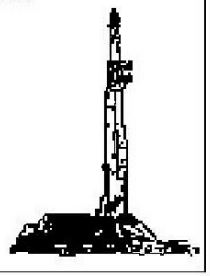
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office

Geological Wellsite
Supervision

www.goolsbybrothers.com



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name:	**Spotted 29N-23HZ**
Well Id:	
Location:	**Sec. 23 T2N R67W Weld County, CO.**
License Number:	**API: 051233942900 AFE: 2089197** **Region: Wattenberg**
Spud Date:	**June 8, 2014** **Drilling Completed: June 30, 2014**
Surface Coordinates:	**275' FSL, 850' FWL**
	Lat. 40.1171694, Long. -104.8638083, Sec.23, T2N R67W
Bottom Hole	**1' FNL, 685' FWL**
Coordinates:	**Lat. 40.130862, Long. -104.863438, Sec. 23, T2NR67W**
Ground Elevation (ft):	**4966'** **K.B. Elevation (ft): 4991'**
Logged Interval (ft):	**7100'** **To: 12536** **Total Depth (ft): 12536'**
Formation:	**Niobrara "B" Chalk**
Type of Drilling Fluid:	**LSND (Polymer-Water)**

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company:	**Anadarko Petroleum Corporation**
Address:	**Granite Tower - 1099 18th St, Ste 1800**
	Denver, CO 80202
	CO Geologist, Tom Birmingham.

GEOLOGIST

Name:	**George Bejan, Blake Stacey**
Company:	**Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)**
Address:	**575 Union Blvd.**
	Suite 208,
	Lakewood CO. 80228

E-logs

MWD Gamma

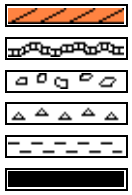
Casing

Intermediate casing: 7", 26#, HTC 110 LTC, set at 7785'
Liner: 4 1/2", packer and assembly, 11.5#, HCP 110, LTC & D2X, set at 12526'

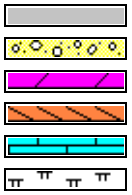
Comments

Drilling Contractor: H&P 311
Pumps 1 & 2: Gardner Denver PZ 11 6" x 11" (.0914 bbl/stk)
Rig Manager: Jack Truett, James Baggett.
Drillers: Michael Munroe, Christopher Beckstead

ROCK TYPES

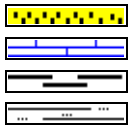


Anhy
Bent
Brec
Cht
Clyst
Coal



Oil sat.
Congl
Dol
Gyp
Lmst
Mrlst

Salt
Shale
Shcol
Shgy
Ss
Sltst



Ss
Chalk
Carb sh
Slty sh

ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

STRINGER

- Chlkstg
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE

- BS Boundst
- C Chalky
- CX CryxIn
- E Earthy
- FX FinexIn
- GS Grainst
- L Lithogr
- MX MicroxIn
- MS Mudst
- PS Packst
- WS Wackest

OTHER SYMBOLS

OIL SHOWS

- Even
- Spotted
- Ques
- Dead
- Vspotty
- near even

POROSITY TYPE

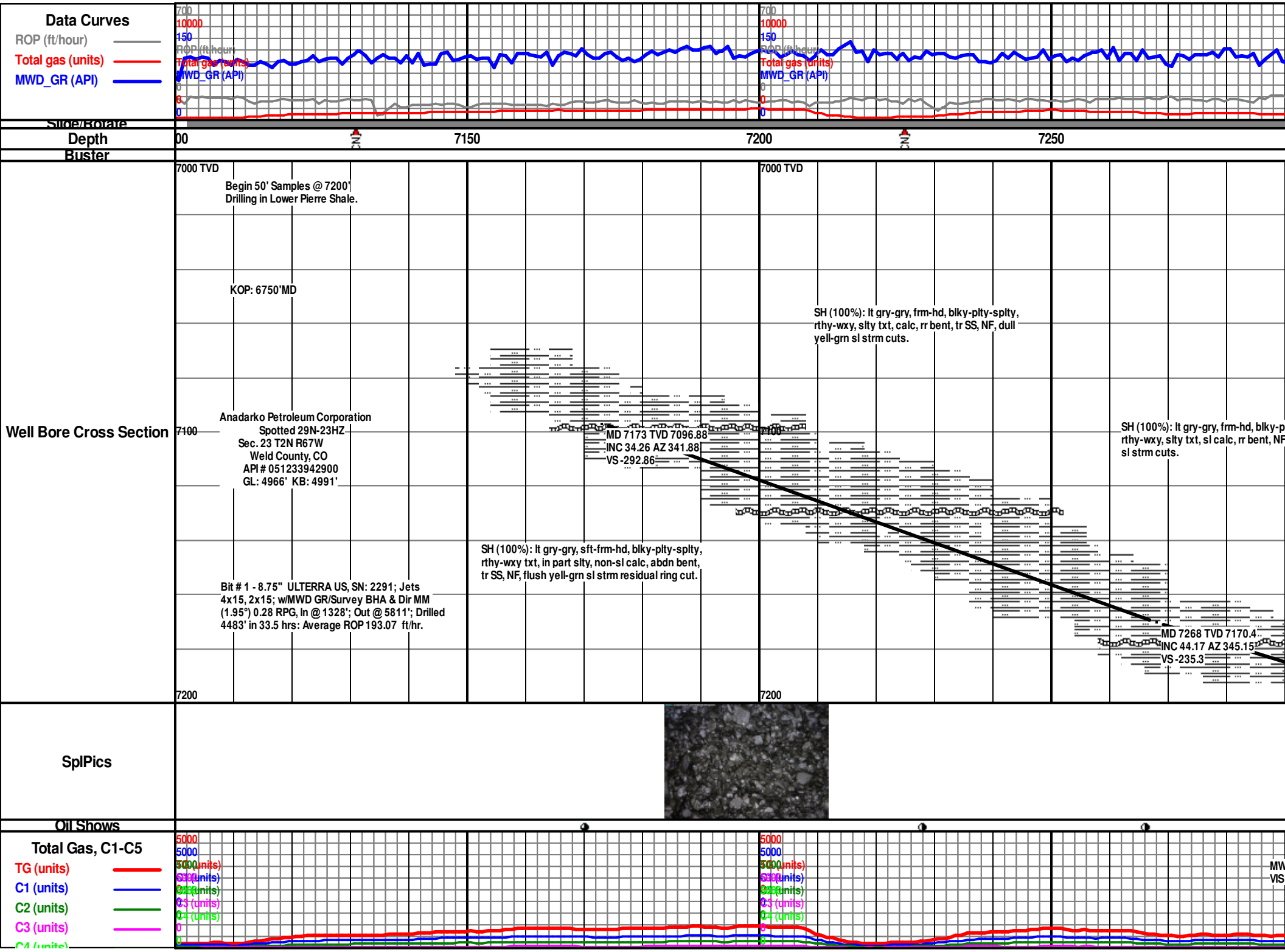
- E Earthy
- Fenest
- F Fracture
- Inter
- Moldic
- Organic
- P Pinpoint
- V Vuggy

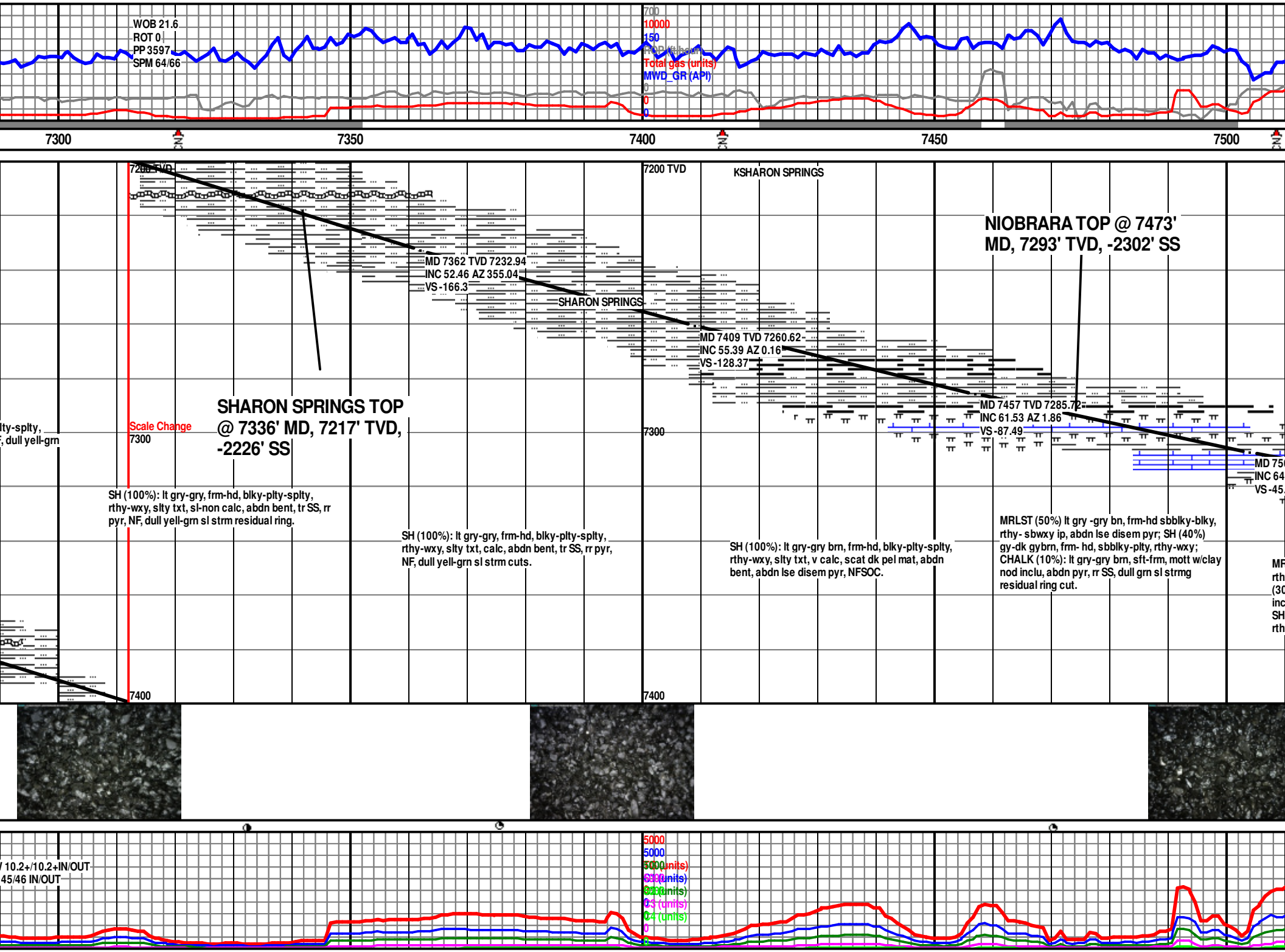
ROUNDING

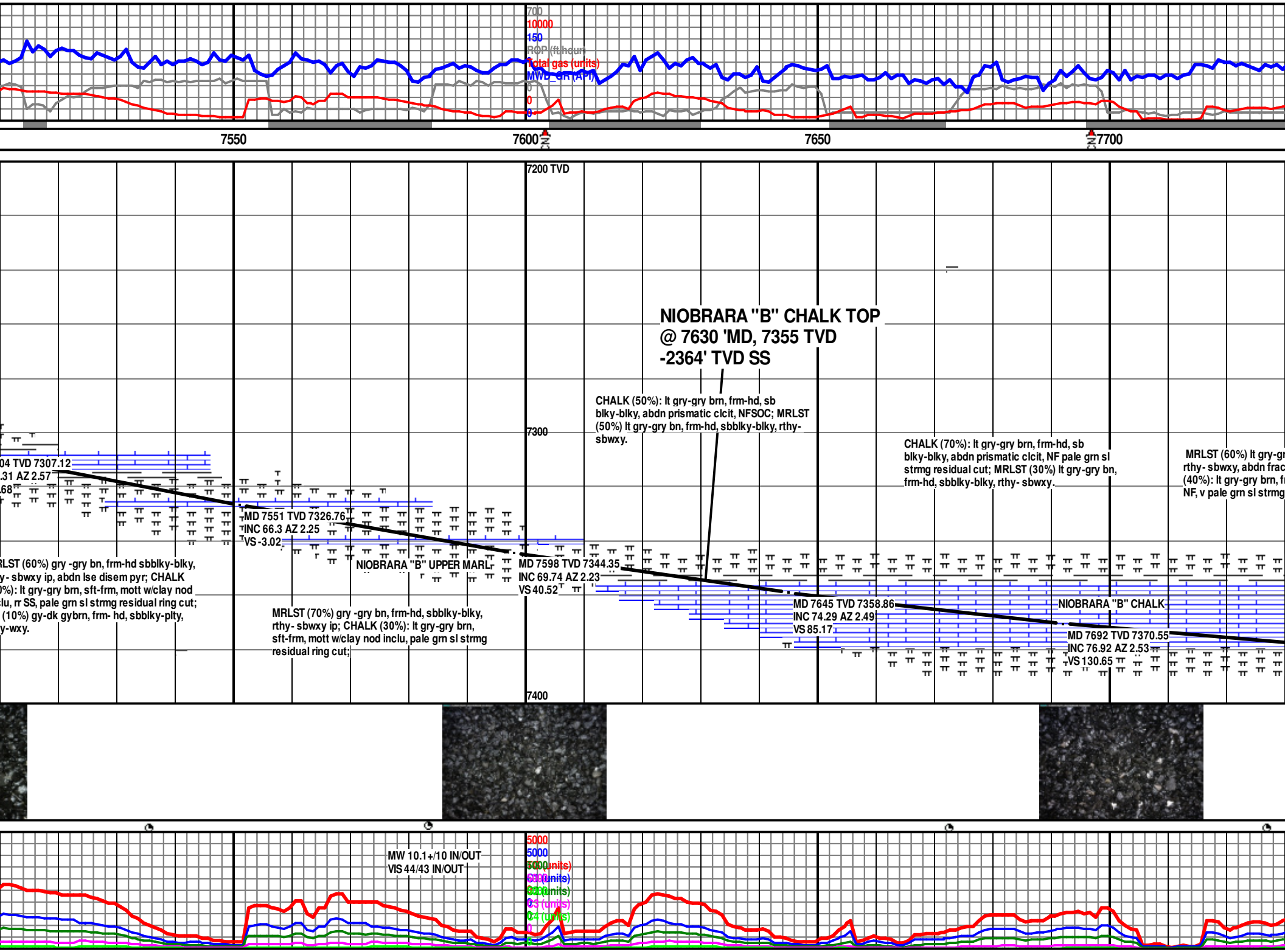
- R Rounded
- r Subrnd
- a Subang
- A Angular

