

Décollement Consulting Inc.



Scale: 5" / 100'
Measured Depth Log

Well Name North Platte Federal F11-J14-22HNB

Location NW/NW Section 22, T5N - R63W

State CO

County Weld

Country USA

Rig Number Xtreme 22

API Number 05-123-40199

Field Wattenberg

Region D.J. Basin

Drilling Completed 5/21/2015

Spud Date 5/10/2015

Surface Coordinates 697 FNL x 1205 FWL (Lat: 40.390230, -104.426817)

Bottom Hole Coordinates 470 FSL x 977 FWL (Lat: 40.378953, -104.427621)

Ground Elevation 4,660'

K.B. Elevation 4,677'

Logged Interval 6,940" To 11,115'

Total Depth 11,115'

Formation Niobrara "B" Chalk

Type of Drilling Fluid Water Based Mud

Operator

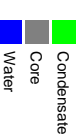
Address Bonanza Creek Energy, Inc.
410 17th Street, Suite 1500
Denver, Colorado 80202

Geologist

Name Scott Sawyer / Paul Givens
Company Decollement Consulting, Inc.
Address 13300 Braun Road
Golden, CO 80401



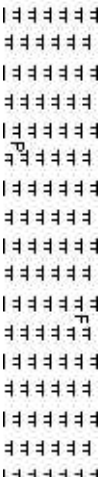
Zone Color Coding



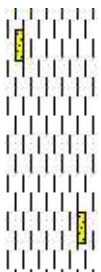
Rock Types

Blank

CEMENT



MPF



SHALE S

CHALK



LIMESTONE



SANDSTONE



SHALE SF

CPF TT TT TT MARLSTONE --- SHALE



Accessories

Fossils

- ALGAE
- AMPHIRORA
- BELEMITE
- BIOCLASTIC
- BRACHIOPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA

F FOSSIL

GASTROPOD

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

PLANT SPORES

SCAPHOPOD

STROMATOPOROID

Minerals

ANHYDRITIC

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

TUFFACEOUS

Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLOMITE STRINGER
- GYPSUM STRINGER
- LIMESTONE STRINGER
- MARLSTONE (CALC) STRG
- MARLSTONE (DOL) STRG
- SANDSTONE STRINGER
- SHALE STRINGER
- SILTSTONE STRINGER

Other Symbols

Oil Show

ORGANIC FORMATION TOP
PINPOINT GAS SHOW

Rounding

L LITHOGRAPHIC
MICROXLN

DEAD VUGGY MINDEPTH MN DEPTH A ANGULAR MS MUDSTONE

EVEN NORMAL FAULT R ROUNDED PS PACKSTONE

QUESTIONABLE Engineering OIL SHOW SUBANG WS WACKESTONE

SPOTTED STAINING BIT OVERTURNED STRATA SUBRND

Sorting

Porosity

CASING REVERSE FAULT
CONNECTION (LEFT) SIDEWALL CORE (LEFT)

Textures

M MODERATE

E EARTHY CONNECTION (RIGHT) SIDEWALL CORE (RIGHT) BS BOUNDSTONE P POOR

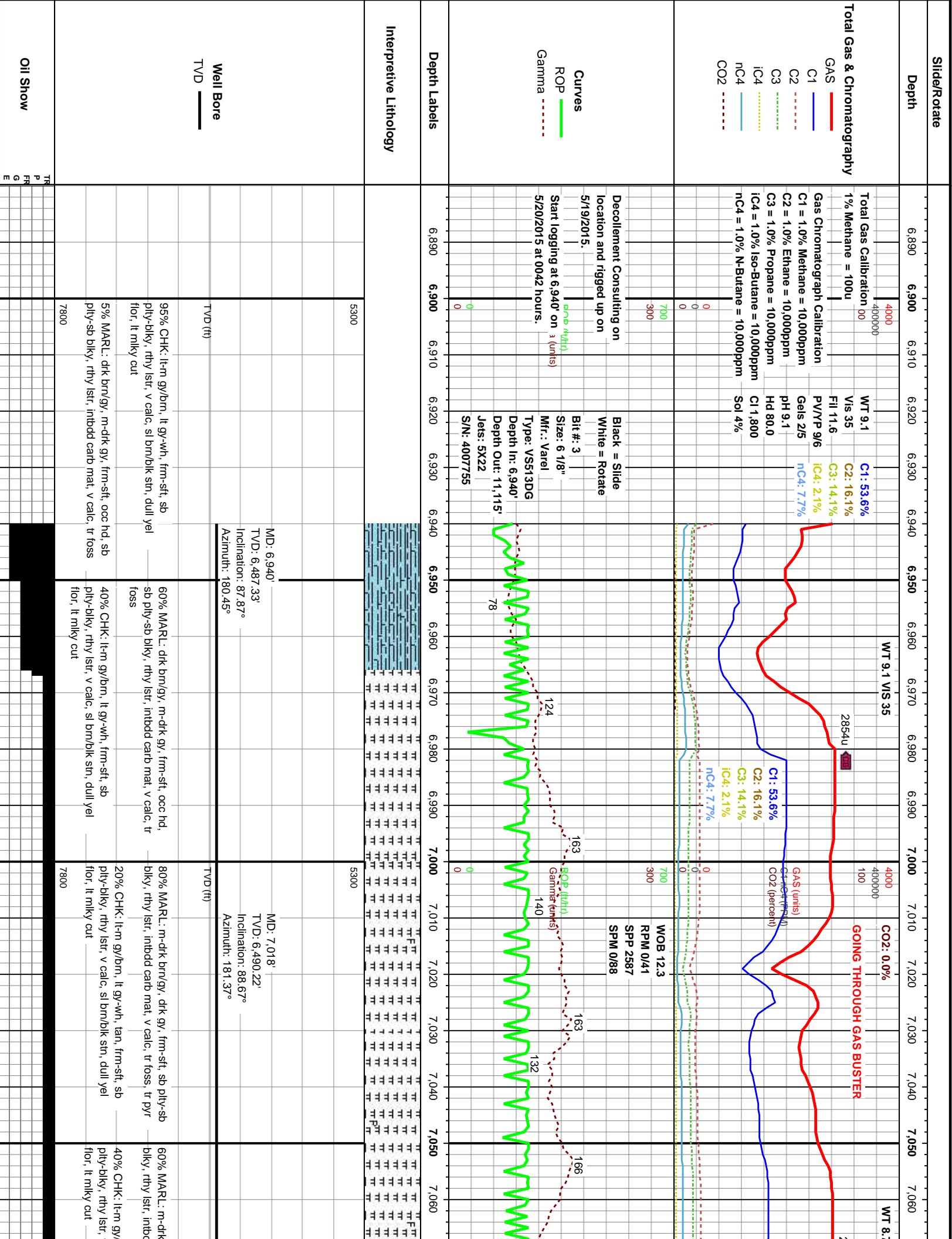
FENESTRAL CONNECTION GAS SLIDE CHALKY W WELL

