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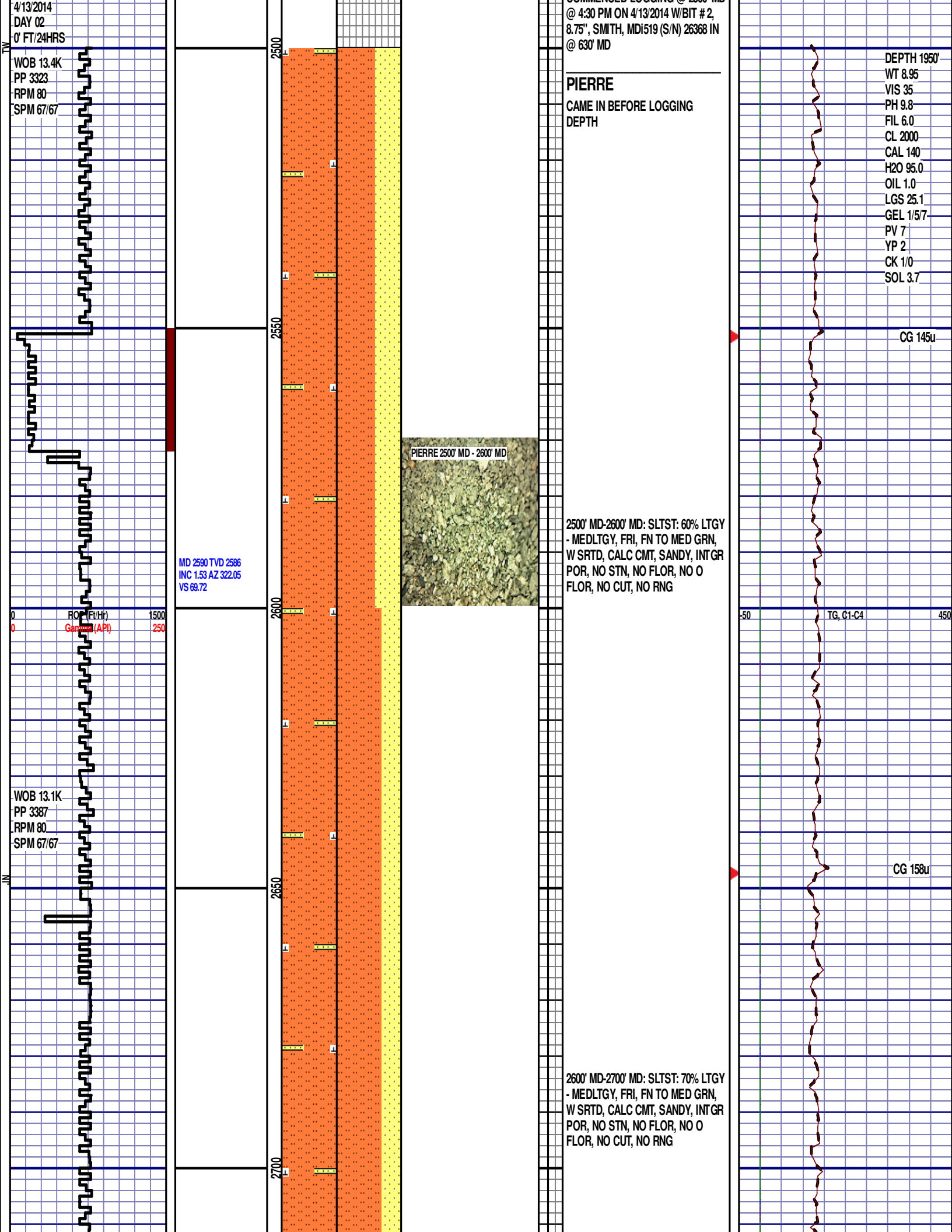
WWW.HZMUD.COM/25

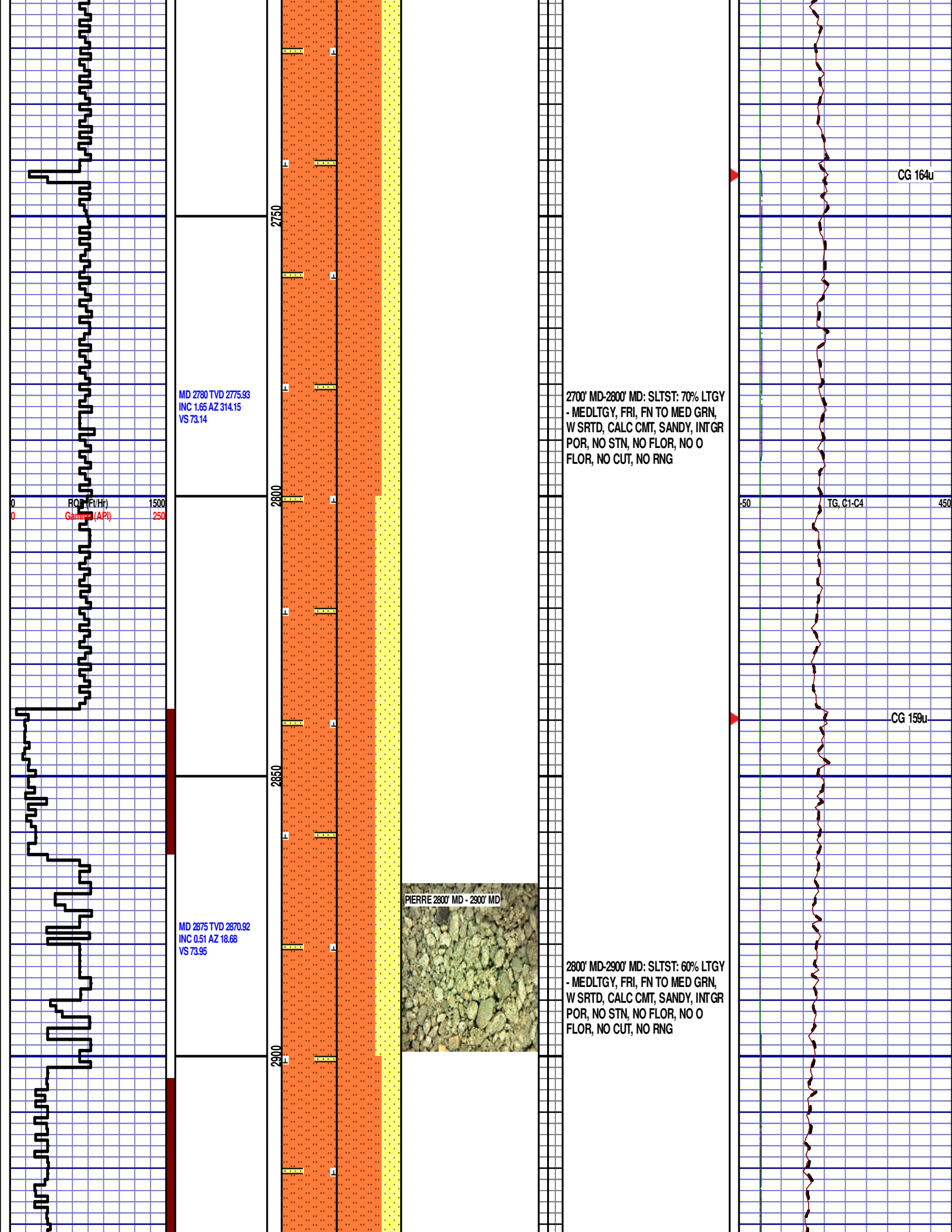
Customer Information	Well Information
<p><b>Operator:</b> Noble Energy Inc 1625 Broadway Suite 2200 Denver, Colorado 80202</p> <p><b>Geologist:</b> Holly Duncan Noble Energy Inc.</p>	<p><b>Well Name:</b> Wells Ranch State AE30-62-1BHNA</p> <p><b>Location:</b> 29-T6N-R62W 192' FSL, 65' FWL</p> <p><b>County:</b> Weld <b>State:</b> Colorado</p>
Mud Logging Details	
<p><b>Logger:</b> Tom Wacholz &amp; Andrew Christiano</p> <p><b>Log Interval:</b> 2500' MD to 6500' MD</p> <p><b>Start Date:</b> April 12, 2014</p> <p><b>Release Date:</b> April 23, 2014</p>	<p><b>Drilling Rig:</b> H&amp;P 343</p> <p><b>Total Depth:</b> 16238' MD</p> <p><b>TD Date:</b> April 21, 2014</p> <p><b>Formation:</b> Niobrara A Marl</p> <p><b>KB Elevation:</b> 4769'</p> <p><b>GR Elevation:</b> 4745'</p> <p><b>API Number:</b> 05-123-38686-0000</p>

