

OPERATOR: **Extraction Oil & Gas**
WELL NAME: **Northwest A S20-25-13N**
FIELD NAME: DJ Basin - Wattenberg
DRILLING RIG: Patterson 901
API #: 05-014-20784

LAT/LONG: 39.983191, -105.01273
SURFACE HOLE: NWNW S9-T1S-R68W, 1277' FNL, 867' FWL
BOTTOM HOLE: S20-T1S-R68W, 2197' FNL, 1804' FEL

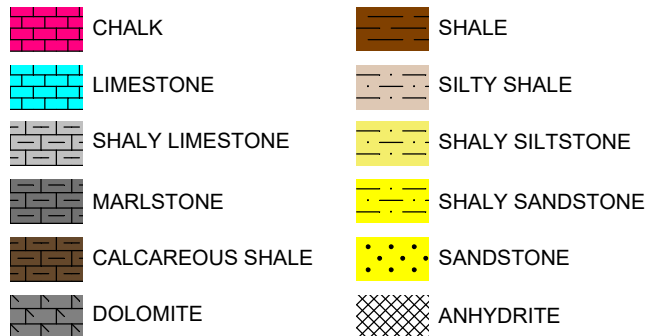


Earth Science Agency, LLC

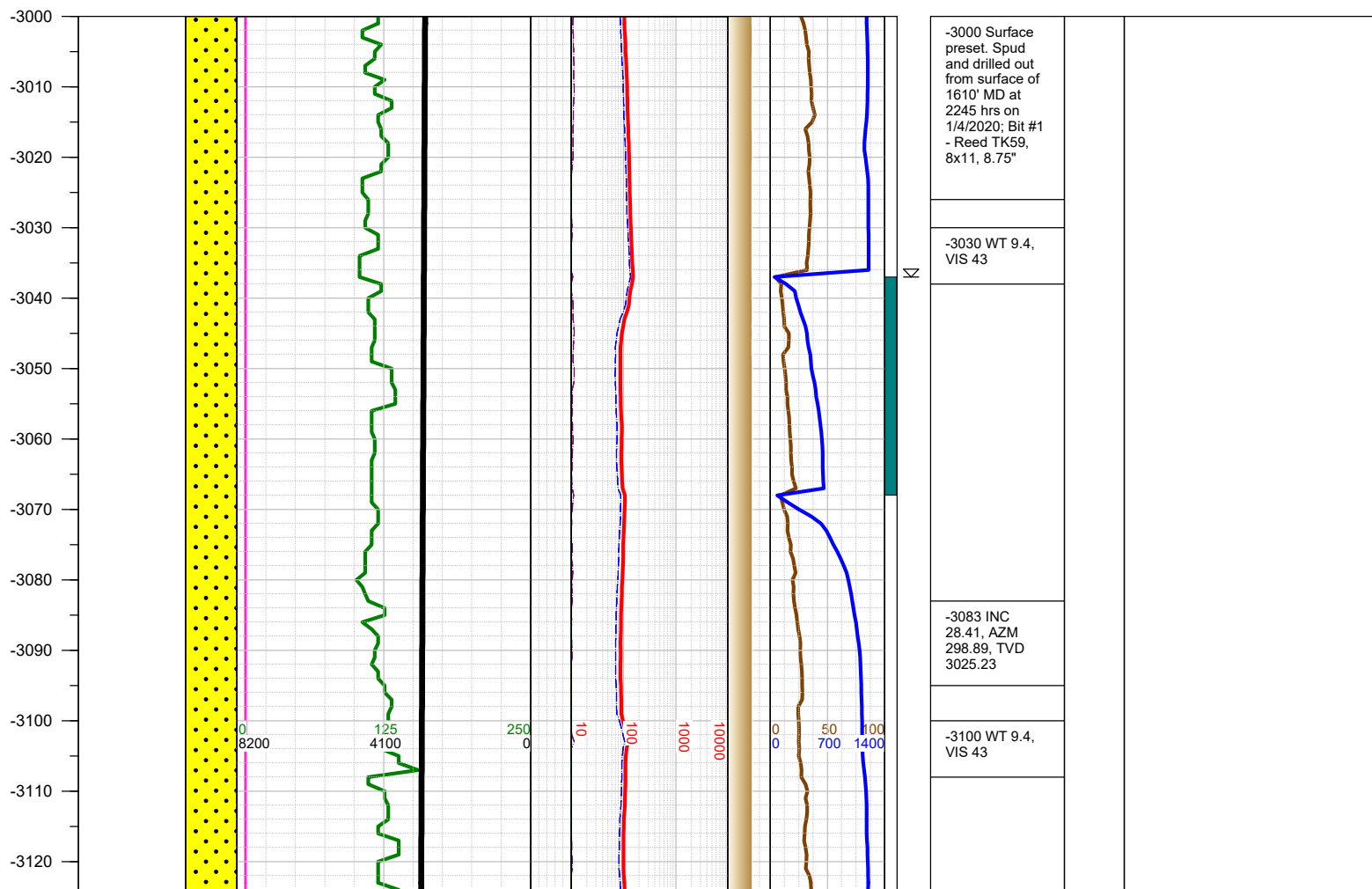
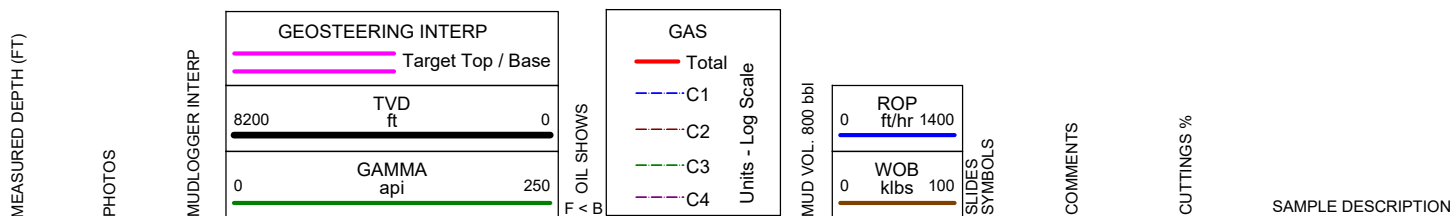
COUNTY: Broomfield
STATE: Colorado
GROUND ELEVATION: 5314'
KELLY BUSHING: 5343'
DRILLING FLUID: OBM
TVD VS. MD: 7967' / 21517'
SPUD DATE: January 4, 2020
TD DATE: January 9, 2020

