

**Lario Oil & Gas Company  
Krause No.1-7  
1323' FSL and 2553' FWL  
3' N and 87' W of S2  
Sec 7 T18S R34W  
Scott County, Kansas**

Geological Report  
by

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

Scale 1:240 Imperial

Well Name:	Krause No. 1-7	
Surface Location:	Sec 7 T18S R34W	
Bottom Location:	1323' FSL and 2553' FWL	
API:	15-171-20920	
License Number:	5214	
Spud Date:	11/26/2012	Time: 11:00 AM
Region:	Scott County, Kansas	
Drilling Completed:	12/8/2012	Time: 5:15 PM
Surface Coordinates:		
Bottom Hole Coordinates:		
Ground Elevation:	3149.00ft	
K.B. Elevation:	3156.00ft	
Logged Interval:	3500.00ft	To: 5170.00ft
Total Depth:	5170.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

**OPERATOR**

Company:	Lario Oil and Gas Company	
Address:	301 South Market Wichita, Kansas 67202	
Contact Geologist:	John Hastings	
Contact Phone Nbr:	316-265-5611	
Well Name:	Krause No. 1-7	
Location:	Sec 7 T18S R34W	API: 15-171-20920
Pool:	Oil	Field: Wildcat
State:	Kansas	Country: USA

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: 101° 07' 07.684" Latitude: 38° 30' 00.533"  
 N/S Co-ord:  
 E/W Co-ord:

**CONTRACTOR**

Contractor: Pickrell Drilling Company  
 Rig #: 10  
 Rig Type: mud rotary  
 Spud Date: 11/26/2012 Time: 11:00 AM  
 TD Date: 12/8/2012 Time: 5:15 PM  
 Rig Release: 12/9/2012 Time: 3:00 AM

**ELEVATIONS**

K.B. Elevation: 3156.00ft Ground Elevation: 3149.00ft  
 K.B. to Ground: 7.00ft

**NOTES**

Date	Depth at 7 am	Activity
11-26-12	MIRU	Spud at 11 pm
11-27-12	287	Drilling
11-28-12	723	Drilling
11-29-12	1847	Drilling
11-30-12	2473	Drilling
12-01-12	3080	Drilling
12-02-12	3620	Drilling
12-03-12	4085	CFS
12-04-12	4380	CFS
12-05-12	4533	OB with DST No. 1
12-06-12	4624	OB with DST No. 2
12-07-12	4790	Drilling
12-08-12	5040	Drilling
12-09-12	5170	P & A

Surface Casing: 8 5/8" 24# at 346'  
 Production Casing: None set

Deviation: 350' - 3/4°, 846' - 3/4°, 1348' - 1/2°, 1847' - 1/2°, 2347' - 1/2°, 2878' - 3/4°, 4533' - 3/4°, 5170' - 3/4°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	JZ	7 7/8"	HA1P	350	2058	28 1/4
	JZ	7 7/8"	HA20Q	2058	4624	95 1/2
	JZ	7 7/8"	HA30Q	4624	5170	

**Drill Stem Tests:**

DST No. 1 4503 to 4533 Formation: Marmaton  
 30-45-45-60

Recovery: 50' MCW (30%M, 70%W)  
 124' W (Chl 50,000 ppm)

IHP 2242 FHP 2209  
 IFP 21-55 FFP 59-99  
 ISIP 1140 FSIP 1118  
 Temp 124°

DST No. 2 4550 to 4624 Formation: Marmaton, Pawnee  
 30-45-45-60

Recovery: 154' WCM (30%W, 70%M)  
 248' MCW (50%M, 50%W)  
 748' W (Chl 50,000 ppm)

IHP 2298 FHP 2242  
 IFP 10-281 FFP 280-538







Formation	Sample	E-Log	Datum	Well 1	Well 2
Anhydrite	2410	2410	+746	-9	-4
B/Anhydrite	2429	2429	+727	-9	-7
Stotler	3610	3610	-454	-9	-8
Topeka	3754	3754	-598	-11	-8
Heebner	4010	4010	-854	-13	-12
Toronto	4027	4027	-871	-12	-19
Lansing	4058	4058	-902	-16	-16
Muncie Creek	4247	4247	-1091	-6	-17
Stark	4348	4348	-1192	-11	-10
Hushpuckney	4405	4405	-1249	-14	-19
B/Kansas City	4466	4466	-1310	-3	-11
Marmaton	4500	4500	-1344	-6	-12
Pawnee	4595	4595	-1439	-12	-7
Fort Scott	4601	4601	-1465	-12	-11
Cherokee Shale	4635	4635	-1479	-14	-12
Lower Cher Shale	4665	4665	-1509	-18	-16
Cherokee Limestone	4721	4721	-1565	-14	-12
Morrow	4800	4800	-1644	-13	-9
Mississippi	4902	4902	-17	-	-
Saint Louis					
Spergen					
Total Depth	5170	5170	-2014		

Well 1: Lario Oil & Gas Company Gaschler Trust No. 1-20 1235' FNL and 1775' FWL Sec 20 T18S R34W  
 Well 2: Lario Oil & Gas Company Felt Farms No. 1-11 1500' FSL and 560' FEL Sec 11 T18S R35W

Due to the Drill Stem Tests results and the electric log calculations, it was decided to plug this test well.

