

DRILL STEM TEST REPORT

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

P.O.Box 372
Hays, Ks. 67601

ATTN: **ORIGINAL**
Ron Nelson

19-13s-20w Ellis

L.Lang # 1-19

Start Date: 2002.11.27 @ 08:47:12

End Date: 2002.11.27 @ 15:26:42

Job Ticket #: 16672

DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

101479
ORIGINAL
**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

P.O.Box 372
Hays, Ks. 67601

ATTN: Ron Nelson

L. Lang # 1-19
19-13s-20w Ellis

Job Ticket: 16672

DST#: 1

Test Start: 2002.11.27 @ 08:47:12

GENERAL INFORMATION:

Formation: **Marmaton**

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

Time Tool Opened: 10:44:12

Time Test Ended: 15:26:42

Test Type: **Conventional Bottom Hole**

Tester: **John Schmidt**

Unit No: **18**

Interval: **3885.00 ft (KB) To 3915.00 ft (KB) (TVD)**

Total Depth: **3915.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2282.00 ft (KB)**
2274.00 ft (CF)

KB to GR/CF: **8.00 ft**
Serial #: 3017 **Inside**

Press@RunDepth: **86.65 psig @ 3888.01 ft (KB)**

Start Date: **2002.11.27**

End Date: **2002.11.27**

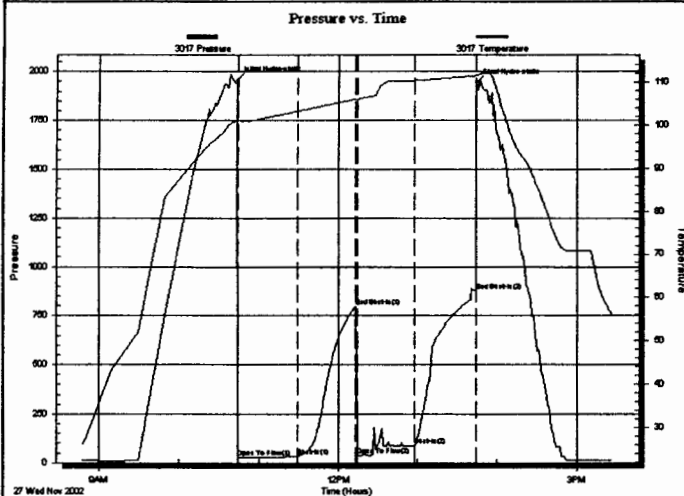
Start Time: **08:47:14**

End Time: **15:26:42**

Capacity: **7000.00 psig**

Last Calib.: **2002.11.27**

Time On Btm: **2002.11.27 @ 10:43:42**

Time Off Btm: **2002.11.27 @ 13:44:42**
TEST COMMENT: **FF-Weak built to 1&1/2" in IS- no blow**
FF-Weak built to 1" in 15 min. 9" surge blow bled off Blow dead IS-no blow


PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1956.34	100.86	Initial Hydro-static
1	27.51	100.93	Open To Flow (1)
46	32.56	103.11	Shut-In(1)
90	797.74	105.93	End Shut-In(1)
91	37.47	105.93	Open To Flow (2)
134	86.65	110.27	Shut-In(2)
181	876.75	111.37	End Shut-In(2)
181	1944.22	111.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
110.00	Drill Mud with oil specks	1.26

Gas Rates

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


TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing-Nelson Oil Co., Inc.

L. Lang # 1-19

 P.O. Box 372
 Hays, Ks. 67601

19-13s-20w Ellis

Job Ticket: 16672

DST#: 1

ATTN: Ron Nelson

Test Start: 2002.11.27 @ 08:47:12

Tool Information

Drill Pipe:	Length: 3853.00 ft	Diameter: 3.80 inches	Volume: 54.05 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: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			Total Volume: 54.20 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3885.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.02 ft			
Tool Length:	50.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3866.00	
S.I. Tool	5.00			3871.00	
HMV	5.00			3876.00	
Packer	4.00			3880.00	20.00 Bottom Of Top Packer
Packer	5.00			3885.00	
Stubb	1.00			3886.00	
Perforations	2.00			3888.00	
Recorder	0.01	3017	Inside	3888.01	
Perforations	24.00			3912.01	
Recorder	0.01	13308	Outside	3912.02	
Bullnose	3.00			3915.02	30.02 Bottom Packers & Anchor

