

Scale 1:240 Imperial

Well Name: CYNTHIA #35-7
Surface Location: SE NW NE SE Sec. 35 - 31S - 39W
Bottom Location:
API: 15-189-22807-00-00
License Number: 34904
Spud Date: 10/3/2013 Time: 6:45 PM
Region: STEVENS COUNTY
Drilling Completed: 10/10/2013 Time: 2:40 AM
Surface Coordinates: 2200' FSL & 750' FEL
Bottom Hole Coordinates:
Ground Elevation: 3180.00ft
K.B. Elevation: 3192.00ft
Logged Interval: 0.00ft To: 0.00ft
Total Depth: 6250.00ft
Formation: ST. GENEVIEVE _ST. LOUIS
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: PALMER OIL, INC.
Address: 3118 N. CUMMINGS ROAD
PO BOX 399
GARDEN CITY, KS 67846
Contact Geologist: CECIL O'BRATE
Contact Phone Nbr: (620) 275-9231
Well Name: CYNTHIA #35-7
Location: SE NW NE SE Sec. 35 - 31S - 39W API: 15-189-22807-00-00
Pool: Field: UNKNOWN
State: KANSAS Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -101.5221140 Latitude: 37.3071291
N/S Co-ord: 2200' FSL
E/W Co-ord: 750' FEL

LOGGED BY



Company: SOLUTIONS CONSULTING, INC.
Address: 108 W 35TH
HAYS, KS 67601
Phone Nbr: (785) 259-3737
Logged By: Geologist Name: JEFF LAWLER

CONTRACTOR

Contractor: DUKE DRILLING CO., INC
Rig #: 9
Rig Type: MUD ROTARY
Spud Date: 10/3/2013 Time: 6:45 PM
TD Date: 10/10/2013 Time: 2:40 AM
Rig Release: Time:

ELEVATIONS

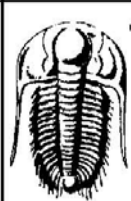
K.B. Elevation: 3192.00ft Ground Elevation: 3180.00ft
K.B. to Ground: 12.00ft

NOTES

WELL COMPARISON SHEET

	CYNTHIA #35-7				CYNTHIA #35-2				CYNTHIA #35-6				HITTLE A #2				VANSELOUS A #4			
	NW SE NE 35-31-39				NE SW SW NE 35-31-39				SW SW 31-35-39				NE NW 2-32-39							
	KB	3192	GL	3180	KB	3200	LOG	SMPL.	KB	3195	LOG	SMPL.	KB	3220	LOG	SMPL.	KB	3219	LOG	SMPL.
	LOG TOPS	SAMPLE TOPS	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG	LOG
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.
HEEBNER SHALE					3900	-700							3880	-660			3894	-675		
LANSING					4013	-813							4004	-784			4002	-783		
MARMATON			4596	-1404	4660	-1460		+ 56	4617	-1422		+ 18	4661	-1441		+ 37	4670	-1451		+ 47
CHEROKEE			4858	-1666	4875	-1675		+ 9	4886	-1691		+ 25	4838	-1618		- 48				
MARROW			5424	-2232	5389	-2189		- 43	5408	-2213		- 19	5370	-2150		- 82	5403	-2184		- 48
CHESTER			5830	-2638	5796	-2596		- 42					5896	-2676		+ 38	5857	-2638		+ 0
ST. GENEVIEVE			5976	-2784	5922	-2722		- 62	5988	-2793		+ 9	5928	-2708		- 76	5924	-2705		- 79
ST. LOUIS			6054	-2862	6058	-2858		- 4				+ 11								
ST. LOUIS B									6114	-2919										
TOTAL DEPTH			6250	-3058	6200	-3000		- 58	6193	-2998		- 60	6000	-2780		- 278	6100	-2881		- 177

DST #1 ST. LOUIS 6025' - 6110'



TRIOLOBITE TESTING, INC.

DRILL STEM TEST REPORT

Palmer Oil INC **35-31-39**
 3118 Cummings RD **Cynthia #35-7**
 Garden City KS 67846 Job Ticket: 52438 **DST#: 1**
 ATTN: Cecil Obrate/ Jeff L Test Start: 2013.10.09 @ 06:32:56

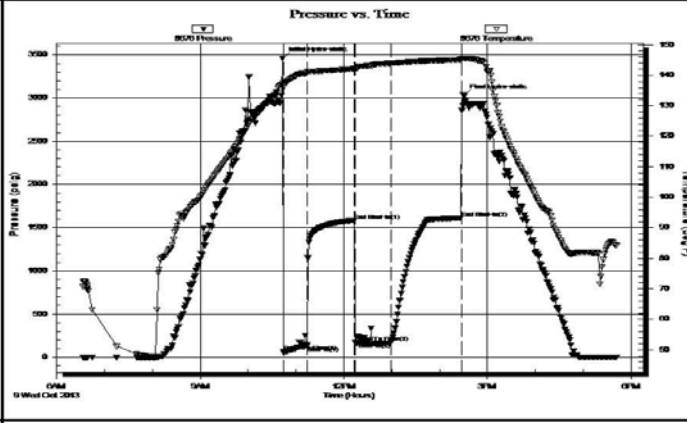
GENERAL INFORMATION:

Formation: **ST Louis**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 10:44:26 Tester: Chris Staats
 Time Test Ended: 17:41:41 Unit No: #47
 Interval: **6025.00 ft (KB) To 6110.00 ft (KB) (TVD)**
 Total Depth: 6110.00 ft (KB) (TVD) Reference Elevations: 3192.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 3180.00 ft (CF)
 KB to GR/CF: 12.00 ft

Serial #: 8676 Outside

Press@RunDepth: 171.06 psig @ 6026.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.10.09 End Date: 2013.10.09 Last Calib.: 2013.10.09
 Start Time: 06:33:01 End Time: 17:41:41 Time On Btm: 2013.10.09 @ 10:43:11
 Time Off Btm: 2013.10.09 @ 14:29:26

TEST COMMENT: IF: No blow Chased tool 10'
 ISI: No blow back
 FF: Waek blow 3"
 FS: No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3460.68	137.28	Initial Hydro-static
2	65.85	136.01	Open To Flow (1)
31	126.67	140.69	Shut-In(1)
91	1584.72	142.10	End Shut-In(1)
92	173.74	142.10	Open To Flow (2)
136	171.06	143.95	Shut-In(2)
224	1610.67	145.16	End Shut-In(2)
227	3031.31	145.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
195.00	W,M 2% water 98% mud	1.02

