

DRILL STEM TEST REPORT

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

PO Box 372
Hays KS 67601

ATTN: Ron Nelson

27 13S 21W Trego KS

Crystal #1-27

Start Date: 2006.11.22 @ 06:16:14

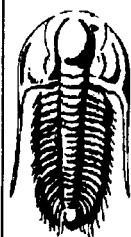
End Date: 2006.11.22 @ 11:03:38

Job Ticket #: 25919 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Downing-Nelson Oil Co Inc

PO Box 372
Hays KS 67601

ATTN: Ron Nelson

Crystal #1-27

27 13S 21W Trego KS

Job Ticket: 25919

DST#: 1

Test Start: 2006.11.22 @ 06:16:14

GENERAL INFORMATION:

Formation: **LKC**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 08:12:39

Time Test Ended: 11:03:38

Test Type: Conventional Bottom Hole

Tester: Ray Schwager

Unit No: 28

Interval: **3661.00 ft (KB) To 3752.00 ft (KB) (TVD)**

Total Depth: 3752.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 2341.00 ft (KB)

2333.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: psig @ 3666.01 ft (KB)

Start Date: 2006.11.22

End Date:

2006.11.22

Start Time: 06:16:14

End Time:

11:03:38

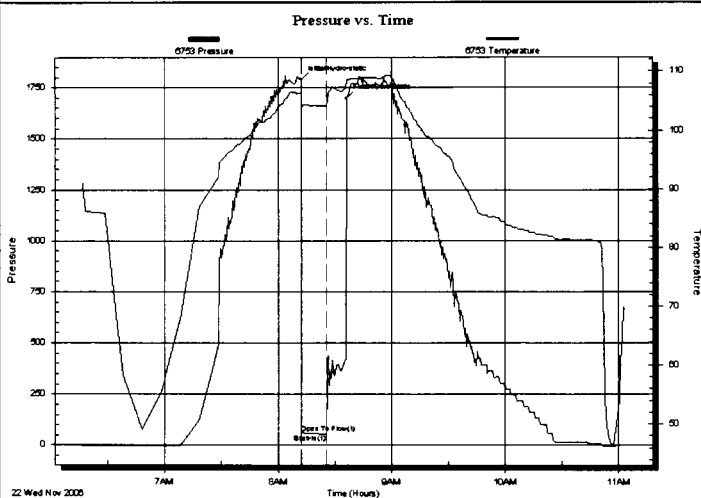
Capacity: 7000.00 psig

Last Calib.: 2006.11.22

Time On Btm: 2006.11.22 @ 08:12:09

Time Off Btm: 2006.11.22 @ 08:36:09

TEST COMMENT: IFP Wk bl lost packer seat reset did not hold



PRESSURE SUMMARY

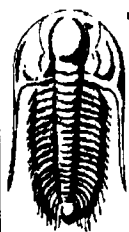
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.70	106.33	Initial Hydro-static
1	60.58	103.47	Open To Flow (1)
14	54.26	104.19	Shut-In (1)
24	1697.27	108.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
800.00	Mud	11.22

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing-Nelson Oil Co Inc

Crystal #1-27

PO Box 372
Hays KS 67601

27 13S 21W Trego KS

Job Ticket: 25919

DST#: 1

ATTN: Ron Nelson

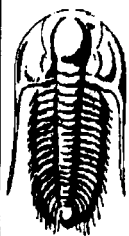
Test Start: 2006.11.22 @ 06:16:14

Tool Information

Drill Pipe:	Length: 3668.00 ft	Diameter: 3.80 inches	Volume: 51.45 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 51.45 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3661.00 ft			Final	47000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	91.02 ft				
Tool Length:	112.02 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			3641.00	
Shut In Tool	5.00			3646.00	
Hydraulic tool	5.00			3651.00	
Packer	5.00			3656.00	21.00 Bottom Of Top Packer
Packer	5.00			3661.00	
Stubb	1.00			3662.00	
Perforations	4.00			3666.00	
Recorder	0.01	6753	Inside	3666.01	
Blank Spacing	63.00			3729.01	
Recorder	0.01	13534	Outside	3729.02	
Perforations	20.00			3749.02	
Bullnose	3.00			3752.02	91.02 Bottom Packers & Anchor

