KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1089748

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 # 30717
Name: Downing-Nelson Oil Co Inc
Address 1: PO BOX 1019
Address 2:
City: HAYS State: KS Zip: 67601 + __ __ __ __
Contact Person: Ron Nelson
Phone: (785) 621-2610
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Marc Downing
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [x] 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 #:

07/20/2012	07/28/2012	07/29/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-145-21681-00-00
Spot Description:
W2 - NW - NE - SW Sec. 30 Twp. 20 S. R. 20 [ ] East [x] West
2310 Feet from [ ] North / [x] South Line of Section
1440 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [ ] NW [ ] SE [x] SW
County: Pawnee
Lease Name: Galen Well #: 1-30
Field Name: Steffen
Producing Formation: Mississippian
Elevation: Ground: 2192 Kelly Bushing: 2200
Total Depth: 4373 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 1203 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 19000 ppm Fluid volume: 400 bbls
Dewatering method used: Evaporated
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**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [x] **I** [ ] **II** [ ] **III** **Approved by:** Deanna Garrison **Date:** 12/04/2012

Side Two

1089748

Operator Name: Downing-Nelson Oil Co Inc Lease Name: Galen Well #: 1-30

Sec. 30 Twp. 20 S. R. 20 ☐ East ☑ West County: Pawnee

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

Electric Log Submitted Electronically ☐ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:

☐ Log Formation (Top), Depth and Datum ☑ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☑ New ☐ 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
Surface pipe	12.25	8.625	23	1203	Common	450	2% Gel & 3% CC
Production string	7.875	5.5	14	4368	EA/2	125	

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 *(Amount and Kind of Material Used)*	Depth
4	4346' to 4353' and 4359' to 4362'	500 gallons 15% Mud Acid	4346' to 4353' and 4359'
		750 gallons 15% IND Acid	4346' to 4353' and 4359'

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:
	2.375	4342.63		☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR.	Producing Method:
10/30/2012	☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	2	0	85		

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

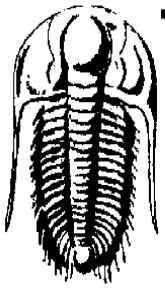
PRODUCTION INTERVAL:
_____
_____

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Galen 1-30
Doc ID	1089748

Tops

Name	Top	Datum
Top Anhydrite	1378'	+822
Base Anhydrite	1403'	+797
Heebner	3716'	-1516
LKC	3767'	-1567
BKC	4085'	-1885
Fort Scott	4277'	-2077
Cherokee Shale	4292'	-2092
MIssissippi	4346'	-2146



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Galen #1-30

30-20s-20w Pawnee,KS

Start Date: 2012.07.26 @ 20:31:05
End Date: 2012.07.27 @ 02:19:50
Job Ticket #: 47902 DST #: 1

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

Printed: 2012.08.09 @ 11:38:11

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47902 **DST#: 1**

Test Start: 2012.07.26 @ 20:31:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:27:50
Time Test Ended: 02:19:50

Test Type: Conventional Bottom Hole (Initial)
Tester: Andy Carreira
Unit No: 39

Interval: 4314.00 ft (KB) To 4355.00 ft (KB) (TVD)
Total Depth: 4355.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

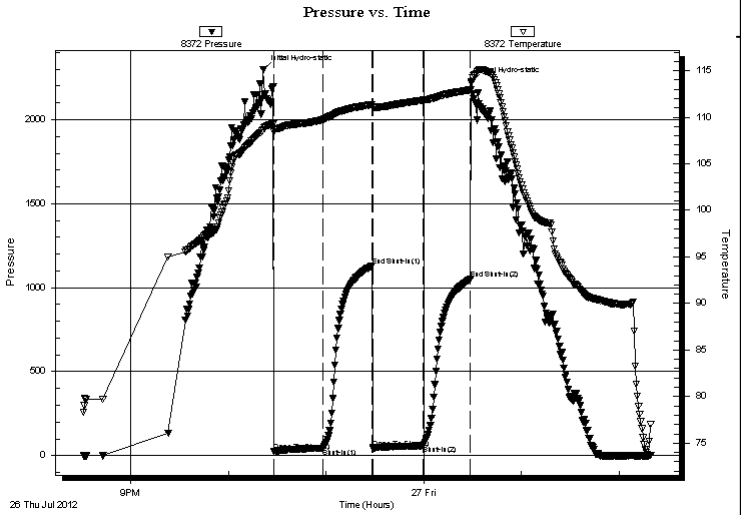
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Outside**

Press@RunDepth: 60.90 psig @ 4319.00 ft (KB)
Start Date: 2012.07.26 End Date: 2012.07.27
Start Time: 20:31:05 End Time: 02:19:50

Capacity: 8000.00 psig
Last Calib.: 2012.07.27
Time On Btm: 2012.07.26 @ 22:21:30
Time Off Btm: 2012.07.27 @ 00:29:30

TEST COMMENT: IF:(30min) Weak, surface blow
ISI:(30min) No Return
FF:(30min) Weak, surface blow
FSI:(30min) No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2299.20	108.67	Initial Hydro-static
7	23.77	108.40	Open To Flow (1)
37	45.44	109.75	Shut-In(1)
67	1130.28	111.36	End Shut-In(1)
68	44.74	111.04	Open To Flow (2)
99	60.90	111.83	Shut-In(2)
128	1051.46	112.93	End Shut-In(2)
128	2226.88	113.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
95.00	HOCGM g=5% o=25% m=70%	1.06

Gas Rates

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

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47902 **DST#: 1**

Test Start: 2012.07.26 @ 20:31:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:27:50
Time Test Ended: 02:19:50

Test Type: Conventional Bottom Hole (Initial)
Tester: Andy Carreira
Unit No: 39

Interval: 4314.00 ft (KB) To 4355.00 ft (KB) (TVD)
Total Depth: 4355.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

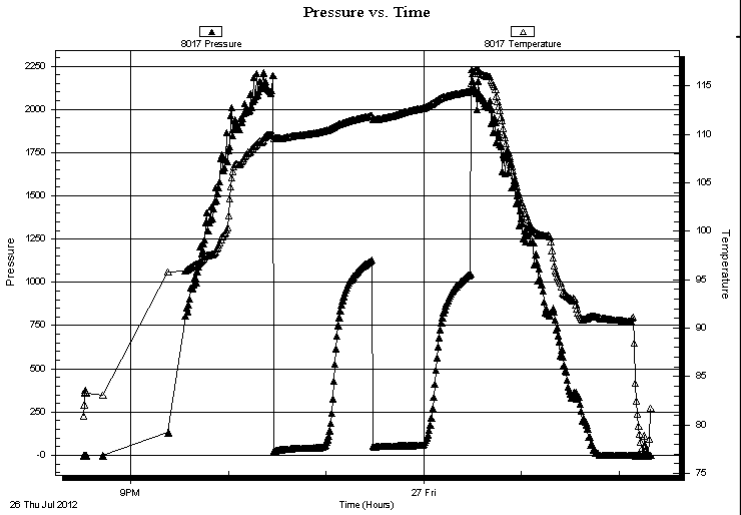
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 4319.00 ft (KB)
Start Date: 2012.07.26 End Date: 2012.07.27
Start Time: 20:31:05 End Time: 02:19:50

Capacity: 8000.00 psig
Last Calib.: 2012.07.27
Time On Btm:
Time Off Btm:

TEST COMMENT: IF:(30min) Weak, surface blow
ISI:(30min) No Return
FF:(30min) Weak, surface blow
FSI:(30min) No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
95.00	HOCGM g=5% o=25% m=70%	1.06

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47902 **DST#: 1**

Test Start: 2012.07.26 @ 20:31:05

Tool Information

Drill Pipe:	Length:	4286.00 ft	Diameter:	3.80 inches	Volume:	60.12 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		24000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		65000.00 lb
					Total Volume:	60.27 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight:	Initial	59000.00 lb
Depth to Top Packer:		4314.00 ft						Final	59000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		41.00 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	
Change Over Sub	1.00			4287.00		
Shut In Tool	5.00			4292.00		
Hydraulic tool	5.00			4297.00		
Jars	5.00			4302.00		
Safety Joint	3.00			4305.00		
Packer	5.00			4310.00	28.00	Bottom Of Top Packer
Packer	4.00			4314.00		
Stubb	1.00			4315.00		
Perforations	3.00			4318.00		
Change Over Sub	1.00			4319.00		
Recorder	0.00	8017	Inside	4319.00		
Recorder	0.00	8372	Outside	4319.00		
Drill Pipe	31.00			4350.00		
Change Over Sub	1.00			4351.00		
Perforations	1.00			4352.00		
Bullnose	3.00			4355.00	41.00	Bottom Packers & Anchor
Total Tool Length:	**69.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47902 **DST#: 1**

Test Start: 2012.07.26 @ 20:31:05

Mud and Cushion Information

Mud Type:		Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.32 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4000.00 ppm				
Filter Cake:	inches				

