KOLAR Document ID: 1441621

Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
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: Downing-Nelson Oil Co Inc
Address 1: PO BOX 1019
Address 2:
City: HAYS State: KS Zip: 67601 + ____
Contact Person: Ron Nelons
Phone: (785) 621-2610
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Marc Downing
Purchaser: Coffeyville Resources

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ 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 EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

01/31/2019	02/08/2019	03/11/2019
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No.: 15-051-26944-00-00
Spot Description:
__ - NW - NW - NW Sec. 31 Twp. 14 S. R. 18 ☐ East ☑ West
330 Feet from ☑ North / ☐ South Line of Section
330 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ellis
Lease Name: RUDER Well #: 1-31
Field Name: Wildcat
Producing Formation: Arbuckle
Elevation: Ground: 2068 Kelly Bushing: 2076
Total Vertical Depth: 3711 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 1320 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: 44000 ppm Fluid volume: 320 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

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

☐ **Confidentiality Requested**
Date:
☐ **Confidential Release Date:**
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** Karen Ritter **Date:** 06/05/2019

Page Two

Operator Name: Downing-Nelson Oil Co Inc Lease Name: RUDER Well #: 1-31

Sec. 31 Twp. 14 S. R. 18 ☐ East ☑ West County: Ellis

INSTRUCTIONS: Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken *(Attach Additional Sheets)*	☑ Yes	☐ No	☑ Log Formation (Top), Depth and Datum ☐ Sample
Samples Sent to Geological Survey	☐ Yes	☑ No	Name: Attached Top: Attached Datum: Attached
Cores Taken	☐ Yes	☑ No	
Electric Log Run	☑ Yes	☐ No	
Geologist Report / Mud Logs	☑ Yes	☐ No	

List All E. Logs Run:

Micro
Compensated Denisty Neutron
Dual Induction

CASING RECORD ☑ New ☐ 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	12.25	8.625	23	1320	SMDC	375	2% Gel & 3% CC
Production	7.875	5.5	14	3706	EA/2	130	-

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	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/ Injection: 03/29/2019	Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*					
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity	
	1		10			

DISPOSITION OF GAS:	METHOD OF COMPLETION:	PRODUCTION INTERVAL: Top	Bottom
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☑ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	3703	3711

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*

TUBING RECORD:	Size:	Set At:	Packer At:	
	2.375	3705		

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	RUDER 1-31
Doc ID	1441621

Tops

Name	Top	Datum
Top Anhydrite	1314'	+763
Base Anhydrite	1354'	+723
Topeka	3087'	-1010
Heebner	3342'	-1265
Toronto	3361'	-1284
LKC	3626'	-1311
BKC	3626'	-1549
Marmaton	3655'	-1578
Arbuckle	3703'	-1626

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	RUDER 1-31
Doc ID	1441621

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	1320	SMDC	375	2% Gel & 3% CC
Production	7.875	5.5	14	3706	EA/2	130	-

JOB LOG

SWIFT Services, Inc.

DATE 2 Feb 19 | PAGE NO. 1

CUSTOMER Downing & Nelson | WELL NO. 1-31 | LEASE Ruder | JOB TYPE cement deep surface | TICKET NO. 31998

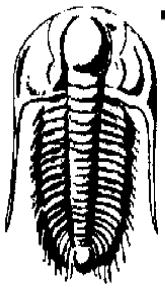
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								~~375~~ 375sk SMD cement w/ ¼# flocele
								8⅝ x 23" casing 31 joints 1320'
								shoe jt 42.30 TD = 1321'
	0500							on loc TRK 110
	0630							circulate
	0645		20					Pump ~~mud flush~~ KCL flush
	0650	5½	46				200	mix SMD cement 100sk @ 11.8 ppg
		5½	76				200	200sk @ 12.5 ppg
		5½	15				200	50sk @ 13.5 ppg
		4	7				300	25sk @ 14.5 ppg
			145					- 325 total -
								Release plug
	0717	6					200	Displace plug
								→ cement to surface ← {30sk top out}
	0730	5	83				1000	Land plug shut in 8⅝"
								Release pressure to truck - dried up
	0735							wash truck
								Rack up
	0815							Job complete
								Thanks
								Blaine, Shane & Jonathan

SWIFT Services, Inc.

DATE 2-9-19 | PAGE NO.

...ning - Nelson	WELL NO. 1-31	LEASE Ruder	JOB TYPE Long String	TICKET NO. 27460

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	300							On location
								5 1/2 x 14#
								RTD - 3711
								Set @ 3705
								Shoe - 42.43 @ 3662.58
								Centralizers - 1, 3, 5, 7, 9, 11
	430							Start Running Csg
	630							Break Circ on Bottom
	730	2	8			0		Plug Rat hole - 30 sks
	740	2	4			0		Plug Mouse Hole - 15 sk
	755					1800		Set Packer Shoe
	800	5	12			400		Pump Mudflush - 500 Gal
	805	5	20			400		Pump KCL spacer
	810	5	32			400		pump Cmt - 130 sks @ 15.5 ppg
	825							Drop plug. Wash Pmp & L
	830	6.5	0			200		Start Disp
	845	6	89			1000/1700		Land Plug - Lift psi - 1000#
								Then land psi - 1700#
								Release Psi - Flowing Back
						1800		Repressure
								Release psi - Dry
								Job Complete
								Thanks
								David, Zach & Kirby



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Ruder #1-31

31-14S-18W Ellis,KS

Start Date: 2019.02.05 @ 20:20:23
End Date: 2019.02.06 @ 03:17:14
Job Ticket #: 65513 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.02.11 @ 09:43:10

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65513 **DST#: 1**

Test Start: 2019.02.05 @ 20:20:23

GENERAL INFORMATION:

Formation: **LKC "C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:50:44
Time Test Ended: 03:17:14

Test Type: Conventional Bottom Hole (Initial)
Tester: Brannan Lonsdale
Unit No: 73

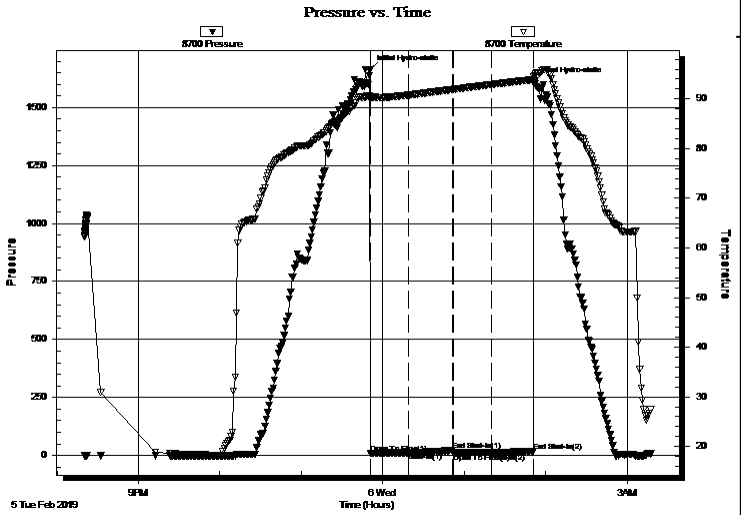
Interval: 3394.00 ft (KB) To 3424.00 ft (KB) (TVD)
Total Depth: 3424.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8700 **Outside**
Press@RunDepth: 11.35 psig @ 3395.00 ft (KB)
Start Date: 2019.02.05 End Date: 2019.02.06
Start Time: 20:20:24 End Time: 03:17:14

Capacity: 8000.00 psig
Last Calib.: 2019.02.06
Time On Btm: 2019.02.05 @ 23:50:29
Time Off Btm: 2019.02.06 @ 01:51:29

TEST COMMENT: 30- IF- Slowly built to 0.97"
30- ISI- No blow
30- FF- Very weak surface blow
30- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.72	90.59	Initial Hydro-static
1	10.09	90.14	Open To Flow (1)
29	11.65	90.78	Shut-In(1)
61	21.78	91.91	End Shut-In(1)
62	11.33	91.93	Open To Flow (2)
90	11.35	92.90	Shut-In(2)
121	17.56	93.89	End Shut-In(2)
121	1613.20	94.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	M	0.01

Gas Rates

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

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65513 **DST#: 1**

Test Start: 2019.02.05 @ 20:20:23

GENERAL INFORMATION:

Formation: **LKC "C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:50:44
Time Test Ended: 03:17:14

Test Type: Conventional Bottom Hole (Initial)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3394.00 ft (KB) To 3424.00 ft (KB) (TVD)
Total Depth: 3424.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

