



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Ron Nelson

Kramer Unit #1-24

24-5s-37w Cheyenne,KS

Start Date: 2014.07.14 @ 23:43:00

End Date: 2014.07.15 @ 07:53:30

Job Ticket #: 58455 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.18 @ 09:25:10

Downing Nelson Oil Co.

24-5s-37w Cheyenne,KS

Kramer Unit #1-24

DST # 1

LKC - 'r

2014.07.14



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58455

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.07.14 @ 23:43:00

GENERAL INFORMATION:

Formation: **LKC - 'I'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 02:10:15
 Tester: Royal Fisher
 Time Test Ended: 07:53:30
 Unit No: #54
 Interval: **4308.00 ft (KB) To 4365.00 ft (KB) (TVD)**
 Reference Elevations: 3289.00 ft (KB)
 Total Depth: 4365.00 ft (KB) (TVD)
 3280.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 9.00 ft

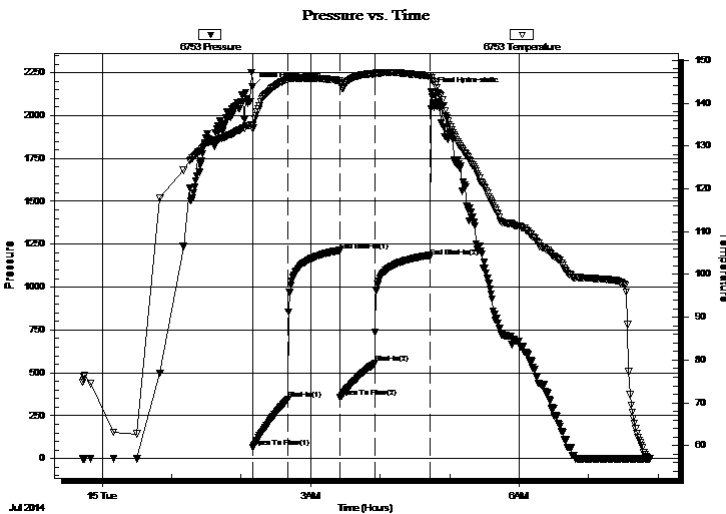
Serial #: 6753

Inside

Press@RunDepth: 556.35 psig @ 4309.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.07.14 End Date: 2014.07.15 Last Calib.: 2014.07.15
 Start Time: 23:43:05 End Time: 07:53:29 Time On Btm: 2014.07.15 @ 02:10:00
 Time Off Btm: 2014.07.15 @ 04:44:15

TEST COMMENT: 30 - IF - Surface blow built to bottom of the bucket in 2 min.
 45 - ISI - Return built to bottom of the bucket in 12 mins.
 30 - FF - Surface blow built to bottom of the bucket in 3 mins.
 45 - FSI - Return built to bottom of the bucket in 12 mins.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2169.33	134.89	Initial Hydro-static
1	64.27	134.09	Open To Flow (1)
31	345.13	145.62	Shut-In(1)
76	1209.63	145.28	End Shut-In(1)
76	358.43	144.83	Open To Flow (2)
106	556.35	146.84	Shut-In(2)
154	1177.68	146.34	End Shut-In(2)
155	2137.33	146.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
819.00	GOCM - 15G - 20M - 65o	11.49
645.00	GO - 25G - 75o	9.05

Gas Rates

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



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DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

ATTN: Ron Nelson

Job Ticket: 58455

DST#: 1

Test Start: 2014.07.14 @ 23:43:00

GENERAL INFORMATION:

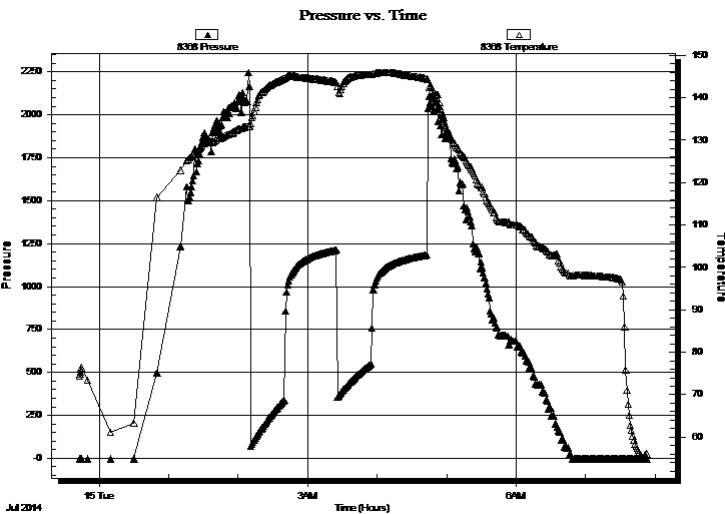
Formation:	LKC - 'I'				
Deviated:	No	Whipstock:		ft (KB)	Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened:	02:10:15				Tester: Royal Fisher
Time Test Ended:	07:53:30				Unit No: #54
Interval:	4308.00 ft (KB) To 4365.00 ft (KB) (TVD)				Reference Elevations: 3289.00 ft (KB)
Total Depth:	4365.00 ft (KB) (TVD)				3280.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Good		KB to GR/CF: 9.00 ft

Serial #: 8368

Outside

Press@RunDepth:		psig @	4309.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2014.07.14	End Date:	2014.07.15	Last Calib.:	2014.07.15
Start Time:	23:43:05	End Time:	07:53:29	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 30 - IF - Surface blow built to bottom of the bucket in 2 min.
 45 - ISI - Return built to bottom of the bucket in 12 mins.
 30 - FF - Surface blow built to bottom of the bucket in 3 mins.
 45 - FSI - Return built to bottom of the bucket in 12 mins.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
819.00	GOCM - 15G - 20M - 65o	11.49
645.00	GO - 25G - 75o	9.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58455

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.07.14 @ 23:43:00

Tool Information

Drill Pipe:	Length: 4297.86 ft	Diameter: 3.80 inches	Volume: 60.29 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.86 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4308.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	76.00 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			4294.00	
Hydraulic tool	5.00			4299.00	
Packer	4.00			4303.00	19.00 Bottom Of Top Packer
Packer	5.00			4308.00	
Stubb	1.00			4309.00	
Recorder	0.00	8368	Outside	4309.00	
Recorder	0.00	6753	Inside	4309.00	
Perforations	19.00			4328.00	
Change Over Sub	1.00			4329.00	
Drill Pipe	31.00			4360.00	
Change Over Sub	1.00			4361.00	
Bullnose	4.00			4365.00	57.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58455

DST#: 1

ATTN: Ron Nelson

Test Start: 2014.07.14 @ 23:43:00

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
819.00	GOCM - 15G - 20M - 65o	11.488
645.00	GO - 25G - 75o	9.048

