



## Operator

PETROLEUM INC

uite 1800

202

## Geologist

N AND JERAMY MURRAY

OGGING INC

it.  
223

## Rock Types

CONGLOMERATE	MARLSTONE	SHALY SANDSTONE
DOLomite	METAMORPHIC	SHALY SILTSTONE
DOLomitic LIMESTONE	NO SAMPLE	SILTY SHALE
GRANITE	SALT	SILTSTONE
GYPsum	SANDSTONE	TILL
IGNEOUS	SALT-PEPPER SAN	TUFF
SIDERITE or LIMONITE	SHALE	WELDED TUFF
LIMESTONE	SHALE COLORED	
	SHALE GRAY	

## Accessories

<b>Fossils</b>	GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL
	INOCERAMUS	B BENTONITE	K KAOLIN
	O OOLITE	BITUMENOUS SUBSTANCE	M MARCASITE
	O OSTRACOD	BRECCIA FRAGMENTS	T MARLSTONE
	B BELEMNITE	C CALCAREOUS	M MICACEOUS
	B BIOCLASTIC	CARBONACEOUS FLAKES	M MINERAL CRYSTALS
	B BRACHIOPOD	C CHITDK	N NODULES
	P PISOLUTE	C CHITL	P PHOSPHATE PELLETS
	P PLANT REMAINS	T THIN BEDS	P PYRITE
	C CEPHALOPOD	D DOLOMITE	S SALT CAST
	C CORAL	F FELDSPAR	S SANDY
	C CRINOID	F FERRUGINOUS PELLETT	S SIDERITE
	E ECHINOID		
<b>Minerals</b>	F FISH	F FERRUGINOUS	S SILICEOUS
	F FORAMINIFERA	A ANHYDRITIC	S SILTY
	F FOSSIL	A ARGILLACEOUS	T TUFFACEOUS
		G GLAUCONITE	
		G GYPSIFEROUS	
			S SILTSTONE STRINGER

## Other Symbols

<b>Oil Show</b>	P PINPOINT	W WIRELINE TESTED - LEFT	E EARTHY
	V VUGGY	W WIRELINE TESTED - RT	F FINELY XLN
<b>Engineering</b>	D DEAD	F FORMATION TOP	G GRAINSTONE
	E EVEN	G GAS SHOW	L LITHOGRAPHIC
	Q QUESTIONABLE	O OIL SHOW	Mx MICRO XLN
	B BIT		
	S SPOTTED STAINING	M MN DEPTH UP	M MS MUDSTONE
	C CONNECTION (UP)		
<b>Porosity</b>	C CONNECTION (DOWN)	M MN DEPTH (DOWN)	A ANGULAR
	C CONNECTION GAS	N NORMAL FAULT	R ROUNDED
<b>E EARTHY</b>	C CONNECTION GAS (LEFT)	O OVERTURNED STRATA	B SUBANG
<b>F FRACTURE</b>	T TRIP GAS	R REVERSE FAULT	P SUBRAND
	T TRIP GAS (LEFT)	C CASING	
<b>X INTERCRYSTALLINE</b>	D DOWN TIME GAS	S SIDEWALL CORE (LEFT)	<b>Textures</b>
	D DOWN TIME GAS (LEFT)	S SIDEWALL CORE (RIGHT)	P POOR
<b>INTEROOLITIC</b>	C CORE - LOST	S SLIDE	BS BOUNDSTONE
<b>M MOLDIC</b>		S SURVEY	C CHALKY
<b>O ORGANIC</b>	C CORE - RECOVERED		W WELL
			Cx CRYPTOXLN

Slide/Rotate

Columbine Logging Two Person  
Rigged Up 1800hrs 05/19/2014  
With Bloodhound Unit # 0624

WT 9.7/ VIS 38

WT 9.7+/ VIS 39

WT 10.0/ VIS 40

WT 10.1/ VIS 42

ROP

ROF

GAMMA

Logging Started @  
0300hrs on 05/20/2014  
at 6700' MD

ROP (ft/hr)  
GAMMA (api)

PROBLEMS WITH GAMMA

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

Bit Data  
Bit #: 01  
Type: SMITTH SD1513  
Size: 8.75  
Depth In: 1,027.  
Depth Out: 7,603.  
Jets: 5x13 3x12  
S/N: J11256

Depth Labels

% Lith

Begin in Sussex Formation

MD: 6,737  
TVD: 6,717.08  
Inclination: 3.3  
Azimuth: 358.57  
VS: -243.69

MD: 6,764  
TVD: 6,763.85  
Inclination: 7.8  
Azimuth: 357.79  
VS: -239.15

Well Bore  
TVD

Acetone was used as the cutting agent with the dimple filled to the rim  
The ratings are based on 7 descriptors:  
None, Slight trace, Trace, Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgement of brilliance, color and longevity of the cut.

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frn, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, sft-mod frn, w  
srt, c grs, sb rnd-sb ang, mod  
fri, sting bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frn, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, sft-mod frn, w  
srt, c grs, sb rnd-sb ang, mod  
fri, sting bl cut, dul bl ring

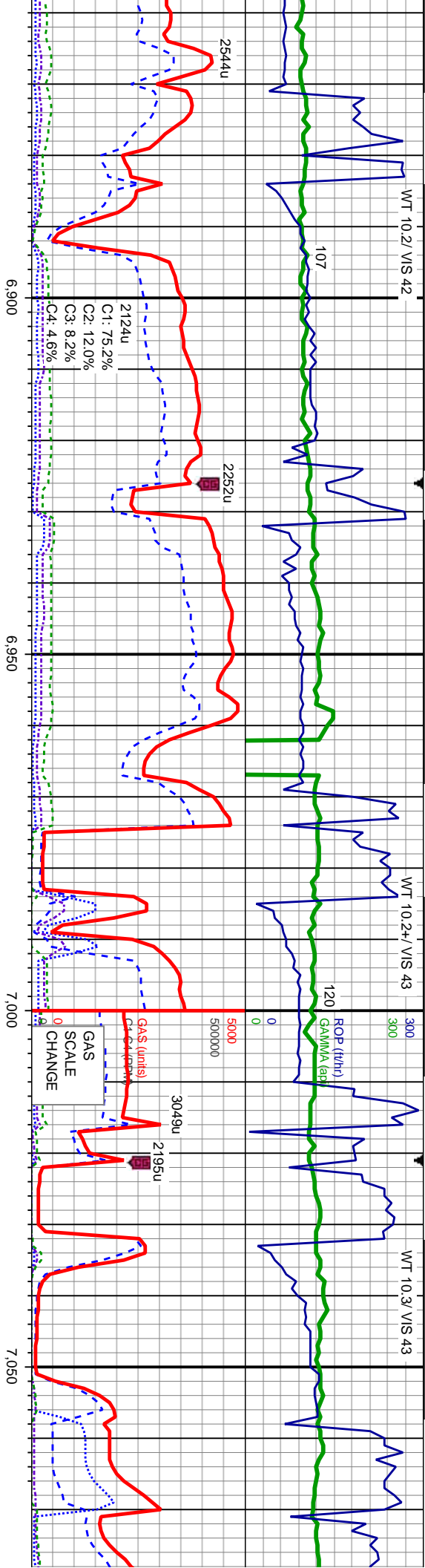
SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frn, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, sft-mod frn, w  
srt, c grs, sb rnd-sb ang, mod  
fri, sting bl cut, dul bl ring

Oil Show

Images







MD: 6.880  
TVD: 6.857.26  
Inclination: 17.61  
Azimuth: 358.7  
VS: -217.56

MD: 6.928  
TVD: 6.902.17  
Inclination: 23.6  
Azimuth: 0.47  
VS: -200.88

MD: 6.975  
TVD: 6.944.25  
Inclination: 29.21  
Azimuth: 358.68  
VS: -179.8

MD: 7.023  
TVD: 6.985.24  
Inclination: 33.49  
Azimuth: 357.97  
VS: -154.85

MD: 7.070  
TVD: 7.023.5  
Inclination: 37.46  
Azimuth: 357.72  
VS: -127.61

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod st-frm, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, st-frm, w  
srt, c grs, sb rnd-sb ang, mod  
fri, stmg bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod st-frm, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, st-frm, w  
srt, c grs, sb rnd-sb ang, mod  
fri, stmg bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod st-frm, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, SLTY SS: lt-med gy, s&p,  
sb ply-sb blk, st-frm, w  
srt, c grs, sb rnd-sb ang, mod  
fri, stmg bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod st-frm, w srt,  
c-v c grs, sb rnd-sb ang, mod  
fri, stmg bl cut, dul bl ring