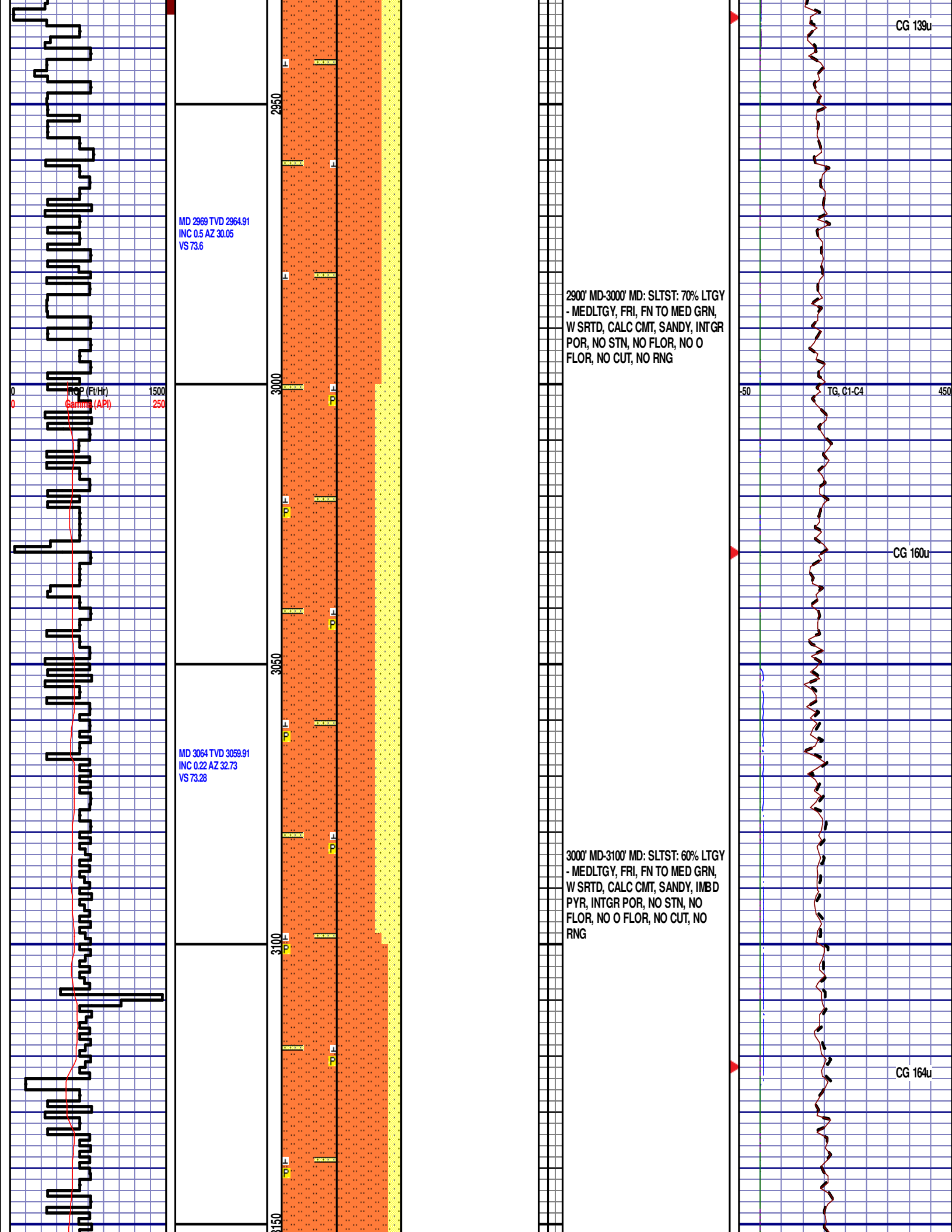
### ROCK TYPES

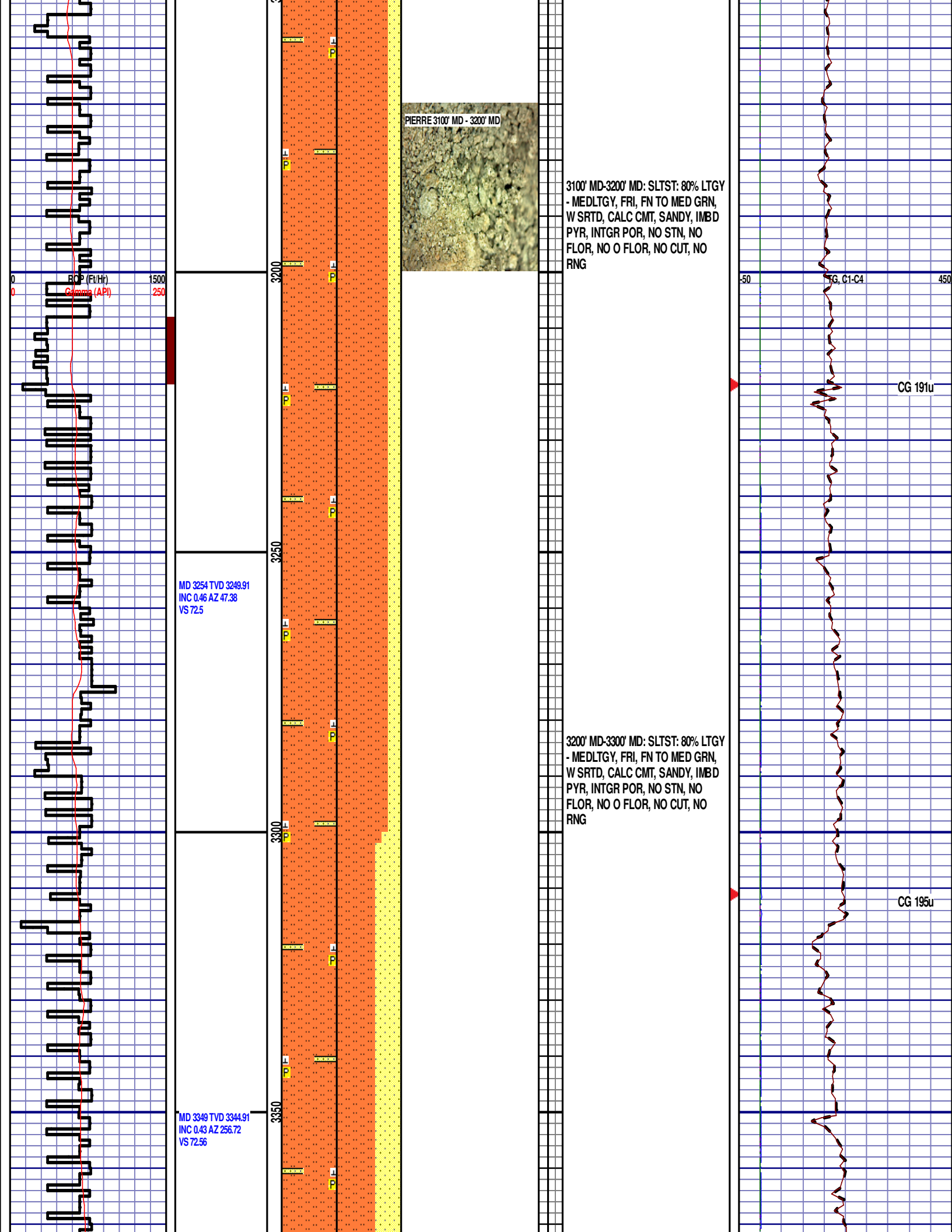
shale	Congl	Salt	gw	hvyrcrbsh
Anhy	Dol	Shale	lmywash	nosmpl
Bent	Gyp	Shcol	ogw	Lsdetrst
Brec	Igne	Shgy	olmywash	sltst
Cht	Lmst	Sltst	oshly gw	sdys sh
Clyst	Meta	Ss	shly gw	
Coal	Mrlst	Till	sdygw	

