



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1199430
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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 SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

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
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1199430

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 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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 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)*

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

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	BEREXCO LLC
Well Name	Michael 1-23
Doc ID	1199430

Tops

Name	Top	Datum
Stone Corral Anhydrite	3190	+94
Anhydrite (base)	3224	+60
Neva	3674	-390
Foraker	3784	-500
Wabaunsee	3944	-660
Topeka	4000	-716
Deer Creek Sand	4034	-750
Oread	4110	-826
Lansing/KS City A	4212	-928
LKC B	4270	-986
LKC C	4330	-1046
LKC D	4377	-1093
LKC E	4418	-1134
LKC F	4456	-1172
RTD	4520	
LTD	4515	-1231

WELL FILE

ALLIED OIL & GAS SERVICES, LLC 062218

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakley, KS

DATE <u>2-20-14</u>	SEC. <u>22</u>	TWP. <u>15</u>	RANGE <u>36 W</u>	CALLED OUT	ON LOCATION	JOB START <u>1:30 PM</u>	JOB FINISH <u>3:30 PM</u>
LEASE <u>Michael</u>	WELL# <u>1-23</u>	LOCATION <u>Beardsley N to Rd A W to Rd</u>		COUNTY <u>Rawlins</u>	STATE <u>KS</u>		
OLD OR <u>NEW</u> (Circle one)							

CONTRACTOR Berexco #2
 TYPE OF JOB Prod
 HOLE SIZE 7 7/8 T.D. 4520
 CASING SIZE 5 1/2 DEPTH 4508
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT 42.30
 CEMENT LEFT IN CSG. 42.30
 PERFS.
 DISPLACEMENT 113 1/4

EQUIPMENT
 PUMP TRUCK CEMENTER Gabel Jones Kelly, Tolen (helper)
 # 423 & 281 HELPER Wayne McGibby
 BULK TRUCK
 # 373 & 310 DRIVER Jhemad (TGS)
 BULK TRUCK
 # 818 & 808 DRIVER adam Flipse

REMARKS:
pump ball, circulate for 1 hr.
mixed 155 lbs P+ 10.5 lbs MH
mixed 425 lbs L+ 1.5 lbs tailer in wash down
released plug & displaced with 113 1/4 bbl water
lift pressure 1100 #, plug landed @ 1900 #
 Thank you
 Kelly & crew

CHARGE TO: Berexco
 STREET _____
 CITY _____ STATE _____ ZIP _____

To: Allied Oil & Gas Services, LLC.
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME _____
 SIGNATURE Ed Jones

OWNER Dame
 CEMENT
 AMOUNT ORDERED 450 lbs L+ 3 1/4 # / bbl
250 lbs cem 1000 P+ 2 # / bbl
5 # gilsonite
 COMMON 250 lbs @ 17.50 4475.00
 POZMIX @ _____
 GEL 50 lbs @ 23.50 1175.00
 CHLORIDE @ _____
 ASC @ _____
lime 450 lbs @ 15.25 7127.50
salt 260 lbs @ 26.35 6851.00
Silicate 1250 # @ 1.98 1225.00
fluoal 338 # @ 2.97 1003.86
 @ _____
superflush 1200 l @ 58.20 70440.00
 @ _____
 @ _____
 HANDLING 824.89 cu.ft @ 2.48 2045.73
 MILEAGE 34.22 hrs x 50 x 2.00 4461.00
 TOTAL 21,190.81

SERVICE
 DEPTH OF JOB 4508'
 PUMP TRUCK CHARGE 2765.75
 EXTRA FOOTAGE @ _____
 MILEAGE MHV 50 @ 7.50 375.00
 MANIFOLD Head @ 275.00 N.C.
M.LV 50 @ 4.40 N.C.
 @ _____
 TOTAL 3,150.25

(FR) PLUG & FLOAT EQUIPMENT
AF4 floathead @ 237.00
latchdown plug @ 184.00
(10) centralizers @ 37.00 370.00
(20) rediprivity @ 46.00 920.00
 @ _____
 TOTAL 1706.00

SALES TAX (if Any) _____
 TOTAL CHARGES 26,047.56
 DISCOUNT 6,815.63 IF PAID IN 30 DAYS
19,231.92 Net.

Date 2-20-14 District Midcon Ticket No. 62318
 Company Berexco Rig Borah #2
 Lease Michael Well No. 1-23
 County Dawkins State KS
 Location Beardsley N to RAAA Field _____
W to Rd 5.5 2 N W into

CASING DATA: Conductor PTA Squeeze Misc
 Surface Intermediate Production Liner
 Size 5 1/2 Type New Weight 15.5 Collar _____

Casing Depths: Top ground level Bottom 4508

Drill Pipe: Size _____ Weight _____ Collars _____
 Open Hole: Size _____ T.D. _____ ft. P.B. to _____ ft.

CAPACITY FACTORS:

Casing: Bbbs/Lin. ft. 10238 Lin. ft./Bbl. _____
 Open Holes: Bbbs/Lin. ft. _____ Lin. ft./Bbl. _____
 Drill Pipe: Bbbs/Lin. ft. _____ Lin. ft./Bbl. _____
 Annulus: Bbbs/Lin. ft. _____ Lin. ft./Bbl. _____
 Bbbs/Lin. ft. _____ Lin. ft./Bbl. _____
 Perforations: From _____ ft. to _____ ft. Amt. _____

CEMENT DATA:
 Spacer Type: Super flush
 Amt. 12bbl Skys Yield _____ ft³/sk Density _____ PPG

LEAD: Pump Time _____ hrs. Type _____
 Excess _____
 Amt. 450 Skys Yield 1.9 ft³/sk Density 125 PPG

TAIL: Pump Time _____ hrs. Type _____
 Excess _____
 Amt. 250 Skys Yield 1.42 ft³/sk Density 14² PPG

WATER: Lead _____ gals/sk Tail _____ gals/sk Total _____ Bbbs.

Pump Trucks Used 4234281
 Bulk Equip. 3734308, 8184306

Float Equip: Manufacturer Industrial Rubber
 Shoe: Type AFU Depth _____
 Float: Type flapper Depth _____
 Centralizers: Quantity 10 Plugs Top _____ Btm. _____
 Stage Collars _____
 Special Equip. 20 reciprocating scratchers
 Disp. Fluid Type water Amt. 134 Bbbs. Weight _____ PPG
 Mud Type _____ Weight _____ PPG

COMPANY REPRESENTATIVE _____

CEMENTER Robby

TIME AM/PM	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	RATE Bbbs Min.	
						rigged up plugged M.H. plugged R.H. mixed com released plug displaced with water
		200	10			
		200	10			
		300	10			
		350	10			
		350	10			
		500	10			
		650	10			
		700	10			
		775	10			
		800	10			
		900	10			
		1500	3.74			plug landed



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56786

DST#: 1

Test Start: 2014.02.14 @ 00:20:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:46:30

Time Test Ended: 09:06:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Kreuzer Jr.

Unit No: 61

Interval: 4072.00 ft (KB) To 4120.00 ft (KB) (TVD)

Reference Elevations: 3284.00 ft (KB)

Total Depth: 4120.00 ft (KB) (TVD)

3271.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8673 Inside

Press@RunDepth: 145.30 psig @ 4073.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.14

End Date:

2014.02.14

Last Calib.: 2014.02.14

Start Time: 00:20:01

End Time:

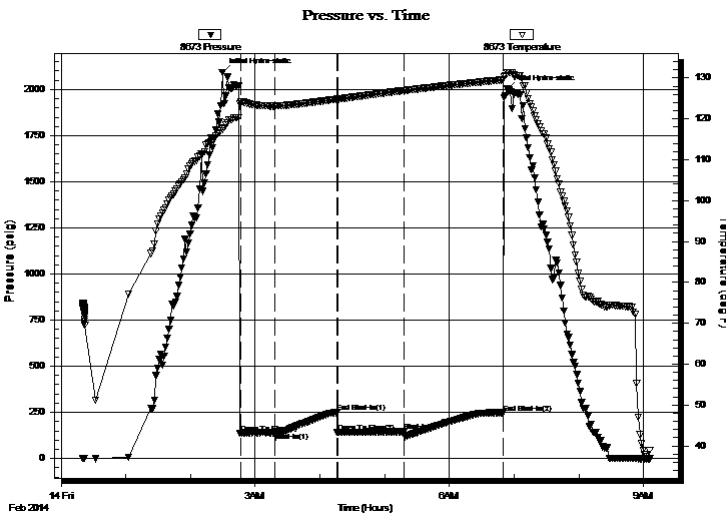
09:06:30

Time On Btm: 2014.02.14 @ 02:29:30

Time Off Btm: 2014.02.14 @ 06:53:30

TEST COMMENT: IF: Weak surface blow died in 15 mins.
IS: No blow back over 60 mins.
FF: No blow over 60 mins.
FS: No blow back over 90 mins.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2092.68	117.49	Initial Hydro-static
17	138.04	124.07	Open To Flow (1)
49	140.86	123.15	Shut-In(1)
106	248.53	124.82	End Shut-In(1)
107	141.86	124.81	Open To Flow (2)
168	145.30	126.89	Shut-In(2)
260	248.03	129.56	End Shut-In(2)
264	2001.44	131.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	mud-100%m	0.98

