

MD 3162 TVD 3110.29
INC 13.27 AZ 93.74
VS 83.06

MD 3257 TVD 3202.81
INC 12.95 AZ 93.55
VS 88.02

MD 3352 TVD 3295.24
INC 13.79 AZ 96.8
VS 92.5



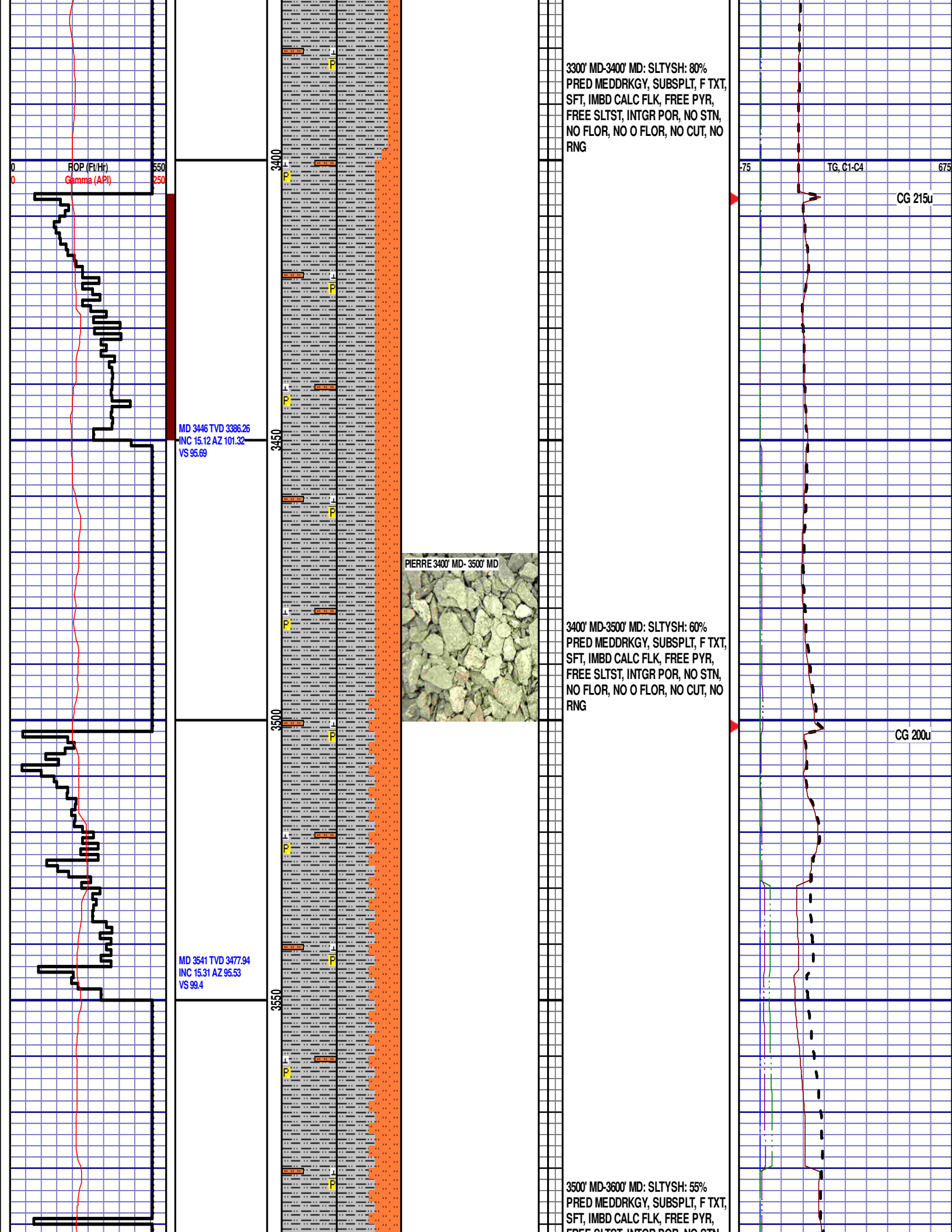
3100' MD-3200' MD: SLTST: 60% LTGY
- MEDLTGY, FRI, FN TO MED GRN,
W SRTD, CALC CMT, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

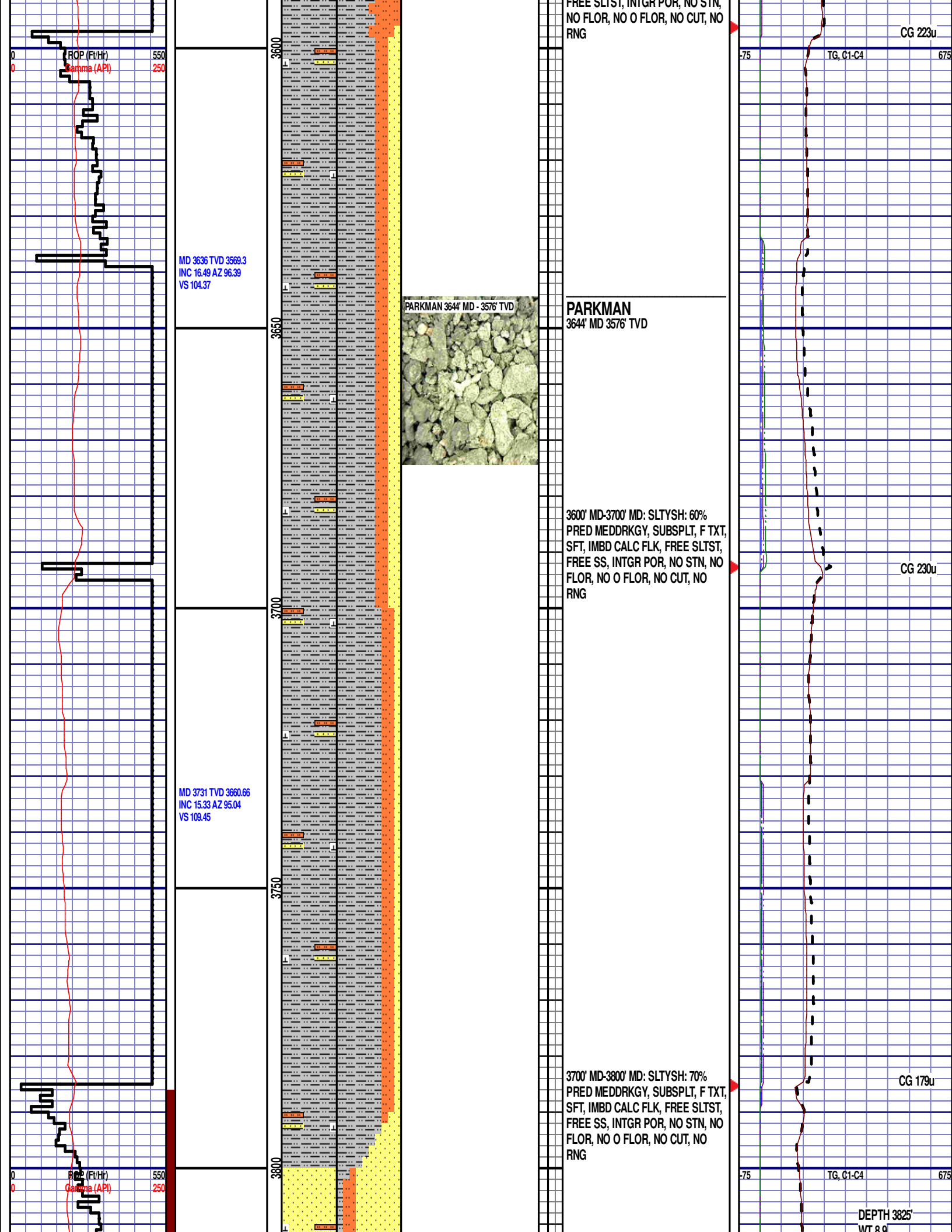
3200' MD-3300' MD: SLTYSH: 80%
PREDDRKGY, SUBSPLT, F TXT,
SFT, IMBD CALC FLK, FREE PYR,
FREE SLTST, INTGR POR, NO STN,
NO FLOR, NO O FLOR, NO CUT, NO
RNG

