

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

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 #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

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: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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:	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) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	F. G. Holl Company L.L.C.
Well Name	CALCARA 3-19
Doc ID	1412859

All Electric Logs Run

CDL/CNL
ML
DIL
Fracfinder

Form	ACO1 - Well Completion
Operator	F. G. Holl Company L.L.C.
Well Name	CALCARA 3-19
Doc ID	1412859

Tops

Name	Top	Datum
Herrington	1757	+152
Winfield	1808	+101
Towanda	1873	+36
Ft Riley	1903	+6
Council Grove	2079	-170
Red Eagle	2313	-404
Stotler	2600	-691
Tarkio	2670	-761
Topeka	2802	-893
Heebner	3132	-1223
Brown Lime	3218	-1309
Lansing	3230	-1321
BKC	3461	-1552
Arbuckle	3537	-1628
Regan Sand	3640	-1731
Granite	3649	-1740
Conglomerate	3476	-1567



DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.05.29 @ 02:06:00

End Date: 2018.05.29 @ 09:14:00

Job Ticket #: 01123 DST #: 1

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.05.29 @ 21:37:28

F.G.Holl Company LLC
19-19-14 Barton
Calcara #3-19
DST # 1
Kansas City "A-F"
2018.05.29



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

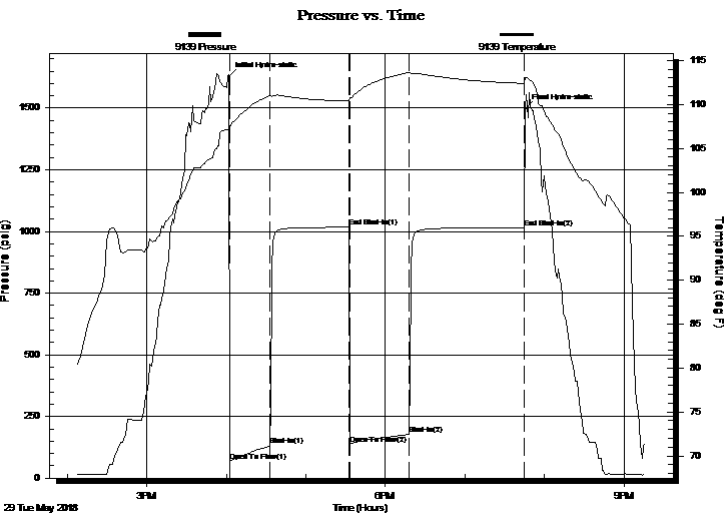
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01123 **DST#: 1**
 Test Start: 2018.05.29 @ 02:06:00

GENERAL INFORMATION:

Formation: **Kansas City "A-F"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 04:02:00 Tester: Gene Budig
 Time Test Ended: 09:14:00 Unit No: 1
 Interval: **3220.00 ft (KB) To 3292.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3292.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1015.74 psig @ 3286.76 ft (KB) Capacity: psig
 Start Date: 2018.05.29 End Date: 2018.05.29 Last Calib.: 2018.05.29
 Start Time: 14:06:00 End Time: 21:15:29 Time On Btm: 2018.05.29 @ 16:02:00
 Time Off Btm: 2018.05.29 @ 19:45:30

TEST COMMENT: 1st Opening 30 Minutes Weak blow built to 8 inches into the water
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes weak blow built to 7 inches into the water
 2nd Shut-In 90 Minutes no blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1628.36	107.16	Initial Hydro-static
1	68.16	107.56	Open To Flow (1)
31	131.67	111.03	Shut-In(1)
91	1017.40	110.44	End Shut-In(1)
91	138.07	110.76	Open To Flow (2)
136	177.59	113.65	Shut-In(2)
223	1015.74	112.39	End Shut-In(2)
224	1496.35	113.03	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
230.00	slightly muddy water	1.59
0.00	Chlorides	0.00

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

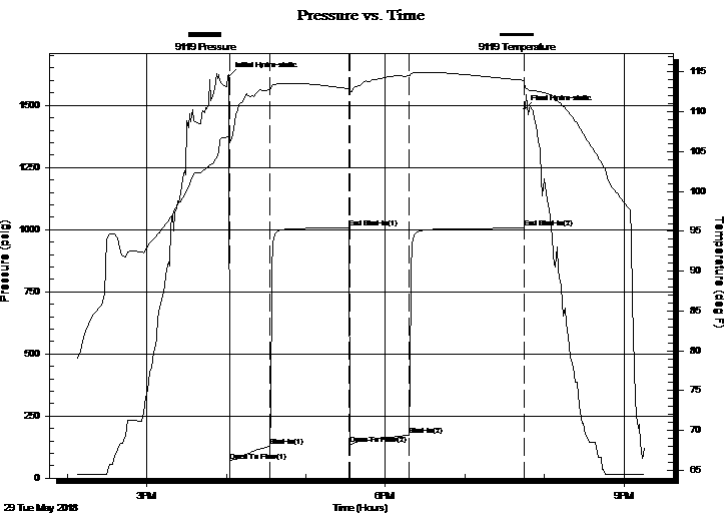
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01123 **DST#: 1**
 Test Start: 2018.05.29 @ 02:06:00

GENERAL INFORMATION:

Formation: **Kansas City "A-F"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 04:02:00 Tester: Gene Budig
 Time Test Ended: 09:14:00 Unit No: 1
 Interval: **3220.00 ft (KB) To 3292.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3292.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1005.35 psig @ 3286.76 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.29 End Date: 2018.05.29 Last Calib.: 2018.05.29
 Start Time: 14:06:00 End Time: 21:15:29 Time On Btm: 2018.05.29 @ 16:02:00
 Time Off Btm: 2018.05.29 @ 19:45:00

TEST COMMENT: 1st Opening 30 Minutes Weak blow built to 8 inches into the water
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes weak blow built to 7 inches into the water
 2nd Shut-In 90 Minutes no blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1616.69	106.97	Initial Hydro-static
1	67.49	106.50	Open To Flow (1)
31	130.05	112.85	Shut-In(1)
91	1006.44	112.90	End Shut-In(1)
91	136.55	112.60	Open To Flow (2)
136	173.69	114.50	Shut-In(2)
223	1005.35	113.97	End Shut-In(2)
223	1483.08	113.76	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
230.00	slightly muddy water	1.59
0.00	Chlorides	0.00

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01123

DST#: 1

ATTN: Rene Hustedad

Test Start: 2018.05.29 @ 02:06:00

Tool Information

Drill Pipe:	Length: 3042.00 ft	Diameter: 3.80 inches	Volume: 42.67 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 43.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3220.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.76 ft			
Tool Length:	101.76 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3195.00	
Hydraulic tool	5.00			3200.00	
Jars	5.00			3205.00	
Safety Joint	5.00			3210.00	
Packer	5.00			3215.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3220.00	
Anchor	6.00			3226.00	
Change Over Sub	0.75			3226.75	
Drill Pipe	32.26			3259.01	
Change Over Sub	0.75		Inside	3259.76	
Anchor	27.00			3286.76	
Recorder	0.00	9119	Inside	3286.76	
Recorder	0.00	9139	Outside	3286.76	
Bullnose	5.00			3291.76	71.76 Bottom Packers & Anchor

Total Tool Length: 101.76



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01123

DST#: 1

ATTN: Rene Husted

Test Start: 2018.05.29 @ 02:06:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 56.00 sec/qt
Water Loss: 6.40 in³
Resistivity: ohm.m
Salinity: 3200.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
230.00	slightly muddy water	1.587
0.00	Chlorides	0.000

Total Length: 230.00 ft Total Volume: 1.587 bbl

Num Fluid Samples: 0

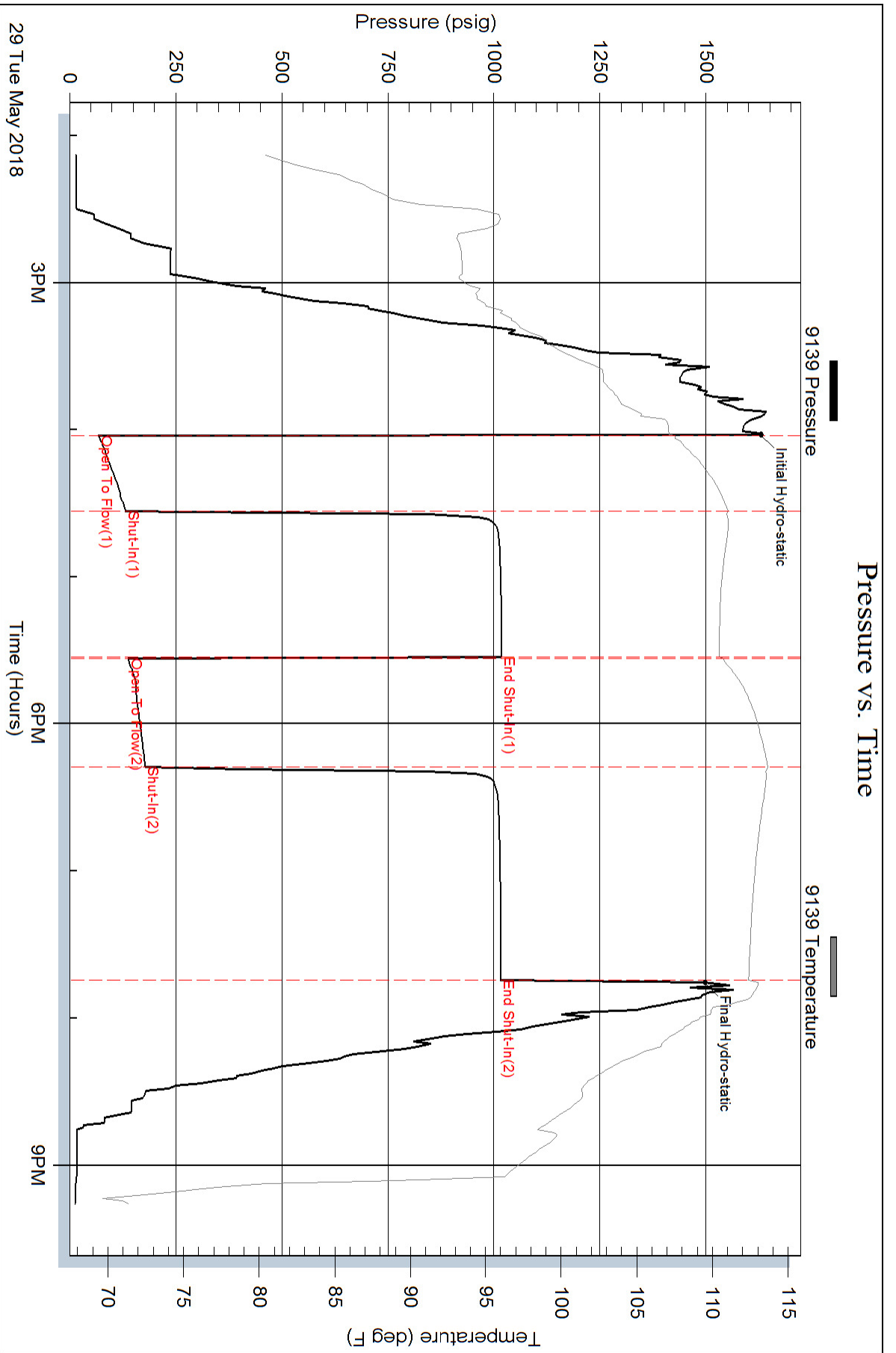
Num Gas Bombs: 0

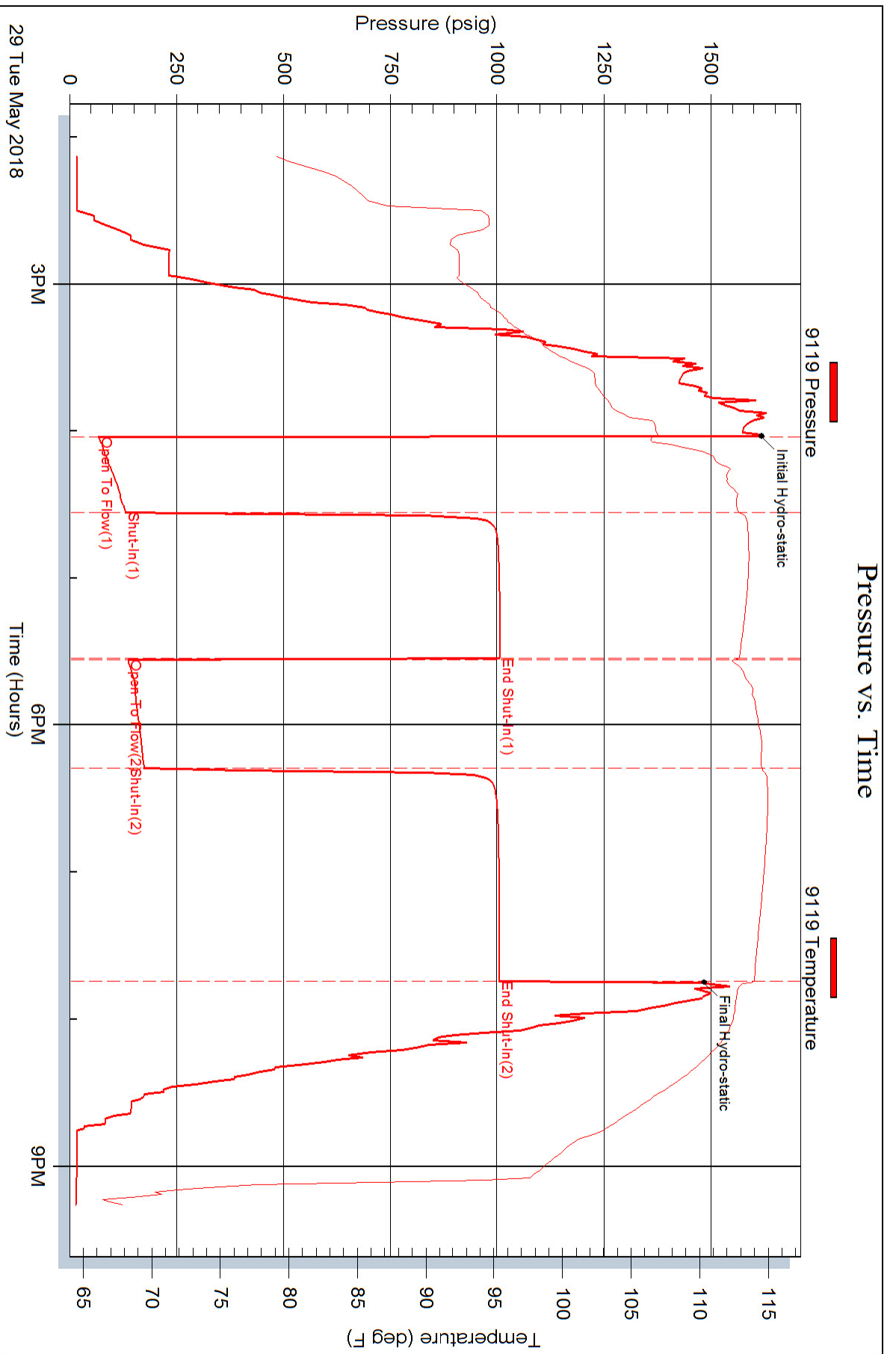
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.05.30 @ 05:38:00

End Date: 2018.05.30 @ 13:20:00

Job Ticket #: 01124 DST #: 2

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.05.30 @ 12:41:29



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

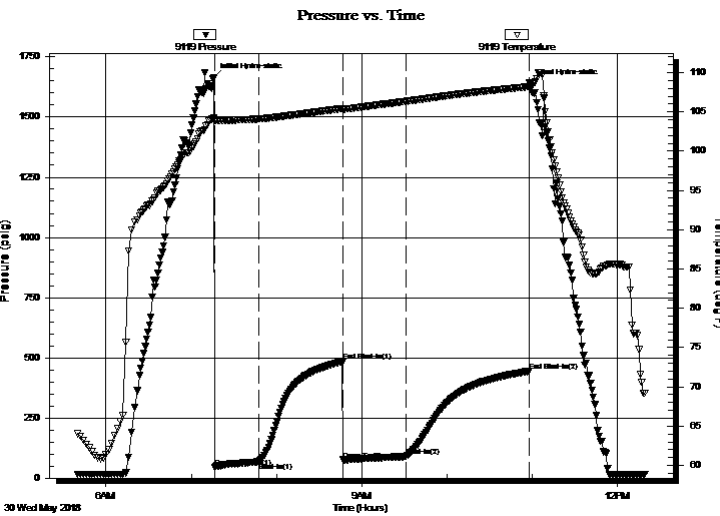
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01124 **DST#: 2**
 Test Start: 2018.05.30 @ 05:38:00

GENERAL INFORMATION:

Formation: **Kansas City "H"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:17:00
 Time Test Ended: 13:20:00
 Interval: **3350.00 ft (KB) To 3374.00 ft (KB) (TVD)**
 Total Depth: 3374.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1909.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 443.79 psig @ 3369.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.30 End Date: 2018.05.30 Last Calib.: 2018.05.30
 Start Time: 05:38:00 End Time: 12:19:30 Time On Btm: 2018.05.30 @ 07:16:00
 Time Off Btm: 2018.05.30 @ 10:58:30

TEST COMMENT: 1st Opening 30 Minutes weak blow built to 6 inches into the water
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes weak blow built to 3 1/2 inches into the water
 2nd Shut-In 90- Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.53	104.28	Initial Hydro-static
1	43.83	103.88	Open to Flow (1)
32	67.68	104.10	Shut-In(1)
91	484.47	105.43	End Shut-In(1)
91	76.14	105.33	Open To Flow (2)
136	89.94	106.34	Shut-In(2)
222	443.79	108.21	End Shut-In(2)
223	1640.68	108.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	slightly oil cut mud 7%Oil 93%Mud	0.15
60.00	slightly oil cut muddy w ater	0.30
0.00	1% Oil 25%Mud 74% Water	0.00
0.00	Chlorides 63000	0.00

Gas Rates

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

19-19-14 Barton
Calcara #3-19
 Job Ticket: 01124 **DST#: 2**
 Test Start: 2018.05.30 @ 05:38:00

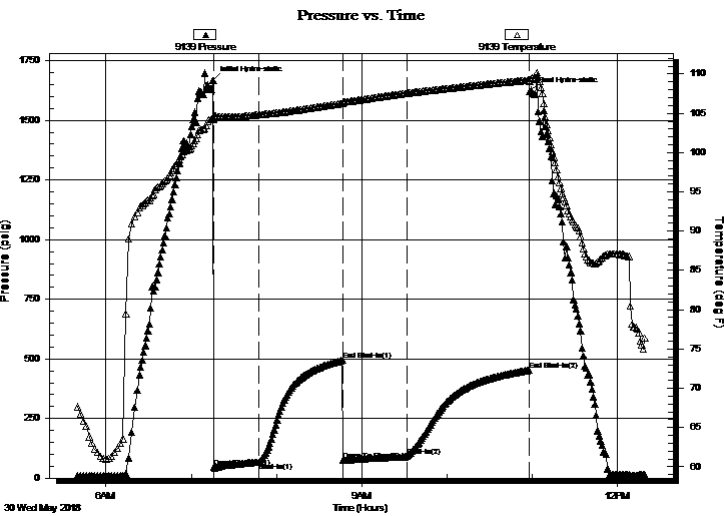
GENERAL INFORMATION:

Formation: **Kansas City "H"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:17:00
 Time Test Ended: 13:20:00
Interval: 3350.00 ft (KB) To 3374.00 ft (KB) (TVD)
 Total Depth: 3374.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1909.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 9139 Outside

Press@RunDepth: 452.50 psig @ 3369.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.30 End Date: 2018.05.30 Last Calib.: 2018.05.30
 Start Time: 05:38:00 End Time: 12:19:30 Time On Btm: 2018.05.30 @ 07:15:30
 Time Off Btm: 2018.05.30 @ 10:58:30

TEST COMMENT: 1st Opening 30 Minutes weak blow built to 6 inches into the water
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes weak blow built to 3 1/2 inches into the water
 2nd Shut-In 90- Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1667.49	104.29	Initial Hydro-static
1	44.56	104.22	Open To Flow (1)
32	66.97	104.81	Shut-In(1)
91	494.03	106.25	End Shut-In(1)
92	75.33	106.44	Open To Flow (2)
137	92.93	107.56	Shut-In(2)
223	452.50	109.23	End Shut-In(2)
223	1620.28	109.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	slightly oil cut mud 7%Oil 93%Mud	0.15
60.00	slightly oil cut muddy w ater	0.30
0.00	1% Oil 25%Mud 74% Water	0.00
0.00	Chlorides 63000	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01124

DST#: 2

ATTN: Rene Husted

Test Start: 2018.05.30 @ 05:38:00

Tool Information

Drill Pipe:	Length: 3171.00 ft	Diameter: 3.80 inches	Volume: 44.48 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 45.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3350.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3325.00	
Hydraulic tool	5.00			3330.00	
Jars	5.00			3335.00	
Safety Joint	5.00			3340.00	
Packer	5.00			3345.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3350.00	
Anchor	19.00			3369.00	
Recorder	0.00	9119	Inside	3369.00	
Recorder	0.00	9139	Outside	3369.00	
Bullnose	5.00			3374.00	24.00 Bottom Packers & Anchor
Total Tool Length:	54.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01124

DST#: 2

ATTN: Rene Husted

Test Start: 2018.05.30 @ 05:38:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 73.00 sec/qt
Water Loss: 7.60 in³
Resistivity: ohm.m
Salinity: 3800.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	slightly oil cut mud 7% Oil 93% Mud	0.148
60.00	slightly oil cut muddy water	0.295
0.00	1% Oil 25% Mud 74% Water	0.000
0.00	Chlorides 63000	0.000

Total Length: 90.00 ft Total Volume: 0.443 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

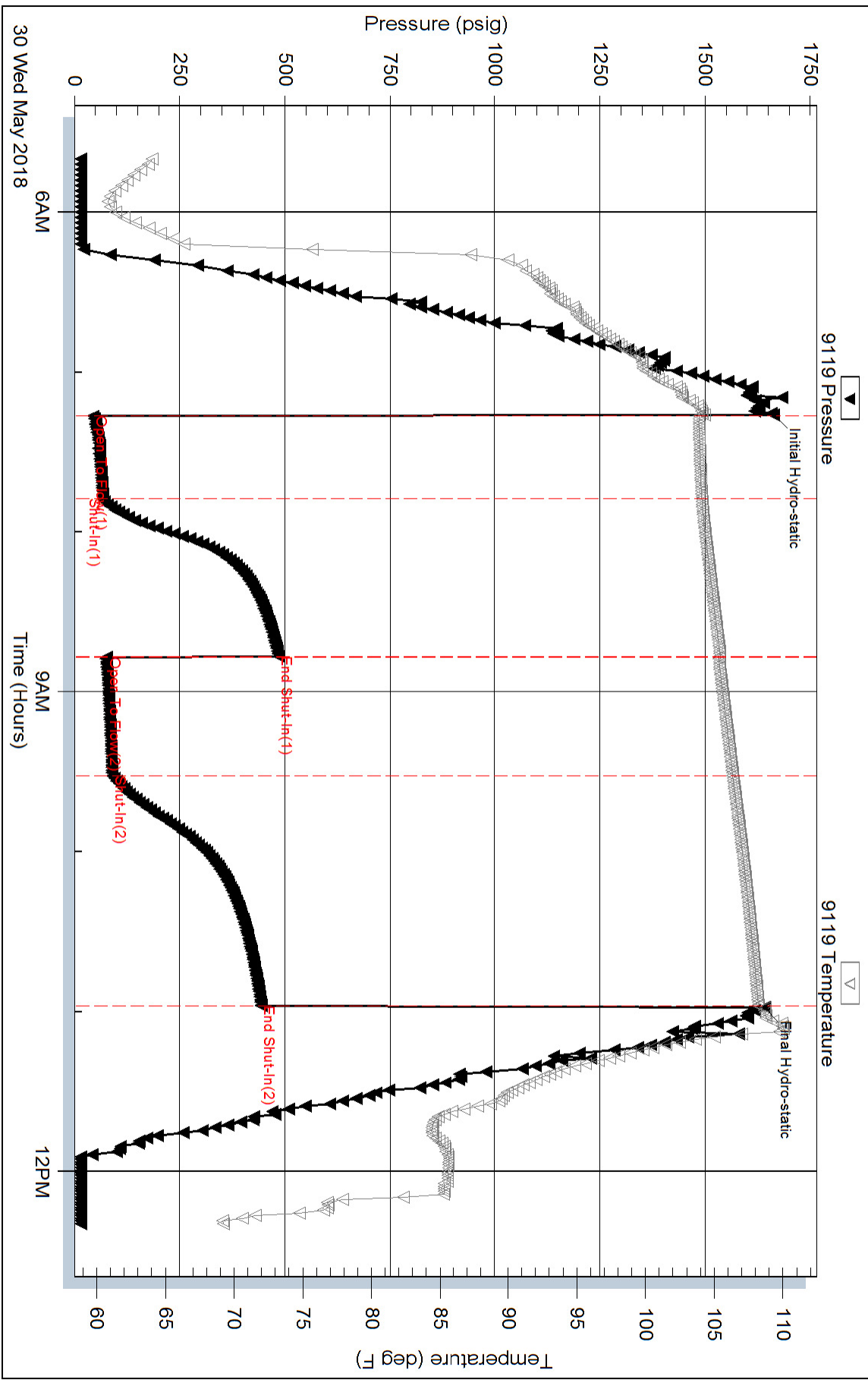
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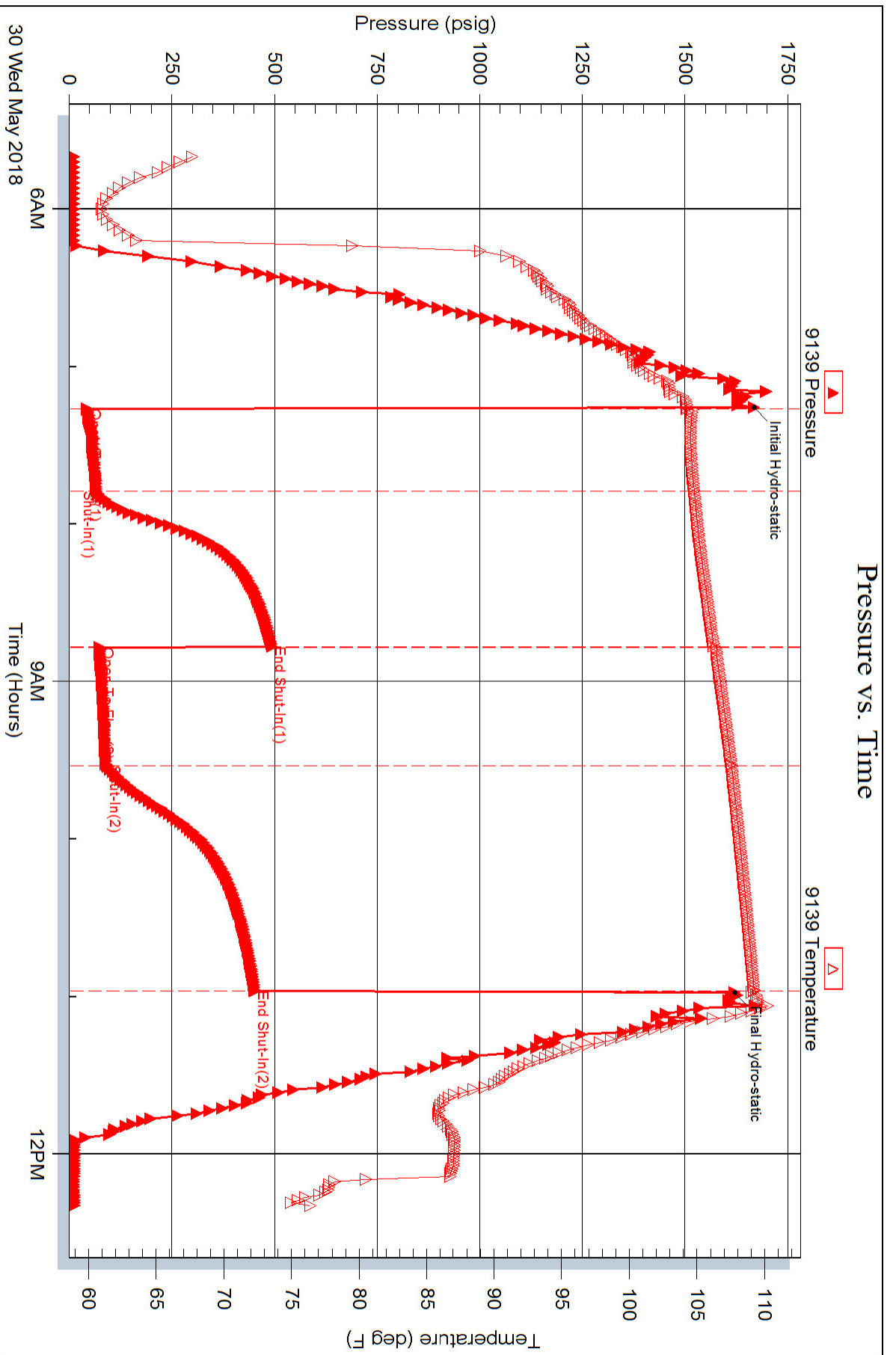
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.05.30 @ 20:05:00

End Date: 2018.05.30 @ 12:00:17

Job Ticket #: 01075 DST #: 3

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.05.31 @ 00:34:43



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

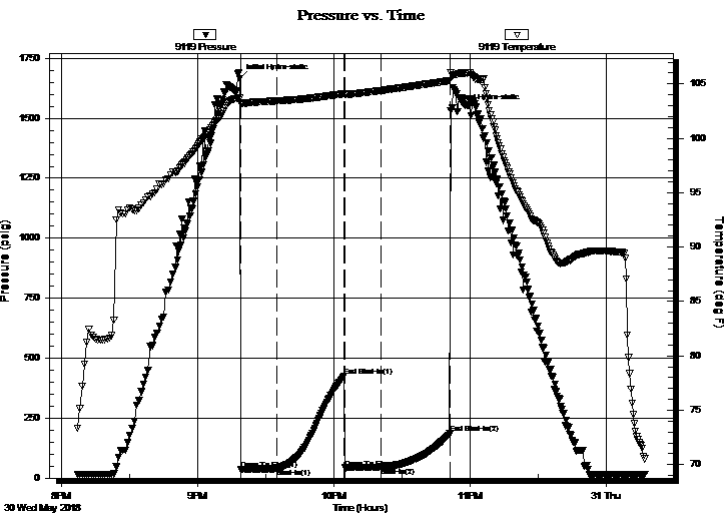
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01075 **DST#: 3**
 Test Start: 2018.05.30 @ 20:05:00

GENERAL INFORMATION:

Formation: **Kansas City "I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:19:00
 Time Test Ended: 12:00:17
 Interval: **3378.00 ft (KB) To 3394.00 ft (KB) (TVD)**
 Total Depth: 3394.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1909.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 184.97 psig @ 3389.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.30 End Date: 2018.05.31 Last Calib.: 2018.05.31
 Start Time: 20:05:00 End Time: 00:16:59 Time On Btm: 2018.05.30 @ 21:18:30
 Time Off Btm: 2018.05.30 @ 22:52:00

TEST COMMENT: 1st Opening 15 Minutes weak blow for 6 minutes and died
 1st Shut-In 30 Minutes no blow back
 2nd Opening 15 Minutes no blow
 2nd Shut-In 30 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1665.38	103.69	Initial Hydro-static
1	37.05	103.22	Open To Flow (1)
17	39.62	103.44	Shut-In(1)
46	425.73	104.10	End Shut-In(1)
47	42.99	104.02	Open To Flow (2)
62	44.55	104.39	Shut-In(2)
93	184.97	105.30	End Shut-In(2)
94	1542.10	105.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Drilling Mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
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 ATTN: Rene Husted

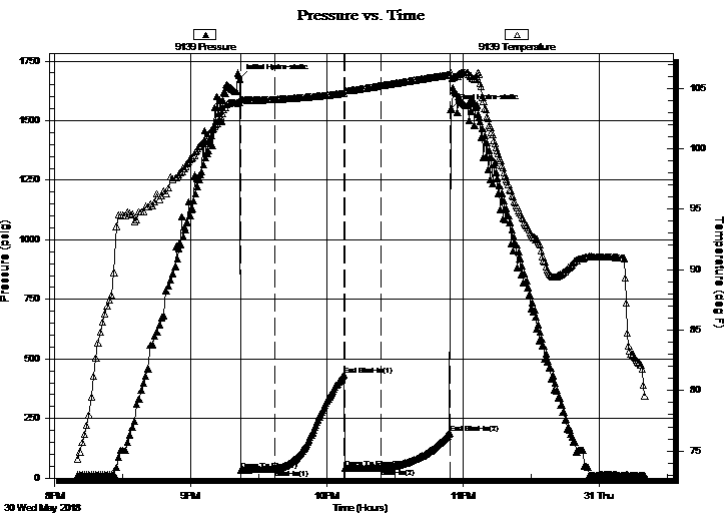
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01075 **DST#: 3**
 Test Start: 2018.05.30 @ 20:05:00

GENERAL INFORMATION:

Formation: **Kansas City "I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:19:00
 Time Test Ended: 12:00:17
 Interval: **3378.00 ft (KB) To 3394.00 ft (KB) (TVD)**
 Total Depth: 3394.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1909.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 188.58 psig @ 3389.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.30 End Date: 2018.05.31 Last Calib.: 2018.05.31
 Start Time: 20:08:00 End Time: 00:19:59 Time On Btm: 2018.05.30 @ 21:21:30
 Time Off Btm: 2018.05.30 @ 22:54:30

TEST COMMENT: 1st Opening 15 Minutes weak blow for 6 minutes and died
 1st Shut-In 30 Minutes no blow back
 2nd Opening 15 Minutes no blow
 2nd Shut-In 30 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.09	103.79	Initial Hydro-static
1	34.97	104.16	Open To Flow (1)
16	38.25	104.08	Shut-In(1)
46	434.26	104.59	End Shut-In(1)
47	41.04	104.78	Open To Flow (2)
62	42.81	105.21	Shut-In(2)
93	188.58	106.12	End Shut-In(2)
93	1549.15	106.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Drilling Mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01075

DST#: 3

ATTN: Rene Husted

Test Start: 2018.05.30 @ 20:05:00

Tool Information

Drill Pipe:	Length: 3173.00 ft	Diameter: 3.80 inches	Volume: 44.51 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 45.40 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3378.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3353.00	
Hydraulic tool	5.00			3358.00	
Jars	5.00			3363.00	
Safety Joint	5.00			3368.00	
Packer	5.00			3373.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3378.00	
Anchor	11.00			3389.00	
Recorder	0.00	9119	Inside	3389.00	
Recorder	0.00	9139	Outside	3389.00	
Bullnose	5.00			3394.00	16.00 Bottom Packers & Anchor
Total Tool Length:	46.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01075

DST#: 3

ATTN: Rene Husted

Test Start: 2018.05.30 @ 20:05:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 73000.00 sec/qt
Water Loss: 7.20 in³
Resistivity: ohm.m
Salinity: 3800.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

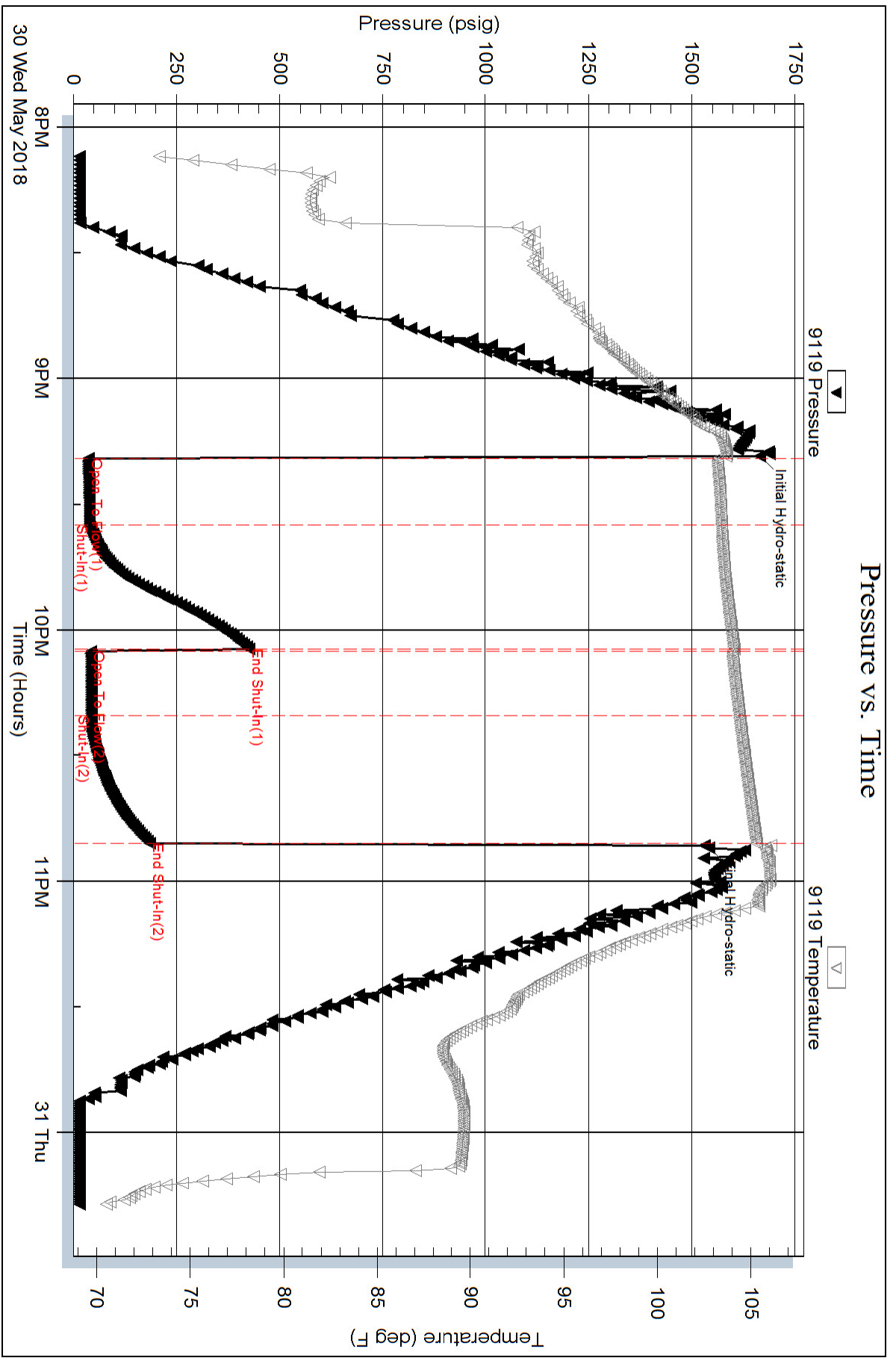
Length ft	Description	Volume bbl
10.00	Drilling Mud	0.049