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56786

DST#: 1

Test Start: 2014.02.14 @ 00:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 55.00 sec/qt

Water Loss: 6.00 in³

Resistivity: ohm.m

Salinity: 400.00 ppm

Filter Cake: 2.00 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
200.00	mud-100%m	0.984

Total Length: 200.00 ft Total Volume: 0.984 bbl

Num Fluid Samples: 0

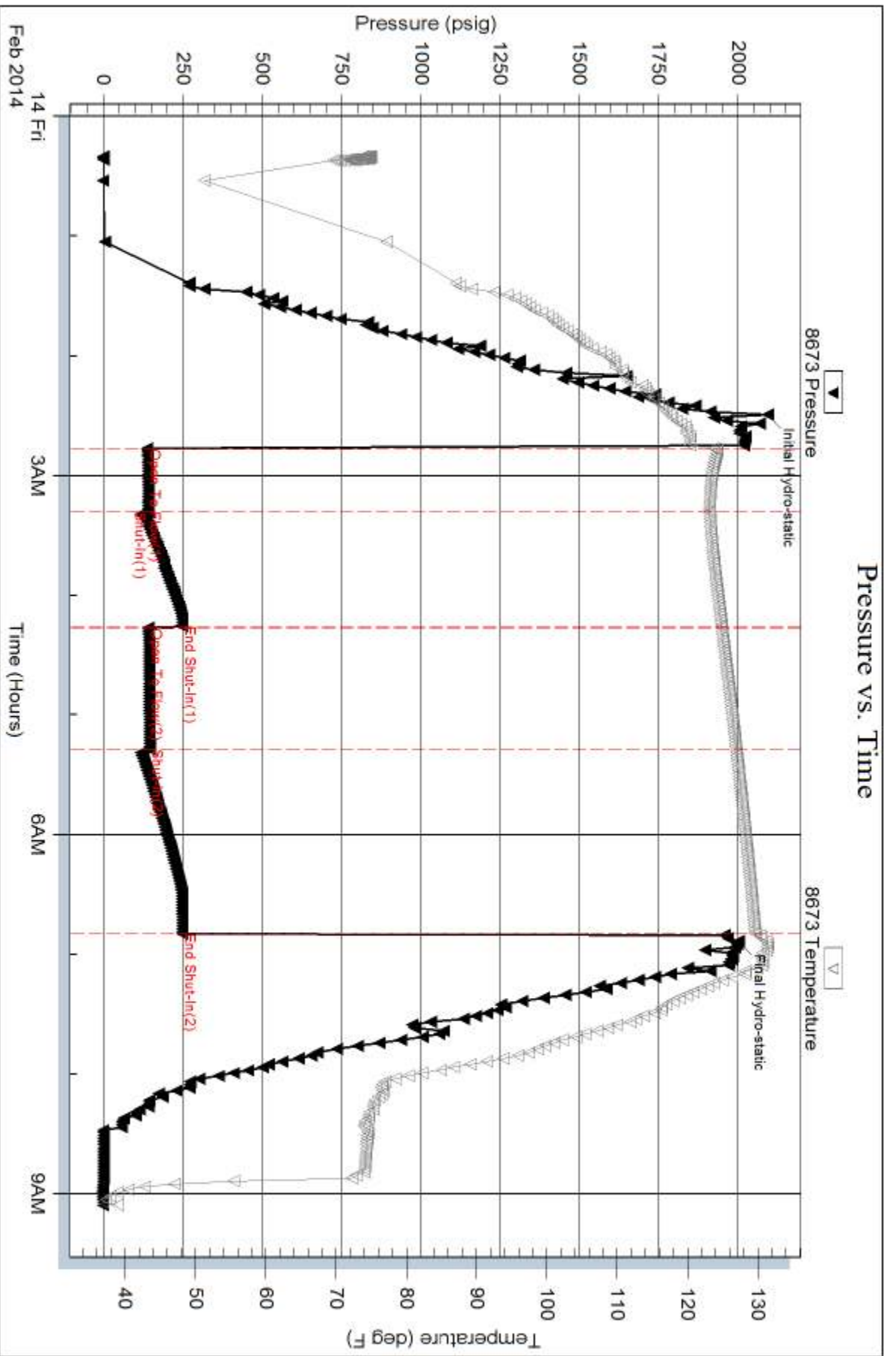
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Had 12ft. of fill Put weight on tool. Tool slid, tool opened on slide. Bled off blow. Tool set about 8 ft higher than i had figured.





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Berexco LLC.
 2020 N. Bramblewood
 Wichita Ks.
 67206
 ATTN: Pete Vollmer

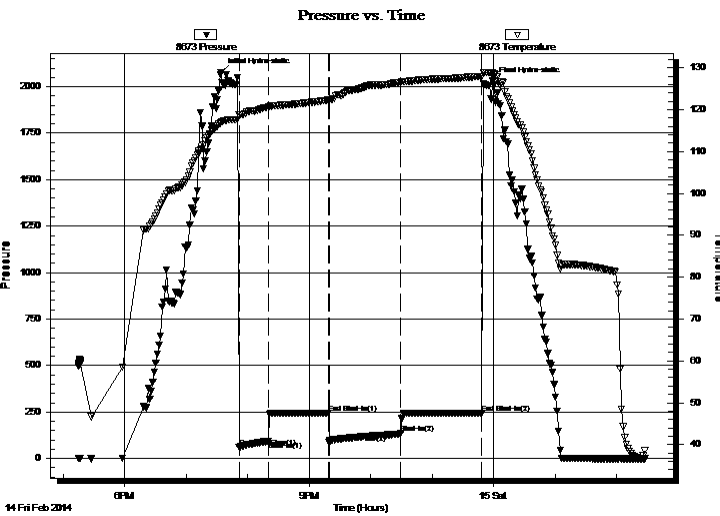
23 1s 36w Rawlins Ks.
Michael #1-23
 Job Ticket: 56787 **DST#: 2**
 Test Start: 2014.02.14 @ 17:15:00

GENERAL INFORMATION:

Formation: **Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:51:30
 Time Test Ended: 02:28:00
 Interval: **4070.00 ft (KB) To 4122.00 ft (KB) (TVD)**
 Total Depth: 4122.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Kreuzer Jr.
 Unit No: 61
 Reference Elevations: 3284.00 ft (KB)
 3271.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8673 Inside
 Press @ Run Depth: 134.47 psig @ 4071.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.14 End Date: 2014.02.15 Last Calib.: 2014.02.15
 Start Time: 17:15:01 End Time: 02:28:00 Time On Btm: 2014.02.14 @ 19:34:00
 Time Off Btm: 2014.02.14 @ 23:59:00

TEST COMMENT: -----10 ft. of fill on bottom. Pushed through 3 ft. Tool opened on last 8 ft. 3 in. blow , bled off.
 IF: Weak blow , Built to 1 in. over 10 mins. Started to Die, Weak Surface after 30 mins.
 IS: No blow back over 60 mins.
 FF: No blow over 60 mins.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2077.06	116.87	Initial Hydro-static
18	60.95	118.68	Open To Flow (1)
46	93.63	120.58	Shut-In(1)
105	245.30	122.25	End Shut-In(1)
106	83.77	122.15	Open To Flow (2)
176	134.47	126.56	Shut-In(2)
255	245.36	127.92	End Shut-In(2)
265	2029.87	128.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
188.00	ocm-50%o50%m	0.92
50.00	Hocm-35%m65%o	0.25

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56787

DST#: 2

Test Start: 2014.02.14 @ 17:15:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 57.00 sec/qt

Water Loss: 6.39 in³

Resistivity: ohm.m

Salinity: 400.00 ppm

Filter Cake: 2.00 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
188.00	ocm-50%o50%m	0.925
50.00	Hocm-35%m65%o	0.246

Total Length: 238.00 ft Total Volume: 1.171 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

