



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Norris #1-6

6-21s-20w Pawnee,KS

Start Date: 2013.03.01 @ 22:16:00

End Date: 2013.03.02 @ 05:39:00

Job Ticket #: 52031 DST #: 1

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

Printed: 2013.03.08 @ 13:34:54



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52031

DST#: 1

ATTN: Marc Dow ning

Test Start: 2013.03.01 @ 22:16:00

GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:51:00

Time Test Ended: 05:39:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 4326.00 ft (KB) To 4377.00 ft (KB) (TVD)

Reference Elevations: 2216.00 ft (KB)

Total Depth: 4377.00 ft (KB) (TVD)

2208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8319 Outside

Press @ Run Depth: 29.13 psig @ 4364.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.03.01

End Date:

2013.03.02

Last Calib.: 2013.03.02

Start Time: 22:16:05

End Time:

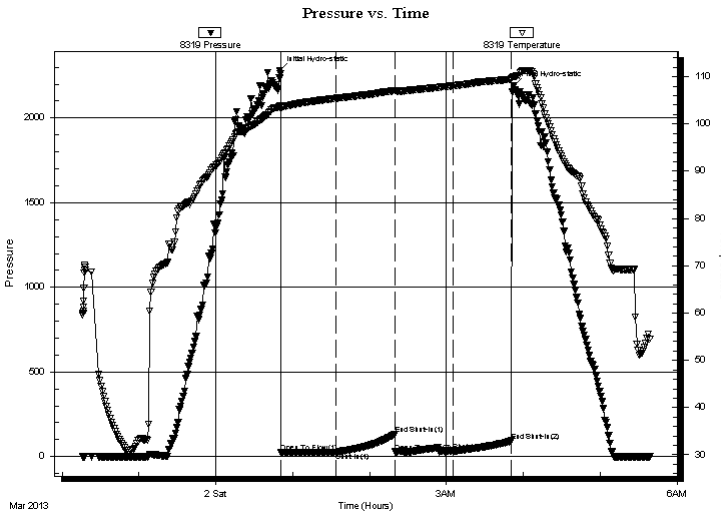
05:38:59

Time On Btm: 2013.03.02 @ 00:50:00

Time Off Btm: 2013.03.02 @ 03:52:30

TEST COMMENT: IF-1 1/4" blow
IS-No blow
FF-very weak surface blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2281.66	103.66	Initial Hydro-static
1	23.39	103.49	Open To Flow (1)
44	26.97	105.40	Shut-In(1)
90	132.59	107.02	End Shut-In(1)
90	27.61	107.02	Open To Flow (2)
136	29.13	108.09	Shut-In(2)
181	92.83	109.47	End Shut-In(2)
183	2191.03	109.98	Final Hydro-static

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52031

DST#: 1

ATTN: Marc Dow ning

Test Start: 2013.03.01 @ 22:16:00

Tool Information

Drill Pipe:	Length: 4292.00 ft	Diameter: 3.80 inches	Volume: 60.21 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - 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:	50000.00 lb
			<u>Total Volume:</u> - bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	4326.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	51.00 ft				
Tool Length:	79.00 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			4299.00	
Shut In Tool	5.00			4304.00	
Hydraulic tool	5.00			4309.00	
Jars	5.00			4314.00	
Safety Joint	2.00			4316.00	
Packer	5.00			4321.00	28.00 Bottom Of Top Packer
Packer	5.00			4326.00	
Stubb	1.00			4327.00	
Perforations	5.00			4332.00	
Change Over Sub	1.00			4333.00	
Drill Pipe	31.00			4364.00	
Recorder	0.00	8166	Inside	4364.00	
Recorder	0.00	8319	Outside	4364.00	
Change Over Sub	1.00			4365.00	
Perforations	9.00			4374.00	
Bullnose	3.00			4377.00	51.00 Bottom Packers & Anchor
Total Tool Length:	79.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52031

