


OPERATOR

Company: Rama Operating Company, Inc.
 Address: 101 S. Main st
 Stafford, Kansas 67578

Contact Geologist:
 Contact Phone Nbr: 620-234-5191
 Well Name: Hillard #4-1
 Location: 8 5/8" @ 1123'
 Pool:
 State: Kansas, Pratt County

API: 15-151-24086-00-00
 Field: Rollingson
 Country: USA




Joshua R. Austin

Petroleum Geologist

report for

RAMA Operating CO., Inc



Scale 1:240 Imperial

Well Name: Hillard #4-1
 Surface Location: 8 5/8" @ 1123'
 Bottom Location:
 API: 15-151-24086-00-00
 License Number:
 Spud Date: 9/20/2013 Time: 3:34 PM
 Region: W2-NE-SW-NE Sec 1-28s-13w
 Drilling Completed: 9/28/2013 Time: 5:50 PM
 Surface Coordinates: 1,650 From North Line & 1,700' From East Line
 Bottom Hole Coordinates:
 Ground Elevation: 1843.00ft
 K.B. Elevation: 1856.00ft
 Logged Interval: 3100.00ft To: 4626.00ft
 Total Depth: 4626.00ft
 Formation: Simpson
 Drilling Fluid Type: Chemical mud was displaced at 3093'

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1,650 From North Line
 E/W Co-ord: 1,700' From East Line

LOGGED BY

Company: Joshua R. Austin, Petroleum Geologist
 Address: 732 NE 110th Ave
 Stafford, KS 67578
 Phone Nbr: 620-546-3960
 Logged By: Geologist Name: Josh Austin

CONTRACTOR

Contractor: Sterling Drilling Company
 Rig #: 5
 Rig Type: mud rotary
 Spud Date: 9/20/2013 Time: 3:34 PM
 TD Date: 9/28/2013 Time: 5:50 PM
 Rig Release: Time:

ELEVATIONS

K.B. Elevation: 1856.00ft
K.B. to Ground: 13.00ft

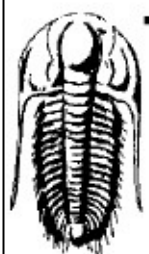
Ground Elevation: 1843.00ft

NOTES

On the basis of the drill stem test and after reviewing the electric logs, it was recommended by all parties involved to set 5 1/2" production casing to further test the Simpson Sand. After the electric logs drilling commenced to a rotary total depth of 4626' for a possible saltwater disposal well.

RAMA Operating Co., Inc. well comparison sheet

| DRILLING WELL | | | | | COMPARISON WELL | | | | COMPARISON WELL | | | |
|---------------|--------|---------|------|---------|-----------------|---------|-------------------------|-----|-----------------|---------|-------------------------|-------|
| Hillard #4-1 | | | | | Hillard #3 | | | | Hillard-Travis | | | |
| 1856 KB | | | | | 1849 KB | | Structural Relationship | | 1848 KB | | Structural Relationship | |
| Formation | Sample | Sub-Sea | Log | Sub-Sea | Log | Sub-Sea | Sample | Log | Log | Sub-Sea | Sample | Log |
| Heebner | 3542 | -1686 | 3540 | -1684 | 3532 | -1683 | -3 | -1 | 3523 | -1675 | -11 | -9 |
| Toronto | 3558 | -1702 | 3554 | -1698 | | | | | 3546 | -1698 | -4 | 0 |
| Douglas | 3581 | -1725 | 3576 | -1720 | | | | | 3558 | -1710 | -15 | -10 |
| Brown Lime | 3725 | -1869 | 3722 | -1866 | 3714 | -1865 | -4 | -1 | 3704 | -1856 | -13 | -10 |
| Lansing | 3737 | -1881 | 3742 | -1886 | 3732 | -1883 | 2 | -3 | 3725 | -1877 | -4 | -9 |
| Base KC | 4100 | -2244 | 4092 | -2236 | | | | | 4068 | -2220 | -24 | -16 |
| Mississippi | 4190 | -2334 | 4188 | -2332 | 4179 | -2330 | -4 | -2 | 4174 | -2326 | -8 | -6 |
| Viola | 4245 | -2389 | 4243 | -2387 | | | | | 4236 | -2388 | -1 | 1 |
| Simpson Shale | 4285 | -2429 | 4282 | -2426 | 4274 | -2425 | -4 | -1 | 4269 | -2421 | -8 | -5 |
| Upper Sand | 4292 | -2436 | 4288 | -2432 | | | | | 4280 | -2432 | -4 | 0 |
| Lower Sand | 4318 | -2462 | 4318 | -2462 | | | | | 4308 | -2460 | -2 | -2 |
| Arbuckle | 4414 | -2558 | 4410 | -2554 | | | | | | | | -2554 |
| Total Depth | 3980 | -2124 | 3980 | -2124 | | | | | 4324 | -2476 | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

