe:	Length: 3323.00 ft	Diameter: 3.80 inches	Volume: 46.61 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 46.76 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3355.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	20.00 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			3335.00	
Shut In Tool	5.00			3340.00	
Hydraulic tool	5.00			3345.00	
Packer	5.00			3350.00	21.00 Bottom Of Top Packer
Packer	5.00			3355.00	
Stubb	1.00			3356.00	
Recorder	0.00	8369	Inside	3356.00	
Recorder	0.00	8700	Outside	3356.00	
Perforations	16.00			3372.00	
Bullnose	3.00			3375.00	20.00 Bottom Packers & Anchor
Total Tool Length:	41.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51640

DST#: 2

ATTN: Ron Nelson

Test Start: 2013.01.27 @ 08:45:14

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:

68000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.86 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	465'GIP	0.000
60.00	OCMW 8%O10%M82%W	0.568
25.00	HO&GCM 20%G25%O55%M	0.351

Total Length: 85.00 ft Total Volume: 0.919 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

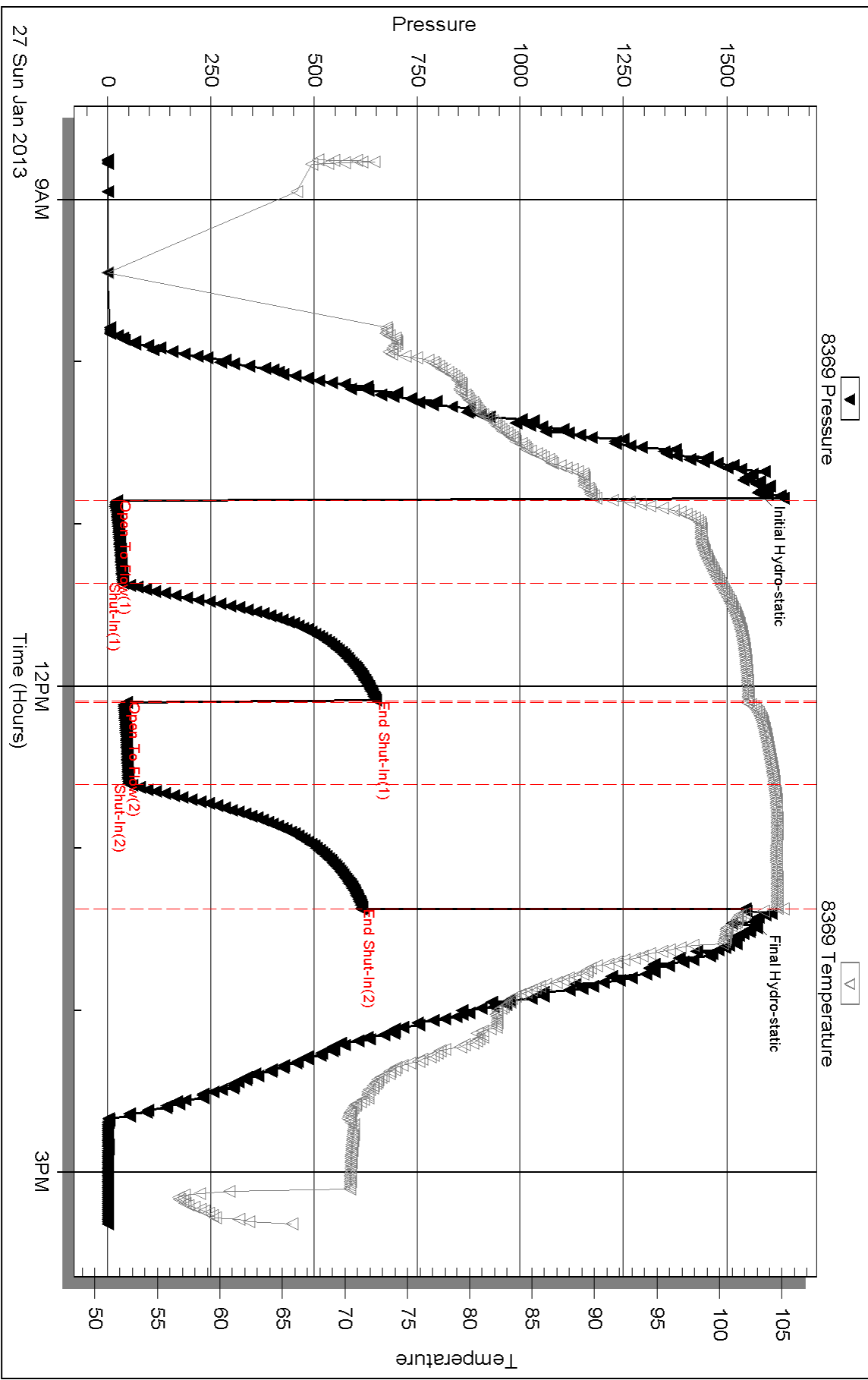
Serial #:

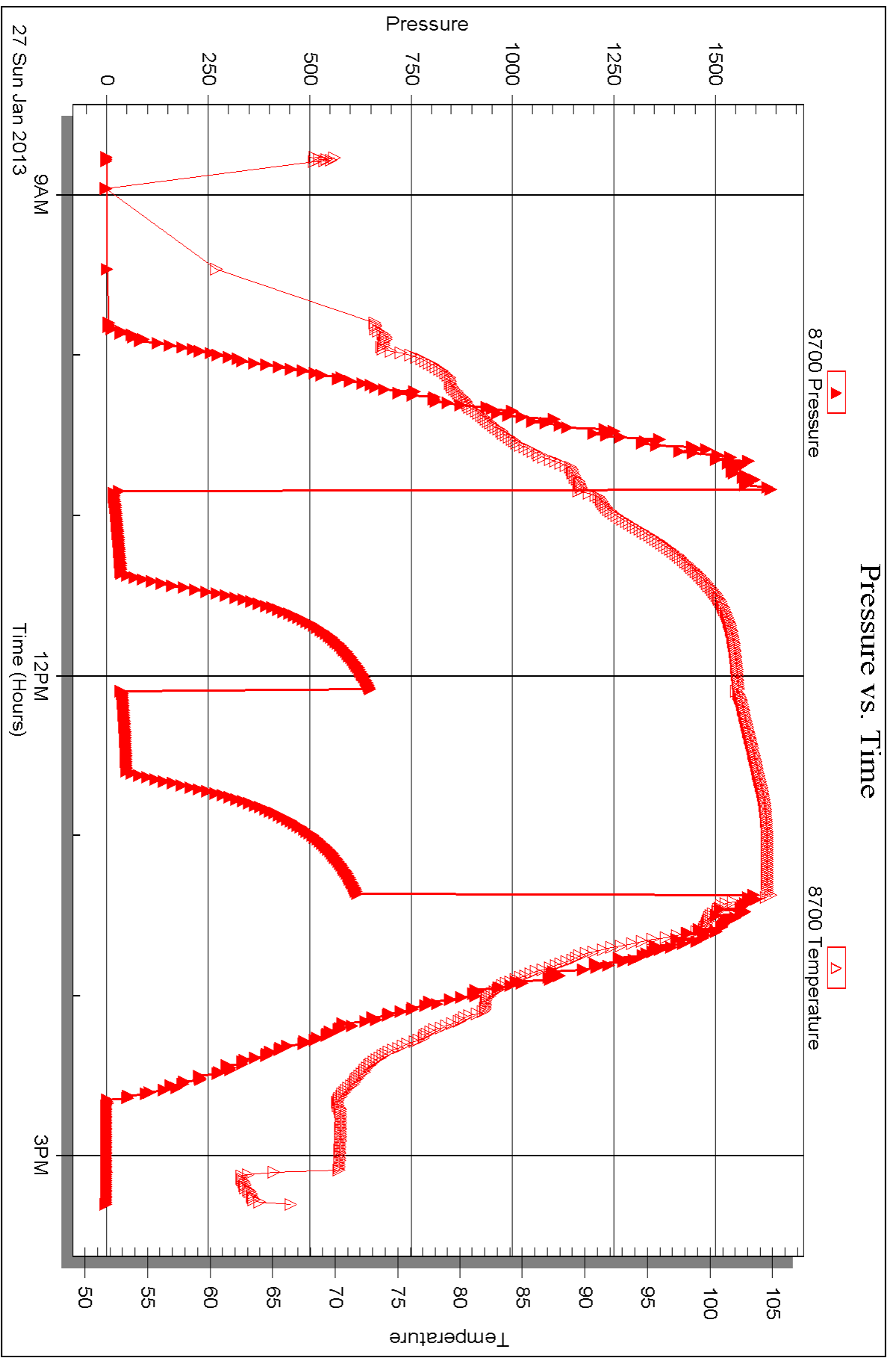
Laboratory Name:

Laboratory Location:

Recovery Comments: RW .14@55F

Pressure vs. Time







DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.27 @ 21:05:11

End Date: 2013.01.28 @ 02:26:05

Job Ticket #: 51641 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:28:09



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

ATTN: Ron Nelson

Job Ticket: 51641

DST#: 3

Test Start: 2013.01.27 @ 21:05:11

GENERAL INFORMATION:

