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WWW.HZMUD.COM/25

Customer Information

Operator: Noble Energy Inc
1625 Broadway
Suite 2200
Denver, Colorado 80202

Geologist: Renee Clackler
Noble Energy Inc.

Mud Logging Details

Logger: Daniel King &
Kevin Brooks

Log Interval: 2500' MD to 6820' MD

Start Date: August 7, 2014

Release Date: August 16, 2014

Well Information

Well Name: NCLP AA06-64-1HNC

Location: 5,6-6N-63W
2163' FSL, 100' FWL

County: Weld
State: Colorado

Drilling Rig: H&P 277

Total Depth: 16493' MD

TD Date: August 16, 3014

Formation: Niobrara C Chalk

KB Elevation: 4735'

GR Elevation: 4711'

API Number: 05-123-39025-0000

ROCK TYPES

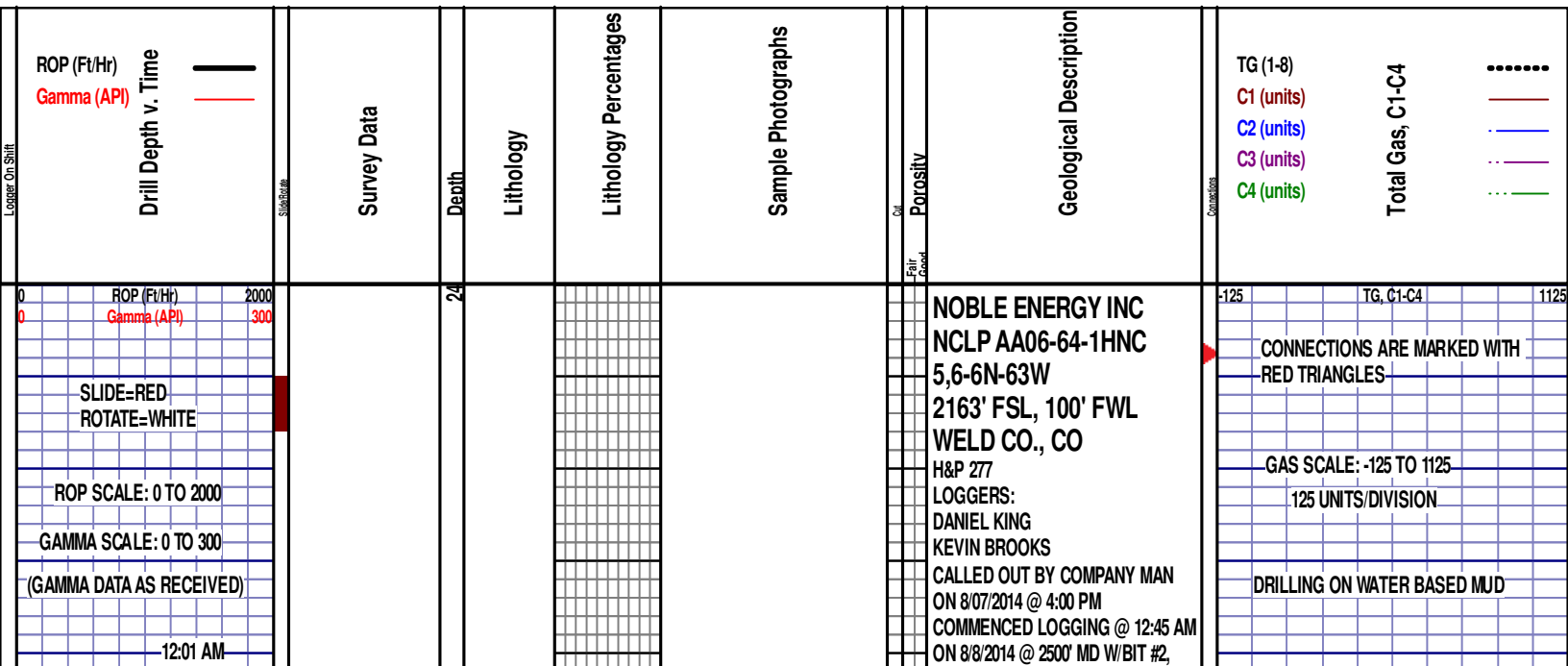
Anhy
Bent
Cht
Clyst
Coal