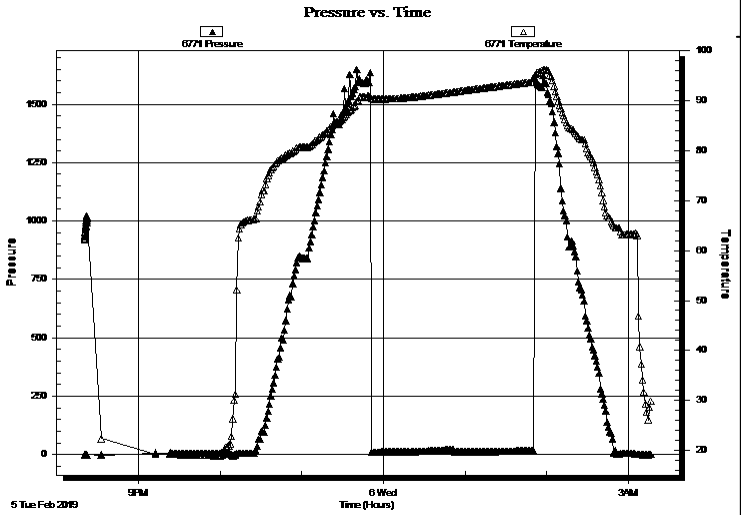
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: psig @ 3395.00 ft (KB)
Start Date: 2019.02.05 End Date: 2019.02.06
Start Time: 20:20:26 End Time: 03:17:01

Capacity: 8000.00 psig
Last Calib.: 2019.02.06
Time On Btm:
Time Off Btm:

TEST COMMENT: 30- IF- Slow ly built to 0.97"
30- ISI- No blow
30- FF- Very w eak surface blow
30- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	M	0.01

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65513 **DST#: 1**

Test Start: 2019.02.05 @ 20:20:23

Tool Information

Drill Pipe:	Length:	3361.00 ft	Diameter:	3.82	inches	Volume:	47.64	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	32.00 ft	Diameter:	2.25	inches	Volume:	0.16	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	19.00 ft
Depth to Top Packer:	3394.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	30.00 ft
Tool Length:	50.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		47000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	47000.00 lb
	Final	47000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3375.00		
Shut In Tool	5.00			3380.00		
Hydraulic tool	5.00			3385.00		
Packer	5.00			3390.00	20.00	Bottom Of Top Packer
Packer	4.00			3394.00		
Stubb	1.00			3395.00		
Recorder	0.00	6771	Inside	3395.00		
Recorder	0.00	8700	Outside	3395.00		
Perforations	26.00			3421.00		
Bullnose	3.00			3424.00	30.00	Bottom Packers & Anchor
Total Tool Length:	**50.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65513 **DST#: 1**

Test Start: 2019.02.05 @ 20:20:23

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:	51.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.58 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	18000.00 ppm				
Filter Cake:	inches				

Recovery Information

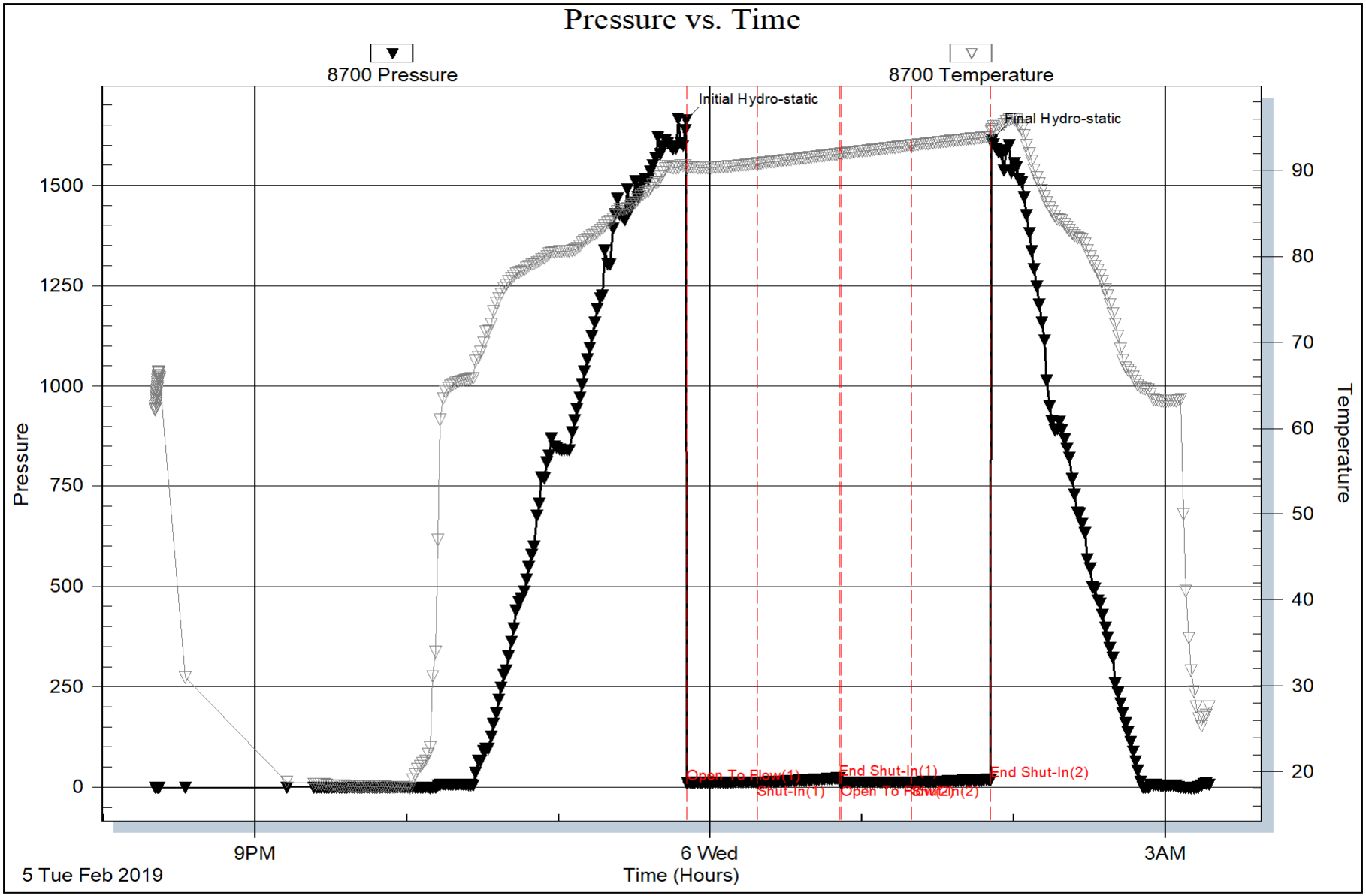
Recovery Table

Length ft	Description	Volume bbl
2.00	M	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

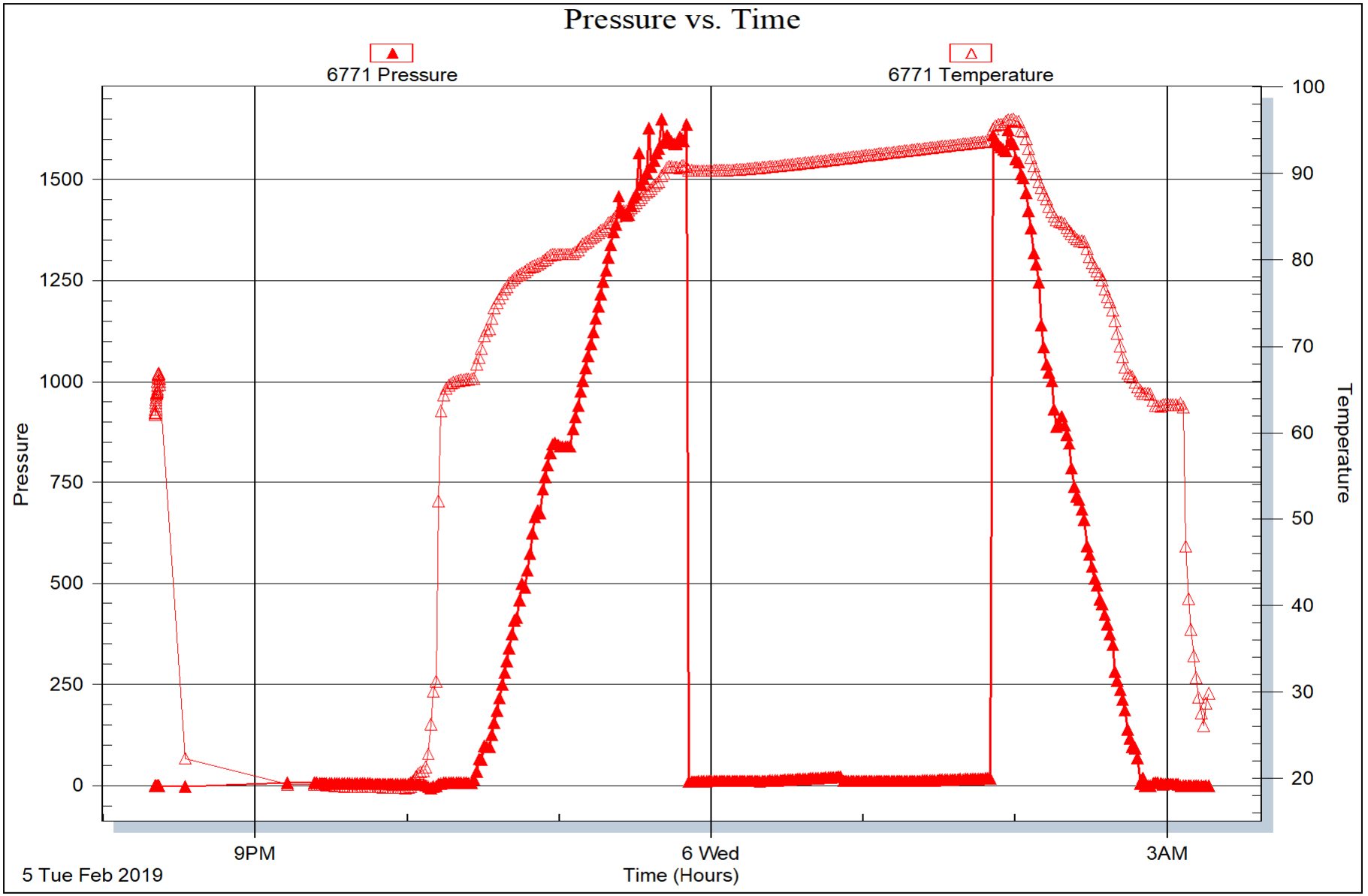
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8700 **Outside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65513 Printed: 2019.02.11 @ 09:43:11