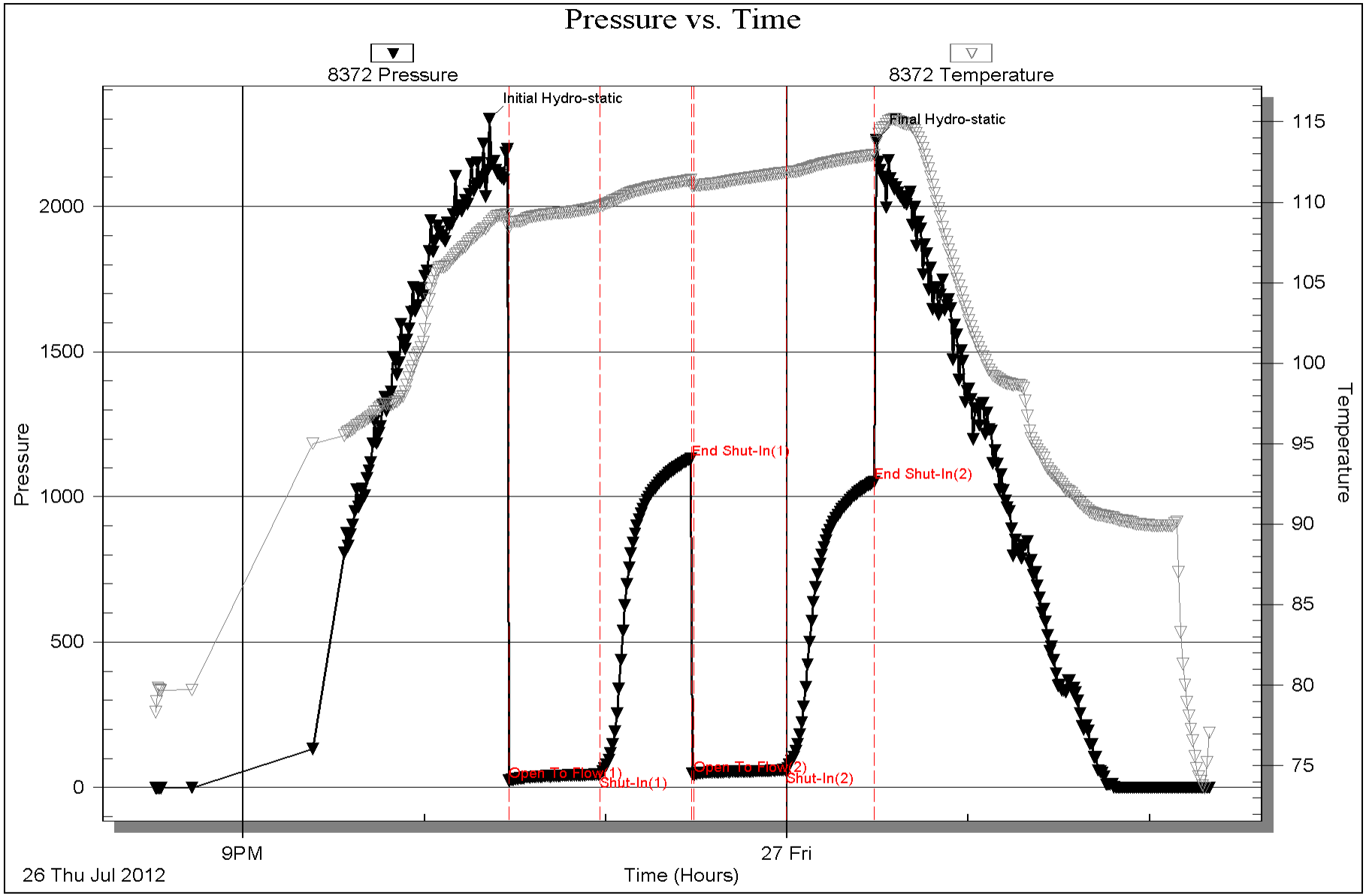
Recovery Information

Recovery Table

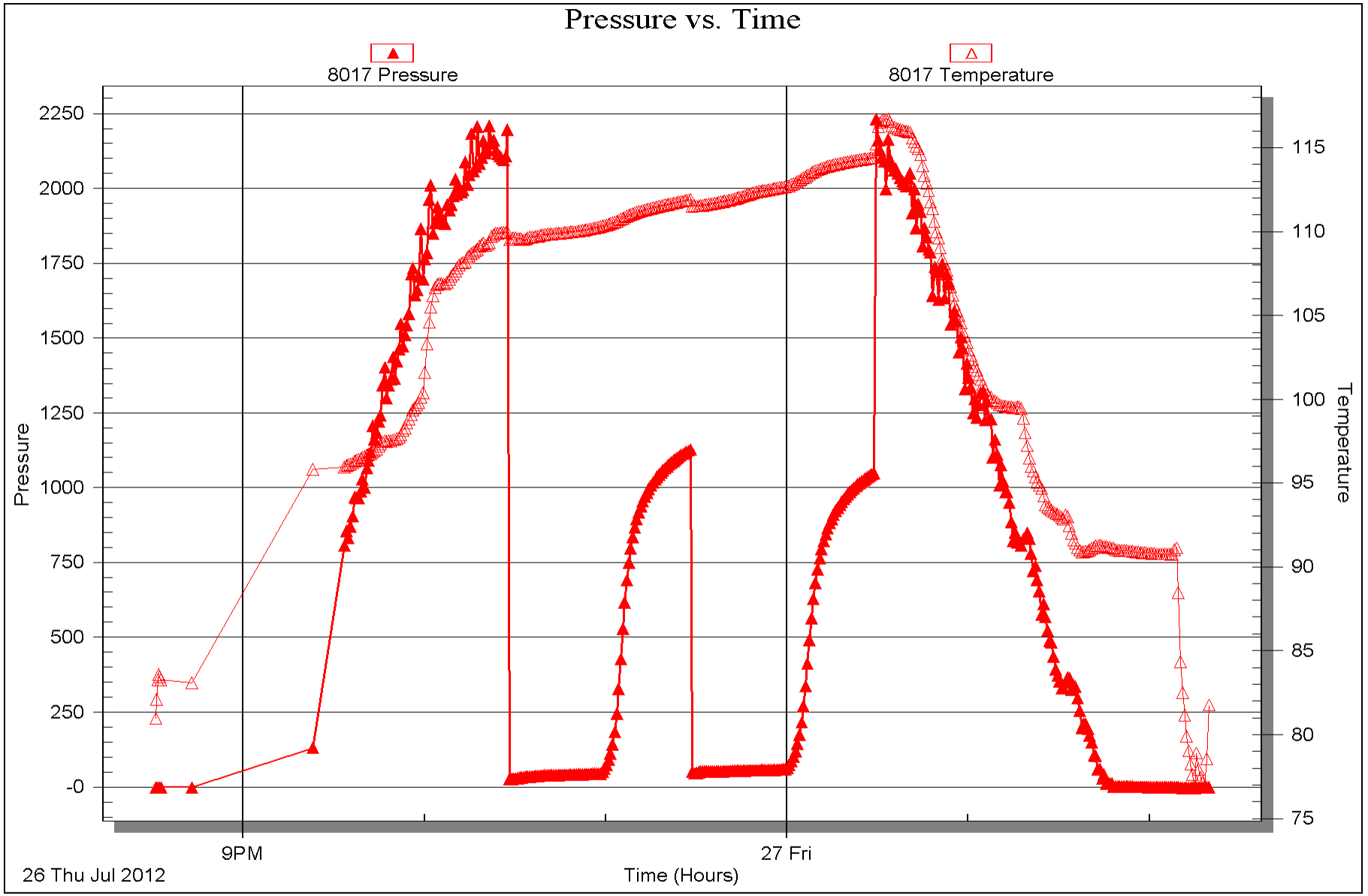
Length ft	Description	Volume bbl
95.00	HOCGM g=5% o=25% m=70%	1.059

Total Length: 95.00 ft Total Volume: 1.059 bbl

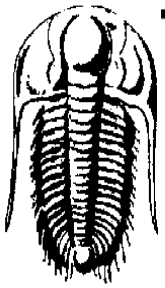
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
8372 Pressure
8372 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2000
1500
1000
500
0
115
110
105
100
95
90
85
80
75
9PM
27 Fri
26 Thu Jul 2012
Time (Hours)

Serial #: 8017 **Inside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 47902 Printed: 2012.08.09 @ 11:38:14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Galen #1-30

30-20s-20w Pawnee,KS

Start Date: 2012.07.27 @ 08:59:05
End Date: 2012.07.27 @ 15:18:50
Job Ticket #: 47903 DST #: 2

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

Printed: 2012.08.09 @ 11:37:19

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47903 **DST#: 2**

Test Start: 2012.07.27 @ 08:59:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:11:30
Time Test Ended: 15:18:50

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4355.00 ft (KB) To 4365.00 ft (KB) (TVD)
Total Depth: 4365.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

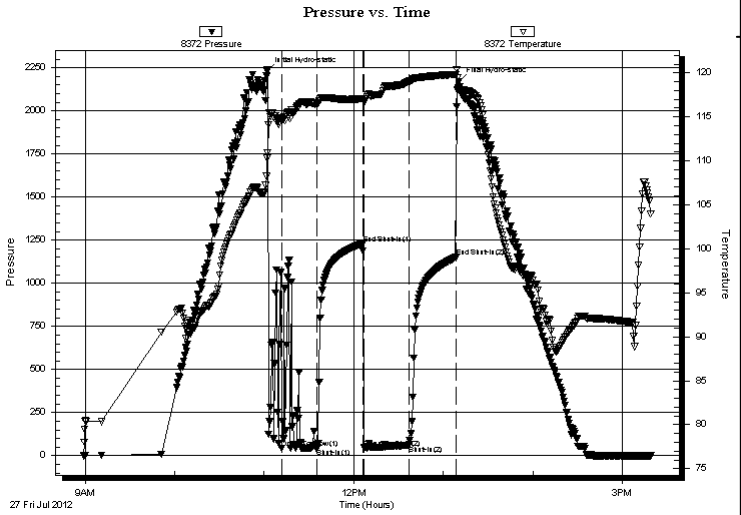
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Outside**

Press@RunDepth: 60.28 psig @ 4356.00 ft (KB)
Start Date: 2012.07.27 End Date: 2012.07.27
Start Time: 08:59:05 End Time: 15:18:50

Capacity: 8000.00 psig
Last Calib.: 2012.07.27
Time On Btm: 2012.07.27 @ 11:02:00
Time Off Btm: 2012.07.27 @ 13:10:20

