

**Ritchie Exploration, Inc.
Baker 31B No.1
2235' FNL and 1090' FWL
75'N & 100'E of SE SW NW
Sec 31 T15S R34W
Logan County, Kansas**

Geological Report
by

Macklin M. Armstrong, P.G.
License Number 743

Scale 1:240 Imperial

Well Name:	Baker 31B No. 1	
Surface Location:	Sec 31 T15 R34W	
Bottom Location:	2235' FNL and 1090' FWL	
API:	15-109-21273	
License Number:	4767	
Spud Date:	4/8/2014	Time: 2:00 PM
Region:	Logan County, Kansas	
Drilling Completed:	4/17/2014	Time: 9:52 AM
Surface Coordinates:		
Bottom Hole Coordinates:		
Ground Elevation:	3055.00ft	
K.B. Elevation:	3060.00ft	
Logged Interval:	3400.00ft	To: 4782.00ft
Total Depth:	4780.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

OPERATOR

Company: Ritchie Exploration, Inc.
Address: 8100 East 22nd Street North, No. 700
Wichita, Kansas 67226

Contact Geologist:	Pete Fiorini	
Contact Phone Nbr:	316-691-9500	
Well Name:	Baker 31B No. 1	
Location:	Sec 31 T15 R34W	API: 15-109-21273
Pool:	Oil	Field: Wildcat
State:	Kansas	Country: USA

CONTRACTOR

Contractor: WW Drilling, LLC
 Rig #: 2
 Rig Type: mud rotary
 Spud Date: 4/8/2014
 TD Date: 4/17/2014
 Rig Release: 4/18/2014

Time: 2:00 PM
 Time: 9:52 AM
 Time: 10:00 AM

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: 101° 08' 49.046" Latitude: 38° 42' 33.178"
 N/S Co-ord:
 E/W Co-ord:

ELEVATIONS

K.B. Elevation: 3060.00ft Ground Elevation: 3055.00ft
 K.B. to Ground: 5.00ft

NOTES

Date	Depth at 7 am	Activity
4-08-14	MIRU	Spud at 2 pm
4-09-14	780	Drilling
4-10-14	2760	Drilling
4-11-14	3950	Drilling
4-12-14	4025	CTCH for DST No. 1
4-13-14	4150	TIH for DST No. 2
4-14-14	4380	Drilling
4-15-14	4490	Drilling
4-16-14	4630	CFS
4-17-14	4740	Drilling
4-18-14	4780	Set 5 1/2"

Surface Casing: 8 5/8" 23# at 253'
 Production Casing: 5 1/2" 15.5# at 4771'

Deviation: 253' - 3/4°
 4025' - 2 1/4°
 4384' - 1°
 4780' - 3/4°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	SM	12 1/4"	RR	Surface	253	3 3/4
	SM	7 7/8"	F27	253	4780	108 1/2

Drill Stem Tests:

DST No. 1 3993 to 4025 Lansing E, F Zones
 30-45-45-60

Recovery: 75' WCM with oil spots (40%W, 60%M)

IHP 1952 FHP 1872

IFP 29-43 FFP 46-68

ISIP 1178 FSIP 1146

Temp 108°

DST No. 2 4068 to 4150 Lansing G, H, I Zones

30-45-45-60

Recovery: 140' Mud with oil spots and 6" of oil on top

IHP 2001 FHP 1927

IFP 37-59 FFP 63-90

ISIP 1193 FSIP 1179

Temp 111°

DST No. 3 4170 to 4384 Lansing K, L Zones, Pleasanton, Marmaton, Altamont

30-45-30-60

30-45-30-60
 Recovery: 2600' SMCW (3%M, 97%W - Chl 47,000 ppm)
 IHP 2093 FHP 1988
 IFP 298-962 FFP 976-1203
 ISIP 1268 FSIP 1270
 Temp 117°

DST No. 4 4518 to 4544 Lower Cherokee Lime
 30-45-45-60

Recovery: 275' GIP
 45' GO (35%G, 65%O - 27 degree gravity corrected)
 100' GMCO (20%G, 40%M, 40%O)
 IHP 2307 FHP 2218
 IFP 31-52 FFP 60-73
 ISIP 1324 FSIP 1306
 Temp 116°

DST No. 5 4574 to 4656 Morrow Sand, Mississippi
 30-45-30-60

Recovery: 1120' SMCW with oil spots in tool (Chl 32,000 ppm)
 IHP 2351 FHP 2170
 IFP 114-419 FFP 440-610
 ISIP 997 FSIP 943
 Temp 125°

Formation	Sample	E-Log	Datum	Well 1	Well 2
Anhydrite	2379	2376	+684	+17	+9
B/Anhydrite	2397	2394	+666	+16	+8
Stotler	3498	3499	-439	+20	+14
Heebner	3861	3861	-801	+24	+18
Toronto	3878	3878	-818	+27	+19
Lansing	3910	3909	-849	+25	+18
Muncie Creek	4072	4074	-1014	+37	+29
Stark	4173	4172	-1112	+31	+24
Hushpuckney	4219	4219	-1159	+29	+23
Base/Kansas City	4261	4260	-1200	+26	+21
Marmaton	4285	4283	-1223	+29	+25
Altamont	4318	4316	-1256	+25	+20
Pawnee	4391	4390	-1330	+28	+23
Myrick Station	4428	4428	-1368	+31	+26
Fort Scott	4444	4445	-1385	+28	+24
Cherokee Shale	4470	4472	-1412	+29	+25
Johnson Zone	4550	4553	-1493	+23	+22
Base Penn Lime	4593	4594	-1534	+27	+31
Morrow	4598	4599	-1539	+30	+36
Mississippi	4626	4628	-1568	+61	+49
Total Depth	4780	4782	-1722		

Well 1: Russell Oil Company Edwards Trust A No. 1-32 780' FNL and 400' FWL Sec 32 T15S R34W
 Well 2: Russell Oil Company Edwards Trust B No. 1-32 2260' FSL and 1000' FWL Sec 32 T15S R34W

Pipe was set to further test the Lower Cherokee Lime.

