COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	Carlson H-15-16HC		
Location	Sec 15 T5N R65W		
State	Colorado	**County**	Weld
Country	United States	**Rig Number**	Frontier (Utah) 8
API Number	05-123-41717	**AFE #**	2014WELDH15.16HC_1
Region	DJ Basin	**Field**	Wattenberg
Spud Date	7/17/2015	**Drilling Completed**	9/10/2015
Surface Coordinates	N 40.403697 W 104.641185		
Bottom Hole Coordinates	Sec 16 T5N R65W: 1685 FNL 2339 FWL		
Ground Elevation	4621'	**K.B. Elevation**	4643'
Logged Interval	6000' **To** 14861'	**Total Depth**	14861'
Formation	Codell		
Type of Drilling Fluid	Water/LSND		

Operator

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202

Geologist

Name Mark E. Brown

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202

BAYSWATE
EXPLORATION & PRODUCT

Other

Wellsite Logging Company	Columbine Logging Inc
Robert Davis	Wellsite Geologist
Brad Wilson	Senior Wellsite Geologist
Joey Lucy	Wellsite Geologist

Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Rock Types

UNKNOWN	COAL	MARLSTONE	SHALY SANDSTONE
ANHYDRITE	CONGLOMERATE	METAMORPHIC	SHALY SILTSTONE
BENTONITE	DOLOMITE	NO SAMPLE	SILTY SHALE
BRECCIA	DOLOMITIC LIMESTONE	SALT	SILTSTONE
CHALK	GRANITE	SANDSTONE	TILL
CEMENT	GYPSUM	SALT-PEPPER SAND	TUFF
CHERT	IGNEOUS	SHALE	WELDED TUFF
CLAY CHOKE SAND	SIDERITE or LIMONITE	SHALE COLORED	
CLAYSTONE	LIMESTONE	SHALE GRAY	

Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHOIPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA
- FOSSIL
- GASTROPOD
- INOCERAMUS
- 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
- MARCASITE
- MARLSTONE
- MICACEOUS
- MINERAL CRYSTALS
- NODULES
- PHOSPHATE PELLETS
- PYRITE
- SALT CAST
- SANDY
- SIDERITE
- 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

Oil Show

- PINPOINT
- VUGGY
- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Engineering

- BIT
- CONNECTION (UP)
- CONNECTION (DOW

Porosity

- CONNECTION GAS
- EARTHY
- CONNECTION GA
- FENESTRAL
- TRIP GAS
- FRACTURE
- TRIP GAS (LEFT)
- INTERCRYSTALLINE
- DOWN TIME GAS
- INTEROOLITIC
- DOWN TIME GAS
- MOLDIC
- CORE - LOST
- ORGANIC
- CORE - RECOVERED

Other Symbols

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

OIL SHOW

MN DEPTH UP

MN DEPTH (DOWN)

NORMAL FAULT

OVERTURNED STRATA

REVERSE FAULT

CASING

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

DRILL STEM TEST

MN DEPTH

Rounding

ANGULAR

ROUNDED

SUBANG

SUBRND

Textures

BOUNDSTONE

CHALKY

CRYPTOXLN

EARTHY

FINELYXLN

GRAINSTONE

LITHOGRAPHIC

MICROXLN

MUDSTONE

PACKSTONE

WACKESTONE

Sorting

MODERATE

POOR

WELL

Slide/Rotate

ROP

ROP

400

ROP (ft/hr)

0

372

242

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

6000

600000

GAS (units)

C1-C4 (PPM)

0

COLUMBINE LOGGING RIGGED UP ON 7/18/2015 MANNED 2-PERSON LOGGING WITH BLOODHOUND GAS CHROMATOGRAPH #0298

2948u

970u

C1: 71%

C2: 13%

C3: 16%

C4: 0%

Depth Labels

5,960 5,970 5,980 5,990 **6,000** 6,010 6,020 6,030 6,040 **6,050** 6,060 6,070 6,080 6,090 **6,100** 6,110 6,120 6,130

% Lith

Gamma

GAMMA

300

GAMMA (units)

145

112

Well Bore

TVD

5900

7100

TVD (ft)

MD: 6,020'
TVD: 5,968.25'
Inclination: 2.2°
Azimuth: 155.4°
VS: -240.44'

MD: 6,115'
TVD: 6,063.19'
Inclination: 1.9°
Azimuth: 164.7°
VS: -241.34'

BEGIN LOGGING F/ 6000' MD @ 01:00 HRS ON 7/19/2015

SLTY SH: med-dk gy, slt-mic gr, sl frm, sb plty-plty, rthy-sb rthy tex, mot ip; SHY SLTST: lt-med gy, slt-vf gr, sl frm-hd, sb plty-sb blky, gt tex, arg cmt, sh incl, non calc, slow difse, mod stmg, bri bl cut

SLTY SH: med-dk gy, slt-mic gr, sl

SLTST: lt-med gy, slt-vf gr, sl frm-h

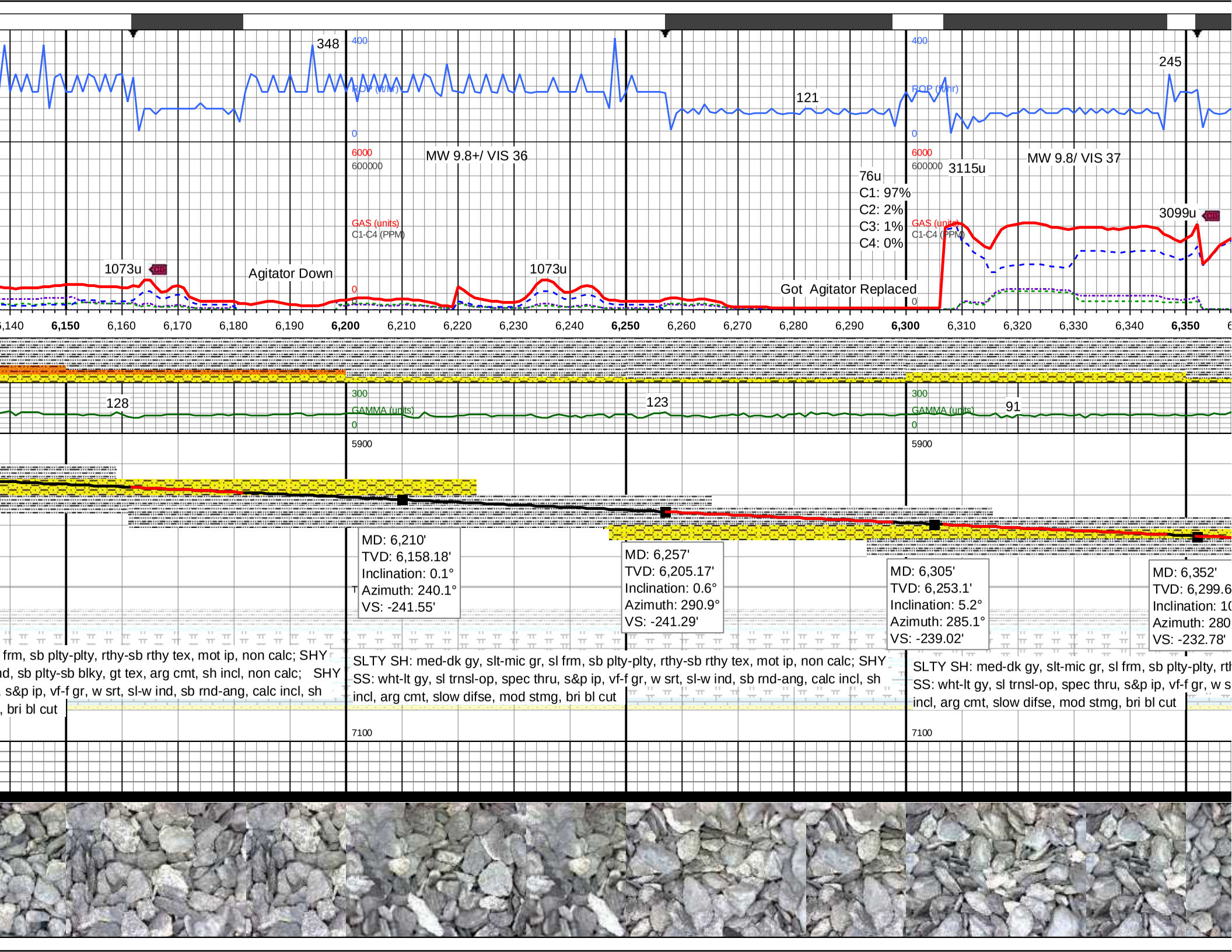
SS: wht-lt gy, sl trnsl-op, spec thru,

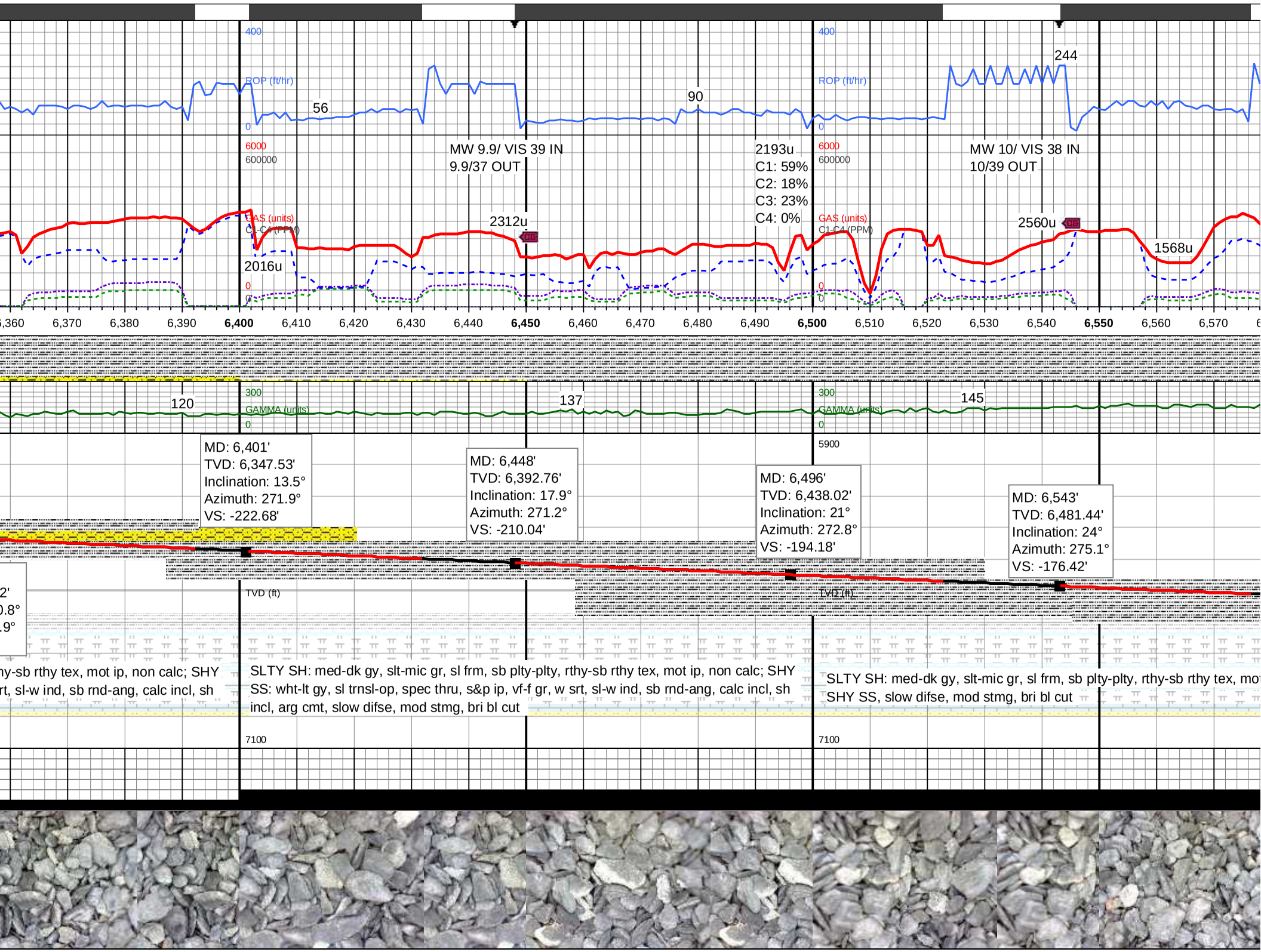
incl, arg cmt, slow difse, mod stmg

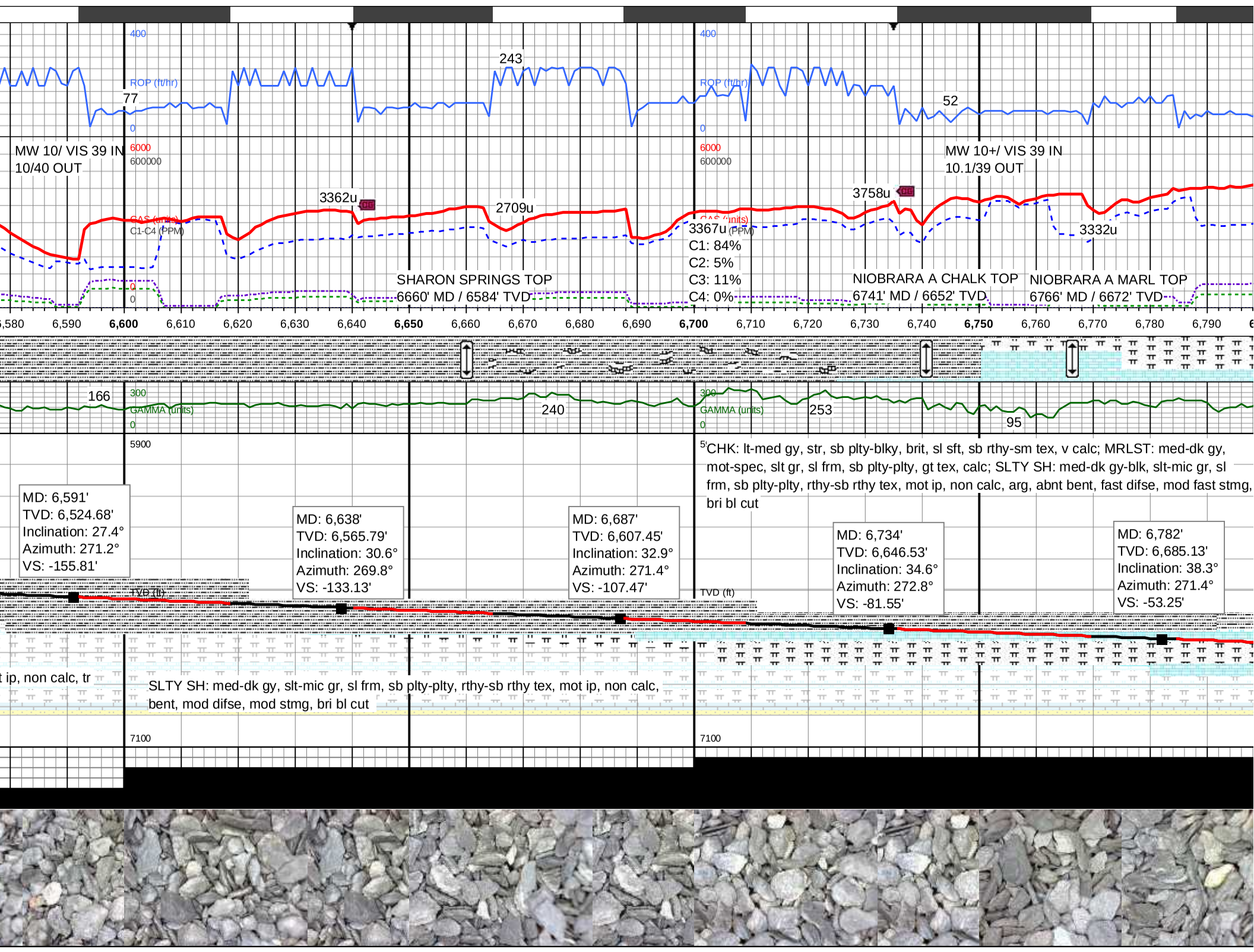
Oil Show

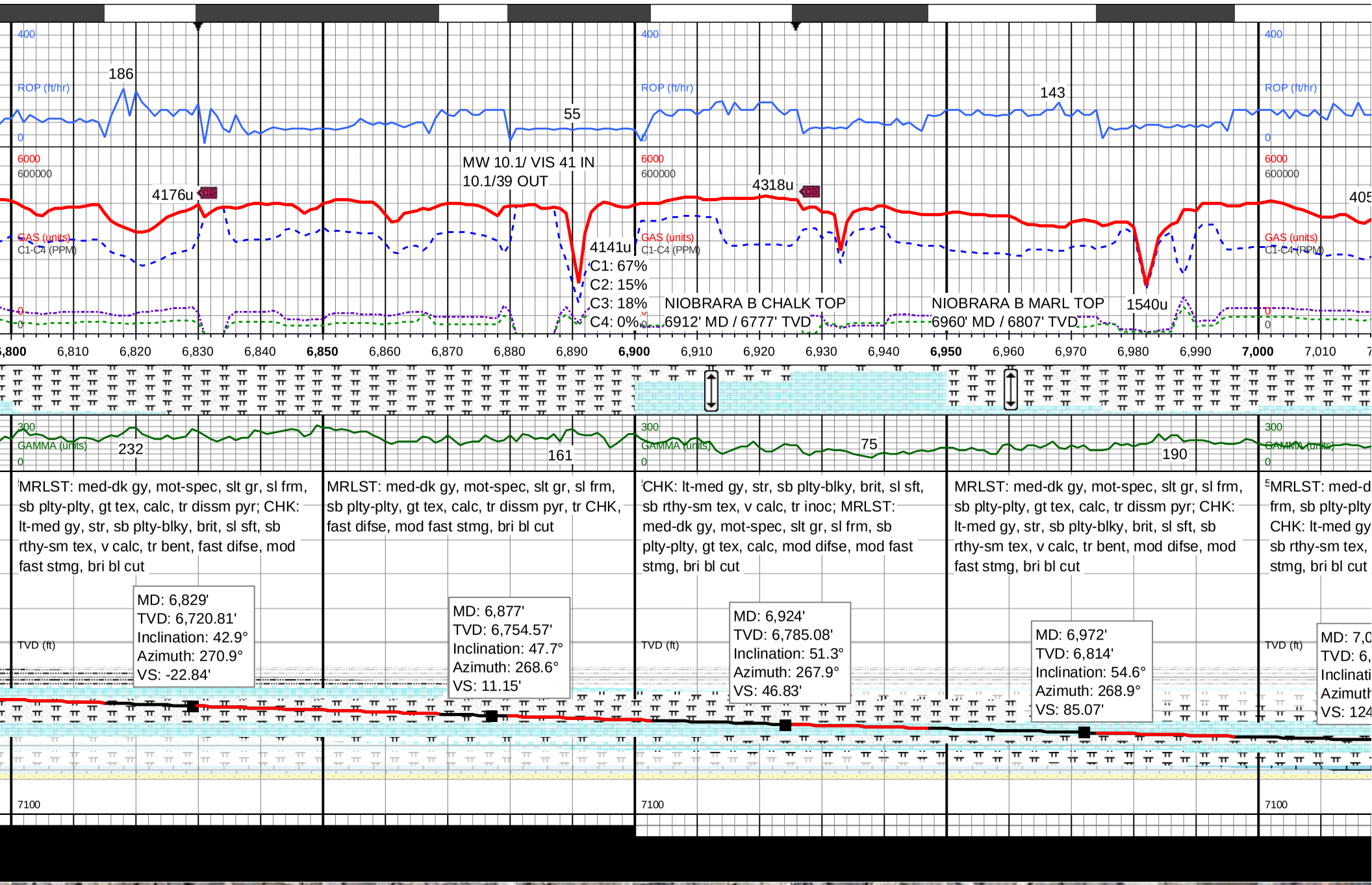
E
G
M
F
T
ST

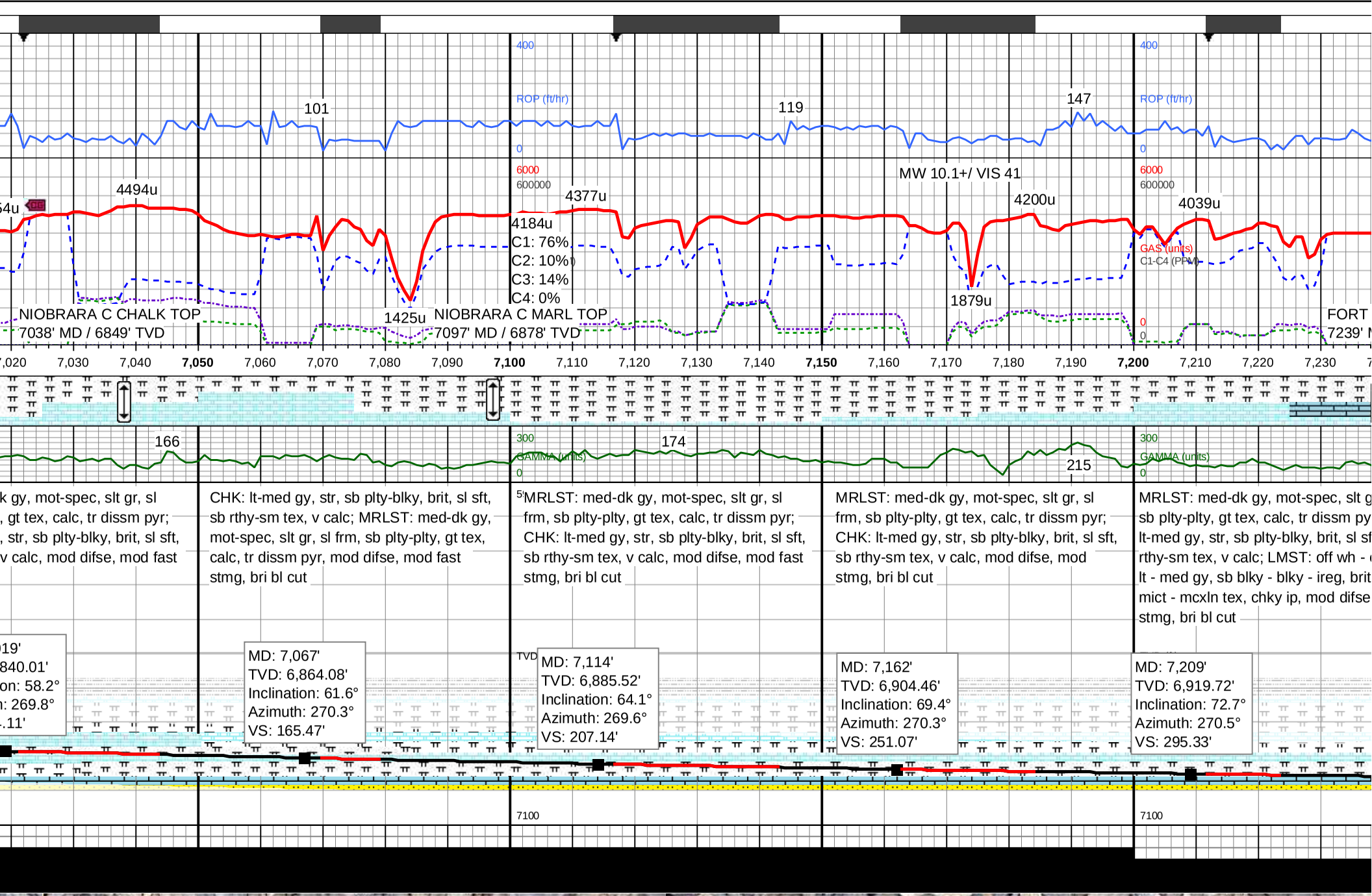
Images

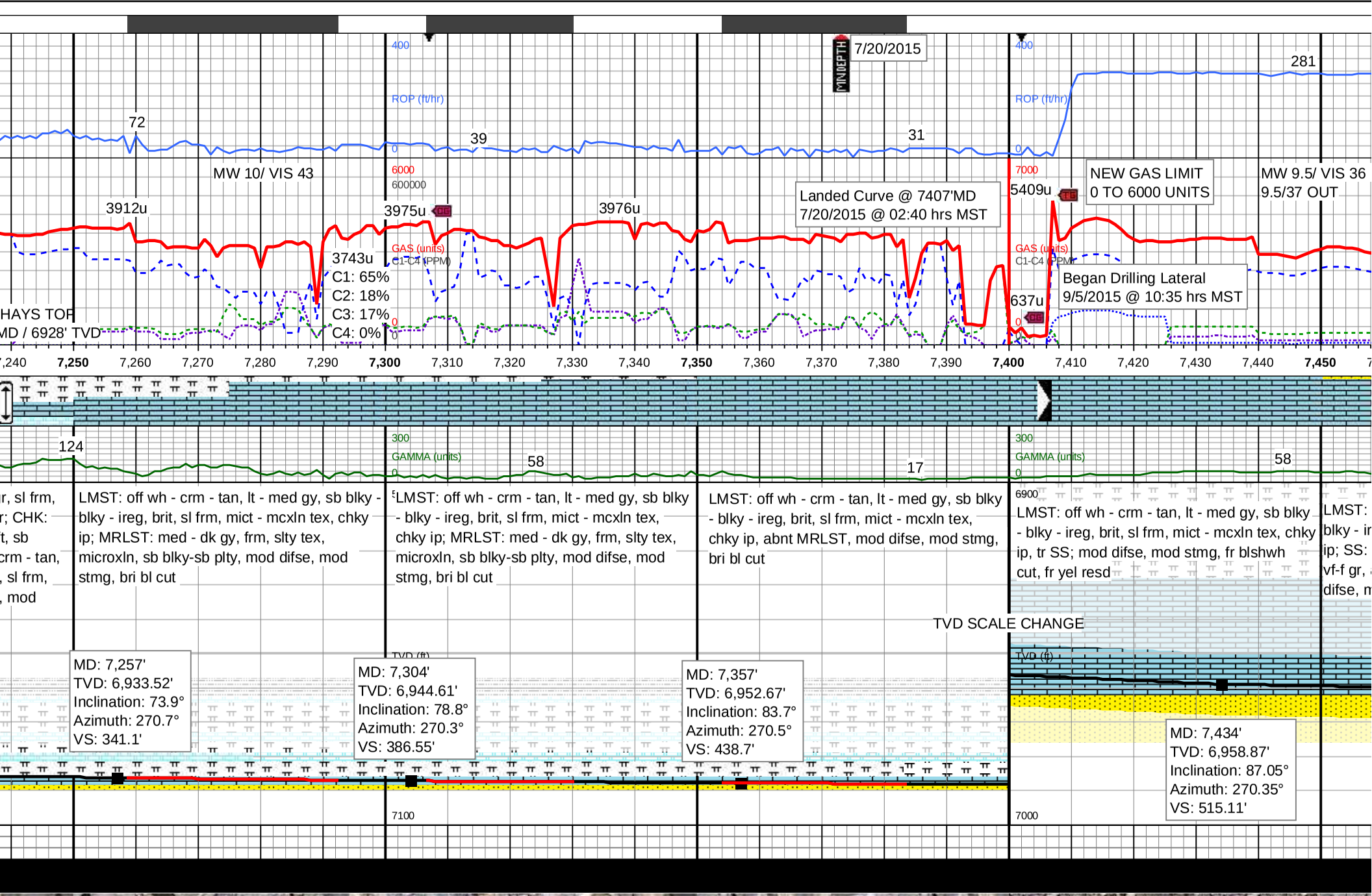

348
400
ROP (fph)
0
6000
600000
GAS (units)
C1-C4 (PPM)
0
MW 9.8+/ VIS 36
1073u
Agitator Down
1073u
121
400
ROP (fph)
0
6000
600000
GAS (units)
C1-C4 (PPM)
0
Got Agitator Replaced
76u
C1: 97%
C2: 2%
C3: 1%
C4: 0%
3115u
MW 9.8/ VIS 37
245
3099u
6,140
6,150
6,160
6,170
6,180
6,190
6,200
6,210
6,220
6,230
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
128
300
GAMMA (units)
0
5900
123
300
GAMMA (units)
0
5900
91
MD: 6,210'
TVD: 6,158.18'
Inclination: 0.1°
Azimuth: 240.1°
VS: -241.55'
MD: 6,257'
TVD: 6,205.17'
Inclination: 0.6°
Azimuth: 290.9°
VS: -241.29'
MD: 6,305'
TVD: 6,253.1'
Inclination: 5.2°
Azimuth: 285.1°
VS: -239.02'
MD: 6,352'
TVD: 6,299.6
Inclination: 10
Azimuth: 280
VS: -232.78'
frm, sb plty-plty, rthy-sb rthy tex, mot ip, non calc; SHY
nd, sb plty-sb blky, gt tex, arg cmt, sh incl, non calc; SHY
s&p ip, vf-f gr, w srt, sl-w ind, sb rnd-ang, calc incl, sh
bri bl cut
SLTY SH: med-dk gy, slt-mic gr, sl frm, sb plty-plty, rthy-sb rthy tex, mot ip, non calc; SHY
SS: wht-lt gy, sl trnsl-op, spec thru, s&p ip, vf-f gr, w srt, sl-w ind, sb rnd-ang, calc incl, sh
incl, arg cmt, slow difse, mod stmg, bri bl cut
7100
SLTY SH: med-dk gy, slt-mic gr, sl frm, sb plty-plty, rth
SS: wht-lt gy, sl trnsl-op, spec thru, s&p ip, vf-f gr, w s
incl, arg cmt, slow difse, mod stmg, bri bl cut
7100