Total Tool Length: 50.02

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 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT		FLUID SUMMARY						
	Downing-Nelson Oil Co., Inc.		L. Lang # 1-19						
	P.O. Box 372 Hays, Ks. 67601		19-13s-20w Ellis						
	ATTN: Ron Nelson		Job Ticket: 16672 DST#: 1 Test Start: 2002.11.27 @ 08:47:12						
Mud and Cushion Information									
Mud Type: Gel Chem		Cushion Type:	Oil API:						
Mud Weight: 9.00 lb/gal		Cushion Length:	deg API						
Viscosity: 45.00 sec/qt		Cushion Volume:	Water Salinity: ppm						
Water Loss: 7.19 in ³		Gas Cushion Type:							
Resistivity: ohm.m		Gas Cushion Pressure:	psig						
Salinity: ppm									
Filter Cake: inches									
Recovery Information									
Recovery Table									
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 20%;">Length ft</th><th style="width: 60%;">Description</th><th style="width: 20%;">Volume bbl</th></tr></thead><tbody><tr><td style="text-align: center;">110.00</td><td>Drill Mud with oil specks</td><td style="text-align: center;">1.261</td></tr></tbody></table>				Length ft	Description	Volume bbl	110.00	Drill Mud with oil specks	1.261
Length ft	Description	Volume bbl							
110.00	Drill Mud with oil specks	1.261							
Total Length: 110.00 ft		Total Volume: 1.261 bbl							
Num Fluid Samples: 0		Num Gas Bombs: 0 Serial #:							
Laboratory Name:		Laboratory Location:							
Recovery Comments:									

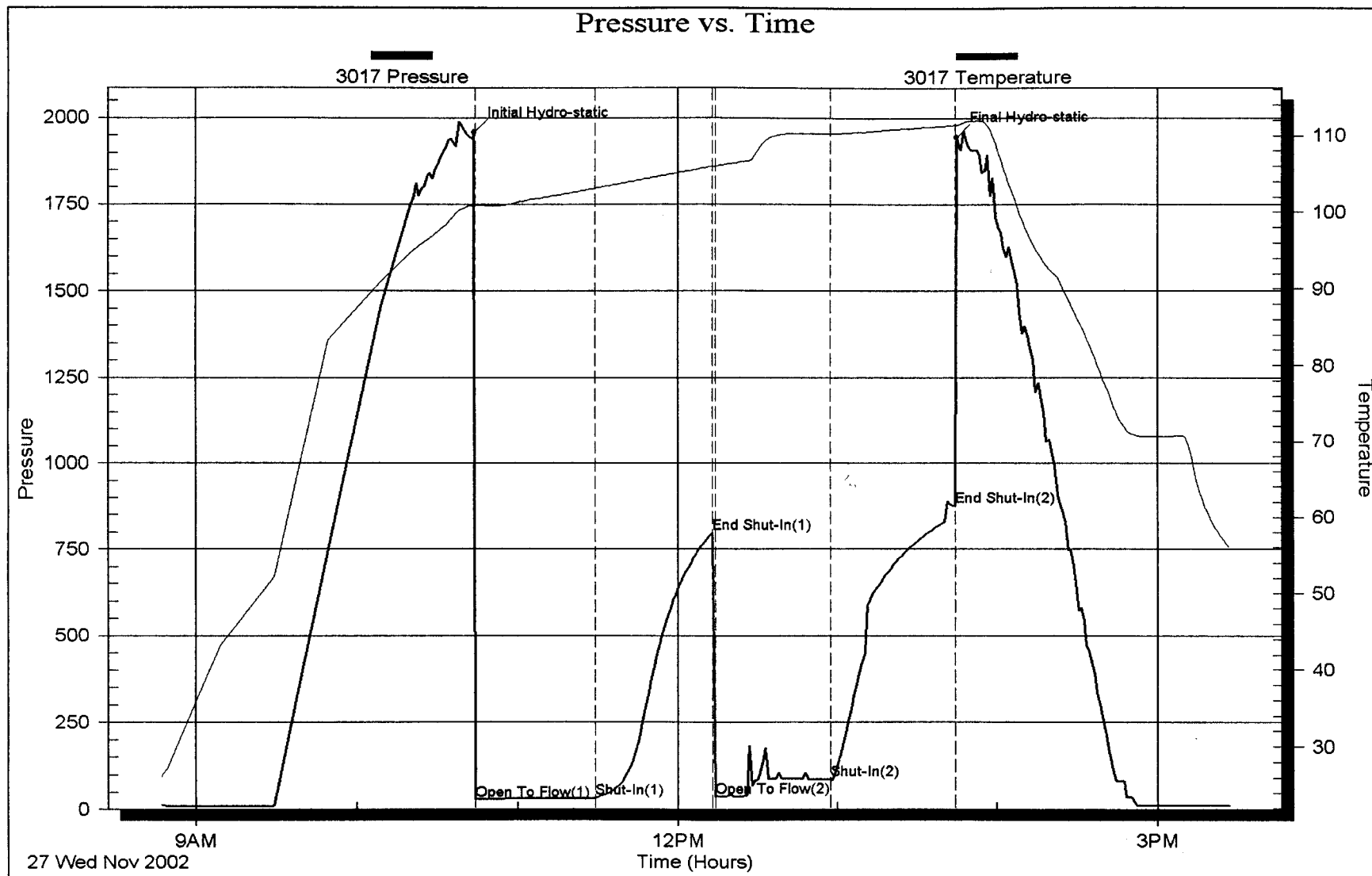
Serial #: 3017

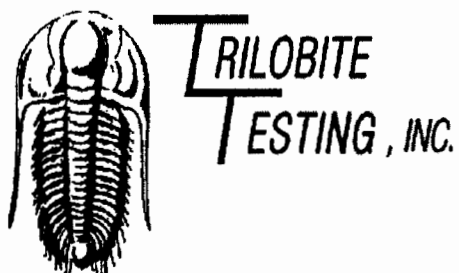
Inside

Downing-Nelson Oil Co., Inc.