Gas Rates

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

ROCK TYPES

shale, gry Carbon Sh

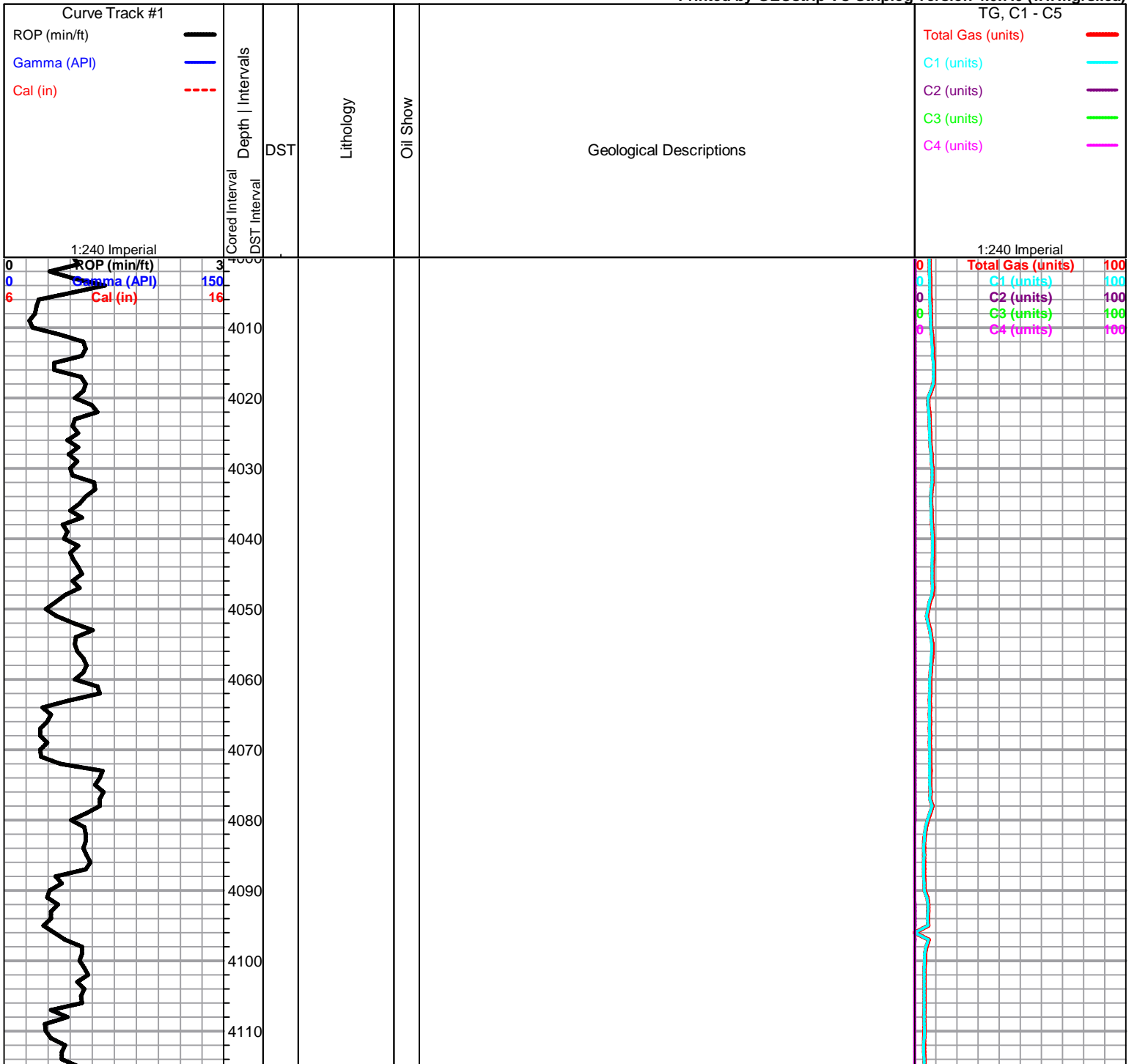
ACCESSORIES

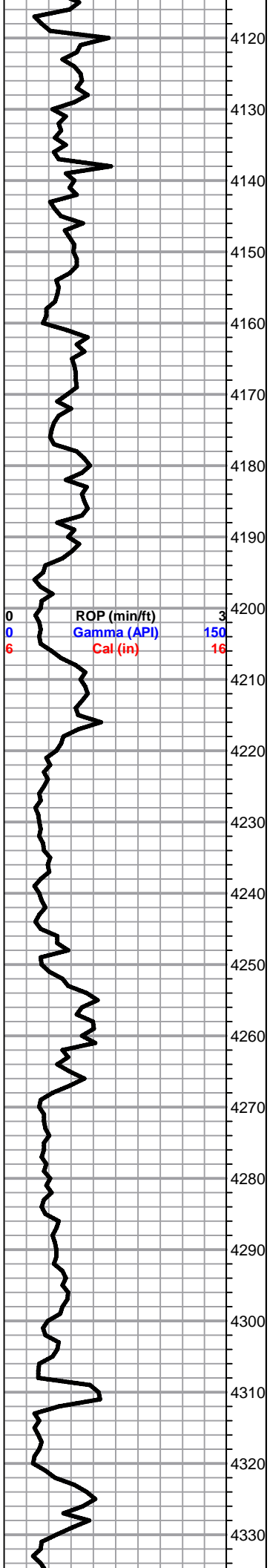
STRINGER
Sandstone

OTHER SYMBOLS

DST
DST Int
DST alt
Core

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





**A BLUESTEM GAS DETECTOR TRAILER WAS EMPLOYED ON THIS WELL
 DRILL TIME AND GAS CURVES UPLOADED FROM BLOODHOUND GAS
 DETECTOR**

**20' WET/DRY SAMPLES FROM 4200' - 5850'
 10' WET/DRY SAMPLES FROM 5800' - RTD**

GEOLOGICAL SUPERVISION BY JEFF LAWLER

8 5/8" SURFACE PIPE SET @ 1762'

DEVIATION SURVEY

256'	1/2 dgr.
1760'	1 1/2 dgr.
2750'	1 1/2 dgr.
3792'	1 dgr.
4771'	1 1/4 dgr.
5246'	1 3/4 dgr.
6110'	2 dgr.