Formation: **LKC "E"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:01:36
 Time Test Ended: 02:26:05
 Interval: **3375.00 ft (KB) To 3393.00 ft (KB) (TVD)**
 Total Depth: 3393.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2034.00 ft (KB)
 2026.00 ft (CF)
 KB to GR/CF: 8.00 ft

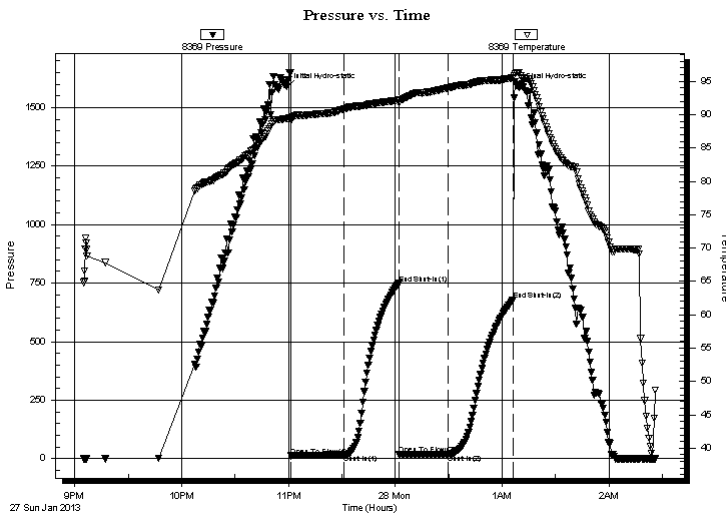
Serial #: 8369

Inside

Press @ Run Depth: 19.54 psig @ 3376.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.01.27 End Date: 2013.01.28 Last Calib.: 2013.01.28
 Start Time: 21:05:11 End Time: 02:26:05 Time On Btm: 2013.01.27 @ 22:59:21
 Time Off Btm: 2013.01.28 @ 01:09:21

TEST COMMENT: 30-IFP-surface bl thru-out
 30-ISIP-no bl
 30-FFP-no bl
 30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1587.52	89.39	Initial Hydro-static
3	11.43	89.21	Open To Flow (1)
32	16.67	90.88	Shut-In(1)
63	748.56	92.18	End Shut-In(1)
63	17.56	91.83	Open To Flow (2)
91	19.54	94.08	Shut-In(2)
127	678.02	95.55	End Shut-In(2)
130	1586.86	96.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.05

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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51641

DST#: 3

ATTN: Ron Nelson

Test Start: 2013.01.27 @ 21:05:11

Tool Information

Drill Pipe:	Length: 3355.00 ft	Diameter: 3.80 inches	Volume: 47.06 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 47.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3375.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	39.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3355.00	
Shut In Tool	5.00			3360.00	
Hydraulic tool	5.00			3365.00	
Packer	5.00			3370.00	21.00 Bottom Of Top Packer
Packer	5.00			3375.00	
Stubb	1.00			3376.00	
Recorder	0.00	8369	Inside	3376.00	
Recorder	0.00	8700	Outside	3376.00	
Perforations	14.00			3390.00	
Bullnose	3.00			3393.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51641

DST#: 3

ATTN: Ron Nelson

Test Start: 2013.01.27 @ 21:05:11

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:

bbf

Water Loss: 7.87 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8369

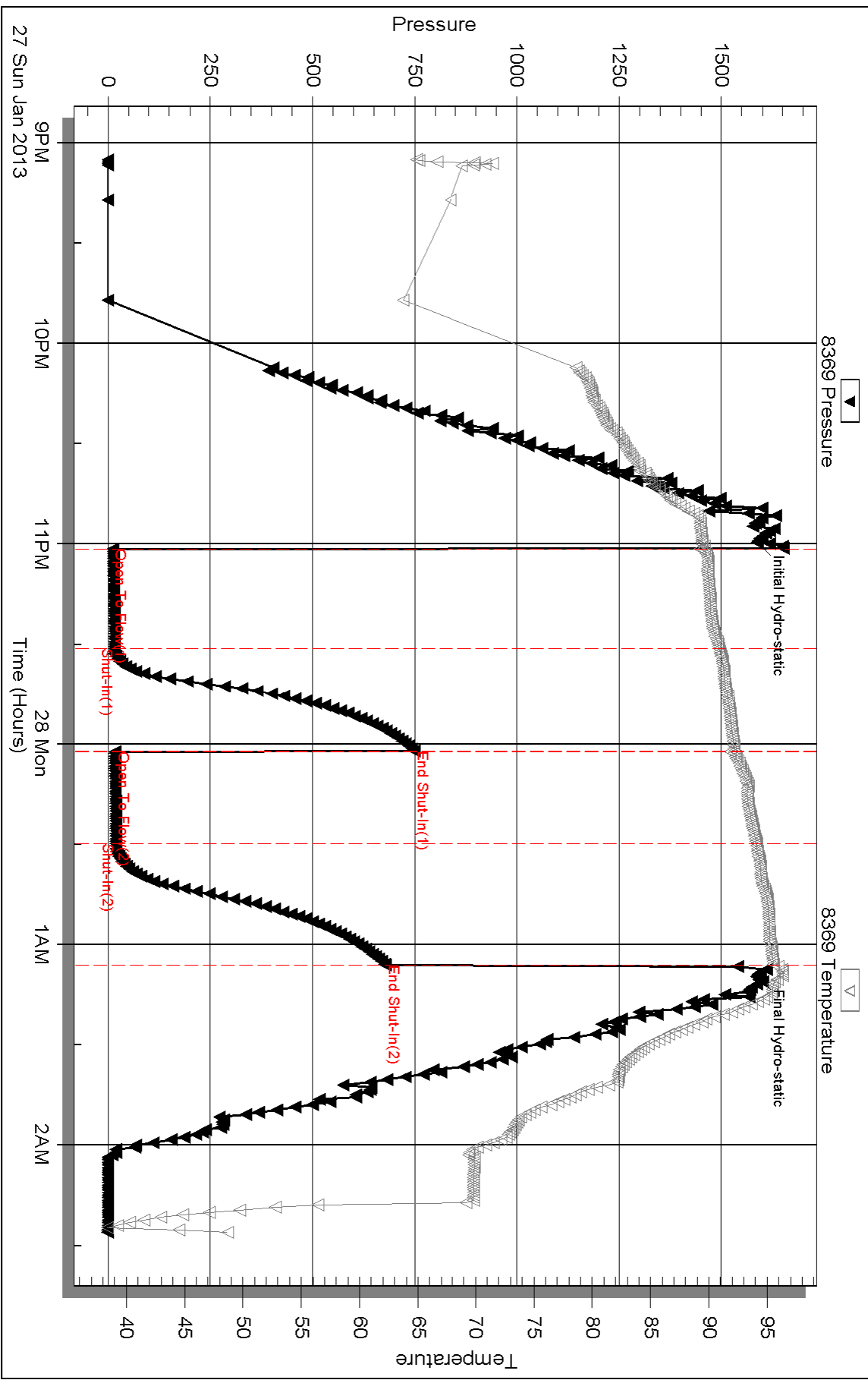
Inside

Downing-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 3

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 51641

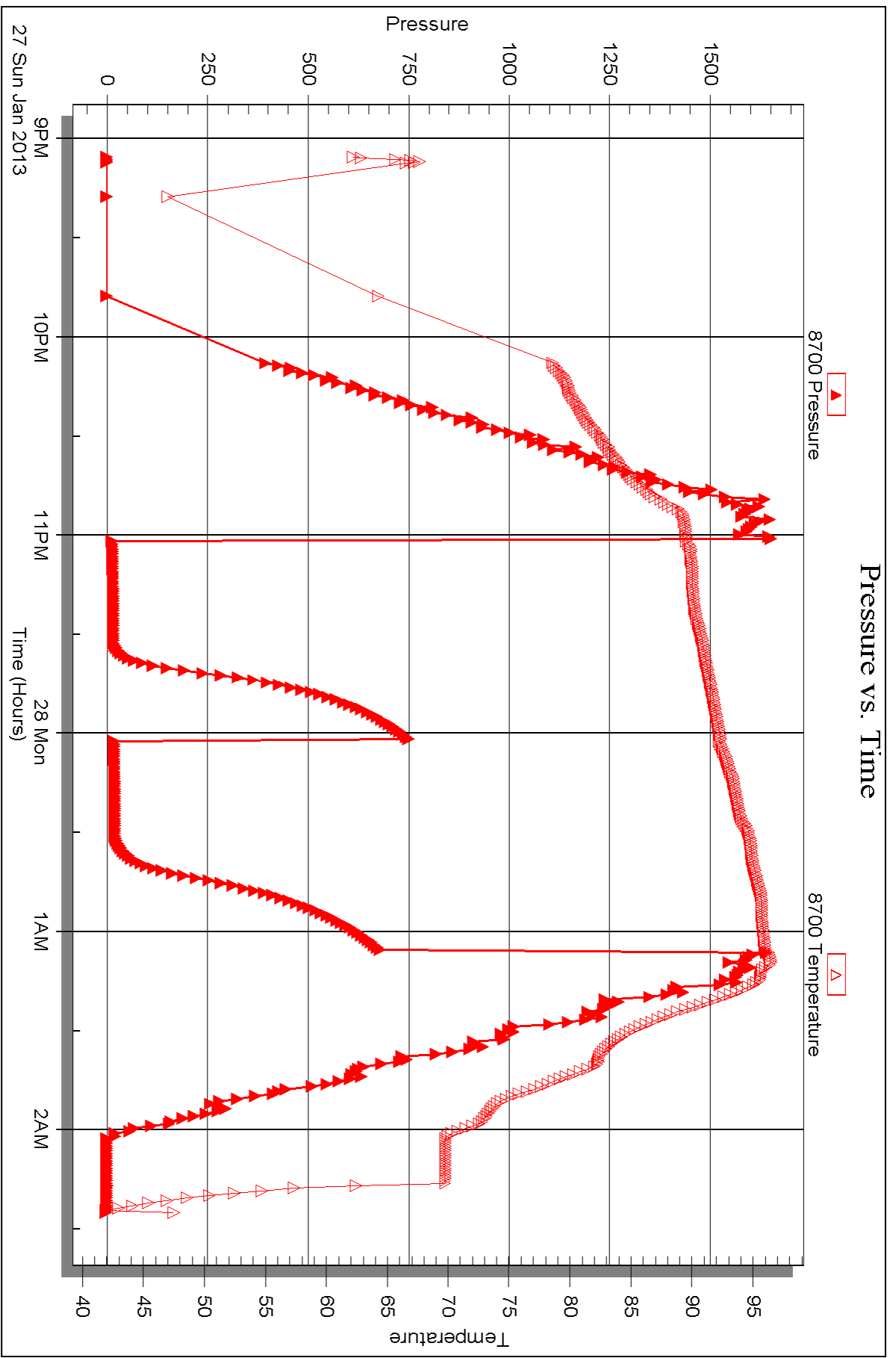
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Serial #: 8700