SLTY SH: med-dk  
ply-sb blk, mod s  
c-v c grs, sb rnd-s  
fri, stmg bl cut, du

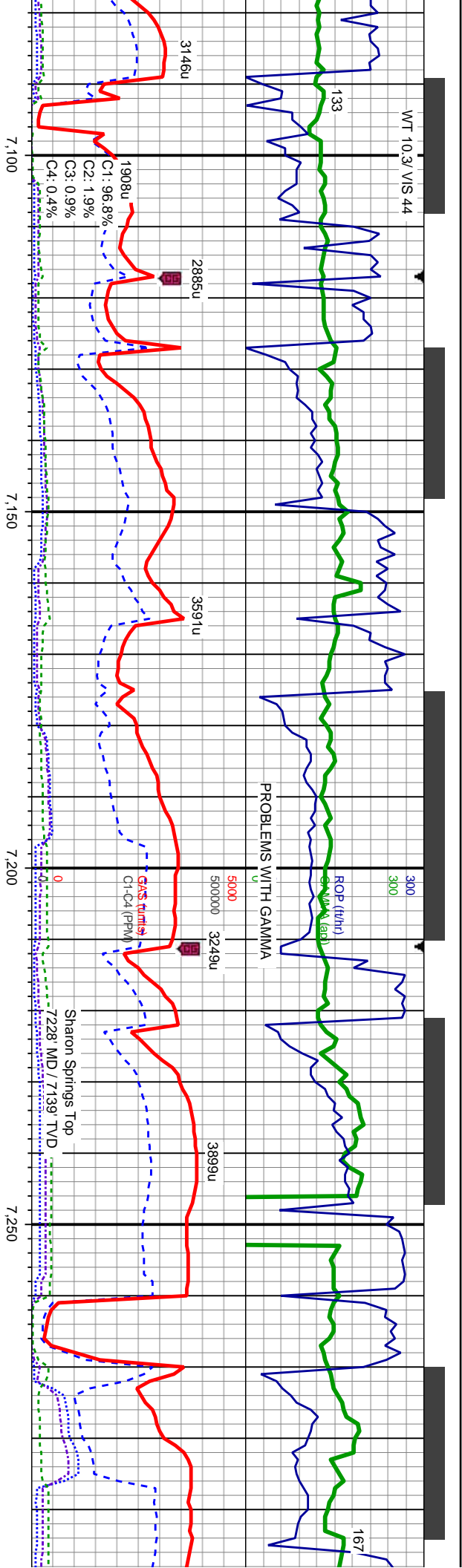
TVD (ft)

7400

6700







MD: 7,118  
TVD: 7,061.07  
Inclination: 39.54  
Azimuth: 359.66  
VS: -97.75

MD: 7,165  
TVD: 7,096.36  
Inclination: 43.09  
Azimuth: 1.08  
VS: -66.73

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frm, w srl,  
c-v c grs, sb mnd-sb ang, mod  
fri, sting bl cut, bl ring

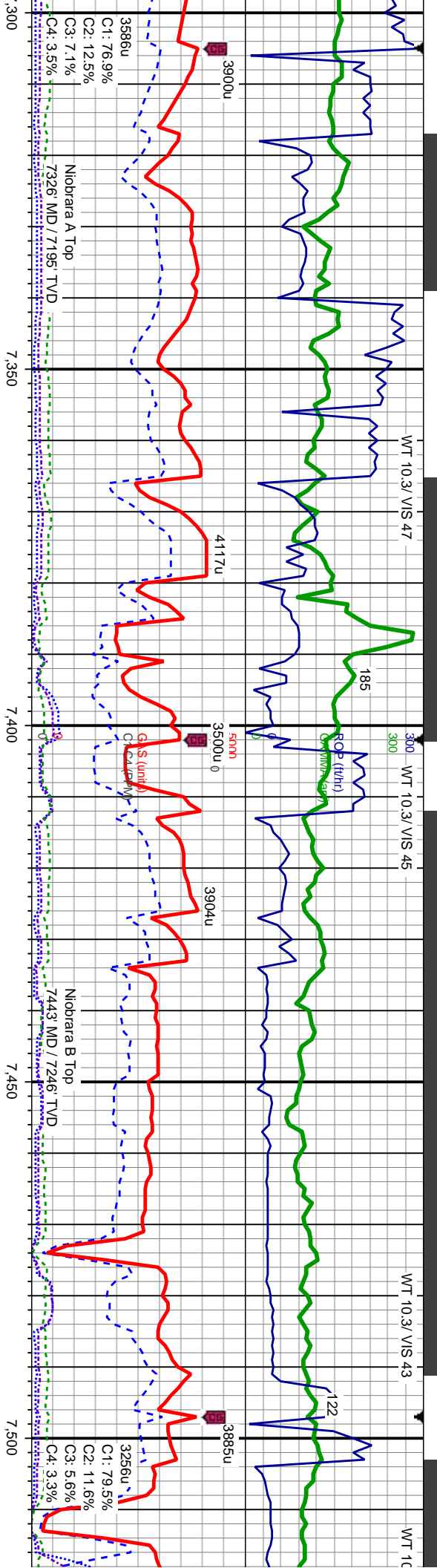
SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frm, w srl,  
c-v c grs, sb mnd-sb ang, mod  
fri, abnt bent, sting bl cut, dul  
bl ring

MD: 7,213  
TVD: 7,129.53  
Inclination: 49.44  
Azimuth: 1.51  
VS: -32.07

MD: 7,260  
TVD: 7,158.66  
Inclination: 53.95  
Azimuth: 3.46  
VS: 4.78

SLTY SH: med-dk gy & blk, sb  
ply-sb blk, mod sft-frm, w srl,  
c-v c grs, sb mnd-sb ang, mod  
fri, CHK: lt-dk gy-brn, mot,  
blk-sb ply, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, blk-sb  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, abnt  
bent, sting bl cut, dul bl ring





CHK: lt-med gy-brn, mot,  
biky-sb pily, stf-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, biky-sb  
pily, stf-frn, mod strd, c grs,  
sb rd-sb ang, mod fri, sting bl  
cut, bri bl ring

CHK: lt-med gy-brn, mot,  
biky-sb pily, stf-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, biky-sb  
pily, stf-frn, mod strd, c grs,  
sb rd-sb ang, mod fri, sting bl  
cut, bri bl ring

CHK: lt-med gy-brn, mot,  
biky-sb pily, stf-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, biky-sb  
pily, stf-frn, mod strd, c grs,  
sb rd-sb ang, mod fri, sting bl  
cut, bri bl ring

CHK: lt-med gy-brn, mot,  
biky-sb pily, stf-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, biky-sb  
pily, stf-frn, mod strd, c grs,  
sb rd-sb ang, mod fri, abnt  
calc incl, sting bl cut, bri bl  
ring

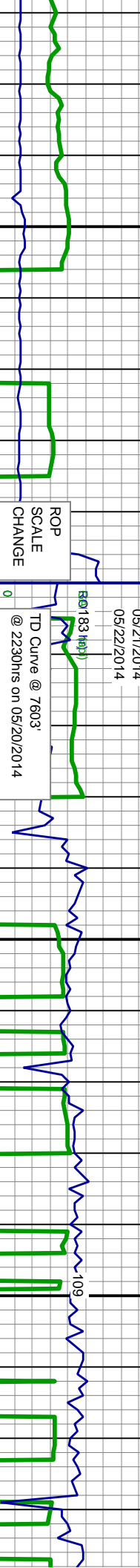
CHK: lt-med gy-brn, mot,  
biky-sb pily, stf-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: dk gy & blk, biky-sb  
pily, stf-frn, mod strd, c grs,  
sb rd-sb ang, mod fri, sting bl  
cut, bri bl ring

MD: 7.308 TVD: 7,185.41 Inclination: 58.29 Azimuth: 2.38 VS: 44.59	MD: 7.335 TVD: 7,208.98 Inclination: 61.52 Azimuth: 2.15 VS: 85.23	MD: 7.403 TVD: 7,230.5 Inclination: 65.17 Azimuth: 2.89 VS: 128.1	MD: 7.450 TVD: 7,248.07 Inclination: 70.93 Azimuth: 1.84 VS: 171.65	MD: 7.498 TVD: 7,261.64 Inclination: 76.2 Azimuth: 0.76 VS: 217.67
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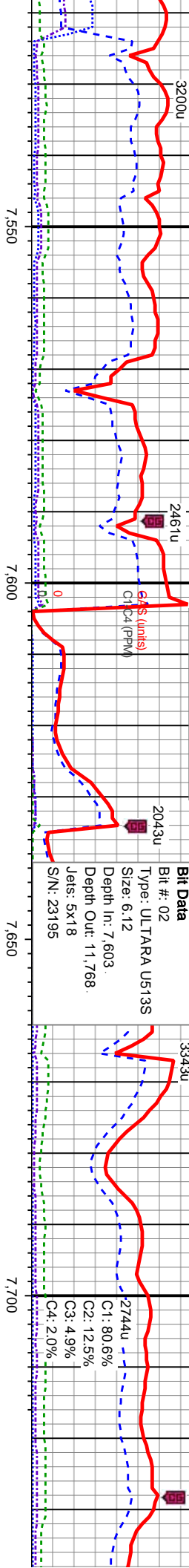
3/ VIS 44 WT 10.2/ VIS 43 WT 10.2/ VIS 44 500' END DEPTH 05/21/2014 05/22/2014 WT 9.9



Start drilling the Lateral @ 1000ms on 05/22/2014

**Bit Data**  
Bit #: 02  
Type: ULTRA U513S  
Size: 6.12  
Depth In: 7.603  
Depth Out: 11.768  
Jets: 5x18  
S/N: 23195

2744u  
C1: 80.6%  
C2: 12.5%  
C3: 4.9%  
C4: 2.0%



med gy-brn, mot, ply, sft-frn, mod strd, b rd-sb ang, mod fri, dk gy & blk, blk-y-sb -frm, mod strd, c grs, o ang, mod fri, sting bl ring  
CHK: lt-med gy-brn, mot, blk-y-sb ply, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, MRLST: dk gy & blk, blk-y-sb ply, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, sting bl cut, bri bl ring

