



Musgrove

NOTES

Company: Grady Bolding Corporation
 Lease: Grizzell #27
 Field: Bloomer
 Location: NW-SW-SE-NE (1996' FNL& 1131' FEL)
 Sec: 31 Twsp: 17S Rge: 10W
 County: Ellsworth State: Kansas
 KB: 1798' GL: 1788'
 API #: 15-053-21308-00-00
 Contractor: Southwind Drilling Inc. (Rig #1)
 Spud: 03/29/2014 Comp: 04/03/2014
 RTD: 3312' LTD: 3310'
 Mud Up: 2700' Type Mud: Chemical
 Samples Saved From: 2700' to RTD
 Drilling Time Kept From: 2700' to RTD
 Samples Examined From: 2700' to RTD
 Geological Supervision from: 2700' to RTD
 Geologist on Well: Wyatt Urban
 Surface Casing: 8 5/8 @ 312'

Electronic Surveys: Logged by Nabors Completion Services CDL/CNL MEL DIL

Grady Bolding Corporation Well Comparison

Formation	Grady Bolding Corp-Grizzell NW-SW-SE-NE 31-17S-10W 1798' KB				Grady Bolding Corp- #24 Grizzell C-W/2-SW-NE 31-17S-10W 1803' KB				Gulf Oil Corp- #15-31 Grizzell SW-NE-SW-NE 23-32S-37W 1807' KB			
					Structural Relationship				Structural Relationship			
	2834	-1036	2836	-1038	2840	-1037	-1	-1	2847	-1040	4	2
Toronto	2848	-1050	2853	-1055	2859	-1056	-6	1	2864	-1057	7	2
Douglas	2860	-1062	2864	-1066	2866	-1062	1	-3				
Brown Lime	2945	-1147	2948	-1150	2955	-1152	5	2				
Lansing	2961	-1163	2964	-1166	2970	-1167	4	1	2976	-1169	6	3
BKC	3220	-1430	3230	-1432	3238	-1432	2	0	3240	-1433	3	1
Arbuckle	3245	-1447	3251	-1453	3242	-1439	-8	-14	3246	-1439	-8	-14
RTD	3312	-1514	3312	-1514	3248	-1445	-69	-69	3350	-1543	29	29
LTD	3310	-1512	3310	-1512								



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Grady Bolding Corporation
 114 N Main St
 Ellsworth KS 67526
 ATTN: Wyatt Urban

31-17s-10w- Ellsworth Co.
 Grizzell #27
 Job Ticket: 57552 DST#: 1
 Test Start: 2014.03.31 @ 13:15:04

GENERAL INFORMATION:

Formation: Lans. A-F

Time Tool Opened: 17:03:04

Time Test Ended: 20:52:04

Interval: 2952.00 ft (KB) To 3050.00 ft (KB) (TVD)

Total Depth: 3050.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Tester: Tate Lang

Unit No: 49

Reference Elevations: 1788.00 ft (KB)

1788.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8898

Outside

Press@RunDepth: 173.43 psig @ 2953.00 ft (KB)

Start Date: 2014.03.31

Start Time: 13:15:05

End Date:

End Time:

2014.03.31

20:52:04

Capacity:

8000.00 psig

Last Call:

2014.03.31

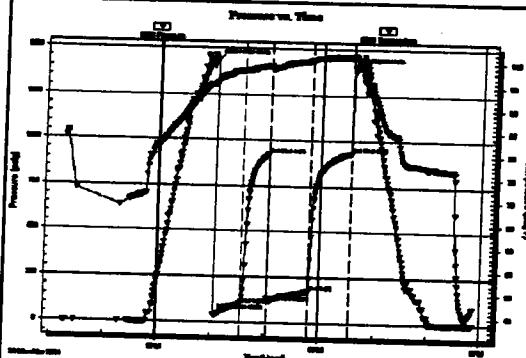
Time On Btm:

2014.03.31 @ 16:03:14

Time Off Btm:

2014.03.31 @ 18:34:13

TEST COMMENT: B.O.B. in 2 mins
Fair blow back built to 4 in died back to 3 in
B.O.B. in 2 mins
Weak blow back built to 3 in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1434.83	95.69	Initial Hydro-static
1	40.10	95.26	Initial Hydro-static
31	102.34	96.02	Shut-in(1)
60	923.11	99.09	End Shut-in(1)
60	115.35	96.72	Open To Flow (1)
105	173.43	100.31	Shut-in(2)
151	933.33	101.11	End Shut-in(2)
151	1399.82	101.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	50%G 40%O 5%W 5%M	1.66
180.00	50%G 10%O 40%M	2.52
60.00	5%G 5%O 90%M	0.84
0.00	100% GP	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (MCFG)
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TRIOBITE TESTING, INC

DRILL STEM TEST REPORT

Grady Bolding Corporation

114 N Main St
Elinwood KS 67526

ATTN: Wyatt Urban

31-17a-10w - Ellsworth Co.

Grizzell #27

Job Ticket: 57553

DST#: 2

Test Start: 2014.04.01 @ 15:03:14

GENERAL INFORMATION:

Formation: Arbuckle

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:12:44

Time Test Ended: 21:53:14

Interval: 3196.00 ft (KB) To 3235.00 ft (KB) (TVD)

Total Depth: 3235.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Resal)

Tester: Tate Lang

Unit No: 49

Reference Elevations: 1788.00 ft (KB)

1788.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8898

Outside

Press@RunDepth: 36.40 psig @ 3191.00 ft (KB)

Start Date: 2014.04.01

Start Time: 15:03:15

End Date:

End Time:

2014.04.01

21:53:14

Capacity:

8000.00 psig

Last Call:

2014.04.01

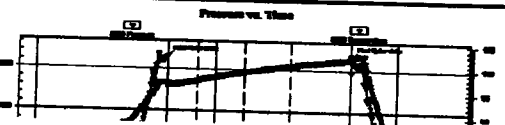
Time On Btm:

2014.04.01 @ 17:12:24

Time Off Btm:

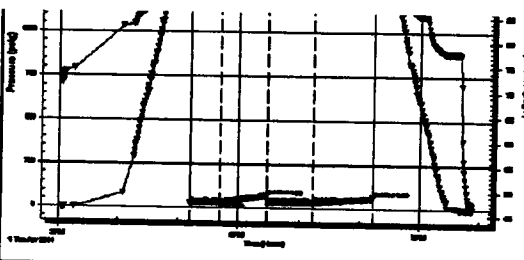
2014.04.01 @ 20:14:34

TEST COMMENT: Fair blow built to 6 in
Dead no blow back
Weak surface blow built to 1 3/4 in
Dead no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1571.61	96.89	Initial Hydro-static
1	26.53	96.50	Open To Flow (1)



77	72.89	99.24	End Shut-in(1)
77	29.35	99.25	Open To Flow(2)
121	36.40	100.63	Shut-in(2)
182	69.47	102.06	End Shut-in(2)
183	1580.28	102.82	Final Hydro-static

Length (ft)	Description	Volume (bbl)
40.00	10%G 10%O 80%M	0.56
0.00	20 GP	0.00

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

* Recovery from multiple tests



DRILL STEM TEST REPORT

Grady Bolding Corporation
 114 N Main St
 Ellwood KS 67526
 ATTN: Wyatt Urban

31-17a-10w- Ellsworth Co.
 Grizzell #27
 Job Ticket: 57554 DST#: 3
 Test Start: 2014.04.02 @ 08:10:46

GENERAL INFORMATION:

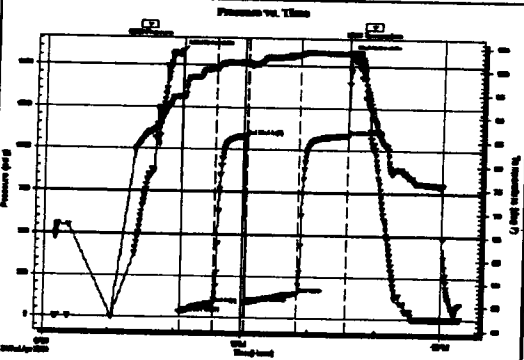
Formation: Arbuckle
 Deviated: No Whipstock ft (KB)
 Time Tool Opened: 08:04:58
 Time Test Ended: 12:17:38
 Interval: 3198.00 ft (KB) To 3252.00 ft (KB) (TVD)
 Total Depth: 3247.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches-Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)
 Tester: Tate Lang
 Unit No: 49
 Reference Elevations: 1798.00 ft (KB)
 1788.00 ft (CF)
 KB to GRVCF: 10.00-ft