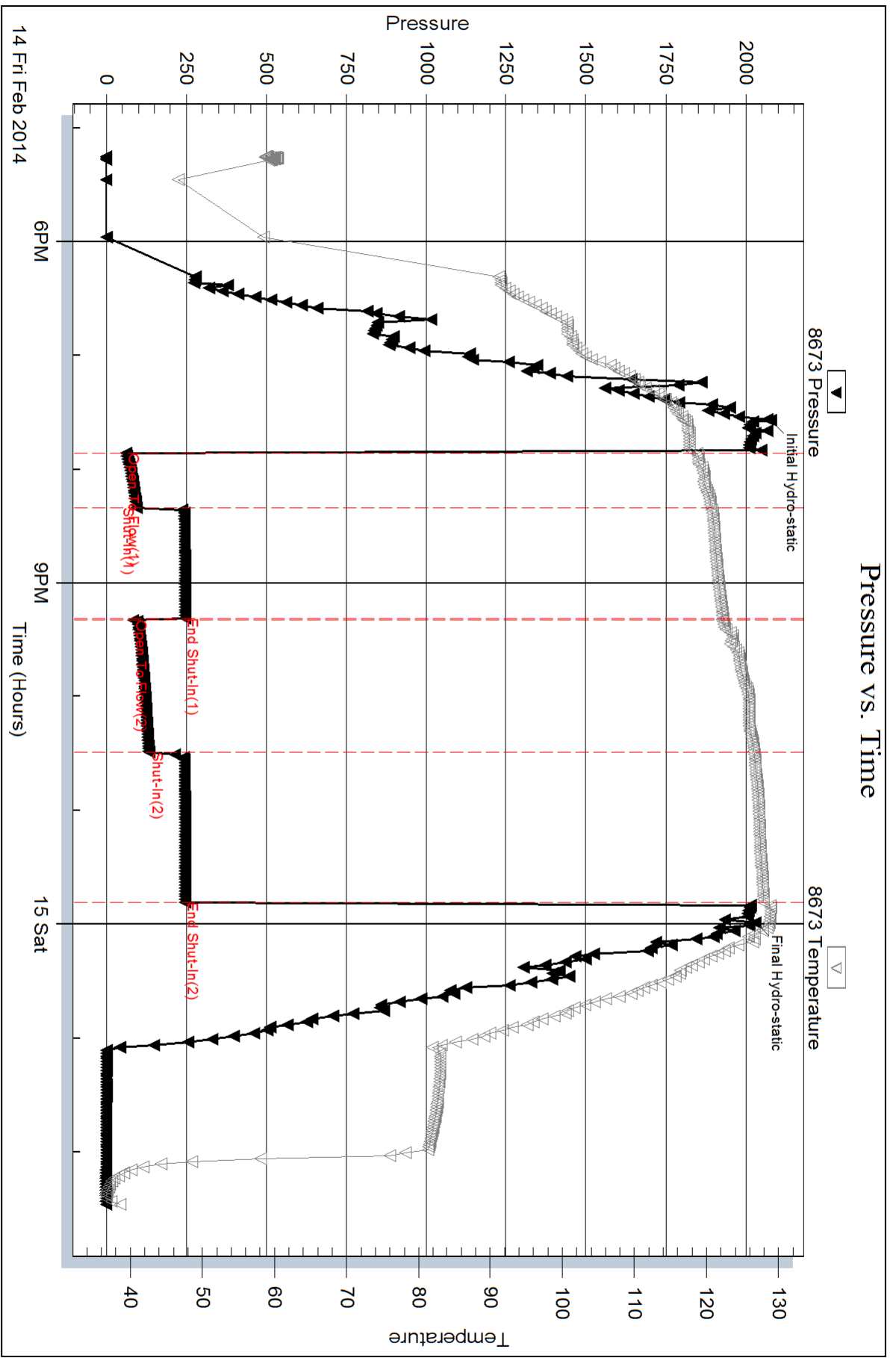
Serial #: 8673

Inside

Berexco LLC.

Michael #1-23

DST Test Number: 2





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Berexco LLC.
2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

23 1s 36w Rawlins Ks.

Michael #1-23

Job Ticket: 56788

DST#: 3

Test Start: 2014.02.15 @ 16:45:00

GENERAL INFORMATION:

Formation: **LKC-A**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 20:00:30
 Tester: Chuck Kreuzer Jr.
 Time Test Ended: 04:50:30
 Unit No: 61
 Interval: **4154.00 ft (KB) To 4250.00 ft (KB) (TVD)**
 Reference Elevations: 3284.00 ft (KB)
 Total Depth: 4250.00 ft (KB) (TVD)
 3271.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 13.00 ft

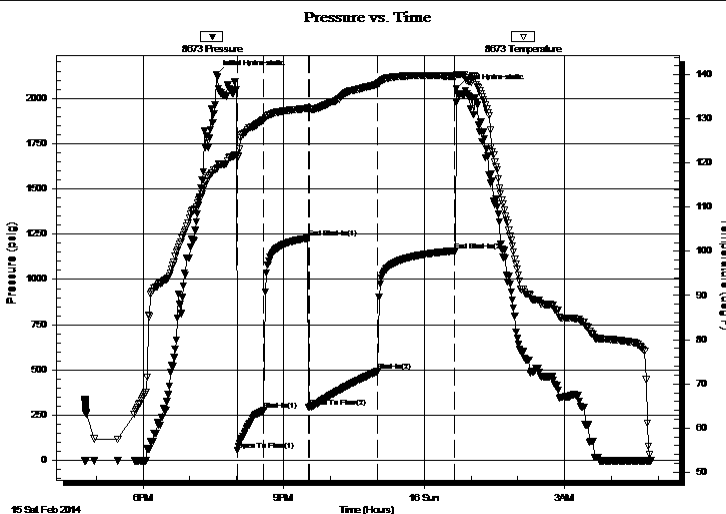
Serial #: 8673

Inside

Press @ Run Depth: 494.09 psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.15 End Date: 2014.02.16 Last Calib.: 2014.02.16
 Start Time: 16:45:01 End Time: 04:50:30 Time On Btm: 2014.02.15 @ 19:33:30
 Time Off Btm: 2014.02.16 @ 00:41:30

TEST COMMENT: IF: Strong blow, Built to B.O.B in 10 mins.
 IS: Bled off, Blow back after 5 mins. Built to 3 in. over 60 mins.
 FF: Strong blo, Built to B.O.B in 8 mins.
 FS: Bled off, Blow back after 1 min., Built to 3 in. over 90 mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2131.62	118.75	Initial Hydro-static
27	57.27	121.33	Open To Flow (1)
61	277.05	129.83	Shut-In(1)
118	1228.00	132.40	End Shut-In(1)
120	296.00	132.05	Open To Flow (2)
207	494.09	137.86	Shut-In(2)
305	1158.05	139.66	End Shut-In(2)
308	2052.02	140.06	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	94ft. of gas in pipe	0.00
0.00	gravity 19@60*=19 corrected gravity	0.00
263.00	go-30%g60%o	1.29
263.00	go-40%g60%o	1.29
328.00	og-65%g35%o	4.60
328.00	og-75%g25%o	4.60

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56788

DST#: 3

Test Start: 2014.02.15 @ 16:45:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 10.00 lb/gal
Viscosity: 46.00 sec/qt
Water Loss: 6.40 in³
Resistivity: ohm.m
Salinity: 800.00 ppm
Filter Cake: 2.00 inches

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

Oil API: 19 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	94ft. of gas in pipe	0.000
0.00	gravity 19@60*=19 corrected gravity	0.000
263.00	go-30%g60%o	1.293
263.00	go-40%g60%o	1.293
328.00	og-65%g35%o	4.601
328.00	og-75%g25%o	4.601

