



7136 South Yale Avenue, Suite 414

Tulsa, Oklahoma 74136-6378

phone 918.925.9739

fax 866.534.4559

WWW.HZMUD.COM

Customer Information

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

Geologist: Cassidy Miller
Noble Energy Inc

Mud Logging Details

Logger: Jonathan Faulkner & Andrew Christiano
Log Interval: 2500' MD to 7250' MD
Start Date: January 11, 2013
Release Date: TBD

Well Information

Well Name: English Farms XX08-72HN

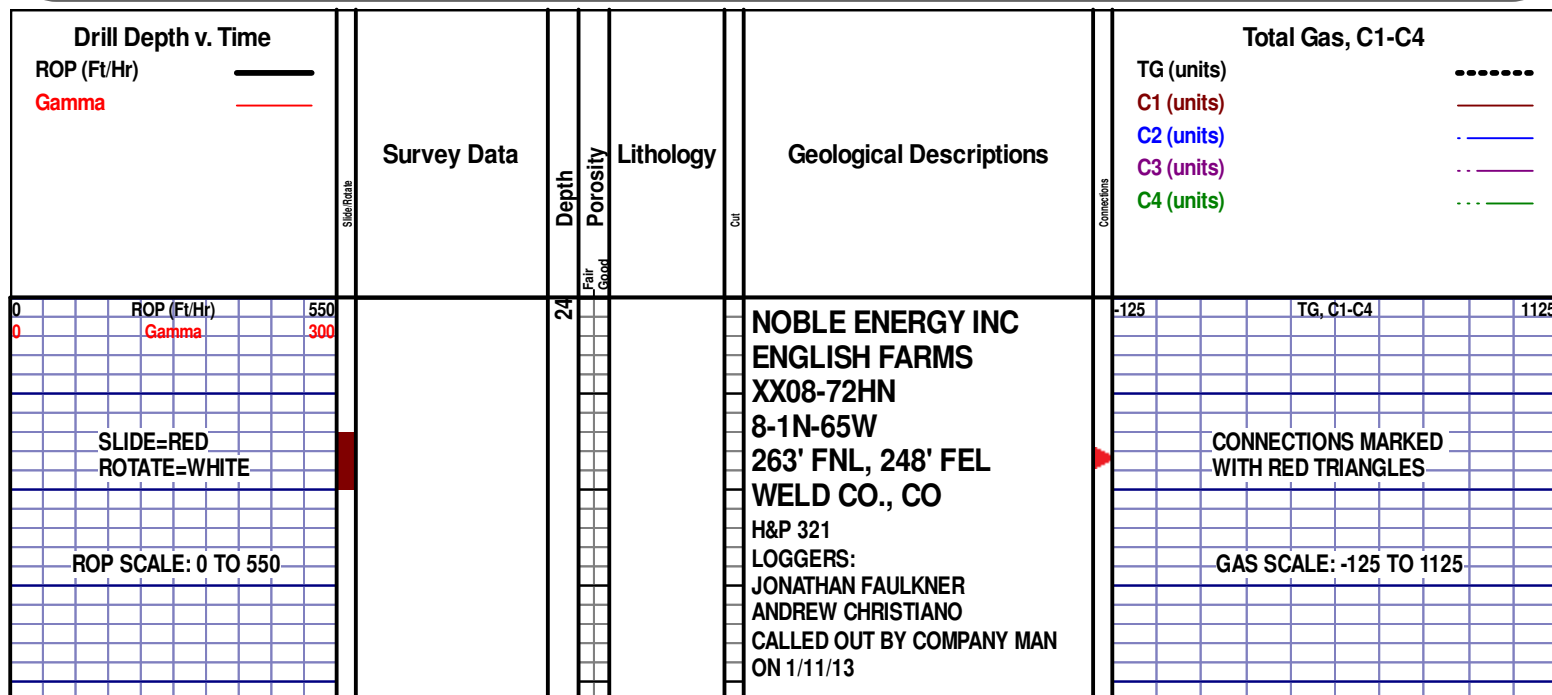
Location: 8-1N-65W
263' FNL, 248' FEL

County: Weld
State: Colorado

Drilling Rig: H&P 321
Total Depth: TBD
TD Date: TBD
Formation: Niobrara C
KB Elevation: 4961'
GR Elevation: 4931'
API Number: 05-123-36276

ROCK TYPES

	Anhy		Dol		Salt		gw		hvycrbsh
	Bent		Gyp		Shale		lmywash		nosmpl
	Brec		Igne		Shcol		ogw		Lsdetrit
	Cht		Chk		Siltysh		olmywash		sltst
	Clyst		Lmst		Sltst		oshly gw		sdy sh
	Coal		Meta		Ss		shly gw		Cement
	Congl		Mrlst		Till		sdygw		



