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

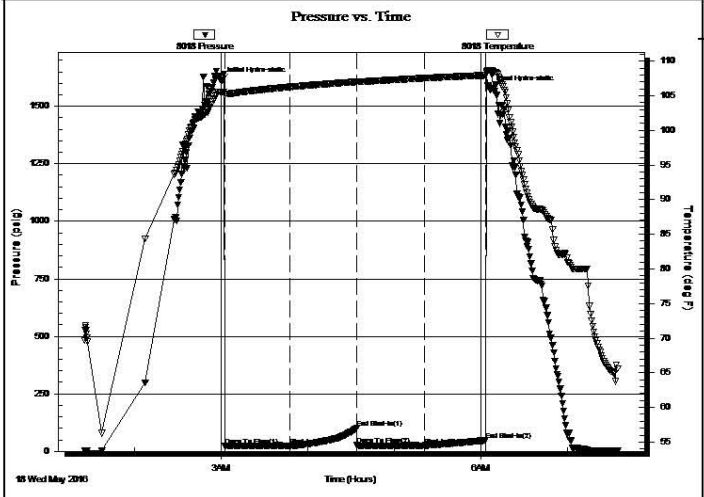
Interval: 3214.00 ft (KB) To 3280.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

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

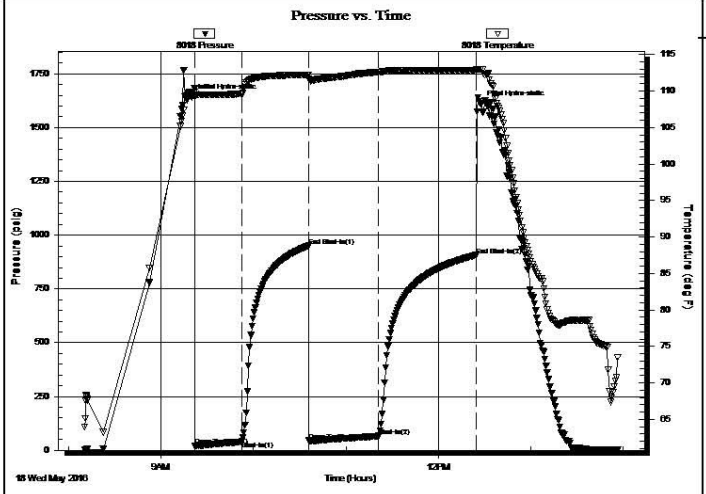
Interval: 3290.00 ft (KB) To 3300.00 ft (KB) (TVD)
Total Depth: 3362.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