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

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

Lm- Lt Gray Buff, mix of Vf Grn, mud supported matrix, fsl w/ fragments, loosely cemented, poor intergranular porosity, & FXLN, fsl high-energy, trash w/ fsl fragments, micro XLN & XLN porosity

Lm- A/A, much soft white chalk Sh- Black, fissile, soft, carbonaceous

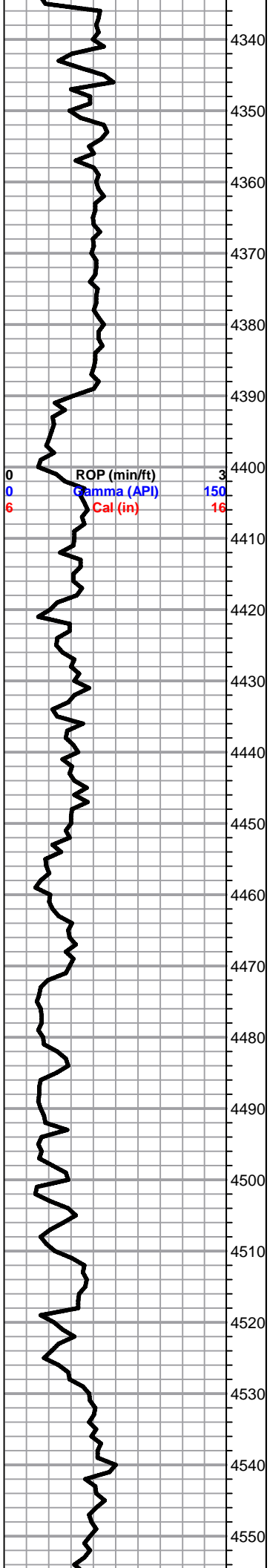
Lm- Cream Off White, FXLN, dense, massive, well cemented, fsl & oolitic, poor interoolite vis. porosity, soft white chalk

Lm- Drk Gray Tan, VFXLN Fn Grn, lithographic, tight, vry well cemented w/o vis. porosity, gritty siltstone, loosely cemented w/ poor intergranular porosity Sh- Maroon Brown, gritty & earthy, dense & blocky

Lm- Lt Gray Tan Cream, FXLN, loosely cemented, high-energy w/ fsl fragments, some fsl & oolitic, sl dev. w/ sctrd vry fn ppt porosity, barren Sh- Lt Gray, silty, soft, calcareous

Lm- Lt Gray, FXLN Fn Grn, sl trashy fsl mix, some w/ fsl fragments, poor vis. porosity, some loosely cemented mud supported matrix, few pcs of semi-translucent sharp angular chert Sh- Lt Gray, gritty & silty, calcareous

Lm- Cream Tan, FXLN, fsl & sl oolitic, few pcs oomoldic, partial skeletal dissolution, poorly interconnected vugs, poor to mod. vis. porosity, barren



Sh- Maroon Lm Green Lt Gray, gritty & earthy, waxy & dense, silty & calcareous

Lm- Tan Cream Buff, FXLN, fsl, few pcs of oomoldic, partial/most skeletal dissolution, poor interconnected vugs, well cemented & barren, some sl trashy high-energy fsl mix, soft white chalk

Sh- Brick Red Maroon Brown Lm Green, soft, gritty & earthy, sl waxy & dense

Lm- Tan, VFXLN, dense, vry well cemented, tight w/o vis. porosity, few pcs of sl gritty buff dolomitic ls w/ micro XLN porosity, barren

Lm- Drk Gray, Fn Grn FXLN, trashy high-energy fsl mix, gritty & loosely cemented, silty

Lm- Tan Cream Off White, VFXLN FXLN, dense, vry well cemented, sl cherty ls w/o vis. porosity, loosely cemented fsl, poorly dev. w/ sctrd XLN porosity, some chalky in part, barren

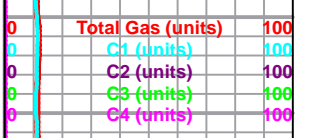
Lm- Cream Off White, Vf Grn, dense, loosely cemented, sl trashy, sctrd mottling, poor intergranular porosity Sh- Black Drk Gray, fissile, carbonaceous, girty

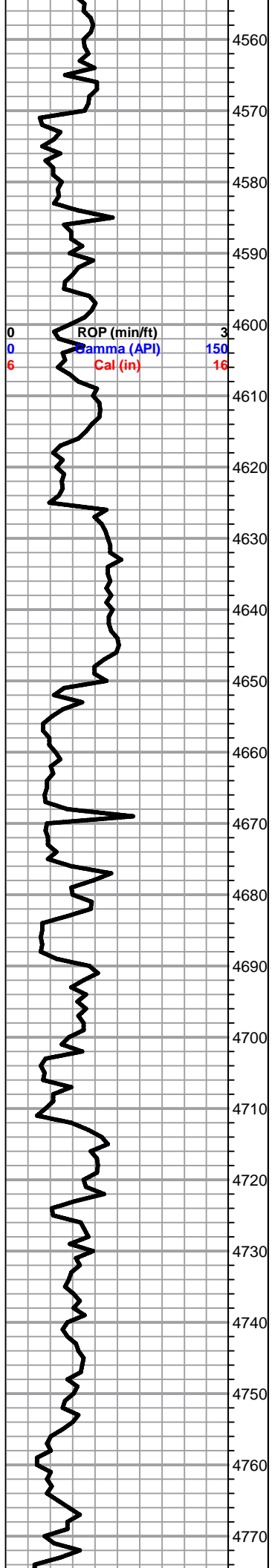
Lm- A/A Sh- Increasing amount of gritty silty gray, sl calcareous

Lm- Lt/Drk Gray, FXLN, dense mottling, well cemented, fsl fragments, poor vis. porosity, interbedded silty gray & black carbonaceous shale lenses

Lm- A/A w/ Lm Green silty lime, sl calcareous, vry loosely cemented, gritty

Lm- Cream Tan White, VF-FLXN, sl fsl, poorly dev. w/ micro XLN & sctrd XLN porosity, much gummy white chalk