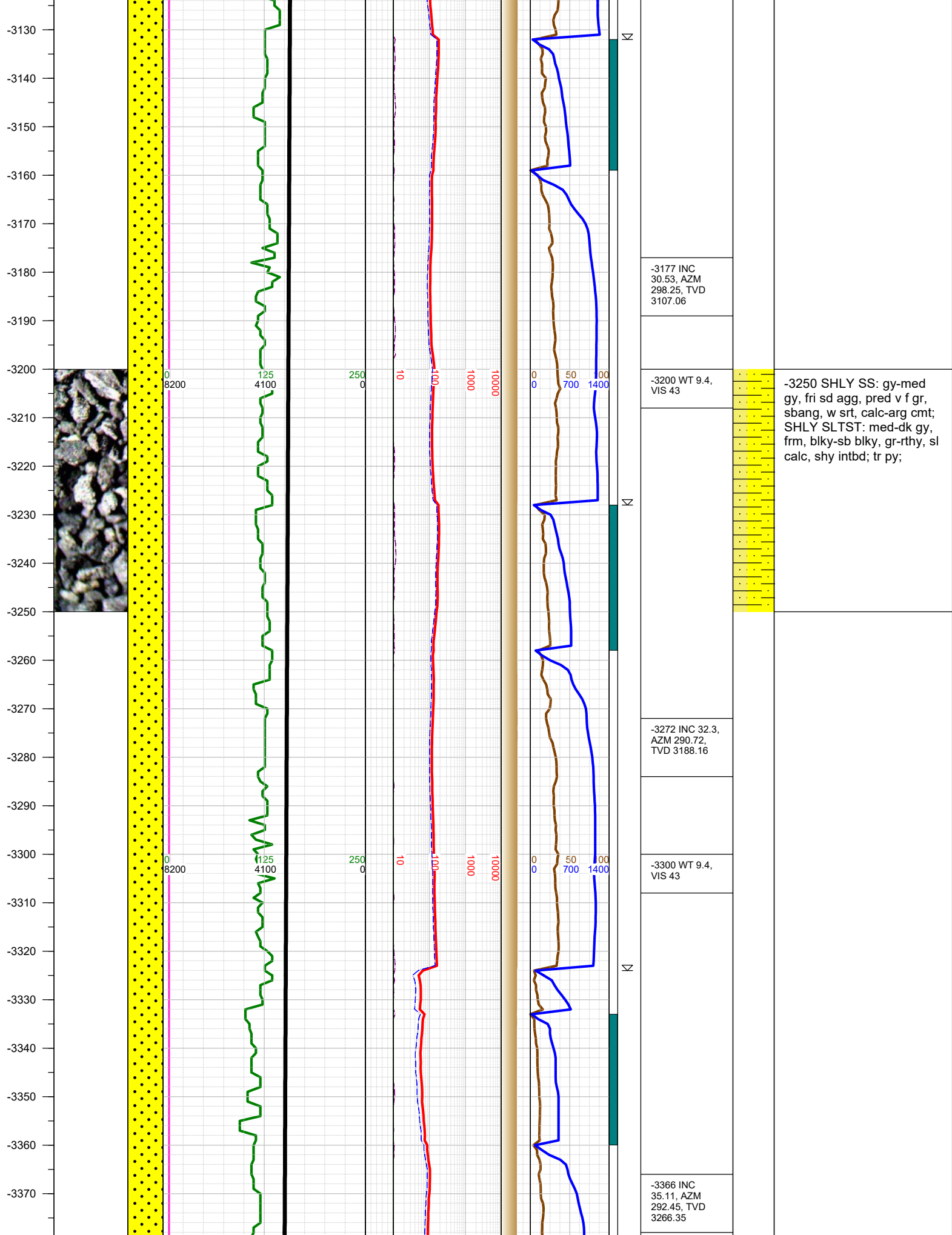
DEPTHS LOGGED: 3000' - 21517'
DATES LOGGED: January 4, 2020 - January 9, 2020
GEOLOGISTS: Mitch Weller, Dominic Pitre
SCALE: 5" = 100'