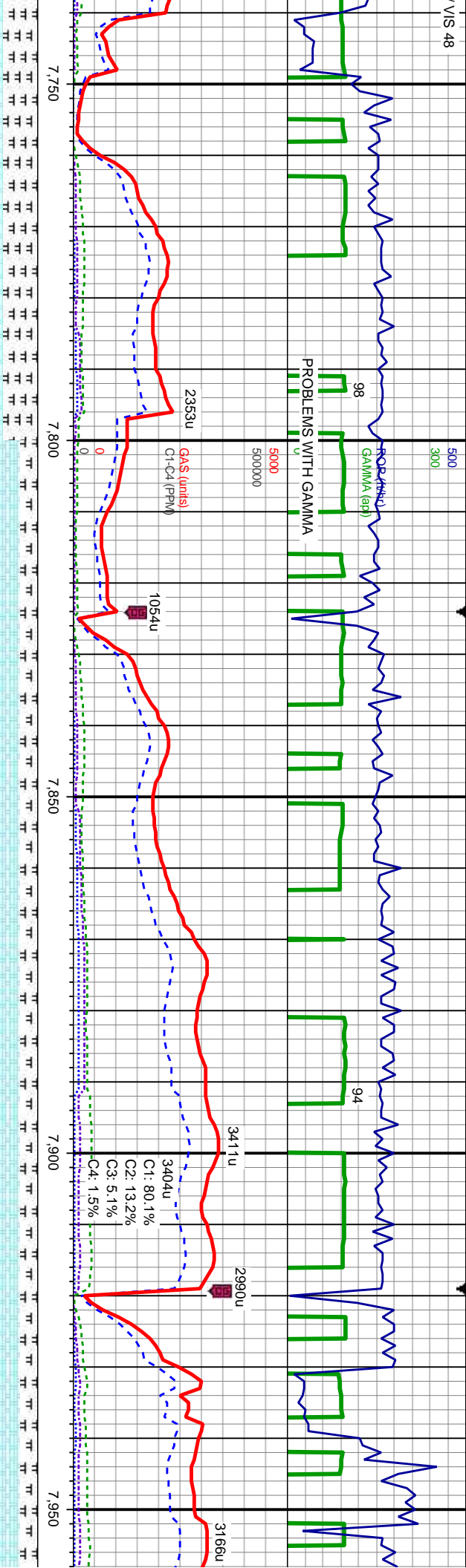
MD: 7.545  
TVD: 7.270.21  
Inclination: 82.78  
Azimuth: 0.01  
VS: 263.86

MD: 7.621  
TVD: 7.275.48  
Inclination: 89.26  
Azimuth: 0.4  
VS: 339.63

MD: 7.683  
TVD: 7.276.13  
Inclination: 89.54  
Azimuth: 359.85  
VS: 401.62

CHK: med-dk gy-brn, mot, blk-y-sb ply, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, MRLST: dk gy & blk, blk-y-sb ply, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, abnt calc incl, tr pyr, sting bl cut, bri bl ring





MD: 7.778  
TVD: 7.225.78  
Inclination: 90.89  
Azimuth: 359.69  
VS: 496.61

MD: 7.873  
TVD: 7.273.48  
Inclination: 91.88  
Azimuth: 359.95  
VS: 591.57

CHK: med-dk gy-brn, mot,  
xy-sb ply, sft-frm, mod strd,  
grs, sb rd-sb ang, mod fri,  
RLST: dk gy & blk, blk-  
y, sft-frm, mod strd, c grs,  
rd-sb ang, mod fri, abnt  
ic incl, stmg bl cut, bri bl  
g

CHK: lt-dk gy-brn, mot, blk-  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, MRLST:  
dk gy & blk, blk-  
sft-frm, mod strd, c grs, sb  
rd-sb ang, mod fri, stmg bl cut,  
bri bl ring

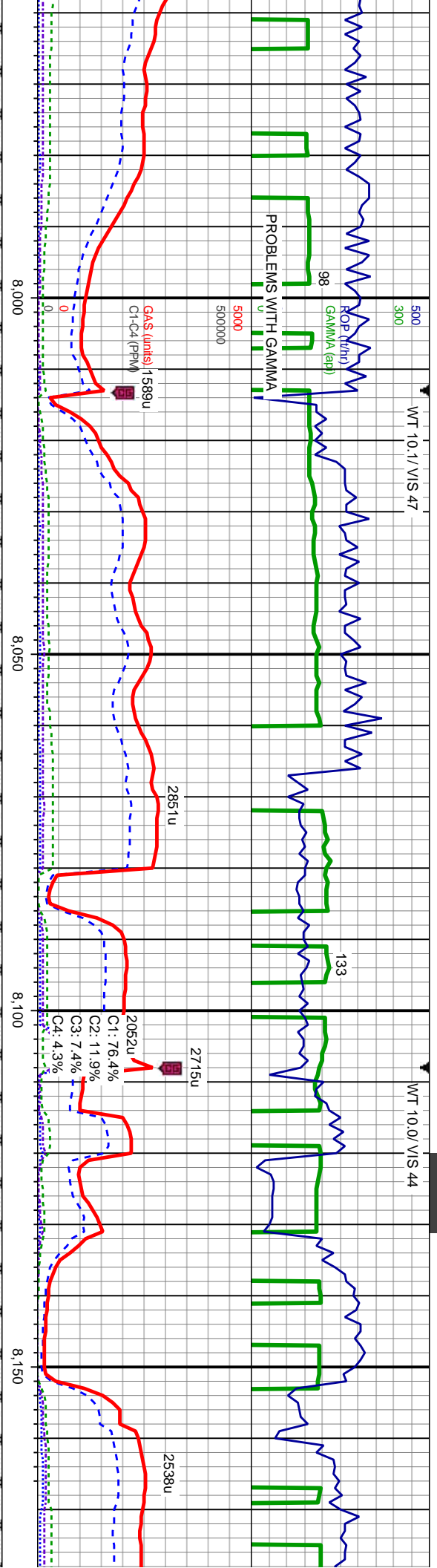
CHK: lt-med gy-brn, r  
blk-  
c grs, sb rd-sb ang, r  
MRLST: dk gy & blk,  
ply, sft-frm, mod strd  
sb rd-sb ang, mod fri,  
cut, bri bl ring





WT 10.1/ VIS 47

WT 10.0/ VIS 44



MD: 7.968  
TVD: 7,270.98  
Inclination: 91.14  
Azimuth: 0.09  
VS: 686.53

MD: 8.063  
TVD: 7,268.93  
Inclination: 91.33  
Azimuth: 359.59  
VS: 781.5

MD: 8.158  
TVD: 7,267.75  
Inclination: 90.09  
Azimuth: 359.77  
VS: 876.48

mod strd, mod fri, blkly-sb, c grs, string bl

CHK: med-dk gy-brn, mod, blkly-sb ply, sft-frm, mod strd, c grs, sb rd-sb ang, mod fri, MRLST: dk gy & blk, blkly-sb ply, sft-frm, mod strd, c grs, sb rd-sb ang, mod fri, tr cal, tr pyr, abnt calc incl, sting bl cut, bri bl ring

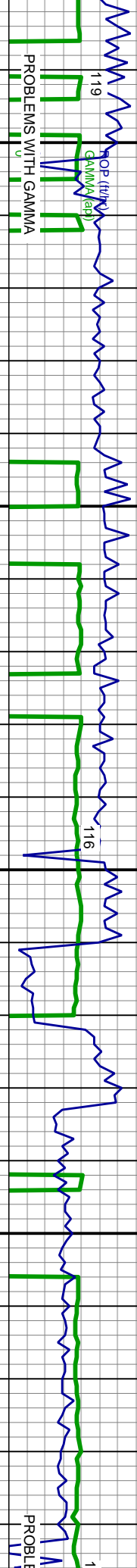
CHK: dk gy-brn, blk, mod, blkly-sb ply, sft-frm, mod strd, c grs, sb rd-sb ang, mod fri, MRLST: dk gy & blk, blkly-sb ply, sft-frm, mod strd, c grs, sb rd-sb ang, mod fri, tr cal, tr pyr, occ calc incl, abnt bent, sting bl cut, bri bl ring

7600



500 WT 10.0/ VIS 47 300

WT 10.1/ VIS 47



5000

2908u

3100u

GRS (units)

GRS (ppm)