Respectfully submitted,  
 Macklin M. Armstrong

**ROCK TYPES**

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

**ACCESSORIES**

**MINERAL**

- ∩ Glauconite
- ≡ Nodules
- P Pyrite
- Sandy
- Mc Mica

**FOSSIL**

- F Fossils < 20%
- ∩ Pellets




**STRINGER**

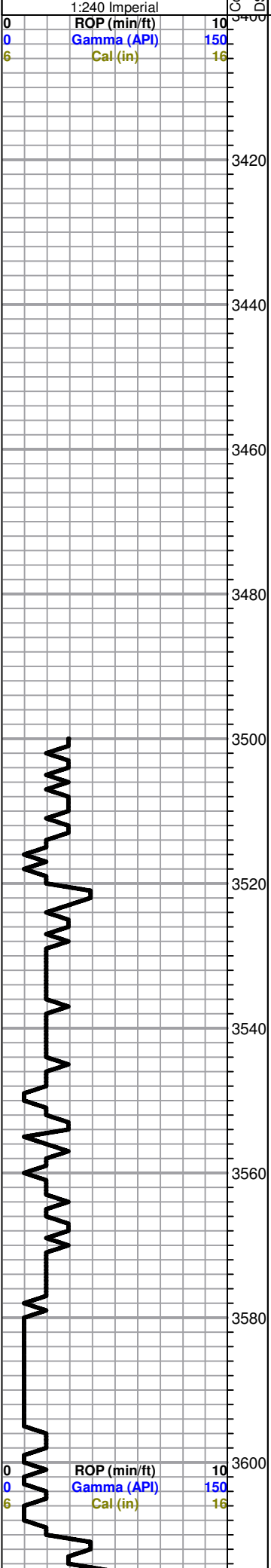
- Sandstone
- Siltstone

**OTHER SYMBOLS**

**DST**

-  DST Int
-  DST alt
-  Core

Curve Track #1	Depth   Intervals	DST	Lithology	Oil Show	Geological Descriptions	Comment
ROP (min/ft)						
Gamma (API)						
Cal (in)						



Lario Oil & Gas Company  
 Krause No. 1-7  
 1323' FSL and 2553' FWL  
 3' N and 87' W of S2  
 Sec 7 T18S R34W  
 Scott County, Kansas  
 GL 3149 KB 3156

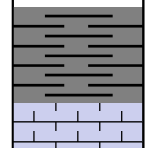
Mud Program:  
 Mud Co/Service Mud, Inc.  
 Chemical Gel/Premix

Sample Cuttings:  
 KGS Well Sample Library

Testing: Trilobite Testing

Electric Logs:  
 Nabors Production and  
 Completion Services  
 DIL  
 CNL/CDL  
 MEL

Deviation:  
 350' - 3/4°  
 846' - 3/4°  
 1348' - 1/2°  
 1847' - 1/2°  
 2347' - 1/2°  
 2878' - 3/4°  
 4533' - 3/4°  
 5170' - 3/4°

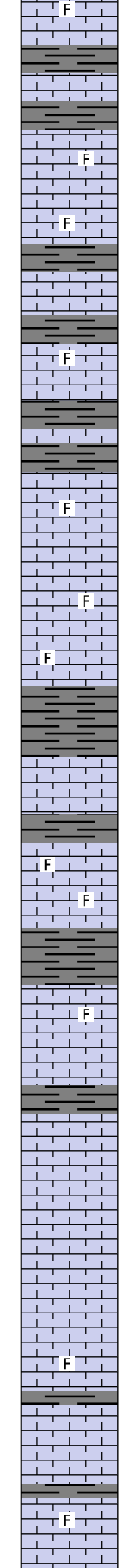
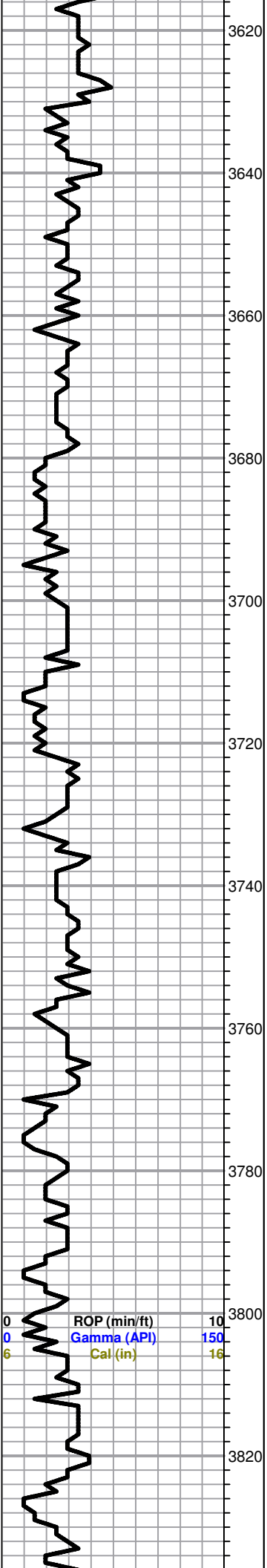