Serial #: 6771 **Inside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 1



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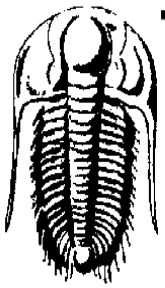


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Ruder #1-31

31-14S-18W Ellis,KS

Start Date: 2019.02.06 @ 09:25:24
End Date: 2019.02.06 @ 16:44:00
Job Ticket #: 65514 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.02.11 @ 09:42:48

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65514 **DST#: 2**

Test Start: 2019.02.06 @ 09:25:24

GENERAL INFORMATION:

Formation: **LKC "D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:39:45
Time Test Ended: 16:44:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3421.00 ft (KB) To 3443.00 ft (KB) (TVD)
Total Depth: 3443.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

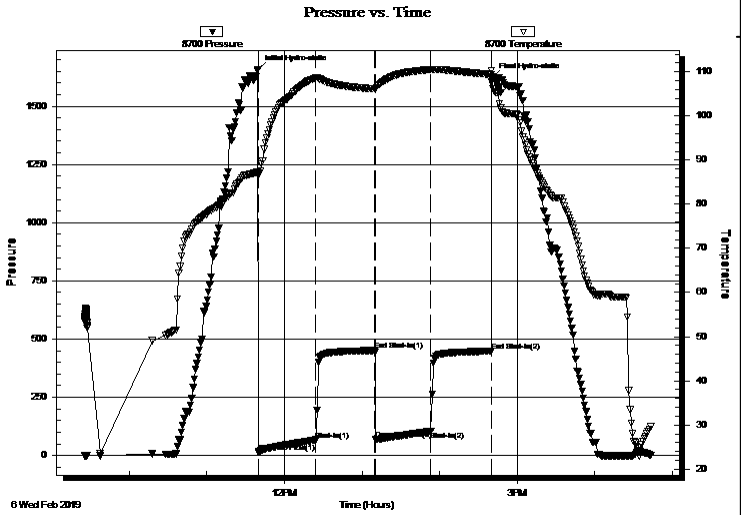
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: 103.16 psig @ 3422.00 ft (KB)
Start Date: 2019.02.06 End Date: 2019.02.06
Start Time: 09:25:25 End Time: 16:44:00

Capacity: 8000.00 psig
Last Calib.: 2019.02.06
Time On Btm: 2019.02.06 @ 11:39:30
Time Off Btm: 2019.02.06 @ 14:41:00

TEST COMMENT: 45- IF- Slowly built to 11.13"
45- ISI- No blow
45- FF- Slowly built to 7.75"
45- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1658.09	87.38	Initial Hydro-static
1	13.76	86.77	Open To Flow (1)
45	66.36	108.63	Shut-In(1)
91	450.55	106.11	End Shut-In(1)
91	67.83	106.06	Open To Flow (2)
134	103.16	110.49	Shut-In(2)
181	447.46	109.38	End Shut-In(2)
182	1624.68	106.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW, 10%M 90%W	2.26

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65514 **DST#: 2**

Test Start: 2019.02.06 @ 09:25:24

GENERAL INFORMATION:

Formation: **LKC "D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:39:45
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Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

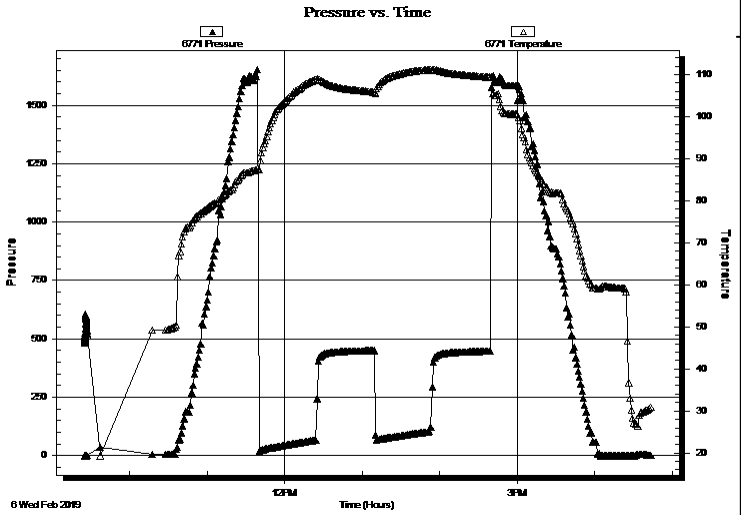
Interval: 3421.00 ft (KB) To 3443.00 ft (KB) (TVD)
Total Depth: 3443.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6771 **Inside**
Press@RunDepth: psig @ 3422.00 ft (KB)
Start Date: 2019.02.06 End Date: 2019.02.06
Start Time: 09:25:22 End Time: 16:43:57

Capacity: 8000.00 psig
Last Calib.: 2019.02.06
Time On Btm:
Time Off Btm:

TEST COMMENT: 45- IF- Slow ly built to 11.13"
45- ISI- No blow
45- FF- Slow ly built to 7.75"
45- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW, 10%M 90%W	2.26

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65514 **DST#: 2**

Test Start: 2019.02.06 @ 09:25:24

Tool Information

Drill Pipe:	Length:	3392.00 ft	Diameter:	3.82	inches	Volume:	48.08	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	32.00 ft	Diameter:	2.25	inches	Volume:	0.16	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	23.00 ft
Depth to Top Packer:	3421.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	22.00 ft
Tool Length:	42.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		54000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	44000.00 lb
	Final	46000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3402.00		
Shut In Tool	5.00			3407.00		
Hydraulic tool	5.00			3412.00		
Packer	5.00			3417.00	20.00	Bottom Of Top Packer
Packer	4.00			3421.00		
Stubb	1.00			3422.00		
Recorder	0.00	6771	Inside	3422.00		
Recorder	0.00	8700	Outside	3422.00		
Perforations	18.00			3440.00		
Bullnose	3.00			3443.00	22.00	Bottom Packers & Anchor
Total Tool Length:	**42.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65514 **DST#: 2**

Test Start: 2019.02.06 @ 09:25:24

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:	62500 ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.58 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	MW, 10%M 90%W	2.255

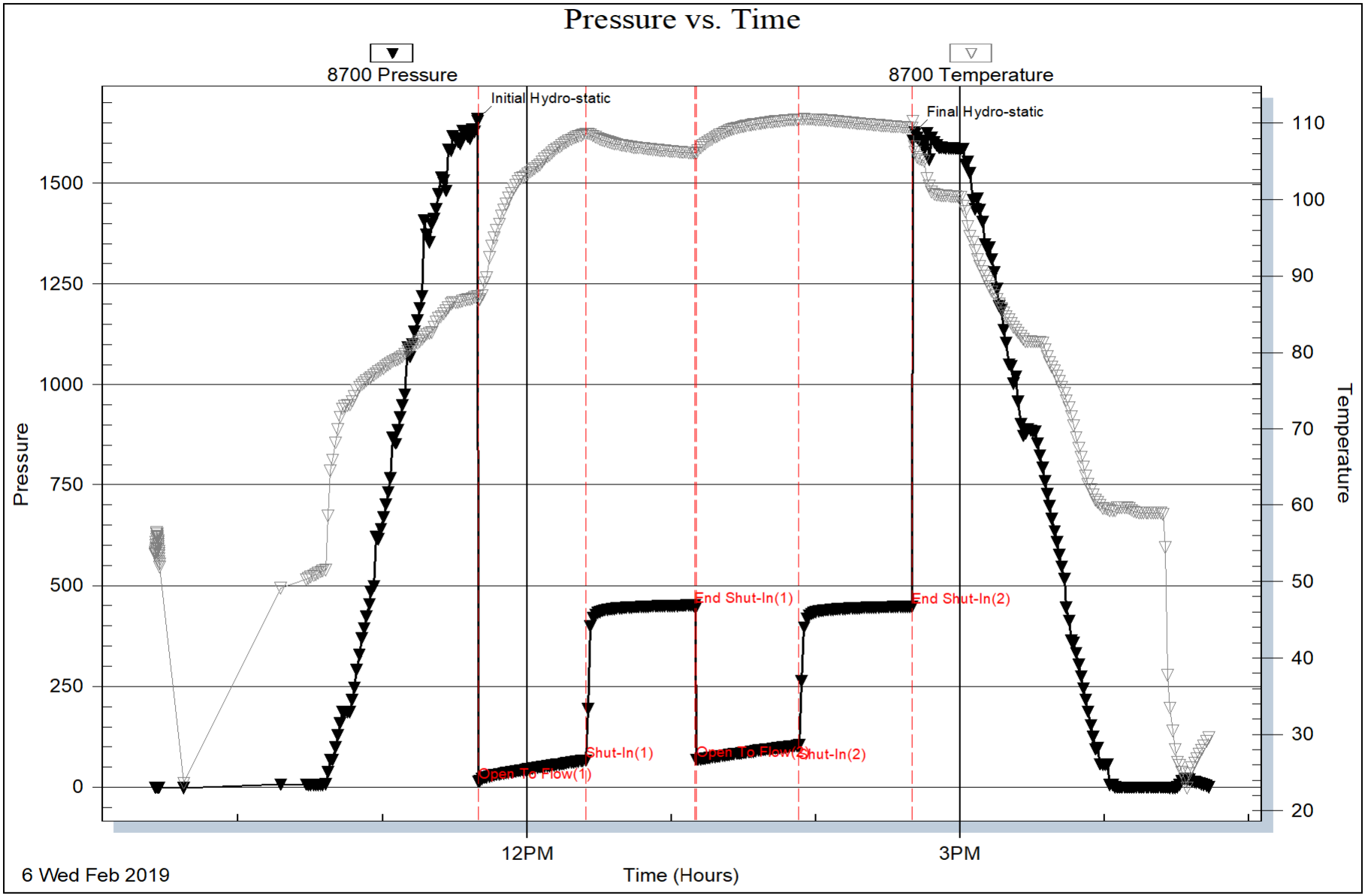
Total Length: 180.00 ft Total Volume: 2.255 bbl