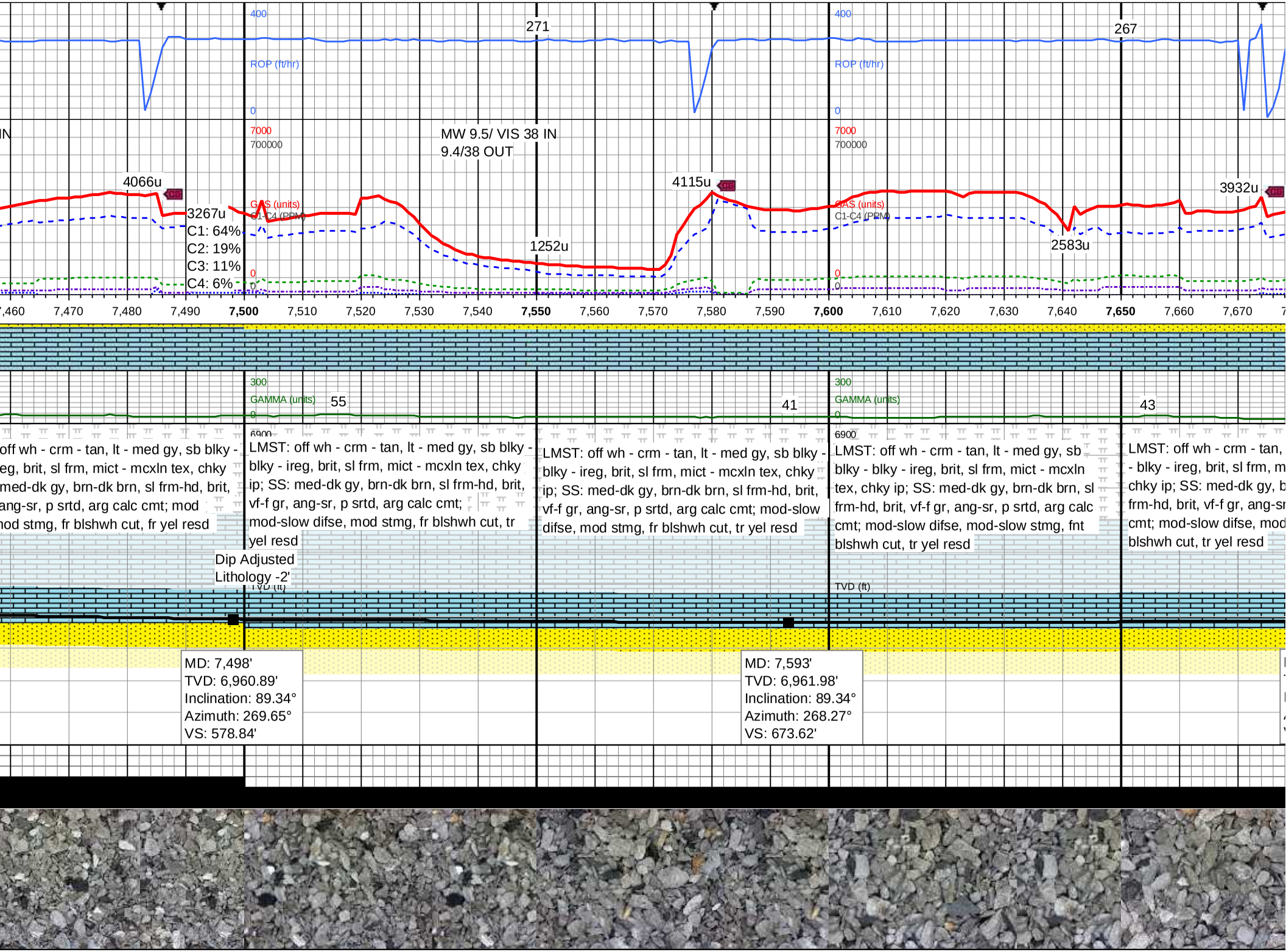

400
ROP (ft/hr)
0
56
90
244
6000
600000
GAS (units)
C1-C4 (PPM)
2016u
2312u
2193u
C1: 59%
C2: 18%
C3: 23%
C4: 0%
2560u
1568u
MW 9.9/ VIS 39 IN
9.9/37 OUT
MW 10/ VIS 38 IN
10/39 OUT
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430
6,440
6,450
6,460
6,470
6,480
6,490
6,500
6,510
6,520
6,530
6,540
6,550
6,560
6,570
300
GAMMA (units)
120
137
145
5900
MD: 6,401'
TVD: 6,347.53'
Inclination: 13.5°
Azimuth: 271.9°
VS: -222.68'
MD: 6,448'
TVD: 6,392.76'
Inclination: 17.9°
Azimuth: 271.2°
VS: -210.04'
MD: 6,496'
TVD: 6,438.02'
Inclination: 21°
Azimuth: 272.8°
VS: -194.18'
MD: 6,543'
TVD: 6,481.44'
Inclination: 24°
Azimuth: 275.1°
VS: -176.42'
TVD (ft)
SLTY SH: med-dk gy, slt-mic gr, sl frm, sb plty-plty, rthy-sb rthy tex, mot ip, non calc; SHY SS: wht-lt gy, sl trnsl-op, spec thru, s&p ip, vf-f gr, w srt, sl-w ind, sb rnd-ang, calc incl, sh incl, arg cmt, slow difse, mod stmg, bri bl cut
7100

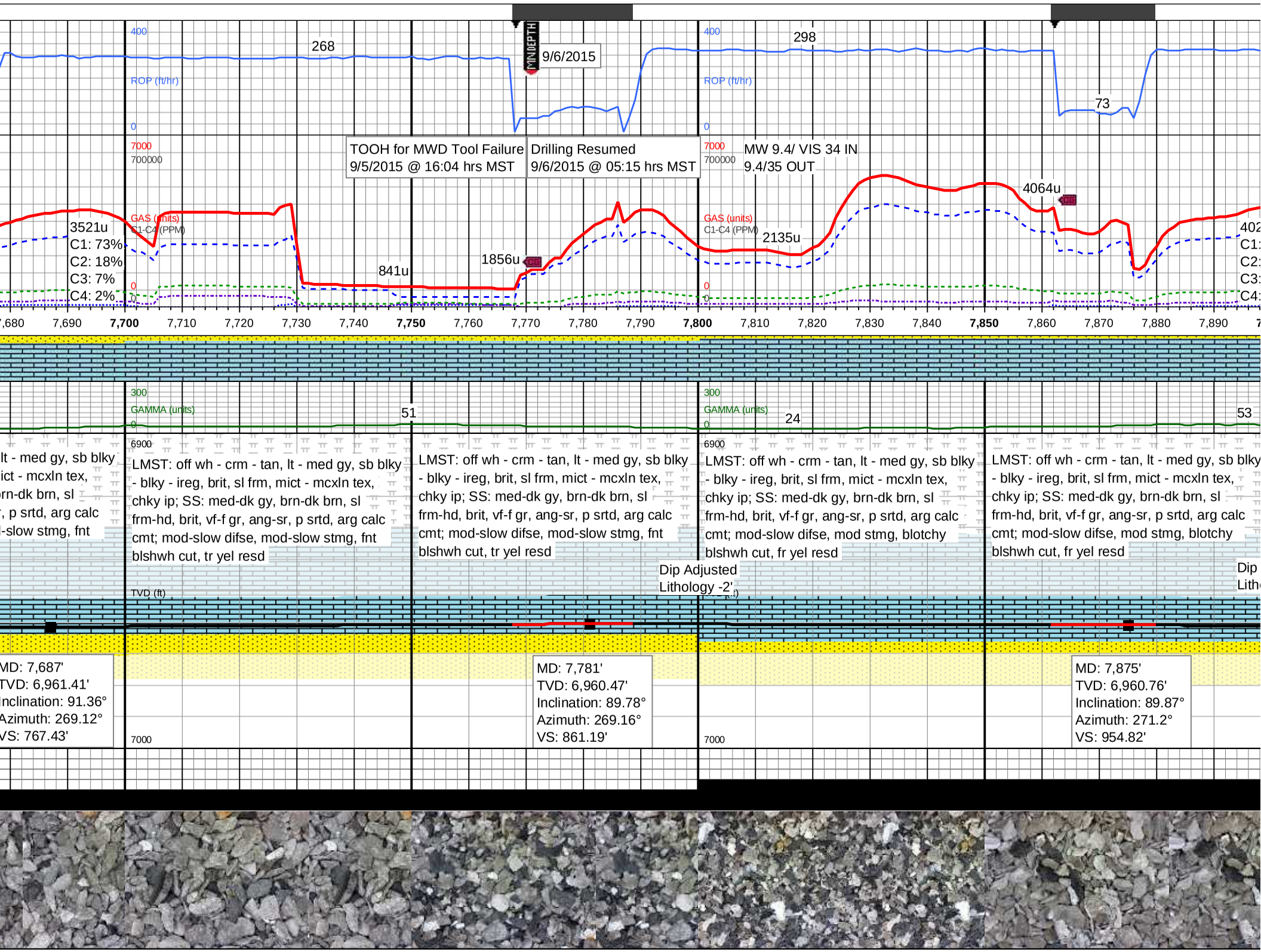

400
ROP (ft/hr)
77
243
0
6000
600000
MW 10/ VIS 39 IN
10/40 OUT
3362u
2709u
C1-C4 (PPM)
0
0
SHARON SPRINGS TOP
6660' MD / 6584' TVD
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650
6,660
6,670
6,680
6,690
6,700
6,710
6,720
6,730
6,740
6,750
6,760
6,770
6,780
6,790
400
ROP (ft/hr)
52
0
6000
600000
MW 10+/ VIS 39 IN
10.1/39 OUT
3758u
3332u
3367u (PPM)
C1: 84%
C2: 5%
C3: 11%
C4: 0%
NIOBRARA A CHALK TOP
6741' MD / 6652' TVD
NIOBRARA A MARL TOP
6766' MD / 6672' TVD
166
300
GAMMA (units)
0
240
253
95
5900
7100
MD: 6,591'
TVD: 6,524.68'
Inclination: 27.4°
Azimuth: 271.2°
VS: -155.81'
MD: 6,638'
TVD: 6,565.79'
Inclination: 30.6°
Azimuth: 269.8°
VS: -133.13'
MD: 6,687'
TVD: 6,607.45'
Inclination: 32.9°
Azimuth: 271.4°
VS: -107.47'
MD: 6,734'
TVD: 6,646.53'
Inclination: 34.6°
Azimuth: 272.8°
VS: -81.55'
MD: 6,782'
TVD: 6,685.13'
Inclination: 38.3°
Azimuth: 271.4°
VS: -53.25'
TVD (ft)
5'CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc; SLTY SH: med-dk gy-blk, slt-mic gr, sl frm, sb plty-plty, rthy-sb rthy tex, mot ip, non calc, arg, abnt bent, fast difse, mod fast stmg, bri bl cut
t ip, non calc, tr
SLTY SH: med-dk gy, slt-mic gr, sl frm, sb plty-plty, rthy-sb rthy tex, mot ip, non calc, bent, mod difse, mod stmg, bri bl cut

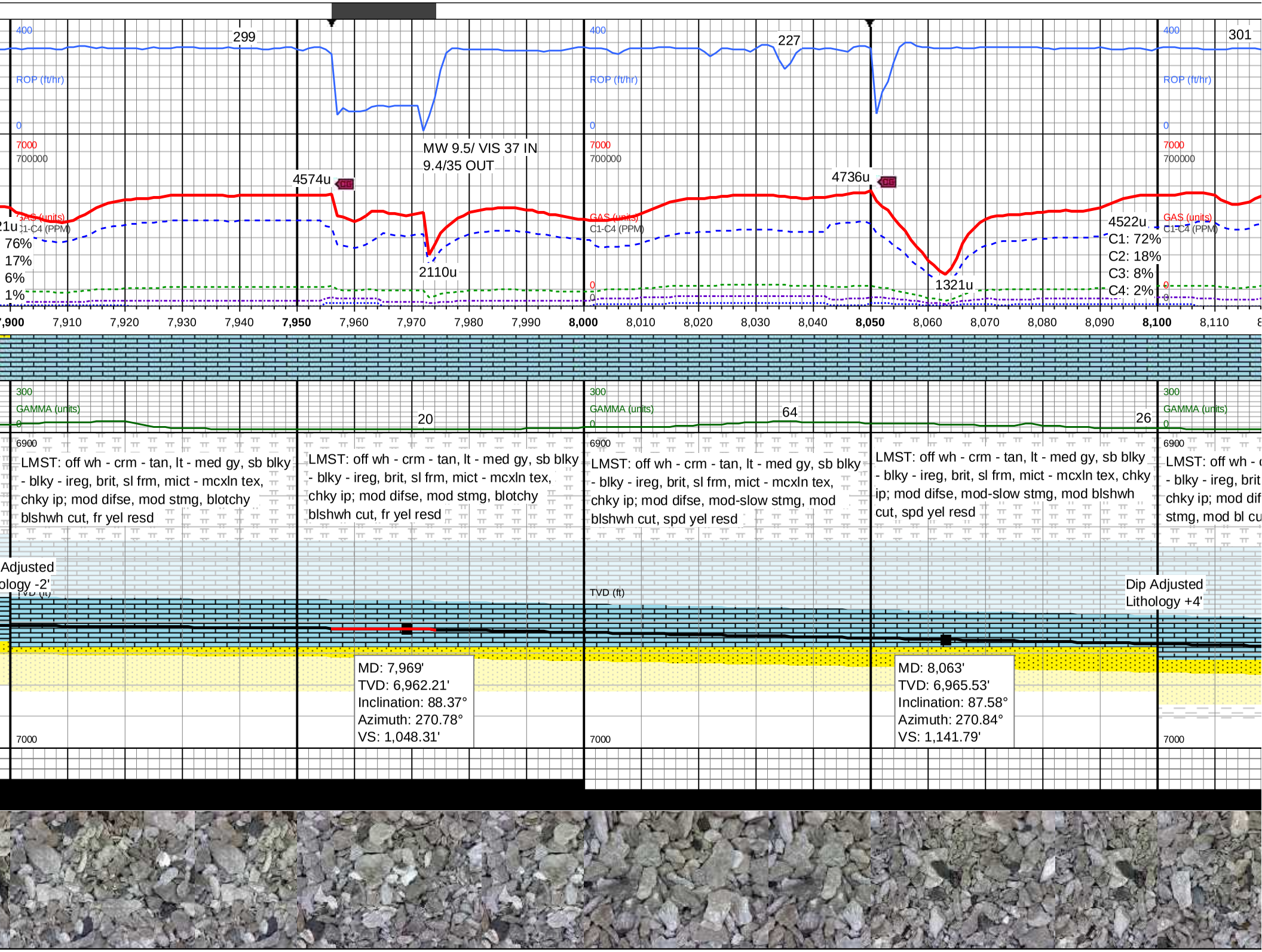

400
ROP (ft/hr)
0
186
55
143
6000
600000
GAS (units)
C1-C4 (PPM)
4176u
MW 10.1/ VIS 41 IN
10.1/39 OUT
4141u
C1: 67%
C2: 15%
C3: 18%
C4: 0%
4318u
NIOBRARA B CHALK TOP
6912' MD / 6777' TVD
NIOBRARA B MARL TOP
6960' MD / 6807' TVD
1540u
405
6,800
6,810
6,820
6,830
6,840
6,850
6,860
6,870
6,880
6,890
6,900
6,910
6,920
6,930
6,940
6,950
6,960
6,970
6,980
6,990
7,000
7,010
300
GAMMA (units)
232
161
75
190
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr; CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, fast difse, mod fast stmg, bri bl cut
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr, tr CHK, fast difse, mod fast stmg, bri bl cut
CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr inoc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, mod difse, mod fast stmg, bri bl cut
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr; CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, mod difse, mod fast stmg, bri bl cut
MD: 6,829'
TVD: 6,720.81'
Inclination: 42.9°
Azimuth: 270.9°
VS: -22.84'
MD: 6,877'
TVD: 6,754.57'
Inclination: 47.7°
Azimuth: 268.6°
VS: 11.15'
MD: 6,924'
TVD: 6,785.08'
Inclination: 51.3°
Azimuth: 267.9°
VS: 46.83'
MD: 6,972'
TVD: 6,814'
Inclination: 54.6°
Azimuth: 268.9°
VS: 85.07'
TVD (ft)
7100

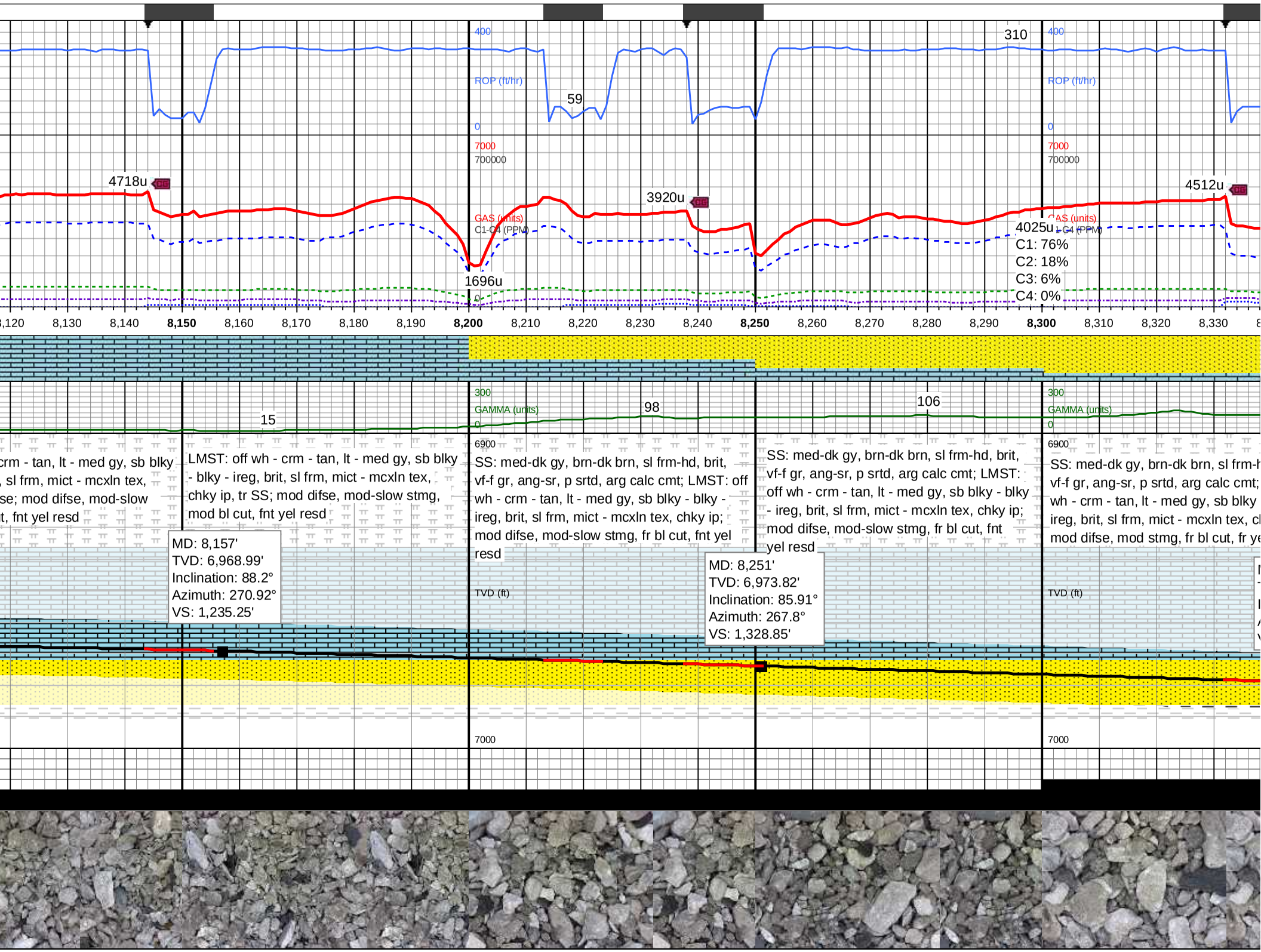

400
ROP (ft/hr)
0
101
119
147
6000
600000
4494u
4377u
4184u
C1: 76%
C2: 10%
C3: 14%
C4: 0%
4200u
4039u
1879u
1425u
MW 10.1+/ VIS 41
GAS (units)
C1-C4 (PPM)
NIOBRARA C CHALK TOP
7038' MD / 6849' TVD
NIOBRARA C MARL TOP
7097' MD / 6878' TVD
FORT
7239' M
7,020
7,030
7,040
7,050
7,060
7,070
7,080
7,090
7,100
7,110
7,120
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
7,230
300
GAMMA (units)
166
174
215
k gy, mot-spec, slt gr, sl
, gt tex, calc, tr dissm pyr;
, str, sb plty-blky, brit, sl sft,
v calc, mod difse, mod fast
CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr, mod difse, mod fast stmg, bri bl cut
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr; CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc, mod difse, mod fast stmg, bri bl cut
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb plty-plty, gt tex, calc, tr dissm pyr; CHK: lt-med gy, str, sb plty-blky, brit, sl sft, sb rthy-sm tex, v calc, mod difse, mod stmg, bri bl cut
MRLST: med-dk gy, mot-spec, slt g
sb plty-plty, gt tex, calc, tr dissm py
lt-med gy, str, sb plty-blky, brit, sl sf
rthy-sm tex, v calc; LMST: off wh -
lt - med gy, sb blky - blky - ireg, brit
mict - mcxln tex, chky ip, mod difse
stmg, bri bl cut
019'
840.01'
on: 58.2°
n: 269.8°
.11'
MD: 7,067'
TVD: 6,864.08'
Inclination: 61.6°
Azimuth: 270.3°
VS: 165.47'
TVD
MD: 7,114'
TVD: 6,885.52'
Inclination: 64.1°
Azimuth: 269.6°
VS: 207.14'
MD: 7,162'
TVD: 6,904.46'
Inclination: 69.4°
Azimuth: 270.3°
VS: 251.07'
MD: 7,209'
TVD: 6,919.72'
Inclination: 72.7°
Azimuth: 270.5°
VS: 295.33'
7100
7100