Respectfully submitted,
 Macklin M. Armstrong

ROCK TYPES










 Lmst fw7>	 shale, gry	 Ss
 shale, grn	 Carbon Sh	

ACCESSORIES

MINERAL	FOSSIL	STRINGER	TEXTURE
▲ Chert, dark	F Fossils < 20%	— Shale	C Chalky
• Sandy	○ Oolite	— green shale	
• Silty	⊕ Oomoldic	— red shale	

OTHER SYMBOLS

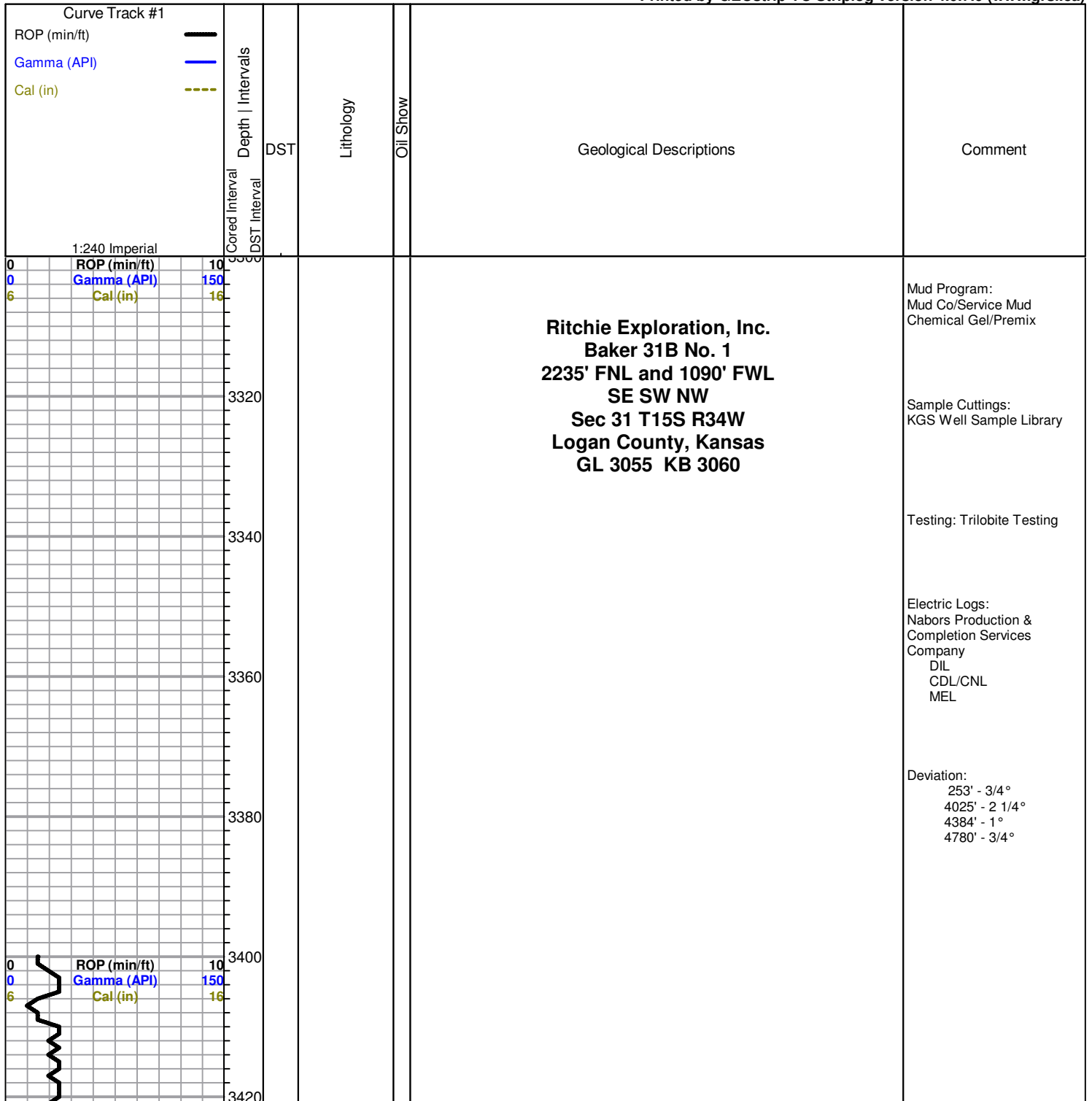
MISC

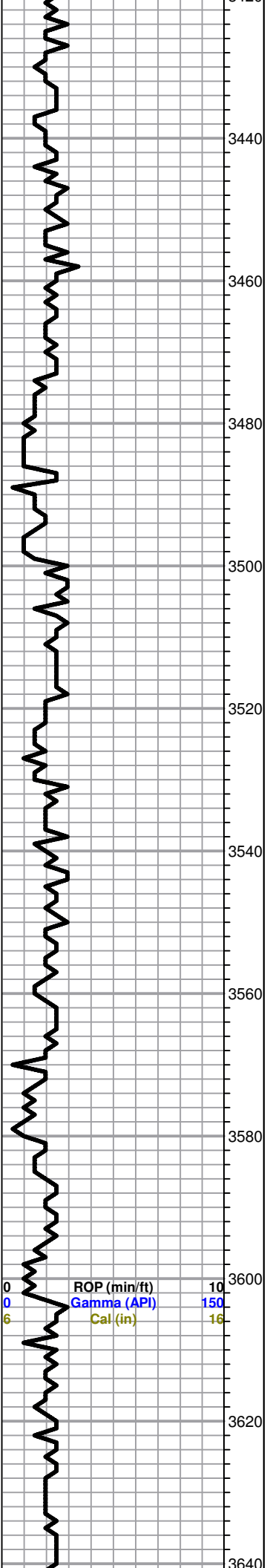
-  Daily Report
-  Digital Photo
-  Document
-  Folder
-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

DST

-  DST Int
-  DST alt
-  Core

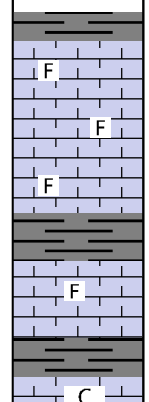
Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





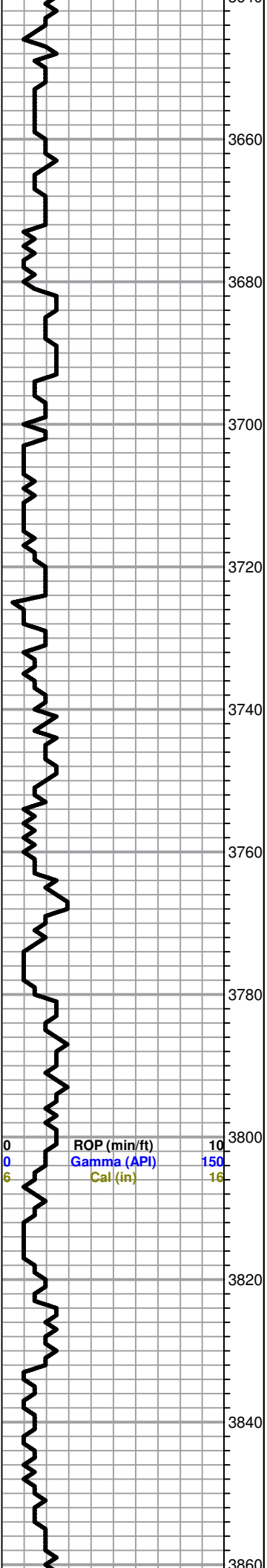
----- Stotler 3498 -438 -----

All formation tops on this geological log have been correlated back to the electric log