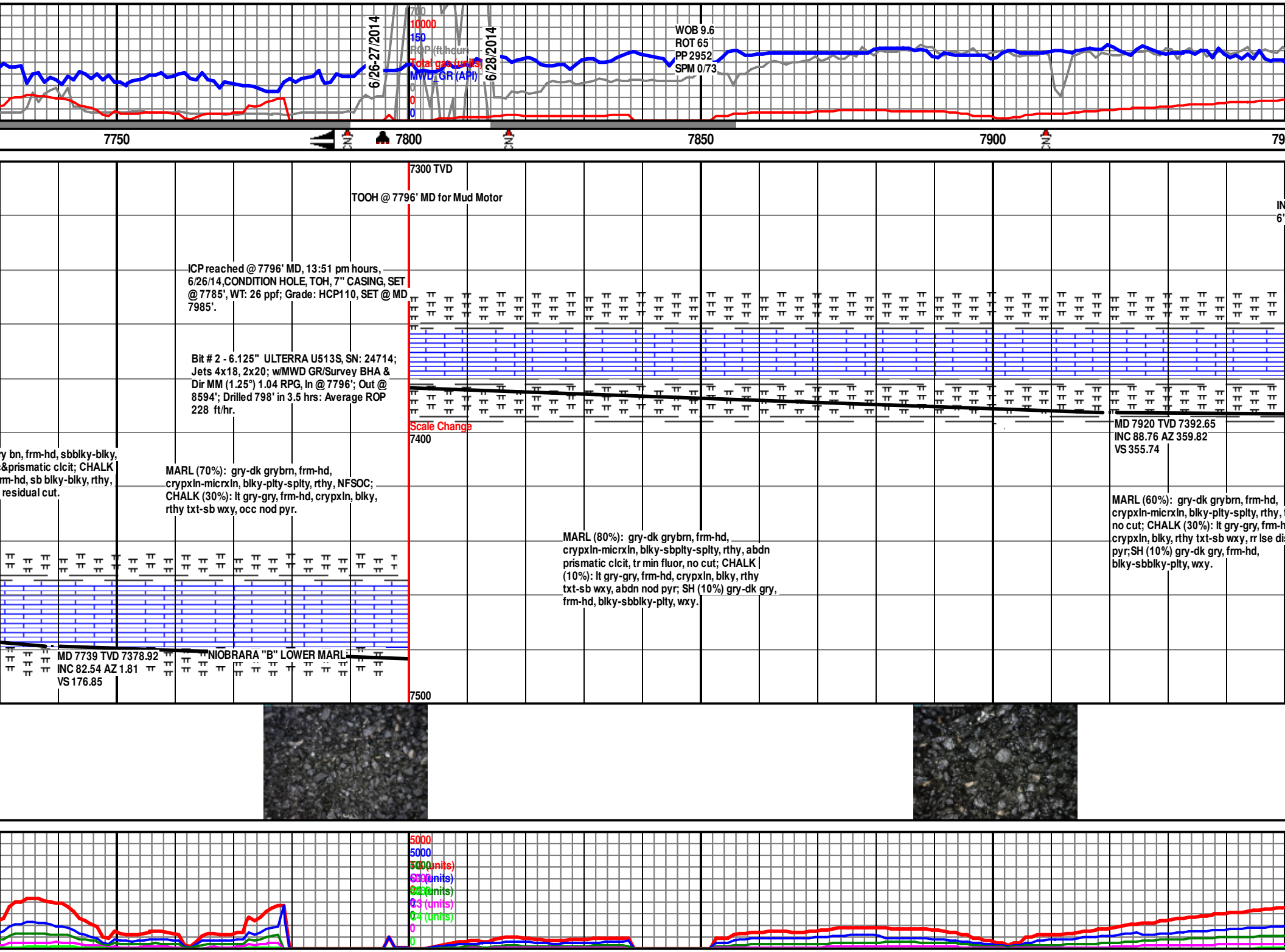
SORTING

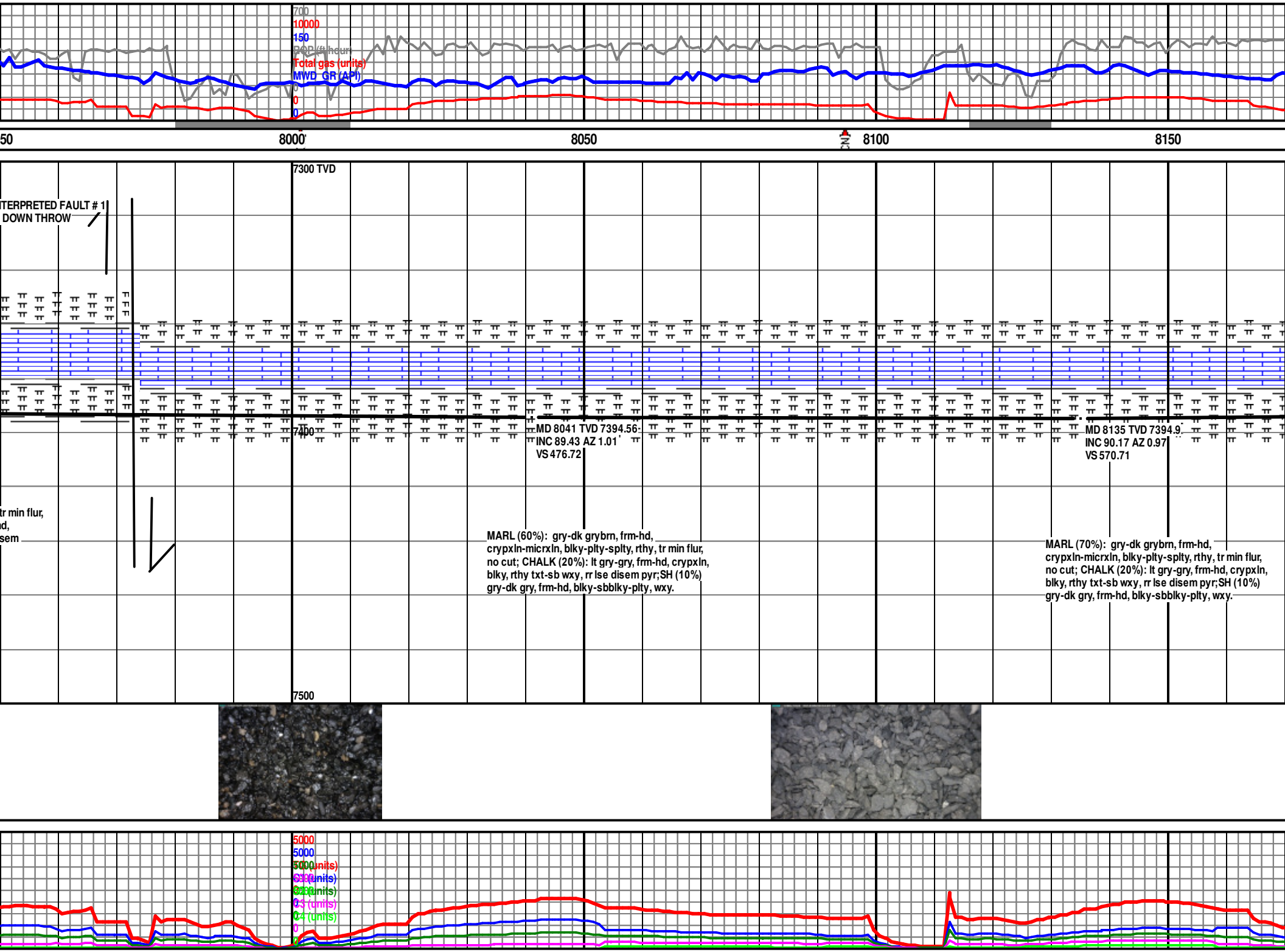
- W Well
- M Moderate
- P Poor

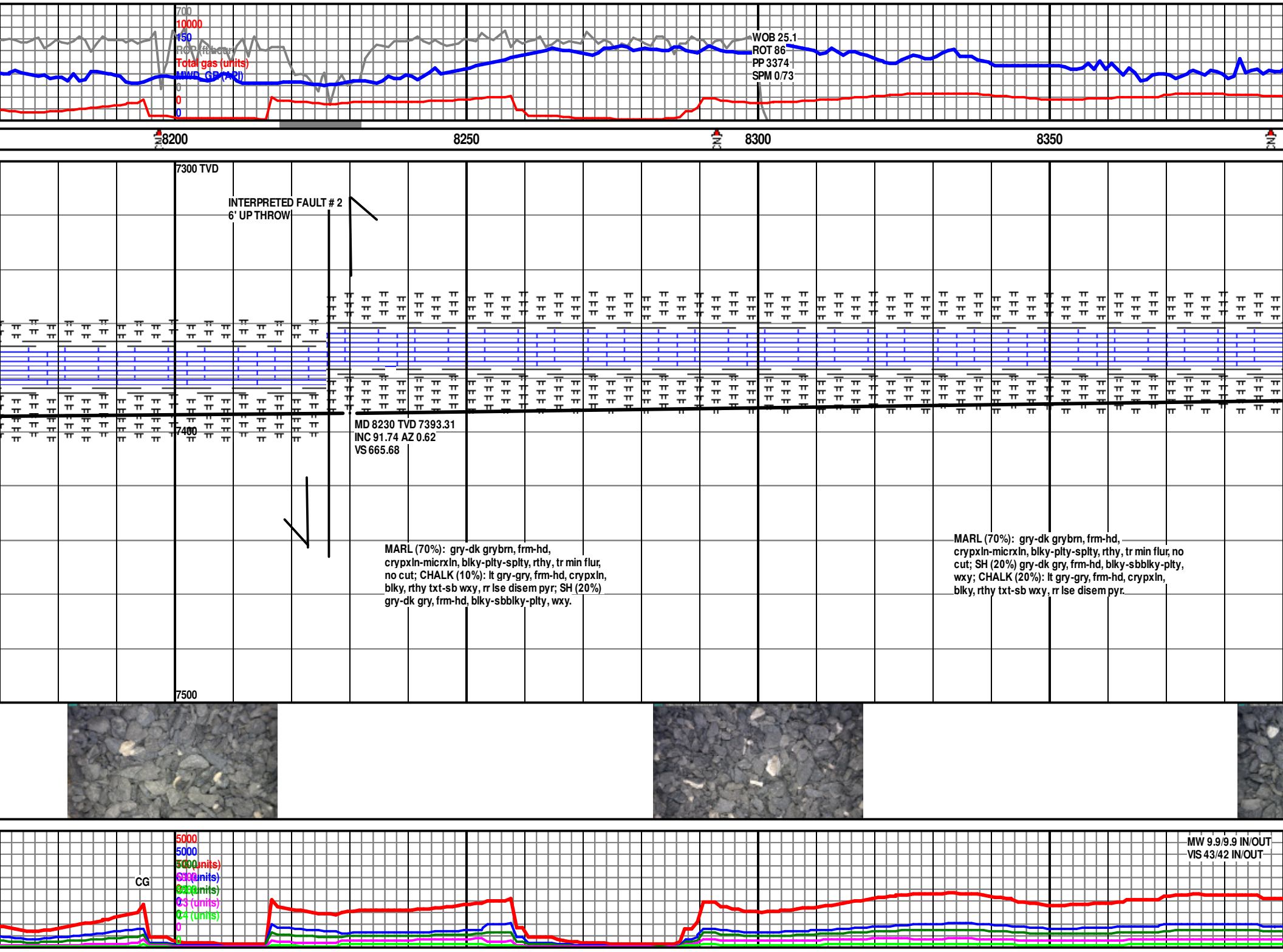

Data Curves
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
700
10000
150
0
6
0
Slide/Rotate
Depth
00
7150
7200
7250
Buster
7000 TVD
Begin 50' Samples @ 7200'
Drilling in Lower Pierre Shale.
KOP: 6750'MD
Well Bore Cross Section
Anadarko Petroleum Corporation
Spotted 29N-23HZ
Sec. 23 T2N R67W
Weld County, CO
API # 051233942900
GL: 4966' KB: 4991'
7100
SH (100%): lt gry-gry, frm-hd, blky-plty-splty, rthy-wxy, slty txt, calc, rr bent, tr SS, NF, dull yell-grn sl strm cuts.
MD 7173 TVD 7096.88
INC 34.26 AZ 341.88
VS -292.86
SH (100%): lt gry-gry, sft-frm-hd, blky-plty-splty, rthy-wxy txt, in part slty, non-sl calc, abdn bent, tr SS, NF, flush yell-grn sl strm residual ring cut.
Bit # 1 - 8.75" ULTERRA US, SN: 2291; Jets 4x15, 2x15; w/MWD GR/Survey BHA & Dir MM (1.95°) 0.28 RPG, In @ 1328'; Out @ 5811'; Drilled 4483' in 33.5 hrs: Average ROP 193.07 ft/hr.
MD 7268 TVD 7170.4
INC 44.17 AZ 345.15
VS -235.3
7200
SplPics
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
5000
5000
0
0