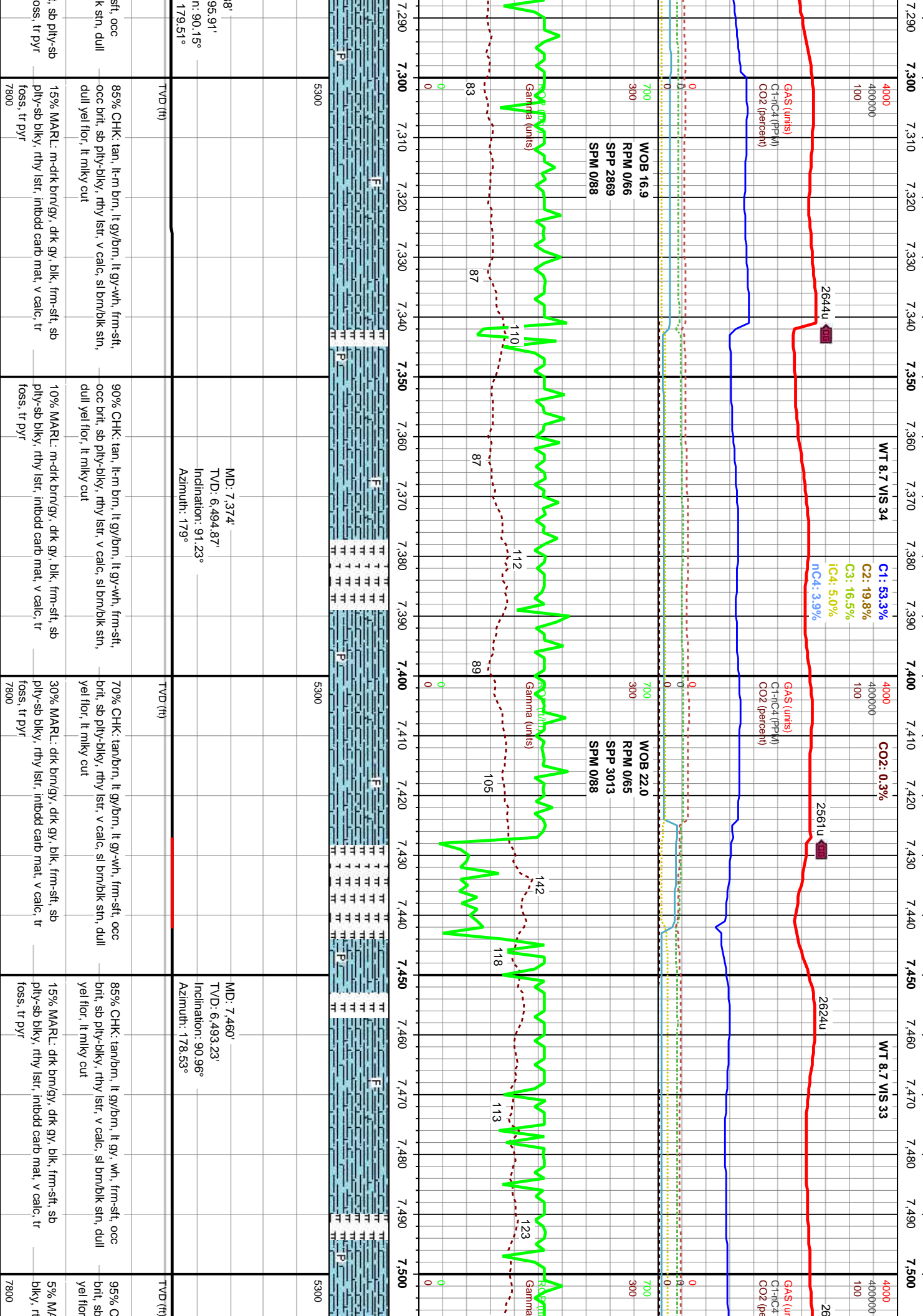
FRACTURE CORE - LOST SURVEY CRYPTOXLN

INTERCRYSTALLINE CORE - RECOVERED TRIP GAS E EARTHY

INTEROOLITIC DST INTERVAL WIRELINE TESTED - LEFT FX FINELYXLN

MOLDIC FAULT WIRELINE TESTED - RT GS GRAINSTONE





7.510 7.520 7.530 7.540 7.550 7.560 7.570 7.580 7.590 7.600 7.610 7.620 7.630 7.640 7.650 7.660 7.670 7.680 7.690 7.700 7.710 7.720

GOING THROUGH GAS BUSTER

WT 8.7 VIS 33

CO2: 0.5%

WT 8.7 VIS 34

61u

2573u

2564u

his

C1: 63.8%

GAS (units)

C1+C4 (PPM)

CO2 (percent)

GAS (units)

C1+C4 (PPM)

CO2 (percent)

C2: 17.8%

C3: 12.9%

iC4: 4.7%

WOB 20.6

RPM 0/66

SPP 2989

SPM 0/88

WOB 26.1

RPM 0/10

SPP 2528

SPM 0/88

WOB 20.9

RPM 3006

SPP 0/88

SPM 2544

his

ROP (ft/hr)

Gamma (units)

Gamma (units)

103

108

87

122

111

140

169

91

86

0

0

0

0

0

7.510

7.520

7.530

7.540

7.550

7.560

7.570

7.580

7.590

7.600

7.610

7.620

7.630

7.640

7.650

7.660

7.670

7.680

7.690

7.700

7.710

7.720

F

P

F

P

F

P

F

P

F

MD: 7.545'

TVD: 6,491.92'

Inclination: 90.8°

Azimuth: 179.66°

MD: 7.629'

TVD: 6,491.2'

Inclination: 90.18°

Azimuth: 178.33°

MD: 7.714'

TVD: 6,490.82'

Inclination: 90.33°

Azimuth: 179.77°

TVD (ft)

TVD (ft)

CHK: tan/bm, lt gy/bm, lt gy, wh, frm-sft, occ
ply-bkly, rthy lstr, v calc, sl brn/bk str, dull
lt milky cut

95% CHK: dk br, blk, dk brn/gy, frm-sft, occ brt,
sb blk, rthy lstr, v calc, sl brn/bk str, dull yel flr,
lt milky cut

95% CHK: dk br-bk, dk brn/gy, frm-sft, occ brt,
sb blk, rthy lstr, v calc, sl brn/bk str, dull yel flr,
lt milky cut

95% CHK: dk brn/gy, dk br, blk, frm-sft, occ brt,
sb blk, rthy lstr, v calc, sl brn/bk str, dull yel flr,
lt milky cut

95% CHK: dk brn/gy, dk gy, blk, dk gy
sb blk, rthy lstr, v calc, sl brn

RL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb
hly lstr, inbd carb mat, v calc, tr foss, tr pyr

5% MAARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb
blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr

5% MAARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb
blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr

5% MAARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb
blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr

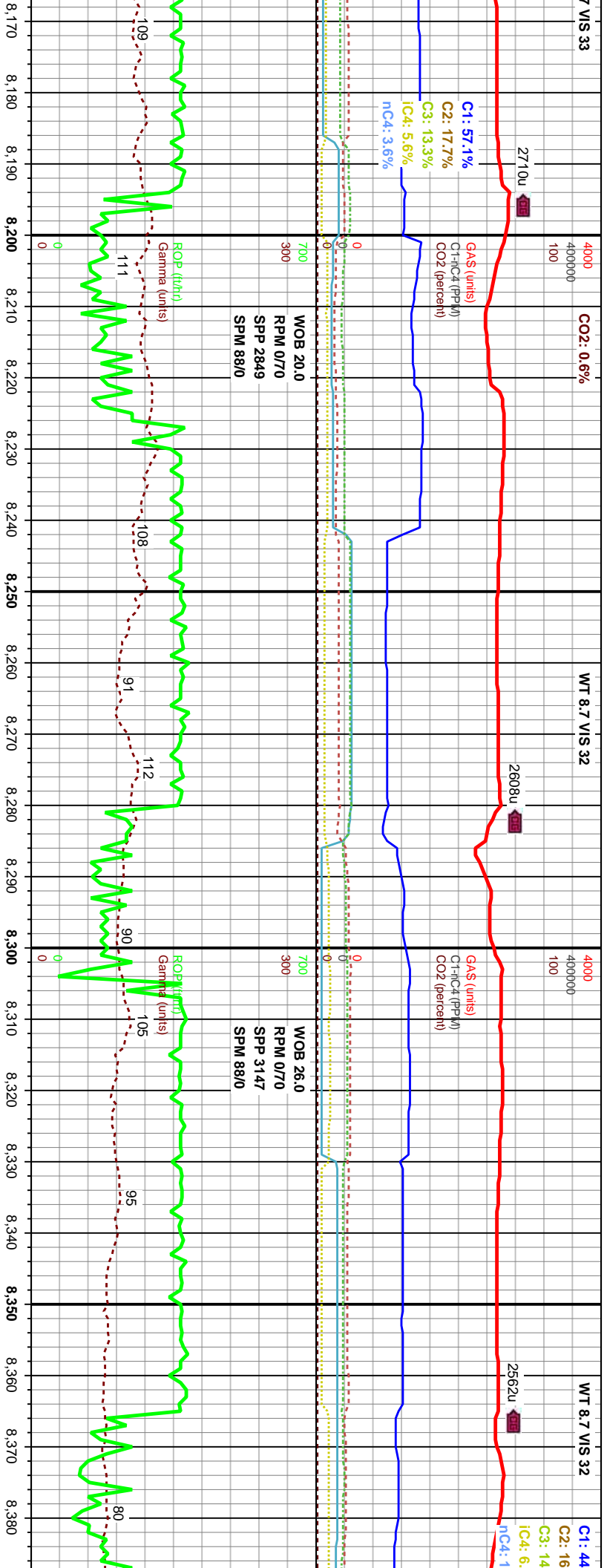
5% MAARL: dk brn/gy, dk gy
blk, rthy lstr, inbd carb mat


