



KANSAS CORPORATION COMMISSION 1099393  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
June 2009  
Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30717  
Name: Downning-Nelson Oil Co Inc  
Address 1: PO BOX 1019  
Address 2:  
City: HAYS State: KS Zip: 67601 +  
Contact Person: Ron Nelson  
Phone: ( 785 ) 621-2610  
CONTRACTOR: License # 31548  
Name: Discovery Drilling  
Wellsite Geologist: Ron Nelson  
Purchaser:

Designate Type of Completion:  
 New Well  Re-Entry  Workover  
 Oil  WSW  SWD  SIOW  
 Gas  D&A  ENHR  SIGW  
 OG  GSW  Temp. Abd.  
 CM (Coal Bed Methane)  
 Cathodic  Other (Core, Expl., etc.):

If Workover/Re-entry: Old Well Info as follows:  
Operator:

Well Name:

Original Comp. Date: Original Total Depth:  
 Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD  
 Conv. to GSW  
 Plug Back: Plug Back Total Depth  
 Commingled Permit #:  
 Dual Completion Permit #:  
 SWD Permit #:  
 ENHR Permit #:  
 GSW Permit #:

10/17/2012	10/23/2012	10/24/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-195-22817-00-00

Spot Description:  
SW SE NW NW Sec. 18 Twp. 13 S. R. 21  East  West  
1225 Feet from  North /  South Line of Section  
930 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW

County: Trego

Lease Name: LW Well #: 1-18

Field Name: Ridge Northwest

Producing Formation: None

Elevation: Ground: 2210 Kelly Bushing: 2218

Total Depth: 4080 Plug Back Total Depth:

Amount of Surface Pipe Set and Cemented at: 218 Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: Feet

If Alternate II completion, cement circulated from:

feet depth to: w/ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 21000 ppm Fluid volume: 400 bbls

Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Blackhawk Petroleum Company

Lease Name: Brull(SWD) License #: 32504

Quarter NW Sec. 30 Twp. 14 S. R. 18  East  West

County: Ellis Permit #: D26232

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Letter of Confidentiality Received  
Date:  
 Confidential Release Date:  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: Deanna Garrison Date: 10/31/2012



1099393

Operator Name: Downing-Nelson Oil Co Inc Lease Name: LW Well #: 1-18  
Sec. 18 Twp. 13 S. R. 21  East  West County: Trego

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Name Attached	Top Attached	Datum Attached
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Electric Log Run	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Submitted Electronically <i>(If no, Submit Copy)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				
Micro Dual Induction Density - Neutron				

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface Pipe	12.25	8.625	23	218.51	Common	150	2% Gel & 3%CC

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing				
___ Plug Back TD	-			
___ Plug Off Zone	-			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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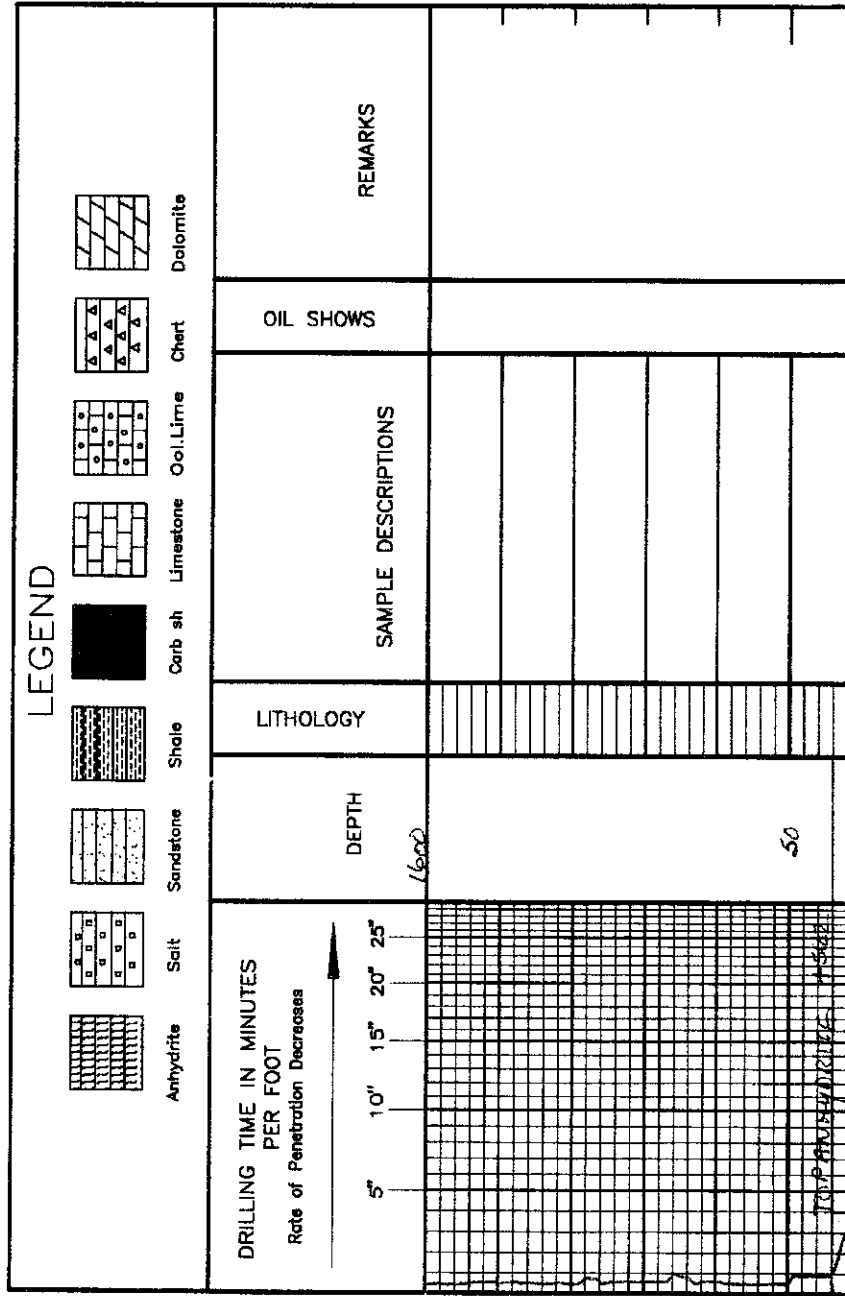
Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	LW 1-18
Doc ID	1099393

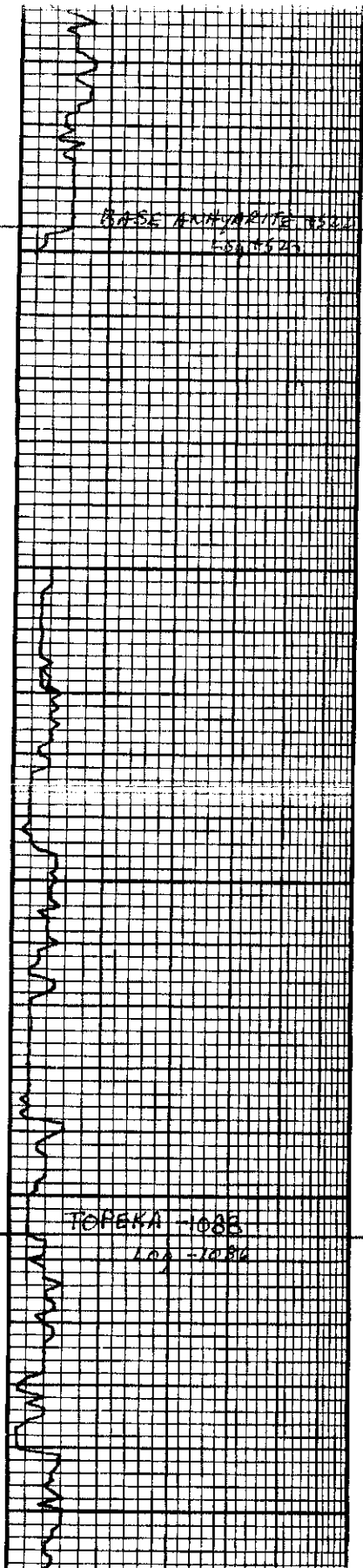
Tops

Top Anhydrite	1656'	+562
Base Anhydrite	1695'	+523
Topeka	3304'	-1086
Heebner	3530'	-1312
Toronto	3548'	-1330
LKC	3564'	-1346
BKC	3806'	-1588
Marmaton	3896'	-1678
Cherokee Shale	3942'	-1724
Conglomerate Chert	3972'	-1754
Arbuckle	4034'	-1816