Total Length: 1182.00 ft Total Volume: 11.788 bbl

Num Fluid Samples: 0

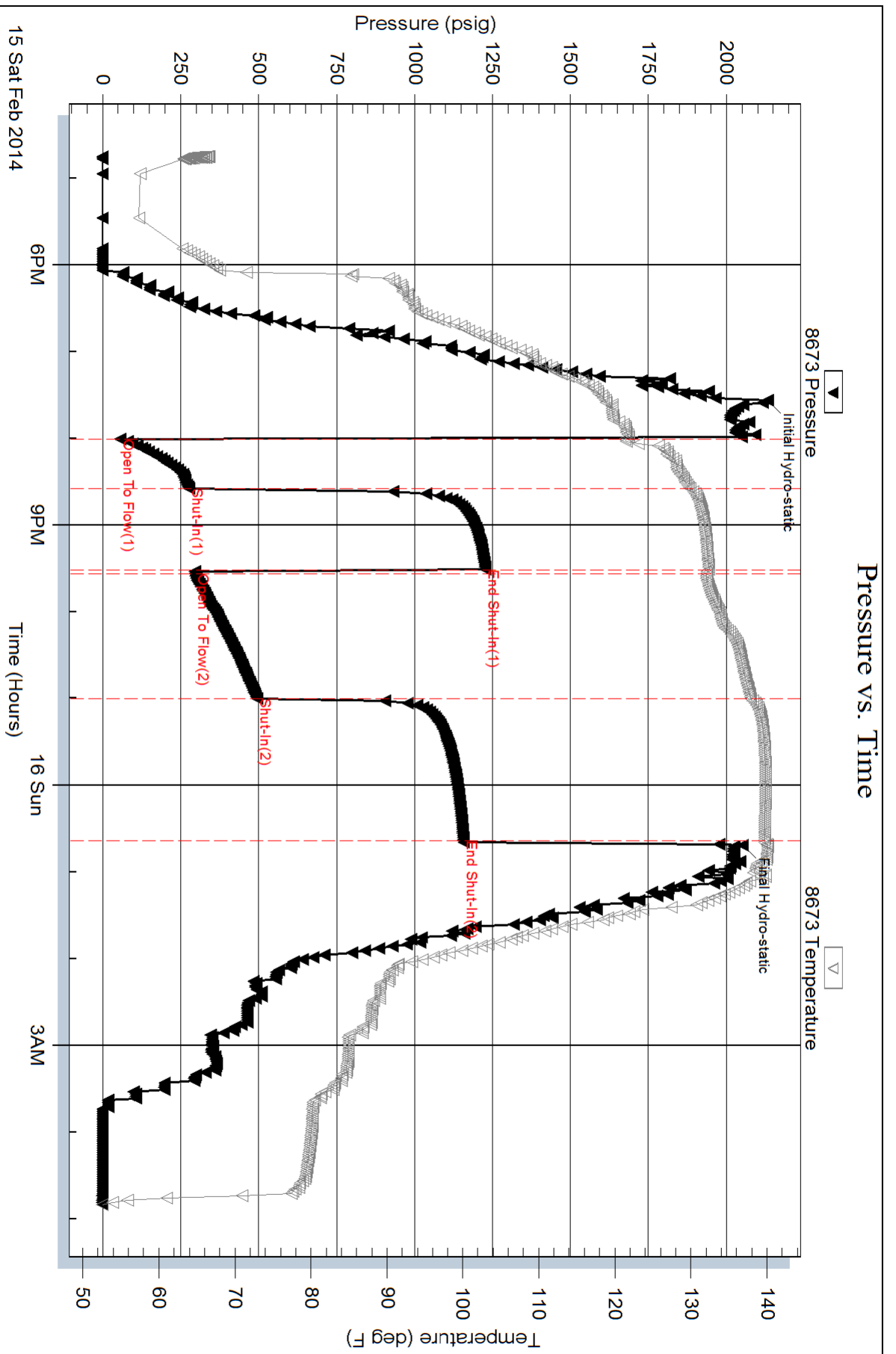
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Berexco LLC.
 2020 N. Bramblewood
 Wichita Ks.
 67206
 ATTN: Pete Vollmer

23 1s 36w Rawlins Ks.

Michael #1-23

Job Ticket: 56789

DST#: 4

Test Start: 2014.02.16 @ 14:50:00

GENERAL INFORMATION:

Formation: **LKC-B**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:11:30
 Time Test Ended: 00:20:00
 Interval: **4228.00 ft (KB) To 4290.00 ft (KB) (TVD)**
 Total Depth: 4290.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Kreuzer Jr.
 Unit No: 61
 Reference Elevations: 3284.00 ft (KB)
 3271.00 ft (CF)
 KB to GR/CF: 13.00 ft

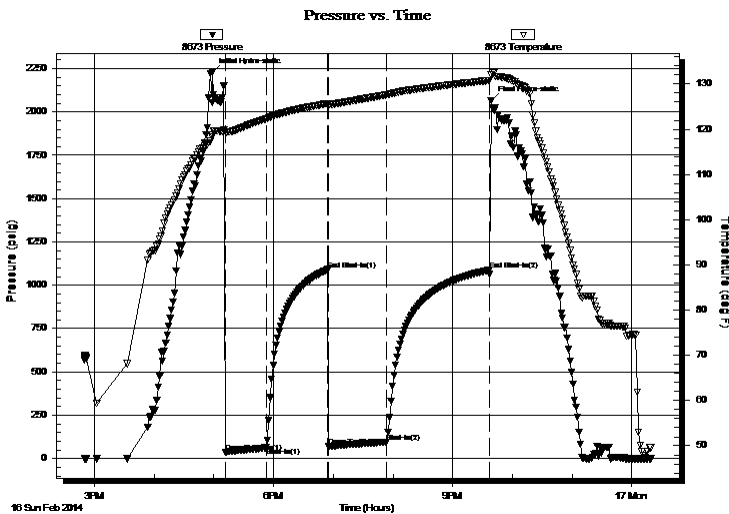
Serial #: 8673

Inside

Press @ Run Depth: 95.78 psig @ 4229.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.16 End Date: 2014.02.17 Last Calib.: 2014.02.17
 Start Time: 14:50:01 End Time: 00:20:00 Time On Btm: 2014.02.16 @ 16:58:30
 Time Off Btm: 2014.02.16 @ 21:38:30

TEST COMMENT: IF: Weak blow, Built to 1 1/2 in. over 30 mins.
 IS: No blow back over 60 mins.
 FF: No blow over 60 mins.
 FS: No blow back over 90 mins.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2228.10	118.75	Initial Hydro-static
13	36.66	119.41	Open To Flow (1)
54	62.91	122.29	Shut-In(1)
116	1090.58	125.69	End Shut-In(1)
117	71.46	125.03	Open To Flow (2)
175	95.78	127.60	Shut-In(2)
278	1087.15	130.77	End Shut-In(2)
280	2063.87	131.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
110.00	Mud w ith oil specs	0.54

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56789

DST#: 4

Test Start: 2014.02.16 @ 14:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 65.00 sec/qt

Water Loss: 5.60 in³

Resistivity: ohm.m

Salinity: 800.00 ppm

Filter Cake: 2.00 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
110.00	Mud with oil specs	0.541

Total Length: 110.00 ft Total Volume: 0.541 bbl

Num Fluid Samples: 0

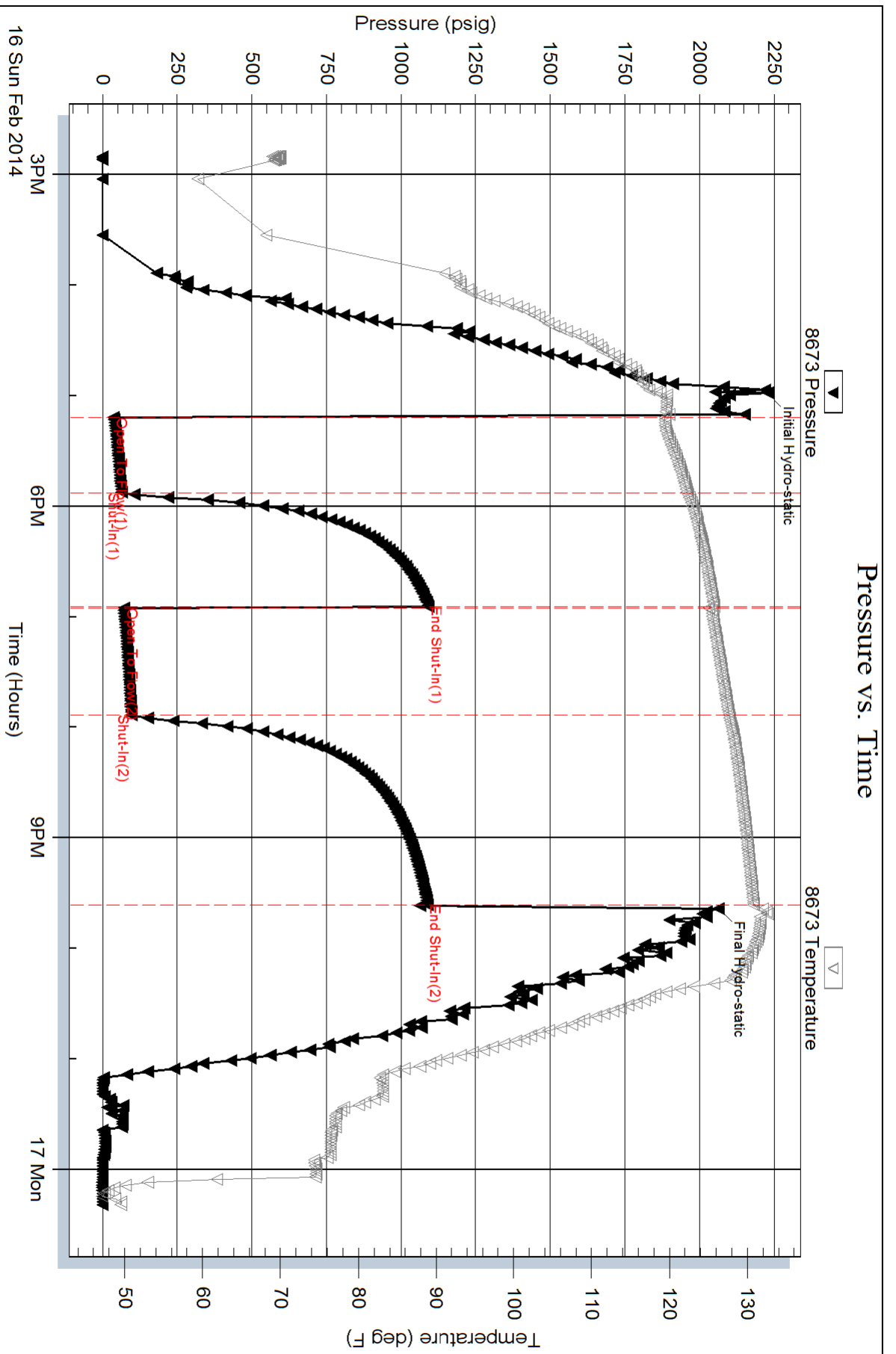
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56790