Congl
Dol

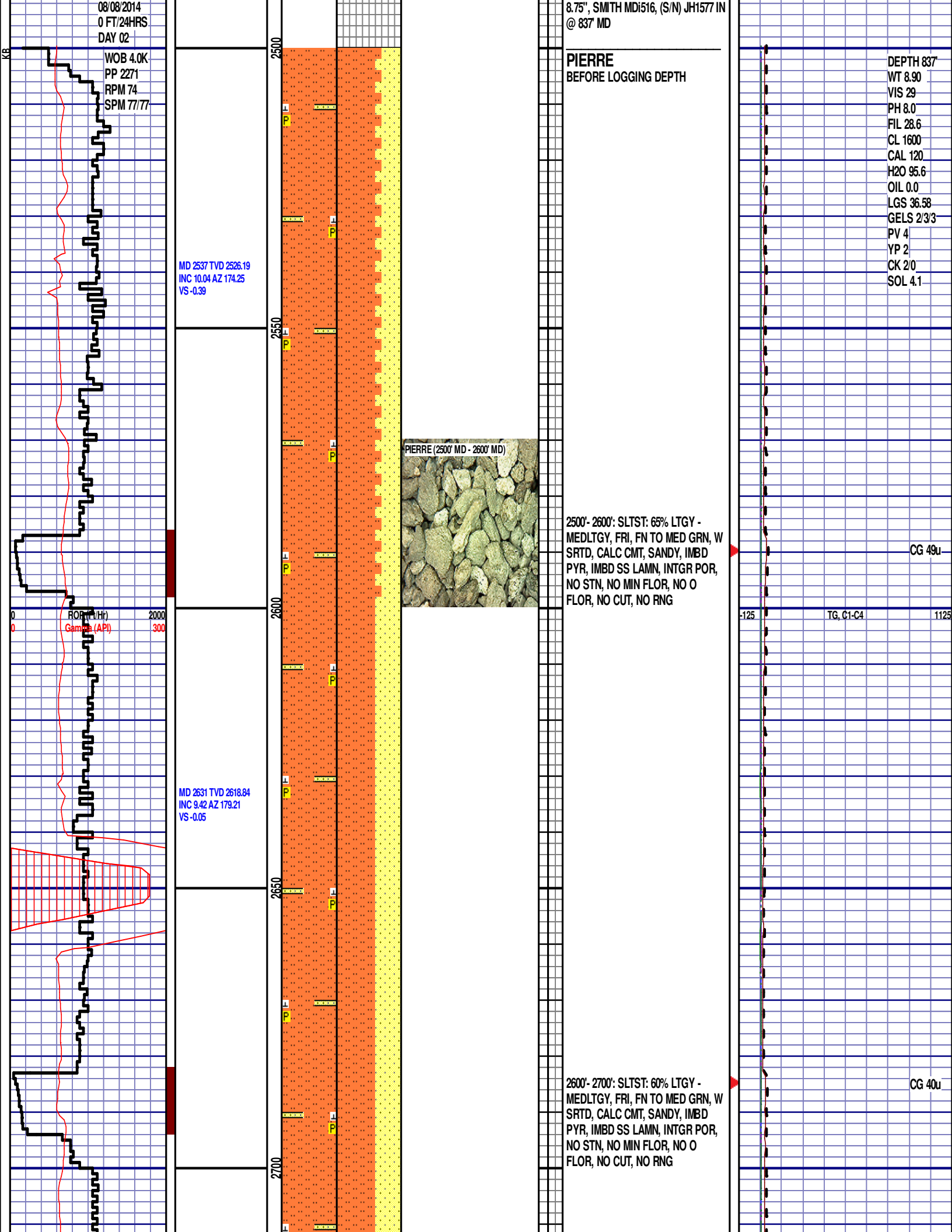
Gyp
Igne
Lmst
Meta
Mrlst
Salt
Shale

Shcol
Chalk
Slst
Ss
Till
gw
lmywash

ogw
olmywash
oshly gw
shly gw
sdygw
hvyrcbsh
nosmpl

Lsdetrit
sltst
sdy sh





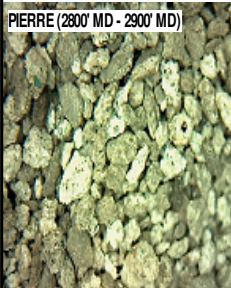
MD 2726 TVD 2712.53
INC 9.63 AZ 182.87
VS 1.5

MD 2820 TVD 2805.18
INC 9.84 AZ 181.98
VS 3.43

MD 2914 TVD 2897.67
INC 10.71 AZ 184.24
VS 5.69

2700'- 2800': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

PIERRE (2800' MD - 2900' MD)

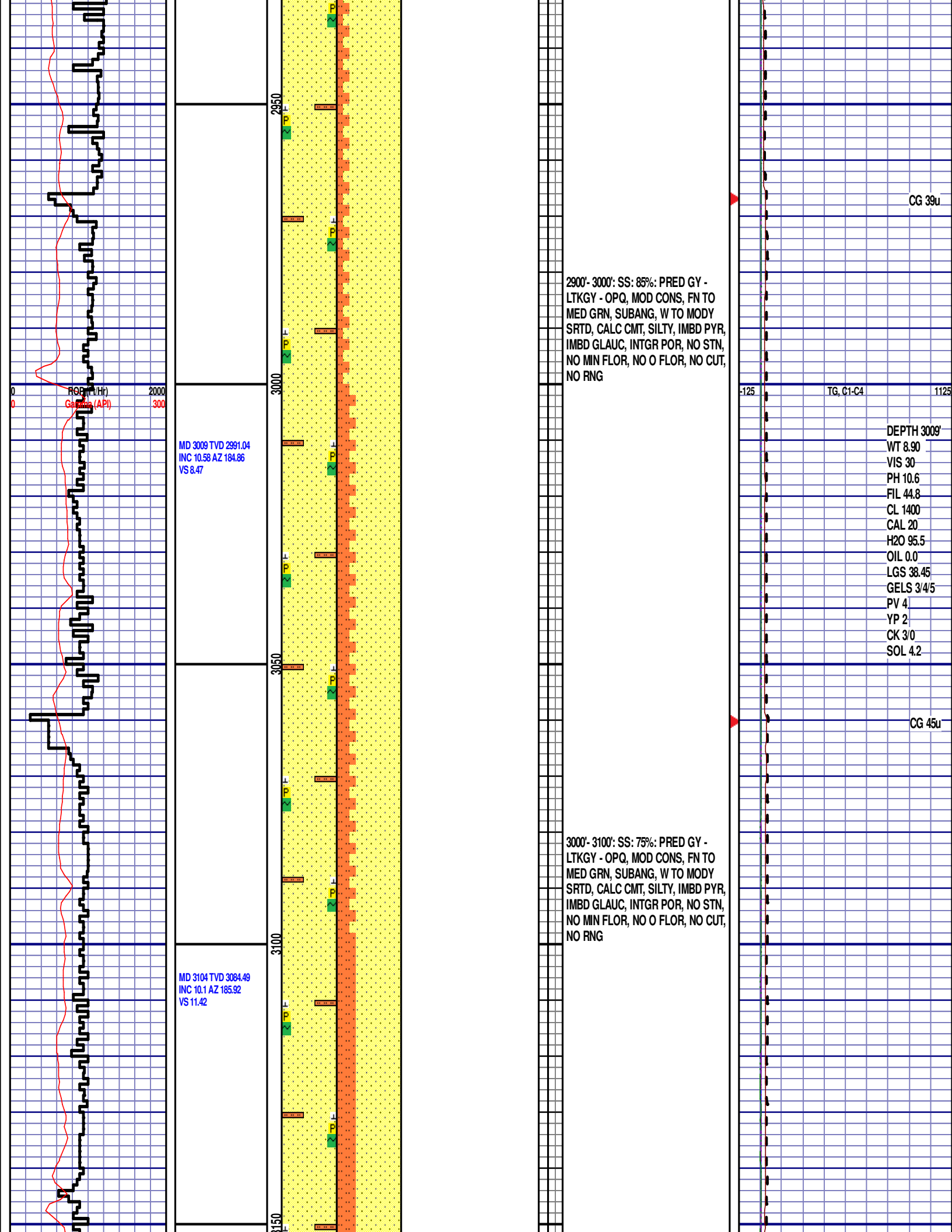


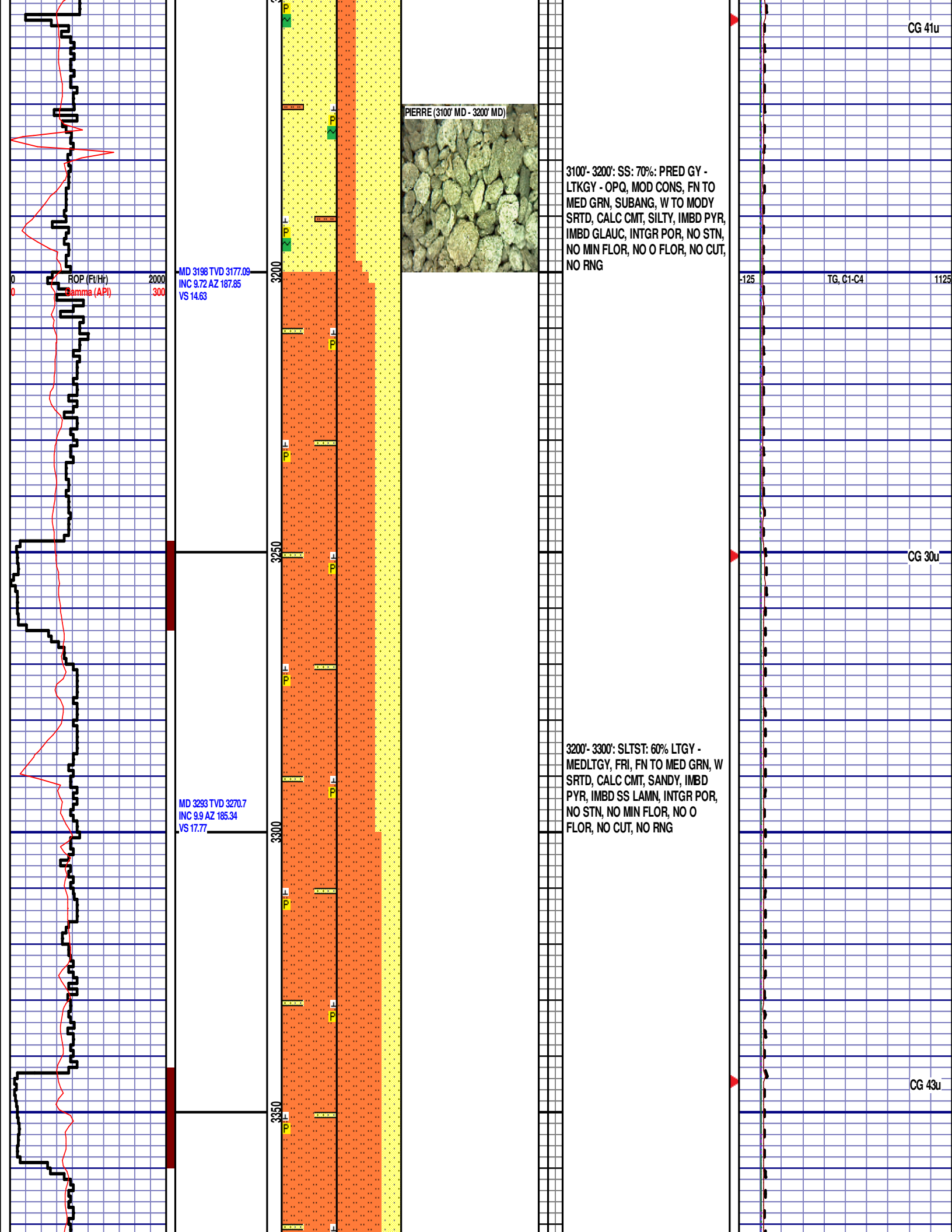
2800'- 2900': SS: 60%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, SILTY, IMBD PYR,
IMBD GLAUC, INTGR POR, NO STN,
NO MIN FLOR, NO O FLOR, NO CUT,
NO RNG