DRILL STEM TESTS							
No.	Interval	IFP/Time	ISF/Time	FFP/Time	FSF/Time	IH-FIH	RECOVERY
REMARKS AND RECOMMENDATIONS <i>SEISMIC CHECK, NO DEVELOPMENT, PLUGGED</i>							
<i>R. K. Klein</i>							





1700

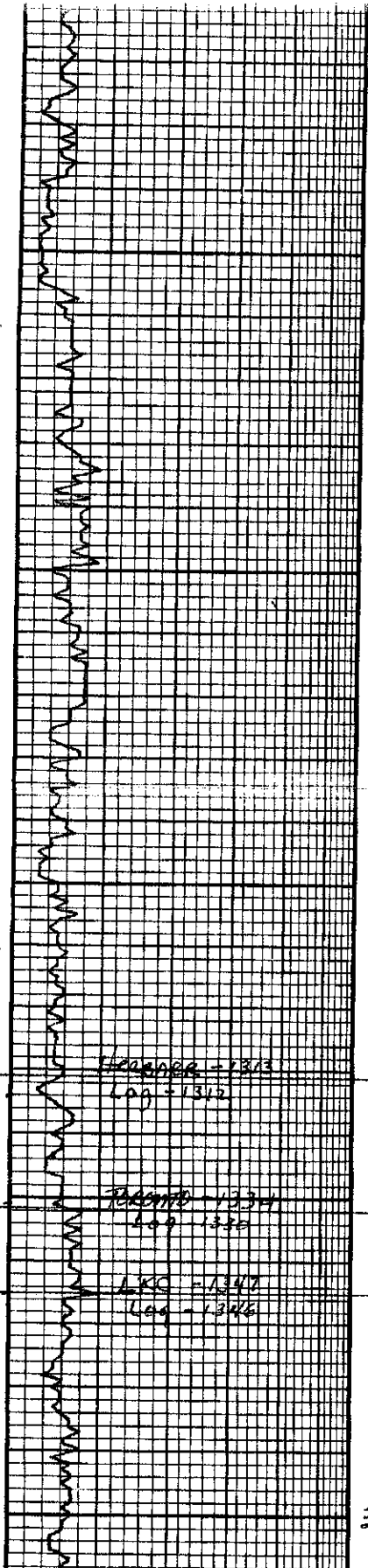
3200

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3300

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3400

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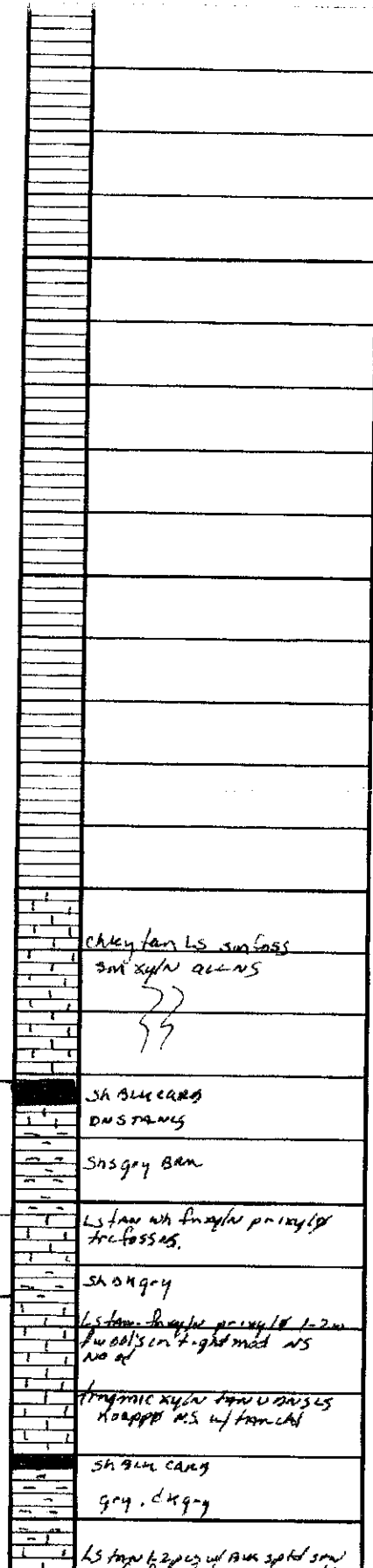
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3600

HEADLINE = 1313  
LOG = 1315

TOLSON = 1334  
LOG = 1335

LKC = 1342  
LOG = 1346



cherty tan ls surf ss  
sm sh/n calc ss

SH blue calc  
DUS tan ls

Shs grey tan

LS tan w/ fine gr pringls  
tr. fossils

sh on grey

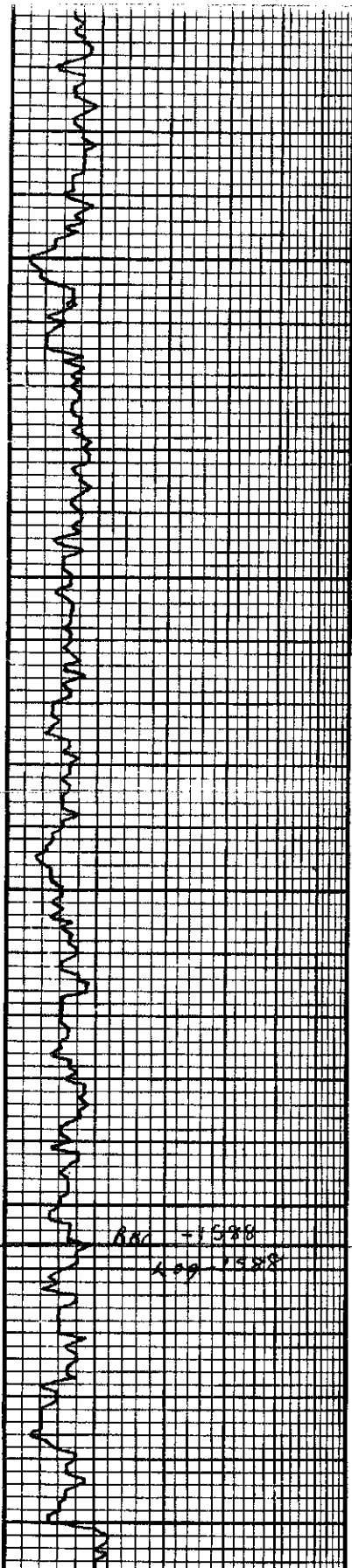
LS tan. shaly pringls 1-2m  
fossils on fr. gr. med ss  
no of