Outside Dow nung-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 3





DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.28 @ 13:50:37

End Date: 2013.01.28 @ 19:26:16

Job Ticket #: 51642 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:26:15



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51642

DST#: 4

ATTN: Ron Nelson

Test Start: 2013.01.28 @ 13:50:37

GENERAL INFORMATION:

Formation: **LKC H,I,J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:59:32

Time Test Ended: 19:26:16

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 3442.00 ft (KB) To 3510.00 ft (KB) (TVD)

Reference Elevations: 2034.00 ft (KB)

Total Depth: 3510.00 ft (KB) (TVD)

2026.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369

Inside

Press @RunDepth: 25.58 psig @ 3453.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.28

End Date:

2013.01.28

Last Calib.:

2013.01.28

Start Time: 13:50:37

End Time:

19:26:16

Time On Btm:

2013.01.28 @ 15:57:32

Time Off Btm:

2013.01.28 @ 18:04:17

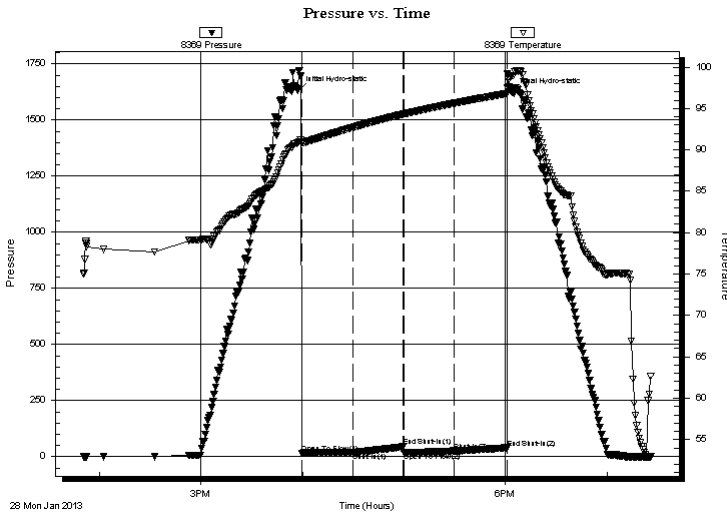
TEST COMMENT: 30-IFP-w k bl thru-out 1/8" to surface

30-ISIP-no bl

30-FFP-no bl

30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1630.40	90.85	Initial Hydro-static
2	16.24	90.83	Open To Flow (1)
32	19.75	92.70	Shut-In(1)
62	44.50	94.32	End Shut-In(1)
63	20.25	94.32	Open To Flow (2)
92	25.58	95.63	Shut-In(2)
124	39.30	96.80	End Shut-In(2)
127	1620.77	98.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w/show of oil	0.05

* 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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51642

DST#: 4

ATTN: Ron Nelson

Test Start: 2013.01.28 @ 13:50:37

Tool Information

Drill Pipe:	Length: 3411.00 ft	Diameter: 3.80 inches	Volume: 47.85 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 48.00 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3442.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.00 ft			
Tool Length:	89.00 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			3422.00	
Shut In Tool	5.00			3427.00	
Hydraulic tool	5.00			3432.00	
Packer	5.00			3437.00	21.00 Bottom Of Top Packer
Packer	5.00			3442.00	
Stubb	1.00			3443.00	
Perforations	10.00			3453.00	
Recorder	0.00	8369	Inside	3453.00	
Recorder	0.00	8700	Outside	3453.00	
Blank Spacing	33.00			3486.00	
Perforations	21.00			3507.00	
Bullnose	3.00			3510.00	68.00 Bottom Packers & Anchor

Total Tool Length: 89.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51642

DST#: 4

ATTN: Ron Nelson

Test Start: 2013.01.28 @ 13:50:37

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:

bbf

Water Loss: 8.71 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	Mud w/show of oil	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