| | |
|-----------------------------------|-----------------------------------|
| Rama Operating Co. | 1-28s-13w Pratt Ks. |
| 101 S. Main Stafford Ks. 67578 | Hillard #4-1 |
| ATTN: Josh Austin | Job Ticket: 52358 DST#: 1 |
| | Test Start: 2013.09.27 @ 05:34:50 |

GENERAL INFORMATION:

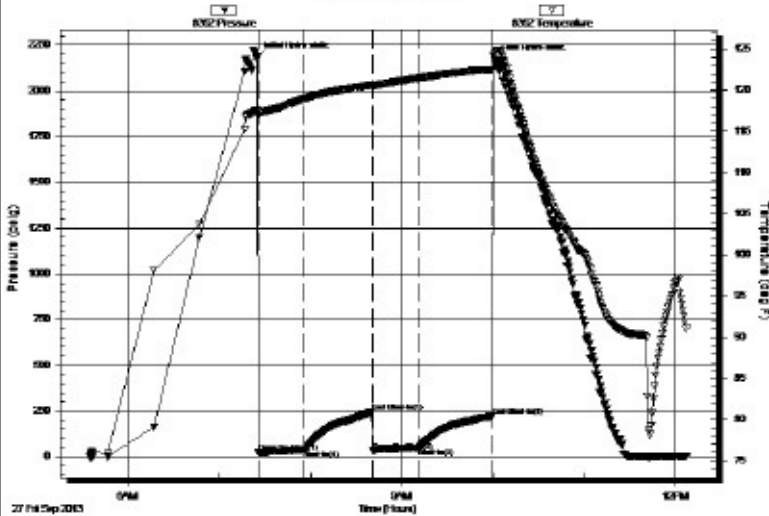
| | |
|--|---|
| Formation: Simpson Sd. | Test Type: Conventional Bottom Hole (Initial) |
| Deviated: No Whipstock: ft (KB) | Tester: Gary Pevoteaux |
| Time Tool Opened: 07:25:50 | Unit No: 56 |
| Time Test Ended: 12:07:20 | Reference Elevations: 1856.00 ft (KB) |
| Interval: 4280.00 ft (KB) To 4336.00 ft (KB) (TVD) | 1843.00 ft (CF) |
| Total Depth: 4336.00 ft (KB) (TVD) | KB to GR/CF: 13.00 ft |
| Hole Diameter: 7.88 inches | Hole Condition: Fair |

| | |
|--|-------------------------------------|
| Serial #: 8352 Inside | Capacity: 8000.00 psig |
| Press@RunDepth: 48.89 psig @ 4281.00 ft (KB) | Last Calib.: 2013.09.27 |
| Start Date: 2013.09.27 End Date: 2013.09.27 | Time On Btm: 2013.09.27 @ 07:24:35 |
| Start Time: 05:34:55 End Time: 12:07:19 | Time Off Btm: 2013.09.27 @ 10:00:50 |

TEST COMMENT: IF:Fair blow . Increase to 10".

ISI:No blow .
 FF:Fair blow . Increase to 10".
 FSI:No blow .

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2184.00 | 117.57 | Initial Hydro-static |
| 2 | 23.06 | 116.89 | Open To Flow (1) |
| 31 | 37.06 | 118.93 | Shut-In(1) |
| 76 | 244.29 | 120.63 | End Shut-In(1) |
| 77 | 31.96 | 120.54 | Open To Flow (2) |
| 107 | 48.89 | 121.48 | Shut-In(2) |
| 155 | 220.20 | 122.46 | End Shut-In(2) |
| 157 | 2169.92 | 124.57 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------------------------|--------------|
| 60.00 | GOCM 8%g 8%o 84%m. | 0.30 |
| 0.00 | 240 ft.of GIP/Clean oil @ top of tool | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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