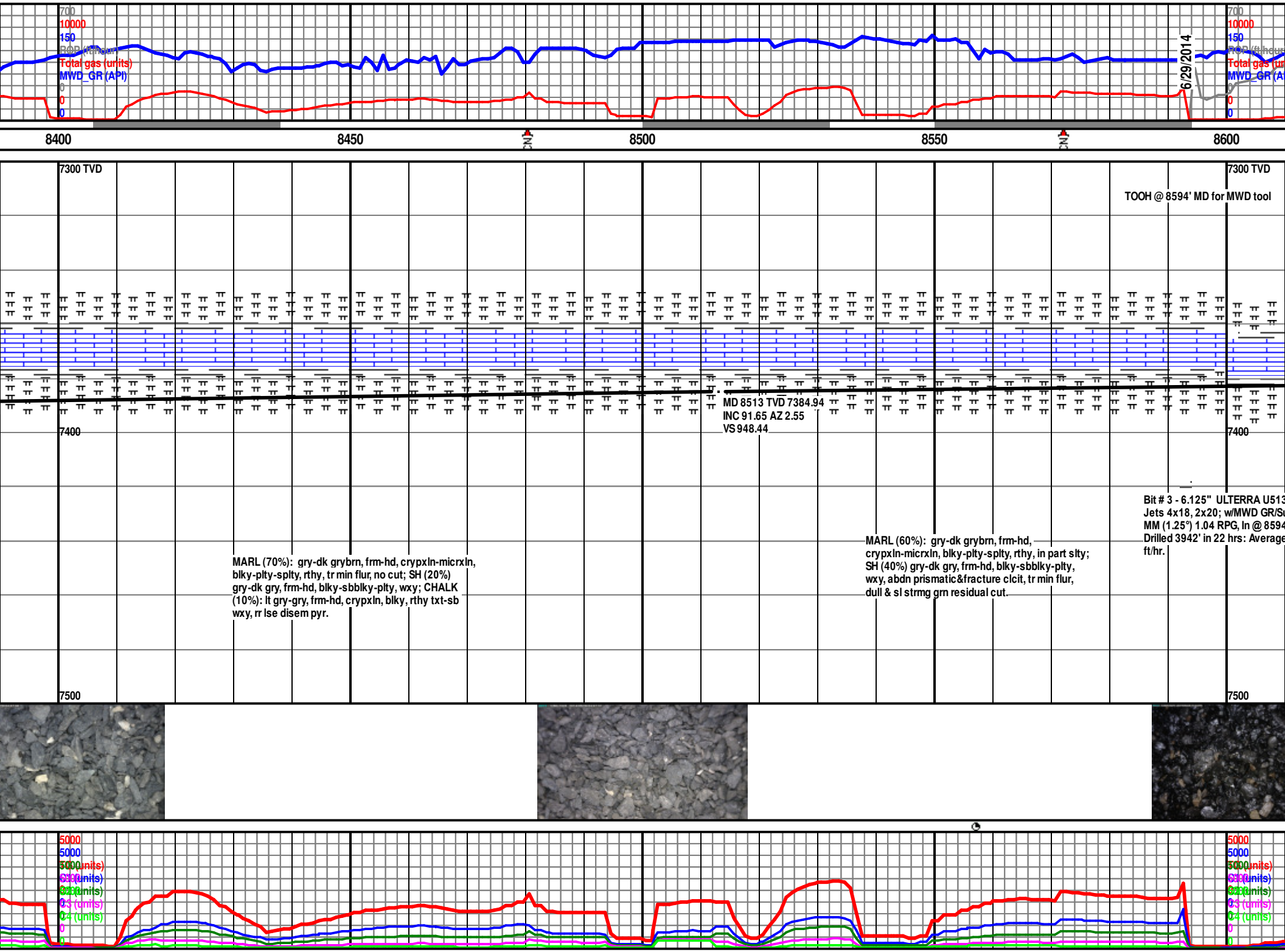

WOB 21.6
ROT 0
PP 3597
SPM 64/66
700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
7300
7350
7400
7450
7500
7200 TVD
KSHARON SPRINGS
NIOBRARA TOP @ 7473'
MD, 7293' TVD, -2302' SS
MD 7362 TVD 7232.94
INC 52.46 AZ 355.04
VS -166.3
SHARON SPRINGS
MD 7409 TVD 7260.62
INC 55.39 AZ 0.16
VS -128.37
MD 7457 TVD 7285.72
INC 61.53 AZ 1.86
VS -87.49
SHARON SPRINGS TOP
@ 7336' MD, 7217' TVD,
-2226' SS
Scale Change
7300
7300
7400
7400
SH (100%): lt gry-gry, frm-hd, blky-plty-splty, rthy-wxy, slty txt, sl-non calc, abdn bent, tr SS, rr pyr, NF, dull yell-grn sl strm residual ring.
SH (100%): lt gry-gry, frm-hd, blky-plty-splty, rthy-wxy, slty txt, calc, abdn bent, tr SS, rr pyr, NF, dull yell-grn sl strm cuts.
SH (100%): lt gry-gry brn, frm-hd, blky-plty-splty, rthy-wxy, slty txt, v calc, scat dk pel mat, abdn bent, abdn lse disem pyr, NFSOC.
MRLST (50%) lt gry -gry bn, frm-hd sbblky-blky, rthy- sbwxy ip, abdn lse disem pyr; SH (40%) gy-dk gybrn, frm- hd, sbblky-plty, rthy-wxy; CHALK (10%): lt gry-gry brn, sft-frm, mott w/clay nod inclu, abdn pyr, rr SS, dull grn sl strmg residual ring cut.
5000
5000
3000 (units)
2000 (units)
1000 (units)
0
0
10.2+/10.2+IN/OUT
45/46 IN/OUT

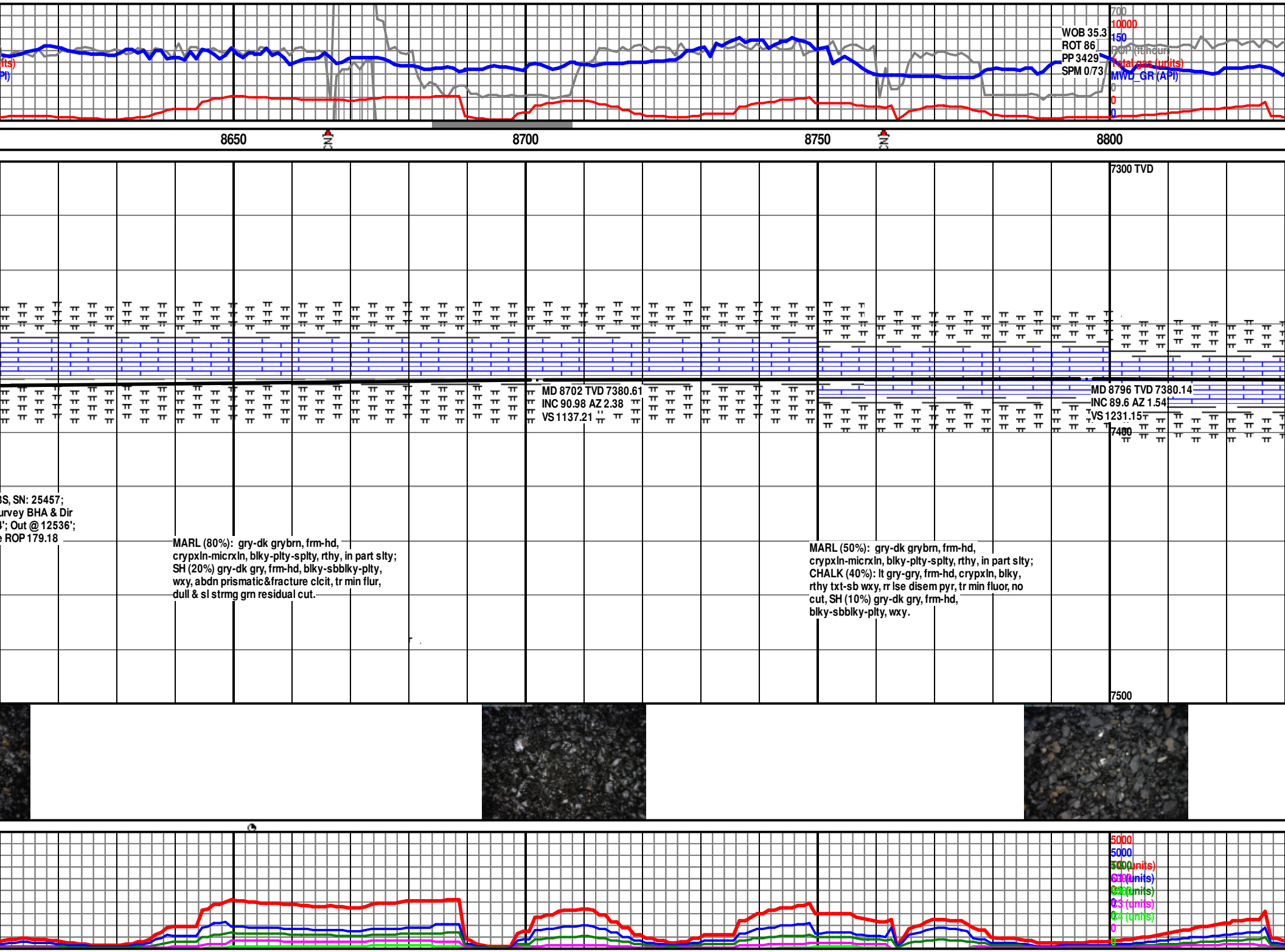

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
7550
7600
7650
7700
7200 TVD
7300
7400
NIOBRARA "B" CHALK TOP
@ 7630 'MD, 7355 TVD
-2364' TVD SS
CHALK (50%): lt gry-gry brn, frm-hd, sb blky-blky, abdn prismatic clcit, NFSOC; MRLST (50%) lt gry-gry bn, frm-hd, sbblky-blky, rthy- sbwxy.
CHALK (70%): lt gry-gry brn, frm-hd, sb blky-blky, abdn prismatic clcit, NF pale grn sl strmg residual cut; MRLST (30%) lt gry-gry bn, frm-hd, sbblky-blky, rthy- sbwxy.
MRLST (60%) lt gry-gr
rthy- sbwxy, abdn frac
(40%): lt gry-gry brn, f
NF, v pale grn sl strmg
04 TVD 7307.12
.31 AZ 2.57
.68
MD 7551 TVD 7326.76
INC 66.3 AZ 2.25
VS -3.02
RLST (60%) gry -gry bn, frm-hd sbblky-blky,
y- sbwxy ip, abdn lse disem pyr; CHALK
%): lt gry-gry brn, sft-frm, mott w/clay nod
lu, rr SS, pale grn sl strmg residual ring cut;
(10%) gy-dk gybrn, frm- hd, sbblky-plty,
y-wxy.
NIOBRARA "B" UPPER MARL
MD 7598 TVD 7344.35
INC 69.74 AZ 2.23
VS 40.52
MRLST (70%) gry -gry bn, frm-hd, sbblky-blky, rthy- sbwxy ip; CHALK (30%): lt gry-gry brn, sft-frm, mott w/clay nod inclu, pale grn sl strmg residual ring cut;
MD 7645 TVD 7358.86
INC 74.29 AZ 2.49
VS 85.17
NIOBRARA "B" CHALK
MD 7692 TVD 7370.55
INC 76.92 AZ 2.53
VS 130.65
MW 10.1+/10 IN/OUT
VIS 44/43 IN/OUT
5000
5000
5000 (units)
(units)
(units)
(units)
(units)

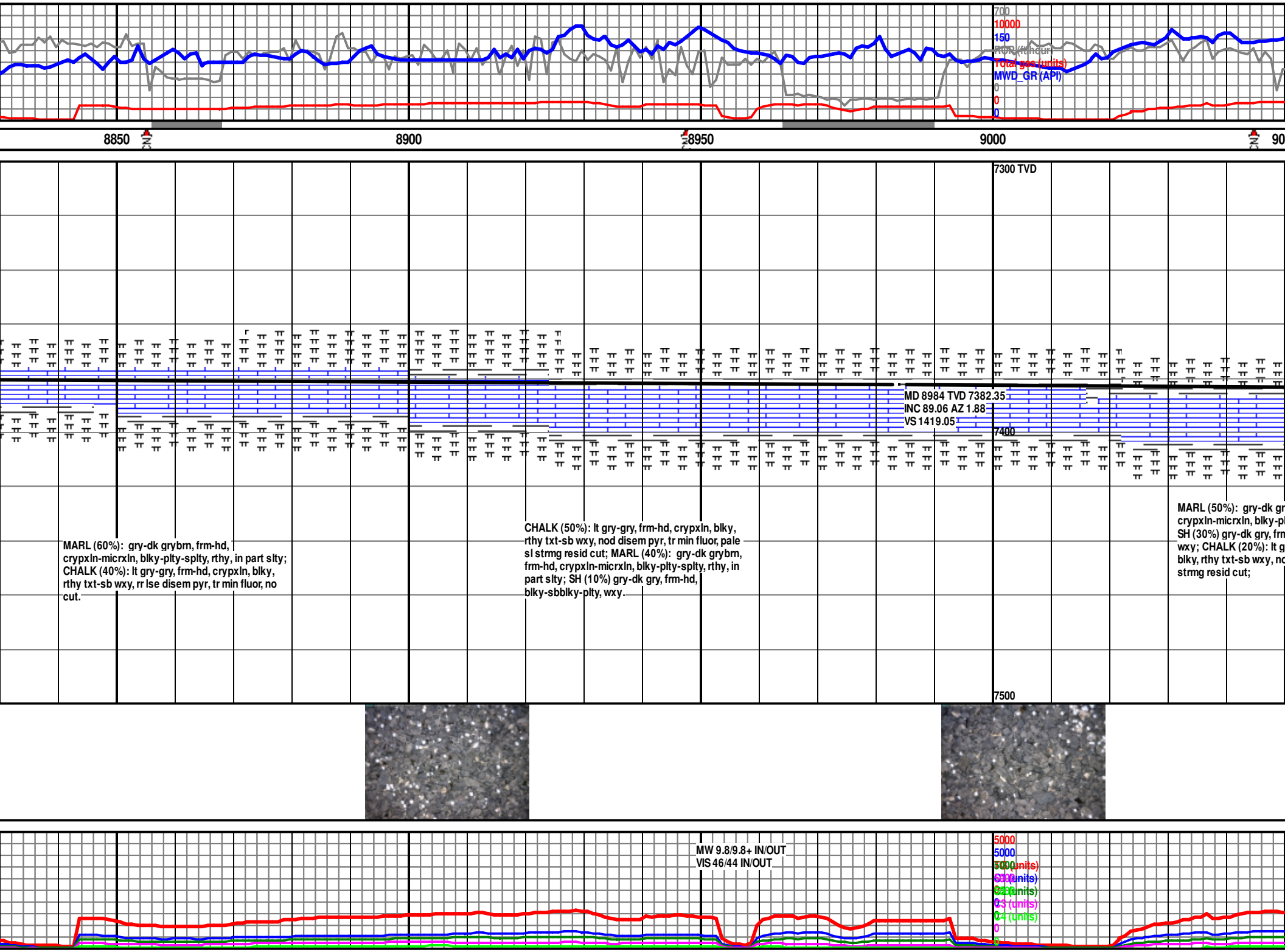

6/26-27/2014
6/28/2014
10000
150
ROP (ft/hour)
Total gas (units)
MWD GR (API)
WOB 9.6
ROT 65
PP 2952
SPM 0/73
7750
7800
7850
7900
7300 TVD
TOOH @ 7796' MD for Mud Motor
ICP reached @ 7796' MD, 13:51 pm hours, 6/26/14,CONDITION HOLE, TOH, 7" CASING, SET @ 7785', WT: 26 ppf; Grade: HCP110, SET @ MD 7985'.
Bit # 2 - 6.125" ULTERRA U513S, SN: 24714; Jets 4x18, 2x20; w/MWD GR/Survey BHA & Dir MM (1.25°) 1.04 RPG, In @ 7796'; Out @ 8594'; Drilled 798' in 3.5 hrs: Average ROP 228 ft/hr.
Scale Change
7400
7500
MD 7920 TVD 7392.65
INC 88.76 AZ 359.82
VS 355.74
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, NFSOC; CHALK (30%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, occ nod pyr.
MARL (80%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sbplty-splty, rthy, abdn prismatic clcit, tr min fluor, no cut; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, abdn nod pyr; SH (10%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
MD 7739 TVD 7378.92
INC 82.54 AZ 1.81
VS 176.85
NIOBRARA "B" LOWER MARL
5000
5000
3000 (units)
333 (units)
333 (units)
0.3 (units)
0.4 (units)
0
0