GAMMA SCALE: 0 TO 300

WOB 20.1K
PP 2579
RPM 61
SPM 66/67

ROP (Ft/Hr)
Gamma

MD 2590 TVD 2579.04
INC 11.6 AZ 293.33
VS -40.29

MD 2685 TVD 2672.16
INC 11.27 AZ 288
VS -45.43

COMMENCED LOGGING @ 2500' @
6:00 PM ON 1/12/13 W/BIT #2 8.75"
SMITH MDI516 IN @ 1178' MD

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

DRILLING ON WBM

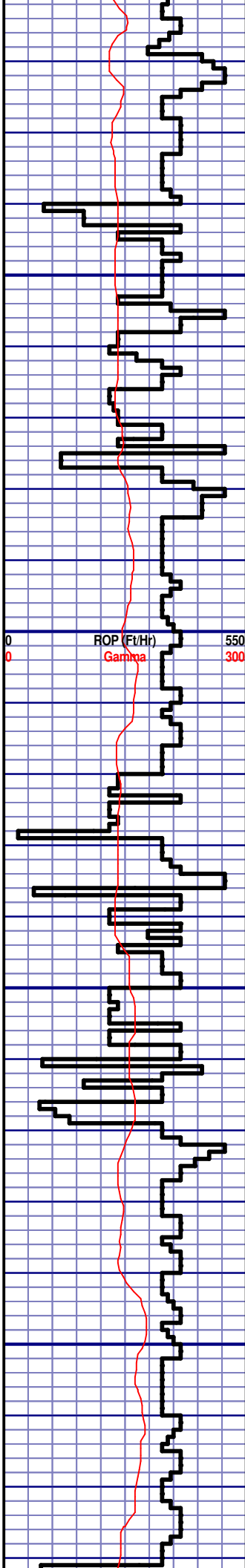
FROZEN GAS LINE

CG 389u

MD 1695
WT 8.5
VIS 30
PH 9.5
FIL 26.6
CL 2400
CAL 210
H2O 98.5
OIL 0.0
SOL 1.2
GELS 1/3/6
PV 4
YP 4

TG, C1-C4

CG 1089u



MD 2780 TVD 2765.18
INC 12.19 AZ 293.01
VS-50.67

MD 2875 TVD 2857.92
INC 12.83 AZ 291.75
VS-56.86

2750

2800

2850

2900

SILTSTN; 60%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

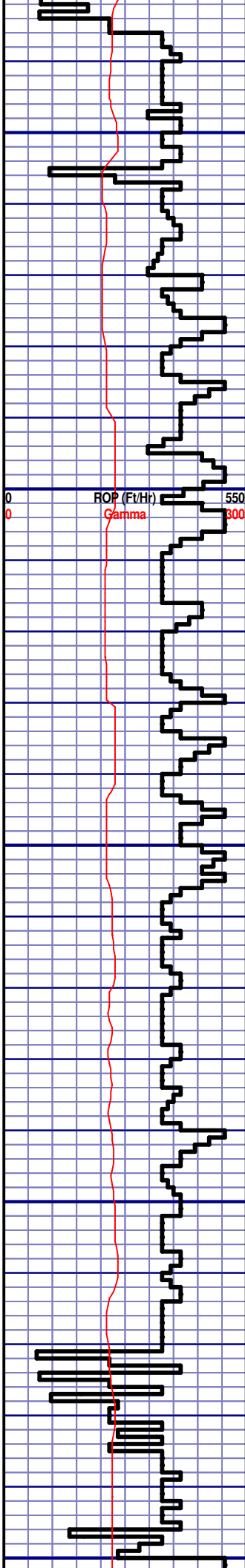
PIERRE
2900' MD 2885' TVD

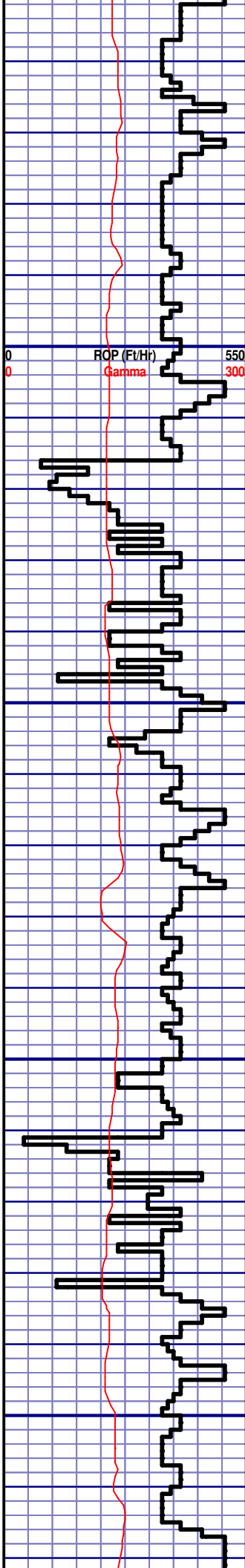
CG 85u

-125 TG, C1-C4 1125

CG 92u

CG N/A

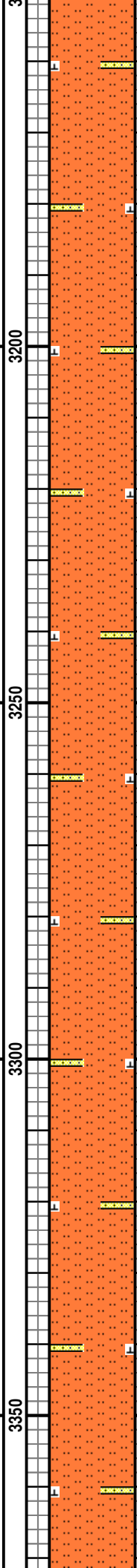




MD 3159 TVD 3134.52
INC 12.55 AZ 294.73
VS-77.63

MD 3254 TVD 3227.05
INC 13.61 AZ 294.26
VS-84.85

MD 3349 TVD 3319.71
INC 11.89 AZ 302.01
VS-93.03

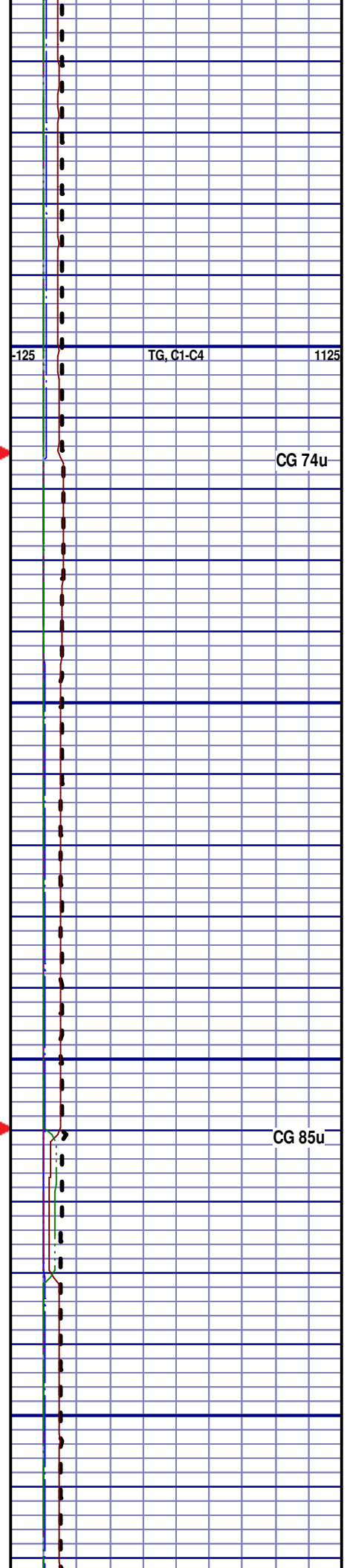


SILTSTN; 80%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

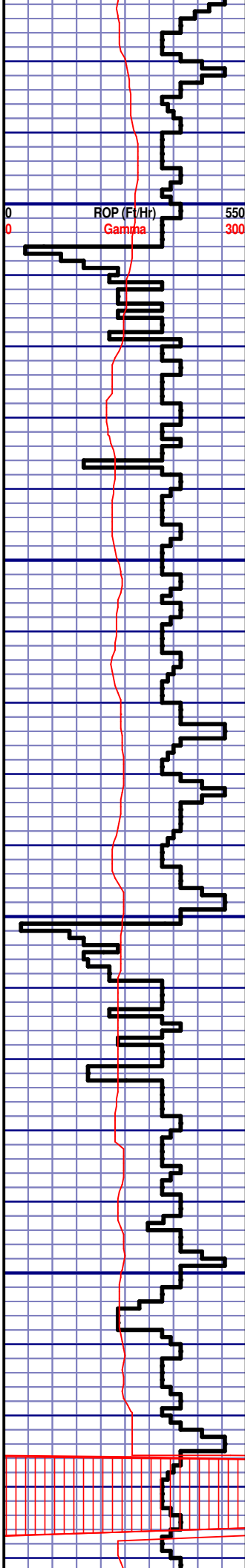
SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH



-125 TG, C1-C4 1125

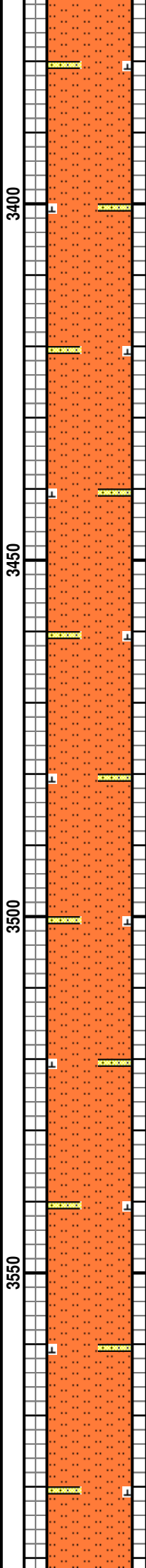
CG 74u

CG 85u



MD 3444 TVD 3412.5
INC 12.92 AZ 297.48
VS -101.59

MD 3539 TVD 3505.04
INC 13.18 AZ 295.41
VS -109.47



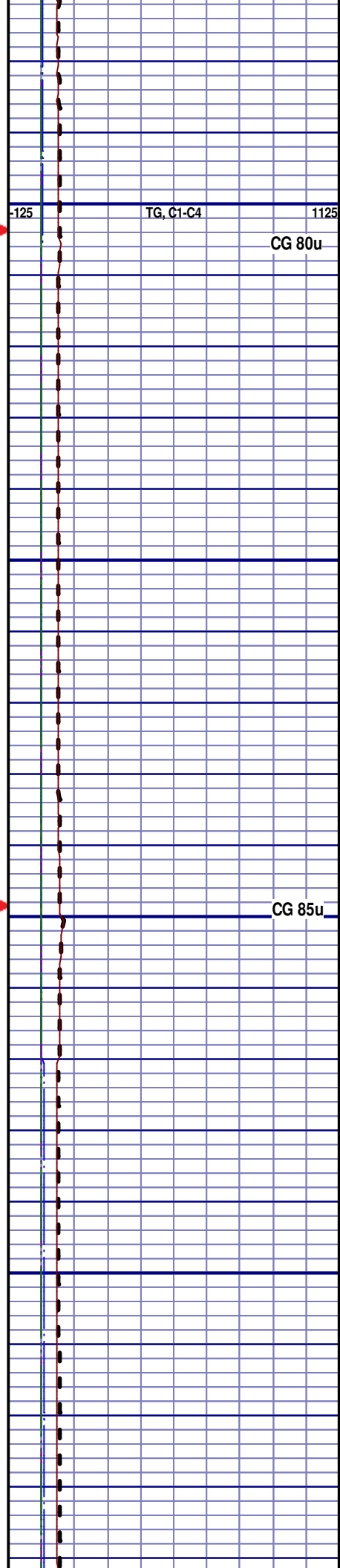
SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

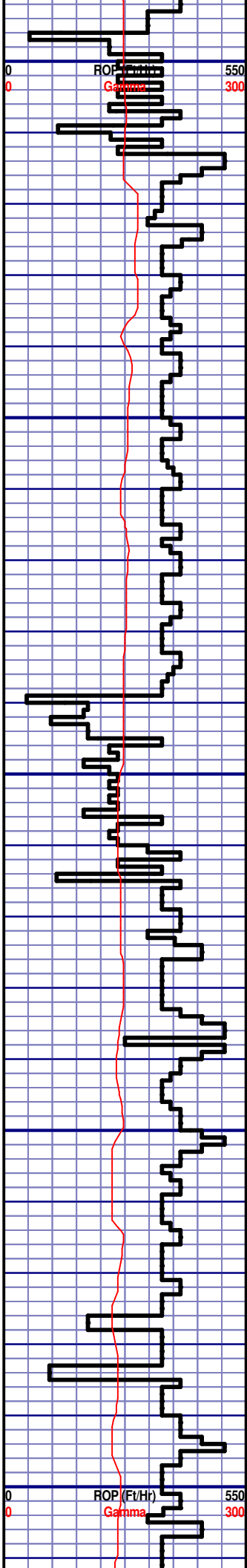
SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

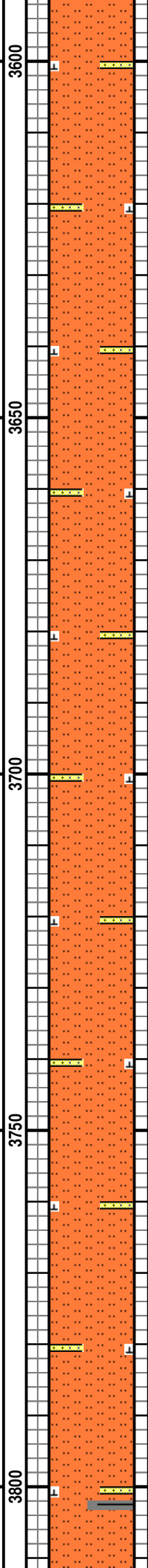
SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH





MD 3634 TVD 3597.57
INC 13.05 AZ 291.7
VS -116.39

MD 3728 TVD 3689.25
INC 12.44 AZ 296.93
VS -123.27



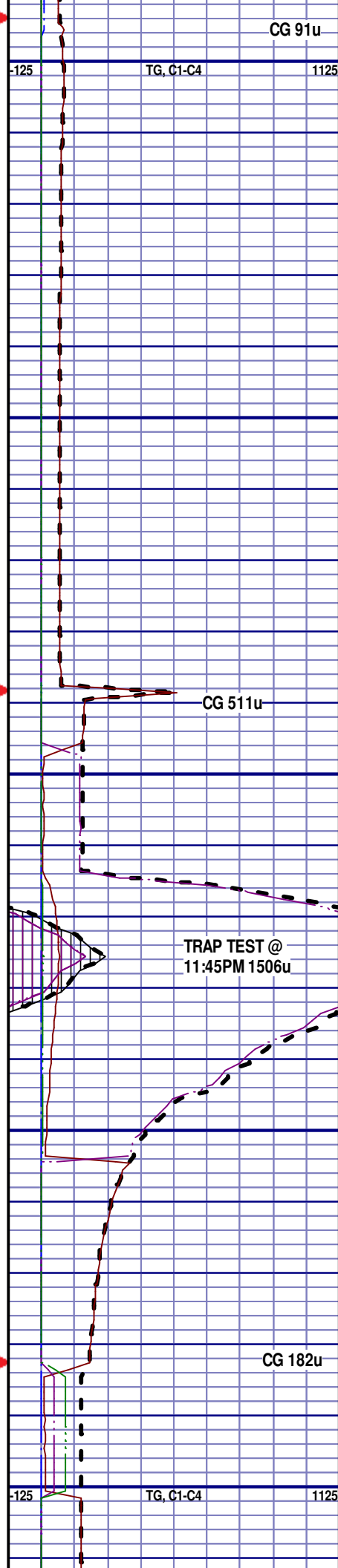
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