5300

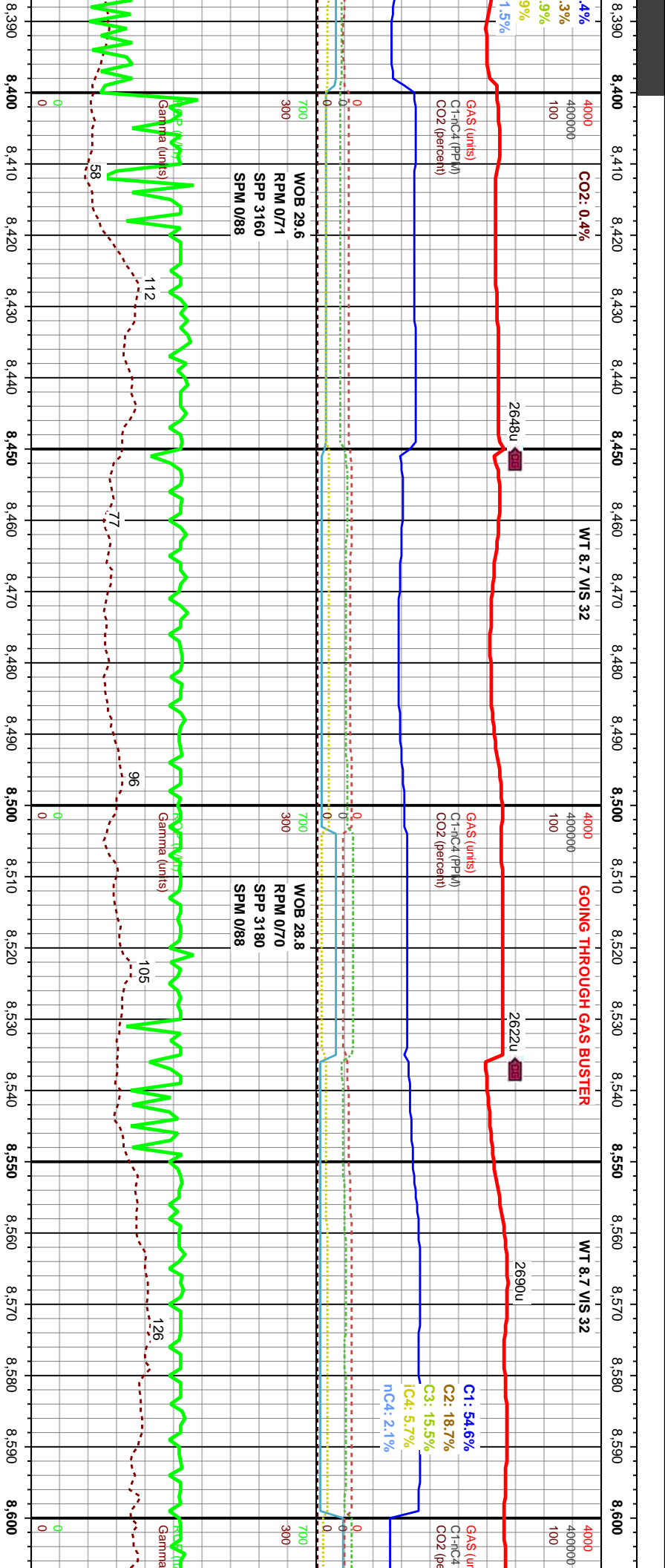
5300

7800

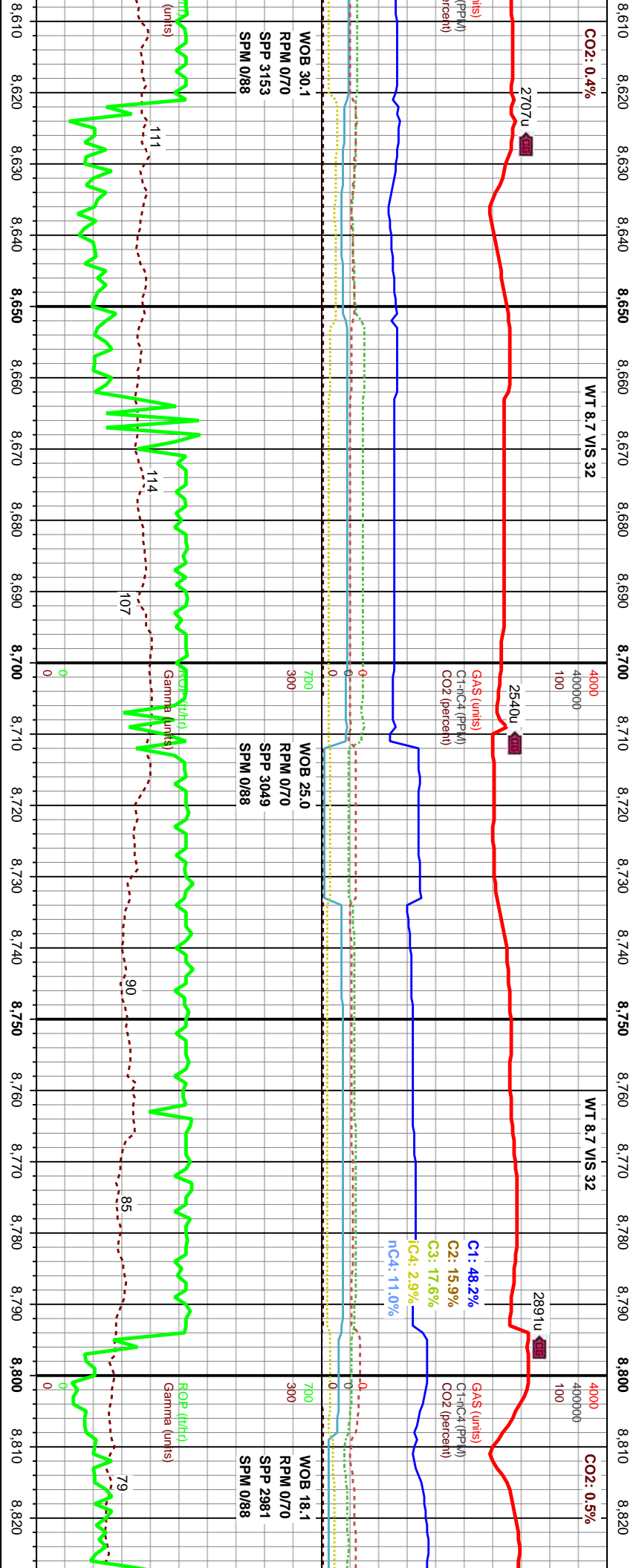
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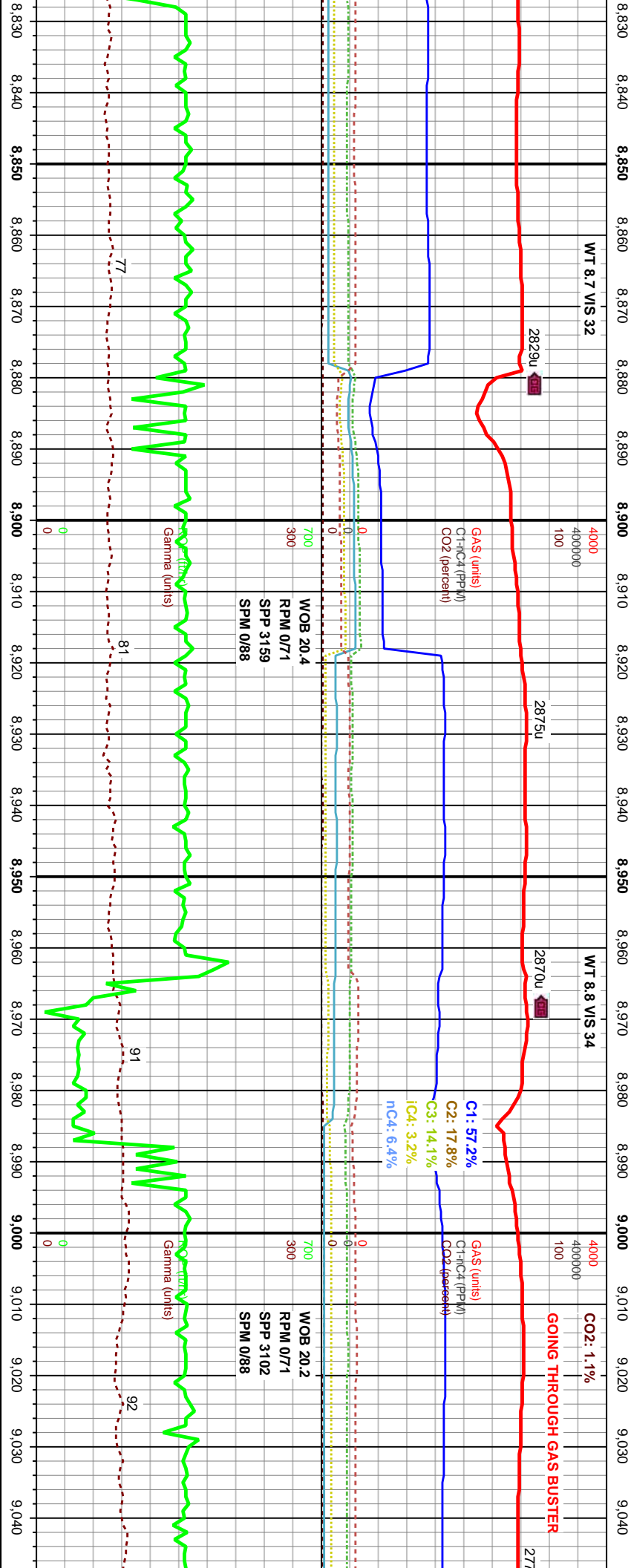
		<p>MD: 8.228'</p> <p>TVD: 6.493.2'</p> <p>Inclination: 89.68°</p> <p>Azimuth: 179.71°</p>		<p>MD: 8.313'</p> <p>TVD: 6.493.72'</p> <p>Inclination: 89.62°</p> <p>Azimuth: 180.87°</p>	
5300	7800	5300	7800	5300	7800
<p>100% CHK: dtk brn-bm, dtk brn/gy, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk stn, dull yel flr, lt mly cut</p>		<p>100% CHK: dtk brn/gy, dtk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr</p>		<p>100% CHK: brn/gy, dtk brn, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk stn, dull yel flr, lt mly cut</p>	
<p>Tr MARL: dtk brn/gy, dtk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr</p>		<p>Tr MARL: dtk brn/gy, dtk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr</p>		<p>Tr MARL: dtk brn/gy, dtk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr</p>	



