



Scale 1:240 Imperial

Well Name: Bauer Y #3-27
Surface Location: Sec. 27 - T21S - R15W
Bottom Location:
API: 15-145-21825-0000
License Number: 30705
Spud Date: 7/10/2017 Time: 3:45 PM
Region: Pawnee County
Drilling Completed: 7/17/2017 Time: 1:00 PM
Surface Coordinates: 500' FSL & 2304' FEL
Bottom Hole Coordinates:
Ground Elevation: 1959.00ft
K.B. Elevation: 1967.00ft
Logged Interval: 3200.00ft To: 4000.00ft
Total Depth: 4000.00ft
Formation: Arbuckle
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Younger Energy Company
Address: 9415 E. Harry
Bldg 400, Suite 403
Wichita, KS 67207
Contact Geologist:
Contact Phone Nbr: 316-681-2542
Well Name: Bauer Y #3-27
Location: Sec. 27 - T21S - R15W
API: 15-145-21825-0000
Pool: Field: Hurray North
State: Kansas Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -98.957252
Latitude: 38.190553
N/S Co-ord: 500' FSL
E/W Co-ord: 2304' FEL

LOGGED BY

Keith Reavis
Consulting Geologist

Company: Keith Reavis, Inc.
Address: 3420 22nd Street
Great Bend, KS 67530
Phone Nbr: 620-617-4091
Logged By: KLG #136 Name: Keith Reavis

CONTRACTOR

Contractor:
Rig #: mud rotary
Rig Type:

Spud Date: 7/10/2017
 TD Date: 7/17/2017
 Rig Release:

Time: 3:45 PM
 Time: 1:00 PM
 Time:

ELEVATIONS

K.B. Elevation: 1967.00ft Ground Elevation: 1959.00ft
 K.B. to Ground: 8.00ft

NOTES

Due to results of DST #1 and electrical log analysis, 5 1/2 inch production casing was set and cemented to further test the Simpson Sand.

A Bloodhound gas detection system operated by Bluestem Labs was employed during the drilling of this well. ROP and gas data were imported into this log. Gamma ray and caliper were imported from the electrical log suite. Electrical log tops were generally within 1 to 2 ft of the tops picked from drill time. These curves were not shifted to provide an exact match, but left as recorded in the field.

Respectfully submitted,
 Keith Reavis

daily drilling report

DATE	7:00 AM DEPTH	REMARKS
07/14/2017	3075	geologist Keith Reavis on location @ 3251 ft, 1405 hrs, drilling ahead Queen Hill, Heebner, Toronto, Douglas
07/15/2017	3587	drilling ahead, Lansing, BKC, Conglomerate, Viola, run wiper trip @ 3938 ft, resume drilling, Simpson Shale
07/16/2017	3890	good show and gas kick in Simpson Sand, warrants test, TOH for DST #1, tight, Had to short trip, conduct and complete DST #1, successful test, TIH w/bit resume drilling, Arbuckle, show warrants test, TOH w/bit
07/17/2017	3906	TIH w/tools, conduct and complete DST #2, successful test, lay down tools, TIH w/bit, rathole to TD, 4000', cch, TOH for logs, conduct and complete logging operations, geologist off loc. @ 2010 hrs

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Younger - Bauer #3-27					F & M Cossman #2				LD Davis - Krueger #1			
500' FSL & 2304' FEL					SE SW SE				SE SE SW			
Sec. 27-T21S-R15W					Sec. 27-T21S-R15W				Sec. 27-T21S-R15W			
1967 KB					1966 KB		Structural Relationship		1977 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Queen Hill	3256	-1289	3253	-1286	3256	-1290	1	4				
Heebner	3358	-1391	3356	-1389	3359	-1393	2	4	3368	-1391		2
Douglas	3392	-1425	3390	-1423	3392	-1426	1	3				
Brown Lime	3466	-1499	3465	-1498	3468	-1502	3	4	3478	-1501	2	3
Lansing	3477	-1510	3474	-1507	3478	-1512	2	5	3486	-1509	-1	2
Lansing G	3558	-1591	3560	-1593	3562	-1596	5	3				
Stark	3664	-1697	3664	-1697	3666	-1700	3	3				
Base KC	3711	-1744	3710	-1743	3712	-1746	2	3	3720	-1743	-1	
Conglomerate	3782	-1815	3784	-1817	3783	-1817	2					
Viola	3811	-1844	3810	-1843	3811	-1845	1	2	3816	-1839	-5	-4
Simpson	3839	-1872	3840	-1873	3844	-1878	6	5	3854	-1877	5	4
Simp upper sd					3862	-1896						
Simp lower sd	3888	-1921	3889	-1922	3893	-1927	6	5	3885	-1908	-13	-14
Arbuckle	3896	-1929	3897	-1930	3897	-1931	2	1	3909	-1932	3	2
Total Depth	4000	-2033	4002	-2035	3896	-1930	-103	-105	3910	-1933	-100	-102

