

OPERATOR: **Extraction Oil & Gas**

WELL NAME: **HFE 4**

FIELD NAME: DJ Basin - Wattenberg

DRILLING RIG: Cyclone 37

API #: 05-123-44774

LAT/LONG: 40.294718, -104.995307

SURFACE HOLE: SWSW S22-T4N-R68W, 1126' FSL, 963' FWL

BOTTOM HOLE: S22-T4N-R68W, 620' FSL, 460' FEL

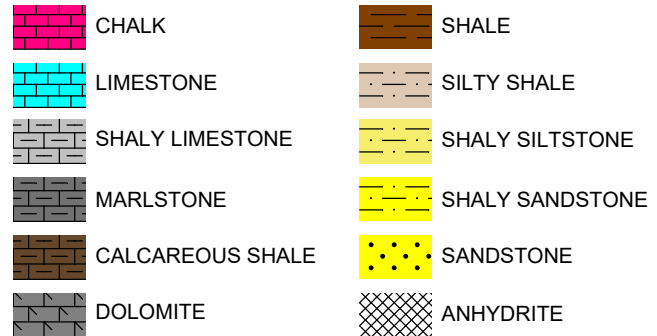


Earth Science Agency, LLC

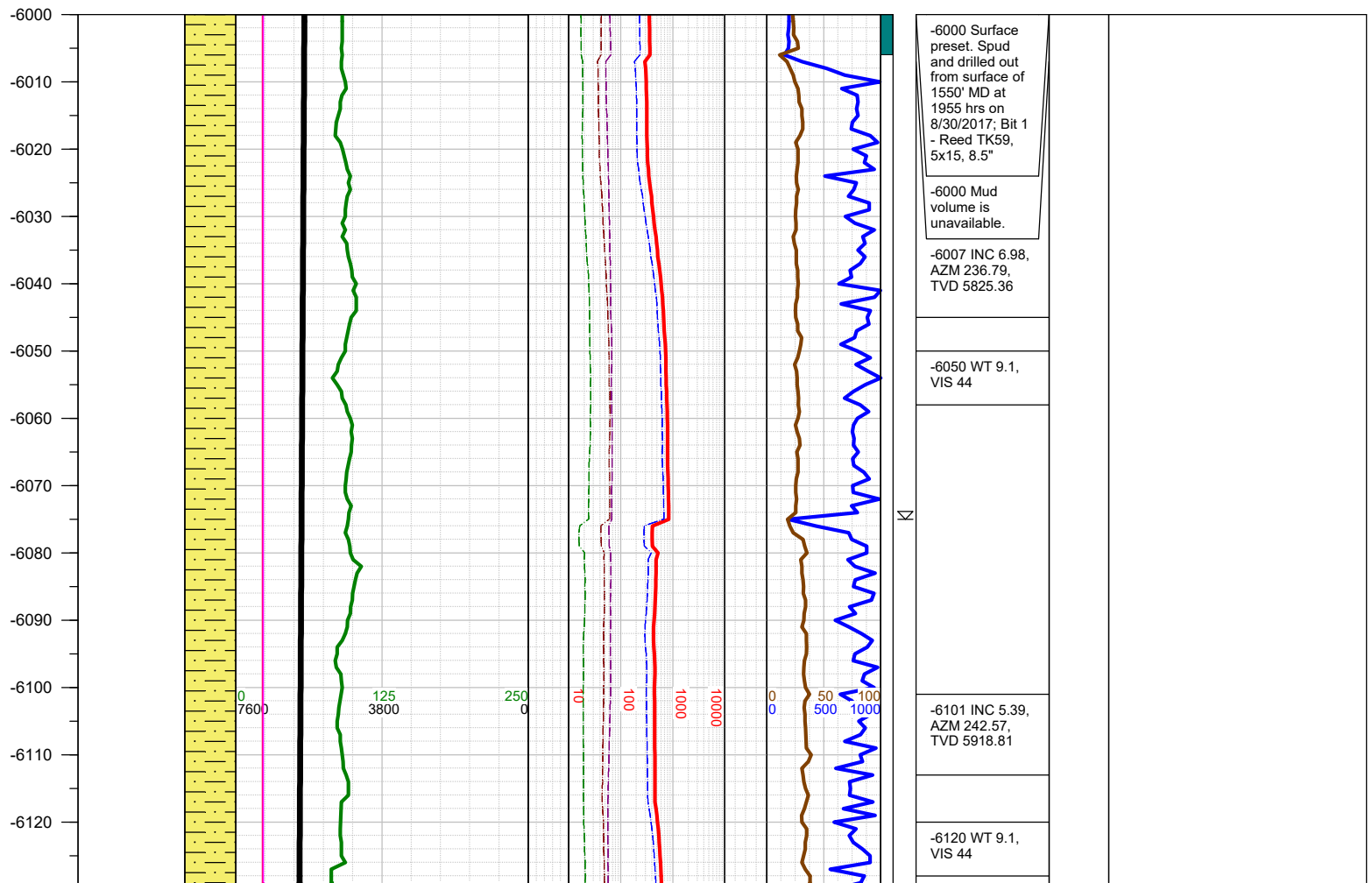
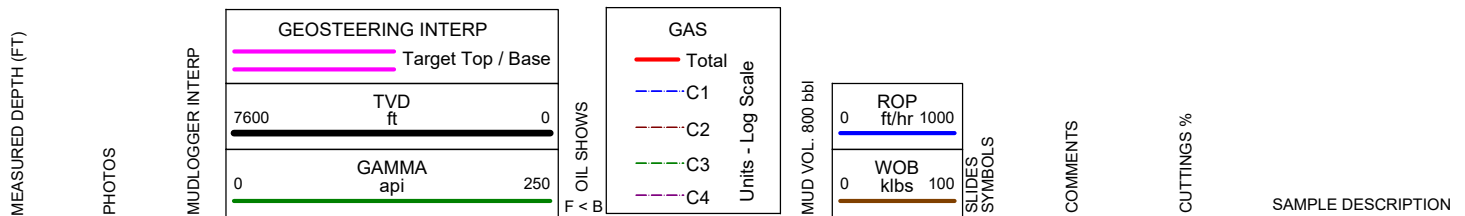
COUNTY: Weld
STATE: Colorado
GROUND ELEVATION: 4919'
KELLY BUSHING: 4947'
DRILLING FLUID: OBM
TVD VS. MD: 6986' / 11757'
SPUD DATE: August 30, 2017
TD DATE: August 31, 2017

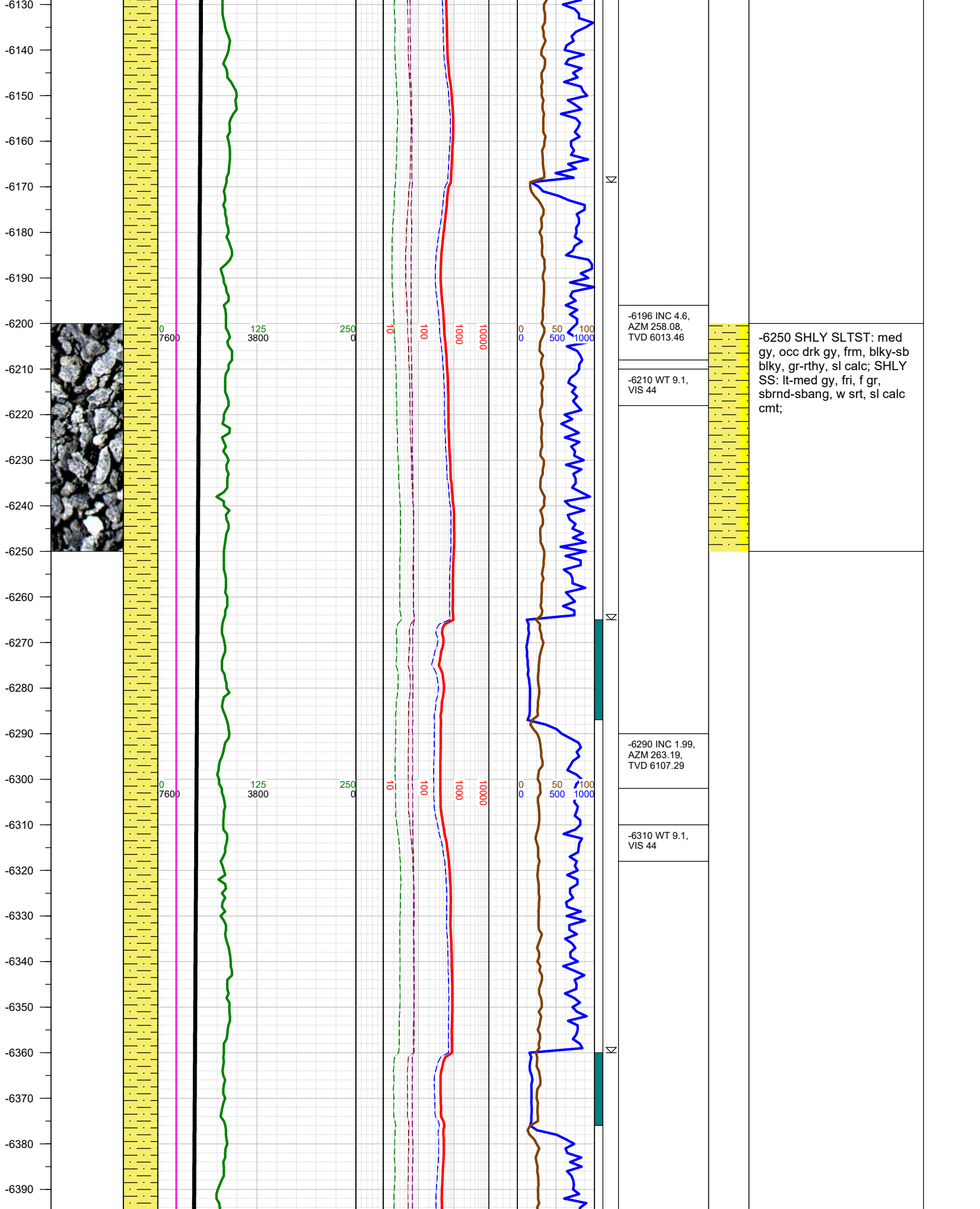
DEPTHS LOGGED: 6000' - 11757'
DATES LOGGED: August 30, 2017 - August 31, 2017
GEOLOGISTS: Dan Jacobs, Kyle Welty
SCALE: 5" = 100'