Total Tool Length: 112.02



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co Inc

Crystal #1-27

PO Box 372
Hays KS 67601

27 13S 21W Trego KS

Job Ticket: 25919

DST#: 1

ATTN: Ron Nelson

Test Start: 2006.11.22 @ 06:16:14

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
800.00	Mud	11.222

Total Length: 800.00 ft

Total Volume: 11.222 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

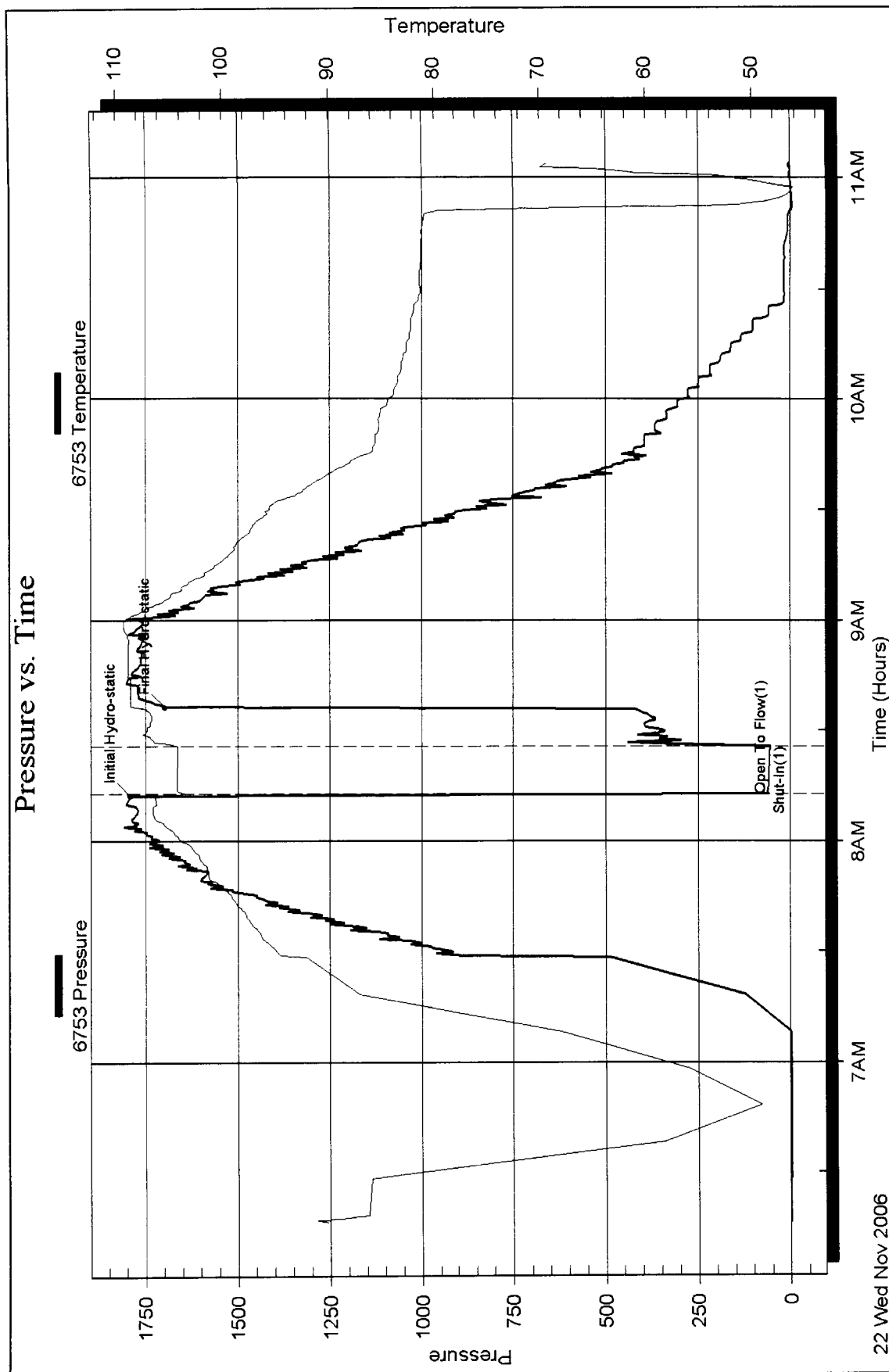
Serial #:

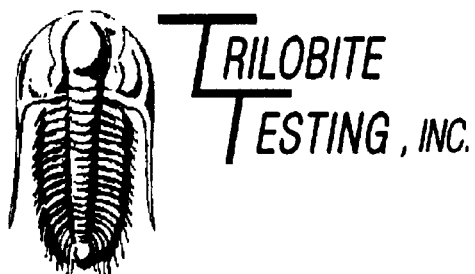
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

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

PO Box 372
Hays KS 67601

ATTN: Ron Nelson

27 13S 21W Trego KS

Crystal #1-27

Start Date: 2006.11.23 @ 15:50:27

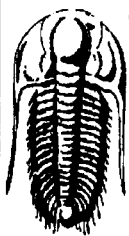
End Date: 2006.11.23 @ 23:01:51

Job Ticket #: 25920 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Downing-Nelson Oil Co Inc

PO Box 372
Hays KS 67601

ATTN: Ron Nelson

Crystal #1-27

27 13S 21W Trego KS

Job Ticket: 25920

DST#: 2

Test Start: 2006.11.23 @ 15:50:27

GENERAL INFORMATION:

Formation: **Cher Sd**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 17:46:52

Time Test Ended: 23:01:51

Test Type: Conventional Bottom Hole

Tester: Ray Schwager

Unit No: 28

Interval: **4030.00 ft (KB) To 4088.00 ft (KB) (TVD)**

Total Depth: 4088.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 2341.00 ft (KB)

2333.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6753

Inside

Press@RunDepth: 65.68 psig @ 4033.01 ft (KB)

Start Date: 2006.11.23

End Date:

2006.11.23

Start Time: 15:50:27

End Time:

23:01:51

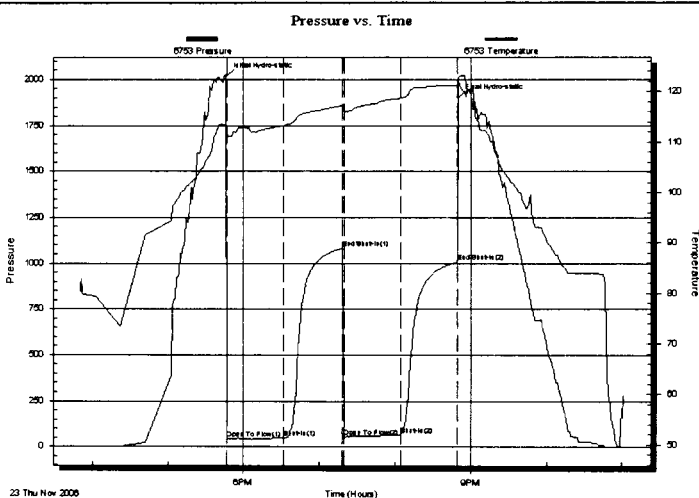
Capacity: 7000.00 psig

Last Calib.: 2006.11.23

Time On Btm: 2006.11.23 @ 17:46:22

Time Off Btm: 2006.11.23 @ 20:49:51

TEST COMMENT: IFP Wk bl thru-out 1/2 " to 1 1/2 " bl
FF Wk bl thru-out surface to 1/2 " bl
Times 45 45 45 45
no bl on shut-in