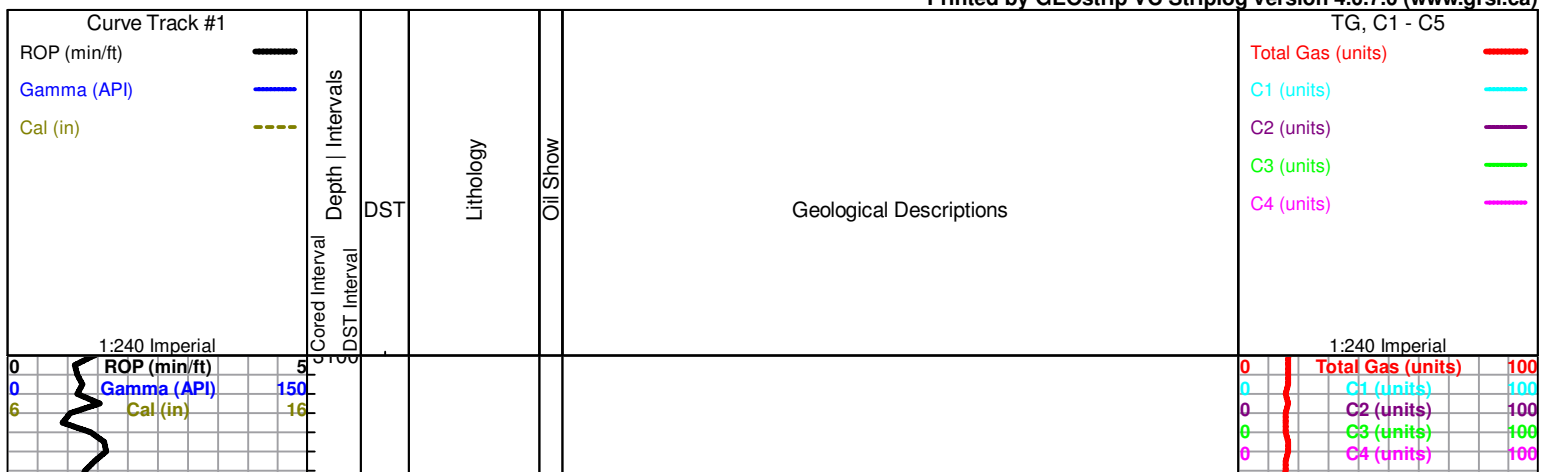
ROCK TYPES

| | | | |
|--------|----------------------|------------|------|
| Cht | Lmst fw7> shale, grn | shale, gry | Ss |
| Dolsec | shale, grn | Carbon Sh | Slst |

OTHER SYMBOLS

- DST
 DST Int
 DST alt
 Core
 tail pipe

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



3120
3140
3160
3180
3200
3220
3240
3260
3280
3300
3320

TOPEKA 3189 (-1333)

Limestone; cream-tan, fine xln, chalky, dense

grey shale

Limestone; cream-buff, fine xln, chalky, slightly granular, few fossiliferous pieces, poor porosity, no shows