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

Laboratory Name: Laboratory Location:

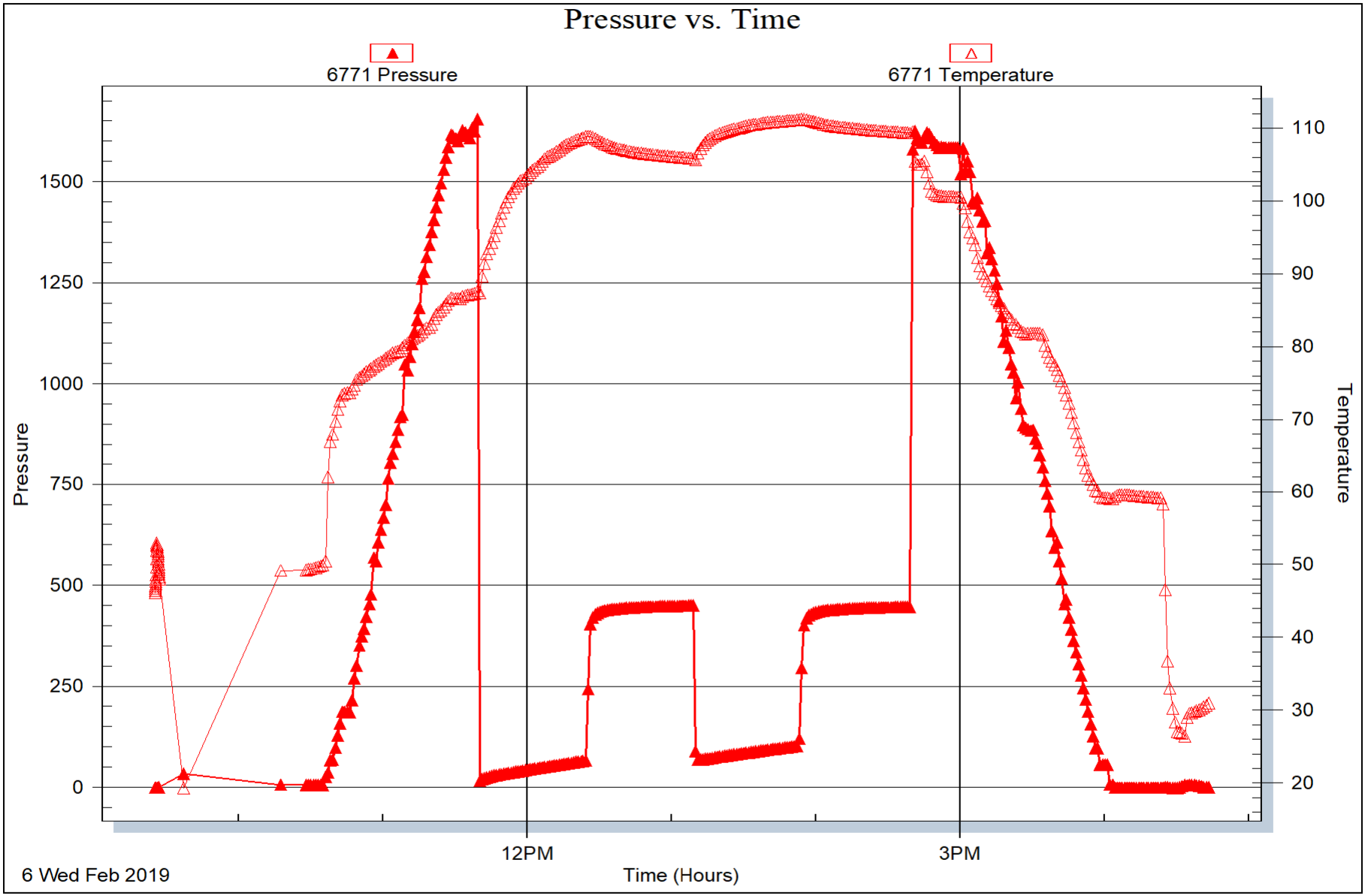
Recovery Comments: RW: .13@37deg

Serial #: 8700 **Outside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 2

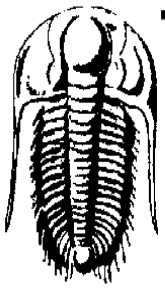


Trilobite Testing, Inc Ref. No: 65514 Printed: 2019.02.11 @ 09:42:48

Serial #: 6771 **Inside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 65514 Printed: 2019.02.11 @ 09:42:49



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Ruder #1-31

31-14S-18W Ellis,KS

Start Date: 2019.02.07 @ 06:38:48
End Date: 2019.02.07 @ 12:59:54
Job Ticket #: 65515 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.02.11 @ 09:42:25

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65515 **DST#: 3**

Test Start: 2019.02.07 @ 06:38:48

GENERAL INFORMATION:

Formation: **LKC "H - I"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:09:39
Time Test Ended: 12:59:54

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3508.00 ft (KB) To 3559.00 ft (KB) (TVD)
Total Depth: 3559.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

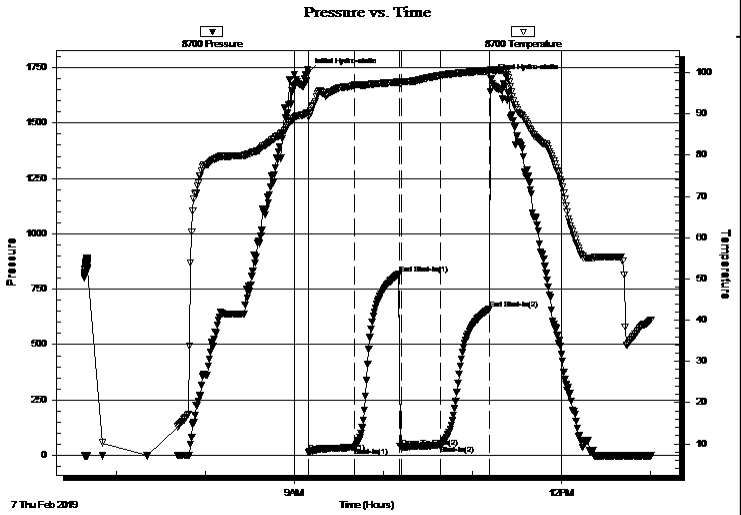
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: 46.38 psig @ 3509.00 ft (KB)
Start Date: 2019.02.07 End Date: 2019.02.07
Start Time: 06:38:49 End Time: 12:59:54

Capacity: 8000.00 psig
Last Calib.: 2019.02.07
Time On Btm: 2019.02.07 @ 09:09:24
Time Off Btm: 2019.02.07 @ 11:12:24

TEST COMMENT: 30- IF- Slowly built to 1.56" in 6 mins then slowly died back to 0.82"
30- ISI- No blow
30- FF- Slowly built to 1.44"
30- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1727.59	90.37	Initial Hydro-static
1	15.14	89.28	Open To Flow (1)
32	36.68	97.07	Shut-In(1)
62	819.97	97.73	End Shut-In(1)
63	37.02	97.84	Open To Flow (2)
90	46.38	99.38	Shut-In(2)
122	659.59	100.42	End Shut-In(2)
123	1701.01	100.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	WSOCM, 5%O 20%W 75%M	0.63
5.00	CO	0.07