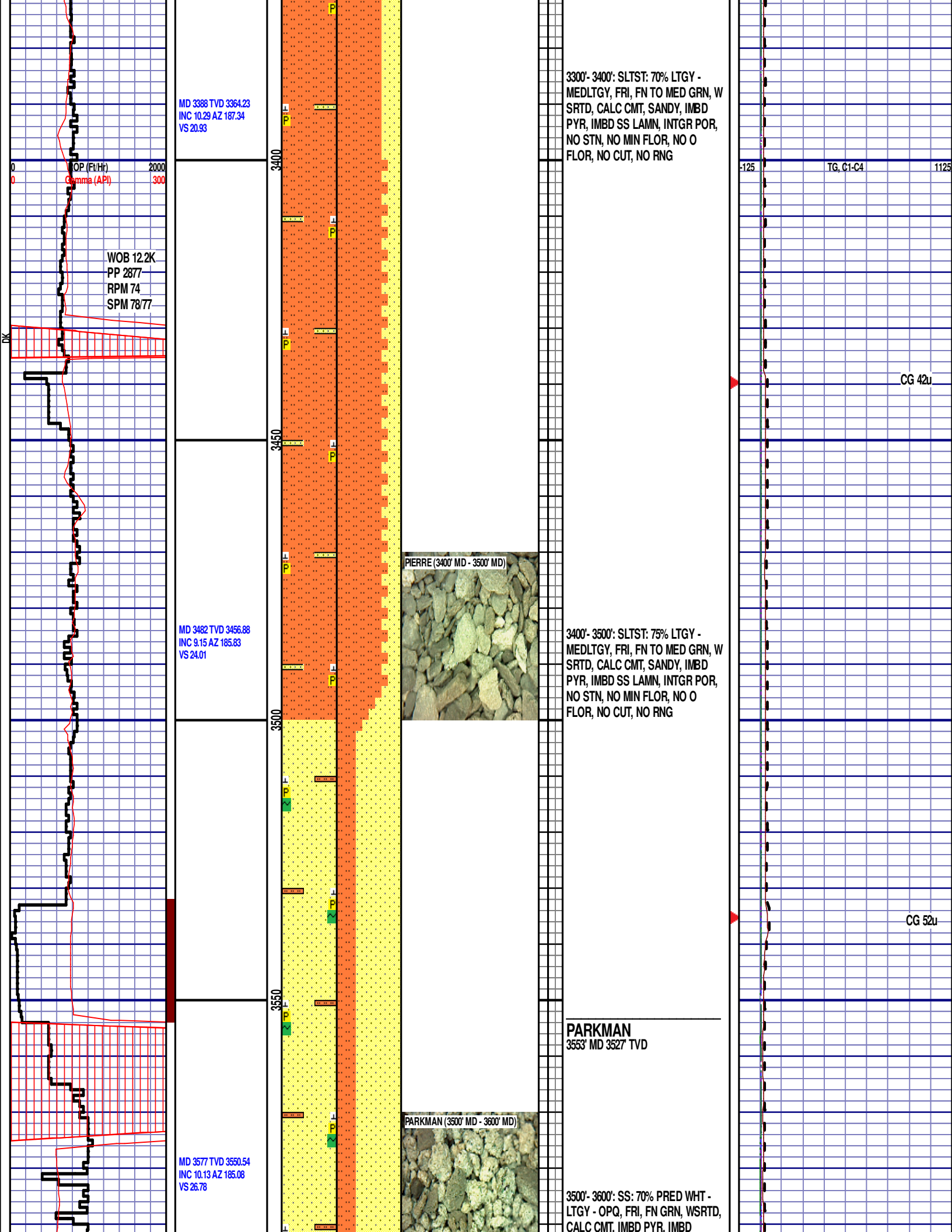
CG 42u

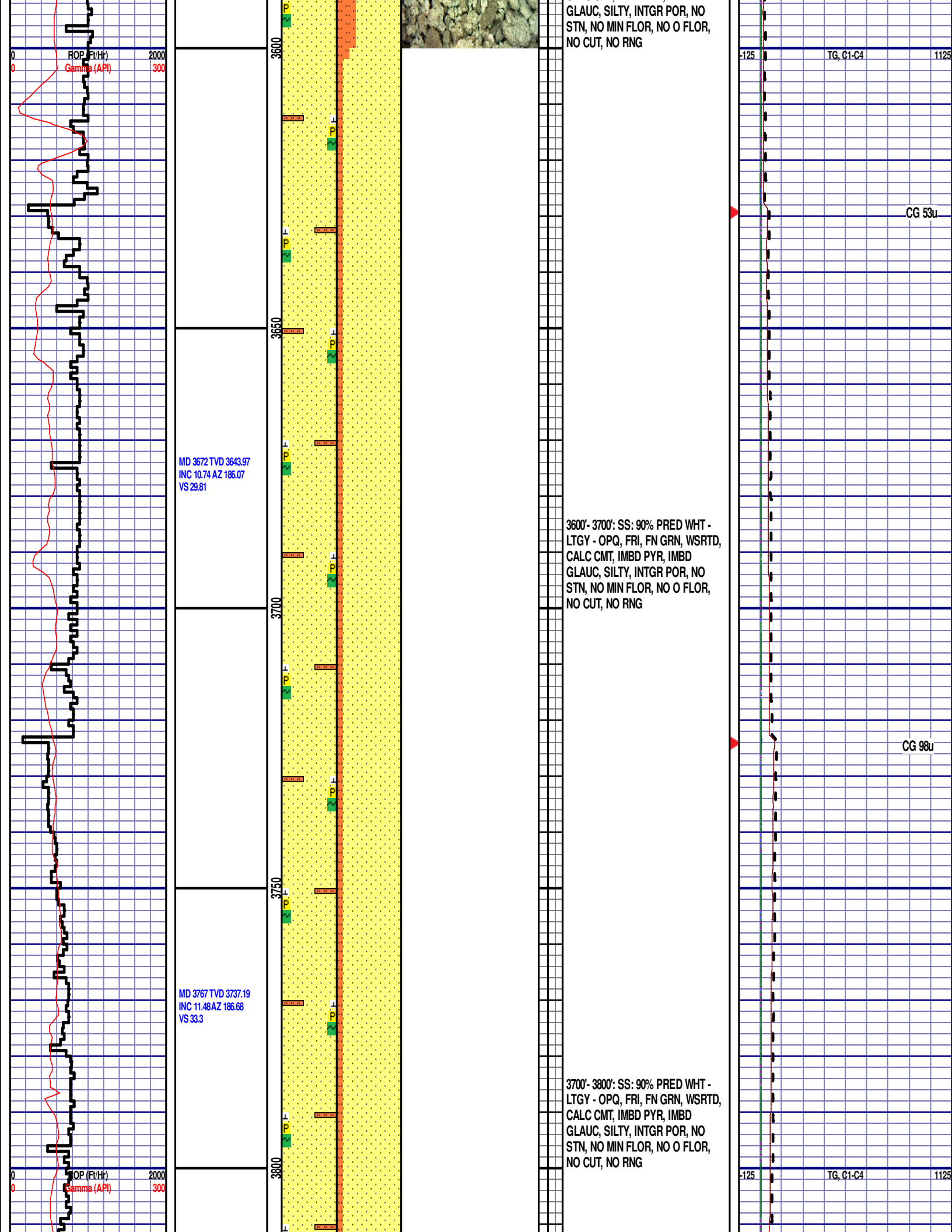
TG, C1-C4

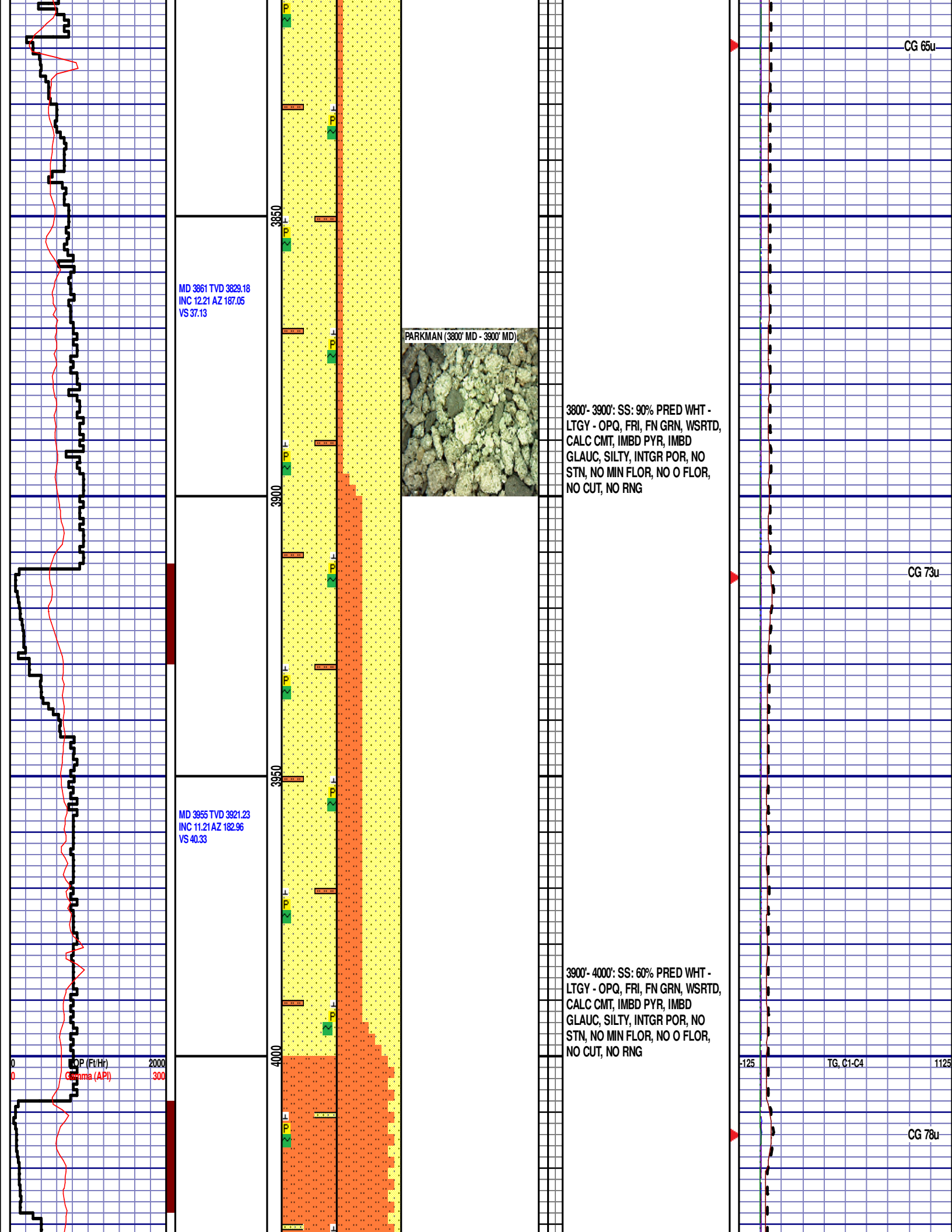
CG 46u











MD 4050 TVD 4014.72
INC 9.21 AZ 182.82
VS 42.52

MD 4145 TVD 4108.55
INC 8.8 AZ 183.12
VS 44.47

MD 4239 TVD 4201.54
INC 7.95 AZ 181.98
VS 46.18

4050

4100

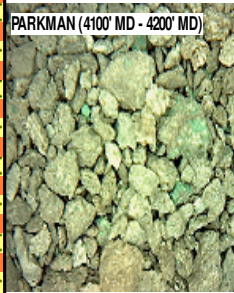
4150

4200

4250

4000'- 4100': SLTST: 85% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

PARKMAN (4100' MD - 4200' MD)