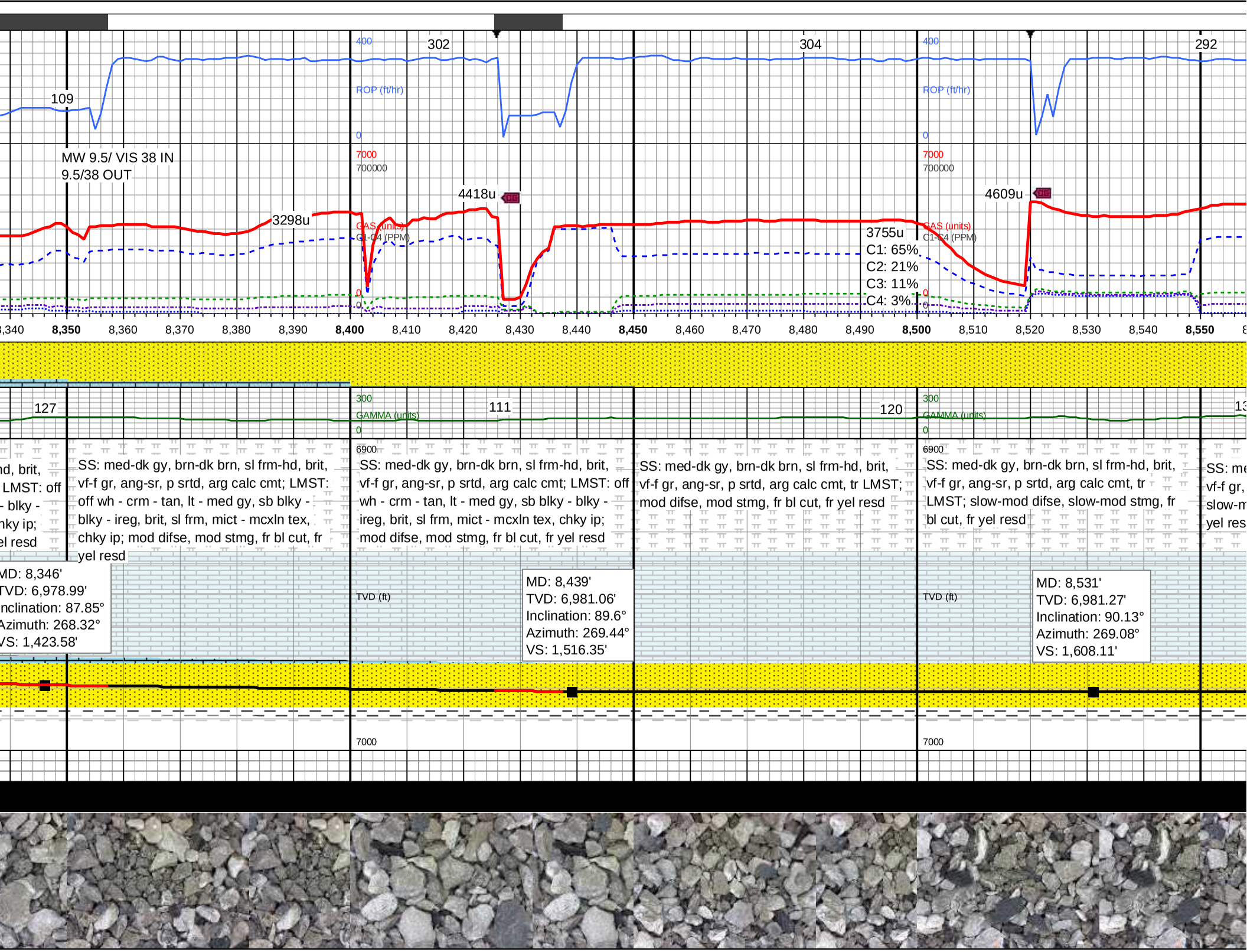

7/20/2015
MINDEPTH
ROP (ft/hr)
400
0
72
39
31
281
MW 10/ VIS 43
6000
600000
3912u
3975u
3976u
3743u
C1: 65%
C2: 18%
C3: 17%
C4: 0%
GAS (units)
C1-C4 (PPM)
Landed Curve @ 7407'MD
7/20/2015 @ 02:40 hrs MST
7000
5409u
NEW GAS LIMIT
0 TO 6000 UNITS
MW 9.5/ VIS 36
9.5/37 OUT
637u
Began Drilling Lateral
9/5/2015 @ 10:35 hrs MST
HAYS TOP
MD / 6928' TVD
7,240
7,250
7,260
7,270
7,280
7,290
7,300
7,310
7,320
7,330
7,340
7,350
7,360
7,370
7,380
7,390
7,400
7,410
7,420
7,430
7,440
7,450
300
GAMMA (units)
124
58
17
58
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; MRLST: med - dk gy, frm, slty tex, microxln, sb blky-sb plty, mod difse, mod stmg, bri bl cut
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip, abnt MRLST, mod difse, mod stmg, bri bl cut
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip, tr SS; mod difse, mod stmg, fr blshwh cut, fr yel resd
TVD SCALE CHANGE
TVD (ft)
6900
7000
7100
MD: 7,257'
TVD: 6,933.52'
Inclination: 73.9°
Azimuth: 270.7°
VS: 341.1'
MD: 7,304'
TVD: 6,944.61'
Inclination: 78.8°
Azimuth: 270.3°
VS: 386.55'
MD: 7,357'
TVD: 6,952.67'
Inclination: 83.7°
Azimuth: 270.5°
VS: 438.7'
MD: 7,434'
TVD: 6,958.87'
Inclination: 87.05°
Azimuth: 270.35°
VS: 515.11'

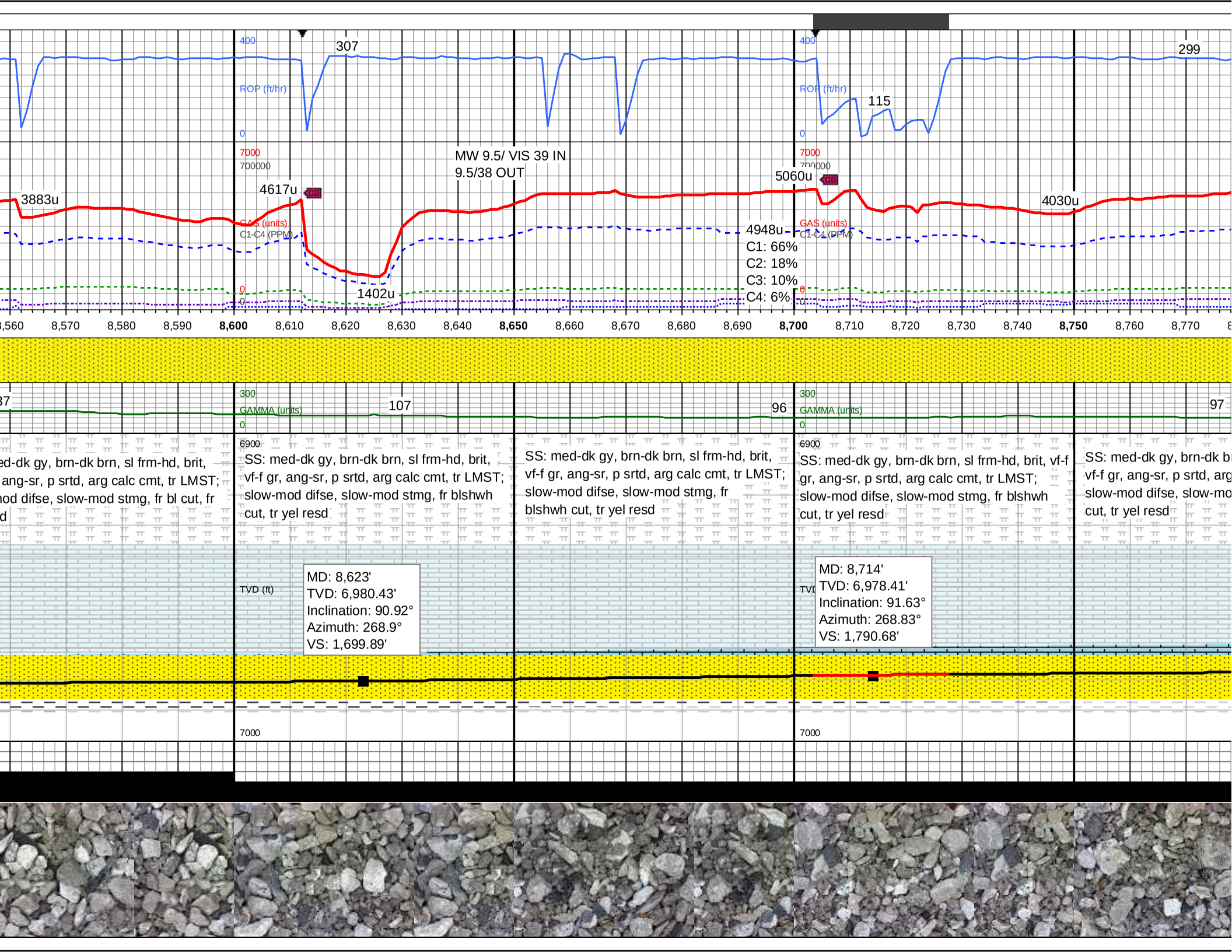

400
ROP (ft/hr)
0
271
267
7000
700000
GAS (units)
C1-C4 (PPM)
MW 9.5/ VIS 38 IN
9.4/38 OUT
4066u
3267u
C1: 64%
C2: 19%
C3: 11%
C4: 6%
4115u
1252u
2583u
3932u
7,460
7,470
7,480
7,490
7,500
7,510
7,520
7,530
7,540
7,550
7,560
7,570
7,580
7,590
7,600
7,610
7,620
7,630
7,640
7,650
7,660
7,670
300
GAMMA (units)
55
41
43
6900
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; mod-slow difse, mod stmg, fr blshwh cut, tr yel resd
Dip Adjusted
Lithology -2'
TVD (ft)
MD: 7,498'
TVD: 6,960.89'
Inclination: 89.34°
Azimuth: 269.65°
VS: 578.84'
MD: 7,593'
TVD: 6,961.98'
Inclination: 89.34°
Azimuth: 268.27°
VS: 673.62'

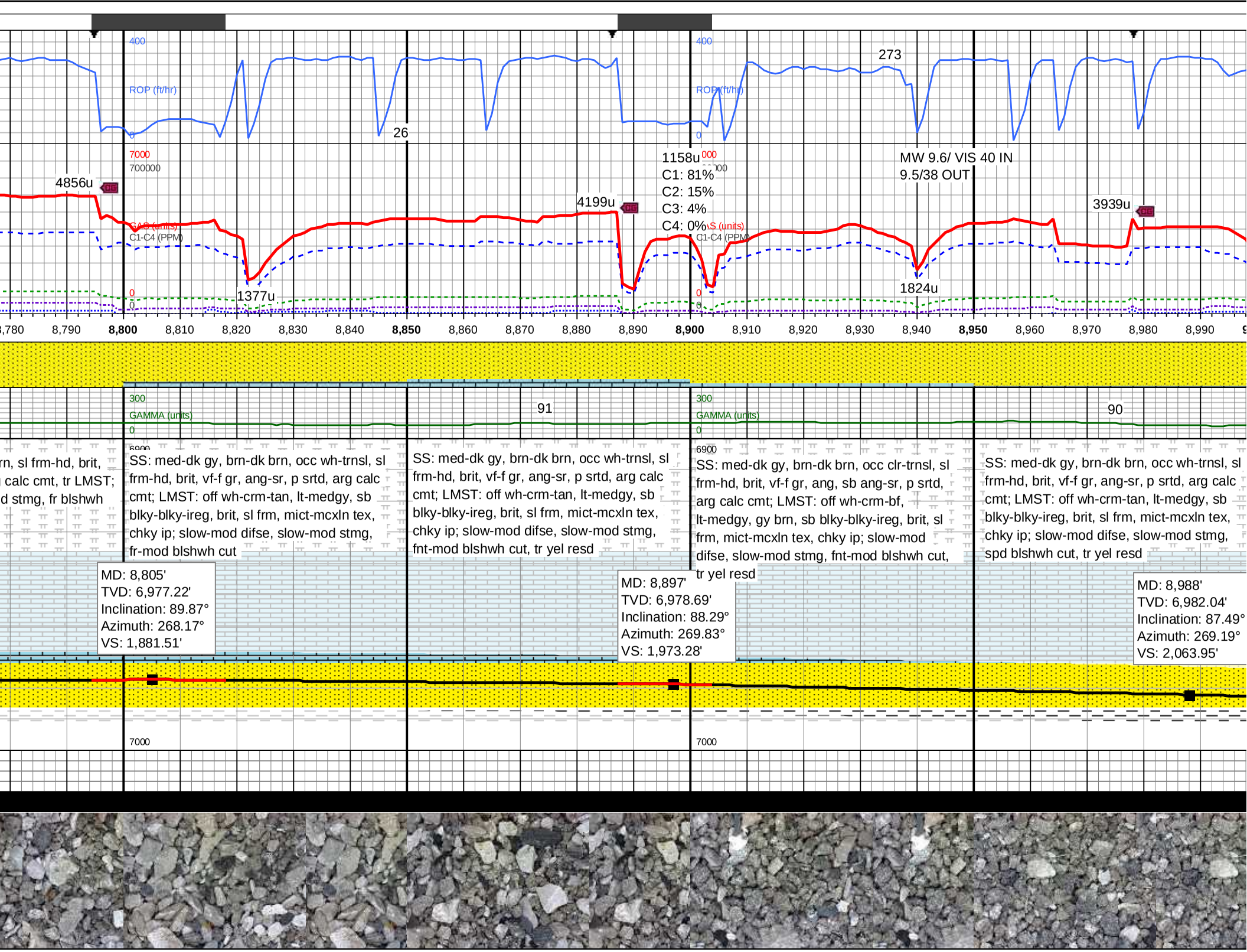

400
ROP (ft/hr)
0
268
MIN DEPTH
9/6/2015
298
73
TOOH for MWD Tool Failure
9/5/2015 @ 16:04 hrs MST
Drilling Resumed
9/6/2015 @ 05:15 hrs MST
7000
700000
GAS (units)
C1-C4 (PPM)
MW 9.4/ VIS 34 IN
9.4/35 OUT
3521u
C1: 73%
C2: 18%
C3: 7%
C4: 2%
841u
1856u
2135u
4064u
7,680
7,690
7,700
7,710
7,720
7,730
7,740
7,750
7,760
7,770
7,780
7,790
7,800
7,810
7,820
7,830
7,840
7,850
7,860
7,870
7,880
7,890
300
GAMMA (units)
51
24
53
6900
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; mod-slow difse, mod-slow stmg, fnt blshwh cut, tr yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; mod-slow difse, mod stmg, blotchy blshwh cut, fr yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; mod-slow difse, mod stmg, blotchy blshwh cut, fr yel resd
Dip Adjusted Lithology -2'
TVD (ft)
7000
MD: 7,687'
TVD: 6,961.41'
Inclination: 91.36°
Azimuth: 269.12°
VS: 767.43'
MD: 7,781'
TVD: 6,960.47'
Inclination: 89.78°
Azimuth: 269.16°
VS: 861.19'
MD: 7,875'
TVD: 6,960.76'
Inclination: 89.87°
Azimuth: 271.2°
VS: 954.82'

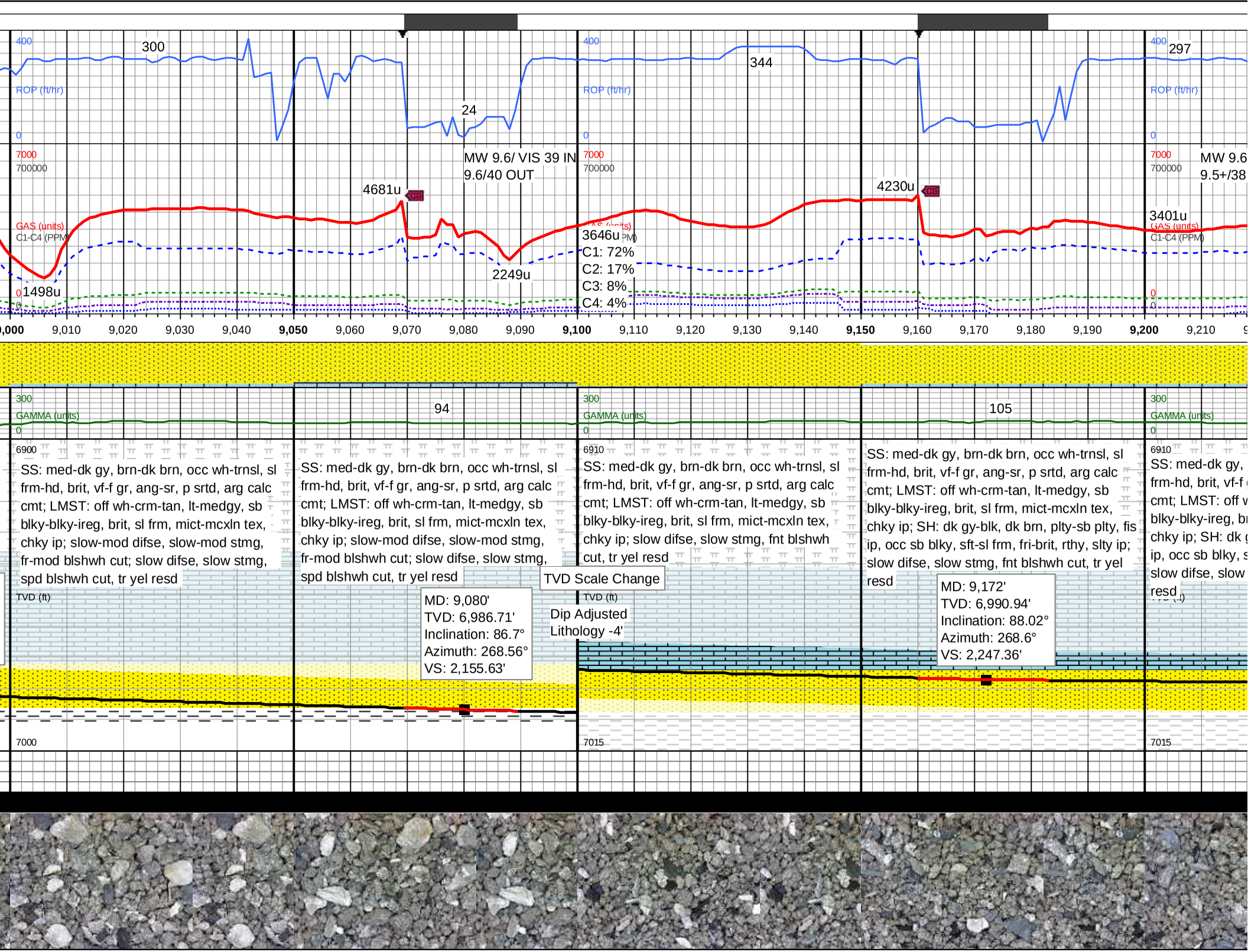

400
ROP (ft/hr)
0
299
227
301
7000
700000
MW 9.5/ VIS 37 IN
9.4/35 OUT
4574u
4736u
GAS (units)
C1-C4 (PPM)
21u
76%
17%
6%
1%
2110u
1321u
4522u
C1: 72%
C2: 18%
C3: 8%
C4: 2%
7,900
7,910
7,920
7,930
7,940
7,950
7,960
7,970
7,980
7,990
8,000
8,010
8,020
8,030
8,040
8,050
8,060
8,070
8,080
8,090
8,100
8,110
300
GAMMA (units)
20
64
26
6900
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod stmg, blotchy blshwh cut, fr yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod-slow stmg, mod blshwh cut, spd yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod-slow stmg, mod blshwh cut, spd yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod stmg, mod bl cu
Adjusted
ology -2'
TVD (ft)
Dip Adjusted
Lithology +4'
MD: 7,969'
TVD: 6,962.21'
Inclination: 88.37°
Azimuth: 270.78°
VS: 1,048.31'
MD: 8,063'
TVD: 6,965.53'
Inclination: 87.58°
Azimuth: 270.84°
VS: 1,141.79'
7000

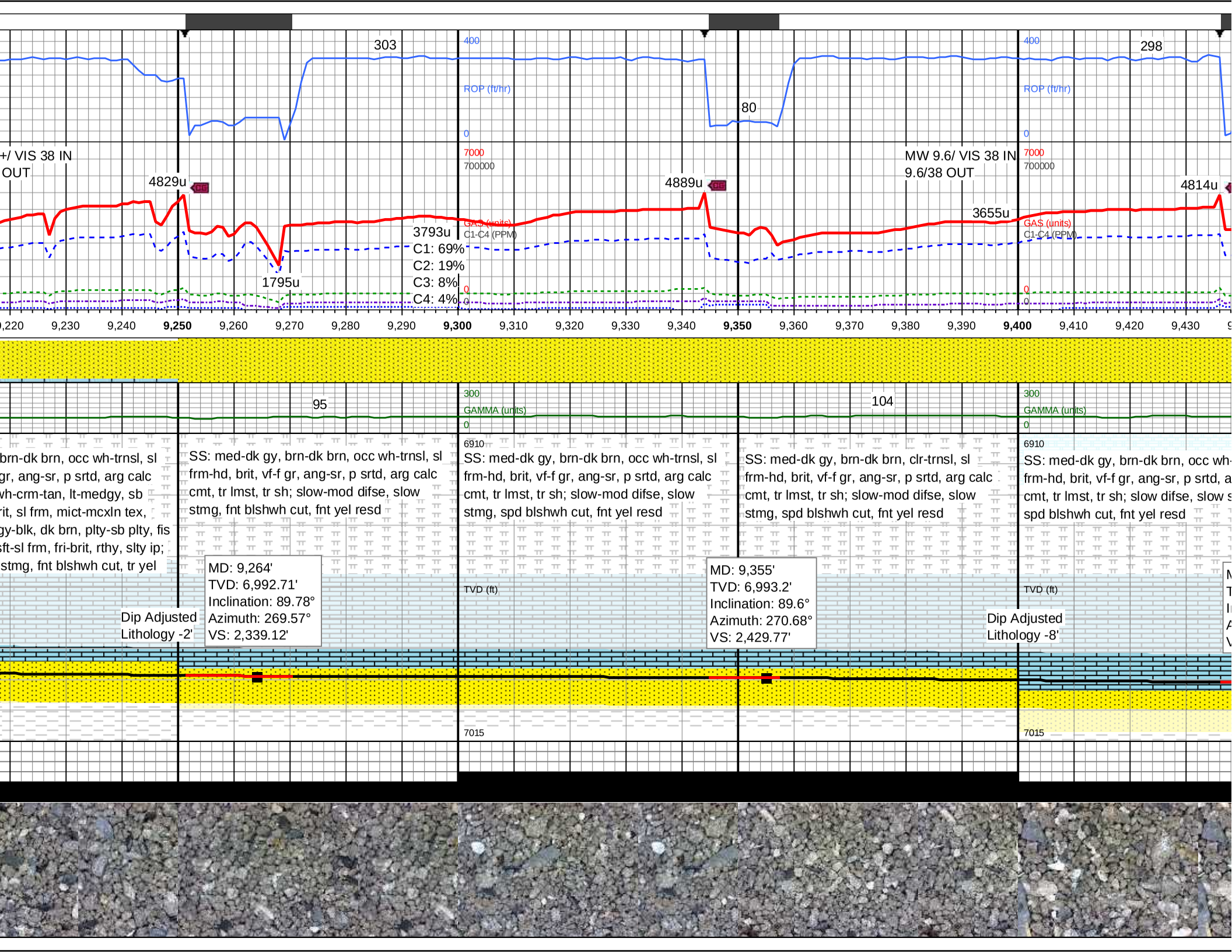

400
ROP (ft/hr)
0
59
310
7000
700000
GAS (units)
C1-C4 (PPM)
4718u
3920u
4512u
1696u
4025u
C1: 76%
C2: 18%
C3: 6%
C4: 0%
8,120
8,130
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330
300
GAMMA (units)
0
15
98
106
6900
TVD (ft)
7000
crm - tan, lt - med gy, sb blky
, sl frm, mict - mcxln tex,
se; mod difse, mod-slow
t, fnt yel resd
LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip, tr SS; mod difse, mod-slow stmg, mod bl cut, fnt yel resd
MD: 8,157'
TVD: 6,968.99'
Inclination: 88.2°
Azimuth: 270.92°
VS: 1,235.25'
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod-slow stmg, fr bl cut, fnt yel resd
MD: 8,251'
TVD: 6,973.82'
Inclination: 85.91°
Azimuth: 267.8°
VS: 1,328.85'
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod stmg, fr bl cut, fr ye

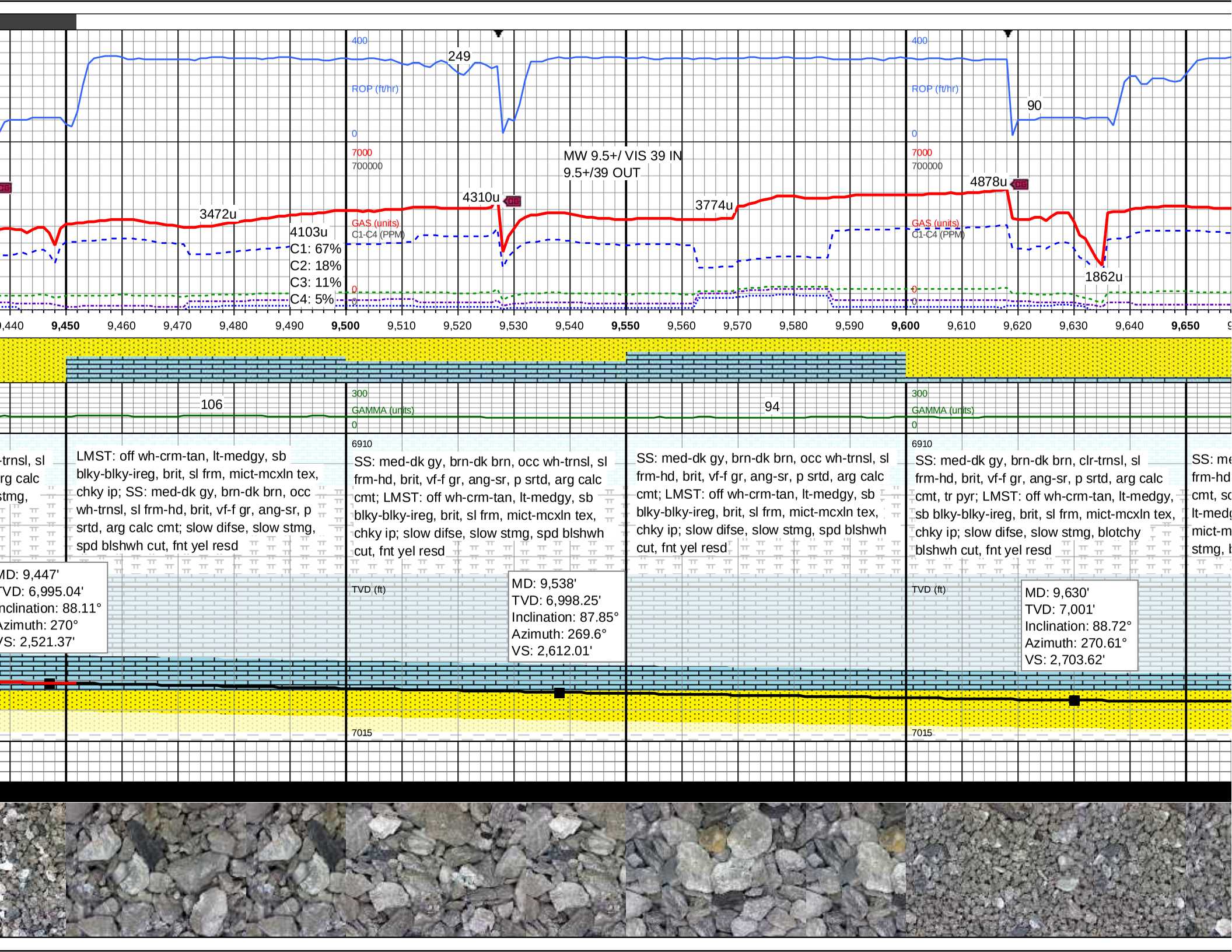

109
302
304
292
400
ROP (ft/hr)
0
7000
700000
MW 9.5/ VIS 38 IN
9.5/38 OUT
3298u
4418u
4609u
3755u
C1: 65%
C2: 21%
C3: 11%
C4: 3%
GAS (units)
C1-C4 (PPM)
8,340
8,350
8,360
8,370
8,380
8,390
8,400
8,410
8,420
8,430
8,440
8,450
8,460
8,470
8,480
8,490
8,500
8,510
8,520
8,530
8,540
8,550
127
111
120
300
GAMMA (units)
6900
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh - crm - tan, lt - med gy, sb blky - blky - ireg, brit, sl frm, mict - mcxln tex, chky ip; mod difse, mod stmg, fr bl cut, fr yel resd
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr LMST; mod difse, mod stmg, fr bl cut, fr yel resd
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr LMST; slow-mod difse, slow-mod stmg, fr bl cut, fr yel resd
MD: 8,346'
TVD: 6,978.99'
Inclination: 87.85°
Azimuth: 268.32°
VS: 1,423.58'
MD: 8,439'
TVD: 6,981.06'
Inclination: 89.6°
Azimuth: 269.44°
VS: 1,516.35'
MD: 8,531'
TVD: 6,981.27'
Inclination: 90.13°
Azimuth: 269.08°
VS: 1,608.11'
TVD (ft)
7000