Sh-gry/dk gry

-----Stotler 3610 -454-----

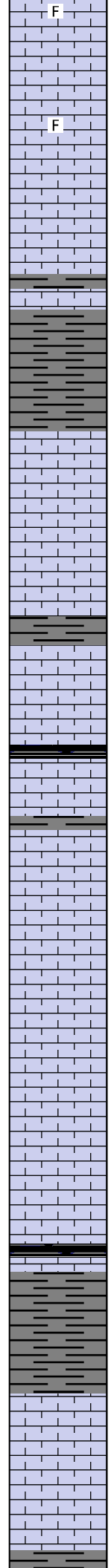
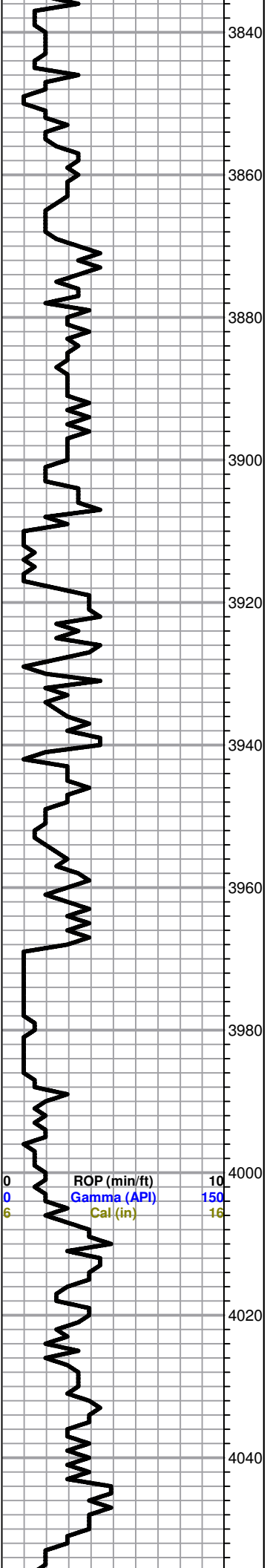
Ls-gry fxln dns fos no por

All formation tops on  
 this geo log have been  
 correlated back to the  
 e-log for accuracy



Ls-AA  
 Sh-gry/dk gry  
 Ls-gry fxl n dns fos no por  
 Sh-gry/dk gry  
 Ls-gry fxl n dns fos no por  
 Ls-AA  
 Sh-gry/dk gry  
 Ls-gry/tan f/mxl n dns fos no por  
 Sh-gry/dk gry  
 Ls-gry/tan f/mxl n dns fos no por  
 Sh-gry/dk gry  
 Ls-gry/tan f/mxl n mhd fos no por  
 Sh-gry/dk gry  
 Ls-tan f/mxl n mhd fos no por  
 Ls-AA  
 Ls-tan/lt gry f/mxl n mhd/dns sl fos no por  
 Ls-AA  
 Sh-gry/dk gry  
 Ls-tan/gry f/mxl n dns sl fos no por  
 Sh-gry/dk gry  
 Ls-tan/gry fxl n dns sl fos no por  
 Ls-tan/gry f/mxl n mhd/dns sl fos no por  
 Sh-gry/dk gry  
 -----**Topeka 3754 -598**-----  
 Ls-tan f/mxl n mhd sl fos trc inter xln por nsfo  
 Ls-tan/gry f/mxl n dns no por  
 Sh-gry/dk gry  
 Ls-tan/gry sm mottled dk gry and blk f/mxl n mhd/dns sl fos no por  
 Ls-tan/gry f/mxl n dns sl fos no por  
 Ls-gry/tan f/mxl n mhd/dns no por  
 Ls-gry/tan f/mxl n mhd sl fos trc inter xln por nsfo  
 Ls-gry/tan f/mxl n dns sl fos no por  
 Ls-gry/tan f/mxl n mhd sl fos trc inter xln por nsfo  
 Ls-tan/gry f/mxl n dns sl fos no por  
 Sh-gry/dk gry  
 Ls-tan/gry f/mxl n dns fos no por  
 Sh-gry/dk gry  
 Ls-tan mxln mhd fos fr inter xln por nsfo  
 Ls-tan f/mxl n dns sl fos no por

Mud Data at 3690'  
 10:30 am 12-02-12  
 Wt 8.8  
 Vis 47  
 WL 8  
 pH 10.5  
 Chl 6000  
 Sol 3.2%  
 YP 14  
 LCM 1#



Ls-tan f/mxln mhd sl fos no por sm Ls-gry/gry brn cxln mhd fos fr inter xln por nsfo