PRESSURE SUMMARY

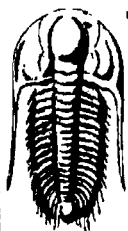
Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2017.01	113.36	Initial Hydro-static
1	40.64	110.77	Open To Flow (1)
45	47.32	113.22	Shut-In(1)
92	1081.68	117.19	End Shut-In(1)
93	55.56	115.91	Open To Flow (2)
138	65.68	118.65	Shut-In(2)
183	1006.55	121.29	End Shut-In(2)
184	1901.23	121.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	CO	0.21
60.00	HOCM 40%O 60%M	0.84

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing-Nelson Oil Co Inc

Crystal #1-27

PO Box 372
Hays KS 67601

27 13S 21W Trego KS

Job Ticket: 25920

DST#: 2

ATTN: Ron Nelson

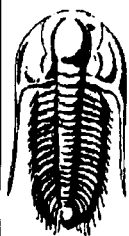
Test Start: 2006.11.23 @ 15:50:27

Tool Information

Drill Pipe:	Length: 4041.00 ft	Diameter: 3.80 inches	Volume: 56.68 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			Total Volume: 56.68 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	4030.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.02 ft			
Tool Length:	79.02 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			4010.00	
Shut In Tool	5.00			4015.00	
Hydraulic tool	5.00			4020.00	
Packer	5.00			4025.00	21.00 Bottom Of Top Packer
Packer	5.00			4030.00	
Stubb	1.00			4031.00	
Perforations	2.00			4033.00	
Recorder	0.01	6753	Inside	4033.01	
Blank Spacing	32.00			4065.01	
Recorder	0.01	13534	Outside	4065.02	
Perforations	20.00			4085.02	
Bullnose	3.00			4088.02	58.02 Bottom Packers & Anchor

Total Tool Length: 79.02



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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co Inc

Crystal #1-27

PO Box 372
Hays KS 67601

27 13S 21W Trego KS

Job Ticket: 25920

DST#: 2

ATTN: Ron Nelson

Test Start: 2006.11.23 @ 15:50:27

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	CO	0.210
60.00	HOCM 40%O 60%M	0.842