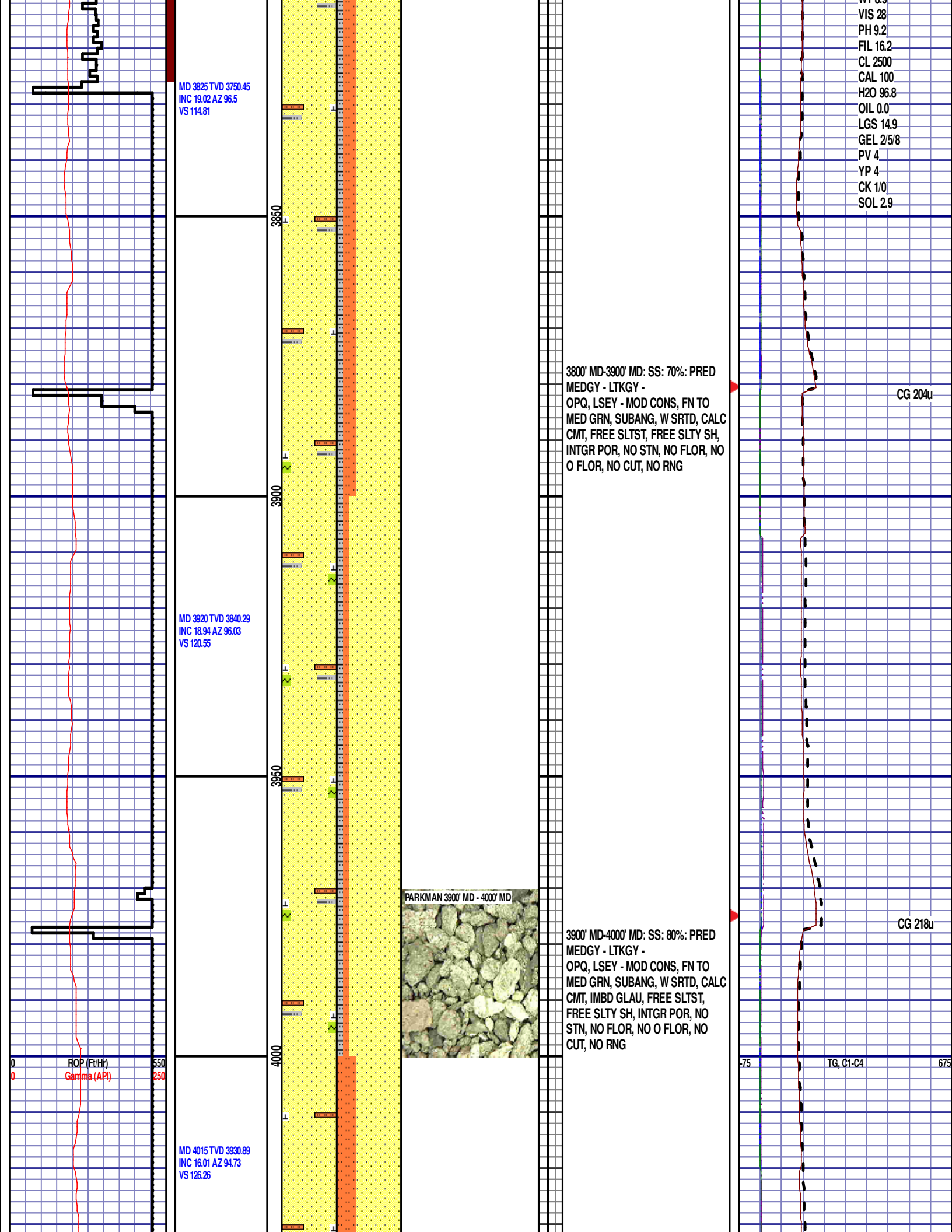
75 TG, C1-C4 675

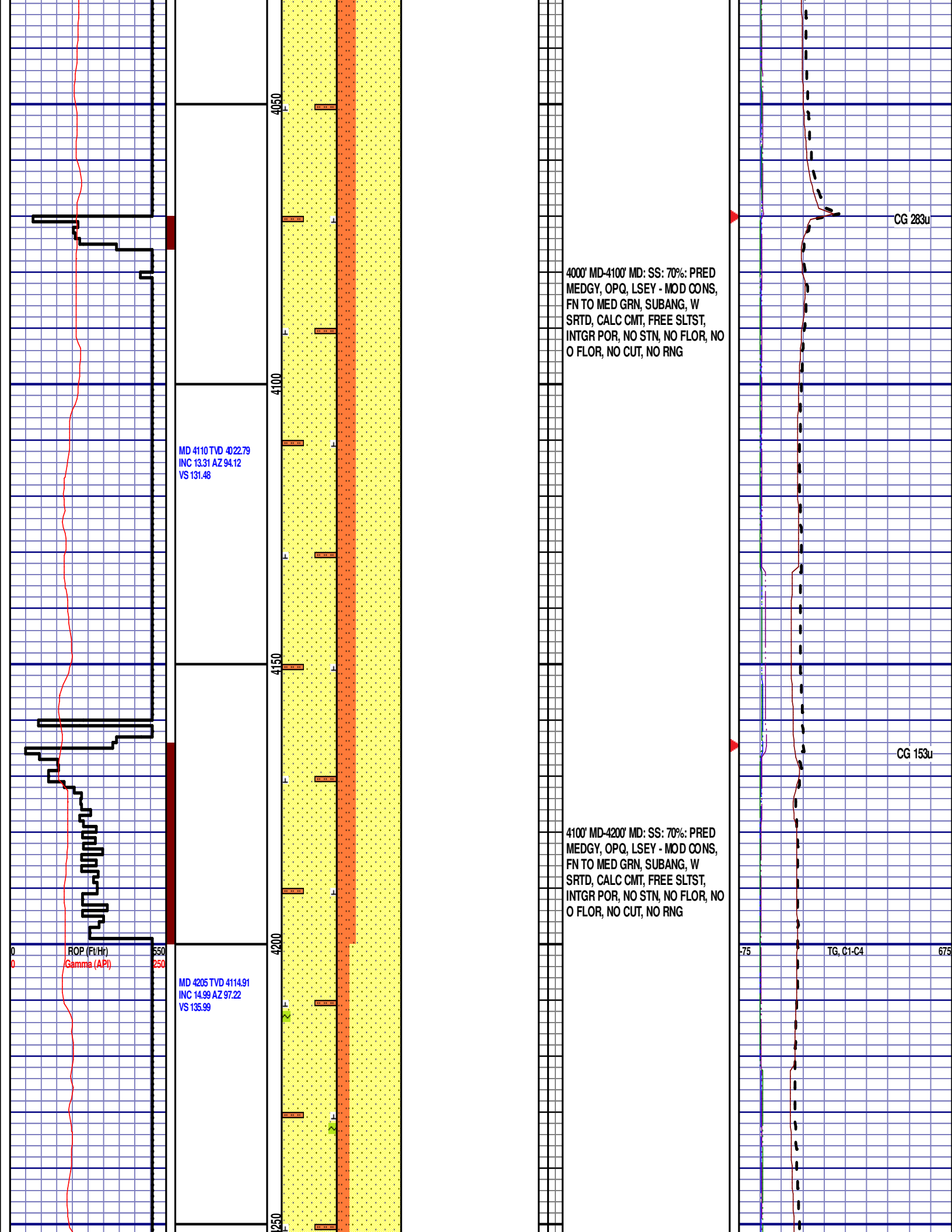
CG 219u

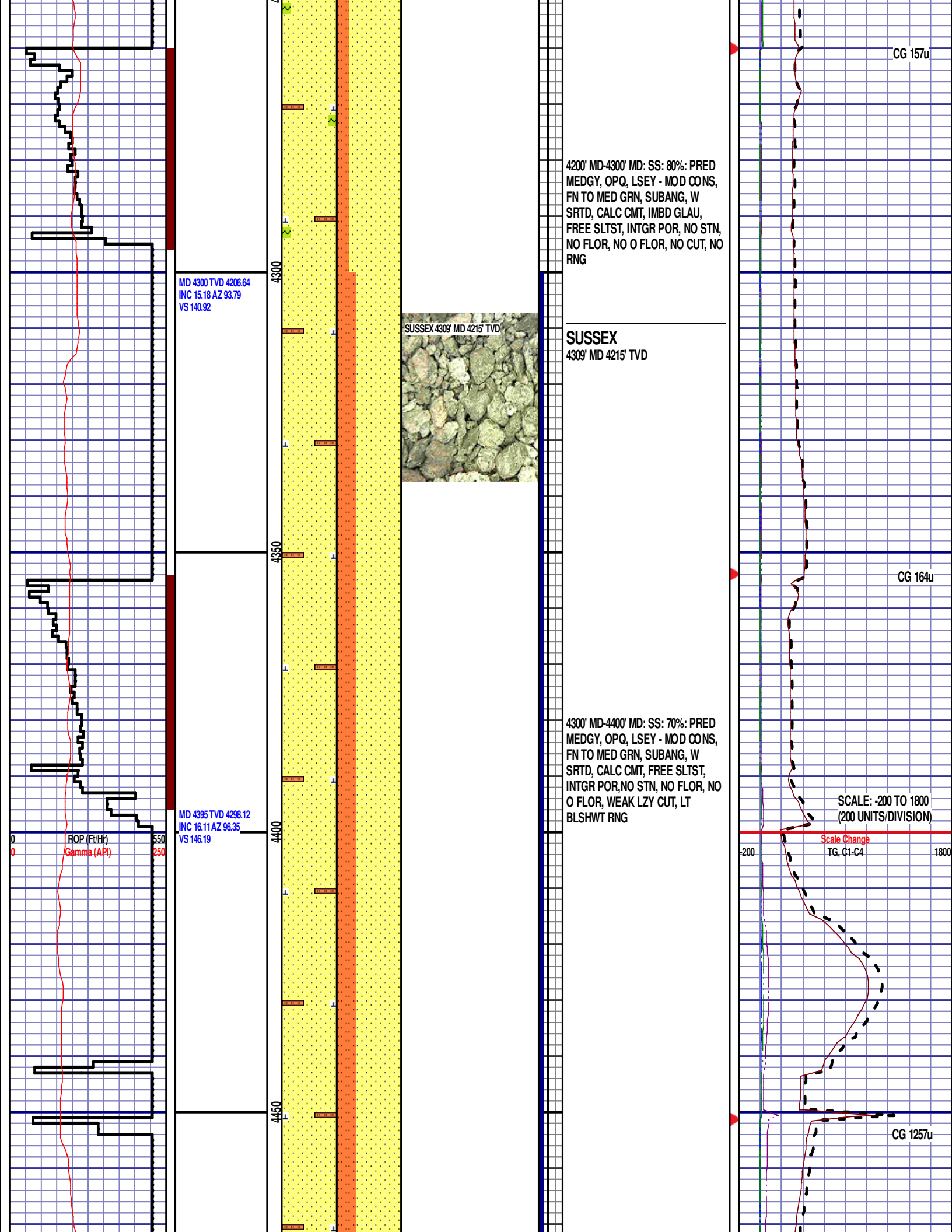
CG 192u











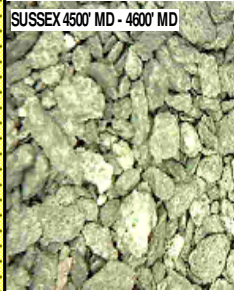
MD 4490 TVD 4389.52
INC 15.53 AZ 95.39
VS 151.17

MD 4585 TVD 4481.39
INC 13.97 AZ 93.03
VS 156.5

MD 4679 TVD 4572.45
INC 14.76 AZ 98.72
VS 160.95

4400' MD-4500' MD: SS: 70%: PRED
MEDGY, OPQ, LSEY - MOD CONS,
FN TO MED GRN, SUBANG, W
SRTD, CALC CMT, FREE SLTST,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, WEAK LZY CUT, LT
BLSHWT RNG