TEST COMMENT: IF:(30min) Weak, intermittent surface blow . Flushed, surged, surface blow .
ISI:(30min) No Return
FF:(30min) Surface blow
FSI:(30min) No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2230.24	110.29	Initial Hydro-static
10	43.68	114.64	Open To Flow (1)
34	44.92	116.54	Shut-In(1)
64	1230.93	117.07	End Shut-In(1)
65	45.95	116.72	Open To Flow (2)
95	60.28	119.01	Shut-In(2)
127	1150.92	119.85	End Shut-In(2)
129	2168.59	118.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
110.00	HOCGM g=5% o=45% m=50%	1.27

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47903 **DST#: 2**

Test Start: 2012.07.27 @ 08:59:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:11:30
Time Test Ended: 15:18:50

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4355.00 ft (KB) To 4365.00 ft (KB) (TVD)
Total Depth: 4365.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

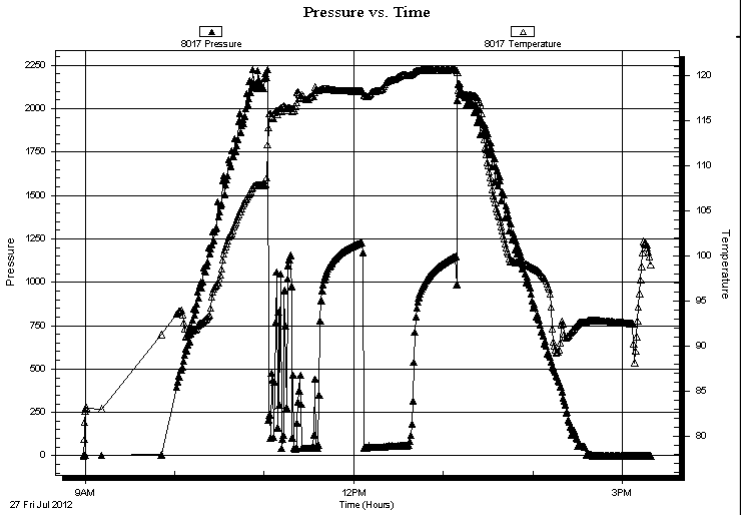
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 4356.00 ft (KB)
Start Date: 2012.07.27 End Date: 2012.07.27
Start Time: 08:59:05 End Time: 15:18:50

Capacity: 8000.00 psig
Last Calib.: 2012.07.27
Time On Btm:
Time Off Btm:

TEST COMMENT: IF:(30min) Weak, intermittent surface blow . Flushed, surged, surface blow .
ISI:(30min) No Return
FF:(30min) Surface blow
FSI:(30min) No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
110.00	HOCGM g=5% o=45% m=50%	1.27

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47903 **DST#: 2**

Test Start: 2012.07.27 @ 08:59:05

Tool Information

Drill Pipe:	Length:	4319.00 ft	Diameter:	3.80 inches	Volume:	60.58 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		22000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	60.73 bbl	Tool Chased		8.00 ft
Drill Pipe Above KB:		22.00 ft					String Weight:	Initial	59000.00 lb
Depth to Top Packer:		4355.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		10.00 ft							
Tool Length:		38.00 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			4328.00		
Shut In Tool	5.00			4333.00		
Hydraulic tool	5.00			4338.00		
Jars	5.00			4343.00		
Safety Joint	3.00			4346.00		
Packer	5.00			4351.00	28.00	Bottom Of Top Packer
Packer	4.00			4355.00		
Stubb	1.00			4356.00		
Recorder	0.00	8017	Inside	4356.00		
Recorder	0.00	8372	Outside	4356.00		
Perforations	6.00			4362.00		
Bullnose	3.00			4365.00	10.00	Bottom Packers & Anchor
Total Tool Length:	**38.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47903 **DST#: 2**

Test Start: 2012.07.27 @ 08:59:05

Mud and Cushion Information

Mud Type:		Cushion Type:		Oil API:	deg API
Mud Weight:	10.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.34 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	8000.00 ppm				
Filter Cake:	inches				

