Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1307295

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 # 34362
Name: Caroden Energy LLC
Address 1: 7302 SPANISH BAY DR
Address 2:
City: WINDSOR State: CO Zip: 80550 + __ __ __ __
Contact Person: CHRIS FREVERT
Phone: (970) 290-7447
CONTRACTOR: License # 33350
Name: Southwind Drilling, Inc.
Wellsite Geologist: HERB DEINES
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 #:

5/13/2016	5/19/2016	7/29/2016
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-053-21345-00-00
Spot Description:
SE - SE - NW - SW Sec. 1 Twp. 17 S. R. 10 ☐ East ☑ West
1400 Feet from ☐ North / ☑ South Line of Section
1020 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☐ SE ☑ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ellsworth
Lease Name: Thelma Well #: 1
Field Name:
Producing Formation: ARBUCKLE
Elevation: Ground: 1804 Kelly Bushing: 1812
Total Vertical Depth: 3380 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 32 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: 48000 ppm Fluid volume: 320 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: Brackeen Line Cleaning
Lease Name: Praeger #4 License #: 9952
Quarter NE Sec. 27 Twp. 17 S. R. 11 ☐ East ☑ West
County: Barton Permit #: D-20,704

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:** Karen Ritter **Date:** 11/10/2016

[redacted] 1307295

Operator Name: Caroden Energy LLC Lease Name: Thelma Well #: 1

Sec. 1 Twp. 17 S. R. 10 ☐ East ☑ West County: Ellsworth

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

DUAL INDUCTION LOG
DUAL COMPENSATED POROSITY LOG
MICRORESISTIVITY LOG

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name: Attached Top: Attached Datum: Attached

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	20	322	60/40	180	2%GEL 3%CC
Production	7.825	5.5	15.5	3374	COMMON	180	10%SALT 5%GILSONITE

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☑ Plug Off Zone	3292-3302	COMMON	100	COMMON
	-			

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 *(Amount and Kind of Material Used)*	Depth
6	3292-96	150 GAL 7.5% MCA	3292-96
		150 GAL 15% MCA	

TUBING RECORD: Size: 2.875 Set At: 3337 Packer At: 0

Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR. 8/17/2016

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	3.5	0	25	0	39

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL: 3292-96

Form	ACO1 - Well Completion
Operator	Caroden Energy LLC
Well Name	Thelma 1
Doc ID	1307295

Tops

Name	Top	Datum
ANHYDRITE	550	+1262
TOPEKA	2555	-743
HEEBNER SHALE	2808	-996
TORONTO	2829	-1013
DOUGLAS SHALE	2839	-1027
BROWN LIME	2918	-1106
LKC	2937	-1125
BKC	3216	-1404
REWORK ARBUCKLE	3255	-1443
ARBUCKLE	3270	-1458
RTD	3360	-1548
LTD	3362	-1550
DDTD	3380	-1568

Form	ACO1 - Well Completion
Operator	Caroden Energy LLC
Well Name	Thelma 1
Doc ID	1307295

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	20	322	60/40	180	2%GEL 3%CC
Production	7.825	5.5	15.5	3374	COMMON	180	10%SALT 5%GILSONITE

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65460 **DST#: 1**

Test Start: 2016.05.18 @ 01:25:14

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:02:39
Time Test Ended: 07:35:08

Test Type: Conventional Straddle (Initial)
Tester: Ray Schw ager
Unit No: 77

Interval: 3214.00 ft (KB) To 3280.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

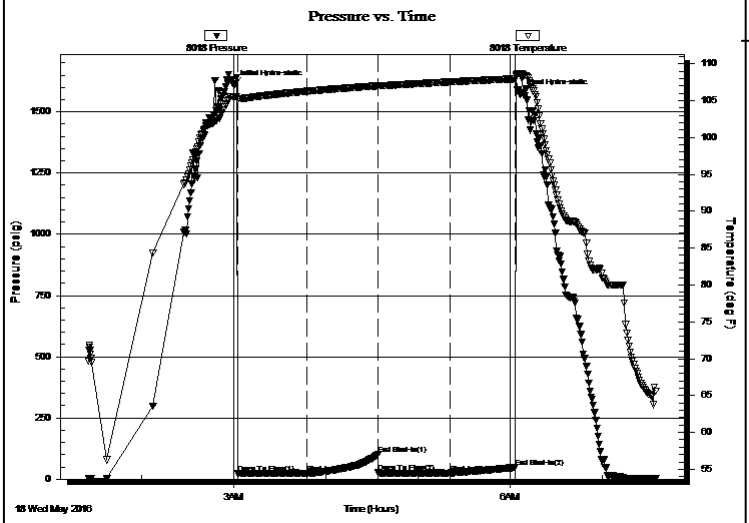
Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8018 **Inside**

Press@RunDepth: 24.95 psig @ 3220.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 01:25:14 End Time: 07:35:08

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm: 2016.05.18 @ 02:59:54
Time Off Btm: 2016.05.18 @ 06:06:23

TEST COMMENT: 45-IFP-w k bl thru-out 1/2'to 1"bl
45-ISIP-no bl bk
45-FFP-w k bl thru-out surface to 1/4"bl
45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1611.17	105.57	Initial Hydro-static
3	23.84	105.12	Open To Flow (1)
48	25.02	106.26	Shut-In(1)
94	101.15	106.99	End Shut-In(1)
95	27.91	106.95	Open To Flow (2)
141	24.95	107.53	Shut-In(2)
184	47.92	107.95	End Shut-In(2)
187	1572.93	108.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	CO	0.07
10.00	OCM 15%O85%M	0.14

Gas Rates

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

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65460 **DST#: 1**

Test Start: 2016.05.18 @ 01:25:14

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:02:39
Time Test Ended: 07:35:08

Test Type: Conventional Straddle (Initial)
Tester: Ray Schw ager
Unit No: 77

Interval: 3214.00 ft (KB) To 3280.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

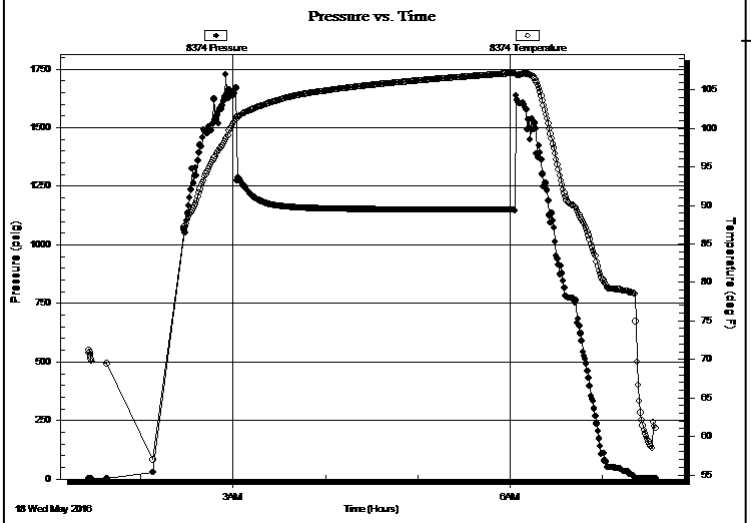
Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8374 **Below (Straddle)**

Press@RunDepth: psig @ 3286.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 01:25:57 End Time: 07:35:06

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm:
Time Off Btm:

TEST COMMENT: 45-IFP-w k bl thru-out 1/2'to 1"bl
45-ISIP-no bl bk
45-FFP-w k bl thru-out surface to 1/4"bl
45-FSIP-no bl bk



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	CO	0.07
10.00	OCM 15%O85%M	0.14