Drill Stem Test #1

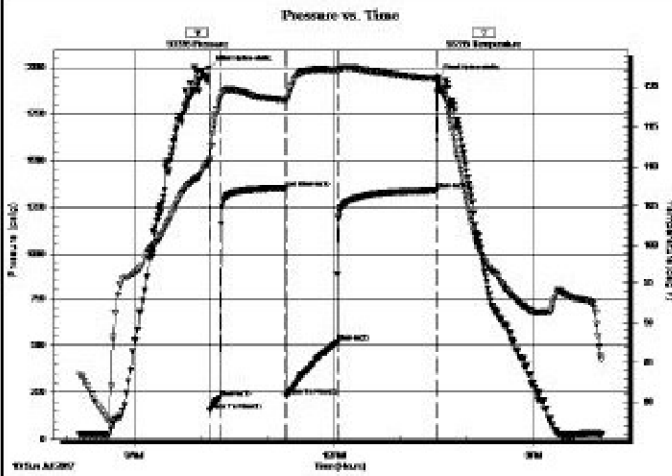
	DRILL STEM TEST REPORT	
	Younger Energy Company	27-21s-15w Pawnee

GENERAL INFORMATION:

Formation: **Simpson Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:11:00
 Time Test Ended: 04:02:00
 Interval: **3710.00 ft (KB) To 3890.00 ft (KB) (TV D)**
 Total Depth: **3890.00 ft (KB) (TV D)**
 Hole Diameter: **7.88 inches** hole Condition: Fair
 Test Type: **Conventional Bottom Hole (initial)**
 Tester: **Gene Budig**
 Unit No: **1**
 Reference Elevations: **1976.00 ft (KB)**
1968.00 ft (CF)
 KB to GR/CF: **8.00 ft**

Serial #: 93335 Inside
 Press@RunDepth: **1352.79 psig @ 3885.04 ft (KB)** Capacity: **5000.00 psig**
 Start Date: **2017.07.16** End Date: **2017.07.16** Last Calb.: **2017.07.16**
 Start Time: **08:11:00** End Time: **16:00:30** Time On Btm: **2017.07.16 @ 10:07:30**
 Time Off Btm: **2017.07.16 @ 13:33:00**

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 5 minutes
 1st Shut-in 60 Minutes 1/2 inch blow back
 2nd Opening 45 Minutes Good blow built to the bottom of a 5 gallon bucket in 5 minutes
 2nd Shut-in 90 Minutes weak 1/4 inch blow back and died



PRESSURE SUMMARY

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1991.29	110.53	Initial Hydro-static
1	153.11	110.58	Open To Flow (1)
10	221.02	118.48	Shut-in (1)
69	1352.79	118.35	End Shut-in (1)
70	229.58	118.34	Open To Flow (2)
116	518.23	122.18	Shut-in (2)
205	1340.87	121.06	Shut-in (3)
206	1945.38	120.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	feet of gas in the pipe	0.00
420.00	Clean Gassy Oil 15% Gas 85% Oil	5.89
120.00	muddy gassy oil	1.68
0.00	10% Gas 57% Oil 34% mud	0.00
180.00	Clean Gassy Oil	2.52
120.00	muddy gassy oil	1.68

Gas Rates

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

Drill Stem Test #1 total recovery

Length ft	Description	Volume bbl
600 0.00	feet of gas in the pipe	0.000
420.00	Clean Gassy Oil 15% Gas 85% Oil	5.891
120.00	muddy gassy oil	1.683
0.00	10% Gas 57% Oil 34% mud	0.000
180.00	Clean Gassy Oil	2.525
120.00	muddy gassy oil	1.683
0.00	10% Gas 48% oilk 42% Mud	0.000
120.00	Muddy Gassy Oil	1.683
0.00	10% Gas 50% Oil 40% Mud	0.000
60.00	Muddy Gassy Oil	0.842
0.00	10% Gas 74% Oil 16% Mud	0.000
0.00	Gravity 42 corrected	0.000

