

OPERATOR

Company: Palmer Oil, Inc.
 Address: 3118 N. Cummings Rd.
 P.O. Box 399
 Garden City, KS 67846

Contact Geologist:
 Contact Phone Nbr: 620-275-9231
 Well Name: UPC #23-4
 Location: Sec. 23 - T32S - R37W
 Pool:
 State: Kansas

API: 15-189-22813-0000
 Field: Willis
 Country: USA

Scale 1:240 Imperial

Well Name: UPC #23-4
 Surface Location: Sec. 23 - T32S - R37W
 Bottom Location:
 API: 15-189-22813-0000
 License Number: 34904
 Spud Date: 8/16/2013
 Region: Stevens County
 Drilling Completed: 8/23/2013
 Surface Coordinates: 900' FSL & 2120' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 3114.00ft
 K.B. Elevation: 3126.00ft
 Logged Interval: 4700.00ft
 Total Depth: 6490.00ft
 Formation: Mississippian - St. Louis
 Drilling Fluid Type: Chemical/Fresh Water Gel

Time: 00:00
 Time: 20:55
 To: 6490.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 N/S Co-ord: 900' FSL
 E/W Co-ord: 2120' FWL

Latitude:

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 #: 9
 Rig Type: mud rotary
 Spud Date: 8/16/2013
 TD Date: 8/23/2013
 Rig Release:

Time: 00:00
 Time: 20:55
 Time:

ELEVATIONS

K.B. Elevation: 3126.00ft
 K.B. to Ground: 12.00ft
 Ground Elevation: 3114.00ft

NOTES

Due to the results of DST #1 and structural position, the operator elected to run 5 1/2" production casing and utilize the UPC #23-4 as a saltwater injection well. Based on electrical logs, it is recommended that the interval from 6466 ft. - 6468 ft. be perforated and stimulated to determine if the zone proves economical.

A Bloodhound gas detection system operated by Bluestem Environmental was employed on this well. ROP and gas curves were imported into this mudlog. The gamma ray and caliper curves were also imported from the electrical log suite.


Respectfully submitted,
 Keith Reavis

Palmer Oil, Inc.
daily drilling report

DATE	7:00 AM DEPTH	REMARKS
08/20/2013		Geologist Keith Reavis on location @ 1915 hrs, 4741 ft, drilling ahead Lansing
08/21/2013	5404	drilling ahead, Marmaton, Cherokee, wiper trip @ 5500', drilling Morrow
08/22/2013	6093	drilling ahead, Morrow, Chester, St. Gen., St. Louis wiper trip @ 6320', back on bottom condition hole and mud, resume drilling, gas kick and show in St. Louis B warrants test, cfs, ctch, TOH for DST #1
08/23/2013	6405	trip test tools, conducting DST #1, successful test, TIH w/bit, rathole ahead to TD, 6490' @ 2055 hrs, ctch, TOH for logs
08/24/2013	6490	TOH for logs, conducting logging operations, truck on location only had enough wireline to log from 5800', logged from that depth until arrival relief, complete logging operations 1030 hrs, geologist mob off loc.

Palmer Oil, Inc.
well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Palmer - UPC #23-4					EOG - UPC #23-1				EOG - Willis #23-1			
900' FSL & 2120' FWL					2310' FSL & 1830' FWL				1650' FSL & 1750' FEL			
Sec. 23 -T32S - R37W					Sec. 23 -T32S - R37W				Sec. 23 -T32S - R37W			
3126 KB					3133 KB				3122 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Base Heebner	4144	-1018	4144	-1016	4150	-1017	-1	1	4145	-1023	5	7
Lansing	4264	-1138	4264	-1138	4271	-1138	0	0	4266	-1144	6	6
Marmaton	4925	-1799	4924	-1798	4940	-1807	8	9	4926	-1804	5	6
Cherokee	5118	-1992	5120	-1994	5126	-1993	1	-1	5120	-1998	6	4
Morrow	5634	-2508	5635	-2509	5630	-2497	-11	-12	5630	-2508	0	-1
Morrow LS mark	5928	-2802	5936	-2810	5932	-2799	-3	-11	5923	-2801	-1	-9
St. Gen	6217	-3091	6218	-3092	6216	-3083	-8	-9	6201	-3079	-12	-13
St. Louis	6304	-3178	6304	-3178	6304	-3171	-7	-7	6293	-3171	-7	-7
St. Louis B	6365	-3239	6366	-3240	6367	-3234	-5	-6	6349	-3227	-12	-13
Total Depth	6490	-3364	6502	-3376	6499	-3366	2	-10	6582	-3460	96	84