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

Ls-tan/gry f/mxln mhd sl fos trc inter xln por nsfo

F

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

Ls-tan/gry f/mxln mhd sl fos trc inter xln por nsfo

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

Sh-gry/dk gry

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

3880

Sh-gry/dk gry

Sh-AA

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

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

Ls-crm/tan f/mxln soft/mhd sl fos fr inter xln por nsfo

Ls-crm/tan fxln dns sl fos no por

3920

S-gry/dk gry

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

Ls-AA

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

3940

Sh-blk carb

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

Sh-gry/dk gry

Ls-crm/tan f/mxln dns sl clkly sl gils no por

3960

Ls-AA

Ls-crm/lt tan f/mxln mhd sl fos fr inter xln por nsfo

Ls-AA

Ls-AA

Ls-crm/tan f/mxln mhd sl clkly sl fos no por

Ls-AA

Ls-crm/tan f/mxln dns no por

-----Heebner 4010 -854-----

Ls-tan f/mxln dns no por

Sh-gry/dk gry

Sh-AA

-----Toronto 4027 -871-----

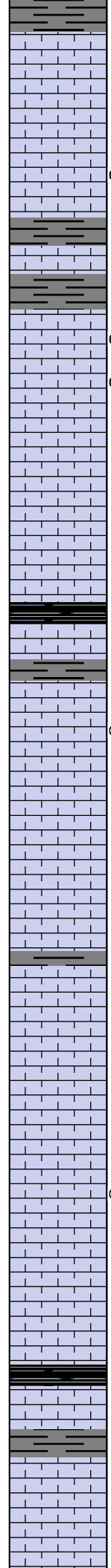
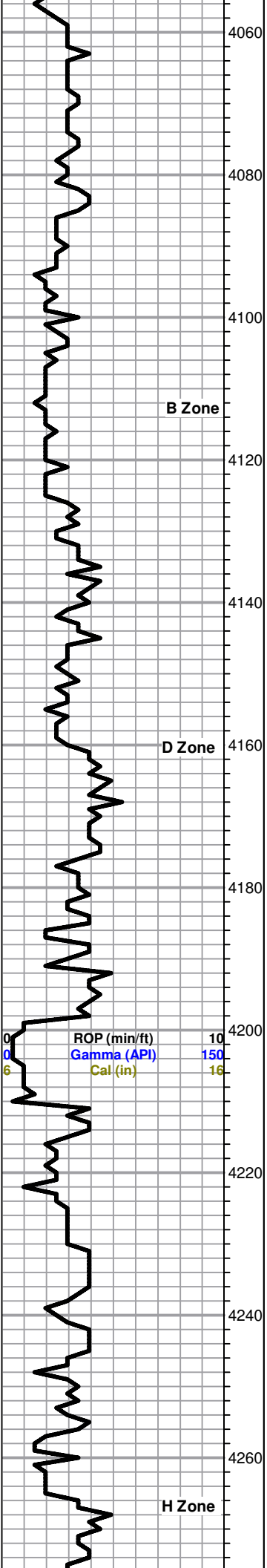
Ls-tan/gry fxln dns no por

Ls-tan/gry fxln dns sl gils no por sm Ls-crm fxln mhd clkly no por and sm Cht-grm/gry fsh opa

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

Sh-gry/dk gry

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



Sh-gry/dk gry

-----**Lansing 4058 -902**-----

Ls-crm/lt tan fxln dns sl clky no por sm Ls-tan fxln mhd with blk ool and Ls-crm fxln mhd fos ool no por wm Cht-wt fsh opa

Ls-AA with sm free crin and pyr

Ls-crm/lt tan fxln dns sl clky no por mostly barren with few pcs Ls-crm/tan fxln mhd fos sl ool trc inter fos/vug por dk brn spt stn sfso (3 pcs)

Ls-ctm/lt tan fxln dns sl clky no por

Sh-gry/dk gry

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

Sh-gry/dk gry

Ls-tan fxln dns sl clky no por mostly barren with few pcs Ls-tan fxln mhd pr vug por sl gils sl odor fsfo on brk (4 pcs)

Ls-AA with few pcs Ls-crm fxln mhd fos ool pr inter ool por dk brn stc stn sl odor fsfo on brk (3 pcs)

Ls-crm/lt tan fxln mhd sl fos sl gils no por

Ls-AA

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

Ls-AA

Sh-blk carb

Ls-crm/tan fxln mhd/dns no por

Sh-gry/dk gry

Ls-crm/lt gry/tan fxln dns no por

Ls-crm/lt gry fxln mhd/dns no por mostly barren with few pcs Ls-tan fxln mhd/dns trc vug por dk brn/blk dead oil sct stn vssfo on brk (4 pcs)

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

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

Ls-AA

Sh-gry/dk gry

Ls-tan/lt gry fxln dns no por

Ls-tan fxln soft clky trc inter xln por nsfo

Ls-AA

Ls-tan fxln dns no por

Ls-tan/lt gry fxln mhd no por

Ls-tan fxln mhd clky no por with few pcs lt brn spt stn nsfo

Ls-tan/lt gry fxln dns no por

Ls-crm/tanlt gry fxln dns no por

Ls-crm/lt tan fxln mhd clky no por

Ls-crm/lt tan fxln dns no por

-----**Muncie Creek 4247 -1091**-----

Sh-blk carb

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

Sh-gry/dk gry

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

Ls-tan f/mxln dns sl fos sl clky no por sm Cht-wt/lt gry fsh opa

Ls-crm/tan/ary fxln mhd/dns sl clky no por sm Cht-ary/wt fsh opa

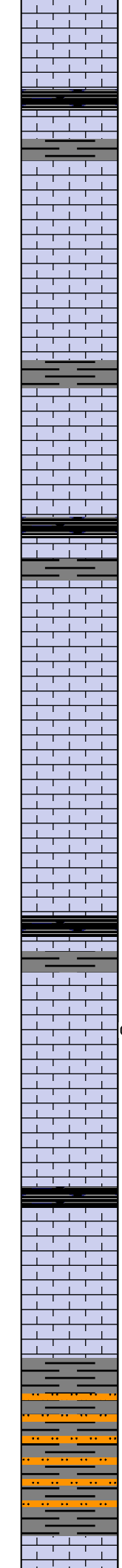
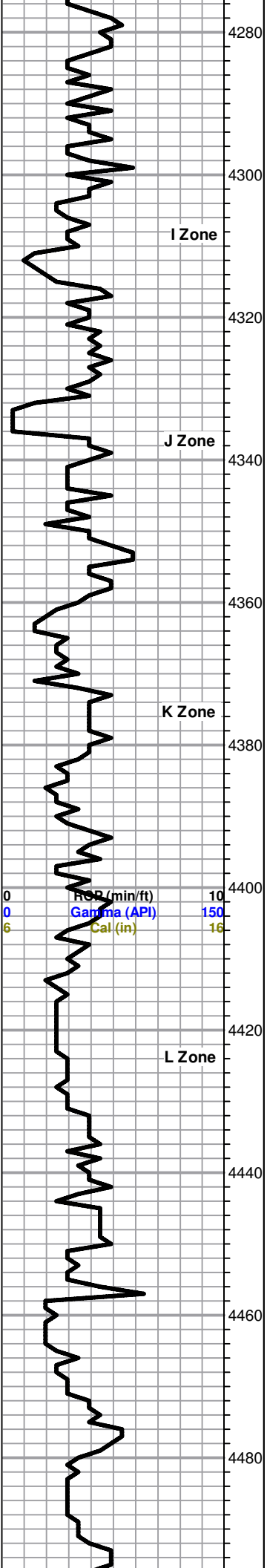
CFS at 4085' - 60"