Serial #: 8898 Outside
 Press@RunDepth: 147.35 psig @ 3198.00 ft (KB)
 Start Date: 2014.04.02 End Date: 2014.04.02
 Start Time: 08:10:47 End Time: 12:17:38

Capacity: 8000.00 psig
 Last Calc.: 2014.04.02
 Time On Blm: 2014.04.02 @ 08:04:38
 Time Off Blm: 2014.04.02 @ 10:35:25

TEST COMMENT: B.O.B. in 12 mins
 Weak surface blow back
 B.O.B. in 11 mins
 Weak surface blow built to 2 in



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1581.56	94.44	Initial Hydro-static
1	28.83	94.14	Open To Flow (1)
31	83.63	100.36	Shut-in(1)
59	1061.55	101.78	End Shut-in(1)
60	89.04	101.48	Open To Flow(2)
106	147.35	103.34	Shut-in(2)
150	1084.98	103.73	End Shut-in(2)
151	1582.56	104.01	Final Hydro-static

Length (ft)	Description	Volume (bbl)
60.00	10%G 10%O 5%W 75%M	0.84
120.00	45%G 30%O 5%W 20%M	1.68
60.00	30%G 35%O 35%M	0.84
40.00	10%G 30%O 80%M	0.56
0.00	440 GP	0.00

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

* Recovery from multiple tests

ROCK TYPES

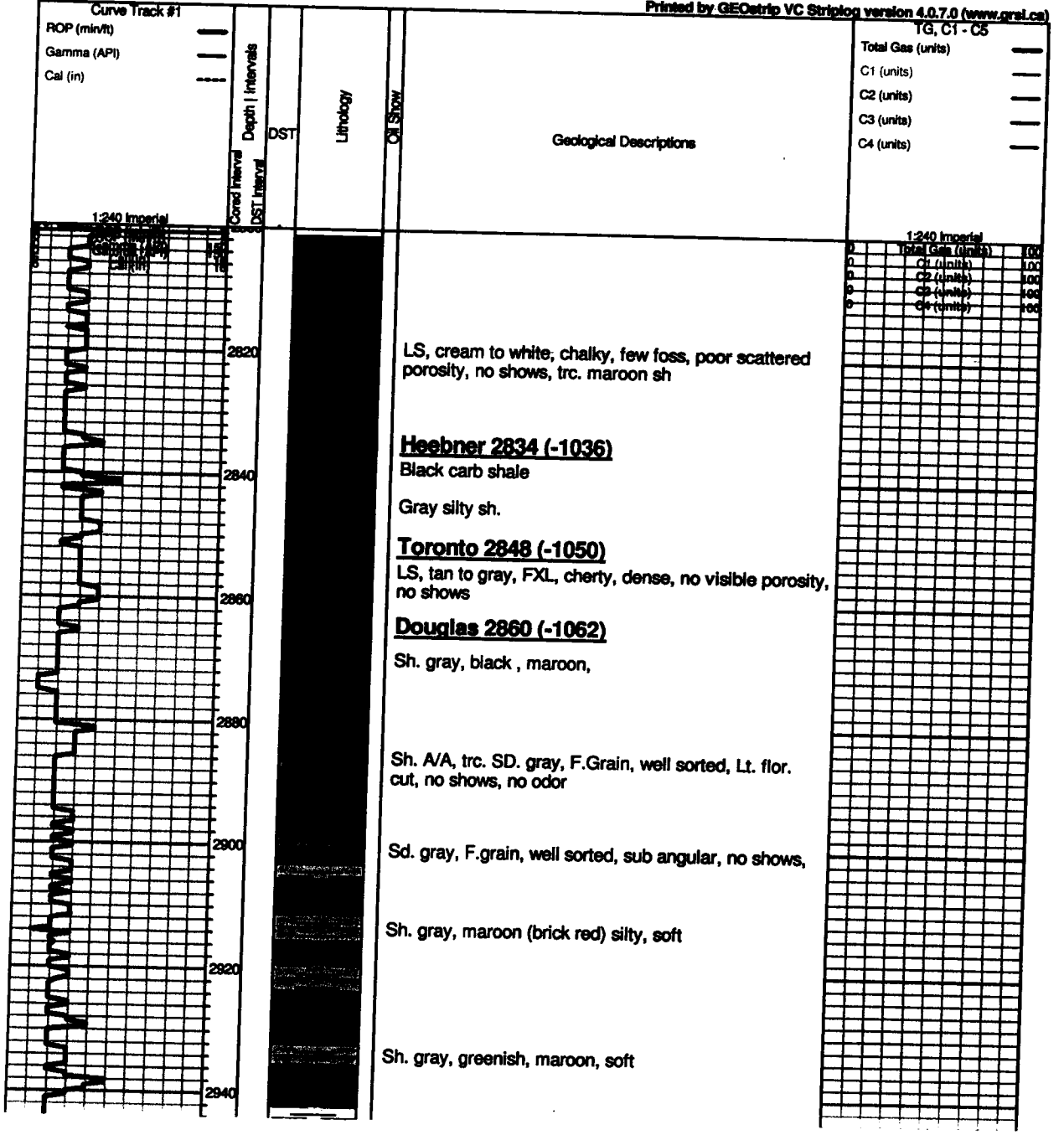
Chicongl	Lmst fw7>	Carbon Sh	Ss
Dolprim	shale, gm	shale, red	
Lmst fw<7	shale, gry	Shool	