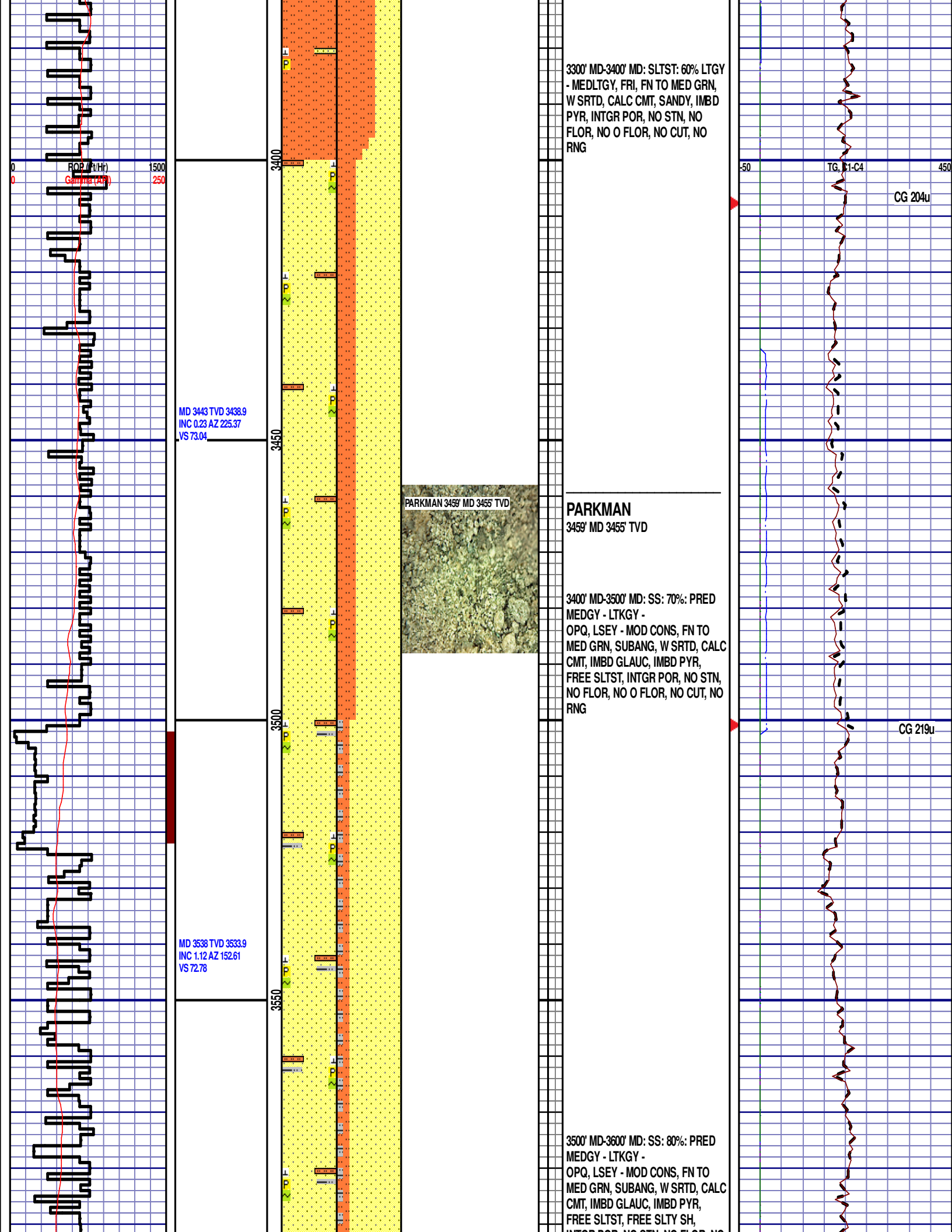
ROP (Ft/Hr) Gamma (API)	Drill Depth v. Time	Survey Data	Depth	Lithology	Lithology Percentages	Sample Photographs	Porosity	Geological Description	TG (1-8) C1 (units) C2 (units) C3 (units) C4 (units)	Total Gas, C1-C4
12:01AM			24					NOBLE ENERGY INC WELLS RANCH STATE AE30-62-1BHNA 29-T6N-R62W 192' FSL, 65' FWL WELD CO., CO H&P 343 LOGGERS: TOM WACHOLZ ANDREW CHRISTIANO CALLED OUT BY COMPANY MAN ON 4/12/2014 COMMENCED LOGGING @ 2500' MD		



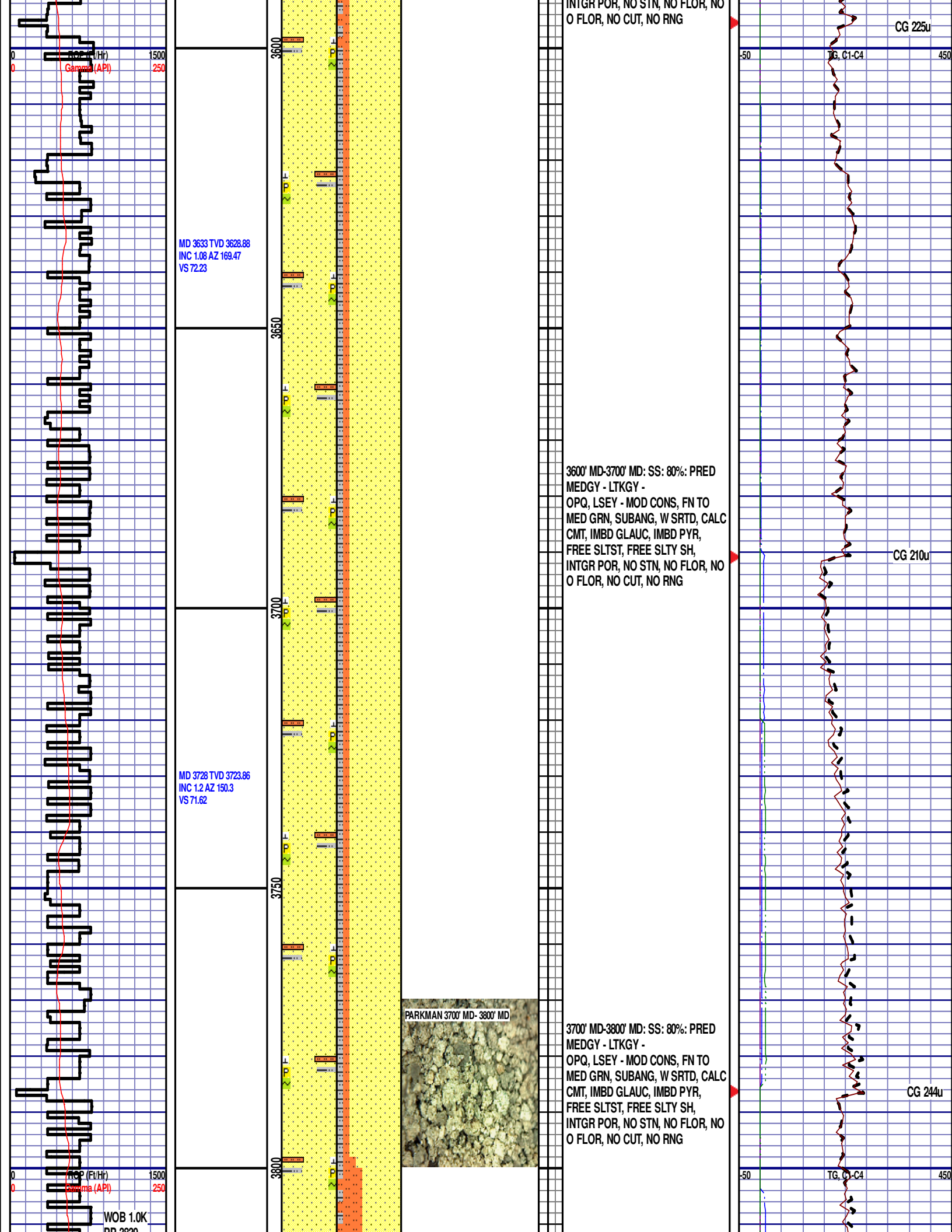












PP 3630  
RPM 80  
SPM 67/67

MD 3822 TVD 3817.84  
INC 1.42 AZ 141.46  
VS 70.45

MD 3917 TVD 3912.81  
INC 1.35 AZ 144.06  
VS 69.1

RCP (Ft/Hr) 1500  
GSP (API) 250

3850

3900

3950

4000

3800' MD-3900' MD: SS: 60%: PRED  
MEDGY - LTKGY -  
OPQ, LSEY - MOD CONS, FN TO  
MED GRN, SUBANG, W SRTD, CALC  
CMT, IMBD GLAUC, IMBD PYR,  
FREE SLTST, FREE SLTY SH,  
INTGR POR, NO STN, NO FLOR, NO  
O FLOR, NO CUT, NO RNG