Recovery Information

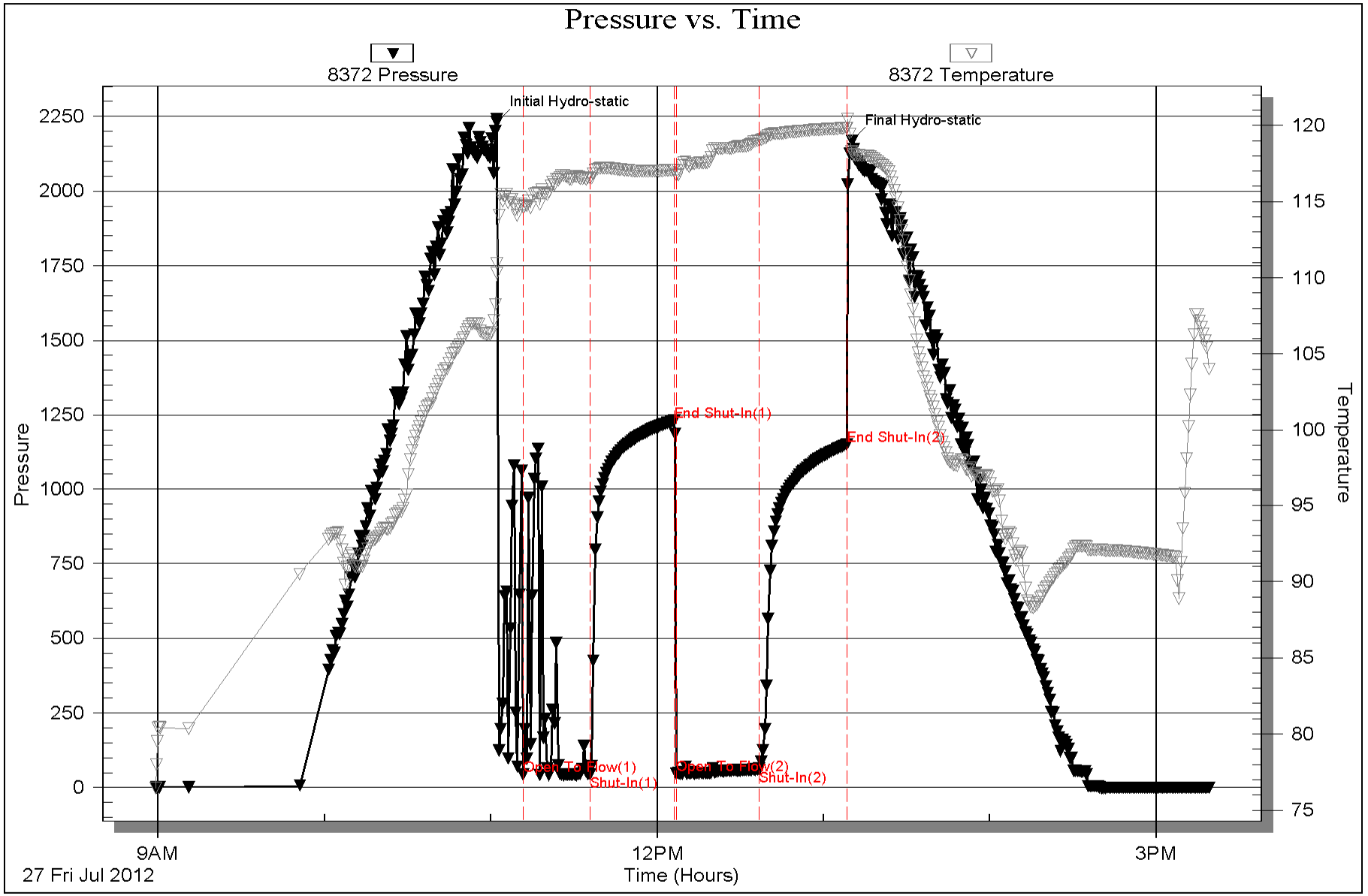
Recovery Table

Length ft	Description	Volume bbl
110.00	HOCGM g=5% o=45% m=50%	1.270

Total Length: 110.00 ft Total Volume: 1.270 bbl

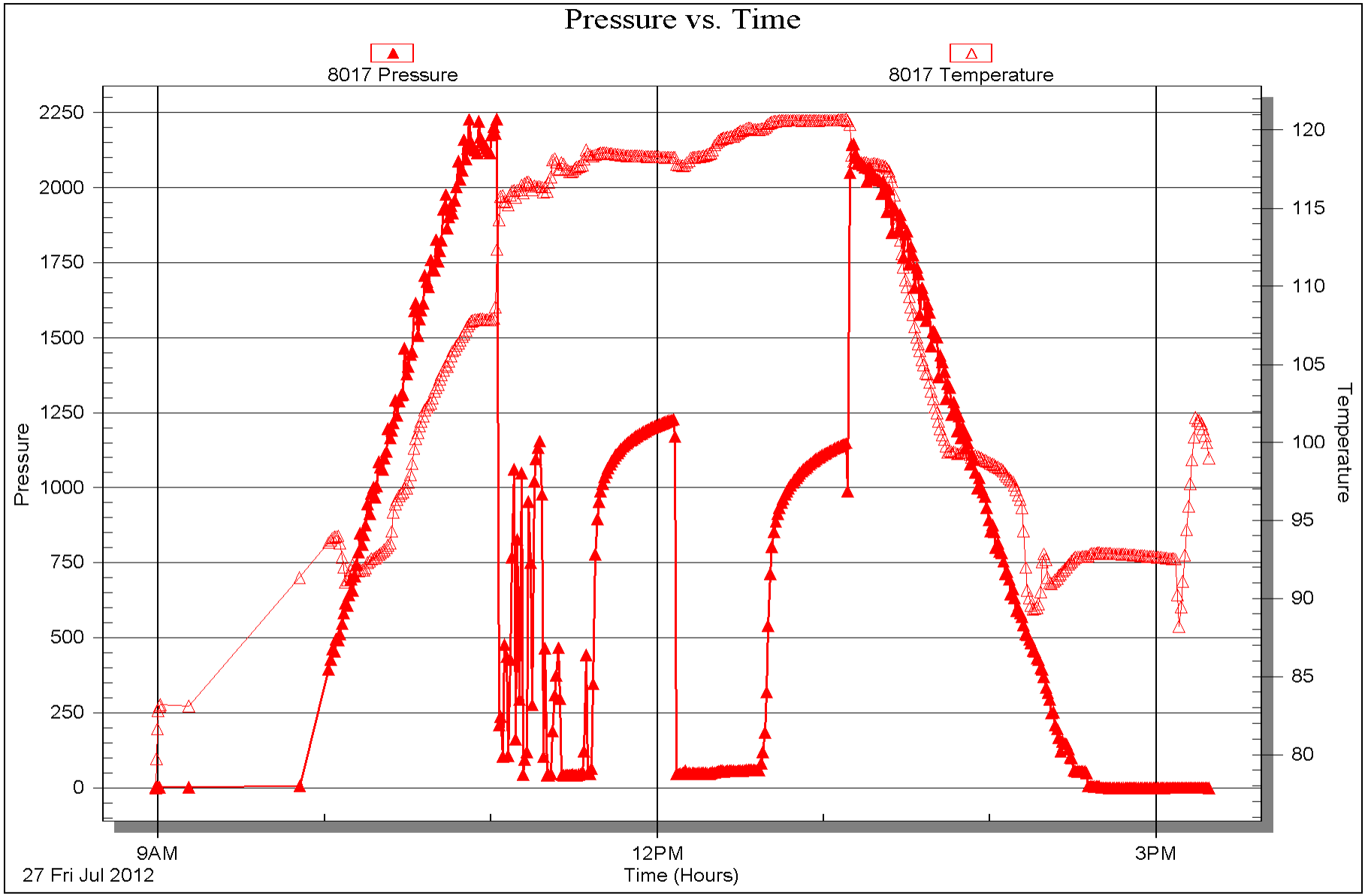
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8372 **Outside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 2

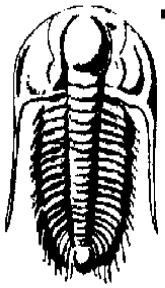


Trilobite Testing, Inc Ref. No: 47903 Printed: 2012.08.09 @ 11:37:22

Serial #: 8017 **Inside** Downing Nelson Oil Company Galen #1-30 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 47903 Printed: 2012.08.09 @ 11:37:23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Galen #1-30

30-20s-20w Pawnee,KS

Start Date: 2012.07.27 @ 22:22:05
End Date: 2012.07.28 @ 04:13:59
Job Ticket #: 47904 DST #: 3

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

Printed: 2012.08.09 @ 11:36:19

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47904 **DST#: 3**

Test Start: 2012.07.27 @ 22:22:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 04:13:59

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4358.00 ft (KB) To 4373.00 ft (KB) (TVD)
Total Depth: 4373.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

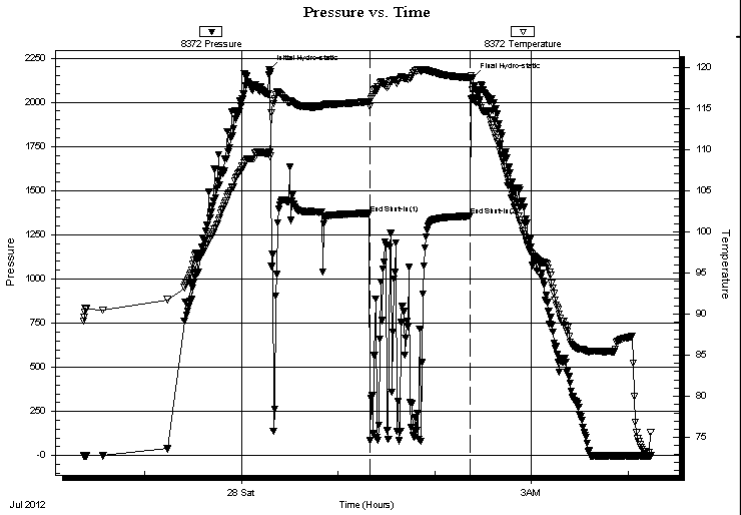
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Outside**

Press@RunDepth: 1356.46 psig @ 4359.00 ft (KB)
Start Date: 2012.07.27 End Date: 2012.07.28
Start Time: 22:22:05 End Time: 04:13:59

Capacity: 8000.00 psig
Last Calib.: 2012.07.28
Time On Btm: 2012.07.28 @ 00:17:20
Time Off Btm: 2012.07.28 @ 02:23:40

TEST COMMENT: IF:(30min) Weak, intermittent blow , Died in 8 min. Flushed, surged, died in 2 min.
ISI:(30min) No Return
FF:(30min) No Blow , Flushed, Weak surge, No Blow
FSI:(30min) No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2186.39	109.62	Initial Hydro-static
63	1370.54	115.83	End Shut-In(1)
125	1356.46	118.74	End Shut-In(2)
127	2140.83	116.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
95.00	Heavy Mud	1.06

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47904 **DST#: 3**

Test Start: 2012.07.27 @ 22:22:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 04:13:59

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4358.00 ft (KB) To 4373.00 ft (KB) (TVD)
Total Depth: 4373.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

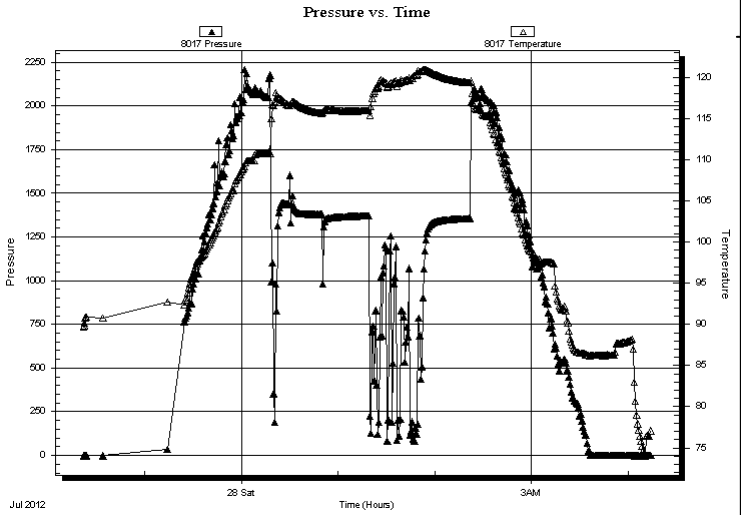
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 4359.00 ft (KB)
Start Date: 2012.07.27 End Date: 2012.07.28
Start Time: 22:22:05 End Time: 04:13:59

Capacity: 8000.00 psig
Last Calib.: 2012.07.28
Time On Btm:
Time Off Btm:

TEST COMMENT: IF:(30min) Weak, intermittent blow , Died in 8 min. Flushed, surged, died in 2 min.
ISI:(30min) No Return
FF:(30min) No Blow , Flushed, Weak surge, No Blow
FSI:(30min) No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
95.00	Heavy Mud	1.06

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47904 **DST#: 3**

Test Start: 2012.07.27 @ 22:22:05

Tool Information

Drill Pipe:	Length:	4317.00 ft	Diameter:	3.80 inches	Volume:	60.56 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		24000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		74000.00 lb
					Total Volume:	60.71 bbl	Tool Chased		10.00 ft
Drill Pipe Above KB:		17.00 ft					String Weight:	Initial	59000.00 lb
Depth to Top Packer:		4358.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		15.00 ft							
Tool Length:		43.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments: Tool Slid 10 ft. Causing Tool to plug

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4331.00		
Shut In Tool	5.00			4336.00		
Hydraulic tool	5.00			4341.00		
Jars	5.00			4346.00		
Safety Joint	3.00			4349.00		
Packer	5.00			4354.00	28.00	Bottom Of Top Packer
Packer	4.00			4358.00		
Stubb	1.00			4359.00		
Recorder	0.00	8017	Inside	4359.00		
Recorder	0.00	8372	Outside	4359.00		
Perforations	11.00			4370.00		
Bullnose	3.00			4373.00	15.00	Bottom Packers & Anchor
Total Tool Length:	**43.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47904 **DST#: 3**

Test Start: 2012.07.27 @ 22:22:05

Mud and Cushion Information

Mud Type:		Cushion Type:		Oil API:	deg API
Mud Weight:	10.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.37 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	8000.00 ppm				
Filter Cake:	inches				