CFS at 4115' - 45"

Mud Data at 4115'  
9:00 am 12-03-12  
Wt 9.2  
Vis 48  
WL 13.6  
pH 9  
Chl 9000  
Sol 5.8%  
YP 8  
LCM trc

CFS at 4168' - 45"

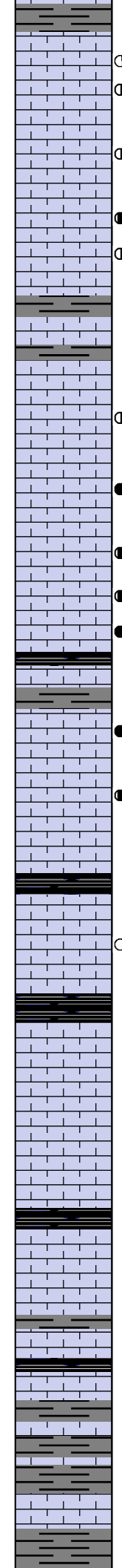
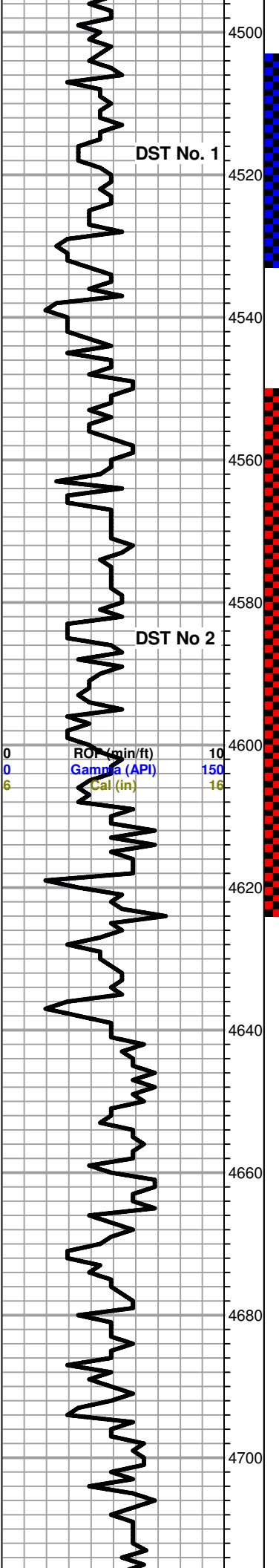
CFS at 4275' - 45"



Ls-crm/tan fxln dns no por sm Cht-AA  
 Ls-crm/tan fxln dns no por sm Cht-gry/wt fsh opa  
 Sh-blk carb  
 Ls-crm/tan fxln dns sl clky no por sm Cht-gry/wt fsh opa  
 Sh-gry/dk gry  
 Ls-tan fxln dns no por  
 Ls-tan f/mxln mhd sl fos no por  
 Ls-tan/lt gry f/mxln mhd/dns sl fos no por sm Cht-lt gry fsh opa  
 Ls-tan/gry f/mxln mhd sm pcs sl fos sub clky nsfo  
 Ls-tan/gry f/mxln sl fos dns no por with sm Cht-gry fsh opa  
 Ls-AA with sm Ls-brn f/mxln dns fos ool no por  
 Sh-gry/dk gry  
 Ls-tan/gry/brn f/mxln dns fos with dk brn ool no por  
 Ls-tan/gry f/mxln mhd fos ool and oom clky nsfo  
 Ls-tan/lt gry/brn f/mxln dns sl clky fos oom and ool no por  
 Ls-AA with sm Cht-wt/lt gry fsh opa  
 -----**Stark 4348 -1192**-----  
 Sh-blk carb  
 Ls-tan fxln dns no por  
 Sh-gry/dk gry  
 Ls-tan/gry fxln dns sl fos no por  
 Ls-tan/lt gry fxln mhd fos sl ool fr ooc por nsfo  
 Ls-tan/lt gry fxln mhd fos sl ool and oom trc ooc por nsfo  
 Ls-tan fxln dns sl clky no pos  
 Ls-gry/tan f/mxln mhd sl fos no por sm Ls-tan fxln mhd fos ool no por  
 Ls-gry/tan f/mxln dns sl fos no por  
 Ls-gry/tan f/mxln mhd fos no por sm Ls-tan fxln mhd fos ool no por  
 Ls-tan fxln dns sl fos no por  
 -----**Hushpuckney 4405 -1244**-----  
 Ls-gry/tan fxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-tan/gry f/mxln mhd fos no por sm Ls-tan fxln mhd fos ool no por  
 Ls-tan/gry f/mxln mhd fos no por mostly barren with few pcs Ls-crm fxln mhd pr vug por blk to dk brn spt stn sl gils faint odor dull fluor ssfo on brk (5 to 10 pcs in 15' and 30" cir slps)  
 Ls-tan/gry f/mxln mhd/dns sl fos no por  
 Ls-crm/tan/brn f/mxln dns fos oom sl clky no por  
 Ls-AA  
 Sh-blk carb  
 Ls-crm/lt tan f/mxln dns sl fos sl clky no por  
 Ls-crm/tan fxln mhd/dns sl fos no por  
 Ls-tan/lt gry f/mxln dns sl fos sl clky no por  
 -----**B/Kansas City 4466 -1310**-----  
 Sh-gry/dk gry/mar  
 Sh-gry/dk gry/mar/blk with sm Silt-grn  
 Sh-AA with sm Silt-grn  
 Sh-gry/dk gry/blk  
 Ls-gry/brn f/mxln dns sl fos no por sm Ls-tan fxln dns fos ool