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65460 **DST#: 1**

Test Start: 2016.05.18 @ 01:25:14

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	43 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.97 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3800.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	CO	0.070
10.00	OCM 15%O85%M	0.140

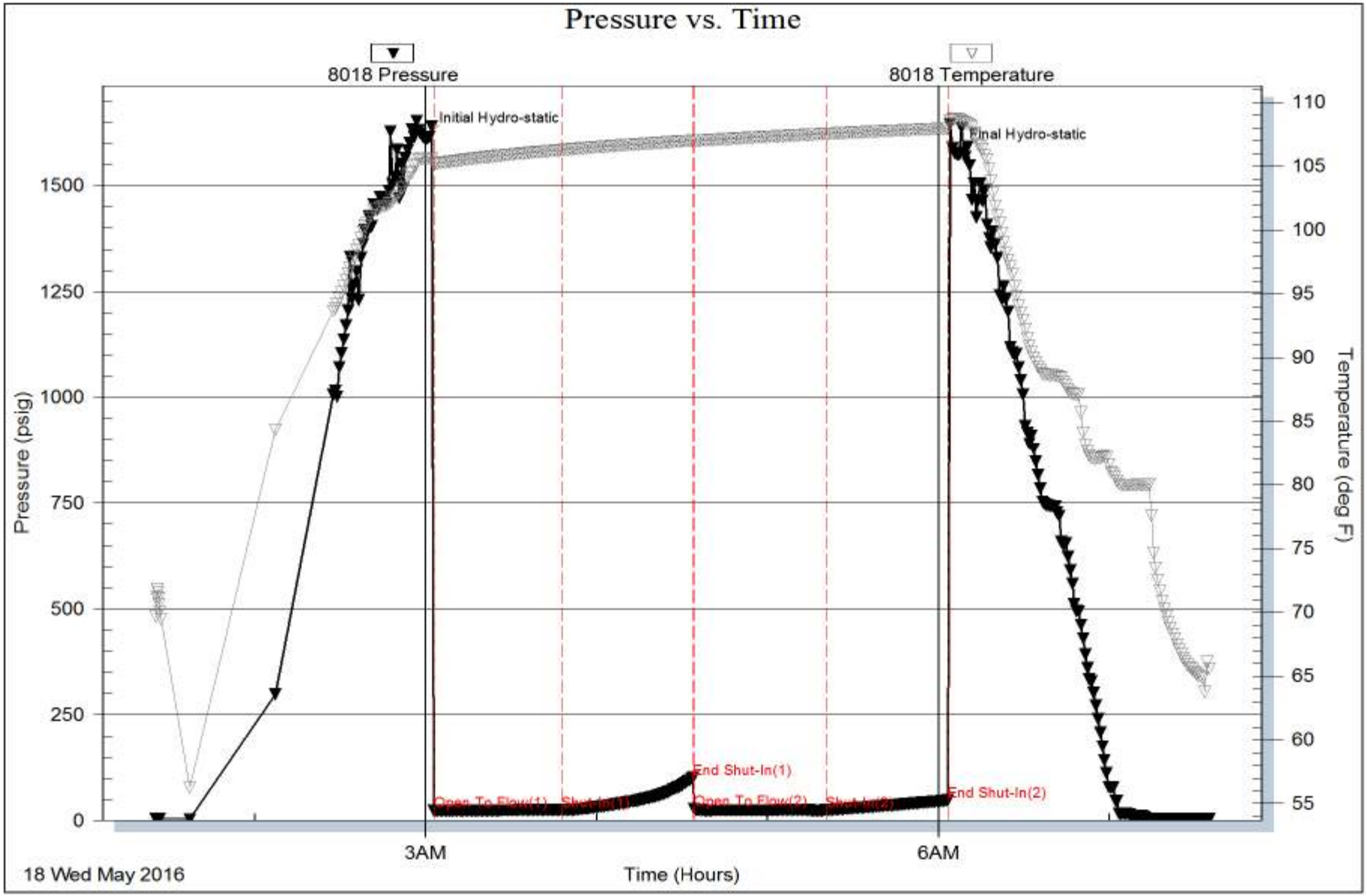
Total Length: 15.00 ft Total Volume: 0.210 bbl

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

Laboratory Name: Laboratory Location:

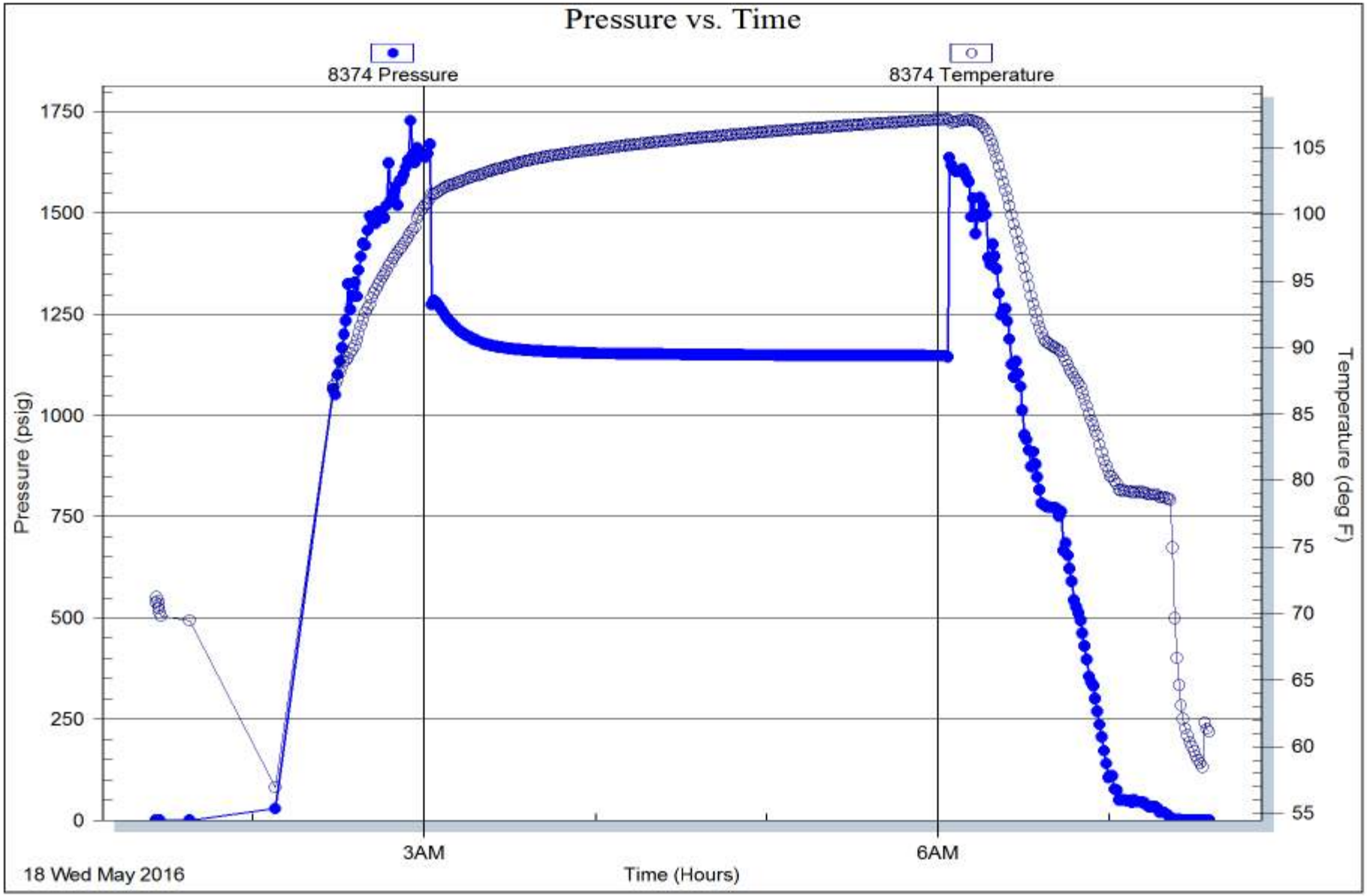
Recovery Comments:

Serial #: 8018 **Inside** Caroden Energy LLC Thelma #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65460 Printed: 2016.05.18 @ 09:01:50

Serial #: 8374 Below (Straddle) Chesapeake Energy LLC Thelma #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65460 Printed: 2016.05.18 @ 09:01:50

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65461 **DST#: 2**

Test Start: 2016.05.18 @ 08:10:17

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:21:57
Time Test Ended: 13:57:11

Test Type: Conventional Straddle (Reset)
Tester: Ray Schw ager
Unit No: 77

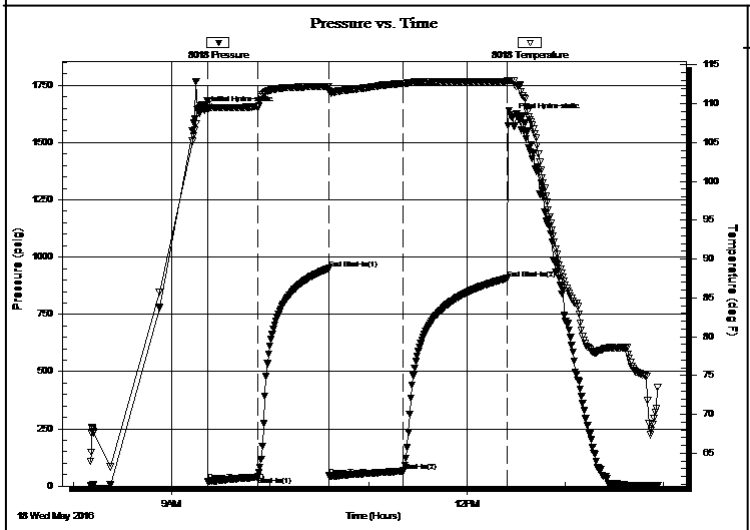
Interval: 3290.00 ft (KB) To 3300.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8018 **Inside**
Press@RunDepth: 65.88 psig @ 3291.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 08:10:17 End Time: 13:57:11

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm: 2016.05.18 @ 09:19:57
Time Off Btm: 2016.05.18 @ 12:27:56

TEST COMMENT: 30-IFP-w k to strg in 9min
45-ISIP-surface bl bk
45-FFP-w k to strg in 5min
60-FSIP-surface bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1640.37	109.90	Initial Hydro-static
2	19.45	109.28	Open To Flow (1)
33	41.45	109.65	Shut-In(1)
76	950.75	112.23	End Shut-In(1)
76	44.46	111.74	Open To Flow (2)
122	65.88	112.60	Shut-In(2)
185	907.00	112.83	End Shut-In(2)
188	1609.52	112.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	580' GIP	0.00
105.00	CO	1.47
62.00	GMO 40%G1%M4%W55%O	0.87

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65461 **DST#: 2**

Test Start: 2016.05.18 @ 08:10:17

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:21:57
Time Test Ended: 13:57:11

Test Type: Conventional Straddle (Reset)
Tester: Ray Schw ager
Unit No: 77

Interval: 3290.00 ft (KB) To 3300.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

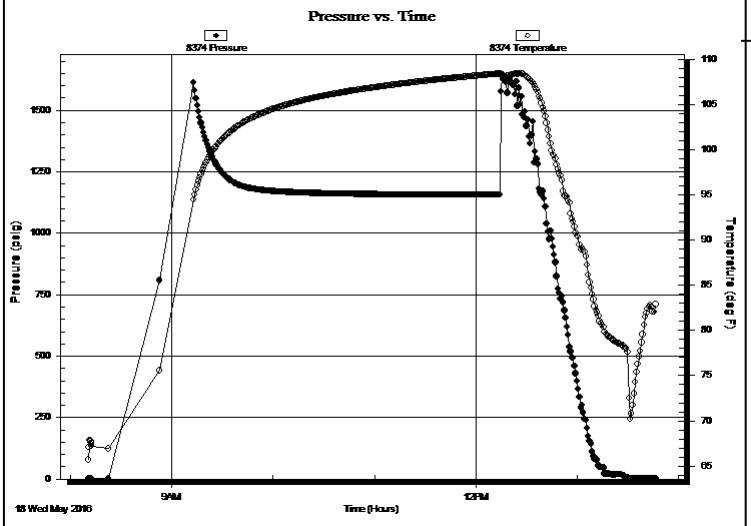
Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8374 **Below (Straddle)**

Press@RunDepth: psig @ 3306.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 08:10:37 End Time: 13:47:01

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP-w k to strg in 9min
45-ISIP-surface bl bk
45-FFP-w k to strg in 5min
60-FSIP-surface bl bk



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	580' GIP	0.00
105.00	CO	1.47
62.00	GMO 40%G1%M4%W55%O	0.87

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65461 **DST#: 2**

Test Start: 2016.05.18 @ 08:10:17

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	43 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.95 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3800.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