SUSSEX 4500' MD - 4600' MD



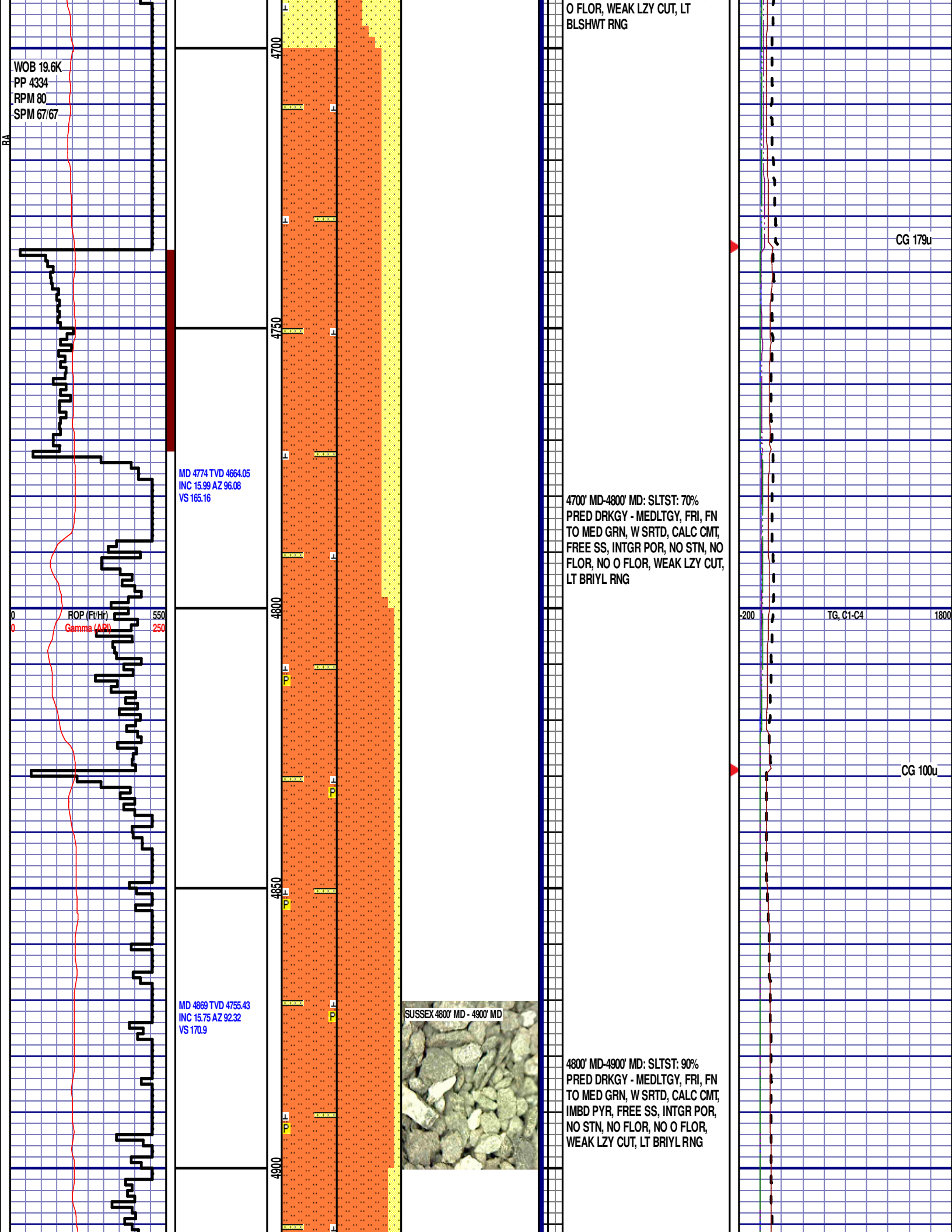
4500' MD-4600' MD: SS: 60%: PRED
MEDGY, OPQ, LSEY - MOD CONS,
FN TO MED GRN, SUBANG, W
SRTD, CALC CMT, FREE SLTST,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, WEAK LZY CUT, LT
BLSHWT RNG

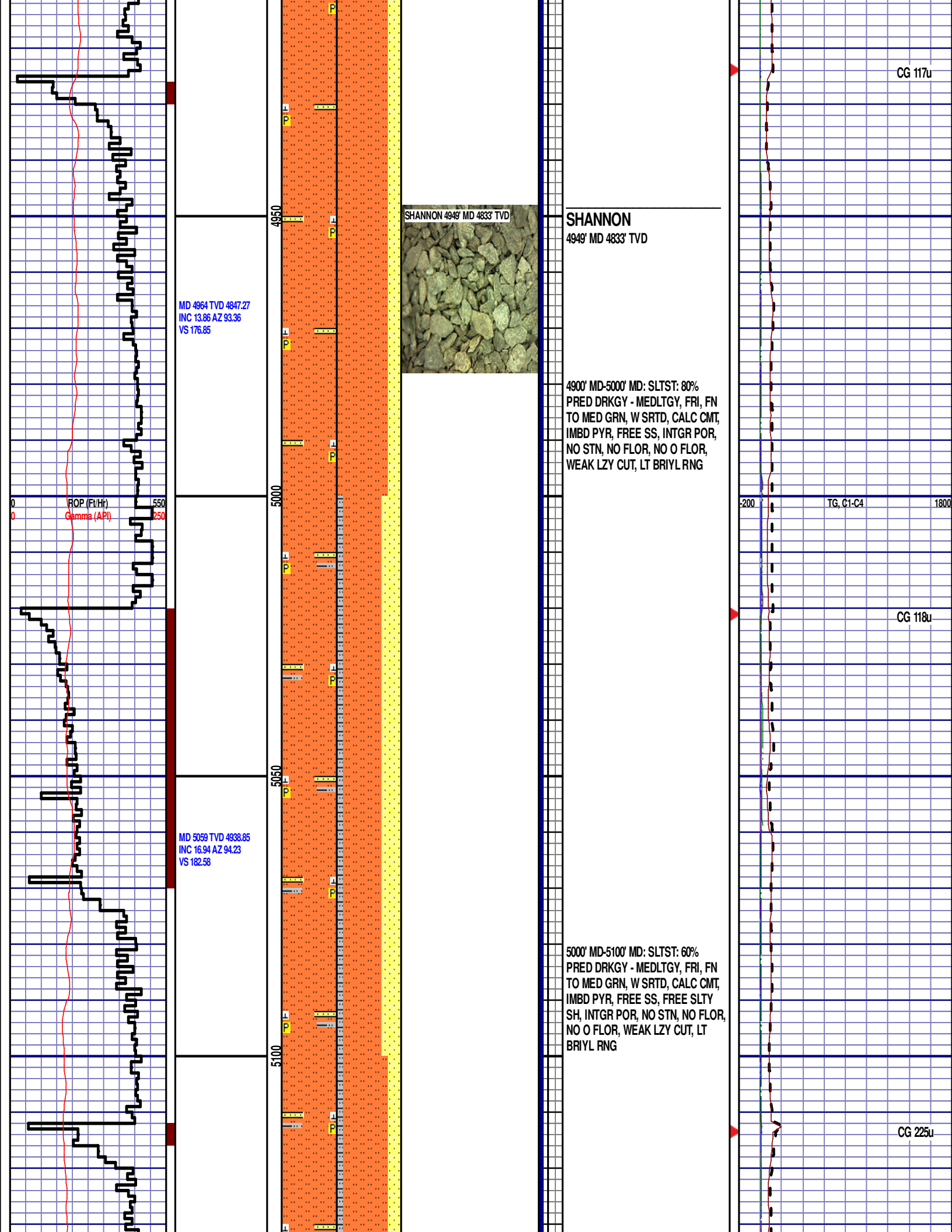
4600' MD-4700' MD: SS: 60%: PRED
MEDGY, OPQ, LSEY - MOD CONS,
FN TO MED GRN, SUBANG, W
SRTD, CALC CMT, FREE SLTST,
INTGR POR, NO STN, NO FLOR, NO

CG 154u

TG, C1-C4

CG 154u





MD 5154 TVD 5029.77
INC 16.77 AZ 92.49
VS 189.07

ROP (Ft/Hr)
Gamma (API)

550
250

MD 5248 TVD 5119.96
INC 15.99 AZ 98.58
VS 194.35

MD 5343 TVD 5211.81
INC 13.6 AZ 98.22
VS 197.96

5150

5200

5250

5300

5350

5100' MD-5200' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD PYR, FREE SS, FREE SLTY
SH, INTGR POR, NO STN, NO FLOR,
NO O FLOR, WEAK LZY CUT, LT
BRIYL RNG