8,200

8,250

8,300

8,350

2846u

2785u

2520u

2845u

C1: 78.1%

C2: 11.3%

C3: 7.0%

C4: 3.6%

MD: 8.254

TVD: 7.267.7

Inclination: 89.97

Azimuth: 357.99

VS: 972.43

MD: 8.349

TVD: 7.267.11

Inclination: 90.74

Azimuth: 0.51

VS: 1.067.39

7000

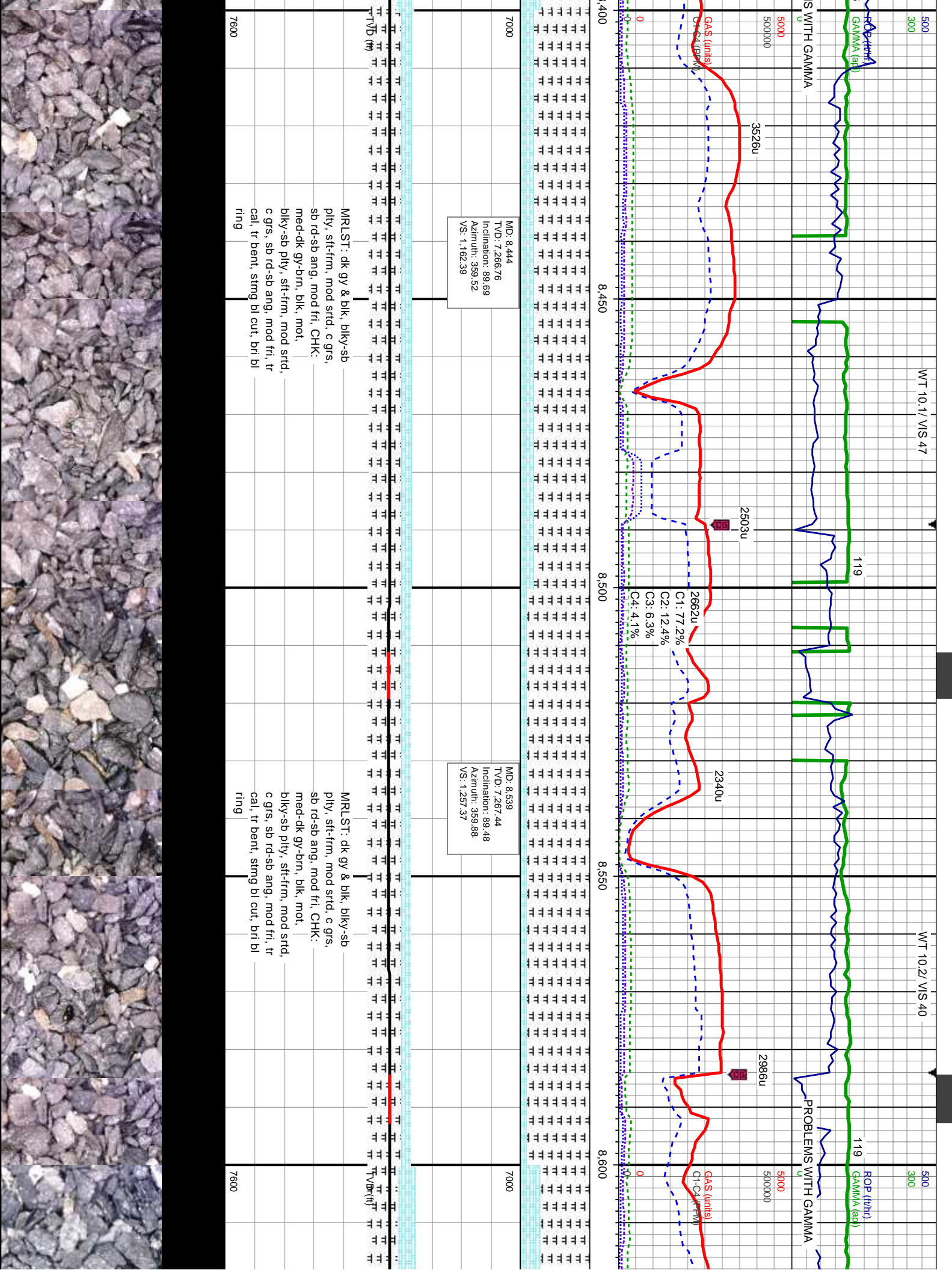
7600

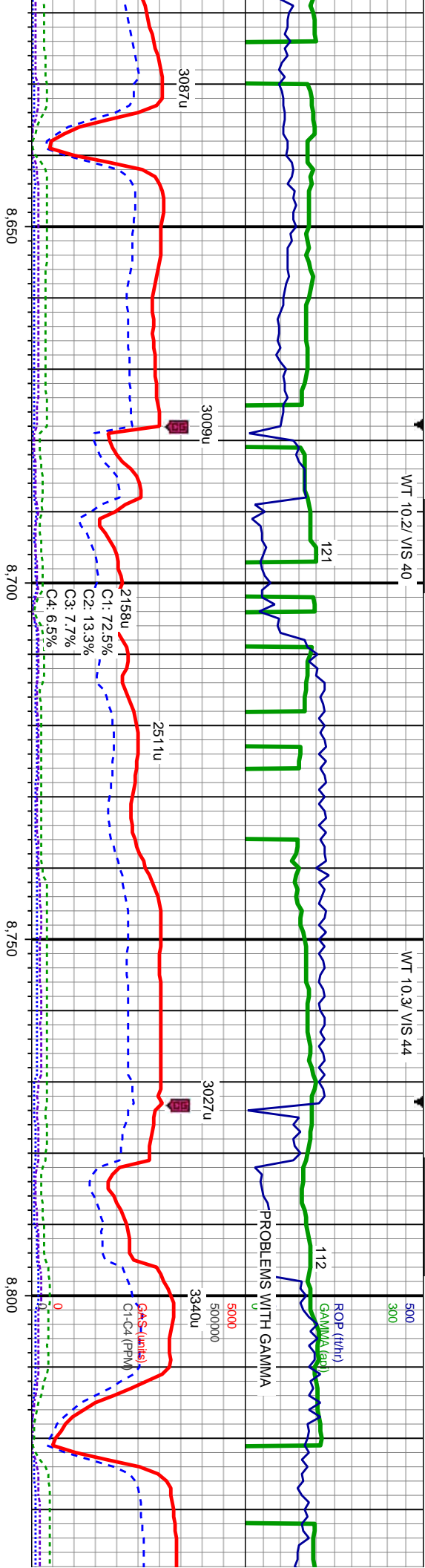
MRLST: dk gy & blk, blk-y-sb  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, CHK: dk  
gy-brn, blk, mot, blk-y-sb ply,  
sft-frm, mod strd, c grs, sb  
rd-sb ang, mod fri, tr cal, tr  
pyr, tr calc incl, abnt bent,  
string bl cut, bri bl ring

MRLST: dk gy & blk, blk-y-sb  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, CHK:  
med-dk gy-brn, blk, mot,  
blk-y-sb ply, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri, tr  
cal, tr pyr, tr calc incl, occ  
bent, string bl cut, bri bl ring









MD: 8.634  
TVD: 7.266.57  
Inclination: 91.57  
Azimuth: 359.03  
VS: 1.352.34

MD: 8.729  
TVD: 7.264.15  
Inclination: 91.36  
Azimuth: 359.9  
VS: 1.447.29

MD: 8.824  
TVD: 7.261.1  
Inclination: 92.31  
Azimuth: 1.75  
VS: 1.542.24

MR1ST: dk gy & blk, blk-y-sb  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, CHK:  
med-dk gy-brn, mot, blk-y-sb  
ply, sft-frm, mod strd, f-c grs,  
sb rd-sb ang, mod fri, occ cal,  
tr calc incl, tr bent, sting bl  
cut, bri bl ring

MR1ST: dk gy & blk, blk-y-sb  
ply, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, CHK:  
med-dk gy-brn, mot, blk-y-sb  
blk-y, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, abunt  
cal, tr bent, sting bl cut, bri bl  
ring

CH  
blk  
f-c  
MR  
ply  
sb  
str

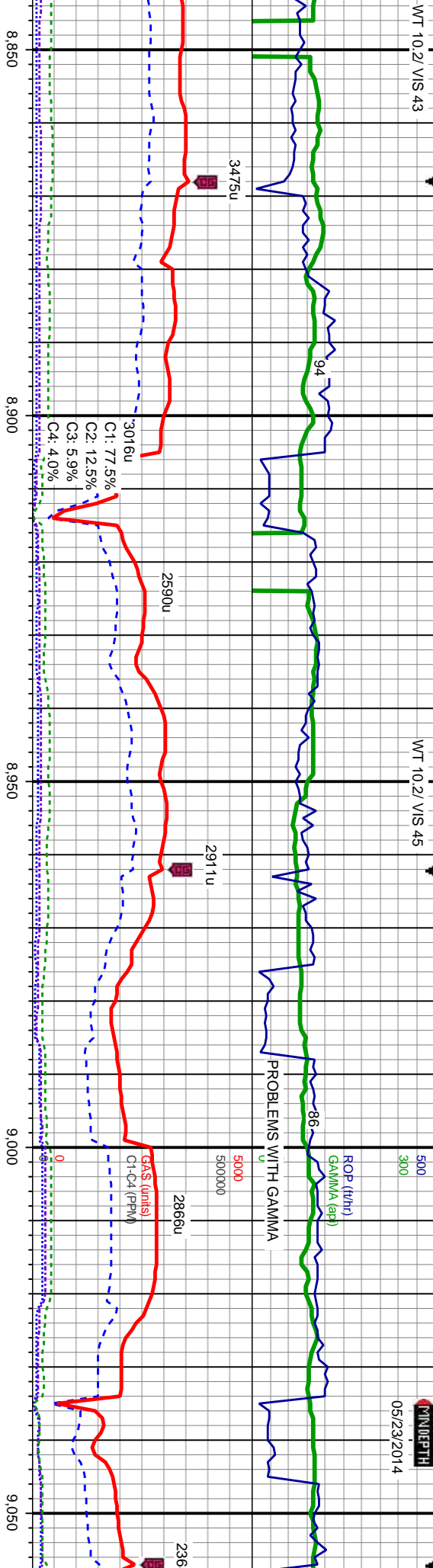




WT 10.2/ VIS 43

WT 10.2/ VIS 45

05/23/2014



MD: 8.919  
TVD: 7.257.4  
Inclination: 92.16  
Azimuth: 2.19  
VS: 1.637.14

MD: 9.015  
TVD: 7.254.3  
Inclination: 91.54  
Azimuth: 2.4  
VS: 1.733.04

K: med-dk gy-brn, mot,  
-sb blk, sft-frm, mod strd,  
grs, sb rd-sb ang, mod fri,  
LST: dk gy & blk, blk-sb  
, sft-frm, mod strd, c grs,  
d-sb ang, mod fri, tr cal,  
g bl cut, bri bl ring

