



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Gloria #1-15

25-17S-19W Rush,KS

Start Date: 2017.08.19 @ 02:19:00

End Date: 2017.08.19 @ 07:39:00

Job Ticket #: 62634 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.08.21 @ 09:40:53

Downing Nelson Oil Co. Inc. 25-17S-19W Rush,KS Gloria #1-15 DST # 1 LKC C 2017.08.19



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62634

DST#: 1

ATTN: Marc Downing

Test Start: 2017.08.19 @ 02:19:00

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:20:30

Time Test Ended: 07:39:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3508.00 ft (KB) To 3536.00 ft (KB) (TVD)

Reference Elevations: 2123.00 ft (KB)

Total Depth: 3536.00 ft (KB) (TVD)

2116.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8354 Inside

Press@RunDepth: 31.84 psig @ 3509.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.08.19 End Date: 2017.08.19

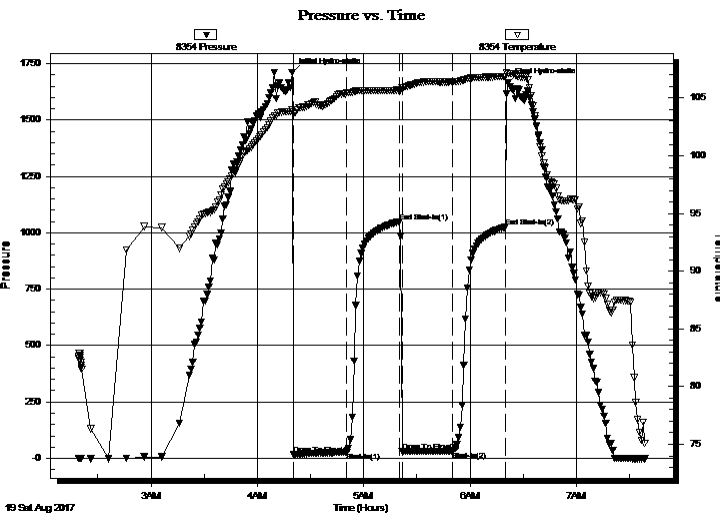
Last Calib.: 2017.08.19

Start Time: 02:19:05 End Time: 07:38:59

Time On Btm: 2017.08.19 @ 04:19:30

Time Off Btm: 2017.08.19 @ 06:21:30

TEST COMMENT: IFP 30 Minutes Blow built to 1"
ISI 30 Minutes No blow back
FFP 30 Minutes Weak surface blow for 1 minute then dead
FSI 30 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1710.70	103.97	Initial Hydro-static
1	16.19	103.64	Open To Flow (1)
31	26.23	105.45	Shut-In(1)
61	1049.53	105.68	End Shut-In(1)
62	30.35	105.85	Open To Flow (2)
91	31.84	106.41	Shut-In(2)
121	1025.46	106.89	End Shut-In(2)
122	1666.18	107.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Light oil spotted mud/ Mud 100%	0.36

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62634

DST#: 1

ATTN: Marc Downing

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Time Test Ended: 07:39:00

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Tester: Ken Swinney

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Interval: 3508.00 ft (KB) To 3536.00 ft (KB) (TVD)

Reference Elevations: 2123.00 ft (KB)

Total Depth: 3536.00 ft (KB) (TVD)

2116.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8960 Outside

Press@RunDepth: 1024.87 psig @ 3510.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.08.19 End Date: 2017.08.19