DST#: 1

ATTN: Marc Dow ning

Test Start: 2013.03.01 @ 22:16:00

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: 59.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	Oil spotted Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

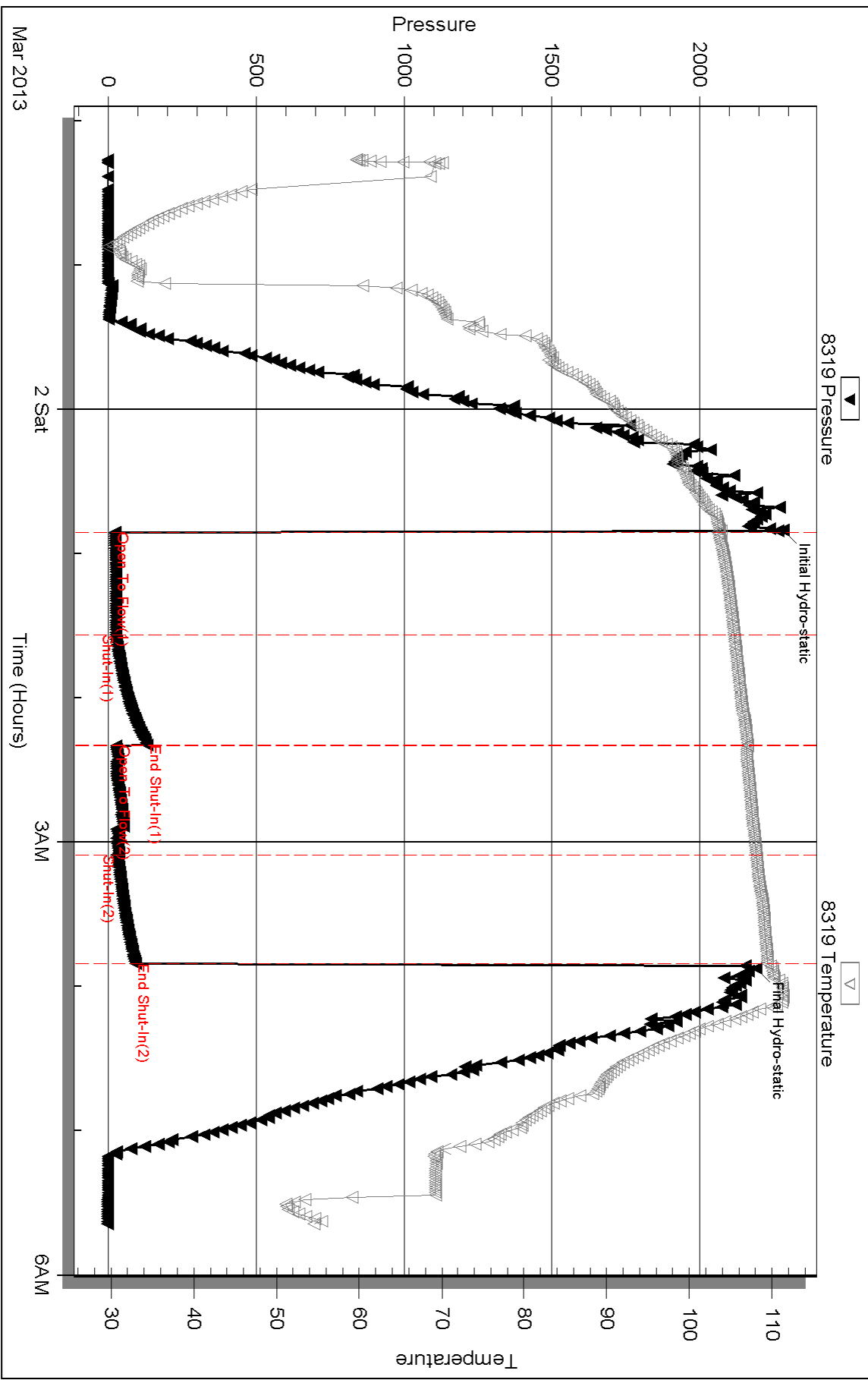
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