trigonic xylon tan u. calc ss  
Korppel ss w/ fossils

SH blue calc

grey, dk grey

LS tan to grey w/ blue spotted ss



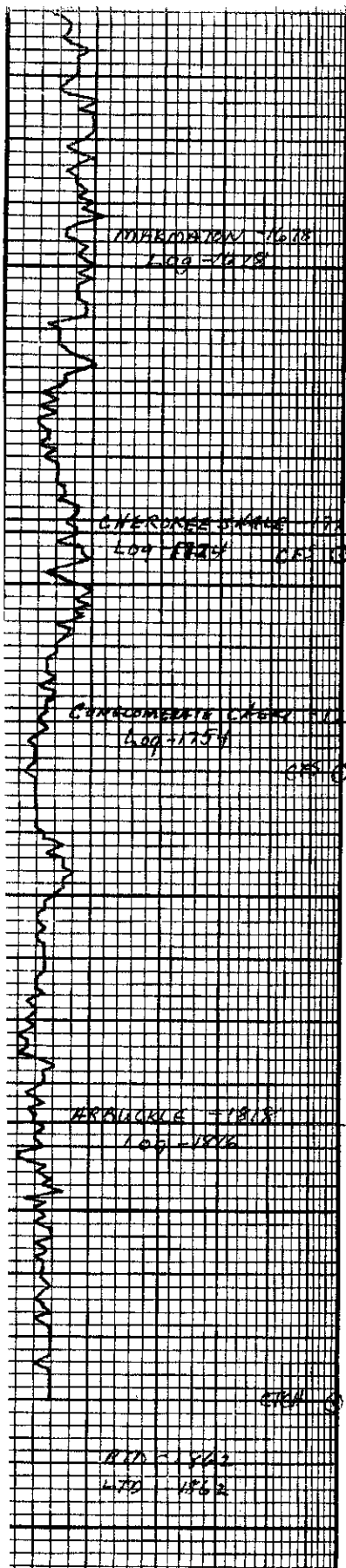
50  
3700  
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3800  
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msl - 10' barren no. 00
sh dk gray
ls tan - gray v. fine w/ nodules pr xylo NS.
trc chert wh tan
sh blk carb
ls tan fine w/ nodules. P. pas w/ blk foss. no. NS to, no od. pr xylo. msl barren no. 00
ls tan - sm carb in pt. and suc xylo. fr xylo NS friable
sh gray
ls tan - wh. fine pas sl. foss & friable w/ int. foss & NS
frag mic xylo nodules no. 00 NS.
sh dk carb
ls dk v. nodules
sh blk carb
sh dk gray
ls tan - wh. no xylo, 1-2 friable. msl tight no. 00 v. pr. 1-2 pas trc blk - brn str. no. 00
sh blk carb
sh dk gray
ls tan - wh. fine pas sl. foss msl fine w/ dk. no. 00, 1-2 pas no. 00 str. no. 00, no. 00 msl all tot barren
dk gray sh
ls fine pas sl. foss w/ sh blk str. msl. 1-2 pas no. 00
ls tan - v. fine suc xylo 1-2 sl. pr. & xylo msl tight v. pr. all NS.
sh blk carb
ls gray - horn fine xylo, sm carb msl all pr. NS.
frag mic xylo no. 00
sh dk carb v. dk gray
ls tan, carb in pt. sm fine xylo msl dk. tight pr xylo
all NS
QA
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v. fine w/ tan no. 00
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dk gray sh
dark gray - fine fine xylo pr. NS
sh gray, gray
shs dk gray, gray

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DST #2  
3686'-3753'  
STRADOLE  
1<sup>st</sup> op 3/4" blow  
2<sup>nd</sup> op dead  
30"-30" 30"-50"  
IFP 16-21  
FFP 22-24  
SIP 332-149  
HP 1936-1978  
REC: 10' mud





3900

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4000

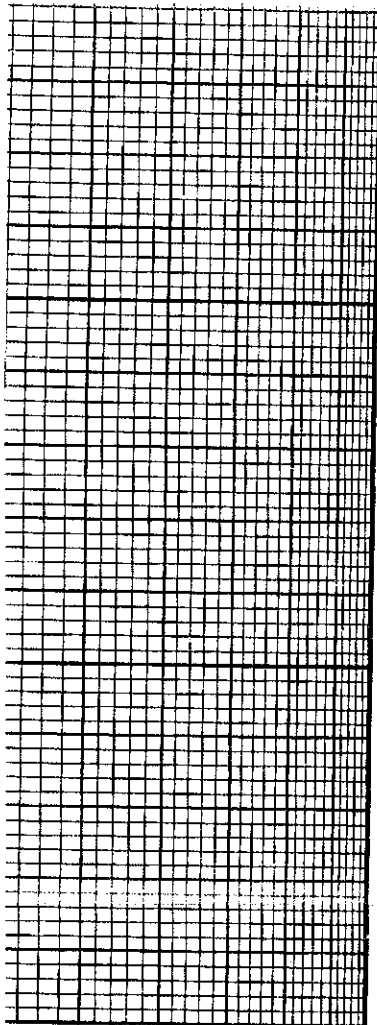
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4100

1	UNDISTURBED UP TO NS, 1-2 pcs sh
2	sh. BRN, dk gry. gry
3	tr. corr. ch. dist. tan. ls
4	sh. BRN, dk brn & gry
5	LS TAN. V. tan. DNS. pr. 1.2 pc sh w/ ch. wh. tan. op. sh. fresh NS. NO STN. NO ch. more ch. NS
6	ls. tan. 1.2 pcs
7	ch. wh. tan. op. brn. op. w/ 1.2 pcs solid brn edge sm. ls. on top. sm. sh. on top. sh. BRN. NS. NO ch.
8	tan. DNS. ch. & sm. gry. sh. NS.
9	sh. BLUE GRAY
10	sh. v. dk gry. BRN
11	ss. ls. tan. gry. - tan. dirty. fr. ch. sh. tan. in 1.5 in. sh. mat. NS. fr.
12	sh. BRN. gry.
13	ch. wh. tan. op. brn. ALL sh. fresh. pr. & qd.
14	fr. ch. NS.
15	aa
16	gry. sh.
17	mostly varicolor ch. tight dist. NS.
18	sh. BRN. gry. dk gry.
19	sh. & ch. mixed
20	MSTLY. SHS
21	sh. ch. mixed, more varicolor ch. w/ 1.2 pcs tan. Dolo
22	sh. shs
23	Dolo. gry. tan. fr. rhombic xyl. fr. v. sh. NS.
24	sh. tan. sh.
25	sh. tan. sh.
26	sh. tan. sh. tan. gry. v. fr. sh. tan. sh. Dolo
27	sh. tan. sh. light v. gry.
28	Dolo. aa
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O.S.T. #1  
 3907'-3945'  
 30"-45"-30"-45"  
 1<sup>st</sup> op 808 3"  
 2<sup>nd</sup> op 4 1/2" Blow  
 NO S.I. Blow  
 I.F.P. 76-122  
 F.F.P. 129-150  
 S.I.P. 1761-1595  
 H.P. 1995-1940  
 REC. 30' 0.5m  
 250' v. 50cm  
 2% oil 98% mud  
 BHT 119°

Ron Nelson



5" 10" 15" 20" 25"  
 RILLING TIME Minutes/Foot  
 Rate of Penetration Decreases

50

4200

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

OPERATOR DNOCT  
 LEASE LW#1-18 IP NEA  
 ELEVATION 2218'KB RTD 4080'

LOCATION 1238'ENL 21019'FWL  
 SEC 18 TWP 13S RNG 21W  
 COUNTY TRAGO STATE KANSAS

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6049

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-17-12	18	13	21	Trego	KS		8:45 am
<del>XXXXXXXXXXXXXXXXXXXX</del>				Location Rgat Hwy 42 Jw 2/85 Wirtc			
Lease			Well No. 1-18	Owner			
Contractor D. Soren #3			To Quality Oilwell Cementing, Inc.				
Type Job Surface			You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.				
Hole Size 12 1/4		T.D. 219		Charge To Dunning/Wilson			
Csg. 8 5/8		Depth 219		Street			
Tbg. Size		Depth		City State			
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. 15'		Shoe Joint		Cement Amount Ordered 150 lbm 3 1/2" 2 1/2" 6 1/2"			
Meas Line		Displace 13 BL		Common 150			
<b>EQUIPMENT</b>							
Pumptrk 15	No.	Cement Helper		Poz. Mix			
Bulktrk	No.	Driver		Gel. 3			
Bulktrk 14	No.	Driver		Calcium 5			
<b>JOB SERVICES &amp; REMARKS</b>				Hulls			
Remarks:				Salt			
Rat Hole				Flowseal			
Mouse Hole				Kol-Seal			
Centralizers				Mud CLR 48			
Baskets				CFL-117 or CD110 CAF 38			
DV or Port Collar				Sand			
8 5/8 on bottom. Est Circulation. Mix				Handling 158			
150 sk y Displace				Mileage			
Cement Circulated				<b>FLOAT EQUIPMENT</b>			
				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge Surface			
				Mileage 26			
				Tax			
				Discount			
				Total Charge			
Signature [Signature]							

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6151

Date	10-23-12	Sec.	18	Twp.	13	Range	21	County	TREGO	State	KANSAS	On Location		Finish	2:00AM
------	----------	------	----	------	----	-------	----	--------	-------	-------	--------	-------------	--	--------	--------

Location OLD 408 RIG - 2LW TO 360202 1/2 S - W / INTO

Lease LW Well No. #1-18 Owner DOWNING & NELSON

Contractor DREYER #3 To Quality Oilwell Cementing, Inc.  
You are hereby requested to rent cementing equipment and furnish  
cementer and helper to assist owner or contractor to do work as listed.