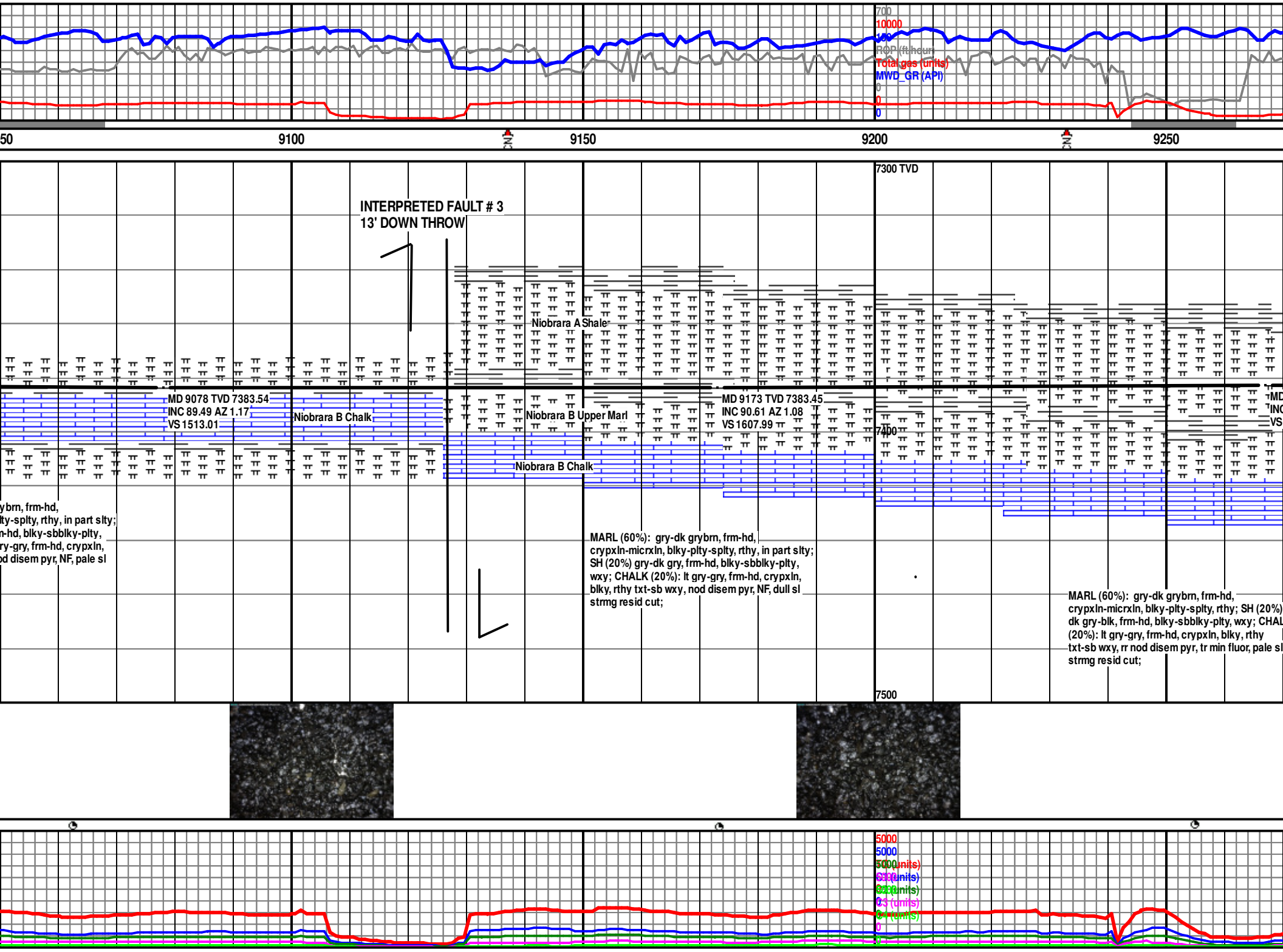

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD GR (API)
0
0
8000
8050
8100
8150
7300 TVD
TERPRETED FAULT # 1
DOWN THROW
7400
7500
MD 8041 TVD 7394.56
INC 89.43 AZ 1.01
VS 476.72
MD 8135 TVD 7394.9
INC 90.17 AZ 0.97
VS 570.71
tr min flur,
d,
sem
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, tr min flur, no cut; CHALK (20%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr;SH (10%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, tr min flur, no cut; CHALK (20%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr;SH (10%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
5000
5000
3000 (units)
(units)
(units)
(units)
(units)
0

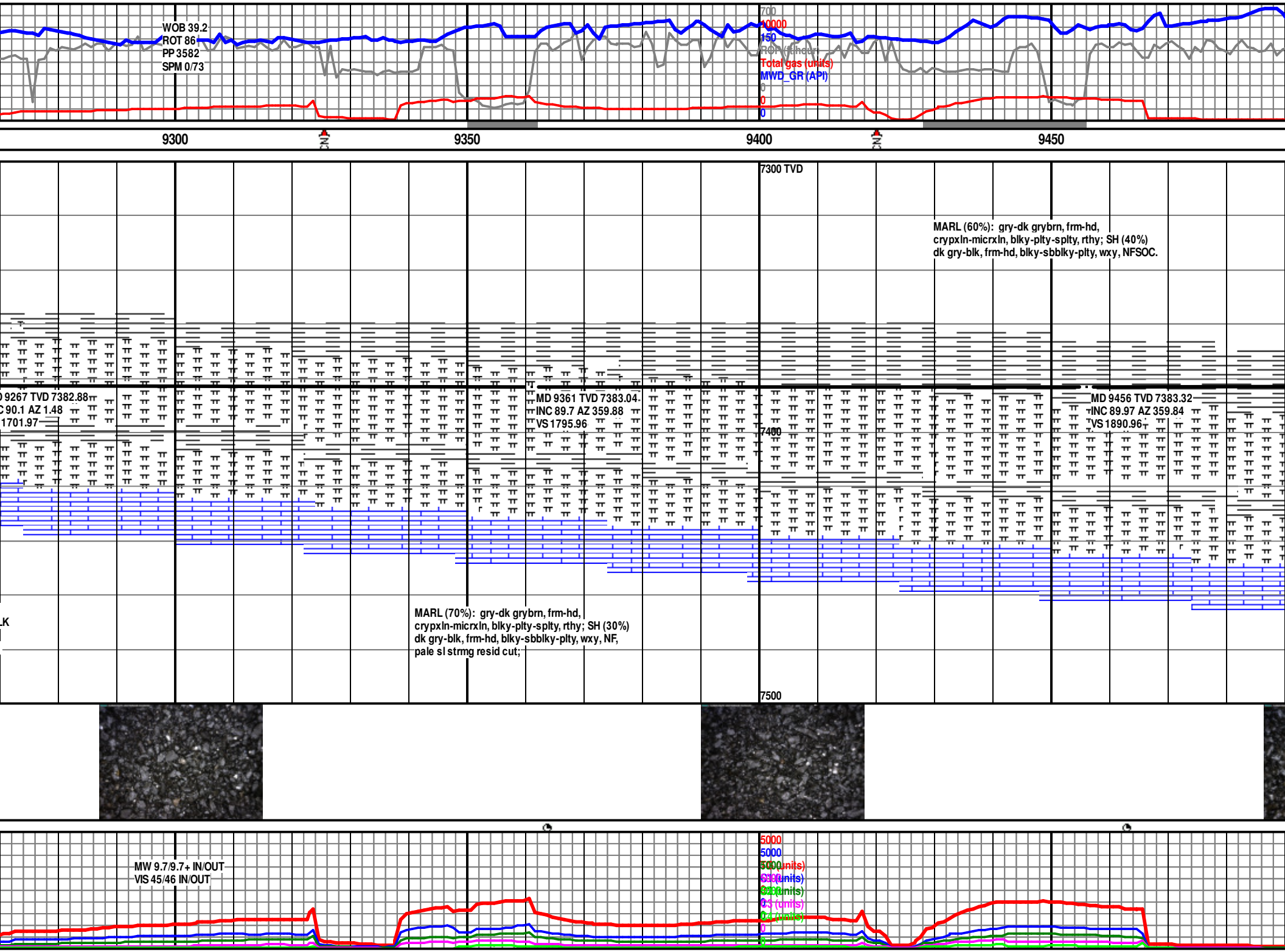

700
10000
150
Total gas (units)
0
0
WOB 25.1
ROT 86
PP 3374
SPM 0/73
8200
8250
8300
8350
7300 TVD
INTERPRETED FAULT # 2
6' UP THROW
MD 8230 TVD 7393.31
INC 91.74 AZ 0.62
VS 665.68
7400
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, tr min flur, no cut; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr; SH (20%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, tr min flur, no cut; SH (20%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy; CHALK (20%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr.
7500
5000
5000
5000 (units)
CG
0.3 (units)
0.4 (units)
0
MW 9.9/9.9 IN/OUT
VIS 43/42 IN/OUT

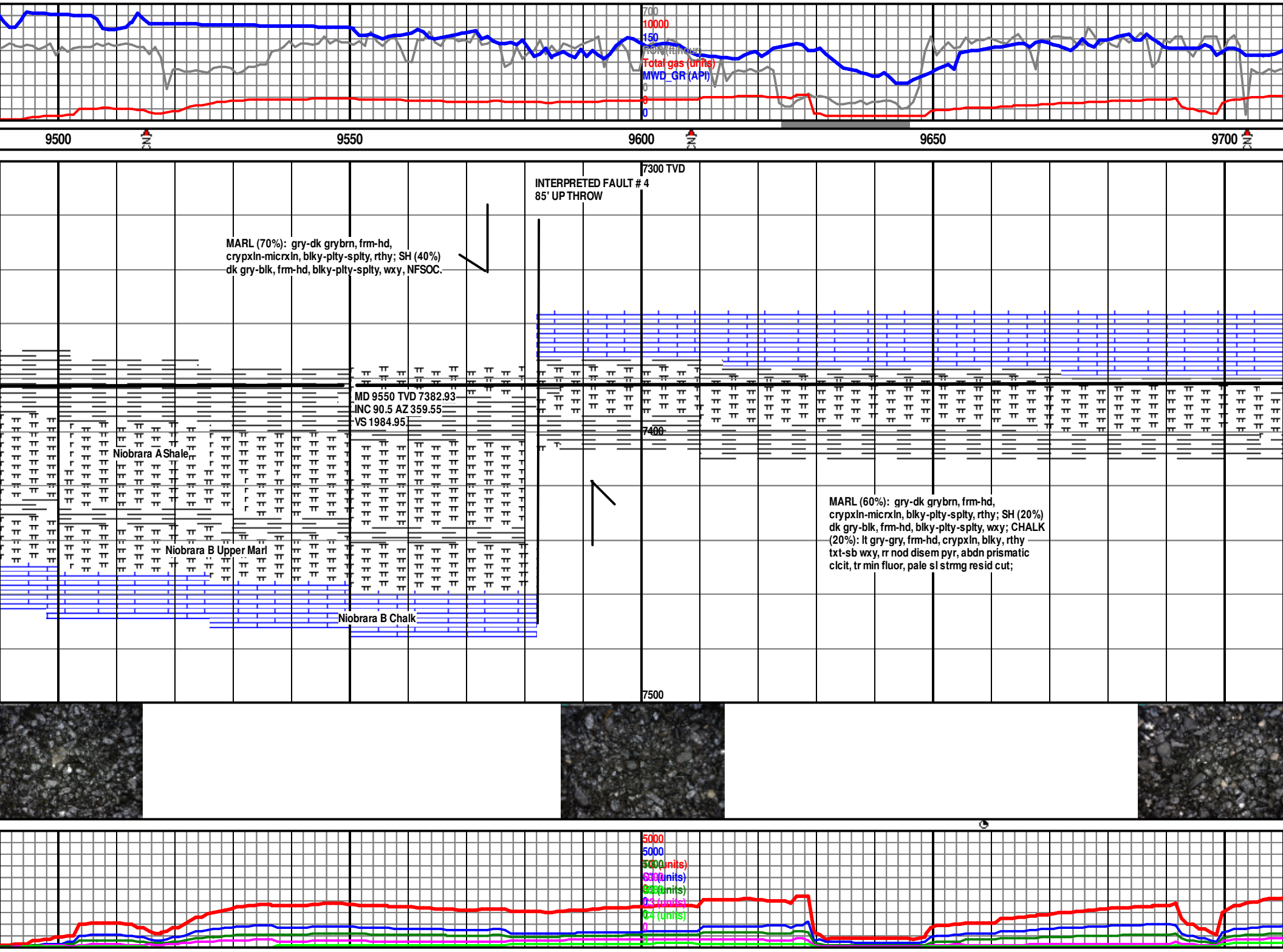

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
6/29/2014
8400
8450
8500
8550
8600
7300 TVD
TOOH @ 8594' MD for MWD tool
MD 8513 TVD 7384.94
INC 91.65 AZ 2.55
VS 948.44
7400
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, tr min flur, no cut; SH (20%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr.
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, in part slty; SH (40%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy, abdn prismatic&fracture clcit, tr min flur, dull & sl strmg grn residual cut.
Bit # 3 - 6.125" ULTERRA U513
Jets 4x18, 2x20; w/MWD GR/Su
MM (1.25°) 1.04 RPG, In @ 8594
Drilled 3942' in 22 hrs: Average
ft/hr.
7500
5000
5000
3000 (units)
(units)
(units)
(units)
(units)
0
0


WOB 35.3
ROT 86
PP 3429
SPM 0/73
700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
8650
8700
8750
8800
7300 TVD
MD 8702 TVD 7380.61
INC 90.98 AZ 2.38
VS 1137.21
MD 8796 TVD 7380.14
INC 89.6 AZ 1.54
VS 1231.15
7400
7500
SS, SN: 25457;
urvey BHA & Dir
'; Out @ 12536';
e ROP 179.18
MARL (80%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, in part slty; SH (20%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy, abdn prismatic&fracture clcit, tr min flur, dull & sl strmg grn residual cut.
MARL (50%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, in part slty; CHALK (40%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr, tr min fluor, no cut, SH (10%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
5000
5000
3000 (units)
(units)
(units)
(units)
(units)
0


700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
8850
8900
8950
9000
7300 TVD
MD 8984 TVD 7382.35
INC 89.06 AZ 1.88
VS 1419.05
7400
7500
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, in part slty; CHALK (40%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr, tr min fluor, no cut.
CHALK (50%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, nod disem pyr, tr min fluor, pale sl strmg resid cut; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy, in part slty; SH (10%) gry-dk gry, frm-hd, blky-sbblky-plty, wxy.
MARL (50%): gry-dk gr
crypxln-micrxln, blky-pl
SH (30%) gry-dk gry, frm
wxy; CHALK (20%): lt g
blky, rthy txt-sb wxy, no
strmg resid cut;
MW 9.8/9.8+ IN/OUT
VIS 46/44 IN/OUT
5000
5000
5000 (units)
(units)
(units)
0.3 (units)
0.4 (units)
0
0