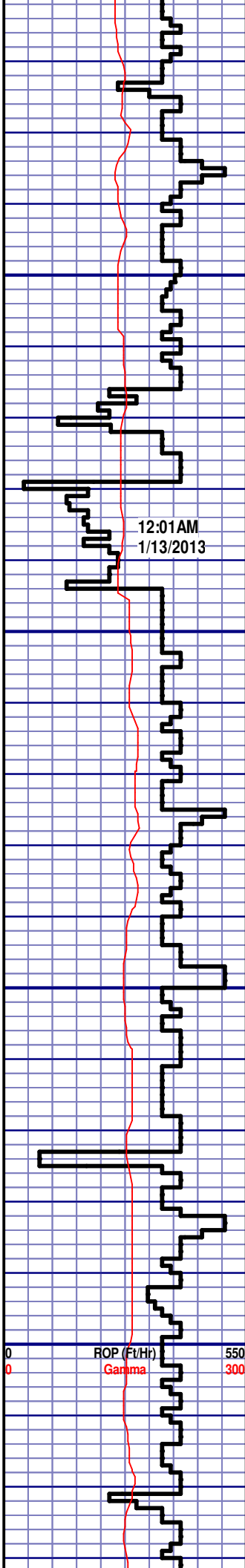
SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH



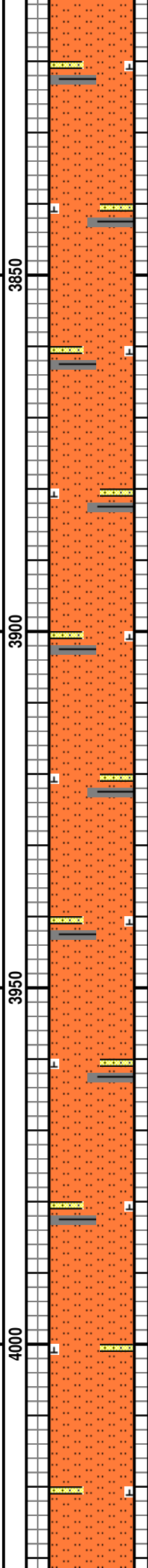


12:01AM
1/13/2013

MD 3823 TVD 3782.34
INC 10.61 AZ 295.21
VS -130.15

MD 3918 TVD 3875.81
INC 9.98 AZ 294.23
VS -135.93

MD 4013 TVD 3969.59
INC 8.34 AZ 292.74
VS -140.77

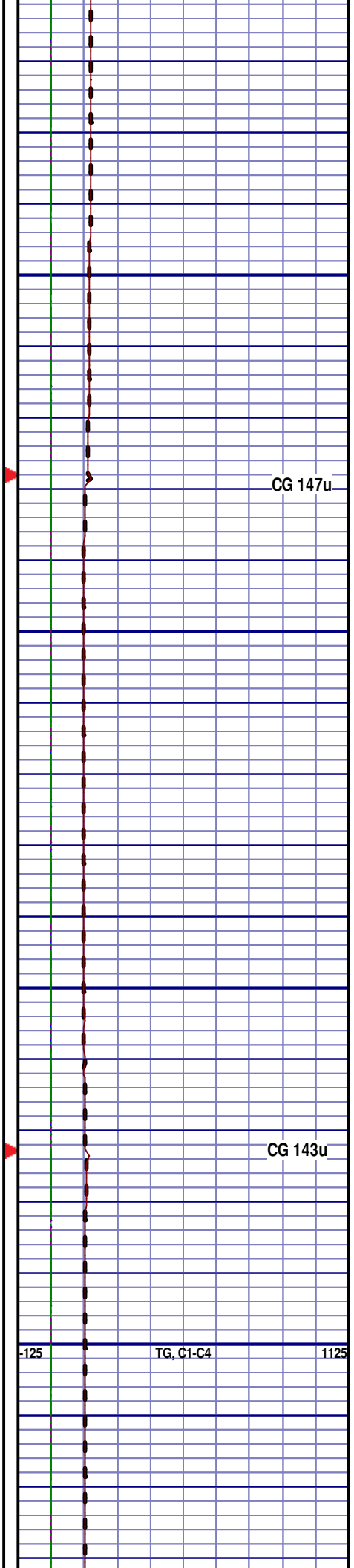


SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, SHALEY, NO FLUOR, NO
STRM CUT, NO CUT AFTER CRUSH

SILTSTN; 60%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, SHALEY, NO FLUOR, NO
STRM CUT, NO CUT AFTER CRUSH

SILTSTN; 70%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, SHALEY, NO FLUOR, NO
STRM CUT, NO CUT AFTER CRUSH

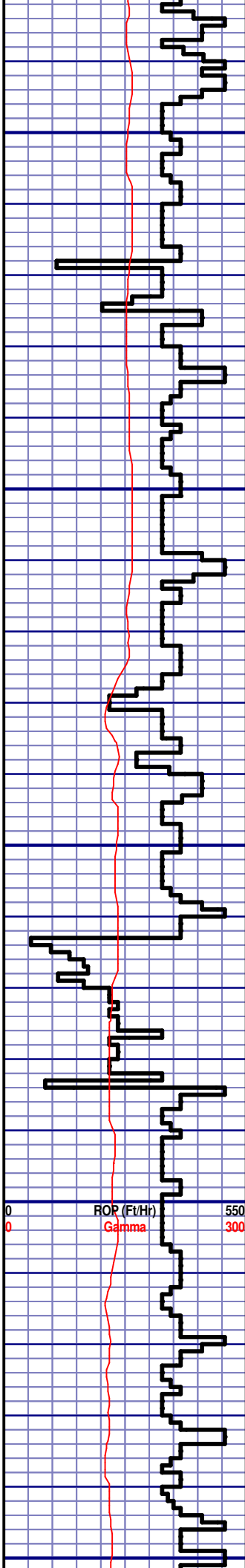
SILTSTN; 80%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, SHALEY, NO FLUOR, NO
STRM CUT, NO CUT AFTER CRUSH



CG 147u

CG 143u

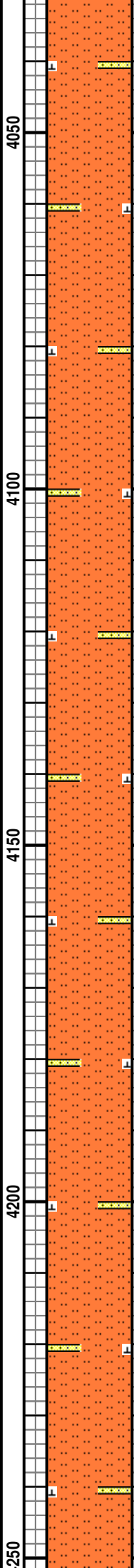
-125 TG, C1-C4 1125



0 0 ROR (Ft/Hr) 550
Gamma 300

MD 4108 TVD 4063.73
INC 7.08 AZ 292.75
VS-144.69

MD 4202 TVD 4157.17
INC 5.38 AZ 300.6
VS-148.38



SILTSTN; 80%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

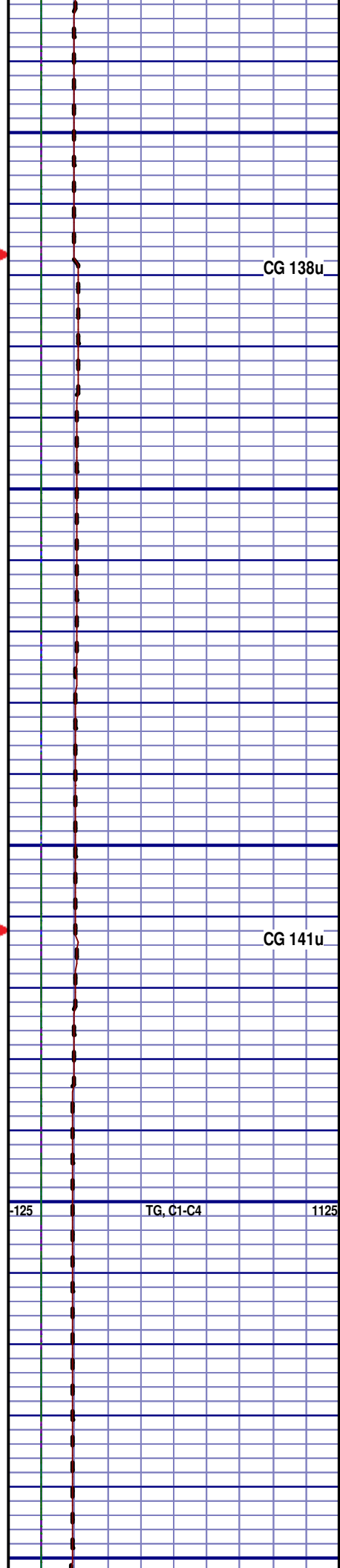
SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