Total Length: 75.00 ft

Total Volume: 1.052 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

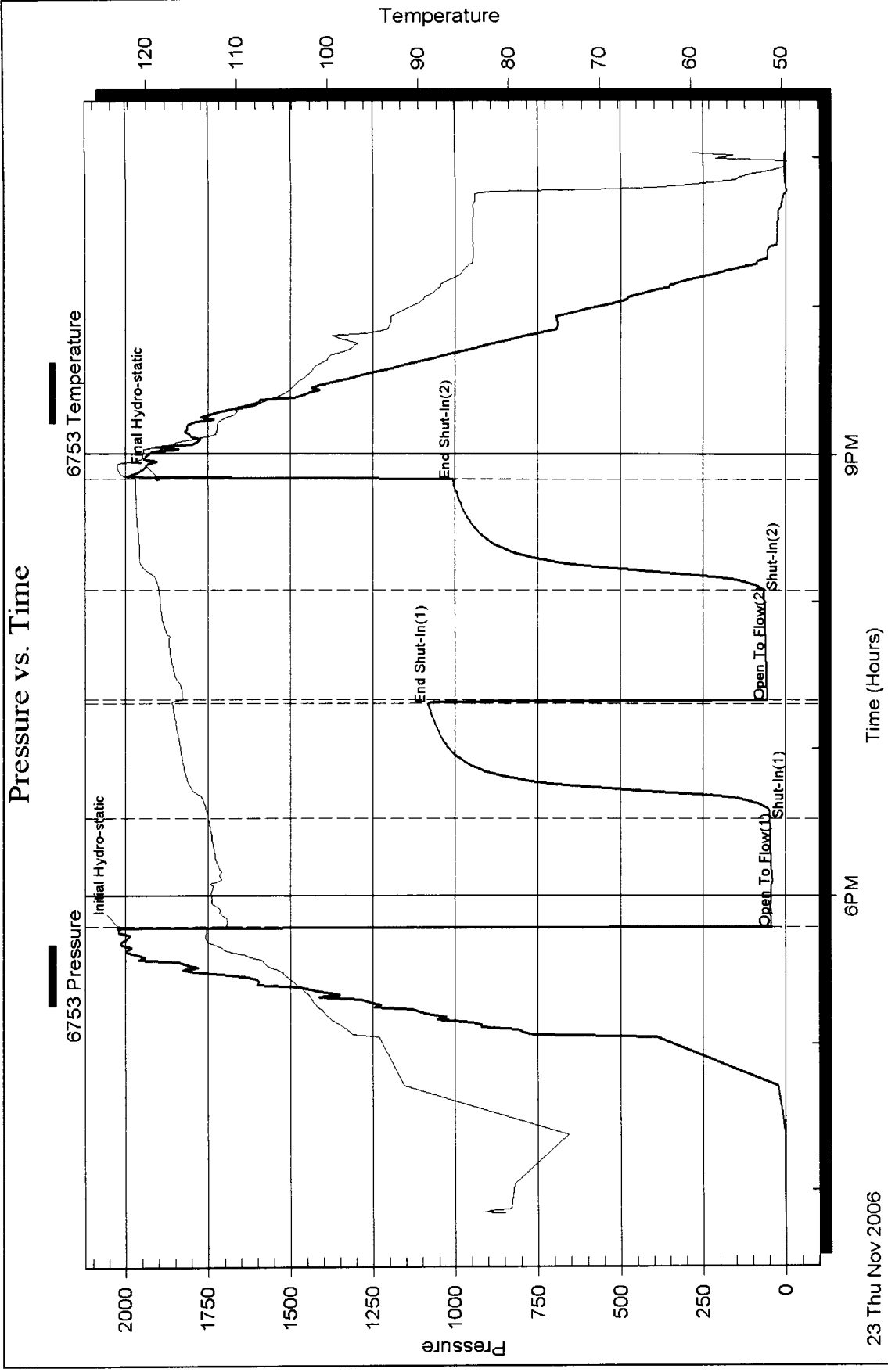
Serial #: 6753

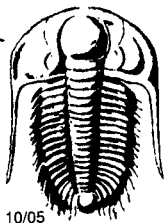
Inside

Downing-Nelson Oil Co Inc

27 13S 21W Trego KS

DST Test Number: 2





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

9562

25919

Test Ticket

Well Name & No. CRYSTAL #1-27 Test No. 1 Date 11-22-06
 Company Downing-Nelson Oil Co. Inc Zone Tested LKC
 Address P.O. Box 372 Hays, Ks 67601 Elevation 2341 KB 2333 GL
 Co. Rep / Geo. Ron Nelson Rig Discovery #193
 Location: Sec. 27 Twp. 13^s Rge. 21^w Co. Yreago State Ks
 Comment: _____ Release date / time: _____

Interval Tested 3661-3752 Initial Str Wt./Lbs. 45000 Unseated Str Wt/Lbs. 47000
 Anchor Length 91 Wt. Set Lbs. 25000 Wt. Pulled Loose/Lbs. 60000
 Top Packer Depth 3656 Tool Weight 2200
 Bottom Packer Depth 3661 Hole Size 7 7/8" Rubber Size 6 3/4"
 Total Depth 3752 Wt. Pipe Run _____ Drill Collar Run _____
 Mud Wt. 9 LCM 1/2# Vis. 56 WL 8 Drill Pipe Size 4 1/2 X H Ft. Run 3668
 Blow Description IFP- WEAK Blow, 1/2" To 1/4" Blow, packer failed approx 13 min
EEP- INTO TEST, pulled loose, RESET did not hold

