



Logger On Shift		ROP (Ft/Hr) Gamma (API)		Drill Depth v. Time		Survey Data		Depth		Lithology		Lithology Percentages		Sample Photographs		Oil Porosity		Geological Description		TG (1-8) C1 (units) C2 (units) C3 (units) C4 (units)		Total Gas, C1-C4			
0		ROP (Ft/Hr) Gamma (API)		1500 350		SLIDE=RED ROTATE=WHITE		24								NOBLE ENERGY NCLP AA06-68-1HNA 4-T6N-R63W 773' FNL, 100' FWL WELD COUNTY, CO H&P 321 LOGGERS: HANNAH BLATCHFORD JOE KLUMPSTRA CALLED OUT BY COMPANY MAN @ 5:00 PM ON 06/08/14. COMMENCED LOGGING @ 11:30 PM @ 2500' MD				-30		TG, C1-C4		270	
																				CONNECTIONS ARE MARKED WITH RED TRIANGLES					
																				GAS SCALE: -30 TO 270 30 UNITS/DIVISION					
																				DRILLING ON WATER-BASED MUD					

ON 6/8/14 W/BIT # 1 8.75" ULTERRA
U516S S/N 19356 IN @ 877' MD

PIERRE

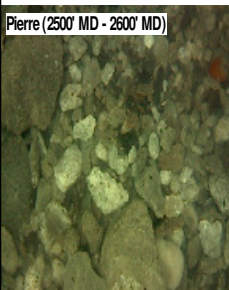
BEFORE LOGGING DEPTH

MD 877
WT 8.90
VIS 35.0
PH 8.6
FIL 13.4
CL 1600
CAL 100.0
H2O 96.8
OIL 0.0
SOL 3.4
CAKE 1/0
GELS 27/12
PV 7.0
YP 5.0

CG 22u

2500'- 2600': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, OCC
IMBD PYR, IMBD SS LAMN, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

Pierre (2500' MD - 2600' MD)



TG, C1-C4

CG 85u

2600'- 2700': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, OCC
IMBD PYR, IMBD SS LAMN, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

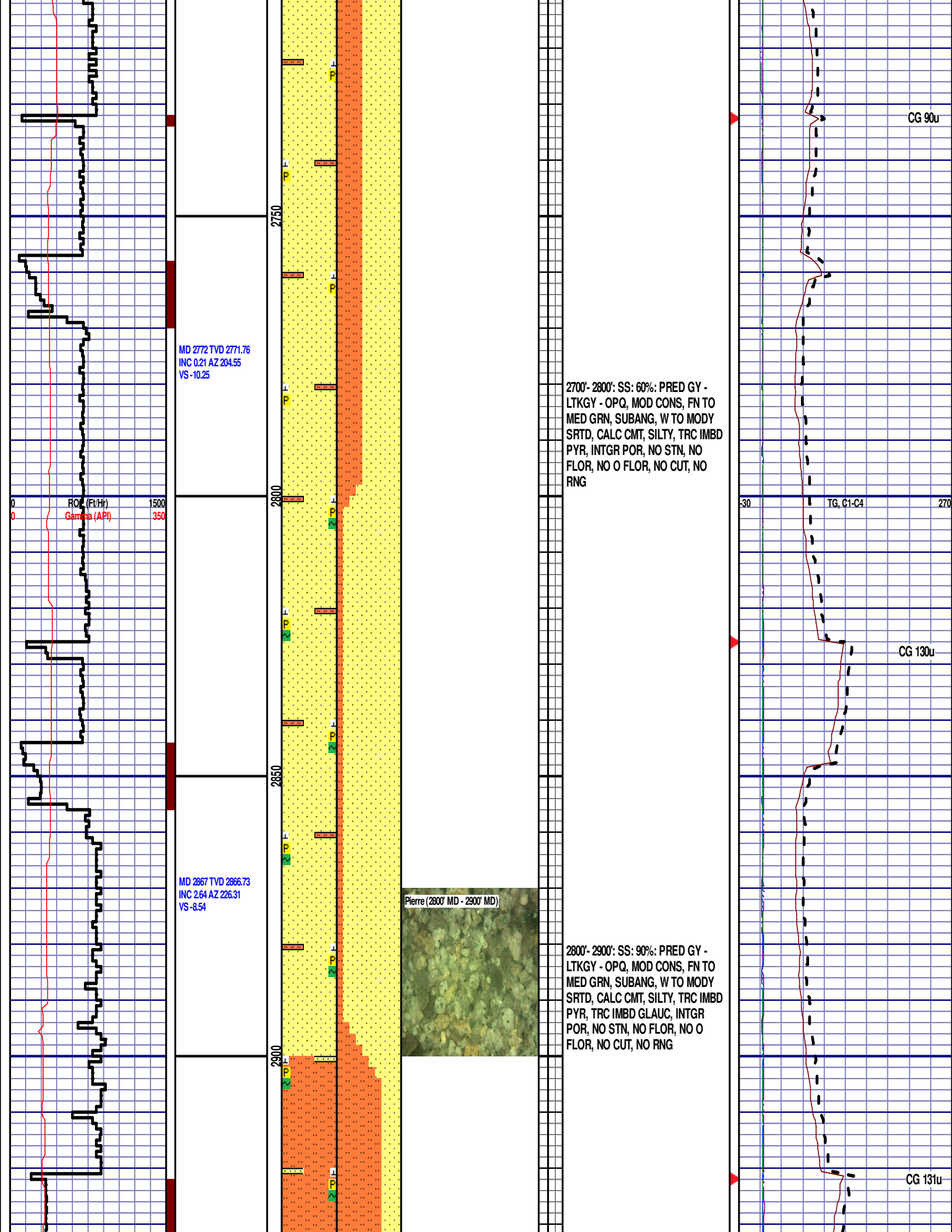
WOB 19.8K
PP 3058
RPM 80
SPM 67/67

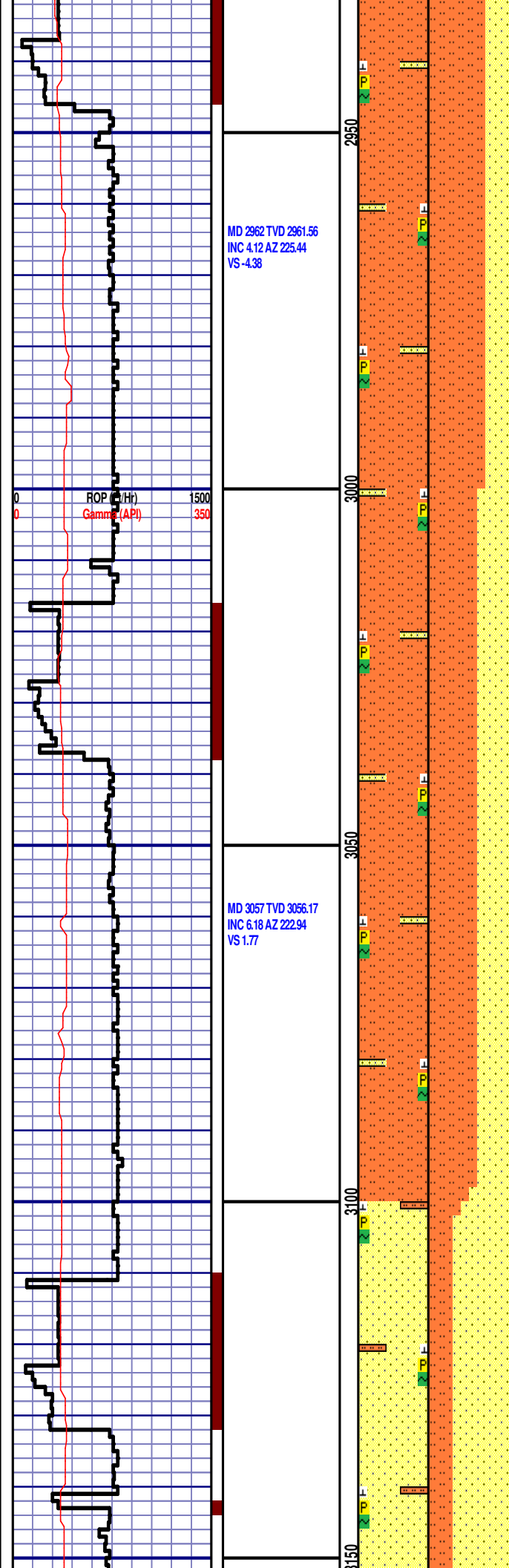
MD 2583 TVD 2582.8
INC 1.08 AZ 90.51
VS -6.94