CFS at 4275' - 45"  
 CFS at 4320' - 45"  
 CFS at 4350' - 45"  
 CFS at 4380' - 45"  
 Mud Data at 4401'  
 7:40 am 12-04-12  
 Wt 9.2  
 Vis 44  
 WL 8  
 pH 11  
 Chl 7000  
 Sol 5.9%  
 YP 15  
 LCM 3#  
 CFS at 4336' - 45"  
 DST No. 1  
 4503 to 4533  
 30-45-45-60  
 1st Open: Built to 6"





**Marmaton 4500 -1344**

Ls-gry/brn cxln to sl blkly dns sl to highly fos no por with few pcs  
 Ls-lt gry fxln dns fos ool blk tarry oil stn vssfo on brk (3 pcs)  
 Ls-gry/brn f/mxln dns sl fos no por with few pcs Ls-brn fxln mhd sl fos  
 pr vug por brn to blk spt stn fr cut dull fluor no odor ssfo on brk (5 pcs)  
 Ls-brn f/mxln dns sl fos no por  
 Ls-AA with few pcs Ls-tan fxln mhd trc vug por brn to blk stt stn fr cut dull flour  
 trc odor ssfo on brk (4 pcs) and few pcs Ls-lt gry fxln mhd fos ool fr inter ool por  
 brn spt stn fr cut dull flour very faint odor ssfo on brk (6 pcs)  
 Ls-tan/brn f/mxln dns sl fos no por  
 Ls-AA with sm Ls-lt gry fxln mhd fos ool fr inter ool por brn spt stn fr cut fr odor  
 f/gso on brk (10 pcs)  
 Ls-tan/brn fxln mhd fos no por with sm Ls-lt gry fxln mhd fos ool inter xln  
 por faint odor fr cut fsfo on brk (5 pcs)  
 Ls-tan/gry fxln dns sl fos no por  
 Sh-gry/dk grygrn  
 Ls-tan/gry fxln mhd/dns sl fos no por  
 Sh-gry/dk gry/grn  
 Ls-tan fxln dns sl fos no por  
 Ls-crm/tan fxln mhd/dns no por with few pcs Ls-crm/lt gry fxln mhd fos ool  
 fr inter ool por blk to brn stn ssfo on brk (2 pcs)  
 Ls-tan fxln dns no por  
 Ls-AA with sm Ls-crm/lt gry fxln mhd fos ool fr inter ool por brn spt stn  
 sl odor on brk gd cut gd gluur f/gso on brk (6 pcs)  
 Ls-tan fxln dns sl fos no por  
 Ls-AA with sm Ls-crm/lt gry fxln mhd fos ool fr inter ool por brn spt stn  
 sl odor on brk gd fluor fsfo on brk (10 pcs)  
 Ls-AA  
 Ls-crm fxln mhd fos ool gd vug/inter ool por brn to blk sct stn fr odor gd cut gd  
 fluor gsfo on brk (more than 10 pcs)  
 Sh-blk carb  
 Ls-tan/gry/brn fxln dns no por

**Pawnee 4595 -1439**

Ls-tan/gry/brn fxln dns no por with Ls-tan/lt gry fxln mhd fos ool fr inter ool por fr  
 cut fr fluor sl odor on brk f/gso on brk (more that 10 pcs)  
 Ls-tan/gry/brn fxln dns no sl fos no por  
 Ls-AA with sm Ls-lt gry fxln mhd fos ool fr vug/inter ool por fr cut fr fluor faint  
 odor on brk fsfo on brk (5 pcs)  
 Ls-tan/gry fxln dns sl fos no por  
 Ls-crm/tan/gry fxln dns sl clky no por  
 Sh-blk carb

**Fort Scott 4621 -1465**

Ls-tan/brn/gry fxln dns sl fos no por  
 Ls-tan/gry f/mxln dns sl fos no por with sm Ls-gry mxln dns fos with blk ool  
 no por and Ls-lt gry fxln mhd fos sl ool pr vug por blk tarry oil stn nsfo  
 Ls-tan/gry f/mxln dns sl fos no por

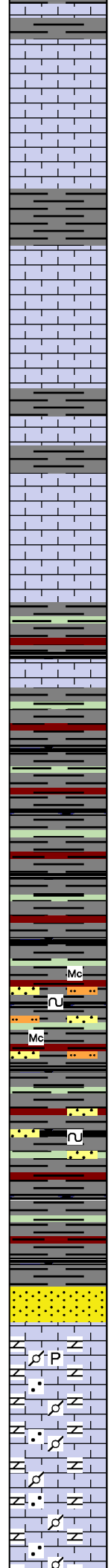
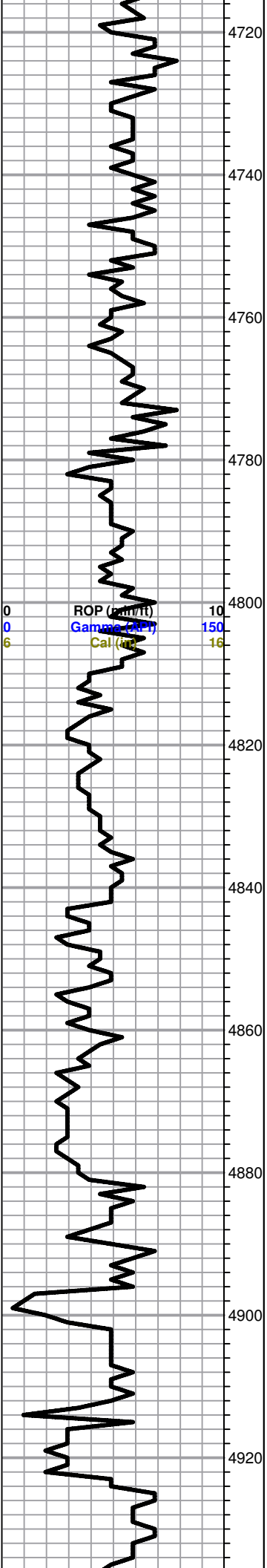
**Cherokee Shale 4635 -1479**