Drill Stem Test #2



DRILL STEM TEST REPORT

Younger Energy Company

27-21a-15w Pawnee

3415 E. Harry suite 403 bld 400
Wichita, Kansas 67207

Bauer Y #3-27

Job Ticket: 01177

DST#: 2

ATTN: Keith Feavis

Test Start: 2017.07.17 @ 12:18:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:00:00

Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budj

Unit No: 1

Interval: 3899.00 ft (KB) To 3906.00 ft (KB) (TVD)

Reference Elevations: 1976.00 ft (KB)

Total Depth: 3906.00 ft (KB) (TVD)

1968.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 91716 Inside

Press@RunDepth: 1355.29 psig @ 3901.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2017.07.17

End Date: 2017.07.17

Last Calb.: 2017.07.17

Start Time: 12:18:00

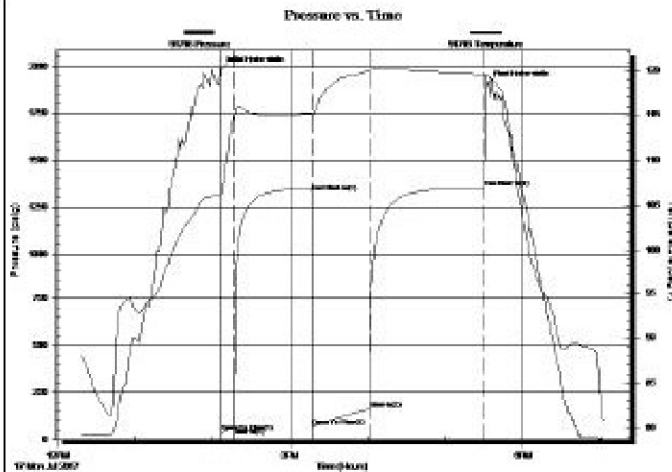
End Time: 19:02:30

Time On Btm: 2017.07.17 @ 14:06:00

Time Off Btm: 2017.07.17 @ 17:32:30

TEST COMMENT: 1st opening 10 minutes weak blow built to 6 inches into the water
1st Shut-in 60 Minutes no blow back
2nd opening 45 minutes weak blow built to the bottom of the bucket in 28 minutes
2nd shut-in 90 minutes no blow back

PRESSURE SUMMARY



Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1994.91	106.15	Initial Hydro-static
1	36.53	106.16	Open To Flow (1)
10	62.95	114.97	Shut-in(1)
71	1328.79	115.19	End Shut-in(1)
71	66.00	115.11	Open To Flow (2)
116	161.62	119.99	Shut-in(2)
205	1355.29	119.55	End Shut-in(2)
207	1905.52	119.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
275.00	slightly muddy water	3.86
0.00	Chlorides 18000	0.00

Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (M cfd)

ROCK TYPES

Cht vari	Lmst fw7>	Carbon Sh	Ss
Dolprim	shale, grn	shale, red	
Lmst fw<7	shale, gry	Shcol	

ACCESSORIES

MINERAL	FOSSIL	STRINGER	TEXTURE
▲ Chert, dark	∩ Bioclastic or Fragmental	••• Sandstone	C Chalky
P Pyrite	F Fossils < 20%		L Lithogr
•• Sandy	∅ Oolite		