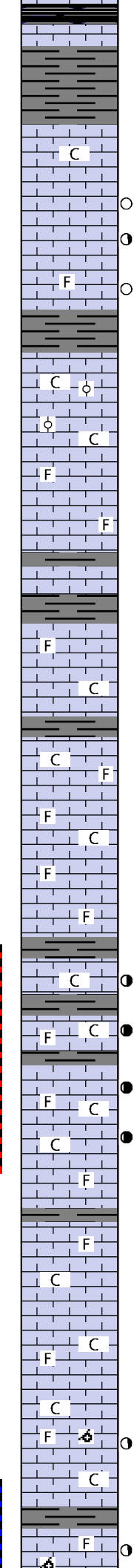
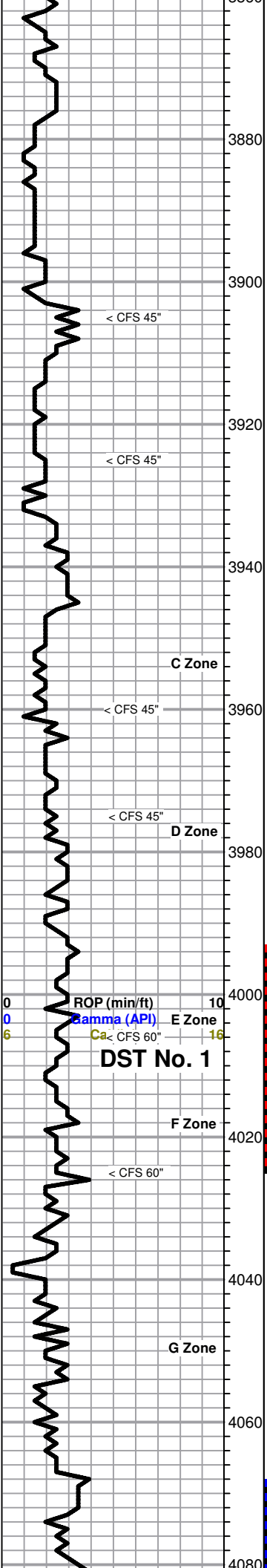
Sh-gry/dk gry
 Ls-crm/tan semi fos ns
 Ls-AA
 Sh-gry/dk gry
 Ls-crm/lt buff semi fos ns
 Sh-gry/dk gry
 Ls-crm/lt buff sl clkv ns

Mud Data at 3605'
 7:45 am on 4-11-14
 Wt 8.6 Vis 57 WL 6.4
 pH 11 Chl 4000 Sol 2
 YP 17 LCM 2#



3640	C	Sh-gry/dk gry
	F	Ls-crm/buff/gry sl fos ns
	F	Ls-lt crm v fos fr por ns no odor
3660	F	Ls-AA
	Sh-gry/dk gry	
	F	Ls-crm/lt tan semi fos ns
	C	Ls-wt/lt crm fxl n clky pr por ns no odor
3680	F	Ls-lt crm/lt tan semi fos ns
	Sh-gry/dk gry	
	F	Ls-lt crm/lt tan semi fos ns
	Sh-gry/dk gry	
3700	F	Ls-lt crm/lt tan semi fos fr por ns no odor
	F	Ls-lt crm/buff semi fos pr/fr por ns no odor
	F	Ls-lt crm semi fos pr/fr por ns
3720	F	Ls-lt crm/lt buff fos pr/fr por ns no odor
	Sh-gry/dk gry	
	F	Ls-lt crm/buff fos pr/fr por ns
	F	Ls-lt crm/buff semi fos pr/fr por ns
3740	F	Ls-lt crm/buff semi fos ns
	Sh-gry/dk gry	
	F	Ls-lt crm/buff semi fos ns
	F	Ls-crm/lt buff fos pr/fr por ns no odor
3760	C	Ls-crm/buff prtly clky ns no odor
	Sh-gry/dk gry	
	C	Ls-crm/buff prtly clky ns no odor
3780	C	Ls-wt/lt crm fos sl clky pr por ns
	Sh-gry/dk gry	
	C	Ls-lt crm semi fos sl clky ns no odor
3800	C F	Sh-gry/dk gry
	C F	Ls-wt/lt crm fos pr to fr fos por dr stn trc hvy fo v ft odor prtly clky
	F C	Ls-wt/lt crm fos pr to fr fos por with dk stn trc hvy fo v faint odor few pcs Ls with stn-AA tiny pp por dk hvy stn plty clky
3820	F	Ls-lt crm/lt tan sli fos pr por ns no odor
	F	Ls-AA
	F	
	Sh-gry/dk gry	
3840	F	Ls-wt/lt crm semi fos fr por dk stn and hvy fo no odor
	F	Ls-lt crm dns pr por ns no odor
	F	Ls-lt crm fxl n pr por ns
	F	Ls-lt crm/buff fos fr por ns no odor
3860	F	Ls-lt crm/sl fos pr fos por with sct lt stn no odor

Geologist M. Engelbrecht
on loc at 3785' at 1:30 pm
on 4-11-12



Heebner 3801 -801

Sh-blk carb
Ls-lt crm fxln por por

Sh-gry/dk gry

Sh-AA

----- Toronto 3878 -818 -----

Ls-crm/tan fxln soft sl clky trc inter xln por nsfo

Ls-crm fxln few pcs with pr por sct lt stn

Ls-wt/crm with small fos pr/fr por sct lt stn vssfo in 2 pcs
no odor no energy

Ls-wt/lt tan/crm sl fos with pr/fr por sct lt stn ns no odor

Sh-gry/dk gry

----- Lansing 3910 -850 -----

Ls-wt/crm semi ool pr por prtly clky ns no odor

Ls-lt crm semi ool pr/fr inter ool por prtly clky ns no odor

Ls-crm sl fos pr/fr por ns

Ls-lt crm semi fos pr/fr por ns no odor

Sh-gry/dk gry

Ls-lt tan fxln dolo pr por ns no odor

Sh-gry/dk gry

Ls-lt crm semi fos pr/fr por ns no odor

Ls-lt crm semi fos pr/fr por sl clky ns no odor

Sh-gry/dk gry

Ls-lt crm sli fos small vug por sl clky ns no odor

Ls-lt crm sli fos pr/fr small vug por ns no odor

Ls-wt/lt crm sl fos prtly clky pr por ns

Ls-wt/lt crm sl fos ns

Ls-wt/lt crm sl fos pr por ns no odor

Sh-gry/dk gry

Ls-lt crm sl fos tiny pp por with scat lt stn vssfo lt odor sl clky lt brn fo

Sh-gry/dk gry

Ls-lt crm small fos with pr to fr por ss lt brn gfo fr odor fr amt pcs sl clky

Sh-gry/dk gry

Ls-lt crm small fos with ss lt gfo fr odor sl clky

Ls-wt/lt crm small fos with ss lt brn gfo fr odor sl clky

Ls-crm/lt gry f/mxln mhd sl fos no por

Sh-gry/dk gry

Ls-crm/lt gry f/mxln mhd sl fos no por

Ls-crm/ltgry fxln mhd sl clky no por sm Ls-wt fxln soft clky

Ls-crm/lt tan fxln mhd sl clky no por

Ls-lt gry/tan f/mxln mhd sl fos no por

Ls-AA

Ls-crm fxln mhd sl clky no por with one piece Ls-crm f/mxln mhd fos
sl oom pr inter xln por lt brn stn vssfo on brk no odor