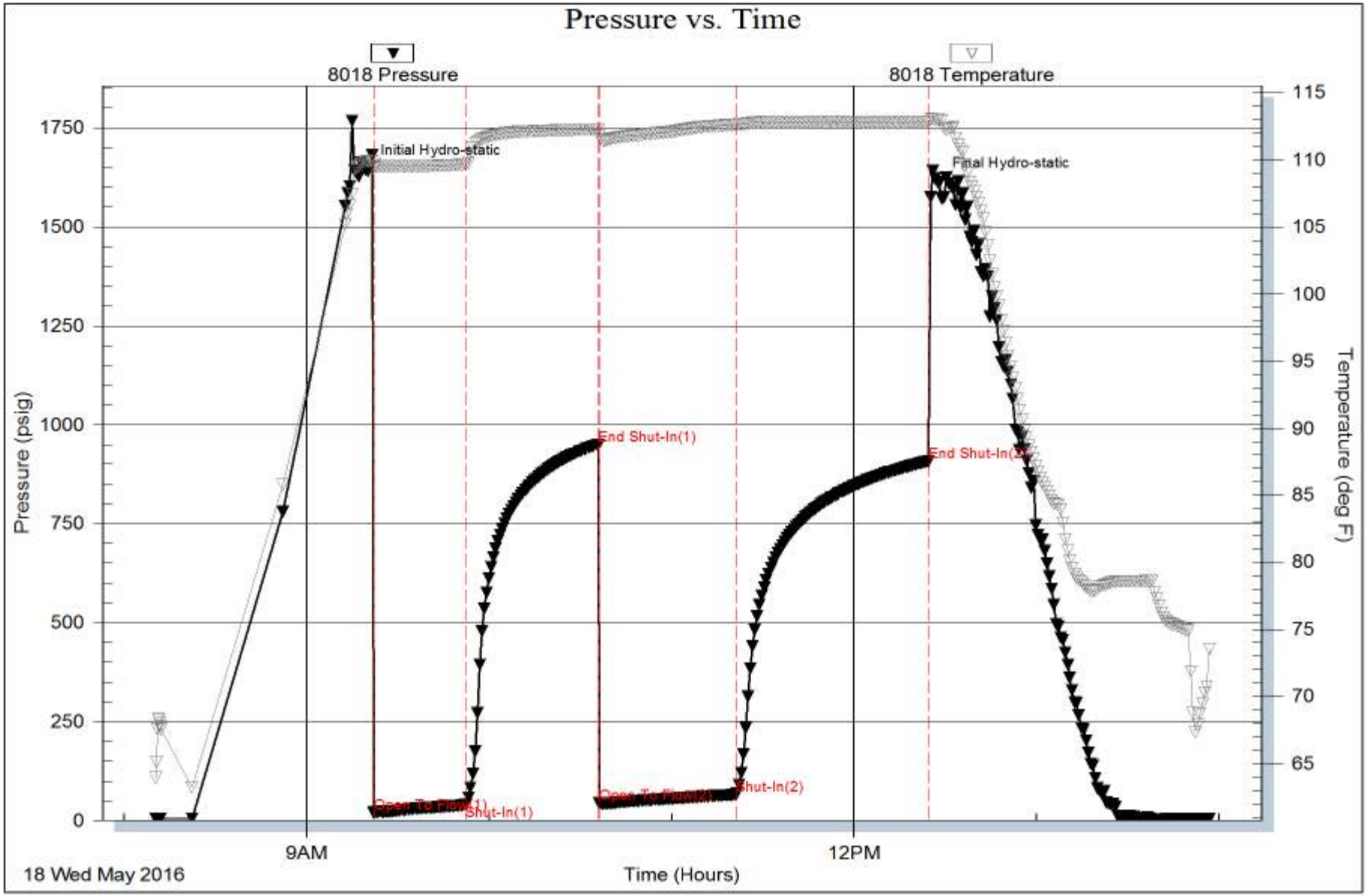
Recovery Table

Length ft	Description	Volume bbl
0.00	580' GIP	0.000
105.00	CO	1.473
62.00	GMO 40%G1%M4%W55%O	0.870

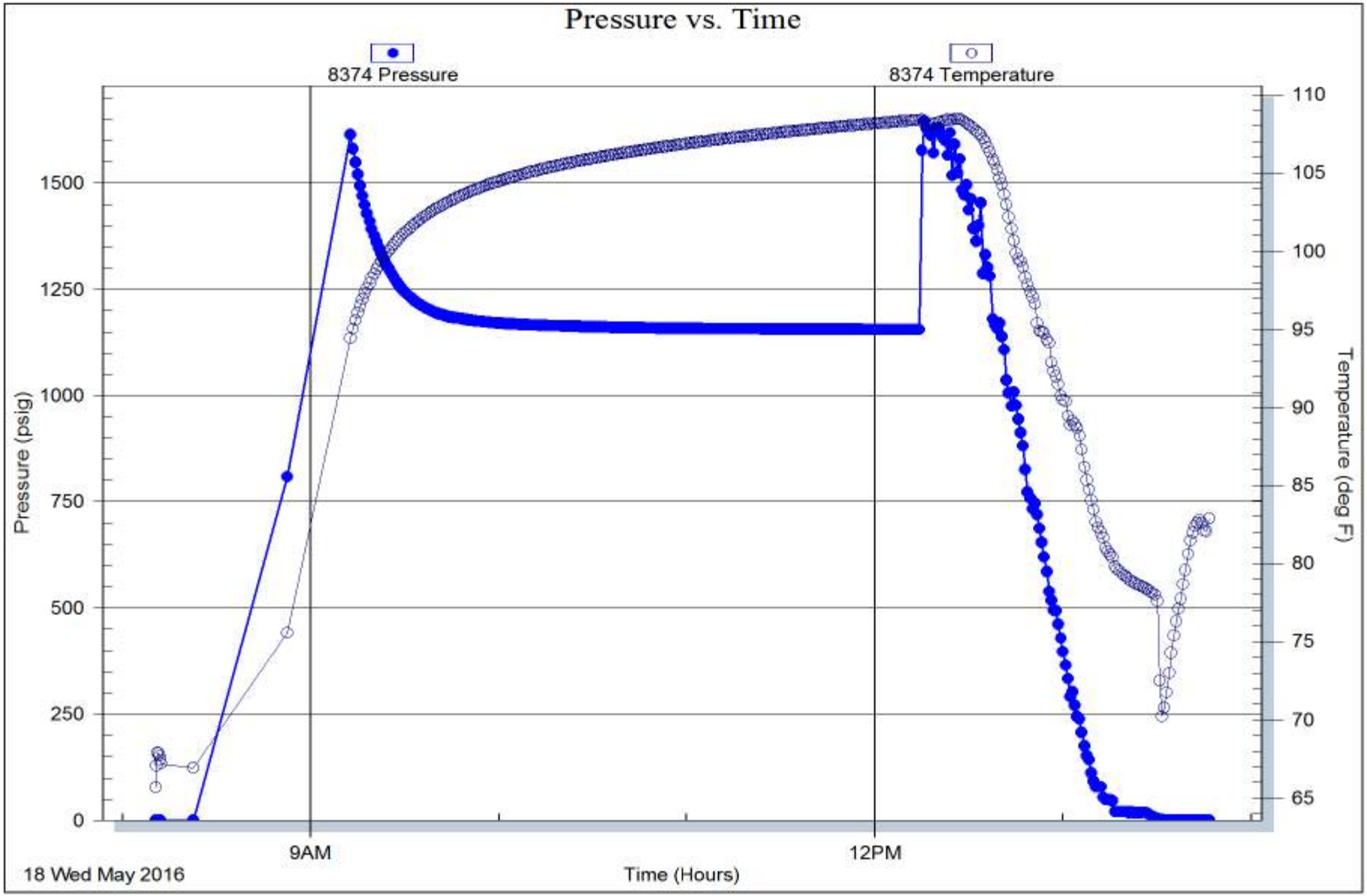
Total Length: 167.00 ft Total Volume: 2.343 bbl

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

Serial #: 8018 **Inside** Caroden Energy LLC Thelma #1 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 65461 Printed: 2016.05.18 @ 15:10:23


Pressure vs. Time
8374 Pressure
8374 Temperature
Pressure (psig)
Temperature (deg F)
1500
1250
1000
750
500
250
0
110
105
100
95
90
85
80
75
70
65
9AM
12PM
18 Wed May 2016
Time (Hours)

OPERATOR

Company:	CARODEN ENERGY LLC		
Address:	7302 SPANISH BAY DR WINDSOR, CO 80550		
Contact Geologist:	CHRIS FREVERT		
Contact Phone Nbr:	970-290-7447		
Well Name:	THELMA # 1		
Location:	SE SE NW SW SEC.1-T17S-10W		
API:	15-053-21,345-00-00		
Pool:	IN FIELD	Field:	STOLTENBERG
State:	KANSAS	Country:	USA

Scale 1:240 Imperial

Well Name:	THELMA # 1		
Surface Location:	SE SE NW SW SEC.1-T17S-10W		
Bottom Location:			
API:	15-053-21,345-00-00		
License Number:	34362		
Spud Date:	5/13/2016	Time:	5:15 PM
Region:	ELLSWORTH COUNTY		
Drilling Completed:	5/17/2016	Time:	3:32 PM
Surface Coordinates:	1400' FSL & 1020' FWL		
Bottom Hole Coordinates:			
Ground Elevation:	1804.00ft		
K.B. Elevation:	1812.00ft		
Logged Interval:	2100.00ft	To:	3360.00ft
Total Depth:	3360.00ft		
Formation:	ARBUCKLE		
Drilling Fluid Type:	CHEMICAL/FRESH WATER GEL		

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	-98.3839748
Latitude:	38.598167
N/S Co-ord:	1400' FSL
E/W Co-ord:	1020' FWL

LOGGED BY

Company:	SOLUTIONS CONSULTING, INC.		
Address:	108 W 35TH HAYS, KS 67601		
Phone Nbr:	(785) 639-1337		
Logged By:	GEOLOGIST	Name:	HERB DEINES