4100'- 4200': SLTST: 95% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

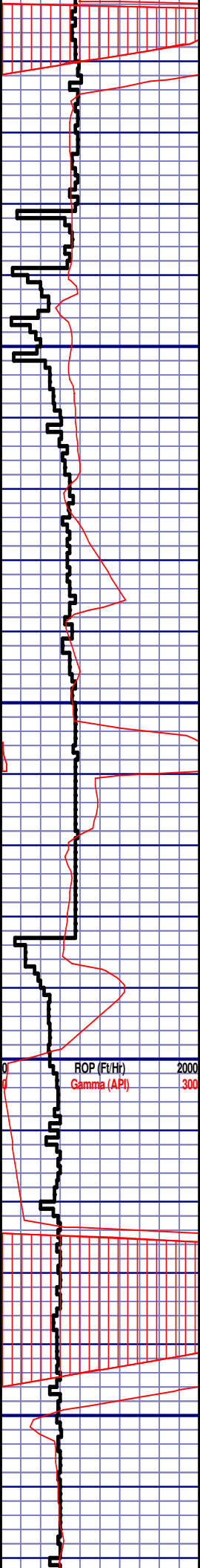
CG 63u

CG 56u

125 TG, C1-C4 1125

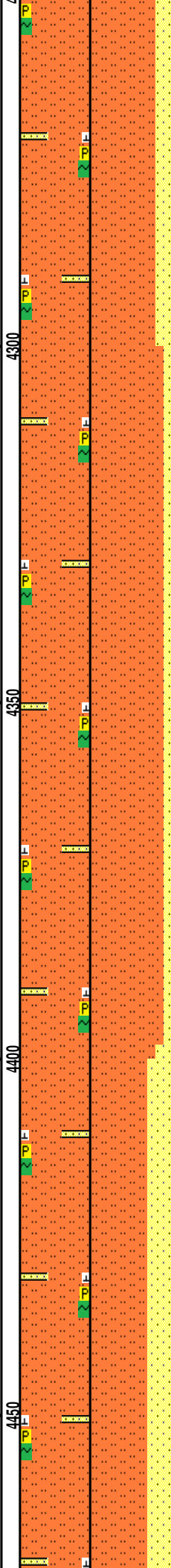
ROP (Ft/Hr)
Gamma (API)

2000
300



MD 4334 TVD 4295.77
INC 6.7 AZ 178.88
VS 47.27

MD 4428 TVD 4389.14
INC 6.5 AZ 177.91
VS 47.83



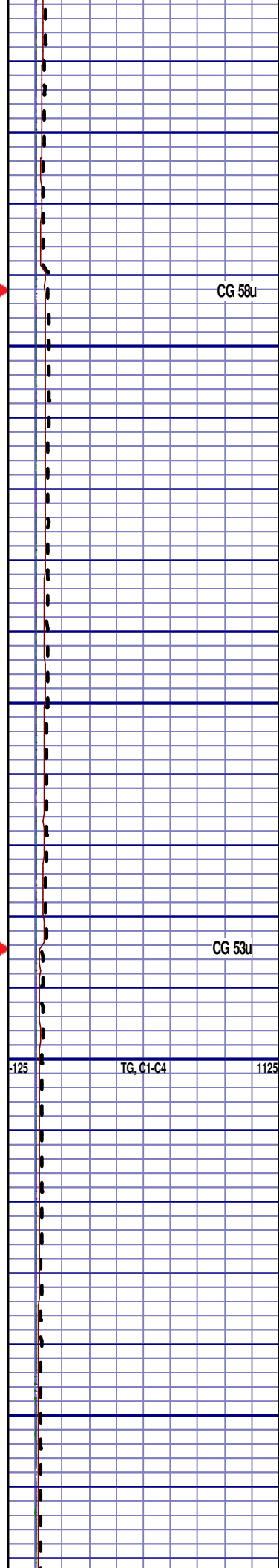
4200'- 4300': SLTST: 80% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

SUSSEX
4361' MD 4322' TVD



SUSSEX (4300' MD - 4400' MD)

4300'- 4400': SLTST: 90% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG



CG 58u

CG 53u

TG, C1-C4

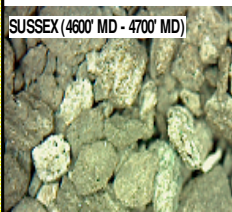
WOB 1.7K
PP 2043
RPM 85
SPM 71/71

MD 4523 TVD 4483.57
INC 6.09 AZ 178.1
VS 48.3

ROP (Ft/Hr) 2000
Gamma (API) 300

MD 4618 TVD 4578.09
INC 5.41 AZ 185.93
VS 49.35

SUSSEX (4600' MD - 4700' MD)



4400'- 4500': SLTST: 70% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

4500'- 4600': SLTST: 85% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

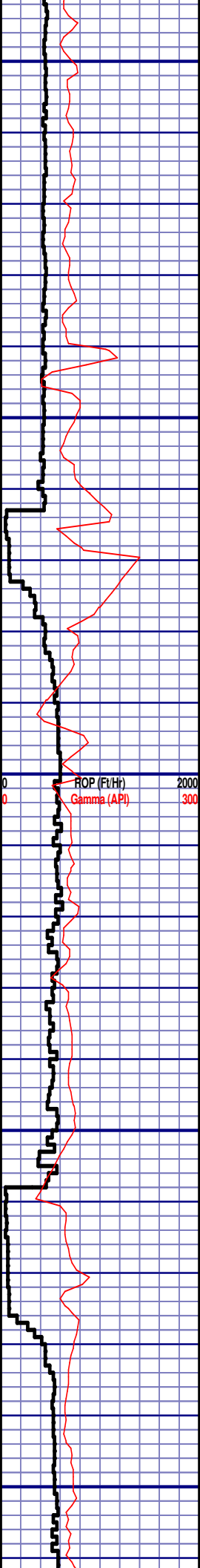
4600'- 4700': SLTST: 90% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,

CG 26u

CG 15u

TG, C1-C4

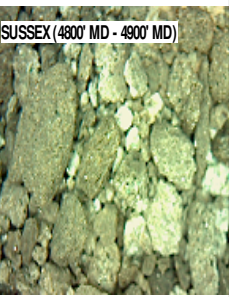
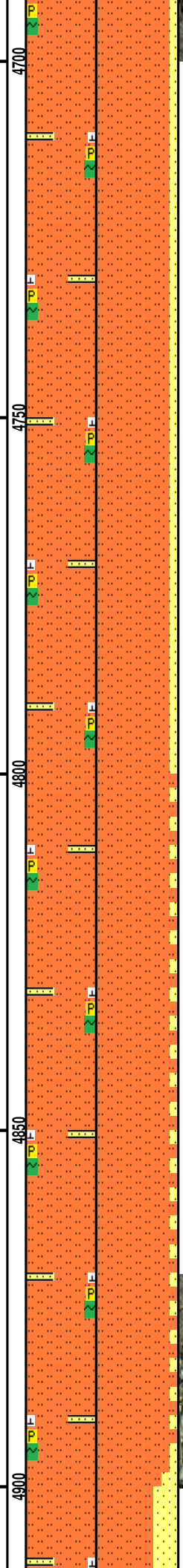
CG 15u