Ls-crm/lt tan/lt gry fxln mhd sl clky no por

----- Muncie Creek 4072 -1012 -----

Sh-gry/dk gry

Ls-crm/lt tan/lt gry fxln mhd/dns no por with sm Ls-gry f/mxln mhd fos
sl oom no por and few pcs Ls-tan f/mxln mhd pr inter xln por vssfo

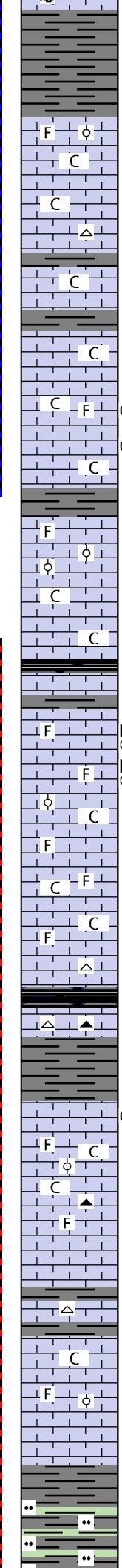
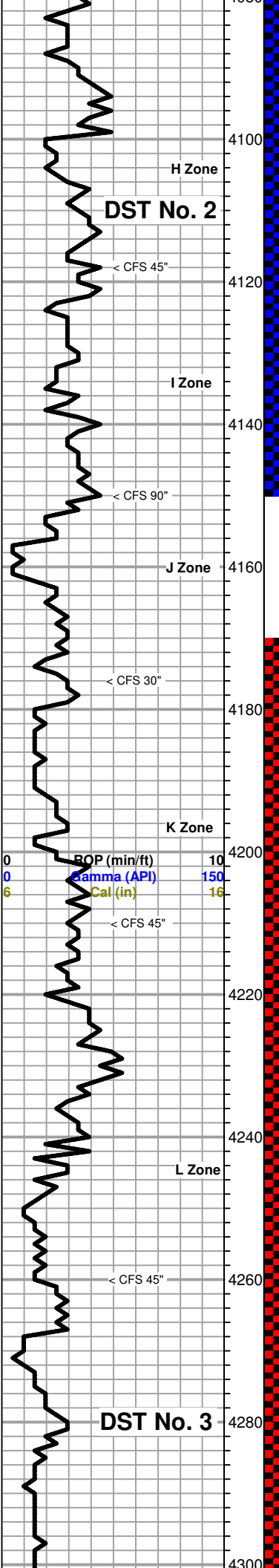
DST No. 1
3993 to 4025
30-45-45-60
1st Open: Weak 3/4" blow
2nd Open: Weak sur blow
Recovery: 75' WCM with
oil spots (40%W, 60%M)
IHP 1952 FHP 1872
IFP 29-43 FFP 46-68
ISIP 1778 FSIP 1146
Temp 108°

Pulled 27 stand short trip at
4025', then cir for test - 90"

Pipe Strap at 4025'
Long 0.25'

Mud Data at 4025'
5:45 am on 4-12-14
Wt 9.1 Vis 53 WL 7.2
pH 10.5 Chl 5000 Sol 5.3%
YP 18 LCM 1#

Geologist M. Armstrong
on loc at 4025' at 2:15 pm
on 4-12-14



Sh-gry/dk gry

Sh-AA

Ls-lt gry fxln mhd sub clkly with sm blk to gry ool no por and sm Ls-tan mxln mhd fos no por

Ls-crm/lt tan fxln mhd clkly no por

Ls-crm/lt gry/tan fxln mhd sl clkly no por sm Cht-wt fsh opa and Ls-wt fxln soft clkly no por

Sh-gry/dk gry

Ls-crm/lt gry fxln dns sl clkly no por

Sh-gry/dk gry

Ls-crm/lt gry fxln mhd/dns sl clkly no por

Ls-crm/lt gry/tan fxln mhd clkly no por sm Ls-lt gry fxln mhd sl fos sl clkly tr inter xln por ssfo on brk

Ls-lt gry fxln mhd sl gils fr inter xln por fr cut fr fluor fsfo on brk

Ls-tan/gry fxln mhd sub clkly no por

Sh-gry/dk gry

Ls-tan/gry f/mxln dns sl fos no por

Ls-crm fxln mhd fos ool gd ooc por nsfo

Ls-crm/lt tan fxln mhd/dns sl clkly no por

Ls-AA

----- Stark 4173 -1113 -----

Ls-tan/gry f/mxln dns no por

Sh-gry/dk gry

Ls-gry/tan/brn f/mxln dns no por with sm Ls-lt gry (5 pcs) f/mxln mhd sl fos trc inter xln/vug por drk brn to blk dead oil stn vssfo on brk no odor

Ls-AA

Ls-gry f/xln mhd fos sl ool sub clkly no por and Ls-wt fxln soft clkly no por

Ls-tan/lt gry f/mxln dns sl fos no por and Ls-wt fxln soft clkly no por

Ls-crm/lt tan/lt gry fmxln dns sl clkly sl fos no por and Ls-wt fxln soft clkly no por

Ls-AA

Ls-crm/lt gry/tan fxln dns no por sm Cht-wt fsh opa

----- Hushpuckney 4219 -1159 -----

Sh-blk carb

Ls-tan/gry/brn fxln mhd/dns no por sm Cht-wt/gry fsh opa

Sh-gry/dk gry

Ls-tan/lt gry/gry fxln dns no por sm Ls-brn (3 pcs) fxln mhd fr/gd vug por dk brn spt stn gd cut fsfo on brk

