OPERATOR

Company:	Younger Energy Company		
Address:	9415 E. Harry Suite 403, Bldg. 400 Wichita, KS 67207		
Contact Geologist:			
Contact Phone Nbr:	316-681-2542		
Well Name:	Schartz #1-34		
Location:	Sec. 34 - T21S - R15W	API:	15-145-21738-0000
Pool:		Field:	Hurray
State:	Kansas	Country:	USA

Scale 1:240 Imperial

Well Name:	Schartz #1-34		
Surface Location:	Sec. 34 - T21S - R15W		
Bottom Location:			
API:	15-145-21738-0000		
License Number:	30705		
Spud Date:	11/29/2013	Time:	00:00
Region:	Pawnee County		
Drilling Completed:	12/10/2013	Time:	07:55
Surface Coordinates:	770' FSL & 1405' FEL		
Bottom Hole Coordinates:			
Ground Elevation:	1967.00ft		
K.B. Elevation:	1978.00ft		
Logged Interval:	3200.00ft	To:	3965.00ft
Total Depth:	3965.00ft		
Formation:	Arbuckle		
Drilling Fluid Type:	Chemical/Fresh Water Gel		

SURFACE CO-ORDINATES

Well Type:	Vertical		
Longitude:		Latitude:	
N/S Co-ord:	770' FSL		
E/W Co-ord:	1405' 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:	Duke Drilling Company		
Rig #:	10		
Rig Type:	mud rotary		
Spud Date:	11/29/2013	Time:	00:00
TD Date:	12/10/2013	Time:	07:55
Rig Release:		Time:	

ELEVATIONS

K.B. Elevation:	1978.00ft	Ground Elevation:	1967.00ft
K.B. to Ground:	11.00ft		

NOTES

Due to favorable results of DST #4 in the Simpson Sand, and favorable structural position and log analysis of the Arbuckle, it was recommended and agreed upon by all parties that 5 1/2" production casing be set and cemented and the Schartz #1-34 be further tested through perforations and stimulation in the Simpson Sand and Arbuckle.

A Bloodhound gas detection system operated by Bluestem Environmental was employed on this well. ROP and gas curves were imported from said system into this mudlog. Gamma ray and caliper curves were also imported from the electrical log suite. Sample tops were generally within 1 ft of log tops, therefore, neither curve was shifted to provide an exact match but rather left as recorded in the field.

A gas kick recorded in the Howard Limestone warrants scrutiny, and while this zone does not calculate on electrical logs, it should warrant testing before abandonment of this well.

Respectfully submitted,
Keith Reavis

Younger Energy Company

daily drilling report

DATE	7:00 AM DEPTH	REMARKS
12/04/2013	3203	Geologist Keith Reavis on location @ 1600 hrs, 3371 ft, drilling ahead Topeka, Heebner, Douglas, Lansing
12/05/2013	3624	drilling ahead, Lansing/KC, BKC, Marmaton, Conglomerate, short trip
12/06/2013	3872	drilling conglomerate, Viola, Simpson, show in Viola warrants test, ctch, TOH for DST #1, conducting DST #1, mis-run, packer failure, TOH and back in with long anchor, conduct DST #2
12/07/2013	3872	complete DST #2, successful test, TIH w/bit, frozen standpipe, TOH, thaw rig run in hole with bit, ctch, resume drilling, Simpson, Arbuckle
12/08/2013	3918	show in Simpson Sand warrants test, TOH w/bit, conduct DST #3, mis-run, packer failure, OOH w/tools, reset anchor interval, conduct DST #4, successful test, TIH w/bit
12/09/2013	3918	under pump repairs, resume drilling Arbuckle, show warrants test, conduct DST #5, complete DST #5, plugged tool
12/10/2013	3965	rathole ahead to TD 3965 ft @ 0755 hrs, ctch, TOH for logs, conduct logging operations, geologist off loc. @ 1615 hrs