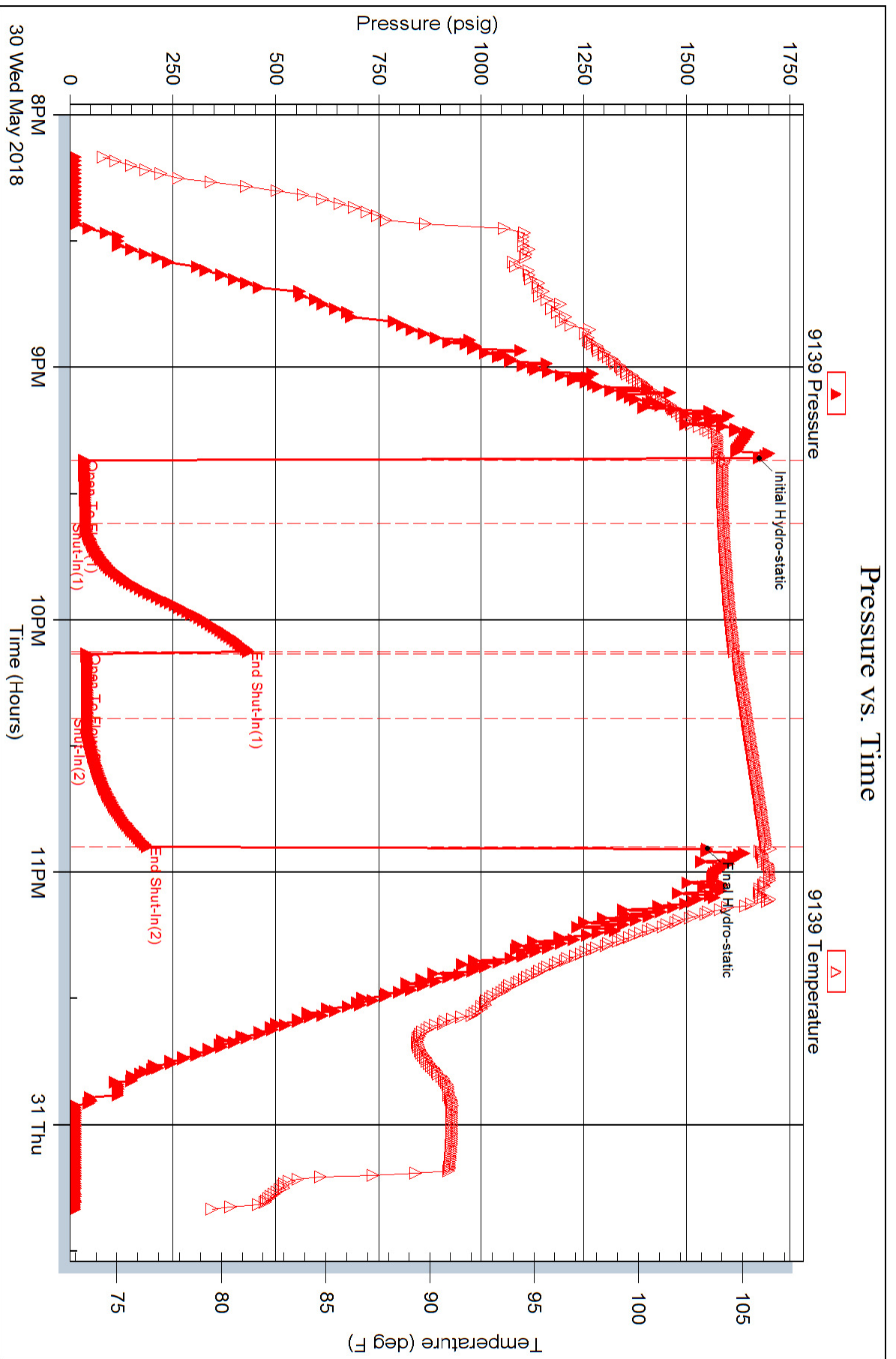
Total Length: 10.00 ft Total Volume: 0.049 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.05.31 @ 09:18:00

End Date: 2018.05.31 @ 15:52:00

Job Ticket #: 01076 DST #: 4

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.06.02 @ 14:33:06



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

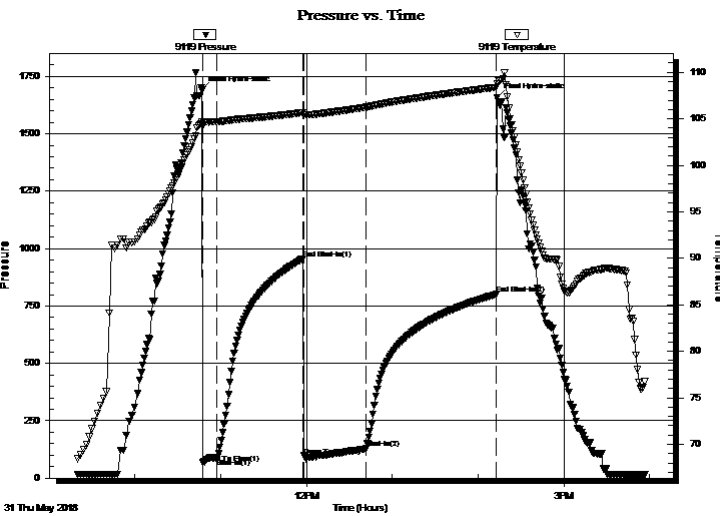
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01076 **DST#: 4**
 Test Start: 2018.05.31 @ 09:18:00

GENERAL INFORMATION:

Formation: **Kansas City "K-L"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 10:43:00 Tester: Gene Budig
 Time Test Ended: 15:52:00 Unit No: 1
 Interval: **3394.00 ft (KB) To 3324.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3324.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 800.44 psig @ 3419.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.31 End Date: 2018.05.31 Last Calib.: 2018.05.31
 Start Time: 09:20:00 End Time: 15:56:30 Time On Btm: 2018.05.31 @ 10:47:00
 Time Off Btm: 2018.05.31 @ 14:13:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of the bucket in 2 minutes
 1st Shut-In 60 Minutes Good blow back
 2nd Opening 45 Minutes strong blow bottom of the bucket in less than 1 minute
 2nd Shut-In 90 Minutes Good Blow back gas on the shut-in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1690.07	104.64	Initial Hydro-static
1	65.95	104.21	Open To Flow (1)
11	88.50	104.68	Shut-In(1)
71	955.88	105.67	End Shut-In(1)
72	96.79	105.43	Open To Flow (2)
115	128.66	106.24	Shut-In(2)
206	800.44	108.39	End Shut-In(2)
207	1656.33	108.77	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	Gas on the final shut in	0.00
120.00	Clean Gassy Oil 20% Gas 80%Oil	0.59
0.00	Gravity 42 Corrected	0.00
90.00	oil and gas cut mud 40%Gas 20%Oil 40%	0.72
60.00	Oil and gas cut mud 5%Gas 30%Oil 65%	0.84

Gas Rates

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

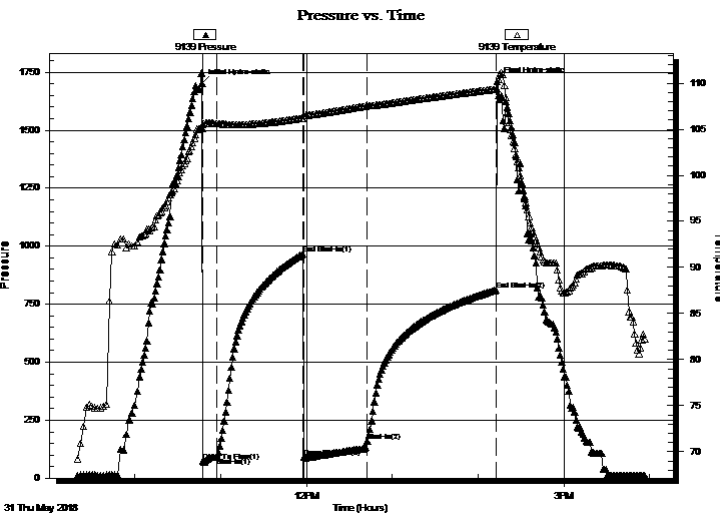
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01076 **DST#: 4**
 Test Start: 2018.05.31 @ 09:18:00

GENERAL INFORMATION:

Formation: **Kansas City "K-L"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 10:43:00 Tester: Gene Budig
 Time Test Ended: 15:52:00 Unit No: 1
 Interval: **3394.00 ft (KB) To 3324.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3324.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 811.08 psig @ 3419.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.05.31 End Date: 2018.05.31 Last Calib.: 2018.05.31
 Start Time: 09:20:00 End Time: 15:56:30 Time On Btm: 2018.05.31 @ 10:47:00
 Time Off Btm: 2018.05.31 @ 14:13:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of the bucket in 2 minutes
 1st Shut-In 60 Minutes Good blow back
 2nd Opening 45 Minutes strong blow bottom of the bucket in less than 1 minute
 2nd Shut-In 90 Minutes Good Blow back gas on the shut-in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1701.62	105.09	Initial Hydro-static
1	72.08	105.56	Open To Flow (1)
11	89.19	105.63	Shut-In(1)
71	966.80	106.22	End Shut-In(1)
72	91.32	106.50	Open To Flow (2)
116	158.17	107.53	Shut-In(2)
206	811.08	109.34	End Shut-In(2)
207	1710.67	109.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	Gas on the final shut in	0.00
120.00	Clean Gassy Oil 20% Gas 80%Oil	0.59
0.00	Gravity 42 Corrected	0.00
90.00	oil and gas cut mud 40%Gas 20%Oil 40%	0.72
60.00	Oil and gas cut mud 5%Gas 30%Oil 65%	0.84

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01076

DST#: 4

ATTN: Rene Husted

Test Start: 2018.05.31 @ 09:18:00

Tool Information

Drill Pipe:	Length: 3205.00 ft	Diameter: 3.80 inches	Volume: 44.96 bbl	Tool Weight:	lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 45.85 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	lb
Depth to Top Packer:	3394.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	60.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3369.00	
Hydraulic tool	5.00			3374.00	
Jars	5.00			3379.00	
Safety Joint	5.00			3384.00	
Packer	5.00			3389.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3394.00	
Anchor	25.00			3419.00	
Recorder	0.00	9119	Inside	3419.00	
Recorder	0.00	9139	Outside	3419.00	
Bullnose	5.00			3424.00	30.00 Bottom Packers & Anchor
Total Tool Length:	60.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01076

DST#: 4

ATTN: Rene Husted

Test Start: 2018.05.31 @ 09:18:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 66.00 sec/qt
Water Loss: 9.59 in³
Resistivity: ohm.m
Salinity: 5000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

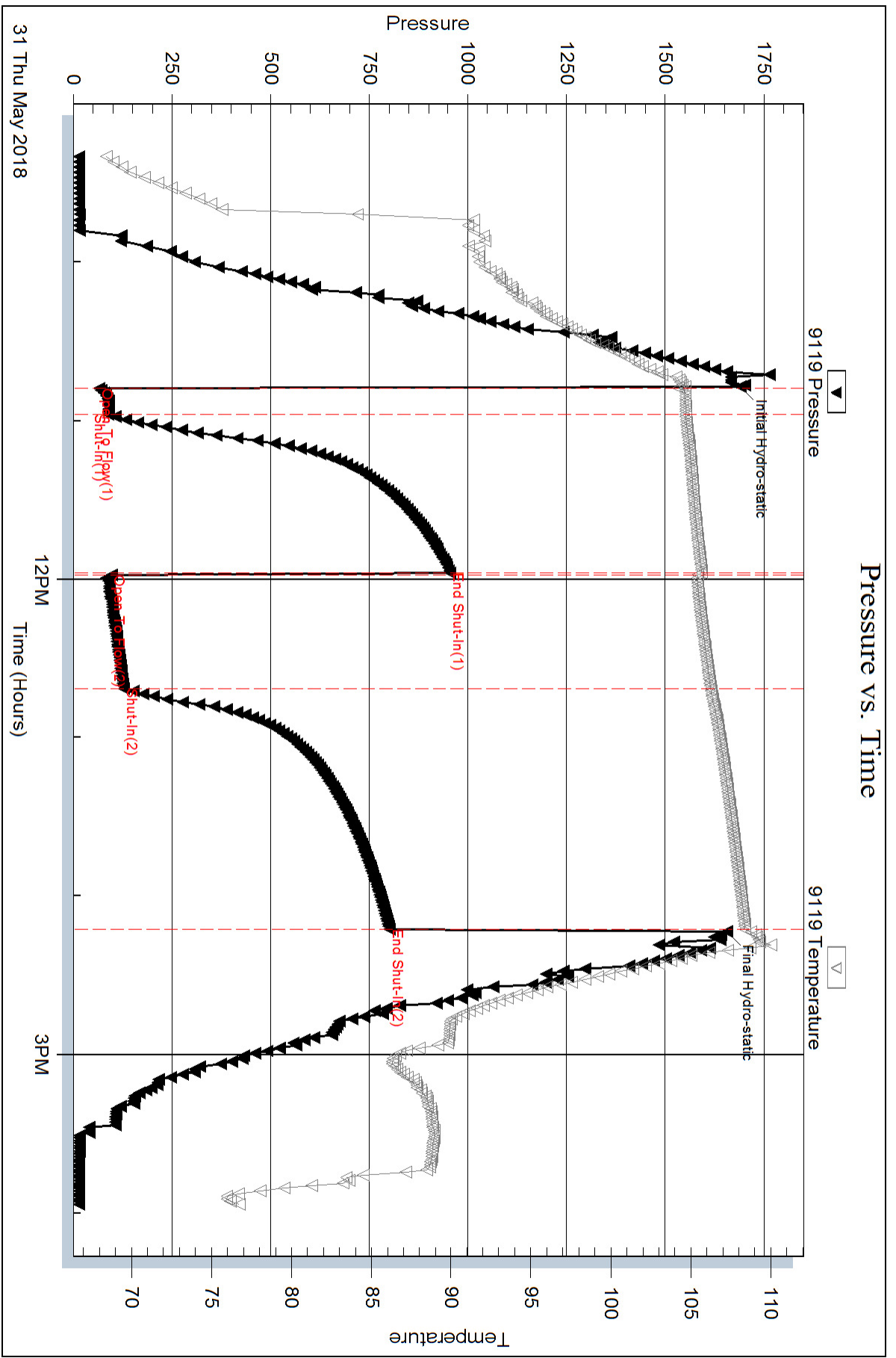
Length ft	Description	Volume bbl
0.00	Gas on the final shut in	0.000
120.00	Clean Gassy Oil 20% Gas 80%Oil	0.590
0.00	Gravity 42 Corrected	0.000
90.00	oil and gas cut mud 40%Gas 20%Oil 40%Mu	0.716
60.00	Oil and gas cut mud 5%Gas 30%Oil 65%Mud	0.842

Total Length: 270.00 ft Total Volume: 2.148 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.06.01 @ 05:29:00

End Date: 2018.06.01 @ 11:33:00

Job Ticket #: 01077 DST #: 5

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.06.01 @ 11:48:09



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

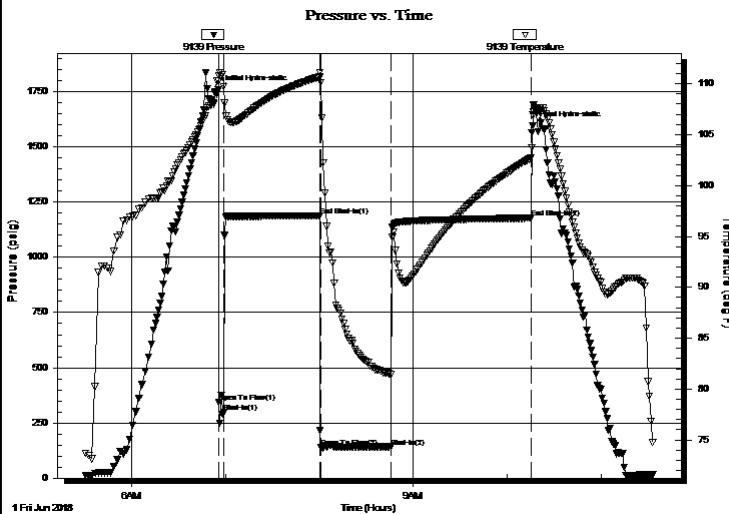
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01077 **DST#: 5**
 Test Start: 2018.06.01 @ 05:29:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 06:55:00 Tester: Gene Budig
 Time Test Ended: 11:33:00 Unit No: 1
 Interval: **3534.00 ft (KB) To 3542.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3542.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1178.07 psig @ 3537.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.01 End Date: 2018.06.01 Last Calib.: 2018.06.01
 Start Time: 05:29:00 End Time: 11:33:00 Time On Btm: 2018.06.01 @ 06:55:30
 Time Off Btm: 2018.06.01 @ 10:16:00

TEST COMMENT: 1st Opening 5 Minutes Strong blow gas to surface in 3 minutes
 1st Shut-In 60 Minutes good blow back
 2nd Opening 45nMinutes Strong blow max gas Gauged 539 mcf
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1760.31	110.28	Initial Hydro-static
1	345.15	110.83	Open To Flow (1)
4	296.86	109.73	Shut-In(1)
65	1186.66	110.67	End Shut-In(1)
66	137.57	110.12	Open To Flow (2)
110	141.42	81.43	Shut-In(2)
200	1178.07	102.72	End Shut-In(2)
201	1595.97	106.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	NO RECOVERY	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	0.91	440.00
Last Gas Rate	1.00	4.35	539.04
Max. Gas Rate	1.00	4.35	539.04