Ls-tan/lt gry fxln mhd sl fos sl clkly no por sm Ls-crm fxln mhd ool no por

Ls-tan fxln mhd sl clkly no por sm Cht-lt gry fsh opa

Ls-tan/gry f/mxln mhd sl fos no por

Ls-tan/lt gry fxln dns no por

----- Base/Kansas City 4261 -1201 -----

Ls-tan/lt gry fxln dns no por sm Cht-crm fsh opa

Sh-gry/dk gry

Ls-wt fxln soft clkly pr inter xln por nsfo

Ls-tan fxln mhd no por sm Ls-lt gry fxln mhd fos ool no por

Ls-tan fxln mhd/dns no por

----- Marmaton 4285 -1225 -----

Sh-gry/dk gry

Sh-gry/dk gry/gry grn sl slity

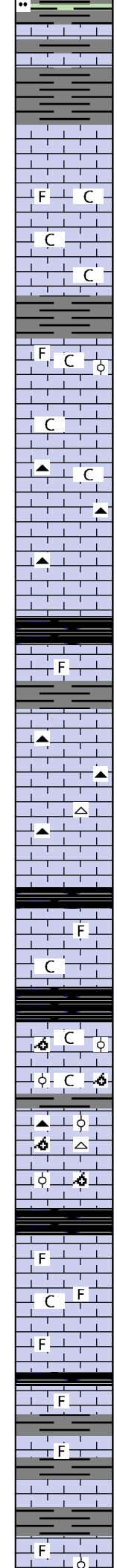
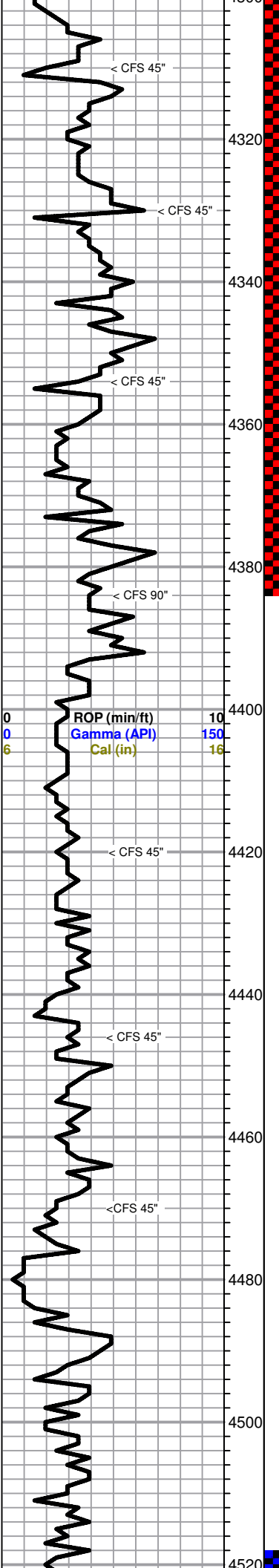
Sh-AA

DST No. 2
 4068 to 4150
 30-45-45-60
 1st Open: Weak 2" blow
 2nd Open: Weak 1" blow
 Recovery: 140' Mud with oil spots and 6" of oil on top
 IHP 2001 FHP 1927
 IFP 37-59 FFP 63-90
 ISIP 1193 FSIP 1179
 Temp 111°

Pulled 10 stand short trip at 4150', then cir for test - 90"

Mud Data at 4150'
 7:30 am on 4-13-14
 Wt 9.3 Vis 52 WL 8
 pH 10.5 Chl 6500 Sol 6.9%
 YP 19 LCM 2#

DST No. 3
 4170 to 4384
 30-45-30-60
 1st Open: BOB in 20 sec
 2nd Open: BOB in 1 min
 Recovery: 2600 SMCW
 (3%M, 97%W
 Chl 47,000 ppm)
 IHP 2093 FHP 1988
 IFP 298-962 FFP 976-1203
 ISIP 1268 FSIP 1270
 Temp 117°

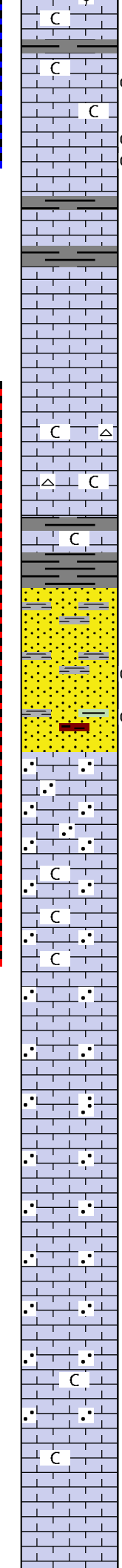
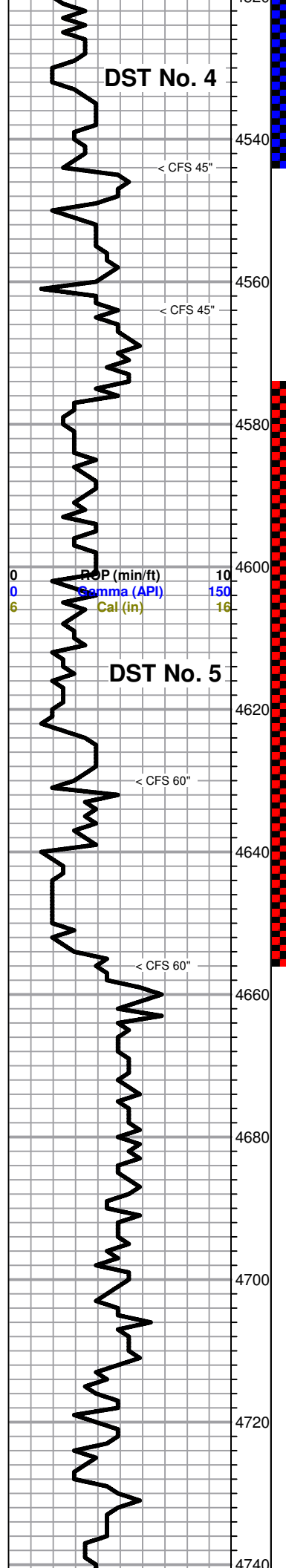


Ls-tan/gry f/mxln dns no por
 Sh-gry/dk gry
 Ls-tan/lt gry f/mxln dns no por
 Sh-gry/dk gry
 ----- **Altamont 4318 -1258** -----
 Ls-tan/lt gry fxln mhd/dns no por
 Ls-tan f/mxln dns sl clkly sl fos no por
 Ls-crm/lt tan/lt gry fxln dns sl clkly no por
 Ls-AA
 Sh-gry/dk gry
 Ls-crm/lt gry/tan fxln dns sl clkly no por sm Ls-crm fxln mhd fos ool no por
 Ls-crm/lt gry/tan fxln mhd pr inter xln pos nsfo
 Ls-crm/tan fxln dns sl clkly no por
 Ls-crm/tan fxln mhd sl clkly no por sm Cht-lt gry fsh opa
 Ls-crm/tan fxln mhd/dns no por sm Cht-AA
 Ls-crm/tan fxln dns no por sm Cht-lt gry/brn fsh opa
 Ls-crm/lt gry fxln mhd/dns no por
 Sh-blk carb
 ----- **Pawnee 4391 -1331** -----
 Ls-tan/gry fxln dns sl fos no por
 Sh-gry/dk gry
 Ls-lt gry/crm fxln dns no por sm Cht-gry/brn fsh opa
 Ls-AA sm Cht-gry/brn fsh opa
 Ls-lt gry/gry fxln dns no por sm Cht-wt/gry fsh opa
 Ls-AA
 Sh-blk carb
 ----- **Myrick Station 4428 -1368** -----
 Ls-crm/tan fxln mhd sl clkly no por sm Ls-lt gry fxln mhd fos no por
 Sh-blk carb
 ----- **Fort Scott 4444 -1384** -----
 Ls-gry/tan fxln mhd sl clkly fos ool and oom no por
 Ls-tan/lt gry fxln dns no por
 Ls-tan/crm fxln mhd sl clkly no por sm Ls-tan fxln mhd fos ool oom no por
 Sh-gry/dk gry
 Ls-tan/crm fxln mhd sl clkly no por sm Ls-tan fxln mhd fos ool oom no por and sm Cht-wt/gry wt fsh opa
 Ls-tan/gry fxln dns no por sm Ls-tan/brn fxln mhd fos ool and oom no por
 ----- **Cherokee Shale 4470 -1410** -----
 Sh-blk carb
 Ls-lt gry/gry fxln dns sl fos no por
 Ls-lt gry mxln soft fos clkly pr inter xln por nsfo
 Ls-lt gry/gry fxln dns sl fos no por
 Sh-blk carb
 Ls-gry/brn f/mxln mhd/dns sl fos no por
 Sh-gry/dk gry
 Ls-gry/brn f/mxln mhd/dns sl fos no por
 Sh-gry/dk gry
 Ls-gry/brn f/mxln mhd/dns no por
 Sh-gry/dk gry
 Ls-lt gry/gry/brn f/mxln mhd/dns sl fos no por sm Ls-gry f/mxln