Any Oil Company

well comparison sheet

	DRILLING WELL Schartz #1-34 770' FSL & 1405' FEL Sec 34-T21S-R15W				COMPARISON WELL F & M – Shartz #1 C N/2 SE SE Sec 34-T21S-R15W				COMPARISON WELL Ritchie – Shartz #1 SW SE SE Sec 34-T21S-R15W			
	1978 KB				1975 KB		Structural Relationship		1975 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Howard	2932	-954	2931	-953	2930	-955	1	2	2932	-957	3	4
Queen Hill	3266	-1288	3266	-1288	3268	-1293	5	5	3258	-1283	-5	-5
Heebner	3370	-1392	3371	-1393	3372	-1397	5	4	3362	-1387	-5	-6
Douglas	3404	-1426	3404	-1426	3405	-1430	4	4	3395	-1420	-6	-6
Brown Lime	3481	-1503	3482	-1504	3482	-1507	4	3	3471	-1496	-7	-8
Lansing	3491	-1513	3492	-1514	3491	-1516	3	2	3481	-1506	-7	-8
BKC	3720	-1742	3722	-1744	3724	-1749	7	5	3714	-1739	-3	-5
Cong. Chert	3809	-1831	3810	-1832	3810	-1835	4	3	3799	-1824	-7	-8
Viola	3831	-1853	3832	-1854	3834	-1859	6	5	3832	-1857	4	3
Simpson	3857	-1879	3858	-1880	3864	-1889	10	9	3862	-1887	8	7
Simp. Sand	3914	-1936	3914	-1936	3916	-1941	5	5	3913	-1938	2	2
Arbuckle	3917	-1939	3918	-1940	3919	-1944	5	4	3916	-1941	2	1
Total Dept	3965	-1987	3959	-1981	3920	-1945	-42	-36	3923	-1948	-39	-33
					Note, depths in red							
					are driller/sample tops							

Drill Stem Test #2

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Younger Energy Co.
9415 E Harry St.
Ste. 403 Bldg. 400
Wichita, KS 67207
ATTN: Keith Reavis

34-21s-15w Pawnee, KS

Schartz #1-34

Job Ticket: 55433 **DST#: 2**

Test Start: 2013.12.06 @ 15:38:30

GENERAL INFORMATION:

Formation: **Viola**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:59:15
Time Test Ended: 04:40:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan L
Unit No: 70

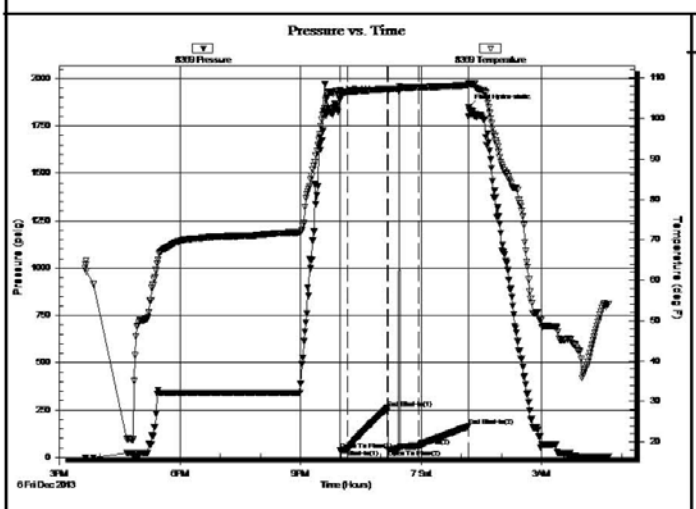
Interval: 3714.00 ft (KB) To 3872.00 ft (KB) (TVD)
Total Depth: 3872.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1978.00 ft (KB)
1967.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8369 **Inside**
Press@RunDepth: 59.87 psig @ 3737.00 ft (KB)
Start Date: 2013.12.06 End Date: 2013.12.07
Start Time: 15:38:35 End Time: 04:40:30

Capacity: 8000.00 psig
Last Calib.: 2013.12.07
Time On Btm: 2013.12.06 @ 21:59:00
Time Off Btm: 2013.12.07 @ 01:11:15

TEST COMMENT: 10- IF- Built to 1/2"
60- ISI- No blow
45- FF- No blow Flushed tool @ 15mins Built to 1/4"
75- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1894.65	106.98	Initial Hydro-static
1	37.28	106.06	Open To Flow (1)
11	40.71	106.58	Shut-In(1)
70	259.40	107.27	End Shut-In(1)
72	43.19	107.21	Open To Flow (2)
117	59.87	107.73	Shut-In(2)
192	163.47	108.19	End Shut-In(2)
193	1848.96	108.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	M	0.15

* Recovery from multiple tests

Gas Rates

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

Drill Stem Test #4

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Younger Energy Co.