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65515 **DST#: 3**

Test Start: 2019.02.07 @ 06:38:48

GENERAL INFORMATION:

Formation: **LKC "H - I"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:09:39
Time Test Ended: 12:59:54

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3508.00 ft (KB) To 3559.00 ft (KB) (TVD)
Total Depth: 3559.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

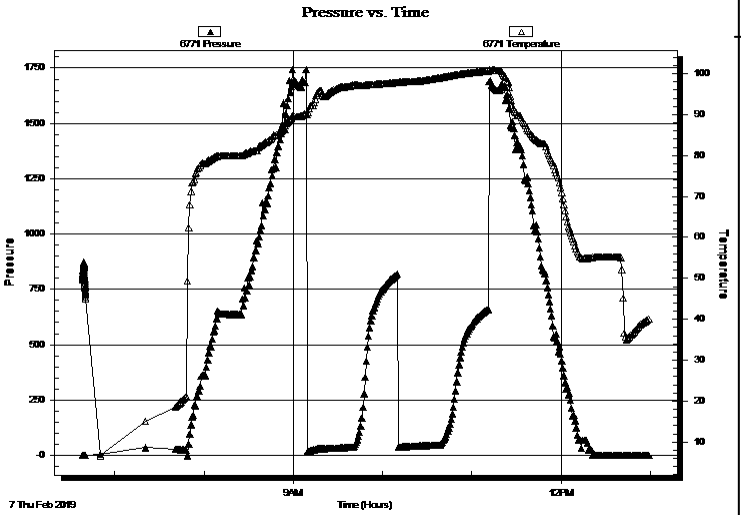
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: psig @ 3509.00 ft (KB)
Start Date: 2019.02.07 End Date: 2019.02.07
Start Time: 06:38:31 End Time: 12:59:21

Capacity: 8000.00 psig
Last Calib.: 2019.02.07
Time On Btm:
Time Off Btm:

TEST COMMENT: 30- IF- Slowly built to 1.56" in 6 mins then slowly died back to 0.82"
30- ISI- No blow
30- FF- Slowly built to 1.44"
30- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
65.00	WSOCM, 5%O 20%W 75%M	0.63
5.00	CO	0.07

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65515 **DST#: 3**

Test Start: 2019.02.07 @ 06:38:48

Tool Information

Drill Pipe:	Length:	3488.00 ft	Diameter:	3.82	inches	Volume:	49.44	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	32.00 ft	Diameter:	2.25	inches	Volume:	0.16	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	32.00 ft
Depth to Top Packer:	3508.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	51.00 ft
Tool Length:	71.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		55000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	47000.00 lb
	Final	47000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3489.00		
Shut In Tool	5.00			3494.00		
Hydraulic tool	5.00			3499.00		
Packer	5.00			3504.00	20.00	Bottom Of Top Packer
Packer	4.00			3508.00		
Stubb	1.00			3509.00		
Recorder	0.00	6771	Inside	3509.00		
Recorder	0.00	8700	Outside	3509.00		
Perforations	13.00			3522.00		
Change Over Sub	1.00			3523.00		
Drill Pipe	32.00			3555.00		
Change Over Sub	1.00			3556.00		
Bullnose	3.00			3559.00	51.00	Bottom Packers & Anchor
Total Tool Length:	**71.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65515 **DST#: 3**

Test Start: 2019.02.07 @ 06:38:48

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:	55000 ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.58 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	WSOCM, 5%O 20%W 75%M	0.625
5.00	CO	0.071

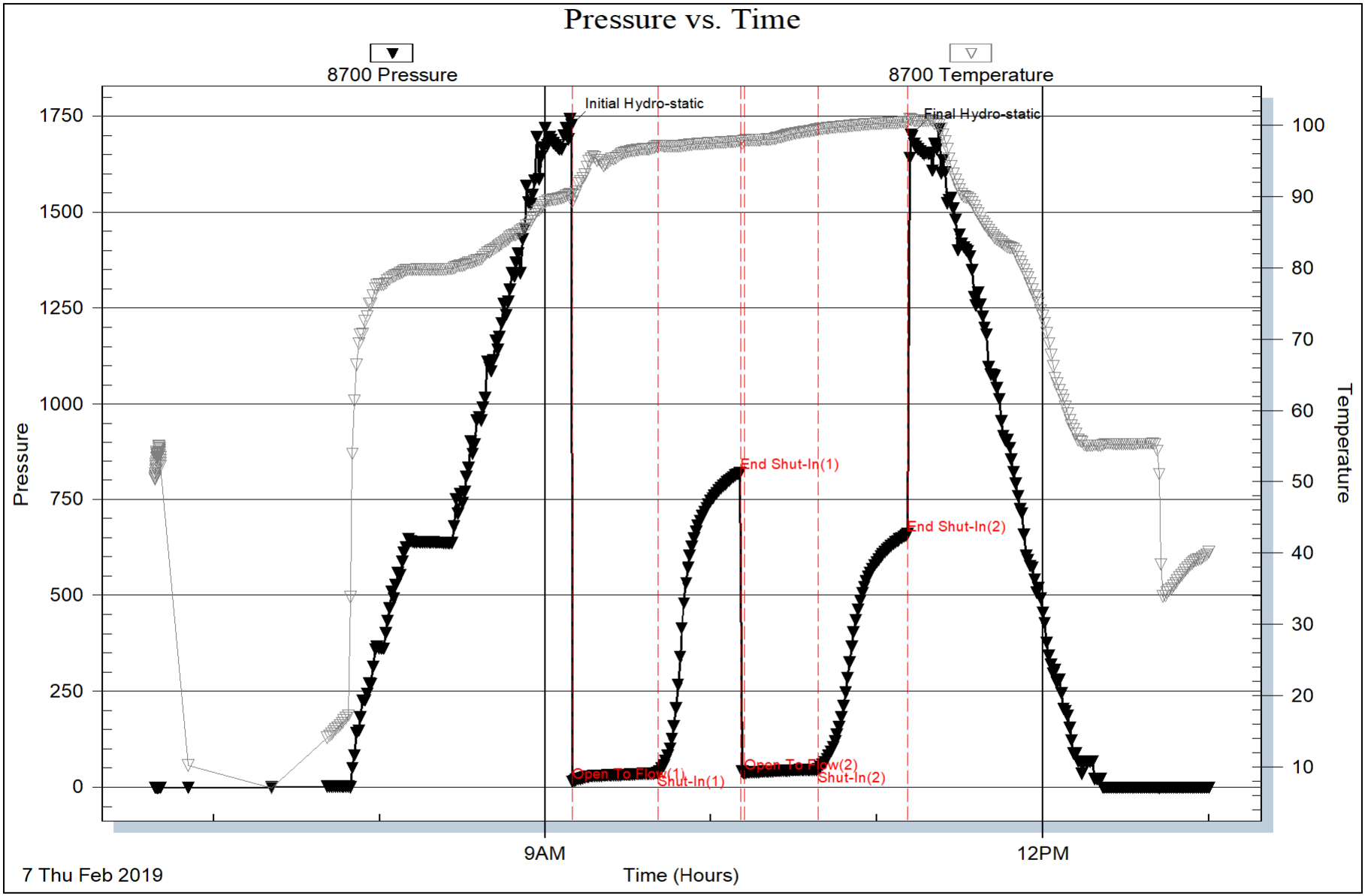
Total Length: 70.00 ft Total Volume: 0.696 bbl

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

Laboratory Name: Laboratory Location:

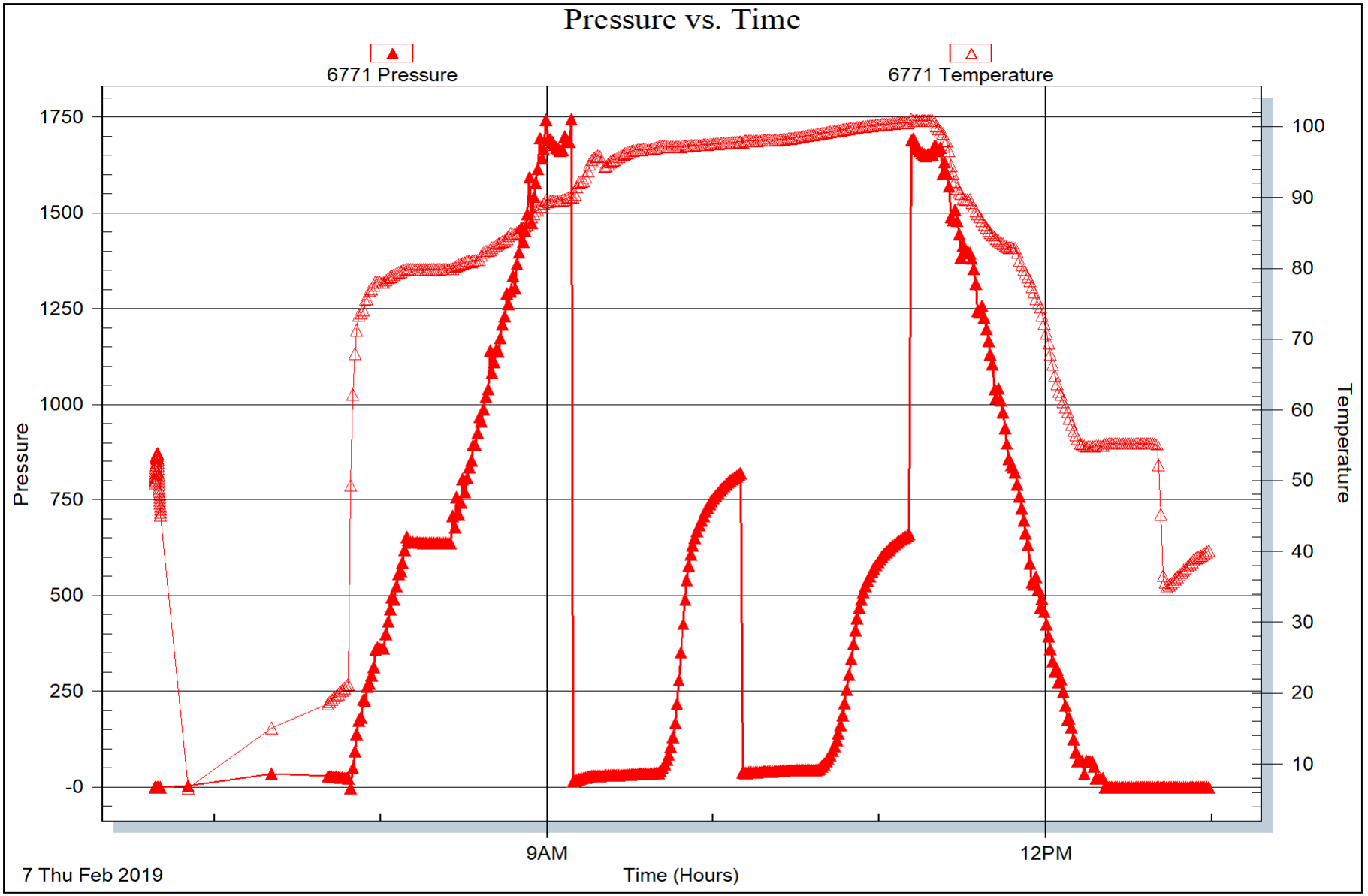
Recovery Comments: RW: .21@41deg

Serial #: 8700 **Outside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 65515 Printed: 2019.02.11 @ 09:42:26

Serial #: 6771 **Inside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 3



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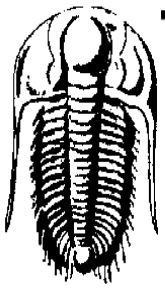


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Ruder #1-31

31-14S-18W Ellis,KS

Start Date: 2019.02.08 @ 06:08:50

End Date: 2019.02.08 @ 13:55:41

Job Ticket #: 65516 DST #: 4

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

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

Printed: 2019.02.11 @ 09:42:01

DRILL STEM TEST REPORT

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65516 **DST#: 4**

Test Start: 2019.02.08 @ 06:08:50

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:46:11
Time Test Ended: 13:55:41

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3669.00 ft (KB) To 3711.00 ft (KB) (TVD)
Total Depth: 3711.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

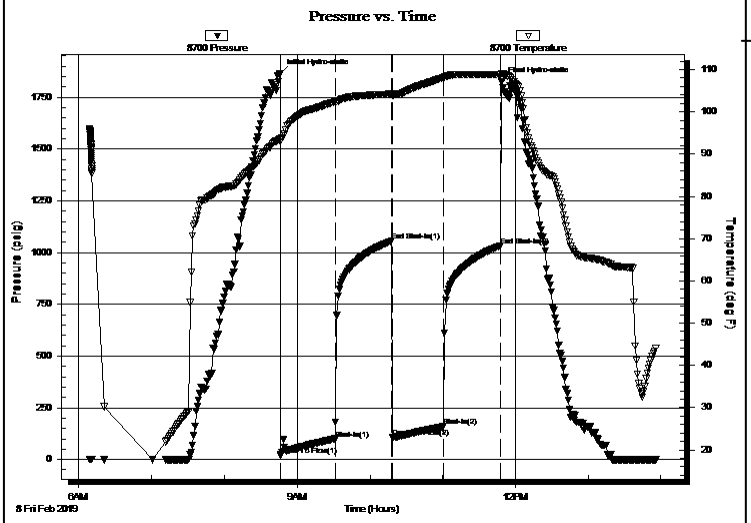
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: 159.24 psig @ 3670.00 ft (KB)
Start Date: 2019.02.08 End Date: 2019.02.08
Start Time: 06:08:51 End Time: 13:55:41

Capacity: 8000.00 psig
Last Calib.: 2019.02.08
Time On Btm: 2019.02.08 @ 08:45:56
Time Off Btm: 2019.02.08 @ 11:48:41

TEST COMMENT: 45- IF- BOB 19 mins. Built to 21.30"
45- ISI- Slowly built to 1.27" then slowly died back to 0.57"
45- FF- BOB 34 mins. Built to 14.21"
45- FSI- Slowly built to 0.87"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1865.42	93.71	Initial Hydro-static
1	20.25	93.01	Open To Flow (1)
46	99.98	102.40	Shut-In(1)
92	1055.43	104.22	End Shut-In(1)
93	108.06	103.97	Open To Flow (2)
135	159.24	108.13	Shut-In(2)
182	1033.52	108.78	End Shut-In(2)
183	1825.31	109.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
95.00	OCM, 20%O 80%M	1.05
317.00	CGO, 15%G 85%O	4.49
0.00	475' GIP	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65516 **DST#: 4**

Test Start: 2019.02.08 @ 06:08:50

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:46:11
Time Test Ended: 13:55:41

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3669.00 ft (KB) To 3711.00 ft (KB) (TVD)
Total Depth: 3711.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

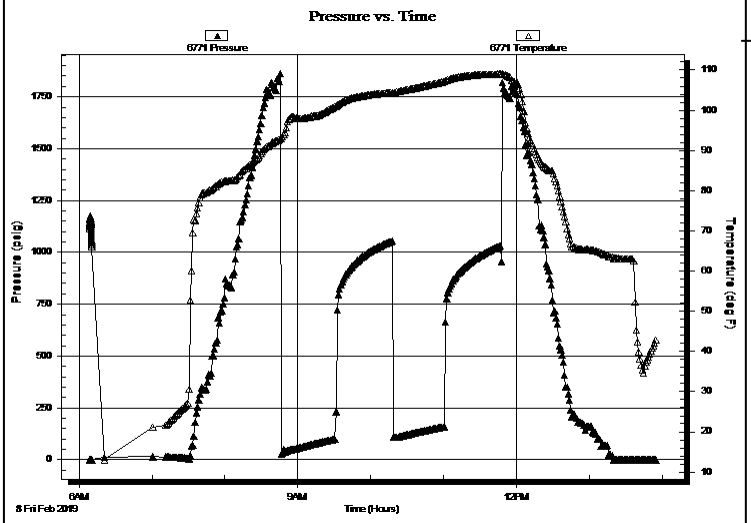
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: psig @ 3670.00 ft (KB)
Start Date: 2019.02.08 End Date: 2019.02.08
Start Time: 06:08:45 End Time: 13:55:20

Capacity: 8000.00 psig
Last Calib.: 2019.02.08
Time On Btm:
Time Off Btm:

TEST COMMENT: 45- IF- BOB 19 mins. Built to 21.30"
45- ISI- Slow ly built to 1.27" then slow ly died back to 0.57"
45- FF- BOB 34 mins. Built to 14.21"
45- FSI- Slow ly built to 0.87"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
95.00	OCM, 20%O 80%M	1.05
317.00	CGO, 15%G 85%O	4.49
0.00	475' GIP	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65516 **DST#: 4**

Test Start: 2019.02.08 @ 06:08:50

Tool Information

Drill Pipe:	Length:	3646.00 ft	Diameter:	3.82	inches	Volume:	51.68	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	32.00 ft	Diameter:	2.25	inches	Volume:	0.16	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	29.00 ft
Depth to Top Packer:	3669.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	42.00 ft
Tool Length:	62.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		48000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	48000.00 lb
	Final	48000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3650.00		
Shut In Tool	5.00			3655.00		
Hydraulic tool	5.00			3660.00		
Packer	5.00			3665.00	20.00	Bottom Of Top Packer
Packer	4.00			3669.00		
Stubb	1.00			3670.00		
Recorder	0.00	6771	Inside	3670.00		
Recorder	0.00	8700	Outside	3670.00		
Perforations	4.00			3674.00		
Change Over Sub	1.00			3675.00		
Drill Pipe	32.00			3707.00		
Change Over Sub	1.00			3708.00		
Bullnose	3.00			3711.00	42.00	Bottom Packers & Anchor
Total Tool Length:	**62.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

31-14S-18W Ellis,KS

Ruder #1-31

Job Ticket: 65516 **DST#: 4**

Test Start: 2019.02.08 @ 06:08:50

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	26 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.99 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	9500.00 ppm				
Filter Cake:	inches				