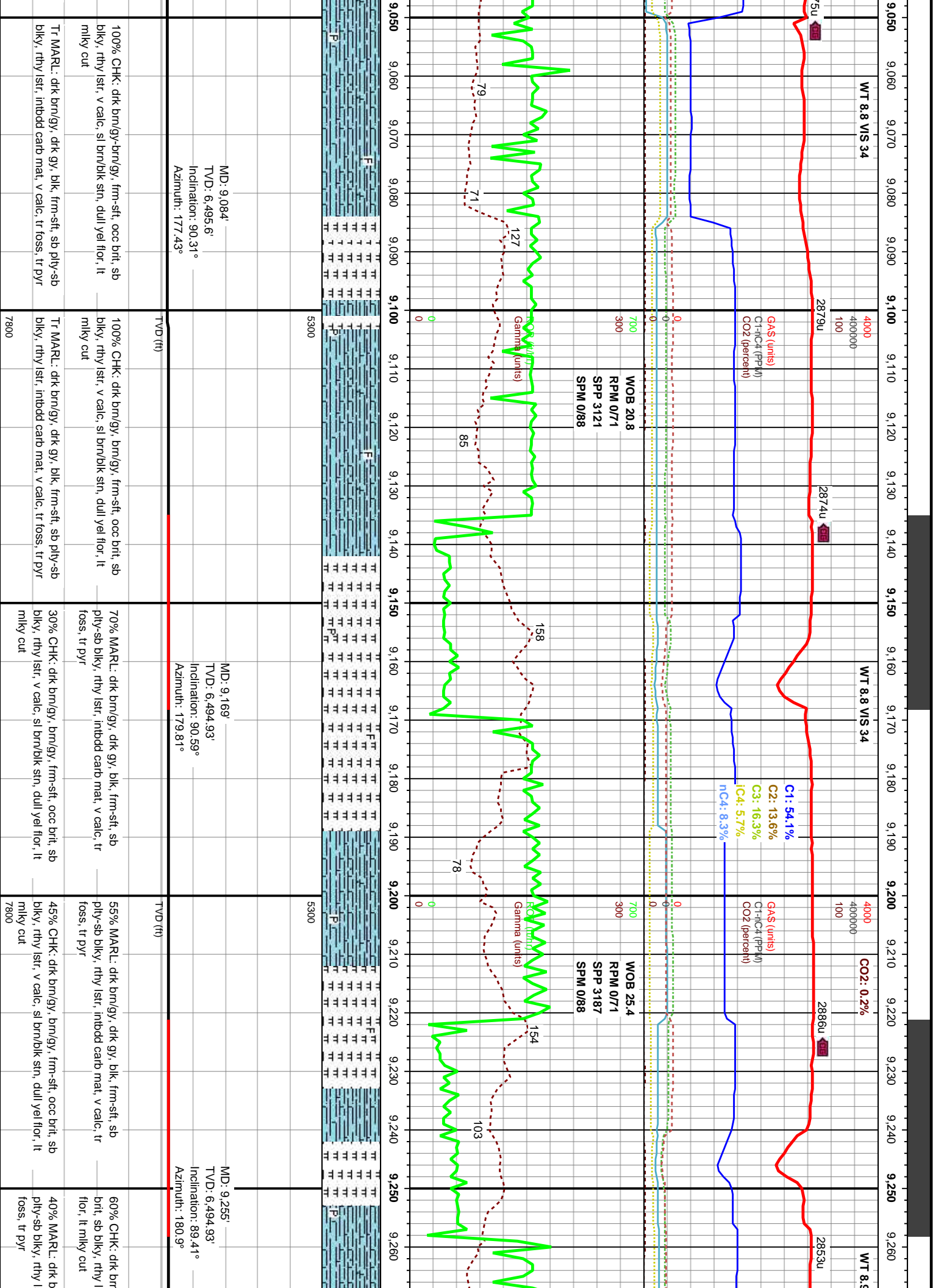
MD: 8.399' TVD: 6.495.26' Inclination: 88.33° Azimuth: 182.22°		MD: 8.484' TVD: 6.497.28' Inclination: 88.94° Azimuth: 182.11°		MD: 8.570' TVD: 6.498.31' Inclination: 89.69° Azimuth: 182.51°	
5300		5300		5300	
100% CHK: brn/gy, dk brn, frm-stf, occ brit, sb blk, rthy lstr, v calc, sl brn/bk stn, dull yel flr, lt milky cut		100% CHK: dk brn, brn/gy, frm-stf, occ brit, sb blk, rthy lstr, v calc, sl brn/bk stn, dull yel flr, lt milky cut		100% CHK: dk brn-brn/gy, frm-stf, occ brit, sb blk, rthy lstr, v calc, sl brn/bk stn, dull yel flr, lt milky cut	
Tr MARL: dk brn/gy, dk gy, blk, frm-stf, sb ply-sb blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr		Tr MARL: dk brn/gy, dk gy, blk, frm-stf, sb ply-sb blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr		Tr MARL: dk brn/gy, dk gy, blk, frm-stf, sb ply-sb blk, rthy lstr, inbd carb mat, v calc, tr foss, tr pyr	
7800		7800		7800	