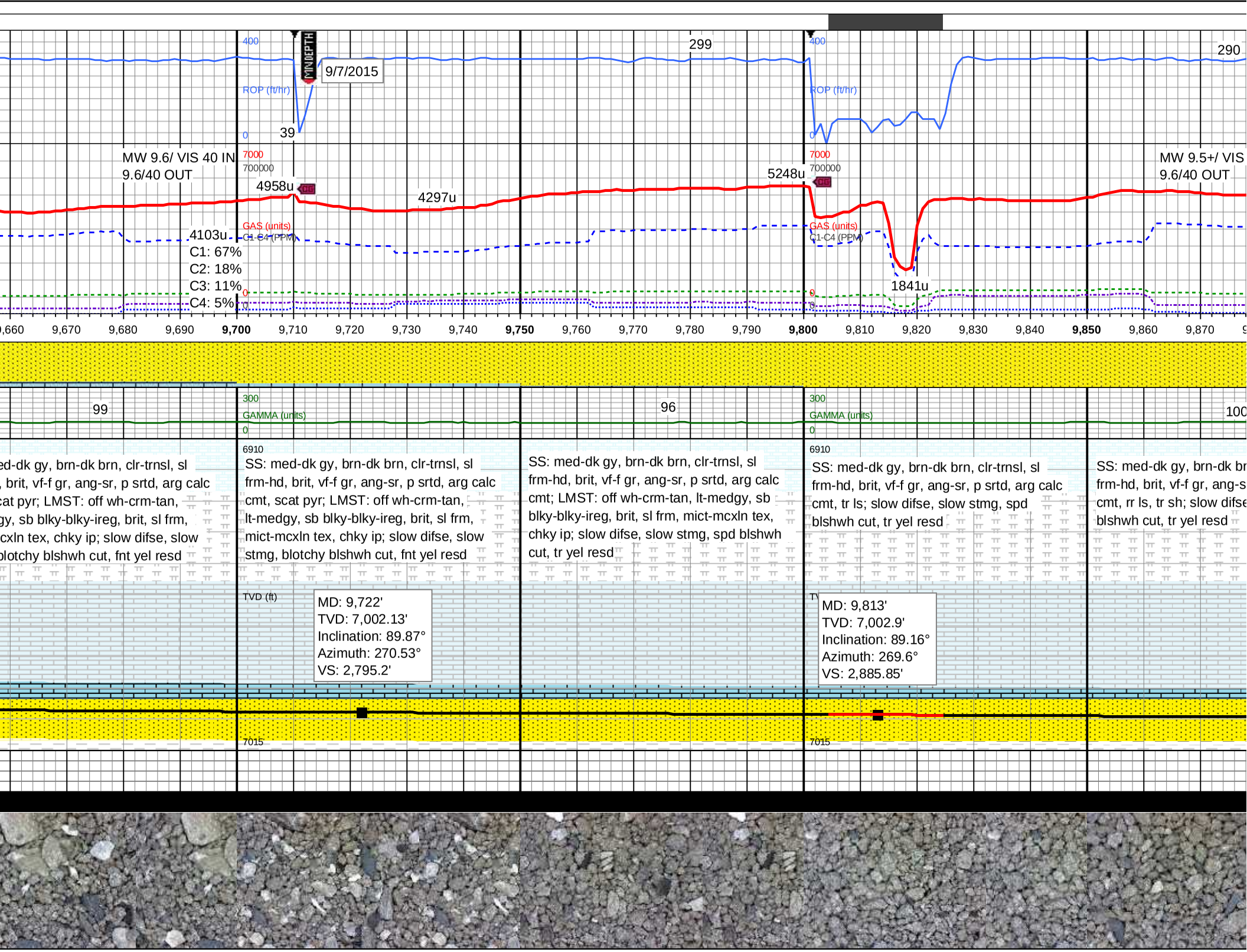

400
ROP (ft/hr)
0
307
299
115
7000
700000
MW 9.5/ VIS 39 IN
9.5/38 OUT
3883u
4617u
5060u
4030u
4948u
GAS (units)
C1-C4 (PPM)
C1: 66%
C2: 18%
C3: 10%
C4: 6%
1402u
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
8,660
8,670
8,680
8,690
8,700
8,710
8,720
8,730
8,740
8,750
8,760
8,770
300
GAMMA (units)
107
96
97
6900
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr LMST; slow-mod difse, slow-mod stmg, fr blshwh cut, tr yel resd
TVD (ft)
MD: 8,623'
TVD: 6,980.43'
Inclination: 90.92°
Azimuth: 268.9°
VS: 1,699.89'
MD: 8,714'
TVD: 6,978.41'
Inclination: 91.63°
Azimuth: 268.83°
VS: 1,790.68'
7000

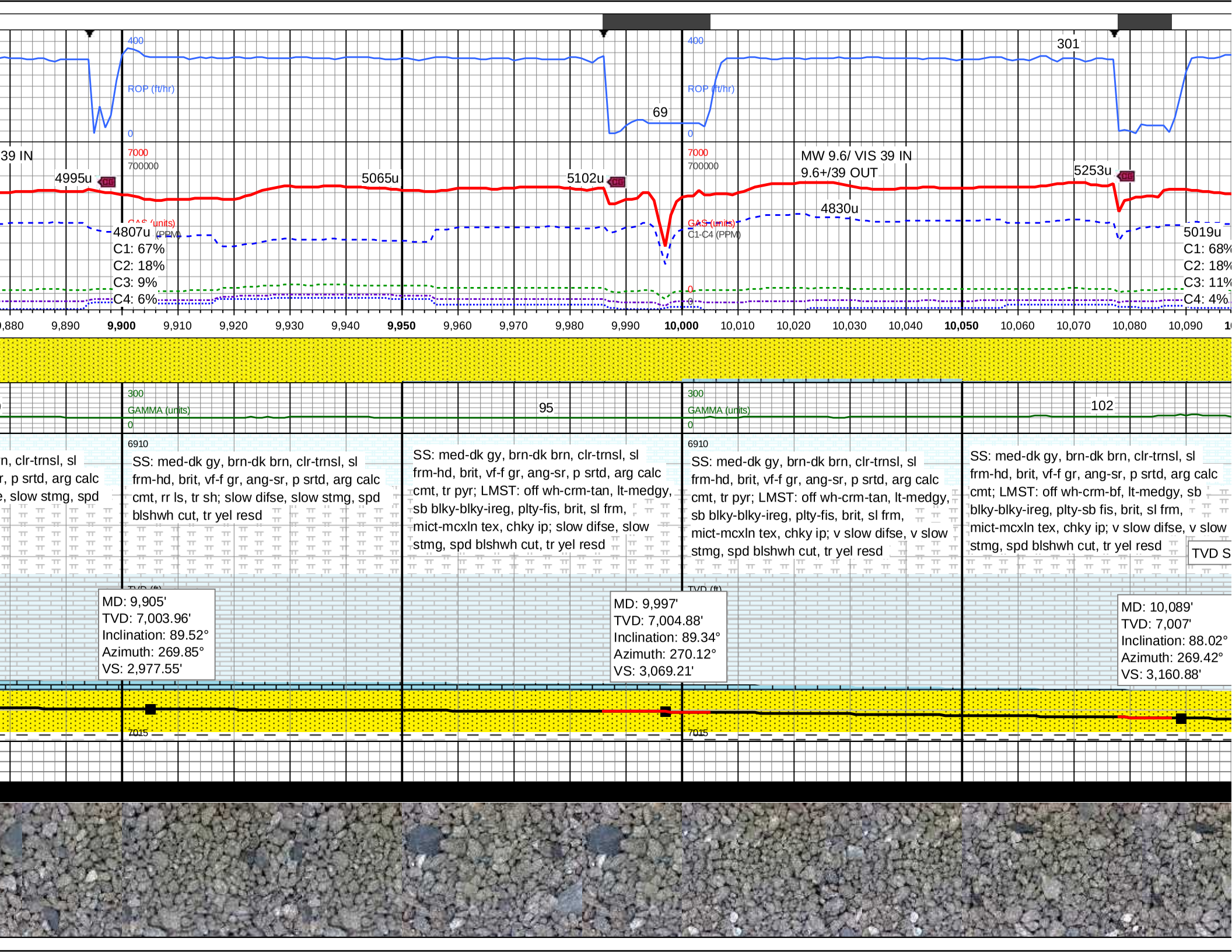

400
ROP (ft/hr)
0
7000
700000
GAS (units)
C1-C4 (PPM)
0
4856u
1377u
4199u
1158u
C1: 81%
C2: 15%
C3: 4%
C4: 0%
26
273
MW 9.6/ VIS 40 IN
9.5/38 OUT
1824u
3939u
8,780
8,790
8,800
8,810
8,820
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
300
GAMMA (units)
0
6900
91
90
rn, sl frm-hd, brit,
calc cmt, tr LMST;
d stmg, fr blshwh
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow-mod difse, slow-mod stmg, fr-mod blshwh cut
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow-mod difse, slow-mod stmg, fnt-mod blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, occ clr-trnsl, sl frm-hd, brit, vf-f gr, ang, sb ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-bf, lt-medgy, gy brn, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow-mod difse, slow-mod stmg, fnt-mod blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow-mod difse, slow-mod stmg, spd blshwh cut, tr yel resd
MD: 8,805'
TVD: 6,977.22'
Inclination: 89.87°
Azimuth: 268.17°
VS: 1,881.51'
MD: 8,897'
TVD: 6,978.69'
Inclination: 88.29°
Azimuth: 269.83°
VS: 1,973.28'
MD: 8,988'
TVD: 6,982.04'
Inclination: 87.49°
Azimuth: 269.19°
VS: 2,063.95'
7000

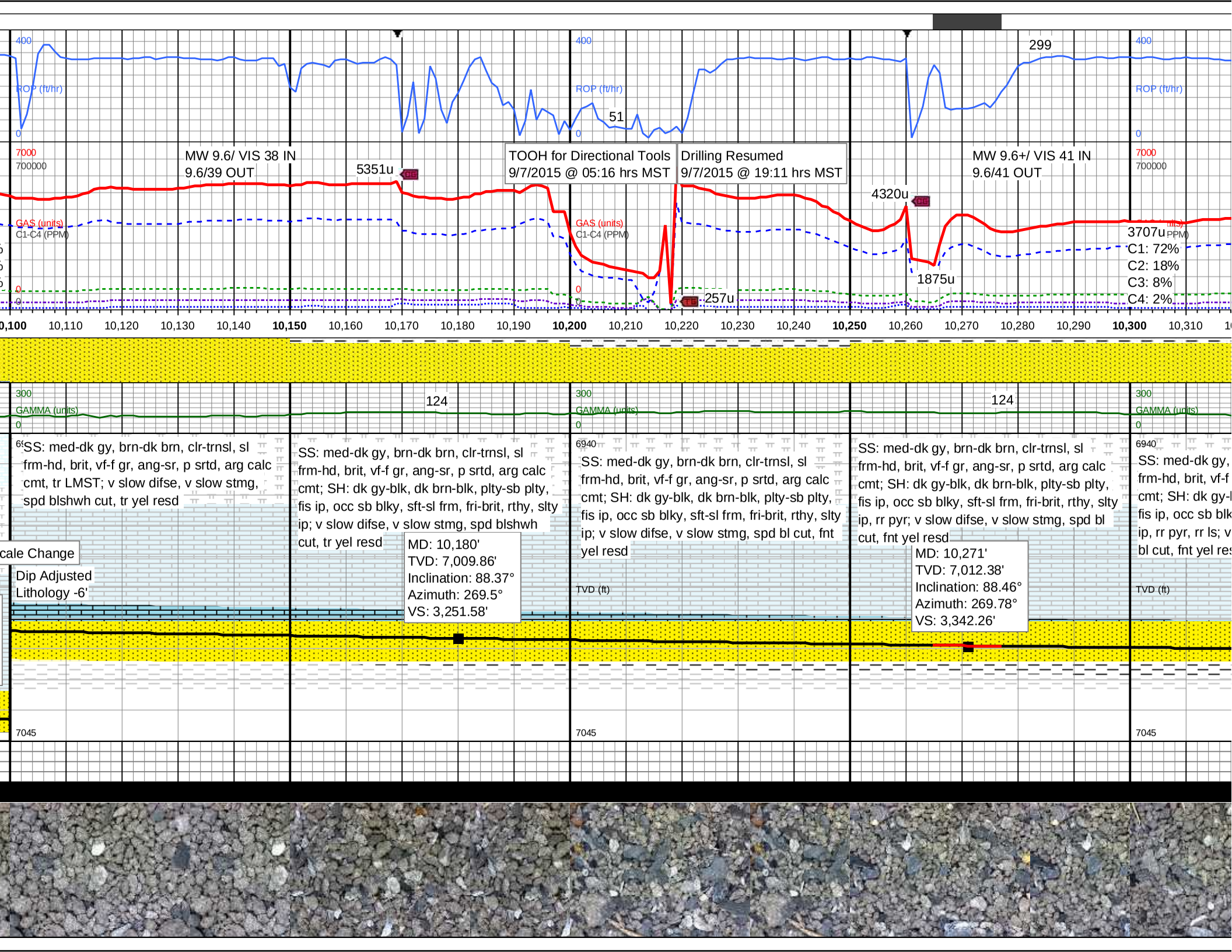

400
300
ROP (ft/hr)
0
24
344
297
7000
700000
GAS (units)
C1-C4 (PPM)
MW 9.6/ VIS 39 IN
9.6/40 OUT
4681u
4230u
3401u
2249u
1498u
3646u
C1: 72%
C2: 17%
C3: 8%
C4: 4%
MW 9.6
9.5+/38
9,000
9,010
9,020
9,030
9,040
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
300
GAMMA (units)
0
94
105
6900
6910
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow-mod difse, slow-mod stmg, fr-mod blshwh cut; slow difse, slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow difse, slow stmg, fnt blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; SH: dk gy-blk, dk brn, plty-sb plty, fis ip, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip; slow difse, slow stmg, fnt blshwh cut, tr yel resd
TVD (ft)
MD: 9,080'
TVD: 6,986.71'
Inclination: 86.7°
Azimuth: 268.56°
VS: 2,155.63'
TVD Scale Change
Dip Adjusted
Lithology -4'
MD: 9,172'
TVD: 6,990.94'
Inclination: 88.02°
Azimuth: 268.6°
VS: 2,247.36'
7000
7015

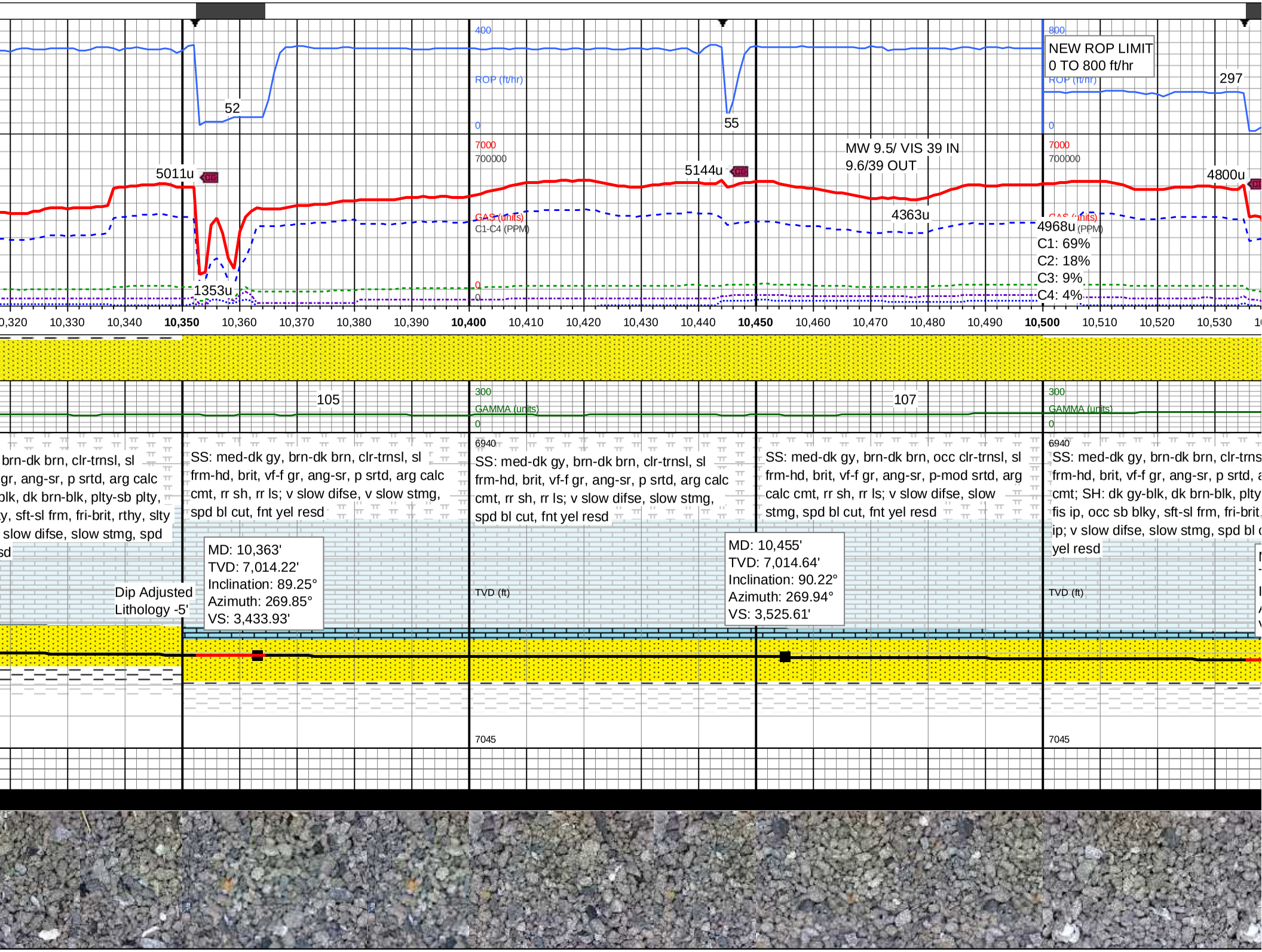

303
400
ROP (ft/hr)
0
80
298
+/ VIS 38 IN
OUT
MW 9.6/ VIS 38 IN
9.6/38 OUT
7000
700000
4829u
4889u
4814u
3655u
3793u
C1: 69%
C2: 19%
C3: 8%
C4: 4%
GAS (units)
C1-C4 (PPM)
1795u
9,220
9,230
9,240
9,250
9,260
9,270
9,280
9,290
9,300
9,310
9,320
9,330
9,340
9,350
9,360
9,370
9,380
9,390
9,400
9,410
9,420
9,430
95
104
300
GAMMA (units)
6910
brn-dk brn, occ wh-trnsl, sl
gr, ang-sr, p srtd, arg calc
wh-crm-tan, lt-medgy, sb
rit, sl frm, mict-mcxln tex,
gy-blk, dk brn, plty-sb plty, fis
sft-sl frm, fri-brit, rthy, slty ip;
stmg, fnt blshwh cut, tr yel
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tr lmst, tr sh; slow-mod difse, slow
stmg, fnt blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tr lmst, tr sh; slow-mod difse, slow
stmg, spd blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tr lmst, tr sh; slow-mod difse, slow
stmg, spd blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, occ wh-
frm-hd, brit, vf-f gr, ang-sr, p srtd, a
cmt, tr lmst, tr sh; slow difse, slow s
spd blshwh cut, fnt yel resd
MD: 9,264'
TVD: 6,992.71'
Inclination: 89.78°
Azimuth: 269.57°
VS: 2,339.12'
MD: 9,355'
TVD: 6,993.2'
Inclination: 89.6°
Azimuth: 270.68°
VS: 2,429.77'
Dip Adjusted
Lithology -2'
Dip Adjusted
Lithology -8'
TVD (ft)
7015

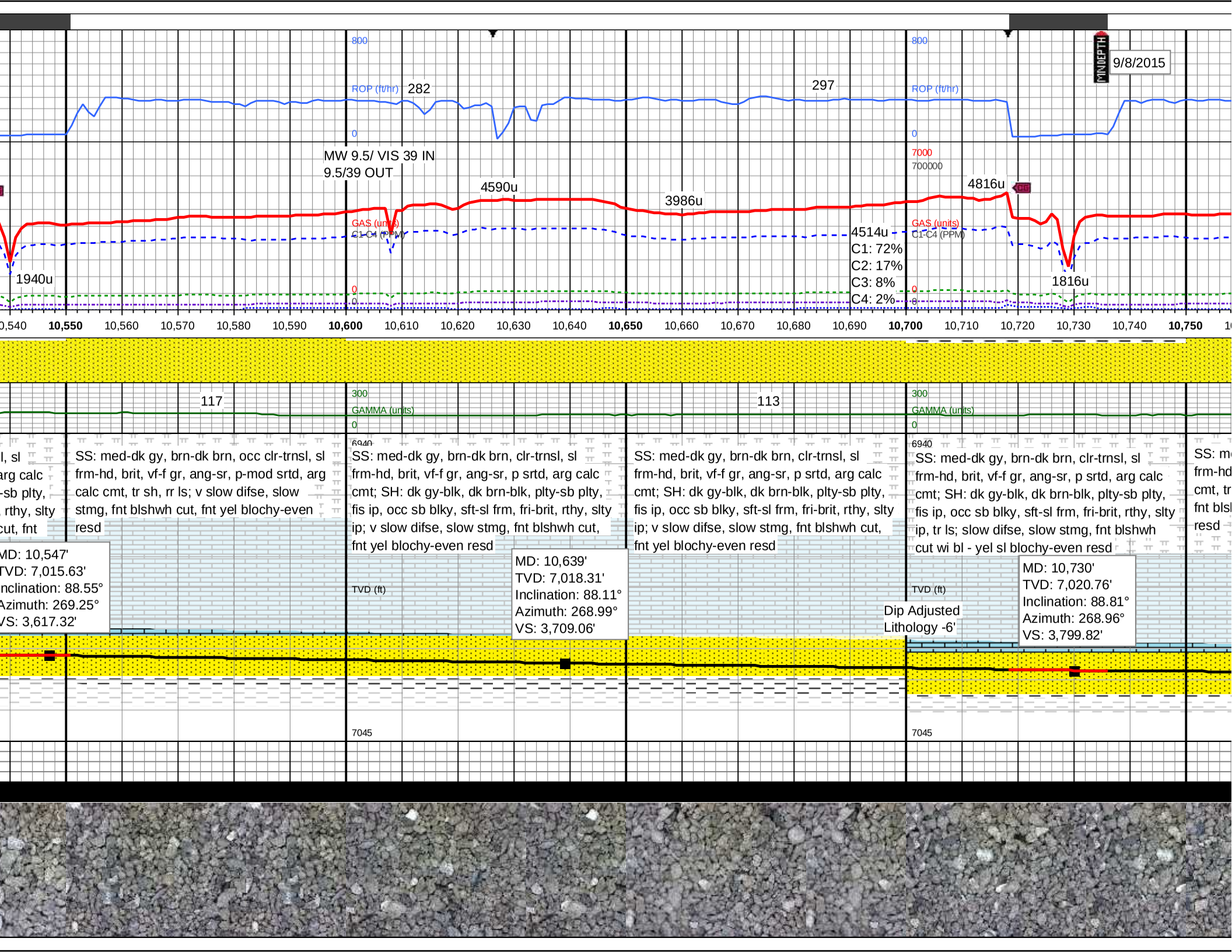

400
ROP (ft/hr)
0
249
90
7000
700000
GAS (units)
C1-C4 (PPM)
MW 9.5+/ VIS 39 IN
9.5+/39 OUT
3472u
4310u
3774u
4878u
1862u
4103u
C1: 67%
C2: 18%
C3: 11%
C4: 5%
9,440
9,450
9,460
9,470
9,480
9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
106
94
300
GAMMA (units)
0
6910
TVD (ft)
7015
LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; slow difse, slow stmg, spd blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, occ wh-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow difse, slow stmg, spd blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr pyr; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, brit, sl frm, mict-mcxln tex, chky ip; slow difse, slow stmg, blotchy blshwh cut, fnt yel resd
MD: 9,538'
TVD: 6,998.25'
Inclination: 87.85°
Azimuth: 269.6°
VS: 2,612.01'
MD: 9,630'
TVD: 7,001'
Inclination: 88.72°
Azimuth: 270.61°
VS: 2,703.62'