Last Calib.: 2017.08.19

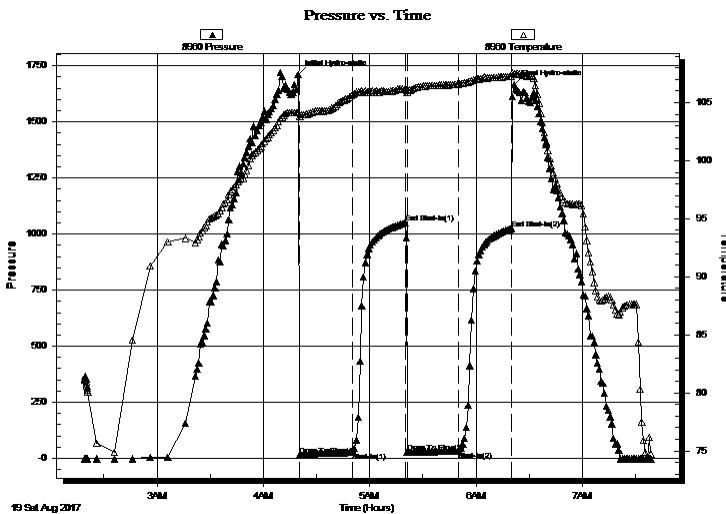
Start Time: 02:19:05 End Time: 07:38:59

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TEST COMMENT: IFP 30 Minutes Blow built to 1"
ISI 30 Minutes No blow back
FFP 30 Minutes Weak surface blow for 1 minute then dead
FSI 30 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1710.30	104.23	Initial Hydro-static
1	13.42	103.79	Open To Flow (1)
31	26.61	105.69	Shut-In(1)
61	1049.21	106.11	End Shut-In(1)
62	28.80	105.91	Open To Flow (2)
91	31.89	106.61	Shut-In(2)
121	1024.87	107.27	End Shut-In(2)
122	1665.21	107.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Light oil spotted mud/ Mud 100%	0.36

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62634

DST#: 1

ATTN: Marc Downing

Test Start: 2017.08.19 @ 02:19:00

Tool Information

Drill Pipe:	Length: 3488.00 ft	Diameter: 3.80 inches	Volume: 48.93 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: lb
			<u>Total Volume: 49.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3508.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	48.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3493.00	
Hydraulic tool	5.00			3498.00	
Top Packer	5.00			3503.00	
Packer	5.00			3508.00	20.00 Bottom Of Top Packer
Recorder	1.00	8354	Inside	3509.00	
Recorder	1.00	8960	Outside	3510.00	
Anchor	23.00			3533.00	
Bullnose	3.00			3536.00	28.00 Anchor Tool

Total Tool Length: 48.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62634

DST#: 1

ATTN: Marc Downing

Test Start: 2017.08.19 @ 02:19:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
45.00	Light oil spotted mud/ Mud 100%	0.358

Total Length: 45.00 ft Total Volume: 0.358 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