MD 4713 TVD 4672.69
INC 5.16 AZ 183.92
VS 50.8

MD 4808 TVD 4767.36
INC 4.37 AZ 184.61
VS 52.01

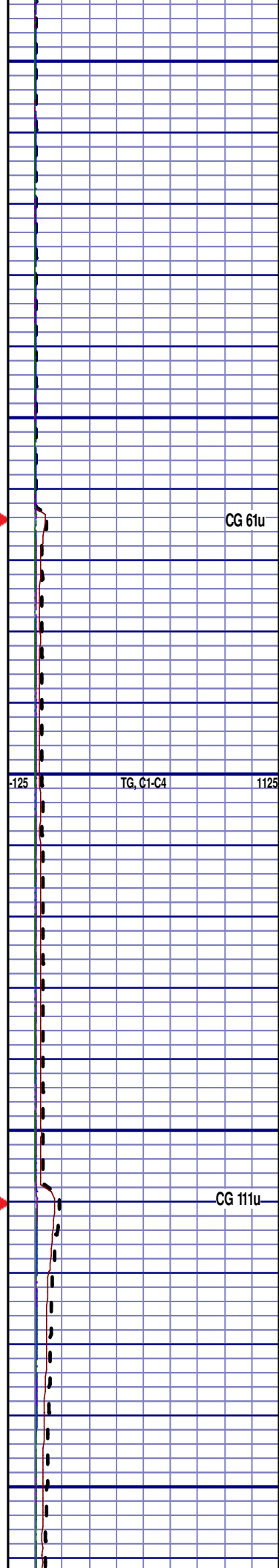
MD 4902 TVD 4861.16
INC 3.04 AZ 197.06
VS 53.5



IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

4700'- 4800': SLTST: 90% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

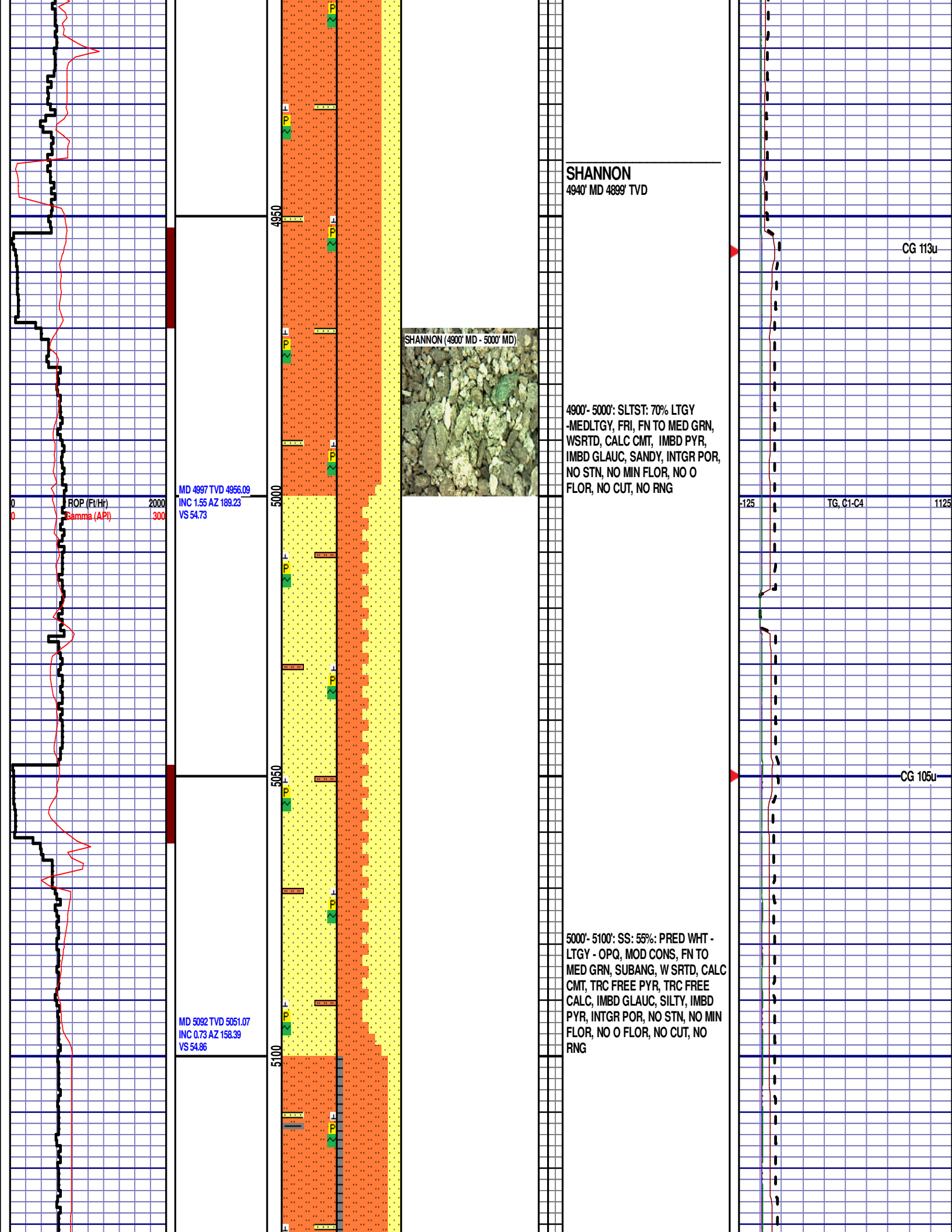
4800'- 4900': SLTST: 95% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SANDY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