Recovery Information

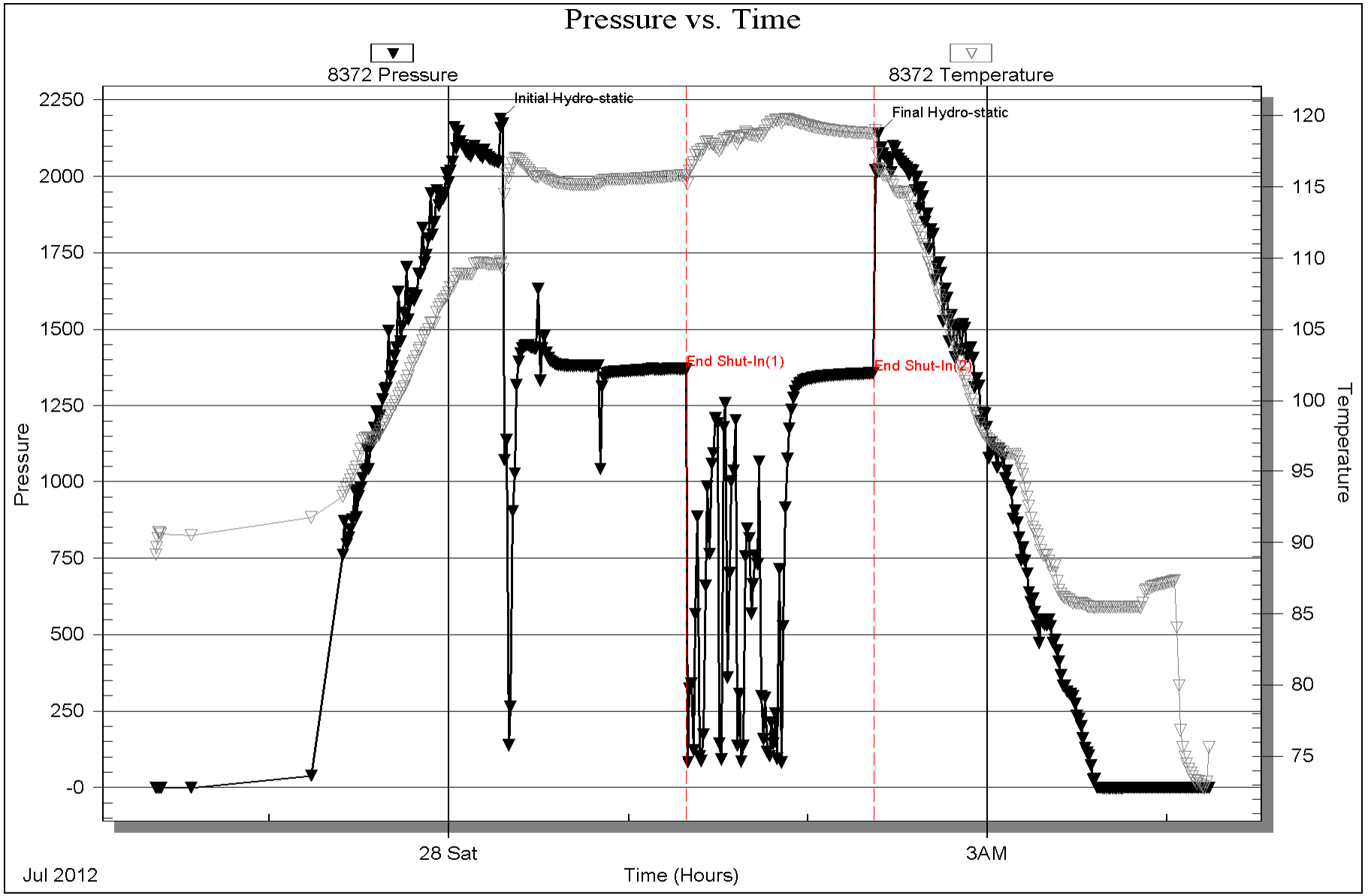
Recovery Table

Length ft	Description	Volume bbl
95.00	Heavy Mud	1.059

Total Length: 95.00 ft Total Volume: 1.059 bbl

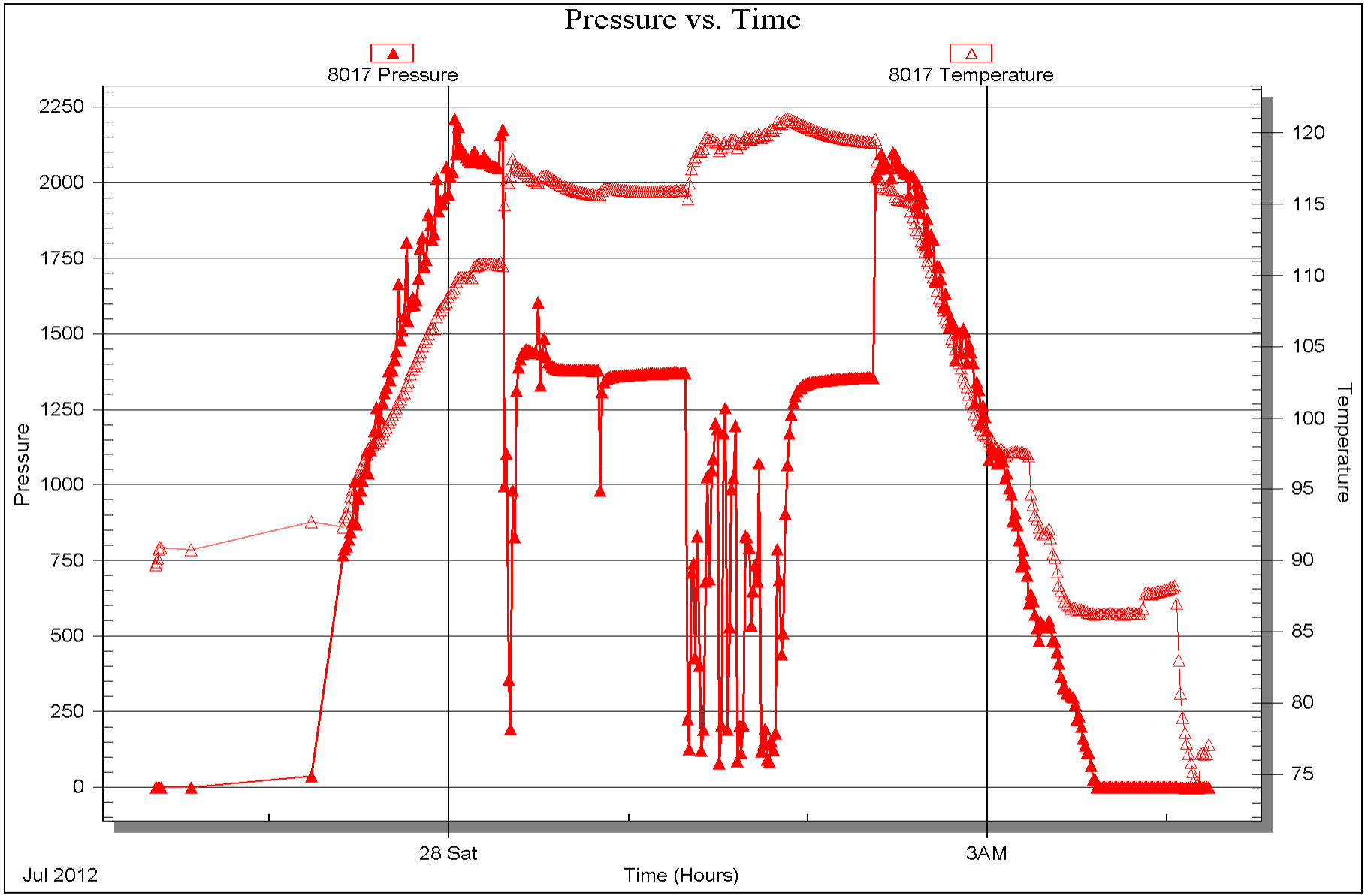
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8372 **Outside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 47904 Printed: 2012.08.09 @ 11:36:23

Serial #: 8017 **Inside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 3



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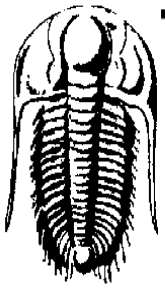


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Galen #1-30

30-20s-20w Pawnee,KS

Start Date: 2012.07.28 @ 11:01:05
End Date: 2012.07.28 @ 19:22:20
Job Ticket #: 47905 DST #: 4

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

Printed: 2012.08.09 @ 11:35:31

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47905 **DST#: 4**

Test Start: 2012.07.28 @ 11:01:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:43:30
Time Test Ended: 19:22:20

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4314.00 ft (KB) To 4373.00 ft (KB) (TVD)
Total Depth: 4373.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

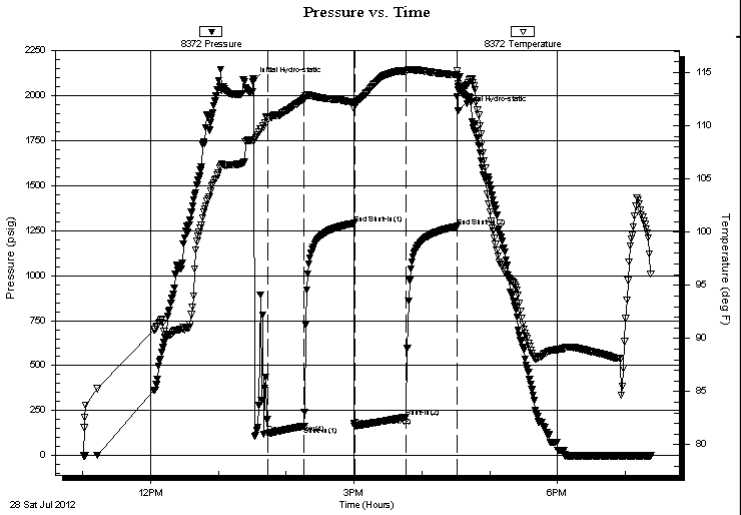
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Outside**

Press@RunDepth: 213.50 psig @ 4321.00 ft (KB)
Start Date: 2012.07.28 End Date: 2012.07.28
Start Time: 11:01:05 End Time: 19:22:20

Capacity: 8000.00 psig
Last Calib.: 2012.07.28
Time On Btm: 2012.07.28 @ 13:30:50
Time Off Btm: 2012.07.28 @ 16:32:20