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

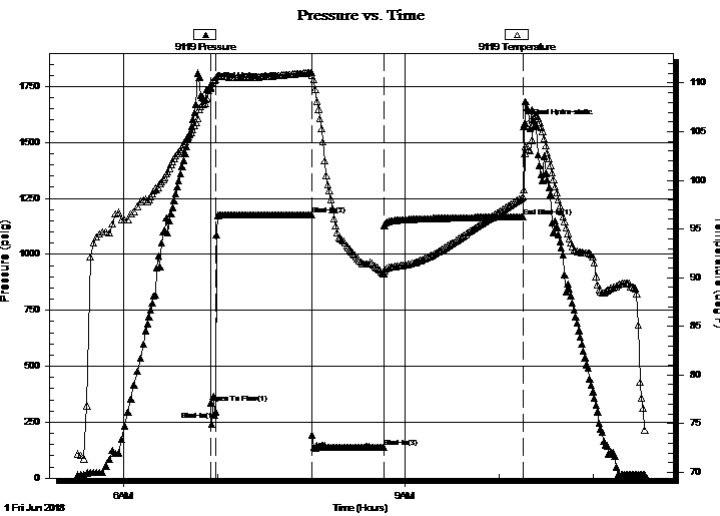
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01077 **DST#: 5**
 Test Start: 2018.06.01 @ 05:29:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 06:55:00 Tester: Gene Budig
 Time Test Ended: 11:33:00 Unit No: 1
 Interval: **3534.00 ft (KB) To 3542.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3542.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1167.53 psig @ 3537.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.01 End Date: 2018.06.01 Last Calib.: 2018.06.01
 Start Time: 05:29:00 End Time: 11:33:00 Time On Btm: 2018.06.01 @ 06:55:30
 Time Off Btm: 2018.06.01 @ 10:16:00

TEST COMMENT: 1st Opening 5 Minutes Strong blow gas to surface in 3 minutes
 1st Shut-In 60 Minutes good blow back
 2nd Opening 45nMinutes Strong blow max gas Gauged 539 mcf
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.70	109.58	Initial Hydro-static
1	336.97	109.42	Open To Flow (1)
4	297.01	110.39	Shut-In(1)
65	1176.89	111.09	Shut-In(2)
111	137.28	90.43	Shut-In(3)
200	1167.53	98.28	End Shut-In(1)
201	1585.58	102.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	NO RECOVERY	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	0.91	440.00
Last Gas Rate	1.00	4.35	539.04
Max. Gas Rate	1.00	4.35	539.04



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01077

DST#: 5

ATTN: Rene Hustedad

Test Start: 2018.06.01 @ 05:29:00

Tool Information

Drill Pipe:	Length: 3328.00 ft	Diameter: 3.80 inches	Volume: 46.68 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose:	72000.00 lb
			<u>Total Volume: 47.57 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial	61000.00 lb
Depth to Top Packer:	3534.00 ft			Final	61000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	38.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3509.00	
Hydraulic tool	5.00			3514.00	
Jars	5.00			3519.00	
Safety Joint	5.00			3524.00	
Packer	5.00			3529.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3534.00	
Anchor	3.00			3537.00	
Recorder	0.00	9119	Inside	3537.00	
Recorder	0.00	9139	Outside	3537.00	
Bullnose	5.00			3542.00	8.00 Bottom Packers & Anchor
Total Tool Length:	38.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01077

DST#: 5

ATTN: Rene Husted

Test Start: 2018.06.01 @ 05:29:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 66.00 sec/qt
Water Loss: 9.60 in³
Resistivity: ohm.m
Salinity: 5000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	NO RECOVERY	0.000

Total Length: ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:



DRILL STEM TEST REPORT

GAS RATES

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01077

DST#: 5

ATTN: Rene Husted

Test Start: 2018.06.01 @ 05:29:00

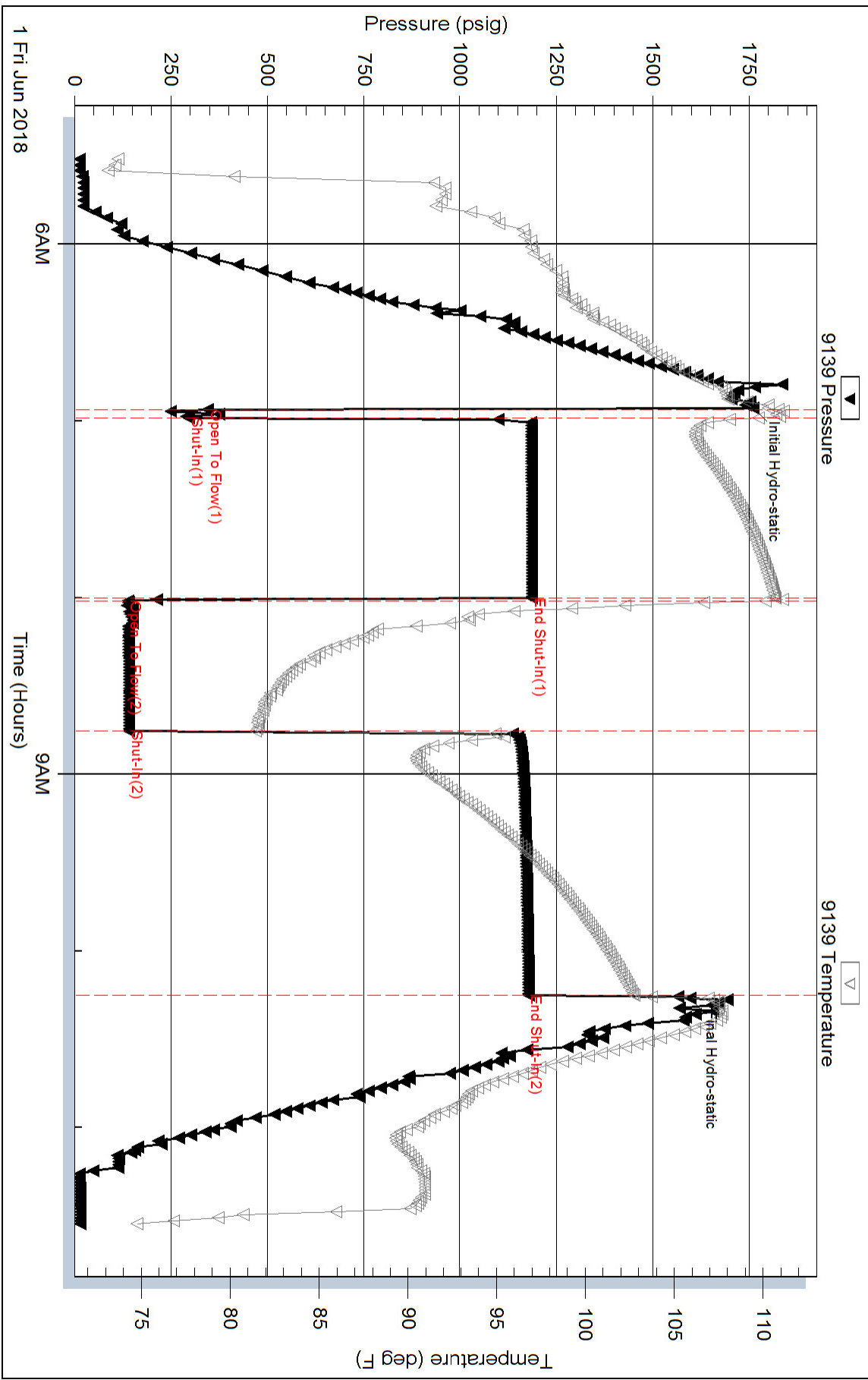
Gas Rates Information

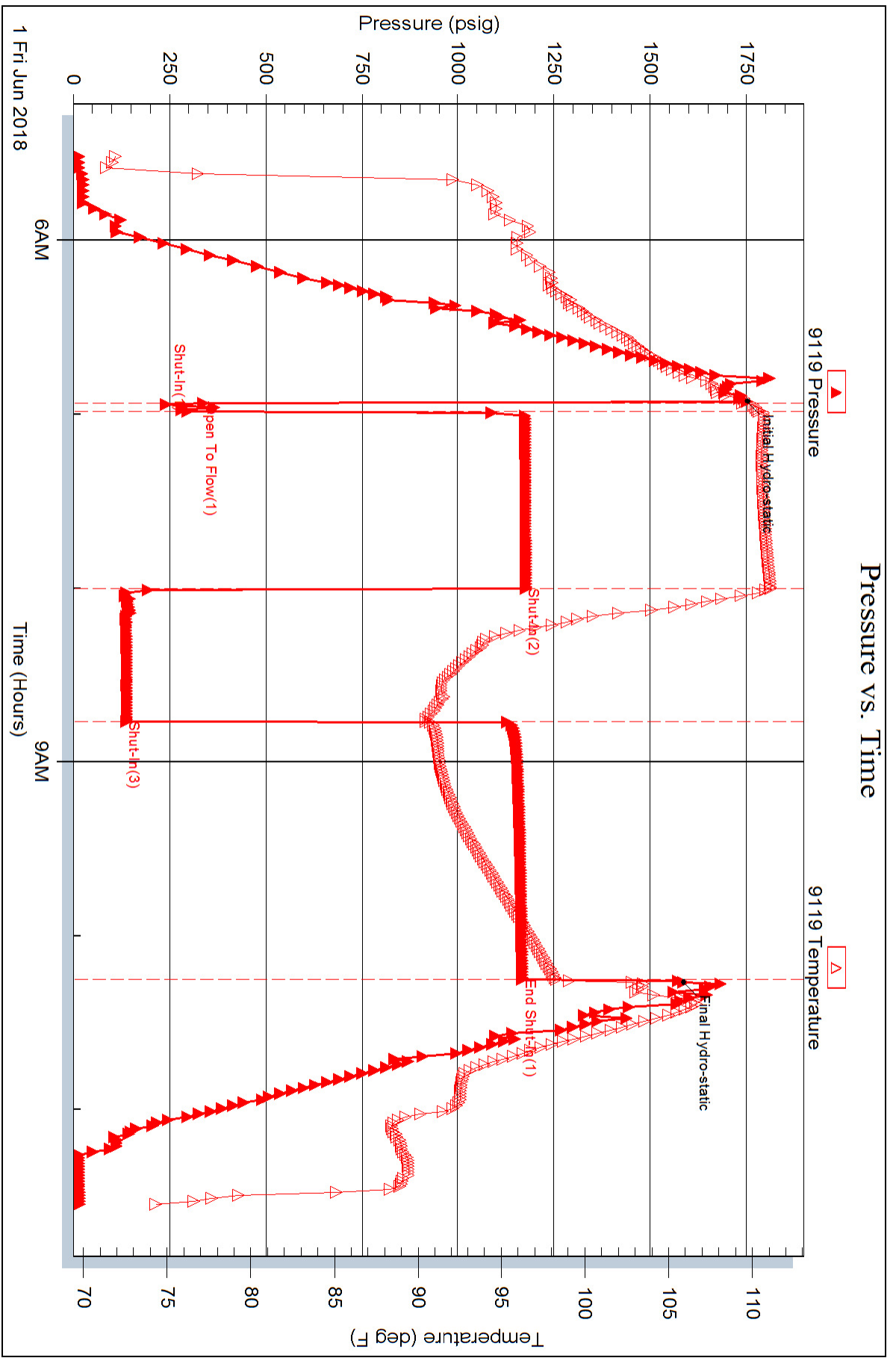
Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	1.00	0.91	440.00
2	15	1.00	4.04	530.13
2	25	1.00	4.04	530.13
2	35	1.00	4.35	539.04
2	45	1.00	4.35	539.04

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.06.01 @ 17:42:00

End Date: 2018.06.01 @ 12:39:00

Job Ticket #: 01078 DST #: 6

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.06.02 @ 00:57:34



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

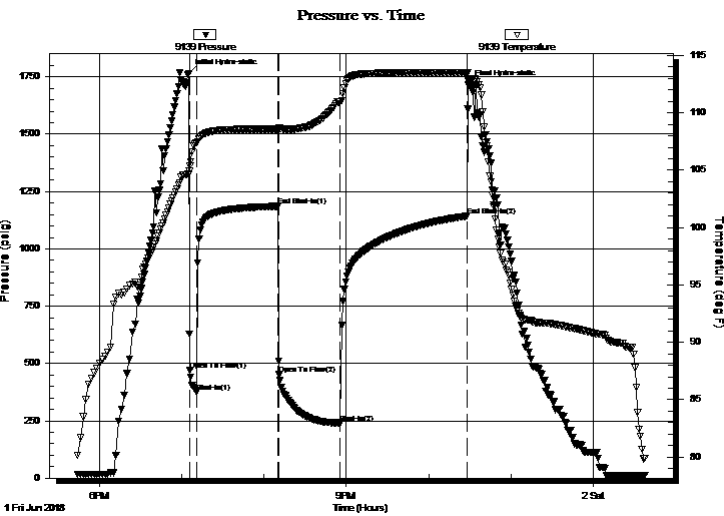
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01078 **DST#: 6**
 Test Start: 2018.06.01 @ 17:42:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:06:00 Tester: Gene Budig
 Time Test Ended: 12:39:00 Unit No: 1
 Interval: **3542.00 ft (KB) To 3552.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3552.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1142.97 psig @ 3547.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.01 End Date: 2018.06.02 Last Calib.: 2018.06.02
 Start Time: 17:42:00 End Time: 00:37:59 Time On Btm: 2018.06.01 @ 19:05:00
 Time Off Btm: 2018.06.01 @ 22:29:00

TEST COMMENT: 1st opening 5 Minutes strong blow gas to surface in 3 minutes
 1st Shut-In 60 Minutes goodblow back
 2nd Opening 45 Minutes strong blow max gas gauged 1474mcf
 2nd Shut-In 90 Minutes Good b;low back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1765.87	104.66	Initial Hydro-static
1	469.67	105.38	Open To Flow (1)
6	376.89	107.42	Shut-In(1)
65	1185.88	108.58	End Shut-In(1)
66	451.61	108.71	Open To Flow (2)
111	241.26	110.98	Shut-In(2)
203	1142.97	113.53	End Shut-In(2)
204	1716.02	112.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
330.00	clean gassy oil 15%Gas 85% Oil	2.99
0.00	gravity 38	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	36.88	1474.10
Last Gas Rate	1.00	15.31	854.13
Max. Gas Rate	1.00	36.88	1474.10



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

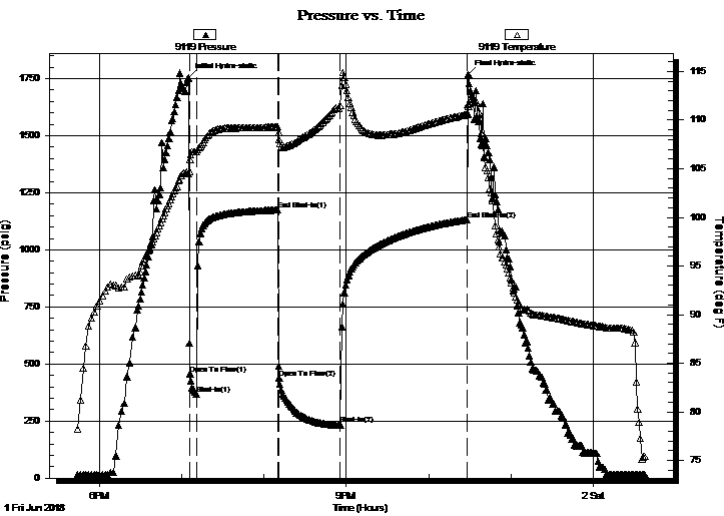
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01078 **DST#: 6**
 Test Start: 2018.06.01 @ 17:42:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:06:00 Tester: Gene Budig
 Time Test Ended: 12:39:00 Unit No: 1
 Interval: **3542.00 ft (KB) To 3552.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3552.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1132.12 psig @ 3547.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.01 End Date: 2018.06.02 Last Calib.: 2018.06.02
 Start Time: 17:42:00 End Time: 00:37:59 Time On Btm: 2018.06.01 @ 19:05:00
 Time Off Btm: 2018.06.01 @ 22:29:00

TEST COMMENT: 1st opening 5 Minutes strong blow gas to surface in 3 minutes
 1st Shut-In 60 Minutes goodblow back
 2nd Opening 45 Minutes strong blow max gas gauged 1474mcf
 2nd Shut-In 90 Minutes Good b;low back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1754.22	104.45	Initial Hydro-static
1	457.50	105.95	Open To Flow (1)
6	367.44	106.72	Shut-In(1)
65	1174.59	109.30	End Shut-In(1)
66	438.06	108.00	Open To Flow (2)
111	234.31	111.48	Shut-In(2)
203	1132.12	110.58	End Shut-In(2)
204	1768.50	111.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
330.00	clean gassy oil 15%Gas 85% Oil	2.99
0.00	gravity 38	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	36.88	1474.10
Last Gas Rate	1.00	15.31	854.13
Max. Gas Rate	1.00	36.88	1474.10



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01078

DST#: 6

ATTN: Rene Husted

Test Start: 2018.06.01 @ 17:42:00

Tool Information

Drill Pipe:	Length: 3361.00 ft	Diameter: 3.80 inches	Volume: 47.15 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 48.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3542.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3522.00		
Hydraulic tool	5.00			3527.00		
Jars	5.00			3532.00		
Safety Joint	5.00			3537.00		
Packer	5.00		Fluid	3542.00	25.00	Bottom Of Top Packer
Anchor	5.00			3547.00		
Recorder	0.00	9119	Inside	3547.00		
Recorder	0.00	9139	Outside	3547.00		
Bullnose	5.00			3552.00	10.00	Anchor Tool
Total Tool Length:	35.00					



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01078

DST#: 6

ATTN: Rene Husted

Test Start: 2018.06.01 @ 17:42:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 60.00 sec/qt
Water Loss: 8.80 in³
Resistivity: ohm.m
Salinity: 4500.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
330.00	clean gassy oil 15% Gas 85% Oil	2.989
0.00	gravity 38	0.000

Total Length: 330.00 ft Total Volume: 2.989 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