PARKMAN
4150' MD 4106' TVD

SILTSTN; 65%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

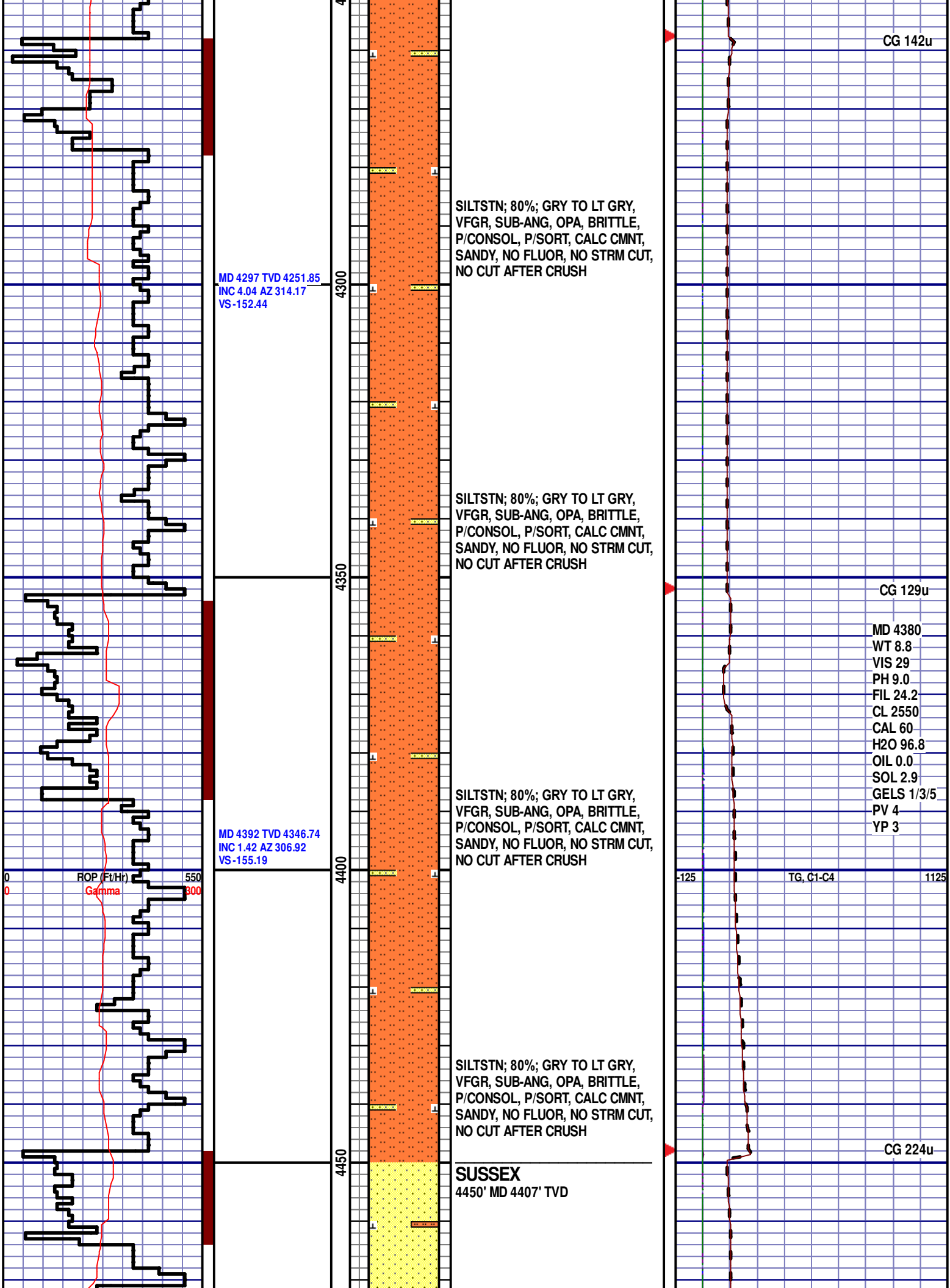
SILTSTN; 80%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH



-125 TG, C1-C4 1125

CG 138u

CG 141u



MD 4487 TVD 4441.72
INC 0.45 AZ 257.55
VS-155.7

SS; 75%; OFF WH TO LT GRY, VF
TO FGR, SUB-ANG, FROST, FRIBL,
P/CONSOL, P/SORT, CALC CMNT,
SILTY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SS; 60%; OFF WH TO LT GRY, VF
TO FGR, SUB-ANG, FROST, FRIBL,
P/CONSOL, P/SORT, CALC CMNT,
SILTY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SS; 65%; OFF WH TO LT GRY, VF
TO FGR, SUB-ANG, FROST, FRIBL,
P/CONSOL, P/SORT, CALC CMNT,
SILTY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SS; 65%; OFF WH TO LT GRY, VF
TO FGR, SUB-ANG, FROST, FRIBL,
P/CONSOL, P/SORT, CALC CMNT,
SILTY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 80%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,

CG 171u

CG 181u

NO DATA

ROR, Γ Ln
Gamma

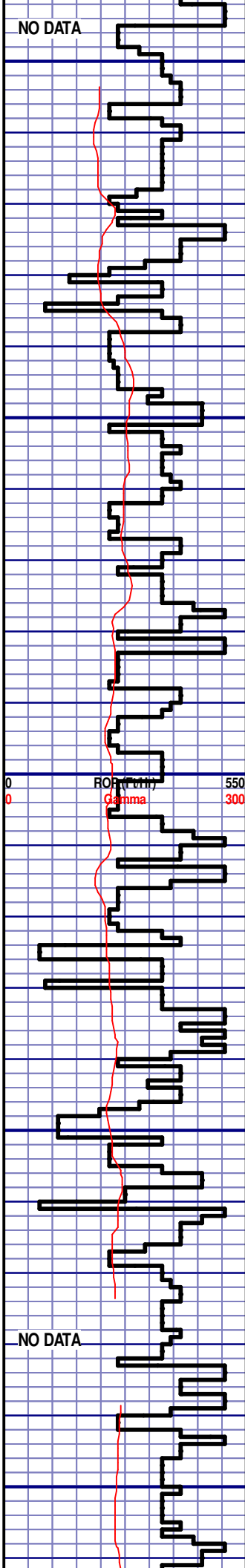
WOB 12.6K
PP 3820
RPM 60
SPM 67/65

-125

TG, C1-C4

1125

NO DATA



MD 4771 TVD 4725.72
INC 0.81 AZ 40.33
VS -157.06

4700

4750

4800

4850

4900

P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

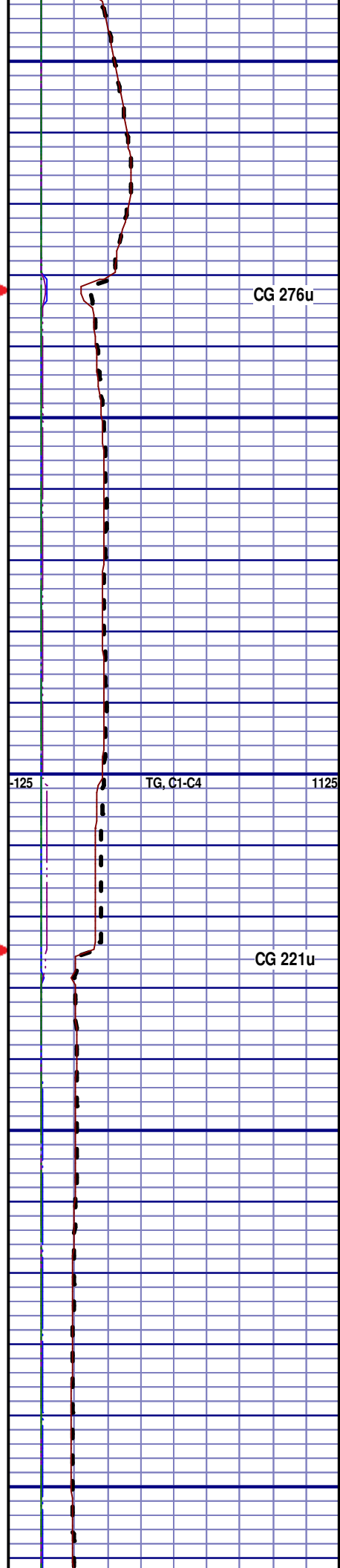
SILTSTN; 55%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 75%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

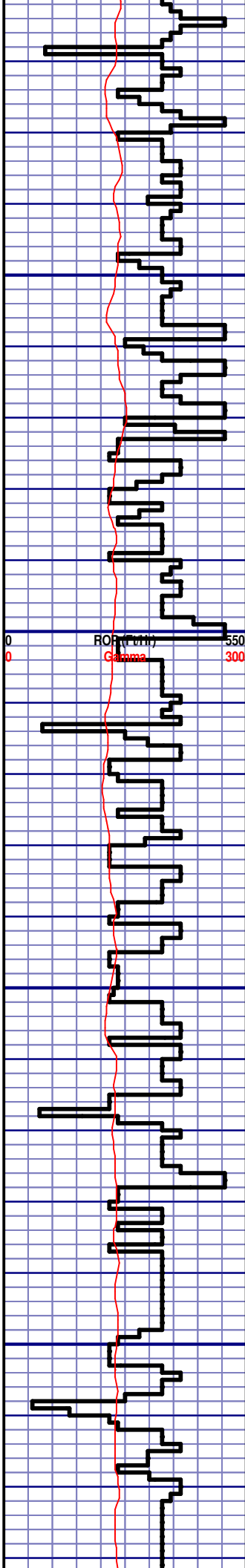
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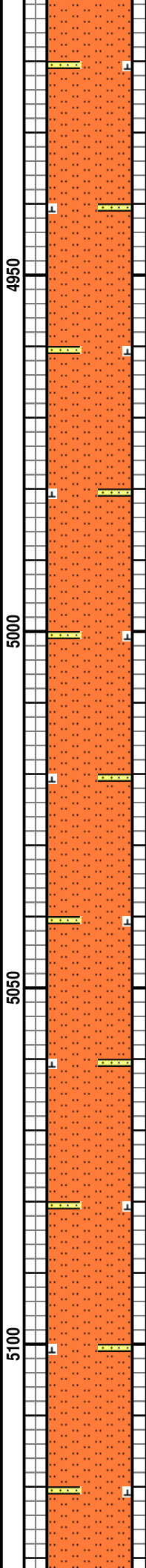
CG 276u

TG, C1-C4

CG 221u



MD 5056 TVD 5010.68
INC 0.99 AZ 48.66
VS -160.48



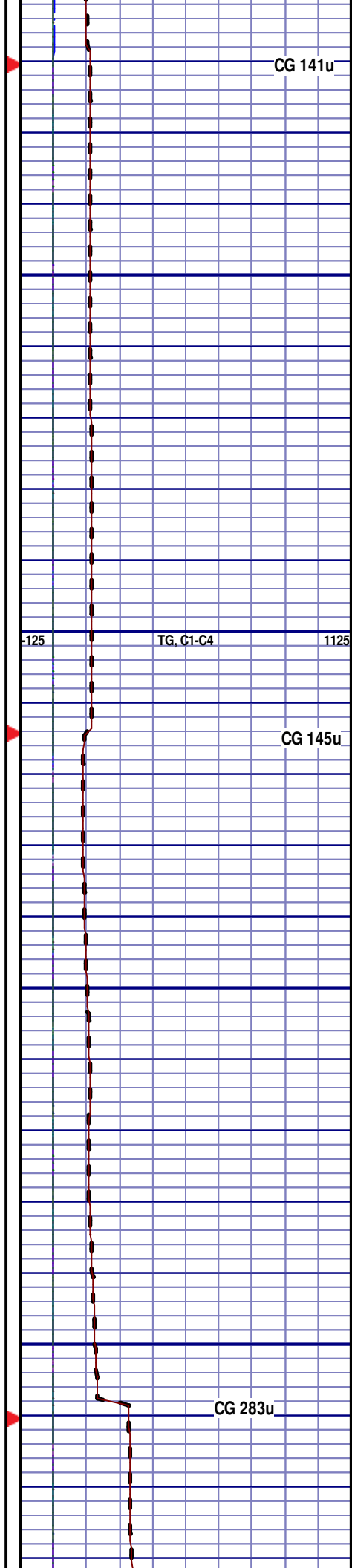
SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