SHANNON 5200' MD - 5300' MD

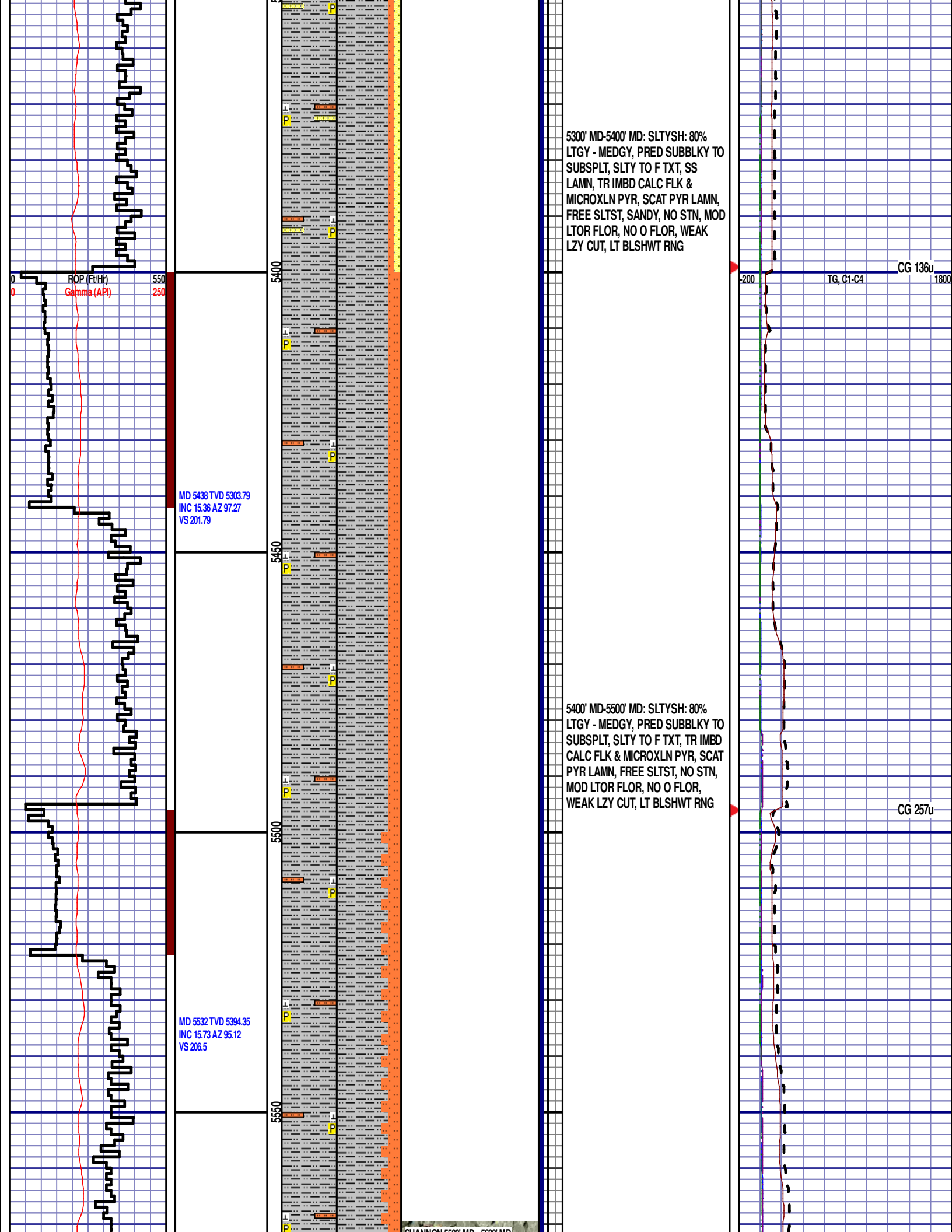


5200' MD-5300' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD PYR, FREE SS, FREE SLTY
SH, INTGR POR, NO STN, NO FLOR,
NO O FLOR, WEAK LZY CUT, LT
BRIYL RNG

TG, C1-C4

CG 133u

CG 197u



WOB 11.9K
PP 3944
RPM 80
SPM 64/63

ROP (F)
Gamma (API)

MD 5627 TVD 5486.39
INC 12.95 AZ 89.13
VS 212.41

MD 5722 TVD 5578.7
INC 14.36 AZ 95.44
VS 218.03



5500' MD-5600' MD: SLTYSH: 75%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, TR IMBD
CALC FLK & MICROXLN PYR, SCAT
PYR LAMN, FREE SLTST, NO STN,
MOD LTOR FLOR, NO O FLOR,
WEAK LZY CUT, LT BLSHWT RNG

5600' MD-5700' MD: SLTYSH: 70%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, TR IMBD
CALC FLK & MICROXLN PYR, SCAT
PYR LAMN, FREE SLTST, NO STN,
MOD LTOR FLOR, NO O FLOR,
WEAK LZY CUT, LT BLSHWT RNG

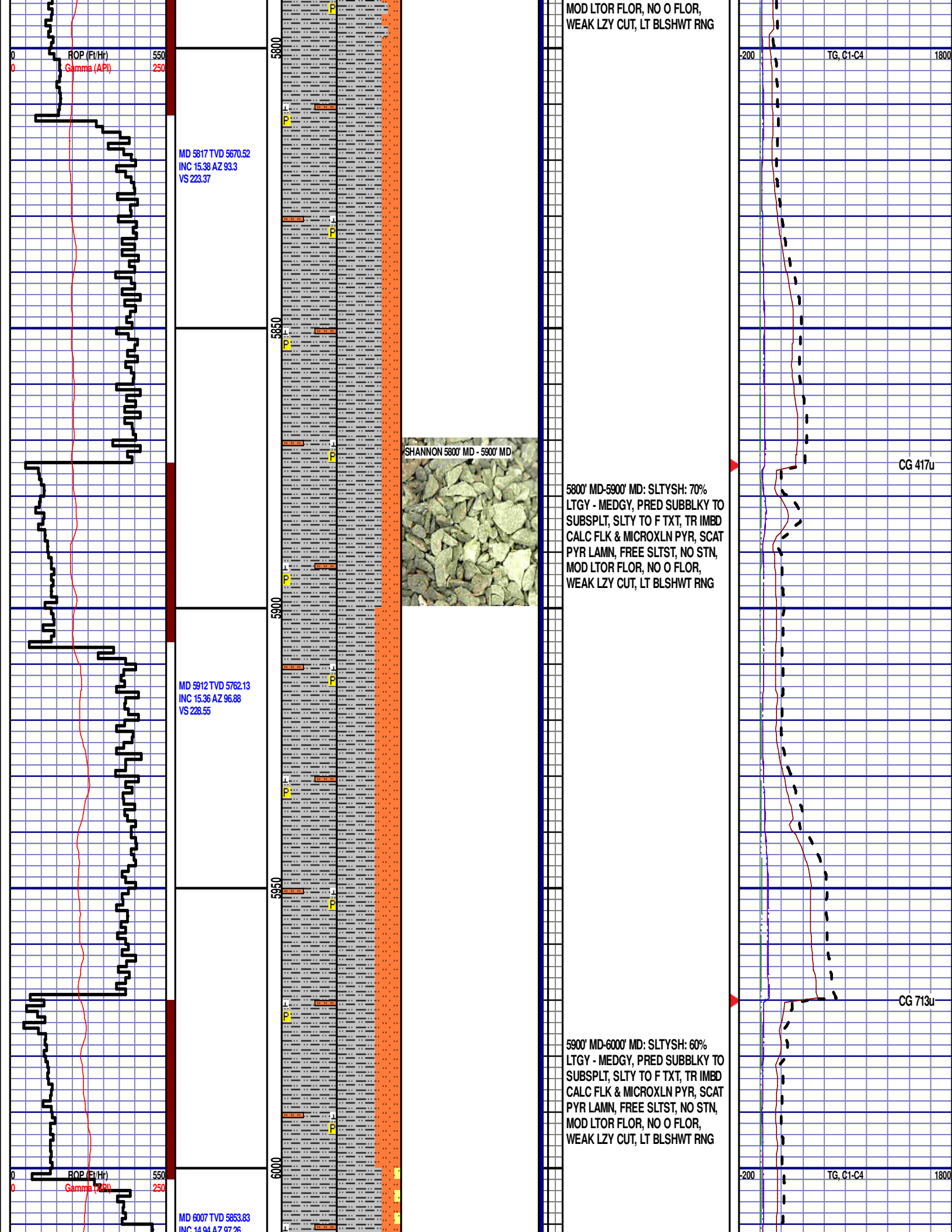
5700' MD-5800' MD: SLTYSH: 75%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, TR IMBD
CALC FLK & MICROXLN PYR, SCAT
PYR LAMN, FREE SLTST, NO STN,