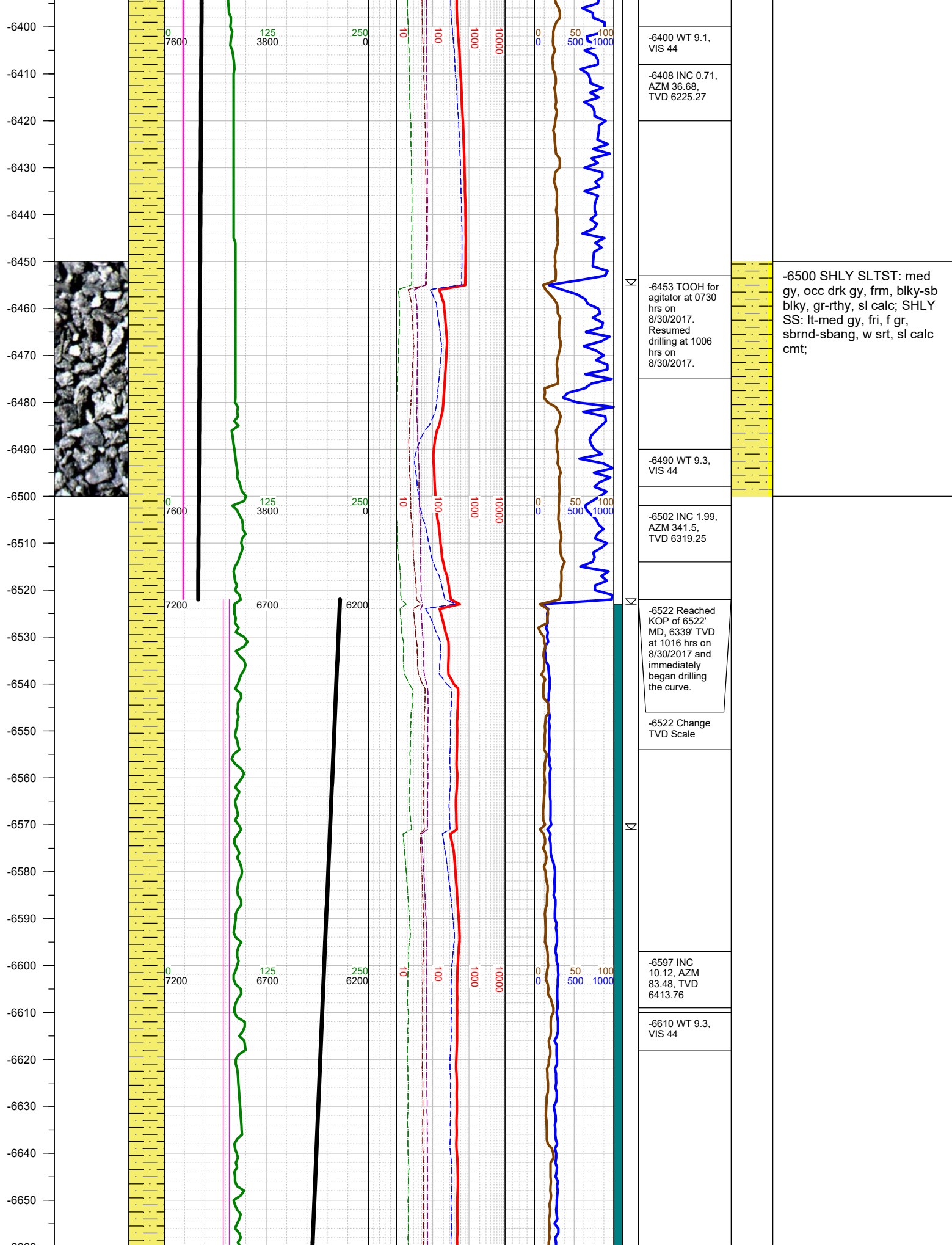
LEGEND



FORMATION CONNECTION MIDNIGHT NEW BIT GAS SHOW FAULT







-6400 WT 9.1,
VIS 44

-6408 INC 0.71,
AZM 36.68,
TVD 6225.27

-6453 TOO for
agitator at 0730
hrs on
8/30/2017.
Resumed
drilling at 1006
hrs on
8/30/2017.

-6490 WT 9.3,
VIS 44

-6502 INC 1.99,
AZM 341.5,
TVD 6319.25

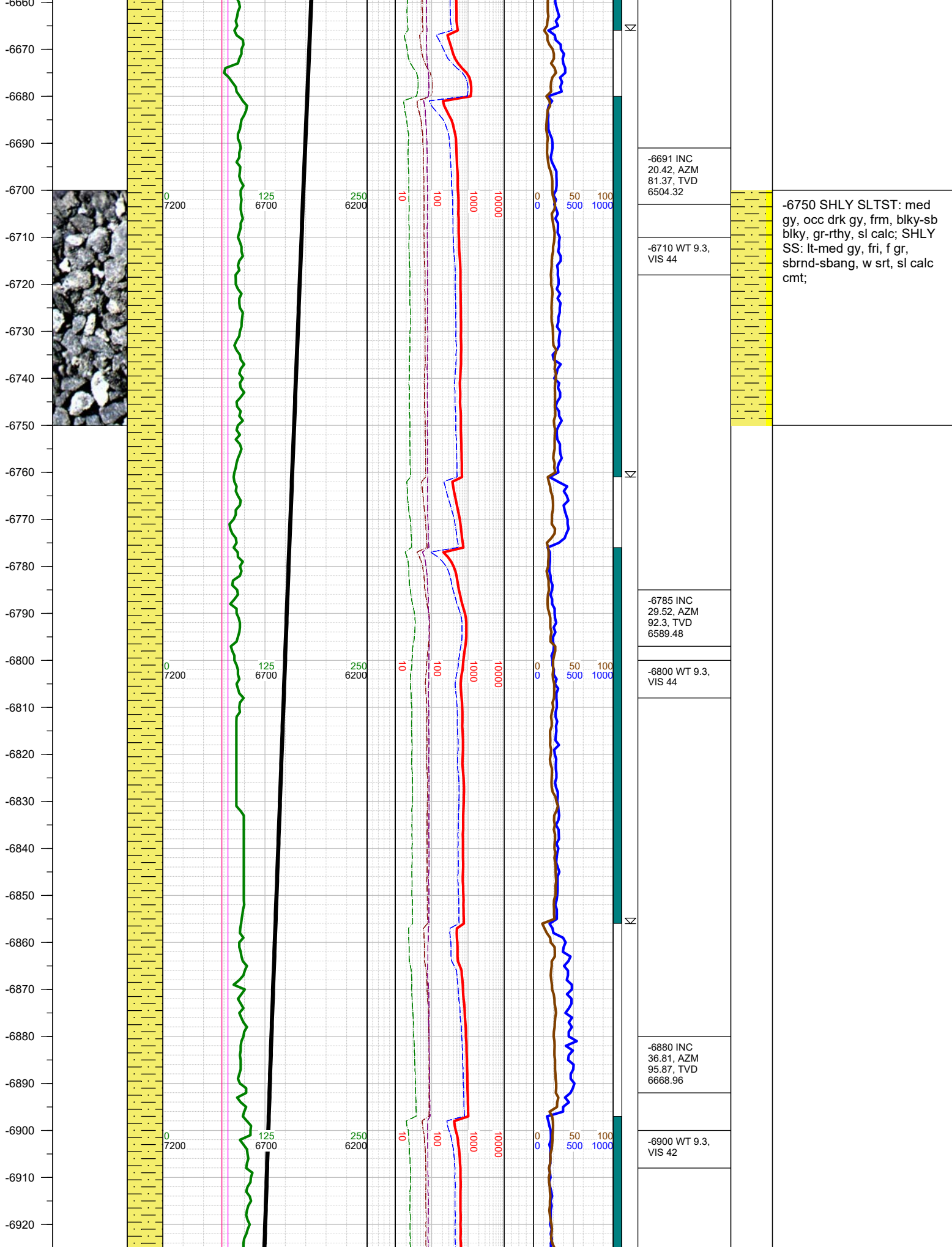
-6522 Reached
KOP of 6522'
MD, 6339' TVD
at 1016 hrs on
8/30/2017 and
immediately
began drilling
the curve.