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	

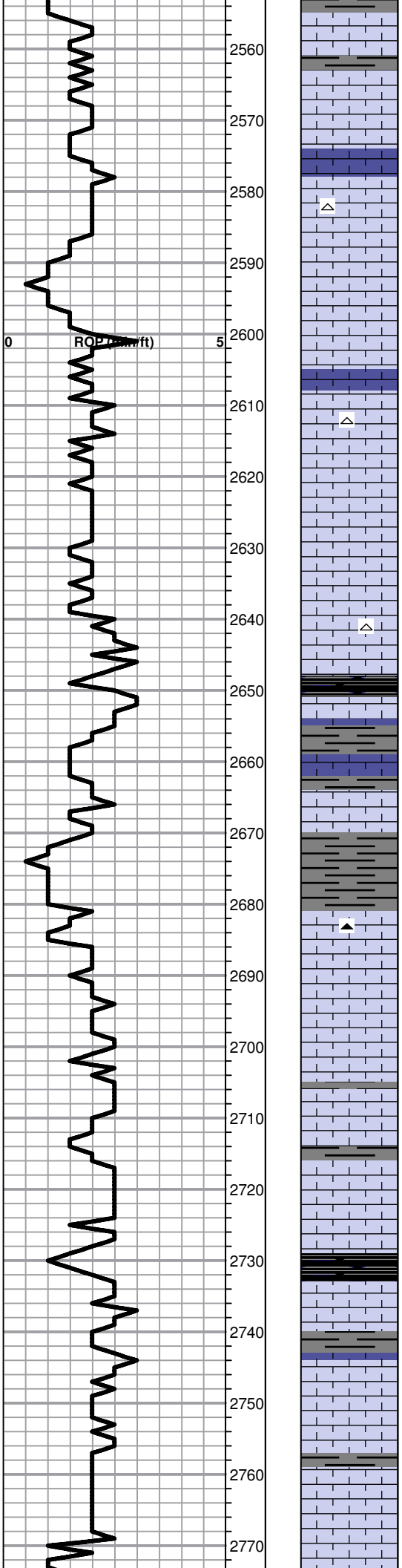
ACCESSORIES

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

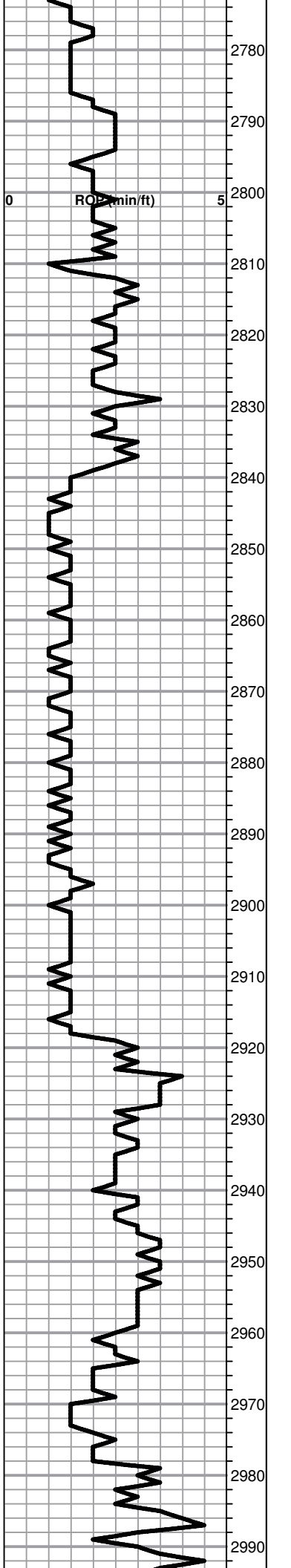
Lime, tan-lt brn, fnxln

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