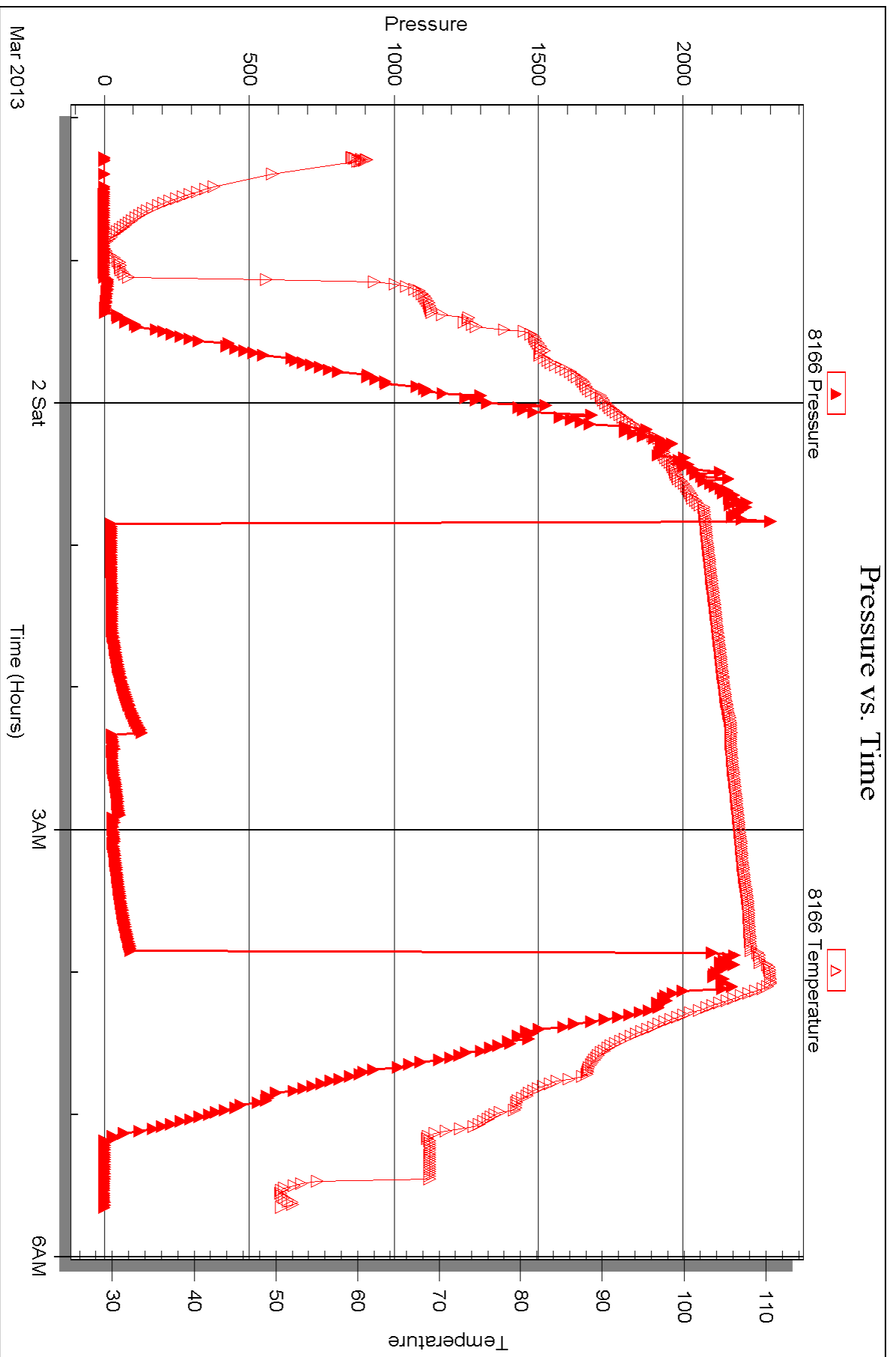
Serial #: 8166

Inside

Dow nung-Nelson Oil Co.