DST#: 5

Test Start: 2014.02.17 @ 15:00:00

GENERAL INFORMATION:

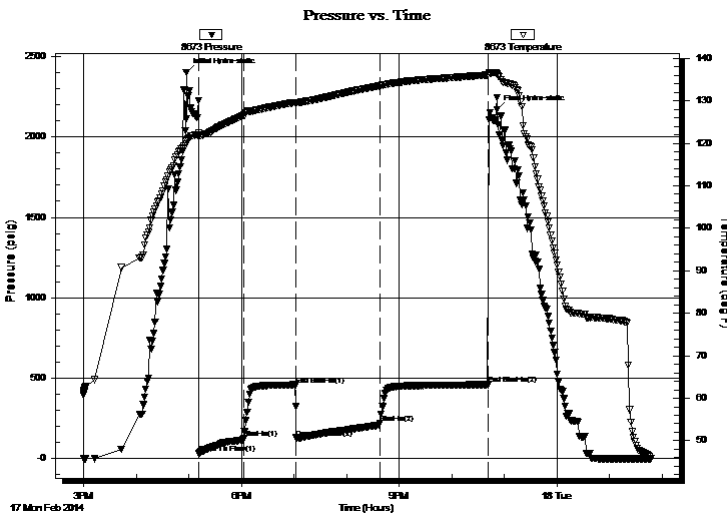
Formation: **LKC-C**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:11:30
 Tester: Chuck Kreuzer Jr.
 Time Test Ended: 01:47:30
 Unit No: 61
 Interval: **4280.00 ft (KB) To 4380.00 ft (KB) (TVD)**
 Reference Elevations: 3284.00 ft (KB)
 Total Depth: 4360.00 ft (KB) (TVD)
 3271.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 13.00 ft

Serial #: 8673

Inside

Press@RunDepth: 220.65 psig @ 4281.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.17 End Date: 2014.02.18 Last Calib.: 2014.02.18
 Start Time: 15:00:01 End Time: 01:47:30 Time On Btm: 2014.02.17 @ 16:57:00
 Time Off Btm: 2014.02.17 @ 22:52:00

TEST COMMENT: IF: Fair blow, Built to B.O.B over 20 mins 10 min longer due to the safety chain w rapped around the head.
 IS: Bled over. Weak surfsce blow, Built to 3 in.
 FF: Fair blow, Built to BOB in 40 min
 FS: Bled off blow, Weak surface blow built to 3 in died to surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2401.41	119.91	Initial Hydro-static
15	30.52	121.59	Open To Flow (1)
66	126.20	126.50	Shut-In(1)
125	459.06	129.61	End Shut-In(1)
126	128.75	129.50	Open To Flow (2)
221	220.65	133.50	Shut-In(2)
345	460.20	136.06	End Shut-In(2)
355	2168.37	136.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
188.00	gmco-20%g20%m60%o	0.92
94.00	gmco-25%g10%m65%o	0.46
282.00	go 20%g 80%o	1.73
0.00	188' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56790

DST#: 5

Test Start: 2014.02.17 @ 15:00:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 35.6 deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 80.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.60 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 600.00 ppm		
Filter Cake: 2.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
188.00	gmco-20%g20%m60%o	0.925
94.00	gmco-25%g10%m65%o	0.462
282.00	go 20%g 80%o	1.733
0.00	188' GIP	0.000

Total Length: 564.00 ft Total Volume: 3.120 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 36 @ 64

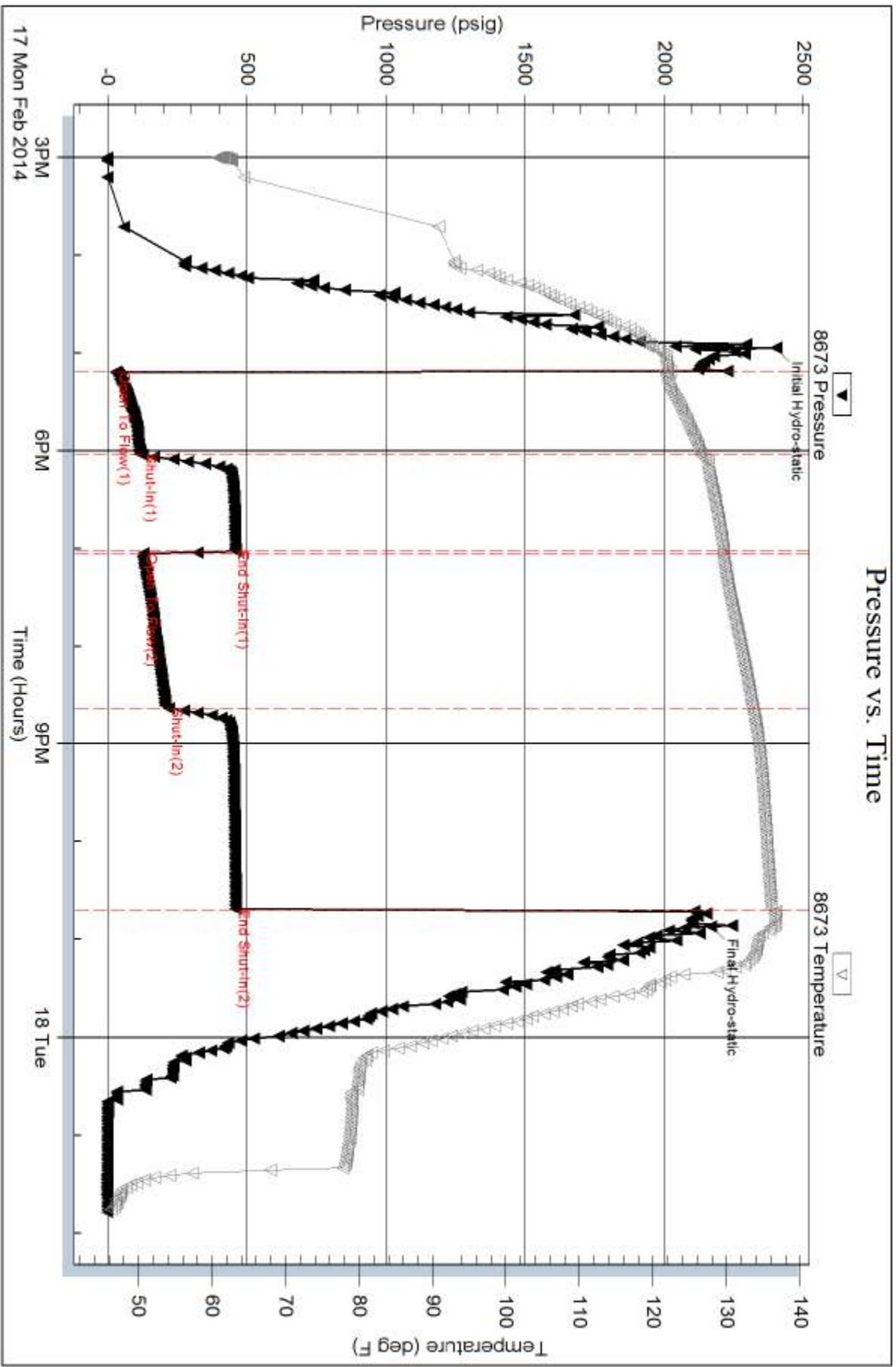
Serial #: 8673

Inside

Berexco LLC

Michael #1-23

DST Test Number: 5





**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56791

DST#: 6

Test Start: 2014.02.18 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC-D,E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:25:30

Time Test Ended: 01:06:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Kreuzer Jr.