Recovery - Total Feet 800 GIP _____ Ft. in DC _____ Ft. in DP 800
 Rec. 800 Feet of 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 _____
 BHT _____ °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API
 RW _____ @ _____ °F Chlorides _____ ppm Recovery _____ Chlorides 3000 ppm System

AK-1 Alpine
 (A) Initial Hydrostatic Mud 1770 PSI Recorder No. 6753 Test ✓ 1100
 (B) First Initial Flow Pressure 60 PSI (depth) 3666 Jars _____
 (C) First Final Flow Pressure 54 PSI Recorder No. 13534 Safety Jt. _____
 (D) Initial Shut-In Pressure _____ PSI (depth) 3029 Circ Sub _____
 (E) Second Initial Flow Pressure _____ PSI Recorder No. _____ Sampler _____
 (F) Second Final Flow Pressure _____ PSI (depth) _____ Straddle _____
 (G) Final Shut-In Pressure _____ PSI Initial Opening 30 Ext. Packer _____
 (Q) Final Hydrostatic Mud 1761 PSI Initial Shut-In _____ Shale Packer _____
 Final Flow _____ Ruined Packer _____
 Final Shut-In _____ Mileage ✓ 54 RT 67.5
 T-On Location 0530 Sub Total: _____
 T-Started 0616 Std. By _____
 T-Open 0810 Acc. Chg: \$1167.50
 T-Pulled 0845 Other: _____
 T-Out 1103 Total: _____

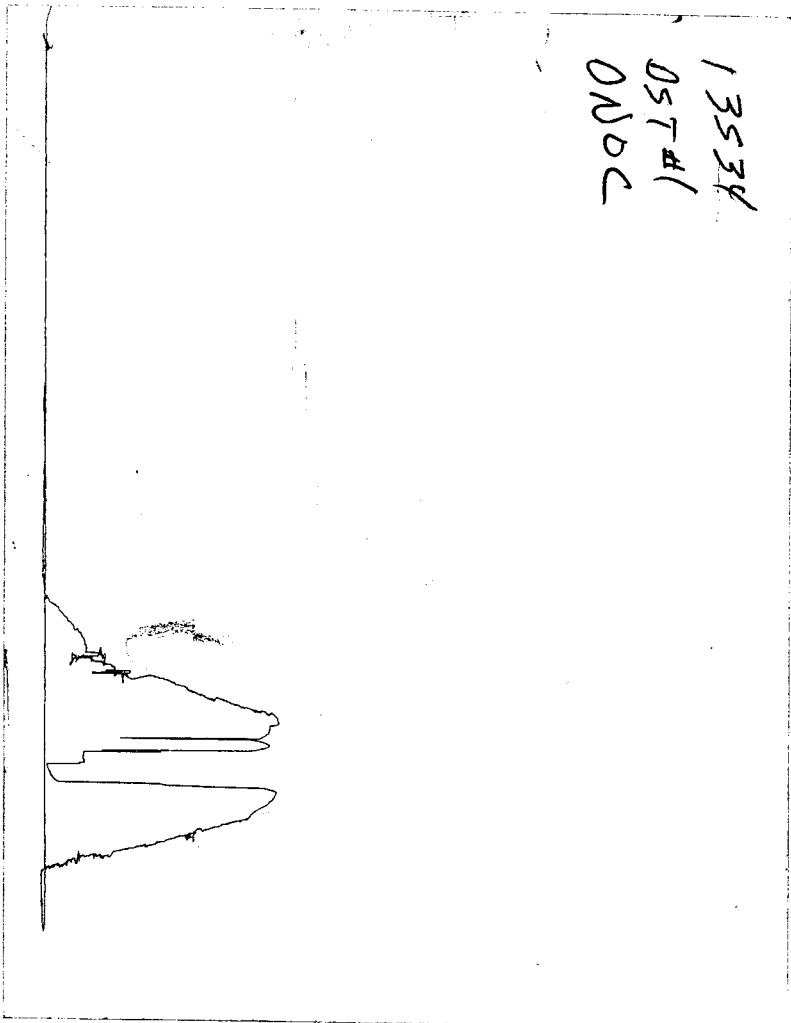
Approved By _____
 Our Representative Ray Schwager Thank you