			
		MD: 8,656' TVD: 6,498.22' Inclination: 90.43° Azimuth: 179.9°	
CHK: brn-dfk brn, brn/gy, frm-sft, occ brt, sb hy lstr, v calc, sl brn/bk stn, dull yel flr. lt ut	100% CHK: dfk brn/gy, dfk brn, frm-sft, occ brt, sb bkly, rthy lstr, v calc, sl brn/bk stn, dull yel flr. lt mlky cut	5300	
		MD: 8,741' TVD: 6,496.95' Inclination: 91.28° Azimuth: 178.18°	
Tr MARL: dfk brn/gy, dfk gy, blk, frm-sft, sb ply-sb bkly, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr	Tr MARL: dfk brn/gy, dfk gy, blk, frm-sft, sb ply-sb bkly, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr	5300	
		MD: 8,822' TVD: 6,449' Inclination: 90.43° Azimuth: 179.9°	
CHK: brn-dfk brn, brn/gy, frm-sft, occ brt, sb hy lstr, v calc, sl brn/bk stn, dull yel flr. lt ut	100% CHK: dfk brn/gy, dfk brn, frm-sft, occ brt, sb bkly, rthy lstr, v calc, sl brn/bk stn, dull yel flr. lt mlky cut	5300	
Tr MARL: dfk brn/gy, dfk gy, blk, frm-sft, sb ply-sb bkly, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr	Tr MARL: dfk brn/gy, dfk gy, blk, frm-sft, sb ply-sb bkly, rthy lstr, inbdd carb mat, v calc, tr foss, tr pyr	5300	

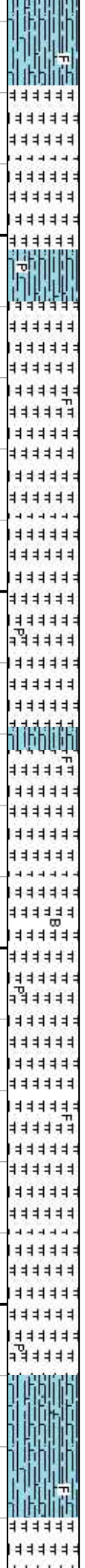
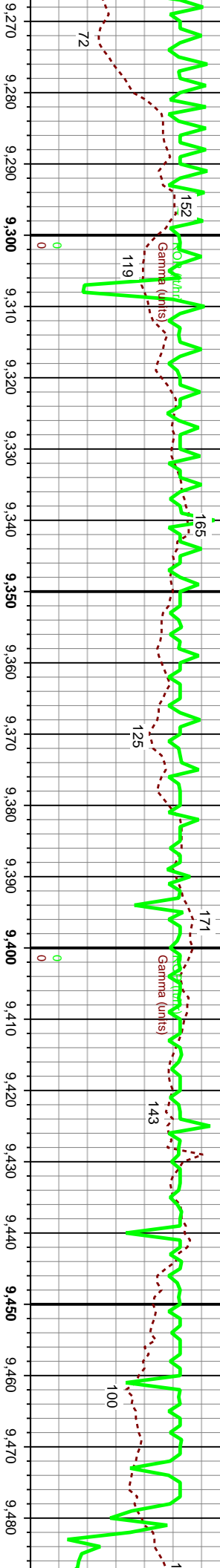
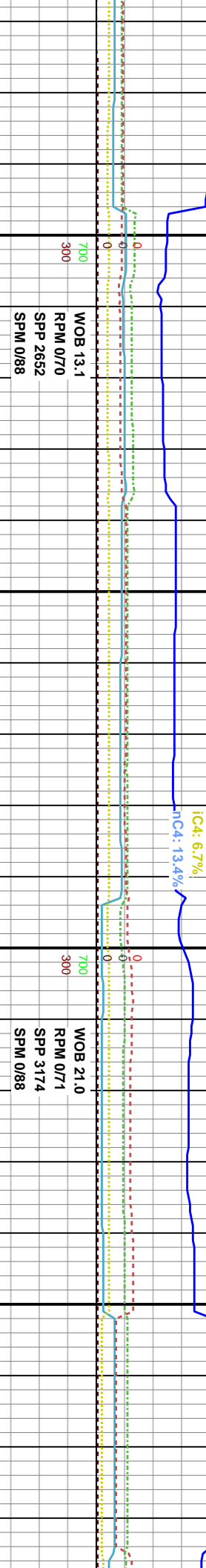
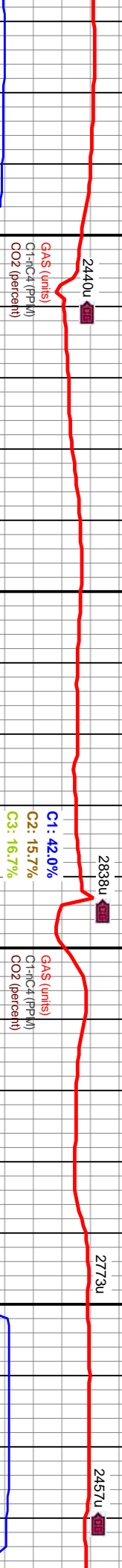


6.09 : 89.87° : 179.54°			MD: 8.912' TVD: 6.495.85' Inclination: 90.46° Azimuth: 178.34°	5300	100% CHK: dk brn/gy, dk brn, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk sft, dull yel flr. lt milky cut	Tr MARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbodd carb mat, v calc, tr foss, tr pyr	7800
			TVD (ft)	5300	100% CHK: dk brn/gy, dk brn, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk sft, dull yel flr. lt milky cut	Tr MARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbodd carb mat, v calc, tr foss, tr pyr	7800
			MD: 8.998' TVD: 6.495.67' Inclination: 89.78° Azimuth: 177.92°	5300	100% CHK: dk brn/gy, dk brn, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk sft, dull yel flr. lt milky cut	Tr MARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbodd carb mat, v calc, tr foss, tr pyr	7800
			TVD (ft)	5300	100% CHK: dk brn/gy, dk brn, frm-sft, occ brt, sb blk, rthy lstr, v calc, sl brn/bk sft, dull yel flr. lt milky cut	Tr MARL: dk brn/gy, dk gy, blk, frm-sft, sb ply-sb blk, rthy lstr, inbodd carb mat, v calc, tr foss, tr pyr	7800



9,270 9,280 9,290 9,300 9,310 9,320 9,330 9,340 9,350 9,360 9,370 9,380 9,390 9,400 9,410 9,420 9,430 9,440 9,450 9,460 9,470 9,480

WT 8.9 VIS 34

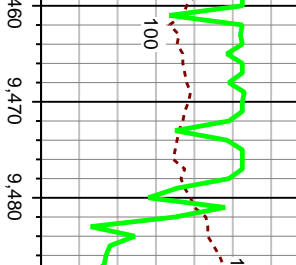
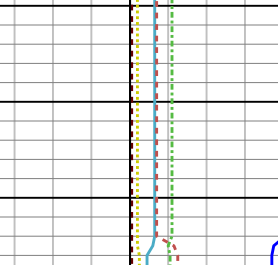
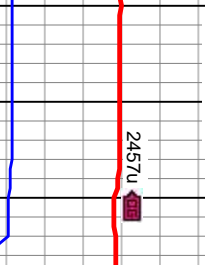


MD: 9,341'
TVD: 6,495.47'
Inclination: 89.87°
Azimuth: 180.02°

80% MARL: dk brn/gy, dk gy, blk, frm-sft, sb
ply-sb blk, rthy lstr, intbdd carb mat, v calc, tr
foss, tr pyr

20% CHK: dk brn/gy, gy/wh, frm-sft, occ brt, sb
blk, rthy lstr, v calc, sl brn/blk str, dull yel flr, lt
mily cut

WT 8.9 VIS 34



MD: 9,426'
TVD: 6,495.09'
Inclination: 90.64°
Azimuth: 180.08°

60% MARL: dk brn, gy, dk brn/gy, gy/wh
occ brt, sb blk, rthy lstr, v calc, sl brn/blk
yel flr, lt mily cut

40% MARL: dk brn/gy, m-dk gy, blk, frm
hd, sb ply-sb blk, rthy lstr, intbdd carb r
calc, tr foss, tr pyr

9,490 9,500 9,510 9,520 9,530 9,540 9,550 9,560 9,570 9,580 9,590 9,600 9,610 9,620 9,630 9,640 9,650 9,660 9,670 9,680 9,690 9,700