Unit No: 61

Interval: 4382.00 ft (KB) To 4434.00 ft (KB) (TVD)

Reference Elevations: 3284.00 ft (KB)

Total Depth: 4434.00 ft (KB) (TVD)

3271.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8673

Inside

Press@RunDepth: 123.98 psig @ 4383.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.18

End Date:

2014.02.19

Last Calib.:

2014.02.19

Start Time: 15:00:01

End Time:

01:06:00

Time On Btm:

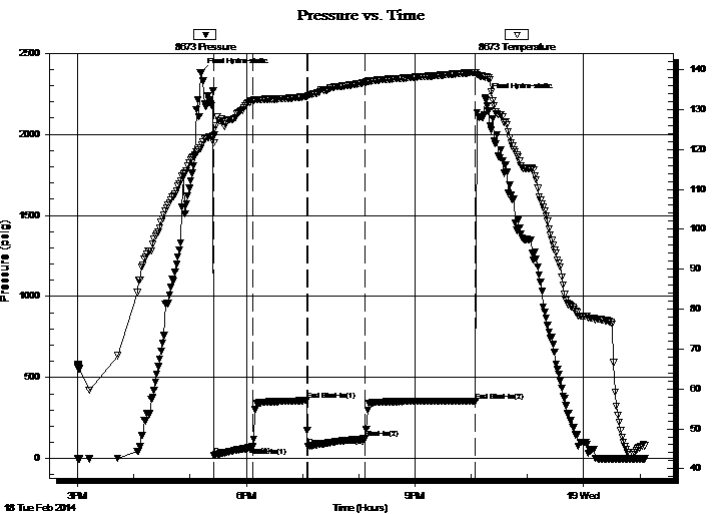
Time Off Btm: 2014.02.18 @ 17:11:00

TEST COMMENT: IF: Weak surface blow over 30 mins.

IS: No blow back

FF: No blow

FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2382.04	120.30	Final Hydro-static
15	20.12	121.71	Open To Flow (1)
56	72.68	132.22	Shut-In(1)
114	359.53	133.27	End Shut-In(1)
115	78.05	133.56	Open To Flow (2)
176	123.98	136.79	Shut-In(2)
294	356.02	139.29	End Shut-In(2)
304	2223.73	138.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
92.00	mud-100%m	0.45
92.00	vsocm-5%o95%m	0.45
40.00	socm-30%o70%m	0.20

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Berexco LLC.
 2020 N. Bramblewood
 Wichita Ks.
 67206
 ATTN: Pete Vollmer

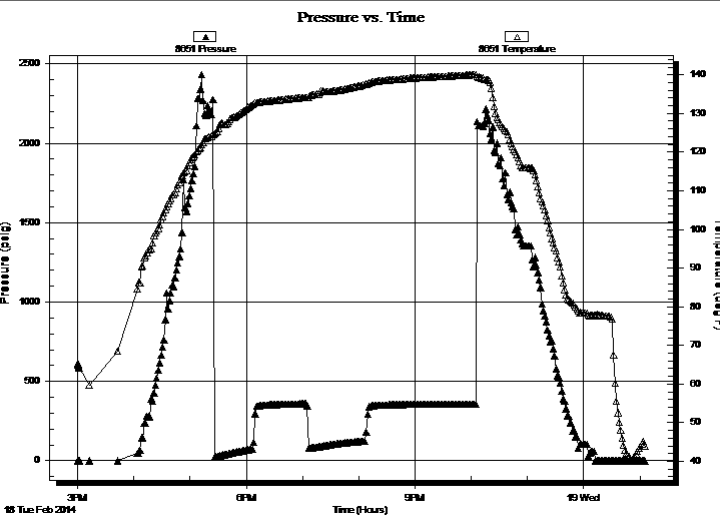
23 1s 36w Rawlins Ks.
Michael #1-23
 Job Ticket: 56791 **DST#: 6**
 Test Start: 2014.02.18 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC-D,E**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:25:30
 Time Test Ended: 01:06:00
 Interval: **4382.00 ft (KB) To 4434.00 ft (KB) (TVD)**
 Total Depth: 4434.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Kreutzer Jr.
 Unit No: 61
 Reference Elevations: 3284.00 ft (KB)
 3271.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8651 Outside
 Press@RunDepth: psig @ 4383.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.18 End Date: 2014.02.19 Last Calib.: 2014.02.19
 Start Time: 15:00:01 End Time: 01:06:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Weak surface blow over 30 mins.
 IS: No blow back
 FF: No blow
 FS: No blow back



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

Recovery		
Length (ft)	Description	Volume (bbl)
92.00	mud-100%m	0.45
92.00	vsocm-5%o95%m	0.45
40.00	socm-30%o70%m	0.20

* Recovery from multiple tests

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

23 1s 36w Rawlins Ks.

2020 N. Bramblewood
Wichita Ks.
67206
ATTN: Pete Vollmer

Michael #1-23

Job Ticket: 56791

DST#: 6

Test Start: 2014.02.18 @ 15:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 10.00 lb/gal
Viscosity: 65.00 sec/qt
Water Loss: 6.40 in³
Resistivity: ohm.m
Salinity: 700.00 ppm
Filter Cake: 2.00 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
92.00	mud-100%m	0.452
92.00	vsocm-5%o95%m	0.452
40.00	socm-30%o70%m	0.197

Total Length: 224.00 ft Total Volume: 1.101 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

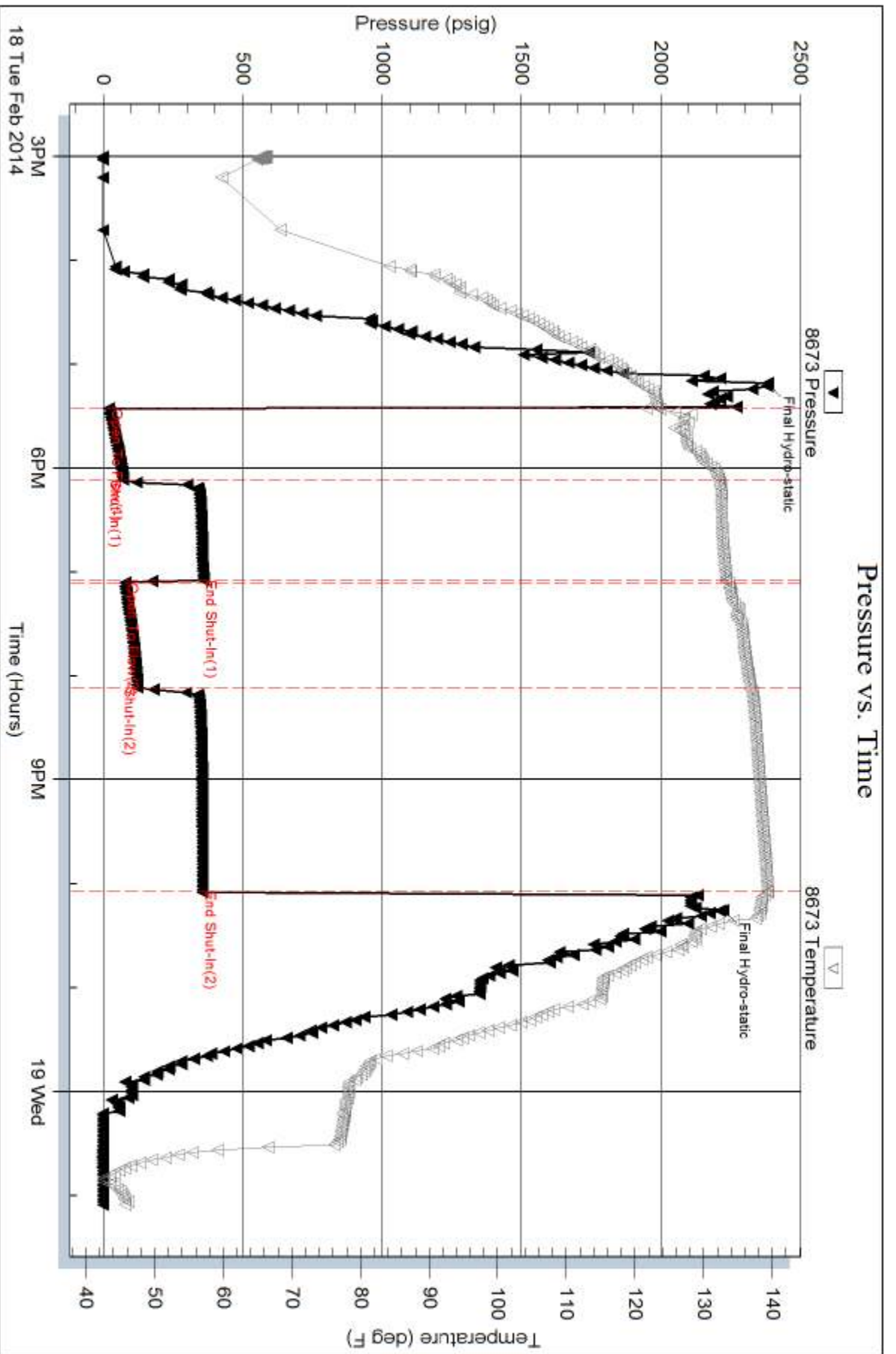
Serial #: 8673

Inside

Berexco LLC.