TEST COMMENT: IF:(45min) Fair, 2.5" blow
ISI:(45min) No Return
FF:(45min) Half inch blow
FSI:(45min) No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2078.04	108.67	Initial Hydro-static
13	123.55	110.76	Open To Flow (1)
46	164.42	112.53	Shut-In(1)
90	1290.35	112.24	End Shut-In(1)
90	163.78	111.92	Open To Flow (2)
136	213.50	115.05	Shut-In(2)
181	1273.36	114.80	End Shut-In(2)
182	1918.93	113.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
410.00	OCGM g=10% o=10% m=80%	5.48

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47905 **DST#: 4**

Test Start: 2012.07.28 @ 11:01:05

GENERAL INFORMATION:

Formation: **Miss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:43:30
Time Test Ended: 19:22:20

Test Type: Conventional Bottom Hole (Reset)
Tester: Andy Carreira
Unit No: 39

Interval: 4314.00 ft (KB) To 4373.00 ft (KB) (TVD)
Total Depth: 4373.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

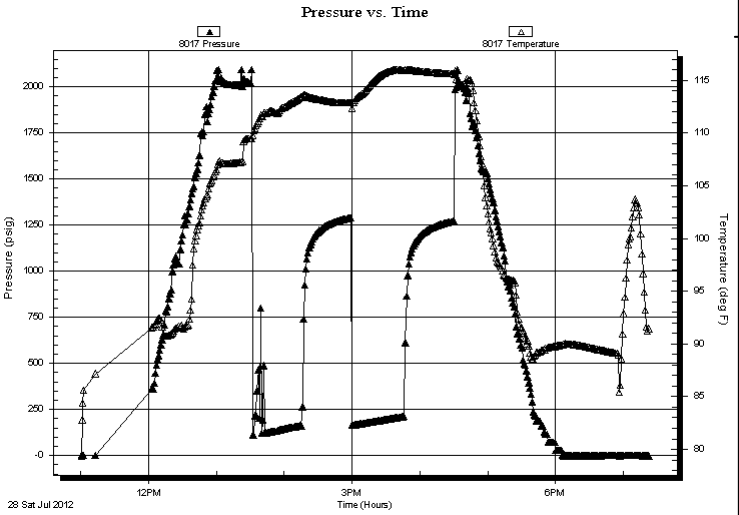
Reference Elevations: 2200.00 ft (KB)
2192.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 4321.00 ft (KB)
Start Date: 2012.07.28 End Date: 2012.07.28
Start Time: 11:01:05 End Time: 19:22:20

Capacity: 8000.00 psig
Last Calib.: 2012.07.28
Time On Btm:
Time Off Btm:

TEST COMMENT: IF:(45min) Fair, 2.5" blow
ISI:(45min) No Return
FF:(45min) Half inch blow
FSI:(45min) No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
410.00	OCGM g=10% o=10% m=80%	5.48

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47905 **DST#: 4**

Test Start: 2012.07.28 @ 11:01:05

Tool Information

Drill Pipe:	Length:	4286.00 ft	Diameter:	3.80 inches	Volume:	60.12 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		24000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		80000.00 lb
					Total Volume:	60.27 bbl	Tool Chased		20.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight:	Initial	59000.00 lb
Depth to Top Packer:		4314.00 ft						Final	61000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		59.00 ft							
Tool Length:		87.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments: Slid 5ft to Bridge. Tool opened on bridge packers failed. 2nd attempt tool opened on bridge & slid 15ft to bottom. Ran test.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4287.00		
Shut In Tool	5.00			4292.00		
Hydraulic tool	5.00			4297.00		
Jars	5.00			4302.00		
Safety Joint	3.00			4305.00		
Packer	5.00			4310.00	28.00	Bottom Of Top Packer
Packer	4.00			4314.00		
Stubb	1.00			4315.00		
Perforations	5.00			4320.00		
Change Over Sub	1.00			4321.00		
Recorder	0.00	8017	Inside	4321.00		
Recorder	0.00	8372	Outside	4321.00		
Drill Pipe	31.00			4352.00		
Change Over Sub	1.00			4353.00		
Perforations	17.00			4370.00		
Bullnose	3.00			4373.00	59.00	Bottom Packers & Anchor
Total Tool Length:	**87.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-20s-20w Pawnee,KS

Galen #1-30

Job Ticket: 47905 **DST#: 4**

Test Start: 2012.07.28 @ 11:01:05

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:	ppm
Viscosity:	50.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.18 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	8000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
410.00	OCGM g=10% o=10% m=80%	5.478

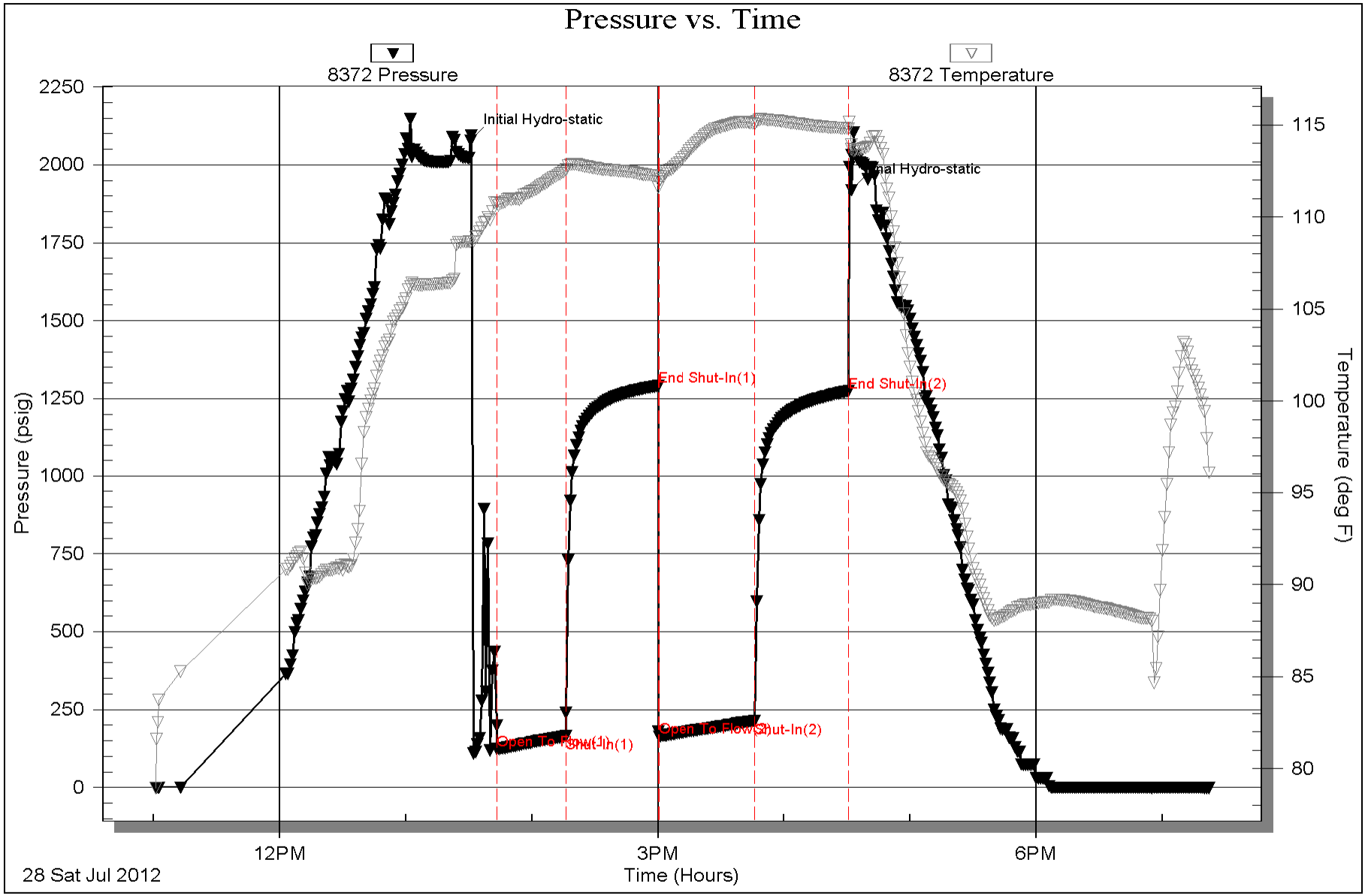
Total Length: 410.00 ft Total Volume: 5.478 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