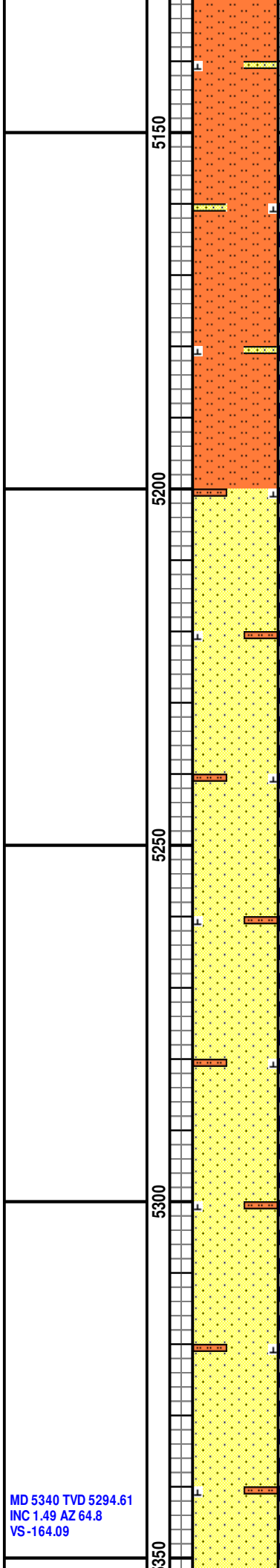
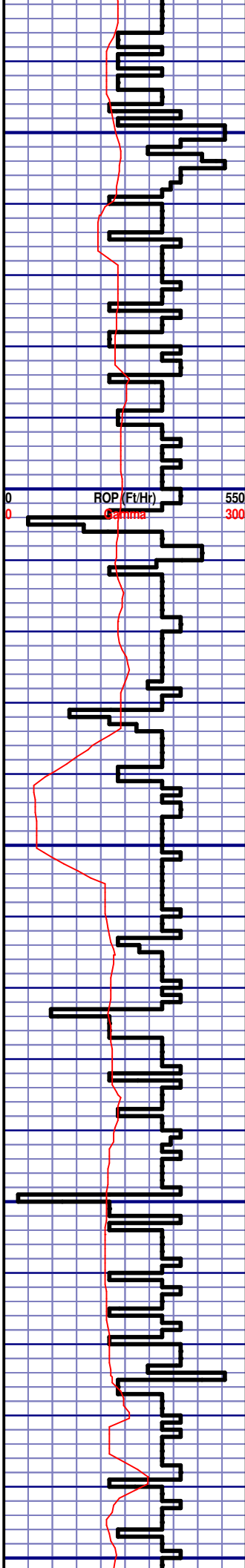
SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 85%; GRY TO LT GRY,
VFGR, SUB-ANG, OPA, BRITTLE,
P/CONSOL, P/SORT, CALC CMNT,
SANDY, NO FLUOR, NO STRM CUT,
NO CUT AFTER CRUSH

SILTSTN; 80%; GRY TO LT GRY,





VFGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SANDY, INTRGRAN POR, NO FLUOR, NO STRM CUT, NO CUT AFTER CRUSH, NO RING CUT, NO VIS STAIN. NO ODOR

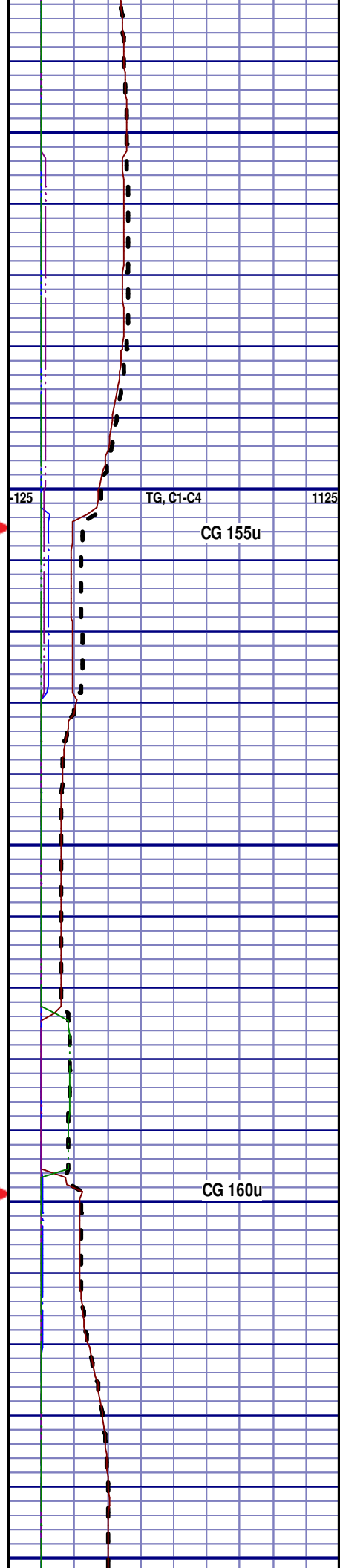
SHANNON
5150' MD 5104' TVD

SILTSTN; 80%; GRY TO LT GRY, VFGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SANDY, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

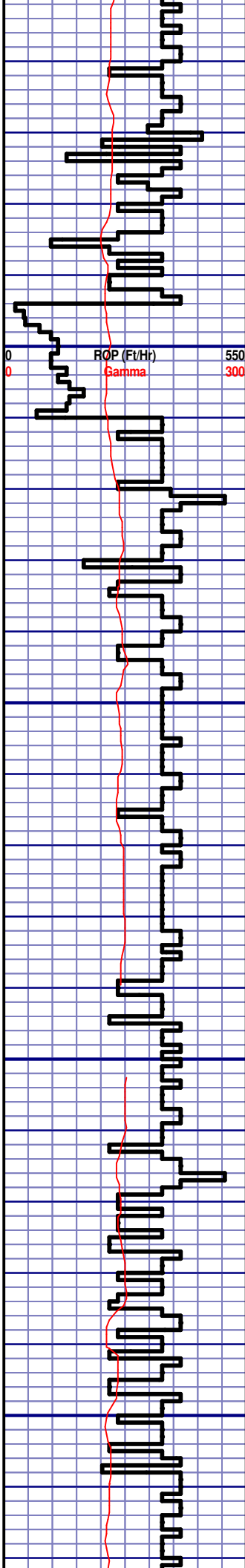
SS; 85%; LT GRY TO OFF WH, F TO MGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SILTY, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SS; 80%; LT GRY TO OFF WH, F TO MGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SILTY, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

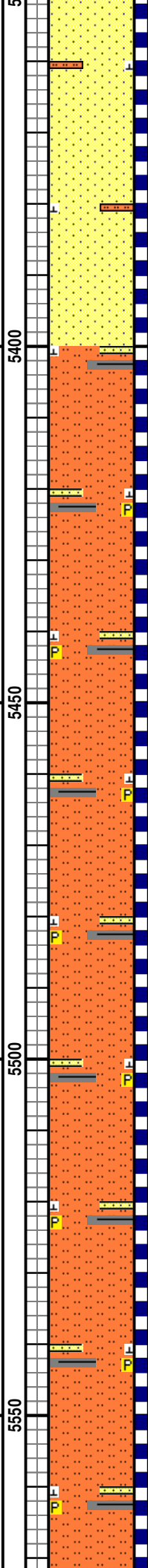
SS; 90%; LT GRY TO OFF WH, F TO MGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SILTY, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR