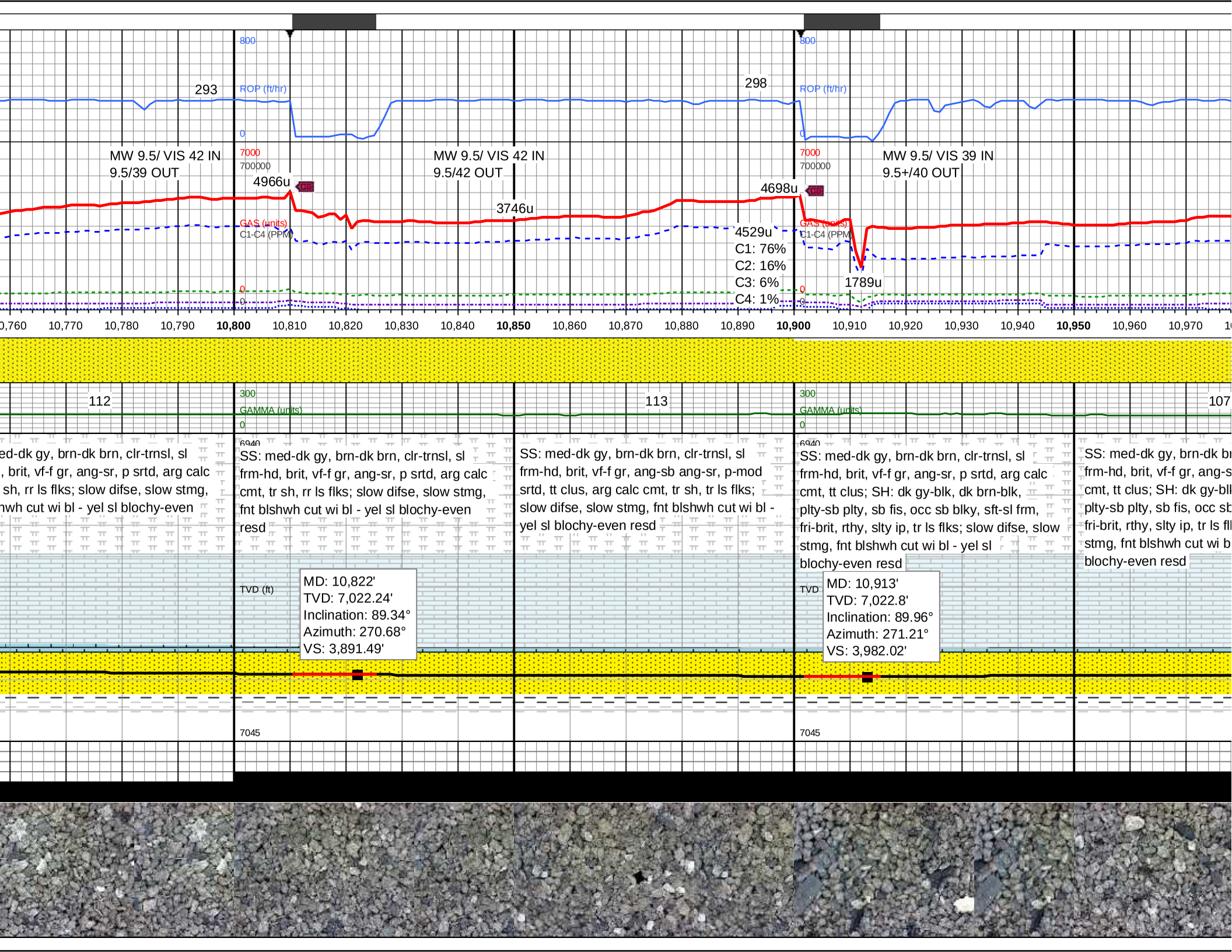

400
ROP (ft/hr)
0
MIN DEPTH
9/7/2015
39
299
290
MW 9.6/ VIS 40 IN
9.6/40 OUT
7000
700000
4958u
4297u
5248u
MW 9.5+/ VIS
9.6/40 OUT
GAS (units)
C1-C4 (PPM)
4103u
C1: 67%
C2: 18%
C3: 11%
C4: 5%
1841u
9,660
9,670
9,680
9,690
9,700
9,710
9,720
9,730
9,740
9,750
9,760
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
99
96
300
GAMMA (units)
0
6910
ed-dk gy, brn-dk brn, clr-trnsl, sl
, brit, vf-f gr, ang-sr, p srtd, arg calc
cat pyr; LMST: off wh-crm-tan,
gy, sb blky-blky-ireg, brit, sl frm,
cxln tex, chky ip; slow difse, slow
blotchy blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, scat pyr; LMST: off wh-crm-tan,
lt-medgy, sb blky-blky-ireg, brit, sl frm,
mict-mcxln tex, chky ip; slow difse, slow
stmg, blotchy blshwh cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt; LMST: off wh-crm-tan, lt-medgy, sb
blky-blky-ireg, brit, sl frm, mict-mcxln tex,
chky ip; slow difse, slow stmg, spd blshwh
cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tr ls; slow difse, slow stmg, spd
blshwh cut, tr yel resd
SS: med-dk gy, brn-dk br
frm-hd, brit, vf-f gr, ang-s
cmt, rr ls, tr sh; slow difse
blshwh cut, tr yel resd
TVD (ft)
MD: 9,722'
TVD: 7,002.13'
Inclination: 89.87°
Azimuth: 270.53°
VS: 2,795.2'
MD: 9,813'
TVD: 7,002.9'
Inclination: 89.16°
Azimuth: 269.6°
VS: 2,885.85'
7015

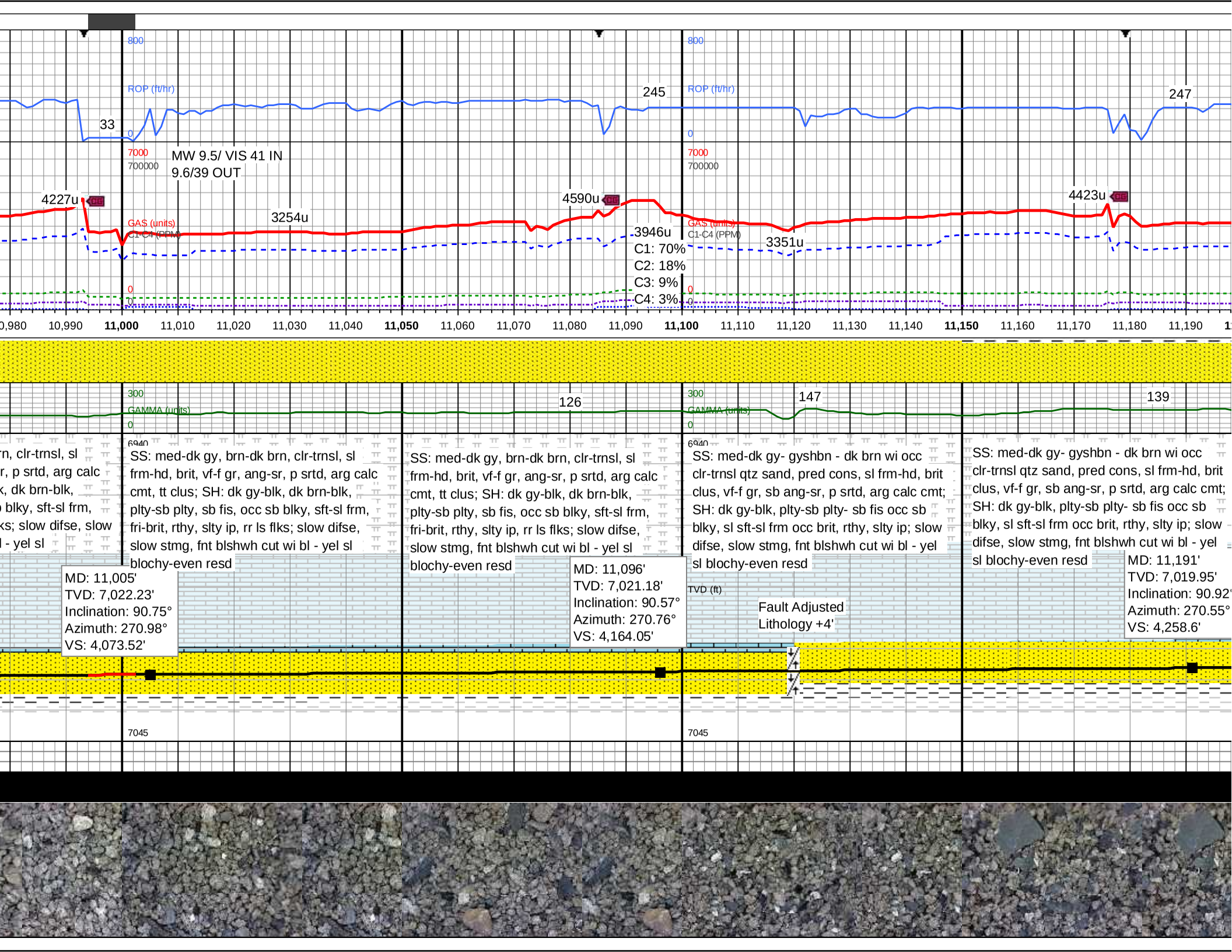

400
ROP (ft/hr)
0
7000
700000
GAS (units)
C1-C4 (PPM)
39 IN
4995u
5065u
5102u
69
MW 9.6/ VIS 39 IN
9.6+/39 OUT
4830u
5253u
301
4807u
C1: 67%
C2: 18%
C3: 9%
C4: 6%
5019u
C1: 68%
C2: 18%
C3: 11%
C4: 4%
9,880
9,890
9,900
9,910
9,920
9,930
9,940
9,950
9,960
9,970
9,980
9,990
10,000
10,010
10,020
10,030
10,040
10,050
10,060
10,070
10,080
10,090
300
GAMMA (units)
0
95
102
6910
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, rr ls, tr sh; slow difse, slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr pyr; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, plty-fis, brit, sl frm, mict-mcxln tex, chky ip; slow difse, slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr pyr; LMST: off wh-crm-tan, lt-medgy, sb blky-blky-ireg, plty-fis, brit, sl frm, mict-mcxln tex, chky ip; v slow difse, v slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; LMST: off wh-crm-bf, lt-medgy, sb blky-blky-ireg, plty-sb fis, brit, sl frm, mict-mcxln tex, chky ip; v slow difse, v slow stmg, spd blshwh cut, tr yel resd
TVD S
MD: 9,905'
TVD: 7,003.96'
Inclination: 89.52°
Azimuth: 269.85°
VS: 2,977.55'
MD: 9,997'
TVD: 7,004.88'
Inclination: 89.34°
Azimuth: 270.12°
VS: 3,069.21'
MD: 10,089'
TVD: 7,007'
Inclination: 88.02°
Azimuth: 269.42°
VS: 3,160.88'
7015

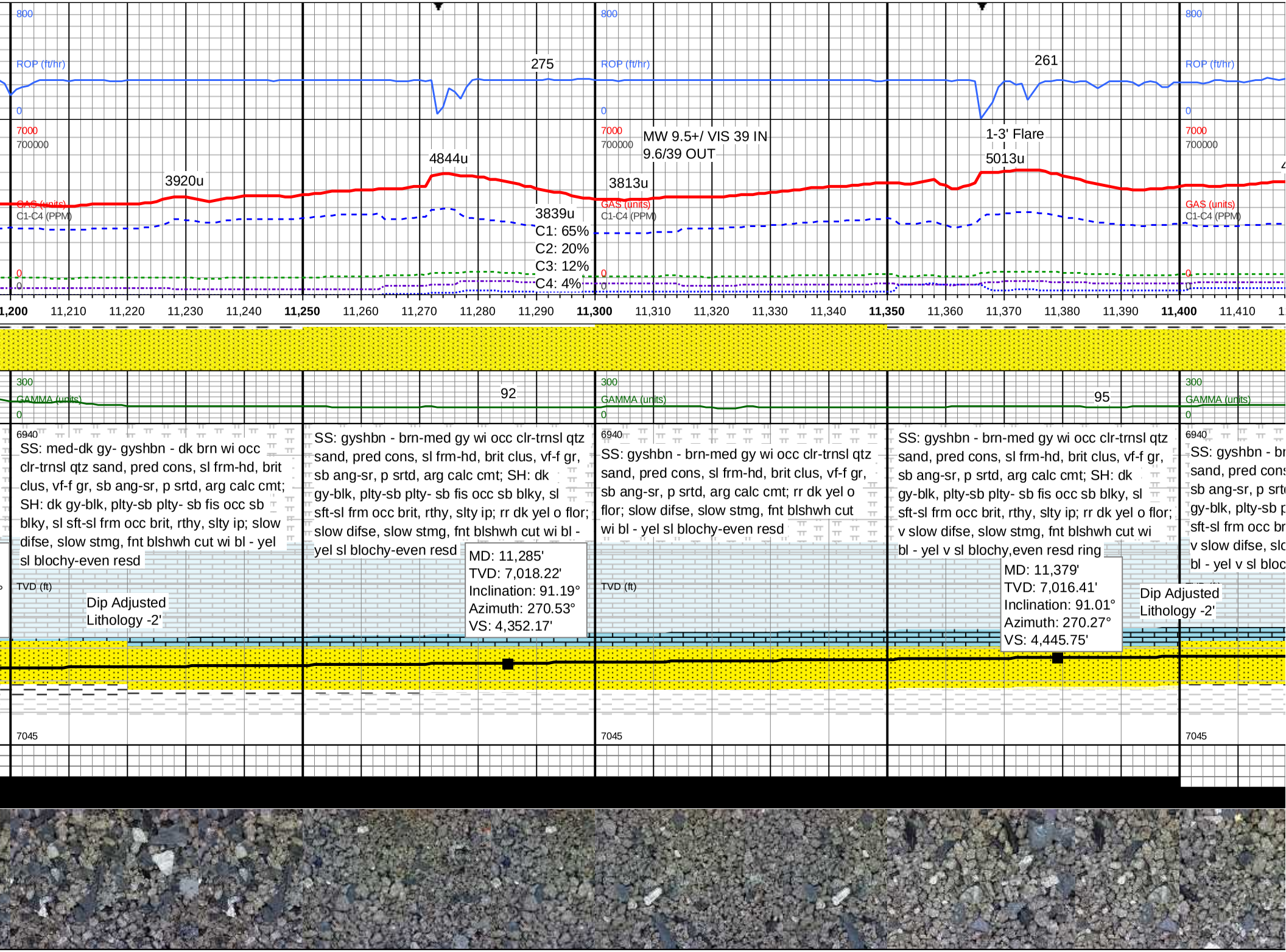

400
ROP (ft/hr)
0
299
51
7000
700000
GAS (units)
C1-C4 (PPM)
MW 9.6/ VIS 38 IN
9.6/39 OUT
5351u
TOOH for Directional Tools
9/7/2015 @ 05:16 hrs MST
Drilling Resumed
9/7/2015 @ 19:11 hrs MST
MW 9.6+/ VIS 41 IN
9.6/41 OUT
4320u
1875u
257u
3707u PPM
C1: 72%
C2: 18%
C3: 8%
C4: 2%
10,100
10,110
10,120
10,130
10,140
10,150
10,160
10,170
10,180
10,190
10,200
10,210
10,220
10,230
10,240
10,250
10,260
10,270
10,280
10,290
10,300
10,310
300
GAMMA (units)
124
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr LMST; v slow difse, v slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, dk brn-blk, plty-sb plty, fis ip, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip; v slow difse, v slow stmg, spd blshwh cut, tr yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, dk brn-blk, plty-sb plty, fis ip, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip; v slow difse, v slow stmg, spd bl cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, dk brn-blk, plty-sb plty, fis ip, rr pyr; v slow difse, v slow stmg, spd bl cut, fnt yel resd
SS: med-dk gy, frm-hd, brit, vf-f cmt; SH: dk gy- fis ip, occ sb blk ip, rr pyr, rr ls; v bl cut, fnt yel res
MD: 10,180'
TVD: 7,009.86'
Inclination: 88.37°
Azimuth: 269.5°
VS: 3,251.58'
MD: 10,271'
TVD: 7,012.38'
Inclination: 88.46°
Azimuth: 269.78°
VS: 3,342.26'
cale Change
Dip Adjusted
Lithology -6'
TVD (ft)
6940
7045

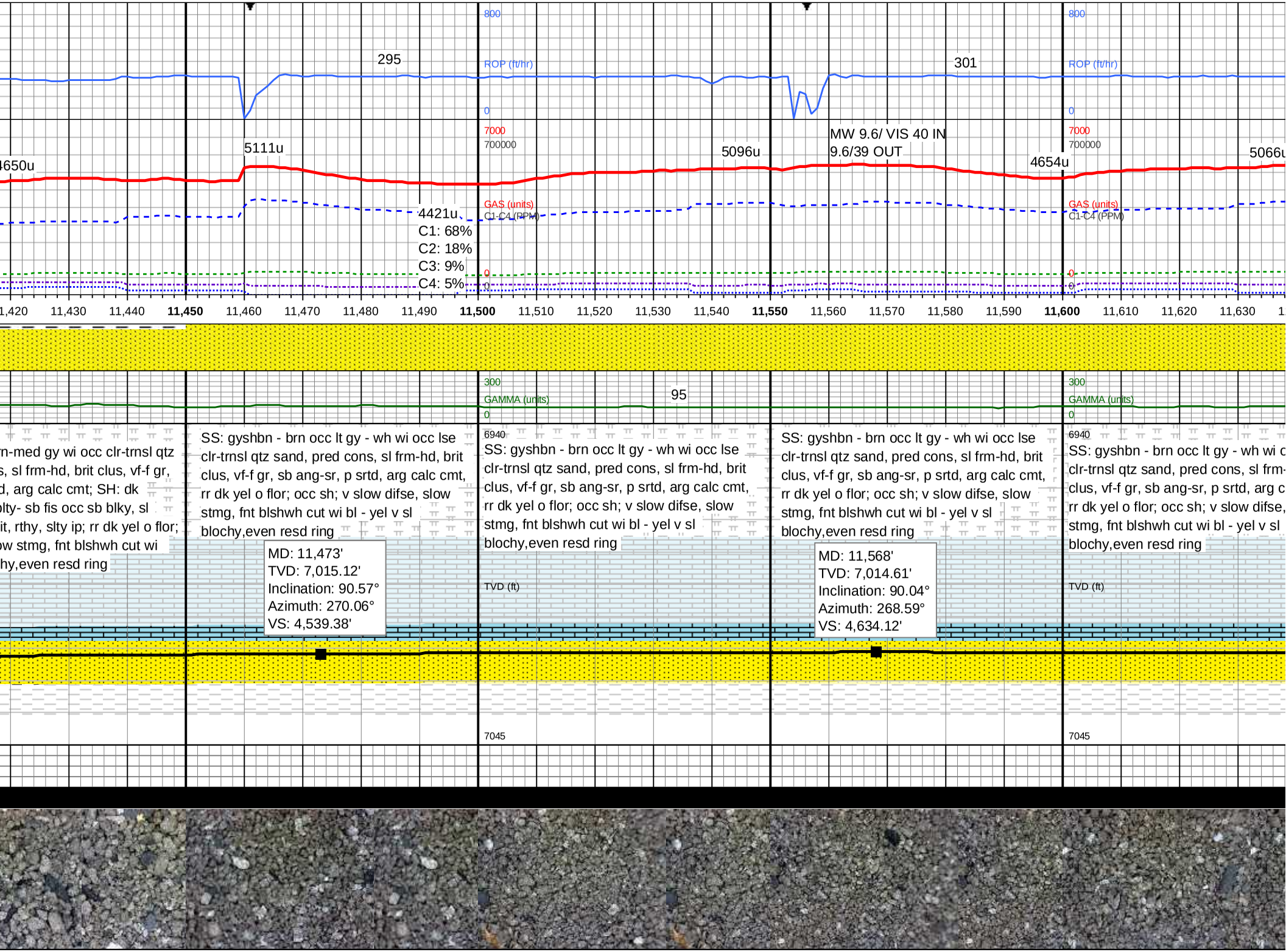

400
ROP (ft/hr)
0
52
55
800
NEW ROP LIMIT
0 TO 800 ft/hr
297
7000
700000
5011u
5144u
4800u
MW 9.5/ VIS 39 IN
9.6/39 OUT
4363u
GAS (units)
C1-C4 (PPM)
1353u
4968u (PPM)
C1: 69%
C2: 18%
C3: 9%
C4: 4%
0
10,320
10,330
10,340
10,350
10,360
10,370
10,380
10,390
10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
105
107
300
GAMMA (units)
6940
brn-dk brn, clr-trnsl, sl
gr, ang-sr, p srtd, arg calc
blk, dk brn-blk, plty-sb plty,
y, sft-sl frm, fri-brit, rthy, slty
slow difse, slow stmg, spd
sd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, rr sh, rr ls; v slow difse, v slow stmg, spd bl cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, rr sh, rr ls; v slow difse, slow stmg, spd bl cut, fnt yel resd
SS: med-dk gy, brn-dk brn, occ clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p-mod srtd, arg calc cmt, rr sh, rr ls; v slow difse, slow stmg, spd bl cut, fnt yel resd
SS: med-dk gy, brn-dk brn, clr-trns
frm-hd, brit, vf-f gr, ang-sr, p srtd,
cmt; SH: dk gy-blk, dk brn-blk, plty
fis ip, occ sb blky, sft-sl frm, fri-brit,
ip; v slow difse, slow stmg, spd bl
yel resd
MD: 10,363'
TVD: 7,014.22'
Inclination: 89.25°
Azimuth: 269.85°
VS: 3,433.93'
MD: 10,455'
TVD: 7,014.64'
Inclination: 90.22°
Azimuth: 269.94°
VS: 3,525.61'
Dip Adjusted
Lithology -5'
TVD (ft)
7045

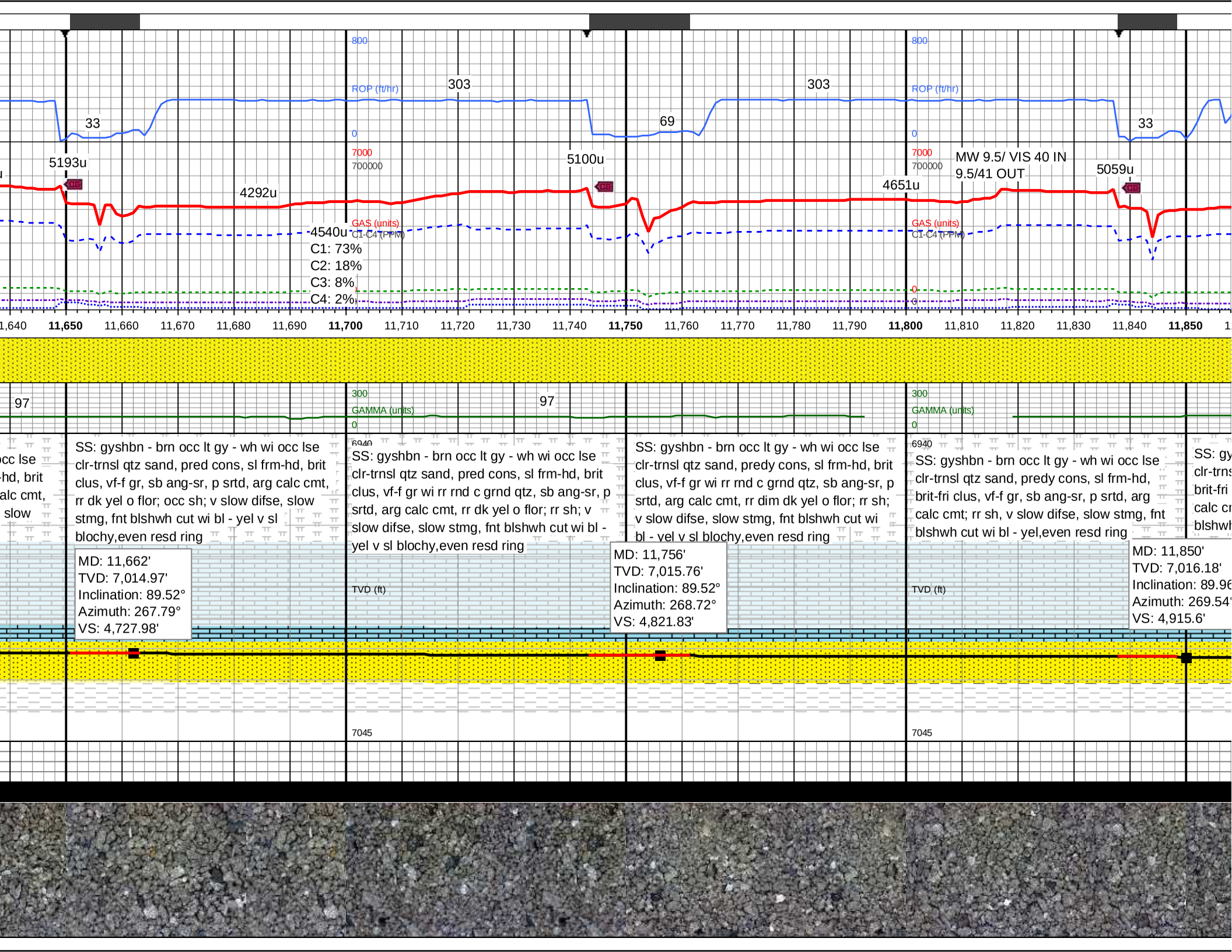

800
ROP (ft/hr)
282
297
0
MW 9.5/ VIS 39 IN
9.5/39 OUT
4590u
3986u
4816u
1940u
1816u
4514u
C1: 72%
C2: 17%
C3: 8%
C4: 2%
GAS (units)
C1-C4 (PPM)
7000
700000
MINDEPTH
9/8/2015
10,550
10,600
10,650
10,700
10,750
117
113
GAMMA (units)
300
6940
SS: med-dk gy, brn-dk brn, occ clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p-mod srtd, arg calc cmt, tr sh, rr ls; v slow difse, slow stmg, fnt blshwh cut, fnt yel blochy-even resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, dk brn-blk, plty-sb plty, fis ip, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip; v slow difse, slow stmg, fnt blshwh cut, fnt yel blochy-even resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, dk brn-blk, plty-sb plty, fis ip, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip, tr ls; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
MD: 10,547'
TVD: 7,015.63'
Inclination: 88.55°
Azimuth: 269.25°
VS: 3,617.32'
MD: 10,639'
TVD: 7,018.31'
Inclination: 88.11°
Azimuth: 268.99°
VS: 3,709.06'
MD: 10,730'
TVD: 7,020.76'
Inclination: 88.81°
Azimuth: 268.96°
VS: 3,799.82'
Dip Adjusted
Lithology -6'
TVD (ft)
7045