700
10000
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
50
9100
9150
9200
9250
7300 TVD
INTERPRETED FAULT # 3
13' DOWN THROW
Niobrara A Shale
MD 9078 TVD 7383.54
INC 89.49 AZ 1.17
VS 1513.01
Niobrara B Chalk
Niobrara B Upper Marl
MD 9173 TVD 7383.45
INC 90.61 AZ 1.08
VS 1607.99
7400
Niobrara B Chalk
ybrn, frm-hd,
lty-splty, rthy, in part slty;
n-hd, blky-sbblky-plty,
ry-gry, frm-hd, crypxln,
od disem pyr, NF, pale sl
MARL (60%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy, in part slty;
SH (20%) gry-dk gry, frm-hd, blky-sbblky-plty,
wxy; CHALK (20%): lt gry-gry, frm-hd, crypxln,
blky, rthy txt-sb wxy, nod disem pyr, NF, dull sl
strmg resid cut;
MARL (60%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy; SH (20%)
dk gry-blk, frm-hd, blky-sbblky-plty, wxy; CHAL
(20%): lt gry-gry, frm-hd, crypxln, blky, rthy
txt-sb wxy, rr nod disem pyr, tr min fluor, pale sl
strmg resid cut;
7500
5000
5000
5000 (units)
(units)
(units)
(units)
0
0


WOB 39.2
ROT 86
PP 3582
SPM 0/73
700
10000
150
API (Wireline)
Total gas (units)
MWD_GR (API)
6
0
0
9300
9350
9400
9450
7300 TVD
MARL (60%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy; SH (40%)
dk gry-blk, frm-hd, blky-sbblky-plty, wxy, NFSOC.
9267 TVD 7382.88
90.1 AZ 1.48
1701.97
MD 9361 TVD 7383.04
INC 89.7 AZ 359.88
VS 1795.96
MD 9456 TVD 7383.32
INC 89.97 AZ 359.84
VS 1890.96
7400
MARL (70%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy; SH (30%)
dk gry-blk, frm-hd, blky-sbblky-plty, wxy, NF,
pale sl strmg resid cut;
7500
MW 9.7/9.7+ IN/OUT
VIS 45/46 IN/OUT
5000
5000
5000 (units)
(units)
(units)
(units)
(units)
0


700
10000
150
ROP (ft/hr)
Total gas (units)
MWD_GR (API)
0
0
0
9500
9550
9600
9650
9700
7300 TVD
INTERPRETED FAULT # 4
85' UP THROW
MARL (70%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy; SH (40%)
dk gry-blk, frm-hd, blky-plty-splty, wxy, NFSOC.
MD 9550 TVD 7382.93
INC 90.5 AZ 359.55
VS 1984.95
7400
Niobrara A Shale
Niobrara B Upper Marl
Niobrara B Chalk
MARL (60%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-plty-splty, rthy; SH (20%)
dk gry-blk, frm-hd, blky-plty-splty, wxy; CHALK
(20%): lt gry-gry, frm-hd, crypxln, blky, rthy
txt-sb wxy, rr nod disem pyr, abdn prismatic
clcit, tr min fluor, pale sl strmg resid cut;
7500
5000
5000
3000 (units)
(units)
(units)
(units)
(units)
0

700
10000
150 WOB 20.4
ROP ROT 86
Tota PP 3236 its)
MW SPM 0/73)
0
0

9750 9800 9850 9900

7300 TVD

Niobrara B Chalk

MD 9738 TVD 7381.77
INC 90.2 AZ 359.74
VS 2172.95

Niobrara B Lower Marl

7400

Niobrara B Shale

MD 9833 TVD 7381.75
AZ 359.7 VS 2267.94

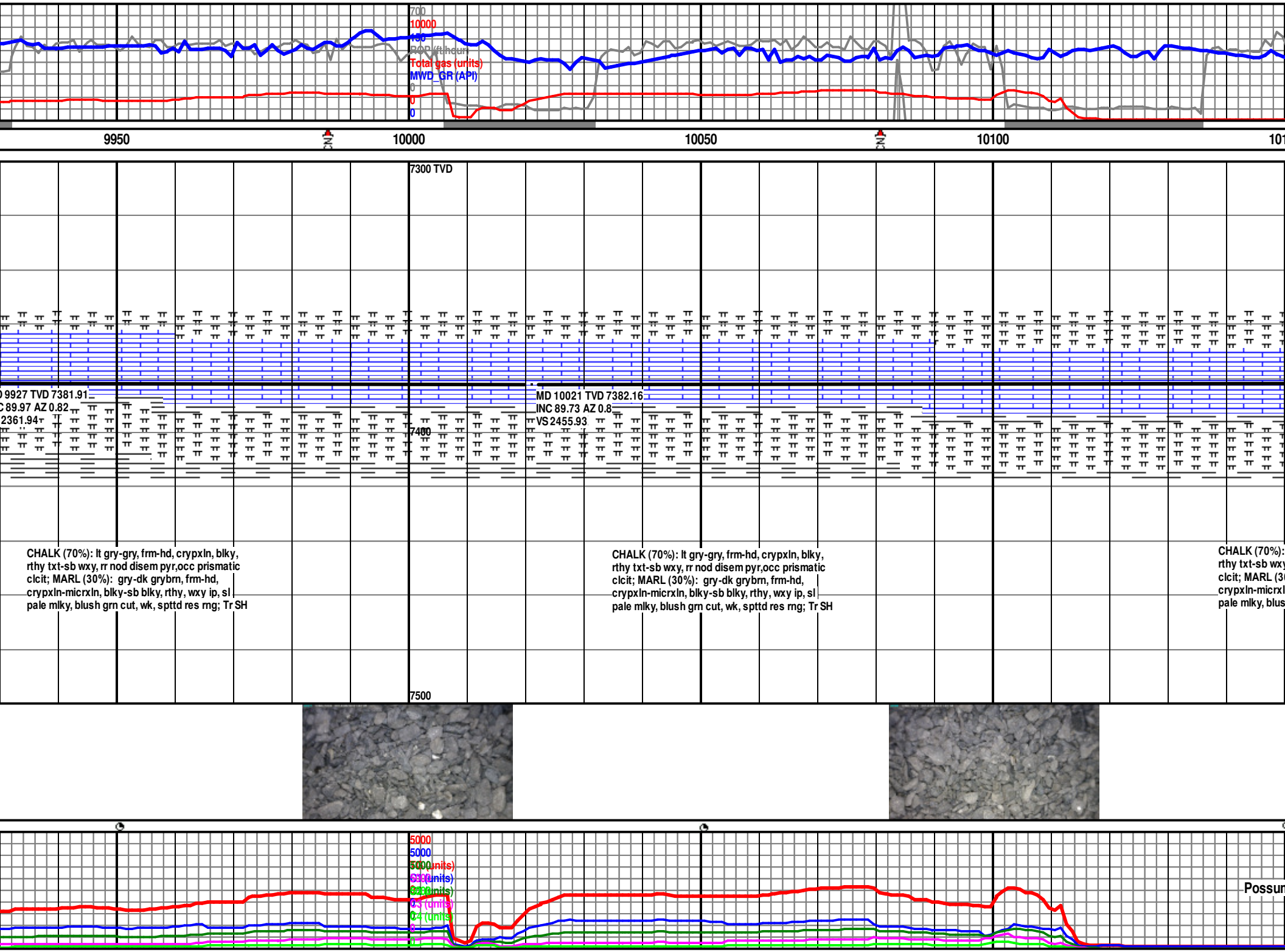
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-plty-splty, rthy; SH (10%) dk gry-blk, frm-hd, blky-plty-splty, wxy; CHALK (30%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit, tr min fluor, pale sl strmg resid cut;

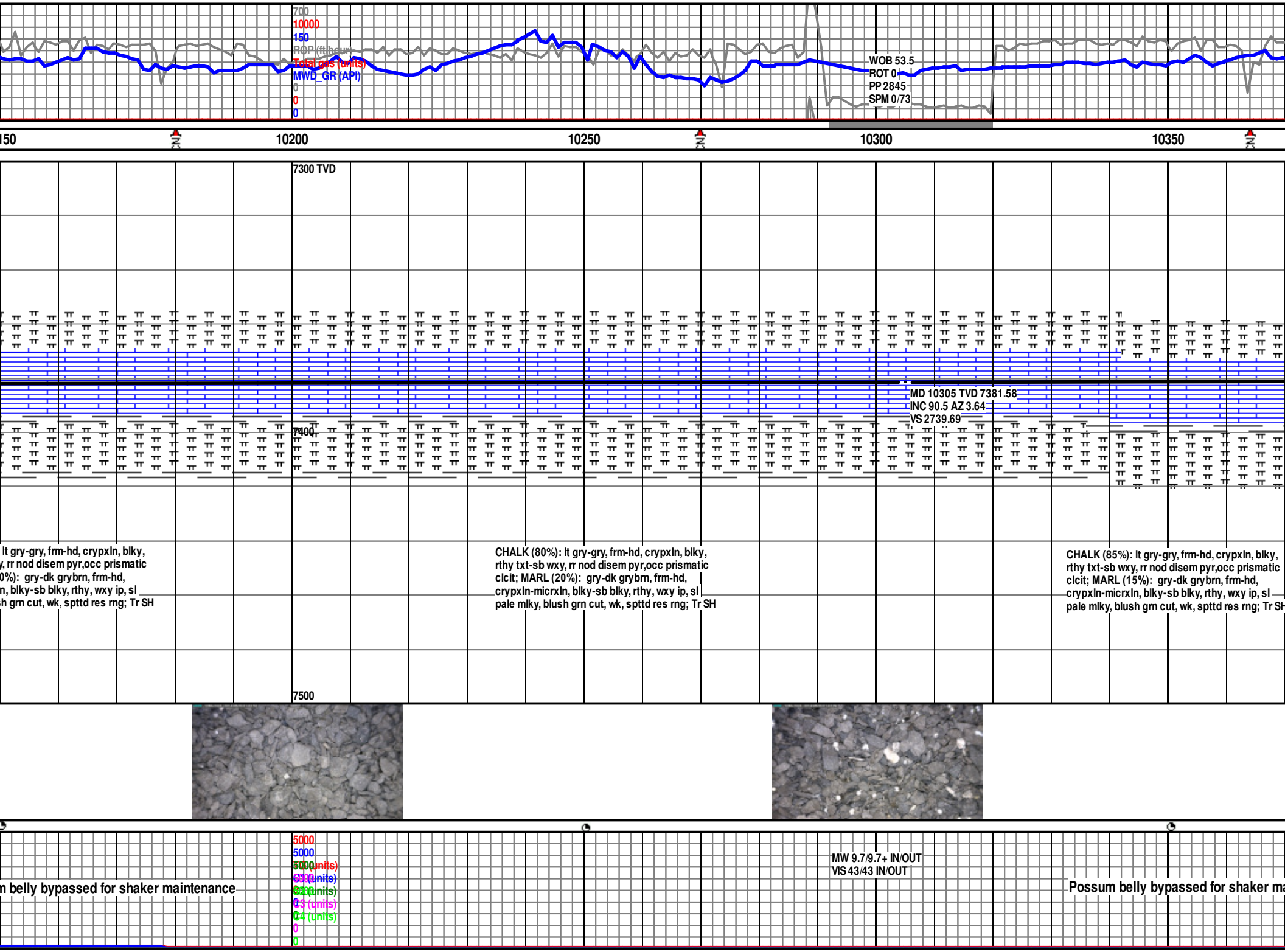
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, spttd res rng; Tr SH