- Silty
- △ Chert White
- Mc Mica
- Pellets
- ⊕ Oomoldic

OTHER SYMBOLS

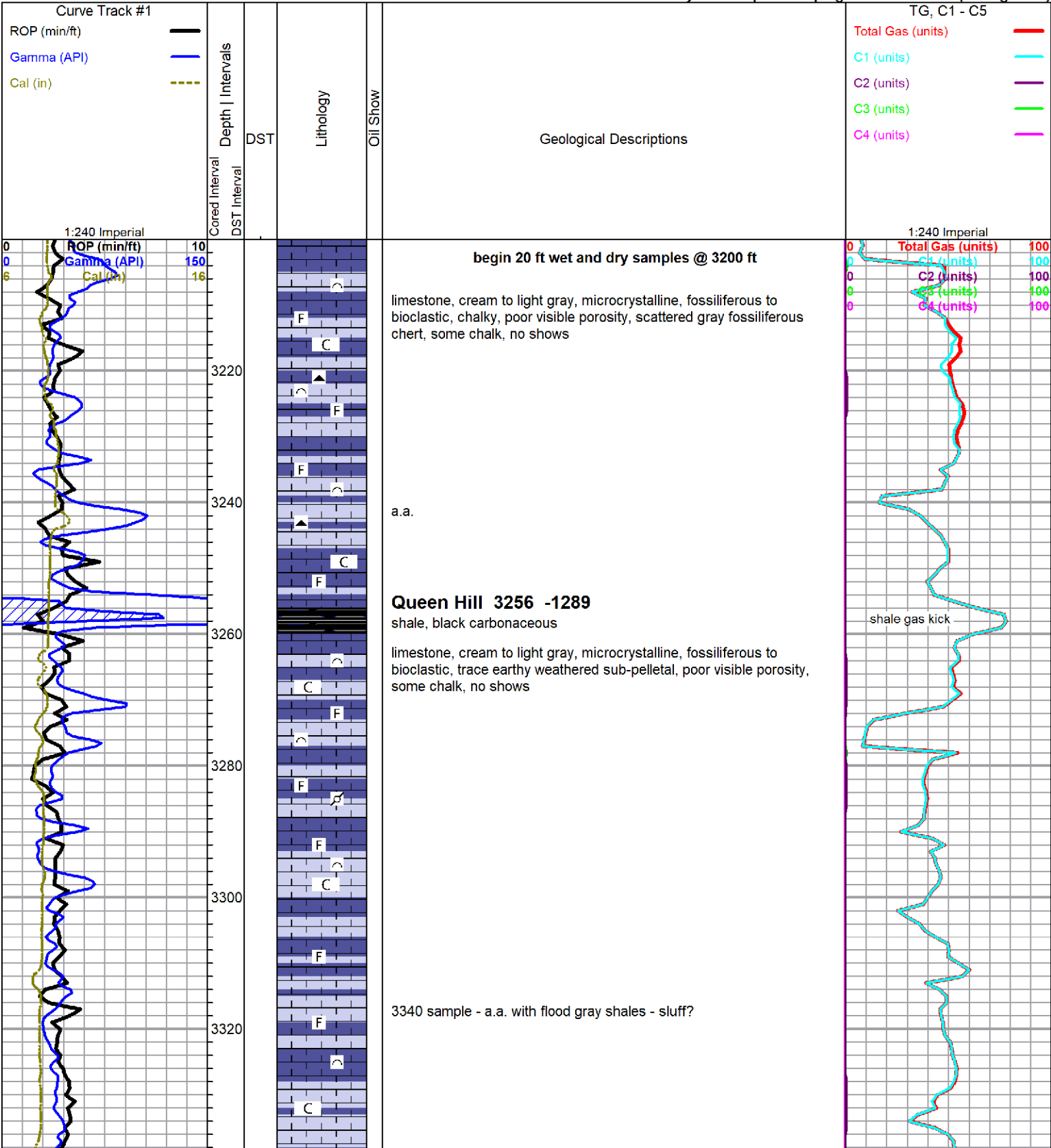
- Oil Show**

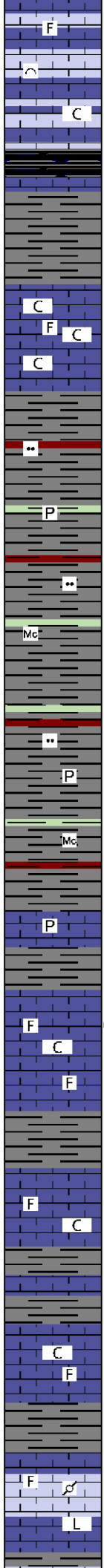
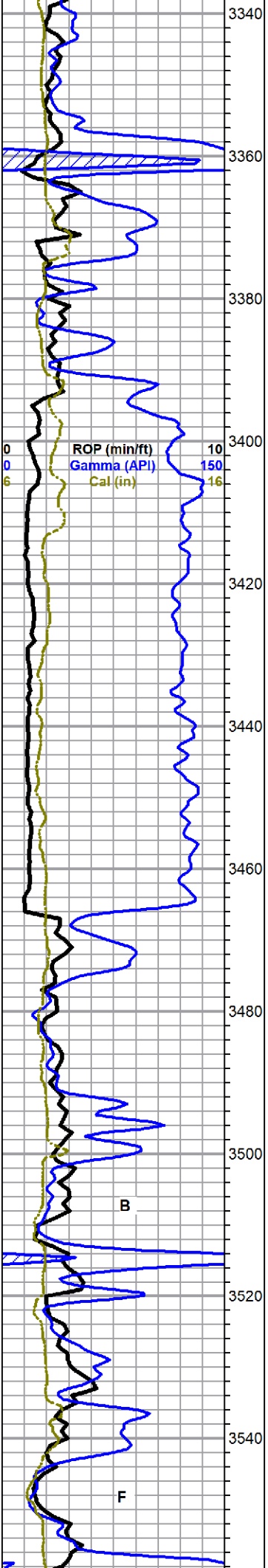
 - Good Show
 - Fair Show
 - Poor Show
 - Spotted or Trace
 - Questionable Stn
 - Dead Oil Stn
 - Fluorescence
 - * Gas