Norris #1-6

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 52031

Printed: 2013.03.08 @ 13:34:57



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Norris #1-6

6-21s-20w Pawnee,KS

Start Date: 2013.03.02 @ 12:35:00

End Date: 2013.03.02 @ 18:27:00

Job Ticket #: 52032 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.08 @ 13:34:11



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52032

DST#: 2

ATTN: Marc Dow ning

Test Start: 2013.03.02 @ 12:35:00

GENERAL INFORMATION:

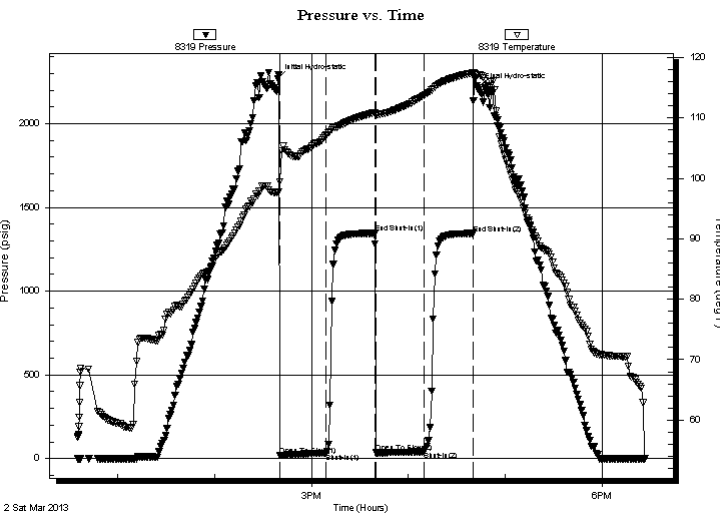
Formation: **Miss**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:40:30
 Time Test Ended: 18:27:00
 Interval: **4377.00 ft (KB) To 4384.00 ft (KB) (TVD)**
 Total Depth: 4384.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2216.00 ft (KB)
 2208.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8319

Outside

Press @ RunDepth: 41.12 psig @ 4381.00 ft (KB)
 Start Date: 2013.03.02 End Date: 2013.03.02
 Start Time: 12:35:05 End Time: 18:26:59
 Capacity: 8000.00 psig
 Last Calib.: 2013.03.02
 Time On Btm: 2013.03.02 @ 14:39:00
 Time Off Btm: 2013.03.02 @ 16:43:00

TEST COMMENT: IF-2 1/4" blow
 IS- No blow
 FF-3/4" blow
 FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2269.84	97.81	Initial Hydro-static
2	18.27	99.44	Open To Flow (1)
30	32.94	107.13	Shut-In(1)
60	1345.43	110.87	End Shut-In(1)
61	34.63	110.53	Open To Flow (2)
91	41.12	113.70	Shut-In(2)
121	1344.52	117.45	End Shut-In(2)
124	2216.11	117.18	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
28.00	Oil spotted MCW 65%W 35%M	0.14
2.00	Free Oil	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52032

DST#: 2

ATTN: Marc Dow ning

Test Start: 2013.03.02 @ 12:35:00

Tool Information

Drill Pipe:	Length: 4322.00 ft	Diameter: 3.80 inches	Volume: 60.63 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - 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:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	50000.00 lb
Drill Pipe Above KB:	3.00 ft			Final	50000.00 lb
Depth to Top Packer:	4377.00 ft				
Depth to Bottom Packer:	ft				
Interval betw een Packers:	7.00 ft				
Tool Length:	35.00 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			4350.00	
Shut In Tool	5.00			4355.00	
Hydraulic tool	5.00			4360.00	
Jars	5.00			4365.00	
Safety Joint	2.00			4367.00	
Packer	5.00			4372.00	28.00 Bottom Of Top Packer
Packer	5.00			4377.00	
Stubb	1.00			4378.00	
Perforations	3.00			4381.00	
Recorder	0.00	8166	Inside	4381.00	
Recorder	0.00	8319	Outside	4381.00	
Bullnose	3.00			4384.00	7.00 Bottom Packers & Anchor