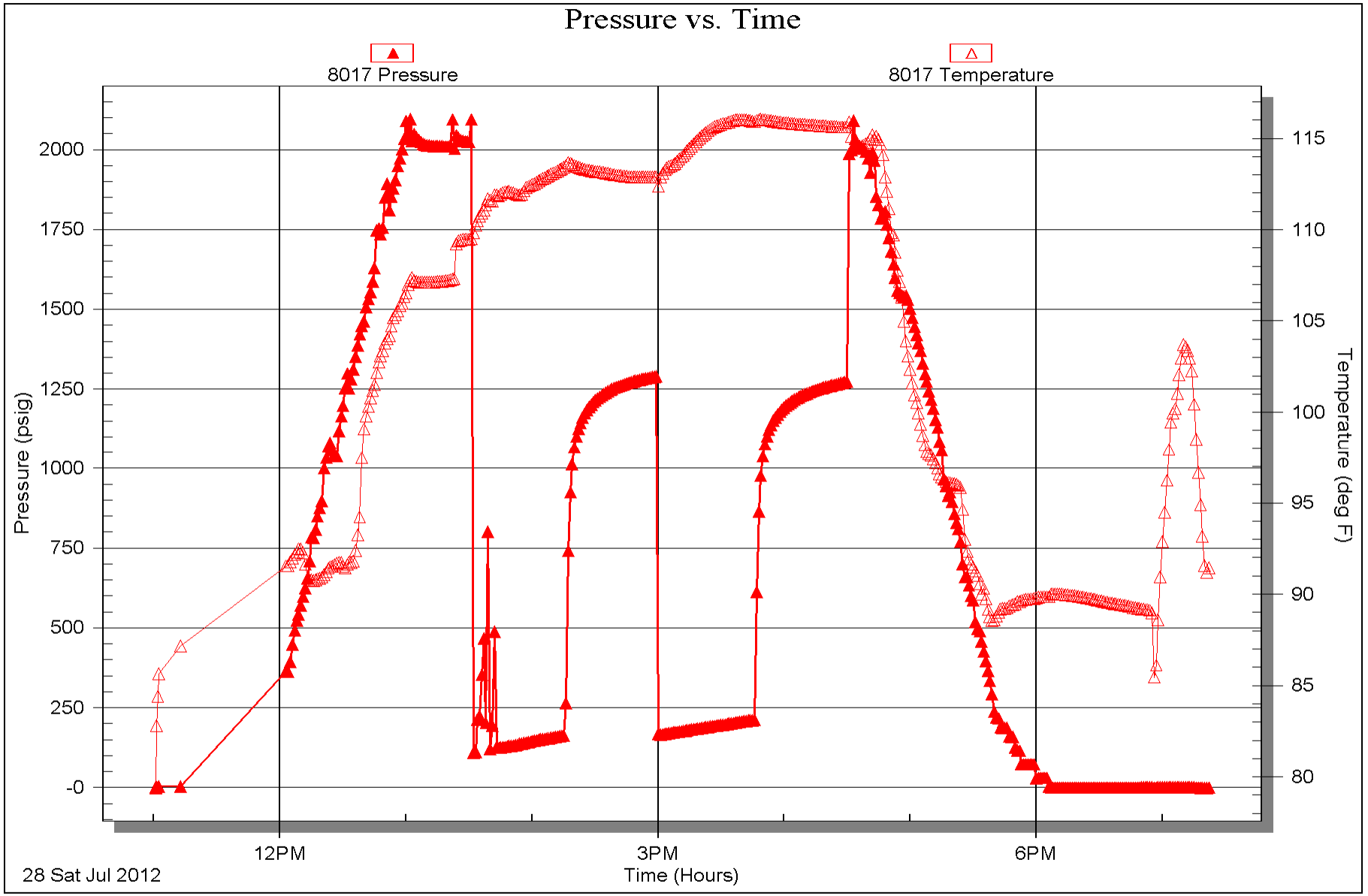
Recovery Comments:

Serial #: 8372 **Outside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 47905 Printed: 2012.08.09 @ 11:35:34

Serial #: 8017 **Inside** Dow ning Nelson Oil Company Galen #1-30 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 47905 Printed: 2012.08.09 @ 11:35:35

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

NO. 47902

Well Name & No. GALEN 1-30 Test No. 1 Date 7-26-12

Company DNOC Elevation 2200 KB 2192 GL

Address PO Box 1019 HAYS KS 67601

Co. Rep / Geo. MARC DOWNING Rig DISCOVERY #4

Location: Sec. 30 Twp. 20S Rge. 20W Co. TAWNEE State KS

Interval Tested 4314 - 4355 Zone Tested MISS

Anchor Length 41 Drill Pipe Run 4286 Mud Wt. 9

Top Packer Depth 4309 Drill Collars Run 30 Vis 54

Bottom Packer Depth 4314 Wt. Pipe Run 0 WL 10.4

Total Depth 4355 Chlorides 4000 ppm System LCM 25#

Blow Description IF: WEAK SURFACE BLOW

~~ISI~~: NO RETURN

FF: WEAK SURFACE BLOW

~~FSI~~: NO RETURN

Rec 95	Feet of HOCGM	5 %gas	25 %oil	%water	70 %mud
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 95' BHT 112° Gravity ____ API RW ____ @ ____ °F Chlorides ____ ppm

(A) Initial Hydrostatic 2299	☑ Test 1250	T-On Location 18:41
(B) First Initial Flow 23	☑ Jars 250	T-Started 20:31
(C) First Final Flow 45	☑ Safety Joint 75	T-Open 22:28
(D) Initial Shut-In 1130	☐ Circ Sub	T-Pulled 00:28
(E) Second Initial Flow 44	☐ Hourly Standby	T-Out 02:20
(F) Second Final Flow 60	☑ Mileage 118RT 182.90	Comments
(G) Final Shut-In 1051	☐ Sampler	
(H) Final Hydrostatic 2226	☐ Straddle	Ness City
	☐ Shale Packer	☐ Ruined Shale Packer
Initial Open 30	☐ Extra Packer	☐ Ruined Packer
Initial Shut-In 30	☐ Extra Recorder	☐ Extra Copies
Final Flow 30	☐ Day Standby	Sub Total 0
Final Shut-In 30	☐ Accessibility	Total 1757.90
	Sub Total 1757.90	MP/DST Disc't

Approved By ____ Our Representative ____

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

NO. 47903

Well Name & No. Galen 1-30 Test No. 2 Date 7-27-12

Company DNOC Elevation 2200 KB 2192 GL

Address PO Box 1019 Hays Ks 67601

Co. Rep / Geo. Rig Discovery #4

Location: Sec. 30 Twp. 20S Rge. 20W Co. Pawnee State Ks

Interval Tested 4355-4365 Zone Tested Miss

Anchor Length 10 Drill Pipe Run 4319 Mud Wt. 9.5

Top Packer Depth 4350 Drill Collars Run 30 Vis 60

Bottom Packer Depth 4355 Wt. Pipe Run 0 WL 10.4

Total Depth 4365 Chlorides 8000 ppm System LCM 2.5

Blow Description IF: Weak, intermittent surface blow, Flushed, surged, surface blow
ISI: No Return
FF: Surface blow
FSI: No Return

Rec 110	Feet of HOCGM	5 %gas	45 %oil	%water	50 %mud
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 110' BHT 119° Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2230	☑ Test 1250	T-On Location 08:16
(B) First Initial Flow 43	☑ Jars 250	T-Started 08:59
(C) First Final Flow 44	☑ Safety Joint 75	T-Open 11:05
(D) Initial Shut-In 1230	☐ Circ Sub	T-Pulled 13:05
(E) Second Initial Flow 45	☐ Hourly Standby	T-Out 15:15
(F) Second Final Flow 60	☑ Mileage 118RT 182.90	Comments
(G) Final Shut-In 1150	☐ Sampler	Ness City
(H) Final Hydrostatic 2168	☐ 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 1757.90
Final Shut-In 30	☐ Accessibility	MP/DST Disc't
	Sub Total 1757.90	

Approved By Our Representative

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

NO. 47904

Well Name & No. GALEN 1-30 Test No. 3 Date 7-27-12

Company DNOC Elevation 2200 KB 2192 GL

Address PO Box 1019 Hays, Ks. 67601

Co. Rep / Geo. Marc Downing Rig Discovery #4

Location: Sec. 30 Twp. 20s Rge. 20w Co. Pawnee State Ks

Interval Tested 4358-4373 Zone Tested Miss

Anchor Length 15' Drill Pipe Run 4317 Mud Wt. 9.5

Top Packer Depth 4353 Drill Collars Run 30 Vis 60

Bottom Packer Depth 4358 Wt. Pipe Run 0 WL 10.4

Total Depth 4373 Chlorides 8000 ppm System LCM 2.5

Blow Description IF: Weak intermittent blow, Died in 8 min, Flushed, surged, died in 2 min

ISI: No Return

FF: No Blow, Flushed, weak surge, no blow

FSI: No Return

Rec 95	Feet of Heavy Mud	%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	Feet of	%gas	%oil	%water	%mud

Rec Total 95 BHT 118° Gravity ____ API RW ____ @ ____ °F Chlorides ____ ppm

(A) Initial Hydrostatic 2186

(B) First Initial Flow —

(C) First Final Flow ____

(D) Initial Shut-In 1370

(E) Second Initial Flow —

(F) Second Final Flow —

(G) Final Shut-In 1356

(H) Final Hydrostatic 2140

Initial Open 30

Initial Shut-In 30

Final Flow 30

Final Shut-In 30

- ☑ Test 1050
- ☑ Jars 250
- ☑ Safety Joint 75
- ☐ Circ Sub
- ☐ Hourly Standby
- ☑ Mileage 1 1/8 ET 182.90
- ☐ Sampler
- ☐ Straddle
- ☐ Shale Packer
- ☐ Extra Packer
- ☐ Extra Recorder
- ☐ Day Standby
- ☐ Accessibility

Sub Total 1557.90

T-On Location 21:20

T-Started 22:22

T-Open 00:20

T-Pulled 02:20

T-Out 04:15

Comments MISRUN - Plugged Tool slid 10 ft shutins invalid

- ☐ Ruined Shale Packer Ness City
- ☐ Ruined Packer
- ☐ Extra Copies

Sub Total 0

Total 1557.90

MP/DST Disc't

Approved By ____ Our Representative ____

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

1925 13-5-D

NO. 47905

Well Name & No. GALEN 1-30 Test No. 4 Date 7-28-12

Company DNOC Elevation 2200 KB 2192 GL

Address PO Box 1019 Hays Ks 67601

Co. Rep / Geo. MARC DOWNING Rig Discovery 4

Location: Sec. 30 Twp. 20S Rge. 20W Co. PAWNEE State Ks

Interval Tested 4314-4373 Zone Tested Miss.