Limestone as above

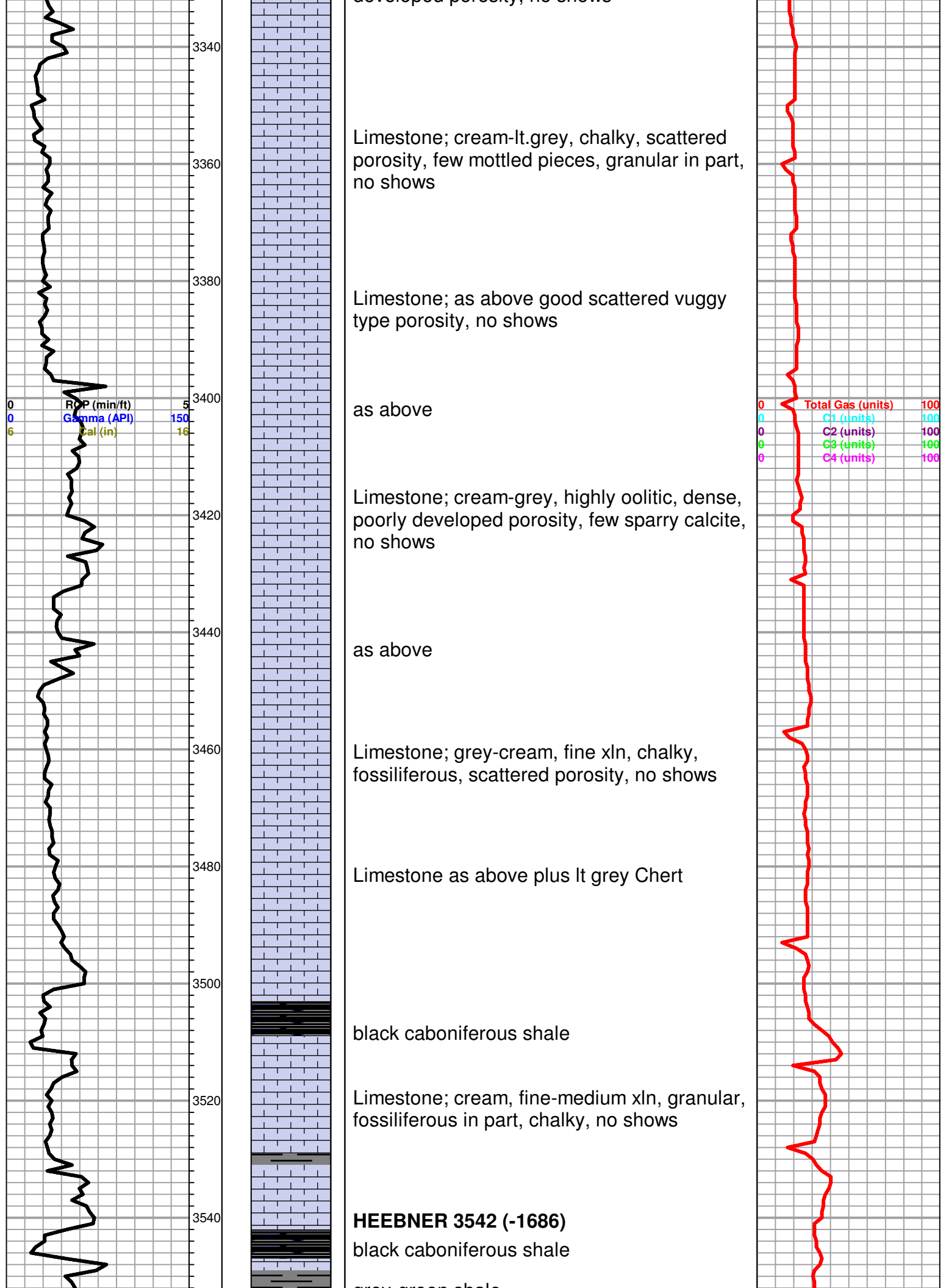
Limestone; cream-tan-lt. grey, chalky, slightly fossiliferous, dense, poor porosity, plus white chalk