Total Length: 1464.00 ft Total Volume: 20.536 bbl

Num Fluid Samples: 0

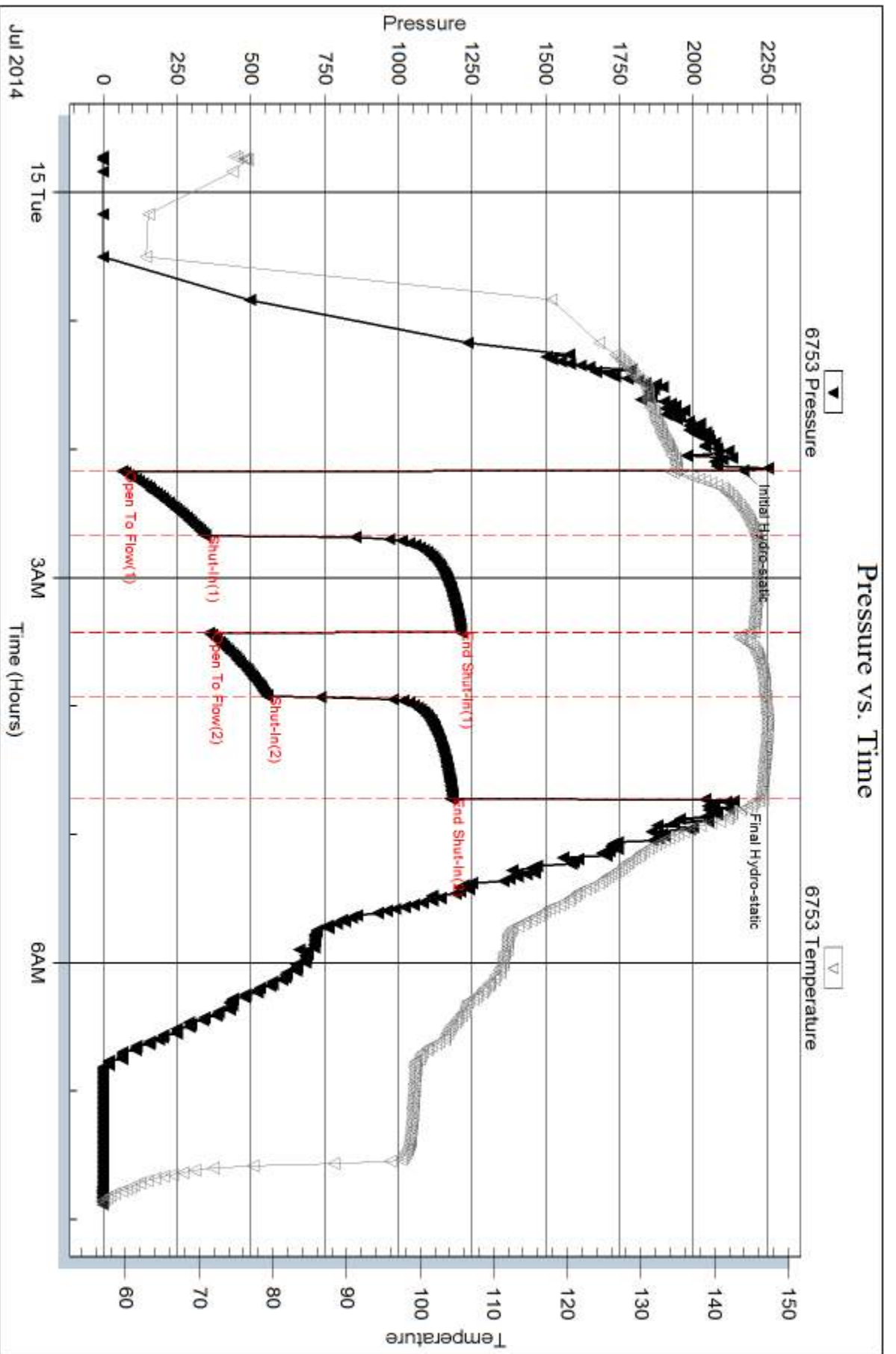
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