DRILL STEM TEST REPORT

GAS RATES

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01078

DST#: 6

ATTN: Rene Husted

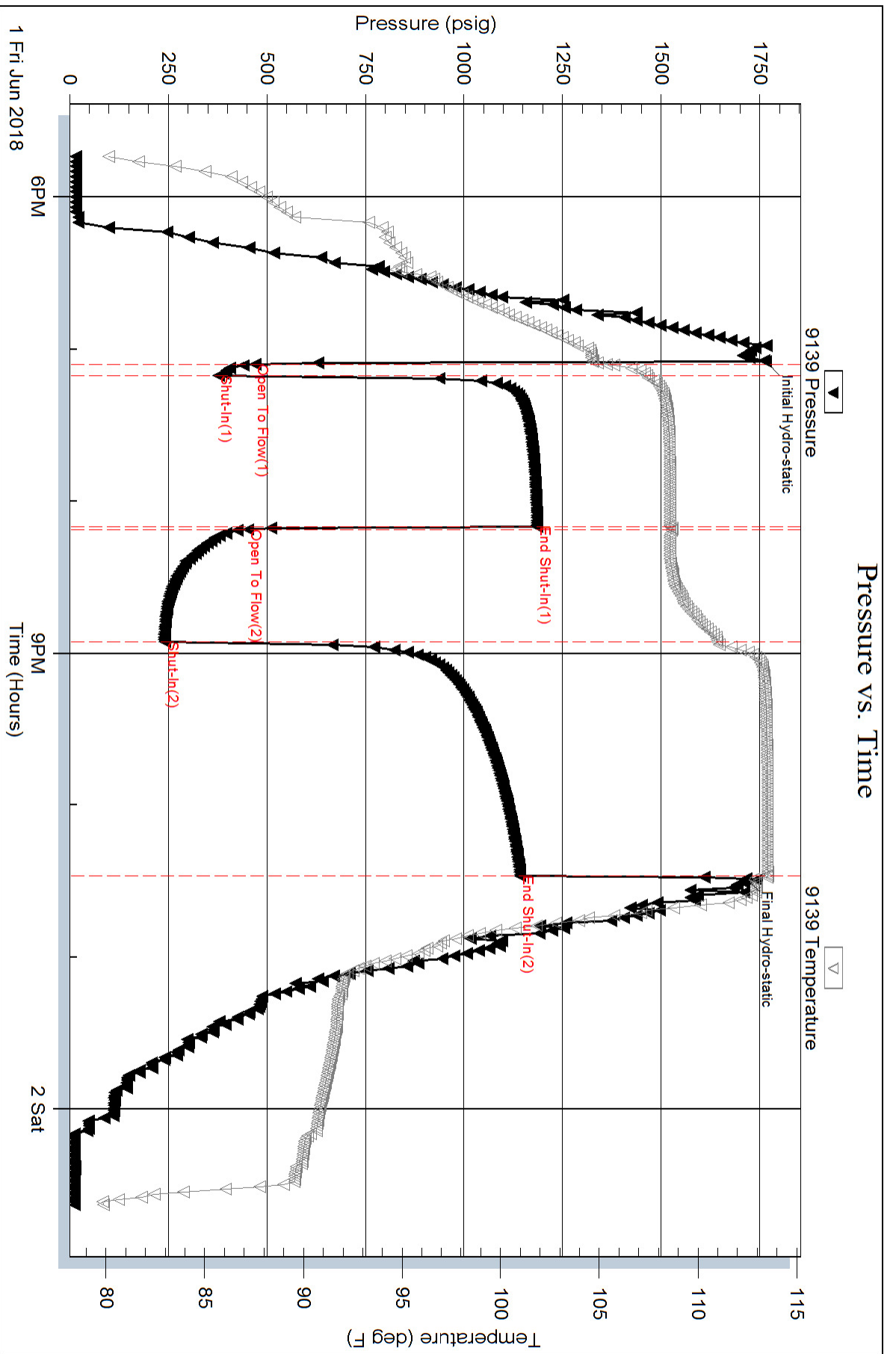
Test Start: 2018.06.01 @ 17:42:00

Gas Rates Information

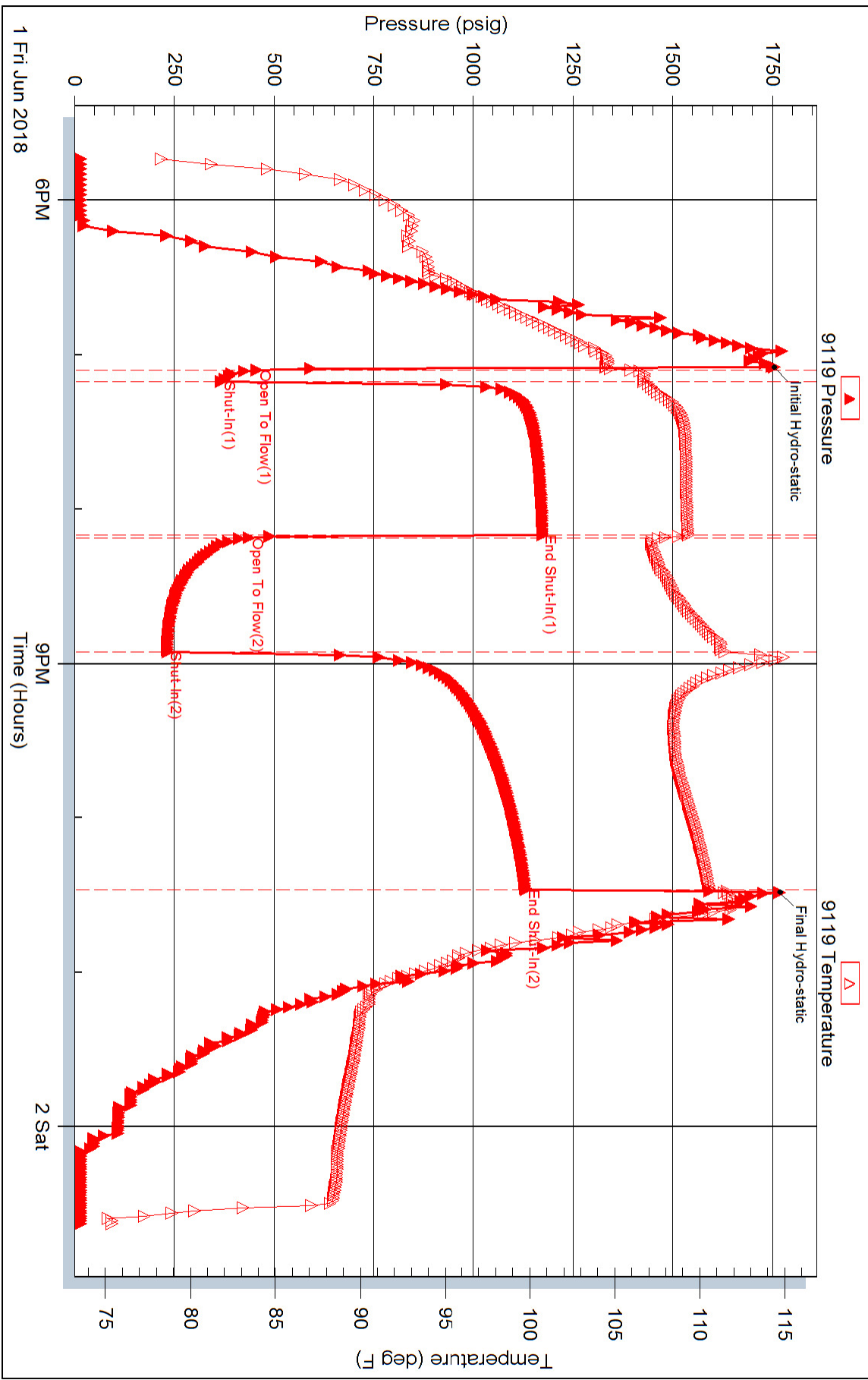
Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	1.00	36.88	1474.10
2	15	1.00	26.82	1185.03
2	25	1.00	21.26	1025.18
2	35	1.00	18.44	944.11
2	45	1.00	15.31	854.13



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.06.02 @ 08:13:00

End Date: 2018.06.02 @ 17:42:00

Job Ticket #: 01079 DST #: 7

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.06.02 @ 18:00:08



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

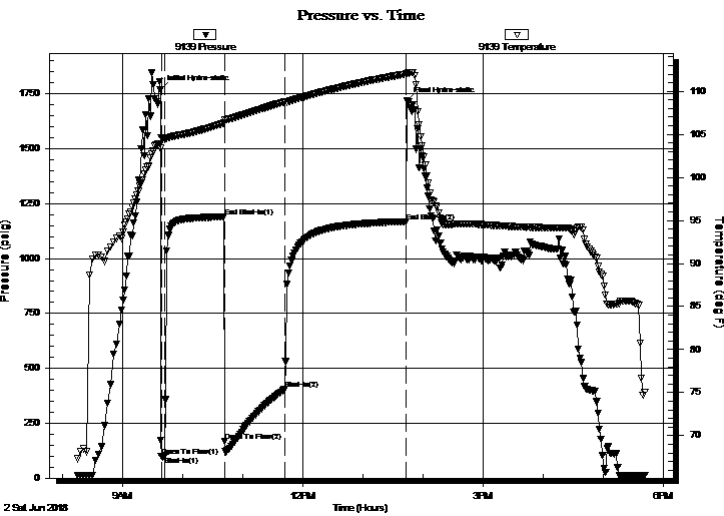
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01079 **DST#: 7**
 Test Start: 2018.06.02 @ 08:13:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:38:00 Tester: Gene Budig
 Time Test Ended: 17:42:00 Unit No: 1
 Interval: **3552.00 ft (KB) To 3562.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3562.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1168.47 psig @ 3558.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.02 End Date: 2018.06.02 Last Calib.: 2018.06.02
 Start Time: 08:13:00 End Time: 17:41:59 Time On Btm: 2018.06.02 @ 09:37:30
 Time Off Btm: 2018.06.02 @ 13:44:00

TEST COMMENT: 1st Opening 5 Minutes Strong blow bottom of the bucket less than 1 minute
 1st Shut-In 60 Minutes Good blow back
 2nd Opening 60 Minutes Strong blow gas in 2 minutes max gauge 60.2 mcf
 2nd Shut-In 120 minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1769.71	103.39	Initial Hydro-static
1	99.14	104.61	Open To Flow (1)
5	101.70	104.63	Shut-In(1)
64	1189.78	106.33	End Shut-In(1)
65	167.81	106.64	Open To Flow (2)
125	406.19	108.79	Shut-In(2)
246	1168.47	112.02	End Shut-In(2)
247	1716.76	112.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2050.00	Clean Gassy Oil Gravity 35 Corrected	27.12

Gas Rates

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

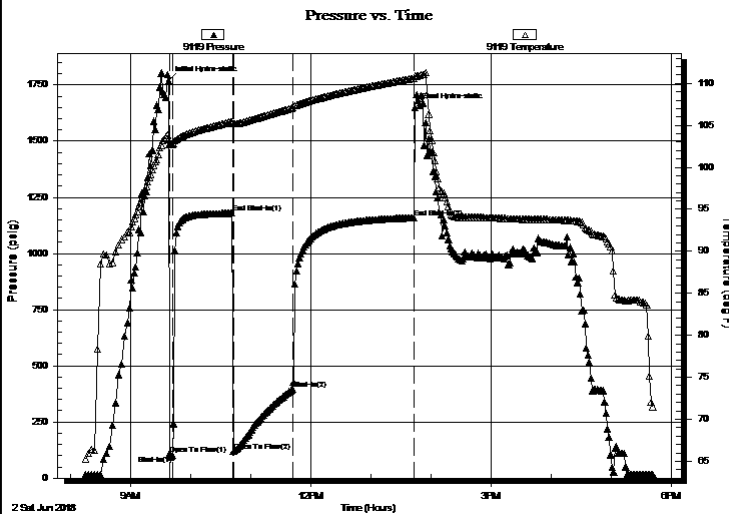
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01079 **DST#: 7**
 Test Start: 2018.06.02 @ 08:13:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:38:00 Tester: Gene Budig
 Time Test Ended: 17:42:00 Unit No: 1
 Interval: **3552.00 ft (KB) To 3562.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3562.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1158.68 psig @ 3558.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.02 End Date: 2018.06.02 Last Calib.: 2018.06.02
 Start Time: 08:13:00 End Time: 17:41:59 Time On Btm: 2018.06.02 @ 09:38:00
 Time Off Btm: 2018.06.02 @ 13:44:00

TEST COMMENT: 1st Opening 5 Minutes Strong blow bottom of the bucket less than 1 minute
 1st Shut-In 60 Minutes Good blow back
 2nd Opening 60 Minutes Strong blow gas in 2 minutes max gauge 60.2 mcf
 2nd Shut-In 120 minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.93	103.28	Initial Hydro-static
1	108.05	102.77	Open To Flow (1)
4	101.10	102.73	Shut-In(1)
64	1179.91	105.47	End Shut-In(1)
65	120.83	105.18	Open To Flow (2)
124	397.33	107.09	Shut-In(2)
245	1158.68	110.61	End Shut-In(2)
246	1650.40	110.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2050.00	Clean Gassy Oil Gravity 35 Corrected	27.12

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01079

DST#: 7

ATTN: Rene Husted

Test Start: 2018.06.02 @ 08:13:00

Tool Information

Drill Pipe:	Length: 3362.00 ft	Diameter: 3.80 inches	Volume: 47.16 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 83000.00 lb
			<u>Total Volume: 48.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3553.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3533.00		
Hydraulic tool	5.00			3538.00		
Jars	5.00			3543.00		
Safety Joint	5.00			3548.00		
Packer	5.00		Fluid	3553.00	25.00	Bottom Of Top Packer
Anchor	5.00			3558.00		
Recorder	0.00	9119	Inside	3558.00		
Recorder	0.00	9139	Outside	3558.00		
Bullnose	5.00			3563.00	10.00	Anchor Tool
Total Tool Length:	35.00					



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01079

DST#: 7

ATTN: Rene Husted

Test Start: 2018.06.02 @ 08:13:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 65.00 sec/qt

Water Loss: 9.20 in³

Resistivity: ohm.m

Salinity: 4900.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2050.00	Clean Gassy Oil Gravity 35 Corrected	27.116

Total Length: 2050.00 ft Total Volume: 27.116 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



DRILL STEM TEST REPORT

GAS RATES

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01079

DST#: 7

ATTN: Rene Husted

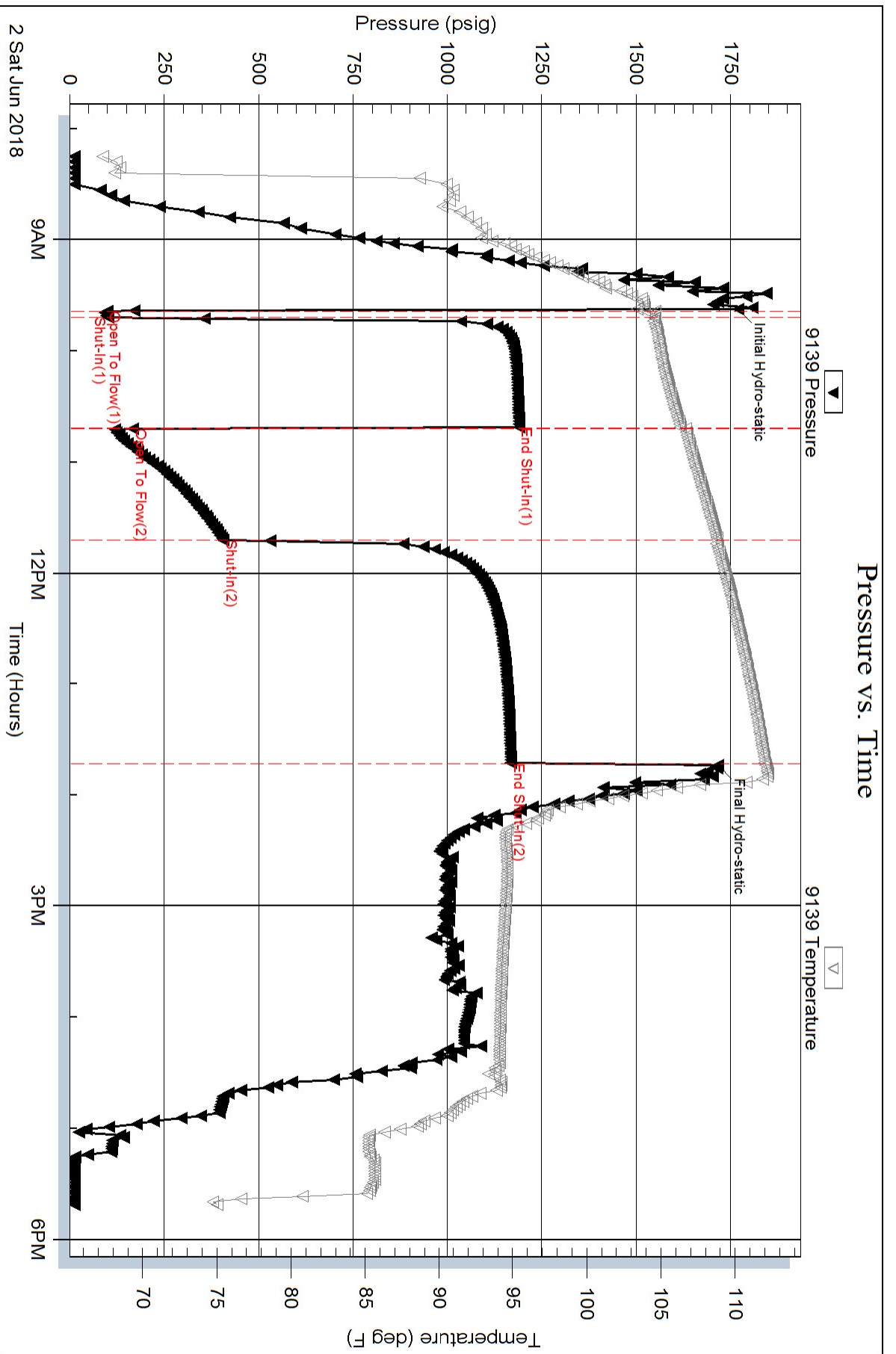
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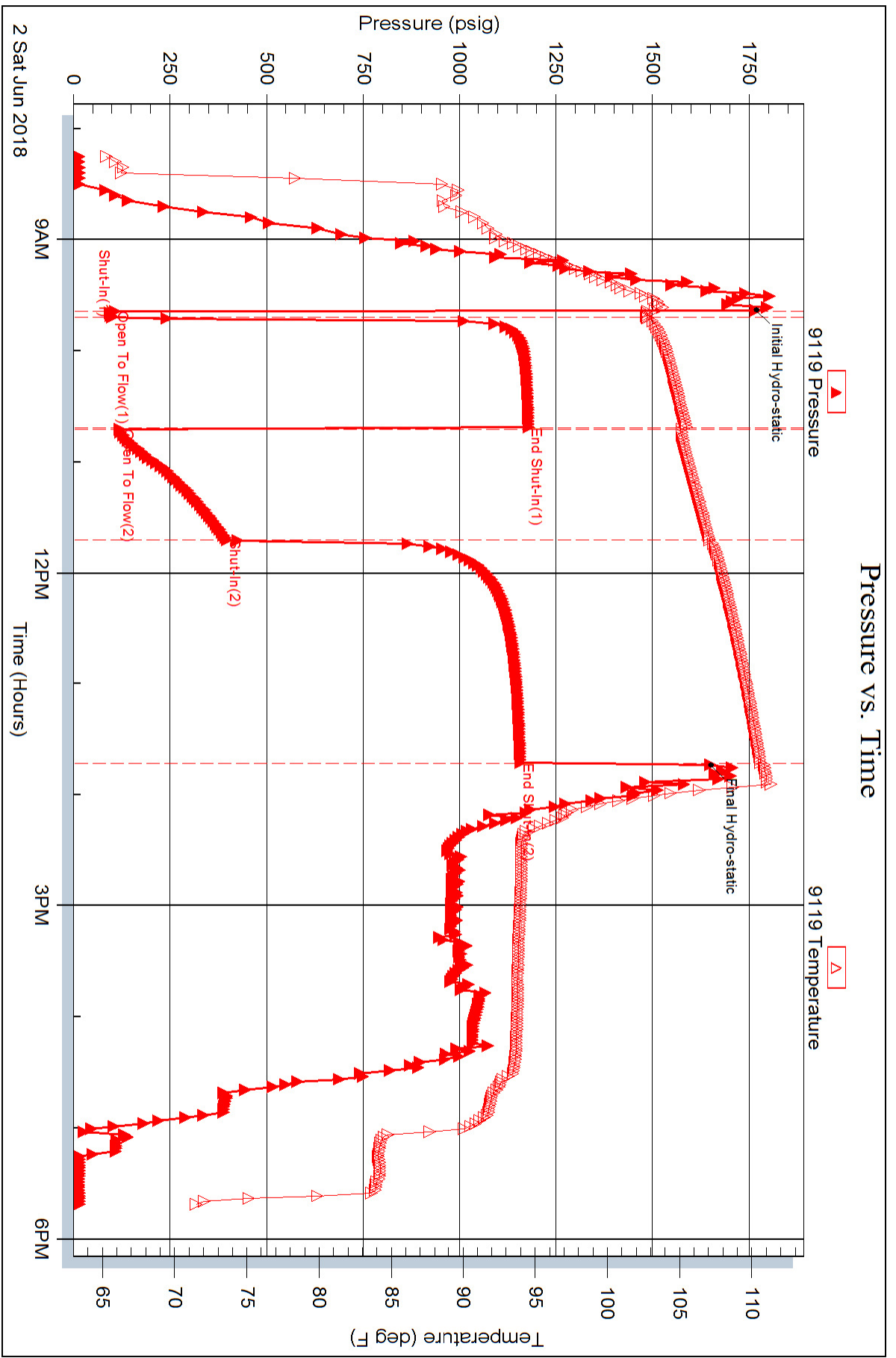
Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
		0.00	0.00	0.00