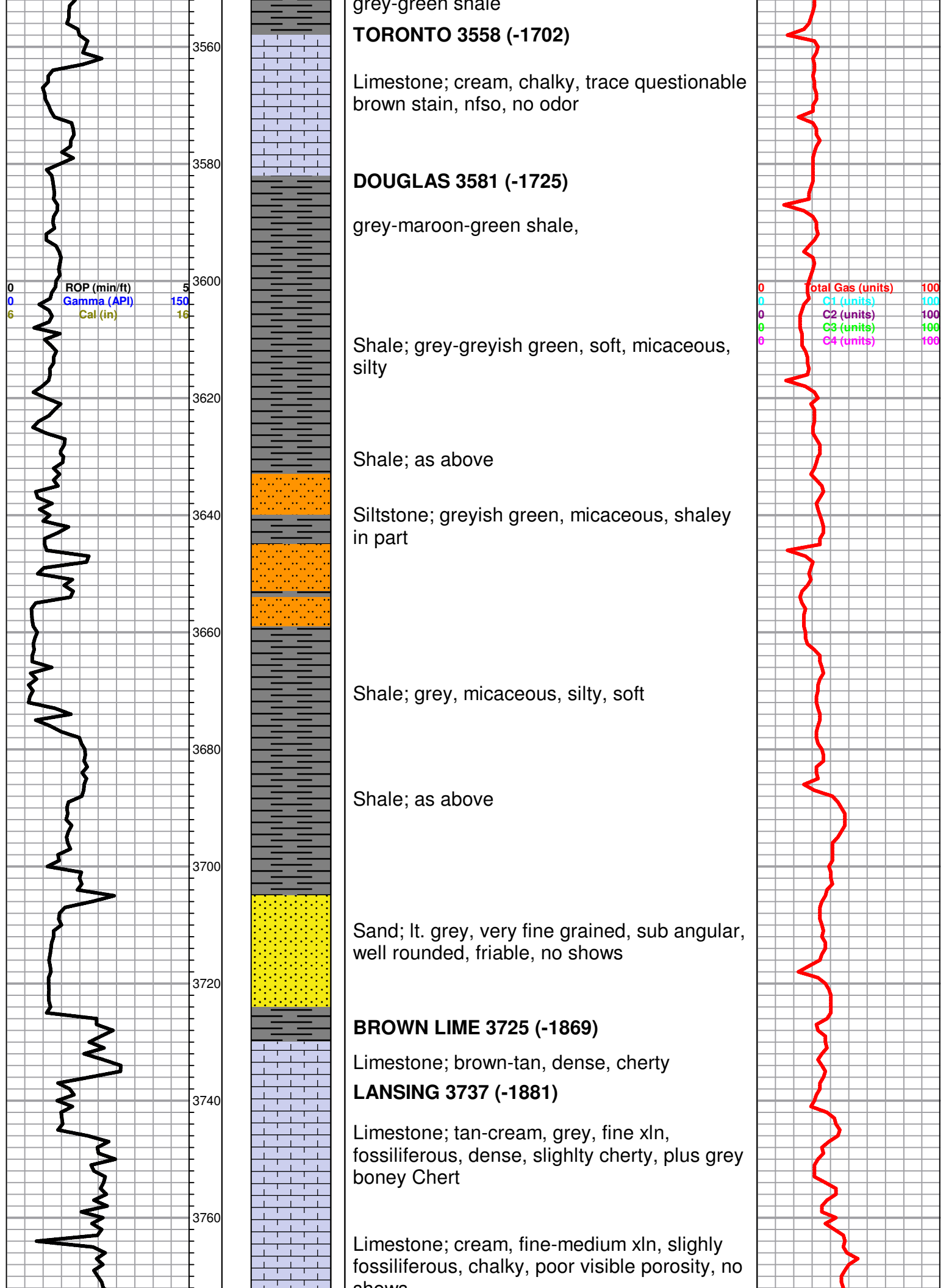
as above

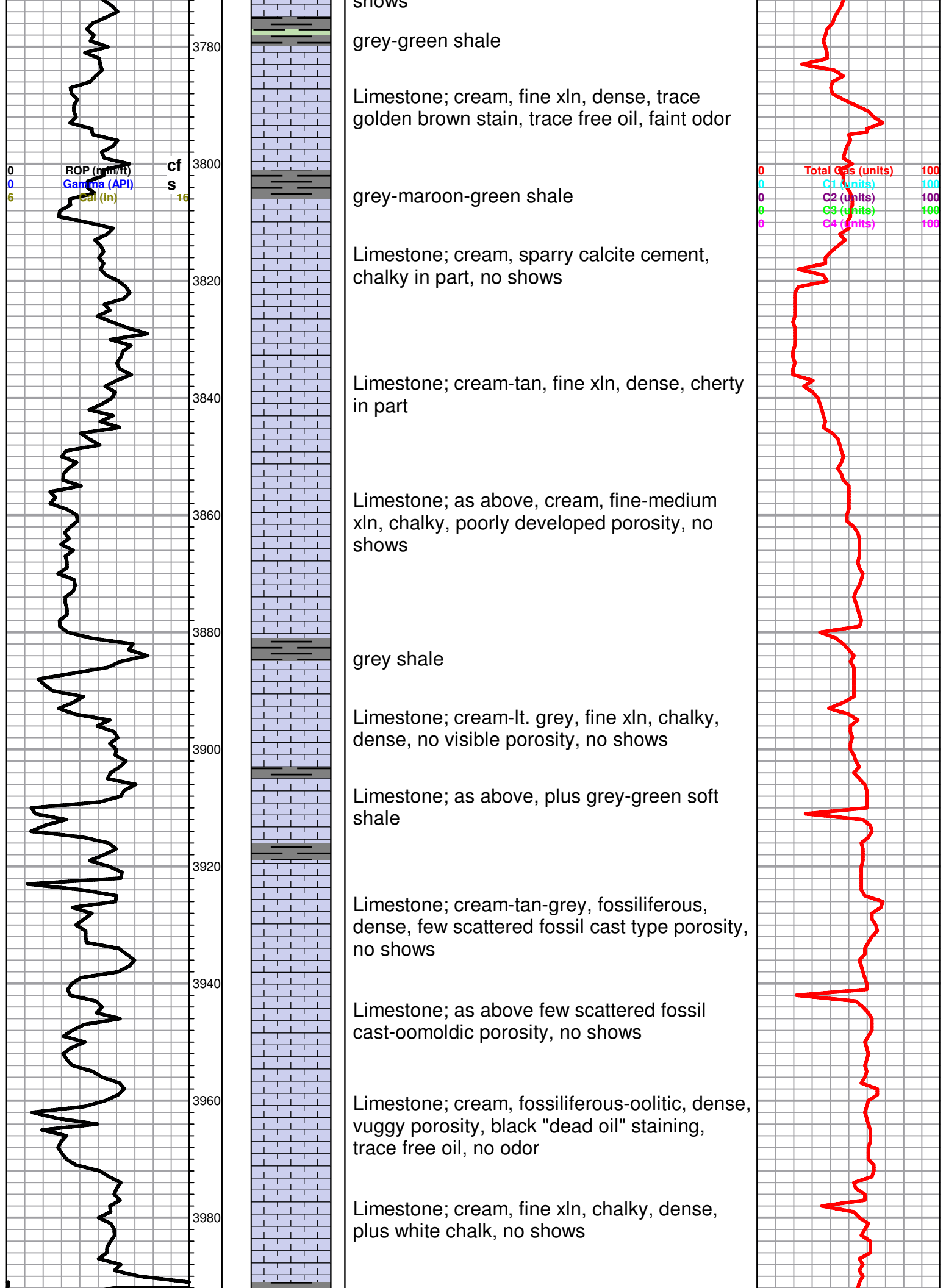
Limestone; grey-tan, highly fossiliferous-oolitic, chalky in part, dense, poorly developed porosity, no shows