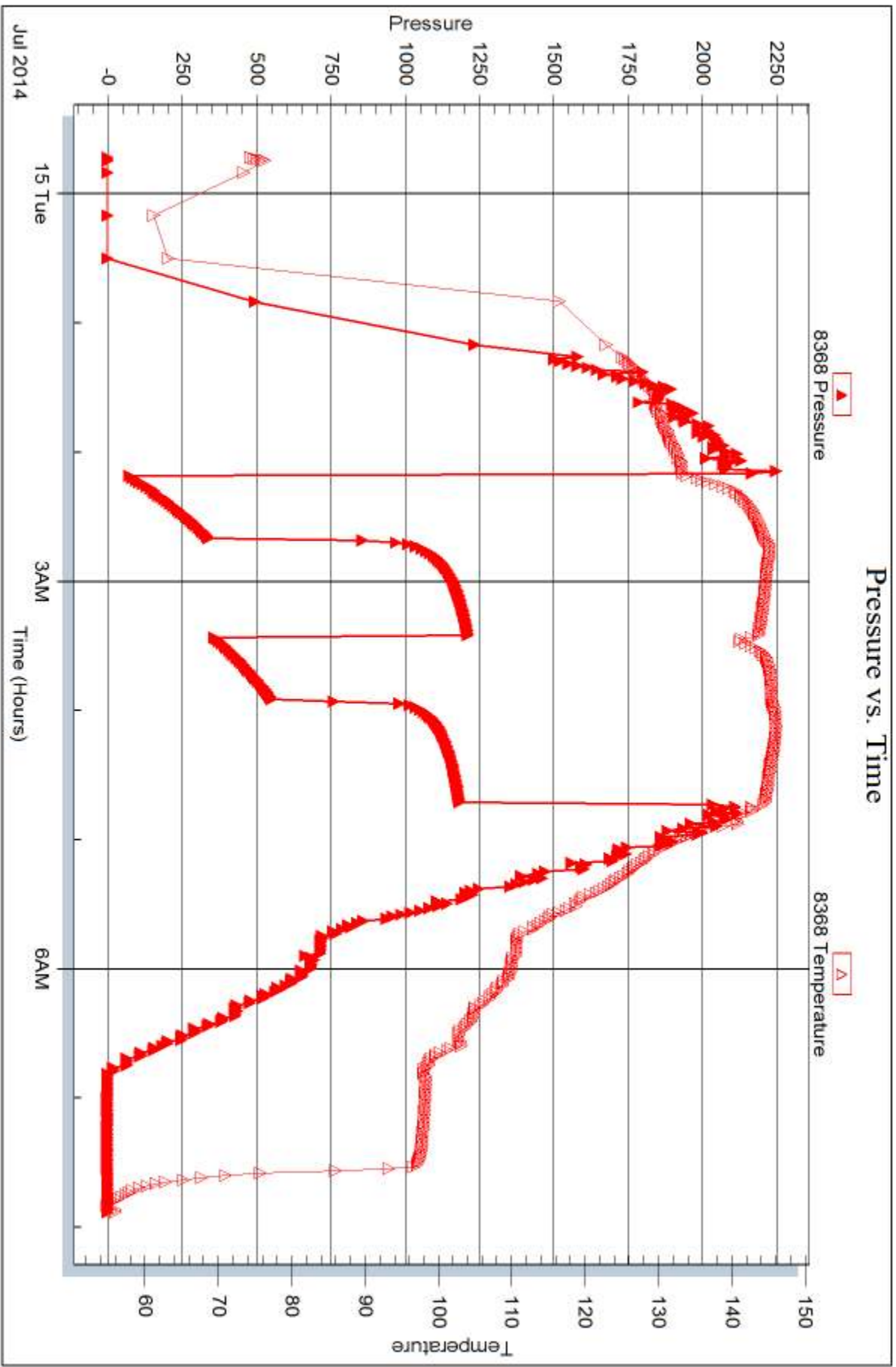


Serial #: 8368

Outside Downing Nelson Oil Co.

Kramer Unit #1-24

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 58455

Printed: 2014.07.18 @ 09:25:14



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Ron Nelson

Kramer Unit #1-24

24-5s-37w Cheyenne,KS

Start Date: 2014.07.16 @ 03:33:00

End Date: 2014.07.16 @ 13:43:25

Job Ticket #: 58456 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.18 @ 09:24:01

Downing Nelson Oil Co.

24-5s-37w Cheyenne,KS

Kramer Unit #1-24

DST # 2

Pawnee

2014.07.16



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58456

DST#: 2

ATTN: Ron Nelson

Test Start: 2014.07.16 @ 03:33:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:34:40

Time Test Ended: 13:43:25

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4526.00 ft (KB) To 4570.00 ft (KB) (TVD)

Reference Elevations: 3289.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

3280.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

Serial #: 6753

Inside

Press@RunDepth: 1306.90 psig @ 4527.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.16

End Date:

2014.07.16

Last Calib.:

2014.07.16

Start Time:

03:33:05

End Time:

13:43:24

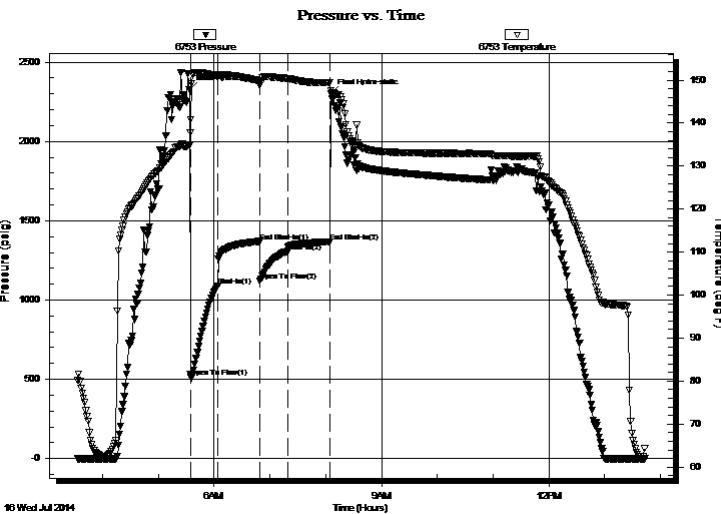
Time On Btm:

2014.07.16 @ 05:33:35

Time Off Btm:

2014.07.16 @ 08:05:35

TEST COMMENT: 30 - IF - Surface blow built to bottom of the bucket in 1 min.
45 - ISI - Retrun built to bottom of the bucket in 5 mins. with gas to surface
30 - FF - Surface blow built to bottom of the bucket in 1 min.
45 - FSI - Return built to bottom of the bucket in 4 mins.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2326.87	134.91	Initial Hydro-static
2	514.13	140.84	Open To Flow (1)
30	1086.75	151.05	Shut-In(1)
76	1369.22	149.80	End Shut-In(1)
76	1120.07	149.23	Open To Flow (2)
106	1306.90	150.32	Shut-In(2)
152	1366.89	149.37	End Shut-In(2)
152	2300.29	147.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3820.00	GWCO - 25G - 70o - 5W	53.58

Gas Rates

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



DRILL STEM TEST REPORT

Dow ning Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

ATTN: Ron Nelson

Job Ticket: 58456

DST#: 2

Test Start: 2014.07.16 @ 03:33:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:34:40

Time Test Ended: 13:43:25

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4526.00 ft (KB) To 4570.00 ft (KB) (TVD)

Total Depth: 4570.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3289.00 ft (KB)

3280.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8368 **Outside**

Press@RunDepth: psig @ 4527.00 ft (KB)

Start Date: 2014.07.16

End Date:

2014.07.16

Start Time: 03:33:05

End Time:

13:43:15

Capacity: 8000.00 psig

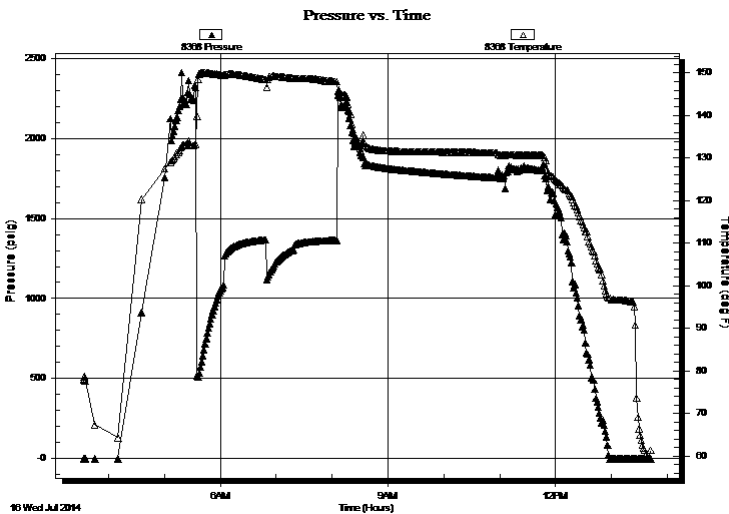
Last Calib.: 2014.07.16

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to bottom of the bucket in 1 min.
45 - ISI - Retrun built to bottom of the bucket in 5 mins. with gas to surface
30 - FF - Surface blow built to bottom of the bucket in 1 min.
45 - FSI - Return built to bottom of the bucket in 4 mins.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
3820.00	GWCO - 25G - 70o - 5W	53.58

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58456

DST#: 2

ATTN: Ron Nelson

Test Start: 2014.07.16 @ 03:33:00

Tool Information

Drill Pipe:	Length: 4519.39 ft	Diameter: 3.80 inches	Volume: 63.40 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	74000.00 lb
			<u>Total Volume: 63.40 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.39 ft			String Weight: Initial	57000.00 lb
Depth to Top Packer:	4526.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	63.00 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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Shut In Tool	5.00			4512.00	
Hydraulic tool	5.00			4517.00	
Packer	4.00			4521.00	19.00 Bottom Of Top Packer
Packer	5.00			4526.00	
Stubb	1.00			4527.00	
Recorder	0.00	8368	Outside	4527.00	
Recorder	0.00	6753	Inside	4527.00	
Perforations	6.00			4533.00	
Change Over Sub	1.00			4534.00	
Drill Pipe	31.00			4565.00	
Change Over Sub	1.00			4566.00	
Bullnose	4.00			4570.00	44.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Co.