Type Job P.T.A. Charge To DOWNING & NELSON

Hole Size 7 7/8" T.D. 4080' Street PO Box 1019

Csg. 4 1/2" Depth City HAYS State KS, 67601

Tbg. Size Depth The above was done to satisfaction and supervision of owner agent or contractor.

Tool Depth Cement Amount Ordered 245 40 202 4 1/2 - 4 FLO

Cement Left in Csg. Shoe Joint

Meas Line Displace

EQUIPMENT			Common
Pumptrk #15	No.	Cementer Helper <u>NTCK</u>	<u>147</u>
Bulktrk #12	No.	Driver <u>LEVY</u>	<u>98</u>
Bulktrk #14	No.	Driver <u>CISCO</u>	<u>9</u>

JOB SERVICES & REMARKS Hulls

Remarks: Salt

Rat Hole 30 SKS Flowseal 60P

Mouse Hole 15 SKS Kol-Seal

Centralizers Mud CLR 48

Baskets CFL-117 or CD110 CAF 38

D/V or Port Collar Sand

1st @ 4,014' 25 SKS Handling 254

2nd @ 1,690' 25 SKS Mileage

3rd @ 810' 100 SKS FLOAT EQUIPMENT

4th @ 268' 40 SKS Guide Shoe

5th @ 40' 10 SKS Centralizer

RAT HOLE 30 SKS Baskets

MOUSE HOLE 15 SKS AFU Inserts

245 SKS Float Shoe

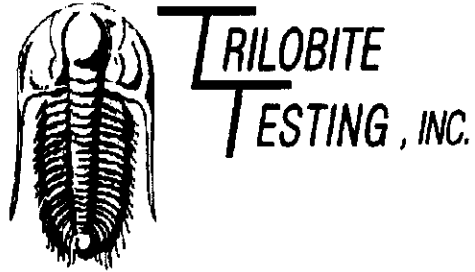
Latch Down

1- 8 5/8" WOODEN PLUG

THANK YOU! Pumptrk Charge plug

Mileage 32 Tax

Signature [Signature] Discount Total Cr



## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays KS 67601

ATTN: Ron Nelson

**LW #1-18**

**18-13s-21w Trego,KS**

Start Date: 2012.10.22 @ 12:00:00

End Date: 2012.10.22 @ 20:05:00

Job Ticket #: 50781                      DST #: 1

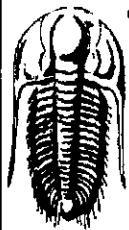
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.10.24 @ 13:39:58

Downing-Nelson Oil Co. 18-13s-21w Trego,KS LW #1-18 DST # 1 Marmaton 2012.10.22



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co.

**18-13s-21w Trego, KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50781

**DST#: 1**

ATTN: Ron Nelson

Test Start: 2012.10.22 @ 12:00:00

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:36:00

Time Test Ended: 20:05:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: **3907.00 ft (KB) To 3945.00 ft (KB) (TVD)**

Reference Elevations: 2239.00 ft (KB)

Total Depth: 3945.00 ft (KB) (TVD)

2231.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8166** Outside

Press@RunDepth: 150.39 psig @ 3911.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.22

End Date: 2012.10.22

Last Calib.: 2012.10.22

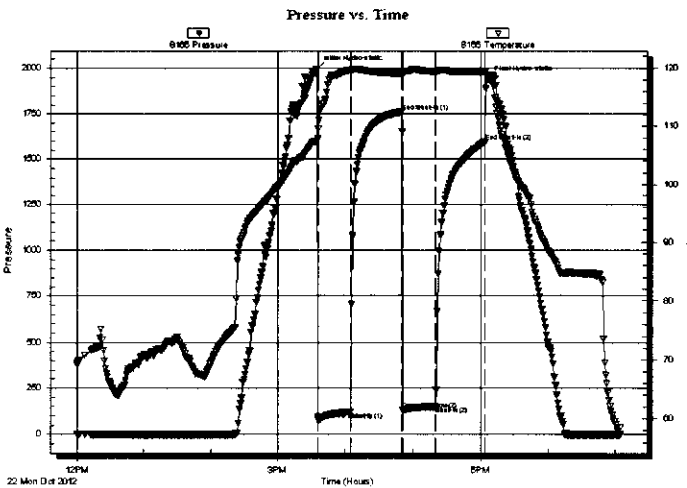
Start Time: 12:00:05

End Time: 20:04:59

Time On Btm: 2012.10.22 @ 15:34:30

Time Off Btm: 2012.10.22 @ 18:06:00

**TEST COMMENT:** IF-BOB in 3 min  
ISI-No Blow  
FF-4 1/2" blow  
FSI-No blow



## PRESSURE SUMMARY

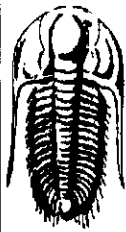
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1995.26	107.43	Initial Hydro-static
2	76.02	109.61	Open To Flow (1)
30	121.95	119.56	Shut-In(1)
76	1761.34	118.97	End Shut-In(1)
77	129.01	119.05	Open To Flow (2)
106	150.39	119.33	Shut-In(2)
150	1595.08	119.36	End Shut-In(2)
152	1939.56	118.65	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
250.00	VSOCM 2%O 98%M	3.23
30.00	Oil spotted mud	0.42

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Downing-Nelson Oil Co.

**18-13s-21w Trego,KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50781

**DST#: 1**

ATTN: Ron Nelson

Test Start: 2012.10.22 @ 12:00:00

### GENERAL INFORMATION:

Formation: **Marmaton**

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

Time Tool Opened: 15:36:00

Time Test Ended: 20:05:00

Test Type: **Conventional Bottom Hole (Initial)**

Tester: **Brett Dickinson**

Unit No: **59**

Interval: **3907.00 ft (KB) To 3945.00 ft (KB) (TVD)**

Reference Elevations: **2239.00 ft (KB)**

Total Depth: **3945.00 ft (KB) (TVD)**

**2231.00 ft (CF)**

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

KB to GR/CF: **8.00 ft**

**Serial #: 8319** **Inside**

Press@RunDepth: **psig @ 3911.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2012.10.22**

End Date: **2012.10.22**

Last Calib.: **2012.10.22**

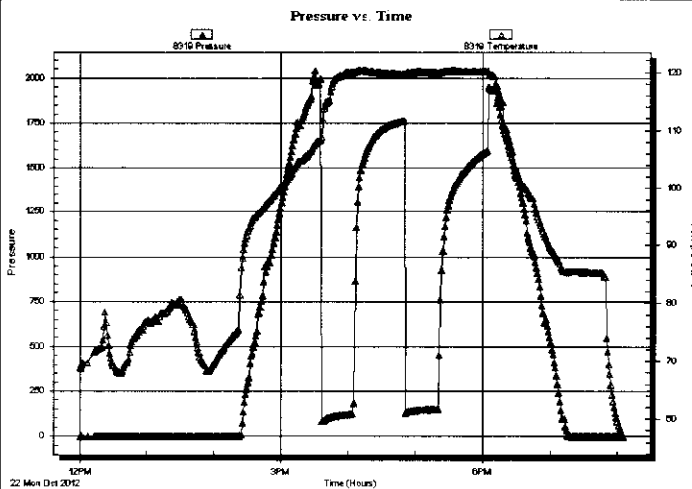
Start Time: **12:00:05**

End Time: **20:05:59**

Time On Btm:

Time Off Btm:

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



### PRESSURE SUMMARY

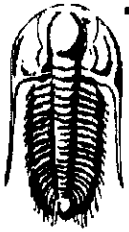
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
250.00	VSOCM 2%O 98%M	3.23
30.00	Oil spotted mud	0.42

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co.