19--13s--20w Ellis

DST Test Number: 1





DRILL STEM TEST REPORT

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

P.O.Box 372
Hays, Ks. 67601

ATTN: Ron Nelson

19-13s-20w Ellis

L.Lang # 1-19

Start Date: 2002.11.27 @ 22:04:23

End Date: 2002.11.28 @ 05:20:23

Job Ticket #: 16673 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

L.Lang # 1-19

P.O.Box 372
Hays,Ks.67601

19-13s-20w Ellis

Job Ticket: 16673

DST#: 2

ATTN: Ron Nelson

Test Start: 2002.11.27 @ 22:04:23

GENERAL INFORMATION:

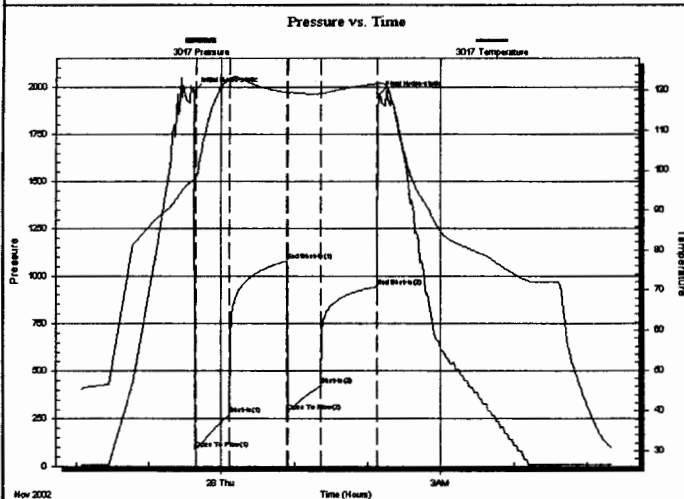
Formation: **Arbuckle**Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 23:38:53

Time Test Ended: 05:20:23

Test Type: **Conventional Bottom Hole**Tester: **John Schmidt**Unit No: **18**Interval: **3909.00 ft (KB) To 3946.00 ft (KB) (TVD)**Reference Elevations: **2282.00 ft (KB)**Total Depth: **3946.00 ft (KB) (TVD)****2274.00 ft (CF)**Hole Diameter: **7.88 inches** Hole Condition: **Fair**KB to GR/CF: **8.00 ft**Serial #: **3017**

Inside

Press@RunDepth: **423.43 psig @ 3919.01 ft (KB)**Capacity: **7000.00 psig**Start Date: **2002.11.27**End Date: **2002.11.28**Last Calib.: **2002.11.28**Start Time: **22:04:25**End Time: **05:20:23**Time On Btm: **2002.11.27 @ 23:37:23**Time Off Btm: **2002.11.28 @ 02:09:23**TEST COMMENT: **IF-Strong B.O.B.in 2 min.**
FF-Strong B.O.B. in 2 min.**ISI-Good blow back 3" in**
FSI-Good blow back 8" in

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1978.08	97.59	Initial Hydro-static
2	89.29	97.90	Open To Flow (1)
30	273.31	122.81	Shut-In (1)
77	1078.42	119.43	End Shut-In (1)
77	287.44	119.41	Open To Flow (2)
104	423.43	119.25	Shut-In (2)
151	942.82	121.69	End Shut-In (2)
152	1955.13	121.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1208.00	Clean Gassy Oil --30%gas 70% oil	16.66
435.00	gas in pipe	6.10

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.

L. Lang # 1-19

P.O. Box 372
Hays, Ks. 67601

19-13s-20w Ellis

Job Ticket: 16673

DST#: 2

ATTN: Ron Nelson

Test Start: 2002.11.27 @ 22:04:23

Tool Information

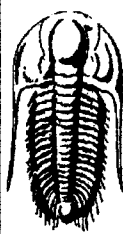
Drill Pipe:	Length: 3885.00 ft	Diameter: 3.80 inches	Volume: 54.50 bbl	Tool Weight: 3200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			Total Volume: 54.65 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3909.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.02 ft			
Tool Length:	57.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3890.00	
S.I. Tool	5.00			3895.00	
HMV	5.00			3900.00	
Packer	4.00			3904.00	20.00 Bottom Of Top Packer
Packer	5.00			3909.00	
Stubb	1.00			3910.00	
Perforations	9.00			3919.00	
Recorder	0.01	3017	Inside	3919.01	
Perforations	24.00			3943.01	
Recorder	0.01	13308	Outside	3943.02	
Bullnose	3.00			3946.02	37.02 Bottom Packers & Anchor