24-5s-37w Cheyenne,KS

PO Box 1019
Hays, KS 67601

Kramer Unit #1-24

Job Ticket: 58456

DST#: 2

ATTN: Ron Nelson

Test Start: 2014.07.16 @ 03:33:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3820.00	GWCO - 25G - 70o - 5W	53.585

Total Length: 3820.00 ft Total Volume: 53.585 bbl

Num Fluid Samples: 0

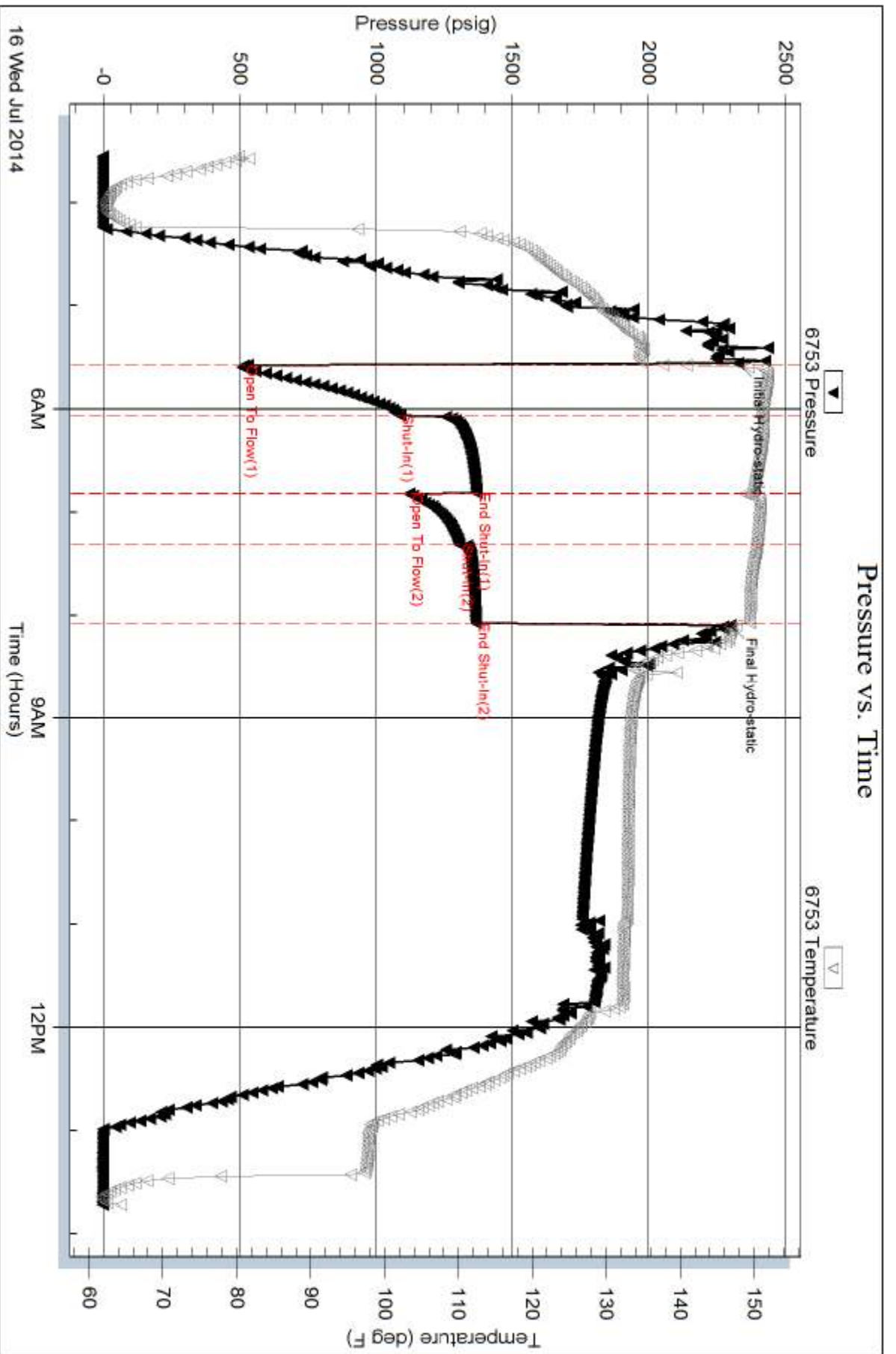
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