DST

 - DST Int
 - DST alt
 - Core
 - tail pipe

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begin 10 ft samples @ 3360 ft, shales fall out, a.a. with some dark gray dense fossiliferous limestones

Heebner 3359 -1391

shale, black carbonaceous

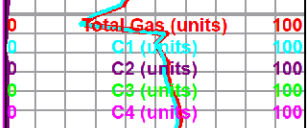
shale gas kick

Toronto

limestone, white to light gray, micro-cryptocrystalline, fossiliferous, very chalky, poor visible porosity, 30-40% chalk in samples, no shows

Douglas 3393 -1425

shale, variable gray, some silty, some micaceous, scattered red and green, some pyrite nodules



Brown Lime 3466 -1499

limestone, dark gray to brown, cryptocrystalline, dense, slightly fossiliferous, slightly pyritic, no shows

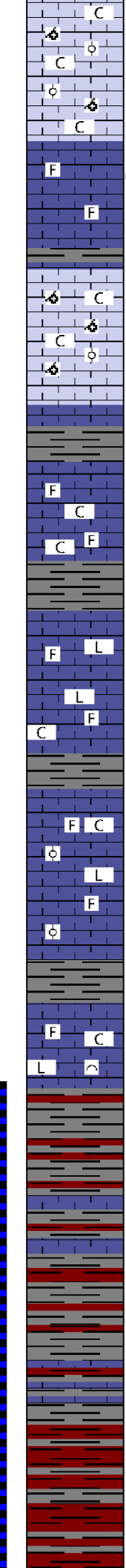
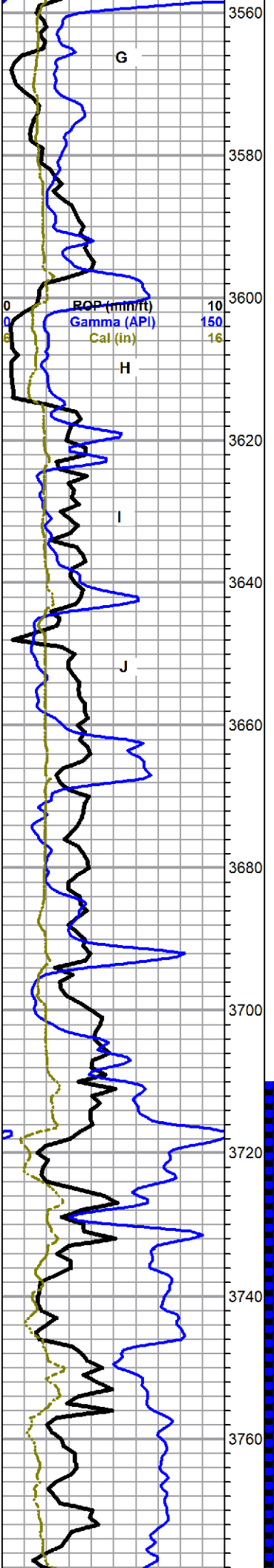
Lansing 3477 -1610

limestone, white to light gray, mostly cryptocrystalline, fossiliferous to lithographic, trace gray/brown arenaceous, one piece with stain and slight show oil on break, no other shows noted, no odor, some chalk

limestone, a.a., with abundant limestone, gray mottled, pelletal, some very chalky, poor visible porosity, no shows

limestone, white to light gray, cryptocrystalline, fossiliferous to sub-lithographic, chalky, some scattered mottled pelletal, no shows

limestone, mixed white to gray, fossiliferous, lithographic and chalky to dense pelletal, trace gray fossiliferous chert, no shows



limestone, light gray to gray, oolitic to sub-oolimoldic, weathered in part, poor overall porosity, flood chalk in samples, no shows