Total Tool Length: 57.02

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TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co., Inc.
P.O.Box 372
Hays, Ks. 67601
ATTN: Ron Nelson

L. Lang # 1-19
19-13s-20w Ellis
Job Ticket: 16673 **DST#: 2**
Test Start: 2002.11.27 @ 22:04:23

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 44 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1208.00	Clean Gassy Oil --30%gas 70% oil	16.663
435.00	gas in pipe	6.102

Total Length: 1643.00 ft Total Volume: 22.765 bbl

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

Laboratory Name: Laboratory Location:

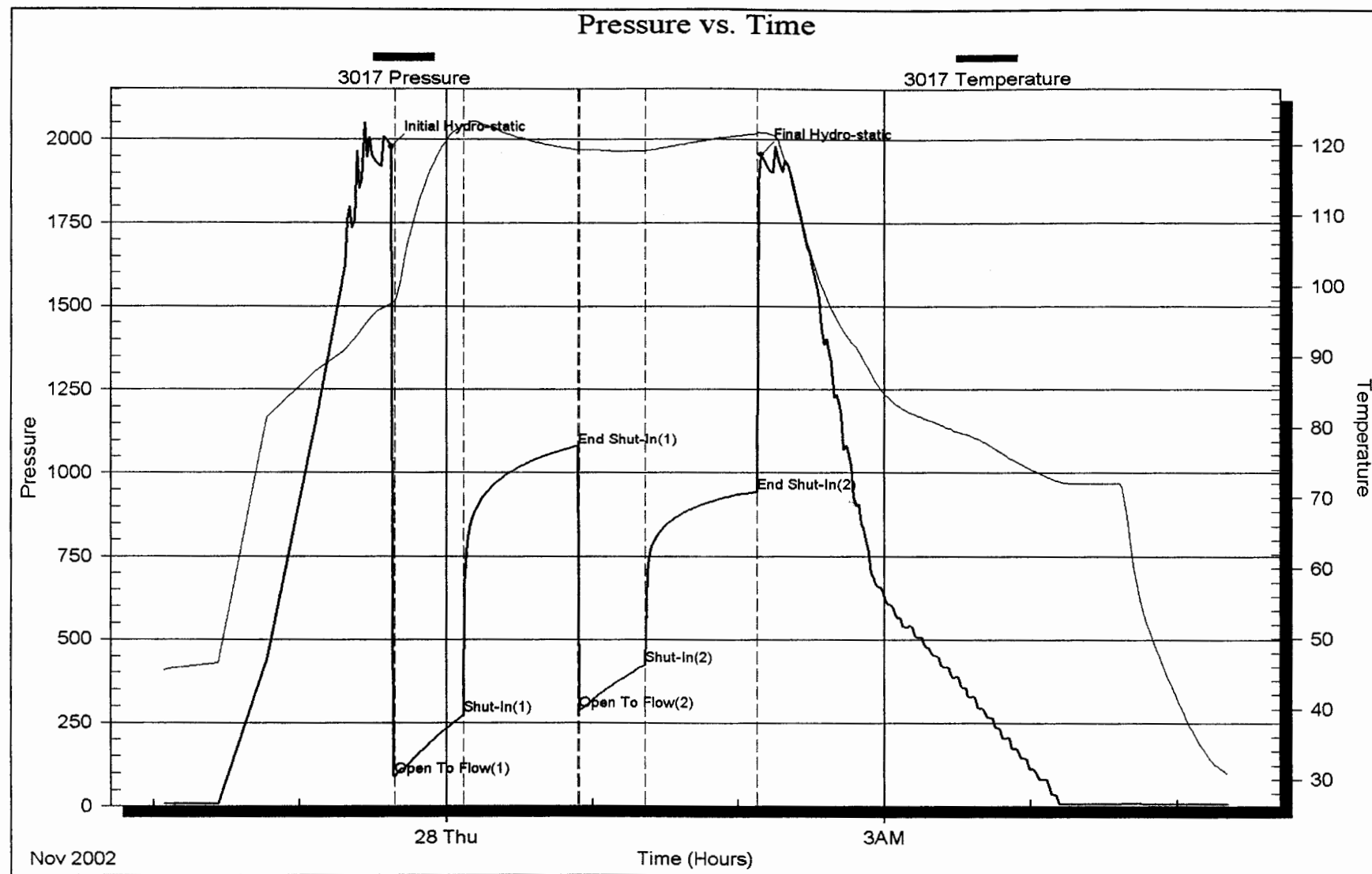
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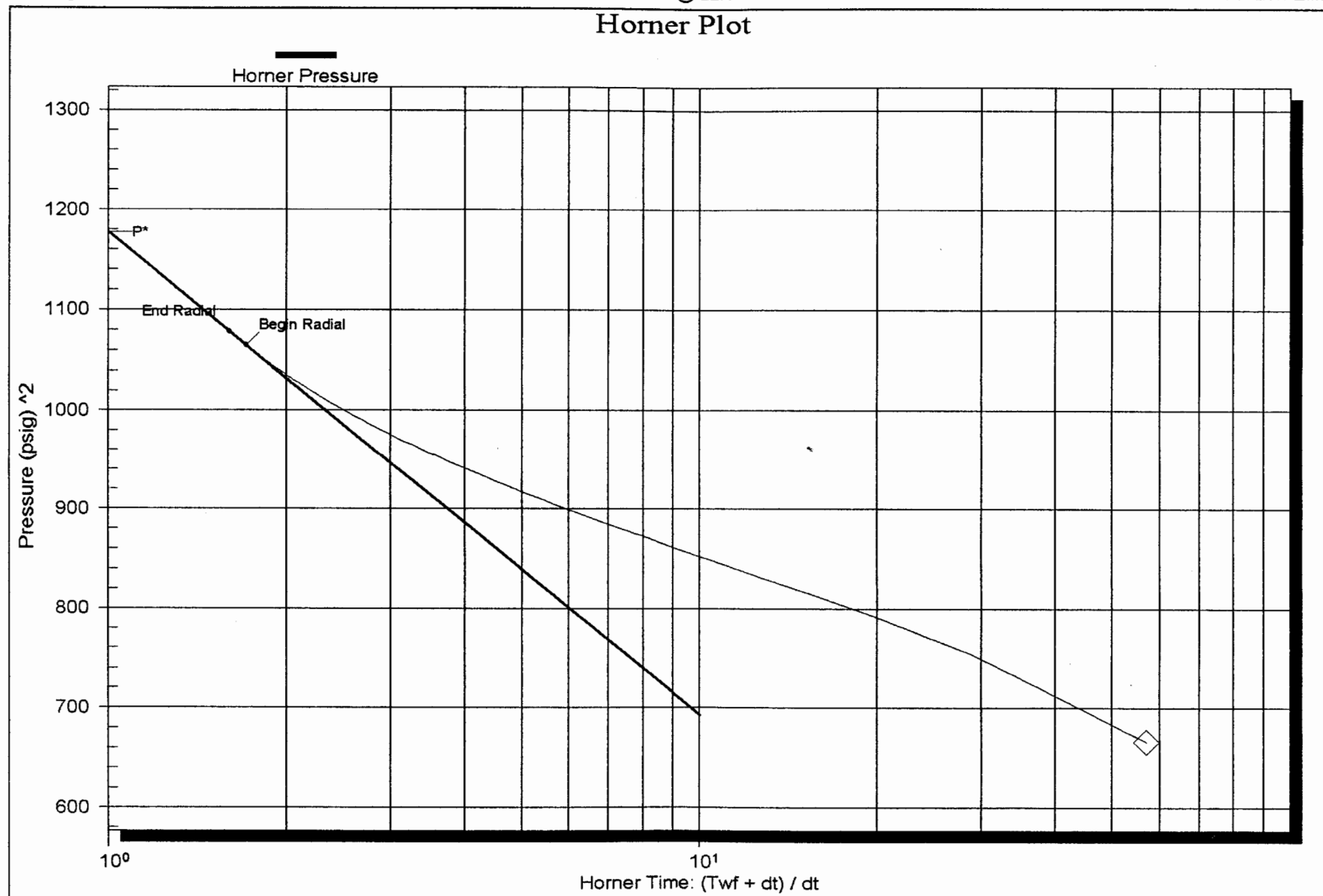
Serial #: 3017