DRILL STEM TEST REPORT

Prepared For: **F.G.Holl Company LLC**

9431 East Central Suite 100
Wichita, Kansas 67206-2563

ATTN: Rene Husted

Calcara #3-19

19-19-14 Barton

Start Date: 2018.06.03 @ 12:17:00

End Date: 2018.06.03 @ 05:26:00

Job Ticket #: 01080 DST #: 8

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.06.03 @ 05:42:30



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

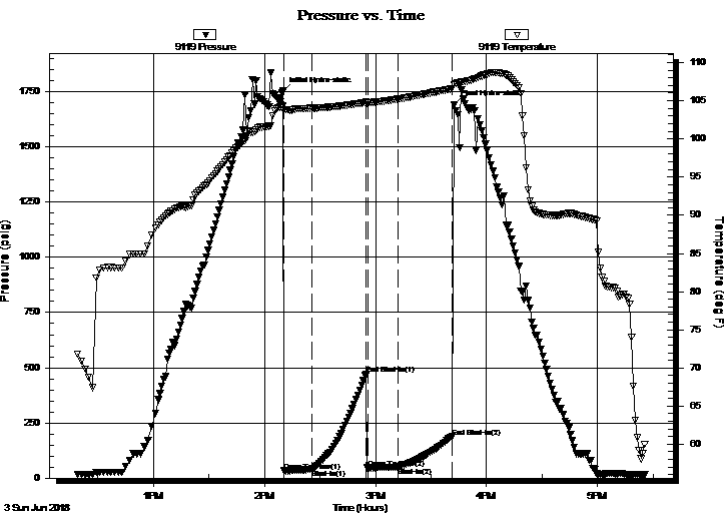
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01080 **DST#: 8**
 Test Start: 2018.06.03 @ 12:17:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 02:10:00 Tester: Gene Budig
 Time Test Ended: 05:26:00 Unit No: 1
 Interval: **3562.00 ft (KB) To 3672.00 ft (KB) (TVD)** Reference Elevations: 1909.00 ft (KB)
 Total Depth: 3572.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 13.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 187.23 psig @ 3567.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.03 End Date: 2018.06.03 Last Calib.: 2018.06.03
 Start Time: 12:17:00 End Time: 17:25:30 Time On Btm: 2018.06.03 @ 14:10:00
 Time Off Btm: 2018.06.03 @ 15:42:30

TEST COMMENT: 1ST Opening 15 Minutes weak blow for 6 minutes and died
 1st Shut-In 30 Minutes no blow back
 2nd Opening 15 Minutes no blow
 2nd Shut-In 30 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1752.40	104.28	Initial Hydro-static
1	32.46	103.73	Open To Flow (1)
16	39.66	104.03	Shut-In(1)
45	470.43	104.80	End Shut-In(1)
46	44.49	104.71	Open To Flow (2)
62	50.08	105.22	Shut-In(2)
92	187.23	106.59	End Shut-In(2)
93	1689.62	107.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	oil cut mud 15% oil 85%Mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

F.G.Holl Company LLC
 9431 East Central Suite 100
 Wichita, Kansas 67206-2563
 ATTN: Rene Husted

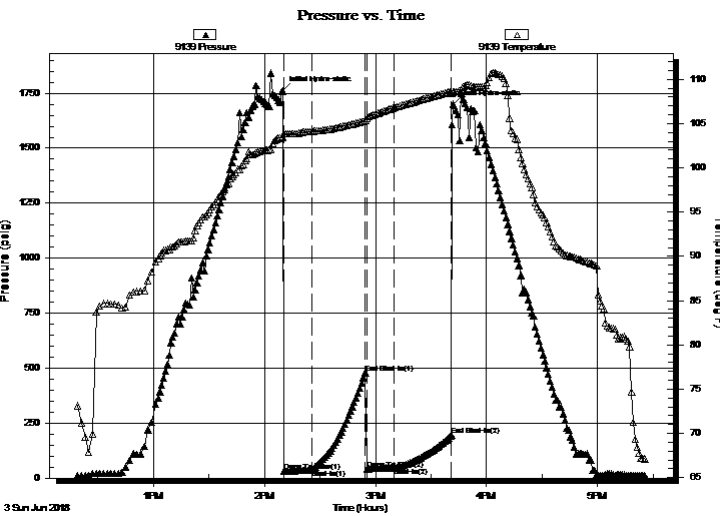
19-19-14 Barton
Calcara #3-19
 Job Ticket: 01080 **DST#: 8**
 Test Start: 2018.06.03 @ 12:17:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:10:00
 Time Test Ended: 05:26:00
 Interval: **3562.00 ft (KB) To 3672.00 ft (KB) (TVD)**
 Total Depth: 3572.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1909.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 194.65 psig @ 3567.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.06.03 End Date: 2018.06.03 Last Calib.: 2018.06.03
 Start Time: 12:17:00 End Time: 17:25:30 Time On Btm: 2018.06.03 @ 14:10:00
 Time Off Btm: 2018.06.03 @ 15:42:00

TEST COMMENT: 1ST Opening 15 Minutes weak blow for 6 minutes and died
 1st Shut-In 30 Minutes no blow back
 2nd Opening 15 Minutes no blow
 2nd Shut-In 30 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1761.81	103.49	Initial Hydro-static
1	29.78	103.92	Open To Flow (1)
16	38.27	104.15	Shut-In(1)
45	476.44	105.30	End Shut-In(1)
46	41.92	105.62	Open To Flow (2)
60	47.72	106.79	Shut-In(2)
91	194.65	108.63	End Shut-In(2)
92	1699.80	108.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	oil cut mud 15% oil 85%Mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01080

DST#: 8

ATTN: Rene Husted

Test Start: 2018.06.03 @ 12:17:00

Tool Information

Drill Pipe:	Length: 3388.00 ft	Diameter: 3.80 inches	Volume: 47.52 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose:	74000.00 lb
			<u>Total Volume: 48.41 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	61000.00 lb
Depth to Top Packer:	3562.00 ft			Final	61000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	10.00 ft				
Tool Length:	35.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3542.00		
Hydraulic tool	5.00			3547.00		
Jars	5.00			3552.00		
Safety Joint	5.00			3557.00		
Packer	5.00		Fluid	3562.00	25.00	Bottom Of Top Packer
Anchor	5.00			3567.00		
Recorder	0.00	9119	Inside	3567.00		
Recorder	0.00	9139	Outside	3567.00		
Bullnose	5.00			3572.00	10.00	Anchor Tool
Total Tool Length:	35.00					



DRILL STEM TEST REPORT

FLUID SUMMARY

F.G.Holl Company LLC

19-19-14 Barton

9431 East Central Suite 100
Wichita, Kansas 67206-2563

Calcara #3-19

Job Ticket: 01080

DST#: 8

ATTN: Rene Husted

Test Start: 2018.06.03 @ 12:17:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 65.00 sec/qt
Water Loss: 9.20 in³
Resistivity: ohm.m
Salinity: 4900.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	oil cut mud 15% oil 85%Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

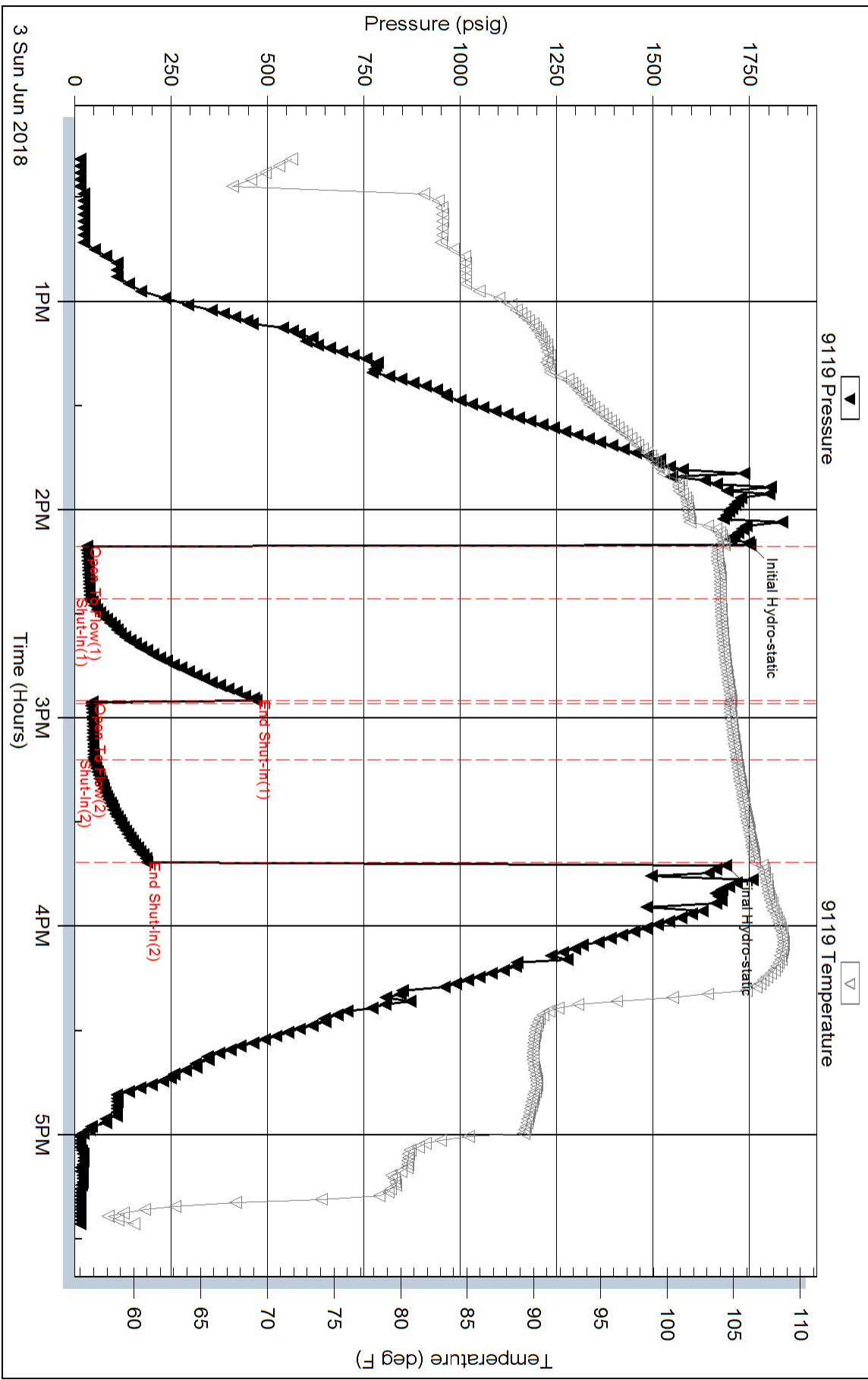
Serial #:

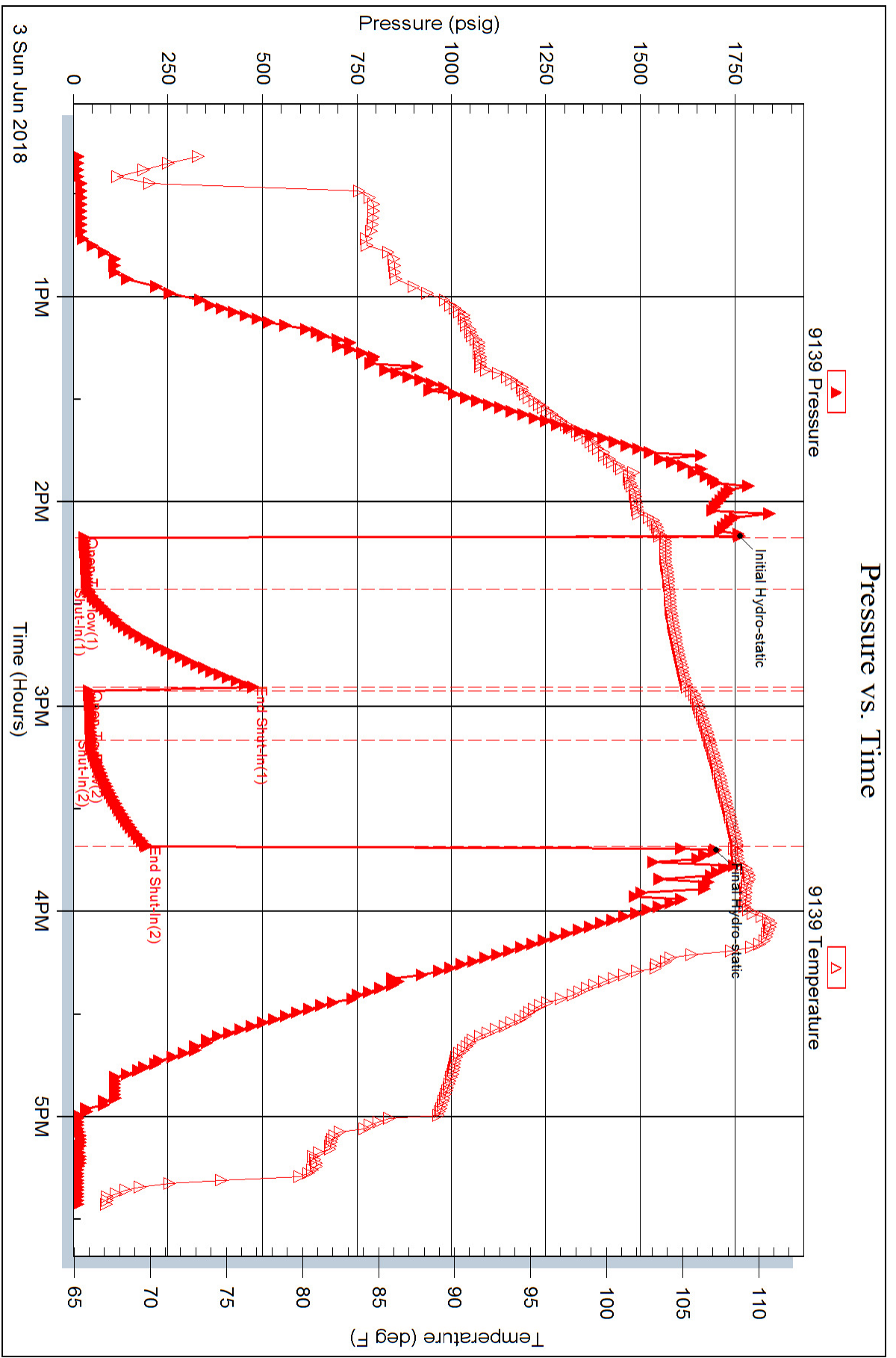
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







energy services, L.P.

TREATMENT REPORT

Customer FG Holl Lease No. _____ Date 5/25/2018
 Lease CS1000 Well # 3-19
 Field Order # 16746 Station Pratt, KS Casing 8 5/8 Depth 841 County Barton State KS
 Type Job 842/8 5/8 SUIPCE Formation TD-845 Legal Description 19-19s-14w

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size <u>8 5/8</u>	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth <u>841</u>	Depth	From	To	Pre Pad	Max		5 Min.
Volume <u>33.5</u>	Volume	From	To	Pad	Min		10 Min.
Max Press <u>500</u>	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth <u>799</u>	Packer Depth	From	To	Flush <u>Freshwater</u>	Gas Volume		Total Load

Customer Representative Glenn Roach Station Manager Justin Westerman Treater Dean Franklin

Service Units	92911	84981	19843	70959	19862
Driver Names	<u>Dean</u>	<u>Josh</u>	<u>Josh</u>	<u>John</u>	<u>John</u>

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<u>10:45 AM</u>					<u>On location / SSF meeting</u>
					<u>175sk A-Con Blend Common, 3% Calcium Chloride, 0.25 pps CelloPlex</u>
					<u>12.0 pps, 2.47 void, 14.49 water</u>
					<u>175sk Common, 2% Calcium Chloride</u>
					<u>0.25 pps, CelloPlex, 15.6 pps, 1.20 void, 5.23 water</u>
<u>4:00 PM</u>	<u>200</u>		<u>3</u>	<u>5</u>	<u>Pump 3 bbls water</u>
	<u>200</u>		<u>77</u>	<u>5</u>	<u>Mix 175sk less cement</u>
	<u>200</u>		<u>37</u>	<u>5</u>	<u>Mix 175sk + 9.1 cement</u>
	<u>0</u>		<u>0</u>	<u>0</u>	<u>Shut down</u>
	<u>0</u>		<u>0</u>	<u>0</u>	<u>Release Plug</u>
	<u>200</u>		<u>0</u>	<u>5</u>	<u>Displace</u>
	<u>200</u>		<u>40</u>	<u>3</u>	<u>Slow rate</u>
	<u>200</u>		<u>31</u>		<u>Bump Plug</u>
<u>4:45 PM</u>					<u>Shut in</u>
					<u>Cement dia Circulation - 10 bbls</u>
					<u>Job complete / Dean & crew</u>
					<u>Thank you!</u>



BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

19-195-14

FIELD SERVICE TICKET
1718 16745 A

DATE _____ TICKET NO. _____

DATE OF JOB: 5/23/2018		DISTRICT: P...		NEW WELL <input checked="" type="checkbox"/>		OLD WELL <input type="checkbox"/>		PROD <input type="checkbox"/>		INJ <input type="checkbox"/>		WDW <input type="checkbox"/>		CUSTOMER ORDER NO.:	
CUSTOMER: F.G. Hall				LEASE: C...				WELL NO. 31							
ADDRESS:				COUNTY: Brown				STATE: KS							
CITY:				STATE:				SERVICE CREW: D... Josh John							
AUTHORIZED BY:				JOB TYPE: 242/8 1/4 501/610											
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME					
198113	1/2						5/23			8:30					
19862	1/2						5/23			10:45					
							5/23			4:00					
							5/23			4:45					
							5/23			5:00					
						RELEASED									
						MILES FROM STATION TO WELL				63					

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: _____
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP101	Common	SK	175		
CP100	Common	SK	175		
CC102	Cellulose	Lb	88		
CC109	Cellulose	Lb	823		
CF105	TOP Rubber Cement Plus 8 3/4	FS	1		
CF1773	Cement 8 3/4 x 12 1/4	FS	3		
CF753	Bestic Pipe Aluminium 8 3/4 (Blue)	FS	1		
F100	Un. misc. Cheese - P...	m	65		
F101	Un. misc. Cheese - P...	m	130		
F113	Pic 205000 ...	lbs	1073		
CF201		
CF240	...	SK	350		
CF504	...	Jch	1		
SC03	...	FS	1		

SUB TOTAL

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$
MATERIALS	%TAX ON \$
TOTAL	

Discoun... TOTAL

SERVICE REPRESENTATIVE: _____

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: _____

(WELL OWNER OPERATOR CONTRACTOR OF

FIELD SERVICE ORDER NO.



BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

UH-26

FIELD SERVICE TICKET

1718 16650 A

DATE _____ TICKET NO. _____

DATE OF JOB	DISTRICT	NEW WELL <input checked="" type="checkbox"/>	OLD WELL <input type="checkbox"/>	PROD <input type="checkbox"/>	INJ <input type="checkbox"/>	WDW <input type="checkbox"/>	CUSTOMER ORDER NO.:			
CUSTOMER	LEASE	WELL NO.								
ADDRESS	COUNTY	STATE								
CITY	STATE	SERVICE CREW								
AUTHORIZED BY	JOB TYPE:									
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME
51779	1					ARRIVED AT JOB	1/10/15		AM	6:00
73263	4					START OPERATION	1/10/15		AM	11:00
						FINISH OPERATION	1/10/15		PM	1:00
						RELEASED	1/10/15		AM	1:00
						MILES FROM STATION TO WELL				

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: _____
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP105	A17 Cement	SK	150		
EPK 3	CC140 P17	SK	75		
CC 103	CC140 P17	1b	78		
CC 105	C 44 P	1b	71		
CC 111	SuH	1b	620		
CC 189	Whiskers CP	1b	423		
CC 148	C 47	1b	85		
CC 201	C 47	1b	1864		
CC 129	Acid Fall Blank 3/4	SK	1		
CC 607	Acid Fall Blank 1 1/2	SK	1		
CC 162	Acid Fall Blank 2 1/2	SK	1		
CC 2002	Acid Fall Blank 3 1/2	SK	30		
CC 101	Acid Fall Blank 4 1/2	SK	7		
CC 134	Acid Fall Blank 5 1/2	SK	500		
LX1	Acid Fall Blank 6 1/2	SK	67		
LX1	Acid Fall Blank 7 1/2	SK	132		
LX3	Acid Fall Blank 8 1/2	SK	163		
CC 204	Acid Fall Blank 9 1/2	SK	1		
CC 240	Acid Fall Blank 10 1/2	SK	225		

SUB TOTAL

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$
MATERIALS	%TAX ON \$

TOTAL

SERVICE REPRESENTATIVE	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:
------------------------	---

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

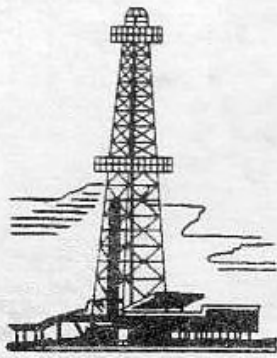
FIELD SERVICE ORDER NO.

Customer F.G. Holl		Lease No.		Date 6/5/18	
Lease Calaca		Well # 3-19			
Field Order # 16650	Station Pratt KS	Casing 5 1/2	Depth 3740	County Barton	State KS
Type Job 5 1/2 Production casing	Formation			Legal Description	

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size 5 1/2	Tubing Size	Shots/Ft		Acid		RATE	PRESS	ISIP
Depth 3740	Depth	From	To	Pre Pad	Max			5 Min.
Volume 06.95	Volume	From	To	Pad	Min			10 Min.
Max Press 2000	Max Press	From	To	Frac.	Avg			15 Min.
Well Connection 5 1/2	Annulus Vol.	From	To		HHP Used			Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume			Total Load

Customer Representative Rob Long		Station Manager Justin Westerman		Treater Scott Grimes	
Service Units 96817 76962 86771 44403 73768					
Driver Names SCOTT W. GRIFFIN — DERRICK —					

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
6:00					On location Safety Meeting Rig up
6:45					Run F.O.E. Baskets, 2, 4, 7
8:45					Turbos 2, 3, 4, 5, 6, 7, 8, 9, 10 Break Circulation Rotate
11:44	200			4.5	Pump Super Spacer
11:45	200		5	4.5	Pump Super flush
11:48	220		12	4.5	Pump Spacer
11:50	240		5	5	Start Scavenger 25 SKS
11:52	180		51.7	5	Start AA7 Cement
12:03	0		36.6		Shut down
12:05	-			-	Wash Pump + lines clean
12:10				6.2	Release Plug Street Displacement
12:19	350		47	6.2	lift Pressure
12:24	800		29	3	Reduce Rate
12:24	850		301	3	Stop Rotating
12:27	930		8	3	Plug landed
12:27	1500			3	Pressure up on Plug Hold
12:29	0			0	Release Pressure NO Returns
12:37	0		6.8	3	Plug Rat Hole
12:42	0		4.6	3	Plug Mouse Hole
12:50					Wash up Equipment
1:00					Job Complete



WELLSITE GEOLOGIST'S REPORT

J. R. Husted
Consulting Geologist



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Calcara No. 3-19
Location: Sec 19-T19S-14W
License Number: 15-009-26,219-0000
Spud Date: May 28 2018
Surface Coordinates: 1713' FEL, 2257' FSL, 63' W. and 53' S. of NE NW SE
Bottom Hole Vertical Hole
Coordinates:
Ground Elevation (ft): 1896' K.B. Elevation (ft): 1909'
Logged Interval (ft): 1700' To: 3750' Total Depth (ft): 3750'
Formation: Kansas City, Arbuckle
Type of Drilling Fluid: Starch, Chemical Premix (Displaced)

Region: Barton
Drilling Completed: June 4 2018

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

Company: F.G. HOLL COMPANY LLC
Address: 9431 E. CENTRAL STE 100
WICHITA, KANSAS 67206-2563

DRILLING CONTRACTOR:

Duke Drilling Company, Rig #7
DOUBLE DERRICK ; DRILL PIPE 4.5 X HX(16.6 #); COLLARS 6.25X 2.25 X 538': BIT #2; 7 7/8 JZ 1721782; JETS 15-15-15
BIT #4 7 7/8 JZ HP-47-53N H10553 ; JETS 15-15-15
REFERENCE DATUM 13 FT ABOVE GROUND LEVEL; TOOLPUSHER; GAYLAN ROACH

SURFACE CASING:

-SURFACE CASING 8 5/8 IN WT 23 LB SET AT 842 FT WITH 350 SAXS OF CEMENT-PRODUCTION CASING 5 1/2 IN WT. 15.5 LB SET AT 3747 FT WITH CEMENT 150 SAXS

CIRCULATION SYSTEM:

NATIONAL 500 DUPLEX 6.0 X 15 stroke, 60 SPM, 850 PSI; STEELE PITS; MUD-CO/SERVICE MUD INC. RICK HUGHES 620-791-7623

GAS DETECTION SYSTEM:

MBC WELL LOGGING AND LEASING
ANALOG HOTWIRE

OPEN HOLE LOGS:

DN(PE),DI (SP),ML:SONIC,FRACFINDER; PIONEER ENERGY SERVICES ;HAYS, KANSAS; RECORDED BY D. SCHMIDT

COMPLETION:

PRODUCTION CASING WAS SET ON LANSING/KC AND ARBUCKLE

DRILL STEM TEST #4

DST #4

DEPTH-3394'-3424'; IBLW-GD BLW BOB IN 2 MIN;BLWBK-YES-FBLW-STRNG BLW BOB IN 1 MIN;REC-GAS TO SURF-120' CLEAN GASSY OIL-GRAVITY 42 ;20% GAS/80% OIL; 90' OIL AND GAS;40% GAS/20% OIL/40% MUD; 60' OIL AND GAS CUT MUD;5% GAS/30%OIL/65% MUD

10/60/45/90

SIP-955.88-800.44;IFP-65.95-96.79;FFP-88.50-128.66;HP-1690.07-1656.33

DST #5

DST #5

3534'-3542';IBLW-STRNG BLW GAS TO SURF IN 3 MIN;BLWBK-YES

FBLW-STRNG BLW-MAX GAS GAUGE 539 MCF;BLWBK-YES

5/60/45/90-SIP-1186.66-1178.07;IFP-345.15-137.57;FFP-295.86-141.42;HP-1760.31-1595.97

FLOW P	ELAPSED TIME	CK	PSIG	MCF/D
2	5 MIN	1	0.91	440.00
2	15 MIN	1	4.04	530.13
2	25 MIN	1	4.04	530.13
2	35 MIN	1	4.35	539.04
2	45 MIN	1	4.35	539.04

DST #6

DST #6

3542'-3552';IBLW-STRNG BLW GAS TO SURF IN 3 MIN;FBLW-STRNG BLW GAS GAUGED MAX 1474

MCF;REC-330 FT CLEAN GASSY OIL/GRAVITY 38 CORRECTED-15% GAS/85%

OIL;5/60/45/90;SIP-1185.88-1142.97/IFP-469.67-451.61-FFP-376.89-241.26;HP-1765.87-1716.02

!ST GAS RATE CK-1;PSIG-15.31;MCF/D-1474.1

2ND GAS RATE CK-1;PSIG-15.31-MCG/D-854.13

DST #7

DST #7

DEPTH-3552'-3562';IBLW-STRNG BLW BOB IN LESS IN 1 MIN;FBLW-STRNG BLW GAS TO SURF IN 2 MIN

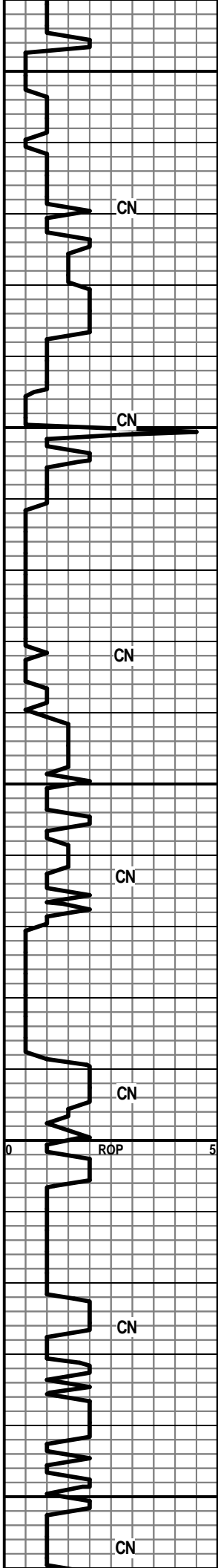
MAX GAUGE 60.2 MCF;REC-2050' GASSY OIL GRAVITY 35

;5/60/60/120;SIP-1189.78-1168.47;IFP-99.14-167167.81;FFP-101.7-406.19;HP-1769.71-1716.76

WELLSITE GEOLOGIST:

**Rene Husted
4714 N. Portwest Circle
Wichita, Kansas 67204
(913) 908-3390**

ROP ROP (min/ft) ———	DST	Lithology	Porosity and Show Depth	Geological Descriptions	TG, C1-C4 / REMARKS
			16		
			1700	SH-GRY-ST-GUMMY W/ ANHY-OFF WHT-SUB-ANG-TRANSL TR SH IMBD HERINGTON LOG 1757' (+152')	
			1750	DOLO-TN-GRY-F-GRN-TR PYR IMBD-HD-DNS DOLO-LT GRY-F-GRN-FR-PP POR-GAS KICK DOLO A.A.	100 UNIT HOT WIRE GAS KICK
			1800	WINFIELD LOG 1808' (+101')	



1850
1900
1950
2000
2050

TOWANDA LOG 1873' (+36')

FT RILEY LOG 1903' (+6')

SH-GRY/RED-SFT- GUMMY

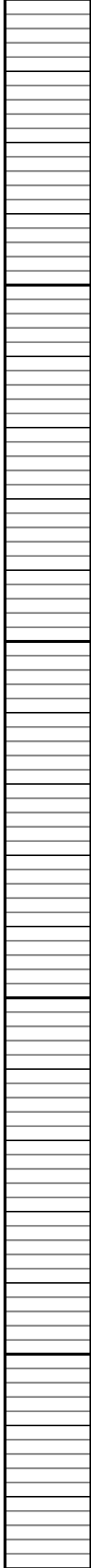
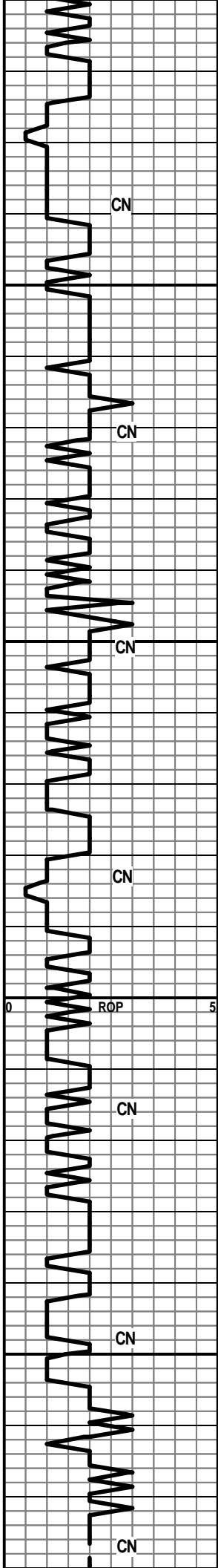
KINNEY LS LOG 2026' (-117')

DOLO-GRY-BRIT-V-FOSS-SHLY IP-GD PP/INTER-GRN
POR-FREE FOSS IN TRAY

DOLO A.A.

40 UNIT HOT WIRE GAS
INCRS

COUNCIL GROVE 2074' (-165')
LOG 2078' (-169')



2100

2150

2200

2250

MUD DATA
2104'
WT. 9.25
VIS 38
LCM 0

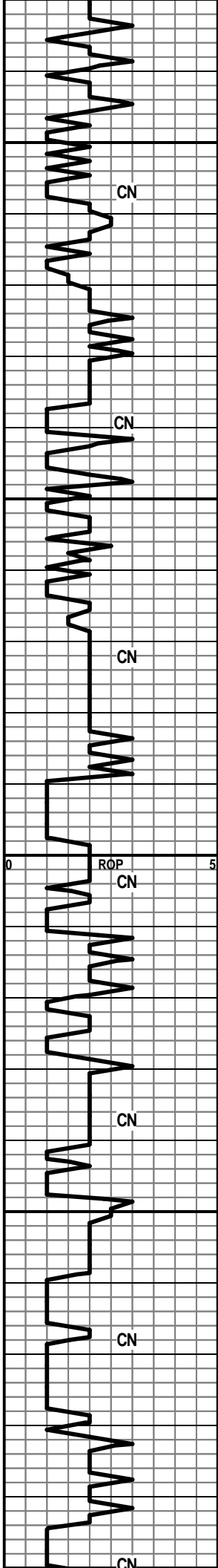
SH-BLK-CARB-SPLNTY

SHALES-GRY-RED-FRM BLKY AND SPLNTY

NEVA LOG 2254' (-345')

LS-TN-F-XLN-V-BRIT-FOSS-TR PP POR-GAS KICK

100 UNIT GAS INCRS



2300

RED EAGLE LOG 2302' (-393')

LS-TN/GRY-F-GRN-BRIT-FOSS-OOL-GD
INTER-GRN/FOSS-PP POR-GAS KICK

LS-TN/GRY-F-GRN-FOSS-OOL-HD-DNS

SH-BLK-CARB

2350

2400

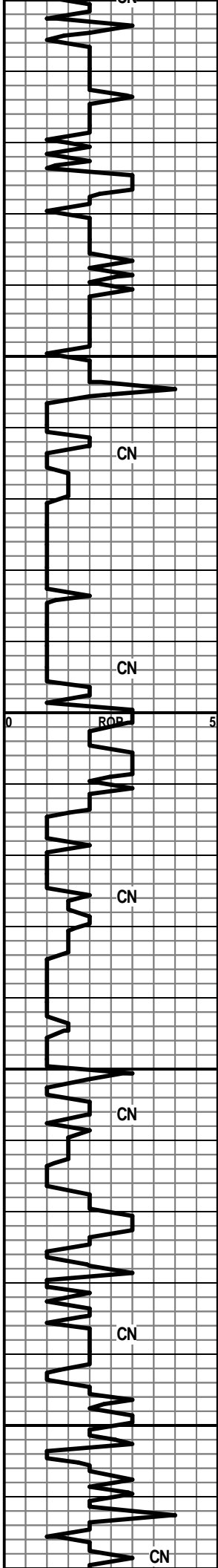
2450

SH-GRY-SILTY

2500

60 UNIT GAS INCRS @
2340'

7 UNIT GAS INCRS @
2468'



25
2550
2600
2650
2700

SH-GRY-SILTY

SH-RED-GRY-SILTY

SILTSTONE-F-GRN-V-SHLY-HEM

SH-LT GRY-SILTY

SLTSS-F-GRN-V-SHLY-HEM
SH-GRY-SILTY-GUMMY

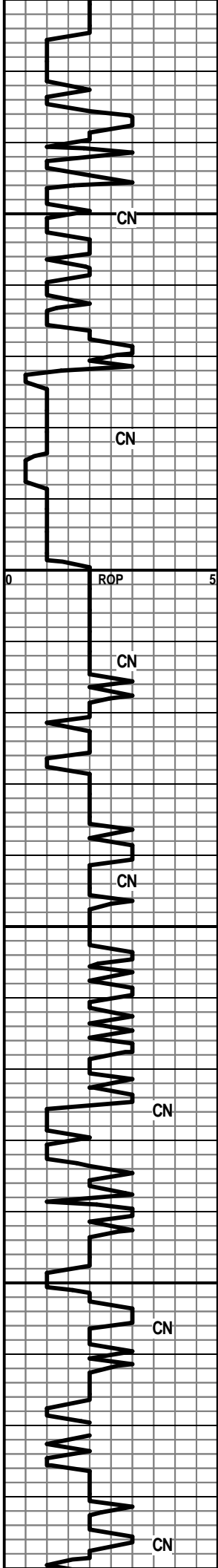
SH-LT GRY-SILTY

STOTLER 2599' (-690')
LOG 2599' (-690')