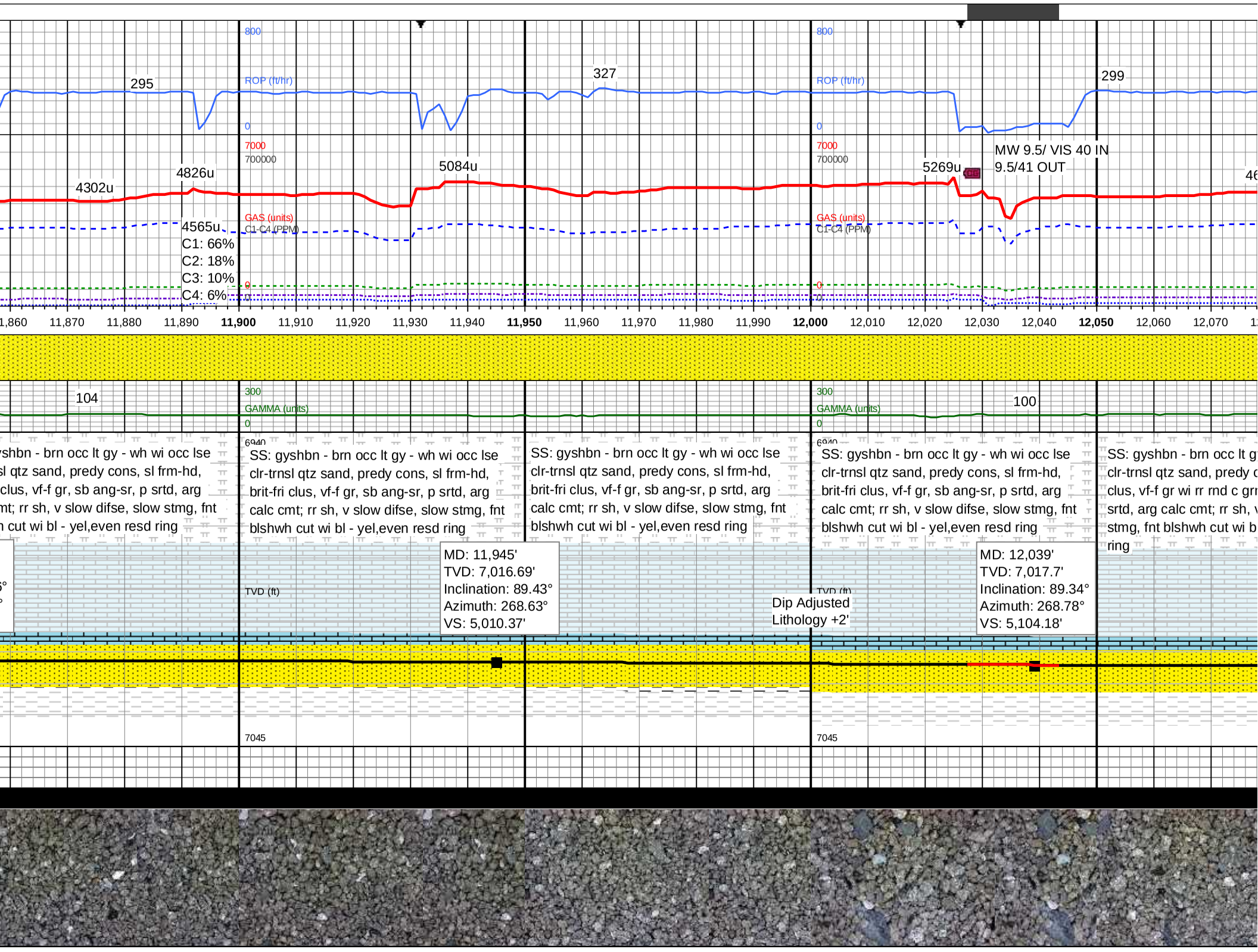

293
298
ROP (ft/hr)
800
0
MW 9.5/ VIS 42 IN
9.5/39 OUT
MW 9.5/ VIS 42 IN
9.5/42 OUT
MW 9.5/ VIS 39 IN
9.5+/40 OUT
7000
700000
4966u
3746u
4698u
4529u
C1: 76%
C2: 16%
C3: 6%
C4: 1%
1789u
GAS (units)
C1-C4 (PPM)
10,760
10,770
10,780
10,790
10,800
10,810
10,820
10,830
10,840
10,850
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
112
113
107
GAMMA (units)
300
0
6940
ed-dk gy, brn-dk brn, clr-trnsl, sl
, brit, vf-f gr, ang-sr, p srtd, arg calc
sh, rr ls flks; slow difse, slow stmg,
hwh cut wi bl - yel sl blochy-even
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tr sh, rr ls flks; slow difse, slow stmg,
fnt blshwh cut wi bl - yel sl blochy-even
resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sb ang-sr, p-mod
srtd, tt clus, arg calc cmt, tr sh, tr ls flks;
slow difse, slow stmg, fnt blshwh cut wi bl -
yel sl blochy-even resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt, tt clus; SH: dk gy-blk, dk brn-blk,
plty-sb plty, sb fis, occ sb blky, sft-sl frm,
fri-brit, rthy, slty ip, tr ls flks; slow difse, slow
stmg, fnt blshwh cut wi bl - yel sl
blochy-even resd
SS: med-dk gy, brn-dk br
frm-hd, brit, vf-f gr, ang-s
cmt, tt clus; SH: dk gy-bl
plty-sb plty, sb fis, occ sb
fri-brit, rthy, slty ip, tr ls fl
stmg, fnt blshwh cut wi b
blochy-even resd
TVD (ft)
TVD
MD: 10,822'
TVD: 7,022.24'
Inclination: 89.34°
Azimuth: 270.68°
VS: 3,891.49'
MD: 10,913'
TVD: 7,022.8'
Inclination: 89.96°
Azimuth: 271.21°
VS: 3,982.02'
7045

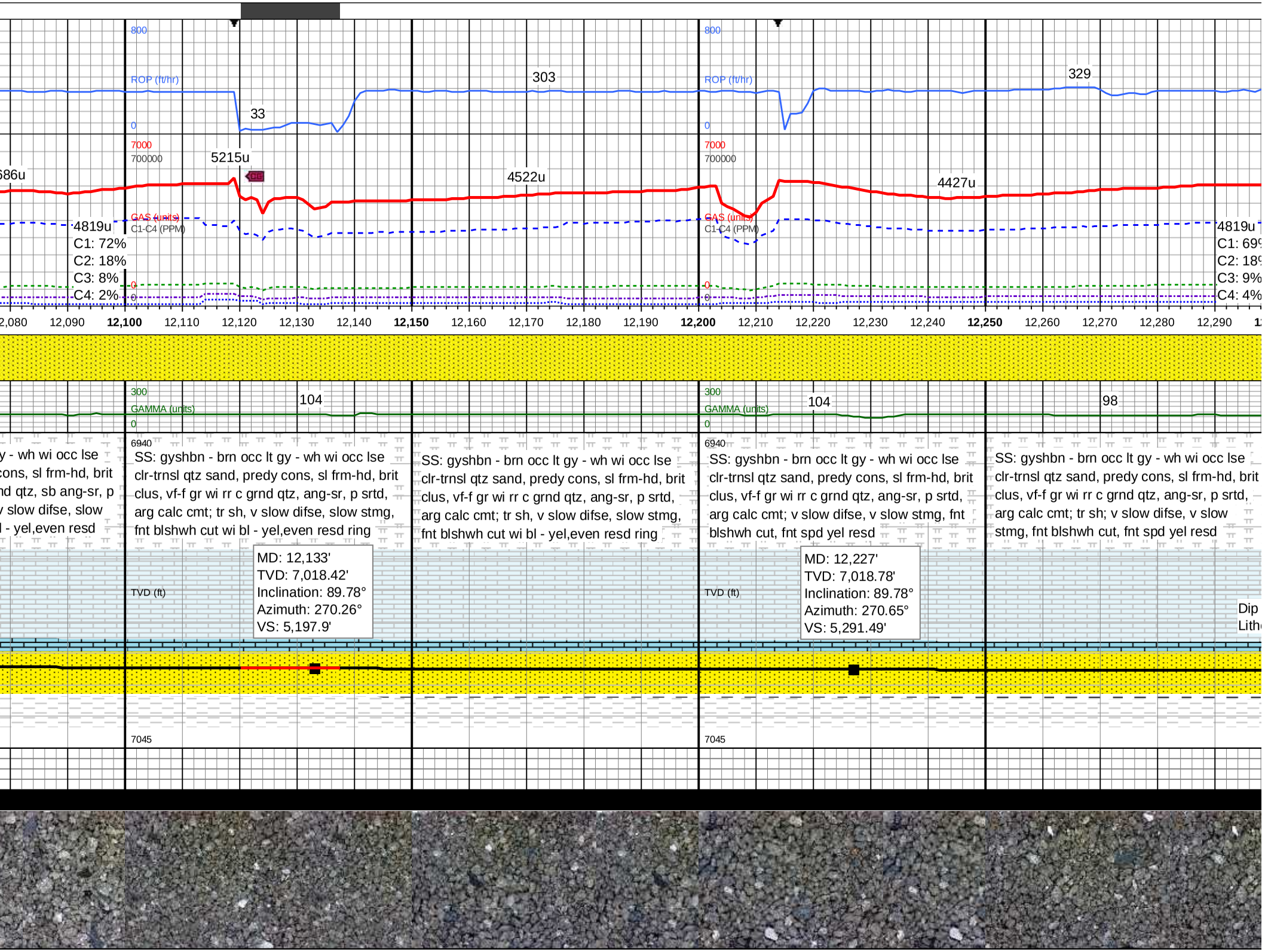

800
ROP (ft/hr)
0
33
245
247
7000
700000
MW 9.5/ VIS 41 IN
9.6/39 OUT
4227u
3254u
4590u
3946u
C1: 70%
C2: 18%
C3: 9%
C4: 3%
3351u
4423u
GAS (units)
C1-C4 (PPM)
0
10,980
10,990
11,000
11,010
11,020
11,030
11,040
11,050
11,060
11,070
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
11,160
11,170
11,180
11,190
300
GAMMA (units)
126
147
139
6940
rn, clr-trnsl, sl
r, p srtd, arg calc
k, dk brn-blk,
blky, sft-sl frm,
ks; slow difse, slow
l - yel sl
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tt clus; SH: dk gy-blk, dk brn-blk, plty-sb plty, sb fis, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip, rr ls flks; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
SS: med-dk gy, brn-dk brn, clr-trnsl, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tt clus; SH: dk gy-blk, dk brn-blk, plty-sb plty, sb fis, occ sb blky, sft-sl frm, fri-brit, rthy, slty ip, rr ls flks; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
SS: med-dk gy- gyshbn - dk brn wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis occ sb blky, sl sft-sl frm occ brit, rthy, slty ip; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
SS: med-dk gy- gyshbn - dk brn wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis occ sb blky, sl sft-sl frm occ brit, rthy, slty ip; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
MD: 11,005'
TVD: 7,022.23'
Inclination: 90.75°
Azimuth: 270.98°
VS: 4,073.52'
MD: 11,096'
TVD: 7,021.18'
Inclination: 90.57°
Azimuth: 270.76°
VS: 4,164.05'
TVD (ft)
Fault Adjusted
Lithology +4'
MD: 11,191'
TVD: 7,019.95'
Inclination: 90.92°
Azimuth: 270.55°
VS: 4,258.6'
7045
7045

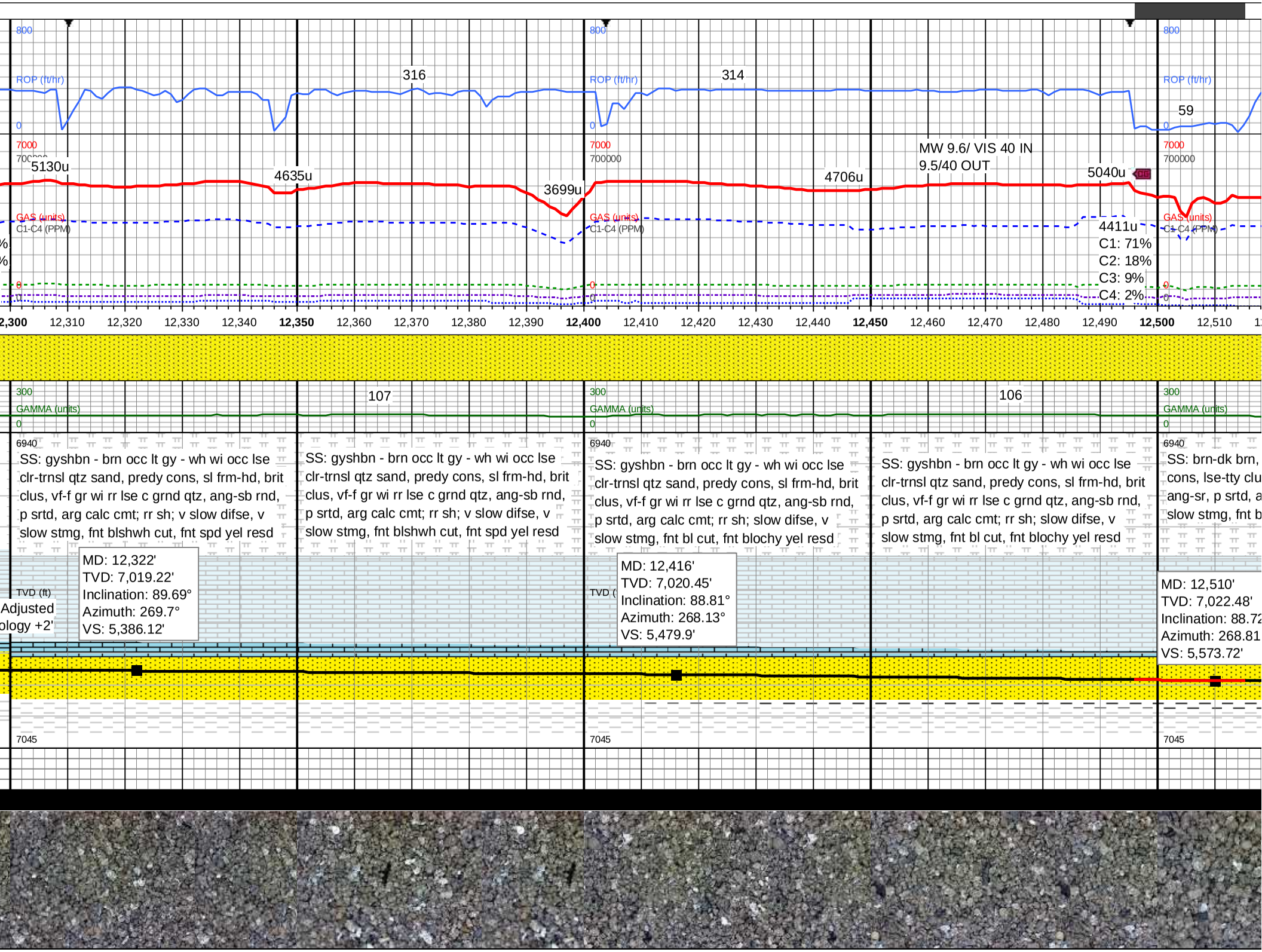

800
ROP (ft/hr)
0
275
261
7000
700000
GAS (units)
C1-C4 (PPM)
3920u
4844u
3839u
C1: 65%
C2: 20%
C3: 12%
C4: 4%
MW 9.5+/ VIS 39 IN
9.6/39 OUT
3813u
1-3' Flare
5013u
11,200
11,210
11,220
11,230
11,240
11,250
11,260
11,270
11,280
11,290
11,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
11,380
11,390
11,400
11,410
300
GAMMA (units)
92
95
6940
SS: med-dk gy- gyshbn - dk brn wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis occ sb blky, sl sft-sl frm occ brit, rthy, slty ip; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
SS: gyshbn - brn-med gy wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis occ sb blky, sl sft-sl frm occ brit, rthy, slty ip; rr dk yel o flor; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
MD: 11,285'
TVD: 7,018.22'
Inclination: 91.19°
Azimuth: 270.53°
VS: 4,352.17'
SS: gyshbn - brn-med gy wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; rr dk yel o flor; slow difse, slow stmg, fnt blshwh cut wi bl - yel sl blochy-even resd
SS: gyshbn - brn-med gy wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis occ sb blky, sl sft-sl frm occ brit, rthy, slty ip; rr dk yel o flor; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
MD: 11,379'
TVD: 7,016.41'
Inclination: 91.01°
Azimuth: 270.27°
VS: 4,445.75'
TVD (ft)
Dip Adjusted Lithology -2'
7045

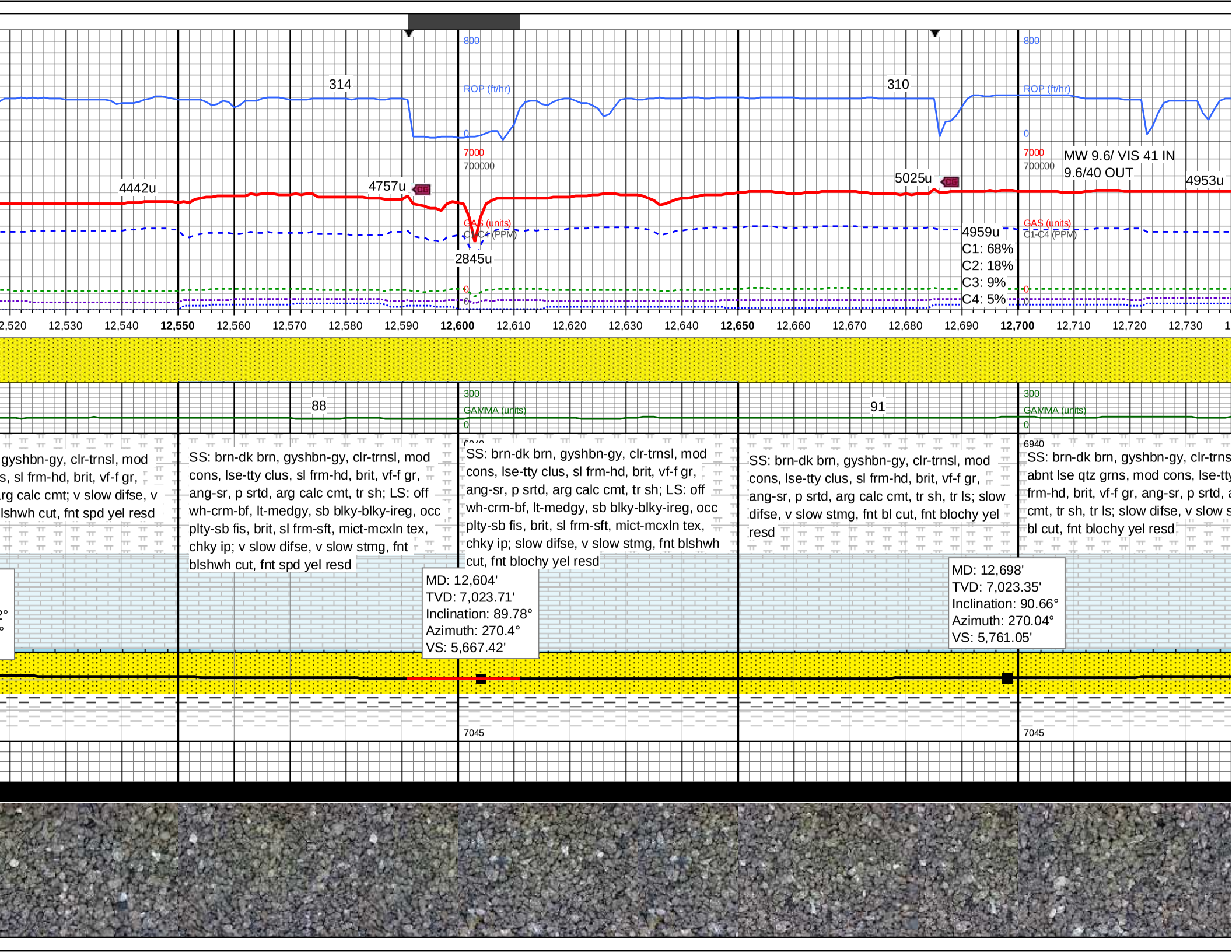

800
ROP (ft/hr)
0
295
301
7000
700000
GAS (units)
C1-C4 (PPM)
5111u
5096u
5066u
4650u
4654u
MW 9.6/ VIS 40 IN
9.6/39 OUT
4421u
C1: 68%
C2: 18%
C3: 9%
C4: 5%
11,420
11,430
11,440
11,450
11,460
11,470
11,480
11,490
11,500
11,510
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
11,600
11,610
11,620
11,630
300
GAMMA (units)
0
95
6940
7045
TVD (ft)
rn-med gy wi occ clr-trnsl qtz
s, sl frm-hd, brit clus, vf-f gr,
d, arg calc cmt; SH: dk
olty- sb fis occ sb blky, sl
it, rthy, slty ip; rr dk yel o flor;
ow stmg, fnt blshwh cut wi
hy,even resd ring
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt, rr dk yel o flor; occ sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
MD: 11,473'
TVD: 7,015.12'
Inclination: 90.57°
Azimuth: 270.06°
VS: 4,539.38'
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt, rr dk yel o flor; occ sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt, rr dk yel o flor; occ sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
MD: 11,568'
TVD: 7,014.61'
Inclination: 90.04°
Azimuth: 268.59°
VS: 4,634.12'
SS: gyshbn - brn occ lt gy - wh wi c
clr-trnsl qtz sand, pred cons, sl frm-
clus, vf-f gr, sb ang-sr, p srtd, arg c
rr dk yel o flor; occ sh; v slow difse,
stmg, fnt blshwh cut wi bl - yel v sl
blochy,even resd ring

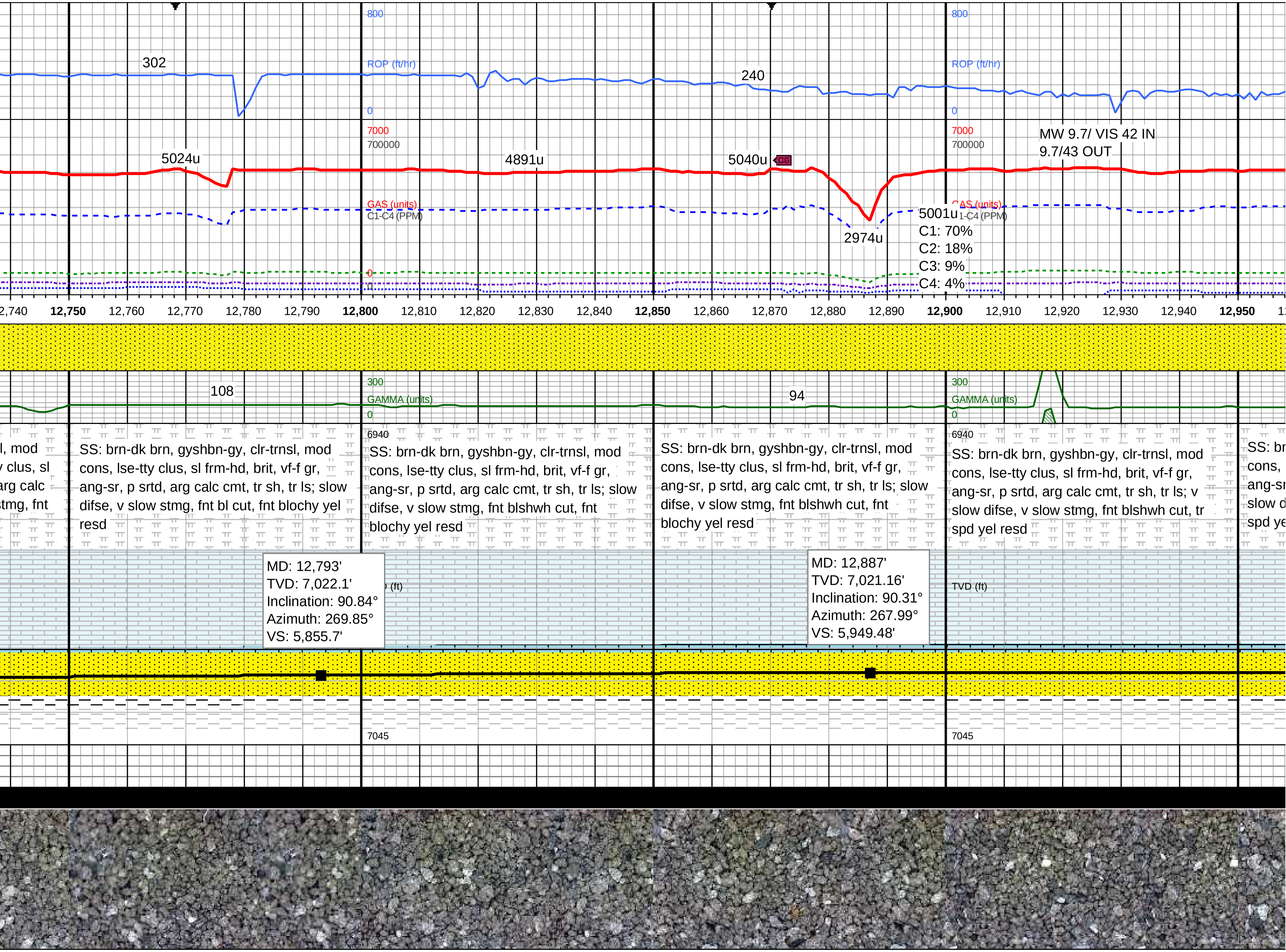

800
ROP (ft/hr)
0
303
303
33
69
33
7000
700000
5193u
5100u
5059u
4292u
4651u
4540u
MW 9.5/ VIS 40 IN
9.5/41 OUT
GAS (units)
C1-C4 (PPM)
C1: 73%
C2: 18%
C3: 8%
C4: 2%
11,640
11,650
11,660
11,670
11,680
11,690
11,700
11,710
11,720
11,730
11,740
11,750
11,760
11,770
11,780
11,790
11,800
11,810
11,820
11,830
11,840
11,850
97
97
300
GAMMA (units)
0
6940
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt, rr dk yel o flor; occ sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
MD: 11,662'
TVD: 7,014.97'
Inclination: 89.52°
Azimuth: 267.79°
VS: 4,727.98'
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr wi rr rnd c grnd qtz, sb ang-sr, p srtd, arg calc cmt, rr dk yel o flor; rr sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr rnd c grnd qtz, sb ang-sr, p srtd, arg calc cmt, rr dim dk yel o flor; rr sh; v slow difse, slow stmg, fnt blshwh cut wi bl - yel v sl blochy,even resd ring
MD: 11,756'
TVD: 7,015.76'
Inclination: 89.52°
Azimuth: 268.72°
VS: 4,821.83'
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit-fri clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; rr sh, v slow difse, slow stmg, fnt blshwh cut wi bl - yel,even resd ring
MD: 11,850'
TVD: 7,016.18'
Inclination: 89.96
Azimuth: 269.54
VS: 4,915.6'
TVD (ft)
7045


800
ROP (ft/hr)
0
295
327
299
7000
700000
GAS (units)
C1-C4 (PPM)
4302u
4826u
5084u
5269u
4565u
C1: 66%
C2: 18%
C3: 10%
C4: 6%
MW 9.5/ VIS 40 IN
9.5/41 OUT
11,860
11,870
11,880
11,890
11,900
11,910
11,920
11,930
11,940
11,950
11,960
11,970
11,980
11,990
12,000
12,010
12,020
12,030
12,040
12,050
12,060
12,070
300
GAMMA (units)
0
104
100
SS: gyshbn - brn occ lt gy - wh wi occ lse
clr-trnsl qtz sand, predy cons, sl frm-hd,
brit-fri clus, vf-f gr, sb ang-sr, p srtd, arg
calc cmt; rr sh, v slow difse, slow stmg, fnt
blshwh cut wi bl - yel,even resd ring
MD: 11,945'
TVD: 7,016.69'
Inclination: 89.43°
Azimuth: 268.63°
VS: 5,010.37'
MD: 12,039'
TVD: 7,017.7'
Inclination: 89.34°
Azimuth: 268.78°
VS: 5,104.18'
TVD (ft)
6940
7045
Dip Adjusted
Lithology +2'