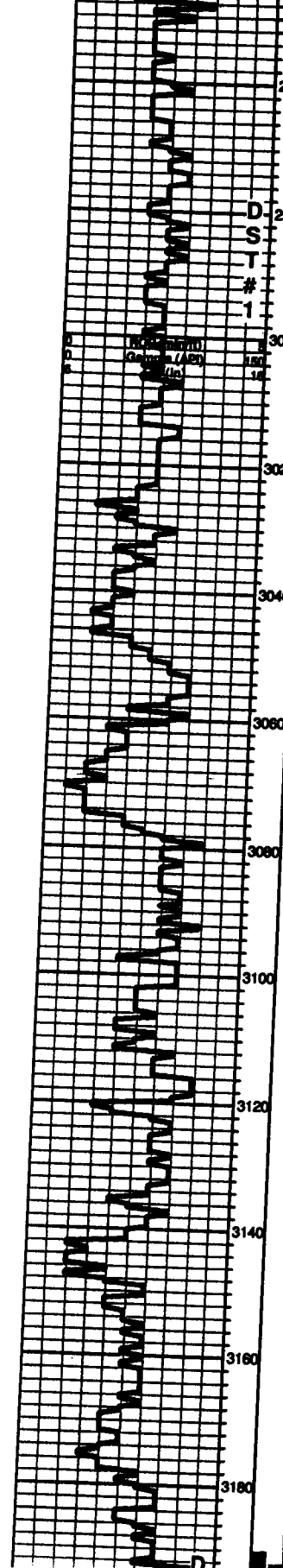
ACCESSORIES

MINERAL • Sandy	FOSSIL ◊ Oolite ◊ Oomoldic	STRINGER ■ Dolomite	TEXTURE C Chalky FX Finegrn
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OTHER SYMBOLS

Oil Show ● Good Show ● Fair Show ● Poor Show ○ Spotted or Trace ○ Questionable Str D Dead Oil Str ■ Fluorescence * Gas	DST ■ DST Int ■ DST alt ■ Core tail pipe
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Brown Lime 2945 (-1147)

LS, tan to brown, FXL, cherty, no visible porosity, NSFO

Lansing 2961 (-1163)

LS, tan, ool, poorly developed, poor visible porosity, SFO, Lt. odor, Lt. black stain

LS, cream to white, chalky, few ool, poor oom porosity, SFO, odor, Lt. golden brown stain

LS, cream to tan, FXL, V. chalky, poor visible porosity, Lt. black stain, Trc. SFO, odor

LS, tan to gray, FLX, foss, poor visible porosity, SFO, odor???