Lm- Drk Gray, VF-FXLN, dense, loosely-vry well cemented, trashy & gritty, some drk & lt gray shale/siltstone

Lm- Lt Gray, FXLN, A/A, vry high-energy, trashy rip up clasts

MARMATON 4608' (-1416) E-LOG

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

Lm- Drk Gray, abundant dense gritty, sl fsl, trashy, poor vis. porosity

Lm- Tan, CryptoXLN, vry tight & vry well cemented, w/o vis. porosity, lighograhic

Lm- Cream Off White, Vf Grn VFXLN, dense, loosely cemented to well cemented, tight w/ vry poor porosity, barren

Lm- Lt Gray, sandy lime & siltstone

Sh- Drk & Lt Gray, gritty & silty, calcareous

Lm- Cream Tan, FXLN Fn Grn, mix of dense, chalky mud supported matrix w/ poor porosity, & fsl ls, some oomoldic w/ sl sctrd to sctrd complete skeletal dissolution, poor sctrd intervugular dev. barren

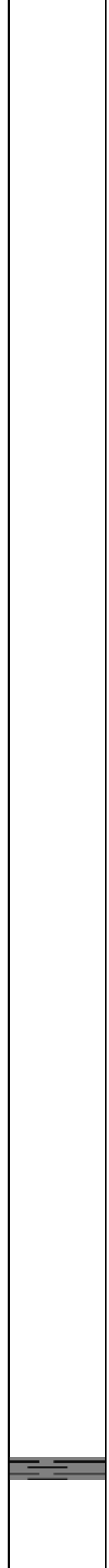
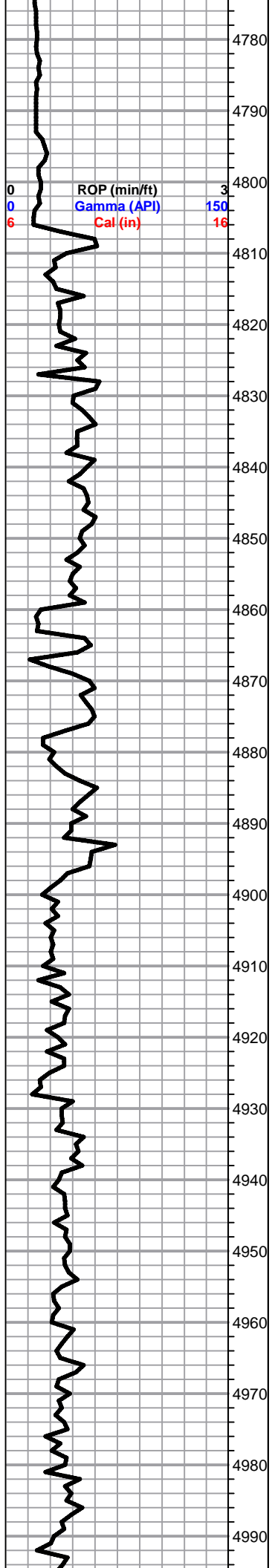
Lm- A/A w/ increasing amount of sl fsl, sl trashy & mottled mud supported matrix & soft white chalk

Lm- Buff Lt Gray, FXLN Fn Grn, dense, well cemented, sl fsl, poorly dev. w/ XLN porosity, girry siltstone Sh- Maroon, gritty & earthy

Lm- Cream Drk Gray, FXLN, fsl, poorly dev. mostly tight w/ sctrd micro XLN & XLN porosity

Lm- A/A w/ gummy white chalk & FXLN oomoldic, partial sctrd skeletal dissolution, sl intervugular connectivity, barren

Lm- A/A w/ increasing amount of soft chalk & oomoldic, some soft gray siltstone



siltstone

Sh- much gummy white chalk, lt & drk silty gray shale/lime, calcareous, gritty & earthy brick red

Lm- Cream Off White, FXLN, fsl, hvy mottling, dense w/ poor innerXLN porosity, few pcs of sharp angular bedded chert

Lm- Lt & Drk Gray, much soft dense siltstone

Lm- Cream Off White, Vf-Fn Grn, dense mud supported matrix, mottled, poor intergranular porosity

Sh- Black, fissile, soft, carbonaceous

Lm- Cream Off White, Vf Grn, dense, chalky mud supported matrix, sl fsl

Sh- Black Drk Gray, fissile, dense, carbonaceous, gritty & silty

Lm- Cream Tan, FXLN, soft, high-energy bioclastic, sl trashy, loosely cemented w/ dense XLN porosity

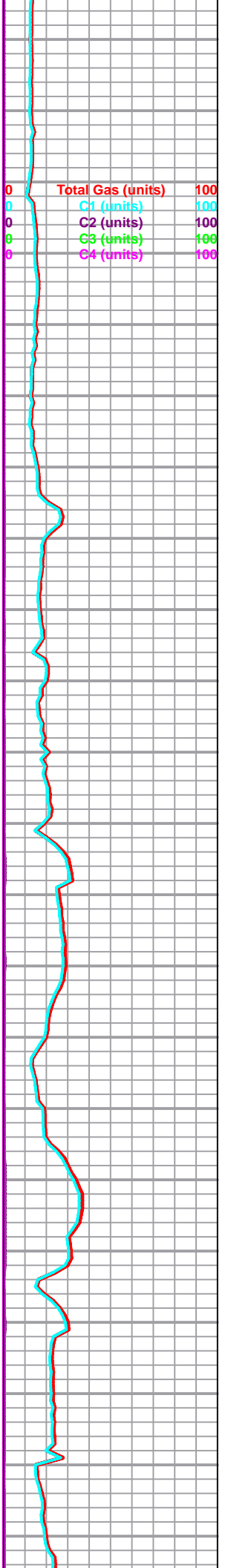
Lm- Drk Gray, Fn Grn, dense, well cemented, gritty & silty