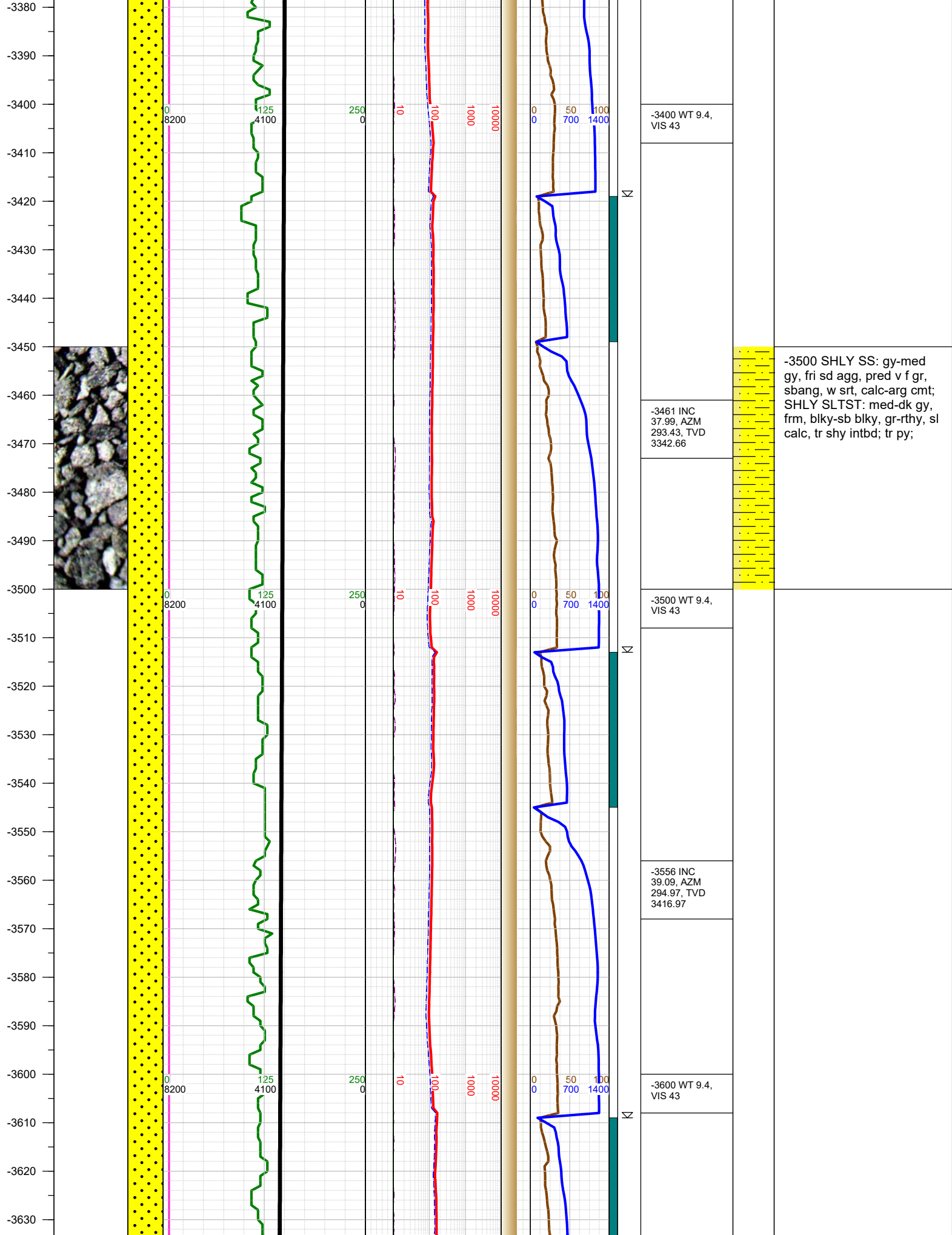
LEGEND

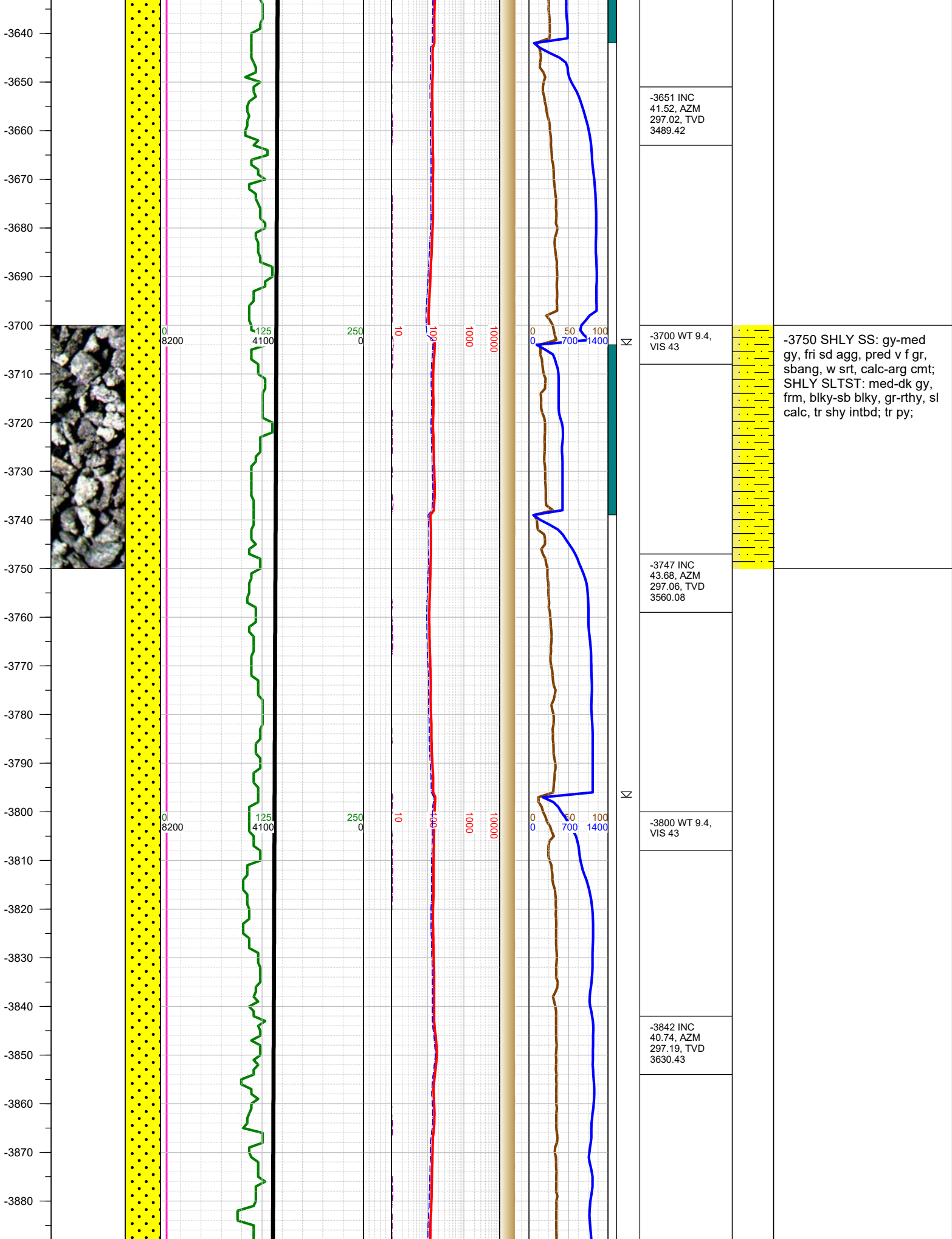


FORMATION CONNECTION MIDNIGHT NEW BIT GAS SHOW FAULT









-3651 INC
41.52, AZM