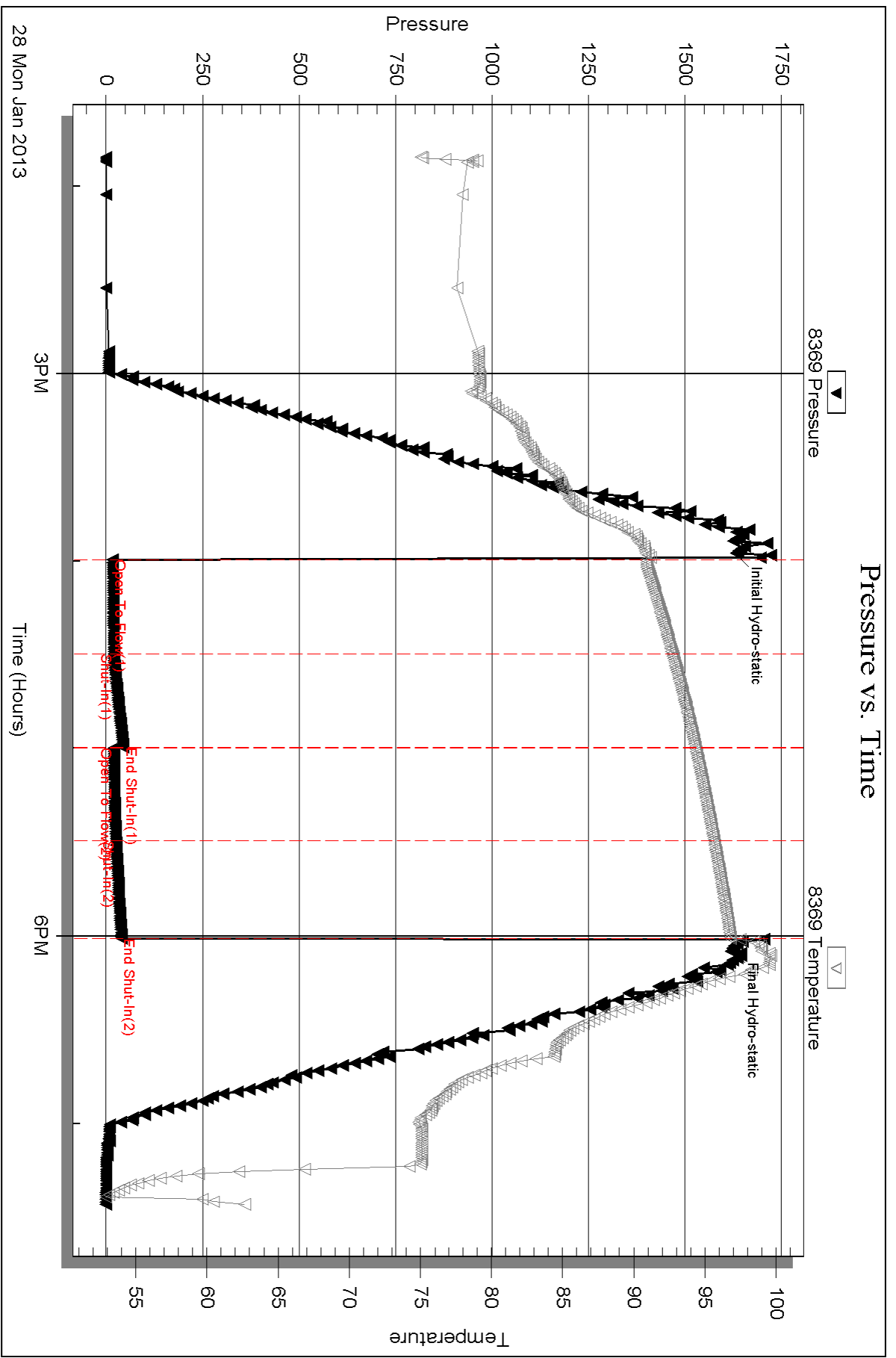
Serial #: 8369

Inside

Dow nung-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 51642

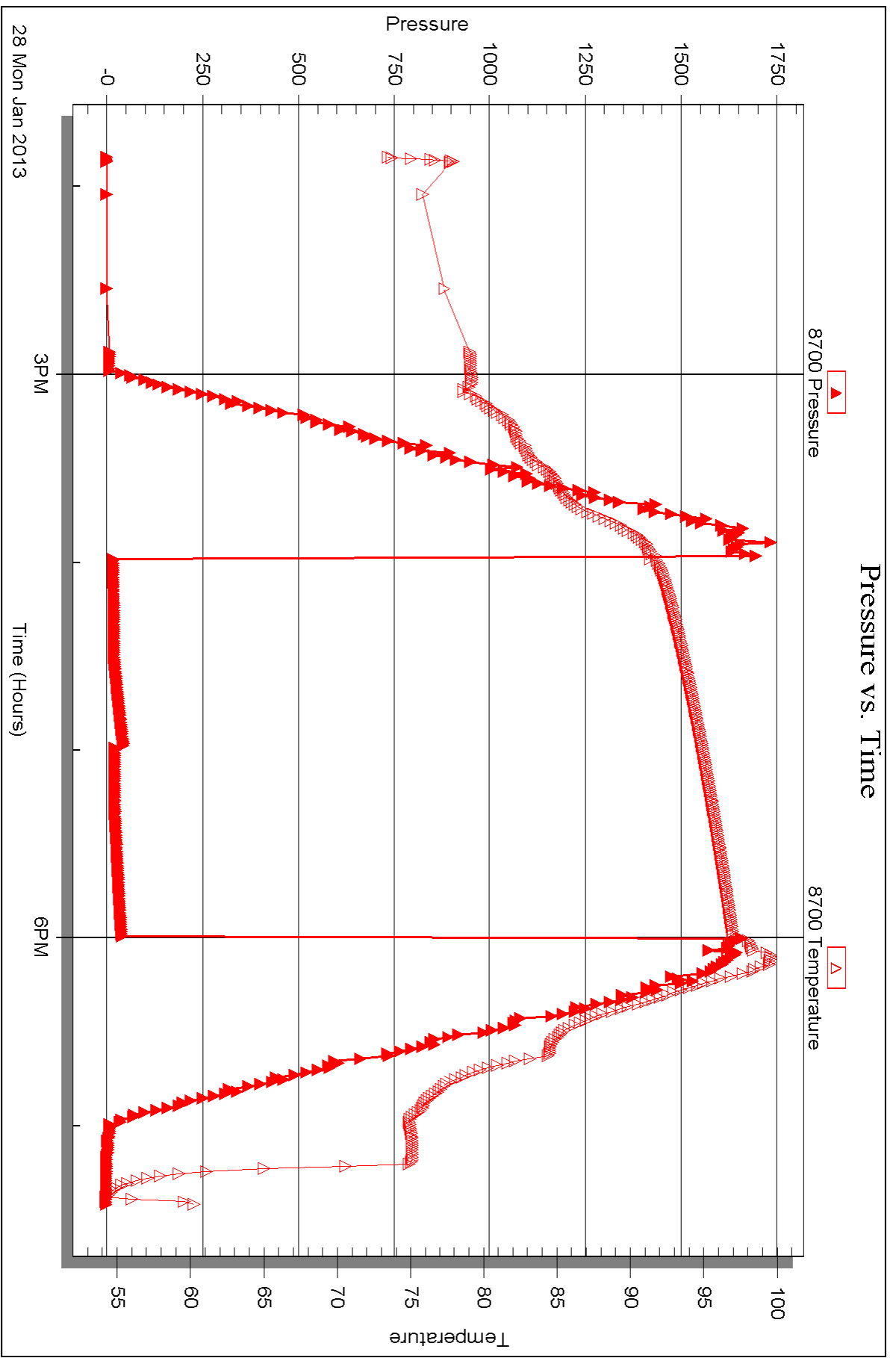
Printed: 2013.02.04 @ 10:26:18

Serial #: 8700

Outside Dow nung-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 51642

Printed: 2013.02.04 @ 10:26:18



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.29 @ 05:11:03

End Date: 2013.01.29 @ 11:33:27

Job Ticket #: 51643 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:22:41



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

ATTN: Ron Nelson

Job Ticket: 51643

DST#: 5

Test Start: 2013.01.29 @ 05:11:03

GENERAL INFORMATION:

Formation: **Congl Sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:46:58

Time Test Ended: 11:33:27

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 3529.00 ft (KB) To 3590.00 ft (KB) (TVD)

Reference Elevations: 2034.00 ft (KB)

Total Depth: 3590.00 ft (KB) (TVD)

2026.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369 Inside

Press @ Run Depth: 33.57 psig @ 3533.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.29 End Date: 2013.01.29

Last Calib.: 2013.01.29

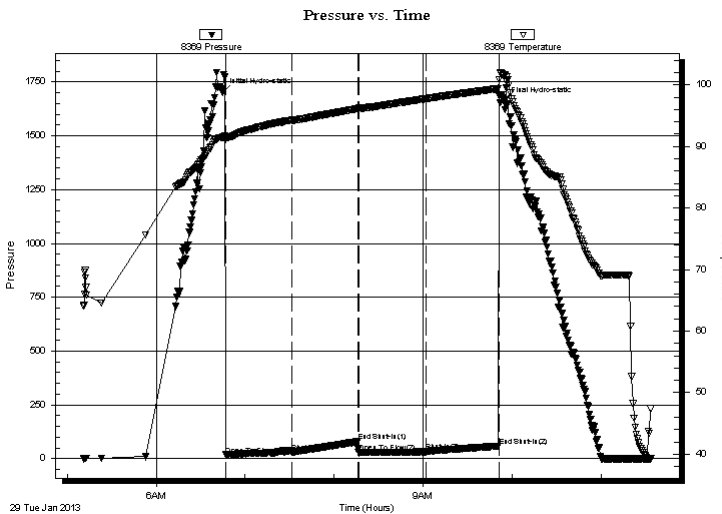
Start Time: 05:11:03 End Time: 11:33:27

Time On Btm: 2013.01.29 @ 06:44:58

Time Off Btm: 2013.01.29 @ 09:54:42

TEST COMMENT: 45-IFP-w k bl thru-out 1/4" to 1" bl
45-ISIP-no bl
45-FFP-w k bl thru-out 1/4" to 1/2" bl
45-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1701.47	91.50	Initial Hydro-static
2	17.70	91.38	Open To Flow (1)
47	28.60	94.24	Shut-In(1)
91	79.47	96.15	End Shut-In(1)
92	30.85	96.18	Open To Flow (2)
137	33.57	97.76	Shut-In(2)
186	57.88	99.41	End Shut-In(2)
190	1659.95	101.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	O&GCM 5%G20%O75%M	0.22
0.00	60'GIP	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

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51643

DST#: 5

ATTN: Ron Nelson

Test Start: 2013.01.29 @ 05:11:03

Tool Information

Drill Pipe:	Length: 3484.00 ft	Diameter: 3.80 inches	Volume: 48.87 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 49.02 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3529.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	61.00 ft				
Tool Length:	82.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3509.00	
Shut In Tool	5.00			3514.00	
Hydraulic tool	5.00			3519.00	
Packer	5.00			3524.00	21.00 Bottom Of Top Packer
Packer	5.00			3529.00	
Stubb	1.00			3530.00	
Perforations	3.00			3533.00	
Recorder	0.00	8369	Inside	3533.00	
Recorder	0.00	8700	Outside	3533.00	
Blank Spacing	33.00			3566.00	
Perforations	21.00			3587.00	
Bullnose	3.00			3590.00	61.00 Bottom Packers & Anchor

Total Tool Length: 82.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51643

DST#: 5

ATTN: Ron Nelson

Test Start: 2013.01.29 @ 05:11:03

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.89 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
35.00	O&GCM 5%G20%O75%M	0.218
0.00	60'GIP	0.000

Total Length: 35.00 ft Total Volume: 0.218 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