**18-13s-21w Trego,KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50781

**DST#: 1**

ATTN: Ron Nelson

Test Start: 2012.10.22 @ 12:00:00

### Tool Information

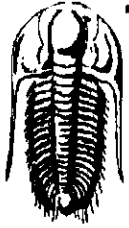
Drill Pipe:	Length: 3868.00 ft	Diameter: 3.80 inches	Volume: 54.26 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3907.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	58.00 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			3888.00	
Shut In Tool	5.00			3893.00	
Hydraulic tool	5.00			3898.00	
Packer	4.00			3902.00	20.00 Bottom Of Top Packer
Packer	5.00			3907.00	
Stubb	1.00			3908.00	
Perforations	3.00			3911.00	
Recorder	0.00	8319	Inside	3911.00	
Recorder	0.00	8166	Outside	3911.00	
Perforations	31.00			3942.00	
Bullnose	3.00			3945.00	38.00 Bottom Packers & Anchor

**Total Tool Length: 58.00**





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing-Nelson Oil Co.

**18-13s-21w Trego,KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50781

**DST#: 1**

ATTN: Ron Nelson

Test Start: 2012.10.22 @ 12:00:00

**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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
250.00	VSOCM 2%O 98%M	3.234
30.00	Oil spotted mud	0.421

Total Length: 280.00 ft

Total Volume: 3.655 bbl

Num Fluid Samples: 0

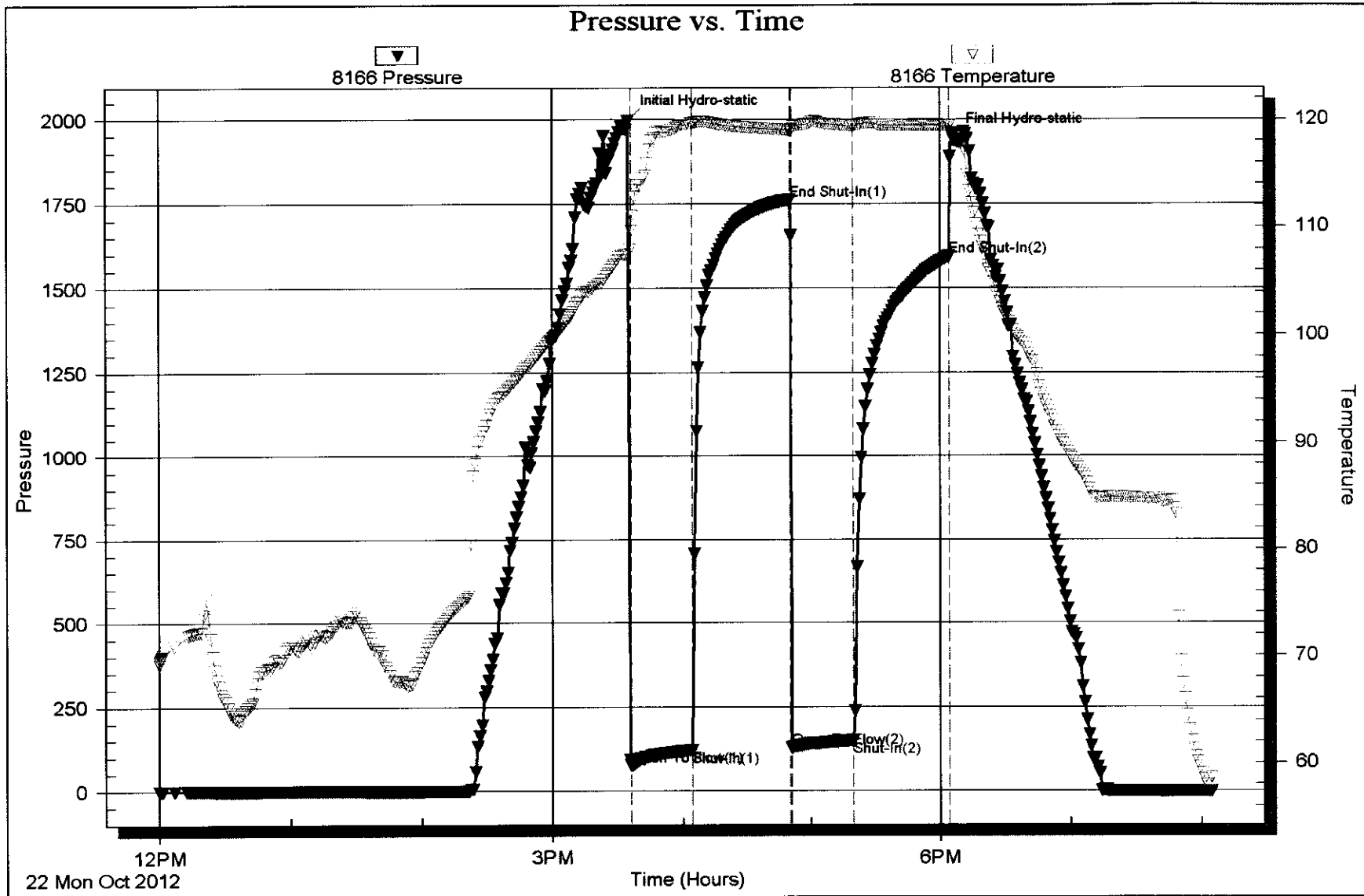
Num Gas Bombs: 0

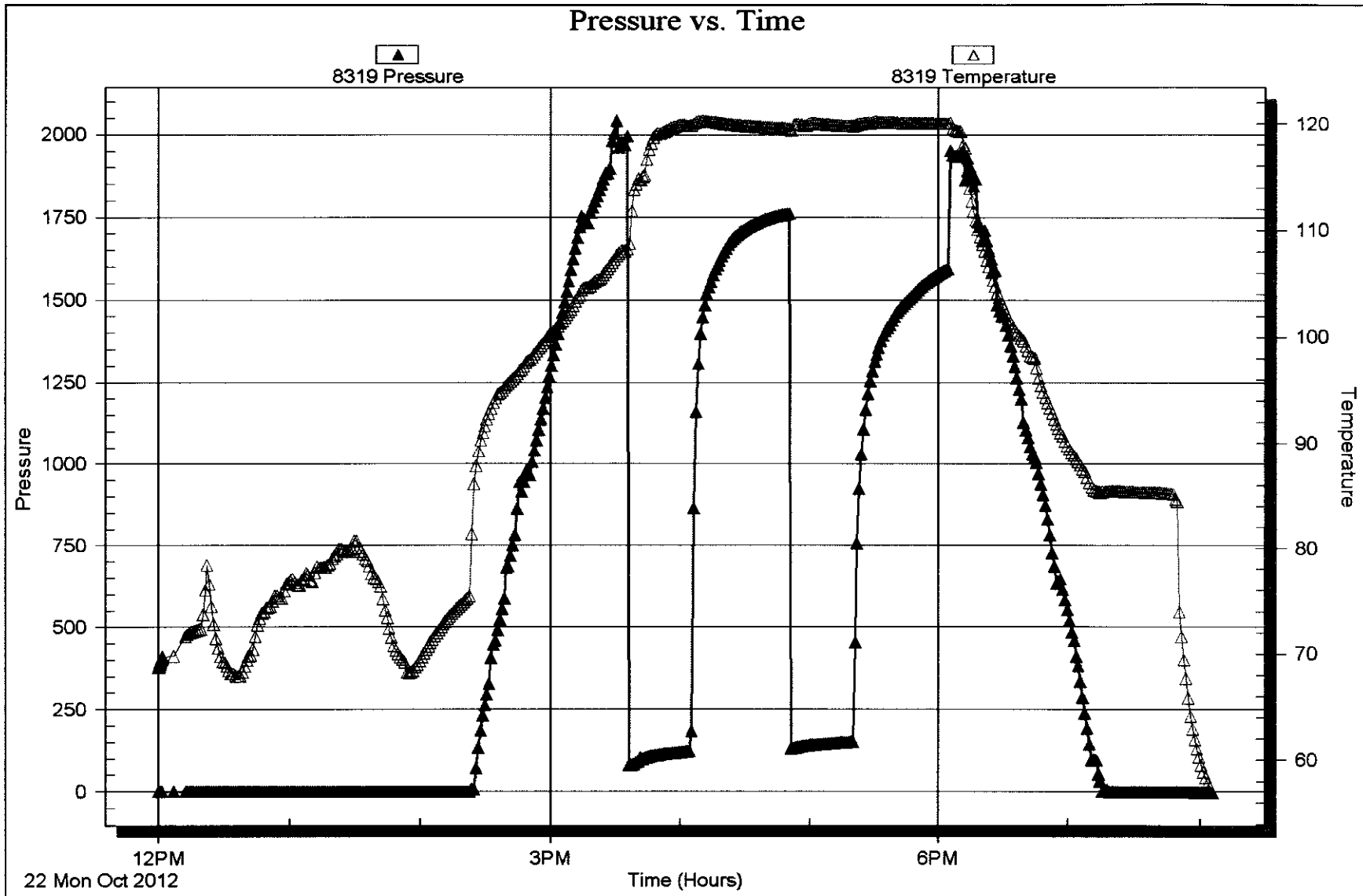
Serial #:

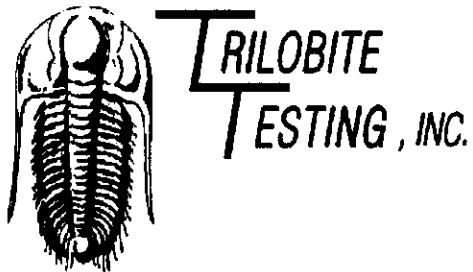
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays KS 67601

ATTN: Ron Nelson

**LW #1-18**

**18-13s-21w Trego,KS**

Start Date: 2012.10.23 @ 13:30:00

End Date: 2012.10.23 @ 19:02:00

Job Ticket #: 50782                      DST #: 2

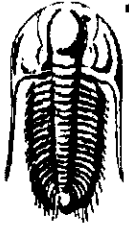
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.10.24 @ 13:38:17

Downing-Nelson Oil Co. 18-13s-21w Trego,KS LW #1-18 DST # 2 KC H-J 2012.10.23



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.  
 PO Box 1019  
 Hays KS 67601  
 ATTN: Ron Nelson

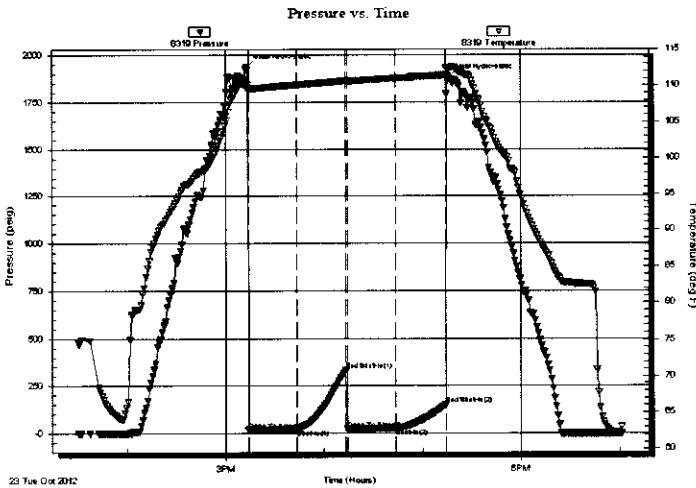
**18-13s-21w Trego,KS**  
**LW #1-18**  
 Job Ticket: 50782 **DST#: 2**  
 Test Start: 2012.10.23 @ 13:30:00

## GENERAL INFORMATION:

Formation: **KC H-J**  
 Deviated: **No** Whipstock: **ft (KB)** Test Type: **Conventional Straddle (Reset)**  
 Time Tool Opened: **15:14:00** Tester: **Brett Dickinson**  
 Time Test Ended: **19:02:00** Unit No: **59**  
 Interval: **3686.00 ft (KB) To 3753.00 ft (KB) (TVD)** Reference Elevations: **2239.00 ft (KB)**  
 Total Depth: **4080.00 ft (KB) (TVD)** **2231.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **8.00 ft**

**Serial #: 8319** **Inside**  
 Press@RunDepth: **24.87 psig @ 3749.00 ft (KB)** Capacity: **8000.00 psig**  
 Start Date: **2012.10.23** End Date: **2012.10.23** Last Calib.: **2012.10.23**  
 Start Time: **13:30:05** End Time: **19:01:59** Time On Btm: **2012.10.23 @ 15:13:00**  
 Time Off Btm: **2012.10.23 @ 17:16:00**

TEST COMMENT: IF-3/4" blow  
 IS-No blow  
 FF-No blow  
 FSI-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1936.54	110.20	Initial Hydro-static
1	16.63	109.26	Open To Flow (1)
31	21.67	110.09	Shut-In(1)
61	332.05	110.68	End Shut-In(1)
62	22.91	110.62	Open To Flow (2)
91	24.87	111.03	Shut-In(2)
121	149.93	111.47	End Shut-In(2)
123	1878.40	112.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud	0.05

\* Recovery from multiple tests

## Gas Rates

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





TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Downing-Nelson Oil Co.

18-13s-21w Trego, KS

PO Box 1019  
Hays KS 67601

LW #1-18

Job Ticket: 50782

DST#: 2

ATTN: Ron Nelson

Test Start: 2012.10.23 @ 13:30:00

## GENERAL INFORMATION:

Formation: KC H-J

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:14:00

Time Test Ended: 19:02:00

Test Type: Conventional Straddle (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3686.00 ft (KB) To 3753.00 ft (KB) (TVD)

Total Depth: 4080.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2239.00 ft (KB)

2231.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3749.00 ft (KB)

Start Date: 2012.10.23

End Date: 2012.10.23

Capacity: 8000.00 psig

Last Calib.: 2012.10.23

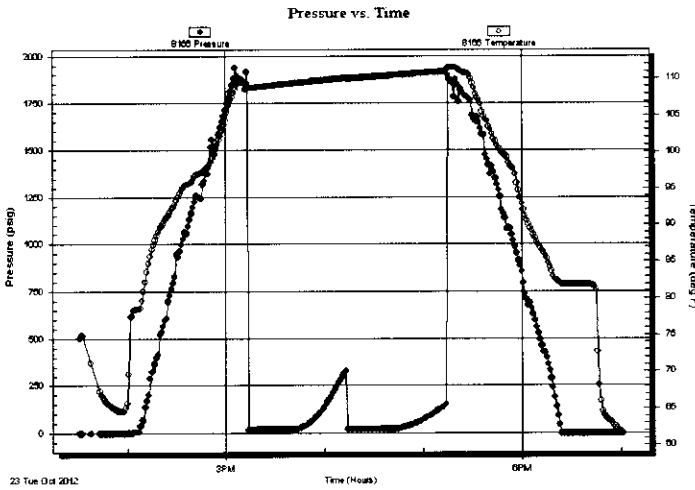
Start Time: 13:30:35

End Time: 19:01:29

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-3/4" blow  
IS-No blow  
FF-No blow  
FSI-No blow



## PRESSURE SUMMARY

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

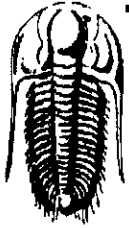
## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud	0.05

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing-Nelson Oil Co.

**18-13s-21w Trego, KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50782

**DST#: 2**

ATTN: Ron Nelson

Test Start: 2012.10.23 @ 13:30:00

### Tool Information

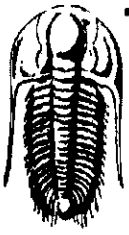
Drill Pipe:	Length: 3645.00 ft	Diameter: 3.80 inches	Volume: 51.13 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3686.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	3753.00 ft			
Interval between Packers:	67.00 ft			
Tool Length:	417.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3667.00	
Shut In Tool	5.00			3672.00	
Hydraulic tool	5.00			3677.00	
Packer	4.00			3681.00	20.00 Bottom Of Top Packer
Packer	5.00			3686.00	
Stubb	1.00			3687.00	
Perforations	3.00			3690.00	
change Over Sub	1.00			3691.00	
Blank Spacing	31.00			3722.00	
change Over Sub	1.00			3723.00	
Perforations	26.00			3749.00	
Recorder	0.00	8319	Inside	3749.00	
Recorder	0.00	8166	Outside	3749.00	
Blank Off Sub	4.00			3753.00	67.00 Tool Interval
Packer	4.00			3757.00	
Stubb	1.00			3758.00	
Recorder	0.00	6753	Below	3758.00	
perforations	3.00			3761.00	
Change Over Sub	1.00			3762.00	
Blank Spacing	317.00			4079.00	
Change Over Sub	1.00			4080.00	
Bullnose	3.00			4083.00	330.00 Bottom Packers & Anchor