297.02, TVD
3489.42

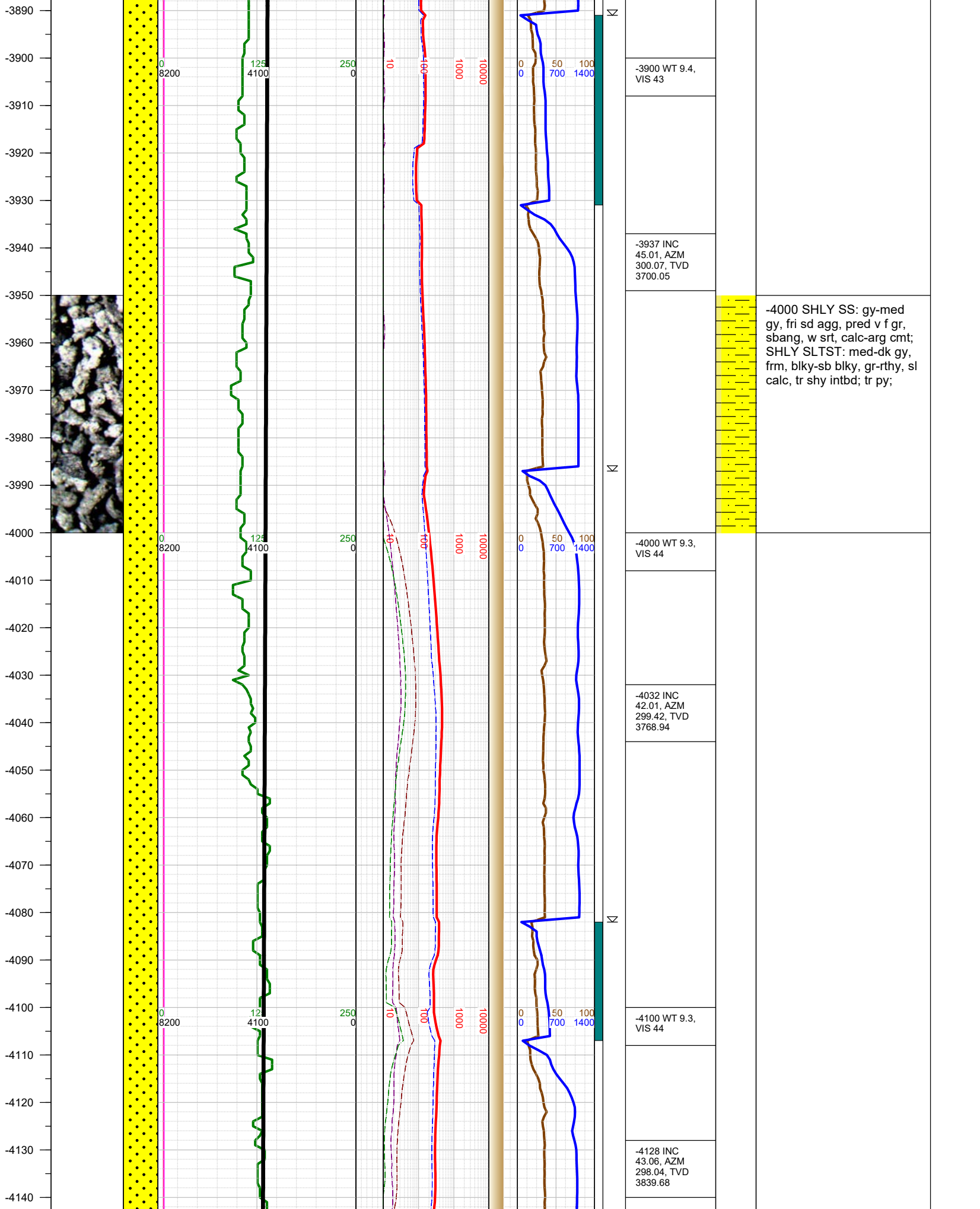
-3700 WT 9.4,
VIS 43

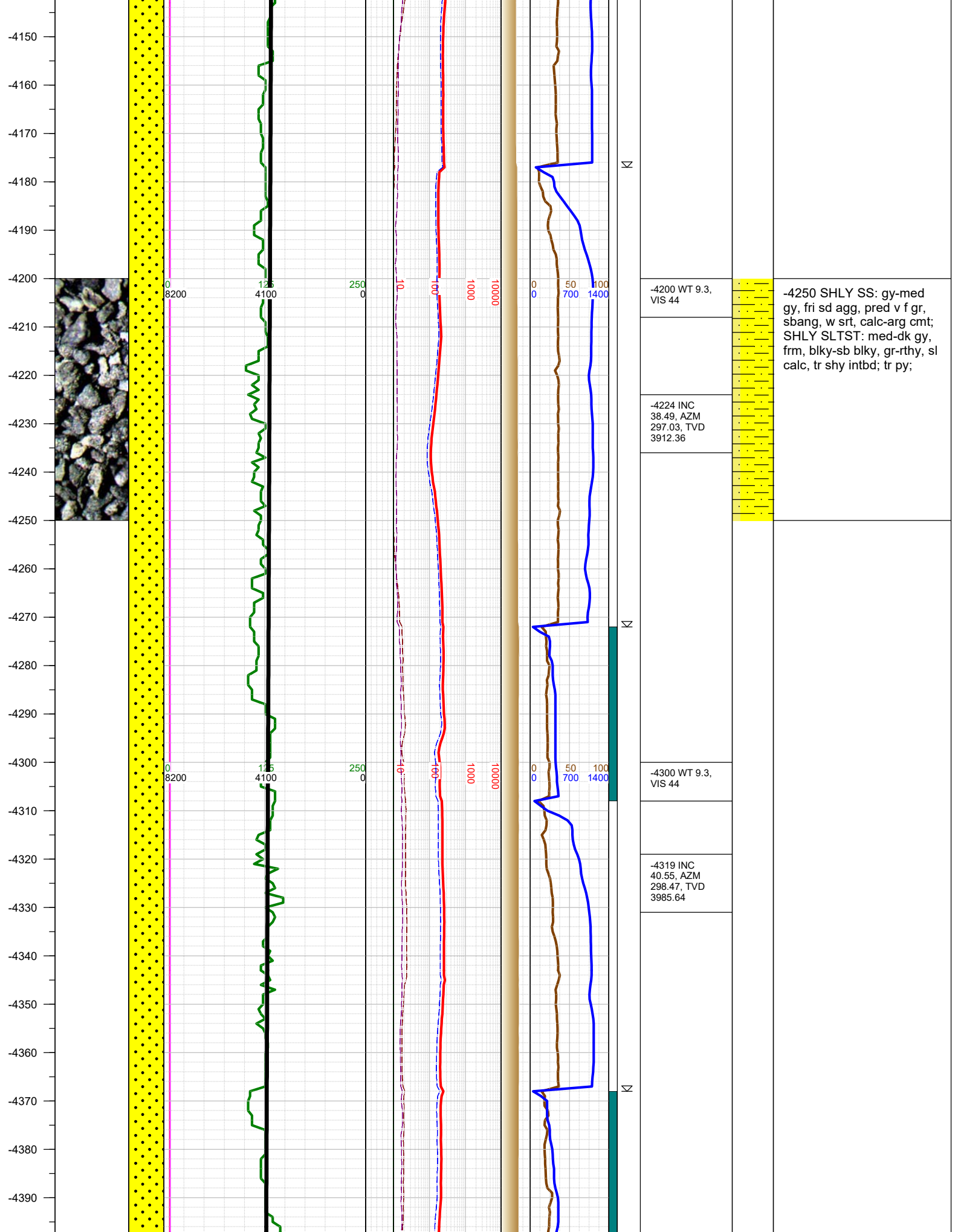
-3747 INC
43.68, AZM
297.06, TVD
3560.08