Pulled 15 stand short trip at 4384', then cir for test - 90"

Mud Data at 4384'
 9:00 am on 4-14-14
 Wt 9.2 Vis 53 WL 9.6
 pH 10 Chl 7000 Sol 6%
 YP 19 LCM 1#

DST No. 4
 4518 to 4544
 30-45-45-60
 1st Open: BOB in 28"
 2nd Open: BOB in 25"
 Recovery: 275' GIP
 45' GO (35%G, 65%O
 27 deg grav corr)
 100' GMCO (20%G, 40%M
 10% O)



mhd sub clkly fos sl ool no por

Sh-gry/dk gry

Ls-lt gry/crm fxln dns sl clkly no por

Ls-crm fxln mhd pr inter xln/vug por brn spt stn fr cut ssfo on brk no odor

Ls-crm/lt gry fxln dns sl clkly no por

Ls-lt gy fxln mhd pr inter xln por brn spt stn sl cut ssfo on brk no odor

Ls-AA

Ls-lt gry/tan fxln dns no por

----- **Johnson Zone 4550 -1490** -----

Ls-tan/gry fxln mhd/dns no por

Sh-gry/dk gry

Ls-tan/gry fxln mhd no por

Ls-tan/gry fxln dns no por

Ls-AA

Ls-tan/lt gry f/mxln mhd sub clkly no por sm Cht-wt fsh opa

Ls-AA sm Cht-wt fsh opa

----- **Base Penn Lime 4593 -1533** -----

Ls-tan/lt gry/crm fxln mhd sl clkly no por

----- **Morrow 4598 -1538** -----

Sh-gry/dk gry

Ss-wt fgrn sub ang well sorted tite cement nsfo with one piece Ss-lt gry f/mgrn sub ang tite cement sl gils fr cut fsfo on brk sm Sh-gry/djk gry

Ss-wt fgrn sub ang well sorted tite cement nsfo with sm Ss-lt gry f/mgrn well sorted tite cement nsfo and one piece Ss-lt gry fgrn sub ang sl gils fr cut ssfo

Ss-wt/lt grn fgrn sub ang well sorted tite cement nsfo and two pieces Ss-lt gry fgrn sub ang tite cement gsfo on brk gd cut fr odor sm Sh-gry/dk gry

Ss-wt/lt gry fgrn sub ang well sorted tite cement nsfo with one piece Ss-lt gry fgrn sub ang well sorted sl gils fsfo on brk sm Sh-gry/grn/mar

----- **Mississippi 4626 -1566** -----

Ls-wt fxln dns sdy no por

Ls-AA

Ls-crm/tan fxln to sl gran mhd sl clkly no por

Ls-AA

Ls-AA

Ls-tan f/mxln to sl gran dns no por

Ls-wt/crm gran dns no por

Ls-AA

Ls-wt gran dns no por

Ls-AA

Ls-wt gran dns no por

Ls-AA

Ls-wt/lt gry fgran mhd/dns no por sm Ls-wt fgran mhd clkly no por

Ls-AA

Ls-crm/tan fxln to fgran dns no por

Ls-crm/tan fxln to sl gran mhd/dns no por

IHP 2307 FHP 2218 40%O)

IFP 31-52 FFP 60-73

ISIP 1324 FSIP 1306

Temp 116°

Pulled 10 stand short trip at 4544', then cir for test - 90"

Mud Data at 4544'

11:55 am on 4-15-14

Wt 9.3 Vis 57 WL 9.6

pH 10.5 Chl 7200 Sol 6.5%

YP 18 LCM 1#

DST No. 5

4574 to 4656

30-45-30-60

1st Open: BOB in 4"

2nd Open: BOB in 5"

Recovery: 1120' SMCW with oil spots in tool

Chl 32,000 ppm

IHP 2351 FHP 2170

IFP 114-419 FFP 440-610

ISIP 997 FSIP 943

Temp 125°

Pulled 10 stand short trip at 4656', then cir for test - 90"

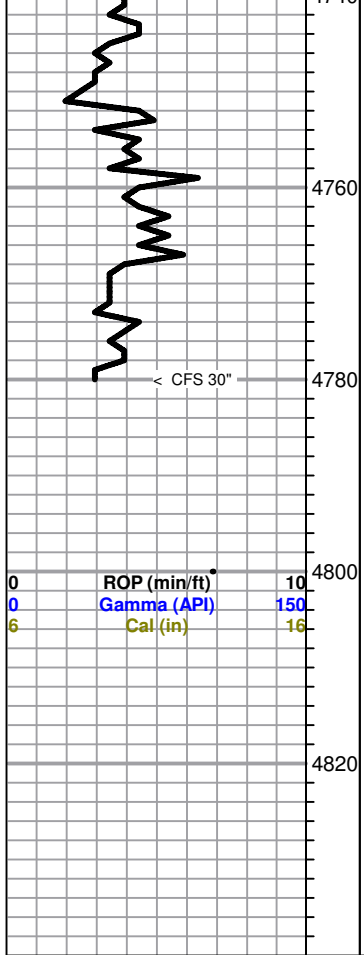
Mud Data at 4656'

11:00 am on 4-16-14

Wt 9.3 Vis 64 WL 10.4

pH 10 Chl 7500 Sol 6.4%

YP 22 LCM 2#



Ls-AA

Ls-crm/tan f/mxln mhd/dns no por sm Ls-wt fgran mhd no por

Ls-AA






Ls-AA

Ls-crm/tan f/mxln mhd/dns no por

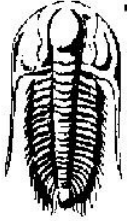
----- RTD 4780 -1720 -----

Finished Drilling at 9:52 am on 4-17-14. Pulled 10 stand short trip, then Cir for Log - 90"

Finished Logging at 7:15 pm on 4-17-14

-  Ritchie Baker 1 31B dst 1-1.jpg
-  Ritchie _1 Baker 31B dst 2-1.jpg
-  Ritchie _1 Baker 31B dst 3_2-1.jpg
-  Ritchie Baker 31B 1 dst 4 (1)-2.jpg
-  Ritchie _1 Baker 31B dst 5_2-1.jpg

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

 <p style="font-size: 2em; font-weight: bold; margin: 0;">TRILOBITE TESTING, INC.</p>	<h2 style="margin: 0;">DRILL STEM TEST REPORT</h2>
Ritchie Exploration 8100 E 22nd St N #700 Wichita, Ks 67278-3188 ATTN: Mac Armstrong	31 15s 34w Logan, Ks #1 Baker 31B Job Ticket: 57632 DST#:1 Test Start: 2014.04.12 @ 08:48:00