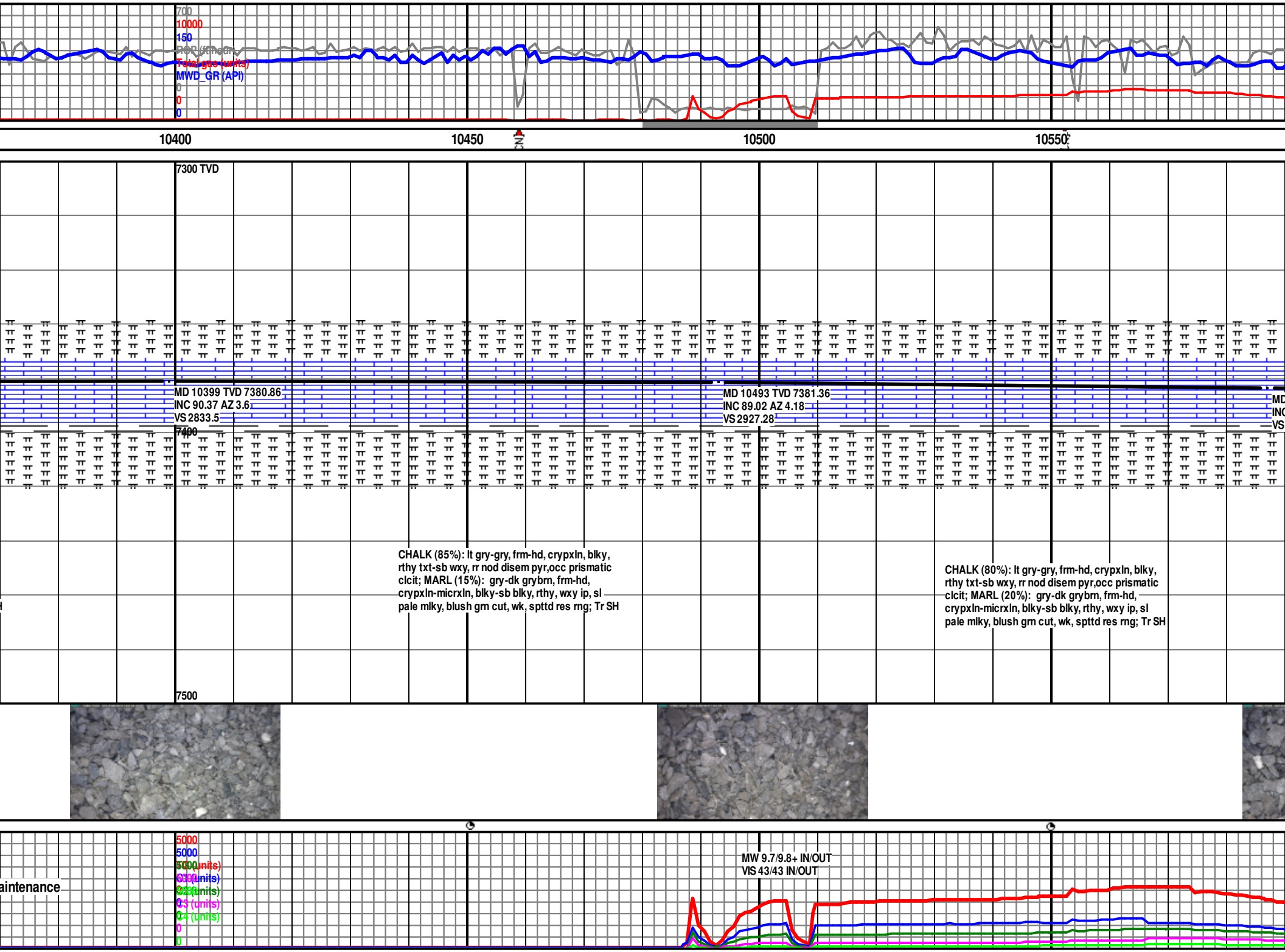
7500

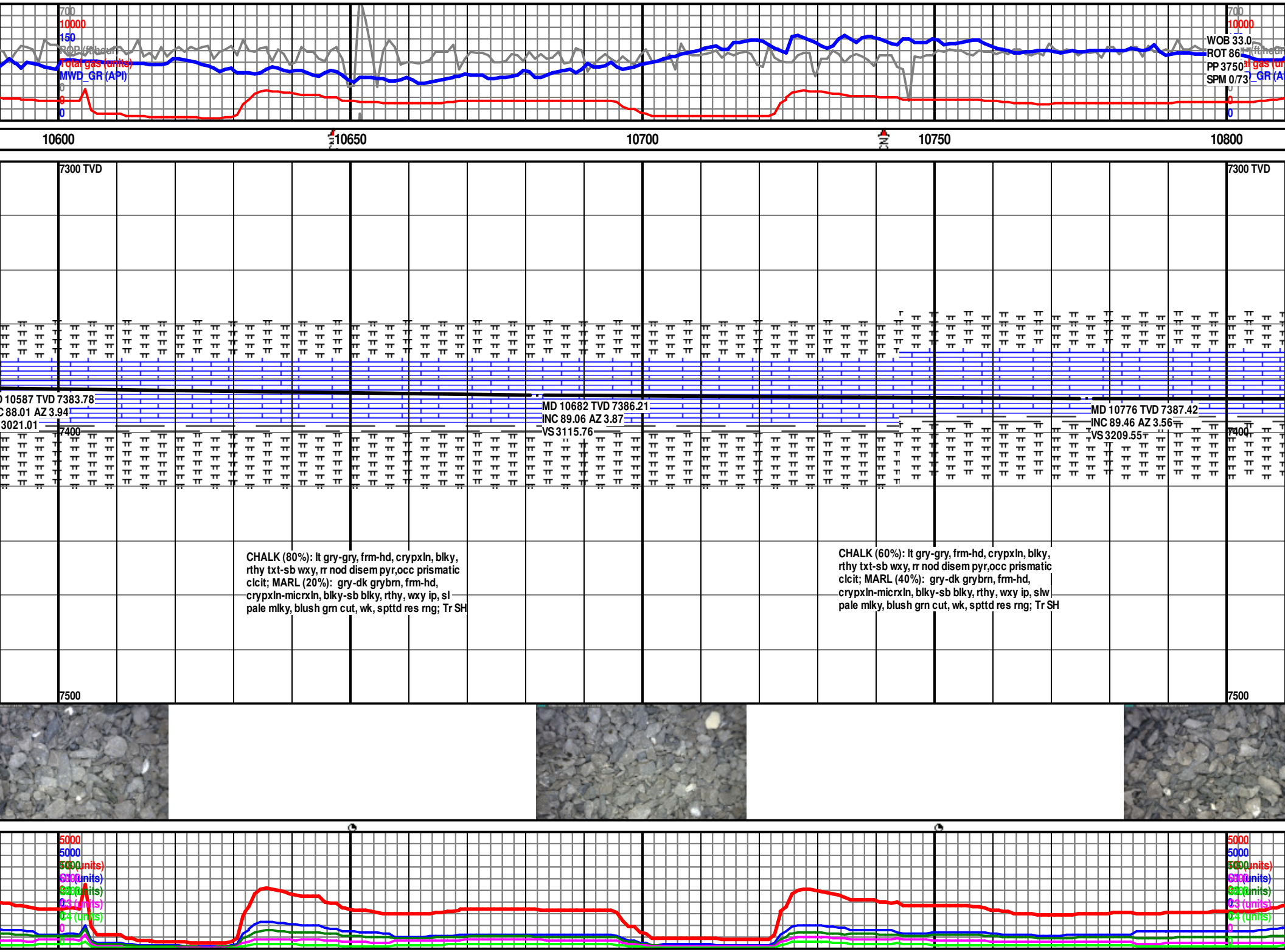
5000
5000
5000 (units)
(units)
(units)
(units)
(units)
0

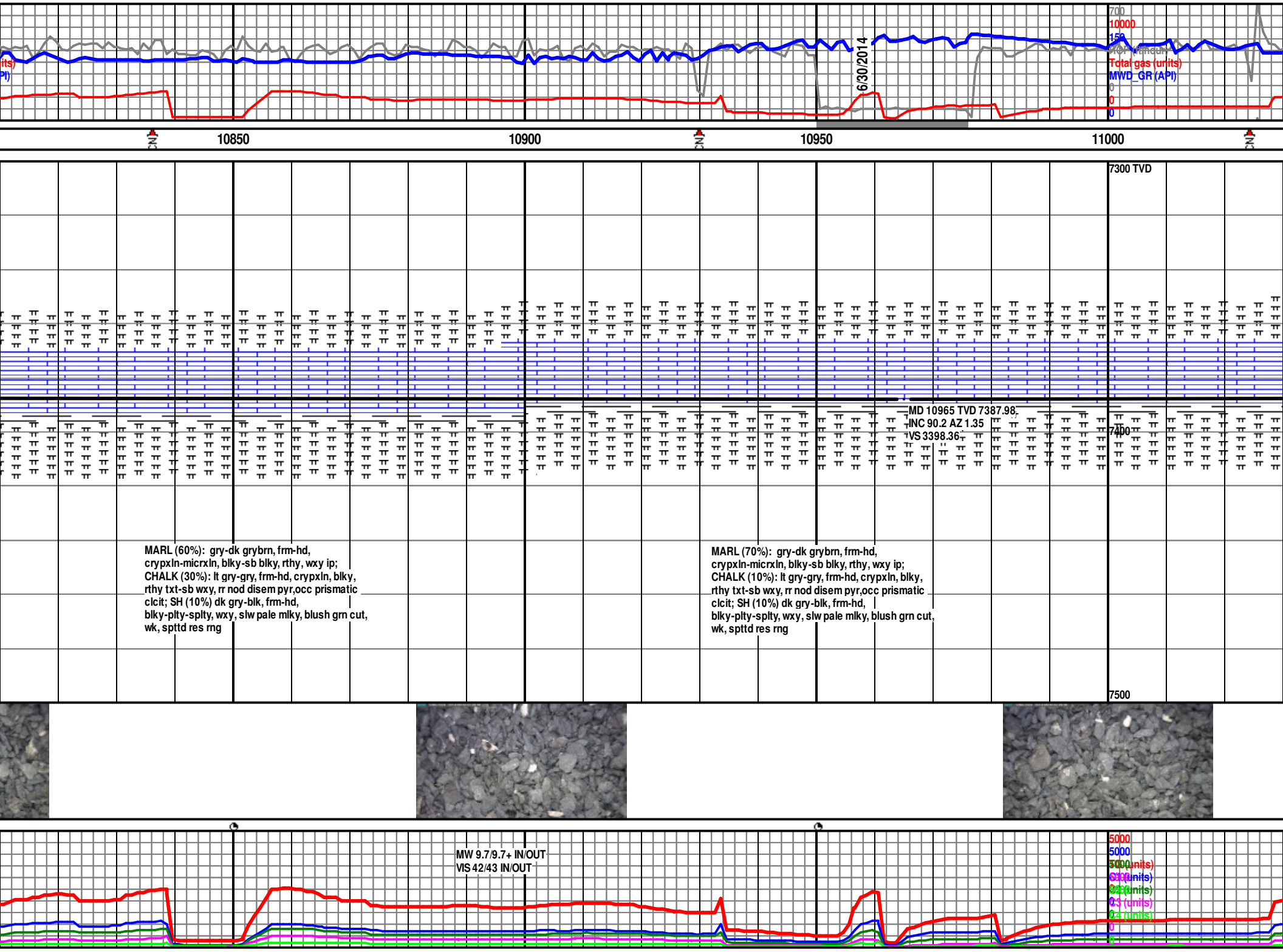
MW 9.7/9.7+ IN/OUT
VIS 43/45 IN/OUT

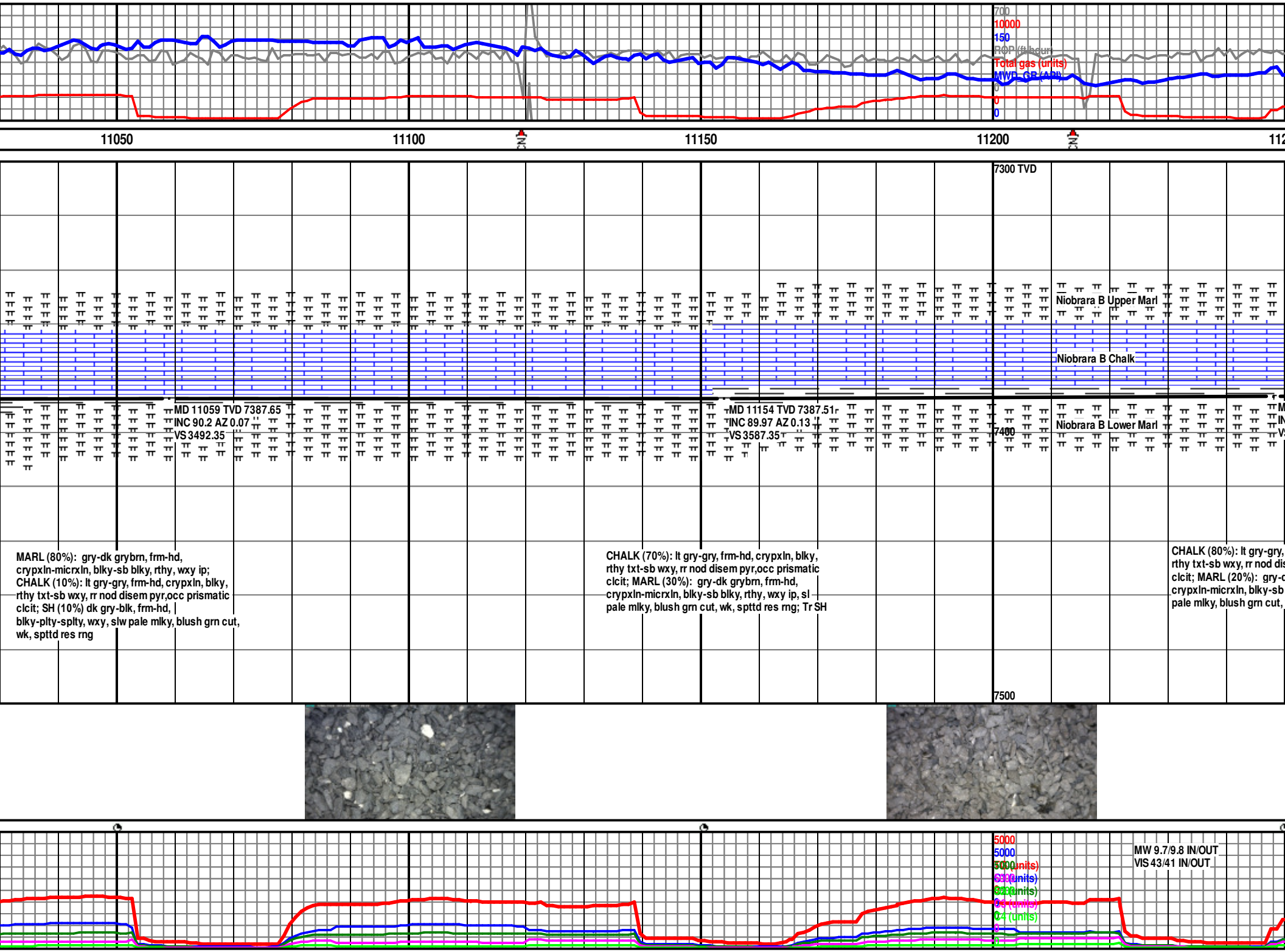

700
10000
100
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
9950
CN
10000
10050
CN
10100
101
7300 TVD
9927 TVD 7381.91
C 89.97 AZ 0.82
2361.94
MD 10021 TVD 7382.16
INC 89.73 AZ 0.8
VS 2455.93
7400
CHALK (70%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (30%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptd res rng; Tr SH
CHALK (70%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (30%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptd res rng; Tr SH
CHALK (70%):
rthy txt-sb wxy
clcit; MARL (3
crypxln-micrxl
pale mlky, blus
7500
5000
5000
3000 (units)
(units)
(units)
03 (units)
04 (units)
Possum

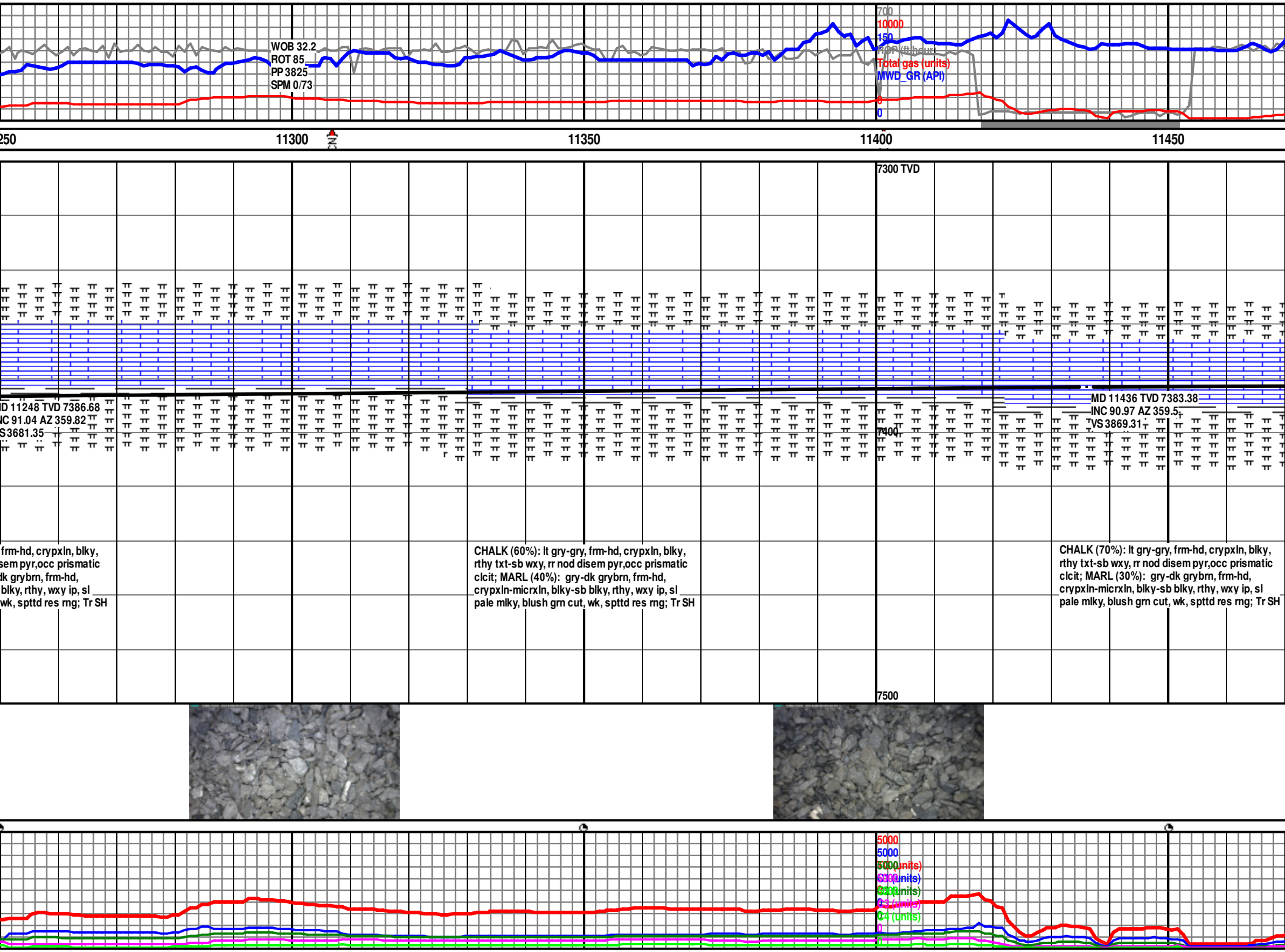

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
6
0
0
WOB 53.5
ROT 0
PP 2845
SPM 0/73
150
10200
10250
10300
10350
7300 TVD
7400
7500
MD 10305 TVD 7381.58
INC 90.5 AZ 3.64
VS 2739.69
lt gry-gry, frm-hd, crypxln, blky,
, rr nod disem pyr,occ prismatic
0%): gry-dk grybrn, frm-hd,
n, blky-sb blky, rthy, wxy ip, sl
h grn cut, wk, sptted res rng; Tr SH
CHALK (80%): lt gry-gry, frm-hd, crypxln, blky,
rthy txt-sb wxy, rr nod disem pyr,occ prismatic
clcit; MARL (20%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl
pale mlky, blush grn cut, wk, sptted res rng; Tr SH
CHALK (85%): lt gry-gry, frm-hd, crypxln, blky,
rthy txt-sb wxy, rr nod disem pyr,occ prismatic
clcit; MARL (15%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl
pale mlky, blush grn cut, wk, sptted res rng; Tr SH
5000
5000
5000 (units)
(units)
(units)
(units)
(units)
0
0
MW 9.7/9.7+ IN/OUT
VIS 43/43 IN/OUT
n belly bypassed for shaker maintenance
Possum belly bypassed for shaker ma