CONTRACTOR

Contractor:	SOUTHWIND DRILLING INC.		
Rig #:	3		
Rig Type:	MUD ROTARY		
Spud Date:	5/13/2016	Time:	5:15 PM
TD Date:	5/17/2016	Time:	3:32 PM
Rig Release:	5/19/2016	Time:	12:30 AM

ELEVATIONS

K.B. Elevation:	1812.00ft	Ground Elevation:	1804.00ft
K.B. to Ground:	8.00ft		

NOTES

PRODUCTION CASING WAS RAN TO FURTHER TEST AND DEVELOP THE ARBUCKLE BASED ON POSITIVE RESULTS OF DSTS.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES:DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) STRADDLE TESTS

	THELMA # 1 SE SE NW SW SEC.1-17S-10W 1804'GL 1812'KB	FREVERT # 1 E2 SW/4 SEC.1-17-10W KB 1797'	FREVERT # 1 S2 SW/4 SEC.1-17-10W KB 1811'
FORMATION	LOG TOPS	LOG TOPS	LOG TOPS
Anhydrite	550 +1262		
B-Anhydrite	568 +1244		
Dover Lime	2193 -381		
Tarkio-Stotler	2249 -437		
Topeka	2555 -743		-749
Heebner Sh.	2808 -996	-992	-1001
Toronto	2829-1017	-1013	-1021
Douglas Shale	2839-1027	-1023	-1032
Brown Lime	2918-1106	-1103	-1112
LKC	2937-1125	-1121	-1129
BKC	3216-1404	-1403	-1410
Rework Arbuckle	3255-1443		
Arbuckle	3270-1458	-1442	-1445
RTD	3360-1548	-1453	-1476

SUMMARY OF DAILY ACTIVITY

5-13-16	Spud 5:15 PM, set 8 5/8" surface casing to 322' w/180 sxs 60/40 2%Gel 3%CC, slope 2 degrees
5-14-16	322', WOC 12 hours, drill plug 12:00PM noon
5-15-16	1480', drilling
5-16-16	2575', drilling, displaced 2365' to 2384'
5-17-16	3165', drilling, CFS 3268', RTD 3360' @3:32 PM, short trip, CCH, TOWB, Logs
5-18-16	3360', finish logs, straddle DST #1 3214' to 3279' Arbuckle, straddle DST # 2 3290' to 3300' Arbuckle, TIWB, drill 20' to DDTD 3380', CCH, LDDP, run production casing and cement bottom stage
5-19-16	Plug down 12:00AM, RD

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65460 **DST#: 1**

Test Start: 2016.05.18 @ 01:25:14

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:02:39
Time Test Ended: 07:35:08

Test Type: Conventional Straddle (Initial)
Tester: Ray Schwager
Unit No: 77

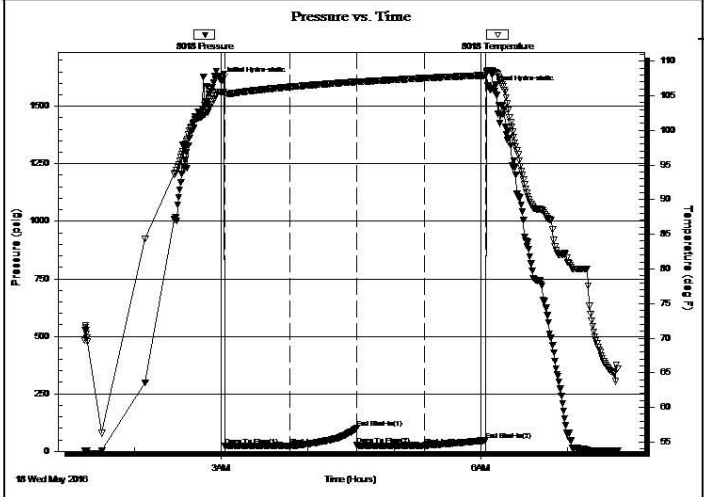
Interval: 3214.00 ft (KB) To 3280.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8018 **Inside**
Press@RunDepth: 24.95 psig @ 3220.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 01:25:14 End Time: 07:35:08

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm: 2016.05.18 @ 02:59:54
Time Off Btm: 2016.05.18 @ 06:06:23

TEST COMMENT: 45-IFP-w k bl thru-out 1/2'to 1"bl
45-ISIP-no bl bk
45-FFP-w k bl thru-out surface to 1/4"bl
45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1611.17	105.57	Initial Hydro-static
3	23.84	105.12	Open To Flow (1)
48	25.02	106.26	Shut-In(1)
94	101.15	106.99	End Shut-In(1)
95	27.91	106.95	Open To Flow (2)
141	24.95	107.53	Shut-In(2)
184	47.92	107.95	End Shut-In(2)
187	1572.93	108.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	CO	0.07
10.00	OCM 15%O85%M	0.14

Gas Rates

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

DRILL STEM TEST REPORT

Caroden Energy LLC

7302 Spanish Bay Dr.
Windsor, Co 80550

ATTN: Chris Frevert, Herb

1-17s-10w Ellsworth

Thelma #1

Job Ticket: 65461 **DST#: 2**

Test Start: 2016.05.18 @ 08:10:17

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:21:57
Time Test Ended: 13:57:11

Test Type: Conventional Straddle (Reset)
Tester: Ray Schw ager
Unit No: 77

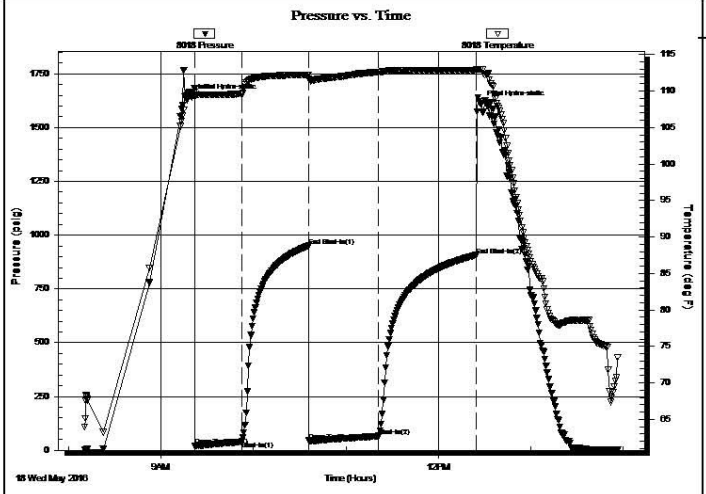
Interval: 3290.00 ft (KB) To 3300.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1810.00 ft (KB)
1802.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8018 **Inside**
Press@RunDepth: 65.88 psig @ 3291.00 ft (KB)
Start Date: 2016.05.18 End Date: 2016.05.18
Start Time: 08:10:17 End Time: 13:57:11

Capacity: 8000.00 psig
Last Calib.: 2016.05.18
Time On Btm: 2016.05.18 @ 09:19:57
Time Off Btm: 2016.05.18 @ 12:27:56

TEST COMMENT: 30-IFP-w k to strg in 9min
45-ISIP-surface bl bk
45-FFP-w k to strg in 5min
60-FSIP-surface bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1640.37	109.90	Initial Hydro-static
2	19.45	109.28	Open To Flow (1)
33	41.45	109.65	Shut-In(1)
76	950.75	112.23	End Shut-In(1)
76	44.46	111.74	Open To Flow (2)
122	65.88	112.60	Shut-In(2)
185	907.00	112.83	End Shut-In(2)
188	1609.52	112.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	580' GIP	0.00
105.00	CO	1.47
62.00	GMO 40%G1%M4%W55%O	0.87