Inside Downing-Nelson Oil Co., Inc.

19--13s--20w Ellis

DST Test Number: 2





Serial Number: 3017 (Inside)

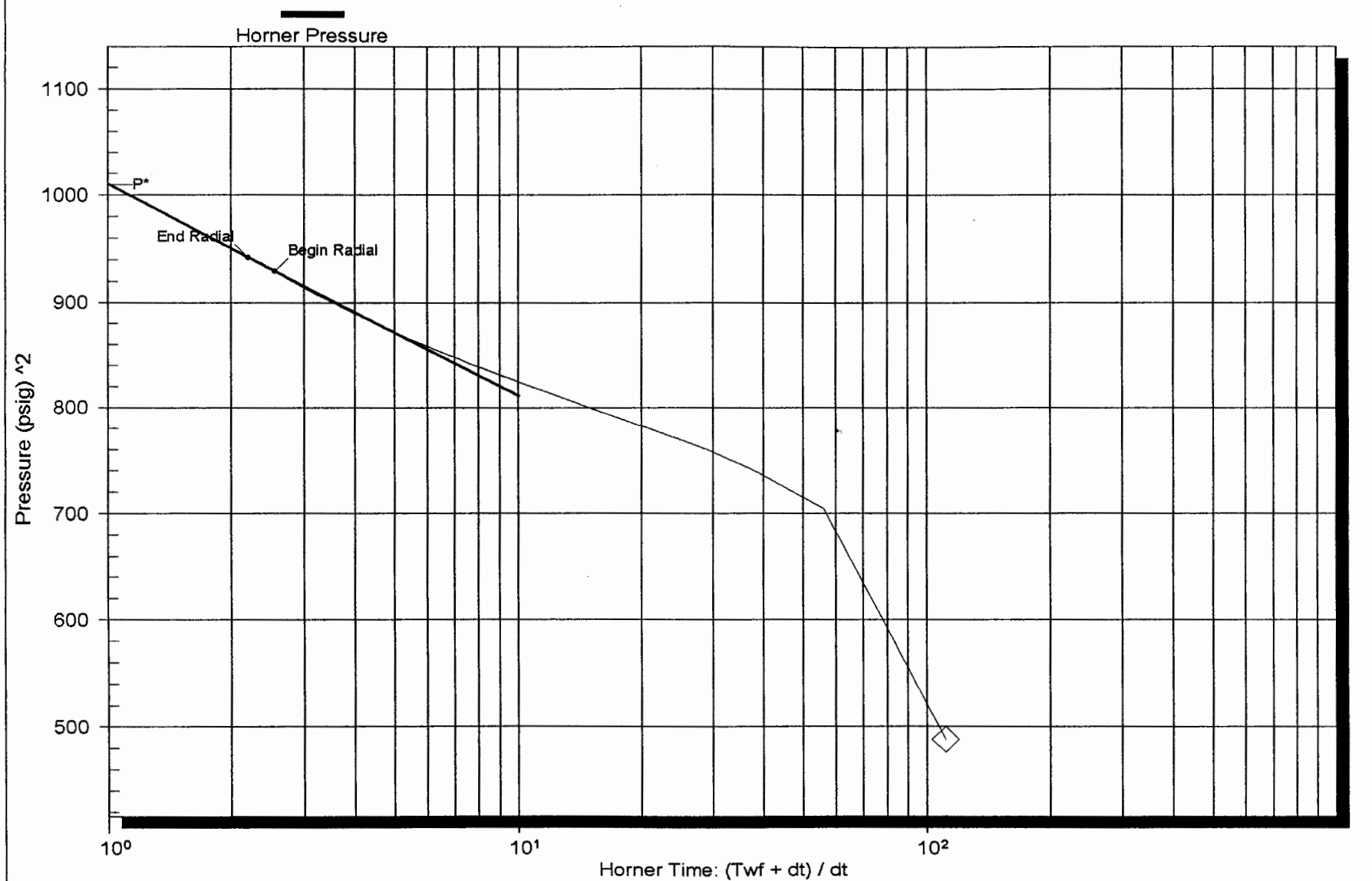
P* : 11.77

Slope (m) : 484.88 kpa/log cycle

Flow Cycle: 1

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Horner Plot

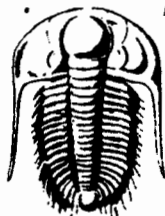


Serial Number: 3017 (Inside)

P* : 1010

Slope (m) : 198.55 kpa/log cycle

Flow Cycle: 2



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

INW # 5262
81740⁰⁰

No 16672

Test Ticket

Well Name & No. <u>L. LANG #1-19</u>	Test No. <u>#1</u>	Date <u>11-27-02</u>
Company <u>DOWNING-NELSON OIL CO., INC.</u>	Zone Tested <u>CONG. MARMATON</u>	
Address <u>PO BOX 372 HAYS, KS, 67601</u>	Elevation <u>2282</u> KB <u>2274</u> GL	
Co. Rep / Geo. <u>RON NELSON</u>	Cont. <u>DISCOVERY #2</u>	Est. Ft. of Pay <u> </u> Por. <u> </u> %
Location: Sec. <u>19</u>	Twp. <u>13S</u>	Rge. <u>20W</u> Co. <u>ELLIS</u> State <u>KS</u>
No. of Copies <u> </u>	Distribution Sheet (Y, N) <u> </u>	Turnkey (Y, N) <u> </u> Evaluation (Y, N) <u> </u>