Total Tool Length: 35.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

6-21s-20w Pawnee,KS

PO Box 1019
Hays KS 67601

Norris #1-6

Job Ticket: 52032

DST#: 2

ATTN: Marc Dow ning

Test Start: 2013.03.02 @ 12:35:00

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:

27000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
28.00	Oil spotted MCW 65%W 35%M	0.138
2.00	Free Oil	0.010

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

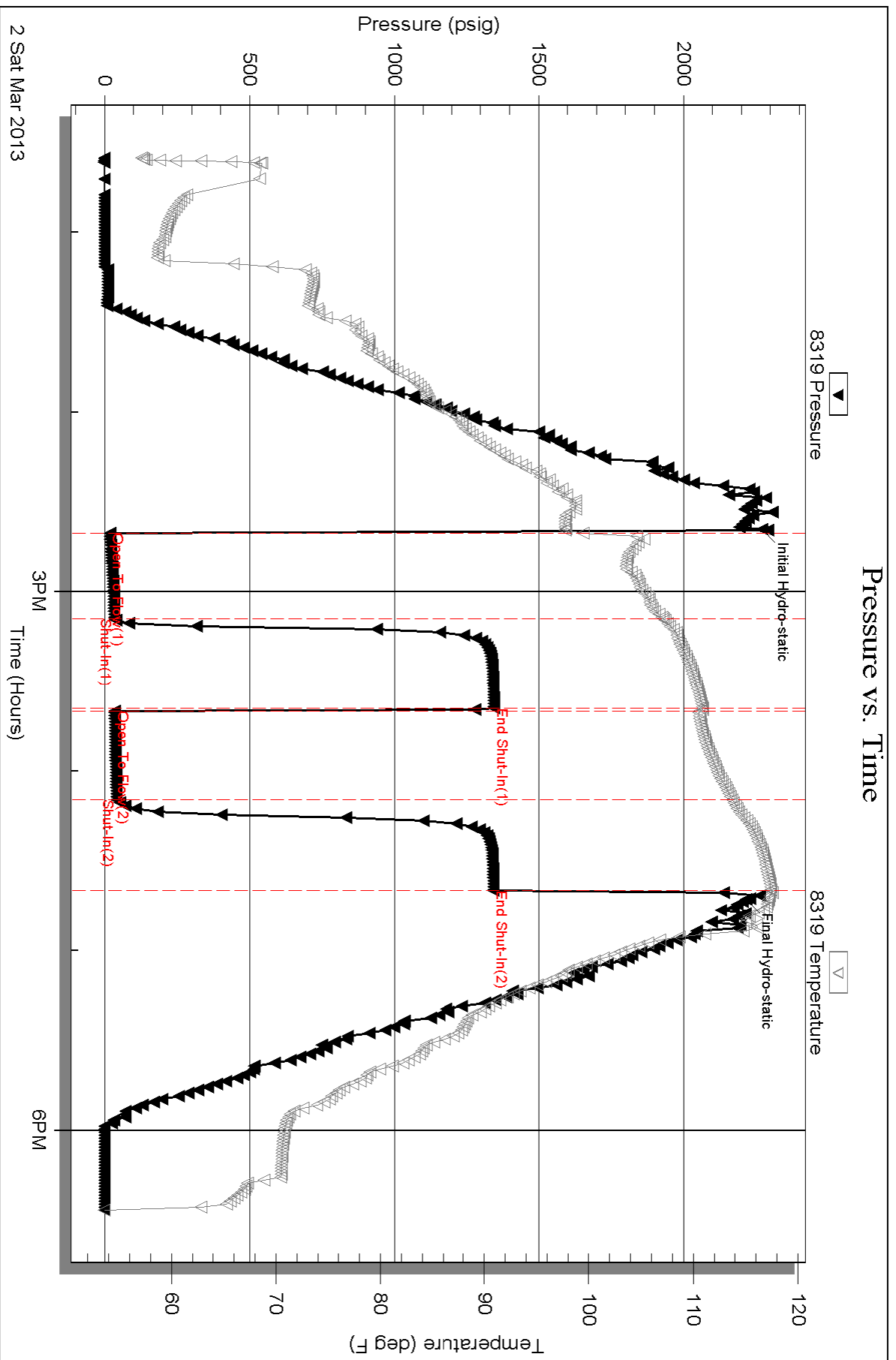
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