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Palmer Oil
 3118 N. Cummings Rd.
 Garden City KS 67846
 ATTN: Keith Reavis

23-32s-37w Steven, KS
UPC #23-4
 Job Ticket: 52904 **DST#: 1**
 Test Start: 2013.08.23 @ 02:34:01

GENERAL INFORMATION:

Formation: **St. Louis**
 Deviated: No Whipstock ft (KB)
 Time Tool Opened: 05:55:41
 Time Test Ended: 12:29:38

Interval: **6360.00 ft (KB) To 6405.00 ft (KB) (TVD)**
 Total Depth: 6405.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 65

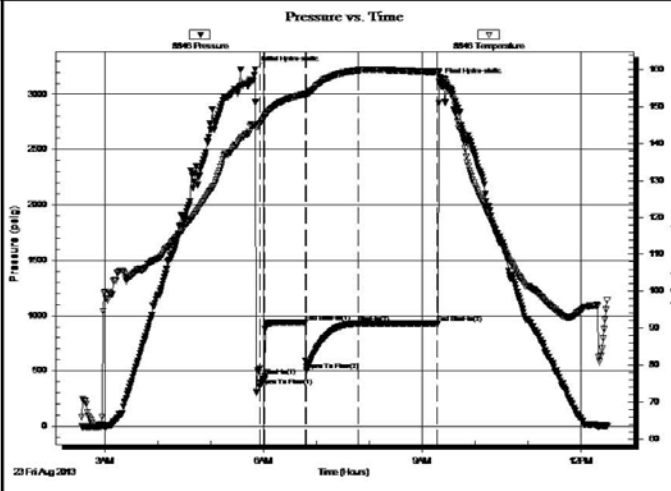
Reference Elevations: 3126.00 ft (KB)
 3116.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8846 Inside

Press@RunDepth: 931.04 psig @ 6361.00 ft (KB)
 Start Date: 2013.08.23 End Date: 2013.08.23
 Start Time: 02:34:01 End Time: 12:29:37

Capacity: 8000.00 psig
 Last Calib.: 2013.08.23
 Time On Btm: 2013.08.23 @ 05:50:24
 Time Off Btm: 2013.08.23 @ 09:18:37

TEST COMMENT: IF:BOB in 1 min.
 IS:No return blow
 FF:BOB in 1 min.
 FS:No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3223.27	145.11	Initial Hydro-static
6	359.21	145.32	Open To Flow (1)
11	452.90	147.29	Shut-h(1)
57	936.72	153.33	End Shut-h(1)
59	503.22	153.32	Open To Flow (2)
117	931.04	159.79	Shut-h(2)
207	930.75	159.24	End Shut-h(2)
209	3115.35	159.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1055.00	mcsw 5% m 95% sw	13.10
434.00	mcgosw 5% m 15% go 80% sw	6.09
248.00	gcow m 5% g 5% go 20% w 70% m	3.48
248.00	mud 100% m	3.48

Gas Rates

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

ROCK TYPES

Clystgy
 Lmst fw<7
 shale, gry
 shale, red
 Sltst
 sdy lmst
 Lmst fw>
 Carbon Sh
 Ss