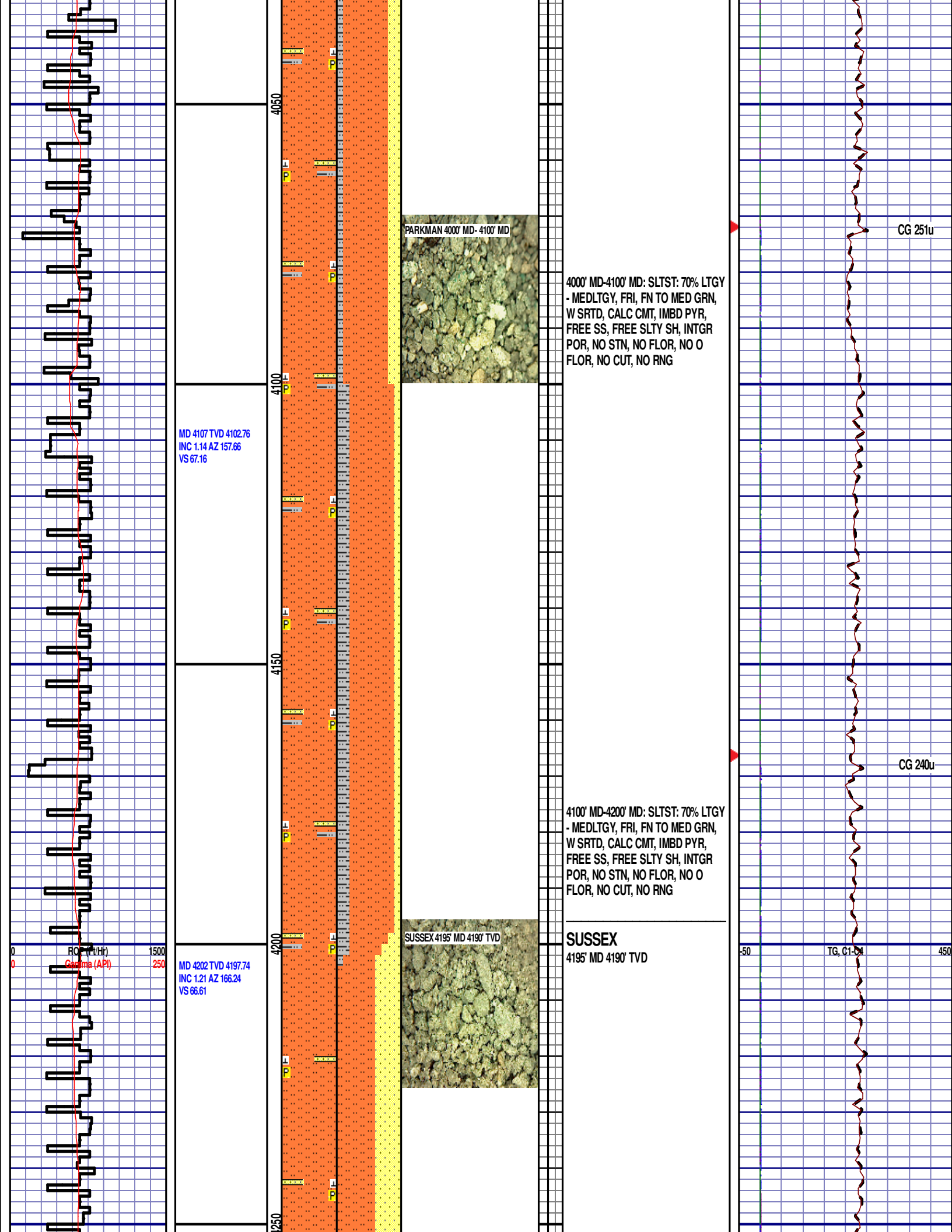
CG 245u

3900' MD-4000' MD: SLTST: 60% LTGY  
- MEDLTGY, FRI, FN TO MED GRN,  
W SRTD, CALC CMT, IMBD GLAUC,  
IMBD PYR, FREE SS, FREE SLTY  
SH, INTGR POR, NO STN, NO FLOR,  
NO O FLOR, NO CUT, NO RNG

CG 246u

-50 TG, C1-54 450





MD 4107 TVD 4102.76  
INC 1.14 AZ 157.66  
VS 67.16

MD 4202 TVD 4197.74  
INC 1.21 AZ 166.24  
VS 66.61

PARKMAN 4000' MD- 4100' MD

SUSSEX 4195' MD 4190' TVD

4000' MD-4100' MD: SLTST: 70% LTGY  
- 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, NO CUT, NO RNG

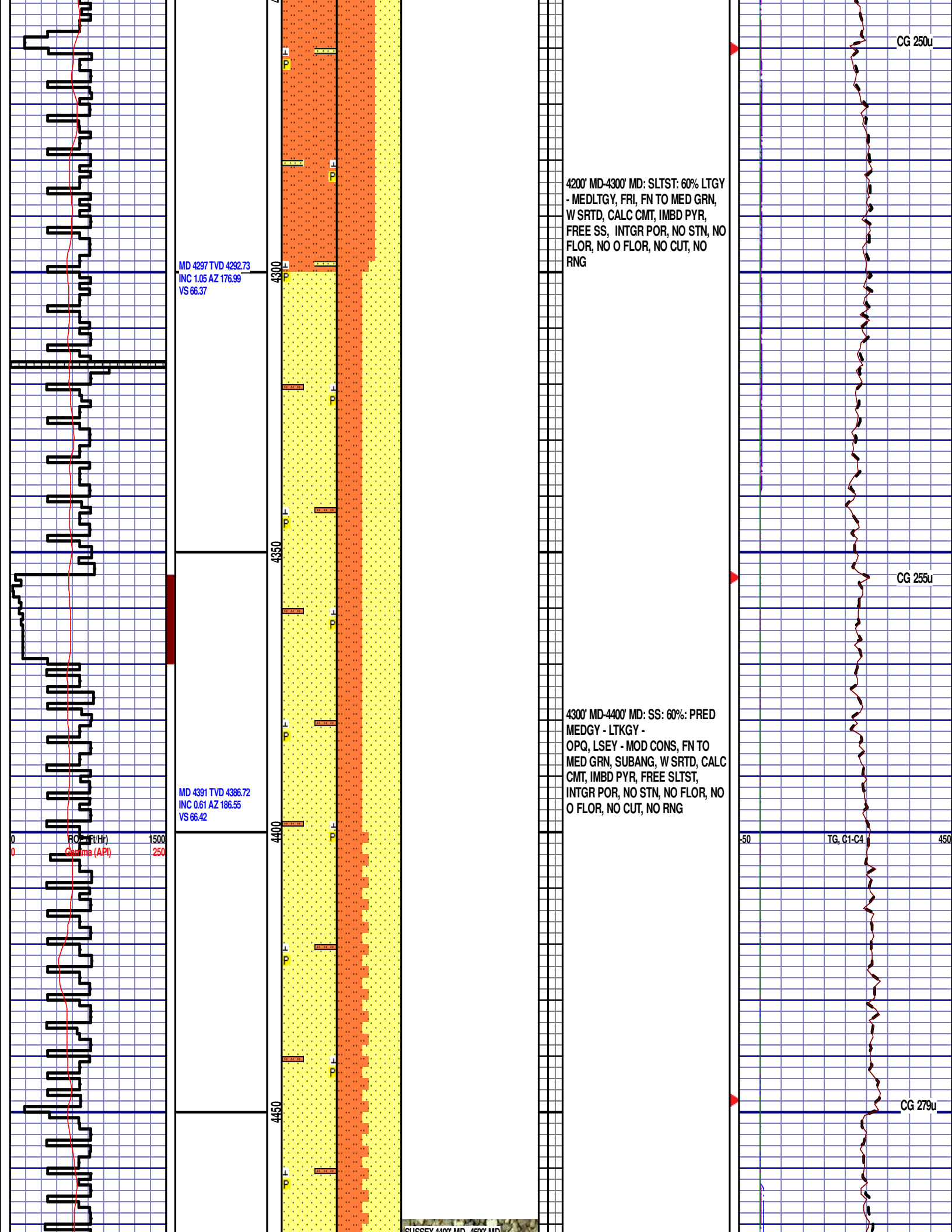
4100' MD-4200' MD: SLTST: 70% LTGY  
- MEDLTGY, FRI, FN TO MED GRN,  
W SRTD, CALC CMT, IMBD PYR,  
FREE SS, FREE SLTY SH, INTGR  
POR, NO STN, NO FLOR, NO O  
FLOR, NO CUT, NO RNG