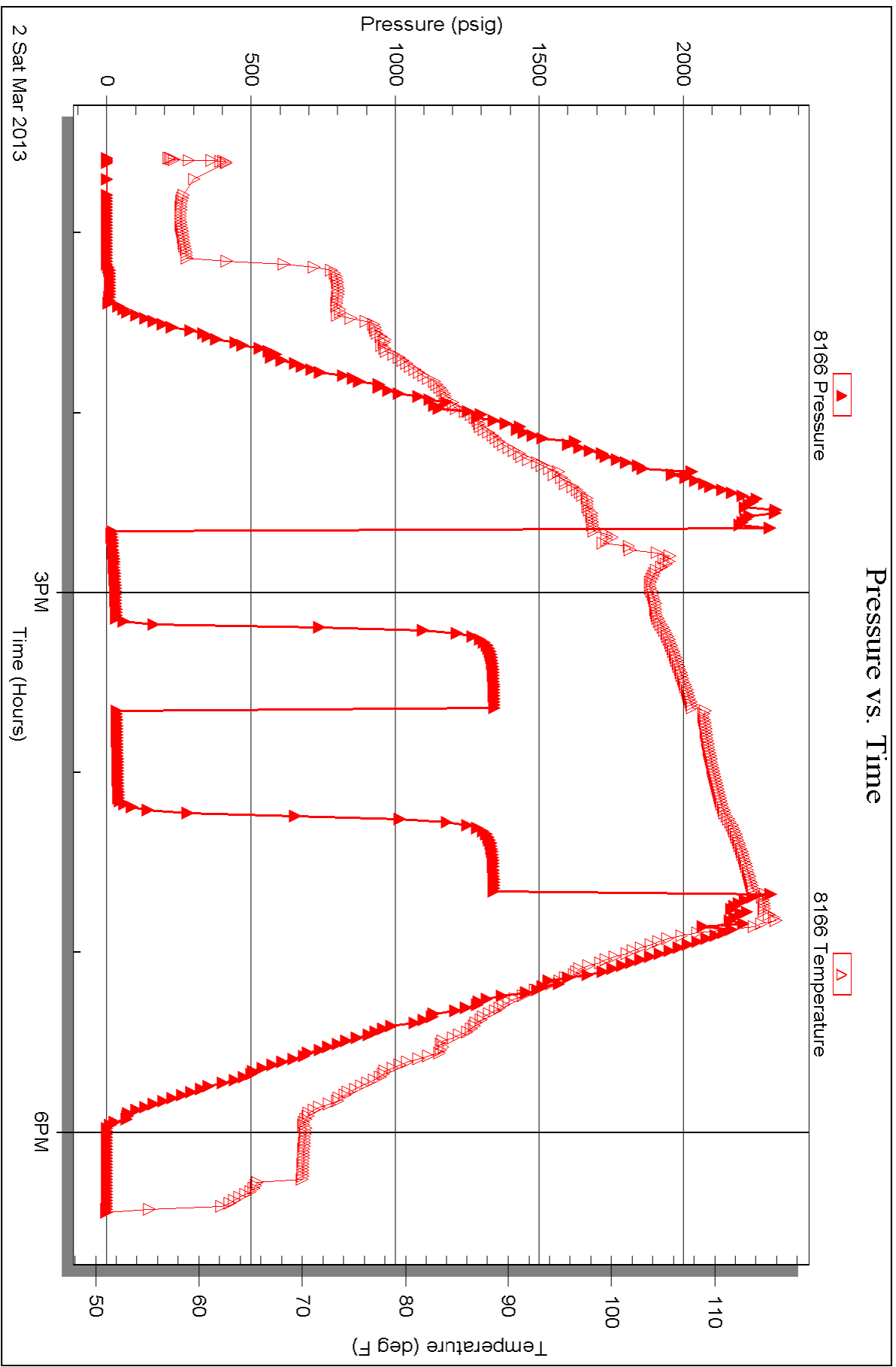
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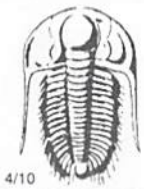
Inside