ROP (Fm)
Gamma (API)

12:01 AM
06/09/2014
102
FT/24HRS
DAY 02

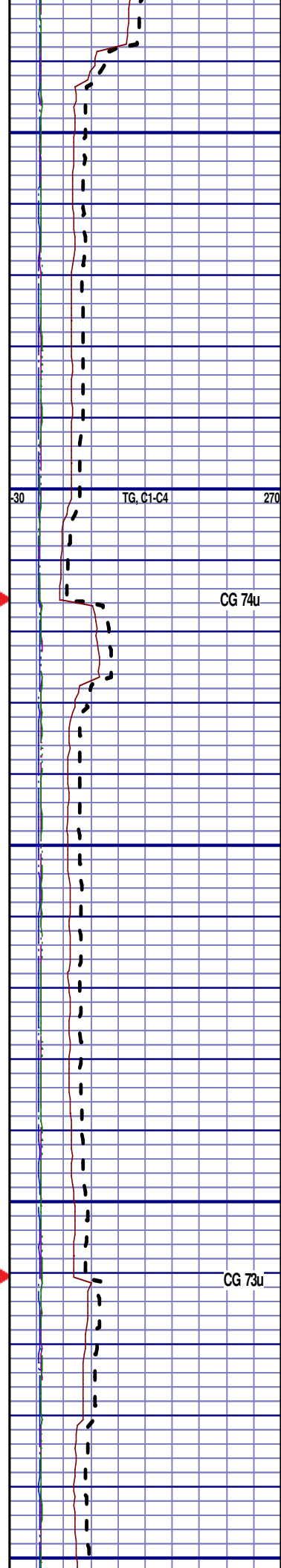
MD 2677 TVD 2676.77
INC 1.55 AZ 76.45
VS -9.07





2900'- 3000': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
SANDY, TRC IMBD PYR, TRC IMBD
GLAUC, IMBD SS LAMN, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

3000'- 3100': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
SANDY, TRC IMBD PYR, TRC IMBD
GLAUC, IMBD SS LAMN, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG



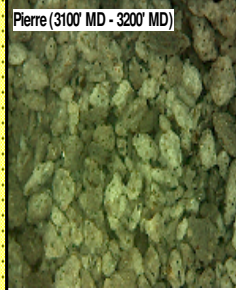
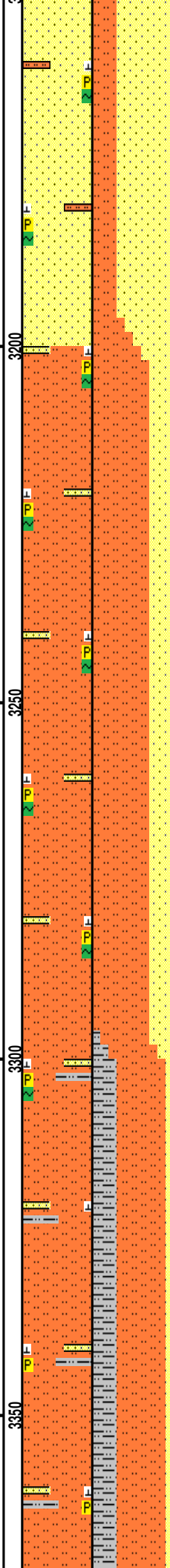
MD 3151 TVD 3149.68
INC 5.6 AZ 210.61
VS 7.84

ROP (Ft/Hr)
Gamma (API)