* Recovery from multiple tests

Gas Rates

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

ROCK TYPES

Chtcongl	Lmst fw<7	shale, grn	shale, red
Dolprim	Lmst fw7>	shale, gry	Ss
Dolsec	Lscongl	Carbon Sh	

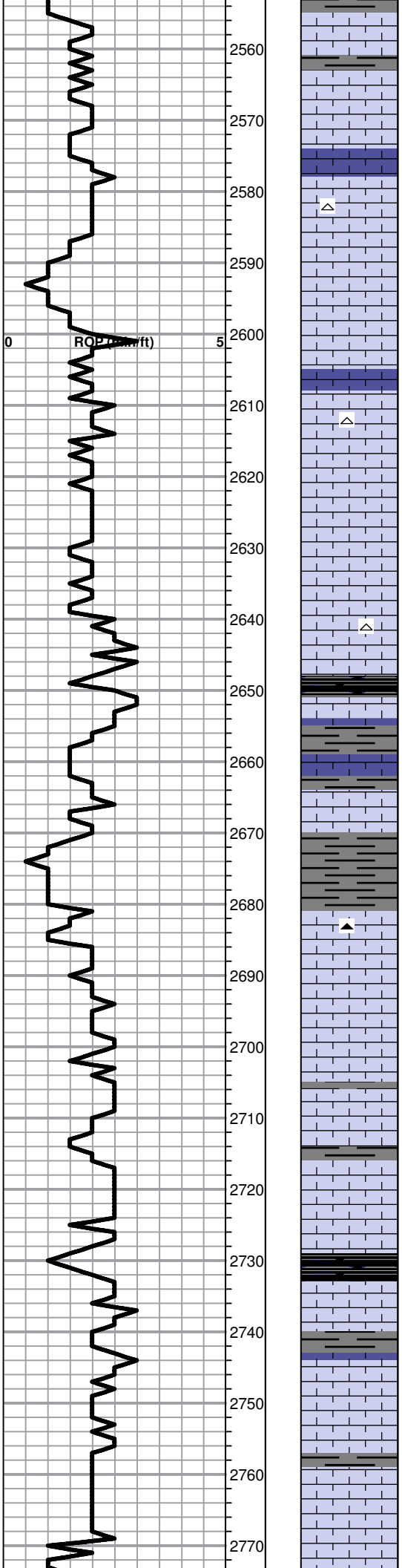
ACCESSORIES

MINERAL
- Chert, dark
- Chert White

FOSSIL
- Oolite
- Oomoldic

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1 ROP (min/ft) 1:240 Imperial	Depth | Intervals Cored Interval DST Interval	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3 1:240 Imperial
0 ROP (min/ft) 5	2450 2460 2470 2480 2490 2500 2510 2520 2530 2540 2550				BEGIN 1' DRILL TIME FROM 2450' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 2500' TO RTD Lime, lt-med brn, fnxln, slightly fossiliferous Shale, lt gray, soft mud to soft blocky Lime, lt-med brn-med grayish brn, fnxln, slightly fossiliferous Lime, lt-med brn, fn-vfxln Lime, lt-med brn-med grayish brn, fn-vfxln, scattered fossil fragments Sandstone, lt gray, fine grained, poorly sorted, No Show Shale, lt gray, soft mud to soft blocky **TOPEKA 2555 -743**	**8 5/8" SURFACE CASING SET TO 322' W/ 180 SXS COMMON 2%GEL 3%CC**



TOPEKA 2555-743

Lime, lt brn, fn-vfxln

Lime, crm-lt brn, fnxln, slight bedded chalk

Lime, lt-med brn, fn-vfxln, slight bedded chalk

Lime, lt-med brn, fnxln

Lime, crm-lt brn, fnxln-granular, chalky matrix with sticky chalk clumps, No Show

Lime, lt-med brn, fn-vfxln

Lime, tan-lt brn, fnxln, slightly fossiliferous, trashy appearance in part

Lime, tan-lt brn, fnxln

Lime, lt-med brn, fnxln, slightly fossiliferous-fusulinids

Shale, black carbonaceous, fissile, blocky
Lime, crm-lt brn-lt grayish brn, fn-vfxln

Lime, lt-med brn, fn-vfxln, slightly fossiliferous

Lime, crm-lt brn, fn-vfxln
Chert, orange, fresh, sharp

Lime, lt brn-med grayish brn, fn-vfxln

Lime, crm-lt brn, fnxln-granular with increasing chalk content

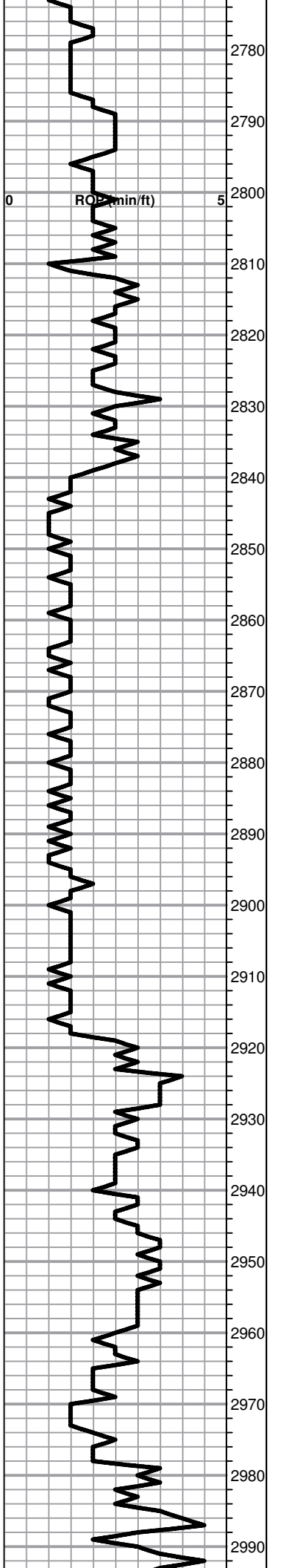
Lime, tan-lt brn, fnxln

Shale, black carbonaceous, fissile, blocky

Lime, lt-med brn-lt gray, fnxln

Lime, lt brn, fnxln to coarse granular

Lime, crm-lt brn, fn-vfxln



Lime, tan-lt brn-lt grayish brn, fn-vfxln, fusulinids

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln

HEEBNER SHALE 2808-996

Shale, black carbonaceous, fissile, blocky
Lime, lt gray-med brn, fn-vfxln

Shale, dove gray-lime green, soft mud

TORONTO 2829-1017

Lime, crm-tan, fnxln with bedded chalk , No Show

DOUGLAS SHALE 2839-1027

Shale, red wash, soft mud with sticky clumps in part

Shale, lt grayish green, soft sticky clumps

Sandstone, lt gray with green tint, poorly sorted, gritty, micaceous, No Show, No Wet Cut