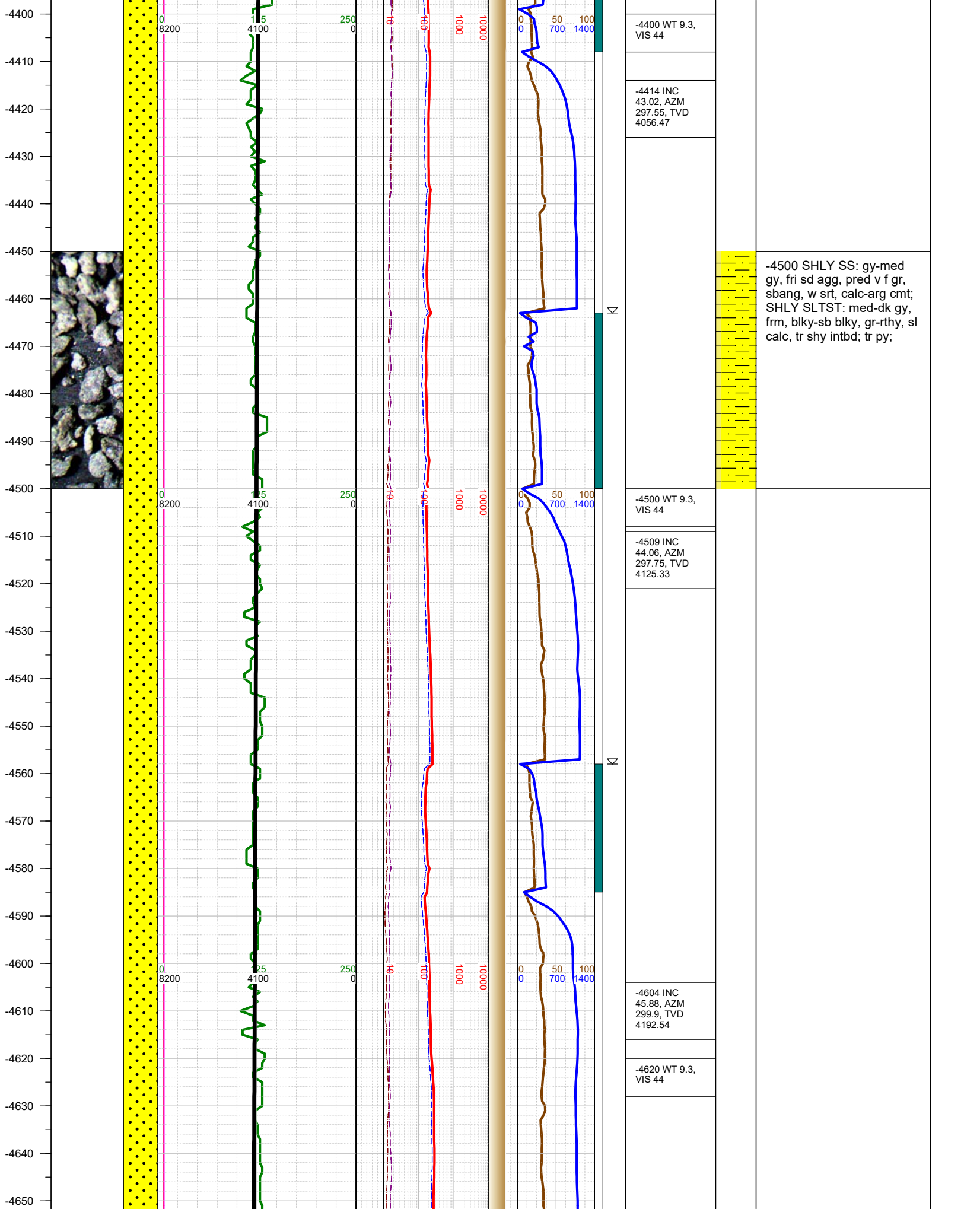
-3800 WT 9.4,
VIS 43

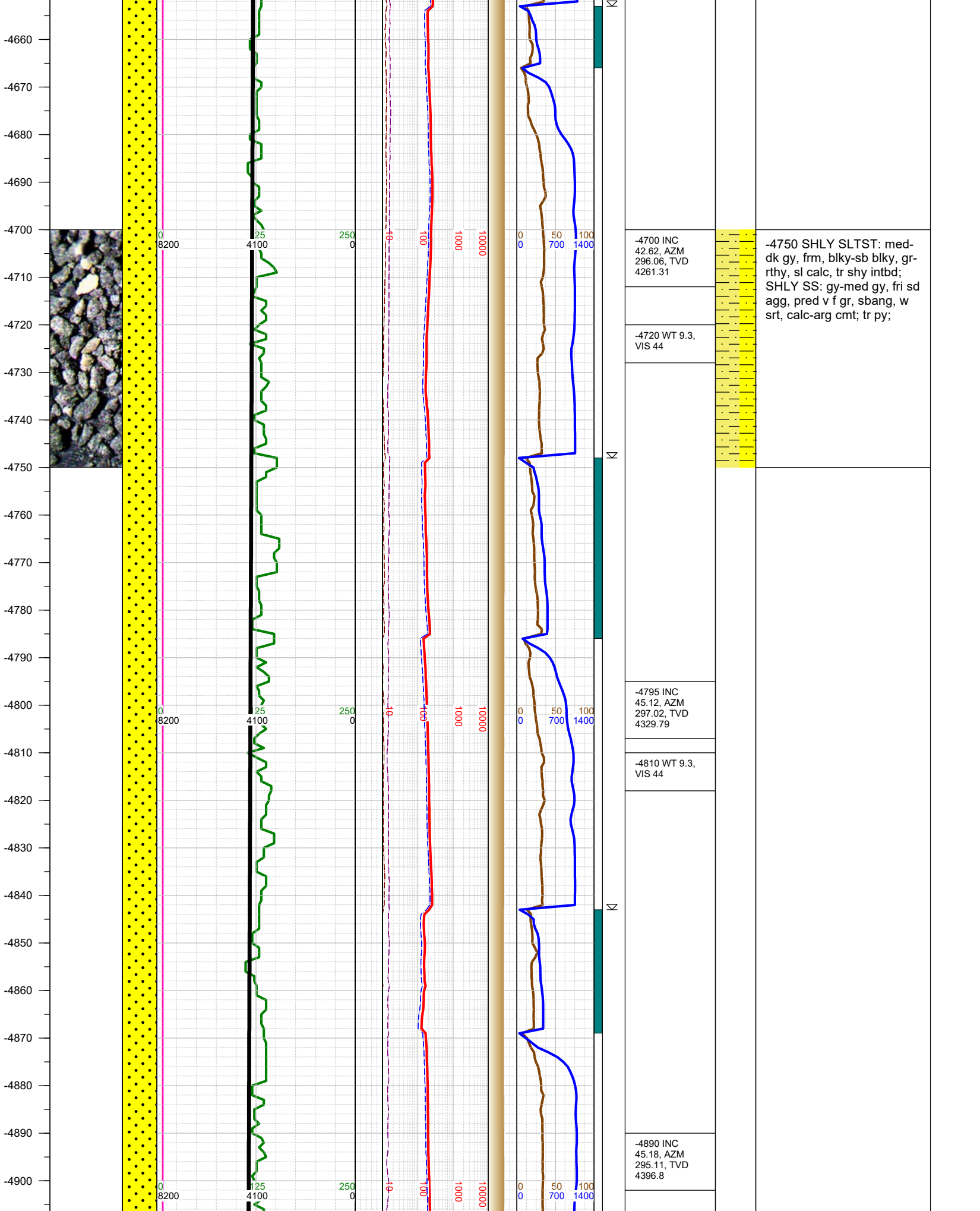
-3842 INC
40.74, AZM
297.19, TVD
3630.43