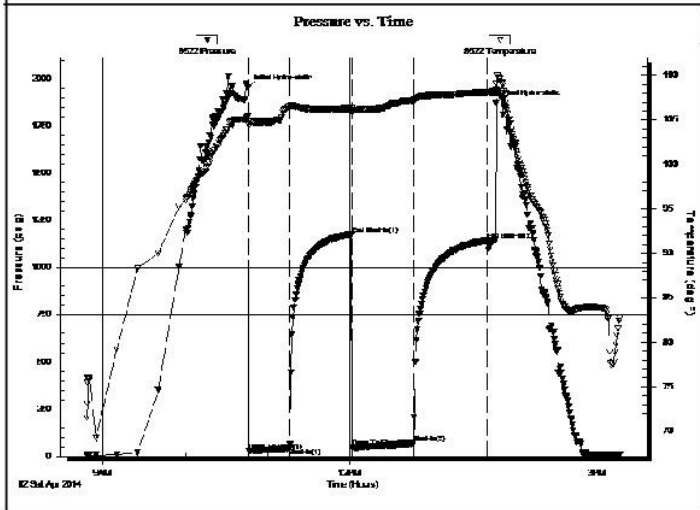
GENERAL INFORMATION:

Formation: LKC - E & F	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: 0.00 ft (KB)	Tester: Bradley Walter
Time Tool Opened: 10:46:00	Unit No: 69
Time Test Ended: 15:17:30	Reference Elevations: 3060.00 ft (KB)
Interval: 3993.00 ft (KB) To 4025.00 ft (KB) (TVD)	3055.00 ft (CF)
Total Depth: 4025.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Good

Serial #: 8522 Outside

Press@RunDepth: 68.00 psig @ 3994.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.04.12	End Date: 2014.04.12
Start Time: 08:48:05	End Time: 15:17:29
	Last Calib.: 2014.04.12
	Time On Btm: 2014.04.12 @ 10:45:45
	Time Off Btm: 2014.04.12 @ 13:46:45

TEST COMMENT: IF: 3/4" in blow.
 IS: No return.
 FF: Surface blow.
 FS: No return.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1952.02	105.39	Initial Hydro-static
1	28.56	104.35	Open To Flow (1)
30	43.16	106.49	Shut-In(1)
76	1177.84	106.28	End Shut-In(1)
76	46.41	105.83	Open To Flow (2)
121	68.00	107.17	Shut-In(2)
174	1145.52	108.11	End Shut-In(2)
181	1871.59	108.44	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
75.00	w cm 60m 40w w/oil spots	0.37

Gas Rates			
	Chole (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
 8100 E 22nd St N #700
 Wichita, Ks
 67278-3188
 ATTN: Mac Armstrong

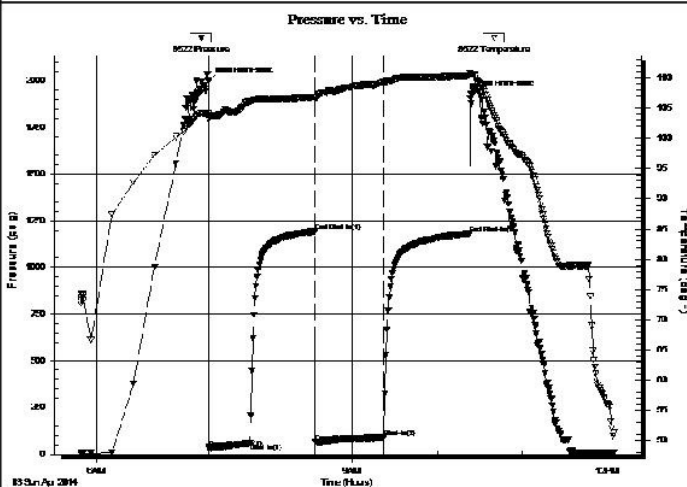
31 15s 34w Logan, Ks
#1 Baker 31B
 Job Ticket: 57633 **DST#:2**
 Test Start: 2014.04.13 @ 05:49:00

GENERAL INFORMATION:

Formation: **LKC - G-I**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 07:19:15
 Time Test Ended: 12:05:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 69
Interval: 4008.00 ft (KB) To 4150.00 ft (KB) (TVD)
 Total Depth: 4150.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Reference Elevations: 3060.00 ft (KB)
 3055.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8522 Outside
 Press@RunDepth: 90.15 psig @ 4009.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.13 End Date: 2014.04.13 Last Calib.: 2014.04.13
 Start Time: 05:49:05 End Time: 12:04:59 Time On Btm: 2014.04.13 @ 07:19:00
 Time Off Btm: 2014.04.13 @ 10:23:45

TEST COMMENT: IF: 2" blow.
 IS: No return.
 FF: 1" blow.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2001.09	104.23	Initial Hydro-static
1	36.53	103.11	Open To Flow (1)
30	59.15	106.09	Shut-In(1)
75	1192.89	106.85	End Shut-In(1)
76	62.71	106.40	Open To Flow (2)
124	90.15	109.27	Shut-In(2)
184	1178.89	110.40	End Shut-In(2)
185	1926.66	110.64	Final Hydro-static

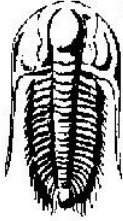
Recovery

Length (ft)	Description	Volume (bbl)
140.00	mud 100m (oil spots) 6" oil on top	0.84

Gas Rates

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

* Recovery from multiple tests

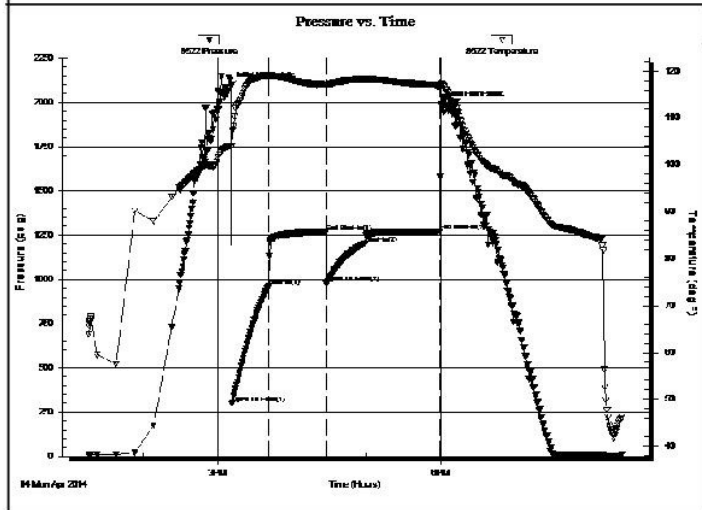
 <p>TRILOBITE TESTING, INC.</p>	<h2 style="margin:0;">DRILL STEM TEST REPORT</h2>
Ritchie Exploration 8100 E 22nd St N #700 Wichita, Ks 67278-3188 ATTN: Mac Armstrong	31 15s 34w Logan, Ks #1 Baker 31B Job Ticket: 57634 DST#:3 Test Start: 2014.04.14 @ 13:16:00

GENERAL INFORMATION:

Formation: LKC -K through Alta	Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock: 0.00 ft (KB)	Tester: Bradley Walter
Time Tool Opened: 15:11:15	Unit No: 69
Time Test Ended: 20:26:00	Reference Elevations: 3060.00 ft (KB)
Interval: 4170.00 ft (KB) To 4384.00 ft (KB) (TVD)	3055.00 ft (CF)
Total Depth: 4384.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Good

Serial #: 8522	Outside	Capacity: 8000.00 psig
Press@RunDepth: 1203.13 psig @ 4171.00 ft (KB)	Start Date: 2014.04.14	Last Calib.: 2014.04.14
Start Time: 13:16:05	End Date: 2014.04.14	Time On Btm: 2014.04.14 @ 15:10:45
	End Time: 20:25:59	Time Off Btm: 2014.04.14 @ 17:59:45

TEST COMMENT: IF: BOB @ 20 sec.
 IS: No return.
 FF: BOB @ 1 min.
 FS: No return.