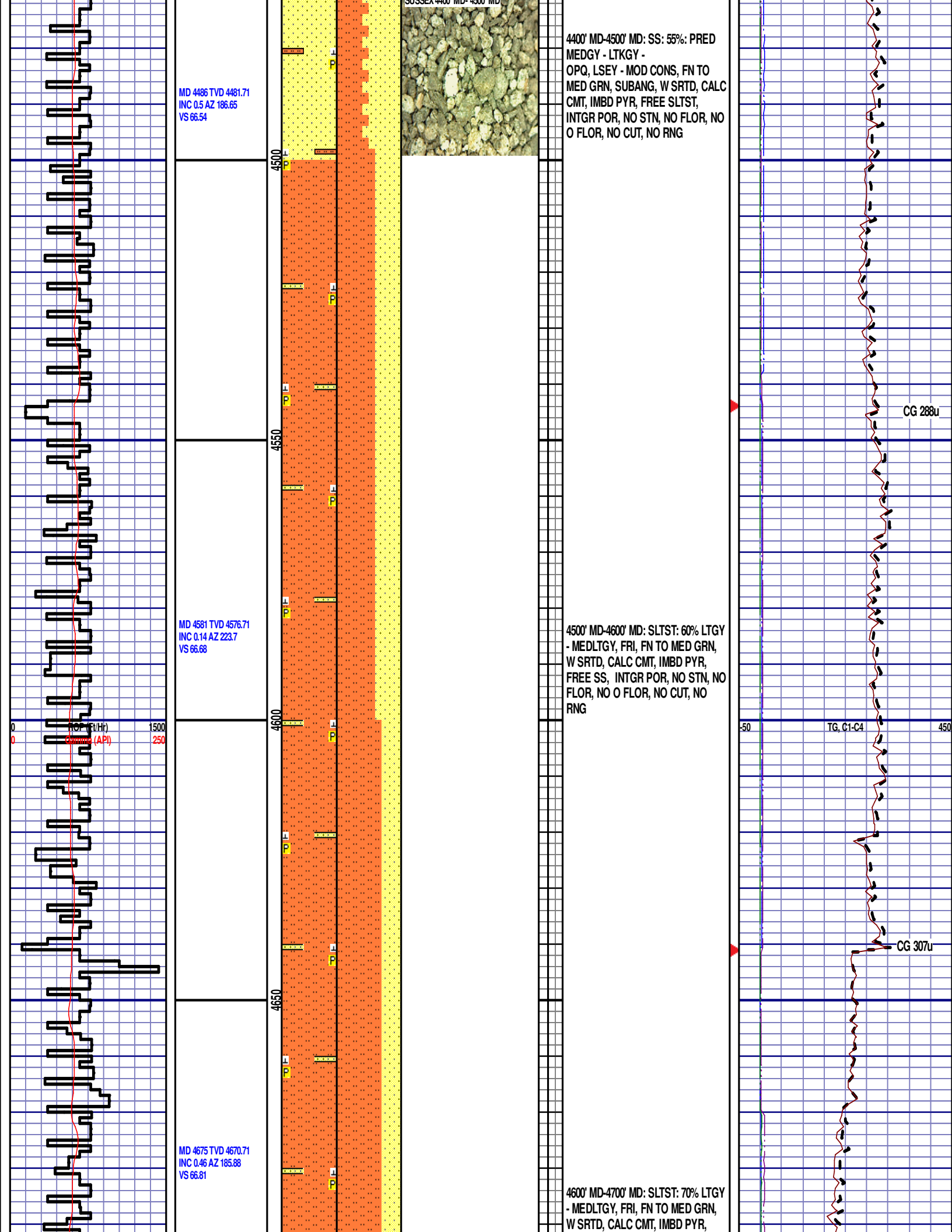
SUSSEX  
4195' MD 4190' TVD

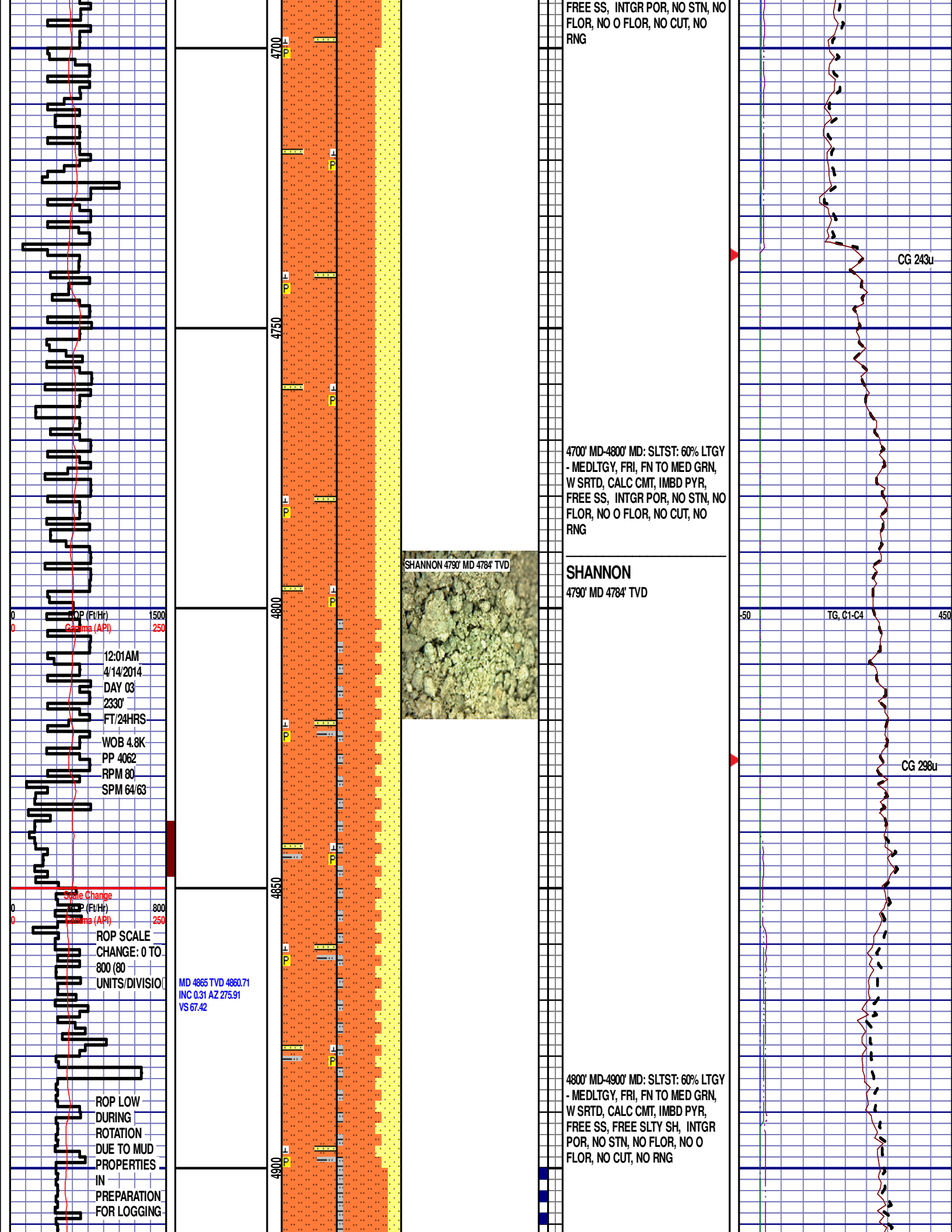
CG 251u

CG 240u

TG, C1-C4







MD 4959 TVD 4954.7  
INC 0.68 AZ 273.88  
VS 68.23

ROP (Ft/Hr)  
Gamma (API)