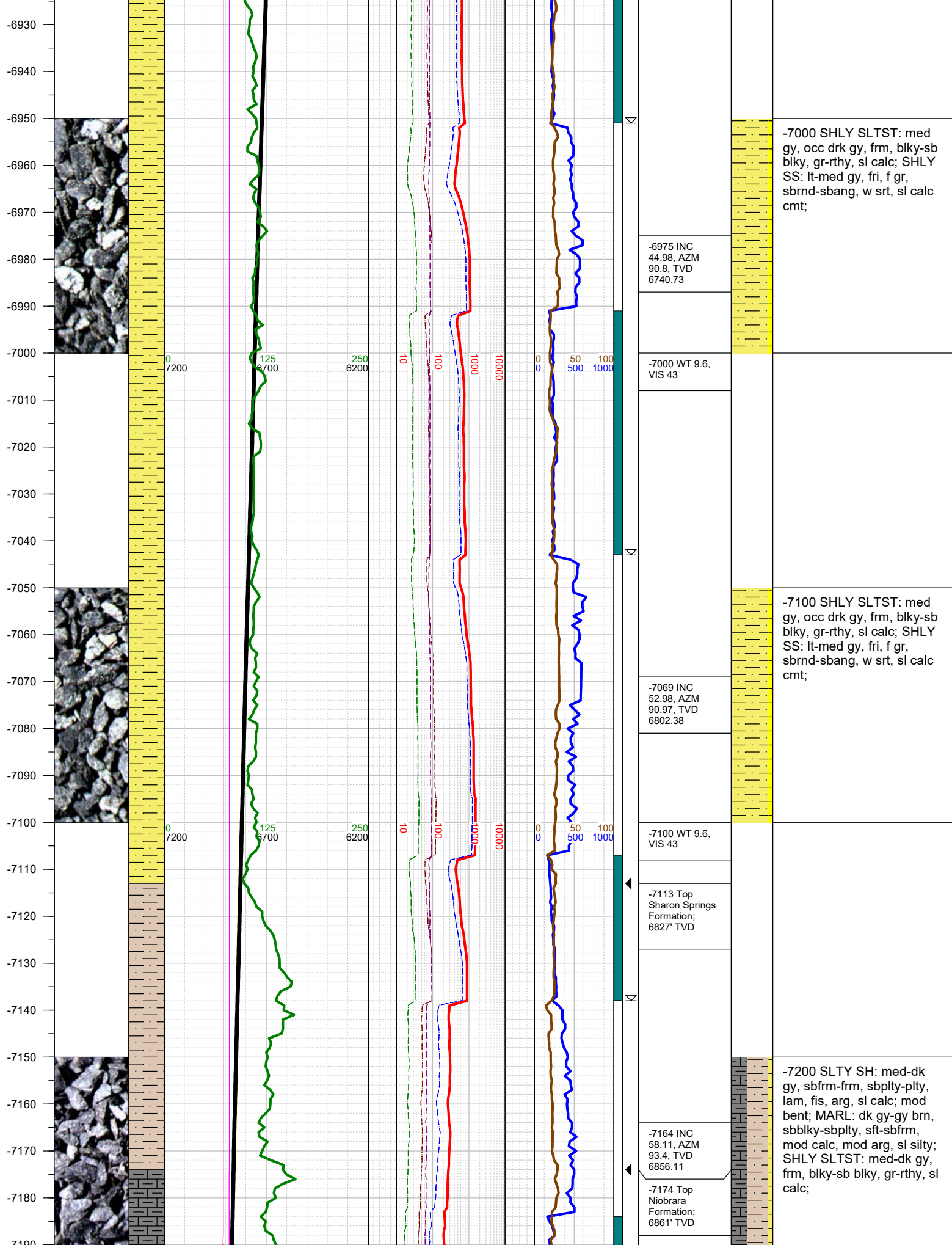
-6522 Change
TVD Scale

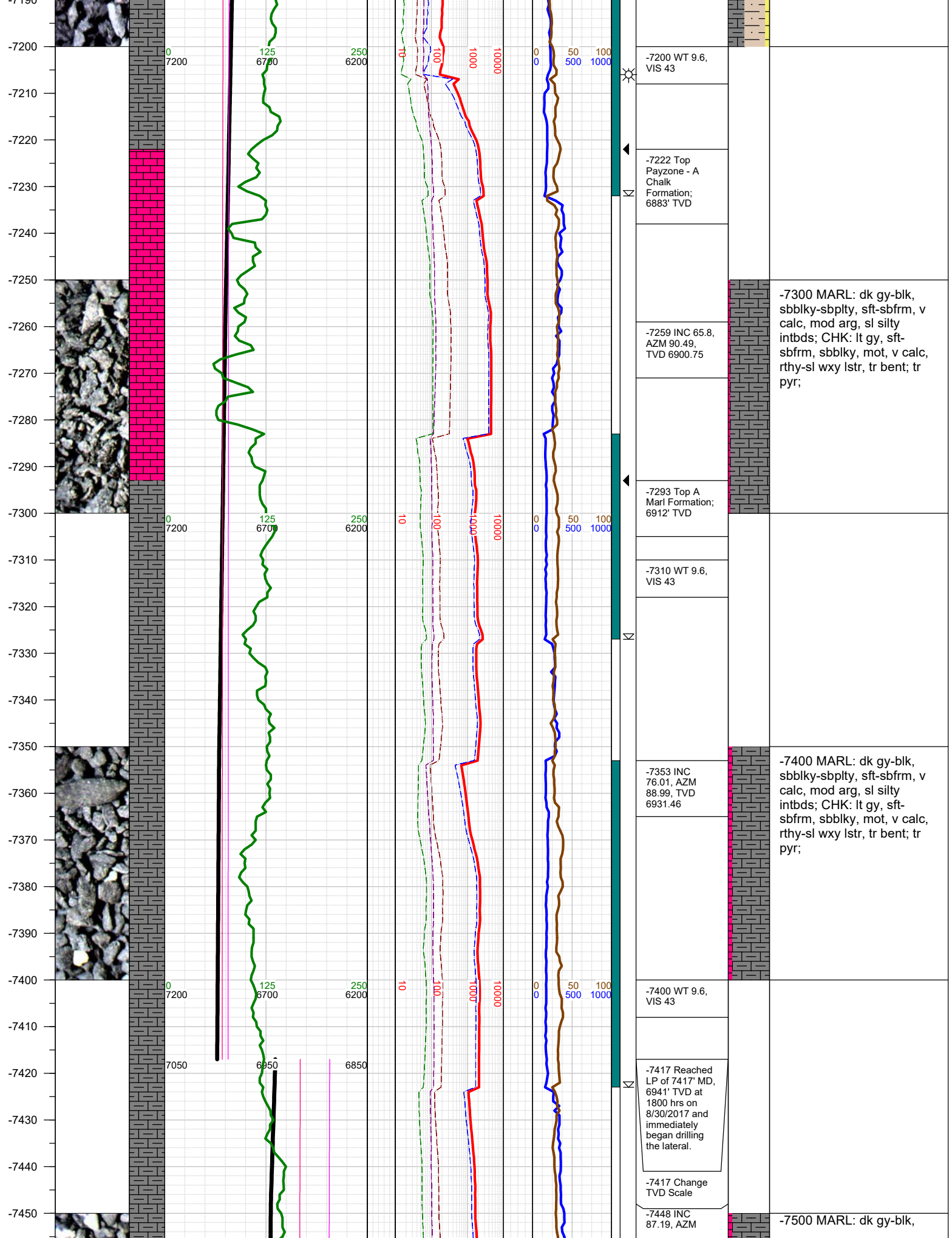
-6597 INC
10.12, AZM
83.48, TVD
6413.76

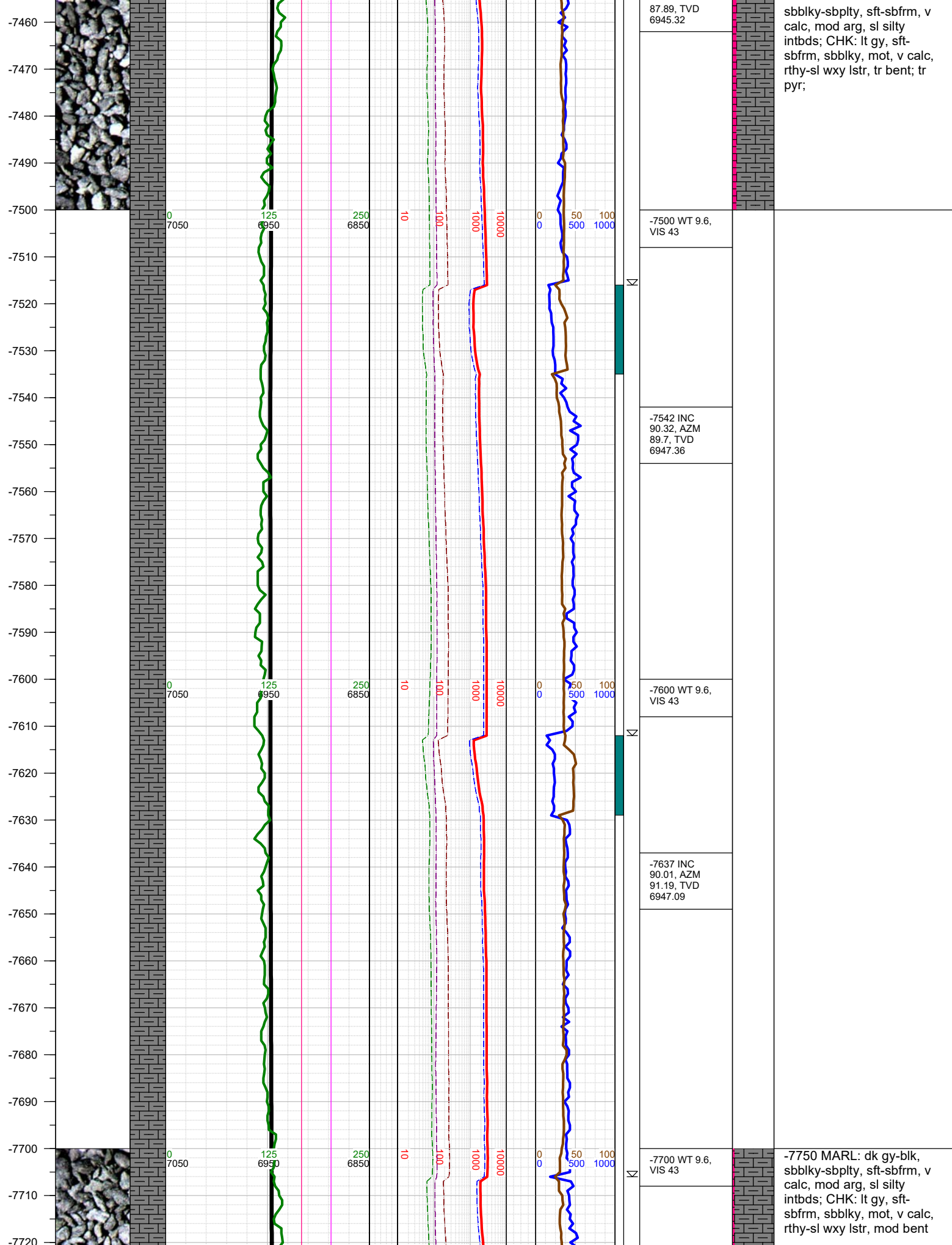
-6610 WT 9.3,
VIS 44

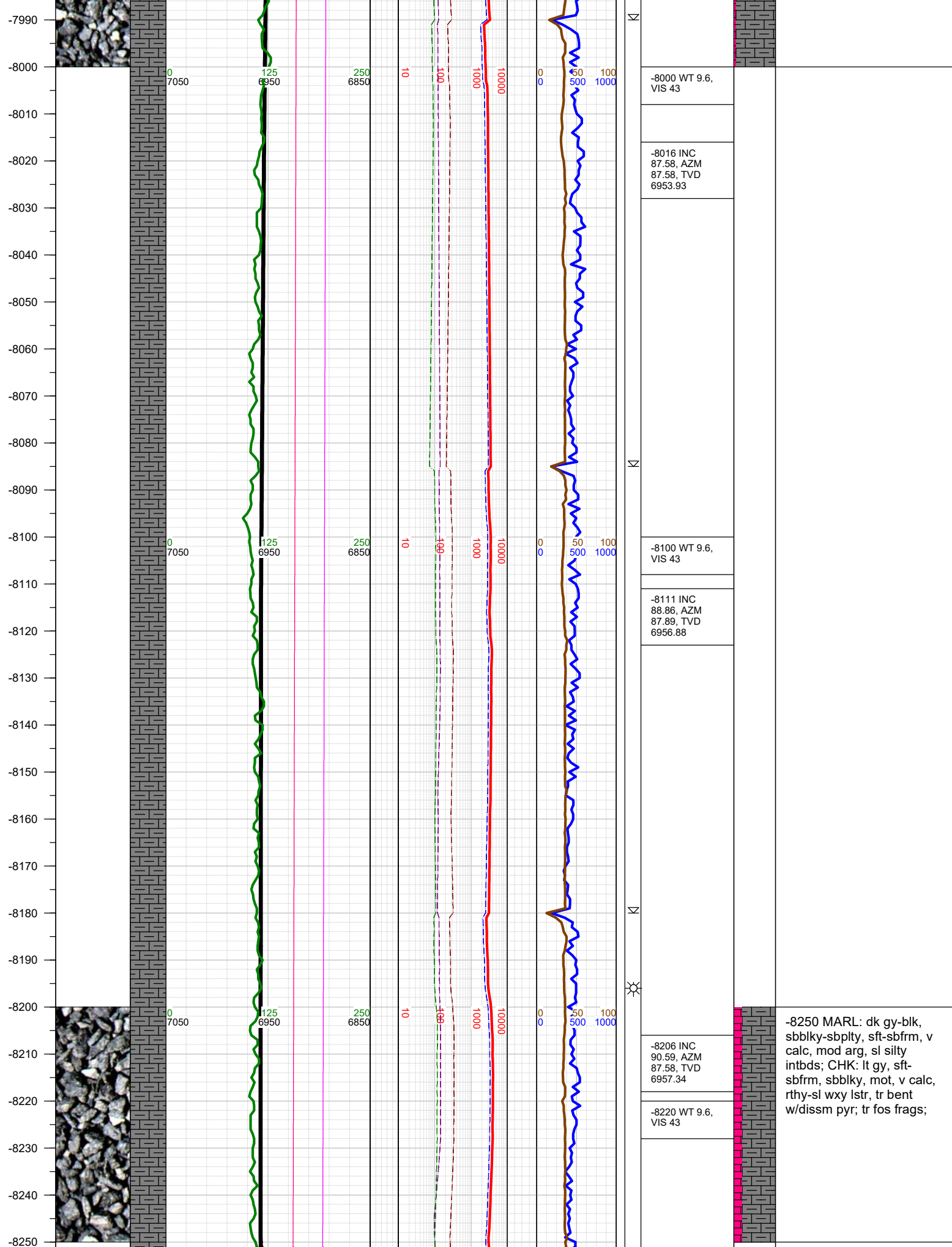
-6500 SHLY SLTST: med
gy, occ drk gy, frm, blk-y-sb
blk-y, gr-rthy, sl calc; SHLY
SS: lt-med gy, fri, f gr,
sbrnd-sbang, w srt, sl calc