**Total Tool Length: 417.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing-Nelson Oil Co.

**18-13s-21w Trego,KS**

PO Box 1019  
Hays KS 67601

**LW #1-18**

Job Ticket: 50782

**DST#: 2**

ATTN: Ron Nelson

Test Start: 2012.10.23 @ 13:30:00

## 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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

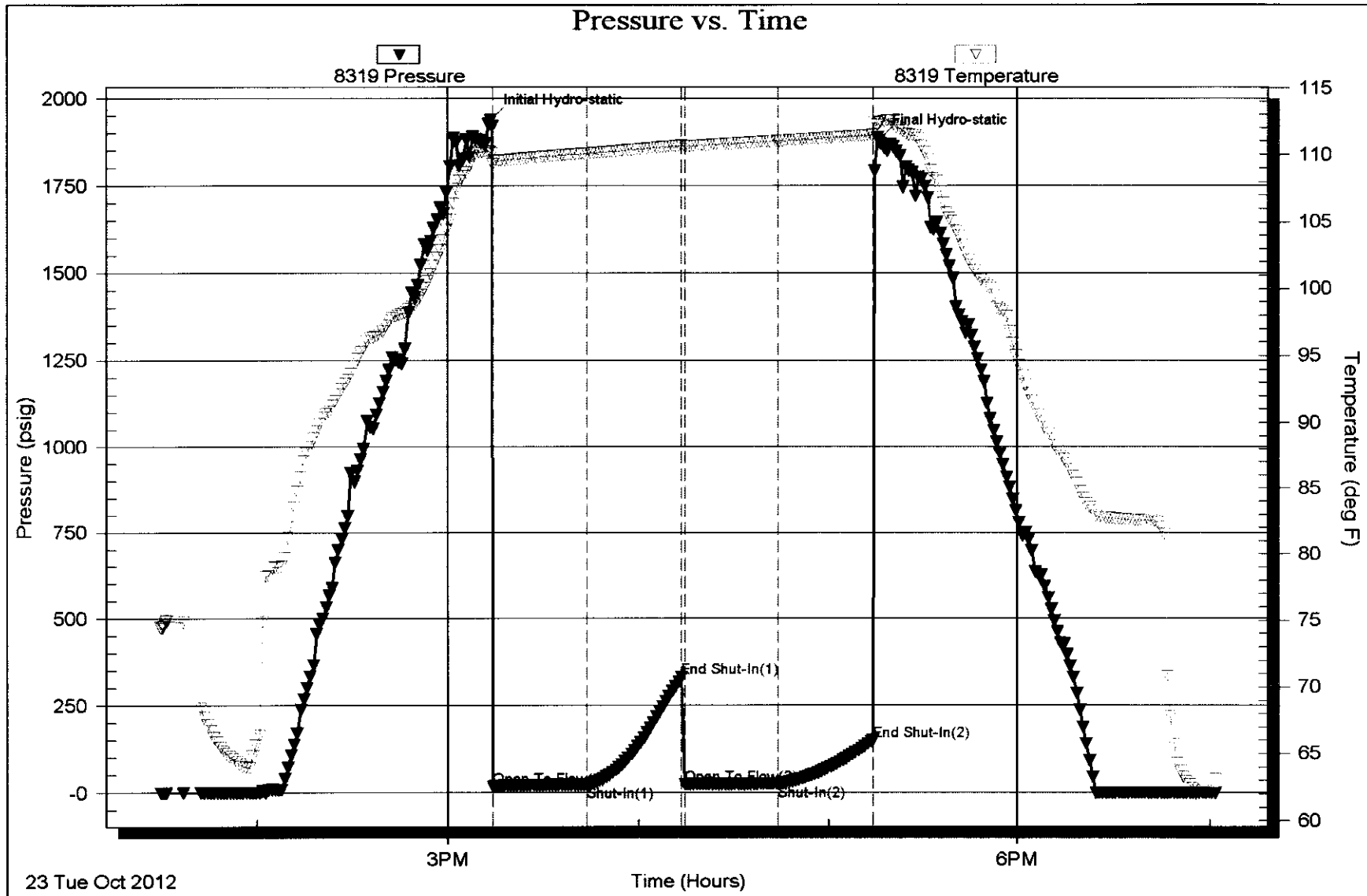
Num Gas Bombs: 0

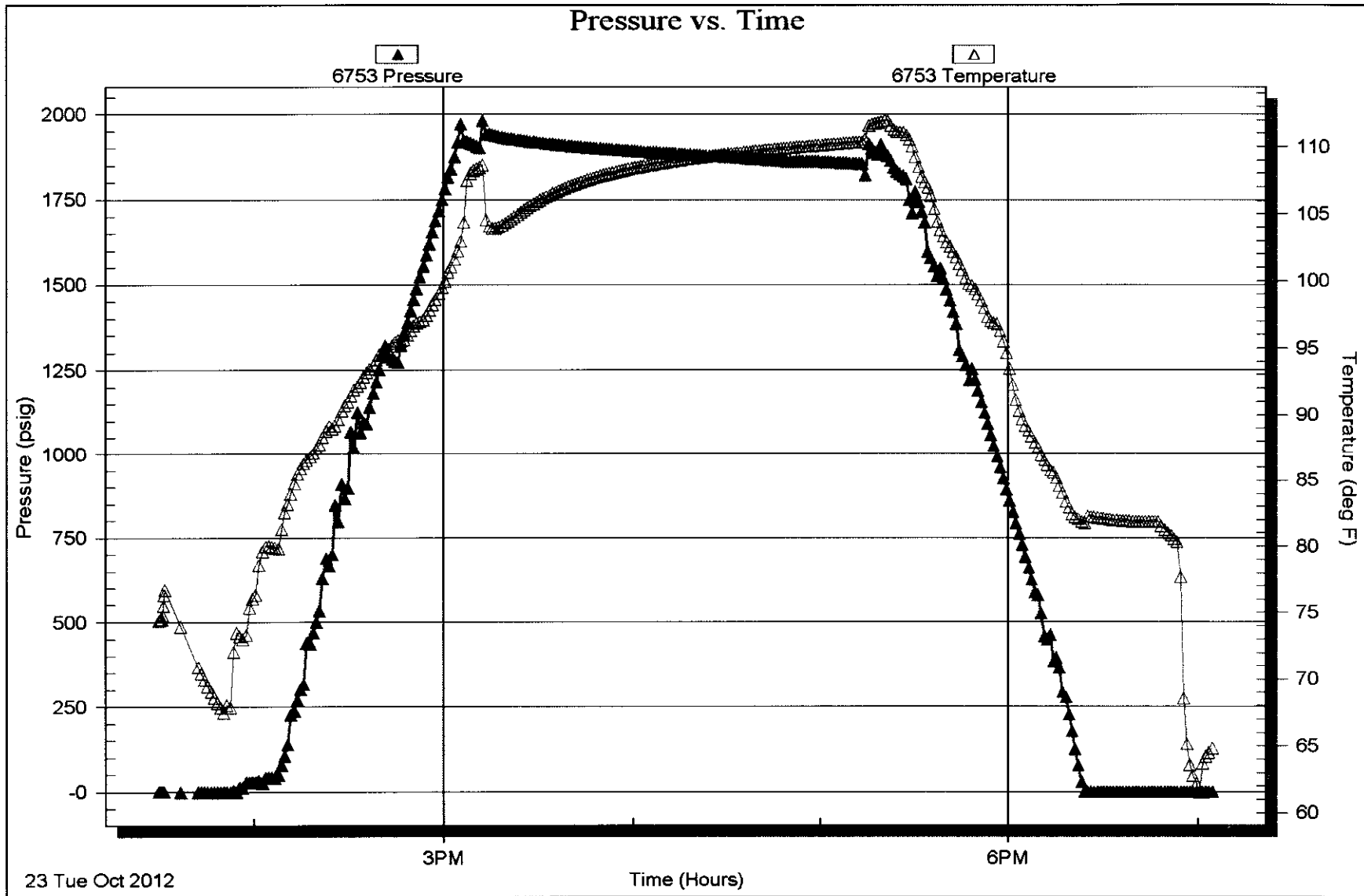
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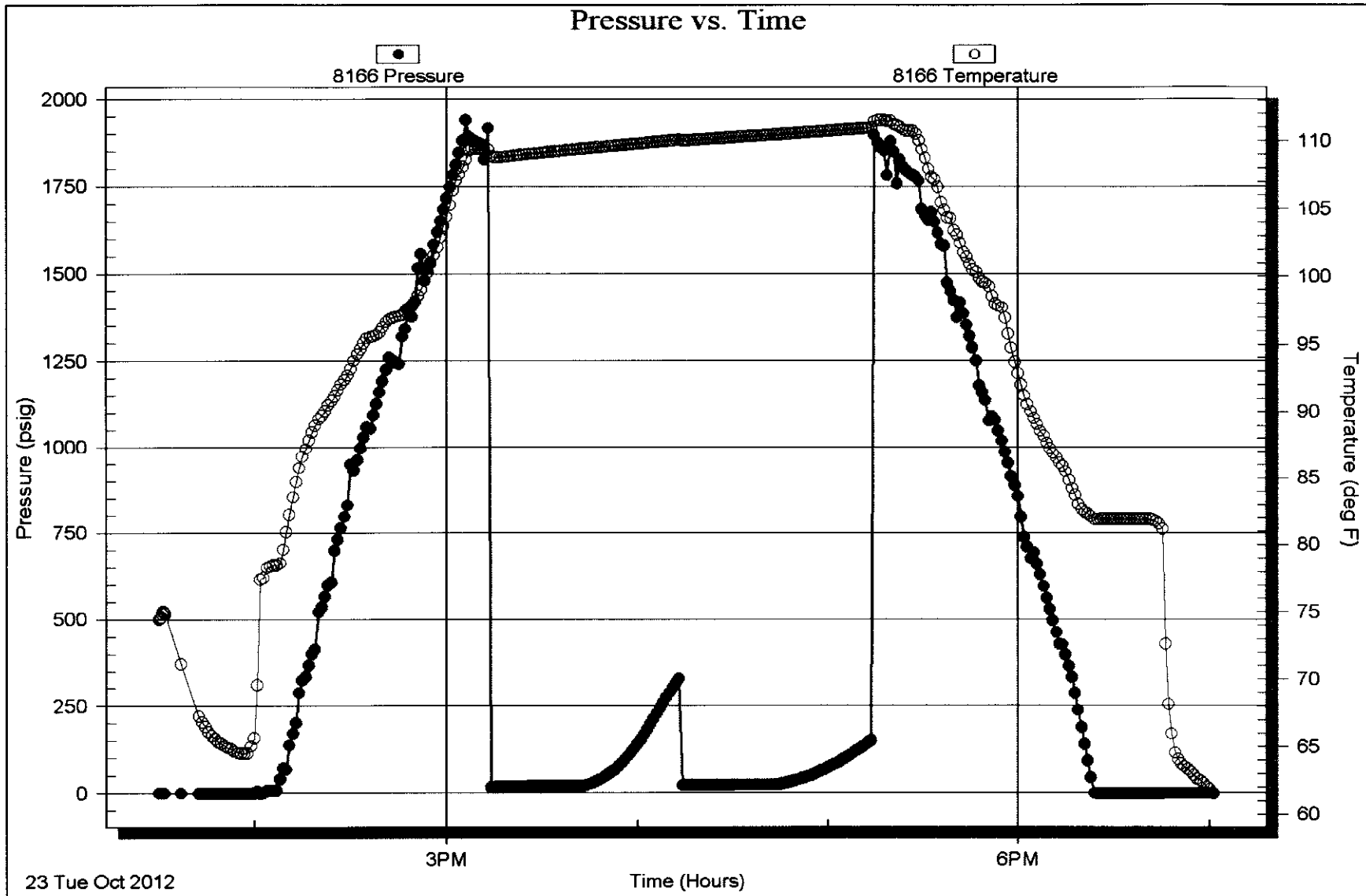
Laboratory Name:

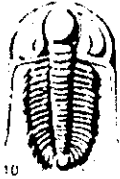
Laboratory Location:

Recovery Comments:









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50781

Well Name & No. LW #1-18 Test No. 1 Date 10-22-12  
 Company Downing-Nelson Oil Co Inc. Elevation 2239 KB 2231 GL  
 Address PO Box 1619 Hays KS 67601  
 Co. Rep / Geo. \_\_\_\_\_ Rig Recovery #3  
 Location: Sec. 18 Twp. 13 Rge. 21 Co. Trego State KS

Interval Tested 3907 - 3945 Zone Tested Marathon  
 Anchor Length 38 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.4  
 Top Packer Depth 3902 Drill Collars Run 30 Vis 68  
 Bottom Packer Depth 3907 Wt. Pipe Run - WL 8.0  
 Total Depth 3945 Chlorides 2,000 ppm System LCM \_\_\_\_\_

Blow Description if BOB in 3 min  
ISE - no blow  
IF - 4 1/2 in blow  
ISA - NO blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>oil spotted mud</u>				
<u>250</u>	<u>vsocm</u>		<u>2</u>		<u>98%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 280 BHT 119 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1,995  Test \_\_\_\_\_ T-On Location 11:00  
 (B) First Initial Flow 76  Jars \_\_\_\_\_ T-Started 12:00  
 (C) First Final Flow 122  Safety Joint \_\_\_\_\_ T-Open 15:35  
 (D) Initial Shut-In 1,761  Circ Sub \_\_\_\_\_ T-Pulled 18:05  
 (E) Second Initial Flow 129  Hourly Standby \_\_\_\_\_ T-Out 20:05  
 (F) Second Final Flow 150  Mileage 57.5 88.35  
 (G) Final Shut-In 1,595  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1,940  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

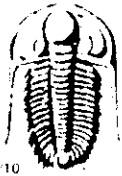
Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 45

Sub Total 1238.35

Comments \_\_\_\_\_  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1238.35  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Peter Fisher