800  
250

MD 5054 TVD 5049.7  
INC 0.5 VS 69.18

SHANNON 5000' MD - 5100' MD



4900' MD-5000' MD: SLTST: 70% LTGY  
- 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 BLSHWT  
RNG

5000' MD-5100' MD: SLTYSH: 50%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, WEAK LZY CUT, LT BLSHWT  
RNG

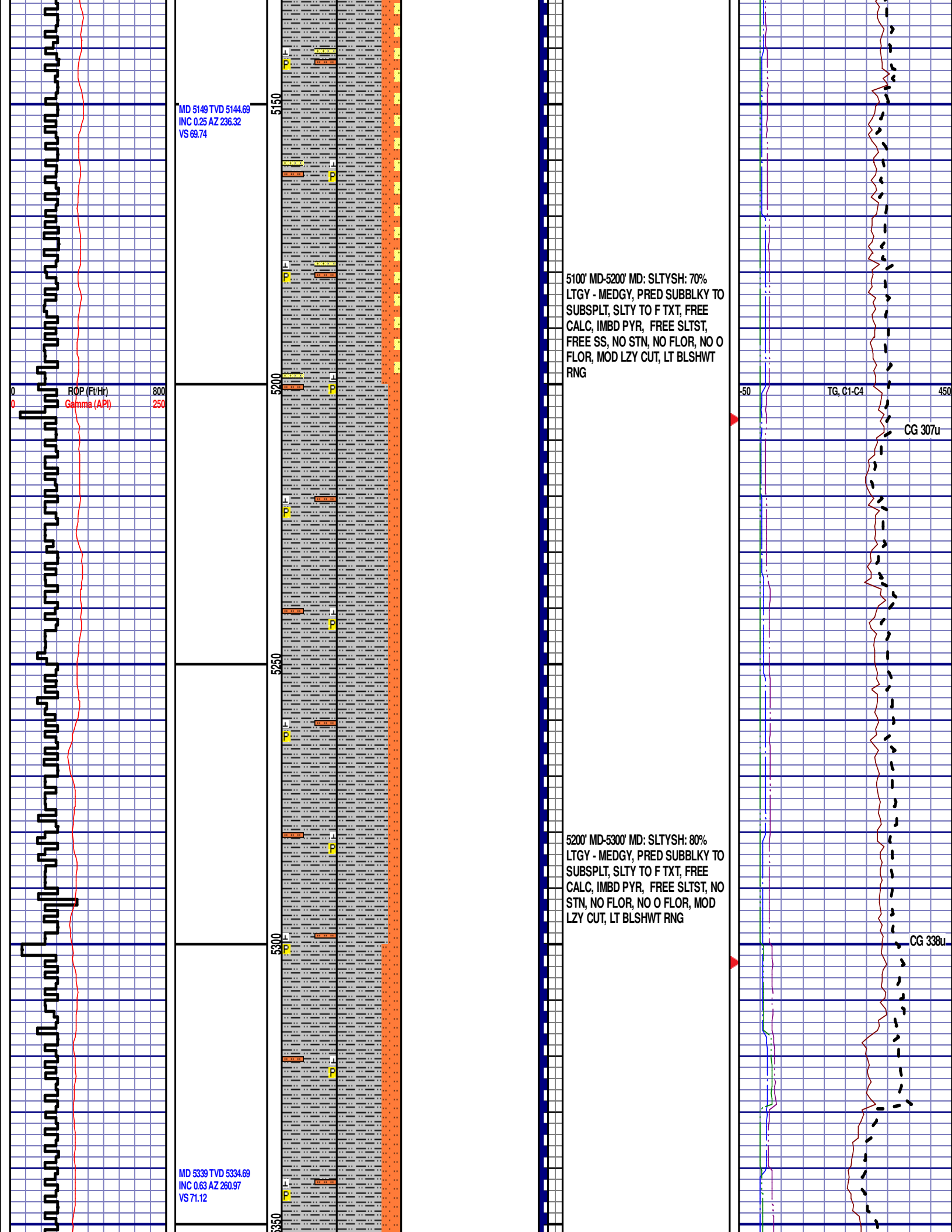
CG 331u

TG, C1-C4

CG 287u

CG 302u





MD 5149 TVD 5144.69  
INC 0.25 AZ 236.32  
VS 69.74

ROP (Fe/Hr)  
Gamma (API)

800  
250

5100' MD-5200' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHWT  
RNG

-50

TG, C1-C4

450

CG 307u

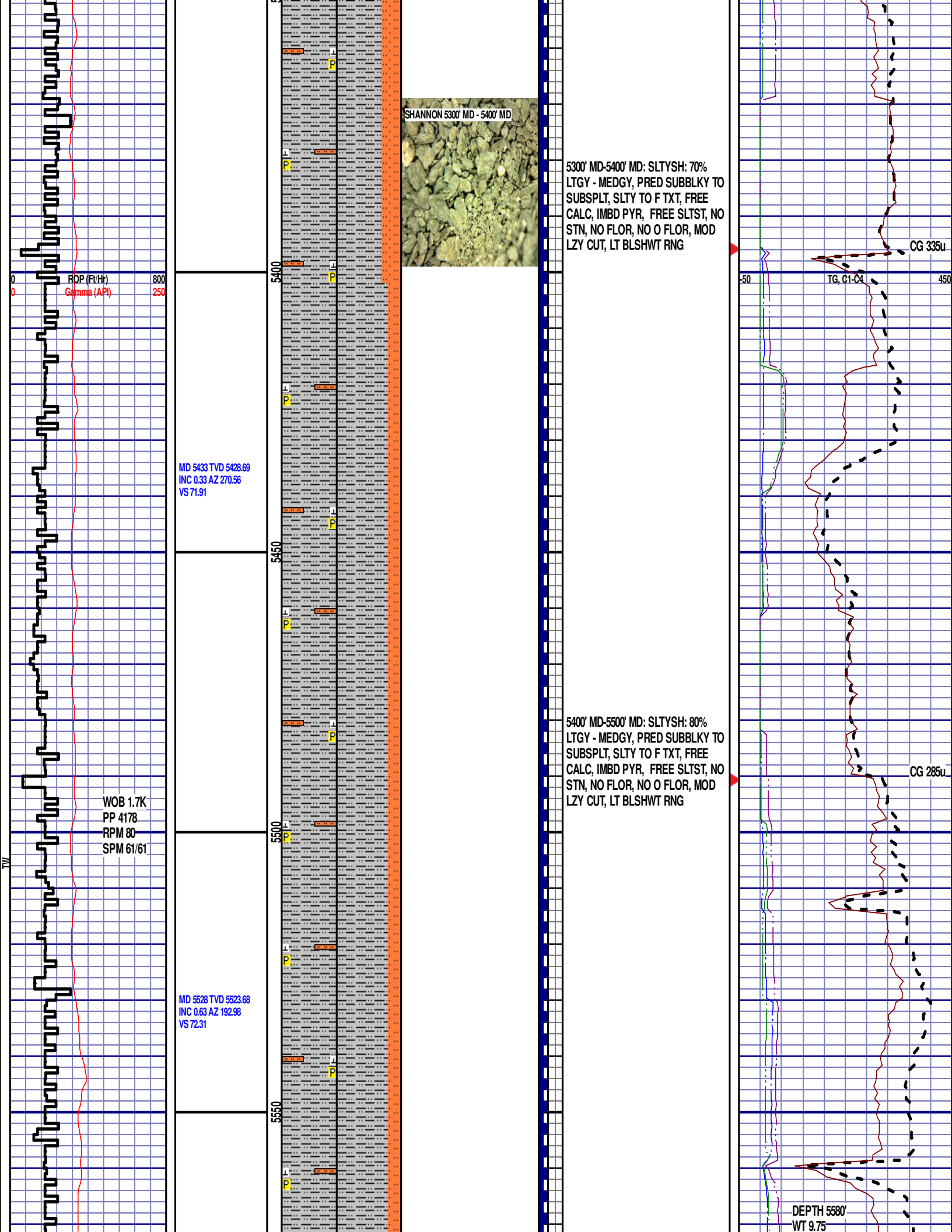
5200' MD-5300' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST, NO  
STN, NO FLOR, NO O FLOR, MOD  
LZY CUT, LT BLSHWT RNG