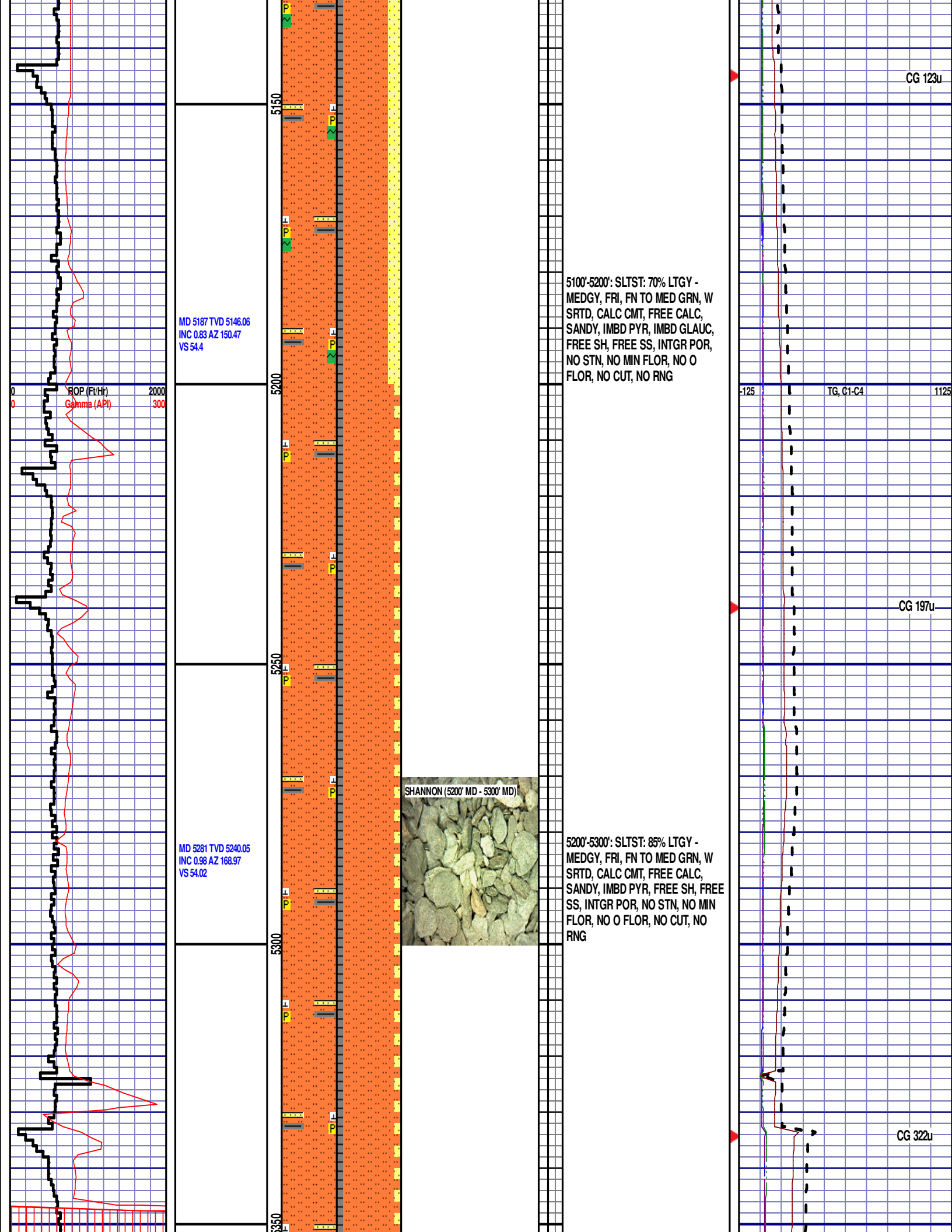


CG 61u

TG, C1-C4

CG 111u





CG 123u

5100'-5200': SLTST: 70% LTGY - MEDGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, FREE CALC, SANDY, IMBD PYR, IMBD GLAUC, FREE SH, FREE SS, INTGR POR, NO STN, NO MIN FLOR, NO O FLOR, NO CUT, NO RNG

125 TG, C1-C4 1125

CG 197u

SHANNON (5200' MD - 5300' MD)



5200'-5300': SLTST: 85% LTGY - MEDGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, FREE CALC, SANDY, IMBD PYR, FREE SH, FREE SS, INTGR POR, NO STN, NO MIN FLOR, NO O FLOR, NO CUT, NO RNG

CG 322u

MD 5376 TVD 5335.03
INC 0.89 AZ 160.43
VS 53.74

5300'-5400': SLTST: 85% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

MD 5471 TVD 5430.02
INC 0.73 AZ 128.2
VS 53.1

5400'-5500': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, IMBD GLAUC, FREE SH,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

MD 5566 TVD 5525.02
INC 0.7 AZ 111.57

CG 192u

CG 122u

VS 52.14

SHANNON (5500' MD - 5600' MD)

5500'-5600': SLTST: 70% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

DEPTH 5590'

WT 9.00

VIS 30

PH 8.9

TG, C1-C4 FIL 39.6

CL 1400

CAL 20

H2O 96.0

OIL 0.0

LGS 21.73

CG 76u GELS 3/8/12

PV 3

YP 3

CK 3/0

SOL 3.7

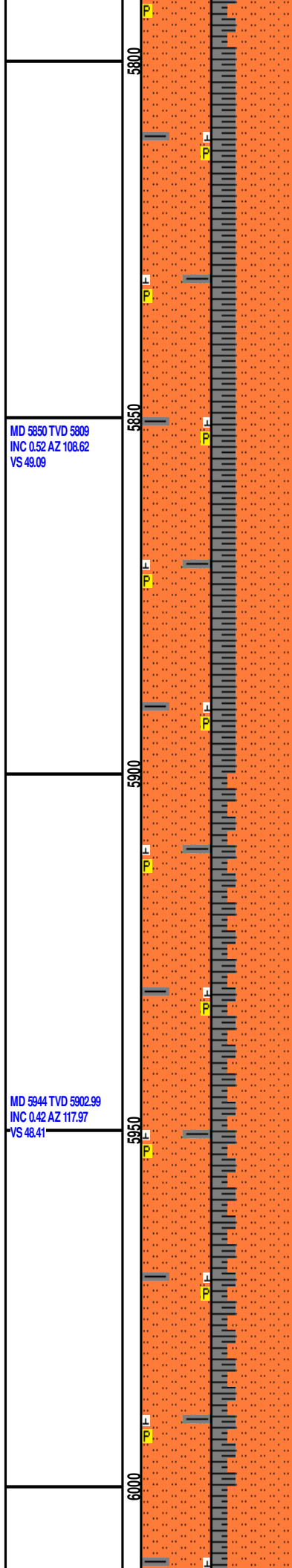
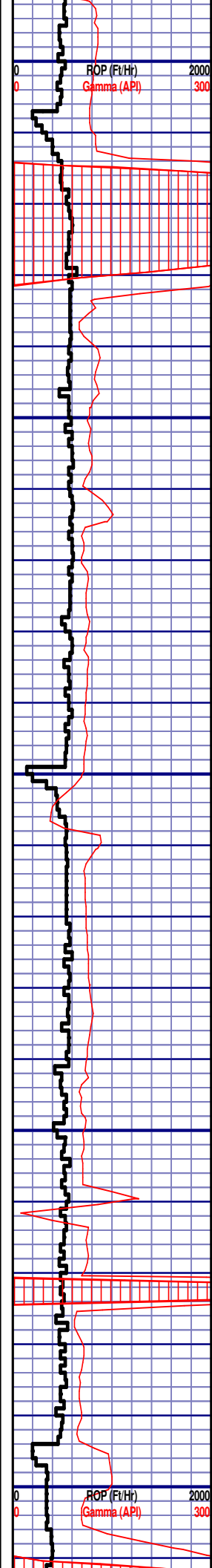
MD 5661 TVD 5620.01
INC 0.79 AZ 121.27
VS 51.08

5600'-5700': SLTST: 90% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

CG 70u

MD 5755 TVD 5714
INC 0.67 AZ 99.86
VS 50.03

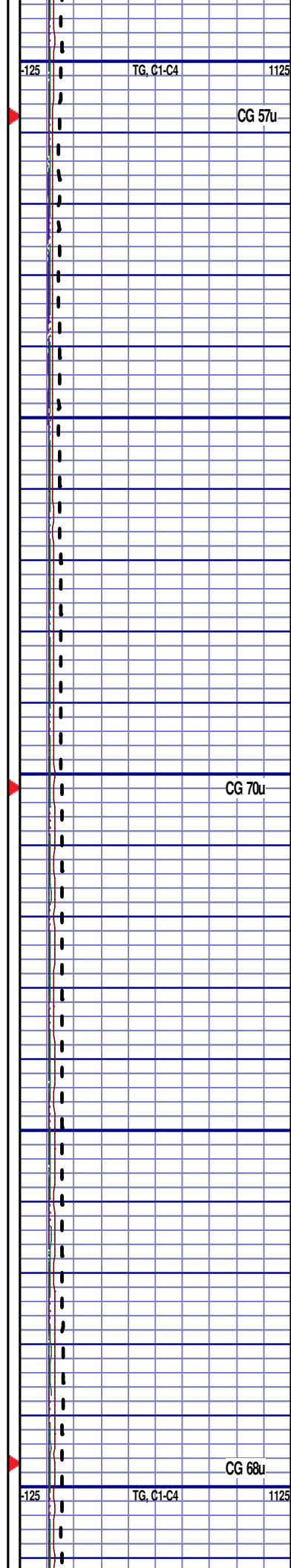
TEEPEE BUTTES (5700' MD - 5800'
MD)



TEEPEE BUTTES
5791' MD 5750' TVD
5700'-5800': SLTST: 75% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