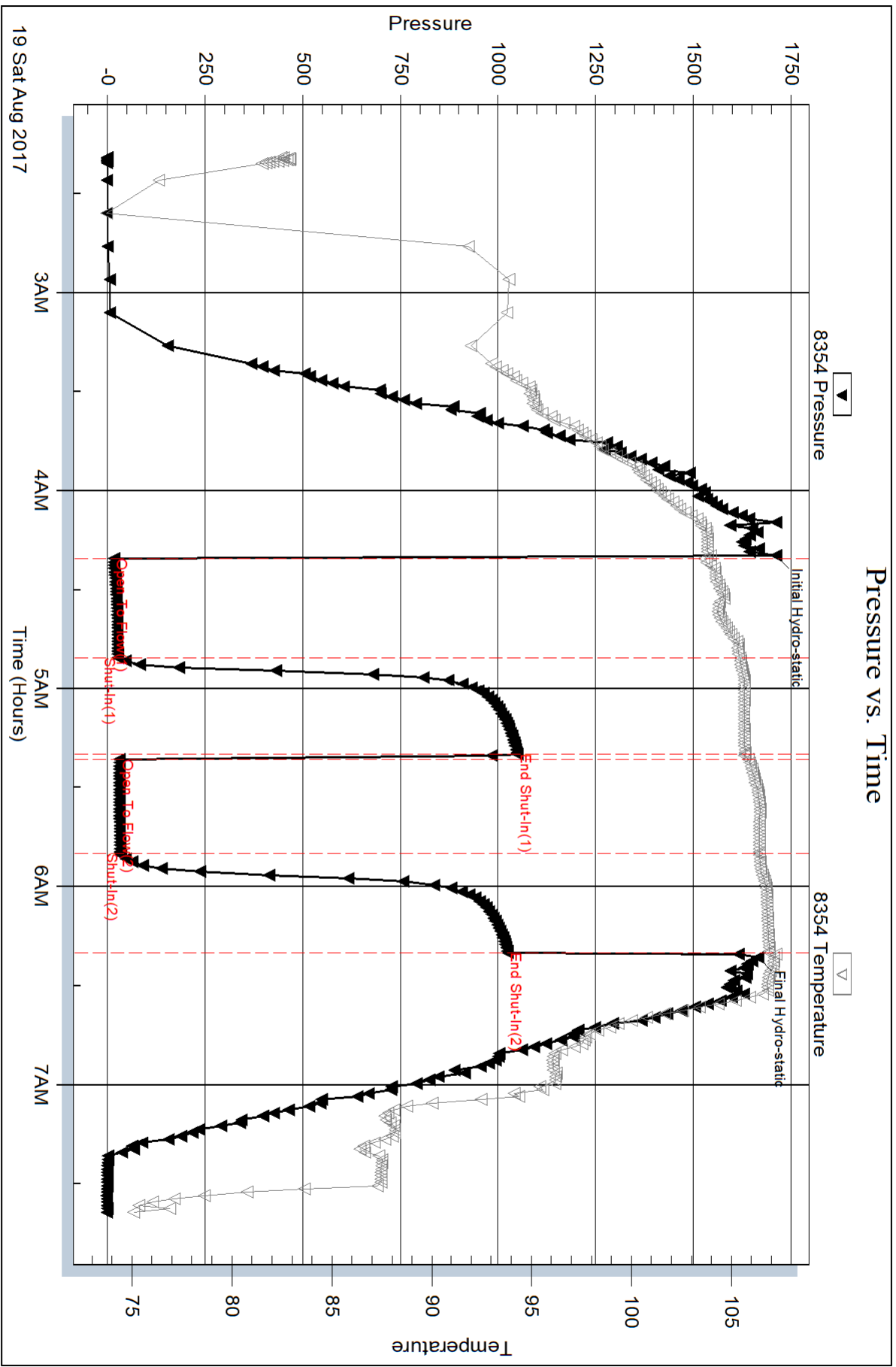
Serial #: 8354

Inside

Downing Nelson Oil Co. Inc.