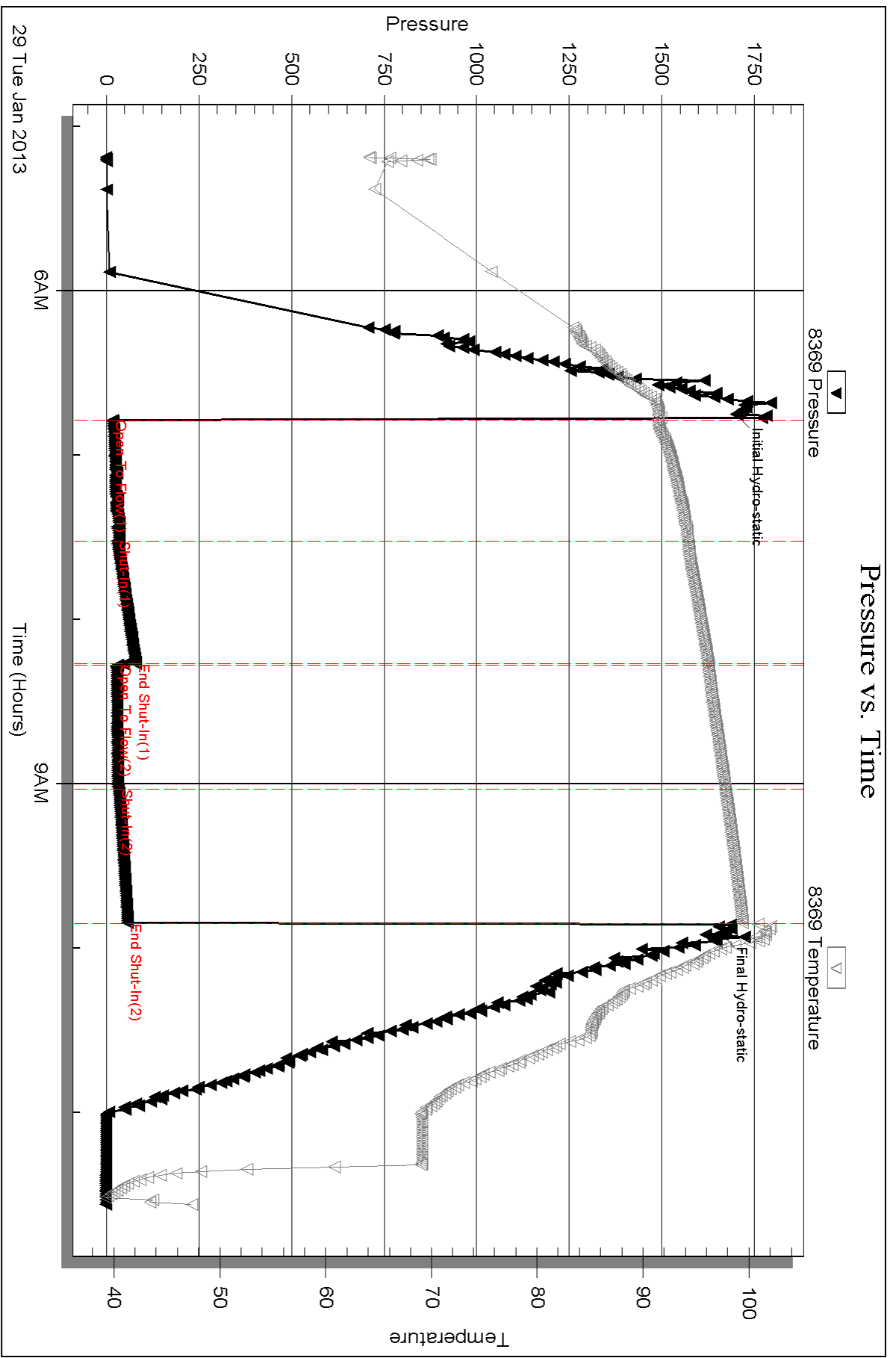
Serial #: 8369

Inside

Dow nging-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 5

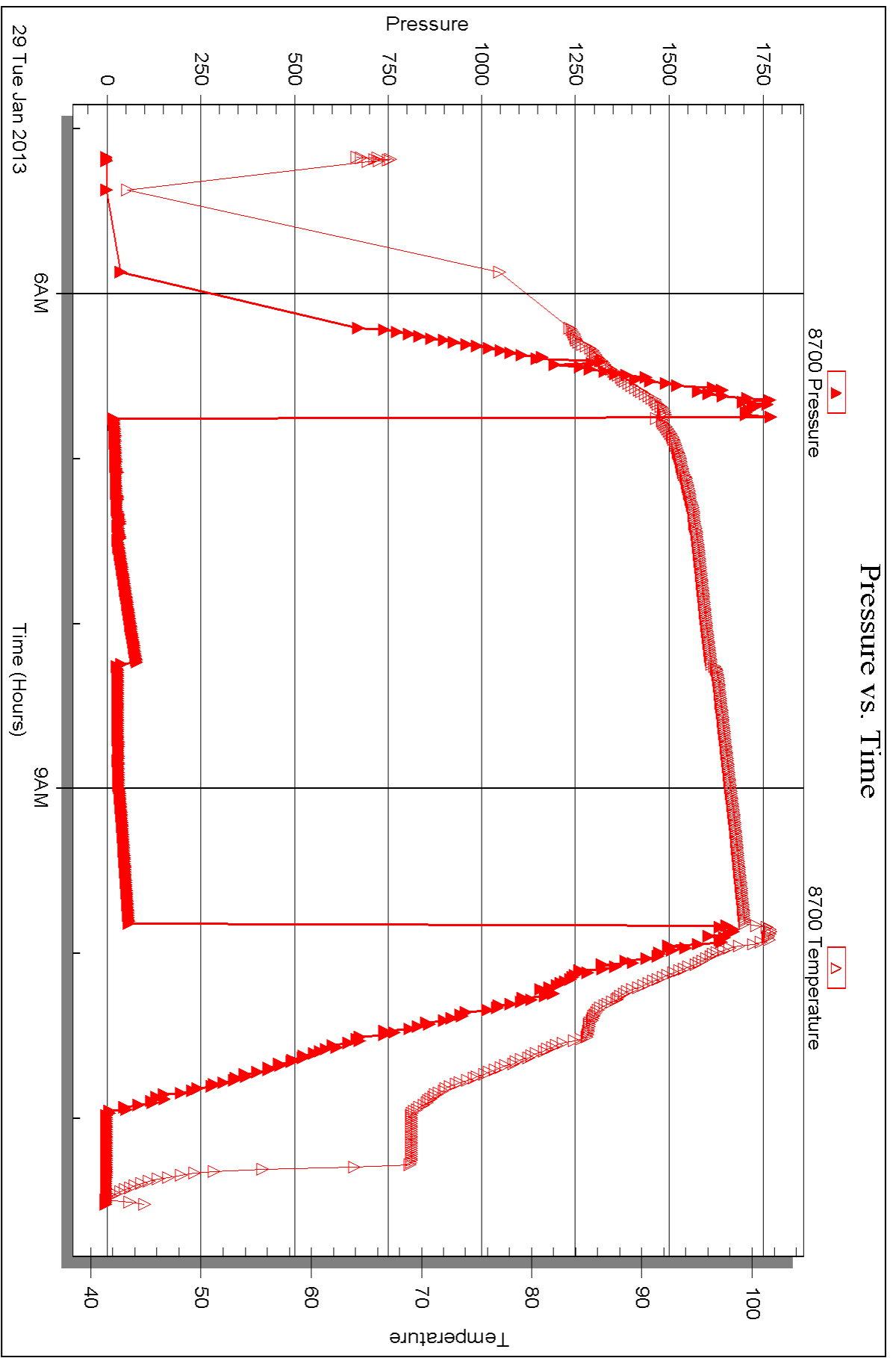


Serial #: 8700

Outside Dow nung-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 51643

Printed: 2013.02.04 @ 10:22:44



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Roth-Robben #1-21

21-16s-17w Rush,KS

Start Date: 2013.01.30 @ 03:00:38

End Date: 2013.01.30 @ 11:14:32

Job Ticket #: 51644 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.04 @ 10:20:03



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

ATTN: Ron Nelson

Job Ticket: 51644

DST#: 6

Test Start: 2013.01.30 @ 03:00:38

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:26:33

Time Test Ended: 11:14:32

Test Type: Conventional Straddle (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 3530.00 ft (KB) To 3613.00 ft (KB) (TVD)

Reference Elevations: 2034.00 ft (KB)

Total Depth: 3613.00 ft (KB) (TVD)

2026.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369

Inside

Press @RunDepth: 104.79 psig @ 3540.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.30

End Date:

2013.01.30

Last Calib.: 2013.01.30

Start Time: 03:00:38

End Time:

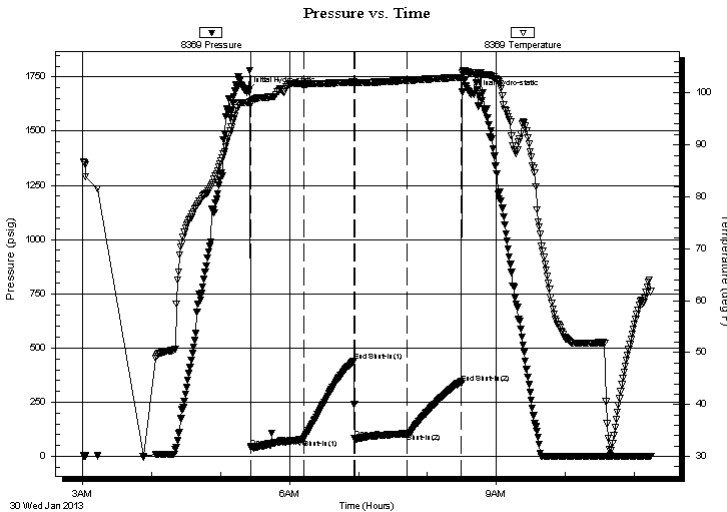
11:14:32

Time On Btm: 2013.01.30 @ 05:22:48

Time Off Btm: 2013.01.30 @ 08:38:02

TEST COMMENT: 45-IFP-w k to strg in 25 min
45-ISIP-no bl
45-FFP-w k to strg in 20 min
45-FSIP-no bl, 1st 15 min, then w k 1/4" bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1680.46	98.16	Initial Hydro-static
4	42.05	98.18	Open To Flow (1)
50	79.78	101.73	Shut-In(1)
94	439.11	102.09	End Shut-In(1)
94	81.62	101.99	Open To Flow (2)
140	104.79	102.41	Shut-In(2)
187	337.68	102.99	End Shut-In(2)
196	1669.36	103.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	MGO 25%G20%M55%O	1.47
76.00	HO&GCM 20%G20%O60%M	1.07
0.00	790'GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51644