Dow nung-Nelson Oil Co.

Norris #1-6

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52031

Well Name & No. Norris #1-6 Test No. 1 Date 3/1/13
 Company Downing-Nelson Oil Co Inc Elevation 2216 KB 2208 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. _____ Rig Discovery #4
 Location: Sec. 6 Twp. 21 Rge. 20 Co. Pawnee State KS

Interval Tested 4326 - 4377 Zone Tested Miss
 Anchor Length 51 Drill Pipe Run _____ Mud Wt. 9.3
 Top Packer Depth 4321 Drill Collars Run 30 Vis 59
 Bottom Packer Depth 4326 Wt. Pipe Run - WL 8.0
 Total Depth 4377 Chlorides 3,600 ppm System LCM 2[#]

Blow Description JF - 1 1/4 in blow
ISI - No blow
FF - very weak surface blow
FSD - No blow

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

Rec Total 10 BHT 109 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2281</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>19:55</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:16</u>
(C) First Final Flow <u>27</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>00:50</u>
(D) Initial Shut-In <u>133</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>3:50</u>
(E) Second Initial Flow <u>28</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>5:40</u>
(F) Second Final Flow <u>29</u>	<input checked="" type="checkbox"/> Mileage <u>114 RT</u> 176.70	Comments _____
(G) Final Shut-In <u>93</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2,191</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

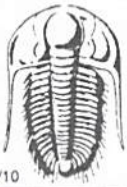
Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1751.70

Sub Total 0
 Total 1751.70
 MP/DST Disc't _____

Approved By _____ Our Representative Bua D...
 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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52032

Well Name & No. Norris #1-6 Test No. 2 Date 3/2/13
 Company Downing-Nelson Oil Co Inc Elevation 2216 KB 2208 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. _____ Rig Discovery #4
 Location: Sec. 6 Twp. 21 Rge. 20 Co. Pawnee State KS

Interval Tested 4377 - 4384 Zone Tested Miss
 Anchor Length 7 Drill Pipe Run _____ Mud Wt. 9.3
 Top Packer Depth 4372 Drill Collars Run 30 Vis 59
 Bottom Packer Depth 4377 Wt. Pipe Run - WL 8.0
 Total Depth 4384 Chlorides 3,600 ppm System LCM 2#
 Blow Description IF - 2 1/4 in blow
FSI - No blow
FF - 3/4 in blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Free Oil</u>				
<u>28</u>	<u>oil spotted msw</u>			<u>65</u>	<u>35</u>
_____	_____				
_____	_____				
_____	_____				

Rec Total 30 BHT _____ Gravity _____ API RW .33 @ 55 °F Chlorides 27000 ppm

(A) Initial Hydrostatic <u>2,270</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>11:45</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:35</u>
(C) First Final Flow <u>33</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:40</u>
(D) Initial Shut-In <u>1,345</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>16:40</u>
(E) Second Initial Flow <u>35</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>18:30</u>
(F) Second Final Flow <u>41</u>	<input checked="" type="checkbox"/> Mileage <u>114.7</u> 176.70	Comments _____
(G) Final Shut-In <u>1,345</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2,216</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1751.70</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1751.70</u>	

Approved By _____ Our Representative Butt Deer
 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.