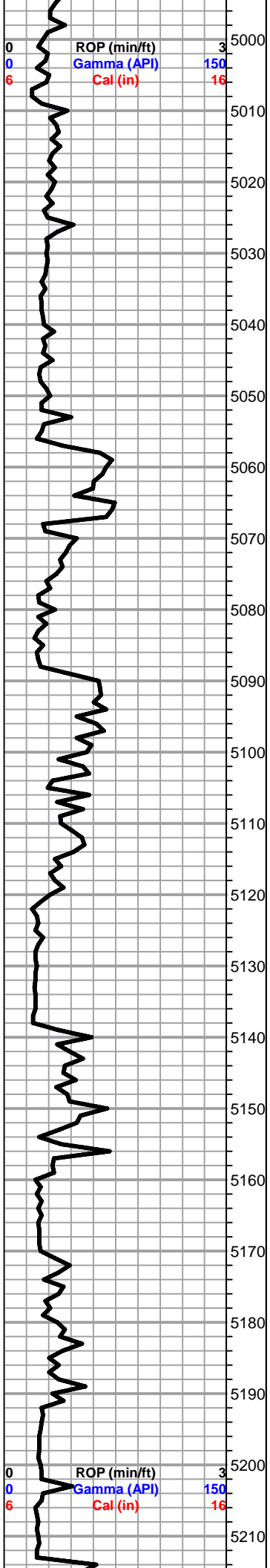
Lm- abundant A/A

Lm- Lt & Drk Gray, Fn Grn FXLN, all dense & well cemented, silty, some sl fsl, trashy, poor porosity, few pcs of drk gray fresh bedded chert

Lm- A/A w/ increasing amount of fn grn mud supported

Sh- Black, fissile, silty, carbonaceous, gummy gray wash shale





Lm- Cream Off White, FXLN, dense, soft & loosely cemented, fsl & oolitic, poorly dev. w/ poor XLN porosity, some chalky in part

Lm- abundatnt well cemented lt gray siltstone

Lm- Drk Gray, silty, loosely cemented mud supported matrix, few pcs sl fsl w/ crinoids

Lm- Tan, VF-FXLN, dense, well cemented, tight w/o vis. porosity

Lm- continual amount of drk gray siltstone, Cream Vf-Fn Grn, dense, chalky in part, poor intergranular porosity, barren

Lm- decreasing amount of siltstone, Tan, FXLN, dense, fsl, sl oolitic, poorly dev. w/ scrt'd to dense XLN porosity, barren

Lm- Drk Gray, Fn Grn, dense siltstone, gritty, loosely to well cemented, few pcs sl fsl

Lm- A/A Sh- Lt & Drk Gray, soft, silty, few pcs of dense & blocky maroon sh

Sh- Black Drk & Lt Gray, dense & blocky, carbonaceous, silty & soft, calcareous

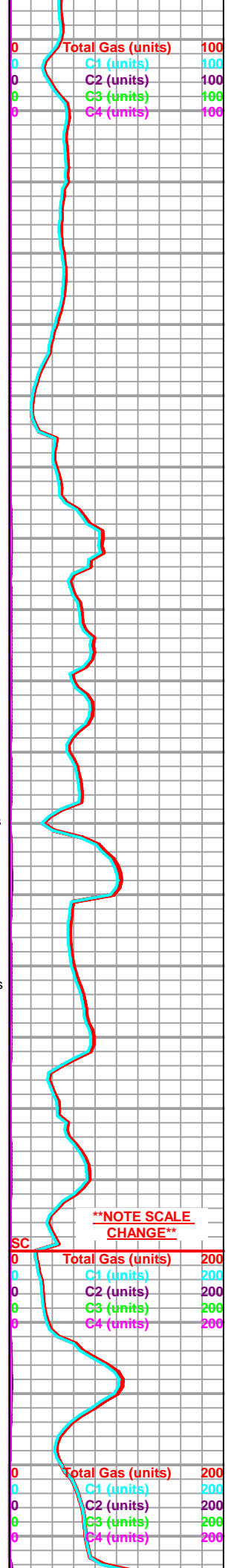
Lm- Cream Off White, FXLN, loosely cemented, sl fsl, dense XLN porosity, barren

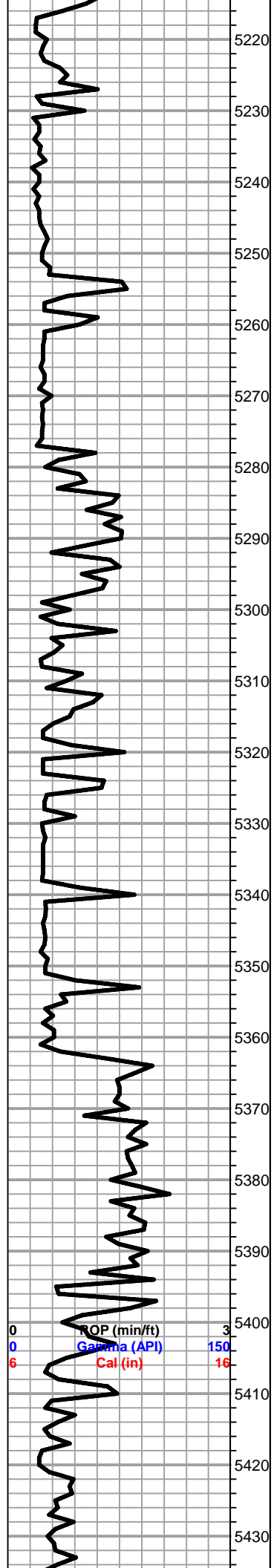
Lm- Drk Gray, soft siltstone

Sh- Black Drk Gray, silty & soft, carbonaceous, some sl calcareous

Sh- A/A w/ increasing amount of drk gray, few pcs of sl waxy, striaghted claystone w/ pyrite

Sh- A/A





Sh- A/A, abundant (>90%) black & drk gray, silty & carbonaceous

Sh- Black Gray Brown Maroon, dense & blocky, carbonaceous,

**SHORT TRIP @ 5246'
SURVEY**

ATOKA 5269' (-2077) E-LOG

Sh- Black Lt Gray, dense & block, carbonaceous, silty & soft, calcareous

Lm- Gray, VF-FXLN, dense, vry well cemented, tight w/ minimal vis. porosity, lithographic

Lm- Lt Gray Tan, Vf Grn, dense, loosely cemented, silty & soft, poor porosity

Sh- Black Gray Brick Red, vry dense & blocky, carbonaceous, silty & calcareous, gritty & earthy