cmt;

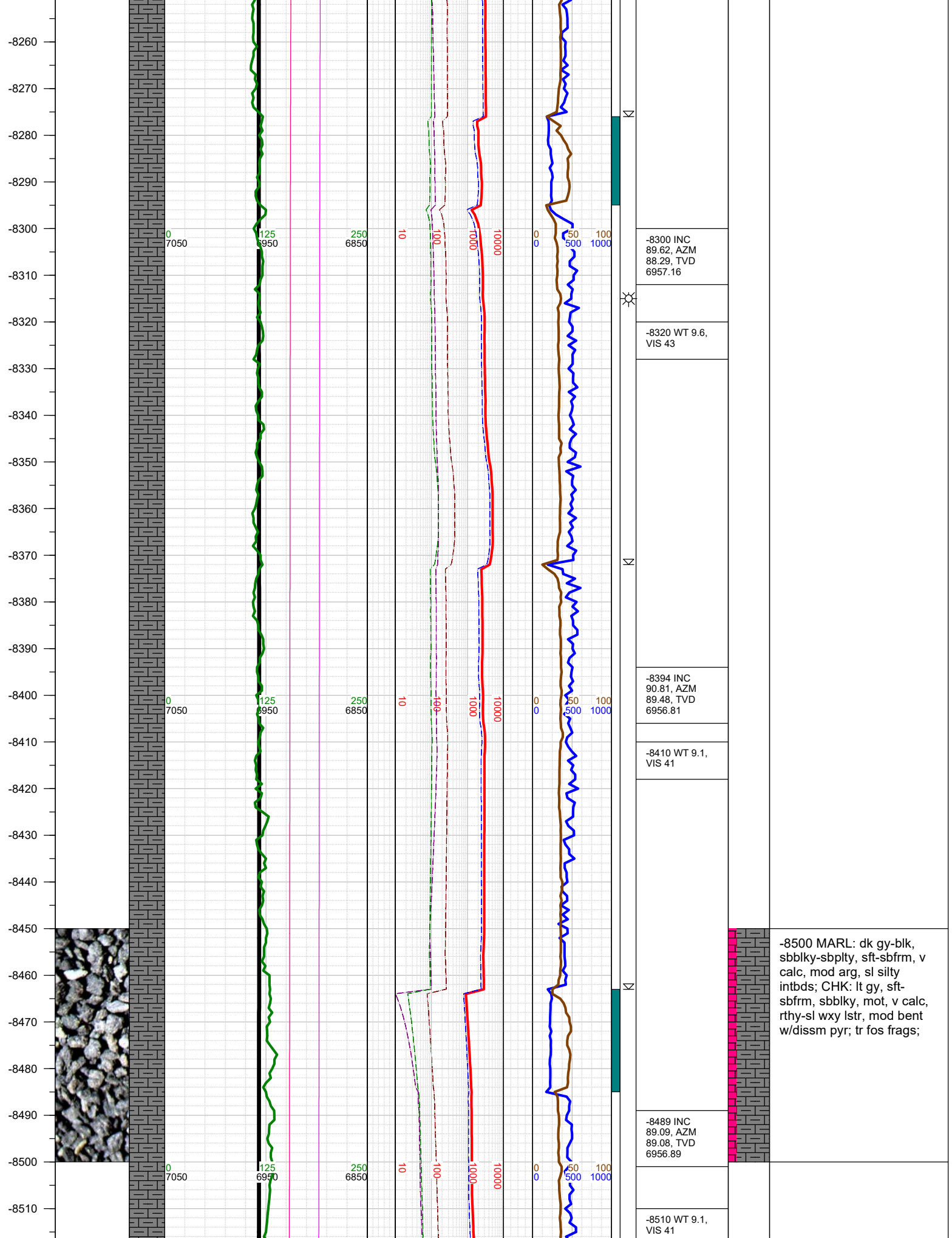




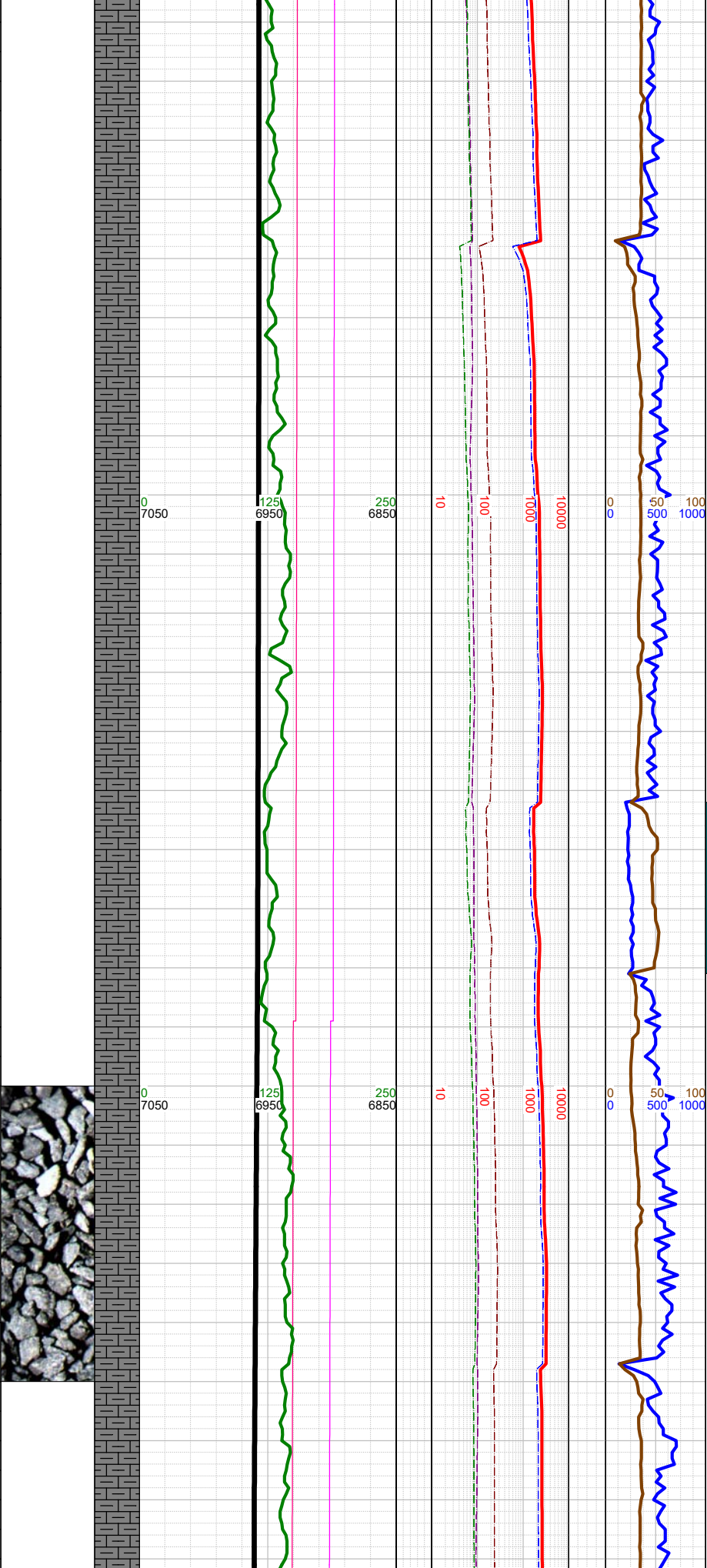








-8520
-8530
-8540
-8550
-8560
-8570
-8580
-8590
-8600
-8610
-8620
-8630
-8640
-8650
-8660
-8670
-8680
-8690
-8700
-8710
-8720
-8730
-8740
-8750
-8760
-8770
-8780



Δ

-8558 TOOH for rig repairs at 2320 hrs on 8/30/2017. Resumed drilling at 0225 hrs on 8/31/2017.