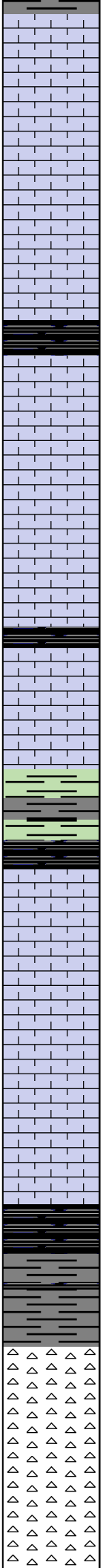
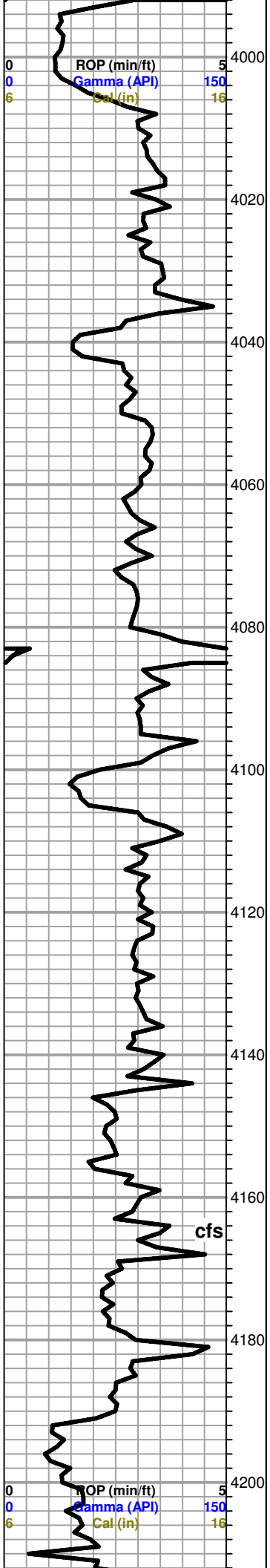
ROP (min/ft) 5
Gamma (API) 150
Cal (in) 16

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









grey-maroon-green shale

Limestone; cream-white, chalky, poorly developed porosity, slightly granular, no shows

Limestone; tan-cream, fine xln, dense, cherty, poor porosity, no shows, plus grey boney Chert

STARK SHALE
black carboniferous shale

Limestone; cream, fine-medium xln, chalky in part, few scattered inter xln porosity, trace brown stain, NSFO, no odor