CG 237u

TG, C1-C4

CG 272u

CG 317u



VS 232.82

12:01AM
1/27/14
DAY 03
FT/24HRS
3580

WOB 19.5K
PP 3570
RPM 0
SPM 67/67

MD 6101 TVD 5944.5
INC 15.63 AZ 98.69
VS 236.69

MD 6196 TVD 6036.07
INC 15.29 AZ 98.82
VS 240.32

ROP (Ft/Hr)
Gamma (API)

550
250

6050

6100

6150

6200

TEEPEE BUTTES 6074' MD 5918' TVD



TEEPEE BUTTES

6074' MD 5918' TVD

6000' MD-6100' MD: SLTYSH: 70%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, SS
LAMN, TR IMBD CALC FLK &
MICROXLN PYR, SCAT PYR LAMN,
FREE SLTST, SANDY, NO STN, MOD
L TOR FLOR, NO O FLOR, WEAK
LZY CUT, LT BLSHWT RNG

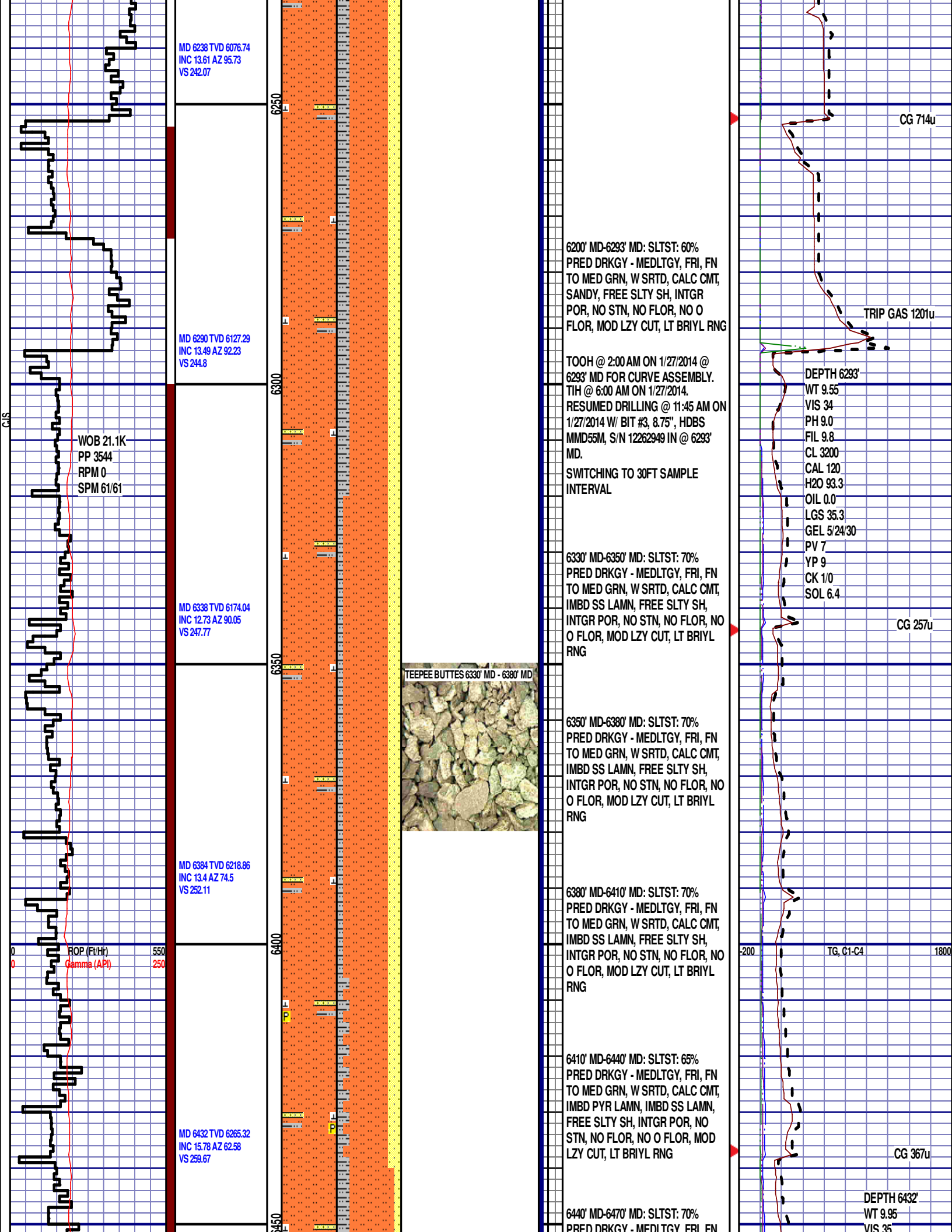
6100' MD-6200' MD: SLTYSH: 60%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, SS
LAMN, TR IMBD CALC FLK &
MICROXLN PYR, SCAT PYR LAMN,
FREE SLTST, SANDY, NO STN, MOD
L TOR FLOR, NO O FLOR, WEAK
LZY CUT, LT BLSHWT RNG

CG 762u

CG 554u

TG, C1-C4

1800



MD 6238 TVD 6076.74
INC 13.61 AZ 95.73
VS 242.07

MD 6290 TVD 6127.29
INC 13.49 AZ 92.23
VS 244.8

WOB 21.1K
PP 3544
RPM 0
SPM 61/61

MD 6338 TVD 6174.04
INC 12.73 AZ 90.05
VS 247.77

MD 6384 TVD 6218.86
INC 13.4 AZ 74.5
VS 252.11

MD 6432 TVD 6265.32
INC 15.78 AZ 62.58
VS 259.67

6200' MD-6293' MD: SLTST: 60%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
SANDY, FREE SLTY SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, MOD LZY CUT, LT BRIYL RNG