Triobite Testing Inc. shall not be liable for damaged or 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. On its statement of test results, the results of any test, tool bit 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. 50782

Well Name & No. LW #1-18 Test No. 2 Date 10-23-12  
 Company Panning-Nelson Oil Co Inc. Elevation 2234 KB 2231 GL  
 Address PO Box 1019 Hays KS 67601  
 Co. Rep / Geo. \_\_\_\_\_ Rtg Discovery #?  
 Location: Sec. 18 Twp. 13 Rge. 21 Co. Trego State KS

Interval Tested 3686 - 3753 Zone Tested KC  
 Anchor Length 67 Drill Pipe Run \_\_\_\_\_ Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3681, 3686 Drill Collars Run 300 Vis \_\_\_\_\_  
 Bottom Packer Depth 3753 Wt. Pipe Run \_\_\_\_\_ WL \_\_\_\_\_  
 Total Depth 4080 Chlorides \_\_\_\_\_ ppm System \_\_\_\_\_ LCM \_\_\_\_\_

Blow Description 2F - 3/4 in blow  
1SI - No blow  
Fi - No blow  
1SI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Ma A</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 10 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic	<u>1937</u>	<input checked="" type="checkbox"/> Test	T-On Location	<u>12:00</u>
(B) First Initial Flow	<u>17</u>	<input type="checkbox"/> Jars	T-Started	<u>13:30</u>
(C) First Final Flow	<u>22</u>	<input type="checkbox"/> Safety Joint	T-Open	<u>15:25</u>
(D) Initial Shut-In	<u>332</u>	<input type="checkbox"/> Circ Sub	T-Pulled	<u>17:25</u>
(E) Second Initial Flow	<u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out	<u>19:10</u>
(F) Second Final Flow	<u>25</u>	<input checked="" type="checkbox"/> Mileage <u>57.7</u>	Comments	
(G) Final Shut-In	<u>150</u>	<input type="checkbox"/> Sampler		
(H) Final Hydrostatic	<u>1978</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer	

Initial Open 30  Shale Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  
 Final Shut-In 30  Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1838.35 Total 1838.35  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Burdin

Triobite Testing Inc. shall not be liable for damaged or 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 opinions concerning the results of any test, hole lost or damaged in the hole shall be paid for at once by the party for whom the test is made.