Limestone; as above, plus grey Chert

black carboniferous shale

Limestone; buff-cream, fine xln, dense, cherty, poor porosity, no shows

BASE KANSAS CITY 4100

black carboniferous shale, plus grey-green shale

Limestone; cream-white, fin xln, chalky, dense, poor visible porosity, no shows, trace Chert; grey-lt. grey-cream, boney

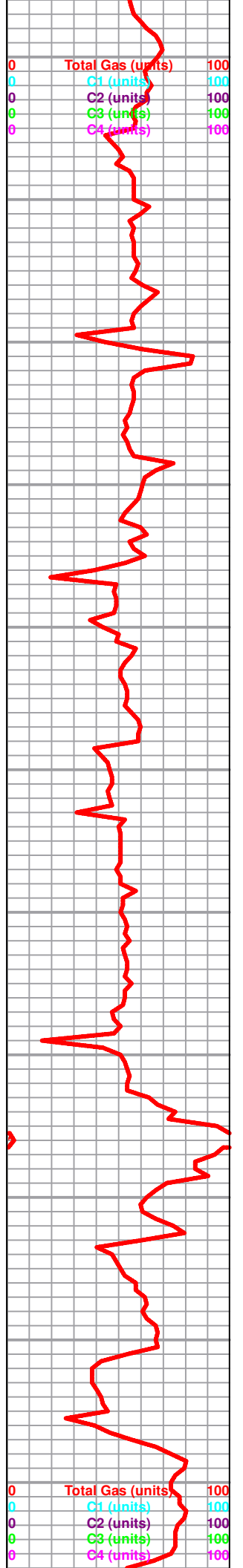
Limestone; cream, fine xln, inter xln porosity, spotty brown stain, NSFO, no odor plus Chert; grey-smokey grey, brown-black stain, NSFO