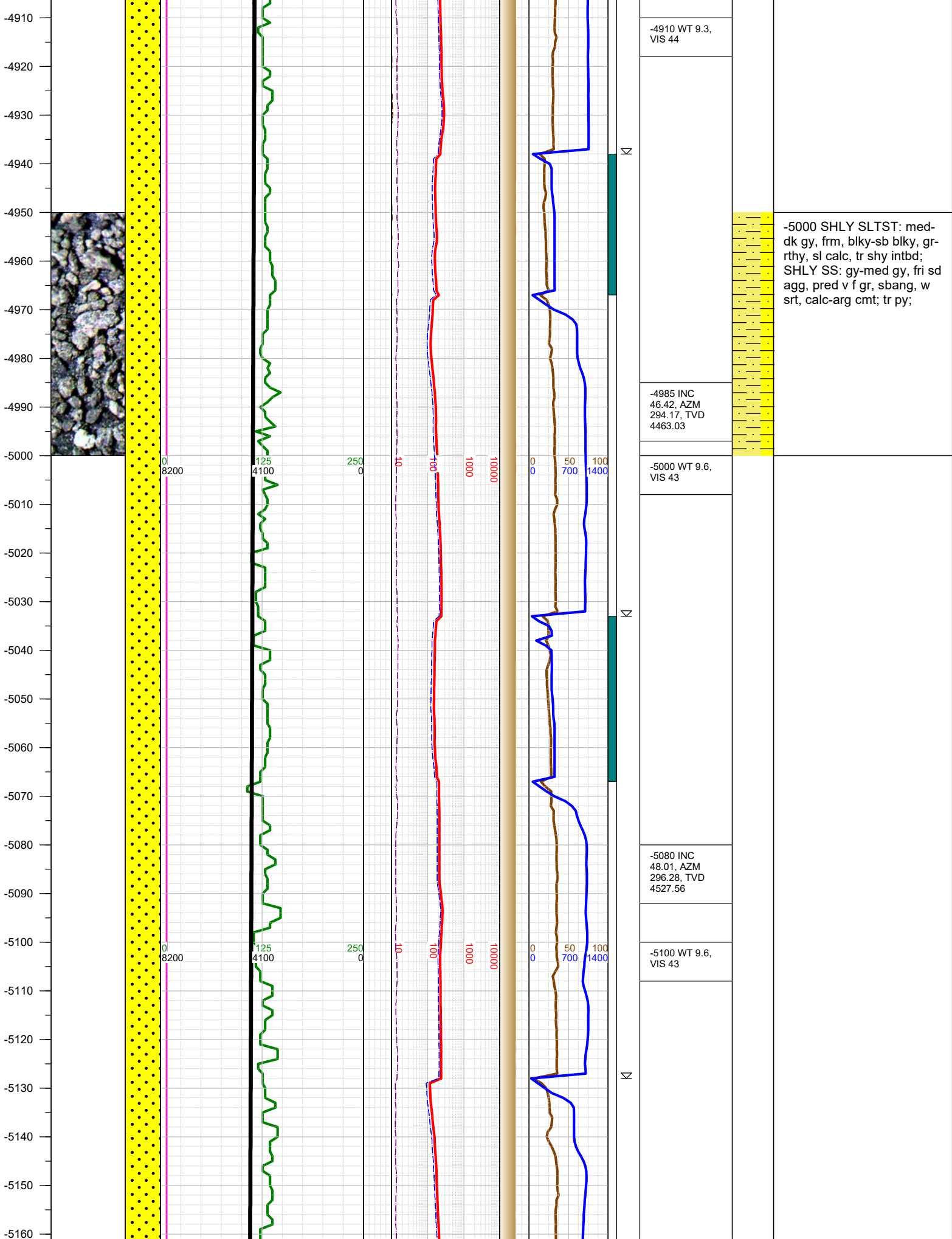
-3750 SHLY SS: gy-med
gy, fri sd agg, pred v f gr,
sbang, w srl, calc-arg cmt;
SHLY SLTST: med-dk gy,
frm, blk-y-sb blk-y, gr-rthy, sl
calc, tr shy intbd; tr py;