1500
350

MD 3246 TVD 3244.1
INC 6.99 AZ 217.45
VS 14.04

MD 3341 TVD 3338.27
INC 8.26 AZ 228.04
VS 22.97

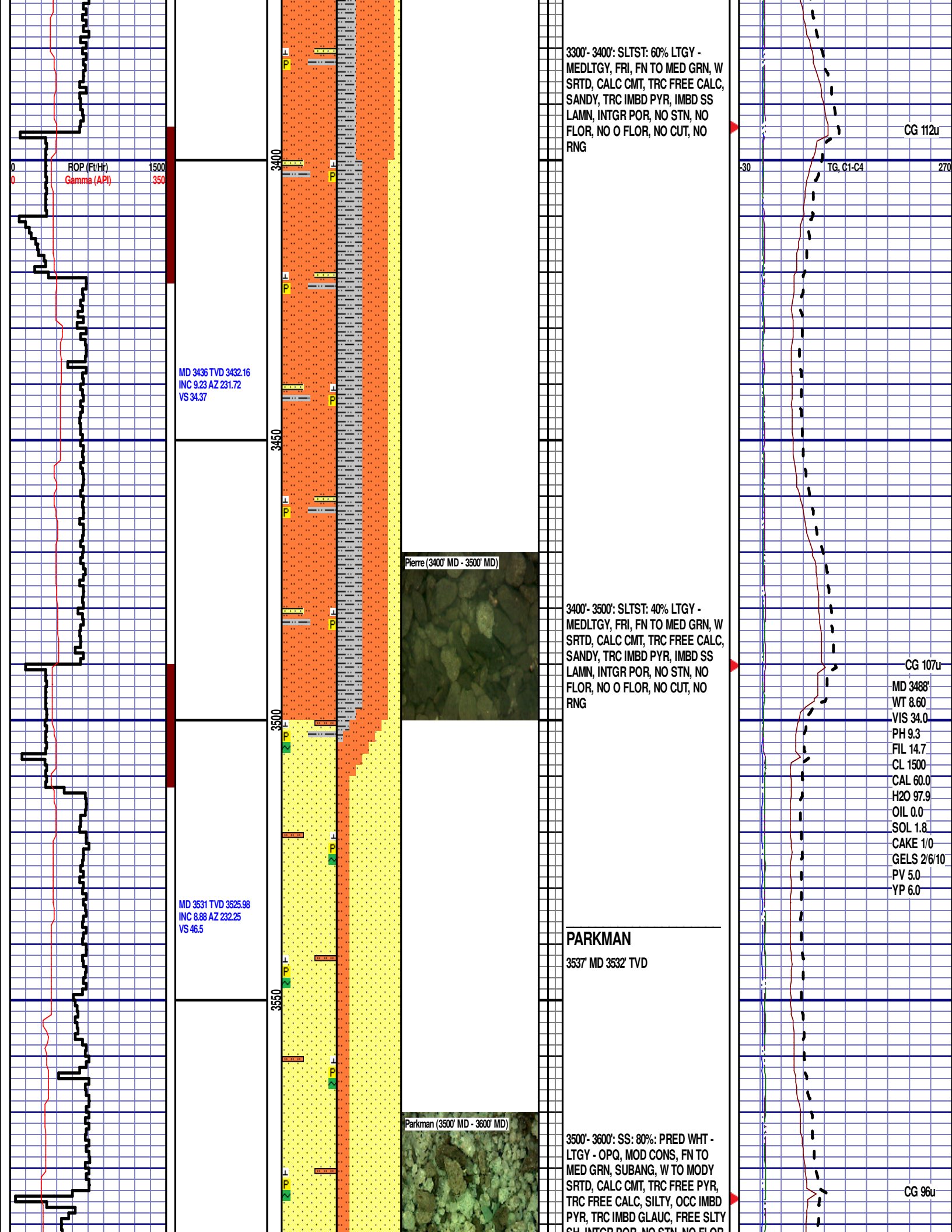


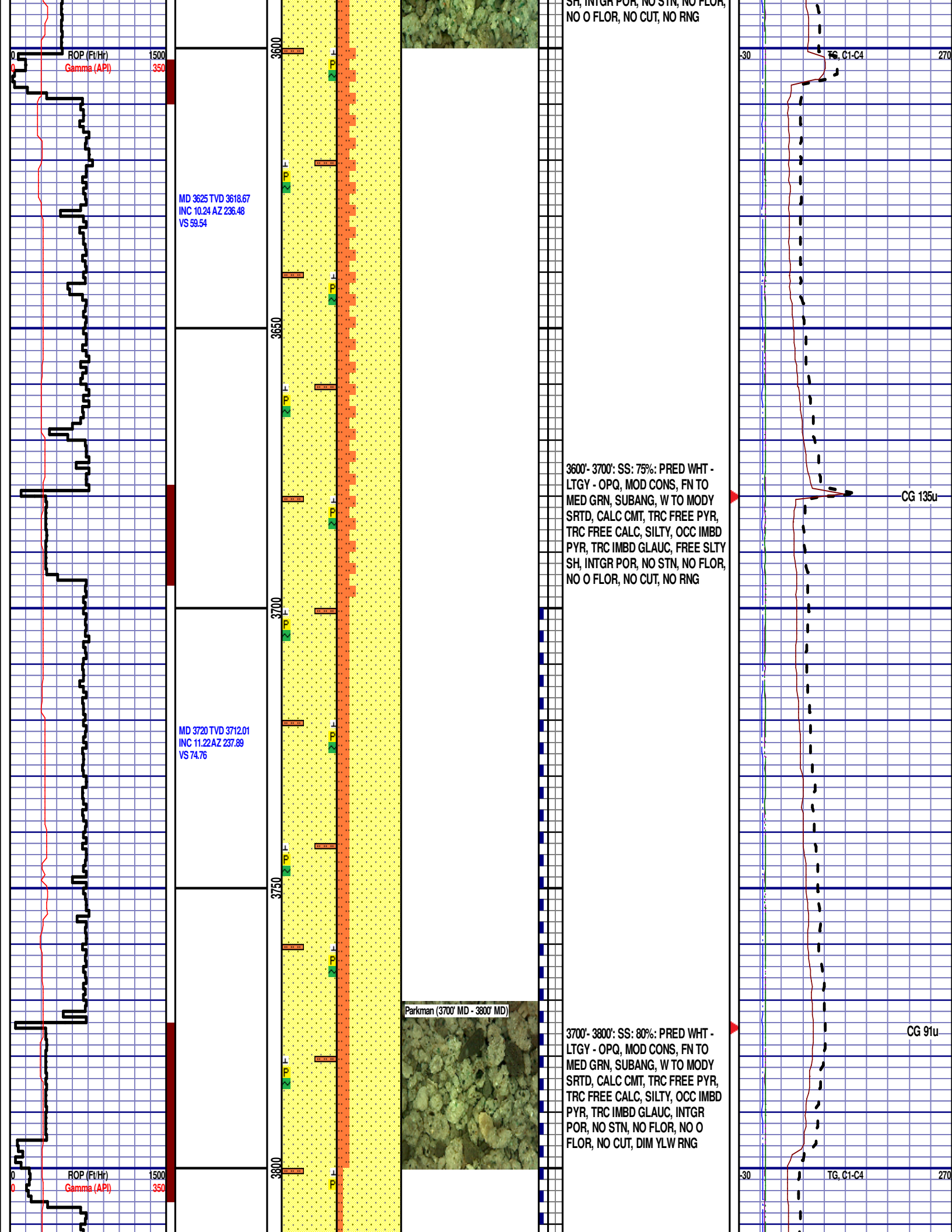
3100'- 3200': SS: 70%: PRED GY - LTKGY - OPQ, MOD CONS, FN TO MED GRN, SUBANG, W TO MODY SRTD, CALC CMT, SILTY, TRC IMBD PYR, TRC IMBD GLAUC, INTGR POR, NO STN, NO FLOR, NO O FLOR, NO CUT, NO RNG

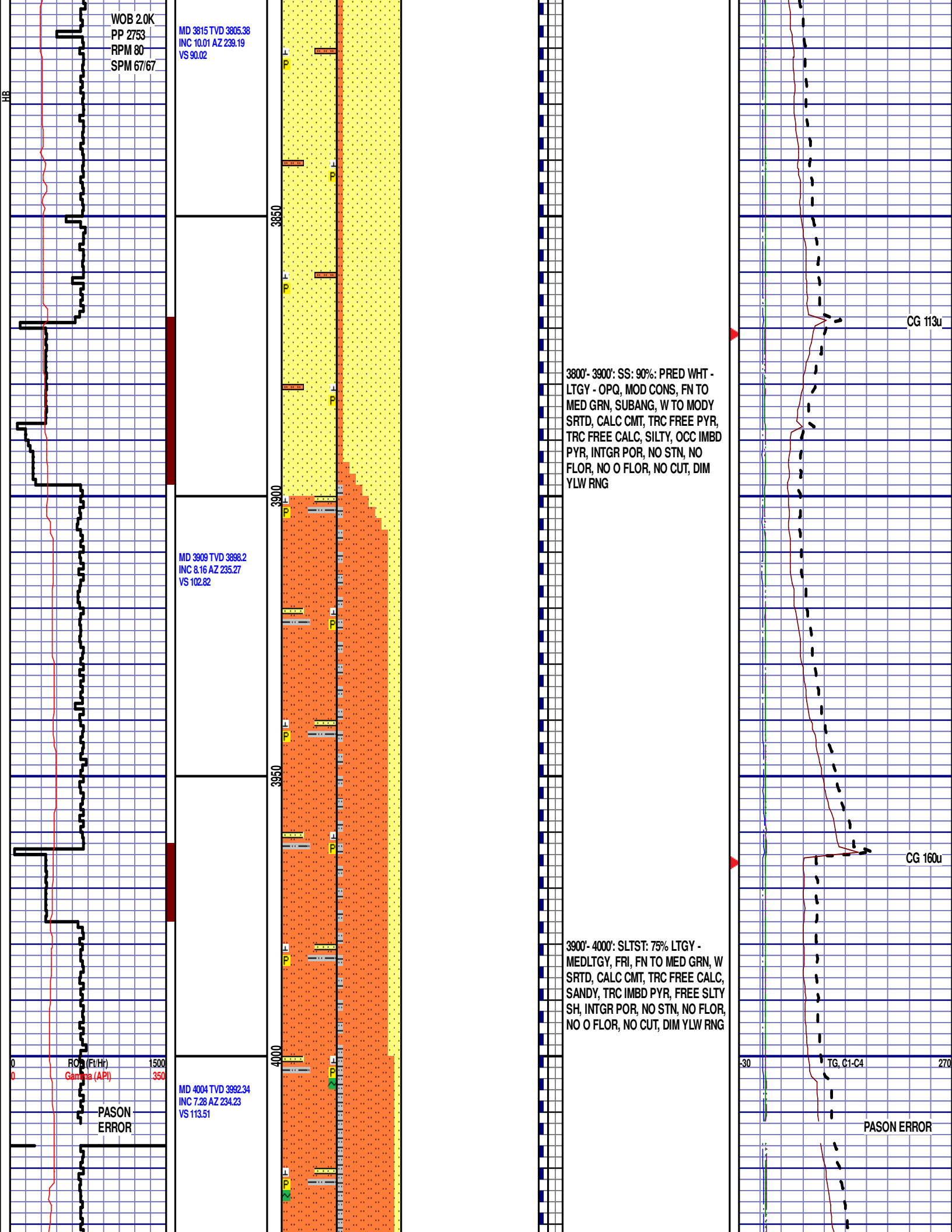
3200'- 3300': SLTST: 70% LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, SANDY, TRC IMBD PYR, TRC IMBD GLAUC, IMBD SS LAMN, INTGR POR, NO STN, NO FLOR, NO O FLOR, NO CUT, NO RNG