CHK: lt-med gy-brn, mot,  
blk-sb blk, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
blk-sb blk, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri, tr  
cal incl, sting bl cut, bri bl ring

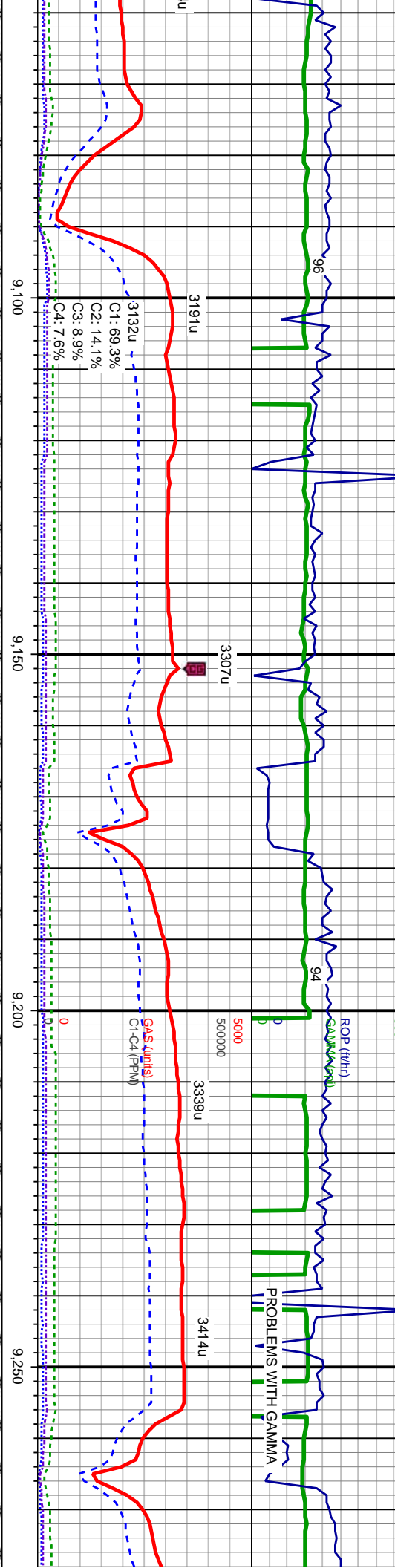
CHK: lt-med gy-brn, mot,  
blk-sb blk, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
blk-sb blk, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri, tr  
cal incl, sting bl cut, bri bl ring



WT 10.1/ VIS 45

WT 9.9/ VIS 45

WT 9.9/ VIS 45



MD: 9,110  
TVD: 7,253.1  
Inclination: 89.91  
Azimuth: 359.78  
VS: 1,828.02

MD: 9,205  
TVD: 7,253.1  
Inclination: 90.09  
Azimuth: 0.75  
VS: 1,923.02

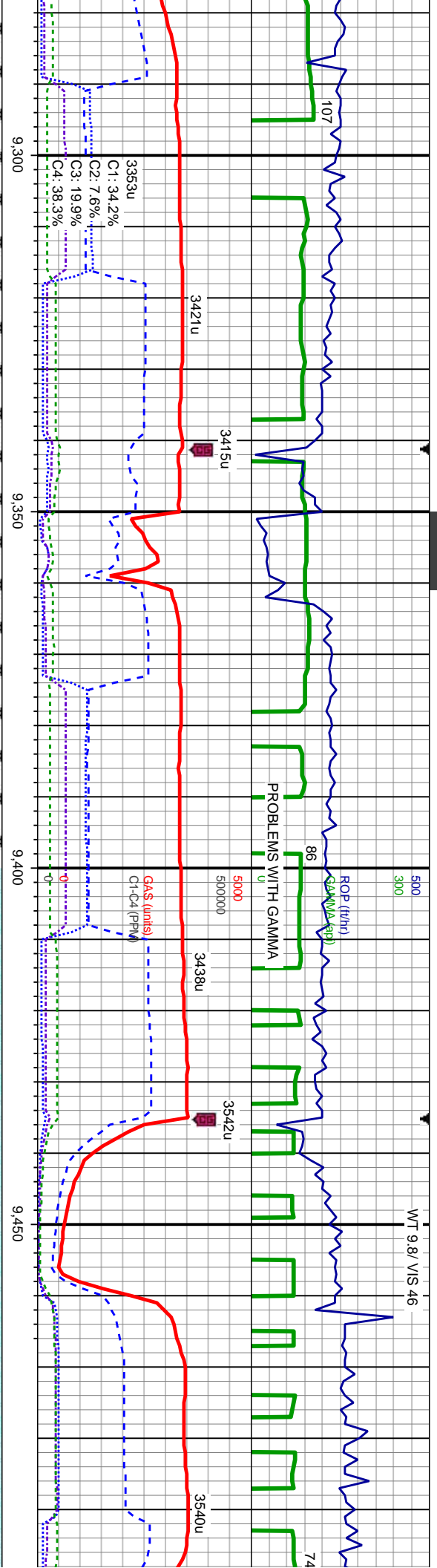
srted,	CHK: lt-med gy-brn, mod
fri,	blky-sb blky, sft-frm, mod srted,
srted,	c grs, sb rd-sb ang, mod fri,
fri, tr	MRLST: med-dk gy & blk,
ring	blky-sb ply, sft-frm, mod srted,
	c grs, sb rd-sb ang, mod fri, tr
	pyr, sting bl cut, bri bl ring

CHK: lt-med gy-brn, mod  
blky-sb blky, sft-frm, mod srted,  
c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
blky-sb ply, sft-frm, mod srted,  
c grs, sb rd-sb ang, mod fri, tr  
pyr, sting bl cut, bri bl ring

CHK: lt gy-brn, mod, blky-sb  
blky, sft-frm, mod srted, c grs,  
sb rd-sb ang, mod fri, MRLST:  
med-dk gy & blk, blky-sb ply,  
sft-frm, mod srted, c grs, sb  
rd-sb ang, mod fri, sting bl cut,  
bri bl ring







MD: 9,300  
TVD: 7,253.3  
Inclination: 89.66  
Azimuth: 0.14  
VS: 2,018.02

MD: 9,396  
TVD: 7,254.25  
Inclination: 89.2  
Azimuth: 1.02  
VS: 2,113.01

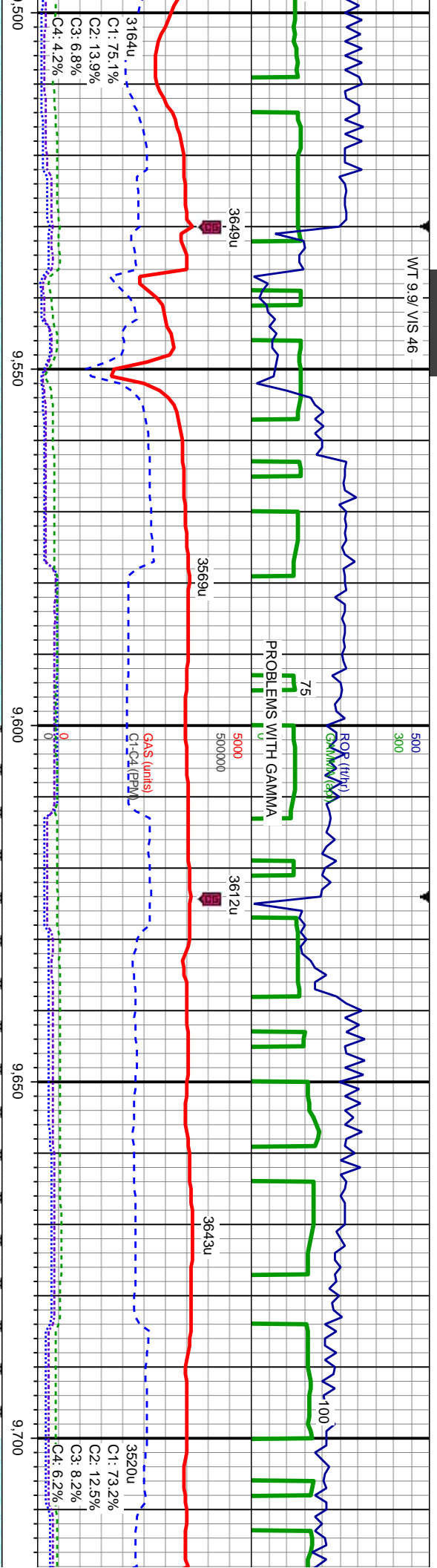
MD: 9,490  
TVD: 7,254.3  
Inclination: 90.74  
Azimuth: 0.76  
VS: 2,208.01

CHK: lt gy-brn, mot, blk-y-sb  
blk-y, sft-frm, mod strd, f-c grs,  
sb rd-sb ang, mod fri, MRLST:  
med-dk gy & blk, blk-y-sb ply,  
sft-frm, mod strd, f-c grs, sb  
rd-sb ang, mod fri, string bl cut,  
bri bl ring