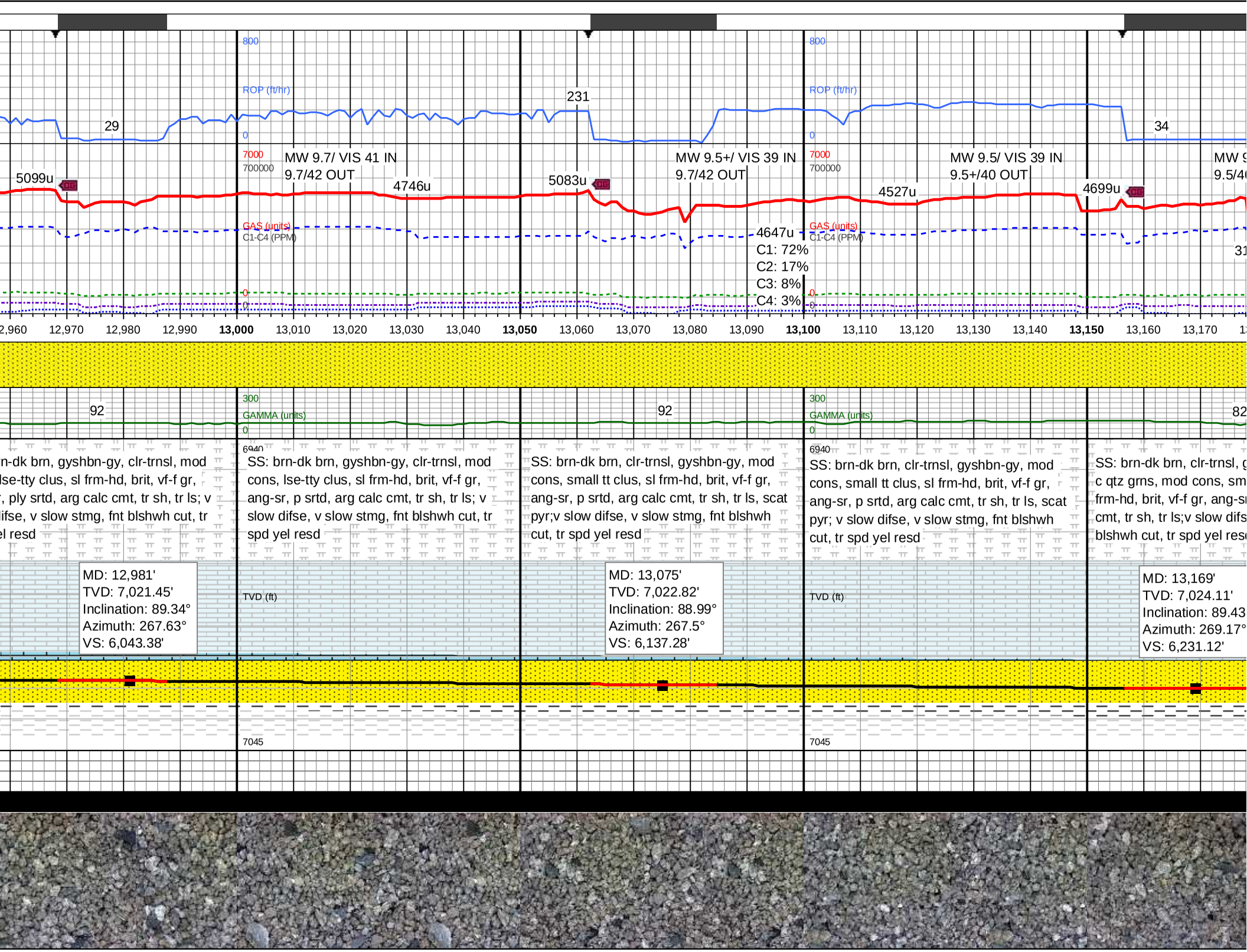

800
ROP (ft/hr)
0
303
33
329
7000
700000
5215u
4522u
4427u
686u
4819u
C1: 72%
C2: 18%
C3: 8%
C4: 2%
GAS (units)
C1-C4 (PPM)
4819u
C1: 69%
C2: 18%
C3: 9%
C4: 4%
12,080
12,090
12,100
12,110
12,120
12,130
12,140
12,150
12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
300
GAMMA (units)
104
98
6940
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr c grnd qtz, ang-sr, p srtd, arg calc cmt; tr sh, v slow difse, slow stmg, fnt blshwh cut wi bl - yel,even resd ring
MD: 12,133'
TVD: 7,018.42'
Inclination: 89.78°
Azimuth: 270.26°
VS: 5,197.9'
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr c grnd qtz, ang-sr, p srtd, arg calc cmt; v slow difse, v slow stmg, fnt blshwh cut, fnt spd yel resd
MD: 12,227'
TVD: 7,018.78'
Inclination: 89.78°
Azimuth: 270.65°
VS: 5,291.49'
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr c grnd qtz, ang-sr, p srtd, arg calc cmt; tr sh; v slow difse, v slow stmg, fnt blshwh cut, fnt spd yel resd
TVD (ft)
7045
Dip
Lith

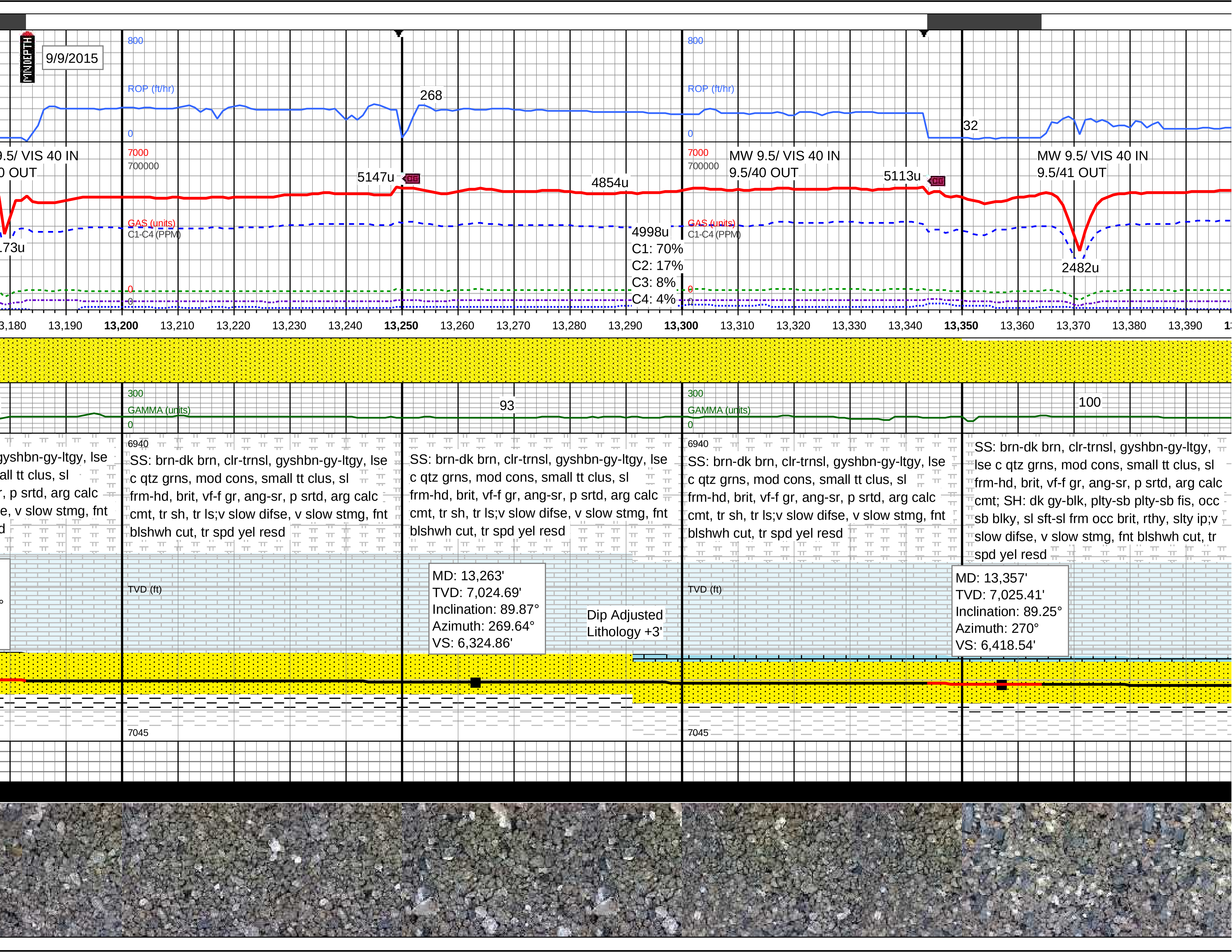

800
ROP (ft/hr)
0
316
314
59
7000
700000
5130u
4635u
3699u
4706u
MW 9.6/ VIS 40 IN
9.5/40 OUT
5040u
4411u
C1: 71%
C2: 18%
C3: 9%
C4: 2%
GAS (units)
C1-C4 (PPM)
12,300
12,310
12,320
12,330
12,340
12,350
12,360
12,370
12,380
12,390
12,400
12,410
12,420
12,430
12,440
12,450
12,460
12,470
12,480
12,490
12,500
12,510
300
GAMMA (units)
107
106
6940
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr lse c grnd qtz, ang-sb rnd, p srtd, arg calc cmt; rr sh; v slow difse, v slow stmg, fnt blshwh cut, fnt spd yel resd
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr lse c grnd qtz, ang-sb rnd, p srtd, arg calc cmt; rr sh; v slow difse, v slow stmg, fnt blshwh cut, fnt spd yel resd
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr lse c grnd qtz, ang-sb rnd, p srtd, arg calc cmt; rr sh; slow difse, v slow stmg, fnt bl cut, fnt blochy yel resd
SS: gyshbn - brn occ lt gy - wh wi occ lse clr-trnsl qtz sand, predy cons, sl frm-hd, brit clus, vf-f gr wi rr lse c grnd qtz, ang-sb rnd, p srtd, arg calc cmt; rr sh; slow difse, v slow stmg, fnt bl cut, fnt blochy yel resd
SS: brn-dk brn, cons, lse-tty clu ang-sr, p srtd, a slow stmg, fnt b
MD: 12,322'
TVD: 7,019.22'
Inclination: 89.69°
Azimuth: 269.7°
VS: 5,386.12'
MD: 12,416'
TVD: 7,020.45'
Inclination: 88.81°
Azimuth: 268.13°
VS: 5,479.9'
MD: 12,510'
TVD: 7,022.48'
Inclination: 88.72
Azimuth: 268.81
VS: 5,573.72'
TVD (ft)
Adjusted
ology +2'
7045


800
ROP (ft/hr)
0
314
310
7000
700000
MW 9.6/ VIS 41 IN
9.6/40 OUT
4442u
4757u
5025u
4953u
2845u
4959u
C1: 68%
C2: 18%
C3: 9%
C4: 5%
GAS (units)
C1-C4 (PPM)
12,520
12,530
12,540
12,550
12,560
12,570
12,580
12,590
12,600
12,610
12,620
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
300
GAMMA (units)
88
91
6940
7045
gyshbn-gy, clr-trnsl, mod
s, sl frm-hd, brit, vf-f gr,
rg calc cmt; v slow difse, v
lshwh cut, fnt spd yel resd
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh; LS: off wh-crm-bf, lt-medgy, sb blky-blky-ireg, occ plty-sb fis, brit, sl frm-sft, mict-mcxln tex, chky ip; v slow difse, v slow stmg, fnt blshwh cut, fnt spd yel resd
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh; LS: off wh-crm-bf, lt-medgy, sb blky-blky-ireg, occ plty-sb fis, brit, sl frm-sft, mict-mcxln tex, chky ip; slow difse, v slow stmg, fnt blshwh cut, fnt blochy yel resd
MD: 12,604'
TVD: 7,023.71'
Inclination: 89.78°
Azimuth: 270.4°
VS: 5,667.42'
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; slow difse, v slow stmg, fnt bl cut, fnt blochy yel resd
MD: 12,698'
TVD: 7,023.35'
Inclination: 90.66°
Azimuth: 270.04°
VS: 5,761.05'
SS: brn-dk brn, gyshbn-gy, clr-trns
abnt lse qtz grns, mod cons, lse-tty
frm-hd, brit, vf-f gr, ang-sr, p srtd, a
cmt, tr sh, tr ls; slow difse, v slow s
bl cut, fnt blochy yel resd

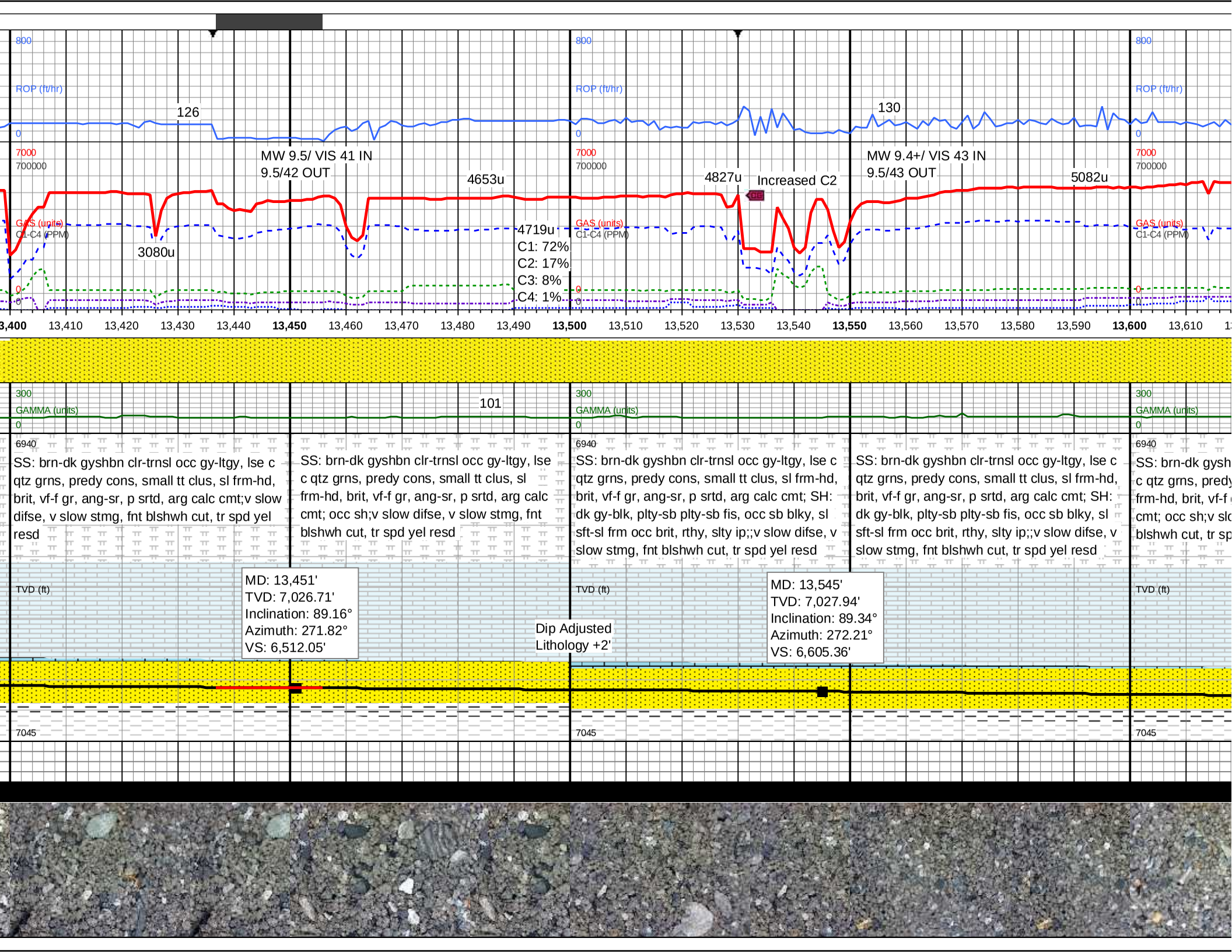


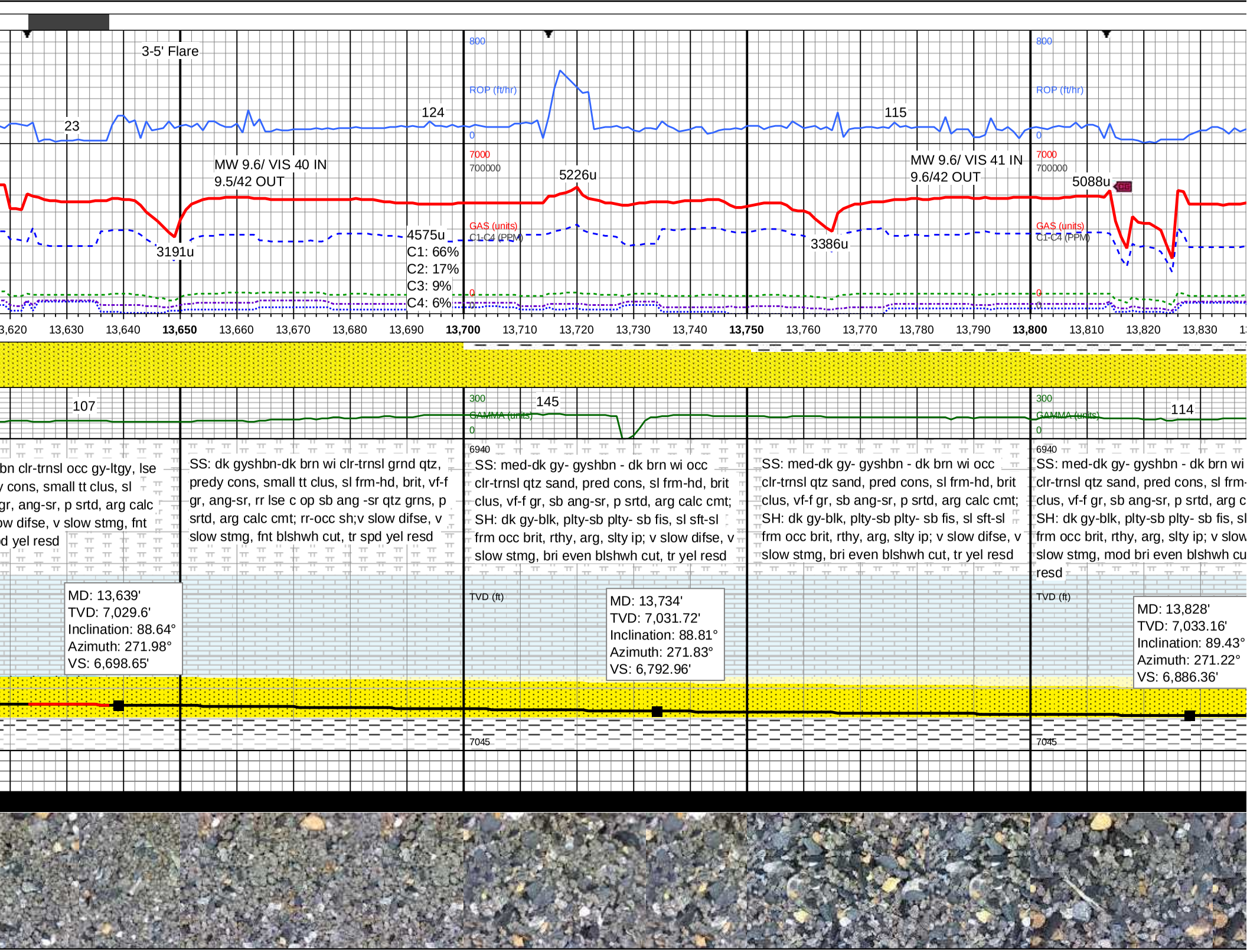
302
240
ROP (ft/hr)
800
0
7000
700000
5024u
4891u
5040u
2974u
5001u
C1: 70%
C2: 18%
C3: 9%
C4: 4%
MW 9.7/ VIS 42 IN
9.7/43 OUT
GAS (units)
C1-C4 (PPM)
12,740
12,750
12,760
12,770
12,780
12,790
12,800
12,810
12,820
12,830
12,840
12,850
12,860
12,870
12,880
12,890
12,900
12,910
12,920
12,930
12,940
12,950
108
94
300
GAMMA (units)
6940
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; slow difse, v slow stmg, fnt bl cut, fnt blochy yel resd
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; slow difse, v slow stmg, fnt blshwh cut, fnt blochy yel resd
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; slow difse, v slow stmg, fnt blshwh cut, fnt blochy yel resd
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
MD: 12,793'
TVD: 7,022.1'
Inclination: 90.84°
Azimuth: 269.85°
VS: 5,855.7'
MD: 12,887'
TVD: 7,021.16'
Inclination: 90.31°
Azimuth: 267.99°
VS: 5,949.48'
TVD (ft)
7045

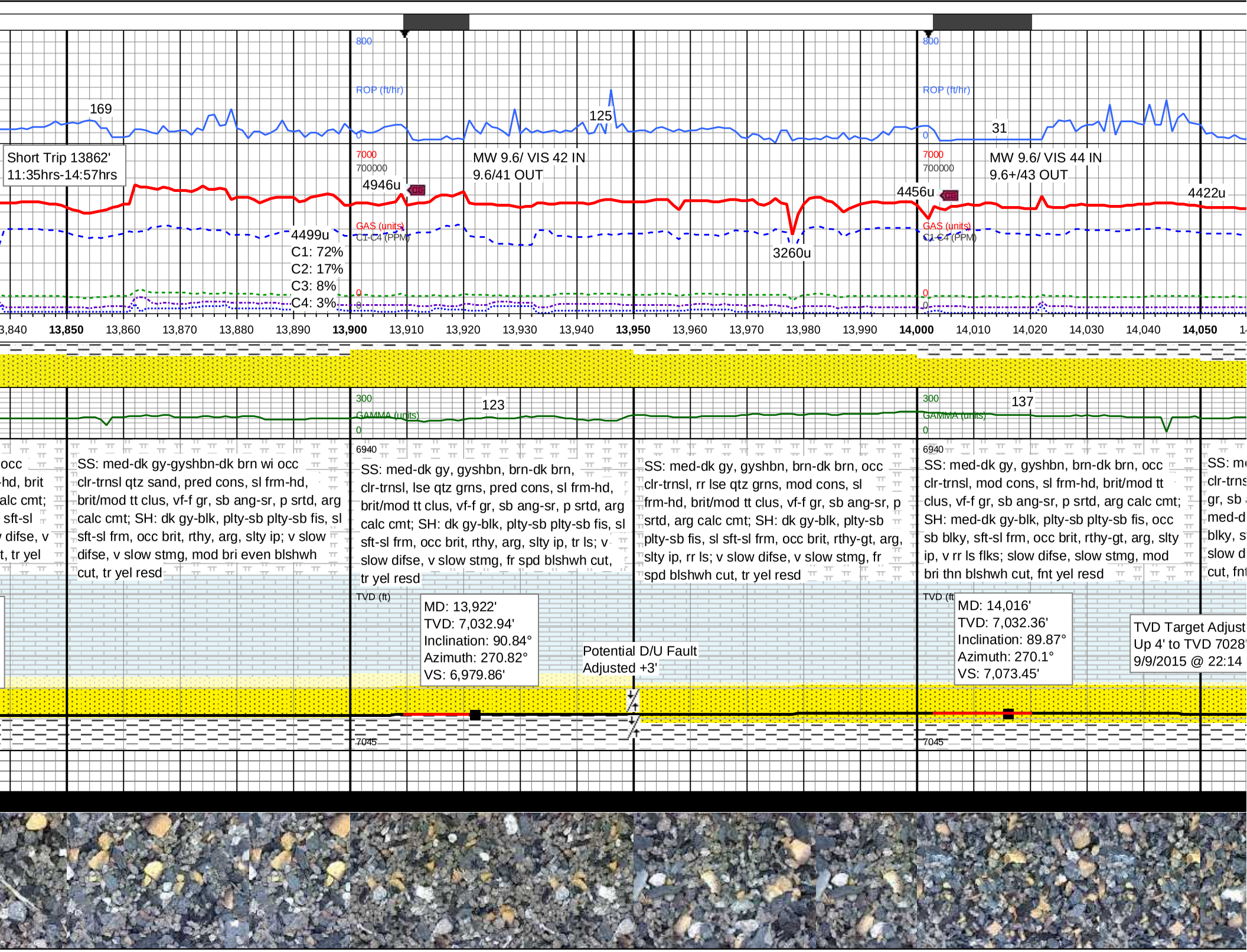

800
ROP (ft/hr)
0
29
231
34
7000
700000
MW 9.7/ VIS 41 IN
9.7/42 OUT
MW 9.5+/ VIS 39 IN
9.7/42 OUT
MW 9.5/ VIS 39 IN
9.5+/40 OUT
5099u
4746u
5083u
4527u
4699u
GAS (units)
C1-C4 (PPM)
4647u
C1: 72%
C2: 17%
C3: 8%
C4: 3%
12,960
12,970
12,980
12,990
13,000
13,010
13,020
13,030
13,040
13,050
13,060
13,070
13,080
13,090
13,100
13,110
13,120
13,130
13,140
13,150
13,160
13,170
92
300
GAMMA (units)
0
6940
SS: brn-dk brn, gyshbn-gy, clr-trnsl, mod cons, lse-tty clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls; v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk brn, clr-trnsl, gyshbn-gy, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls, scat pyr;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk brn, clr-trnsl, gyshbn-gy, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls, scat pyr; v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
MD: 12,981'
TVD: 7,021.45'
Inclination: 89.34°
Azimuth: 267.63°
VS: 6,043.38'
MD: 13,075'
TVD: 7,022.82'
Inclination: 88.99°
Azimuth: 267.5°
VS: 6,137.28'
MD: 13,169'
TVD: 7,024.11'
Inclination: 89.43
Azimuth: 269.17°
VS: 6,231.12'
TVD (ft)
7045