MD 5340 TVD 5294.61
INC 1.49 AZ 64.8
VS-164.09



MD 5435 TVD 5389.6
INC 0.4 AZ 350.61
VS -165.04

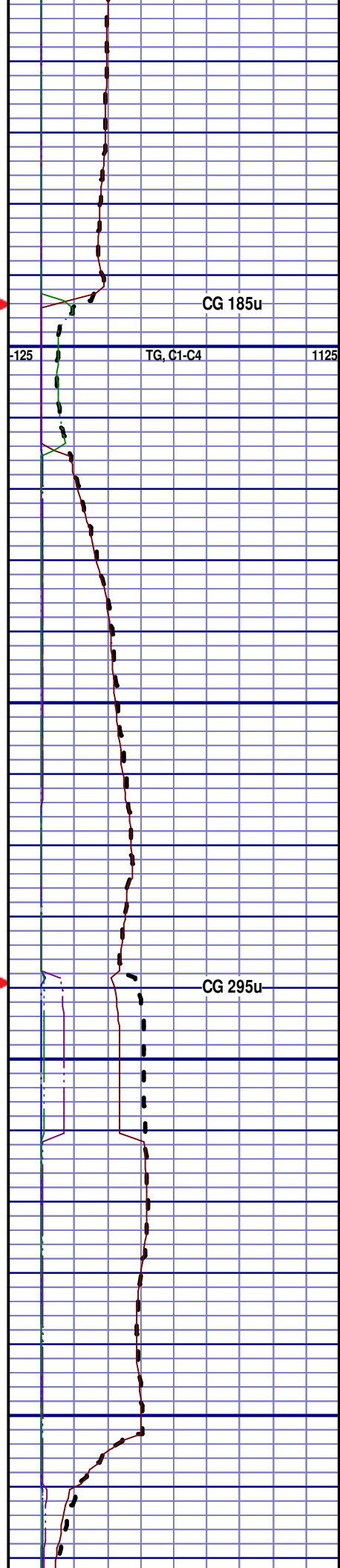


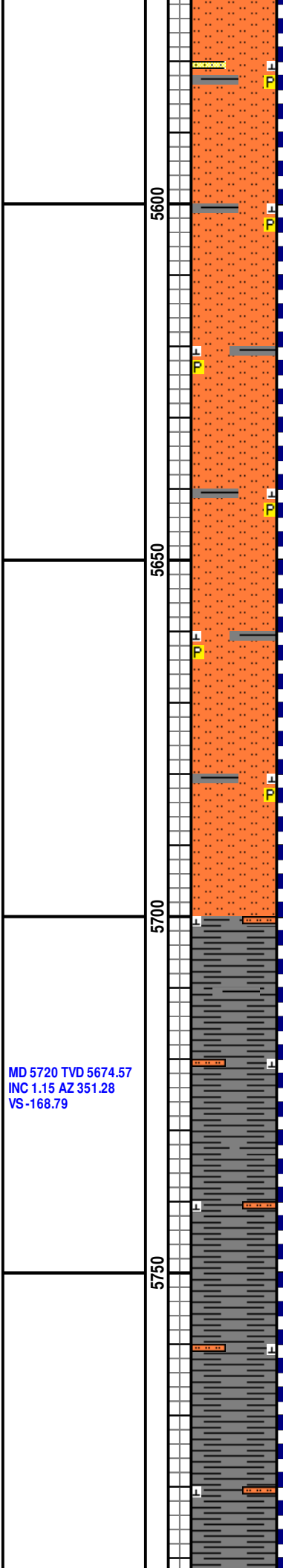
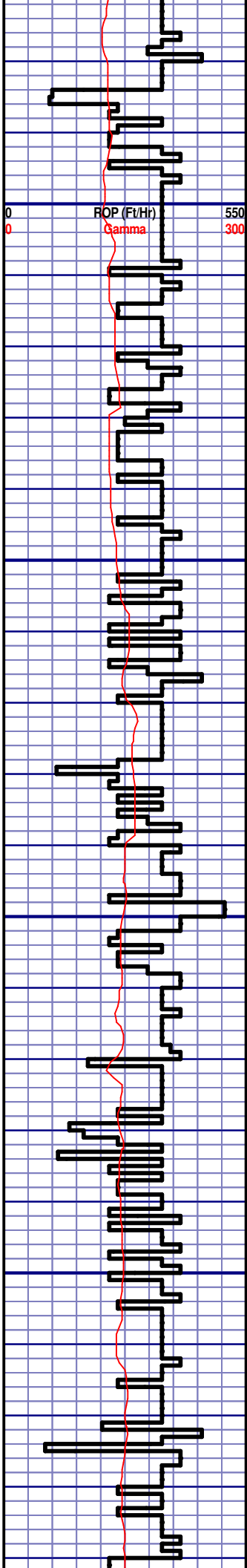
SS; 95%; LT GRY TO OFF WH, F TO MGR, SUB-ANG, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SILTY, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 75%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SANDY, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 80%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SANDY, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 85%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SANDY, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR





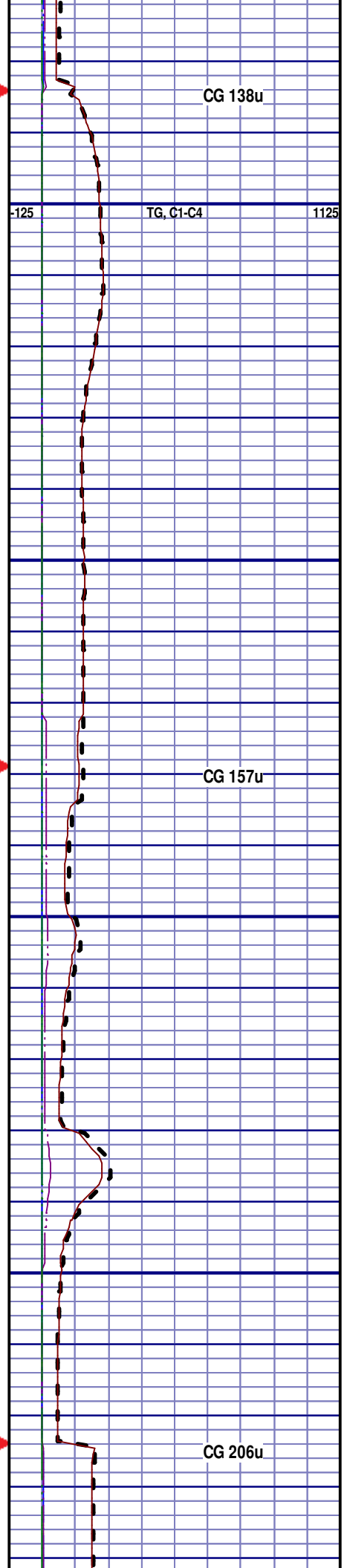
SILTSTN; 85%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SANDY, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

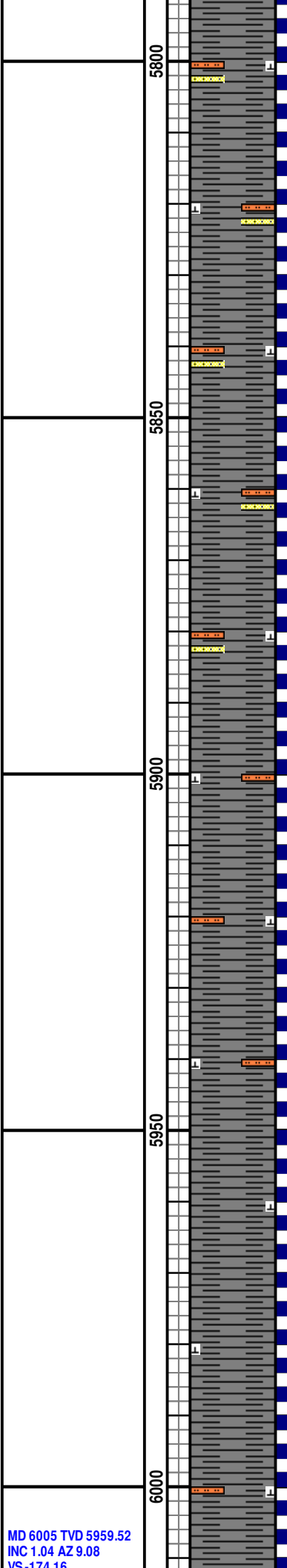
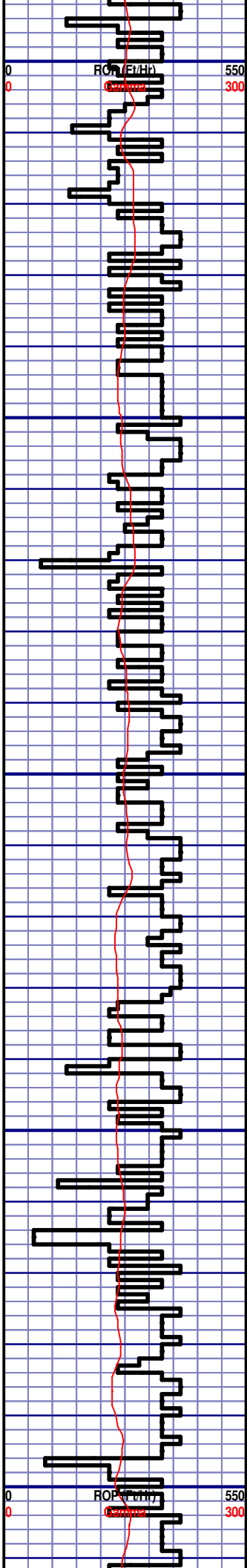
SILTSTN; 85%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 70%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, PYR INCLUS, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SH; 80%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, SILTY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, PLATY, NO ODOR

SH; 85%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, SILTY, NO VIS FRACT. NO FLUOR.





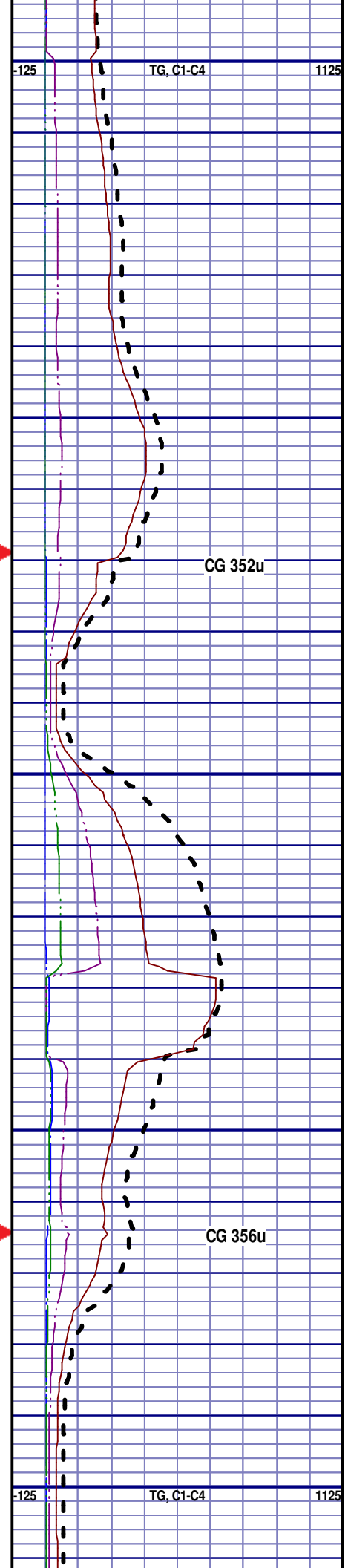
SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, PLATY, NO ODOR