TOOH @ 2:00 AM ON 1/27/2014 @
6293' MD FOR CURVE ASSEMBLY.
TIH @ 6:00 AM ON 1/27/2014.
RESUMED DRILLING @ 11:45 AM ON
1/27/2014 W/ BIT #3, 8.75", HDBS
MMD55M, S/N 12262949 IN @ 6293'
MD.
SWITCHING TO 30FT SAMPLE
INTERVAL

6330' MD-6350' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD SS LAMN, FREE SLTY SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, MOD LZY CUT, LT BRIYL
RNG



6350' MD-6380' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD SS LAMN, FREE SLTY SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, MOD LZY CUT, LT BRIYL
RNG

6380' MD-6410' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD SS LAMN, FREE SLTY SH,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, MOD LZY CUT, LT BRIYL
RNG

6410' MD-6440' MD: SLTST: 65%
PRED DRKGY - MEDLTGY, FRI, FN
TO MED GRN, W SRTD, CALC CMT,
IMBD PYR LAMN, IMBD SS LAMN,
FREE SLTY SH, INTGR POR, NO
STN, NO FLOR, NO O FLOR, MOD
LZY CUT, LT BRIYL RNG

6440' MD-6470' MD: SLTST: 70%
PRED DRKGY - MEDLTGY, FRI, FN

CG 714u

TRIP GAS 1201u

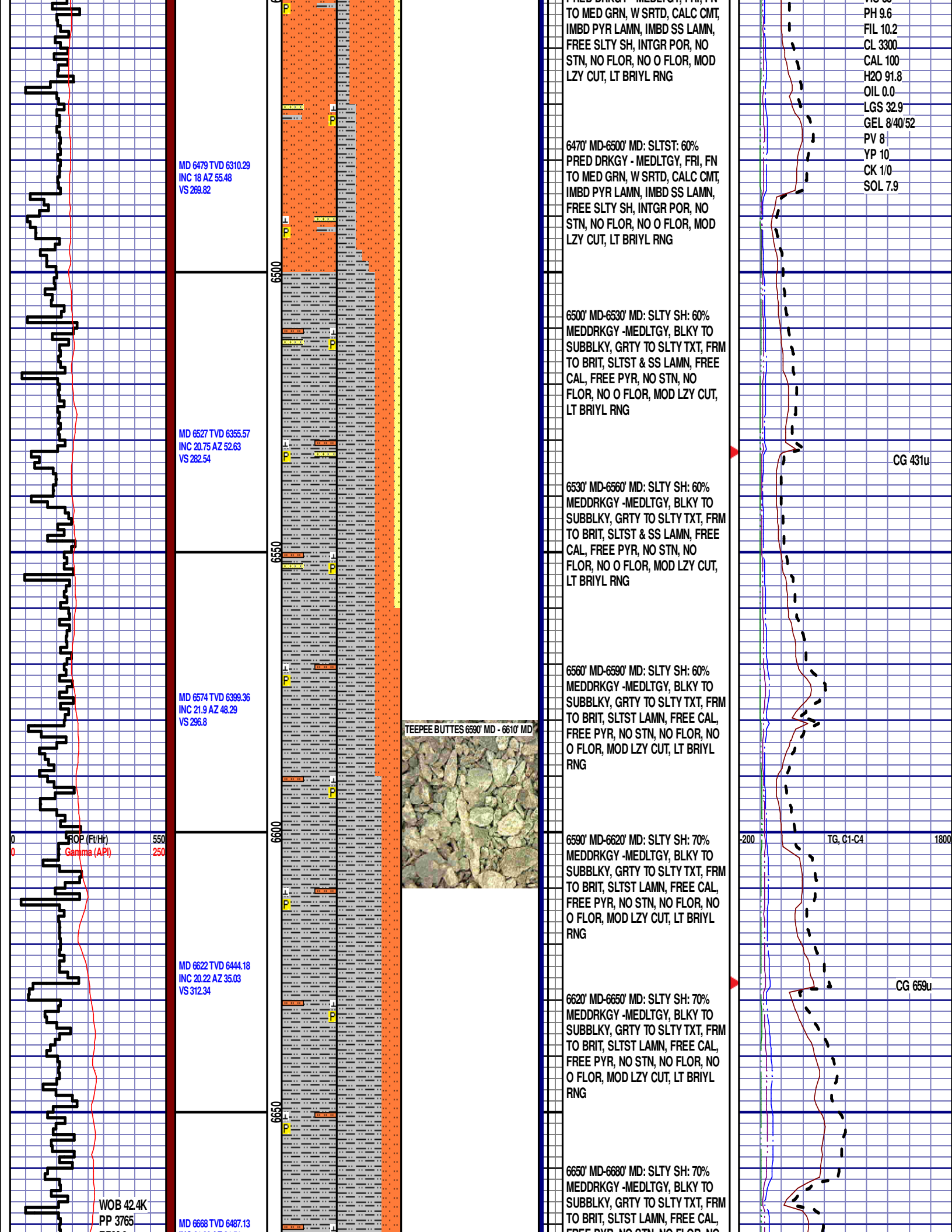
DEPTH 6293'
WT 9.55
VIS 34
PH 9.0
FIL 9.8
CL 3200
CAL 120
H2O 93.3
OIL 0.0
LGS 35.3
GEL 5/24/30
PV 7
YP 9
CK 1/0
SOL 6.4