CHK: lt gy-brn, mot, blk-y-sb  
blk-y, sft-frm, mod strd, f grs,  
sb rd-sb ang, mod fri, tr  
MRLST: med-dk gy & blk,  
blk-y-sb ply, sft-frm, mod strd, f  
grs, sb rd-sb ang, mod fri,  
string bl cut, bri bl ring



WT 9.9/ VIS 46

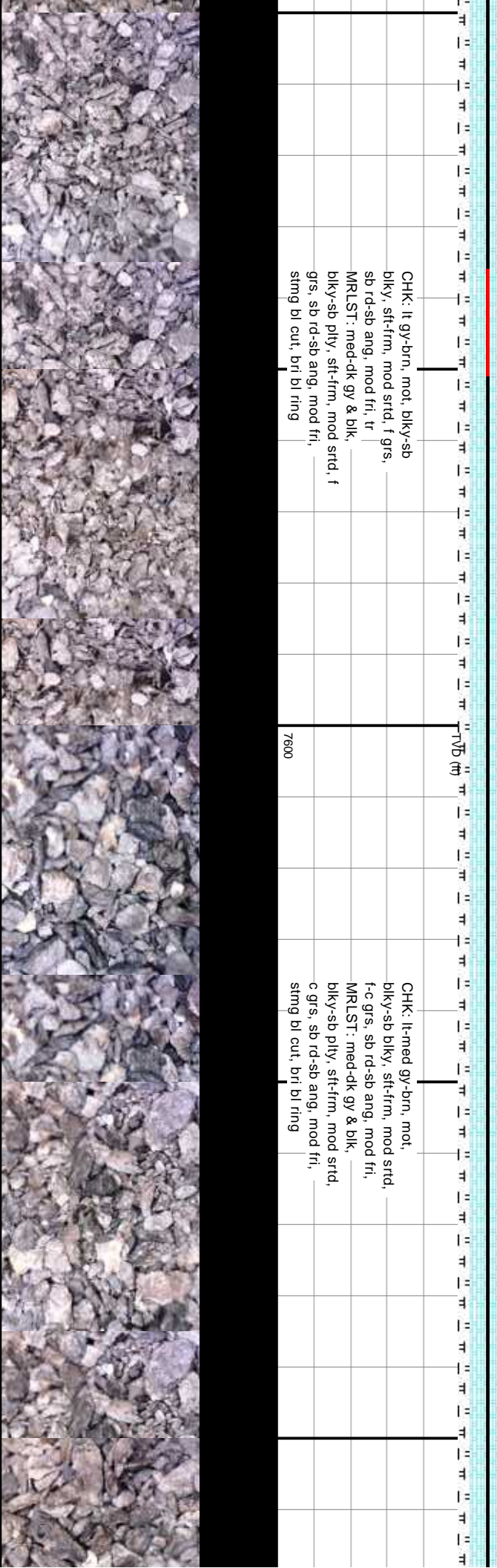


MD: 9.586  
TVD: 7.254.22  
Inclination: 89.35  
Azimuth: 0.58  
VS: 2.304.01

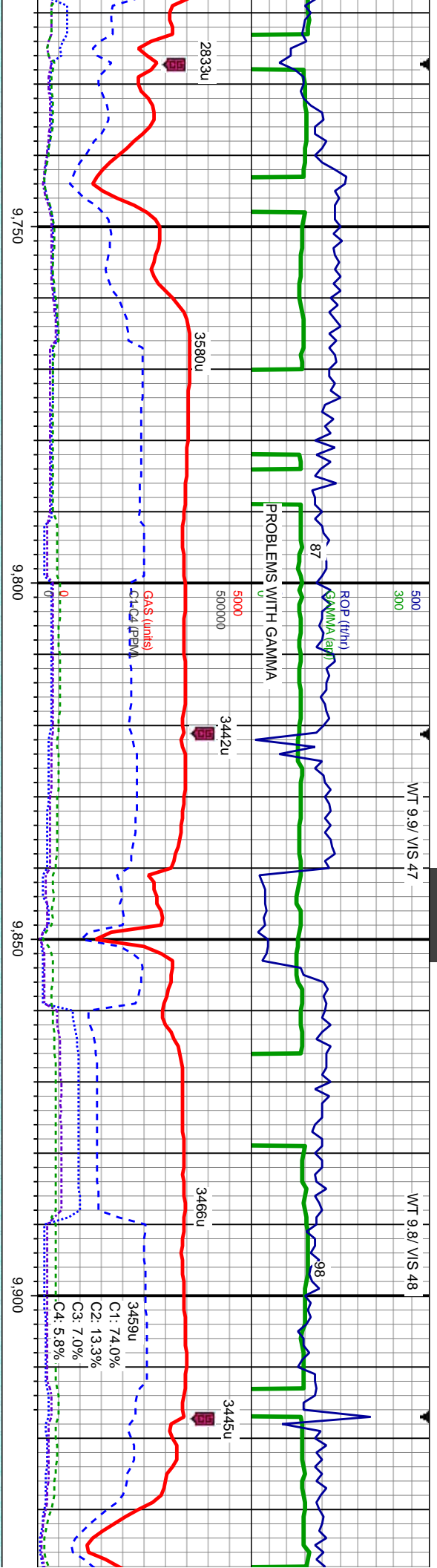
MD: 9.681  
TVD: 7.254.97  
Inclination: 89.75  
Azimuth: 0.44  
VS: 2.399

CHK: lt gy-brn, mot, blk-y-sb  
blk-y, sft-frn, mod strd, f grs,  
sb rd-sb ang, mod fri, tr  
MRLST: med-dk gy & blk,  
blk-y-sb ply, sft-frn, mod strd, f  
grs, sb rd-sb ang, mod fri,  
stmg bl cut, bri bl ring

CHK: lt-med gy-brn, mot,  
blk-y-sb blk-y, sft-frn, mod strd,  
f-c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
blk-y-sb ply, sft-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
stmg bl cut, bri bl ring







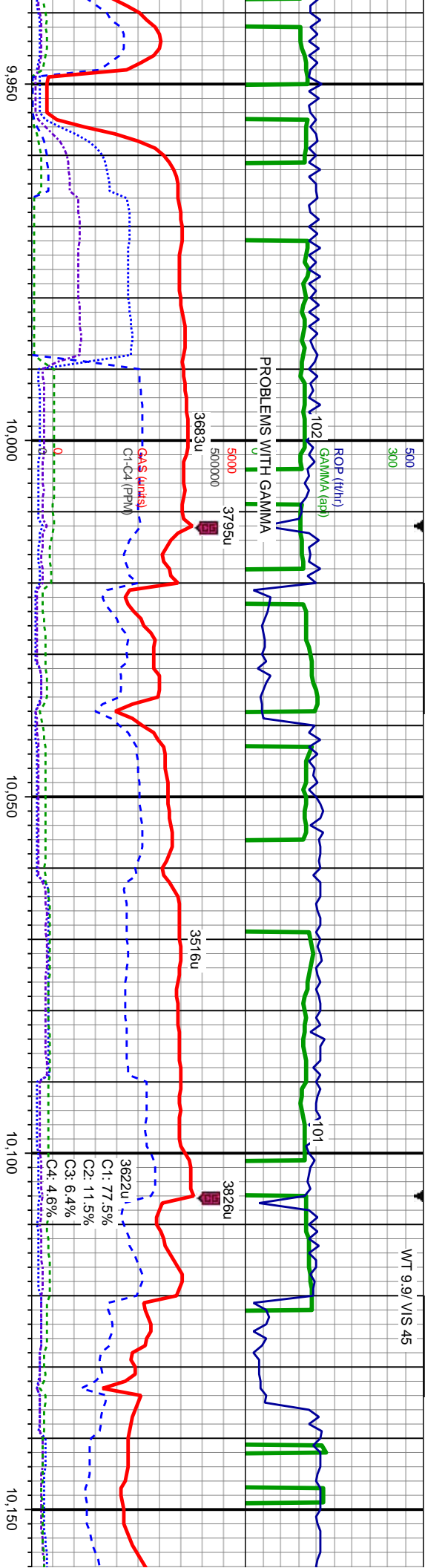
MD: 9.776  
TVD: 7.254.95  
Inclination: 90.28  
Azimuth: 0.05  
VS: 2.494

MD: 9.871  
TVD: 7.254.79  
Inclination: 89.91  
Azimuth: 0.81  
VS: 2.589

CHK: lt-med gy-brn, mot,	CHK: lt-med gy-brn, mot,
blky-sb blky, sft-frm, mod strd,	blky-sb blky, sft-frm, mod strd,
f-c grs, sb rd-sb ang, mod fri,	f-c grs, sb rd-sb ang, mod fri,
tr MRLST: med-dk gy & blk,	tr MRLST: med-dk gy & blk,
blky-sb pity, sft-frm, mod strd,	blky-sb pity, sft-frm, mod strd,
c grs, sb rd-sb ang, mod fri,	c grs, sb rd-sb ang, mod fri,
stmg bl cut, bri bl ring	stmg bl cut, bri bl ring



WT 9.9 V/S 45



MD: 9.966  
TVD: 7.254.35  
Inclination: 90.62  
Azimuth: 0.09  
VS: 2.684

MD: 10.061  
TVD: 7.253.99  
Inclination: 89.88  
Azimuth: 1.46  
VS: 2.778.99

MD: 10.156  
TVD: 7.255  
Inclination:  
Azimuth: 1  
VS: 2.873.9

HK: lt-med gy-brn, mot,  
biky-sb blkly, sft-firm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
biky-sb ply, sft-firm, mod strd,  
c grs, sb rd-sb ang, mod fri, tr  
al, stmg bl cut, bri bl ring