Sh- A/A

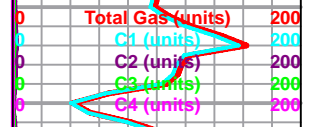
Sh- Black Drk & Lt Gray, dense & blocky, carbonaceous, silty & soft, some dense

Lm- Drk Gray, VFXLN, dense, vry well cemented, tight w/o vis. porosity

Sh- Drk Gray Black White, silty & soft, dense & blocky, carbonaceous, few gummy white argillaceous clumps

Lm- Brown Tan Cream, FXLN, dense, well cemented, fsl, poorly dev. w/ micro XLN & XLN porosity

MARROW 5424' (-2232) E-LOG Sh- Black Gray, dense & blocky, carbonaceous, silty & soft



5440
5450
5460
5470
5480
5490
5500
5510
5520
5530
5540
5550
5560
5570
5580
5590
5600
5610
5620
5630
5640
5650

Lm- Brown, VF-FXLN, dense, loosely cemented, tight w/ poor dev. vis. porosity, traces of lt gray mudstone, vry loosely cemented & crumbly

Lm- Cream, VFXLN, dense, poorly dev. well cemented, tight w/ minimal vis. porosity, traces of tan Ss, unconsolidated w/ shale bands, vf grn, friable, no flor. or wet cut

Sh- Black Lt Gray, soft, carbonaceous, silty & soft Ss- A/A, somewhat cleaner & more consolidated, no shows noted

Sh- A/A, increasing amount of lt gray, sl trashy, vry silty & soft

Lm- Cream to Off White Tan, FXLN, fsl, sl dev. w/ sctrd to dense XLN porosity, barren, some vry soft & chalky

Lm- Brown, VF-FXLN, dense, vry well cemented, tight w/ minimal vis. porosity, barren

Lm- Cream Tan Brown, FXLN, fsl, poorly dev. well cemented, sctrd XLN porosity, 1-2 chips of oolitic chalky mud supported matrix

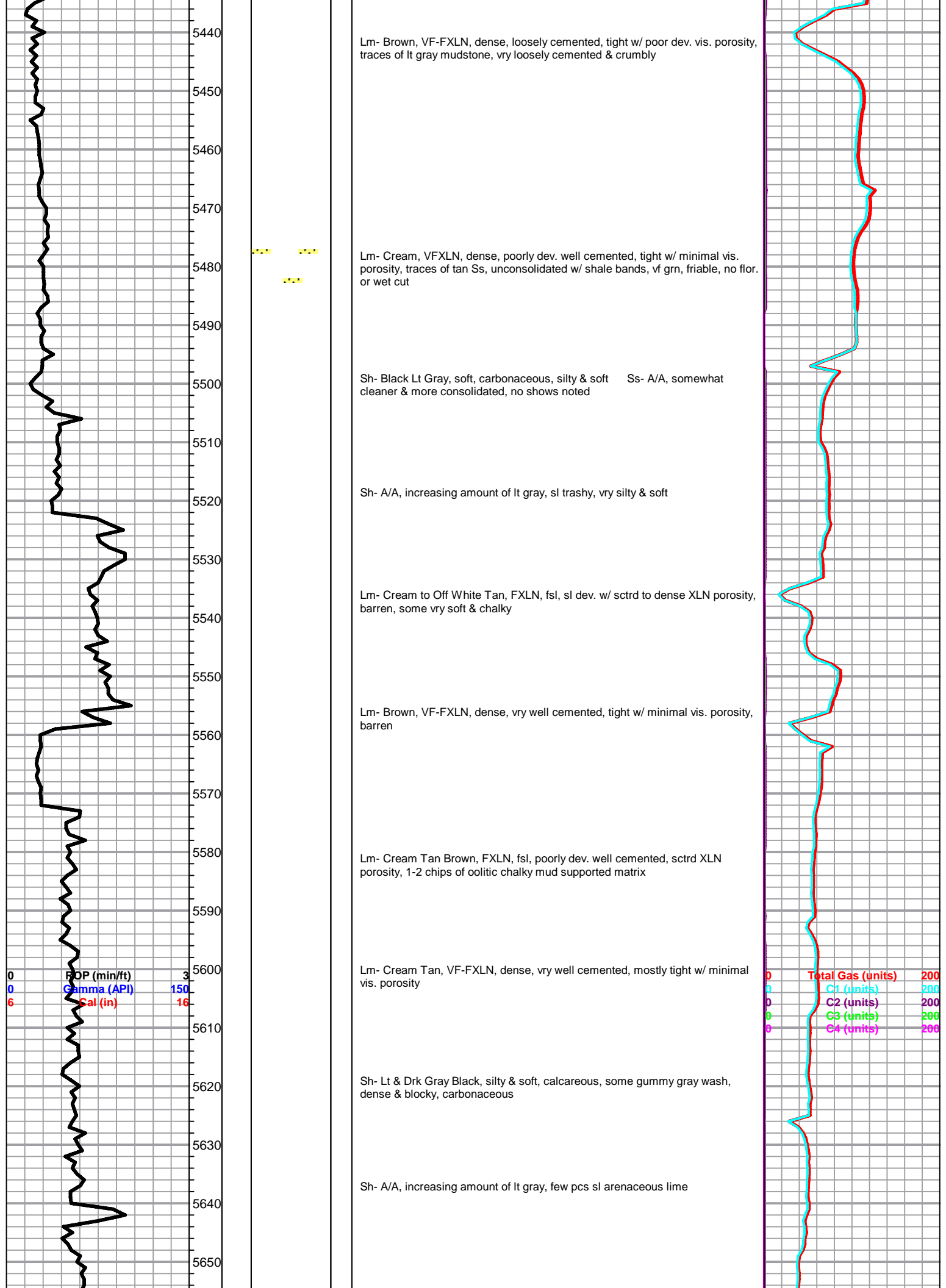
Lm- Cream Tan, VF-FXLN, dense, vry well cemented, mostly tight w/ minimal vis. porosity