Shale, lt gray, soft mud to soft blocky

Shale, lt gray, soft mud to soft blocky

Shale, lt gray, soft blocky

BROWN LIME 2918-1106

Lime, lt-med brn, fn-vfxln, slightly fossiliferous

Shale, lt gray, soft sticky mud

LKC 2937-1125

Lime, tan-lt brn, fn-micro xln, slight bedded chalk, NS

Lime, crm-tan, fn-micro xln

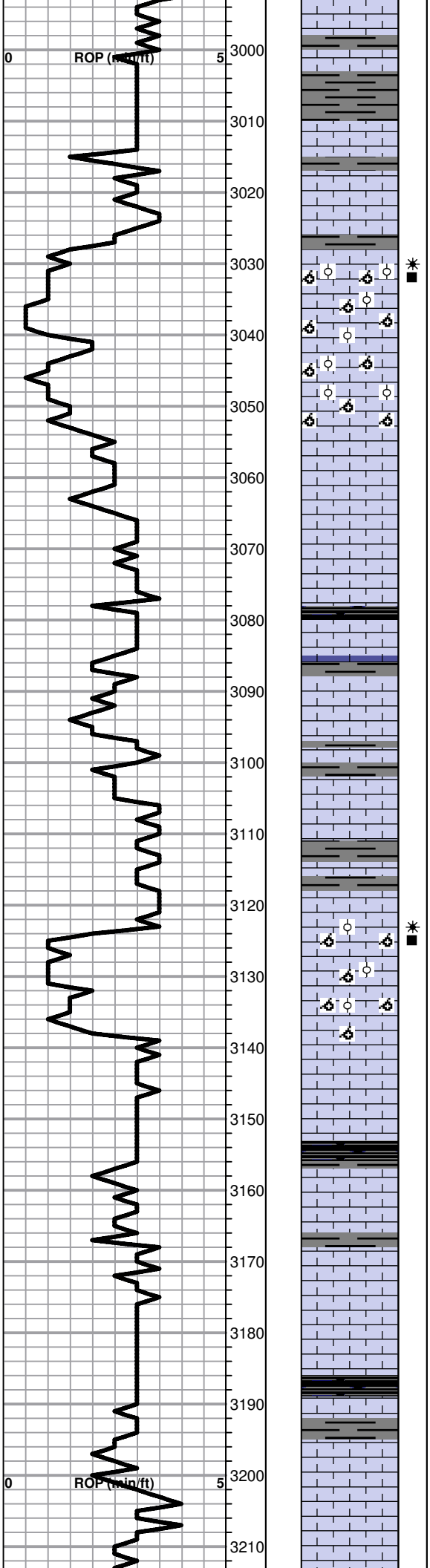
Lime, crm-lt-med brn, fn-vfxln

Lime, crm-tan, fnxln with thin zone of oolitic/oomoldic material, NFO, No Odor, No Staining, fleeting lt wet cut.

Lime, lt-dark brn, fn-vfxln with gray mottling in part

Lime, crm-tan-med brn, fn-micro xln

LOG INTERVAL 2970-72 APPEARS TO HAVE POOR PERMEABILITY AND LIKELY WOULD BE NON COMMERCIAL



Lime, lt-dark brn, fn-micro xln
Shale, med gray, soft-firm blocky

Shale, lt-med green, firm blocky

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fnxln grading into oolitic/oomoldic zone, fair-good odor, very lt staining, NFO

Lime, lt brn, oomoldic, mostly barren

Lime, lt-med brn, fnxln-oomoldic/oolitic, barren

Lime, lt brn-med grayish brn, fnxln, dense

Lime, med-dark brn-dark grayish brn, fn-micro xln with thin fossil beds embedded in lime-shale matrix

Shale, gray-black carbonaceous, blocky

Lime, lt-med brn-lt gray, fn-micro xln

Lime, crm-lt brn, fnxln, No Show

Lime, crm-tan, fnxln with bedded chalk, NS

Lime, crm-tan, fn-vfxln, no visible porosity

Lime, tan-lt brn, fn-micro xln with well cemented fossil beds

Lime, crm-tan, oolitic/oomoldic, lt odor, NFO,very lt staining

Lime, lt-med brn, fn-micro xln

Lime, crm-lt brn, fn-micro xln

Shale, gray-black carbonaceous, blocky

Lime, lt brn-med grayish brn, shaley in part, fn-micro xln

Lime, crm-lt brn, fn-micro xln

Lime, crm-lt brn, fn-vfxln

Shale, gray-black carbonaceous, blocky, fissile

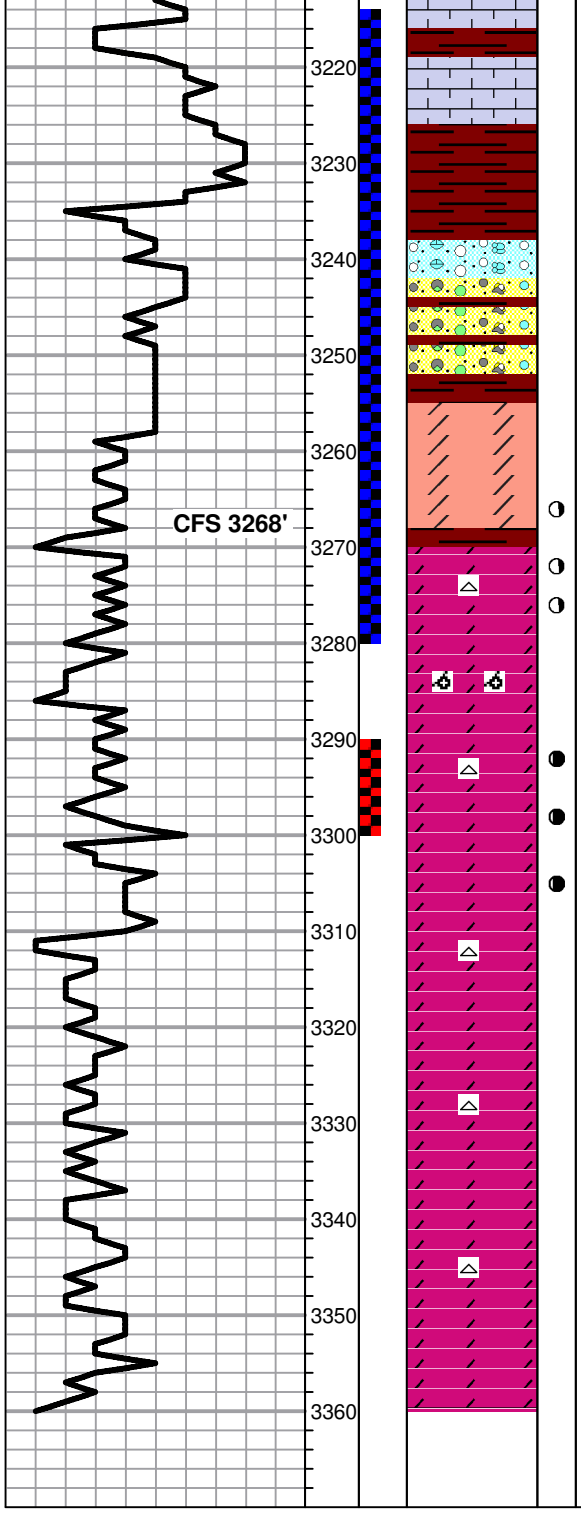
Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-micro xln

THIS ZONE HAS BEEN TESTED IN RECENT OFFSET WELLS AND RECOVERED GAS. SINCE THERE IS NO OUTLET FOR GAS I WOULD NOT RECOMMEND PERFORATING THIS ZONE AT THIS TIME.

THIS ZONE HAS BEEN TESTED IN RECENT WELLS AND RECOVERED GAS. I WOULD NOT RECOMMEND PERFORATING ZONE DUE TO LACK OF A MARKET FOR GAS IN AREA.