3600 and 3610 samples, a.a. with mixed fossiliferous and some gray recrystallized fossiliferous, some surface etching with oily clingy stain, poor porosity, no free oil, no odor in wet cup, poor fluorescence, excellent cut

limestone, light gray to gray, oomoldic, good large molds, good porosity, barren, abundant chalk

limestone, cream to mixed gray, microcrystalline, fossiliferous to sub-lithographic, abundant oomoldic from above, abundant chalk, no shows

limestone a.a., with abundant white cryptocrystalline lithographic, some slightly fossiliferous, moderate chalk, no shows

Stark Shale 3664 -1697

limestone, white to light gray, cryptocrystalline, fossiliferous to oolitic to sub-lithographic, chalky in part, no visible porosity, no shows, moderate chalk

limestone, white to gray, micro-cryptocrystalline, fossiliferous, bioclastic and sub-lithographic, dense to chalky, no shows

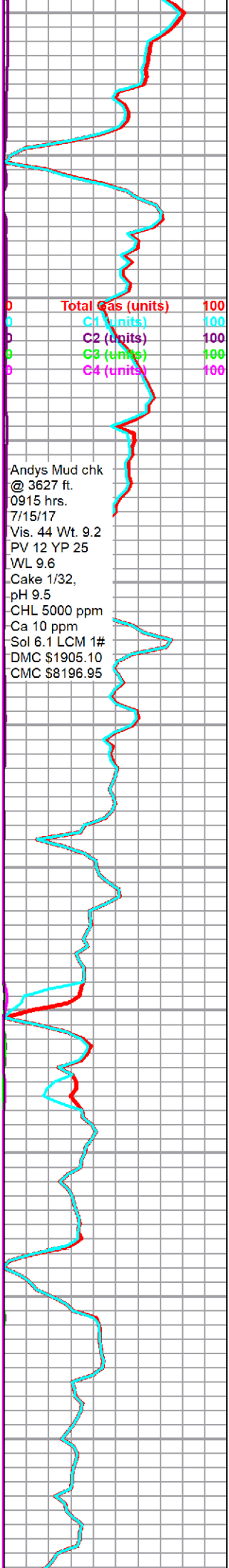
Base KC 3711 -1744

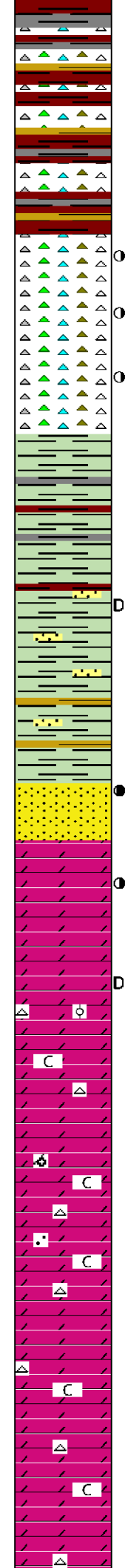
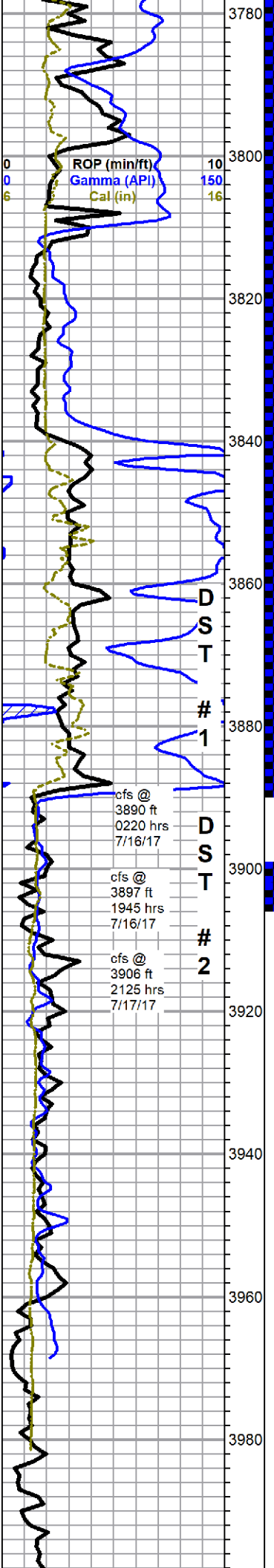
mixed gray shales, influx red shales, some soft, red wash in samples

carrying abundant limestone from above, with influx gray/green limestones, fossiliferous to lithographic, no shows, samples still carrying red wash

3770 & 3780 samples, flood soft gray and pink mushy shale, still abundant mixed limestones, some olive shale

shales a.a.