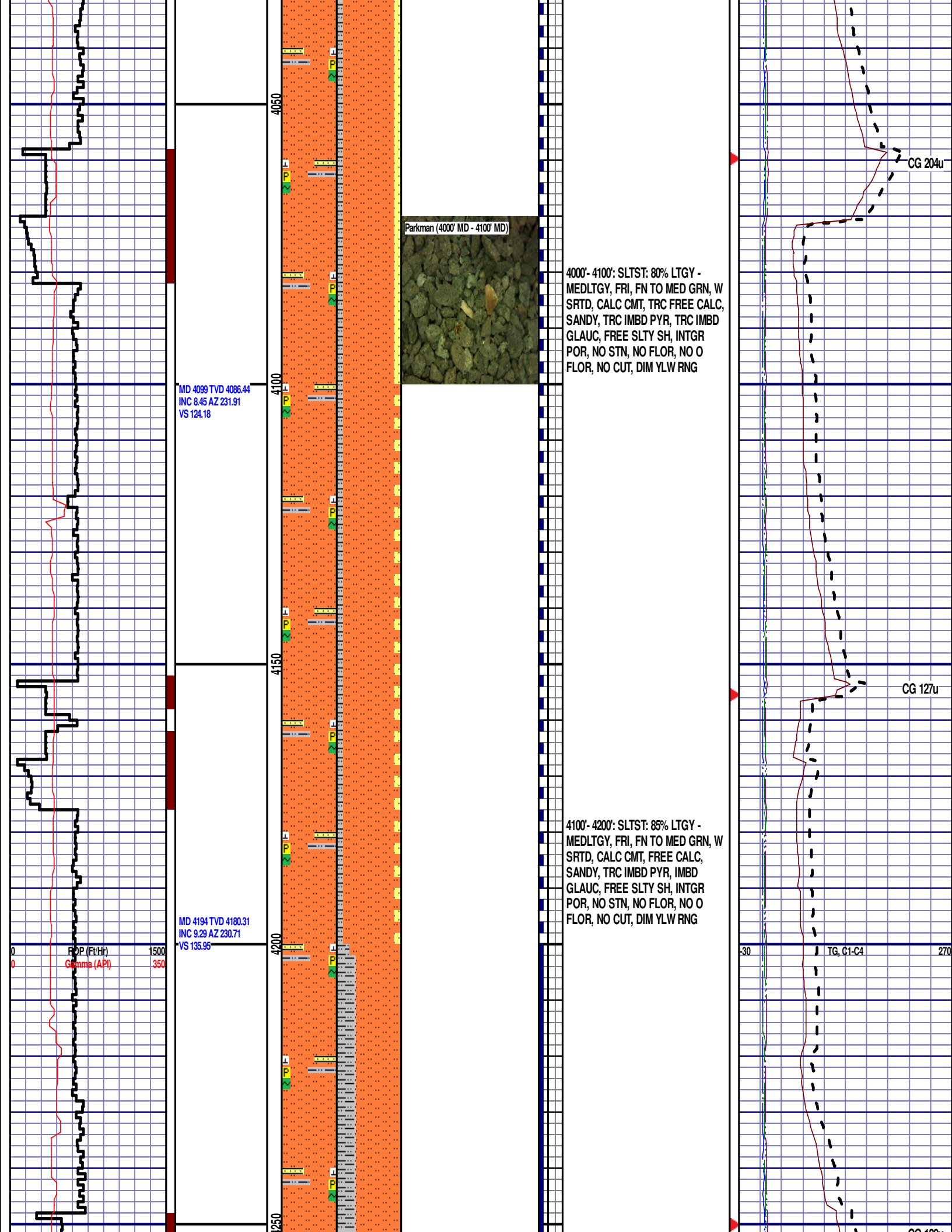
30 TG, C1-C4
CG 77u

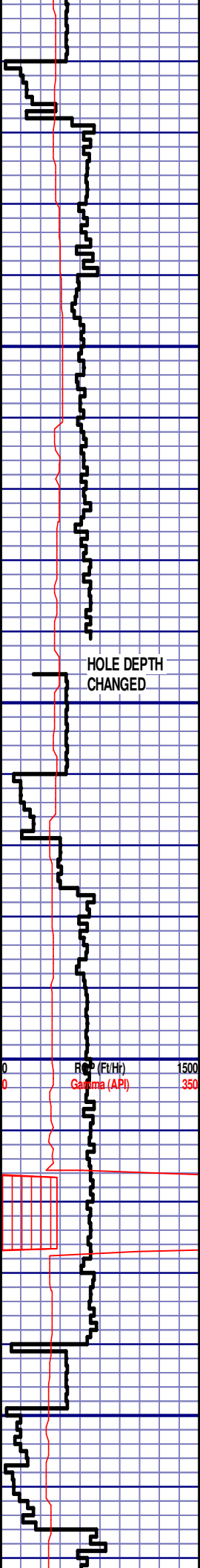
CG 97u







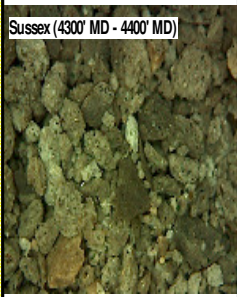
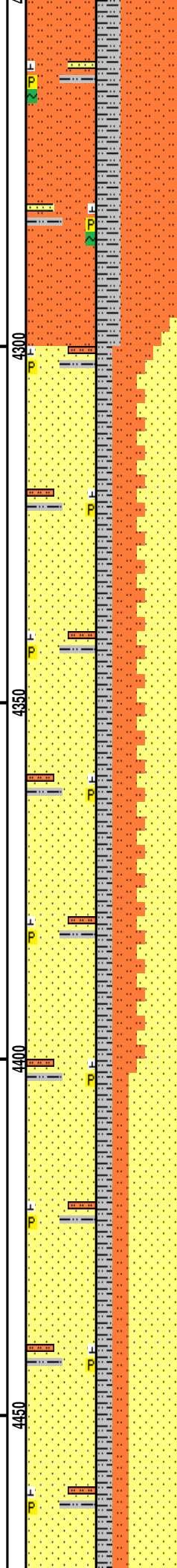




MD 4289 TVD 4274.14
INC 8.75 AZ 241.26
VS 148.53

MD 4383 TVD 4367.03
INC 8.86 AZ 240.21
VS 161.34

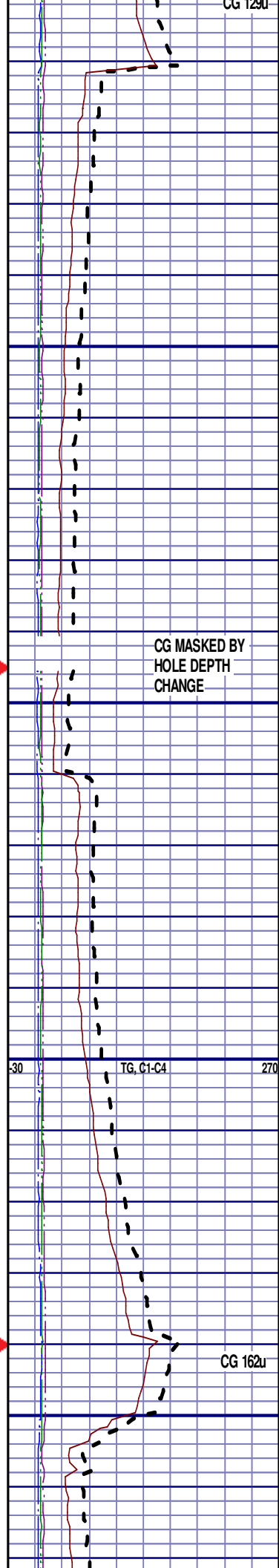
HOLE DEPTH
CHANGED



4200'- 4300': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC IMBD PYR,
TRC IMBD GLAUC, FREE SLTY SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZY CUT, DIM YLW
RNG

SUSSEX
4342' MD 4326' TVD

4300'- 4400': SS: 45%: PRED WHT -
LTGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, TRC FREE PYR,
TRC FREE CALC, SILTY, OCC IMBD
PYR, FREE SLTY SH, INTGR POR,
NO STN, NO FLOR, NO O FLOR,
SLOW LZY CUT, DIM YLW RNG



CG MASKED BY
HOLE DEPTH
CHANGE

30 TG, C1-C4 270

CG 162u

MD 4478 TVD 4460.71
INC 10.29 AZ 233.15
VS 174.81

MD 4573 TVD 4554.34
INC 9.14 AZ 230.5
VS 187.79

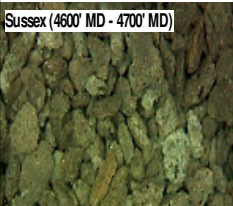
MD 4668 TVD 4648.39
INC 7.04 AZ 227.3
VS 198.22

4400'- 4500': SS: 60%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, TRC IMBD PYR,
SILTY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZY CUT,
DIM YLW RNG

4500'- 4600': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
SANDY, TRC IMBD PYR, FREE SLTY
SH, FREE SS, INTGR POR, NO STN,
NO FLOR, NO O FLOR, SLOW LZY
CUT, DIM YLW RNG

4600'- 4700': SLTST: 50% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
SANDY, TRC IMBD PYR, FREE SLTY
SH, FREE SS, INTGR POR, NO STN,
NO FLOR, NO O FLOR, SLOW LZY
CUT, DIM YLW RNG