Michael #1-23

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 56791

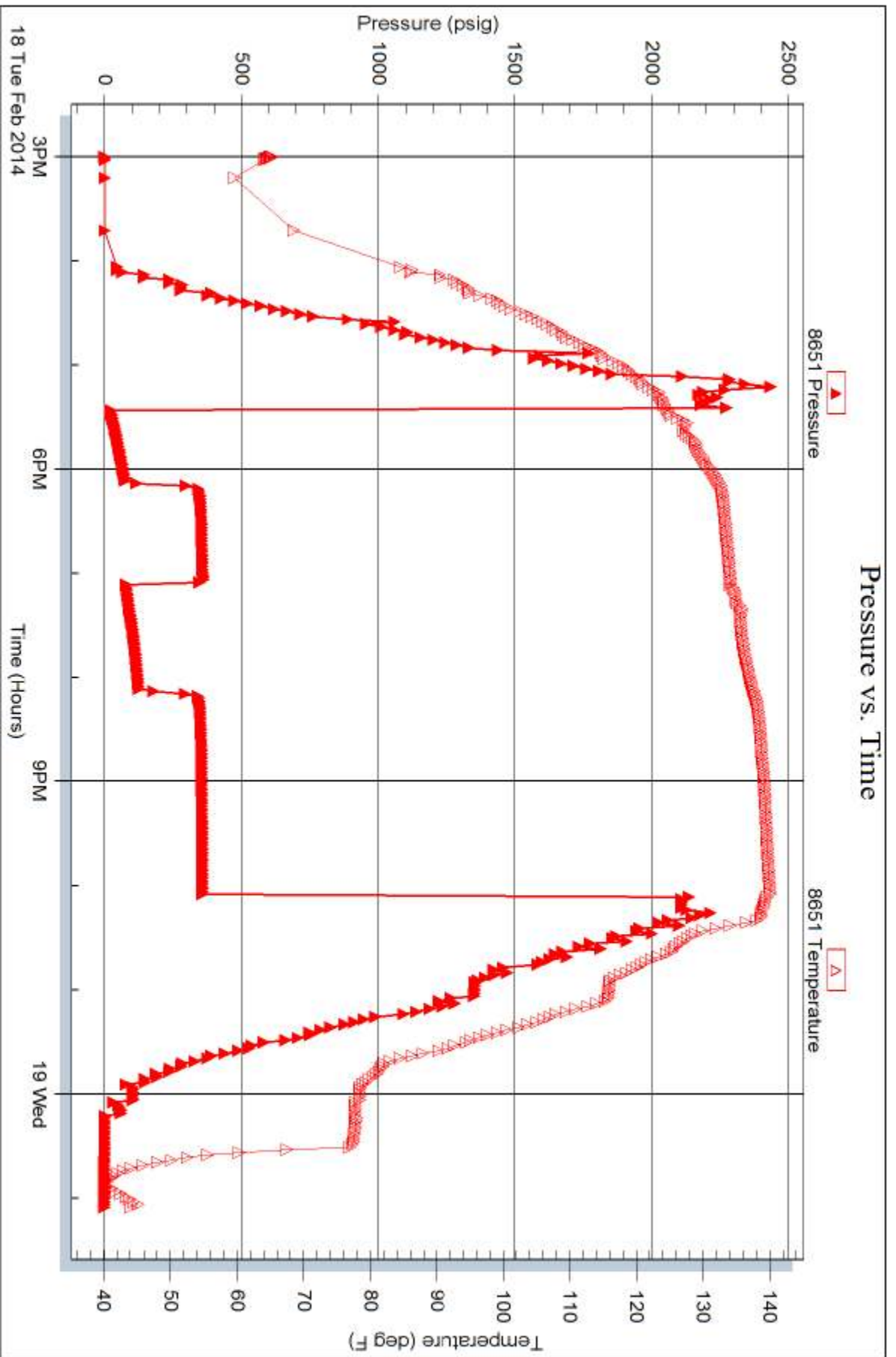
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Serial #: 8651

Outside Berexco LLC.

Michael #1-23

DST Test Number: 6



BEREXCO LLC

MICHAEL 1-23

SW NW NW SEC 23 T1S R36W

RAWLINS COUNTY, KANSAS

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SUMMARY

The Berexco LLC Michael 1-23 in Rawlins County, Kansas spud February 9, 2014 and reached a total depth of 4520' on February 9, 2014. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Missourian Lansing-Kansas City carbonate benches, which produce in the East Fork field. Secondary zones of interest were the Foraker and Oread limestones. The Michael 1-23 was drilled using seismic and nearby well control.

Evaluation of the primary zones of interest was by drill stem testing after sample analysis. Six DSTs were run.

Foraker, Oread and Lansing-Kansas City

The Foraker was clean, non-porous limestone without shows.

Oread samples were fossiliferous wackestone with poor interparticle porosity, scattered oil staining, and good cuts. DST 1 in the Oread recovered 200 ft of mud. The drill stem test was deemed a misrun because the tool opened and slid 8 ft but ended short of bottom by 7 ft. The test tool was packed off with drill cuttings and cavings. The hole was cleaned by drilling two feet deeper. DST 2 recovered 238 ft of highly oil cut mud.

The Lansing A displayed fair interparticle and vuggy porosity with abundant heavy black oil stain in cuttings. DST 3 recovered 1158 ft of highly gas cut 19 gravity oil.

The Lansing B exhibited fossiliferous packstone and mudstone with poor to trace vuggy porosity, live black oil staining and good cuts. DST 4 recovered 110 ft of mud with spots of oil. The poor flow pressures and wireline logs indicated a non-porous B zone.

The Lansing C displayed abundant live black oil staining, fluorescence, and cut in packstone with fair to poor interparticle and vuggy porosity. DST 5 recovered 564 ft of gassy oil with a slight mud cut at the bottom plus 188 ft of gas in the drill pipe.

The Lansing D was mudstone with black heavy oil staining but no visible porosity. No drill stem testing was warranted in the D zone alone and the decision was made to drill through the E zone and test the D and E zones together. The Lansing E was predominantly non-porous with only trace pin-point vuggy porosity with a scattered show of black oil and cuts. DST 6 recovered 224 ft of mud and very slightly to slightly oil cut mud. The shut-in and flow pressures were low, probably due to depletion from nearby wells in the E zone.

The Lansing F was non-porous limestone with no sample shows.

Oil Well Completion

5 ½" production casing was run to complete the Michael 1-23 as an oil producer.

Peter J. Vollmer
Consulting Wellsite Geologist, WPG #3369
February 2014

Berexco LLC
Michael 1-23

WELL DATA

OPERATOR: Berexco LLC
2020 North Bramblewood Drive
Wichita, Kansas 67206

WELL NAME: Michael 1-23

SURFACE LOCATION: 990' FNL & 330'FWL
SW NW NW Sec. 23, T1S, R36W
Rawlins County, Kansas

LATITUDE & LONGITUDE: 39.9563496, -101.3346704 (From State, calculated from footages)

BOTTOM HOLE LOCATION: Vertical hole

ELEVATIONS: 3271' GL 3284' KB

API NUMBER: 15-153-20984

BASIN: Mid-Continental Arch

FIELD: East Fork

HOLE SIZE: 12 ¼" to 310'; 7 7/8" to 4520'

CASING: 8 5/8" J-55 24# STC set to 310' KB

SPUD DATE: February 19, 2014

TD DATE: February 9, 2014

TOTAL DEPTH: 4520' Rig TD 4515' Log TD

LAST FORMATION: Pennsylvanian Lansing-Kansas City

WELL STATUS: Ran 5 1/2" production casing

OPERATOR
REPRESENTATIVE: Dana Wreath - Vice President

WELLSITE GEOLOGIST: Peter J. Vollmer

FORMATION TOPS

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3284
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1200	1200	+2084
Fort Hays Ls Mbr	N/A	1723	1723	+1561
Carlile Sh	N/A	1770	1770	+1514
Dakota	N/A	2154	2154	+1130
Cheyenne	N/A	2716	2716	+568
Blaine	N/A	3040	3040	+244
Stone Corral Anhydrite	3186	3190	3190	+94
Base Anhydrite	3227	3224	3224	+60
Neva	3671	3674	3674	-390
Foraker	3778	3784	3784	-500
Wabaunsee	3941	3944	3944	-660
Topeka	3994	4000	4000	-716
Deer Creek Sand	4034	4034	4034	-750
Oread	4107	4110	4110	-826
Lansing-Kansas City				
"A"	4212	4212	4212	-928
"B"	4266	4270	4270	-986
"C"	4329	4330	4330	-1046
"D"	4375	4377	4377	-1093
"E"	4417	4418	4418	-1134
"F"	4455	4456	4456	-1172
TD Driller	4520			
TD Logger		4515	4515	-1231

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4625' TD. Depths are rig depths except where noted as wireline.