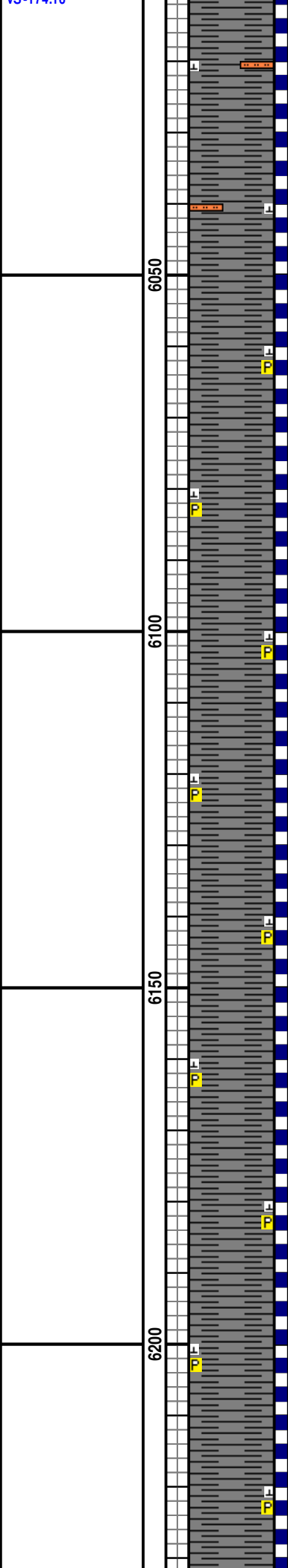
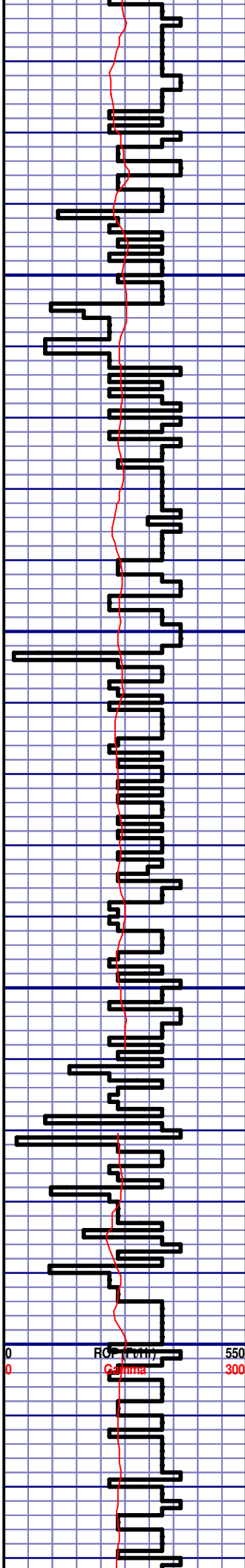
SH; 85%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, SILTY, SANDY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, PLATY, NO ODOR

SH; 85%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, SILTY, SANDY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, PLATY, NO ODOR

SH; 95%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, SILTY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, BLKY TO PLATY, NO ODOR

SH; 100%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, BLKY TO PLATY, NO ODOR



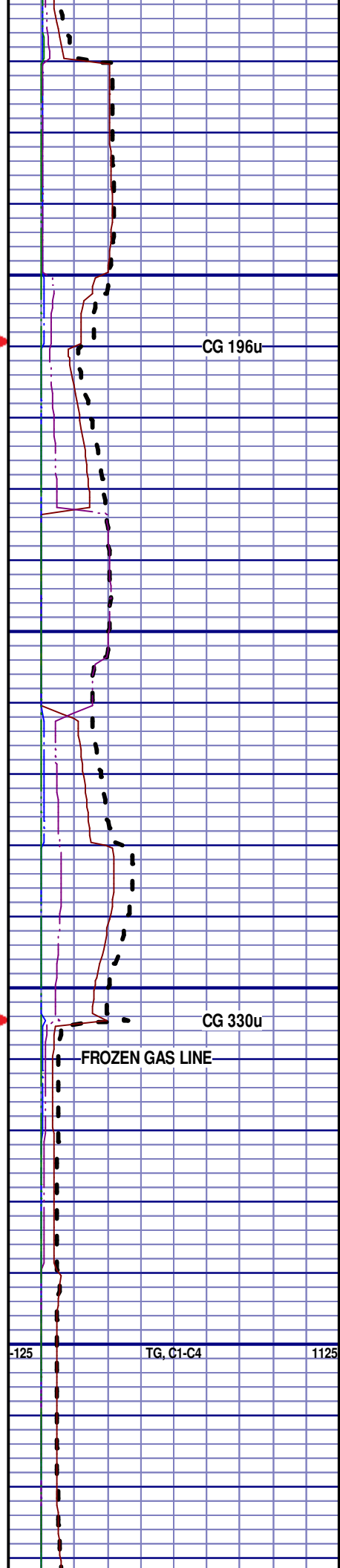


SH; 90%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, SILTY, NO VIS
FRACT, NO FLUOR, SLOW, BLU
STRM CUT, YLW RING CUT, MINOR
CALC, BLKY TO PLATY, NO ODOR

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
NO VIS FRACT, NO FLUOR, SLOW,
BLU STRM CUT, YLW RING CUT,
MINOR CALC, BLKY TO PLATY, NO
ODOR

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
NO VIS FRACT, NO FLUOR, SLOW,
BLU STRM CUT, YLW RING CUT,
MINOR CALC, BLKY TO PLATY, NO
ODOR

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY, NO ODOR

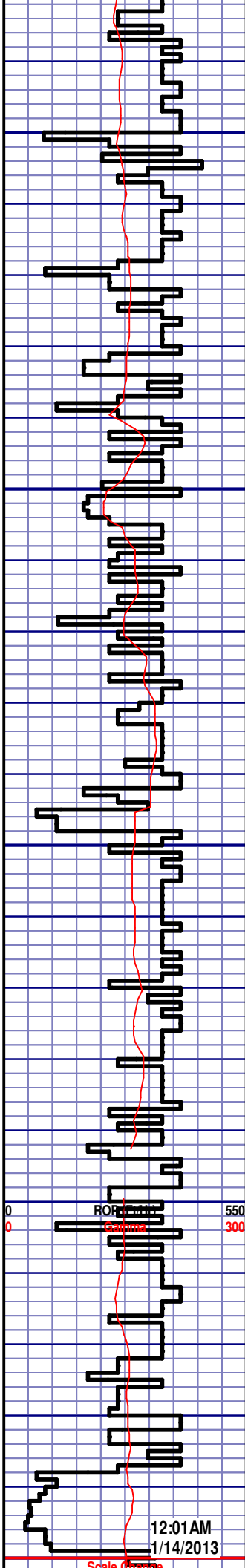


CG 196u

CG 330u

FROZEN GAS LINE

TG, C1-C4

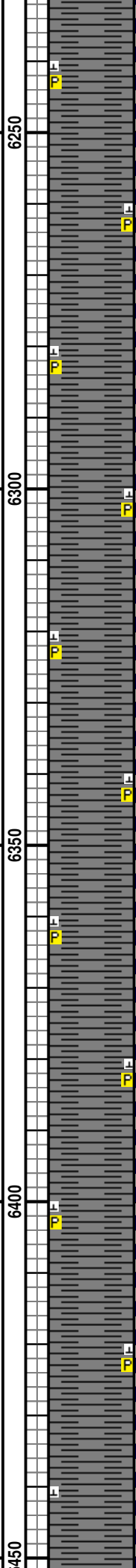


MD 6289 TVD 6243.47
INC 1.21 AZ 324.48
VS -179.03

MD 6384 TVD 6338.46
INC 0.75 AZ 324.11
VS -180.26

MD 6440 TVD 6394.45
INC 0.94 AZ 308.85
VS -180.8

12:01AM
1/14/2013



SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY, NO ODOR

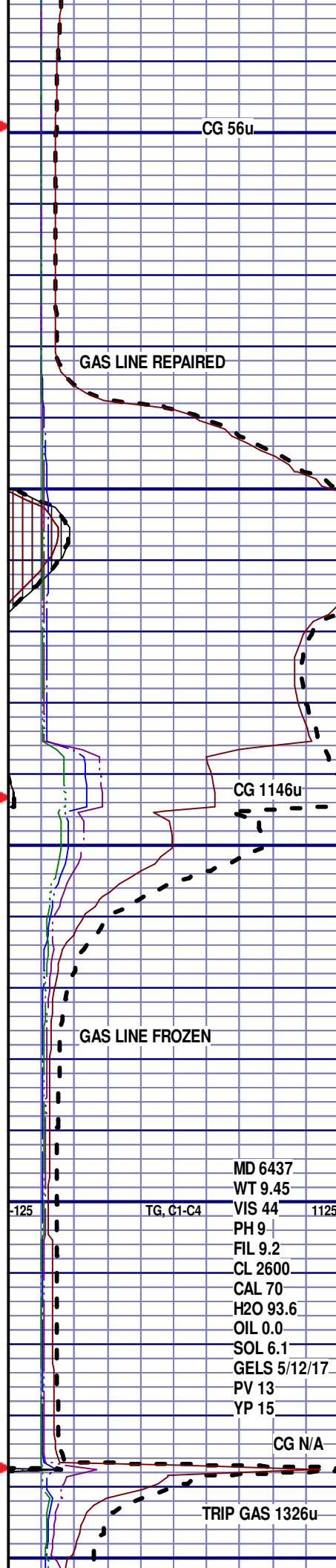
SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY, NO ODOR

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY. NO ODOR

TEEPEE BUTTES
6350' MD 6304' TVD

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY, NO ODOR

SH; 100%; DK GRY TO GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC, BLKY
TO PLATY, NO ODOR



CG 56u

GAS LINE REPAIRED

CG 1146u

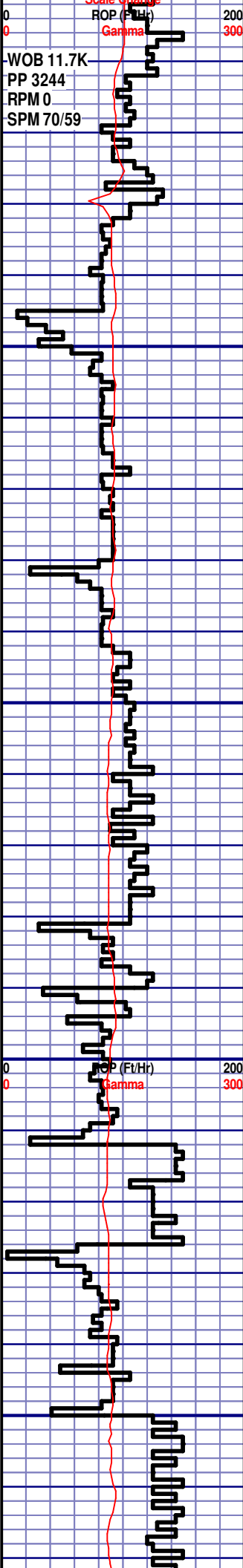
GAS LINE FROZEN

MD 6437
WT 9.45
VIS 44
PH 9
FIL 9.2
CL 2600
CAL 70
H2O 93.6
OIL 0.0
SOL 6.1
GELS 5/12/17
PV 13
YP 15

TG, C1-C4

CG N/A

TRIP GAS 1326u

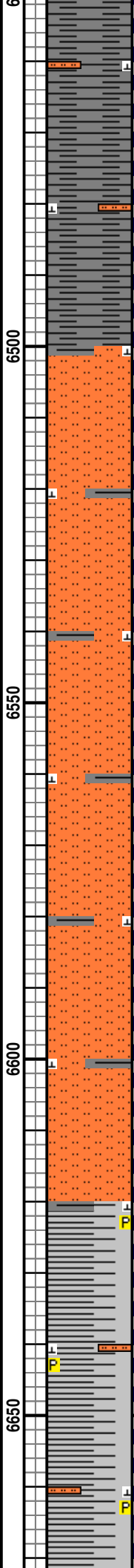


MD 6525 TVD 6479.36
INC 4.56 AZ 200.04
VS -177.92

MD 6571 TVD 6524.97
INC 10.05 AZ 191.54
VS -172.17

MD 6619 TVD 6572.01
INC 12.9 AZ 189.35
VS -162.67

MD 6666 TVD 6617.66
INC 14.58 AZ 186.22



TOOH @ 1:45 PM ON 1/13/13 @ 6437' MD FOR BHA TIH @ 8:00PM ON 1/13/13 RESUMED DRILLING AT 2:00 AM ON 1/14/13 W/ BIT #3 8.750" MODEL HDBS MMD55M IN @ 6437' MD