-8558 0000 hrs on 8/31/2017

-8583 INC 90.72, AZM 90.49, TVD 6957.05

-8610 WT 9.5, VIS 43

Δ

☀

-8678 INC 88.2, AZM 88.86, TVD 6957.94

▣

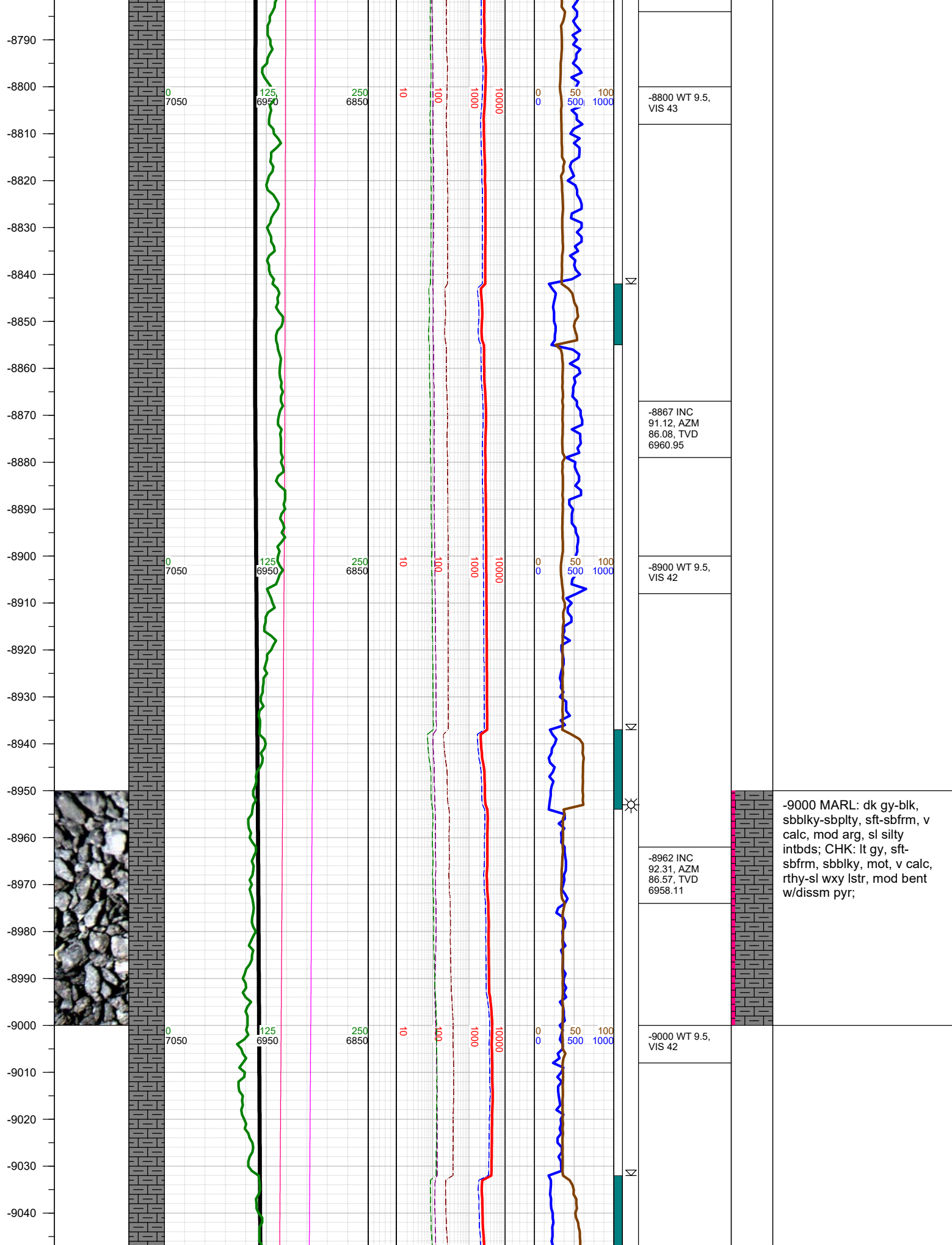
-8689 Fault: 2' down-throw; stayed in A Marl