TARKIO 2670' (-761')
LOG 2670' (-761')

20 UNIT GAS INCRS @
2531'

65 UNIT GAS INCRS AT
2595'



2750

2800

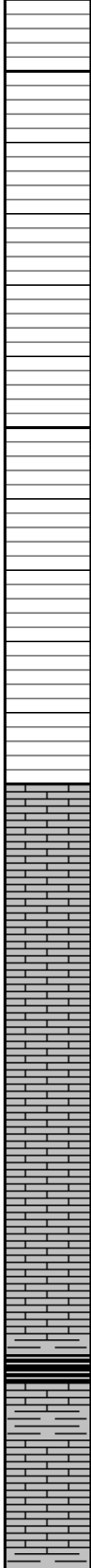
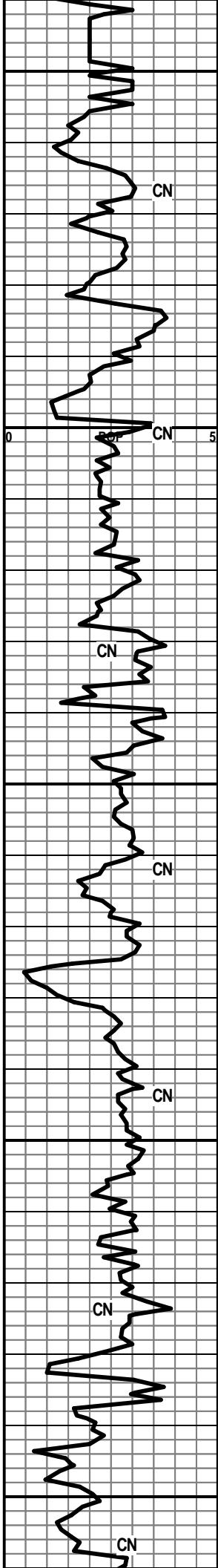
2850

2900

HOWARD 2799' (-890')
LOG 2802' (-893')

TOPEKA 2880' (-971')

MUD DATA
2806'
WT. 8.7
VIS 56
LCM 0



2950
3000
3050
3100
3150

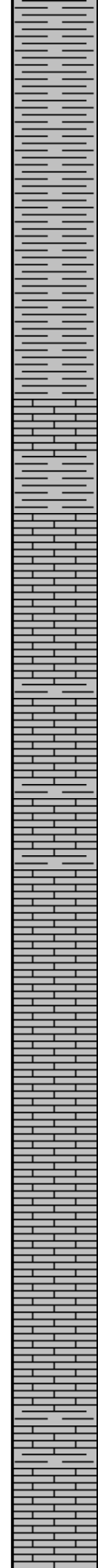
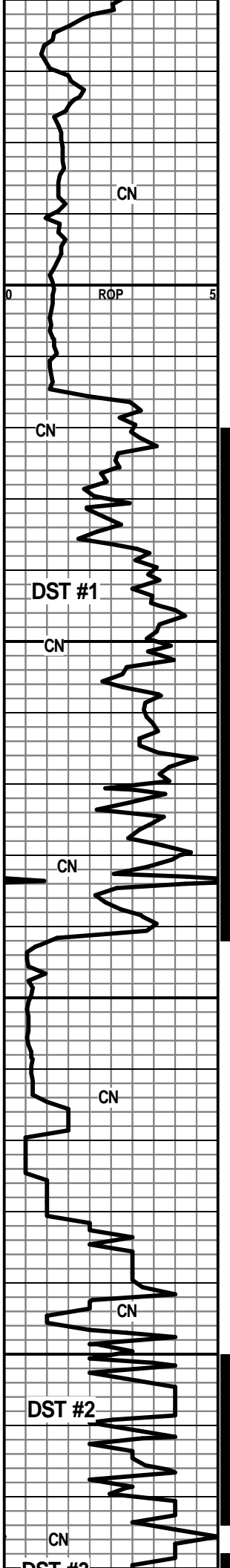
QUEEN SH LOG 2972' (-1062')

KING SH LOG 3042' (-1133')

HEEBNER 3130' (-1221') LOG
3132' (-1223')
SH-BLK-CARB

TORONTO 3150' (-1241') LOG
3148' (-1239')
LS-OFF WHT-F-XLN-CHLKY-TR DK BLK STN-FR STRM
CUT-FNT ODOR -GAS KICK

SURVEYS	
FT	DEG
309'	1/2
578'	3/4
845'	1/2
1334'	1/2
1805'	1/2
2277'	1
2781'	3/4
3292'	1/2
3562'	3/4



DOUGLAS SH 3163' (-1254')
LOG 3164' (-1255')

SH-GRY-SFT-GUMMY- FOSS

SH-GRY-SILTY

3200 SH-GRY-SILTY-FOSS

BROWN LS 3215' (-1306')
LOG 3218' (-1309')
 LS-LT BRN-F-XLN-HD-DNS

LANSING/KC 3232' (-1323')
LOG 3230' (-1321')

LS-TN/GRY-F-XLN-TR SH IMBD-FOSS-HD-DNS

LS-CRM-F-XLN-HD-DNS

3250 LS-CRM-F-XLN-TR PP POR-LT BRN STN-TR FLOR-FR STRM CUT-NO ODOR

LS-CRM/GRY-F-GRN-BLK OOL/FOSS-SH LT GRY IMBD-NO VIS SHOW

LS-OFF WHT-F-XLN/GRN-HD-TR PP/FAC POR-TR FLOR-TR STRM CUT-NO ODOR W/ CHRT-OPQ-FRSH

LS-CRM-F-XLN-V-OOL-HD-DNS-NO VIS SHOW

LS-OFF WHT-F-XLN-PP/FAC POR-LT BRN STN-SCATT FLOR-GD ODOR TR OF LS-TN-OOL-MOLDIIC IN TRAY

3300 LS-TN-F-XLN-OOL-MOLDIC POR-LT BRN STN IP-SCATT FLOR-FR STRM CUT-GD ODOR

LS A.A.

LS-TN-F-XLN-OOL-MOLDIC POR-TR DK BLK STN

LS-TN-F-XLN-OOL-FOSS-OOL-MOLDIC IP

LS-TN-F-XLN-OOL IP-HD-DNS

LS-TN/GRY-F-XLN-HD-DNS-W/ PYRITE IMBD TR OF CHLK IN TRAY

3350 SH-BLK-CARB

LS-TN/GRY-F-XLN-FOSS-OOL-BRIT TO HD-NO VIS POR-NO VIS SHOW

LS-GRY-F-XLN-OOL-FR INTER-XLN AND PP POR-LT BRN/BLK STN-SCATT YEL FLOR-PR TO FR STRM CUT-V-STRG ODOR

LS-TN-F-XLN-OOL-FR OOL-MOLDIC POR-LT BRN STN-YEL FLOR-GD STRM CUT-V-STRG ODOR

LS-TN/GRY-XLN-OOL-TR FOSS-HD-DNS W/ LS-OFF WHT- CHLKY-FR PP POR-LT BRN STN-PR-STRM CUT-NO ODOR

MUD DATA
 3292'
 WT. 9.1
 VIS 56
 LCM 0

STRAP
 S=3317.68
 B=3314.56
 LONG TO THE BOARD
 3.18 FT

5 UNIT GAS KICK

DST #1
 3220'-3292'
 REC 230 SL MUDDY
 H2O

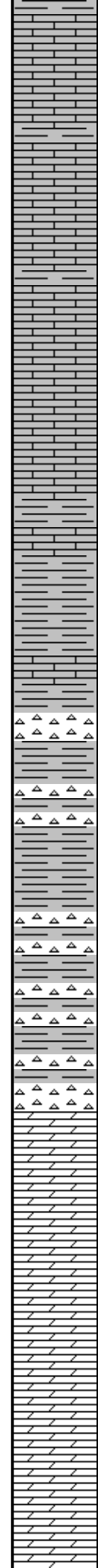
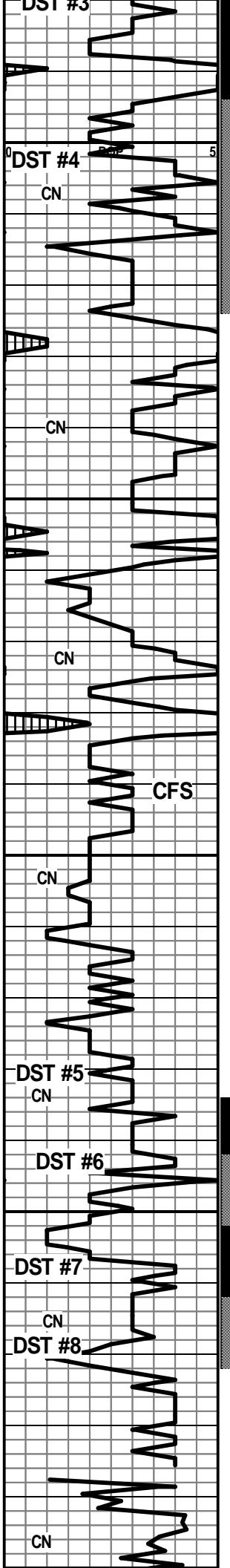
IBLW-WK BLDING BLW
 BLT TO 8 IN
 FBLW-WK BLDING BLW
 BLT TO 7 IN
 30/60/45/90
 SIP-1006.44-1005.35
 IFP-67.49-136.55
 FFP-130.05-173.69
 HP-1616.89-1640.68

9 UNIT GAS INCRS

DST #2
 3350-3374
 REC-30 FT SLI OIL CUT
 MUD 7% OIL/93% MUD
 60 FT -V-SLI OIL CUT
 MUDDY H2O
 IBLW-WK BLW BLT TO
 6 IN
 FBLW-WK BLW BLT TO
 3.5 IN
 30/60/45/90
 SIP-484.47-443.79
 IFP-43.83-76.14
 FFP-67.68-89.94
 HP-1662.53-1640.68

100 UNIT GAS INCRS

MUD DATA @ 3374'
 WT. 9.2
 VIS 73



3400
 LS-TN--XLN-V OOL-GD INTERPT POR-LT BRN STN-SCATT
 FLOR-GD STRM CUT-GD ODOR W/LS-OFF WHT--XLN-CHLKY-PP
 POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-SSFO

LS-OFF WHT-F-XLN-OOL-VUG POR-LT BRN STN-PR STRM CUT-FNT
 ODOR

SH-GRY-SPLNTY

LS-OFF WHT--XLN-BRIT TO HD-CHLKY IP-DNS W/ TR LS-TN--XLN-FR
 VUG POR-LT BRN STN

LS-CRM-V-F-GRN-SLI CHLKY-BLOCKY-LT BRN STN-YEL/GLD
 FLOR-FLSH CUT-GD ODOR-SSFO W/LS-TN-F-XLN-OOL-FR
 OOL-MOLDIC POR-LT BRN STN-FR CUT

LS-TN-F-XLN-BLOCKY-HD-DNS W/ FOSS IN TRAY

SH-GRY/GRN-BRIT

LS-OFF WHT/LTGRY-F-XLN-HD-DNS

3450
 SH-RED/GRY-BLKY

LS-TN-F-XLN-BLOCKY-HD-DNS

BASE OF THE KANSAS CITY 3461'
(-1552') LOG 3461' (-1552')

SH/CHRT/TR SS IN TRAY

LS-OFF WHT-V-F-XLN-SNDY-HD-DNS W/
 SH-RED-GRY-GRN-CHRT-VARIG-OPQ/TRANS-FRSH

CHRT-OFF WHT-OPQ-SNDY-V-HD W/ SH/CHRT-RED
CONGLOMERATE 3476' (-1567')
LOG 3476' (-1567')

CHRT-RED-W/ SH RED-HD-DNS-SILTY IP

3500
 SH-GRN-GRY-RED-FRM-SPLNTY W/ CHRTRS-VARIG-OPQ
 TO TRANSL-FRSH

CHRT-RED-WHT-OPQ-TRANSL-FRSH W/ TR SS IN TRAY

CHRT-RED-OPQ-HD-FRSH W/ VARIG. CHRT-OFF
 WHT-TRANSL-FRSH

ARBUCKLE 3536' (-1627')
LOG 3537' (-1628')

DOLO-TN-CRS-XLN-GD-INTER-XLN POR-LT BRN
 STN-BRITE YEL FLOR-GD STRM CUT-STRNG
 ODOR-SSFO

DOLOMITE-CRM-CRS XLN-GD INTER-XLN POR-LT
 BRN/DK BLK STN-BRITE WHT FLOR-FR TO GD FLSH
 CUT-STRNG ODOR-SSFO

3550
 DOLO-OFF WHT-CRS-XLN-SNDY-HD-DNS W/ TR
 DOLO-CRM-CRS-XLN-TR LT BRN STN-BRITE WHT
 FLOR-FR STRM CUT-FNT ODOR

DOLO-CRM-CRS-XLN-BRIT-GD INTER-XLN POR-LT BRN
 STN-YEL FLOR-STRM CUT-GD ODOR-SSFO

DOLO-OFF WHT-F-XLN-SNDY-HD-DNS -NO VIS SHOW

MISSING SAMPLE

00
 DOLO-OFF WHT-F-XLN-SNDY-HD-DNS W/ TR CLAU

GAS OFF CHART

LCM 0
 DST #3
 3378-3394
 REC 10 FT DRILLING
 MUD
 IBLW-WK BLW 6 MIN
 AND DIED
 FBLW-NO BLW
 15/30/15/30
 SIP-425.73-184.97
 IFP-37.05-42.99
 FFP-39.62-44.55
 HP-1665.38-1542.1

GAS KICK 100 UNIT

MUD DATA @ 3424'
 WT. 9.2
 VIS 66
 LCM 0

DST #4
 3394-3424
 REC-GAS TO SURF
 120 FT CLEAN GAS OIL
 90 FT - OIL/GAS CUT
 MUD 40% GAS 20%
 OIL-40% MUD
 60 FT-OIL/GAS CUT
 MUD 5% GAS-30%
 OIL-65% MUD
 SEE HEADER ABOVE

MUD DATA @ 3542'
 WT. 9.15
 VIS 60
 LCM 2

DST #5
 3534'-3542'
 REC -GAS TO SURF
 SEE HEADER ABOVE

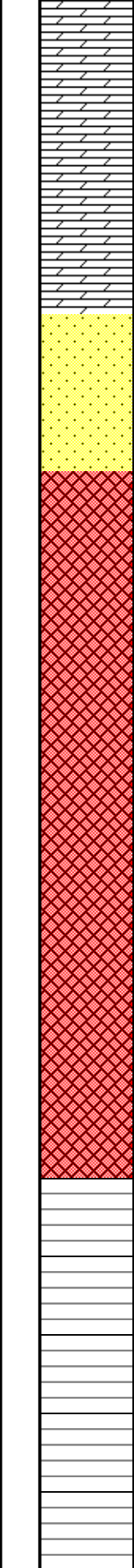
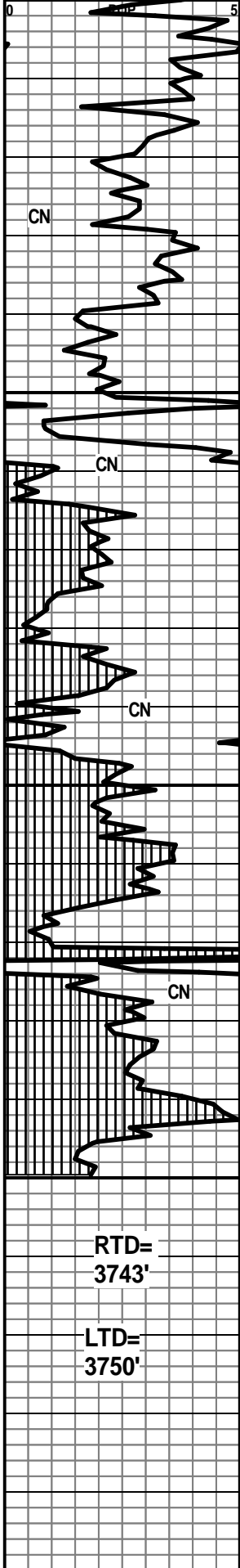
DST #6
 3542-3552'
 REC-330 FT CLEAN
 GASSY OIL
 15%GAS85% OIL

DST #7
 3552-3562' SEE HEADER ABOVE
 REC-2050' CLEAN
 GASSY OIL
 SEE HEADER ABOVE

MUD DATA @ 3562'
 WT. 9.25
 VIS 65
 LCM 2

MUD DATA @ 3572'
 WT. 9.1
 VIS 46
 LCM 1

DST #8



36
3650
3700
3750
00

DOLO-OFF WHT-F-XLN-SNDY-HD-DNS W/ TR GLAU

DOLO A.A.

DOLO-OFF WHT-F-XLN-LG SND GRNS
IMBD-SNDY-HD-DNS

DOLO-OFF WHT-F-XLN-SNDY-HD-DNS

SS-FRSTY WHT-M-GRN-FRI-DOLO CMT-PR
SRTEG-GLAU IMBD

REGAN SD LOG 3649' (-1740')
SS A.A. W/ RNDED SND GRNS IN TRAY-PR SRTEG

GRANITE LOG 3660' (-1751')
GRANITE-RED-F-XLN-HD-DNS W/ BLK MIN

GRANITE-RED/GRY-F-XLN-TRANSL-W/ BLK MIN

GRANITE A.A. W/ SH-GRY-SPLNTY

GRANITE-RED-OPQ-BLK MIN-HD-DNS W/ GRANITE-OFF
WHT-TRANSL-BLK MIN-HD-DNS-SAMPLE IS VERY
SHLY

GRANITE A.A. W/ SH-DK GRY-SPLNTY

SAMPLE -MSTLY SH-DK GRY-SPLNTY-TR CHRT-OFF
WHT-OPQ-FRSH

GRANITE AND SHALES A.A.

DST #8
3562'-3572
REC 10FT OIL CUT MUD
15% OIL 85% MUD
IBLW-WK SURF BLW
FOR 6 MIN
FBLW-NO BLW
15/30/15/30
SIP-470.43-187.23
IFP-32.46-44.49
FFP-39.66-50.08
HP-1752.4-1689.62

MUD DATA @ 3750'
WT. 9.2
VIS 68
LCM 3

RTD=
3743'

LTD=
3750'