Recovery Information

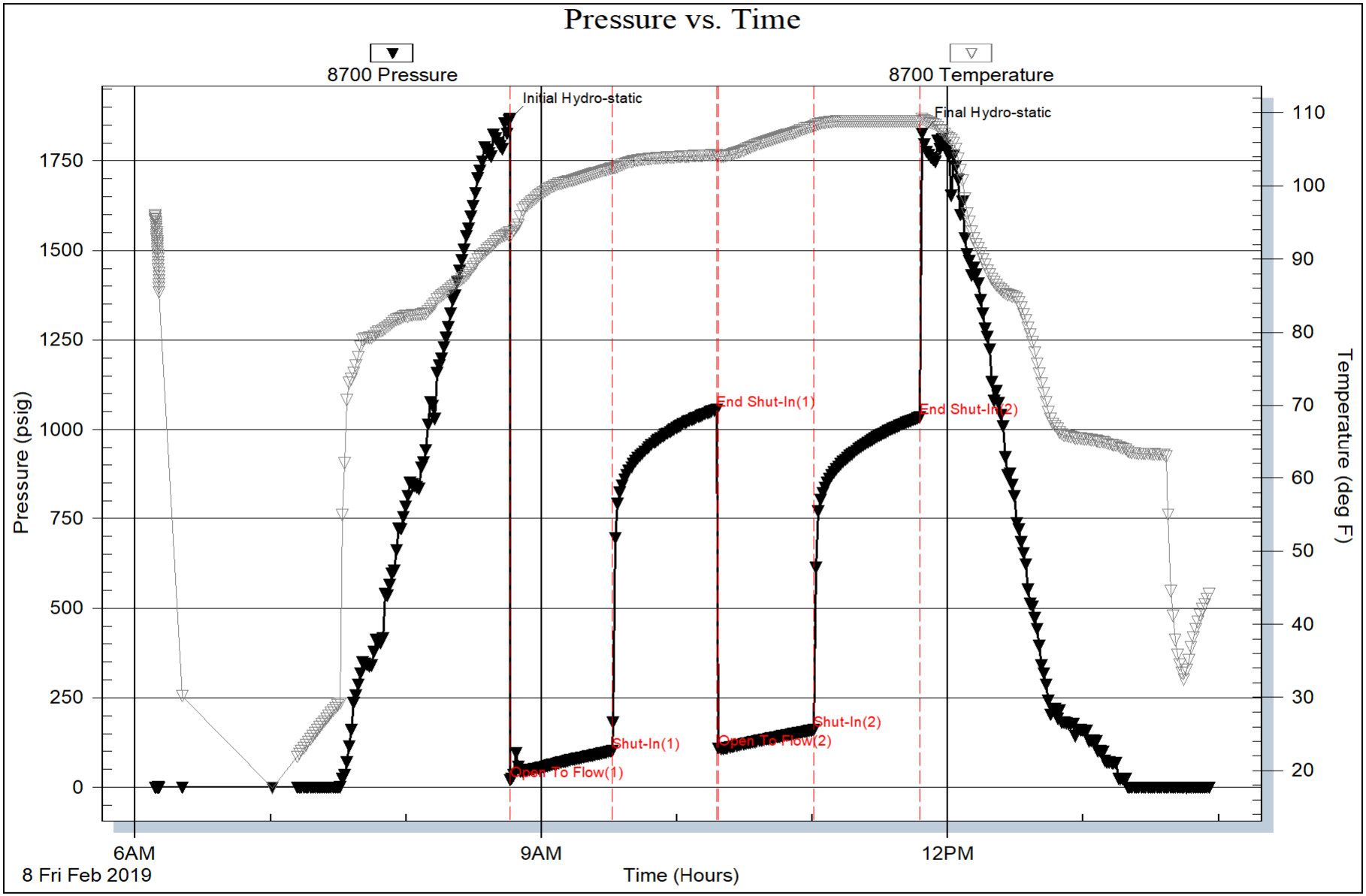
Recovery Table

Length ft	Description	Volume bbl
95.00	OCM, 20%O 80%M	1.050
317.00	CGO, 15%G 85%O	4.494
0.00	475' GIP	0.000

Total Length: 412.00 ft Total Volume: 5.544 bbl

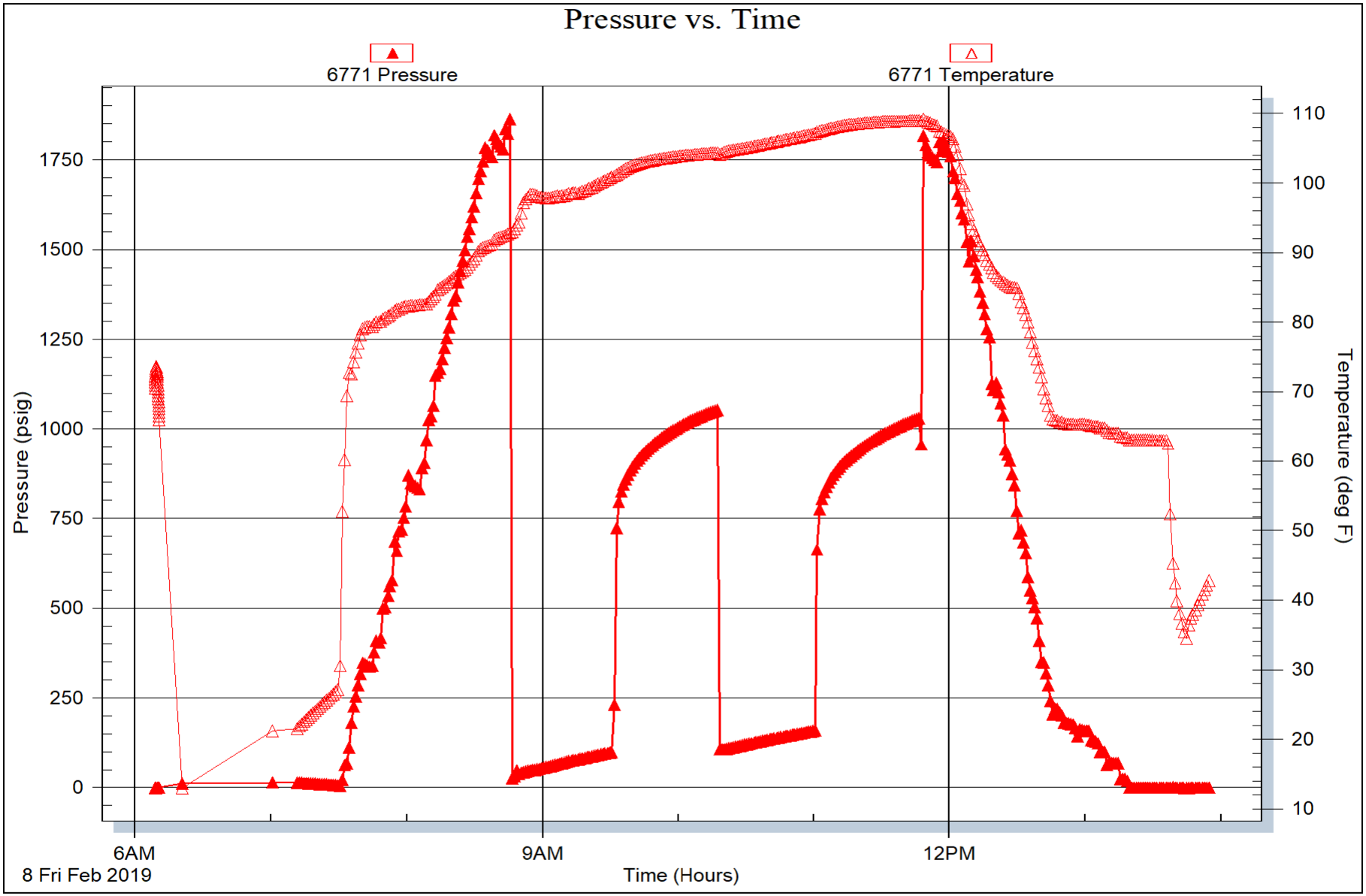
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8700 **Outside** Downing-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 65516 Printed: 2019.02.11 @ 09:42:01

Serial #: 6771 **Inside** Dow ning-Nelson Oil Co., Inc. Ruder #1-31 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 65516 Printed: 2019.02.11 @ 09:42:02

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 65513

Well Name & No. Ruder #1-31 Test No. 1 Date 2/5/19

Company Downing-Nelson Oil Co, Inc. Elevation 2076 KB 2068 GL

Address PO Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery 4

Location: Sec. 31 Twp 14 S Rge. 18 W Co. Ellis State KS

Interval Tested 3394-3424 Zone Tested LKC "C"

Anchor Length 30' Drill Pipe Run 3361 Mud Wt. 8.8

Top Packer Depth 3389 Drill Collars Run 32 Vis 51

Bottom Packer Depth 3394 Wt. Pipe Run — WL 7.6

Total Depth 3424 Chlorides 18,000 ppm System LCM 2#

Blow Description IF - Slowly built to 0.97"