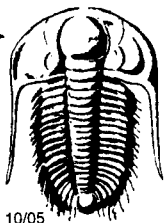
TRILOBITE TESTING INC. SHALL NOT BE LIABLE FOR DAMAGED OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart.

13534
OST #1
ONDC





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

25920

Test Ticket

Well Name & No.	CRYSTAL #1527	Test No.	2	Date	11-23-06
Company	Downing-Nelson Oil Co., Inc	Zone Tested	Cher 5d.		
Address	P.O. Box 372 Hays, Ks 67601	Elevation	2341	KB	2333
Co. Rep / Geo.	Ron Nelson	Rig	DISCOVERY rig 3		
Location: Sec.	27	Twp.	13 ^s	Rge.	21 ^w
		Co.	rego	State	Ks
Comment:		Release date / time:			

Interval Tested	4030 - 4088	Initial Str Wt./Lbs.	45000	Unseated Str Wt./Lbs.	45000
Anchor Length	58	Wt. Set Lbs.	25000	Wt. Pulled Loose/Lbs.	60000
Top Packer Depth	4025	Tool Weight	2200		
Bottom Packer Depth	4036	Hole Size 7 7/8"	—	Rubber Size 6 3/4"	—
Total Depth	4088	Wt. Pipe Run	—	Drill Collar Run	—
Mud Wt.	9.3	LCM	TR	Vis.	65
		WL	8	Drill Pipe Size	4 1/2 x H
Blow Description	TFP - WEAK Blow thru-out 1/2" to 1 1/2" Blow				
	FFP - WEAK Blow surface to 1/2" Blow				
	NO Blow on shut-in				

Recovery - Total Feet	75	GIP	—	Ft. in DC	—	Ft. in DP	75
Rec.	15	Feet of	CO	%gas	%oil	%water	%mud
Rec.	60	Feet of	HOCM	%gas	40	%oil	60
Rec.		Feet of		%gas	%oil	%water	%mud
Rec.		Feet of		%gas	%oil	%water	%mud
Rec.		Feet of		%gas	%oil	%water	%mud
BHT	121	*F Gravity	31	*API D @	60	*F Corrected Gravity	31
RW	—	@	—	*F	Chlorides	ppm Recovery	Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud	AK-1	Alpine	1985	PSI	Recorder No.	6753	Test	✓	1100
(B) First Initial Flow Pressure			41	PSI	(depth)	4033	Jars		
(C) First Final Flow Pressure			47	PSI	Recorder No.	13534	Safety Jt.		
(D) Initial Shut-In Pressure			1081	PSI	(depth)	4065	Circ Sub		
(E) Second Initial Flow Pressure			55	PSI	Recorder No.	—	Sampler		
(F) Second Final Flow Pressure			66	PSI	(depth)	—	Straddle		
(G) Final Shut-In Pressure			1007	PSI	Initial Opening	45	Ext. Packer		
(Q) Final Hydrostatic Mud			1933	PSI	Initial Shut-In	45	Shale Packer		
					Final Flow	45	Ruined Packer		
					Final Shut-In	45	Mileage	✓ 54 RT 67.50	
					T-On Location	1530	Sub Total:		
					T-Started	1550	Std. By		
					T-Open	1745	Acc. Chg:		
					T-Pulled	2045	Other:	1167.50	
					T-Out	2301	Total:		

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.

Approved By: Ray Schwager

Our Representative: RAY SCHWAGER Thank you

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart.

13534
05742
0NDC