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2092.91	104.04	Initial Hydro-static
1	298.29	103.87	Open To Flow (1)
31	961.77	119.07	Shut-In(1)
77	1267.53	117.11	End Shut-In(1)
77	976.10	116.90	Open To Flow (2)
108	1203.13	118.25	Shut-In(2)
168	1270.28	116.81	End Shut-In(2)
169	1988.29	117.08	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
2600.00	mcw 3m 97w	35.35

* Recovery from multiple tests

Gas Rates			
	Chole (inches)	Pressure (psig)	Gas Rate (Mcf/d)

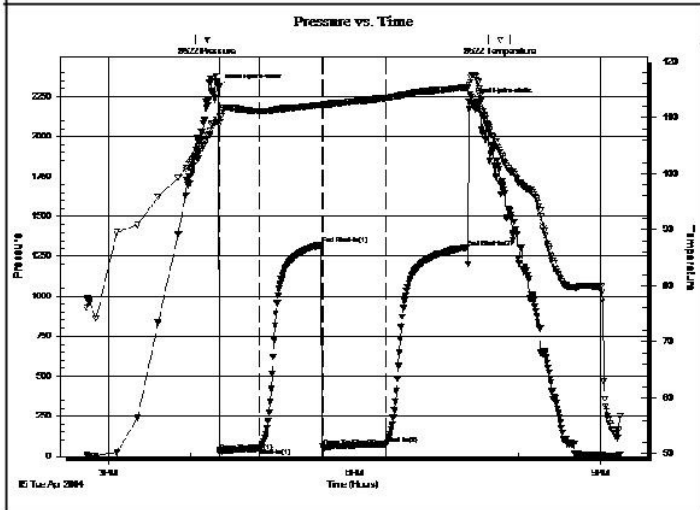
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Ritchie Exploration 8100 E 22nd St N #700 Wichita, KS 67278-3188 ATTN: Mac Armstrong	31 15s 34w Logan,KS Baker 31B #1 Job Ticket: 57635 DST#: 4 Test Start: 2014.04.15 @ 14:44:00

GENERAL INFORMATION:

Formation: Cherokee Lime Deviated: No Whipstock: ft (KB) Time Tool Opened: 16:20:45 Time Test Ended: 21:14:00	Test Type: Conventional Bottom Hole (Reset) Tester: Bradley Walter Unit No: 69
Interval: 4518.00 ft (KB) To 4544.00 ft (KB) (TVD) Total Depth: 4544.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Good	Reference Elevations: 3060.00 ft (KB) 3055.00 ft (CF) KB to GR/CF: 5.00 ft

Serial #: 8522	Outside				
Press@RunDepth:	73.46 psig @	4519.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2014.04.15	End Date:	2014.04.15	Last Calib.:	2014.04.15
Start Time:	14:44:05	End Time:	21:13:59	Time On Btm:	2014.04.15 @ 16:20:30
				Time Off Btm:	2014.04.15 @ 19:23:15

TEST COMMENT: IF: BOB @ 28 min.
 IS: No return
 FF BOB @ 25 min.
 FS: 1/2" return.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2306.53	109.63	Initial Hydro-static
1	30.99	108.94	Open To Flow (1)
30	51.75	111.14	Shut-In(1)
76	1324.49	112.23	End Shut-In(1)
76	59.87	112.18	Open To Flow (2)
122	73.46	113.47	Shut-In(2)
182	1306.23	115.38	End Shut-In(2)
183	2218.21	115.68	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
100.00	gmco 20g 40m 40o	0.49
45.00	go 35g 65o	0.42
0.00	275' GIP	0.00

* Recovery from multiple tests

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
 8100 E 22nd St N #700
 Wichita, Ks
 67278-3188
 ATTN: Mac Armstrong

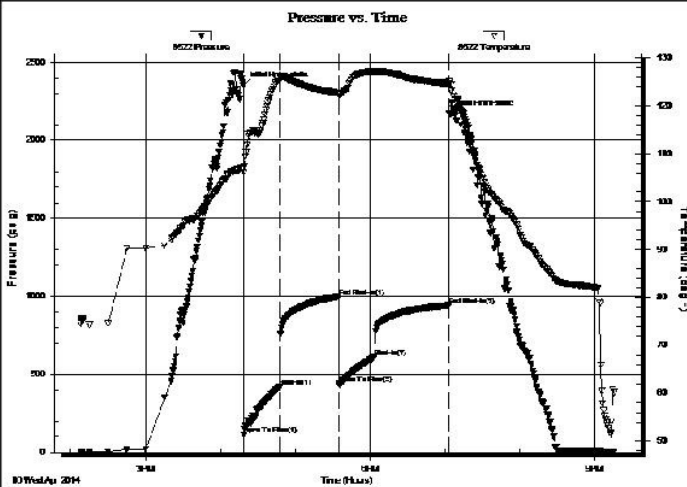
31 15s 34w Logan, Ks
#1 Baker 31B
 Job Ticket: 57636 **DST#:5**
 Test Start: 2014.04.16 @ 14:08:00

GENERAL INFORMATION:

Formation: **4656**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 16:18:45
 Time Test Ended: 21:15:30
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 69
Interval: 4574.00 ft (KB) To 4656.00 ft (KB) (TVD)
 Total Depth: 4656.00 ft (KB) (TVD)
 Reference Elevations: 3060.00 ft (KB)
 3055.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 5.00 ft

Serial #: 8522 Outside
 Press@RunDepth: 610.30 psig @ 4575.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.16 End Date: 2014.04.16 Last Calib.: 2014.04.16
 Start Time: 14:08:05 End Time: 21:15:29 Time On Btm: 2014.04.16 @ 16:18:30
 Time Off Btm: 2014.04.16 @ 19:03:45

TEST COMMENT: IF: BOB @ 4 min.
 IS: No return
 FF: BOB @ 5 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2351.00	106.90	Initial Hydro-static
1	114.01	106.18	Open To Flow (1)
29	418.90	125.22	Shut-In(1)
77	996.59	122.56	End Shut-In(1)
77	439.65	122.32	Open To Flow (2)
105	610.30	127.15	Shut-In(2)
165	943.02	124.61	End Shut-In(2)
166	2169.84	124.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1120.00	smcw 3m 97w (oil spots in tool)	14.59

Gas Rates

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

* Recovery from multiple tests