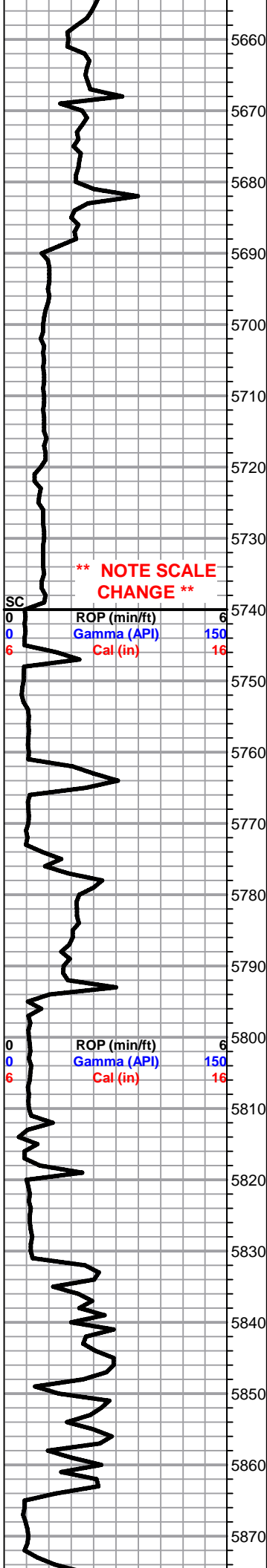
Sh- Lt & Drk Gray Black, silty & soft, calcareous, some gummy gray wash, dense & blocky, carbonaceous

Sh- A/A, increasing amount of lt gray, few pcs sl arenaceous lime

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

0 Total Gas (units) 200
0 C1 (units) 200
0 C2 (units) 200
0 C3 (units) 200
0 C4 (units) 200





Sh- Lt & Drk Gray, soft, silty, calcareous

Lm- Drk Gray, unconsolidated, sl sandy & fsl, loosely cemented, trahsy, dense fractured porosity

Sh- Lt & Drk Gray A/A, dense blocky black slivers, some silty pcs, carbonaceous

Sh- Lt Gray Black, silty, calcareous, dense & blocky, carbonaceous

**** NOTE SCALE CHANGE ****

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

Sh- A/A Ss- Frosted & Brown, Fn-Med Grn, angular, unconsolidated, friable, speckled w/ chlorite/glaucanite, barren

Lm- Cream Off White, Vf Grn, dense, loosely cemented, chalky in part, poor intergranular porosity, barren

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

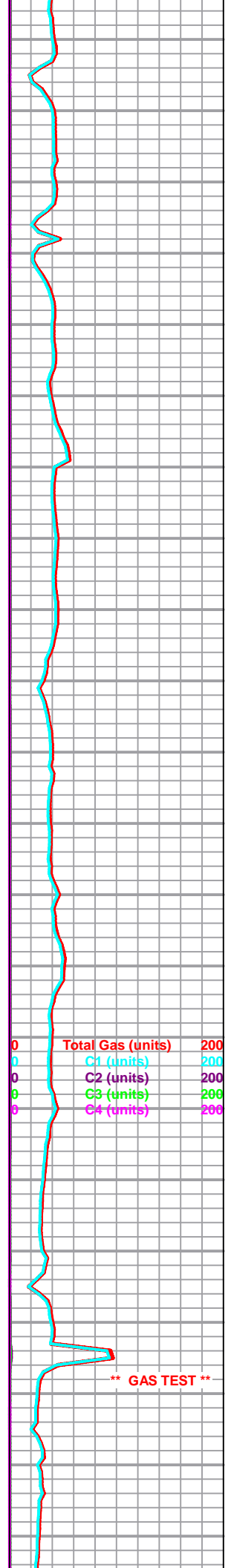
Sh- Black Gray A/A

CHESTER 5830' (-2638) E-LOG Lm- Off White, Vf Grn, dense mud supported matrix, chalky in part, soft, no vis. porosity

Lm- Brown Tan, FXLN, dense, well cemented, mostly tight w/ micro XLN porosity

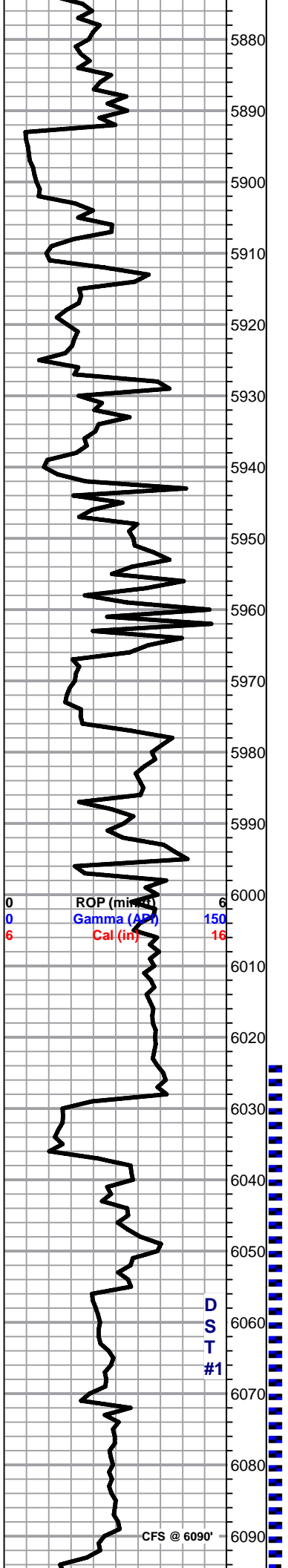
Lm- Lt Gray, VF-FXLN, dense, well-loosely cemented, mostly tight w/ minimal vis. porosity

Lm- Mint Green, Fn Grn, arenaceous ls, vry loosely cemented, sucrosic,



0 Total Gas (units) 200
 0 C1 (units) 200
 0 C2 (units) 200
 0 C3 (units) 200
 0 C4 (units) 200

**** GAS TEST ****



consistant fn ppt intergranular porosity, barren

Lm- A/A w/ cream arenaceous ls A/A, some better cemented

Sh- Maroon, abundant gritty & earthy

Lm- White Off White, VFXLN, dense, poorly dev. minimal vis. to micro XLN porosity, vry clean, barren

Lm- Maroon, Fn Grn, arenaceous, sucrosic, consolidated & sorted

Lm- Tan Cram, Fn Grn, arenaceous A/A

Sh- Black Drk Gray, dense & blocky, waxy, vry well compacted

Lm- Cream Tan, Fn Grn, arenaceous, sucrosic

ST. GENEVIEVE 5976' (-2784) E-LOG Lm- Cream Tan Maroon, Fn Grn, arenaceous & sucrosic, consolidated & sorted, friable, barren