CHK: lt-med gy-brn, mot,  
biky-sb blkly, sft-firm, mod strd,  
f-c grs, sb rd-sb ang, mod fri,  
tr MRLST: med-dk gy & blk,  
biky-sb ply, sft-firm, mod strd,  
c grs, sb rd-sb ang, mod fri, tr  
cal, stmg bl cut, bri bl ring

CHK: lt-med gy-brn, m  
biky-sb blkly, sft-firm, n  
f-c grs, sb rd-sb ang, r  
MRLST: med-dk gy & l  
biky-sb ply, sft-firm, r  
c grs, sb rd-sb ang, m  
cal, abnt calc incl, stm  
bri bl ring







WT 9.9 / VIS 45  
300

ROP (ft/hr)

PROBLEMS WITH GAMMA

3623u  
5000  
500000

Gas (ml/s)  
Cl-C4 (ppm)

10.400

10.450

10.500

10.550

WT 9.9 / VIS 46

109

3963u

1754u  
C1: 68.2%  
C2: 13.9%  
C3: 9.1%  
C4: 8.9%

4005u

3884u

106

PROBLEM

7000

MD: 10.442  
TVD: 7260.55  
Inclination: 89.02  
Azimuth: 359.9  
VS: 3.159.92

MD: 10.537

TVD: 7262.54  
Inclination: 88.58  
Azimuth: 359.88  
VS: 3.254.89

TVDr (ft)

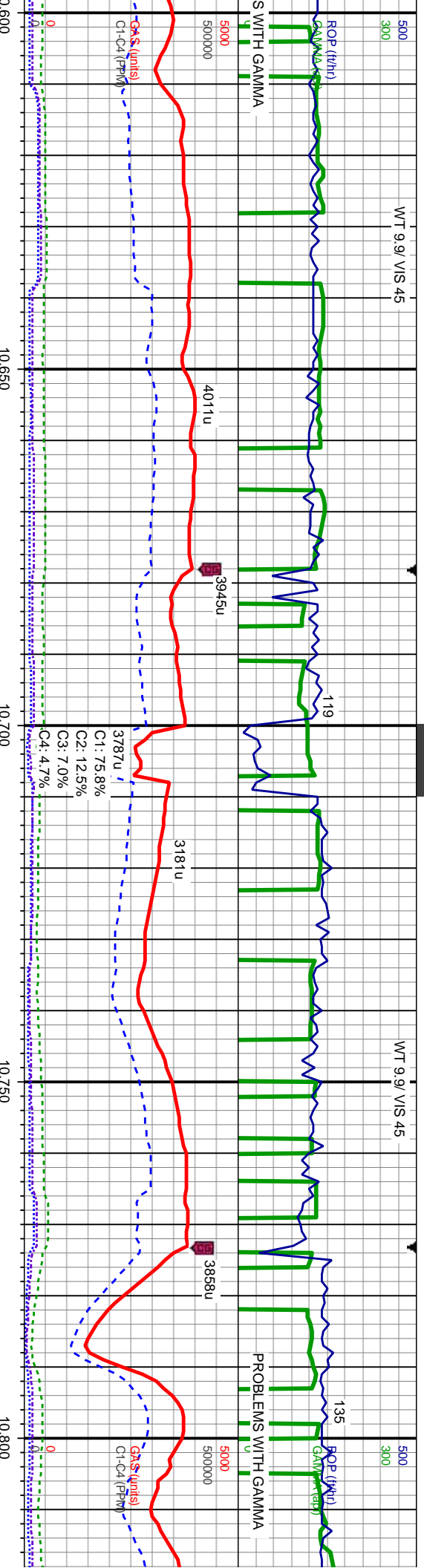
7600

CHK: med-dk gy-brn, mot,  
biky-sb biky, sft-frn, mod strd,  
f-c grs, sb rd-sb ang, mod fri,  
MRLST: med-dk gy & blk,  
biky-sb ply, sft-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, sting bl  
cut, bri bl ring

MRLST: med-dk gy & blk,  
biky-sb ply, sft-frn, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, CHK:  
med-dk gy-brn, blk, mot,  
biky-sb biky, sft-frn, mod strd,  
f-c grs, sb rd-sb ang, mod fri,  
tr cal, tr calc incl, sting bl cut,  
bri bl ring







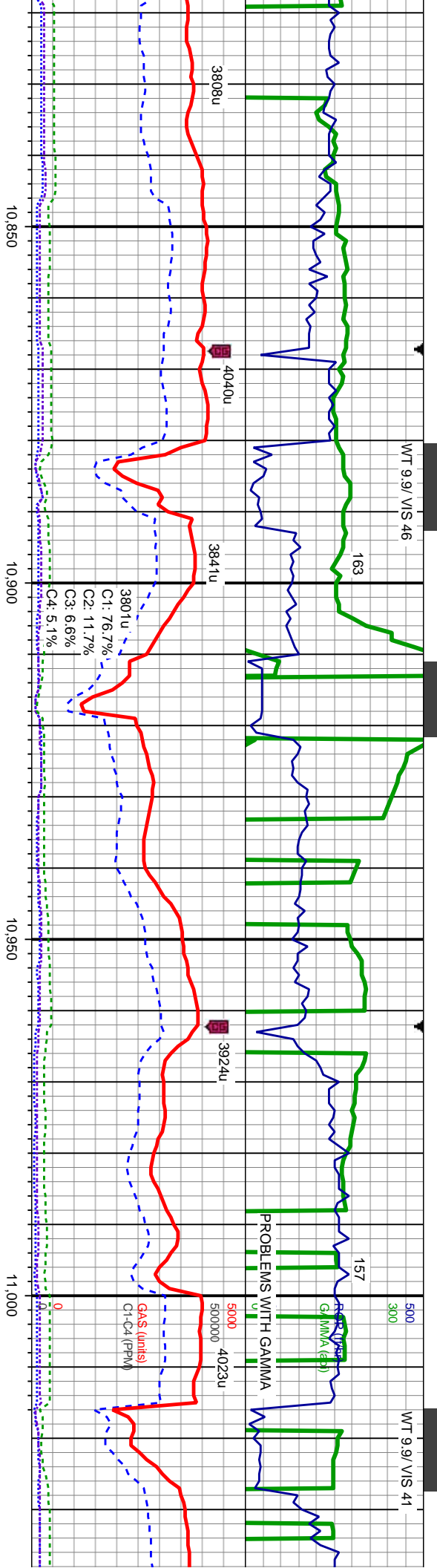
MD: 10.632  
TVD: 7.265.1  
Inclination: 88.33  
Azimuth: 359.16  
VS: 3.349.84

MD: 10.727  
TVD: 7.267.69  
Inclination: 88.55  
Azimuth: 359.3  
VS: 3.444.77

MRLST: med-dk gy & blk,  
biky-sb pily, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, CHK:  
med-dk gy-brn, blk, mot,  
biky-sb biky, sft-frm, mod strd,  
f-c grs, sb rd-sb ang, mod fri,  
tr cal, tr calc incl, tr pyr, sting  
bl cut, bri bl ring

MRLST: dk gy & blk, biky-sb  
pily, sft-frm, mod strd, c grs,  
sb rd-sb ang, mod fri, occ cal,  
tr calc incl, CHK: med-dk  
gy-brn, blk, mot, biky-sb biky,  
sft-frm, mod strd, f-c grs, sb  
rd-sb ang, mod fri, tr cal, sting  
bl cut, bl ring





10,822	MD: 10.918	7000	MD: 11.013
7,270.35	TVD: 7,271.47		TVD: 7,270.6
Inclination: 88.24	Inclination: 90.43		Inclination: 90.62
uth: 358.75	Azimuth: 359.93		Azimuth: 0.34
3,539.7	VS: 3,635.66		VS: 3,730.65

MRSLT: med-dk gy & blk, biky-sb pily, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, occ cal, tr calc incl, CHK: med-dk gy-brn, blk, mot, biky-sb biky, sft-frn, mod strd, f-c grs, sb rd-sb ang, mod fri, tr bent, sting bl cut, bl ring	MRSLT: med-dk gy & blk, biky-sb pily, sft-frn, mod strd, c grs, sb rd-sb ang, mod fri, occ cal, tr calc incl, CHK: med-dk gy-brn, blk, mot, biky-sb biky, sft-frn, mod strd, f-c grs, sb rd-sb ang, mod fri, tr bent, sting bl cut, bl ring	MR blk biky c gr occ med biky sb l stm
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WT 9.8/ VIS 40

500  
300

ROP (ft/hr)