Interval Tested <u>3885 To 3915</u>	Initial Str Wt/Lbs. <u>46,000</u>	Unseated Str Wt/Lbs. <u>47,000</u>
Anchor Length <u>30</u>	Wt. Set Lbs. <u>25,000</u>	Wt. Pulled Loose/Lbs. <u>50,000</u>
Top Packer Depth <u>3880</u>	Tool Weight <u>3,000</u>	
Bottom Packer Depth <u>3885</u>	Hole Size — 7 7/8" <u>✓</u>	Rubber Size — 6 3/4" <u>✓</u>
Total Depth <u>3915</u>	Wt. Pipe Run <u> </u>	Drill Collar Run <u>31</u>
Mud Wt. <u>9.4</u> LCM <u>TR</u> Vis. <u>45</u> WL <u>7.2</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>3853</u>
Blow Description <u>IF - WEAK BUILT TO 1 1/2" IN ISI - NO BLOW</u>		
<u>FE - WEAK BUILT TO 1" 15MIN 9" SURGE BLOW - BLEED OFF</u>		
<u>BLOW DEAD FSI - NO BLOW</u>		

Recovery — Total Feet <u>110</u>	GIP <u> </u>	Ft. in DC <u>31</u>	Ft. in DP <u>79</u>
Rec. <u>110'</u>	Feet Of <u>MUD WITH FEW OIL SPECIES</u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
BHT <u>111</u>	°F Gravity <u> </u>	°API D@ <u> </u>	°F Corrected Gravity <u> </u> °API <u> </u>
RW <u> </u>	@ <u> </u> °F Chlorides <u> </u>	ppm Recovery <u> </u>	Chlorides <u>7,500</u> ppm System <u> </u>

(A) Initial Hydrostatic Mud	AK-1 <u>1956</u>	Alpine	PSI Recorder No. <u>3017</u>	T-On Location <u>07:45</u>
(B) First Initial Flow Pressure	<u>27</u>	PSI (depth)	<u>3888</u>	T-Started <u>08:47</u>
(C) First Final Flow Pressure	<u>32</u>	PSI Recorder No.	<u>13308</u>	T-Open <u>10:43</u>
(D) Initial Shut-In Pressure	<u>797</u>	PSI (depth)	<u>3912</u>	T-Pulled <u>13:44</u>
(E) Second Initial Flow Pressure	<u>37</u>	PSI Recorder No.	<u> </u>	T-Out <u>15:26</u>
(F) Second Final Flow Pressure	<u>86</u>	PSI (depth)	<u> </u>	T-Off Location <u>16:00</u>
(G) Final Shut-in Pressure	<u>876</u>	PSI Initial Opening	<u>45</u>	Test <u>BOTTOM HOLE</u>
(Q) Final Hydrostatic Mud	<u>1944</u>	PSI Initial Shut-in	<u>45</u>	Jars <u> </u>
		Final Flow	<u>45</u>	Safety Joint <u> </u>
		Final Shut-in	<u>45</u>	Straddle <u> </u>

TRILOBITE TESTING INC. SHALL NOT BE LIABLE FOR DAMAGE 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.