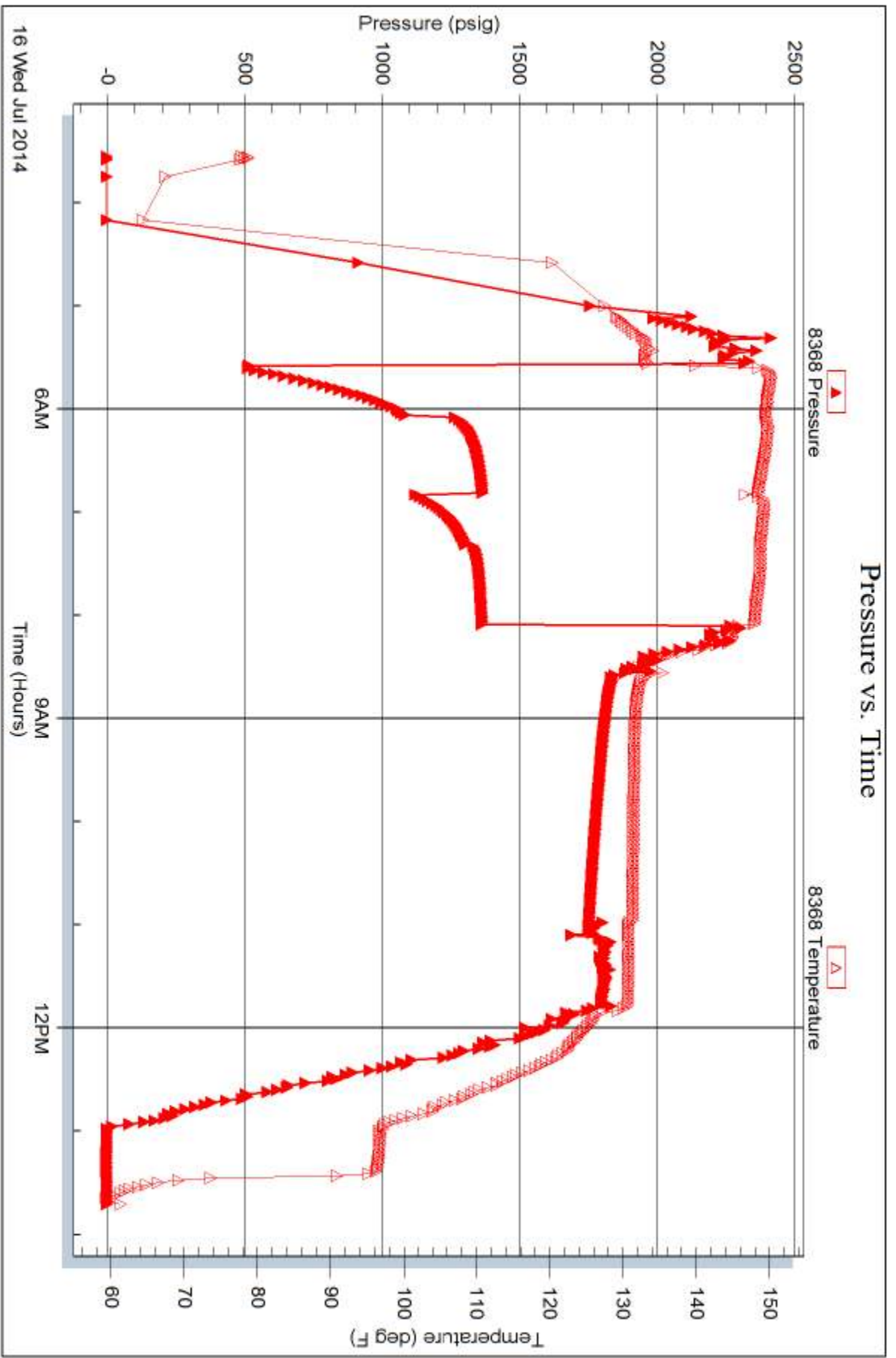


Serial #: 8368

Outside Dow ning Nelson Oil Co.