3500' - 3590'	SHALE: reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light tan Limestone.
3590' - 3606'	SANDSTONE: light gray to reddish brown, friable to firm, very fine grained grading to silt, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity no shows.
3606' - 3671'	SHALE: red, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace tan Limestone.
NEVA	SAMPLE TOP: 3671' LOG TOP: 3674' SUBSEA: -390'
3671' - 3678'	LIMESTONE: white to light gray, firm to hard, chalky, fossil fragments, tight, no shows.
3678' - 3736'	SHALE: red brown, soft to firm, sub blocky, non calcareous, occasional silty, with interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3736' - 3748'	LIMESTONE: light gray, hard, cryptocrystalline, very slightly sandy, tight, no shows.
3748' - 3778'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.
FORAKER	SAMPLE TOP: 3778' LOG TOP: 3784' SUBSEA: -500'
3778' - 3788'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, clean, tight, no show.
3788' - 3800'	SHALE: gray, firm, blocky, non to slightly calcareous, fossil fragments.
3800' - 3818'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, algal stain, slightly sandy at base, tight to trace intercrystalline porosity, no shows.
3818' - 3832'	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black specks, tight to trace porosity, no shows.

LITHOLOGY AND SHOWS

3832' - 3896'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray Limestone stringers.
3896' - 3926'	SHALE: dark gray to black, firm, fissile to blocky, non calcareous, carbonaceous in part, fossil fragments(Brachiopods).
WABAUNSEE	SAMPLE TOP: 3941' LOG TOP: 3944' SUBSEA: -660'
3926' - 3950'	LIMESTONE: white to light reddish brown, mottled, soft to firm, cryptocrystalline, chalky texture, red brown SHALE partings, rare fossil fragment, tight, no shows.
3950' - 3982'	SHALE: brown red, soft to firm, blocky, n to slightly calcareous, with interbedded LIMESTONE: white to light gray, occasionally light reddish brown mottling, hard to firm, cryptocrystalline, fossil fragments, tight, no shows.
3982' - 3994'	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.
TOPEKA	SAMPLE TOP: 3994' LOG TOP: 4000' SUBSEA: -716'
3994' - 4002'	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments (Fusulinids), sparry calcite, trace black dead oil, tight, no shows.
4002' - 4018'	SHALE: gray, firm, platy, non to slightly calcareous, dull luster.
4018' - 4034'	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments, clear calcite fill in vugs, opaque chert, tight, no shows.
DEER CREEK SAND	SAMPLE TOP: 4034' LOG TOP: 4034' SUBSEA: -750'
4034' - 4053'	SANDSTONE: light gray to light grayish brown, friable to soft, very fine grained, well rounded, well sorted, calcareous, clay filled, plant remains, predominantly loose grains, no visible porosity, no show.
4053' - 4072'	LIMESTONE: white to light reddish brown, mottled, firm to hard, mudstone, very chalky, argillaceous in part, interbedded reddish brown Shale partings, tight, no shows.

LITHOLOGY AND SHOWS

4072' - 4107'	SHALE: reddish brown, brownish maroon, gray, mottled in part, firm, blocky, occasional slightly calcareous, non to slightly silty in part, clayey to sticky.
OREAD	SAMPLE TOP: 4107' LOG TOP: 4110' SUBSEA: -826'
4107' - 4130'	LIMESTONE: cream to white, firm to hard, wackestone to packstone, fossil fragments, scattered black to dark brown live oil stain, tight to trace interparticle and vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming cuts, good show.
4130' - 4136'	SHALE: dark gray to black, firm, fissile, slightly to very carbonaceous, non to slightly calcareous, fossil fragments, gas odor.
4136' - 4160'	LIMESTONE: gray to light gray, firm to hard, mudstone, rare fossil, slightly argillaceous in part, tight, no show.
4160' - 4172'	SHALE: reddish brown, gray, firm, blocky, non to slightly calcareous, silty in part.
4172' - 4190'	LIMESTONE: gray to grayish brown, firm, mudstone, argillaceous, gray Shale partings, tight.
4190' - 4212'	SHALE: gray to reddish brown to maroon, firm, blocky, non to slightly calcareous.
LANSING- KANSAS CITY "A"	SAMPLE TOP: 4212' LOG TOP: 4212' SUBSEA: -928'
4212' - 4231'	LIMESTONE: white to cream, firm to hard, mudstone to grainstone, occasional interclasts and peloids, fossil fragment, sandy at base, abundant black heavy oil stain, trace to fair interparticle porosity, trace vuggy porosity, bright yellowish white fluorescence, instant yellowish white cuts, very good show.
4231' - 4232'	SHALE: gray to dark gray, firm, blocky, non to slightly calcareous.
4232' - 4242'	SANDSTONE: white to light gray to light reddish brown, mottled, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, tight to poor porosity, no show.
4242' - 4266'	SHALE: dark gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, silty in part.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "B"

SAMPLE TOP: 4266' LOG TOP: 4270' SUBSEA: -986'

4266' - 4284'

LIMESTONE: white, firm to hard, mudstone to packstone, occasional fossil fragments, clear calcareous fracture fill, patchy live heavy black oil, predominant tight with trace intergranular porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, fair show.

4284' - 4298'

SHALE: gray to dark gray, firm, platy to fissile, slightly carbonaceous in part.

4298' - 4310'

LIMESTONE: white to light gray, firm, cryptocrystalline, gray Shale partings, fossil fragments, argillaceous in part, trace pyrite, tight, no show.

4310' - 4329'

SHALE: brown red to gray to maroon, firm, platy, slightly calcareous, silty in part.

LANSING- KANSAS CITY "C"

SAMPLE TOP: 4329' LOG TOP: 4330' SUBSEA: -1046'

4329' - 4344'

LIMESTONE: white, firm, mudstone to packstone, fossil fragments, abundant black heavy oil, poor intergranular and fair vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, with slow streaming cuts, good show.

4344' - 4357'

SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments.

4357' - 4364'

LIMESTONE: white to dark gray, mottled in part, hard to firm, mudstone to wackestone, fossil, clear calcite fill in vugs, spotty black heavy oil stain, trace intergranular and vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, good show.

4364' - 4375'

SHALE: gray, firm, blocky.

LANSING- KANSAS CITY "D"

SAMPLE TOP: 4375' LOG TOP: 4377' SUBSEA: -1093'

4375' - 4386'

LIMESTONE: light gray to white, firm, grainstone to mudstone, fossil fragments, tight to trace intergranular porosity, trace spotty black oil, dull yellow fluorescence, dull yellowish white cut, poor show.

4386' - 4400'

SHALE: dark gray to gray, firm, blocky, white Limestone partings.

LITHOLOGY AND SHOWS

4400' - 4417' SHALE: dark reddish to brown to grayish green to gray, firm, blocky to platy, non calcareous, silty, pyrite, interbedded Limestone.

LANSING-
KANSAS CITY "E"

SAMPLE TOP: 4417' LOG TOP: 4418' SUBSEA: -1134'

4417' - 4434' LIMESTONE: white to light gray, hard to firm, mudstone to wackestone, predominant chalky texture, occasional fossil, patchy black oil specks and stain, tight to trace vuggy porosity, bright yellowish white fluorescence, blooming yellowish white cut, poor to fair show.

4434' - 4455' SHALE: dark gray to black, firm, blocky, calcareous, fossils, slightly carbonaceous in part, pyrite.

LANSING-
KANSAS CITY "F"

SAMPLE TOP: 4455' LOG TOP: 4456' SUBSEA: -1172'

4455' - 4462' LIMESTONE: cream to white to light gray, firm to hard, mudstone to wackestone, scattered fossil fragments, trace black dead oil, very tight, no shows.

4462' - 4473' SHALE: dark gray to black, firm, blocky, calcareous, fossil (Brachiopod), carbonaceous in part.

4473' - 4488' LIMESTONE: cream to white, firm to hard, mudstone, fossil fragment, very chalky, dense, with interbedded dark gray Shale partings, tight, no shows.

4488' - 4520' TD SHALE: gray to dark gray, firm, platy to blocky, non to very slightly calcareous, fossil fragments, interbedded white to light gray chalky Limestone.

SERVICES

CONTRACTOR:	Beredco Drilling Inc., Rig 2	
Toolpusher:	Milo Salinas	
DRILLING FLUIDS:	Morgan Mud, Inc.	McCook, ND
Mud Type:	Freshwater Chemical	308-340-5946
Engineer:	Dave Lines	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Chuck Kreutzer, Jr. DST 1: 4072' - 4120' Oread DST 2: 4070' - 4122' Oread DST 3: 4154' - 4250' LKC "A" DST 4: 4228' - 4290' LKC "B" DST 5: 4280' - 4364' LKC "C" DST 6: 4382' - 4434' LKC "D" & "E"	Hays, KS
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500' - TD Engineer: Don Schmidt	Hays, KS 785-625-3858