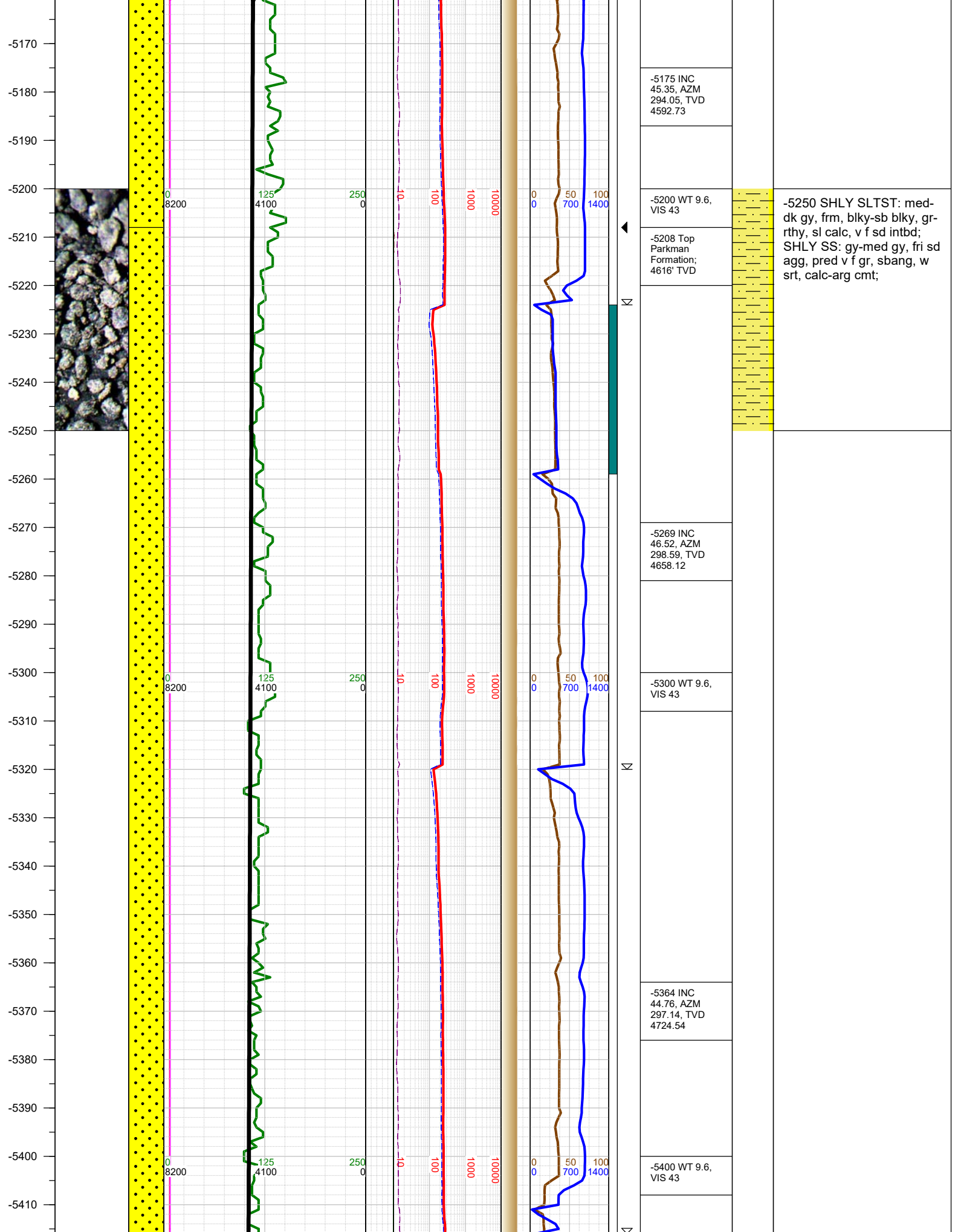




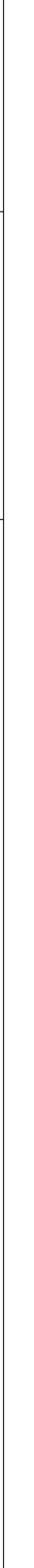
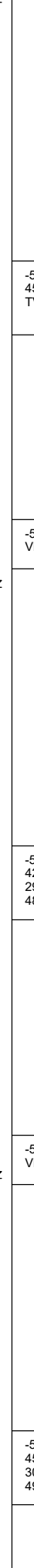
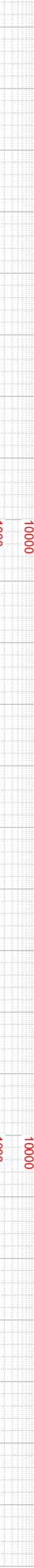
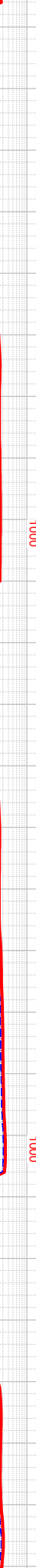
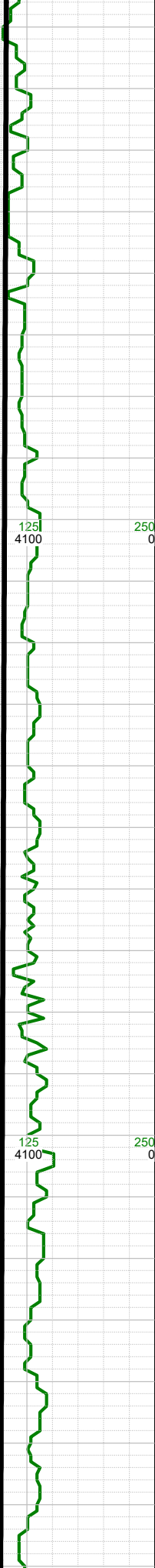
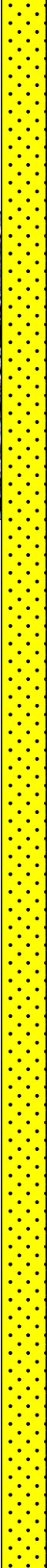








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-5458 INC
45.84, AZM 300,
TVD 4790.66