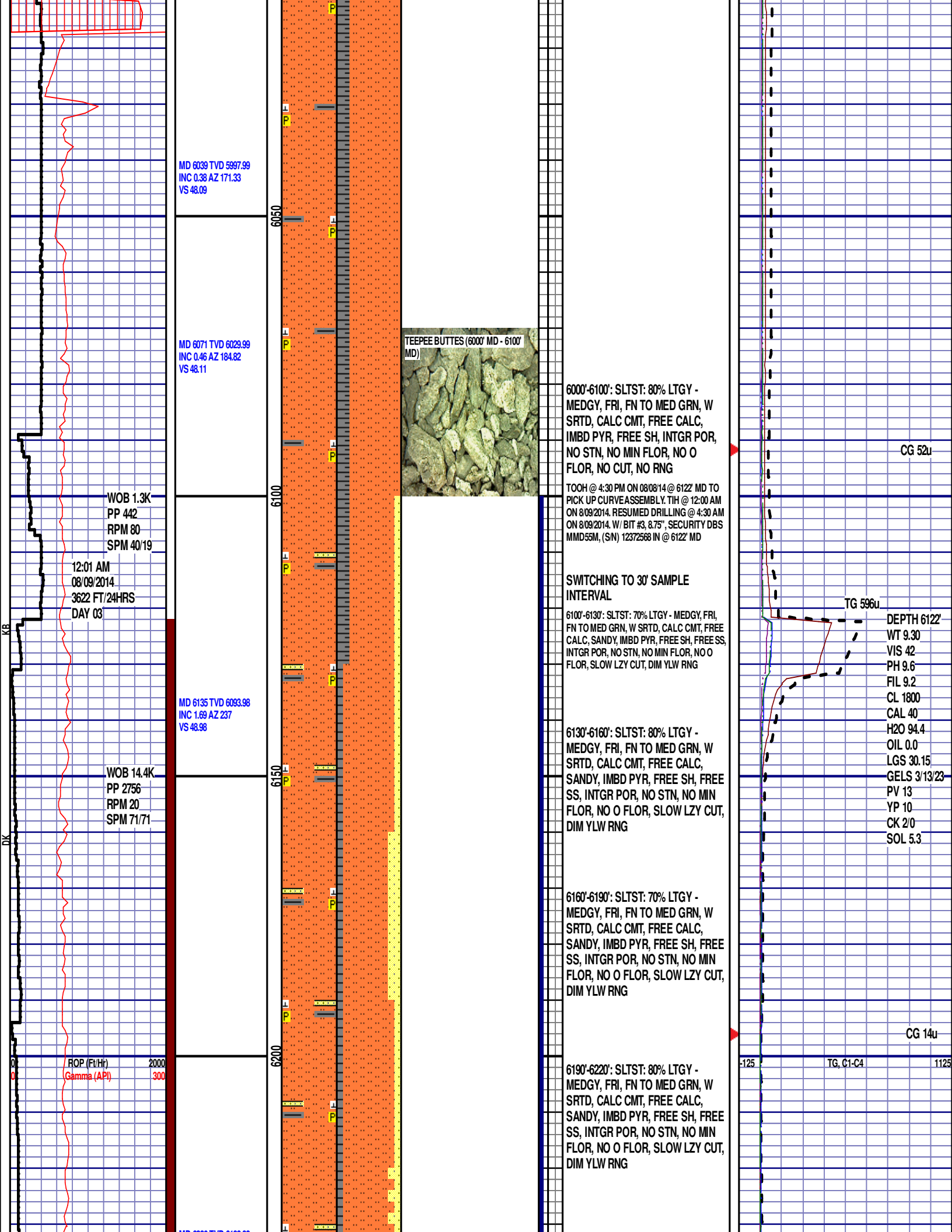
5800'-5900': SLTST: 70% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

5900'-6000': SLTST: 75% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG



MD 5850 TVD 5809
INC 0.52 AZ 108.62
VS 49.09

MD 5944 TVD 5902.99
INC 0.42 AZ 117.97
VS 48.41



MD 6039 TVD 5997.99
INC 0.38 AZ 171.33
VS 48.09

MD 6071 TVD 6029.99
INC 0.46 AZ 184.82
VS 48.11

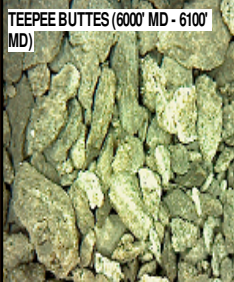
WOB 1.3K
PP 442
RPM 80
SPM 40/19

12:01 AM
08/09/2014
3622 FT/24HRS
DAY 03

MD 6135 TVD 6093.98
INC 1.69 AZ 237
VS 48.98

WOB 14.4K
PP 2756
RPM 20
SPM 71/71

ROP (Fe/Hr) 2000
Gamma (API) 300



6000'-6100': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

TOOH @ 4:30 PM ON 08/08/14 @ 6122' MD TO
PICK UP CURVE ASSEMBLY. TIH @ 12:00 AM
ON 8/09/2014. RESUMED DRILLING @ 4:30 AM
ON 8/09/2014. W/ BIT #3, 8.75", SECURITY DBS
MMD55M, (SN) 12372568 IN @ 6122' MD

SWITCHING TO 30' SAMPLE INTERVAL

6100'-6130': SLTST: 70% LTGY - MEDGY, FRI,
FN TO MED GRN, W SRTD, CALC CMT, FREE
CALC, SANDY, IMBD PYR, FREE SH, FREE SS,
INTGR POR, NO STN, NO MIN FLOR, NO O
FLOR, SLOW LZ Y CUT, DIM YLW RNG

6130'-6160': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNG

6160'-6190': SLTST: 70% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNG

6190'-6220': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNG

CG 52u

TG 596u

DEPTH 6122'
WT 9.30
VIS 42
PH 9.6
FIL 9.2
CL 1800
CAL 40
H2O 94.4
OIL 0.0
LGS 30.15
GELS 3/13/23
PV 13
YP 10
CK 2/0
SOL 5.3

CG 14u

TG, C1-C4

MD 6230 TVD 6188.33
INC 10.69 AZ 256.41
VS 58.93

MD 6324 TVD 6279.2
INC 18.66 AZ 264.21
VS 82.62

MD 6419 TVD 6366.66
INC 27.06 AZ 263.02
VS 119.47

WOB 26.1K
PP 3492
RPM 0
SPM 74/74

ROP (Ft/Hr)
Gamma (API)

2000
300

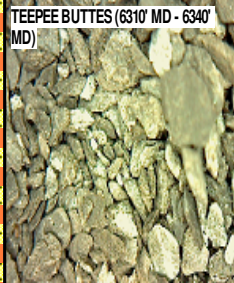
6250

6300

6350

6400

6450



6220'-6250': SLTST: 75% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6250'-6280': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6280'-6310': SLTST: 85% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6310'-6340': SLTST: 90% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6340'-6370': SLTST: 90% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6370'-6400': SLTST: 85% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

6400'-6430': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
SANDY, IMBD PYR, FREE SH, FREE
SS, INTGR POR, NO STN, NO MIN
FLOR, SLOW LZY CUT, DIM YLW
RNG

6430'-6460': SLTST: 80% LTGY -
MEDGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, INTGR POR,

CG 11u

CG 185u

-125

TG, C1-C4

1125