9415 E Harry St.
Ste. 403 Bldg. 400
Wichita, KS 67207
ATTN: Keith Reavis

34-21s-15w Pawnee, KS

Schartz #1-34

Job Ticket: 55435 **DST#:4**

Test Start: 2013.12.08 @ 12:31:24

GENERAL INFORMATION:

Formation: **Simpson Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:54:09
Time Test Ended: 21:12:24

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan L
Unit No: 70

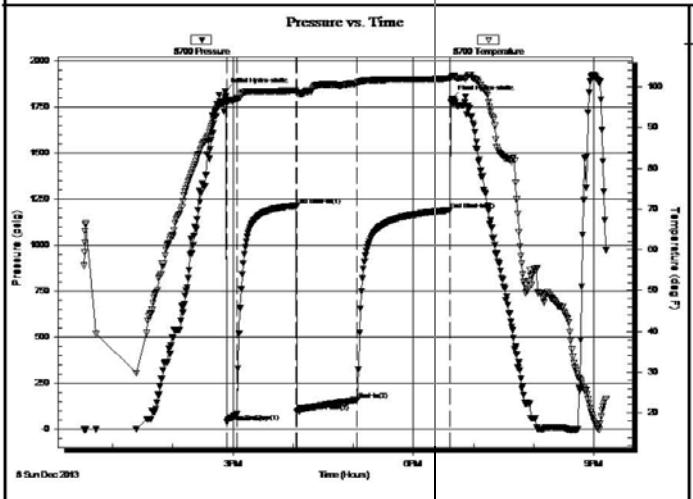
Interval: 3713.00 ft (KB) To 3918.00 ft (KB) (TVD)
Total Depth: 3918.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1978.00 ft (KB)
1967.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8700 **Outside**
Press@RunDepth: 161.43 psig @ 3716.00 ft (KB)
Start Date: 2013.12.08 End Date: 2013.12.08
Start Time: 12:31:29 End Time: 21:12:24

Capacity: 8000.00 psig
Last Calib.: 2013.12.08
Time On Btm: 2013.12.08 @ 14:52:24
Time Off Btm: 2013.12.08 @ 18:38:39

TEST COMMENT: 10- IF- Built very quickly to 4" and then slowly to 6"
60- ISI- No blow
60- FF- BOB 35mins
90- FSI- Surface blow died after 26mins



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1834.63	96.66	Initial Hydro-static
2	40.52	96.14	Open To Flow (1)
12	82.04	97.16	Shut-In(1)
71	1215.02	99.09	End Shut-In(1)
72	93.56	98.60	Open To Flow (2)
132	161.43	100.96	Shut-In(2)
225	1191.38	102.03	End Shut-In(2)
227	1794.40	102.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	MCO, 80%O	0.22
285.00	OCM, 85%M	2.66
0.00	50' GIP	0.00

* Recovery from multiple tests

Gas Rates

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

Drill Stem Test #5

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Younger Energy Co.

9415 E Harry St.
Ste. 403 Bldg. 400
Wichita, KS 67207
ATTN: Keith Reavis

34-21s-15w Pawnee, KS

Schartz #1-34

Job Ticket: 55436 **DST#:5**

Test Start: 2013.12.09 @ 13:02:44

GENERAL INFORMATION:

Formation: **ARBUCKLE**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 00:15:59

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan L
Unit No: 70

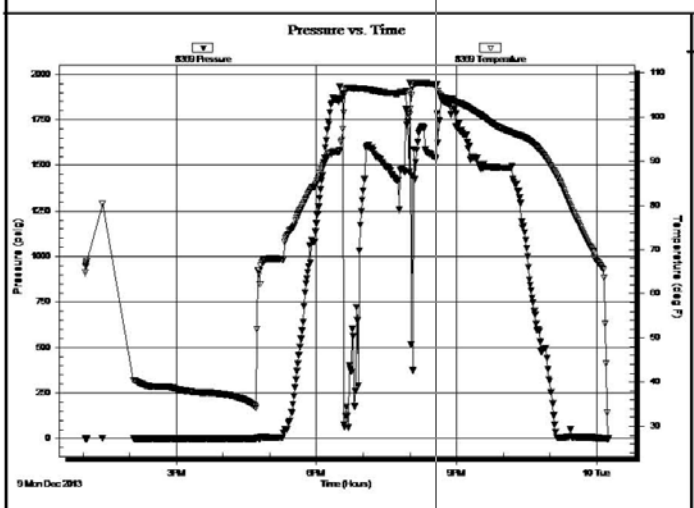
Interval: 3921.00 ft (KB) To 3926.00 ft (KB) (TVD)
Total Depth: 3926.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 1978.00 ft (KB)
1967.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8369 **Inside**
Press@RunDepth: psig @ 3923.00 ft (KB)
Start Date: 2013.12.09 End Date: 2013.12.10
Start Time: 13:02:49 End Time: 00:15:59