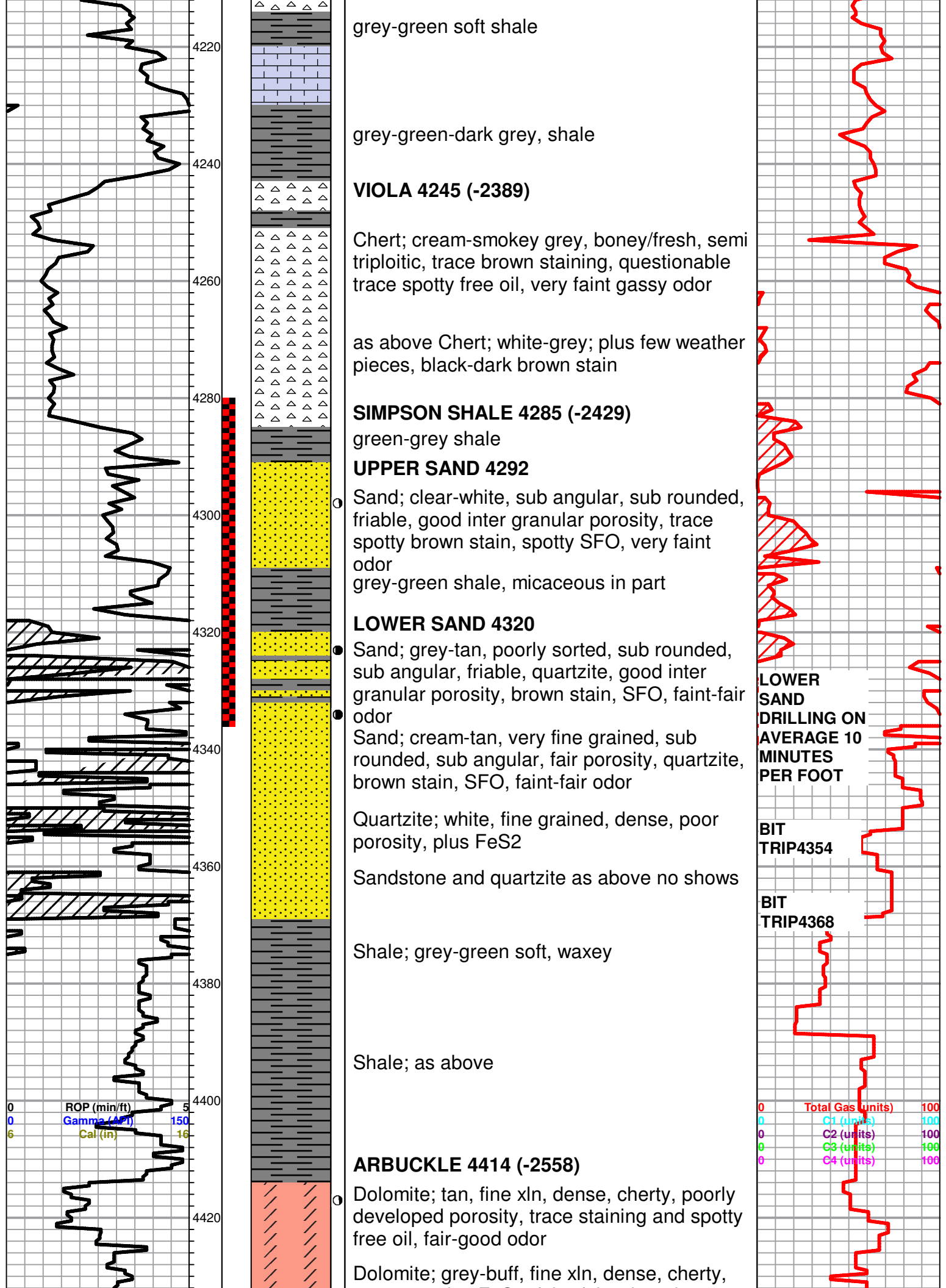
trace black cardoniferous shale

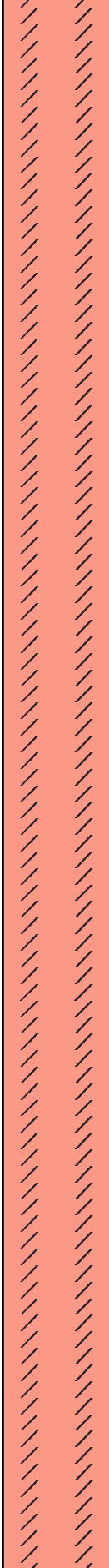
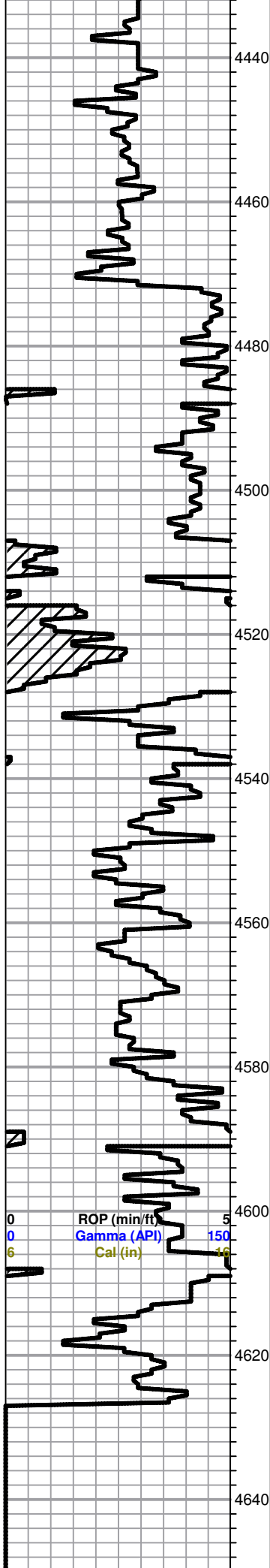
grey-green shale plus Limestone; cream, fine xln, chalky, dense, no shows

MISSISSIPPI 4190 (-2334)

Chert; cream-amber, boney/fresh, few semi tripolitic pieces, brown spotty stain, no odor, dull grey fluorescence







poor porosity, FeS₂, faint-fair odor, plus Chert, boney translucent

Dolomite; cream-lt. grey, fine-medium xln, quartz inclusions, poorly developed porosity, Chert; lt. grey-translucent

Dolomite and chert as above

Dolomite; tan-buff, fine-medium xln, dense, poor porosity, cherty in part, plus Chert; white-smokey grey, oolitic in part

Dolomite; tan-grey-buff, fine-medium xln, dense, cherty, poorly developed porosity, plus grey-white boney Chert

Dolomite; as above, few inter xln type porosity

Dolomite; cream-white, fine xln, sucrosic, few scattered porosity, no shows, plus grey-white boney chert

Dolomite; as above

Dolomite; buff-cream-lt. grey, fine-medium xln, dense, slightly granular, poor porosity

Dolomite; cream-buff, fine-medium xln, sandy-granular in part, fair inter xln porosity, no shows

ROTARY TOTAL DEPTH