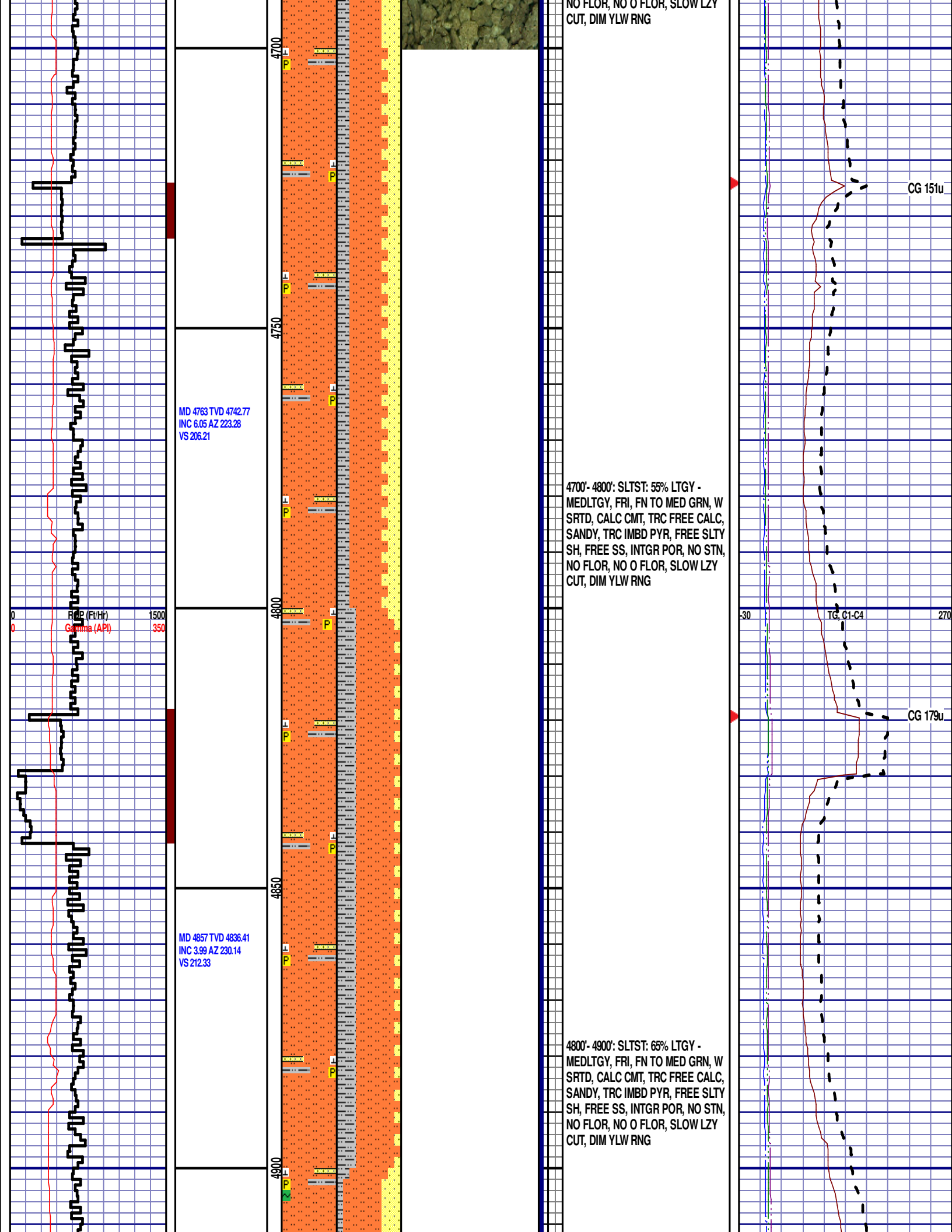
Sussex (4600' MD - 4700' MD)