Lm- Cream Lt Green, Fn Grn, arenaceous & sucrosic, consolidated & sorted, loosely cemented to sl fused

Lm- Cream Tan, A/A, few pcs of VFXLN, dense, well cemented, mostly tight w/ minimal vis. porosity, vry clean, barren

Lm- A/A & lt chlorite spking, w/ few pcs of FXLN densely packed oolites, poorly dev. w/ XLN porosity, barren

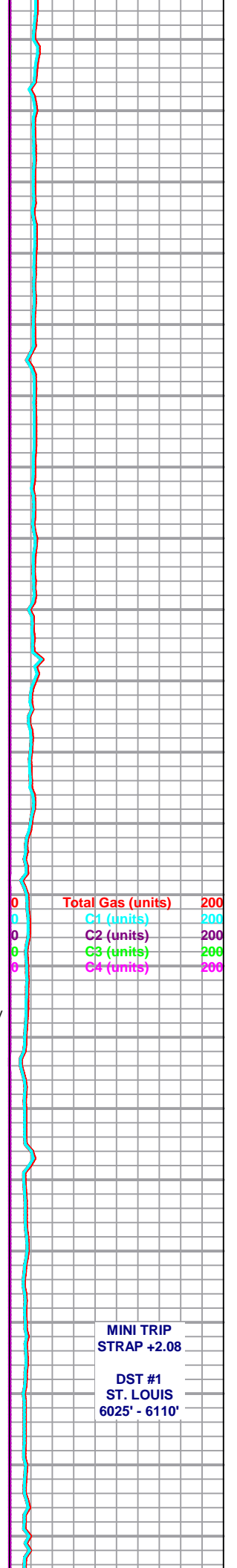
Lm/Chert- White Off White Semi-Translucent Golden Brown, VFXLN, dense, vry well cemented, tight w/ minimal vis. porosity & sharp angular fresh bedded chert

Lm- Cream Off White, Vf-Fn Grn, sl arenaceous & sub-sucrosic, poorly dev. some FXLN, loosely cemented & poorly dev. w/ XLN porosity, all vry clean & barren

Lm- Cream Buff, VF-FXLN, dense, sl chalky in part, loosely cemented, poorly dev. w/ micro XLN & XLN porosity, all vry clean & barren

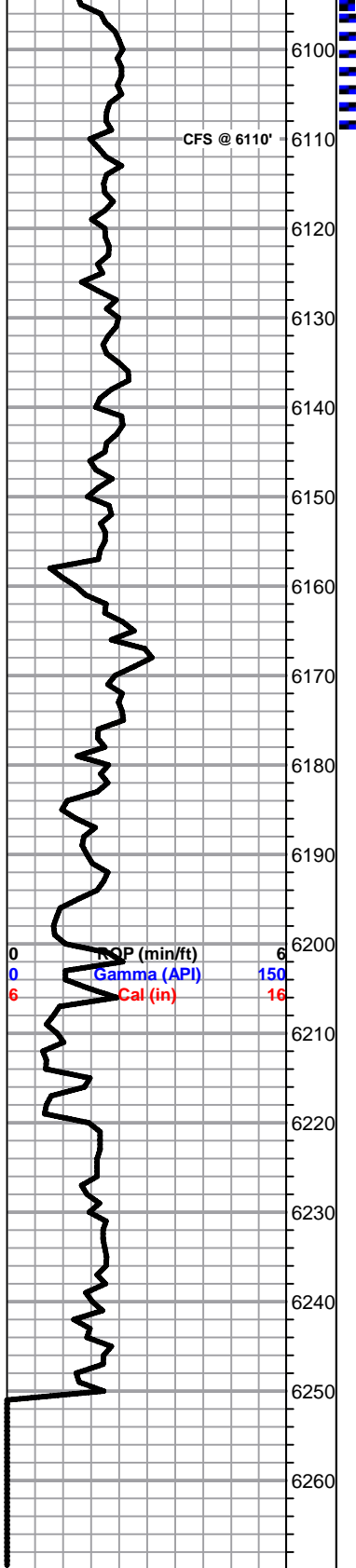
Lm- Cream Tan, mostly Fn Grn consolidated & sorted arenaceous sucrosic ls, few pcs of VF-FXLN oolitic biomicrite w/ clear siliceous cementation, poorly dev. w/ micro XLN & XLN porosity, vry clean, NO STN, NO FLOR., NO WET CUT

Lm- White Off White, A/A, few pcs of chalky sl unconsolidated ls w/ few small oolites & few pcs of pearl shaped oolite clusters, poorly dev. w/ some clear siliceous cementation & sctrd vry fn ppt porosity, TR WK STN, NO SFO, NO ODR



MINI TRIP
 STRAP +2.08

DST #1
 ST. LOUIS
 6025' - 6110'



Lm- Cream Off White, FXLN, oolitic, loosely cemented & crumbly, chaly, sctrd interoolite & intergranular porosity, some w/ sl sctrd mottling, barren

Lm- Cream Tan, FXLN, dense, loosely-well cemented, dense XLN porosity, barren

Lm- Cream Tan, FXLN, sl fsl, poorly dev., loosely cemented, dense XLN porosity, barren

Lm- A/A

Lm- White Off White, VF-FXLN, dense, loosely to well cemented cherty ls, sl fsl, no vis-poor vis. porosity, some soft white chalk

Lm- Cream Tan, FXLN, loosely cemented, sl fsl, poorly dev. w/ dense XLN porosity, barren, some sl chalky in part

Lm- A/A, w/ few pcs of VFXLN, dense, lithographic w/o vis. porosity, sub-cryptoXLN

Lm- Cream Tan, FXLN, dense, poorly dev. sl fsl, loosely cemented, chalky, poor vis. porosity, barren

Lm- Tan Buff, VFXLN, dense, well cemented, sub-sucrosic dolomitic ls, micro XLN porosity, barren

Lm- Tan Buff, A/A w/ VFXLN dense vry well cemented ls, tight w/ minimal vis. porosity

Lm- Tan Buff, VF-FXLN, dense, well cemented, sub-sucrosic dolomitic ls, micro XLN porosity, barren

RTD 6250' (-3058) LTD @ 02:40 10/10/2013