Gloria #1-15

DST Test Number: 1

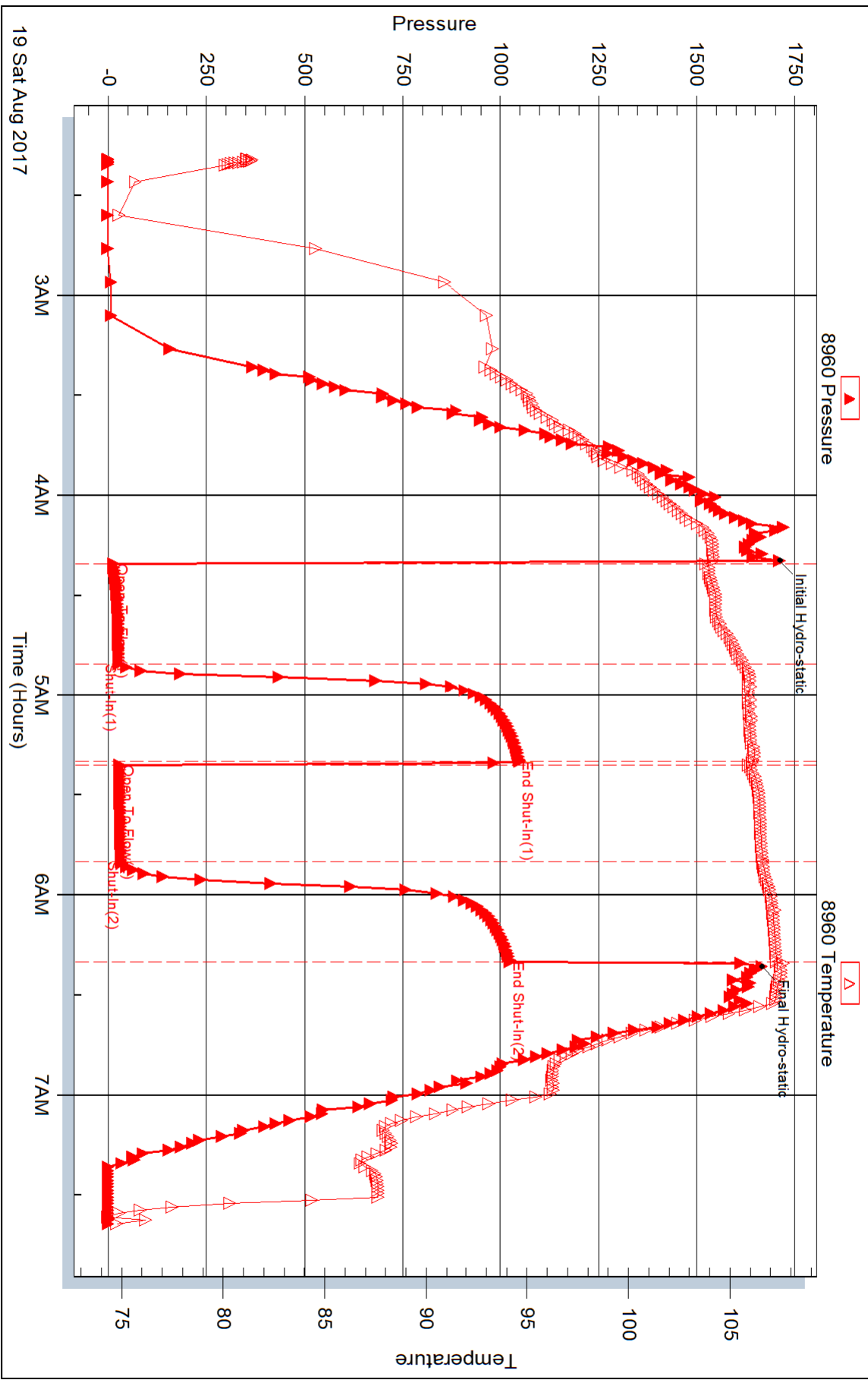


Triobite Testing, Inc

Ref. No: 62634

Printed: 2017.08.21 @ 09:40:53

Pressure vs. Time





DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Gloria #1-15

25-17S-19W Rush,KS

Start Date: 2017.08.19 @ 09:01:00

End Date: 2017.08.19 @ 14:33:00

Job Ticket #: 62635 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.08.21 @ 09:39:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62635

DST#: 2

ATTN: Marc Downing

Test Start: 2017.08.19 @ 09:01:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:38:30

Time Test Ended: 14:33:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3830.00 ft (KB) To 3855.00 ft (KB) (TVD)

Reference Elevations: 2123.00 ft (KB)

Total Depth: 3855.00 ft (KB) (TVD)

2116.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8354

Inside

Press@RunDepth: 229.51 psig @ 3831.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.08.19

End Date:

2017.08.19

Last Calib.:

2017.08.20

Start Time: 09:01:05

End Time:

14:32:59

Time On Btm:

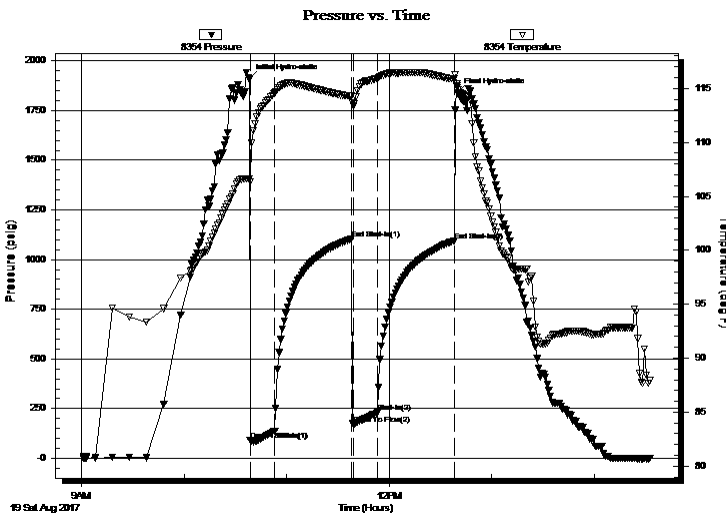
2017.08.19 @ 10:38:00

Time Off Btm:

2017.08.19 @ 12:40:00

TEST COMMENT: IFP 15 Minutes Blow built to BOB in 3 1/2 minutes
ISI 45 Minutes Blow back built to 3 1/2"
FFP 15 Minutes Blow built to BOB in 4 minutes
FSI 45 Minutes Blow back built to 1 1/2"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1908.43	106.64	Initial Hydro-static
1	91.83	106.33	Open To Flow (1)
15	136.41	114.56	Shut-In(1)
60	1103.94	114.27	End Shut-In(1)
61	169.54	113.35	Open To Flow (2)
75	229.51	115.90	Shut-In(2)
120	1095.09	115.89	End Shut-In(2)
122	1838.84	115.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Emulsified Oily Mud/ Oil 20% Mud 80%	1.41
453.00	Gassy Oil/ Gas 20% Oil 80%	6.35
0.00	109 Feet of GIP	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

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25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62635

DST#: 2

ATTN: Marc Downing

Test Start: 2017.08.19 @ 09:01:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:38:30

Time Test Ended: 14:33:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3830.00 ft (KB) To 3855.00 ft (KB) (TVD)

Reference Elevations: 2123.00 ft (KB)

Total Depth: 3855.00 ft (KB) (TVD)

2116.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8960 Outside

Press@RunDepth: 1093.45 psig @ 3832.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.08.19 End Date: 2017.08.19

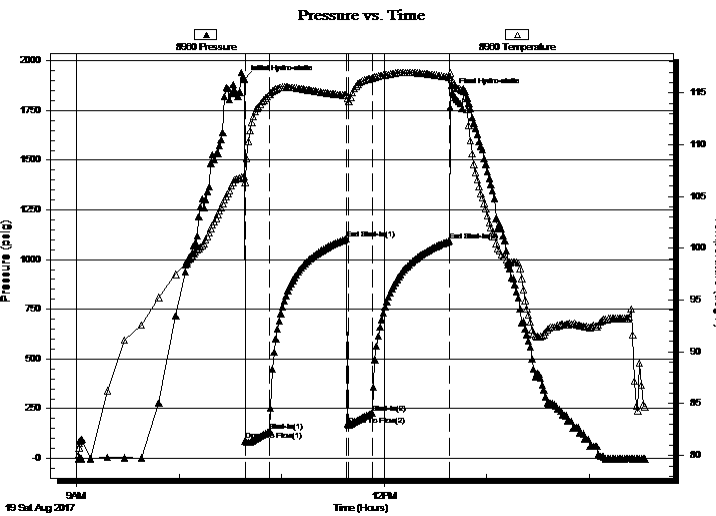
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Start Time: 09:01:05 End Time: 14:32:59

Time On Btm: 2017.08.19 @ 10:38:00

Time Off Btm: 2017.08.19 @ 12:40:00

TEST COMMENT: IFP 15 Minutes Blow built to BOB in 3 1/2 minutes
ISI 45 Minutes Blow back built to 3 1/2"
FFP 15 Minutes Blow built to BOB in 4 minutes
FSI 45 Minutes Blow back built to 1 1/2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1907.49	106.90	Initial Hydro-static
1	89.30	106.38	Open To Flow (1)
15	135.43	114.90	Shut-In(1)
60	1103.72	114.78	End Shut-In(1)
61	167.53	114.24	Open To Flow (2)
75	228.86	116.44	Shut-In(2)
120	1093.45	116.54	End Shut-In(2)
122	1837.98	115.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Emulsified Oily Mud/ Oil 20% Mud 80%	1.41
453.00	Gassy Oil/ Gas 20% Oil 80%	6.35
0.00	109 Feet of GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62635

DST#: 2

ATTN: Marc Downing

Test Start: 2017.08.19 @ 09:01:00

Tool Information

Drill Pipe:	Length: 3805.00 ft	Diameter: 3.80 inches	Volume: 53.37 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 53.52 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	59000.00 lb
Depth to Top Packer:	3830.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	25.00 ft				
Tool Length:	45.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3815.00	
Hydraulic tool	5.00			3820.00	
Top Packer	5.00			3825.00	
Packer	5.00			3830.00	20.00 Bottom Of Top Packer
Recorder	1.00	8354	Inside	3831.00	
Recorder	1.00	8960	Outside	3832.00	
Anchor	20.00			3852.00	
Bullnose	3.00			3855.00	25.00 Anchor Tool

Total Tool Length: 45.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Co. Inc.