ACCESSORIES

MINERAL
 ▲ Chert, dark
 P Pyrite
 ● Silty
 △ Chert White

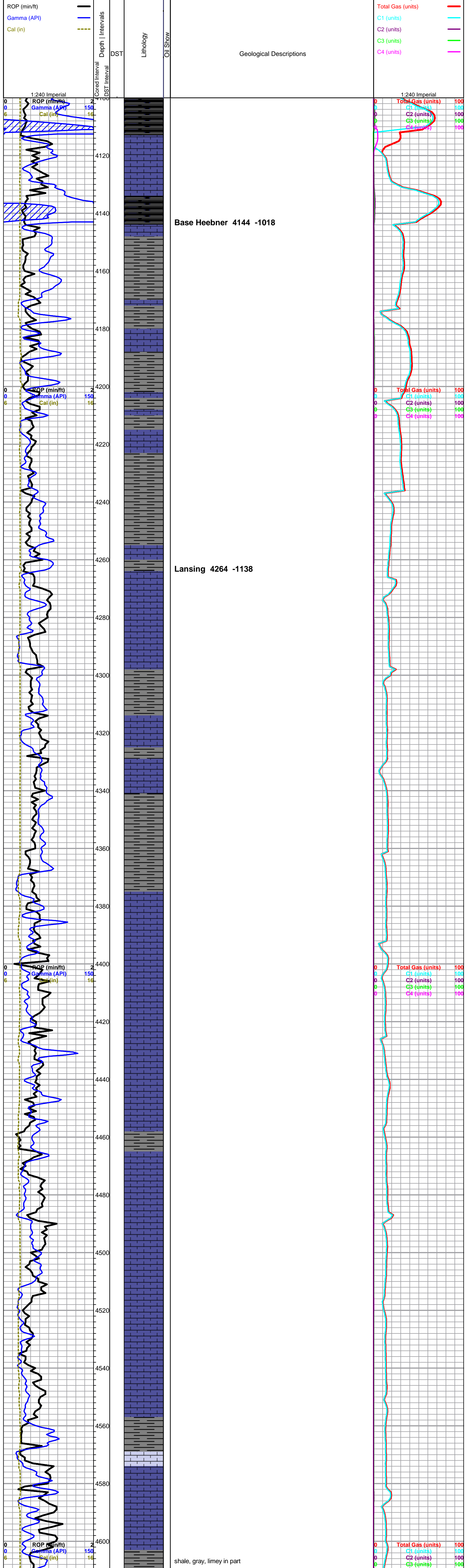
FOSSIL
 ∩ Bioclastic or Fragmental
 ∩ Fossils < 20%
 ∩ Oolite
 ∩ Pellets
 ∩ Oomoldic

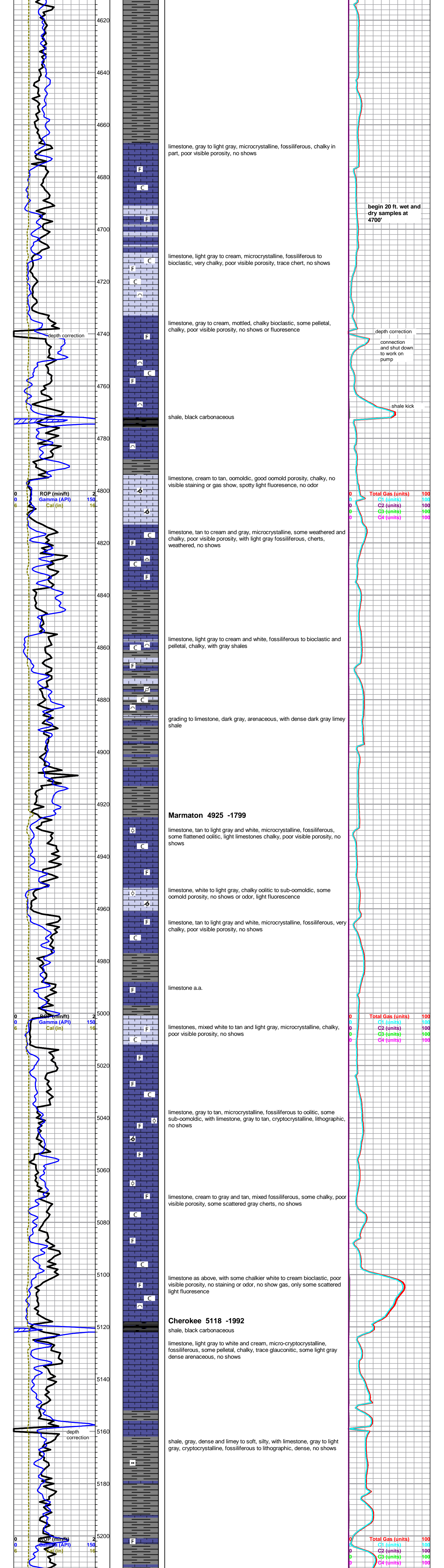
STRINGER
 ■ Dolomite
 ■ Limestone
 ■ Sandstone