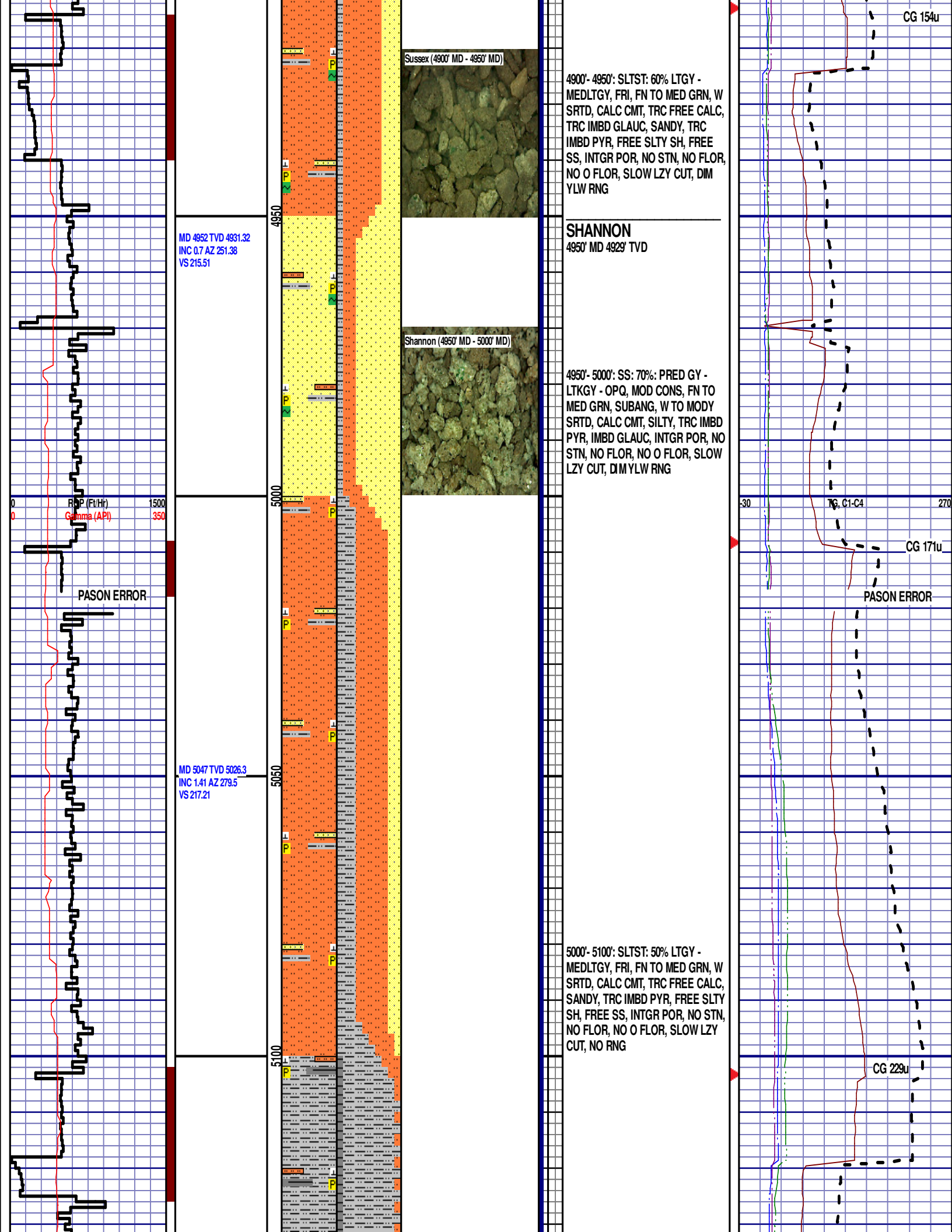


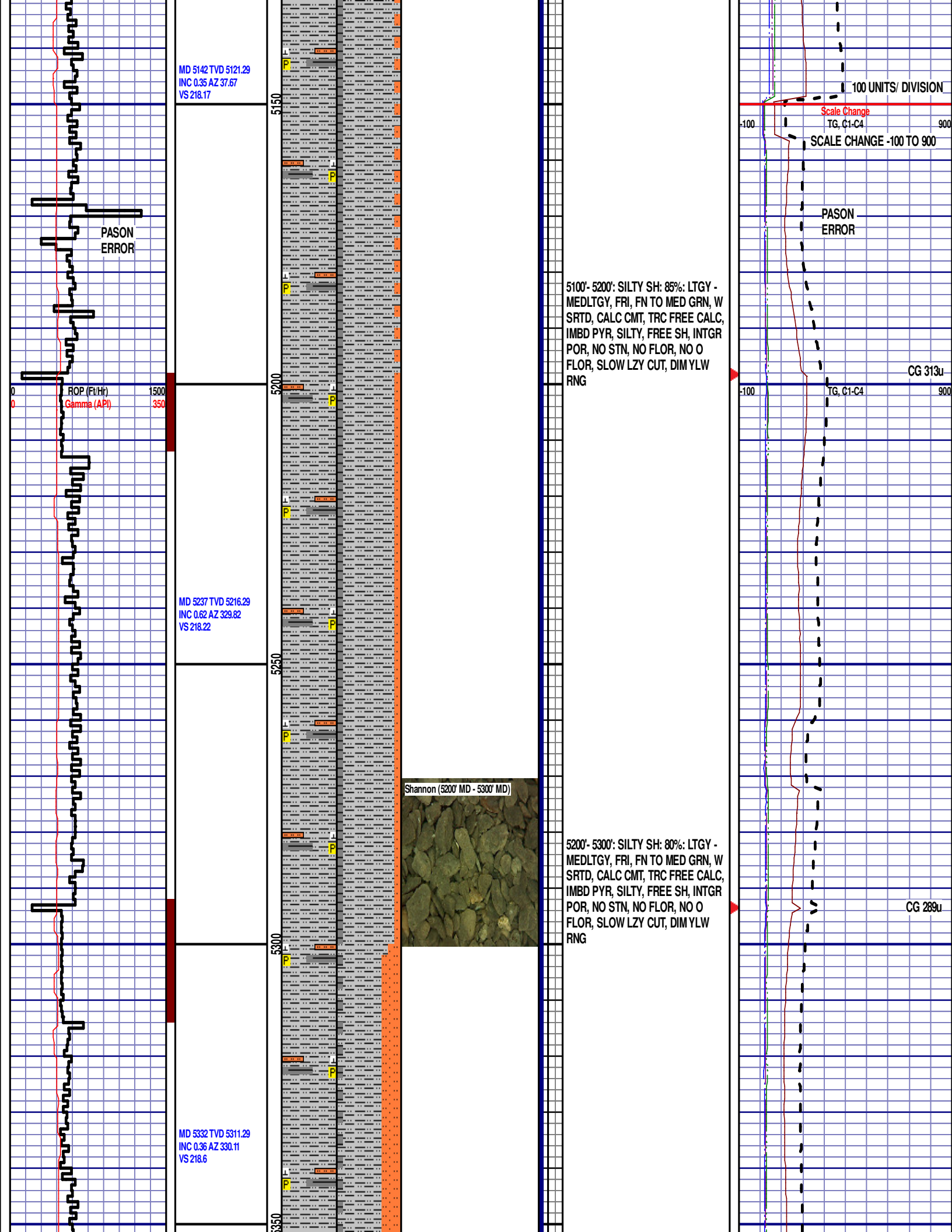
CG 145u

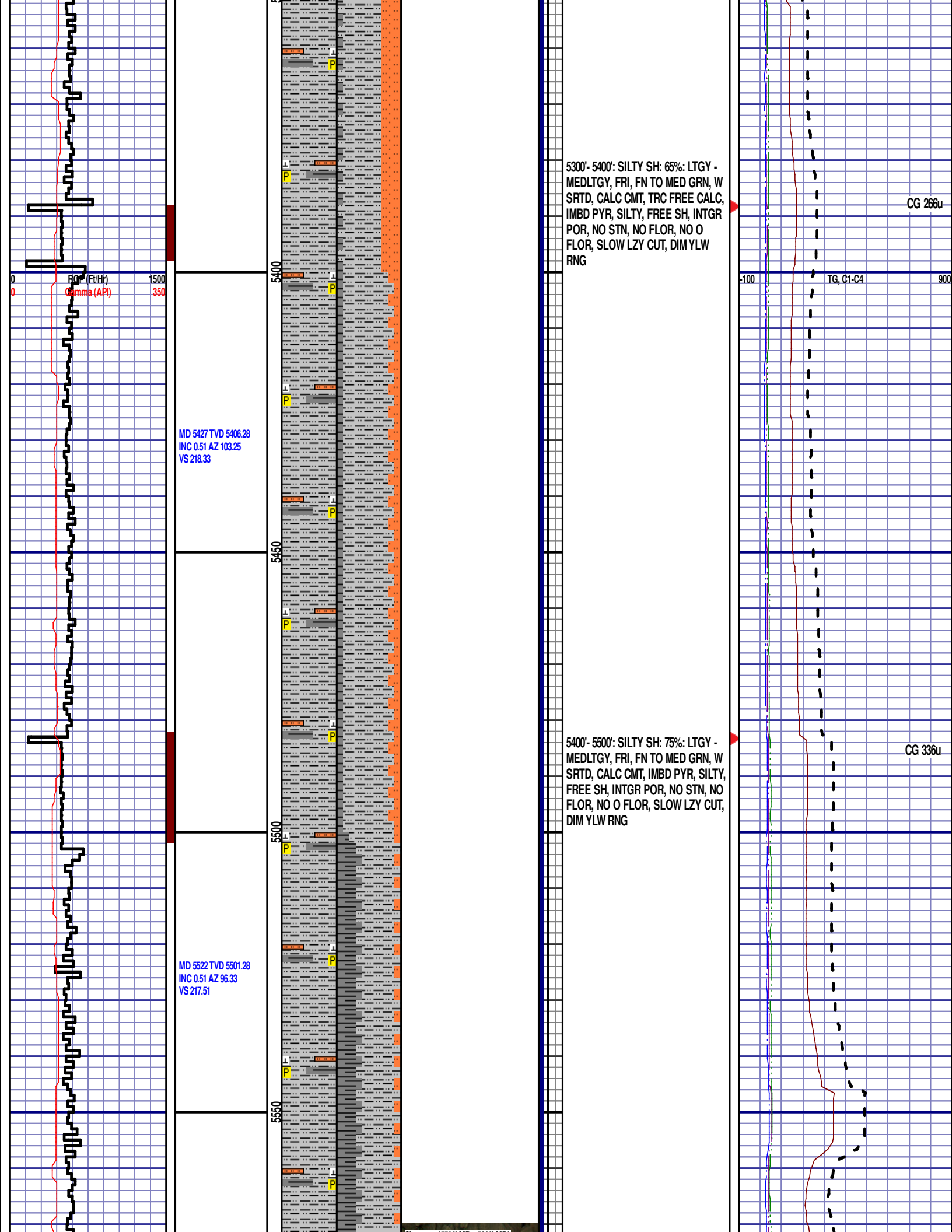
CG 153u

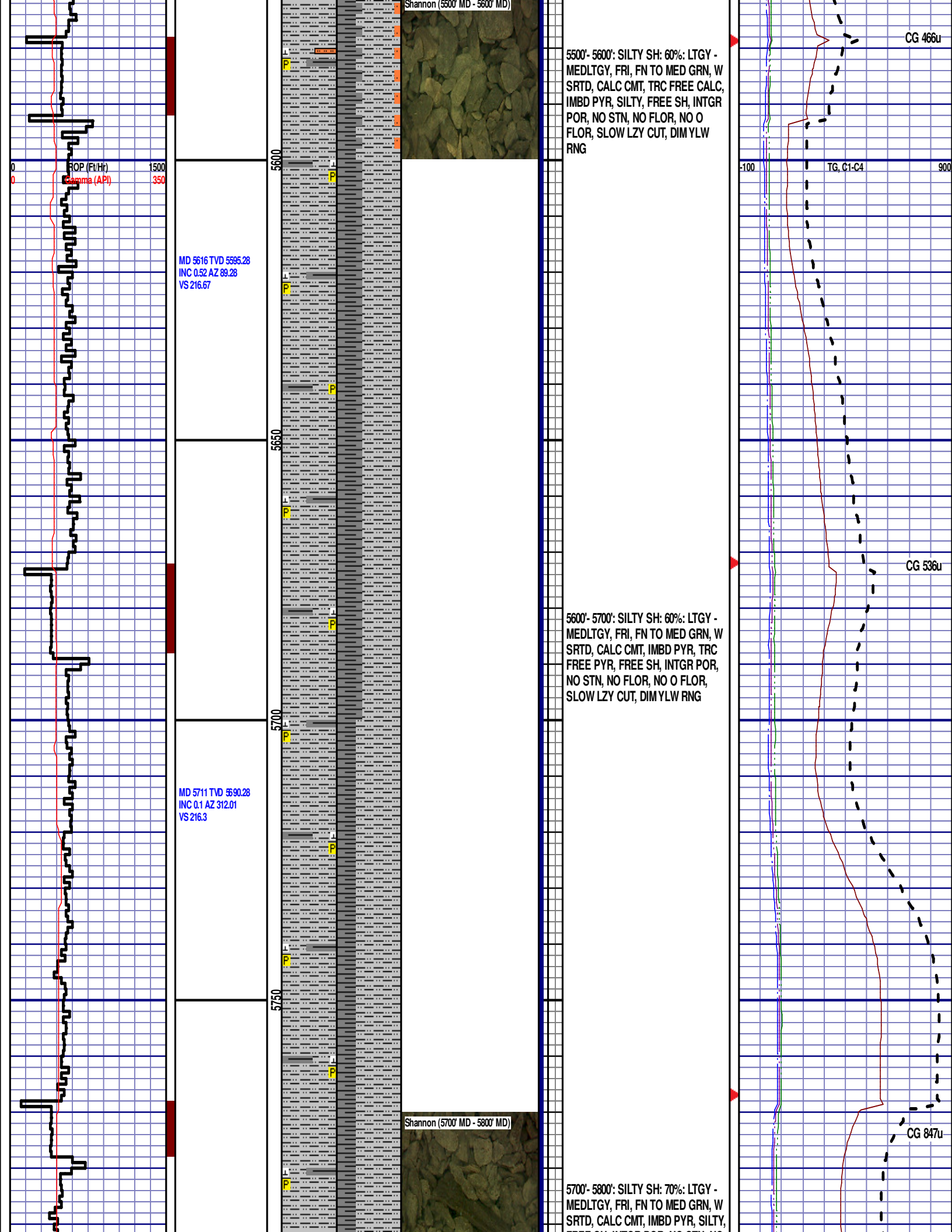
TG, C1-C4







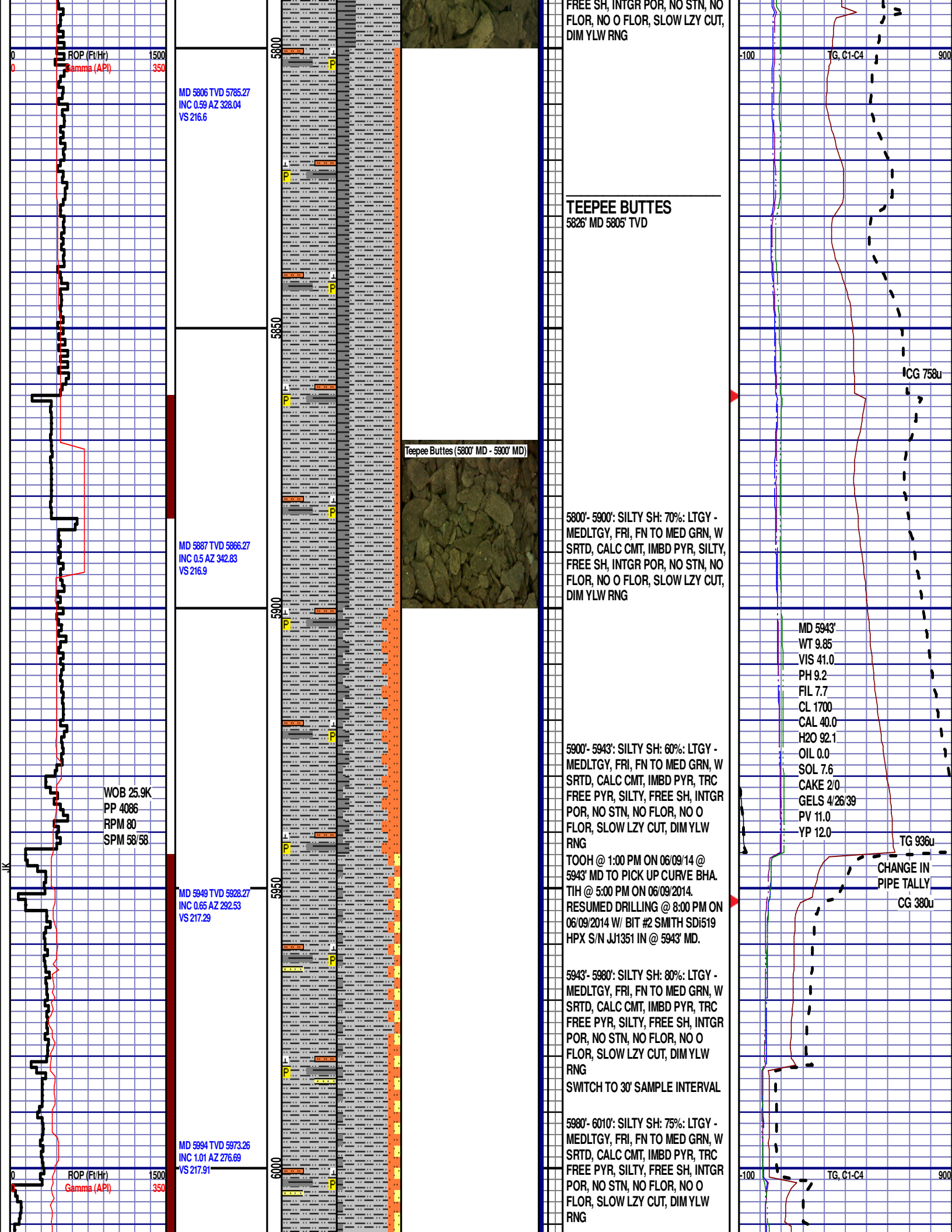


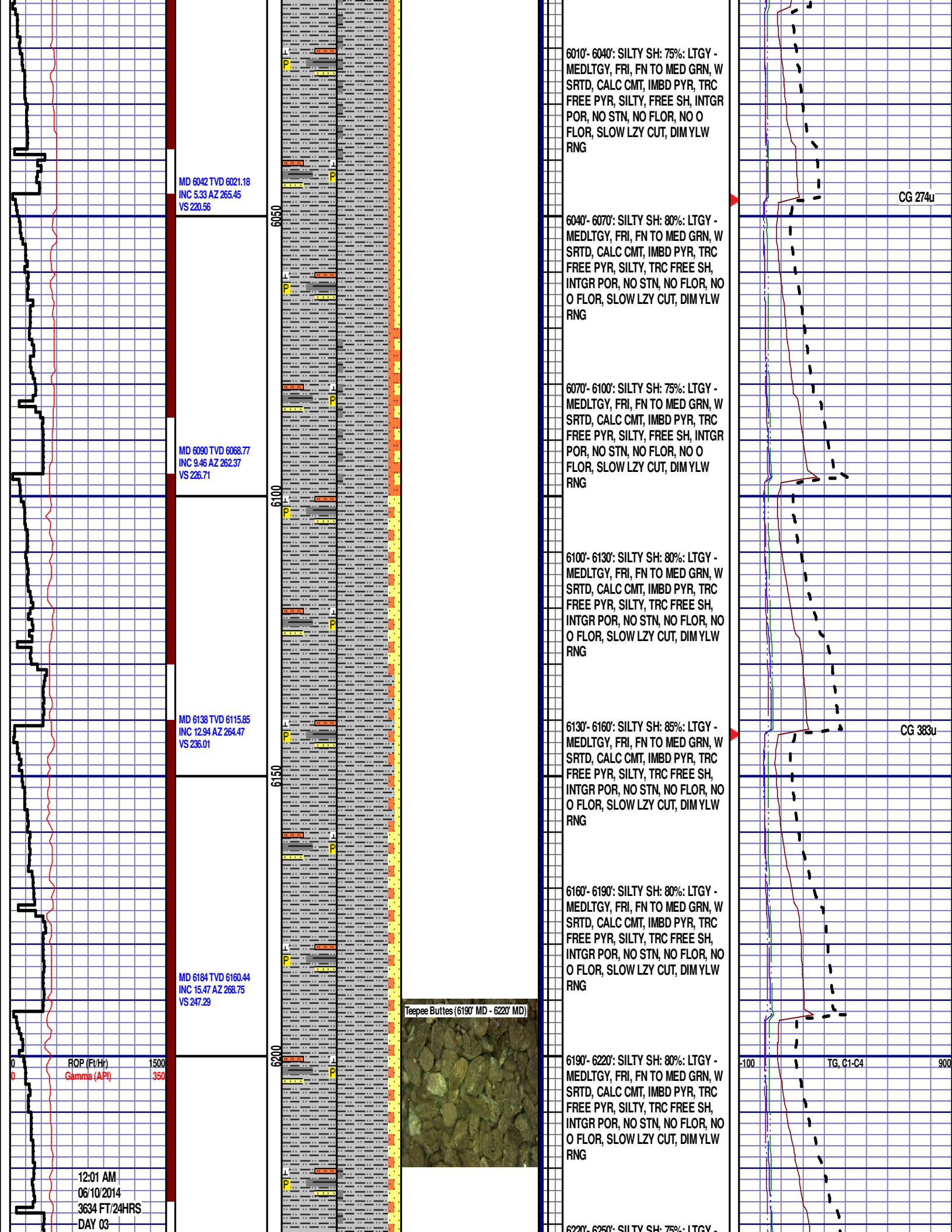


5500'- 5600': SILTY SH: 60%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, IMBD PYR, SILTY, FREE SH, INTGR POR, NO STN, NO FLOR, NO O FLOR, SLOW LZY CUT, DIM YLW RNG

5600'- 5700': SILTY SH: 60%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, IMBD PYR, TRC FREE PYR, FREE SH, INTGR POR, NO STN, NO FLOR, NO O FLOR, SLOW LZY CUT, DIM YLW RNG

5700'- 5800': SILTY SH: 70%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, IMBD PYR, SILTY,





MD 6042 TVD 6021.18
INC 5.33 AZ 265.45
VS 220.56

MD 6090 TVD 6068.77
INC 9.46 AZ 262.37
VS 226.71

MD 6138 TVD 6115.85
INC 12.94 AZ 264.47
VS 236.01

MD 6184 TVD 6160.44
INC 15.47 AZ 268.75
VS 247.29

Teepee Buttes (6190' MD - 6220' MD)

6010'- 6040': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZC CUT, DIM YLW
RNG