Capacity: 8000.00 psig
Last Calib.: 2013.12.10
Time On Btm:
Time Off Btm:

TEST COMMENT: 10- IF- Built to 1/2"
60- ISI- No blow
35- FF- No blow @ 10mins Flushed tool No blow
15- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	M	0.05

* Recovery from multiple tests

Gas Rates

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

ROCK TYPES

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

ACCESSORIES

MINERAL
- Chert, dark
- P Pyrite
- Sandy
- Silty
- Chert White
- Mc Mica

FOSSIL
- Bioclastic or Fragmental
- F Fossils < 20%
- Oolite
- Pellets
- Oomoldic

STRINGER
- Dolomite
- Limestone
- Sandstone
- Siltstone
- Shale
- green shale
- red shale

TEXTURE
- C Chalky

OTHER SYMBOLS

INTERVALS
- Core
- DST

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

DST
- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

Howard 2932 -954

begin 20 ft wet and dry samples at 3200 ft.

limestone, gray to light gray, microcrystalline, grainy, fossiliferous, some mottled pelletal, limestone, white, chalky, soft, poor visible porosity, no shows

limestone as above

Queen Hill 3266 -1288

shale, brownish/black carbonaceous

limestone, cream to light gray, micro-cryptocrystalline, fossiliferous to lithographic, poor visible porosity, chalky in part, some chalk, no shows

as above, trace oolitic, chalky, no framework

limestone, mixed grainy chalky fossiliferous, some chalky bioclastic, marked increase in chalk in samples, poor visible porosity, no shows

Heebner 3370 -1392

Toronto 3391 -1413

limestone, white to cream, microcrystalline, fossiliferous to bioclastic, some grainy, some chalky, poor visible porosity, no shows

Douglas 3404 -1426

shale, gray to green, silty to micaceous

Mud-Co Mud chk
@ 3000 ft.
0000 hrs. 0/0/13
Vis. 50 Wt. 9.2
PV 18 YP 32
WL 11.2
Cake 1/32,
pH 9.0
CHL 6000 ppm
Ca 160 ppm
Sol 6.1 LCM 10#
DMC $0
CMC $0

bit trip, out with PDC and in with button @ 3200'

re-zero and spike system

Mud-Co Mud chk
@ 3233 ft.
0820 hrs. 12/4/13
Vis. 61 Wt. 9.2
PV 19 YP 21
WL 7.6
Cake 1/32,
pH 10.0
CHL 4400 ppm
Ca 40 ppm
Sol 6.2 LCM 1#
DMC $1158.95
CMC $8502.90

SCALE CURVE CHANGE

0 ROP (min/ft) 3 (10)
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100

0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100

3480
3500
3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
3720
3740
3760
3780
3800
3820
3840
3860
3880
3900
3920
3940
3960
3980

G
H

DST #1 3824-3872, mis-run, packer failure

DST #3 3850-3918, mis-run, packer failure

cfs @ 3872 ft 0350 hrs 12/6/13

DST #4

DST #5

cfs @ 3918 ft 2340 hrs 12/7/13

Brown Lime 3481 -1503

Lansing 3491 -1513

limestone, white to cream, microcrystalline, fossiliferous, chalky, grainy to spongy, poor visible porosity, questionable light stain on few specimens, with chert, white boney to light gray, sharp, fresh, no show oil, no odor, good even fluoresence in limestone

limestone, white to light gray, mostly cryptocrystalline, fossiliferous, chalky in part, dense, no shows

limestone, light gray to cream, microcrystalline, fossiliferous, dense to chalky, poor visible porosity, no shows, trace light gray fossiliferous chert

limestone, cream to white and light gray, microcrystalline, fossiliferous to grainy bioclastic, poor visible porosity, some fractures, trace chert as above, no shows

limestone, light gray, sub-oolitic, some small molds and interoolite porosity, 2 specimens with light stain and show filmy oil, no odor, no fluoresence, good cut

limestones, gray to cream and white, micro-cryptocrystalline, fossiliferous, some lithographic, some cherty, few scattered specimens with light edge staining, no show free oil, no odor, poor fluoresence

limestone, light gray, oomoldic, good porosity, barren, with mixed fossiliferous chalky limestones, 1 specimen dead black stain, flood chert, light gray, fossiliferous, sharp, fresh, no shows

limestone, white to light gray, microcrystalline, fossiliferous, chalky in part, some grainy, some scattered tight chalky oolitic, white, no shows

limestone, white to cream and light gray, microcrystalline, fossiliferous, some grainy bioclastic, few pieces black dead stain, in 3680 sample light scaley oil sheen in tray, no odor, no fluoresence

as above, slight influx gray chert, sharp, fresh

limestone, light gray to white, mixed crypto-microcrystalline, fossiliferous, some scattered light gray sub-oomoldic, recrystallized, slight black dead stain, no show free oil, no odor, even light fluoresence, some chalk

limestone, gray to cream, microcrystalline, fossiliferous, some scattered recrystallized oolitic and sub-oomoldic, abundant chalk, some scattered white and gray cherts, no shows