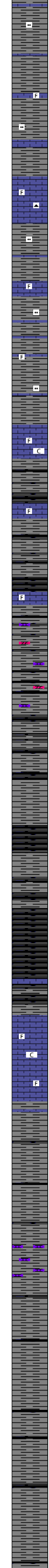
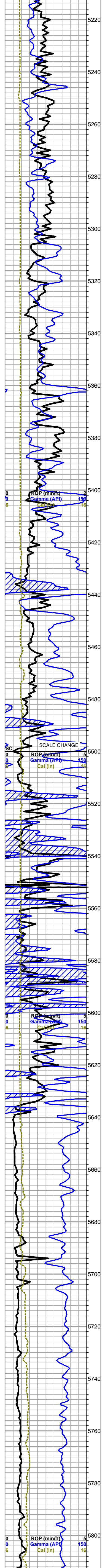
TEXTURE
 C Chalky
 L Lithog

OTHER SYMBOLS

MISC	Oil Show	DST
<ul style="list-style-type: none"> Daily Report Digital Photo Document Folder Link Vertical Log File Horizontal Log File Core Log File Drill Cuttings Rpt 	<ul style="list-style-type: none"> Good Show Fair Show Poor Show Spotted or Trace Questionable Stn Dead Oil Stn Fluorescence Gas 	<ul style="list-style-type: none"> DST Int DST alt Core tail pipe







a.a.

limestone, gray, cryptocrystalline, fossiliferous, dense, with limestone, gray arenaceous, no shows, some tan chert

shale, gray, dense and limey to soft, silty, with limestone, gray to light gray, cryptocrystalline, fossiliferous to lithographic, dense, no shows

as above

influx limestone, white to cream, microcrystalline, chalky, fossiliferous, poor visible porosity, no shows

shale, black carbonaceous, black and gray, some scattered limestones, tan to gray, dense, fossiliferous, no shows

as above

shales, black carbonaceous, black and gray, some scattered brown to gray fossiliferous limestone, some light brown sub-sucrosic dolomite, dense, no shows

shales, black carbonaceous, black and gray

shale, mostly black carbonaceous

shale, black carbonaceous

limestone, gray mottled, cryptocrystalline, fossiliferous, chalky in part, no visible porosity, no shows

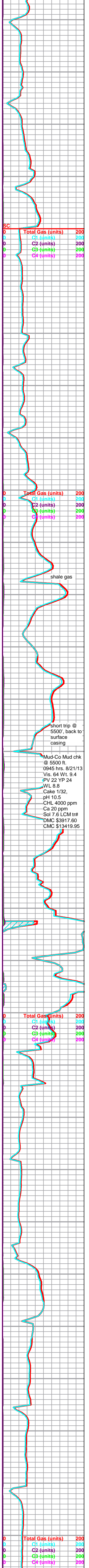
Morrow 5634 -2508

shale, gray to light gray, some black, plated to fissile, some silty, fairly soft