DST#: 6

ATTN: Ron Nelson

Test Start: 2013.01.30 @ 03:00:38

Tool Information

Drill Pipe:	Length: 3510.00 ft	Diameter: 3.80 inches	Volume: 49.24 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 49.39 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3530.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	3613.00 ft			
Interval between Packers:	83.00 ft			
Tool Length:	222.00 ft			
Number of Packers:	3	Diameter:	6.75 inches	
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3510.00	
Shut In Tool	5.00			3515.00	
Hydraulic tool	5.00			3520.00	
Packer	5.00			3525.00	21.00 Bottom Of Top Packer
Packer	5.00			3530.00	
Stubb	1.00			3531.00	
Perforations	9.00			3540.00	
Recorder	0.00	8369	Inside	3540.00	
Recorder	0.00	8700	Outside	3540.00	
Blank Spacing	64.00			3604.00	
Perforations	5.00			3609.00	
Blank Off Sub	1.00			3610.00	
Blank Spacing	3.00			3613.00	83.00 Tool Interval
Packer	5.00			3618.00	
Stubb	1.00			3619.00	
Perforations	14.00			3633.00	
Recorder	0.00	8374	Below	3633.00	
Blank Spacing	95.00			3728.00	
Bullnose	3.00			3731.00	118.00 Bottom Packers & Anchor

Total Tool Length: 222.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

21-16s-17w Rush,KS

PO Box 1019
Hays KS 67601

Roth-Robben #1-21

Job Ticket: 51644

DST#: 6

ATTN: Ron Nelson

Test Start: 2013.01.30 @ 03:00:38

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	MGO 25%G20%M55%O	1.466
76.00	HO&GCM 20%G20%O60%M	1.066
0.00	790'GIP	0.000

Total Length: 200.00 ft Total Volume: 2.532 bbl

Num Fluid Samples: 0

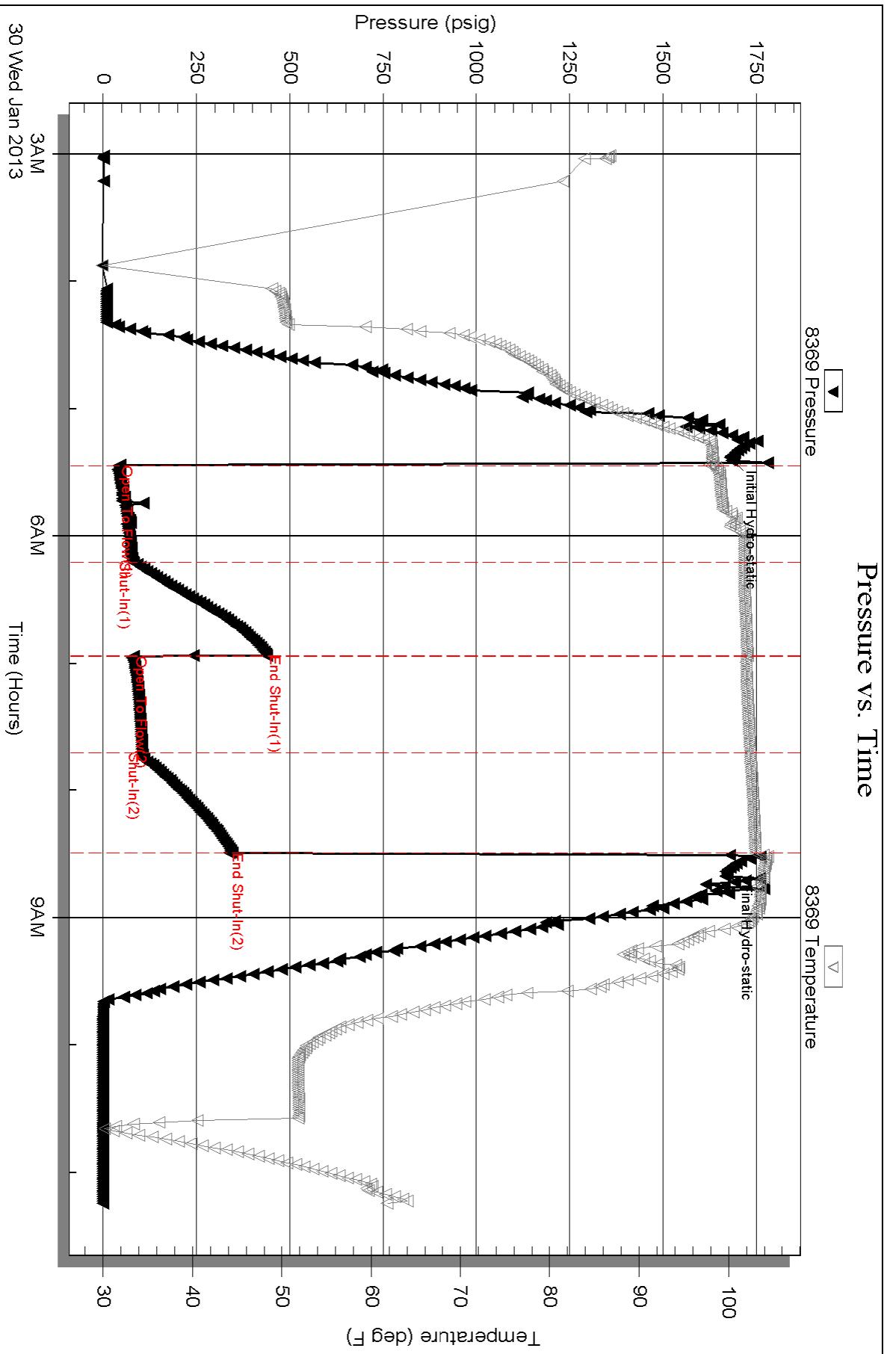
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