Anchor Length 59 Drill Pipe Run 4286 Mud Wt. 8.7

Top Packer Depth 4309 Drill Collars Run 30 Vis 50

Bottom Packer Depth 4314 Wt. Pipe Run — WL 9.2

Total Depth 4373 Chlorides 8000 ppm System LCM 2½

Blow Description IF: FAIR, 2½" blow

ISI: NO RETURN

FF: ~~NO BLOW~~ ½" blow

FSI: NO RETURN

Rec 410	Feet of OCGM	10 %gas	10 %oil	%water	80 %mud	
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 410' BHT 118° Gravity ____ API RW ____ @ ____ °F Chlorides ____ ppm

(A) Initial Hydrostatic 2078	☑ Test 1250	T-On Location	
(B) First Initial Flow 123	☑ Jars 250	T-Started 11:01	
(C) First Final Flow 164	☑ Safety Joint 75	T-Open 13:30	
(D) Initial Shut-In 1290	☐ Circ Sub	T-Pulled 16:30	
(E) Second Initial Flow 163	☐ Hourly Standby	T-Out 19:00	
(F) Second Final Flow 213	☐ Mileage	Comments Stayed on loc between DST 3&4. Slid 20ft.	
(G) Final Shut-In 1273	☐ Sampler		
(H) Final Hydrostatic 1918	☐ Straddle	☐ Ruined Shale Packer	
	☐ Shale Packer	☐ Ruined Packer	
Initial Open 45	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 45	☐ Extra Recorder	Sub Total 0	
Final Flow 45	☐ Day Standby	Total 1575	
Final Shut-In 45	☐ Accessibility	MP/DST Disc't	
	Sub Total 1575		

Approved By ____ Our Representative ____

Marc Downing
Consulting Petroleum Geologist
1411 Washington Circle
Hays, Ks 67601
Phone: 620-428-1356 (cell) 785-621-2286

GEOLOGIC REPORT LOG

COMPANY: Downing-Nelson Oil Co, Inc.
WELL: Galen #1-30
FIELD: Wildcat
LOCATION: 2310' FSL & 1440' FWL
SEC. 30 TWP. 20s RGE. 20w
COUNTY: Pawnee
STATE: Kansas

Section plat: 20s 20w, 30

PRODUCTION: Miss
ELEVATION: KB 2200, DF —, GL 2192
Drilling Measured From: KB
Samples Saved From: 4100 To: TD
Drilling Time From: 3600 To: TD
Samples Examined From: 4100 To: TD
Geological Supervision From: 3600 To Total Depth
Wellsite Geologist: Marc Downing
Electrical Surveys: None

OPERATOR: DNOCI
CONTRACTOR: Discovery Drilling, Rig #4
COMM: 7-20-12 COMP: 7-29-12

CASING RECORD
SURF: 8⅝" @ 1203' PROD: 5½" @ 4370'
TOTAL DEPTH DRILLERS: 4373'
TOTAL DEPTH LOG: —

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
Top Anhydrite	1378		+822	FL
Base Anhydrite	1403		+797	NA
HEEBNER	3716		-1514	+5
Lansing	3767		-1567	+6
BKC	4085		-1885	NA
Fort Scott	4277		-2077	+6
CHEROKEE SH.	4292		-2092	+6
Miss	4346		-2146	+21

REFERENCE WELL FOR STRUCTURE: Lario Daisy Beltz #1 C-SE-NW Sec. 30-20s-20w

DAILY PENETRATION: DATE | DEPTH | FORMATION | INTERVAL

DRILL STEM TESTS

LEGEND

Anhydrite, Salt, Sandstone, Shale, Carb sh, Limestone, Dol./Lime, Chert, Dolomite

DRILLING TIME IN MINUTES PER FOOT (Rate of Penetration Decreases) | DEPTH | LITHOLOGY | SAMPLE DESCRIPTIONS | OIL SHOWS | REMARKS

Sample descriptions:

LS: tan, dns, scat foss.
Sh: gry
LS: Mostly AIA, tan, foss, pr∅
Sh: lt gry
LS: tan-wht, fn-md xln. Scat foss, subxln.
Sh: brn w/ gry
LS: tan-wht, fnxln, sltly suc.
LS: tan, trng dns w/ No vis∅.
Sh: drk gry-blk
LS: wht, ool, dns.
Sh: gry
LS: tan, fn-md xln, foss. All pr∅ + dns, NS.
Sh: Black Carb, scat gry-drk gry.
LS: tan-wht, fn xln, pr∅, dns.
Sh: Black Carb
LS: wht, fn xln, subxln. Rx trng dns w/ pr∅, All NS, No Od.
Sh: Black Carb
LS: tan-wht, fn xln, pr∅.
LS: AIA
Sh: gry w/ lt grn + brn. Scat yel chto.
Cht: wht-lt gry. some fresh shp w/ blk edge stn. Fr omt wht-clr, Frost, v weath, fr-gd pp∅ w/ gd stn + gd SFO vfnt-No Od, fr-gd grn/yel Fluor.
Cht: Scat pcs AIA, Frly weath w/ Fr Stnt sptd SFO. More Fresh + shp pcs. rare edge stn. Fr Fluor, No Od. 80% Sh.
Cht: Much AIA, less chto in smpl, 90% Sh. No Od.

Remarks:

DST #1
4314 - 4355
30-30-30-30
I.F.- Surf
F.F.- Surf
IFP: 24-45
FFP: 45-61
SIP: 1130-1051
HP: 2299-2227
Rec: 95' HOCGM 5%g, 25%o
BHT: 113°

DST #2
4355 - 4365
30-30-30-30
I.F.- Interm. Surf, Flush
F.F.- Surf
IFP: 44-45
FFP: 46-60
SIP: 1231-1151
HP: 2230-2169
Rec: 110' HOCGM 5%g, 45%o
BHT: 120°
*Tool plug on 1st open.

DST #3
4359 - 4373
30-30-30-30
I.F.- Weak Int, Flush, surge, dead
F.F.- Dead, Flush, Surge, dead
IFP: NA
FFP: NA
SIP: 1371-1354
HP: 2186-2141
Rec: 95' Heavy mud
BHT: 119°
*Tool plug on both opens.

DST #4
4314 - 4373
45-45-45-45
I.F.- 2½" blow
F.F.- ½" blow
IFP: 124-164
FFP: 164-214
SIP: 1290-1273
HP: 2078-1919
Rec: 410' OCGM 10%g, 10%o
BHT: 115°
* Hit bridge 10' off bottom. Tool opened + packer failed for 4-5 sec. Picked tool back up, set back down, fell through bridge to bottom. Hole conditions continue to deteriorat, decision made to set pipe + test through casing.

Marc Downing

ALLIED OIL & GAS SERVICES, LLC 053756

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:
Great Bend, KS

DATE	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
7-21-12	30	20S	20W			6:00	7:00

LEASE	WELL #	LOCATION	COUNTY	STATE
Galen	1-30	Burdett, KS 6N 2W 1/2N	Pawnee	KS

OLD OR (NEW) (Circle one) — 6, into

CONTRACTOR Discovery Drilling Rig #4
TYPE OF JOB Surface
HOLE SIZE 12 1/4 T.D.
CASING SIZE 8 5/8 DEPTH 1203.29
TUBING SIZE DEPTH
DRILL PIPE 4 1/2 DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 42.13
PERFS.
DISPLACEMENT 73.96 Bbls Freshwater

EQUIPMENT

PUMP TRUCK # 394 CEMENTER Dustin C 2
HELPER Joel M 2
BULK TRUCK #
DRIVER
BULK TRUCK #
DRIVER

REMARKS:

Spot Cement Log
Plug Down 1200 # 700psi

CHARGE TO: Downing-Nelson Oil Co. INC
STREET
CITY STATE ZIP

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 X Michael Gaschler
SIGNATURE X Michael Gaschler

Thank You!!

CEMENT

AMOUNT ORDERED 450 sks Class A 3% CC 2% gel

COMMON	450	@	16.25	7,312.50
POZMIX		@		
GEL	9	@	21.25	191.25
CHLORIDE	16	@	58.20	931.20
ASC		@		
HANDLING	486.60	@	2.10	1,021.86
MILEAGE	22.2 x 42 x		2.35	2,191.14
	932.40	TOTAL		11,647.95

SERVICE

DEPTH OF JOB	1203		
PUMP TRUCK CHARGE			1125.00
EXTRA FOOTAGE	903	@ .95	857.85
MILEAGE	HWM 42	@ 7.00	294.00
MANIFOLD		@	
	LVM 42	@ 4.00	168.00
		@	
TOTAL			2,444.85

PLUG & FLOAT EQUIPMENT

1 Baffle plate	@	112.00	112.00
1 Rubber plug	@	112.00	112.00
	@		
	@		
	@		
TOTAL			224.00

SALES TAX (If Any) 718.69
TOTAL CHARGES 14,316.80
DISCOUNT 25% 3,579.20 IF PAID IN 30 DAYS
$10,737.60

JOB LOG **SWIFT Services, Inc.**

DATE 7-29-12 | PAGE NO. 1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Downing & Nelson	1-30	Galen	Cement Longstring	22823

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								TD 4373
	0330					14 #/ft	5 1/2	On loc w/ Float Equip Rig LD DC
	0500							Start 5 1/2 casing to 4370' - PKR Shoe on bottom
								~~Insert~~ L.D. Baffle-SJ-42' @ 4330'
								Cent - 1-3-5-7-9-11-13
								Cement Basket #14
	0645							Fin run casing
	0700							Rig circ casing
								Fin circ - Drop PKR Shoe Ball
			75					Plug RH-30SKS MH-200SKS EA-2 cmt
	0730						1250	Set PKR Shoe with 1st Flush
								Continue Mud Flush / 500 gal
		4 1/2	12					Start KCL Flush. (20 BBL)
		4 1/2	32					Fin Flushes -
								Start 125 SKS EA-2 cmt down Hole
		4 1/2	30					Fin cmt - Wash out Pump & Lines
								Drop L.D. Plug - Start Disp
	0830		105 1/2				1500	Plug Down - Held - Release & Held
								Job Complete
								Wash up & Rack up Tks
								Thanks
								Don, Blaine & Flint
	0915							