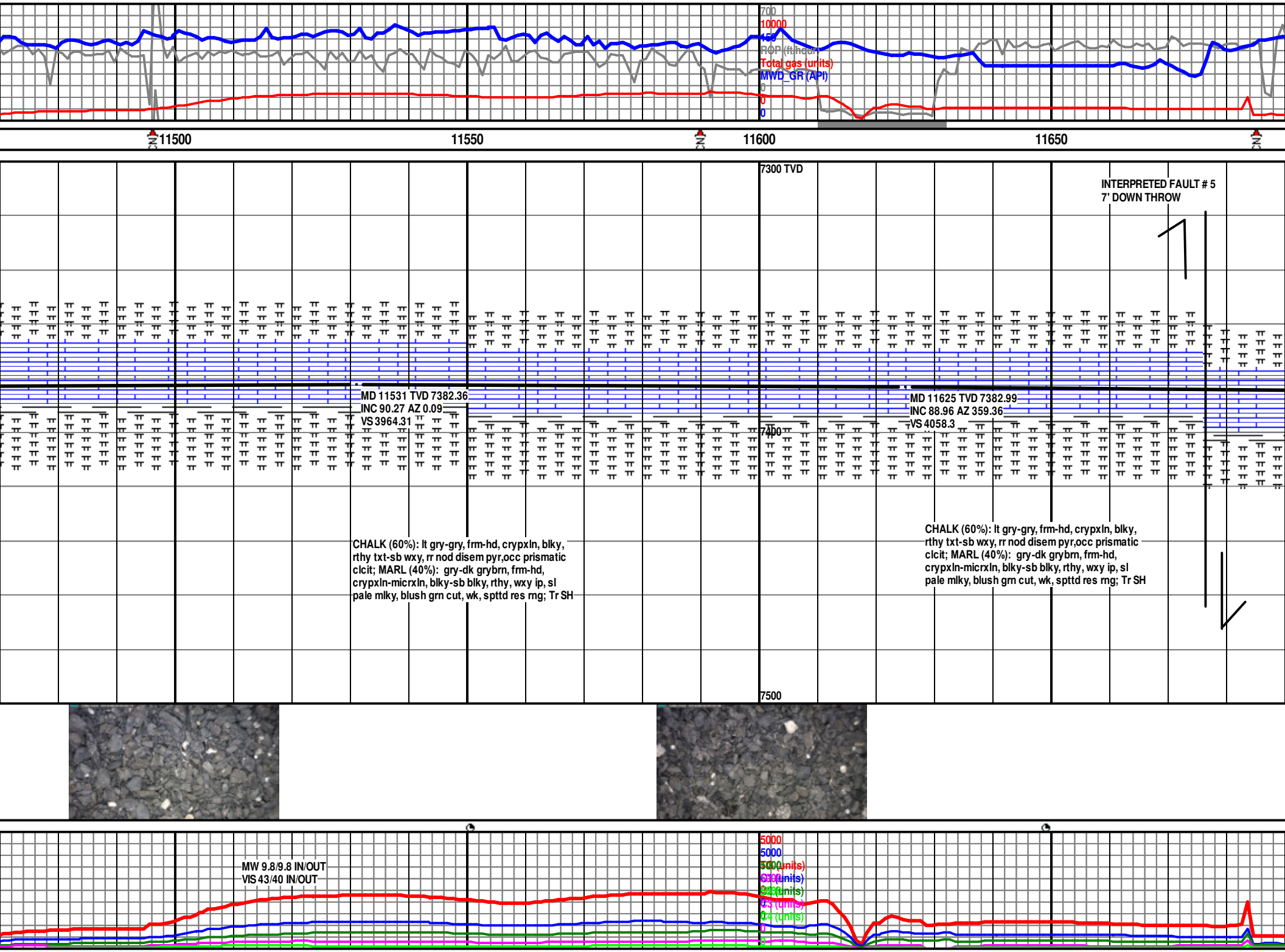

700
10000
150
Total gas (units)
MWD_GR (API)
0
0
0
10400
10450
10500
10550
7300 TVD
MD 10399 TVD 7380.86
INC 90.37 AZ 3.6
VS 2833.5
7400
MD 10493 TVD 7381.36
INC 89.02 AZ 4.18
VS 2927.28
CHALK (85%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (15%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, spttd res rng; Tr SH
CHALK (80%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (20%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, spttd res rng; Tr SH
7500
5000
5000
5000 (units)
(units)
(units)
(units)
0
0
MW 9.7/9.8+ IN/OUT
VIS 43/43 IN/OUT

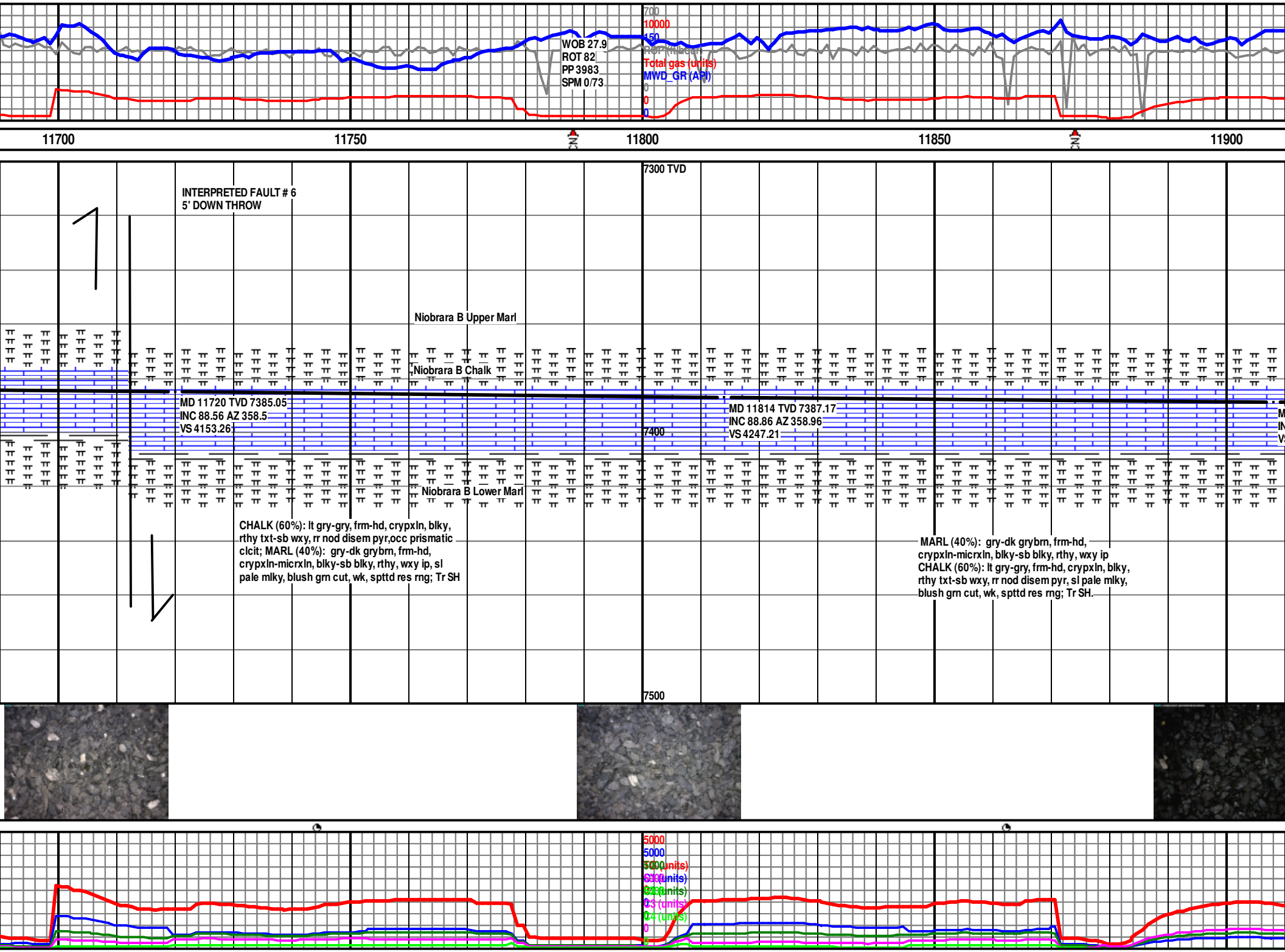

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
WOB 33.0
ROT 86
PP 3750
SPM 0/73
10600
10650
10700
10750
10800
7300 TVD
7400
7500
MD 10587 TVD 7383.78
INC 88.01 AZ 3.94
VS 3021.01
MD 10682 TVD 7386.21
INC 89.06 AZ 3.87
VS 3115.76
MD 10776 TVD 7387.42
INC 89.46 AZ 3.56
VS 3209.55
CHALK (80%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (20%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptd res rng; Tr SH
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, slw pale mlky, blush grn cut, wk, sptd res rng; Tr SH
5000
5000
3000 (units)
0.3 (units)
0.4 (units)
0

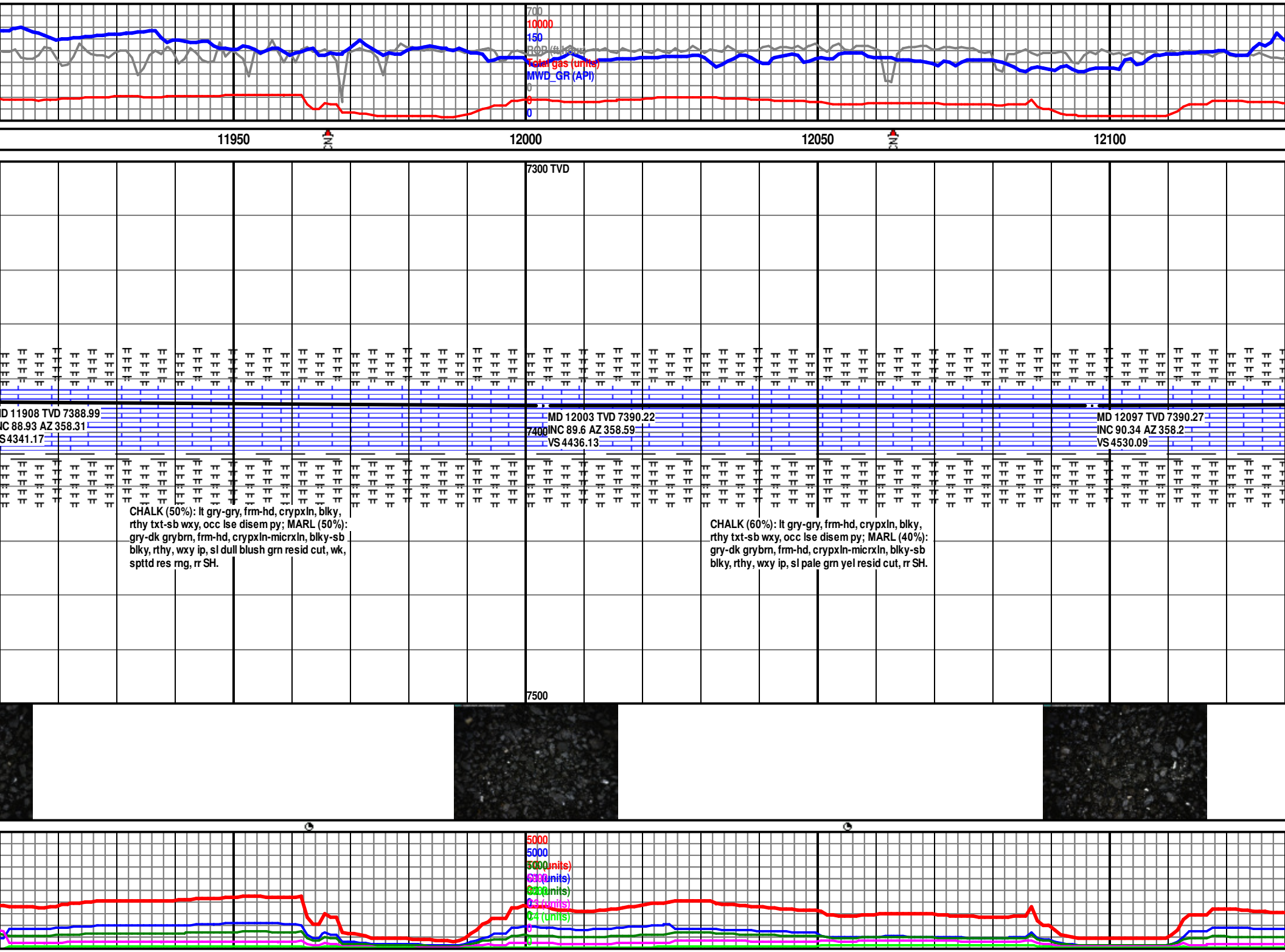

6/30/2014
Total gas (units)
MWD_GR (API)
10850
10900
10950
11000
7300 TVD
7400
7500
MD 10965 TVD 7387.98
INC 90.2 AZ 1.35
VS 3398.36
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip; CHALK (30%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; SH (10%) dk gry-blk, frm-hd, blky-plty-splty, wxy, slw pale mlky, blush grn cut, wk, sptd res rng
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; SH (10%) dk gry-blk, frm-hd, blky-plty-splty, wxy, slw pale mlky, blush grn cut, wk, sptd res rng
MW 9.7/9.7+ IN/OUT
VIS 42/43 IN/OUT