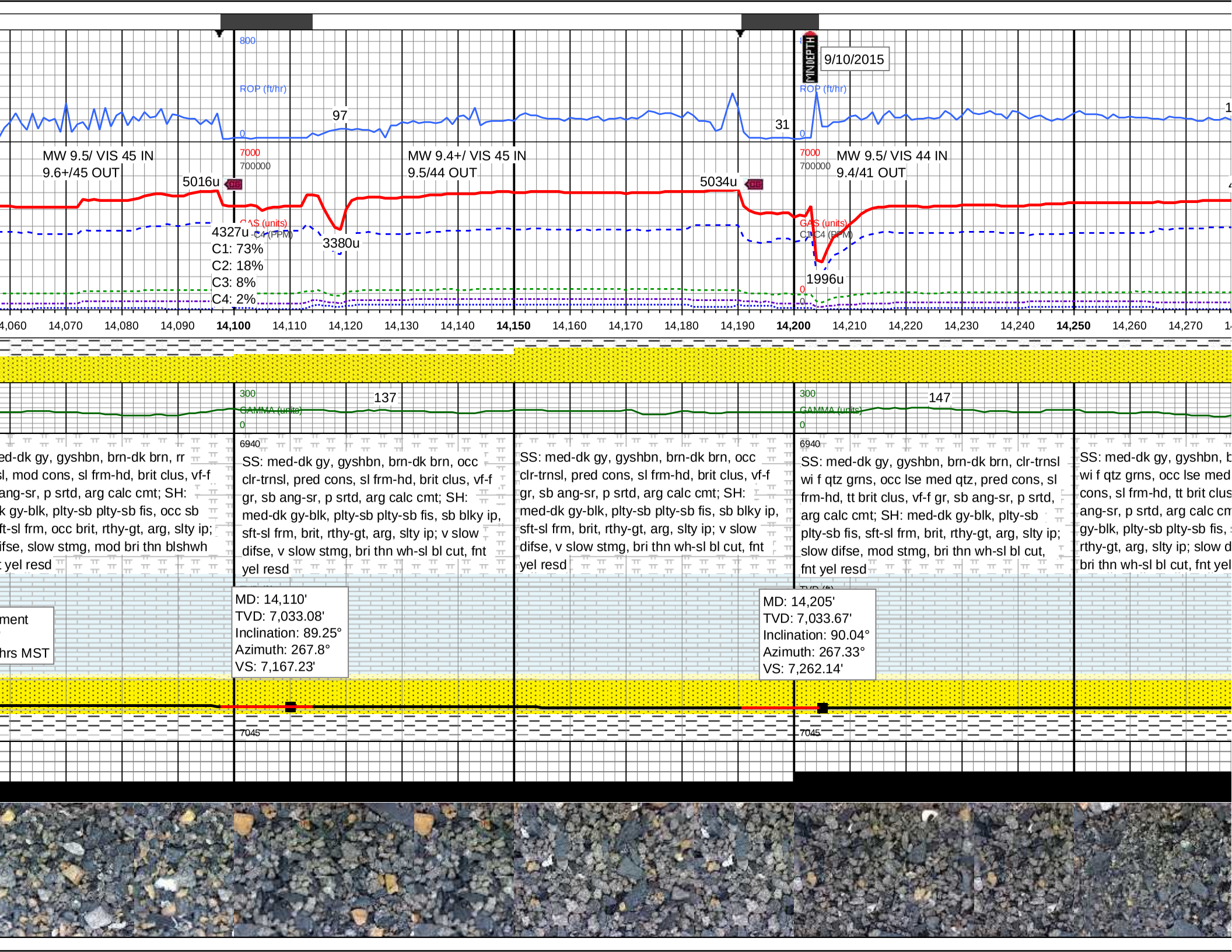


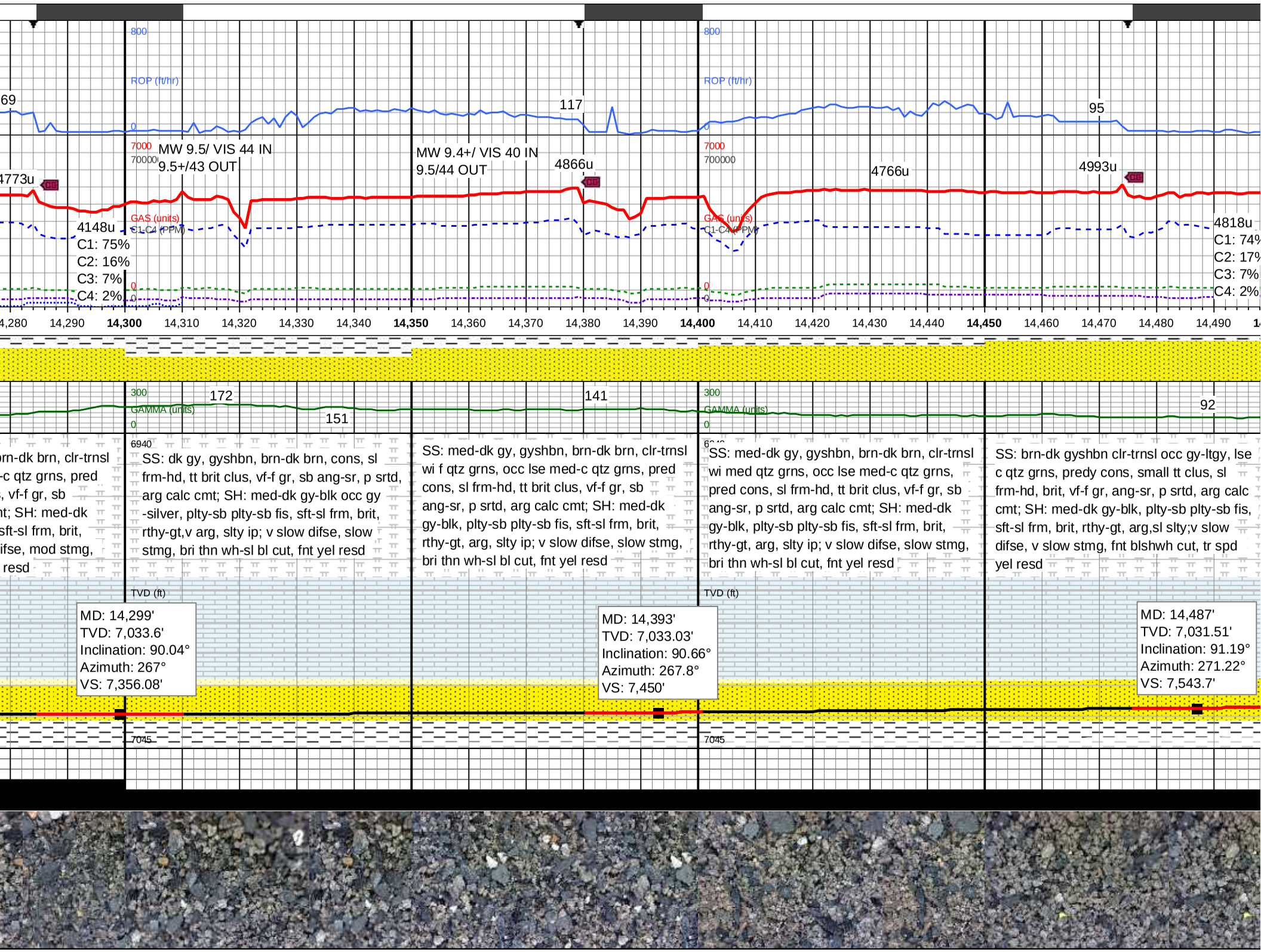
9/9/2015
MNDEPTH
ROP (ft/hr)
800
0
268
32
7000
700000
9.5/ VIS 40 IN
0 OUT
MW 9.5/ VIS 40 IN
9.5/40 OUT
MW 9.5/ VIS 40 IN
9.5/41 OUT
5147u
4854u
5113u
GAS (units)
C1-C4 (PPM)
73u
4998u
C1: 70%
C2: 17%
C3: 8%
C4: 4%
2482u
3,180
13,190
13,200
13,210
13,220
13,230
13,240
13,250
13,260
13,270
13,280
13,290
13,300
13,310
13,320
13,330
13,340
13,350
13,360
13,370
13,380
13,390
300
GAMMA (units)
93
100
6940
gyshbn-gy-ltgy, lse
all tt clus, sl
r, p srtd, arg calc
e, v slow stmg, fnt
d
SS: brn-dk brn, clr-trnsl, gyshbn-gy-ltgy, lse c qtz grns, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk brn, clr-trnsl, gyshbn-gy-ltgy, lse c qtz grns, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk brn, clr-trnsl, gyshbn-gy-ltgy, lse c qtz grns, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt, tr sh, tr ls;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk brn, clr-trnsl, gyshbn-gy-ltgy, lse c qtz grns, mod cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, occ sb blky, sl sft-sl frm occ brit, rthy, slty ip;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
TVD (ft)
MD: 13,263'
TVD: 7,024.69'
Inclination: 89.87°
Azimuth: 269.64°
VS: 6,324.86'
Dip Adjusted
Lithology +3'
MD: 13,357'
TVD: 7,025.41'
Inclination: 89.25°
Azimuth: 270°
VS: 6,418.54'
7045

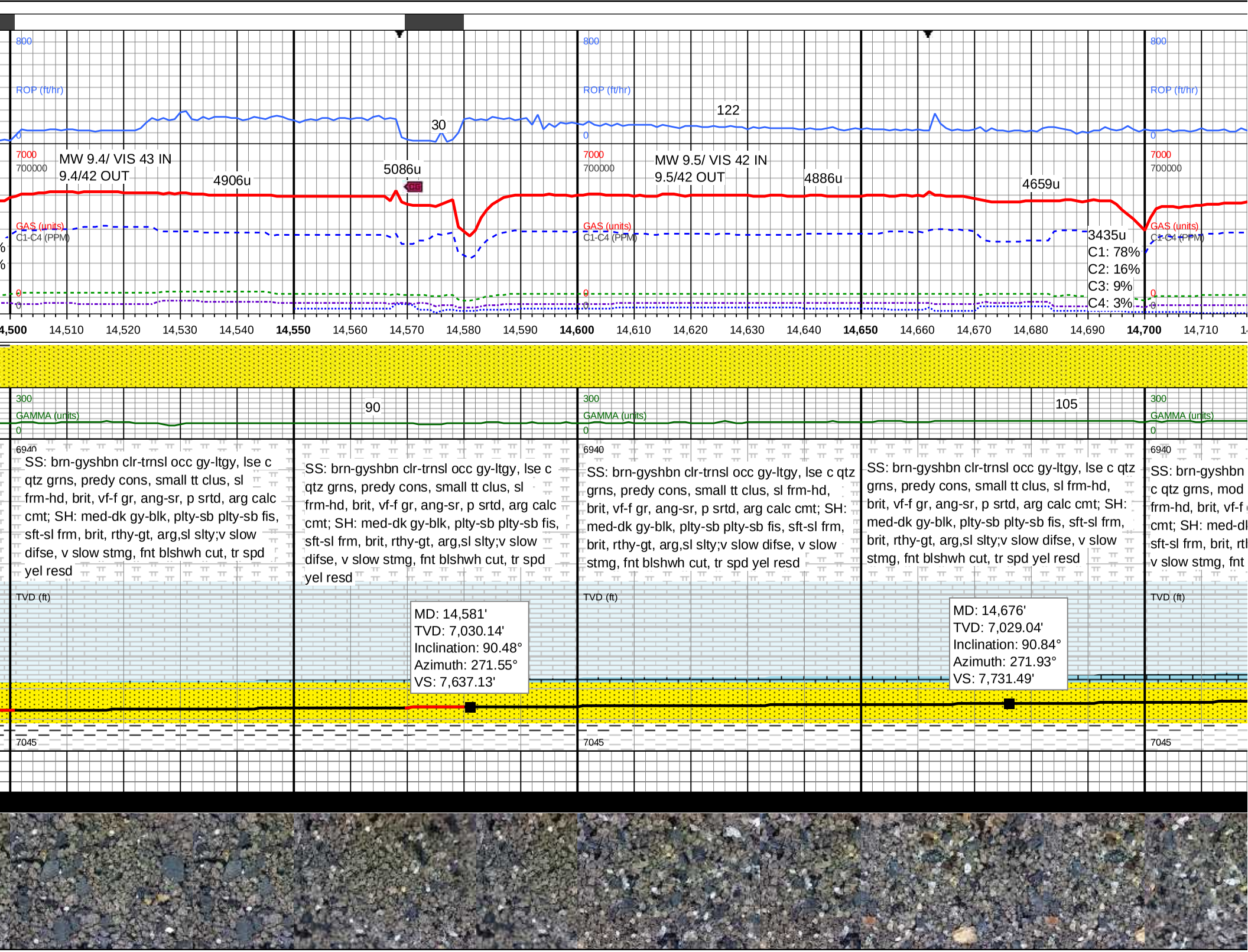

800
ROP (ft/hr)
0
126
MW 9.5/ VIS 41 IN
9.5/42 OUT
4653u
3080u
4719u
C1: 72%
C2: 17%
C3: 8%
C4: 1%
4827u
Increased C2
MW 9.4+/ VIS 43 IN
9.5/43 OUT
5082u
130
7000
700000
GAS (units)
C1-C4 (PPM)
13,400
13,410
13,420
13,430
13,440
13,450
13,460
13,470
13,480
13,490
13,500
13,510
13,520
13,530
13,540
13,550
13,560
13,570
13,580
13,590
13,600
300
GAMMA (units)
101
6940
SS: brn-dk gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; occ sh;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, occ sb blky, sl sft-sl frm occ brit, rthy, slty ip;;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-dk gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, occ sb blky, sl sft-sl frm occ brit, rthy, slty ip;;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
TVD (ft)
MD: 13,451'
TVD: 7,026.71'
Inclination: 89.16°
Azimuth: 271.82°
VS: 6,512.05'
Dip Adjusted
Lithology +2'
MD: 13,545'
TVD: 7,027.94'
Inclination: 89.34°
Azimuth: 272.21°
VS: 6,605.36'
7045

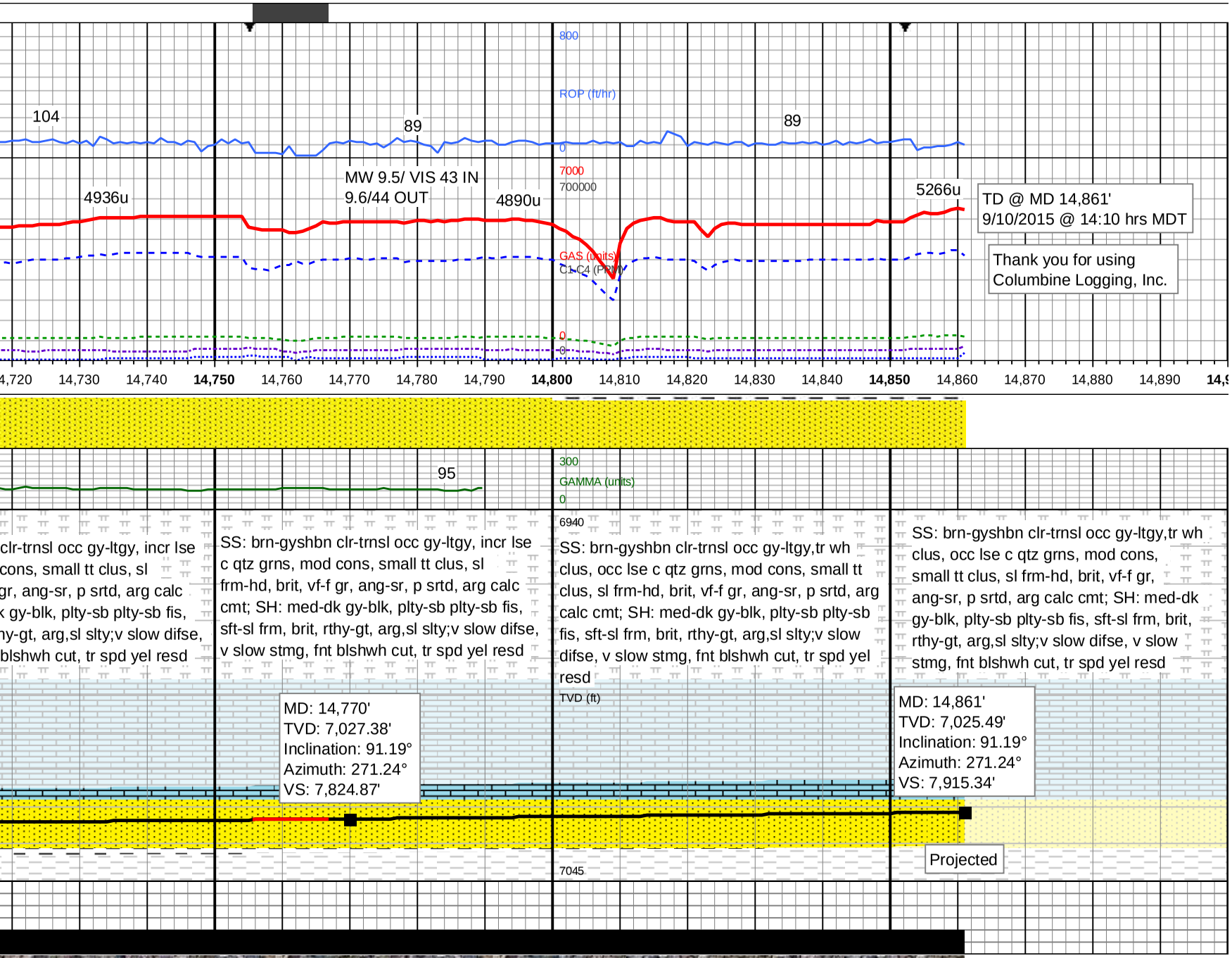

3-5' Flare
ROP (ft/hr)
800
0
23
124
115
MW 9.6/ VIS 40 IN
9.5/42 OUT
MW 9.6/ VIS 41 IN
9.6/42 OUT
5226u
5088u
3191u
3386u
4575u
C1: 66%
C2: 17%
C3: 9%
C4: 6%
7000
700000
GAS (units)
C1-C4 (PPM)
13,620
13,630
13,640
13,650
13,660
13,670
13,680
13,690
13,700
13,710
13,720
13,730
13,740
13,750
13,760
13,770
13,780
13,790
13,800
13,810
13,820
13,830
107
145
114
300
GAMMA (units)
6940
7045
TVD (ft)
SS: dk gyshbn-dk brn wi clr-trnsl grnd qtz, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, rr lse c op sb ang -sr qtz grns, p srtd, arg calc cmt; rr-occ sh;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
SS: med-dk gy- gyshbn - dk brn wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty- sb fis, sl sft-sl frm occ brit, rthy, arg, slty ip; v slow difse, v slow stmg, bri even blshwh cut, tr yel resd
MD: 13,639'
TVD: 7,029.6'
Inclination: 88.64°
Azimuth: 271.98°
VS: 6,698.65'
MD: 13,734'
TVD: 7,031.72'
Inclination: 88.81°
Azimuth: 271.83°
VS: 6,792.96'
MD: 13,828'
TVD: 7,033.16'
Inclination: 89.43°
Azimuth: 271.22°
VS: 6,886.36'


800
ROP (ft/hr)
0
169
125
31
Short Trip 13862'
11:35hrs-14:57hrs
7000
700000
4946u
GG
MW 9.6/ VIS 42 IN
9.6/41 OUT
4456u
GG
4422u
MW 9.6/ VIS 44 IN
9.6+/43 OUT
GAS (units)
C1-C4 (PPM)
4499u
C1: 72%
C2: 17%
C3: 8%
C4: 3%
3260u
0
13,840
13,850
13,860
13,870
13,880
13,890
13,900
13,910
13,920
13,930
13,940
13,950
13,960
13,970
13,980
13,990
14,000
14,010
14,020
14,030
14,040
14,050
300
GAMMA (units)
123
137
6940
SS: med-dk gy-gyshbn-dk brn wi occ clr-trnsl qtz sand, pred cons, sl frm-hd, brit/mod tt clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, sl sft-sl frm, occ brit, rthy, arg, slty ip; v slow difse, v slow stmg, mod bri even blshwh cut, tr yel resd
SS: med-dk gy, gyshbn, brn-dk brn, clr-trnsl, lse qtz grns, pred cons, sl frm-hd, brit/mod tt clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, sl sft-sl frm, occ brit, rthy, arg, slty ip, tr ls; v slow difse, v slow stmg, fr spd blshwh cut, tr yel resd
SS: med-dk gy, gyshbn, brn-dk brn, occ clr-trnsl, rr lse qtz grns, mod cons, sl frm-hd, brit/mod tt clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: dk gy-blk, plty-sb plty-sb fis, sl sft-sl frm, occ brit, rthy-gt, arg, slty ip, rr ls; v slow difse, v slow stmg, fr spd blshwh cut, tr yel resd
SS: med-dk gy, gyshbn, brn-dk brn, occ clr-trnsl, mod cons, sl frm-hd, brit/mod tt clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, occ sb blky, sft-sl frm, occ brit, rthy-gt, arg, slty ip, v rr ls flks; slow difse, slow stmg, mod bri thn blshwh cut, fnt yel resd
TVD (ft)
MD: 13,922'
TVD: 7,032.94'
Inclination: 90.84°
Azimuth: 270.82°
VS: 6,979.86'
Potential D/U Fault
Adjusted +3'
MD: 14,016'
TVD: 7,032.36'
Inclination: 89.87°
Azimuth: 270.1°
VS: 7,073.45'
TVD Target Adjust
Up 4' to TVD 7028'
9/9/2015 @ 22:14
7045


9/10/2015
MINDEPTH
800
ROP (ft/hr)
0
97
31
7000
700000
MW 9.5/ VIS 45 IN
9.6+/45 OUT
MW 9.4+/ VIS 45 IN
9.5/44 OUT
MW 9.5/ VIS 44 IN
9.4/41 OUT
5016u
5034u
GAS (units)
C1/C4 (PPM)
4327u
C1: 73%
C2: 18%
C3: 8%
C4: 2%
3380u
1996u
14,060
14,070
14,080
14,090
14,100
14,110
14,120
14,130
14,140
14,150
14,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
14,240
14,250
14,260
14,270
300
GAMMA (units)
0
137
147
6940
SS: med-dk gy, gyshbn, brn-dk brn, occ clr-trnsl, pred cons, sl frm-hd, brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sb blky ip, sft-sl frm, brit, rthy-gt, arg, slty ip; v slow difse, v slow stmg, bri thn wh-sl bl cut, fnt yel resd
SS: med-dk gy, gyshbn, brn-dk brn, clr-trnsl wi f qtz grns, occ lse med qtz, pred cons, sl frm-hd, tt brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt, arg, slty ip; slow difse, mod stmg, bri thn wh-sl bl cut, fnt yel resd
MD: 14,110'
TVD: 7,033.08'
Inclination: 89.25°
Azimuth: 267.8°
VS: 7,167.23'
MD: 14,205'
TVD: 7,033.67'
Inclination: 90.04°
Azimuth: 267.33°
VS: 7,262.14'
7045


800
ROP (ft/hr)
0
69
117
95
7000
700000
MW 9.5/ VIS 44 IN
9.5+/43 OUT
MW 9.4+/ VIS 40 IN
9.5/44 OUT
4773u
4866u
4766u
4993u
GAS (units)
C1-C4 (PPM)
4148u
C1: 75%
C2: 16%
C3: 7%
C4: 2%
4818u
C1: 74%
C2: 17%
C3: 7%
C4: 2%
14,280
14,290
14,300
14,310
14,320
14,330
14,340
14,350
14,360
14,370
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
300
GAMMA (units)
172
151
141
92
6940
TVD (ft)
SS: dk gy, gyshbn, brn-dk brn, cons, sl frm-hd, tt brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk occ gy -silver, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt,v arg, slty ip; v slow difse, slow stmg, bri thn wh-sl bl cut, fnt yel resd
SS: med-dk gy, gyshbn, brn-dk brn, clr-trnsl wi f qtz grns, occ lse med-c qtz grns, pred cons, sl frm-hd, tt brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt, arg, slty ip; v slow difse, slow stmg, bri thn wh-sl bl cut, fnt yel resd
SS: med-dk gy, gyshbn, brn-dk brn, clr-trnsl wi med qtz grns, occ lse med-c qtz grns, pred cons, sl frm-hd, tt brit clus, vf-f gr, sb ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt, arg, slty ip; v slow difse, slow stmg, bri thn wh-sl bl cut, fnt yel resd
SS: brn-dk gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt, arg,sl slty;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
MD: 14,299'
TVD: 7,033.6'
Inclination: 90.04°
Azimuth: 267°
VS: 7,356.08'
MD: 14,393'
TVD: 7,033.03'
Inclination: 90.66°
Azimuth: 267.8°
VS: 7,450'
MD: 14,487'
TVD: 7,031.51'
Inclination: 91.19°
Azimuth: 271.22°
VS: 7,543.7'
7045


800
ROP (ft/hr)
0
30
122
7000
700000
MW 9.4/ VIS 43 IN
9.4/42 OUT
4906u
5086u
MW 9.5/ VIS 42 IN
9.5/42 OUT
4886u
4659u
3435u
C1: 78%
C2: 16%
C3: 9%
C4: 3%
GAS (units)
C1-C4 (PPM)
14,500
14,510
14,520
14,530
14,540
14,550
14,560
14,570
14,580
14,590
14,600
14,610
14,620
14,630
14,640
14,650
14,660
14,670
14,680
14,690
14,700
300
GAMMA (units)
90
105
6940
SS: brn-gyshbn clr-trnsl occ gy-ltgy, lse c qtz grns, predy cons, small tt clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc cmt; SH: med-dk gy-blk, plty-sb plty-sb fis, sft-sl frm, brit, rthy-gt, arg,sl slty;v slow difse, v slow stmg, fnt blshwh cut, tr spd yel resd
TVD (ft)
MD: 14,581'
TVD: 7,030.14'
Inclination: 90.48°
Azimuth: 271.55°
VS: 7,637.13'
MD: 14,676'
TVD: 7,029.04'
Inclination: 90.84°
Azimuth: 271.93°
VS: 7,731.49'
7045


800
ROP (ft/hr)
104
89
89
0
7000
700000
MW 9.5/ VIS 43 IN
9.6/44 OUT
4936u
4890u
5266u
GAS (units)
C1-C4 (PPM)
TD @ MD 14,861'
9/10/2015 @ 14:10 hrs MDT
Thank you for using
Columbine Logging, Inc.
0
0
14,720
14,730
14,740
14,750
14,760
14,770
14,780
14,790
14,800
14,810
14,820
14,830
14,840
14,850
14,860
14,870
14,880
14,890
95
300
GAMMA (units)
0
6940
clr-trnsl occ gy-ltgy, incr lse
cons, small tt clus, sl
gr, ang-sr, p srtd, arg calc
k gy-blk, plty-sb plty-sb fis,
hy-gt, arg,sl slty;v slow difse,
blshwh cut, tr spd yel resd
SS: brn-gyshbn clr-trnsl occ gy-ltgy, incr lse
c qtz grns, mod cons, small tt clus, sl
frm-hd, brit, vf-f gr, ang-sr, p srtd, arg calc
cmt; SH: med-dk gy-blk, plty-sb plty-sb fis,
sft-sl frm, brit, rthy-gt, arg,sl slty;v slow difse,
v slow stmg, fnt blshwh cut, tr spd yel resd
SS: brn-gyshbn clr-trnsl occ gy-ltgy,tr wh
clus, occ lse c qtz grns, mod cons, small tt
clus, sl frm-hd, brit, vf-f gr, ang-sr, p srtd, arg
calc cmt; SH: med-dk gy-blk, plty-sb plty-sb
fis, sft-sl frm, brit, rthy-gt, arg,sl slty;v slow
difse, v slow stmg, fnt blshwh cut, tr spd yel
resd
SS: brn-gyshbn clr-trnsl occ gy-ltgy,tr wh
clus, occ lse c qtz grns, mod cons,
small tt clus, sl frm-hd, brit, vf-f gr,
ang-sr, p srtd, arg calc cmt; SH: med-dk
gy-blk, plty-sb plty-sb fis, sft-sl frm, brit,
rthy-gt, arg,sl slty;v slow difse, v slow
stmg, fnt blshwh cut, tr spd yel resd
TVD (ft)
MD: 14,770'
TVD: 7,027.38'
Inclination: 91.19°
Azimuth: 271.24°
VS: 7,824.87'
MD: 14,861'
TVD: 7,025.49'
Inclination: 91.19°
Azimuth: 271.24°
VS: 7,915.34'
Projected
7045