Sh-blk carb  
 Ls-gry/brn f/mxln dns sl fos no por with sm Ls-gry mxln dns fos with blk  
 ool no por  
 Ls-tan/gry/brn f/mxln very dns sl fos no por  
 Ls-gry/brn f/mxln dns no por with sm Ls-brn/gry fxln dns fos with blk  
 and brn ool no por  
 Ls-gry/brn f/mxln dns sl fos no por with sm Ls-gry/brn f/mxln mhd fos  
 ool dns no por with sm free crin and pyrite  
 Ls-gry/brn f/mxln dns no por sm Cht-gry fsh opaqa fos ool

**Lower Cher Sh 4665 -1509**

Sh-blk carb  
 Ls-tan/brn f/mxln dns fos no por  
 Ls-tan f/mxln mhd sl fos sl clky no por sm Cht-brn/gry fsh opaqa fos ool  
 Ls-tan/lt gry/brn f/mxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-tan/brn fxln dns no por  
 Sh-blk carb  
 Ls-tan/brn fxln dns no por  
 Sh-gry/dk gry  
 Sh-gry/dk gry  
 Sh-gry/dk gry  
 Ls-tan/brn f/mxln dns sl fos no por  
 Sh-gry/dk gry

1st Open: Built to 4"  
 2nd Open: Built to 4"  
 Recovery:  
 56' MCW (30%M,70%W)  
 124' W (Chl 50,000 ppm)  
 IHP 2242 FHP 2209  
 IFP 21-55 FFP 59-99  
 ISIP 1140 FSIP 1118  
 Temp 124°  
 Pipe Strap at 4533'  
 Long 4.18'  
 CFS at 4533' - 60"  
 Pulled 20 Stand Short Trip  
 at 4533', then Cir for Test -  
 90"  
 Mud Data at 4533'  
 8:20 am 12-05-12  
 Wt 9.3  
 Vis 57  
 WL 8.8  
 pH 10  
 Chl 6700  
 Sol 6.7%  
 YP 21  
 LCM 2#  
 CFS at 4584' - 45"  
 DST No. 2  
 4550 to 4624  
 30-45-45-60  
 1st Open: BOB in 6"  
 2nd Open: BOB in 8"  
 Recovery:  
 154' WCM (30%W,70%M)  
 248' MCW (50%M,50%W)  
 748' W (Chl 50,000 ppm)  
 IHP 2298 FHP 2242  
 IFP 40-281 FFP 289-538  
 ISIP 1032 FSIP 1030  
 Temp 128°  
 CFS at 4624' - 60"  
 Mud Data at 4624'  
 7:05 am 12-06-12  
 Wt 9.4  
 Vis 67  
 WL 10.4  
 pH 9  
 Chl 9200  
 Sol 7.1%  
 YP 23  
 LCM 1#



-----Cherokee Ls 4721 -1565-----

Ls-tan/gry/brn fxln dns no por  
 Ls-AA  
 Ls-tan/brn/gry fxln dns no por  
 Sh-gry/dk gry  
 Ls-tan/lt gry/brn fxln dns no por  
 Ls-AA  
 Ls-tan/lt gry fxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry fxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-tan/gry/brn fxln dns no por  
 Ls-AA  
 Ls-gry f/mxln dns sl fos no por

-----Morrow 4800 -1644-----

Sh-gry/dk gry/mar blk  
 Ls-gry mxln to sl blk mhd sl fos no por  
 Sh-gry/grn/mar/blk  
 Sh-AA  
 Sh-gry/grn/mar/blk  
 Sh-AA  
 Sh-gry/grn/mar/blk  
 Sh-AA with sm Silt-gry mica and Ss-lt gry frgn sug ang tite cement sl glau  
 Sh-gry/grn/mar/blk with sm Silt and Ss-AA  
 Sh-gry/grn/dk grn/mar/blk  
 Sh-AA with sm Ss-lt gry frgn sub ang to ang tite cement sl glau  
 Sh-gry/dk gry/dk grn/mar/sm blk  
 Sh-AA  
 Ss-lt gry frgn sub ang to ang tite cement and Ss-wt frgn sub ang calc tite cement