25-17S-19W Rush,KS

PO Box 1019
Hays, KS 67601

Gloria #1-15

Job Ticket: 62635

DST#: 2

ATTN: Marc Downing

Test Start: 2017.08.19 @ 09:01:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	Emulsified Oily Mud/ Oil 20% Mud 80%	1.410
453.00	Gassy Oil/ Gas 20% Oil 80%	6.354
0.00	109 Feet of GIP	0.000

Total Length: 573.00 ft

Total Volume: 7.764 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

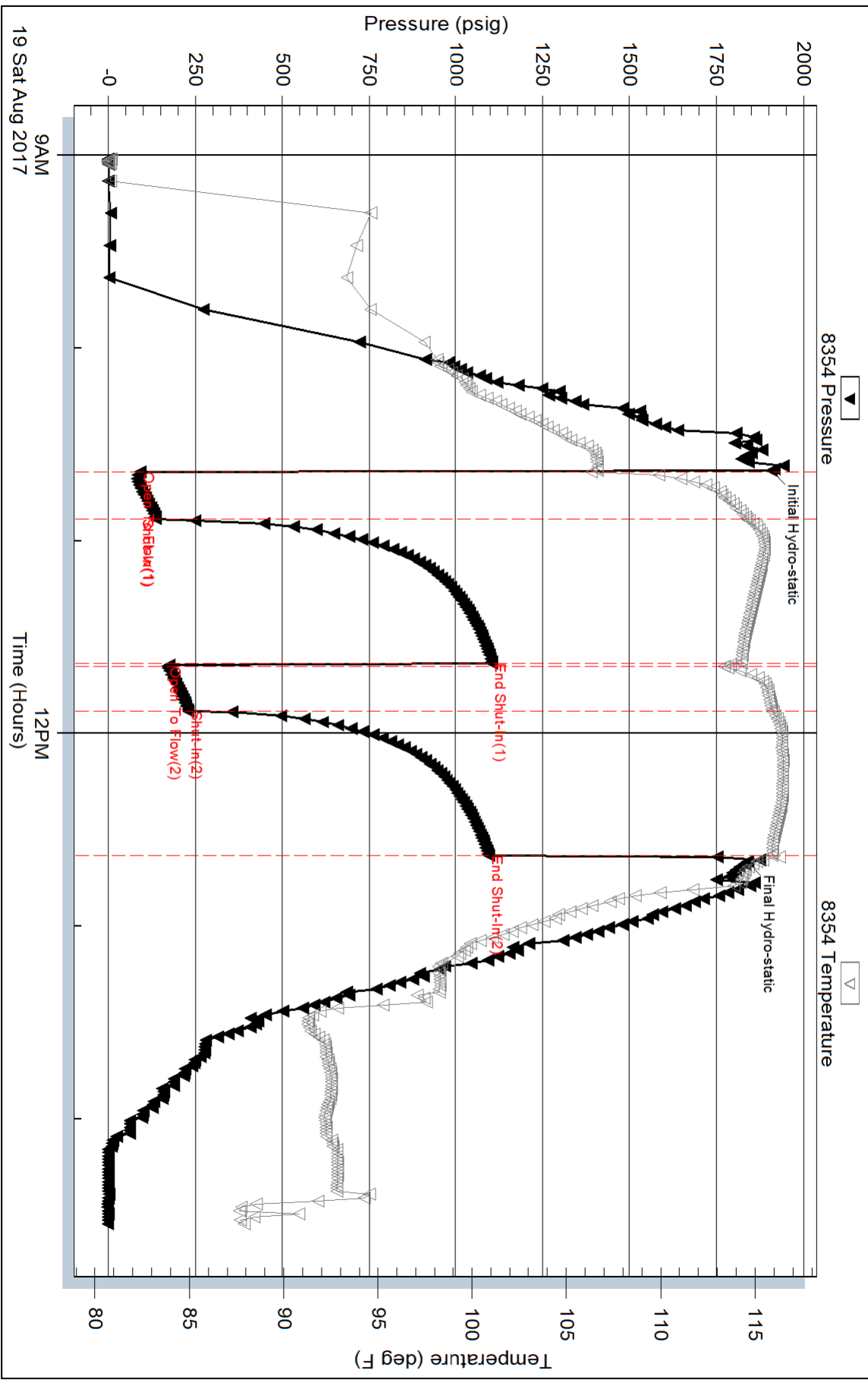
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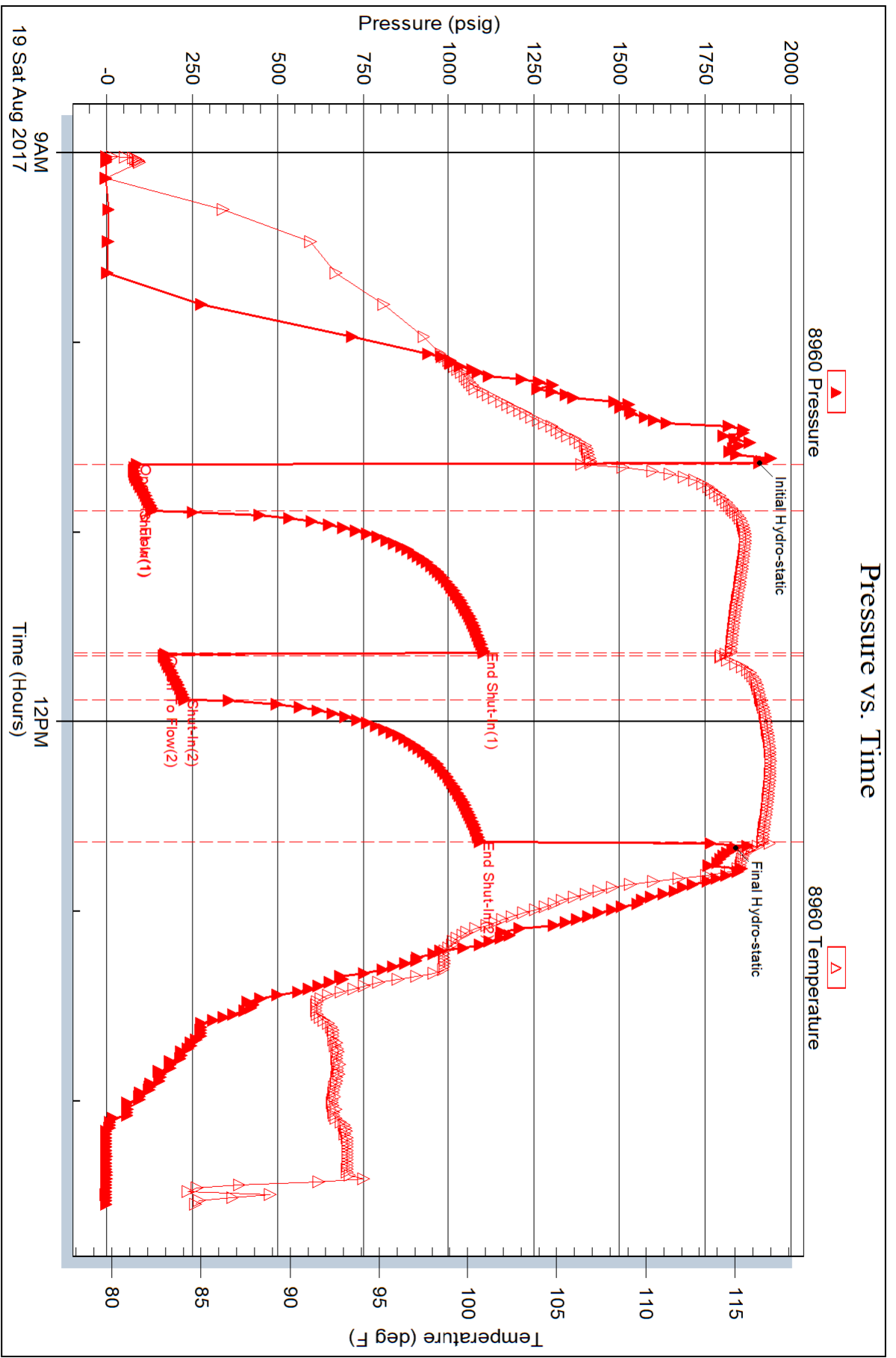
Laboratory Name:

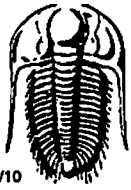
Laboratory Location:

Recovery Comments:

Pressure vs. Time







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62634

Well Name & No. Gloria 1-25 Test No. 1 Date 19 AUG 17
 Company Downing Nelson Oil Company Inc Elevation 2123 KB 2116 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep/Geo. Marc Downing Rig Discovery R. 4
 Location: Sec. 25 Twp. 17S Rge. 19W Co. Rush State KS

Interval Tested 3508-3536 Zone Tested Lansing/Kansas City zone C
 Anchor Length 28 Drill Pipe Run 3488 Mud Wt. 8.9
 Top Packer Depth 3503 Drill Collars Run 30 Vis 66
 Bottom Packer Depth 3508 Wt. Pipe Run - WL 7.2
 Total Depth 3536 Chlorides 4800 ppm System LCM 2#

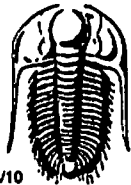
Blow Description I.F. Blow built to 1"
I.S.I No blow back
F.F. Weak surface blow for 1 minute then dead
F.S.I no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>light oil spotted mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 45 BHT 106 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1710</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>1:33 am</u>
(B) First Initial Flow <u>16</u>	<input type="checkbox"/> Jars _____	T-Started <u>2:19 am</u>
(C) First Final Flow <u>26</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>4:21 am</u>
(D) Initial Shut-In <u>1049</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>6:21 am</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>2:39 am</u>
(F) Second Final Flow <u>31</u>	<input checked="" type="checkbox"/> Mileage <u>45 60</u>	Comments _____
(G) Final Shut-In <u>1025</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1666</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1095</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1095</u>	

Approved By _____ Our Representative [Signature]
 TriLOBITE TESTING INC. shall not be liable for damaged of any kind of the property or personal of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62635

Well Name & No. Gloria 1-25 Test No. 2 Date 20 AUG 17
 Company Downing Nelson Oil Company Inc. Elevation 2123 KB 2116 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig #
 Location: Sec. 25 Twp. 17S Rge. 19W Co. Rush State KS

Interval Tested 3830-3855 Zone Tested Arbuckle
 Anchor Length 25 Drill Pipe Run 3805 Mud Wt. 9.2
 Top Packer Depth 3825 Drill Collars Run 30 Vis 50
 Bottom Packer Depth 3830 Wt. Pipe Run - WL 8.8
 Total Depth 3855 Chlorides 5000 ppm System LCM 1.5 #

Blow Description I.F. Blow built to BOB in 3 1/2 minutes
I.S.I. Blow back built to 3 1/2 inches
F.F. Blow built to BOB in 4 minutes
F.S.I. Blow back built to 1 1/2 inches

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>Emulsified Oil Mud</u>		<u>20</u>		<u>80</u>
<u>453</u>	<u>Gassy Oil</u>	<u>20</u>	<u>90</u>		
<u>109</u>	<u>GIP</u>	<u>100</u>			

Rec Total 573 BHT 115 Gravity 33 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 1906 Test 1050 T-On Location 5:11 am
 (B) First Initial Flow 91 Jars _____ T-Started 9:01 am
 (C) First Final Flow 136 Safety Joint _____ T-Open 10:38 am
 (D) Initial Shut-In 1103 Circ Sub _____ T-Pulled 12:38 pm
 (E) Second Initial Flow 169 Hourly Standby _____ T-Out 2:32 pm

(F) Second Final Flow 229 Mileage 45 60 Comments _____

(G) Final Shut-In 1095 Sampler _____

(H) Final Hydrostatic 1838 Straddle _____ Ruined Shale Packer _____

Shale Packer _____ Ruined Packer _____

Initial Open 15 Extra Packer _____ Extra Copies _____

Initial Shut-In 45 Extra Recorder _____ Sub Total 0

Final Flow 15 Day Standby _____ Total 1095

Final Shut-In 45 Accessibility _____ MP/DST Disc't _____

Approved By _____ Our Representative [Signature] Sub Total 1095

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.