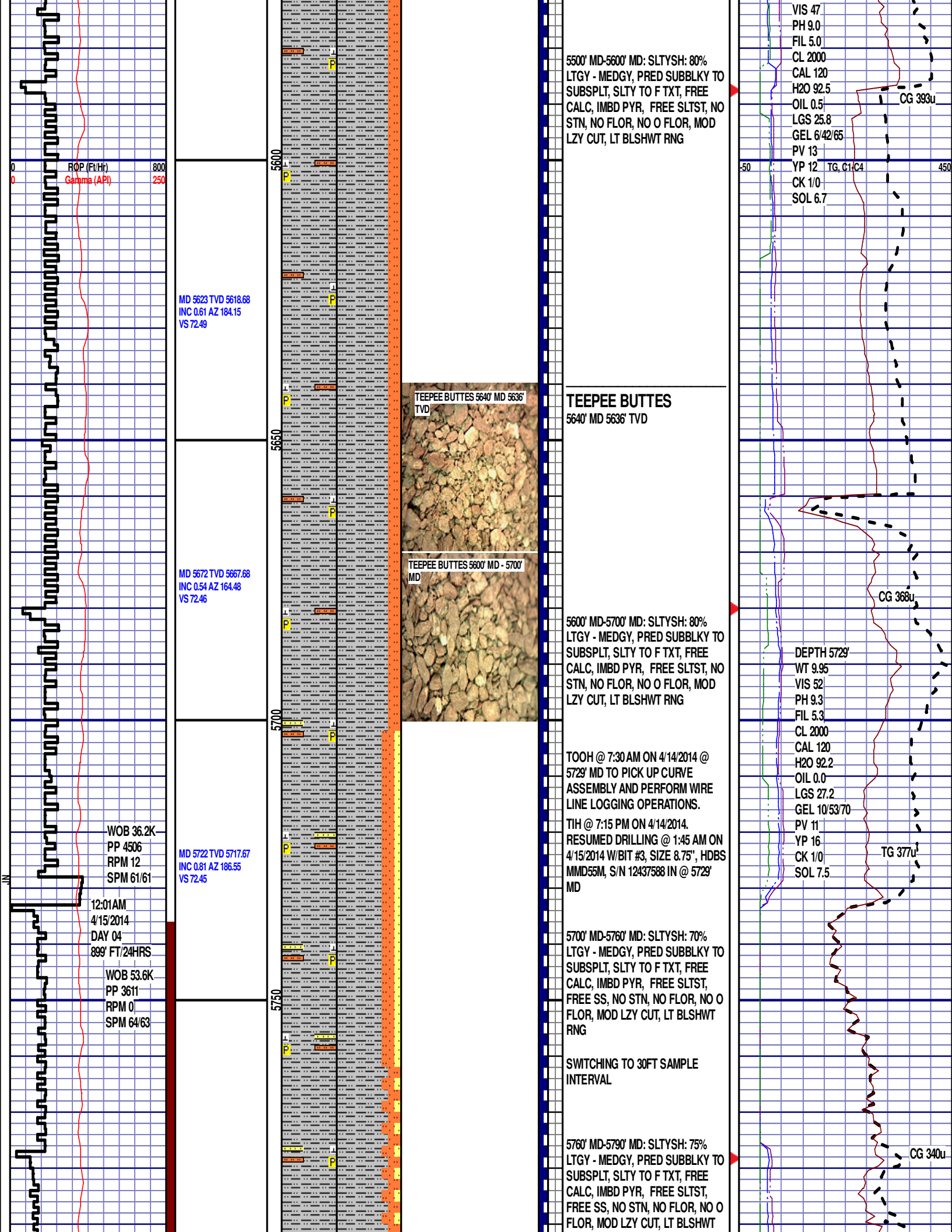
CG 338u

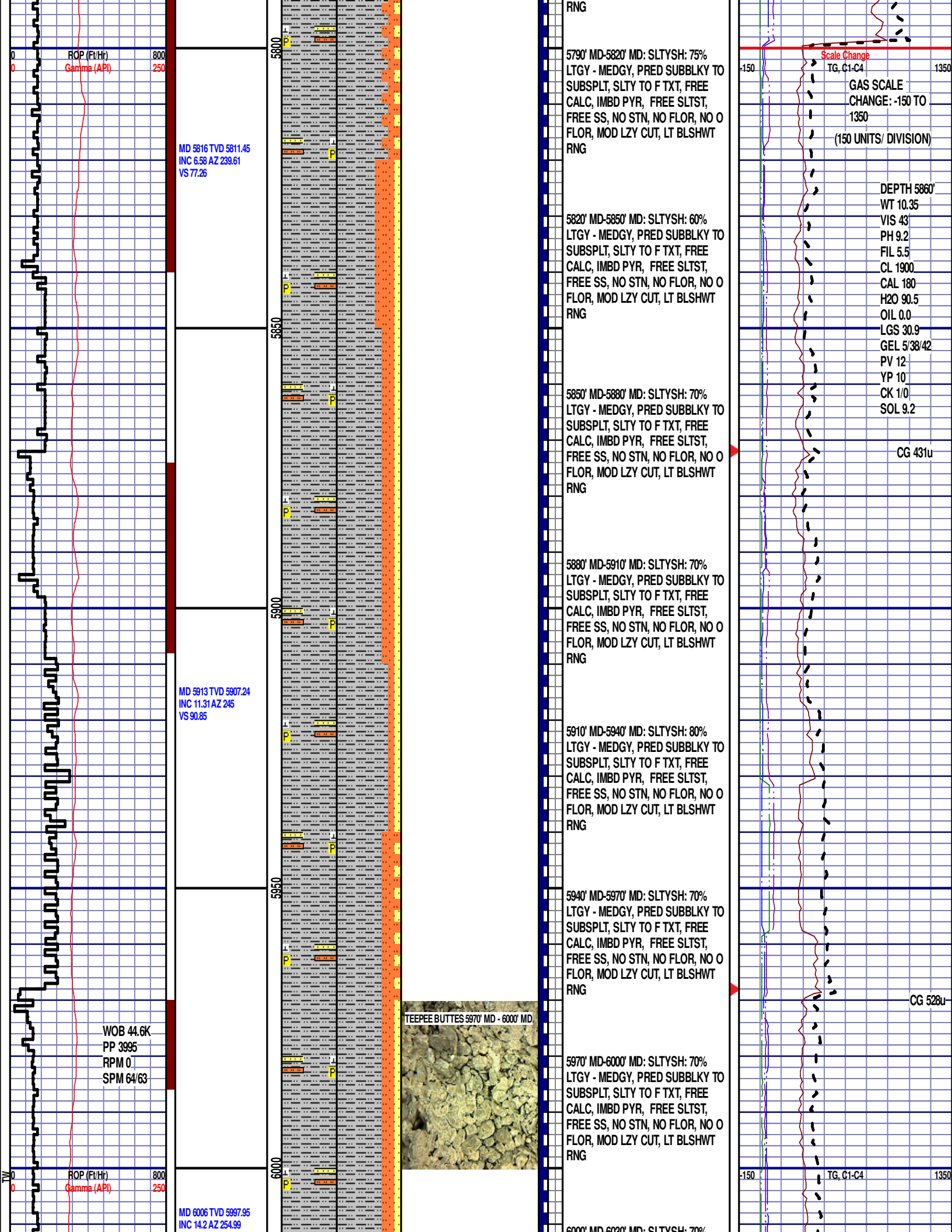
MD 5339 TVD 5334.69  
INC 0.63 AZ 260.97  
VS 71.12