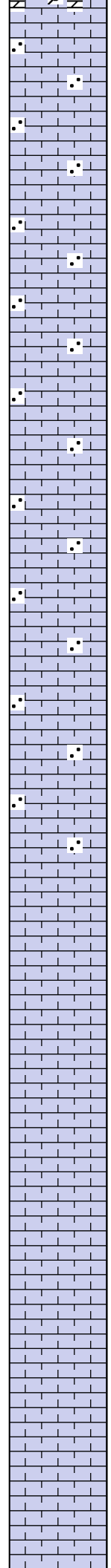
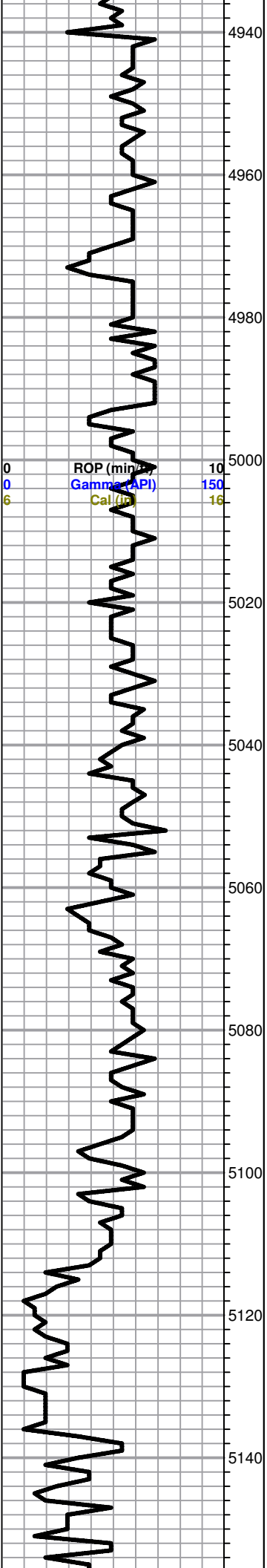
-----Mississippi 4902 -1746-----

Ls-wt/off wt sm tan mxln to gran or sdy with small calc nodules or pellets mhd/dns no por sm pyr  
 Ls-AA  
 Ls-wt/off wt/tan mxln to gran or sdy with small calc nodules or pellets mhd no por  
 Ls-wt/off wt/tan mxln to gran or sdy with small calc nodules or pellets dns no por  
 Ls-AA

Mud Data at 4806'  
 8:00 am 12-07-12  
 Wt 9.5  
 Vis 51  
 WL 10.4  
 pH 9  
 Chl 8500  
 Sol 7.7%  
 YP 19  
 LCM 2#

CFS at 4826' - 45"

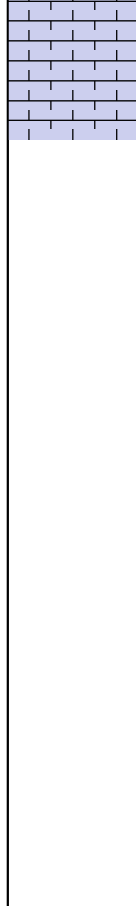
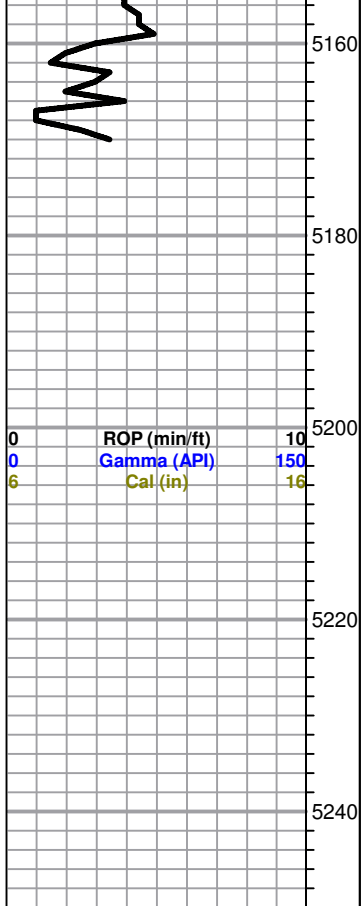
CFS at 4908' - 45"



Ls-wt/crm fxln to mxln with sm gran mhd/dns no por  
 Ls-crm/tan fxln to mxln with sm sl gran dns no por  
 Ls-AA  
 Ls-crm/lt gry/tan fxln to mxln with sm sl gran dna no por  
 Ls-crm/lt gry/tan fxln to sl gran mhd no por  
 Ls-crm/tan/lt gry fxln to sl gran dns no por  
 Ls-AA  
 Ls-crm/lt gry fxln to sl gran mhd no por  
 Ls-crm/lt gry f/mxln sm sl gran dns no por  
 Ls-AA  
 Ls-crm/lt gry/tan f/mxln sm sl gran dns no por  
 Ls-AA  
 Ls-crm/tan/lt gry fxln to sl gran dns no por  
 Ls-AA  
 Ls-crm/tan/lt gry f/mxln to very sl gran mhd/dns no por  
 Ls-tan f/mxln mhd sl fos no por  
 Ls-tan/brn fxln dns no por  
 Ls-AA  
 Ls-tan/brn fxln dns sl dolo no por  
 Ls-tan/lt gry fxln dns no por  
 Ls-AA  
 Ls-tan/crm f/mxln dns no por  
 Ls-tan/ltgry f/mxln mhd no por  
 Ls-tan/lt gry f/mxln mhd trc inter xln por nsfo  
 Ls-tan/lt gry f/mxln mhd no por (No Dolo)  
 Ls-tan/lt gry f/mxln mhd trc inter xln por nsfo (No Dolo)  
 Ls-crm/tan fxln dns no por  
 Ls-crm/tan f/mxln mhd trc inter xln por nsfo  
 Ls-crm/tan fxln mhd/dns no por

Mud Data at 5050'  
 7:50 am 12-08-12  
 Wt 9.5  
 Vis 45  
 WL 9.6  
 pH 10  
 Chl 7600  
 Sol 7.9%  
 YP 16  
 LCM 3#

Ls-crm/tan fxln dns no por



-----RTD 5170 -2014-----

CFS at 5170' - 60"

Finished Drilling at 5:15 pm on 12-08-12. Pulled 10 Stand Short Trip, then Cir for Log - 90"

Finished Logging at x:10 am on 12-09-12