6040'- 6070': SILTY SH: 80%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, TRC FREE SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RNG

6070'- 6100': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZC CUT, DIM YLW
RNG

6100'- 6130': SILTY SH: 80%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, TRC FREE SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RNG

6130'- 6160': SILTY SH: 85%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, TRC FREE SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RNG

6160'- 6190': SILTY SH: 80%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, TRC FREE SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RNG

6190'- 6220': SILTY SH: 80%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, TRC FREE SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RNG

6220'- 6250': SILTY SH: 75%: LTGY -

CG 274u

CG 383u

TG, C1-C4

ROP (Ft/Hr)
Gamma (API)

1500
350

12:01 AM
06/10/2014
3634 FT/24HRS
DAY 03

WOB 6.1K
PP 3915
RPM 25
SPM 62/62

MD 6232 TVD 6206.23
INC 19.37 AZ 268.46
VS 261.65

MD 6279 TVD 6249.96
INC 23.57 AZ 268.4
VS 278.85

MD 6327 TVD 6293.12
INC 28.26 AZ 270.34
VS 299.81

MD 6374 TVD 6333.89
INC 31.4 AZ 267.48
VS 323.18

MD 6422 TVD 6373.79
INC 36.12 AZ 264.23
VS 349.82

ROP (Ft/Hr)
Gamma (API)

1500
350

6250

6300

6350

6400

6450

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

6250'-6280': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

6280'-6310': SILTY SH: 70%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

6310'-6340': SILTY SH: 70%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

6340'-6370': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

6370'-6400': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

6400'-6430': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, IMMED STRMG CUT, BRIYL
RNG

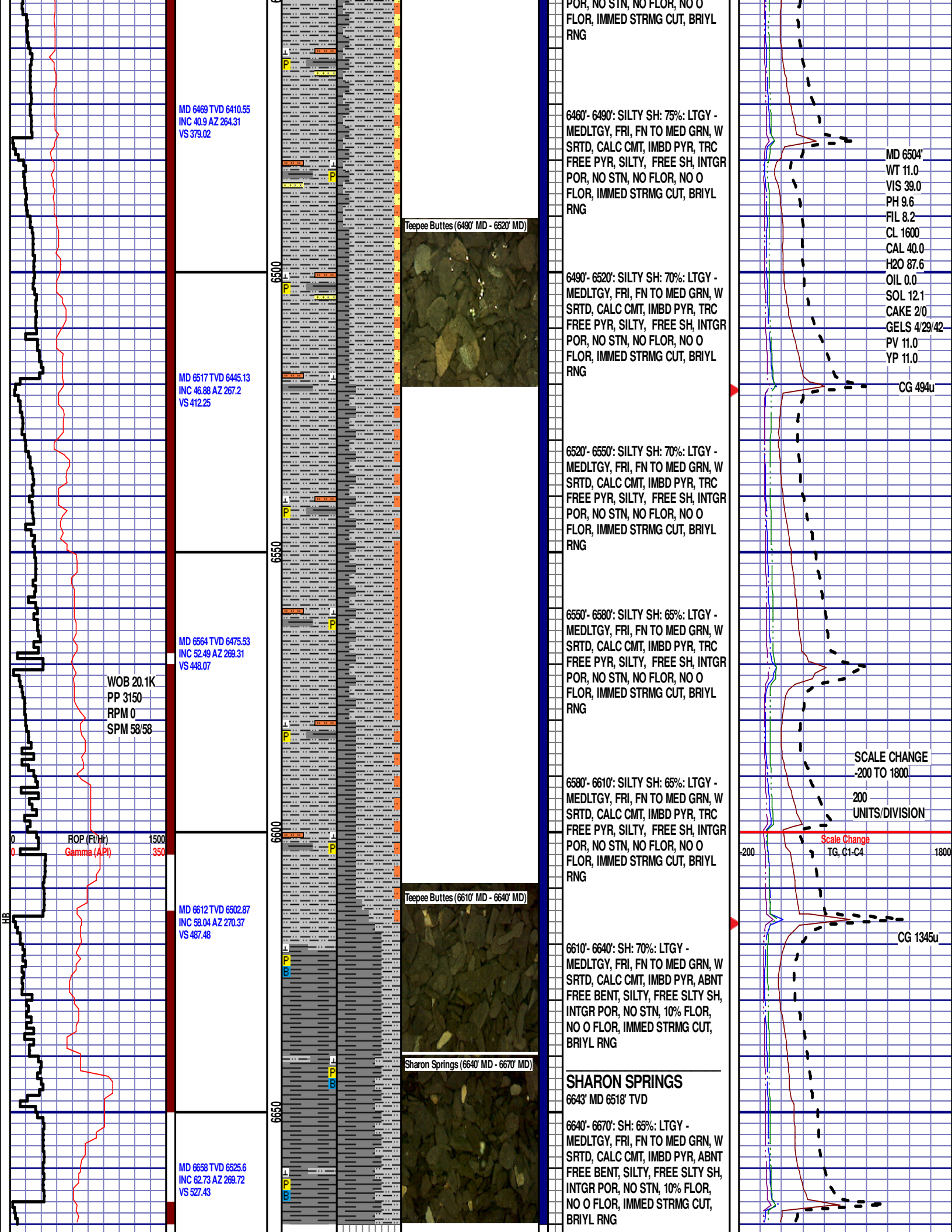
6430'-6460': SILTY SH: 75%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR, TRC
FREE PYR, SILTY, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, BRIYL RNG

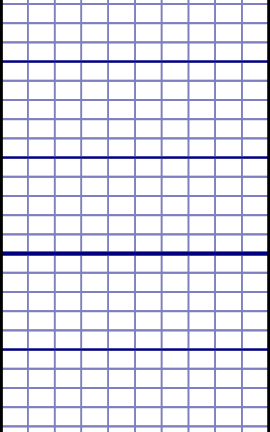
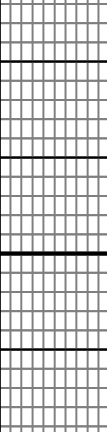

CG 416u

CG 417u

CG 605u

TG, C1-C4



		6700				END OF VERTICAL LOG @ 6670' MD ON 6/10/14. CONTINUED ON HORIZONTAL LOG.	