5350









VS 110.3

MD 6054 TVD 6043.54  
INC 22.03 AZ 260.89  
VS 124.97

MD 6101 TVD 6085.96  
INC 28.88 AZ 266.93  
VS 145.08

MD 6149 TVD 6127.53  
INC 31.11 AZ 272.22  
VS 169.05

MD 6195 TVD 6166.2  
INC 34.47 AZ 271.96  
VS 193.91

ROP (Ft/Hr)  
Gamma (API)

800  
250

6050

6100

6150

6200

6000' MD-6030' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6030' MD-6060' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6060' MD-6090' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6090' MD-6120' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6120' MD-6150' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6150' MD-6180' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6180' MD-6210' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6210' MD-6240' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,

CG 365u

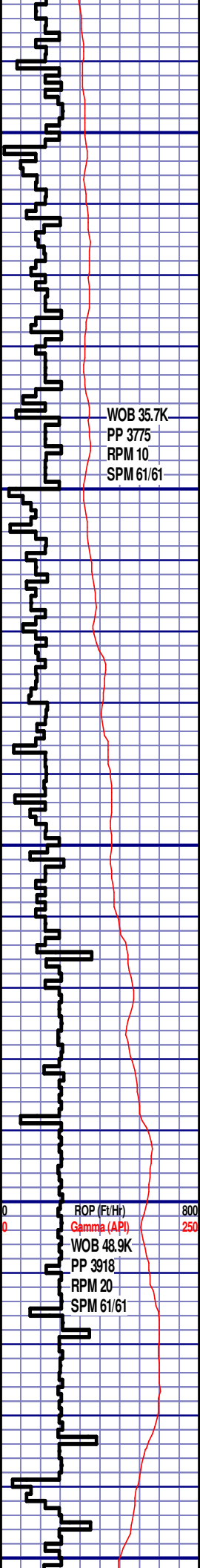
CG 502u

-150

TG, C1-C4

1350





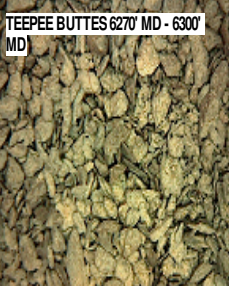
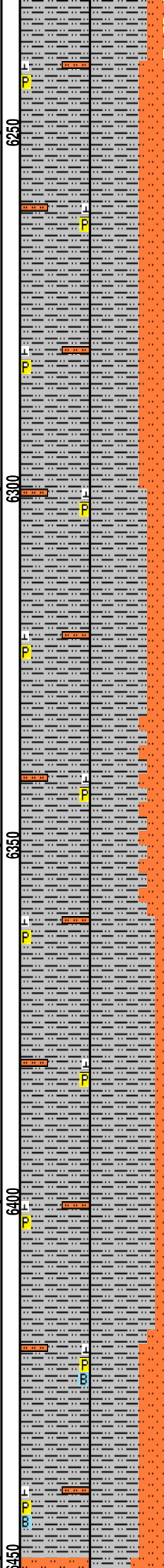
MD 6243 TVD 6204.87  
INC 38.17 AZ 268.65  
VS 222.31

WOB 35.7K  
PP 3775  
RPM 10  
SPM 61/61

MD 6290 TVD 6240.37  
INC 43.66 AZ 266.85  
VS 253.08

ROP (Ft/Hr)  
Gamma (API)  
WOB 48.9K  
PP 3918  
RPM 20  
SPM 61/61

MD 6385 TVD 6300.85  
INC 57.06 AZ 269.92  
VS 326.05



CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, MOD LZY CUT, LT BLSHW  
RNG

6240' MD-6270' MD: SLTYSH: 60%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL  
RNG

6270' MD-6300' MD: SLTYSH: 60%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL  
RNG

6300' MD-6330' MD: SLTYSH: 70%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL  
RNG

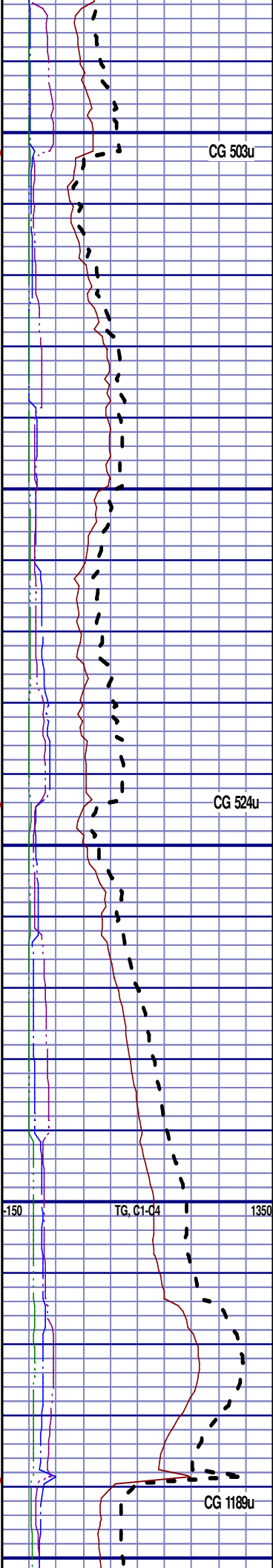
6330' MD-6360' MD: SLTYSH: 65%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, NO FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL  
RNG

6360' MD-6390' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, TRC FLOR, NO  
O FLOR, IMMED STRMG CUT, BRIYL  
RNG

6390' MD-6420' MD: SLTYSH: 80%  
LTGY - MEDGY, PRED SUBBLKY TO  
SUBSPLT, SLTY TO F TXT, FREE  
CALC, IMBD PYR, FREE SLTST,  
FREE SS, NO STN, 5% FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL  
RNG

**SHARON SPRINGS**  
6430' MD 6322 TVD

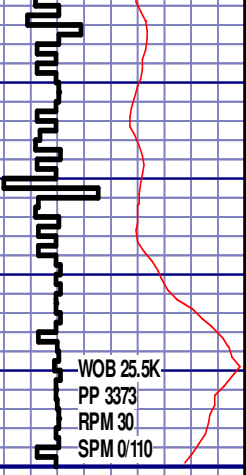
6420' MD-6450' MD: SLTYSH: 60% LTGY -  
MEDGY, PRED SUBBLKY TO SUBSPLT, SLTY  
TO F TXT, FREE CALC, IMBD PYR, FREE  
BENT, FREE SLTST, FREE SS, NO STN, 5%  
FLOR, NO O FLOR, IMMED STRMG CUT,  
BRIYL RNG



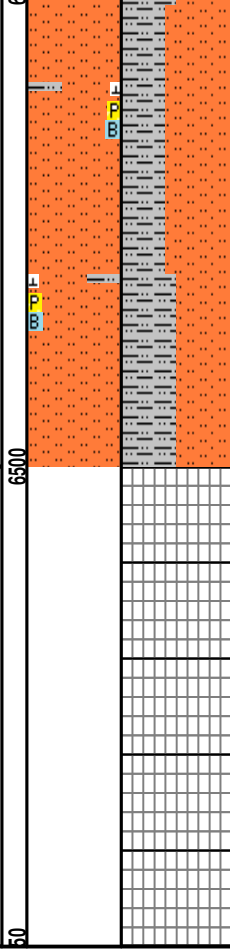
CG 503u

CG 524u

CG 1189u



MD 6480 TVD 6345.98  
INC 66.19 AZ 275.69  
VS 409.25



6450' MD-6480' MD: SLTST: 60%  
MEDDKGY- MEDLTGY, FRI, FN TO  
MED GRN, W SRTD, CALC CMT,  
FREE PYR, FREE SLTYSH, INTGR  
POR, ABDT FREE BENT, 15% MIN  
FLOR NO STN, FNT BLSHWT O  
FLOR, IMMED STRMG CUT, HVY  
BLSHWT RNG

6480' MD-6500' MD: SLTST: 50%  
MEDDKGY- MEDLTGY, FRI, FN TO  
MED GRN, W SRTD, CALC CMT,  
FREE PYR, FREE SLTYSH, INTGR  
POR, FREE BENT, 5% MIN FLOR,  
FNT BLSHWT O FLOR, IMMED  
STRMG CUT, HVY BLSHWT RNG

END OF VERTICAL LOG @ 6500' MD  
ON 4/15/2014, CONTINUED ON  
HORIZONTAL LOG