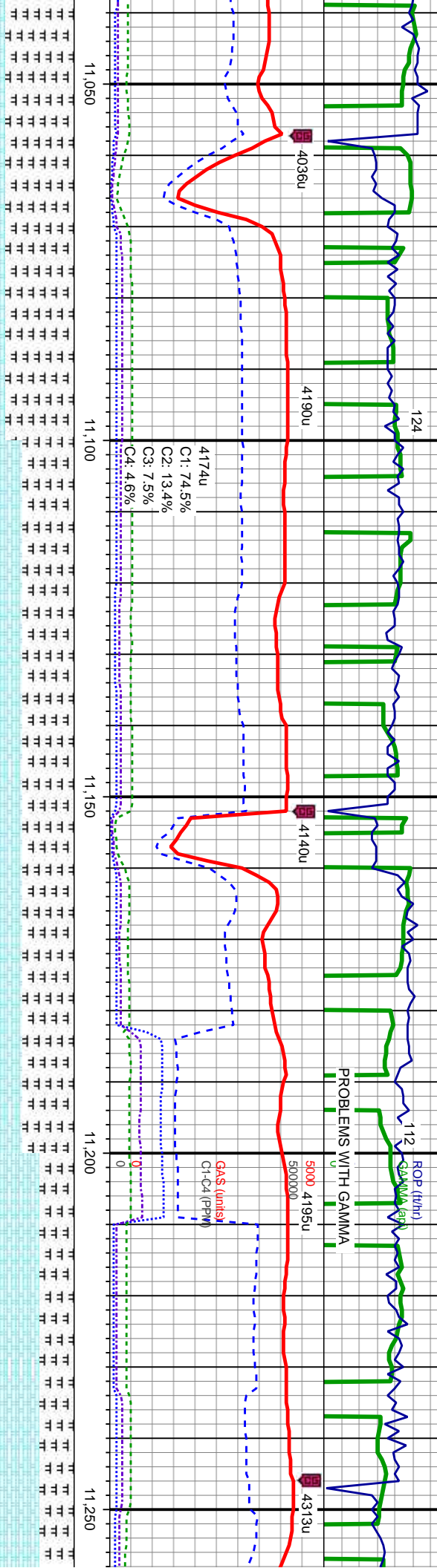
5000 4195u

5000000

PROBLEMS WITH GAMMA

GAS (units)  
C1-C4 (PPM)

11,050 11,100 11,150 11,200 11,250



MD: 11,108  
TVD: 7,269.87  
Inclination: 90.25  
Azimuth: 0.73  
VS: 3,825.65

MD: 11,203  
TVD: 7,269.31  
Inclination: 90.43  
Azimuth: 0.31  
VS: 3,920.65

ST: med-dk gy & blk,  
-sb ply, sft-frm, mod strd,  
s, sb rd-sb ang, mod fri,  
cal, tr calc incl, CHK:  
s-dk gy-brn, mot, blk-y-sb  
-, sft-frm, mod strd, f-c grs,  
d-sb ang, mod fri, tr cal,  
g bl cut, bl ring

MR LST: med-dk gy & blk,  
blk-y-sb ply, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, CHK:  
med-dk gy-brn, mot, blk-y-sb  
blk-y, sft-frm, mod strd, f-c grs,  
sb rd-sb ang, mod fri, tr cal,  
sting bl cut, bl ring

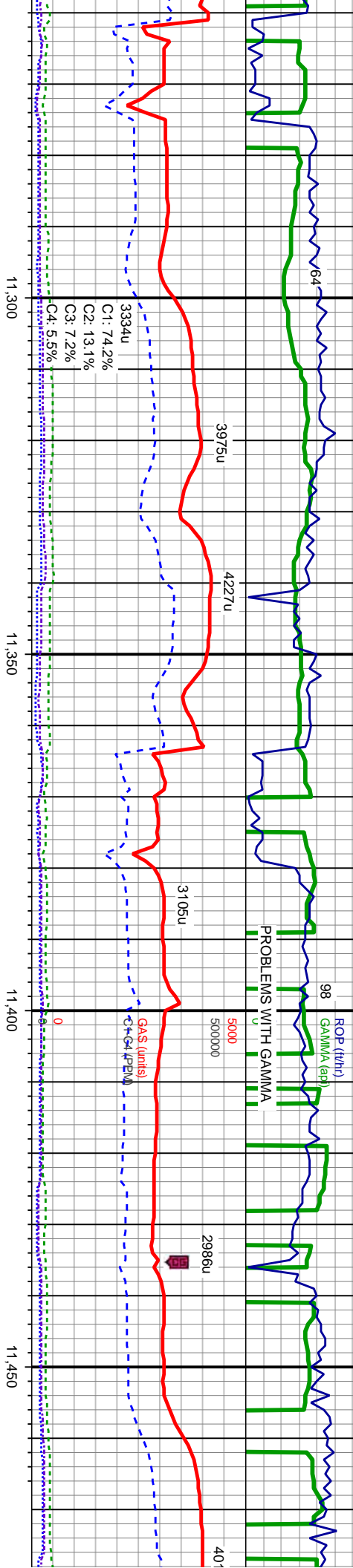
7600



WT 9.8/ VIS 40

MINDEPTH  
05/24/2014

WT 9.8/ VIS 40



MD: 11,298  
TVD: 7,269.11  
Inclination: 89.81  
Azimuth: 1.7  
VS: 4,015.64

MD: 11,393  
TVD: 7,270.42  
Inclination: 88.61  
Azimuth: 2.53  
VS: 4,110.6

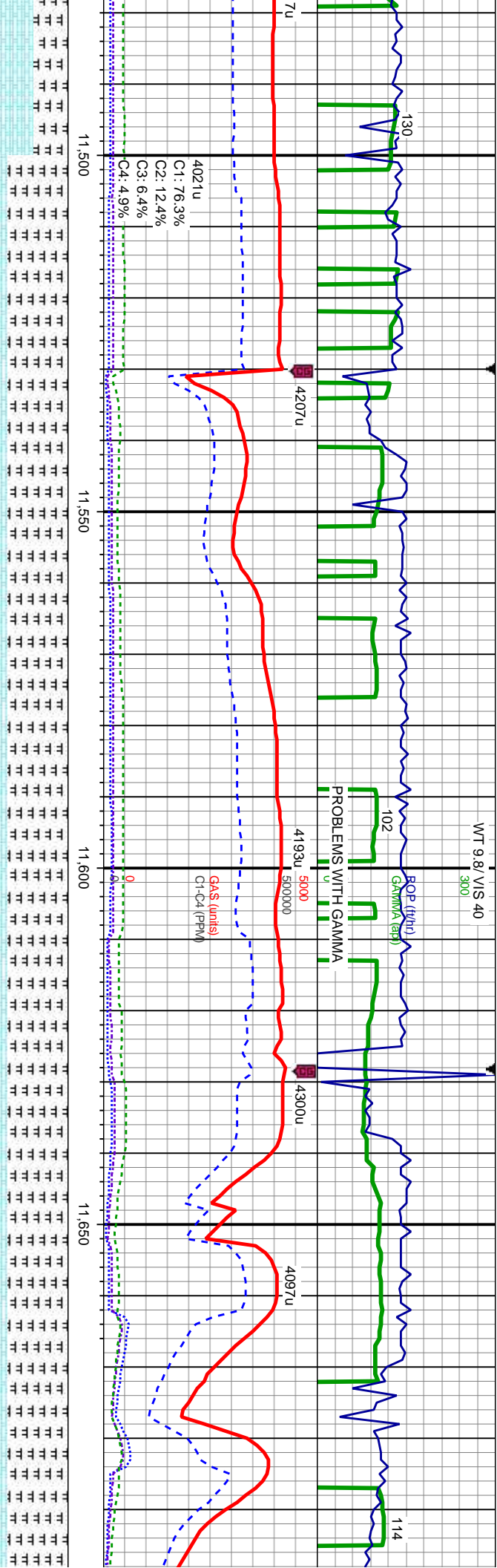
ky-sb  
grs.  
LST:  
ply,  
b  
l, tr  
alc  
CHK: lt-dk gy-brn, mot, blk-ysb  
blk-ysb, stf-fm, mod srd, f-c grs,  
sb rd-sb ang, mod fri, MRLST:  
med-dk gy & blk, blk-ysb ply,  
stf-fm, mod srd, c grs, sb  
rd-sb ang, mod fri, occ cal, tr  
calc incl, tr cal, tr pyr, tr calc  
incl, string bl cut, bl ring

7600

CHK: lt-dk gy-brn, mot, blk-ysb  
blk-ysb, stf-fm, mod srd, f-c grs,  
sb rd-sb ang, mod fri, MRLST:  
med-dk gy & blk, blk-ysb ply,  
stf-fm, mod srd, c grs, sb  
rd-sb ang, mod fri, occ cal, tr  
calc incl, tr cal, abunt calc  
incl, string bl cut, bl ring







MD: 11.488  
TVD: 7.272.98  
Inclination: 88.3  
Azimuth: 1.49  
VS: 4.205.53

MD: 11.583  
TVD: 7.275.83  
Inclination: 88.27  
Azimuth: 1.24  
VS: 4.300.48

MD: 11.678  
TVD: 7.278.64  
Inclination: 88.34  
Azimuth: 0.92  
VS: 4.395.44

MRLST: med-dk gy & blk,  
biky-sb pily, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, CHK: lt-dk  
gy-brn, mot, biky-sb blk,  
sft-frm, mod strd, f-c grs, sb  
rd-sb ang, mod fri, occ cal  
incl, stmg bl cut, bl ring

MRLST: med-dk gy & blk,  
biky-sb pily, sft-frm, mod strd,  
c grs, sb rd-sb ang, mod fri,  
occ cal, tr calc incl, CHK:  
med-dk gy-brn, mot, biky-sb  
blk, sft-frm, mod strd, f-c grs,  
sb rd-sb ang, mod fri, occ cal  
incl, stmg bl cut, bl ring