GOING THROUGH GAS BUSTER

WT 9.0 VIS 34

WT 9.0 VIS 34

4000 400000 100 4000 400000 100 4000 400000 100

GAS (units)
C1-IC4 (PPM)
CO2 (percent)

C1: 59.1%
C2: 20.6%
C3: 15.6%
iC4: 4.2%
nC4: 0.1%

GAS (units)
C1-IC4 (PPM)
CO2 (percent)

GAS (ur
C1-IC4
CO2 (pe

WOB 45.0
RPM 0/23
SPP 2662
SPM 0/88

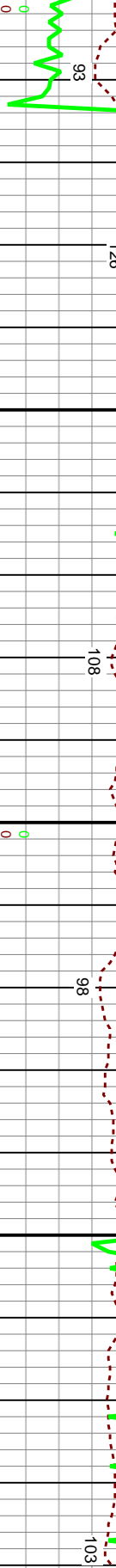
WOB 21.6
RPM 0/70
SPP 3187
SPM 87/0

700
300

ROP (t/h)
Gamma (units)

ROP (t/h)
Gamma (units)

ROP (t/h)
Gamma



5300

5300

5300

MD: 9,511'
TVD: 6,495.47'
Inclination: 88.85°
Azimuth: 180.65°

MD: 9,596'
TVD: 6,497.27'
Inclination: 88.72°
Azimuth: 180.85°

MD: 9,682'
TVD: 6,499.07'
Inclination: 88.88°
Azimuth: 180.95°

TVD (ft)

TVD (ft)

TVD (ft)

70% MARL: dk brn/gy, m-dk gy, blk, frm-sft, occ
hd, sb pily-sb blk, rthy istr, inbdd carb mat, v
calc, tr foss, tr pyr

80% MARL: dk brn/gy, dk gy, blk, frm-sft, sb
pily-sb blk, rthy istr, inbdd carb mat, v calc, tr
foss, tr pyr

60% MARL: dk brn/gy, dk gy, frm-sft, sb pily-sb
blk, rthy istr, inbdd carb mat, v calc, tr foss, tr pyr

70% MARL: dk brn, dk gy, dk brn/gy, gy/wh, frm-sft,
occ brt, sb blk, rthy istr, v calc, sl brn/blk sft, dull
yel flor, lt milky cut

60% C
frm-sft
blk, r
sft, du

30% CHK: dk brn, gy, dk brn/gy, gy/wh, frm-sft,
occ brt, sb blk, rthy istr, v calc, sl brn/blk sft, dull
yel flor, lt milky cut

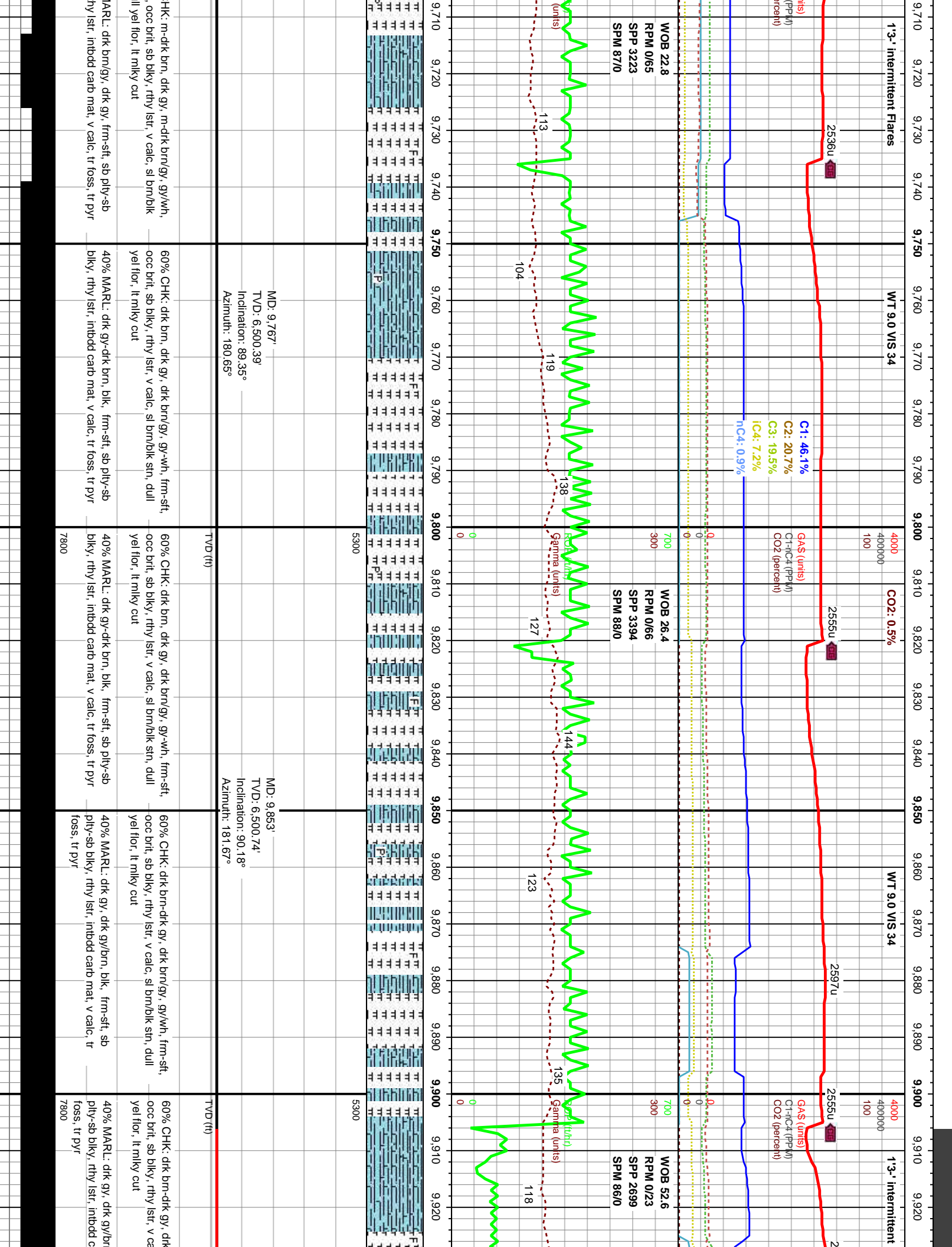
20% CHK: m-dk brn, gy, dk brn/gy, gy/wh, frm-sft,
occ brt, sb blk, rthy istr, v calc, sl brn/blk sft, dull
yel flor, lt milky cut

40% CHK: dk brn, dk gy, dk brn/gy, gy/wh, frm-sft,
occ brt, sb blk, rthy istr, v calc, sl brn/blk sft, dull
yel flor, lt milky cut

30% MARL: dk brn/gy, dk gy, frm-sft, sb pily-sb
blk, rthy istr, inbdd carb mat, v calc, tr foss, tr pyr

40% V
blk, r
7800

7800



9,930 9,940 9,950 9,960 9,970 9,980 9,990 10,000 10,010 10,020 10,030 10,040 10,050 10,060 10,070 10,080 10,090 10,100 10,110 10,120 10,130 10,140

Flares WT 8.9 VIS 34 WT 8.9 VIS 34 WT 8.9 VIS 34 13'- Intermittent Flares

5597u 2603u 2508u 2496u

C1: 39.0%
C2: 19.9%
C3: 22.9%
iC4: 10.5%
nC4: 7.7%

GAS (units)
C1+IC4 (PPM)
CO2 (percent)