Conglomerate 3782 -1815

red shales, with gray and olive shale, mixed limestones and cherts, heavy red wash

Viola 3811 -1844

cherts, pink, yellow, white, tan, orange, mostly fresh, some tripolitic to slightly tripolitic, scattered spotty to fair staining, no show free oil, some tarry residue, no odor

short trip @ 3938 ft

Simpson 3939 -1872

shale, gray and maroon and green

a.a., trace sandstone, white, fine grain, well sorted, white cement, spotty dead stain

shale flood mostly waxy green and olive, still carrying some sand a.a. and some very dense well cemented barren sand

sandstone, quartz, very fine grain, well rounded, fair sorting, friable, good intergrain porosity, trace pyritic, light stain, fair show oil, strong odor, bright but spotty fluorescence, weak cut, good flash cut on break

Simpson Sand 3888 -1921

Simpson sand description above - 3897 cfs samples, abundant sand a.a., some with black gilsonitic infill, some dolomite, gray, cryptocrystalline, dense, no visible porosity, few specimens with trace stain

Arbuckle 3896 -1929

dolomite, light gray, cryptocrystalline, dense, no porosity or shows, with microcrystalline, sub-rhombic dense, and rhombic to sub-sucrosic, some intercrystalline and vuggy porosity, lightly stained to spotty black stain, slight show free oil in tray, few specimens gassy with show bleeding oil, fair odor, fair to good fluorescence, fair but slow cut

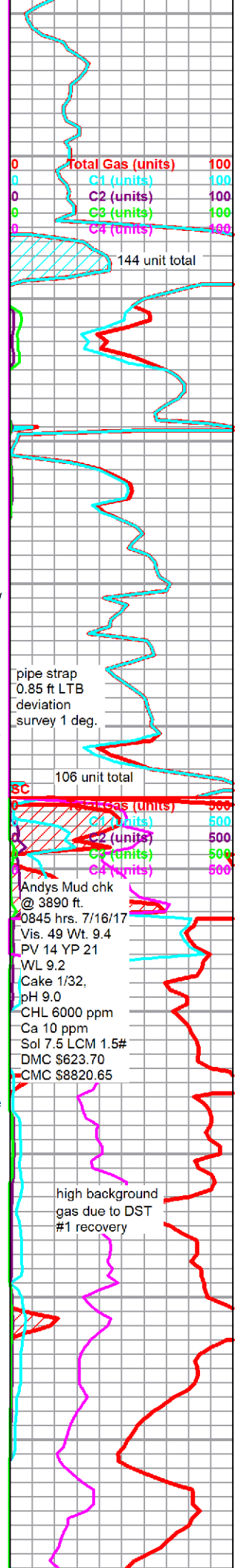
3920-30 samples, dolomite, light gray, cryptocrystalline, lithographic, micro - very fine crystalline, sub-rhombic, dense, recrystallized oolitic, some scattered dead black stain, no free oil, no odor

beginning 3940 sample, dolomite, light gray, mostly micro-very fine crystalline, rhombic to sub-rhombic to re-crystallized, poor overall visible porosity, abundant dense cryptocrystalline, some tan to light gray crystalline-sub-oomoldic mix, influx caliche and white and gray chert, some oolitic chert, no shows

a.a., increase in re-crystallized dolomite, trace sandy dolomite, increase caliche, no shows

dolomite, mixed white to light gray and tan, micro-very fine crystalline, rhombic to sub-rhombic, some scattered good intercrystalline porosity, some re-crystallized, abundant caliche, with gray and white cherts, no shows

Rotary TD 4000' @ 1300 hrs 7/17/17



0	ROP (min/ft)	10	4000
0	Gamma (API)	150	



ELI Wireline TD 4002'
complete logging operations 1950 hrs 7/17/17

0	Total Gas (units)	500
0	C1 (units)	500