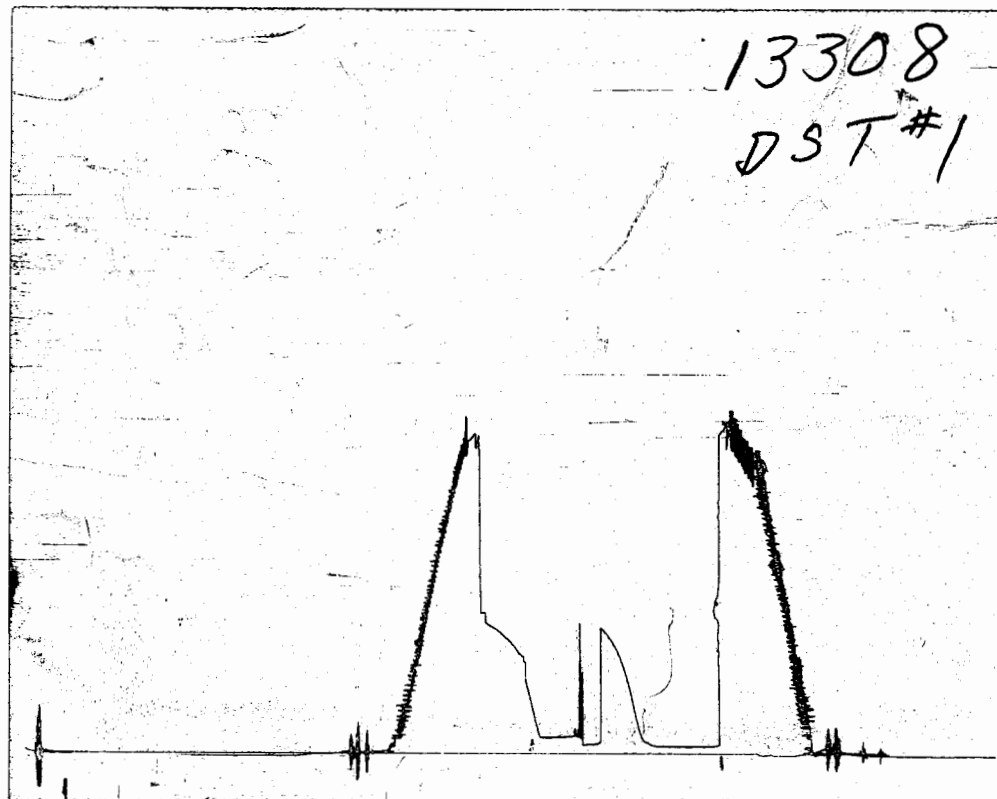
Approved By

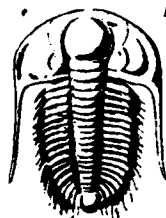
Our Representative John J. Schmidt

Elec. Rec. ✓ 150
 Mileage 20
 Other
 TOTAL PRICE \$ 870

CHART PAGE

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





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 16673

Test Ticket

Well Name & No. <u>L. LANG #1-19</u>	Test No. <u>#2</u>	Date <u>11-27-02</u>
Company <u>DOWNING-NELSON OIL CO. INC.</u>	Zone Tested <u>ARBUCKLE</u>	
Address <u>PO BOX 372 HAYS, KS. 67601</u>	Elevation <u>2282</u> KB <u>2274</u> GL	
Co. Rep / Geo. <u>RON NELSON</u>	Cont. <u>DISCOVERY #2</u>	Est. Ft. of Pay <u> </u> Por. <u> </u> %
Location: Sec. <u>19</u> Twp. <u>13S</u> Rge. <u>20W</u> Co. <u>ELLIS</u> State <u>KS</u>		
No. of Copies <u> </u> Distribution Sheet (Y, N) <u> </u> Turnkey (Y, N) <u> </u> Evaluation (Y, N) <u> </u>		

Interval Tested <u>3909 To 3946</u>	Initial Str Wt./Lbs. <u>46,000</u>	Unseated Str Wt./Lbs. <u>48,000</u>
Anchor Length <u>37'</u>	Wt. Set Lbs. <u>25,000</u>	Wt. Pulled Loose/Lbs. <u>50,000</u>
Top Packer Depth <u>3904</u>	Tool Weight <u>3,200</u>	
Bottom Packer Depth <u>3909</u>	Hole Size — 7 7/8" <u>✓</u>	Rubber Size — 6 3/4" <u>✓</u>
Total Depth <u>3946</u>	Wt. Pipe Run <u> </u>	Drill Collar Run <u>31</u>
Mud Wt. <u>9.4</u> LCM <u>TR</u> Vis. <u>45</u> WL <u>7.2</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>3885</u>
Blow Description <u>IF-STRONG R.O.B. 2 min. FST. GOOD BLOW BACK 3"</u>		
<u>W. F.F. STRONG R.O.B. 2min. FST GOOD BLOW BACK</u>		

Recovery — Total Feet <u>1208'</u>	GIP <u>435'</u>	Ft. in DC <u>31</u>	Ft. in DP <u>1177</u>
Rec. <u>1208</u>	Feet Of <u>CLEAN GASSY OIL</u>	30 %gas 70 %oil	%water %mud
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil	%water %mud
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil	%water %mud
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil	%water %mud
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil	%water %mud
BHT <u>121</u>	°F Gravity <u>44</u>	°API D@ <u>60</u>	°F Corrected Gravity <u>44</u> °API <u> </u>
RW <u> </u> @ <u> </u>	°F Chlorides <u> </u> ppm Recovery	Chlorides <u>7,500</u> ppm System	

(A) Initial Hydrostatic Mud	AK-1 Alpine <u>1978</u>	PSI Recorder No. <u>3017</u>	T-On Location <u>21:30</u>
(B) First Initial Flow Pressure	<u>89</u>	PSI (depth) <u>3919</u>	T-Started <u>22:04</u>
(C) First Final Flow Pressure	<u>273</u>	PSI Recorder No. <u>13308</u>	T-Open <u>23:37</u>
(D) Initial Shut-In Pressure	<u>1078</u>	PSI (depth) <u>3943</u>	T-Pulled <u>02:09</u>
(E) Second Initial Flow Pressure	<u>287</u>	PSI Recorder No. <u> </u>	T-Out <u>05:20</u>
(F) Second Final Flow Pressure	<u>423</u>	PSI (depth) <u> </u>	T-Off Location <u>06:00</u>
(G) Final Shut-in Pressure	<u>942</u>	PSI Initial Opening <u>30</u>	Test <u>BOTTOM HOLE</u>
(Q) Final Hydrostatic Mud	<u>1955</u>	PSI Initial Shut-in <u>45</u>	Jars <u> </u>
		Final Flow <u>30</u>	Safety Joint <u> </u>
		Final Shut-in <u>45</u>	Straddle <u> </u>
			Circ. Sub <u> </u>
			Sampler <u> </u>
			Extra Packer <u> </u>
			Elec. Rec. <u>✓ 150</u>
			Mileage <u>20</u>
			Other <u> </u>
			TOTAL PRICE \$ <u>870</u>

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Approved By

Our Representative John A. Schmidt

CHART PAGE

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