Sh. gray, silty, trc. pyrite

LS, cream to white, ool, poor to fair oom porosity, SFO, Lt. golden brown stain, fair odor

LS, tan to brown, FXL, ool, poor scattered porosity, NSFO, no odor

LS, white to cream, oom, good vuggy porosity, barren

LS, cream to gray, FXL, dense, poor visible porosity, foss, no shows, trace black carb sh.

LS, cream to gray, FXL, dns, few foss, chalky in parts, poor visible porosity, no shows

LS, cream to white, chalky, poor scattered porosity, no shows

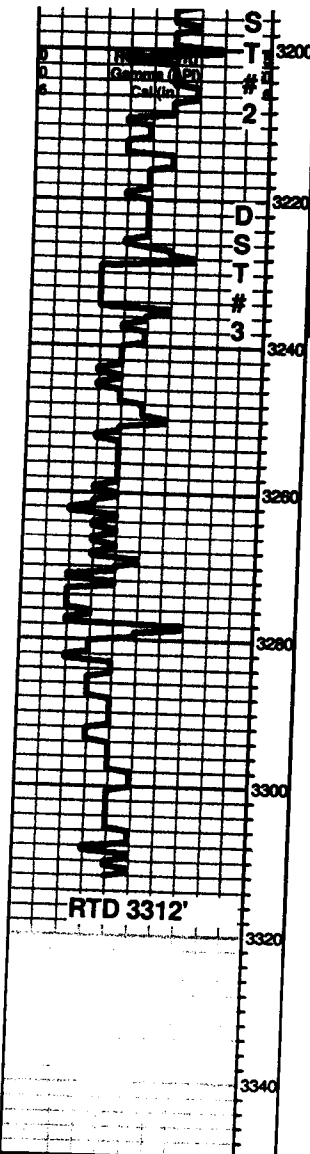
Black carb SH.

LS, cream to white, ool, foss, chalky, poor scattered porosity, dense, trc. SFO, odor???, trc. blk stain

LS, tan, ool, fair oom porosity, chalky, trc. Lt. spotty SFO, odor, SH. greenish, maroon, black,

LS, cream to white, chalky, poor visible porosity no shows

LS, tan ool, FXL, poor visible porosity, dense, no shows



LS, gray, FXL, dense, few foss, no visible porosity, cherty, trc. Sh. gray, maroon soft

BASE OF KANSAS CITY 3228 (-1430)

Sh. maroon, blue greenish, soft, greenish trc. white ool, chert
 V.C. cherts, white, orange, cream, opaque
 60 min. sample strong odor, few dol, cream to tan, F. grained, sandy, Lt. SFO in fresh broken sample,

Arbuckle 3245 (-1447)

Dol. white, gray, P-MXLN, poor to fair scattered porosity SFO, strong odor, golden brown stain, trc. pyrite
 Dol, white to gray, MXLN, fair scattered porosity, SFO, strong odor, golden brown stain

Dol, white, M-FXLN, fair scattered porosity, Lt. SFO, faint odor, Lt. brown stain

Dol. white, FXLN dense, poor to none visible porosity, no shows,

Dol, white, FXLN, dense, poor visible porosity, no shows, odor???

	Total Gas (ml/g)	Gr
0	0	100
1	0	100
2	0	100
3	0	100
4	0	100
5	0	100
6	0	100
7	0	100
8	0	100
9	0	100
10	0	100
11	0	100
12	0	100
13	0	100
14	0	100
15	0	100
16	0	100
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91	0	100
92	0	100
93	0	100
94	0	100
95	0	100
96	0	100
97	0	100
98	0	100
99	0	100
100	0	100

CFS 20-40-60

CFS 20-40-60

CFS 20-40-60

CFS 20-40-60

CFS 20-40-60