Kramer Unit #1-24

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58456

Printed: 2014.07.18 @ 09:24:03



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58455

Well Name & No. Kramer Unit #1-24 Test No. 1 Date 7-14-14
 Company Downing Nelson Oil Co. Elevation 3289 KB 3280 GL
 Address P.O. Box 109 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Ninnescah
 Location: Sec. 24 Twp. 55 Rge. 37 W Co. Cheyenne State KS

Interval Tested 4308 - 4365 Zone Tested LKC-I'
 Anchor Length 57' Drill Pipe Run 4297.80 Mud Wt. 9.1
 Top Packer Depth 4303 Drill Collars Run 0 Vis 47
 Bottom Packer Depth 4308 Wt. Pipe Run 0 WL 10
 Total Depth 4365 Chlorides 500 ppm System LCM 2#

Blow Description IF - surface blow built to bottom of bucket in 2 min.
ISI - return built to bottom of bucket in 12 mins.
FF - surface blow built to bottom of the bucket in 3 min.
FST - return built to bottom of bucket in 12 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>645'</u>	<u>Gasy Oil</u>	<u>25</u>	<u>75</u>		
<u>819'</u>	<u>GOCm</u>	<u>15</u>	<u>65</u>	<u>20</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

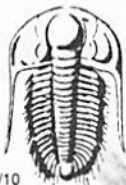
Rec Total 1464 BHT 146°F Gravity 33@60° API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2169 Test 1250 T-On Location 10:15pm
 (B) First Initial Flow 64 Jars T-Started 11:43pm
 (C) First Final Flow 345 Safety Joint T-Open 2:10am
 (D) Initial Shut-In 1209 Circ Sub N/C T-Pulled 4:40am
 (E) Second Initial Flow 358 Hourly Standby T-Out 7:43am
 (F) Second Final Flow 556 Mileage 120 R/T 186 Comments
 (G) Final Shut-In 1177 Sampler
 (H) Final Hydrostatic 2137 Straddle Ruined Shale Packer

Initial Open 30 Shale Packer Ruined Packer
 Initial Shut-In 45 Extra Packer Extra Copies
 Final Flow 30 Extra Recorder Sub Total 0
 Final Shut-In 45 Day Standby Total 1436
 Accessibility MP/DST Disc't
 Sub Total 1436

Approved By _____ Our Representative [Signature]

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. 58456

Well Name & No. Kramer Unit #1-24 Test No. 2 Date 7-16-14
 Company Downing Nelson Oil Co. Elevation 3289 KB 3280 GL
 Address P.O. Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Ninnescah
 Location: Sec. 24 Twp. 5S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4526-4570 Zone Tested Lawner
 Anchor Length 44' Drill Pipe Run 4519.39 Mud Wt. 9.2
 Top Packer Depth 4521 Drill Collars Run 0 Vis 60
 Bottom Packer Depth 4526 Wt. Pipe Run 0 WL 9
 Total Depth 4570 Chlorides 500 ppm System LCM 1#

Blow Description IF - Surface blow built to bottom of the bucket in 1 min.
ISI - Return built to bottom of the bucket in 5 mins. w/GTS
FF - Surface blow built to bottom of the bucket in 1 min
FST - Return built to bottom of bucket in 4 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>3,820</u>	<u>GWCO</u>	<u>25</u>	<u>70</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 3,820' BHT 10149°F Gravity 36 @ 60°F API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2326 Test 1250 T-On Location 3:00am
 (B) First Initial Flow 514 Jars T-Started 3:33am
 (C) First Final Flow 4,086 Safety Joint T-Open 5:34am
 (D) Initial Shut-In 1369 Circ Sub Dropped bar 50 T-Pulled 8:04am
 (E) Second Initial Flow 1120 Hourly Standby 2 1/4 hrs .25h T-Out 1:44pm
 (F) Second Final Flow 1306 Mileage 120 R/T 372 Comments Waited on truck from 8:30 to 10:45 am.
 (G) Final Shut-In 1366 Sampler Picked up tool 7-17-14 5:00 54
 (H) Final Hydrostatic 2300 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Sub Total 800
 Total 2497
 MP/DST Disc't
 Sub Total 1697

Approved By _____ Our Representative [Signature]

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.