FSI - No blow

FF - Very weak surface blow

FSI - No blow

Rec 2	Feet of M	%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

Rec Total 2' BHT 94° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	1662	☒ Test	1050	T-On Location	2005
(B) First Initial Flow	10	☐ Jars		T-Started	2020
(C) First Final Flow	12	☐ Safety Joint		T-Open	2350
(D) Initial Shut-In	22	☐ Circ Sub		T-Pulled 2/6	0150
(E) Second Initial Flow	11	☐ Hourly Standby		T-Out	0317
(F) Second Final Flow	11	☒ Mileage 26 RT	26	Comments	
(G) Final Shut-In	18	☐ Sampler			
(H) Final Hydrostatic	1613	☐ Straddle		☐ EM Tool	
		☐ Shale Packer		☐ Ruined Shale Packer	
Initial Open	30	☐ Extra Packer		☐ Ruined Packer	
Initial Shut-In	30	☐ Extra Recorder		☐ Extra Copies	
Final Flow	30	☐ Day Standby		Sub Total	0
Final Shut-In	30	☐ Accessibility		Total	1076
		Sub Total	1076	MP/DST Disc't	

Approved By Our Representative Brennan Lonsdale

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 65514

Well Name & No. Bader #1-31 Test No. 2 Date 2/6/19

Company Downing-Nelson Oil Co, Inc. Elevation 2076 KB 2068 GL

Address PO Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery 4

Location: Sec. 31 Twp 14 S Rge. 18 W Co. Ellis State KS

Interval Tested 3421-3443 Zone Tested LKC "D"

Anchor Length 22' Drill Pipe Run 3392 Mud Wt. 8.9

Top Packer Depth 3416 Drill Collars Run 32 Vis 52

Bottom Packer Depth 3421 Wt. Pipe Run — WL 7.6

Total Depth 3443 Chlorides 7,000 ppm System LCM 2#

Blow Description IF- Slowly built to 11.13"
ISI- No blow
FF- Slowly built to 7.75"
FSI- No blow

Rec 180	Feet of MW	%gas	%oil 90	%water 10	%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

Rec Total 180' BHT 109° Gravity — API RW .13 @ 37 °F Chlorides 63,500 ppm

(A) Initial Hydrostatic 1658	☒ Test 1050	T-On Location 0905
(B) First Initial Flow 14	☐ Jars	T-Started 0925
(C) First Final Flow 66	☐ Safety Joint	T-Open 1139
(D) Initial Shut-In 451	☐ Circ Sub	T-Pulled 1439
(E) Second Initial Flow 68	☐ Hourly Standby	T-Out 1645
(F) Second Final Flow 103	☒ Mileage 26RT 26	Comments
(G) Final Shut-In 447	☐ Sampler	
(H) Final Hydrostatic 1625	☐ Straddle	☐ EM Tool
	☐ Shale Packer	☐ Ruined Shale Packer
Initial Open 45	☐ Extra Packer	☐ Ruined Packer
Initial Shut-In 45	☐ Extra Recorder	☐ Extra Copies
Final Flow 45	☐ Day Standby	Sub Total 0
Final Shut-In 45	☐ Accessibility	Total
	Sub Total 1076	MP/DST Disc't

Approved By Our Representative Brannon Loesdale

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 65515

Well Name & No. Ruder #1-31 Test No. 3 Date 2/7/19

Company Downing-Nelson Oil Co, Inc. Elevation 2076 KB 2068 GL

Address PO Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery #4

Location: Sec. 31 Twp 14 S Rge. 18 W Co. Ellis State KS

Interval Tested 3508-3559 Zone Tested LKC "H+I"

Anchor Length 51' Drill Pipe Run 3488 Mud Wt. 8.9

Top Packer Depth 3503 Drill Collars Run 32 Vis 52

Bottom Packer Depth 3508 Wt. Pipe Run ——— WL 7.6

Total Depth 3559 Chlorides 7000 ppm System LCM 2#

Blow Description IF- Slowly built to 1.56" in 6 mins then slowly died back to 0.82"

ISI- No blow

FF- Slowly built to 1.44"

FSI- No blow

Rec 65	Feet of WSOCM	%gas	5 %oil	20 %water	75 %mud	
Rec 5	Feet of CO	%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 70' BHT 100° Gravity 36 API RW .21 @ 41 °F Chlorides 35,000 ppm

(A) Initial Hydrostatic 1728	☒ Test 1050	T-On Location 0611
(B) First Initial Flow 15	☐ Jars	T-Started 0638
(C) First Final Flow 37	☐ Safety Joint	T-Open 0908
(D) Initial Shut-In 820	☐ Circ Sub	T-Pulled 1108
(E) Second Initial Flow 37	☐ Hourly Standby	T-Out 1259
(F) Second Final Flow 46	☒ Mileage 26 RT 26	Comments
(G) Final Shut-In 660	☐ Sampler	
(H) Final Hydrostatic 1701	☐ Straddle	☐ EM Tool
	☐ Shale Packer	☐ Ruined Shale Packer
Initial Open 30	☐ Extra Packer	☐ Ruined Packer
Initial Shut-In 30	☐ Extra Recorder	☐ Extra Copies
Final Flow 30	☐ Day Standby	Sub Total 0
Final Shut-In 30	☐ Accessibility	Total 1076
	Sub Total 1076	MP/DST Disc't

Approved By Our Representative Braman Lonsdale

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 65516

Well Name & No. Ryder #1-31 Test No. 4 Date 2/8/19

Company Downing-Nelson Oil Co, Inc. Elevation 2076 KB 2068 GL

Address PO Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery 4

Location: Sec. 31 Twp 14 S Rge. 18 W Co. Ellis State KS

Interval Tested 3669-3711 Zone Tested Arbuckle

Anchor Length 42' Drill Pipe Run 3646 Mud Wt. 9.0

Top Packer Depth 3664 Drill Collars Run 32 Vis 52

Bottom Packer Depth 3669 Wt. Pipe Run — WL 8.0

Total Depth 3711 Chlorides 9,500 ppm System LCM 2#

Blow Description IF-BOB 19 mins. Built to 21.30"

ISI-Slowly built to 1.27" in 26 mins then slowly died back to 0.57"

FF-BOB 34 mins. Built to 14.21"

FSI-Slowly built to 0.87"

Rec 95	Feet of OCM	%gas	20 %oil	%water	80 %mud		
Rec 317	Feet of CGO	15 %gas	85 %oil	%water	%mud		
Rec	Feet of 475' GIP	%gas	%oil	%water	%mud		
Rec	Feet of	%gas	%oil	%water	%mud		
Rec	Feet of	%gas	%oil	%water	%mud		

Rec Total 412' BHT 109° Gravity 26 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1865	☒ Test 1050	T-On Location 0525	
(B) First Initial Flow 20	☐ Jars	T-Started 0609	
(C) First Final Flow 100	☐ Safety Joint	T-Open 0845	
(D) Initial Shut-In 1055	☐ Circ Sub	T-Pulled 1145	
(E) Second Initial Flow 108	☐ Hourly Standby	T-Out 1355	
(F) Second Final Flow 159	☒ Mileage 26 RT 26	Comments	
(G) Final Shut-In 1034	☐ Sampler		
(H) Final Hydrostatic 1825	☐ Straddle	☐ EM Tool	
	☐ Shale Packer	☐ Ruined Shale Packer	
Initial Open 45	☐ Extra Packer	☐ Ruined Packer	
Initial Shut-In 45	☐ Extra Recorder	☐ Extra Copies	
Final Flow 45	☐ Day Standby	Sub Total 0	
Final Shut-In 45	☐ Accessibility	Total 1076	
	Sub Total 1076	MP/DST Disc't	

Approved By Our Representative Brannan Longdale

Marc A. Downing

Consulting Petroleum Geologist

Geologic Report

Drilling Time and Sample Log

Operator **Downin-Nelson Oil Co., Inc.**			**Elevation** KB 2077 DF 2075 GL 2069
Lease **Ruder**		No. **1-31**	
API # **15-051-26944-0000**			**Casing Record** Surface 8 5/8" @ 1320' Production 5 1/2" @ 3705'
Field **Wildcat**			
Location **330' FNL & 330' FWL**			
Sec. **31**	Twp. **14s**	Rge. **18w**	**Electrical Surveys** CNDL / DIL MEL
County **Ellis**	State **Kansas**		

Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	1314	1314	+763	-4
Base Anhydrite	1356	1354	+723	-1
Topeka	3087	3087	-1010	-4
Heebner	3342	3342	-1265	-4
Toronto	3361	3361	-1284	-5
LKC	3388	3388	-1311	-3
BKC	3627	3626	-1549	-9
Marmaton	3655	3655	-1578	-4
Arbuckle	3703	3703	-1626	-10
Total Depth	3711	3711	-1634	

Reference Well For Structural Comparison **DNOCI**

Virginia #1-30_____770' FSL & 1390' FWL_____Sec. 30-14s-18w

Drilling Contractor		**Discovery Drilling, Rig #4**		
Commenced	**1-31-19**	Completed		**2-8-19**
Samples Saved From		**3050**	To	**RTD**
Drilling Time Kept From		**2950**	To	**RTD**
Samples Examined From		**3050**	To	**RTD**
Geological Supervision From		**3050**	To	**RTD**

Summary and Recommendations

Due to structural position, DST recovery, and log evaluation, it was decided to set 5 1/2" production casing for completion.

Respectfully Submitted,

Marc A. Downing