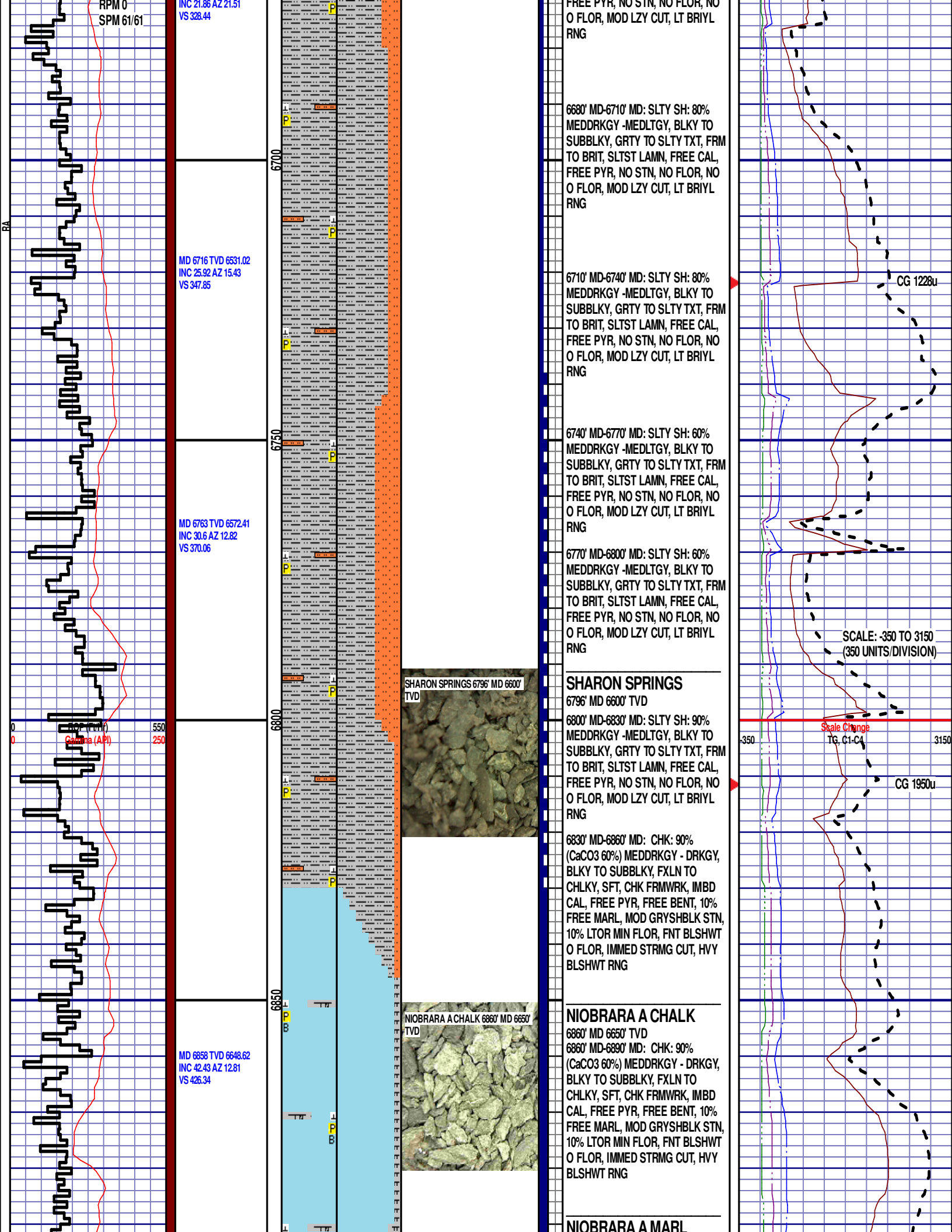
CG 257u

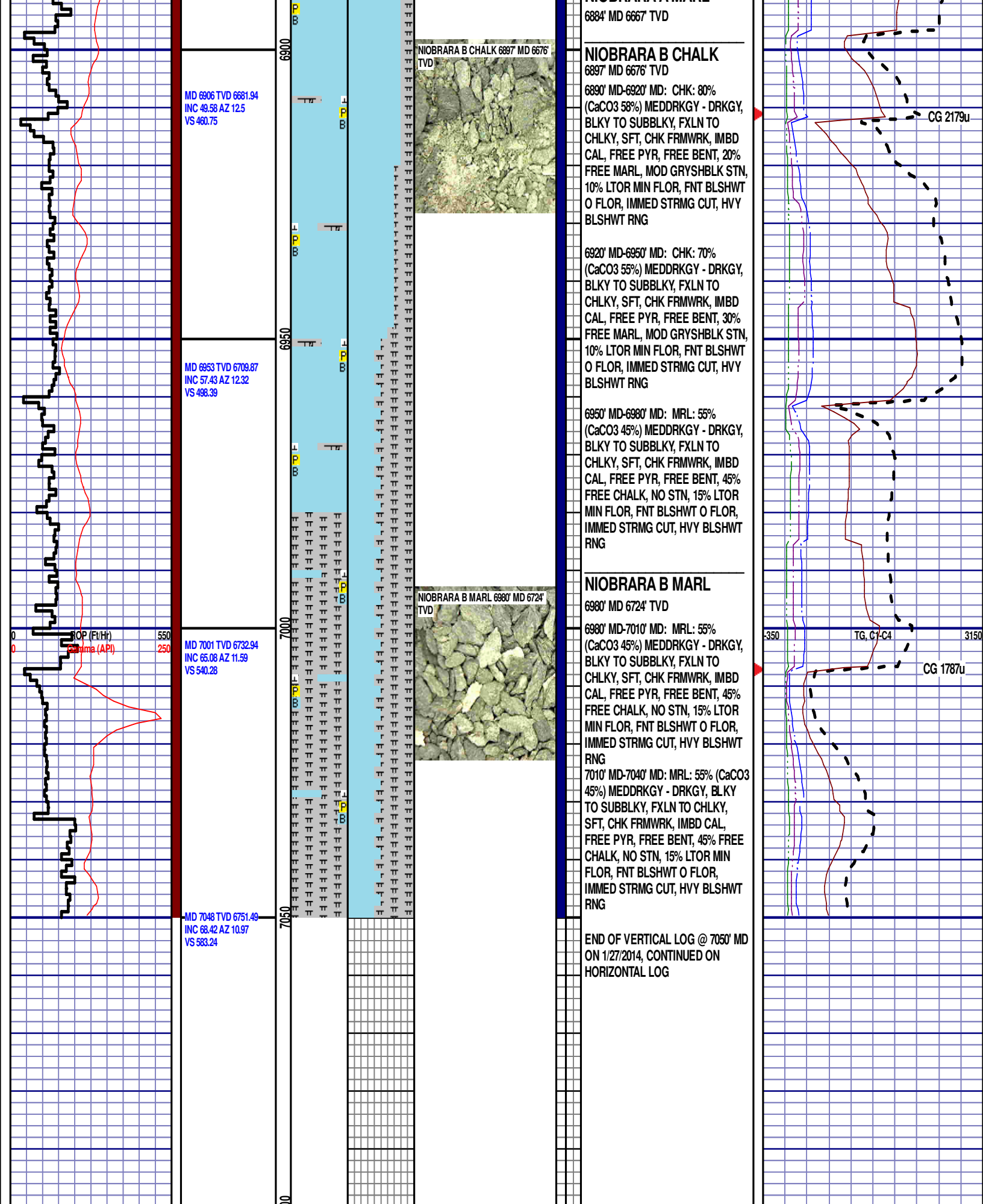
TG, C1-C4

CG 367u

DEPTH 6432'
WT 9.95
VIS 35







MD 6906 TVD 6681.94
INC 49.58 AZ 12.5
VS 460.75

MD 6953 TVD 6709.87
INC 57.43 AZ 12.32
VS 498.39

MD 7001 TVD 6732.94
INC 65.08 AZ 11.59
VS 540.28

MD 7048 TVD 6751.49
INC 68.42 AZ 10.97
VS 583.24

NIOBRARA B CHALK 6897' MD 6676' TVD

NIOBRARA B MARL 6980' MD 6724' TVD

NIOBRARA B CHALK

6897' MD 6676' TVD
6890' MD-6920' MD: CHK: 80% (CaCO3 58%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 20% FREE MARL, MOD GRYSHBLK STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

6920' MD-6950' MD: CHK: 70% (CaCO3 55%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 30% FREE MARL, MOD GRYSHBLK STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

6950' MD-6980' MD: MRL: 55% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 45% FREE CHALK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

NIOBRARA B MARL

6980' MD 6724' TVD
6980' MD-7010' MD: MRL: 55% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 45% FREE CHALK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
7010' MD-7040' MD: MRL: 55% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 45% FREE CHALK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

END OF VERTICAL LOG @ 7050' MD
ON 1/27/2014, CONTINUED ON
HORIZONTAL LOG