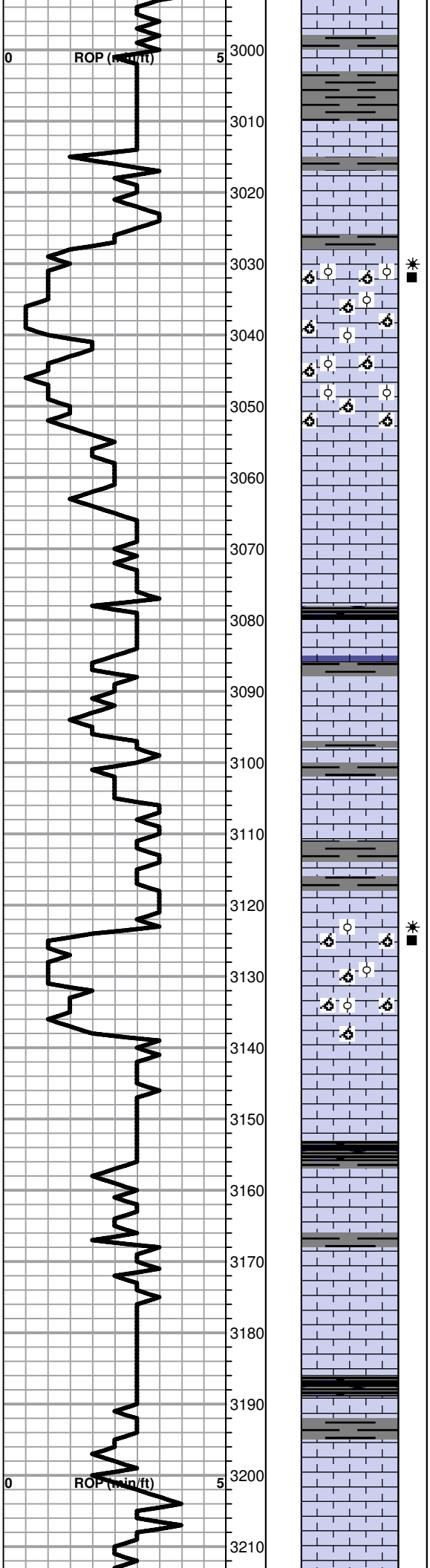
Lime, crm-lt-med brn, fn-vfxln

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

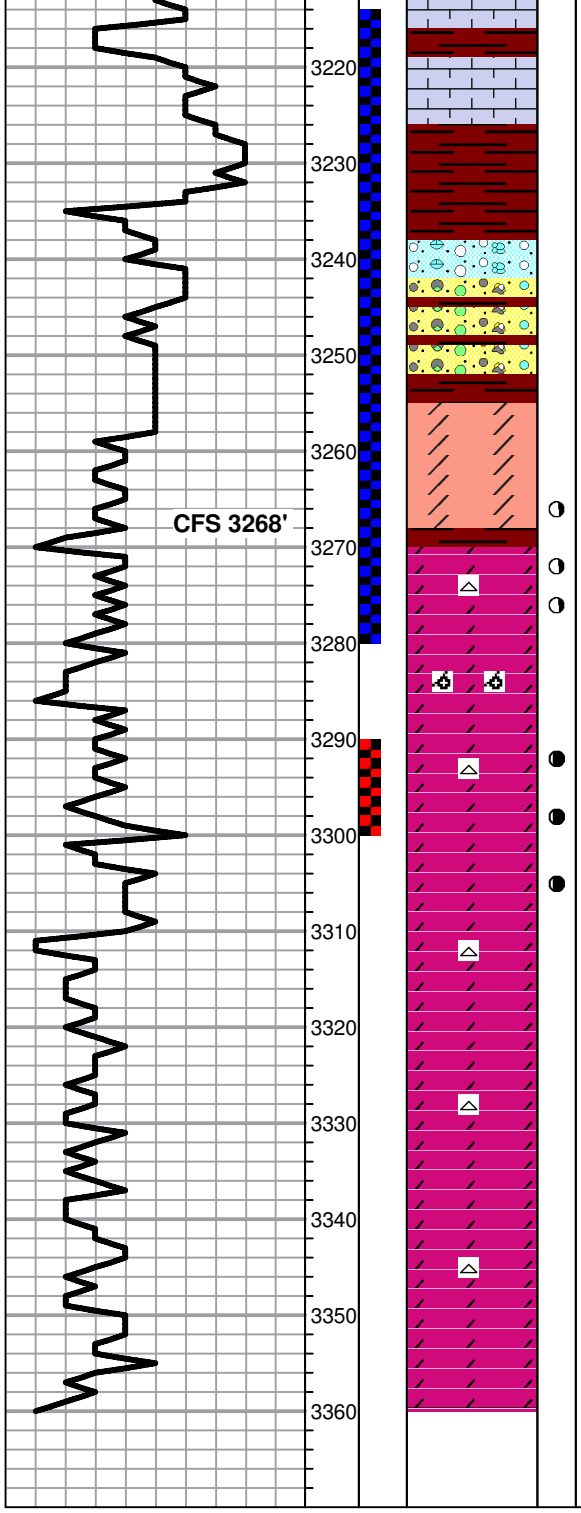
Lime, lt-med brn, fn-vfxln

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