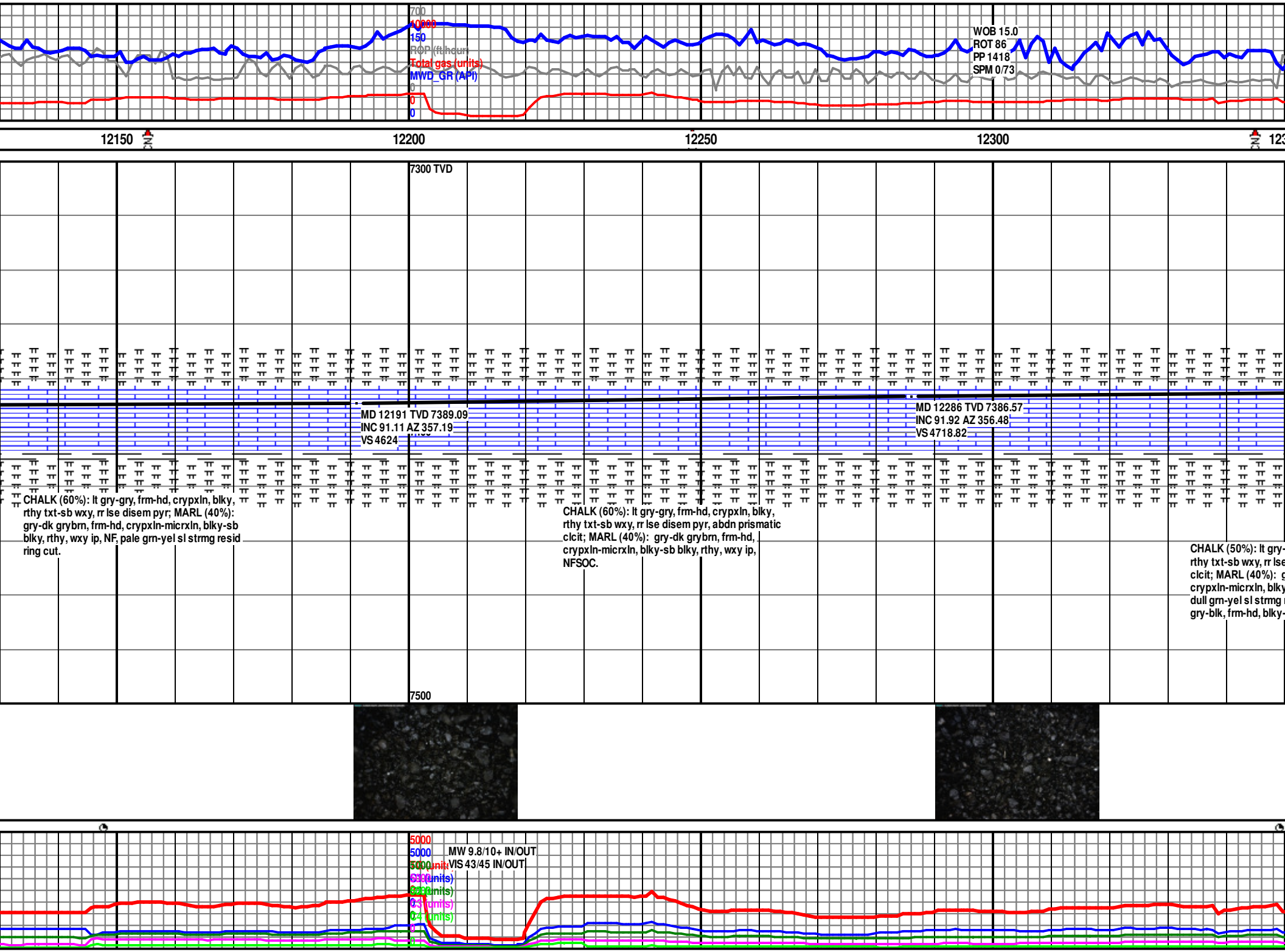

700
10000
150
ROP (ft/hour)
Total gas (units)
MWD GR (API)
0
0
11050
11100
11150
11200
7300 TVD
Niobrara B Upper Marl
Niobrara B Chalk
Niobrara B Lower Marl
7400
7500
MD 11059 TVD 7387.65
INC 90.2 AZ 0.07
VS 3492.35
MD 11154 TVD 7387.51
INC 89.97 AZ 0.13
VS 3587.35
MARL (80%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; SH (10%) dk gry-blk, frm-hd, blky-plty-splty, wxy, slw pale mlky, blush grn cut, wk, spttd res rng
CHALK (70%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (30%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, spttd res rng; Tr SH
CHALK (80%): lt gry-gry, rthy txt-sb wxy, rr nod dis clcit; MARL (20%): gry-d crypxln-micrxln, blky-sb pale mlky, blush grn cut,
5000
5000
3000 (units)
600 (units)
200 (units)
0.4 (units)
0.4 (units)
0
0
MW 9.7/9.8 IN/OUT
VIS 43/41 IN/OUT

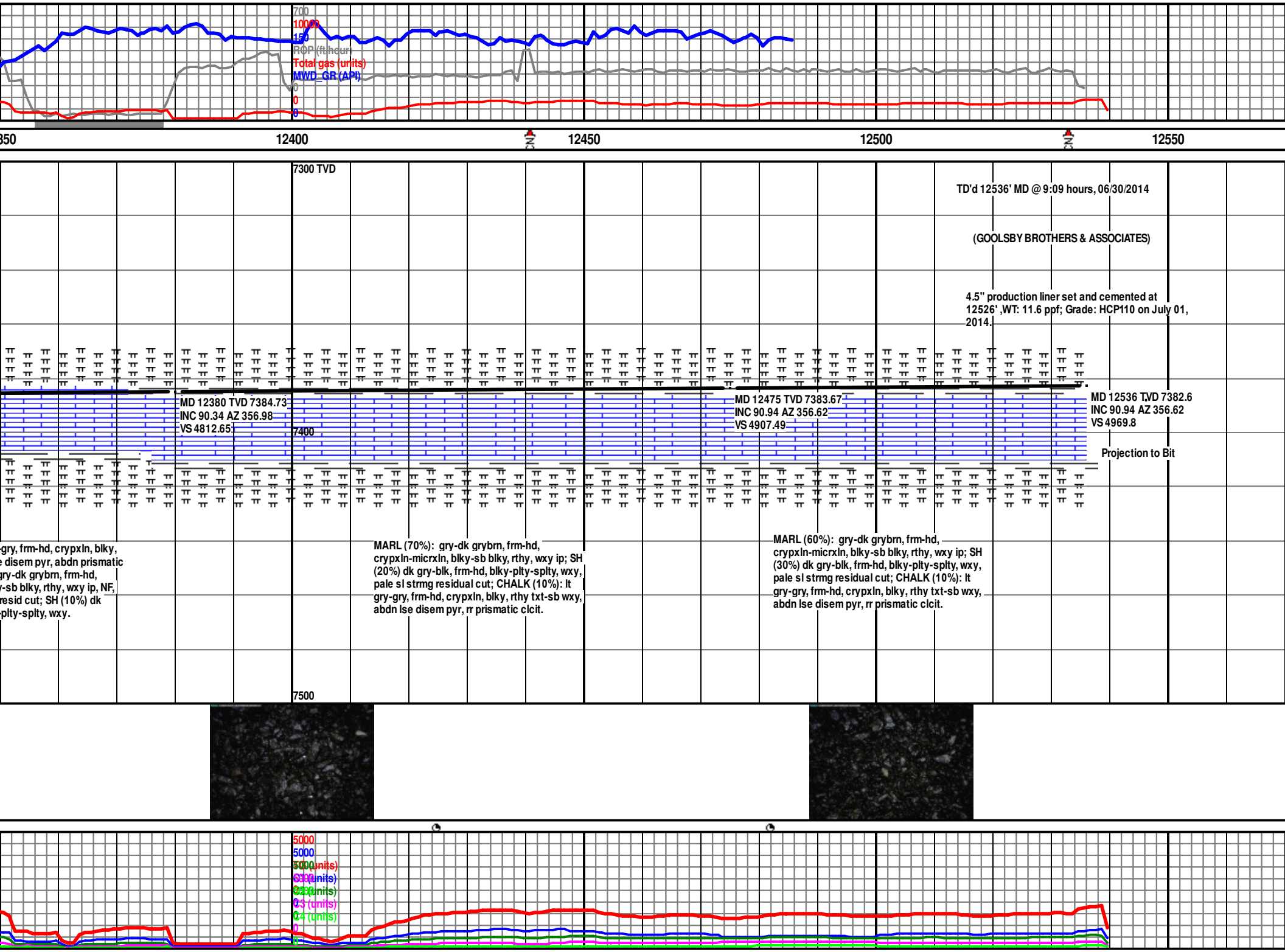

WOB 32.2
ROT 85
PP 3825
SPM 0/73
700
10000
150
Total gas (units)
MWD_GR (API)
0
0
250
11300
11350
11400
11450
7300 TVD
MD 11436 TVD 7383.38
INC 90.97 AZ 359.5
VS 3869.31
7400
7500
ID 11248 TVD 7386.68
NC 91.04 AZ 359.82
S 3681.35
frm-hd, crypxln, blky,
sem pyr,occ prismatic
dk grybrn, frm-hd,
blky, rthy, wxy ip, sl
wk, sptd res rng; Tr SH
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky,
rthy txt-sb wxy, rr nod disem pyr,occ prismatic
clcit; MARL (40%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl
pale mlky, blush grn cut, wk, sptd res rng; Tr SH
CHALK (70%): lt gry-gry, frm-hd, crypxln, blky,
rthy txt-sb wxy, rr nod disem pyr,occ prismatic
clcit; MARL (30%): gry-dk grybrn, frm-hd,
crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl
pale mlky, blush grn cut, wk, sptd res rng; Tr SH
5000
5000
(units)
(units)
(units)
(units)
(units)
0
0


700
10000
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
11500
11550
11600
11650
7300 TVD
INTERPRETED FAULT # 5
7' DOWN THROW
MD 11531 TVD 7382.36
INC 90.27 AZ 0.09
VS 3964.31
MD 11625 TVD 7382.99
INC 88.96 AZ 359.36
VS 4058.3
7400
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptd res rng; Tr SH
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptd res rng; Tr SH
7500
MW 9.8/9.8 IN/OUT
VIS 43/40 IN/OUT
5000
5000
5000 (units)
(units)
(units)
(units)
(units)
0


WOB 27.9
ROT 82
PP 3983
SPM 0/73
700
10000
150
ROP (ft/hr)
Total gas (units)
MWD_GR (API)
0
0
0
11700
11750
11800
11850
11900
7300 TVD
INTERPRETED FAULT # 6
5' DOWN THROW
Niobrara B Upper Marl
Niobrara B Chalk
MD 11720 TVD 7385.05
INC 88.56 AZ 358.5
VS 4153.26
MD 11814 TVD 7387.17
INC 88.86 AZ 358.96
VS 4247.21
7400
Niobrara B Lower Marl
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr,occ prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale mlky, blush grn cut, wk, sptttd res rng; Tr SH
MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr nod disem pyr, sl pale mlky, blush grn cut, wk, sptttd res rng; Tr SH.
7500
5000
5000
3000 (units)
(units)
(units)
(units)
0


700
10000
150
Total gas (units)
MWD_GR (API)
0
8
0
11950
CN
12000
12050
CN
12100
7300 TVD
7400
7500
MD 11908 TVD 7388.99
INC 88.93 AZ 358.31
VS 4341.17
MD 12003 TVD 7390.22
INC 89.6 AZ 358.59
VS 4436.13
MD 12097 TVD 7390.27
INC 90.34 AZ 358.2
VS 4530.09
CHALK (50%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, occ lse disem py; MARL (50%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl dull blush grn resid cut, wk, sptd res rng, rr SH.
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, occ lse disem py; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, sl pale grn yel resid cut, rr SH.
5000
5000
5000 (units)
(units)
(units)
(units)
(units)
0
0


700
10000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 15.0
ROT 86
PP 1418
SPM 0/73
12150
12200
12250
12300
7300 TVD
MD 12191 TVD 7389.09
INC 91.11 AZ 357.19
VS 4624
MD 12286 TVD 7386.57
INC 91.92 AZ 356.48
VS 4718.82
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, NF, pale grn-yel sl strmg resid ring cut.
CHALK (60%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, rr lse disem pyr, abdn prismatic clcit; MARL (40%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip, NFSOC.
CHALK (50%): lt gry-
rthy txt-sb wxy, rr lse
clcit; MARL (40%): g
crypxln-micrxln, blky
dull grn-yel sl strmg
gry-blk, frm-hd, blky-
7500
5000
5000
MW 9.8/10+ IN/OUT
VIS 43/45 IN/OUT


700
1000
150
ROP (ft/hour)
Total gas (units)
MWD_GR (API)
0
0
0
12400
12450
12500
12550
7300 TVD
TD'd 12536' MD @ 9:09 hours, 06/30/2014
(GOOLSBY BROTHERS & ASSOCIATES)
4.5" production liner set and cemented at 12526' ,WT: 11.6 ppf; Grade: HCP110 on July 01, 2014.
MD 12380 TVD 7384.73
INC 90.34 AZ 356.98
VS 4812.65
MD 12475 TVD 7383.67
INC 90.94 AZ 356.62
VS 4907.49
MD 12536 TVD 7382.6
INC 90.94 AZ 356.62
VS 4969.8
Projection to Bit
7400
-gry, frm-hd, crypxln, blky,
e disem pyr, abdn prismatic
gry-dk grybrn, frm-hd,
-sb blky, rthy, wxy ip, NF,
resid cut; SH (10%) dk
plty-splty, wxy.
MARL (70%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip; SH (20%) dk gry-blk, frm-hd, blky-plty-splty, wxy, pale sl strmg residual cut; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, abdn lse disem pyr, rr prismatic clcit.
MARL (60%): gry-dk grybrn, frm-hd, crypxln-micrxln, blky-sb blky, rthy, wxy ip; SH (30%) dk gry-blk, frm-hd, blky-plty-splty, wxy, pale sl strmg residual cut; CHALK (10%): lt gry-gry, frm-hd, crypxln, blky, rthy txt-sb wxy, abdn lse disem pyr, rr prismatic clcit.
7500
5000
5000
3000 (units)
(units)
(units)
(units)
(units)
0
0