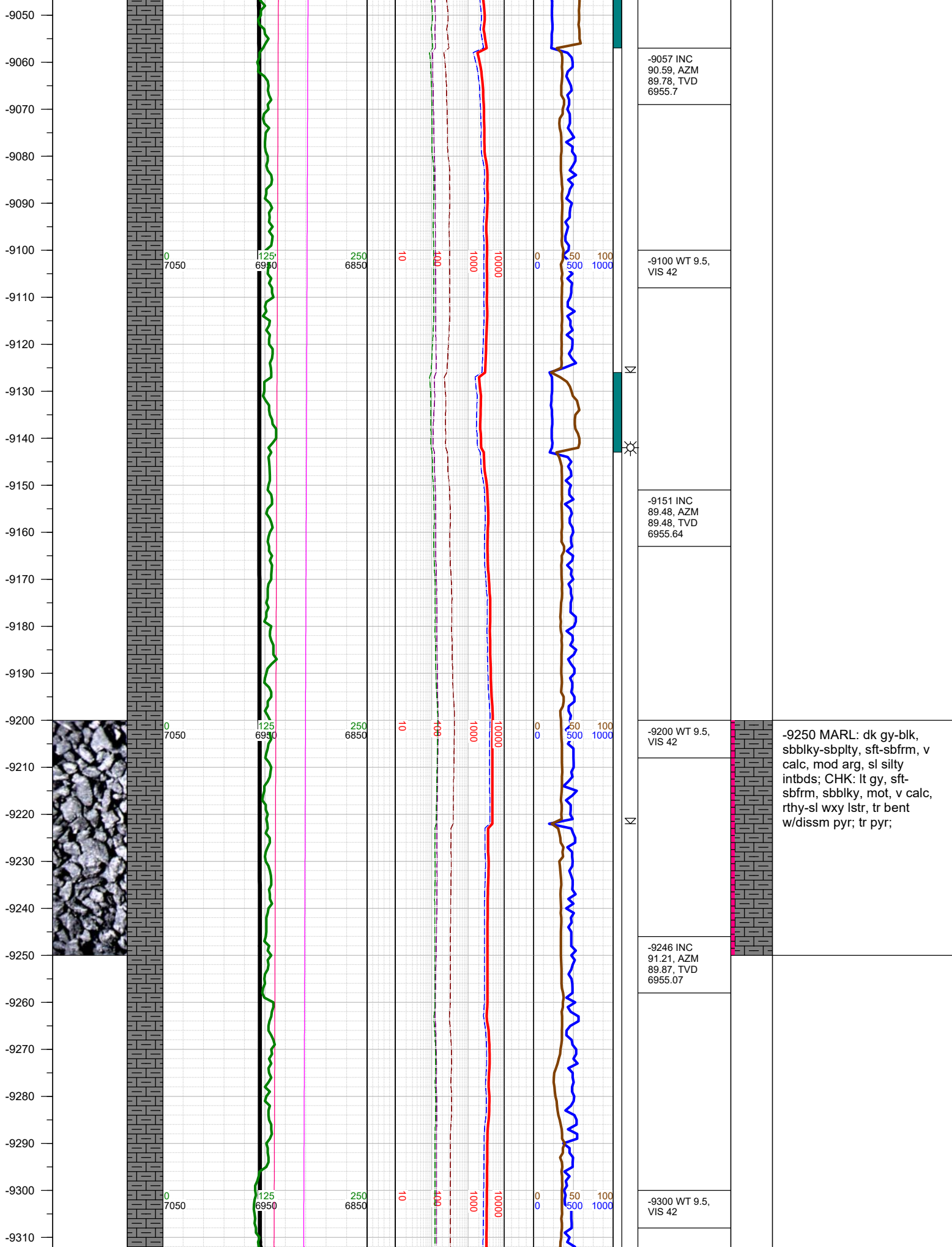
-8710 WT 9.5, VIS 43

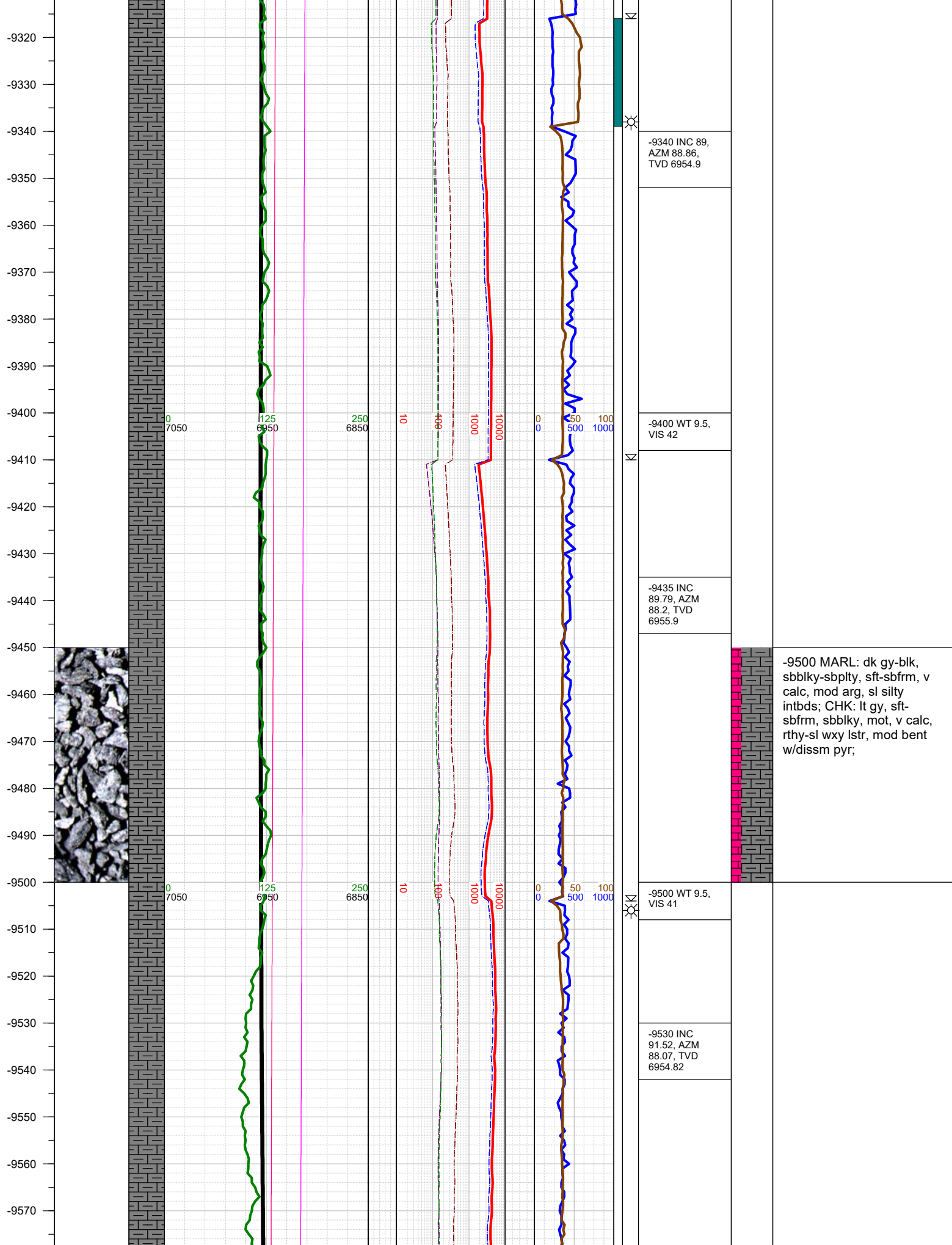
Δ

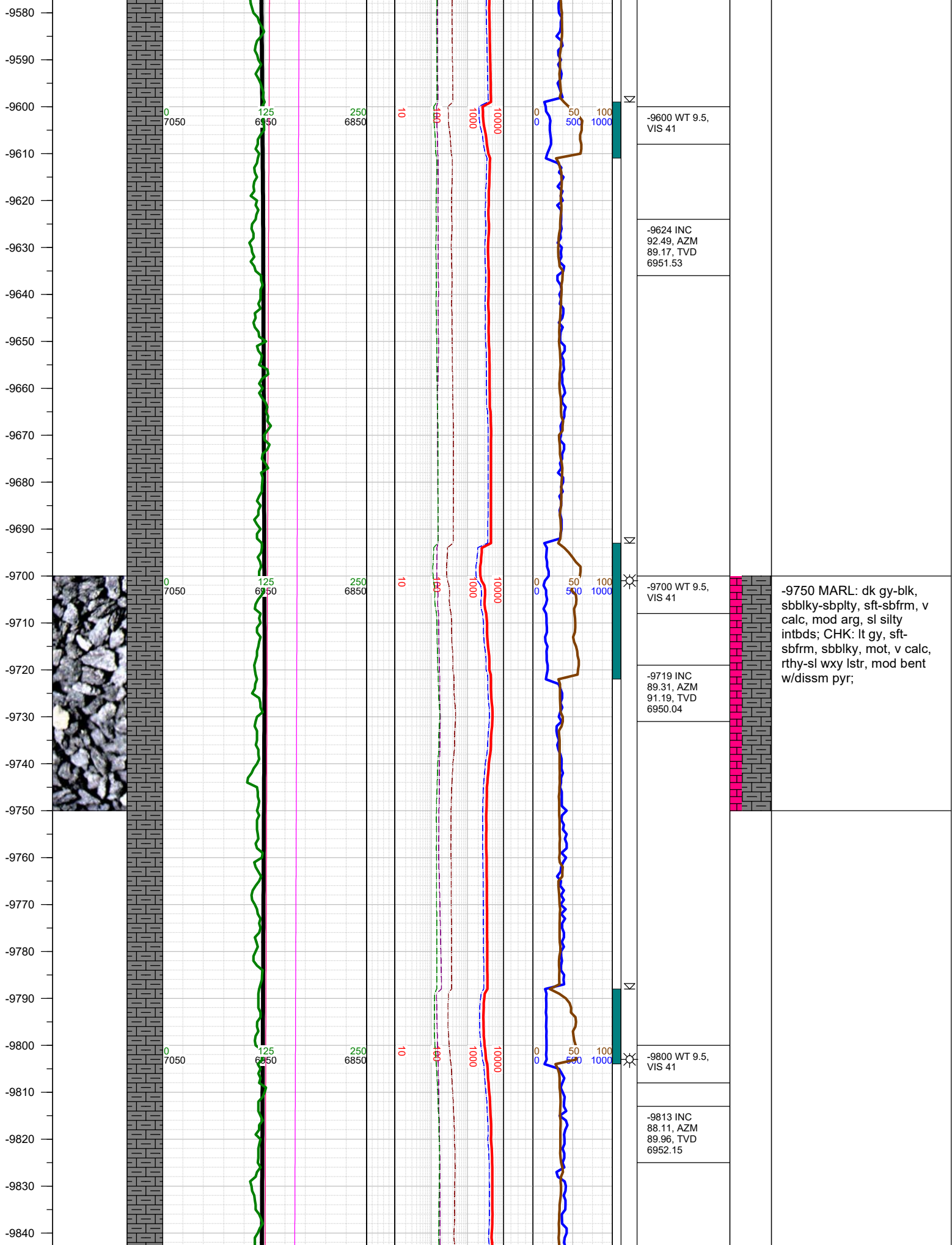
-8772 INC 88.51, AZM 88.68, TVD 6960.64

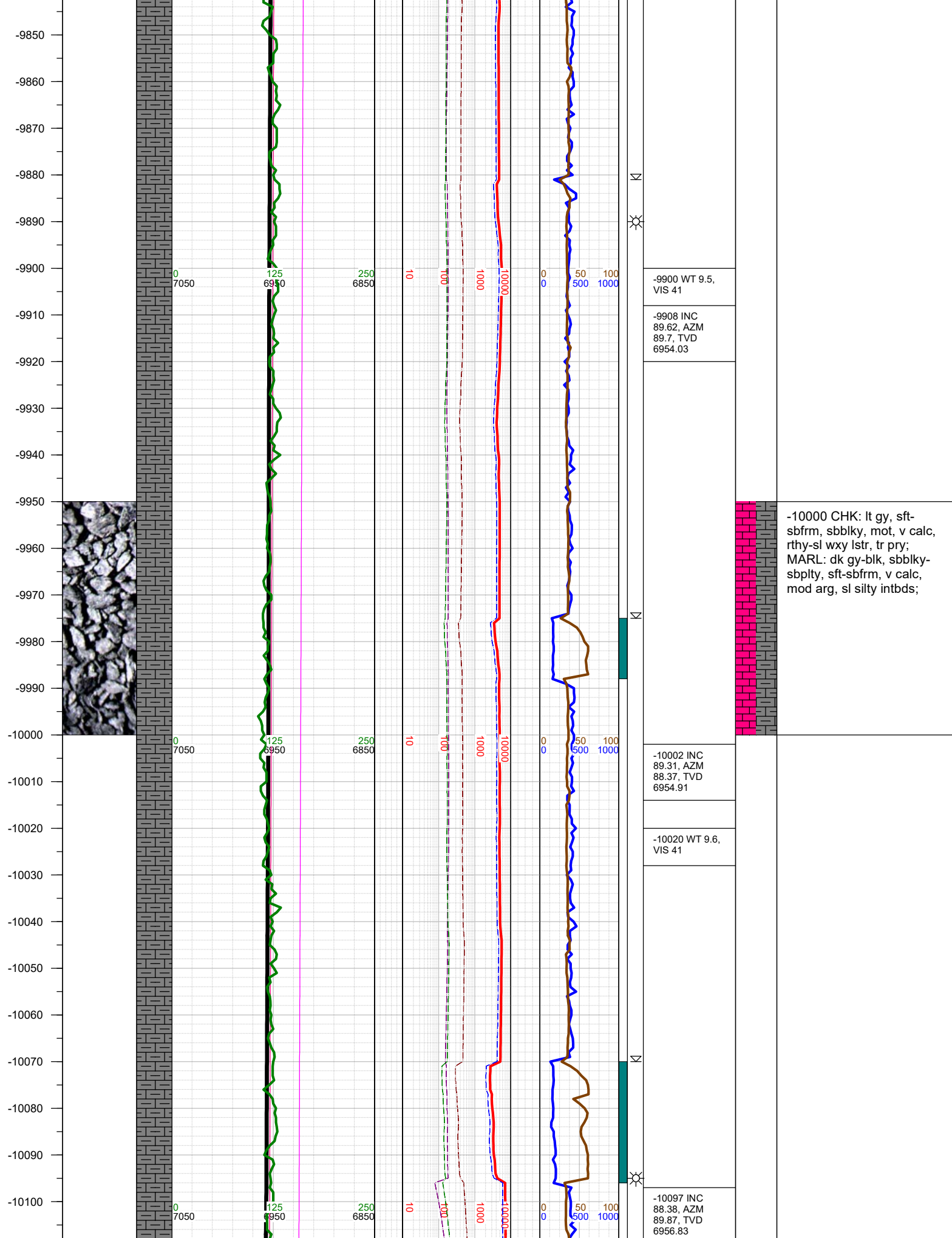
-8750 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty intbds; CHK: lt gy, sft-sbfrm, sbblky, mot, v calc, rthy-sl wxy lstr, tr bent w/dissm pyr;