WOB 21.9
RPM 0/71
SPM 3289
SPM 87/0

WOB 23.3
RPM 0/71
SPM 3389
SPM 88/0

Gamma (units)
121 137 128 103 149 125 127



MD: 9,938'
TVD: 6,500.77'
Inclination: 89.78°
Azimuth: 180.06°

MD: 10,023'
TVD: 6,500.5'
Inclination: 90.58°
Azimuth: 180.66°

MD: 10,109'
TVD: 6,500.14'
Inclination: 89.9°
Azimuth: 179.36°

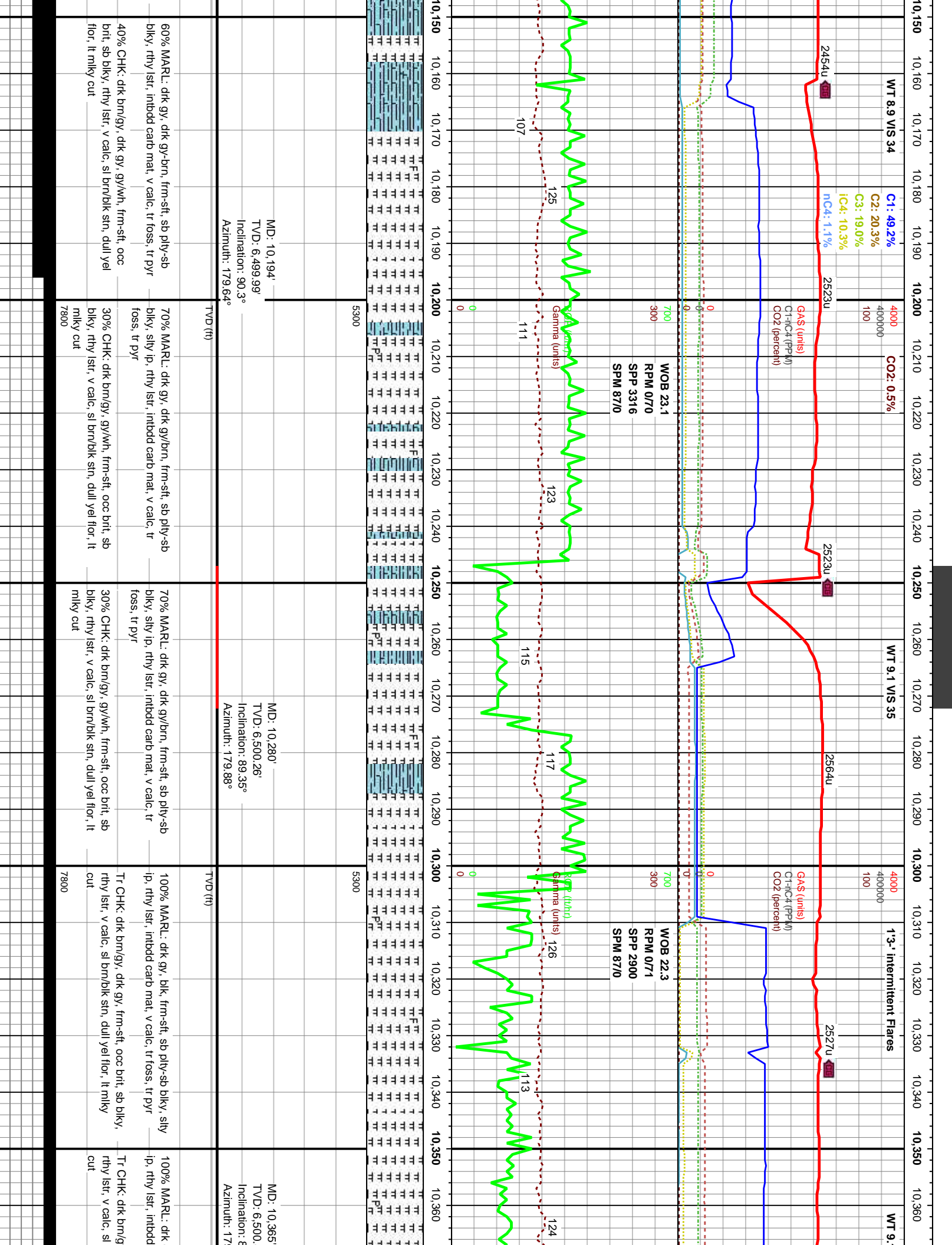
brn/gy, gy/wh, frm-sft, occ
bnt, sb blk, rthy lstr, v calc, sl brn/bk str, dull yel
flor, lt mlky cut

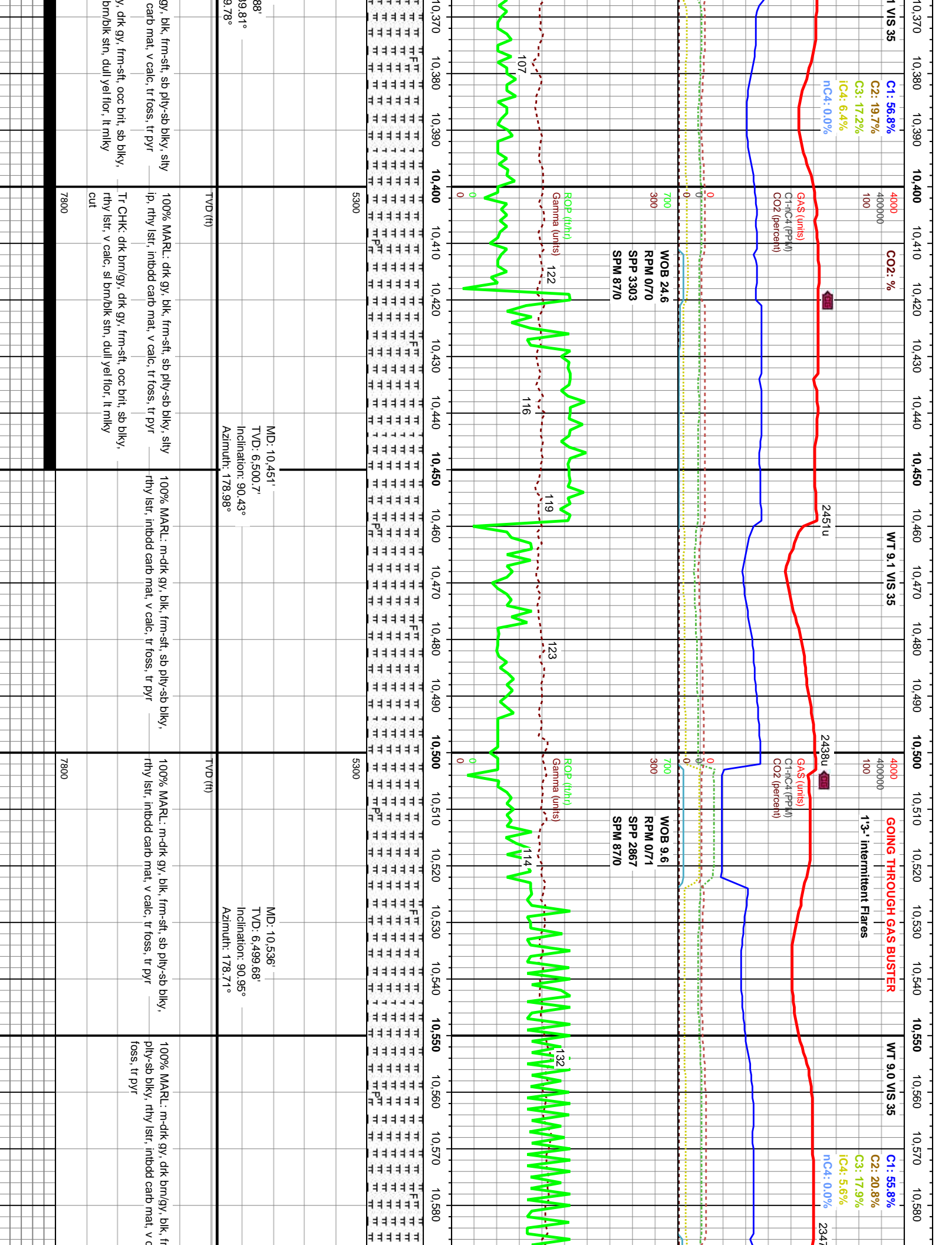
45% MARL: dk gy, dk gy-brn, blk, frm-sft, sb
ply-sb blk, rthy lstr, intbnd carb mat, v calc, tr
foss, tr pyr