SH; 90%; DK GRY TO GRY, FINE TXT, SOFT TO FIRM, SILTY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, BLKY TO PLATY, NO ODOR

SILTSTN; 80%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

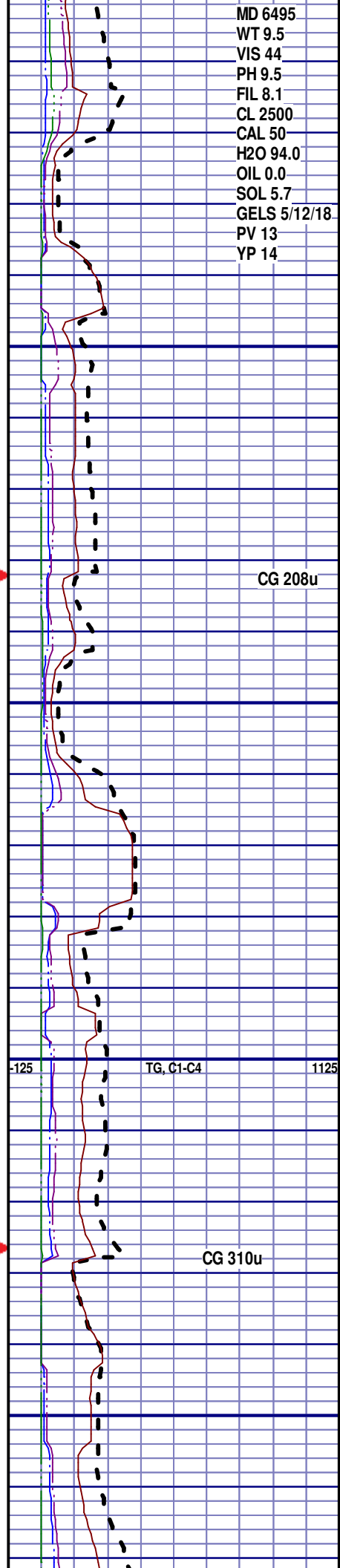
SILTSTN; 80%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 90%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTSTN; 90%; GRY TO LT GRY, VFGR, OPA, BRITTLE, M/CONSOL, W TO M/SORT, CALC CMNT, SH INCLUS, INTRGRAN POR, NO FLUOR, SLOW STRM CUT: BLU, YLW RING CUT, NO VIS STAIN, NO ODOR

SILTY SH; 95%; GRY TO LT GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, SILTY, NO VIS FRACT, NO FLUOR, SLOW, BLU STRM CUT, YLW RING CUT, MINOR CALC, BLKY TO PLATY, NO ODOR

SILTY SH; 95%; GRY TO LT GRY, FINE TXT, SOFT TO FIRM, PYR INCLUS, PYR NODULES, CALC NODULES, SILTY, NO VIS FRACT.

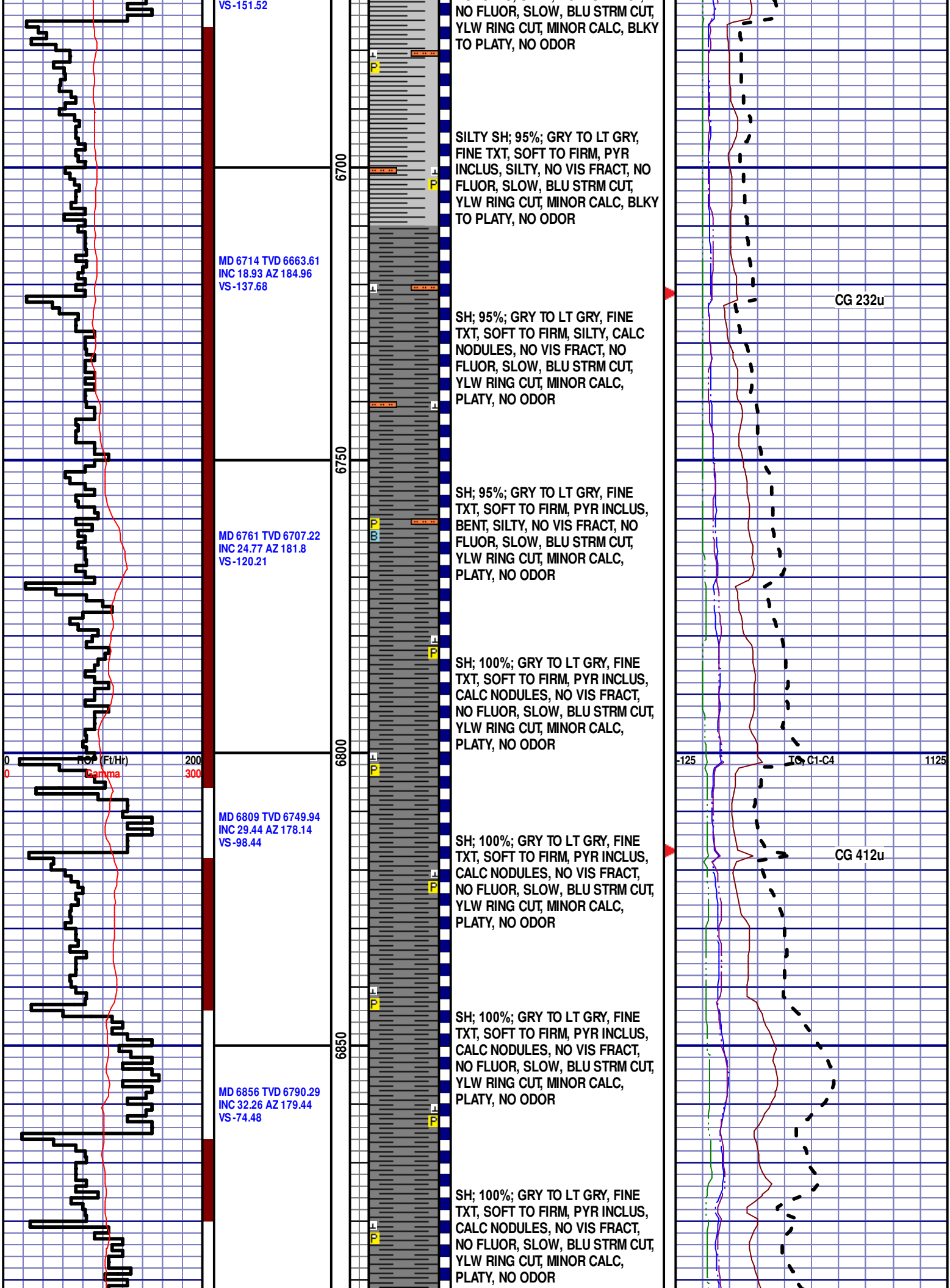


MD 6495
WT 9.5
VIS 44
PH 9.5
FIL 8.1
CL 2500
CAL 50
H2O 94.0
OIL 0.0
SOL 5.7
GELS 5/12/18
PV 13
YP 14

CG 208u

TG, C1-C4

CG 310u



MD 6904 TVD 6830.38
INC 34.44 AZ 179.18
VS -48.22

MD 6951 TVD 6868.32
INC 37.88 AZ 179.04
VS -20.63

MD 6999 TVD 6905.67
INC 39.95 AZ 178.02
VS 9.34

MD 7046 TVD 6940.55
INC 44.18 AZ 178.11
VS 40.6

MD 7094 TVD 6973.73
INC 48.35 AZ 177.46
VS 75.01

6900

6950

7000

7050

7100

SH; 95%; GRY TO LT GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
BENT, SILTY, NO VIS FRACT, NO
FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC,
PLATY, NO ODOR

SH; 100%; GRY TO LT GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC,
PLATY, NO ODOR

SH; 100%; GRY TO LT GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC,
PLATY, NO ODOR

SH; 100%; GRY TO LT GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC,
PLATY. NO ODOR

SHARON SPRINGS

7010' MD 6913' TVD

SH; 100%; GRY TO LT GRY, FINE
TXT, SOFT TO FIRM, PYR INCLUS,
CALC NODULES, NO VIS FRACT,
NO FLUOR, SLOW, BLU STRM CUT,
YLW RING CUT, MINOR CALC,
PLATY, NO ODOR

NIOBRARA

7040' MD 6937' TVD

CHK; 55%; LT GRY TO GRY, SOFT,
SH LAMIN, PYR INCLUS, NO VIS
FRACT, INTRXLN POR, NO FLUOR,
IMMED BLU STRM CUT, YLW RING
CUT, NO VIS STAIN, NO ODOR

CHK; 55%; LT GRY TO GRY, SOFT,
SH LAMIN, PYR INCLUS, NO VIS
FRACT, INTRXLN POR, NO FLUOR,
IMMED BLU STRM CUT, YLW RING
CUT, NO VIS STAIN, NO ODOR

CG 711u

GAS LINE CLEARED

Scale Change
TO C1-C4

CG MASKED BY
GAS LINE
RECONNECT

CG 1859u

MD 7123