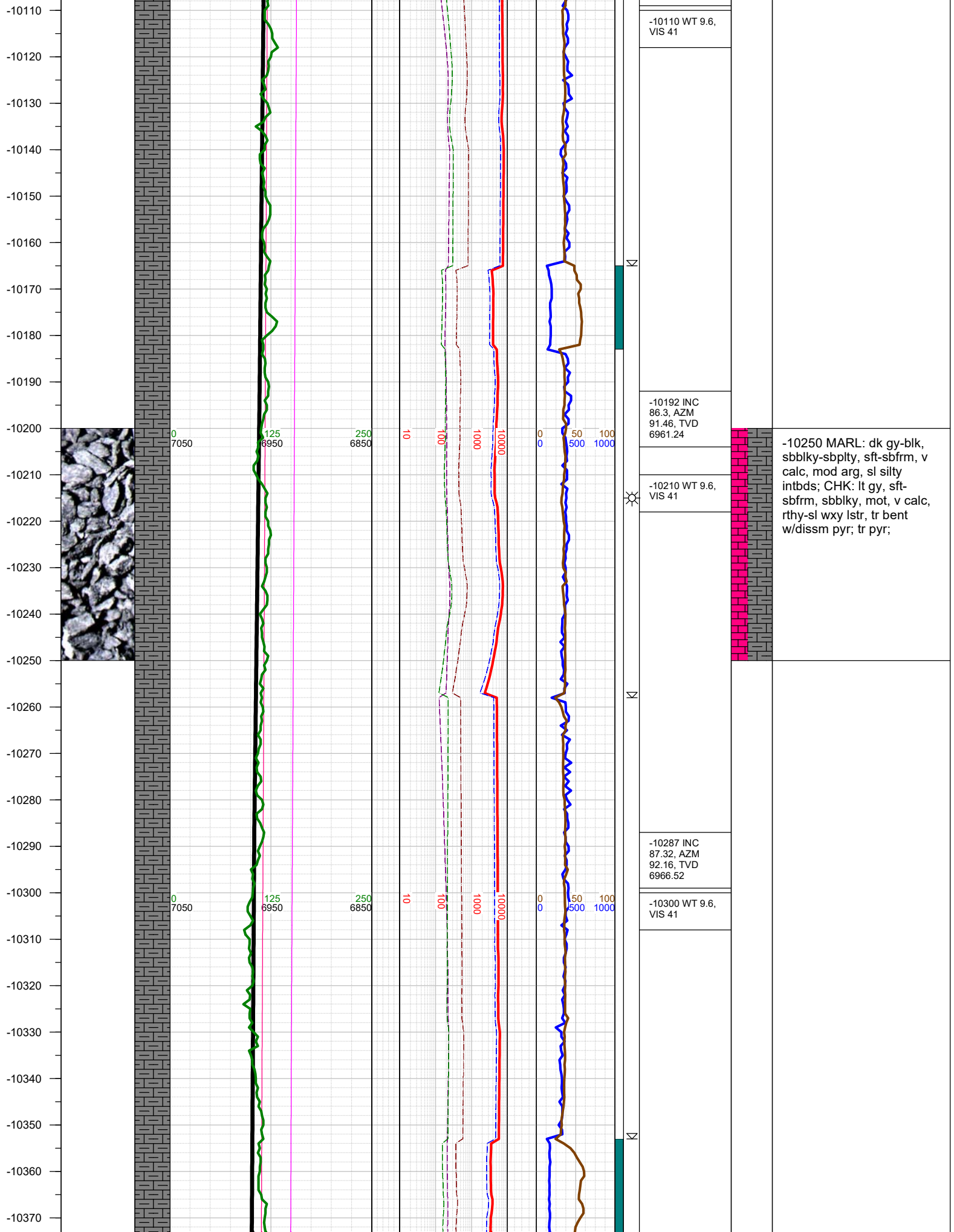


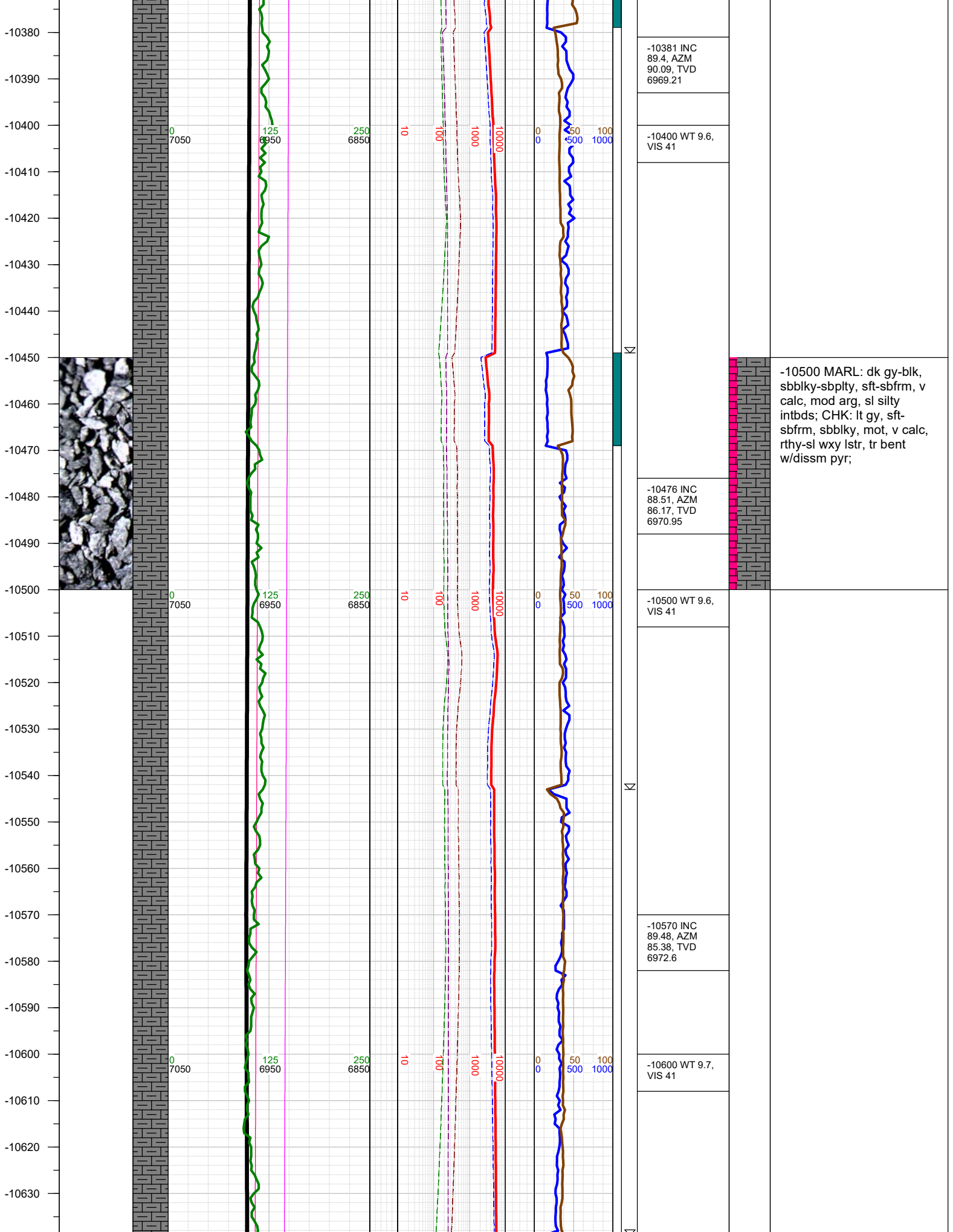




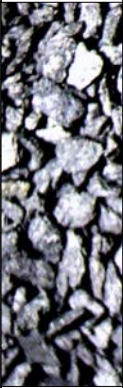








-10640
-10650
-10660
-10670
-10680
-10690
-10700
-10710
-10720
-10730
-10740
-10750
-10760
-10770
-10780
-10790
-10800
-10810
-10820
-10830
-10840
-10850
-10860
-10870
-10880
-10890
-10900



0
7050

125
6950

250
6850

10
100

100
1000

1000
10000

0
0

50
500

100
1000

0
7050

125
6950

250
6850

10
100

100
1000

1000
10000

0
0

50
500

100
1000

0
7050

125
6950

250
6850

10
100

100
1000

100
1000

0
0

50
500

100
1000

-10665 INC 92,
AZM 87.36,
TVD 6971.37

-10700 WT 9.7,
VIS 41

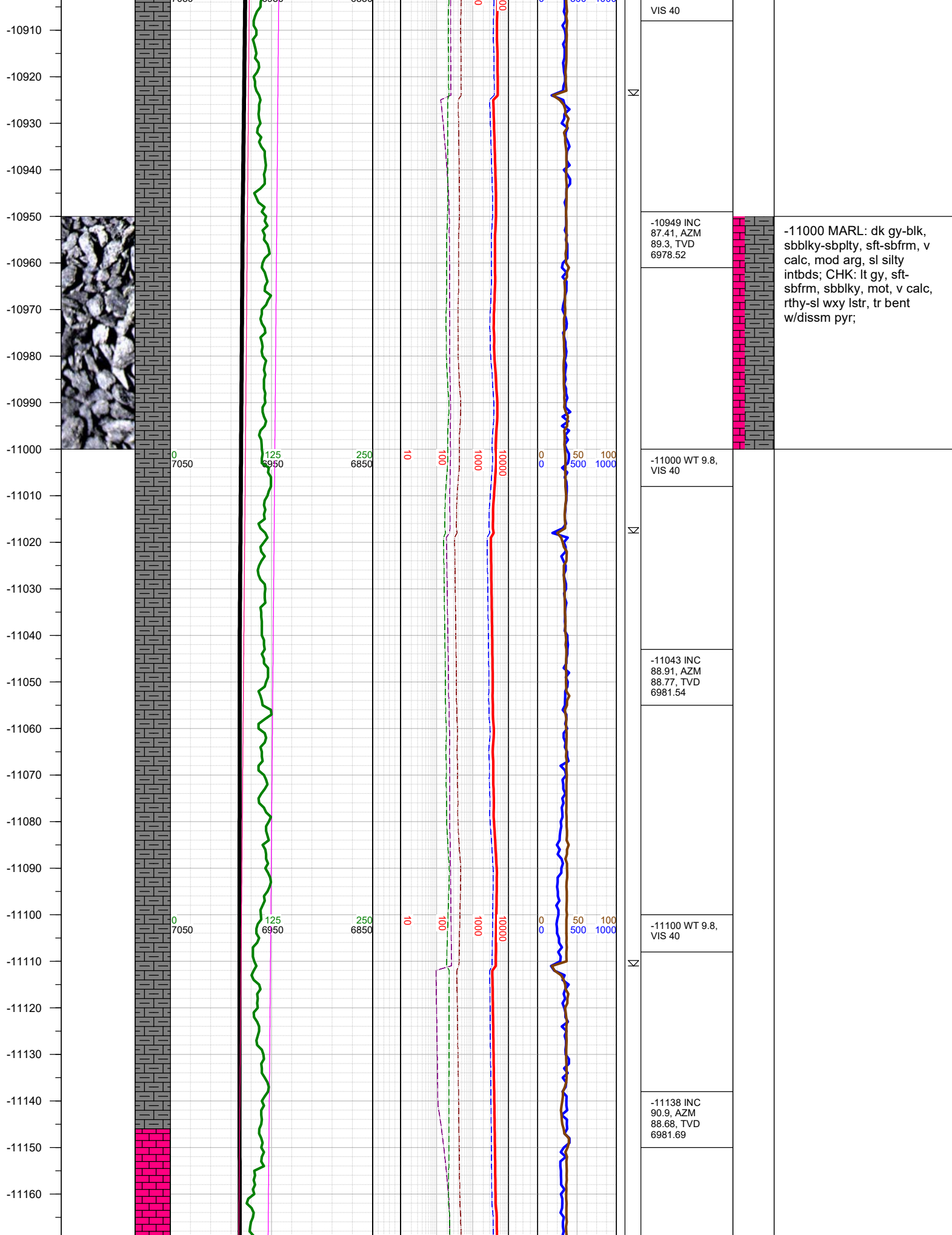
-10760 INC
89.48, AZM
90.49, TVD
6970.14