Base KC 3720 -1742

shale, mixed green to gray, some silty, abundant soft/mushy

limestone, mixed white to light gray, chalky fossiliferous, some dense pale green arenaceous

shale and limestone as above, influx brick red shale, some dense, samples wash red beginning 3770 sample

shaley conglomerate, predominate red shale, with mixed shales, limestones, some pale green siltstone, some scattered rose chert, no shows, heavy red wash

as above

Conglomerate Chert 3809 -1831

chert, mixed, predominately orange, yellow and brick red, some slight edge staining, slight sheen in tray, no odor or fluoresence, still carrying abundant shales

Viola 3831 -1853

chert, mixed, white to tan to light gray and pale green, sharp and fresh to tripolitic and tripolitic edges, some rotten/brittle, barren to edge stain to saturated brown and black, some good spongy tripolitic porosity, bleeding, good show free oil, strong odor, even to spotty fluoresence, excellent cut

Simpson 3857 -1879

shale, green, some very soft, mushy, gray and red

shale, waxy green, abundant brick red, some gray, some sandy, abundant rounded quartz sand grains in bottom of tray, some scattered dolomite, light gray, cryptocrystalline, dense, good fluoresence, no shows

3918 sample, 1 piece trashy sandstone, light stain with sheen, faint odor in wet cup

Simpson Sand 3914 -1936

sandstone, quartz, very fine grain, fair sorting, sub-rounded, well cemented, some fair inter-granular and fracture porosity, saturated stain, good show free oil, strong odor, even yellow fluoresence, good cut

Arbuckle 3917 -1939

3917-3921 dolomite, light gray, cryptocrystalline, dense, very pyritic, no visible porosity, no shows

3921-3926 dolomite, light gray to white, cryptocrystalline, dense and barren with microcrystalline, rhombic to sub-rhombic, some good intercrystalline and small vuggy porosity, appx 30% stained, spotty to saturated light brown to black, fair show oil, weak odor, good white fluoresence, excellent cut

3926-33, a.a., decrease stain, weak odor, no show free oil

3934-TD, dolomite, mixed, white to gray, cream and some orange, micro-cryptocrystalline, some rhombic with good porosity, some oolitic, recrystallized, barren

Rotary TD 3965 ft. 0755 hrs 12/10/13
Pioneer Wireline TD 3959 ft.
Complete Logging Operations 1600 hrs 12/10/13

begin 10 ft wet and dry samples at 3500 ft.

Mud-Co Mud chk @ 3639 ft. 0825 hrs. 12/5/13 Vis. 40 Wt. 9.2 PV 10 YP 9 WL 8.0 Cake 1/32, pH 10.0 CHL 5000 ppm Ca 20 ppm Sol 6.1 LCM tr# DMC $1095.10 CMC $9598.00

system gas test

short trip @ 3800 ft

79 unit total

Mud-Co Mud chk @ 3872 ft. 0605 hrs. 12/6/13 Vis. 48 Wt. 9.2 PV 15 YP 14 WL 8.0 Cake 1/32, pH 10.0 CHL 4700 ppm Ca 20 ppm Sol 6.1 LCM 3# DMC $2447.50 CMC $12045.50

Mud-Co Mud chk @ 3918 ft. 0830 hrs. 12/8/13 Vis. 42 Wt. 9.0 PV 10 YP 11 WL 8.8 Cake 1/32, pH 9.0 CHL 3300 ppm Ca 40 ppm Sol 4.8 LCM 1# DMC $1585.80 CMC $13638.60

Mud-Co Mud chk @ 3918 ft. 0825 hrs. 12/9/13 Vis. 43 Wt. 9.0 PV 9 YP 12 WL 8.4 Cake 1/32, pH 9.0 CHL 4300 ppm Ca 60 ppm Sol 4.8 LCM 1# DMC $-94.75 CMC $13543.85