shale as above, some scattered gray-tan fossiliferous limestones

shales as above

shales as above



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

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

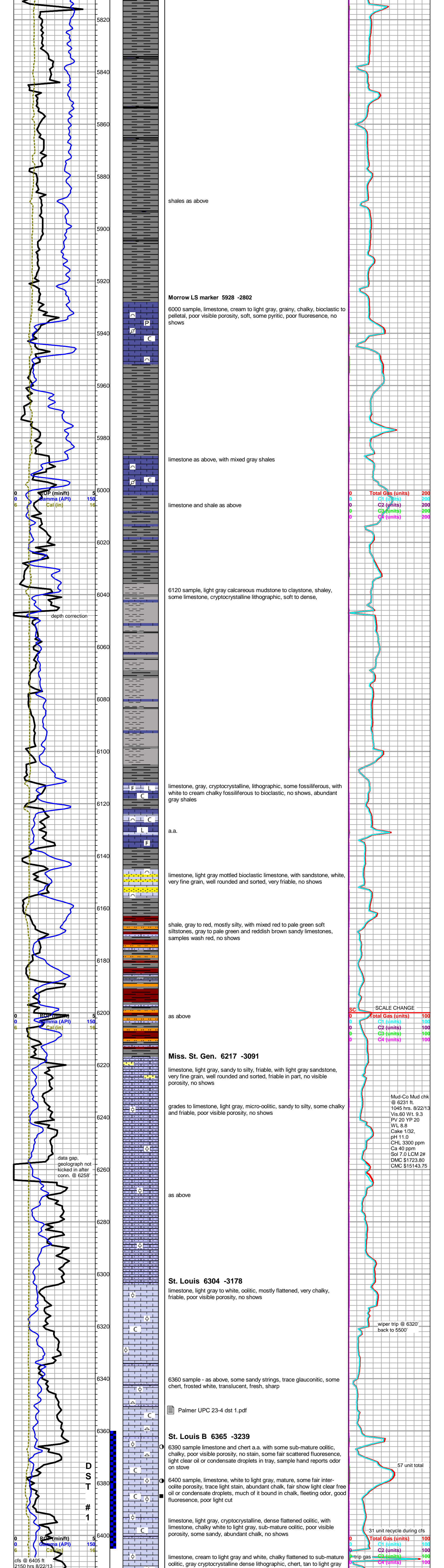
shale gas

short trip @ 5500', back to surface casing

Mud-Co Mud chk @ 5500 ft.
0945 hrs. 8/21/13
Vis. 64 Wt. 9.4
PV 22 YP 24
WL 8.8
Cake 1/32,
pH 10.5
CHL 4000 ppm
Ca 20 ppm
Sol 7.6 LCM tr#
DMC \$3917.60
CMC \$13419.95

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

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



shales as above

Morrow LS marker 5928 -2802

6000 sample, limestone, cream to light gray, grainy, chalky, bioclastic to pelletal, poor visible porosity, soft, some pyritic, poor fluorescence, no shows

limestone as above, with mixed gray shales

limestone and shale as above

6120 sample, light gray calcareous mudstone to claystone, shaley, some limestone, cryptocrystalline lithographic, soft to dense,

depth correction

limestone, gray, cryptocrystalline, lithographic, some fossiliferous, with white to cream chalky fossiliferous to bioclastic, no shows, abundant gray shales

a.a.

limestone, light gray mottled bioclastic limestone, with sandstone, white, very fine grain, well rounded and sorted, very friable, no shows

shale, gray to red, mostly silty, with mixed red to pale green soft siltstones, gray to pale green and reddish brown sandy limestones, samples wash red, no shows

as above

Miss. St. Gen. 6217 -3091

limestone, light gray, sandy to silty, friable, with light gray sandstone, very fine grain, well rounded and sorted, friable in part, no visible porosity, no shows

grades to limestone, light gray, micro-oolitic, sandy to silty, some chalky and friable, poor visible porosity, no shows

data gap, geolograph not kicked in after conn. @ 6258'

as above

St. Louis 6304 -3178

limestone, light gray to white, oolitic, mostly flattened, very chalky, friable, poor visible porosity, no shows

Mud-Co Mud chk @ 6231 ft. 1045 hrs. 8/22/13 Vis.60 Wt. 9.3 PV 20 YP 20 WL 8.8 Cake 1/32, pH 11.0 CHL 3300 ppm Ca 40 ppm Sol 7.0 LCM 2# DMC \$1723.80 CMC \$15143.75

wiper trip @ 6320' back to 5500'

6360 sample - as above, some sandy strings, trace glauconitic, some chert, frosted white, translucent, fresh, sharp

Palmer UPC 23-4 dst 1.pdf

St. Louis B 6365 -3239

6390 sample limestone and chert a.a. with some sub-mature oolitic, chalky, poor visible porosity, no stain, some fair scattered fluorescence, light clear oil or condensate droplets in tray, sample hand reports odor on stove

6400 sample, limestone, white to light gray, mature, some fair inter-oolite porosity, trace light stain, abundant chalk, fair show light clear free oil or condensate droplets, much of it bound in chalk, fleeting odor, good fluorescence, poor light cut

limestone, light gray, cryptocrystalline, dense flattened oolitic, with limestone, chalky white to light gray, sub-mature oolitic, poor visible porosity, some sandy, abundant chalk, no shows

limestone, cream to light gray and white, chalky flattened to sub-mature oolitic, gray cryptocrystalline dense lithographic, chert, tan to light gray

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

SCALE CHANGE

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

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

57 unit total

31 unit recycle during cfs

DST # 1