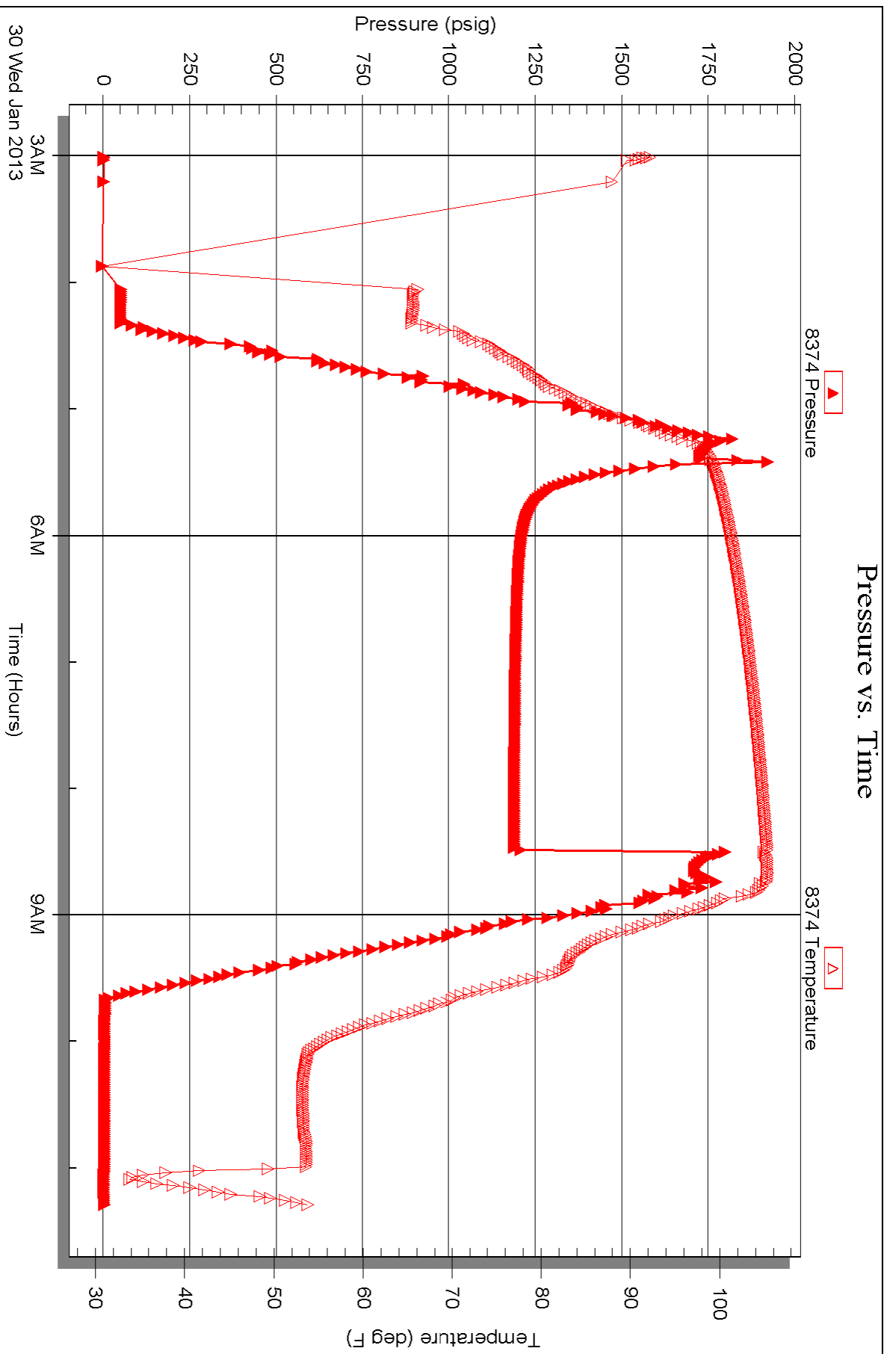


Serial #: 8374

Below (Stratton)ng-Nelson Oil Co Inc

Roith-Robben #1-21

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 51644

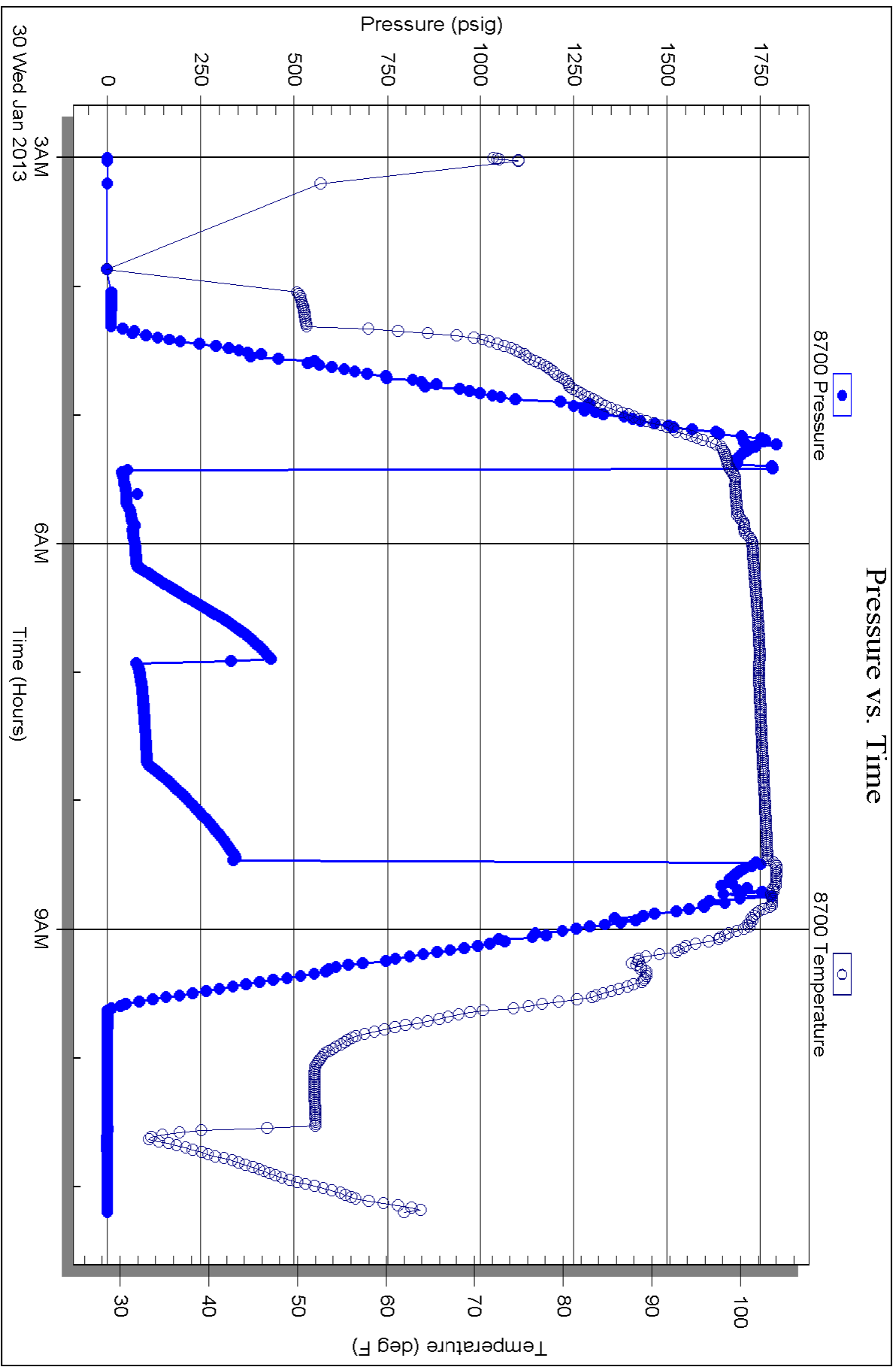
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Serial #: 8700

Outside Dow nung-Nelson Oil Co Inc

Roth-Robben #1-21

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51639

4/10

Well Name & No. Roth - Robben #1-21 Test No. 1 Date 1-26-13
 Company Downing-Nelson Oil Co Inc Elevation 2034 KB 2026 GL
 Address PO Box 1019 HAYS, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State Ks

Interval Tested 3300-3348 Zone Tested LKC A-C
 Anchor Length 48 Drill Pipe Run 3269 Mud Wt. 8.8
 Top Packer Depth 3295 Drill Collars Run 30 Vis 57
 Bottom Packer Depth 3360 Wt. Pipe Run - WL 8
 Total Depth 3348 Chlorides 4000 ppm System LCM 2 1/2 #

Blow Description IFP - STRONG Blow Thru-out
TSIP - NO Blow
FFP - STRONG Blow Thru-out, GTS IN 28 MIN, NO GAUGE
FSIP - WEAK Blow BACK

Rec	Feet of	%gas	%oil	%water	%mud
	<u>GTS</u>				
<u>90</u>	<u>GMO</u>	<u>30</u>	<u>60</u>		<u>10</u>
<u>470</u>	<u>CO</u>				

Rec Total 560 BHT 103 Gravity 28 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1540 Test 1150 T-On Location 1845
 (B) First Initial Flow 59 Jars - T-Started 1950
 (C) First Final Flow 84 Safety Joint - T-Open 2150
 (D) Initial Shut-In 824 Circ Sub - T-Pulled 0605
 (E) Second Initial Flow 92 Hourly Standby - T-Out 0202
 (F) Second Final Flow 163 Mileage 50 RT 77.50 Comments -
 (G) Final Shut-In 787 Sampler -
 (H) Final Hydrostatic 1533 Straddle -
 Shale Packer -
 Extra Packer -
 Extra Recorder -
 Day Standby -
 Accessibility -

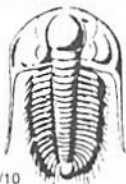
Initial Open 15
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 60

Sub Total 1227.50

MP/DST Disc't -

Approved By - Our Representative Ray Schwager Thank you

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51640

Well Name & No. Roth-Robben #1-21 Test No. 2 Date 1-27-13
 Company Downing-Nelson Oil Co Inc Elevation 2034 KB 2026 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State Ks

Interval Tested 3355-3375 Zone Tested LKC "0"
 Anchor Length 20 Drill Pipe Run 3323 Mud Wt. 9
 Top Packer Depth 3350 Drill Collars Run 30 Vis 49
 Bottom Packer Depth 3355 Wt. Pipe Run - WL 8
 Total Depth 3375 Chlorides 6000 ppm System LCM 2[#]

Blow Description IFP - STRONG BLOW IN 4 MIN
ISIP - SURFACE BLOW BACK
FFP - WEAK TO A STRONG BLOW IN 25 MIN
FSIP - NO BLOW BACK!