BKC 3216-1404

Shale, red, soft

Lime, lt-med brn, fn-vfxln grading into med brn-med gray lime

Shale, red wash, soft with clastic mix with red shale staining

Clastic mix of lime, chert and red shale

Clastic mix with some rework dolomite

REWORKED ARBUCKLE 3255-1443

Dolomite,vari color shades of brn, fnxln-granular, very lt to good odor with depth, lt staining in part

ARBUCKLE 3270-1458

Dolomite, ivory-crm, fnxln, lt odor, granular in part with lt staining

Dolomite, lt brn, fnxln-granular with oomoldic chips. E- log and offset test indicates zone may be depleted of oil and water bearing

Dolomite, lt brn, fnxln-granular, good odor with SFO on break in sucrosic chips

Dolomite, lt brn, fnxln-granular, good odor with SFO on crush in sucrosic chips

dolomite, fnxln-granular, lt odor but decreasing with depth

Dolomite, lt brn, fnxln with scattered oomoldic chips, lt sulfur odor

Dolomite, lt-med brn, fnxln-granular with lt sulfur odor

Dolomite, lt brn, fnxln

Dolomite, lt brn, fnxln

RTD 3360-1548 LTD 3362-1550 DDTD 3380-1568

STRADDLE TEST # 1 3214' TO 3280' SEE HEADER FOR TEST SUMMARY

TEST#1 COVERED REWORK AND TOP OF ARBUCKLE WITH RECOVERY OF SMALL AMOUNT OF OIL WITH NO RESERVOIR PRESSURES

STRADDLE TEST # 2 3290' TO 3300' SEE HEADER FOR TEST SUMMARY

TEST #2 RECOVERED OIL AND GAS WITH GOOD RESERVOIR PRESSURES. RECOMMEND PERFS FROM 3292-3302 TO START. OIL-WATER CONTACT APPEARS TO START AT 3314'

SLOPE SURVEY @ 3360' 1 1/4 DEGREE

5 1/2' 15.5# CASING SET TO 3374' AND CEMENTED WITH 180 SXS COMMON, 10%SALT, 5% GILSONITE

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 5/14/2016
Invoice # 1348
P.O.#:
Due Date: 6/13/2016
Division: *Russell*

Invoice

Contact:
Caroden Energy LLC
Address/Job Location:

7302 Spanish Bay Dr
Windsor, CO 80550

Reference:
THELMA 1 SEC 1-17-10

Description of Work:
SURFACE JOB

Services / Items Included:

	Quantity	Price	Taxable
Labor		$ 462.53	No
Common-Class A	108	$ 1,115.29	Yes
POZ Mix-Standard	72	$ 313.53	Yes
Calcium Chloride	7	$ 243.86	Yes
Bulk Truck Matl-Material Service Charge	190	$ 118.20	No
Pump Truck Mileage-Job to Nearest Camp	28	$ 78.38	No
Bulk Truck Mileage-Job to Nearest Bulk Plant	28	$ 60.97	No
Premium Gel (Bentonite)	3	$ 54.12	Yes

Item	Quantity	Price	Taxable

Invoice Terms:
Net 30

SubTotal:	$	*2,446.88*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(61.17)
SubTotal for Taxable Items:	$	1,683.64
SubTotal for Non-Taxable Items:	$	702.07
Total:	$	2,385.71
7.50% Ellsworth County Sales Tax Tax:	$	126.27
Amount Due:	**$**	**2,511.98**
Applied Payments:		
Balance Due:	**$**	**2,511.98**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.
©2008-2013 Straker Investments, LLC. All rights reserved.

#362

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1348

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-14-16	1	17	10	Ellsworth	Ks		12:00 AM

Location Hollyrood, Ks Rodeo Ave T, 1½E

Lease	Thelma	Well No.	1
Contractor	Southwind		3
Type Job	Surface		
Hole Size	12¼"	T.D.	322'
Csg.	8⅝"	Depth	322'
Tbg. Size		Depth	
Tool		Depth	
Cement Left in Csg.	15'	Shoe Joint	15'
Meas Line		Displace	19½ BLS

Owner N/Into

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

Charge To Caroden Energy LLC

Street 7302 Spanish Bay Drive

City Windsor State Co 80550

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

Cement Amount Ordered 180 60/40 3% CC 2% Gel

EQUIPMENT

Pumptrk 18	No.	Cementer	
		Helper	Brett
Bulktrk 15	No.	Driver	
		Driver	Doug
~~Bulktrk~~ P.U.	No.	Driver	
		Driver	Rick

JOB SERVICES & REMARKS

Remarks: Cement did Circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Common	108
Poz. Mix	72
Gel.	3
Calcium	7
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	190
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	

Pumptrk Charge Surface

Mileage 28

Tax

Discount

Total Charge

X Signature Jay Ulrich

Quality Oilwell Cementing

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 5/19/2016
Invoice # 1968

P.O.#:

Due Date: 6/18/2016
Division: *Russell*

Invoice

Contact:
Caroden Energy LLC
Address/Job Location:

7302 Spanish Bay Dr
Windsor, CO 80550

Reference:
THELMA 1

Description of Work:
PROD STRING

Services / Items Included:

	Quantity	Price	Taxable
Labor		$ 452.01	No
Common-Class A	180	$ 1,816.57	Yes
Gilsonite	700	$ 638.35	Yes
CFL 117	90	$ 337.05	Yes
5 1/2" Turbolizer	8	$ 282.09	Yes
Mud Clear	500	$ 224.94	Yes
Auto Fill Float Shoe, 5 1/2"	1	$ 186.03	Yes
5 1/2" Basket	1	$ 156.85	Yes
Latch Down Plug & Baffle, 5 1/2"	1	$ 136.18	Yes
Defoamer A or CAF-38	28	$ 119.16	Yes
Bulk Truck Matl-Material Service Charge	201	$ 122.20	No

Item	Quantity	Price	Taxable
Salt (Fine)	14	$111.50	Yes
Pump Truck Mileage-Job to Nearest Camp	28	$76.60	No
Bulk Truck Mileage-Job to Nearest Bulk Plant	28	$59.58	No

Invoice Terms:
Net 30

SubTotal:	$	*4,719.13*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(117.98)
SubTotal for Taxable Items:	$	3,908.51
SubTotal for Non-Taxable Items:	$	692.64
Total:	$	4,601.15
7.50% Ellsworth County Sales Tax Tax:	$	293.14
Amount Due:	**$**	**4,894.29**
Applied Payments:		
Balance Due:	**$**	**4,894.29**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.
©2008-2013 Straker Investments, LLC. All rights reserved.

#362

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1968

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-19-16	1	17	10	Ellsworth	KS		12:00 A.M.

Location Holyrood 1/2E

Lease Thelma Well No. 1

Owner

Contractor Southwind #3

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

Type Job Production String

Hole Size 7 7/8 T.D. 3380

Csg. 5 1/2 15.50# Depth 3374'

Charge To Canaden Energy

Tbg. Size Depth

Street

Tool Depth

City State

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

Cement Left in Csg. 32' Shoe Joint 32'

Cement Amount Ordered 180 com 10# Salt 5# Gilsonite 3/4 of 1% CFL 500 gal mud clear 10 BC KCL

Meas Line Displace 79 1/2 BBL

EQUIPMENT

Pumptrk 20 No. Cementer Craig / Helper

Bulktrk No. Driver Brett / Driver

Bulktrk 14 No. Driver / Driver Dwg

Common 180

Poz. Mix

Gel.

Calcium

Hulls KCL 1 gal

Salt 14

Flowseal

Kol-Seal 700 #

Mud CLR 48 500 gal

CFL-117 or CD110 CAF 38 ~~28 lbs~~

~~Sand~~ → ~~50#~~

Handling 201

Mileage

JOB SERVICES & REMARKS

Remarks:

Rat Hole 30SK

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

5 1/2 Set @ 3374' Insert @ 3342'
Est Circulation Pump 10BBL KCL & 500 gal mud Clean. Pump 10BBL Spacer Plug Rathole Cement 5 1/2 with 150SK Clean lines & Displace Plug Plug landed @ 1800#. Lift pressure @ 800#

FLOAT EQUIPMENT

Guide Shoe

Centralizer 8 Turbo's

Baskets 1

AFU Inserts

Float Shoe 1

Latch Down 1

Pumptrk Charge Prod String

Mileage 28

Tax

Discount

Total Charge

X Signature

Quality Oilwell Cementing