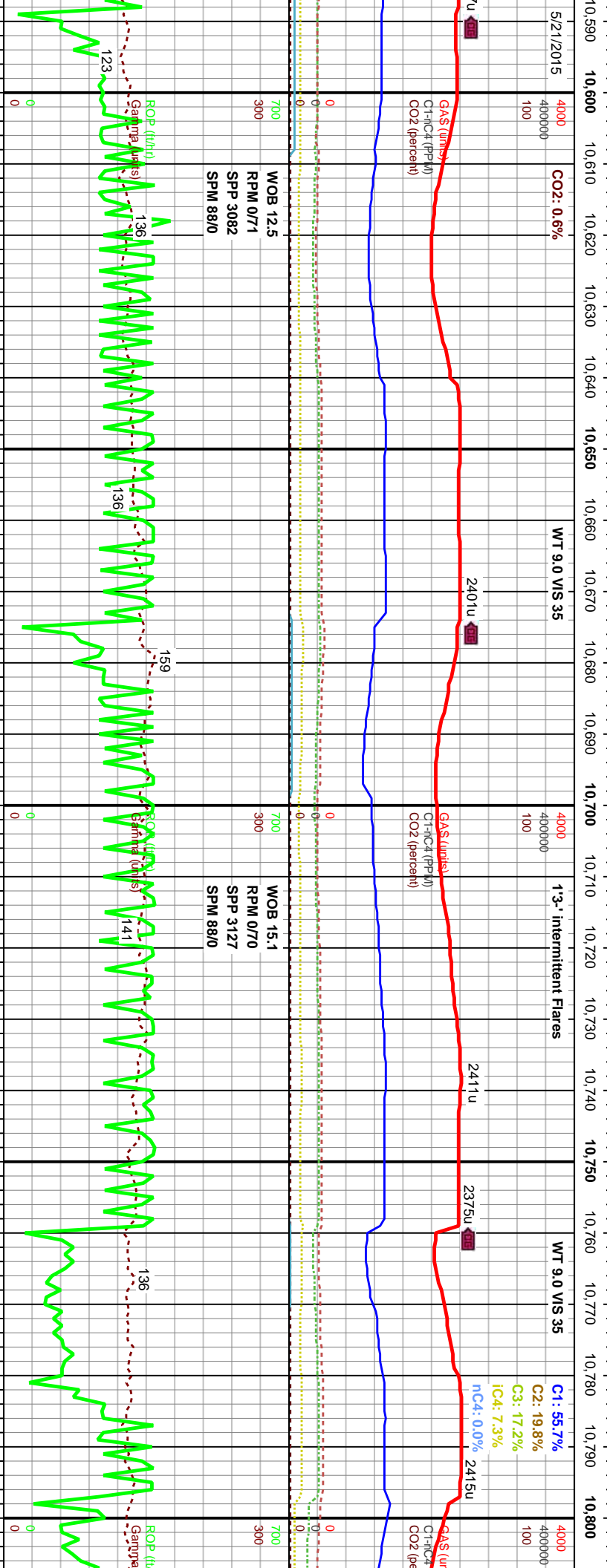
45% MARL: dk gy, dk gy-brn, blk, frm-sft, sb
ply-sb blk, rthy lstr, intbnd carb mat, v calc, tr
foss, tr pyr

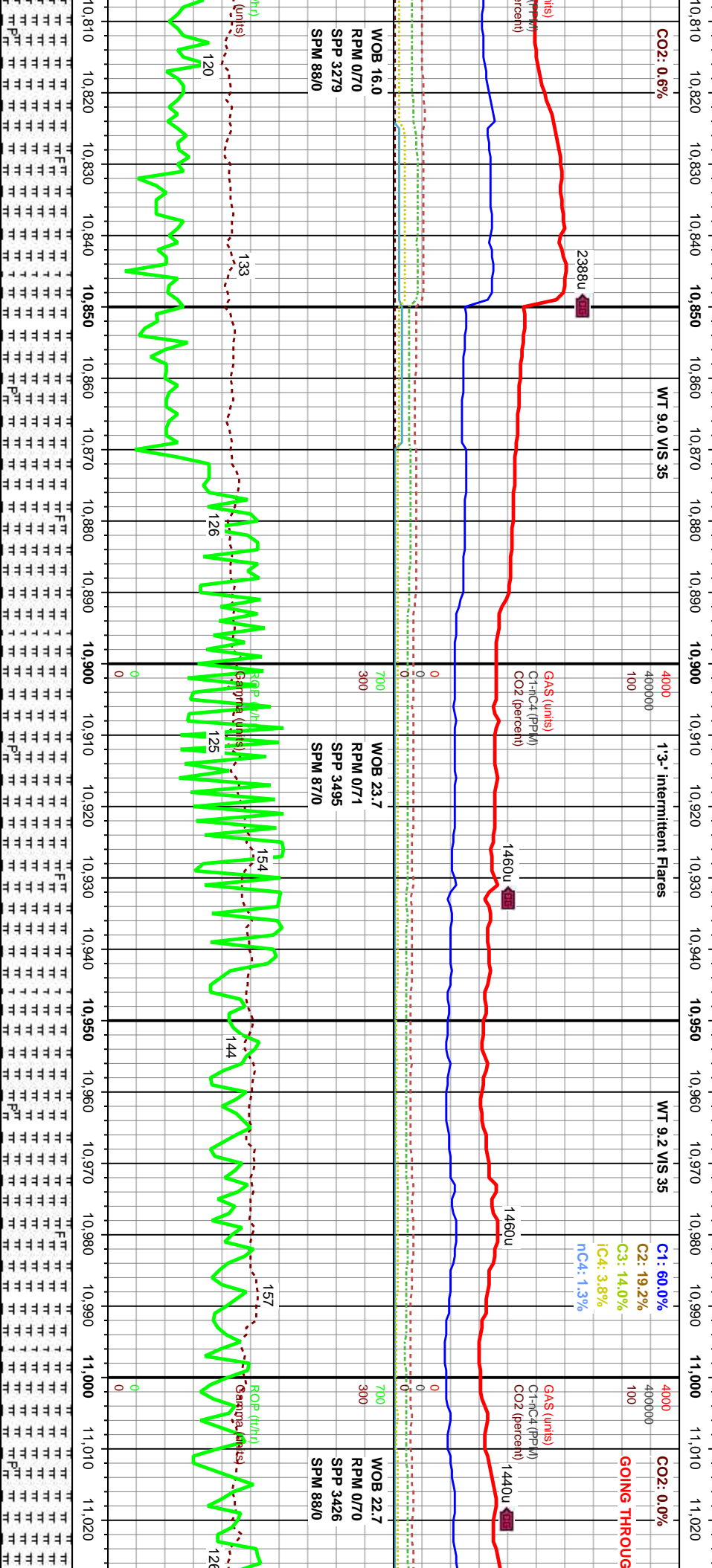
45% MARL: dk gy, dk gy-brn, blk, frm-sft, sb
ply-sb blk, rthy lstr, intbnd carb mat, v calc, tr
foss, tr pyr

45% MARL: dk gy, dk gy-brn, blk, frm-sft, occ
bnt, sb blk, rthy lstr, v calc, sl brn/bk str, dull yel
flor, lt mlky cut





[illegible]

MARL: drk gy, drk brn/gy, frm-sft, sb plty-sb
hy|str, intbdd carb mat, v calc, tr foss, tr pyr

100% MARL: drk gy, drk brn/gy, frm-sft, sb plty-sb
biky, rthy lstr, intbdd carb mat, v calc, tr foss, tr pyr

100% MARL: drk gy, drk brn/gy, frm-sft, sb pty-sb
bky, rthy lstr, intbdd carb mat, v calc, tr foss, tr pyrr

100% MARL: m-drk gy, m-drk brn/gy, frm-sft, sb
ply-sb blkly, rthy lstr, intbdd carb mat, v calc, tr
foss, tr pyr

100% MARL: m-dirk gy, m-dr
ply-sb blkly, rthy lstr, intbdc
foss, tr pyr

MD: 10,879'
TVD: 6,495.36'
Inclination: 89.72°
Azimuth: 179.97°

MD: 10,965'
TVD: 6,495.74'
Inclination: 89.78°
Azimuth: 179.97°

TV D (ft)

 $\phi(t)$