Rec	Feet of	%gas	%oil	%water	%mud
<u>465</u>	<u>GIP</u>				
<u>25</u>	<u>HOT+6CM</u>	<u>20</u>	<u>25</u>	<u>55</u>	
<u>60</u>	<u>OCMW</u>		<u>8</u>	<u>82</u>	<u>10</u>

Rec Total 85 BHT 104 Gravity - API RW .14 @ 55 °F Chlorides 68000 ppm

(A) Initial Hydrostatic 1576 Test 1150 T-On Location 0745
 (B) First Initial Flow 22 Jars T-Started 0845
 (C) First Final Flow 35 Safety Joint T-Open 1030
 (D) Initial Shut-In 649 Circ Sub T-Pulled 1300
 (E) Second Initial Flow 44 Hourly Standby T-Out 1518
 (F) Second Final Flow 49 Mileage 77.50 Comments _____
 (G) Final Shut-In 613 Sampler _____
 (H) Final Hydrostatic 1565 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 30 Extra Copies _____
 Final Shut-In 45 Sub Total 0
 Total 1227.50
 Sub Total 1227.50 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51641

4/10

Well Name & No. Roth-Robben # 1-21 Test No. 3 Date 1-27-13
 Company Downing-Nelson Oil Co Inc Elevation 2034 KB 2026 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State Ks

Interval Tested 3375-3393 Zone Tested LKC "E"
 Anchor Length 18 Drill Pipe Run 3355 Mud Wt. 8.7
 Top Packer Depth 3370 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3375 Wt. Pipe Run — WL 8
 Total Depth 3393 Chlorides 6000 ppm System LCM 2#

Blow Description IFP - SURFACE Blow thru-out
ISIP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</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 10 BHT 95 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1587 Test 1150 T-On Location 2045
 (B) First Initial Flow 11 Jars T-Started 2105
 (C) First Final Flow 16 Safety Joint T-Open 2305
 (D) Initial Shut-In 748 Circ Sub T-Pulled 0105
 (E) Second Initial Flow 17 Hourly Standby T-Out 0226
 (F) Second Final Flow 19 Mileage 77.50 Comments _____
 (G) Final Shut-In 678 Sampler _____
 (H) Final Hydrostatic 1586 Straddle _____
 Ruined Shale Packer _____

Initial Open 30 Ruined Packer _____
 Initial Shut-In 30 Extra Copies _____
 Final Flow 30 Sub Total 0
 Final Shut-In 30 Total 1227.50
 Sub Total 1227.50 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51642

Well Name & No. Roth-Robben #1-21 Test No. 4 Date 1-28-13
 Company Downing-Nelson Oil Co Inc Elevation 2034 KB 2026 GL
 Address Po Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State Ks

Interval Tested 3442-3510 Zone Tested LKC H, I, J
 Anchor Length 68 Drill Pipe Run 3411 Mud Wt. 8.8
 Top Packer Depth 3437 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3442 Wt. Pipe Run - WL 8.8
 Total Depth 3510 Chlorides 7000 ppm System LCM 1 1/2 #

Blow Description IFP - WEAK BLOW THRU-OUT 1/8" TO SURFACE
ISIP - NO BLOW
FFP - NO BLOW
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</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

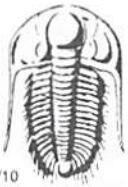
Rec Total 10 BHT 92 Gravity - API RW - @ - F Chlorides - ppm

(A) Initial Hydrostatic 1630 Test 1150 T-On Location 1255
 (B) First Initial Flow 16 Jars _____ T-Started 1350
 (C) First Final Flow 19 Safety Joint _____ T-Open 1600
 (D) Initial Shut-In 44 Circ Sub _____ T-Pulled 1800
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 1926
 (F) Second Final Flow 25 Mileage 77.50 Comments _____
 (G) Final Shut-In 39 Sampler _____
 (H) Final Hydrostatic 1620 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 30 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1227.50
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 1227.50

Approved By _____ Our Representative RAY SCHWAGER *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51643

4/10

Well Name & No. Roth-Robben #1-21 Test No. 5 Date 1-29-13
 Company Downing-Nelson Oil Co Inc Elevation 2034 KB 2026 GL
 Address PO Box 1019 Hays, Ko 67601
 Co. Rep / Geo. MARC Downing Rig Discrepary rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State Ko

Interval Tested 3529-3590 Zone Tested Congl sd.
 Anchor Length 61 Drill Pipe Run 3484 Mud Wt. 8.7
 Top Packer Depth 3524 Drill Collars Run 30 Vis 49
 Bottom Packer Depth 3529 Wt. Pipe Run - WL 8
 Total Depth 3590 Chlorides 7000 ppm System LCM 1 1/2 #
 Blow Description I FP - WEAK Blow Thru-out 1/4" To 1" Blow
ISIP - NO Blow
FFP - WEAK Blow Thru-out 1/4" To 1/2" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>GIP</u>				
<u>35</u>	<u>OTGCM</u>	<u>5</u>	<u>20</u>		<u>75</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 35 BHT 99 Gravity - API RW - @ - F Chlorides - ppm

(A) Initial Hydrostatic <u>1701</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0450</u>
(B) First Initial Flow <u>17</u>	<input type="checkbox"/> Jars	T-Started <u>0510</u>
(C) First Final Flow <u>28</u>	<input type="checkbox"/> Safety Joint	T-Open <u>0645</u>
(D) Initial Shut-In <u>29</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0945</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1133</u>
(F) Second Final Flow <u>33</u>	<input checked="" type="checkbox"/> Mileage <u>77.50</u>	Comments
(G) Final Shut-In <u>57</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1659</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1227.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1227.50</u>	

Approved By _____ Our Representative Ray Schwager Thank you

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51644

Well Name & No. Roth-Robben #1-21 Test No. 6 Date 1-30-13
 Company Downing-Nelson Oil Co, Inc Elevation 2034 KB 2026 GL
 Address PO Box 1019 Hays, Ko 67601
 Co. Rep / Geo. MARC DOWNING Rig Discovery rig 4
 Location: Sec. 21 Twp. 16^s Rge. 17^w Co. Rush State K

Interval Tested 3530-3613 Zone Tested Arbuckle
 Anchor Length 83 Drill Pipe Run 3510 Mud Wt. 8.7
 Top Packer Depth 3530-3525 Drill Collars Run 30 Vis 58
 Bottom Packer Depth 3613 Wt. Pipe Run - WL 8
 Total Depth 3727 Chlorides 7000 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 25 MIN
ISIP - NO BLOW
FIFP - WEAK TO STRONG IN 20 MIN
FSIP - NO BLOW 1st 15 min, THEN WK 1/4" BLOWBACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>790</u>	<u>GIP</u>				
<u>76</u>	<u>HOT GCM</u>	<u>20</u>	<u>20</u>		<u>60</u>
<u>124</u>	<u>MGO</u>	<u>25</u>	<u>55</u>		<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 200 BHT 102 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1680 Test 1150 T-On Location 0215
 (B) First Initial Flow 42 Jars T-Started 0300
 (C) First Final Flow 79 Safety Joint T-Open 0530
 (D) Initial Shut-In 439 Circ Sub T-Pulled 0830
 (E) Second Initial Flow 81 Hourly Standby T-Out 1114
 (F) Second Final Flow 104 Mileage 77.50 Comments _____
 (G) Final Shut-In 337 Sampler _____
 (H) Final Hydrostatic 1669 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1827.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1827.50

Approved By _____ Our Representative Ray Schwaner *Thank you*

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WELL: Asth-Robben #1-21
FIELD: Locetta
LOCATION: Basin #1 & 2
SEC: 21 TWP: 14S RGE: 17W
COUNTY: Rush
STATE: Kansas
OPERATOR: DACTI
CONTRACTOR: Diversey Drilling, Inc.
CASSING RECORD: 1-22-13
SURF: 59' @ 1124' PROD: 5 1/2" @ 3725'
TOTAL DEPTH DRILLERS: 3724'
TOTAL DEPTH: 3727'

FORMATION TOPS AND STRUCTURAL POSITION	DEPTH	STRUCTURAL POSITION
Top Anhydrite	1157	-1
Base Anhydrite	1195	-1
Tapeka	3010	-6
Hedden	3271	-6
Toronto	3290	-6
LKC	3319	-6
PKC	3550	-4
Archieville	3592	-21

FORMATION TOPS AND STRUCTURAL POSITION	DEPTH	STRUCTURAL POSITION
Top Anhydrite	1157	-1
Base Anhydrite	1195	-1
Tapeka	3010	-6
Hedden	3271	-6
Toronto	3290	-6
LKC	3319	-6
PKC	3550	-4
Archieville	3592	-21

REFERENCE WELL FOR STRUCTURE: Alameda & Jones & Stillman
C-111-SE Sec. 21-14S-17W

Drilling time in minutes per foot. Rate of Penetration Decreases



DEPTH: 1150, 1200, 1250, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700

LITHOLOGY: dk gray sh, ls tan, mod. sh, sh, ss, etc.

SAMPLE DESCRIPTIONS: dk gray sh, ls tan, mod. sh, sh, ss, etc.

REMARKS: DST #1, DST #2, DST #3, DST #4, DST #5, DST #6

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

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Top Anhydrite 1157-877

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Base Anhydrite 1195-839

Top Anhydrite 1157-877

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Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

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LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

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Hedden 3271-1237

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Base Anhydrite 1195-839

Top Anhydrite 1157-877

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LKC 3550-1514

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Tapeka 3010-1007

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Top Anhydrite 1157-877

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LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

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LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

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Hedden 3271-1237

Tapeka 3010-1007

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Top Anhydrite 1157-877

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Archieville 3592-1558

LKC 3550-1514

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Hedden 3271-1237

Tapeka 3010-1007

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Top Anhydrite 1157-877

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LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

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LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

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LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839

Top Anhydrite 1157-877

RTD: 3724(1692)
LTD: 3727(1693)

Archieville 3592-1558

LKC 3550-1514

TORONTO 3290-1256

Hedden 3271-1237

Tapeka 3010-1007

Base Anhydrite 1195-839