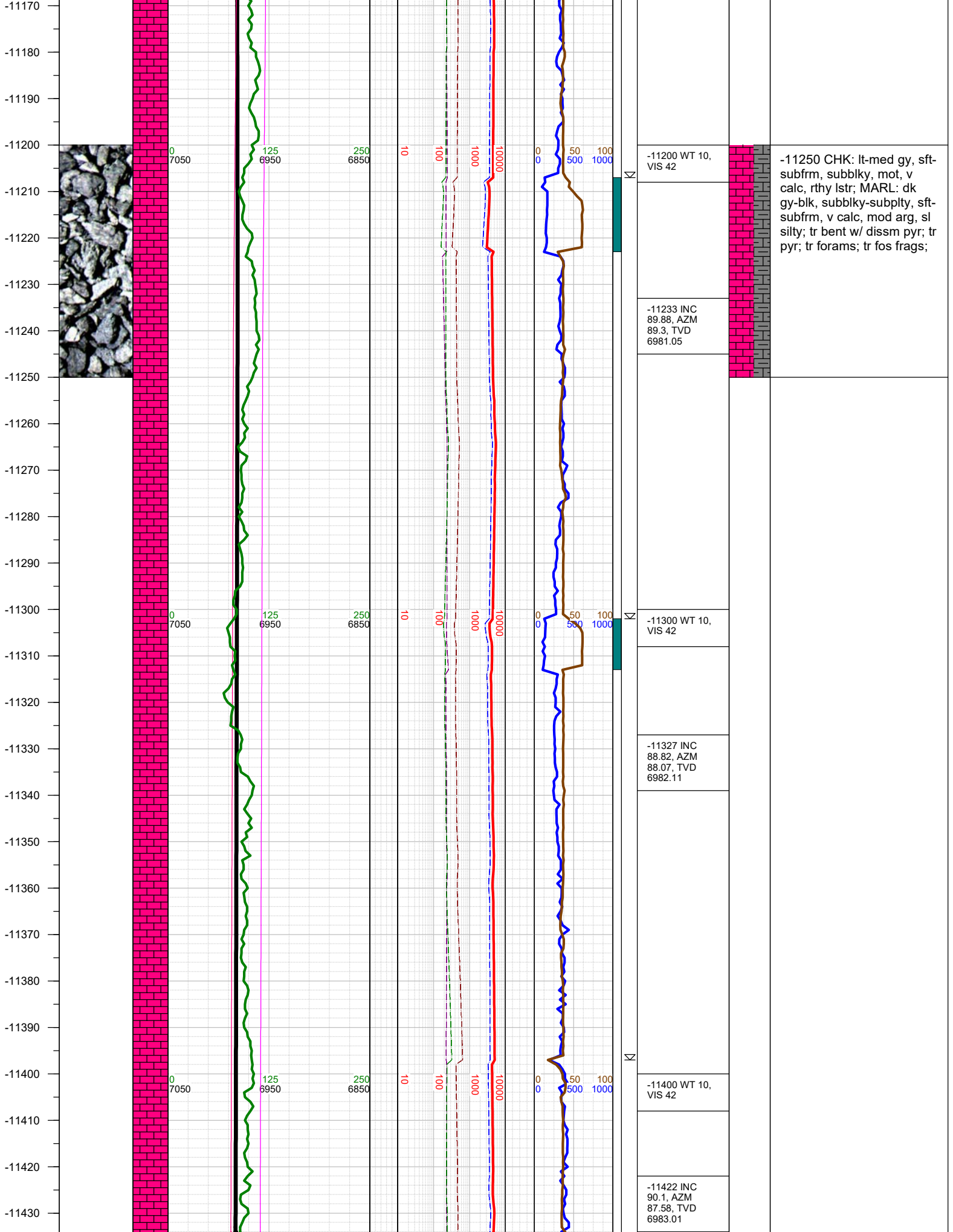
-10800 WT 9.8,
VIS 40

-10854 INC
86.48, AZM
89.78, TVD
6973.45

-10900 WT 9.8,

-10750 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm, v
calc, mod arg, sl silty
intbds; CHK: lt gy, sft-
sbfrm, sbbly, mot, v calc,
rthy-sl wxy lstr, tr bent
w/dissm pyr; tr pyr;

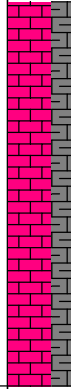




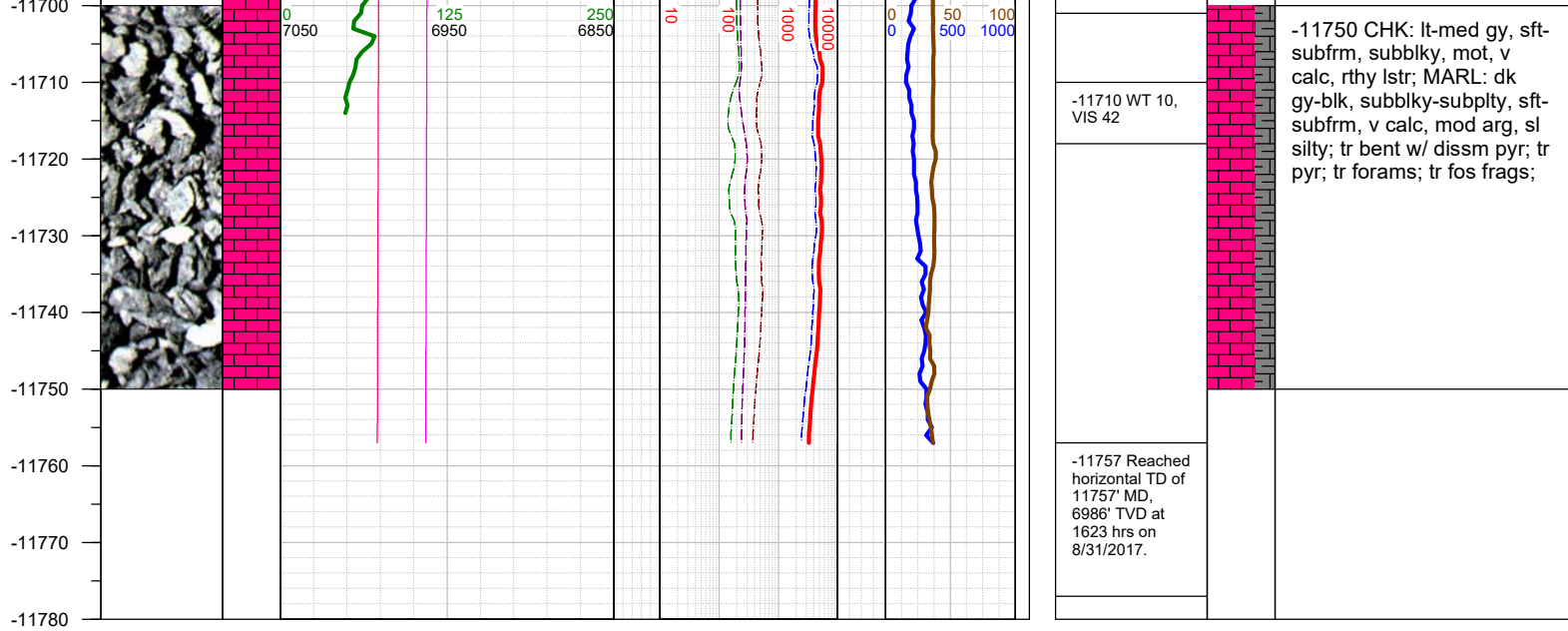
-11440
-11450
-11460
-11470
-11480
-11490
-11500
-11510
-11520
-11530
-11540
-11550
-11560
-11570
-11580
-11590
-11600
-11610
-11620
-11630
-11640
-11650
-11660
-11670
-11680
-11690



-11500 WT 10, VIS 42
-11516 INC 88.29, AZM 88.2, TVD 6984.33
-11600 WT 10, VIS 42
-11611 INC 89.88, AZM 88.2, TVD 6985.85
-11689 INC 89.88, AZM 88.2, TVD 6986.01



-11500 CHK: lt-med gy, sft-subfrm, subblky, mot, v calc, rthy lstr; MARL: dk gy-blk, subblky-subplty, sft-subfrm, v calc, mod arg, sl silty; tr bent w/ dissim pyr; tr pyr; tr forams; tr fos frags;



TOTAL DEPTH = 11757'

Thank you for using Earth Science Agency