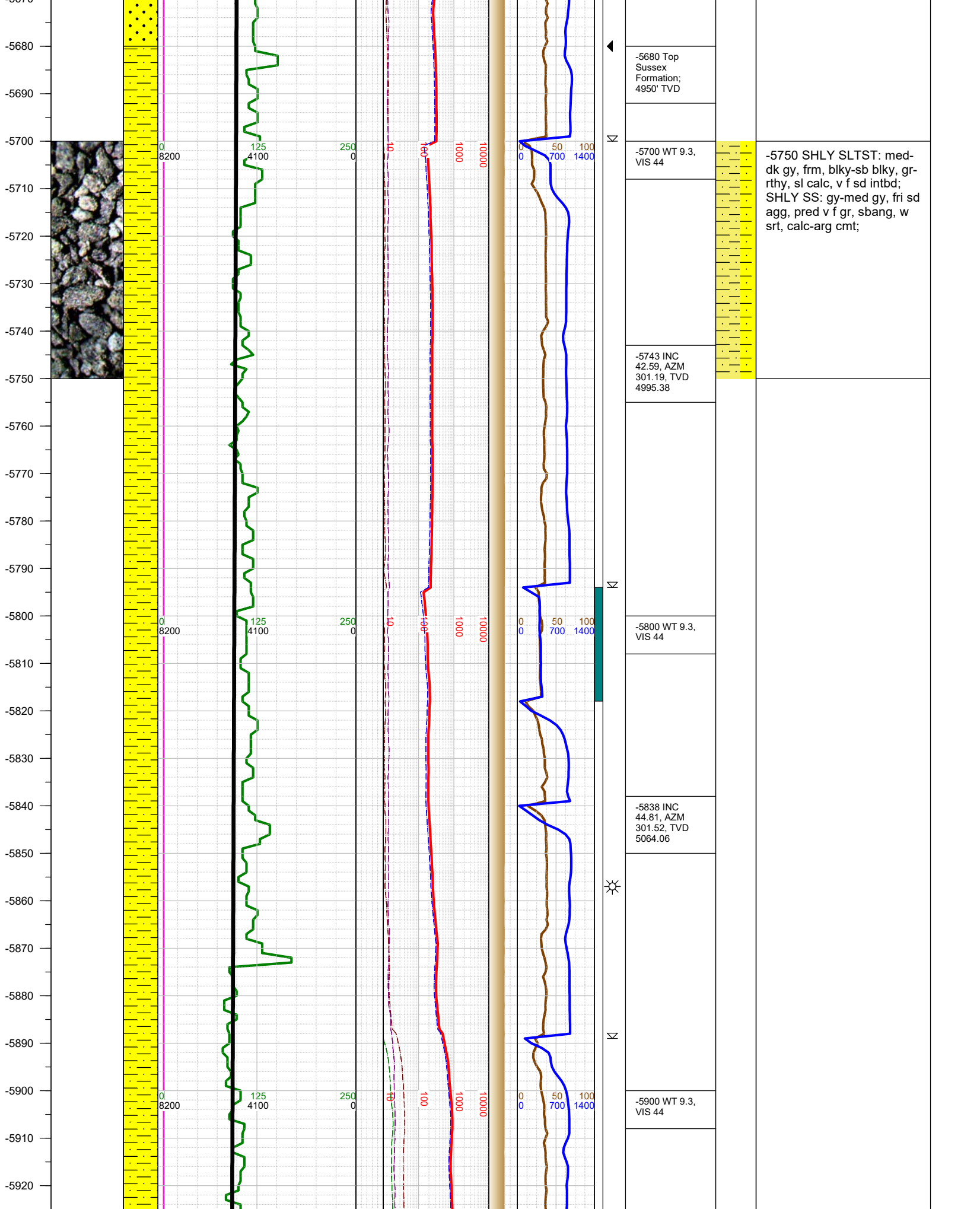
-5500 WT 9.3,
VIS 44

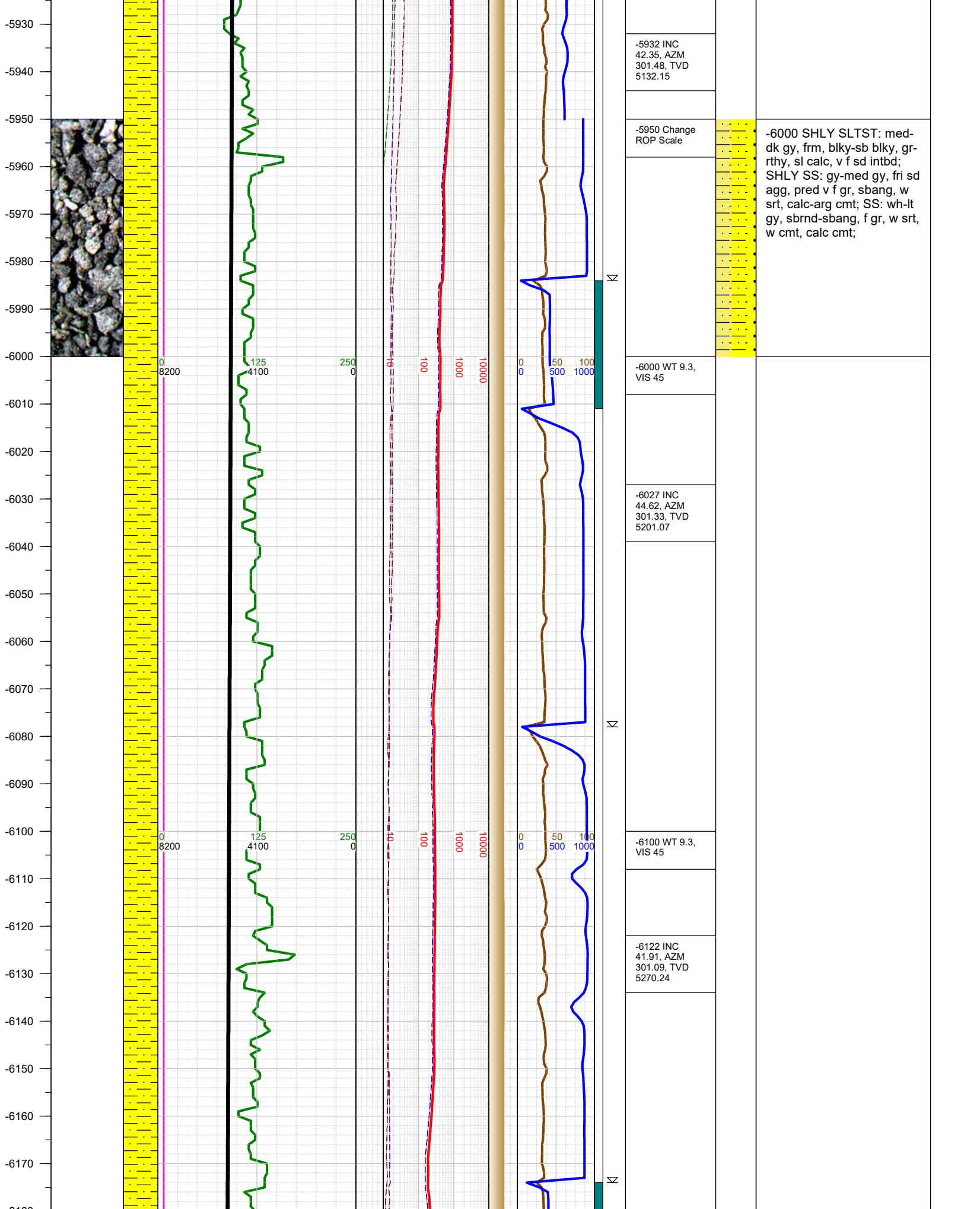
-5553 INC
42.74, AZM
299.12, TVD
4858.65

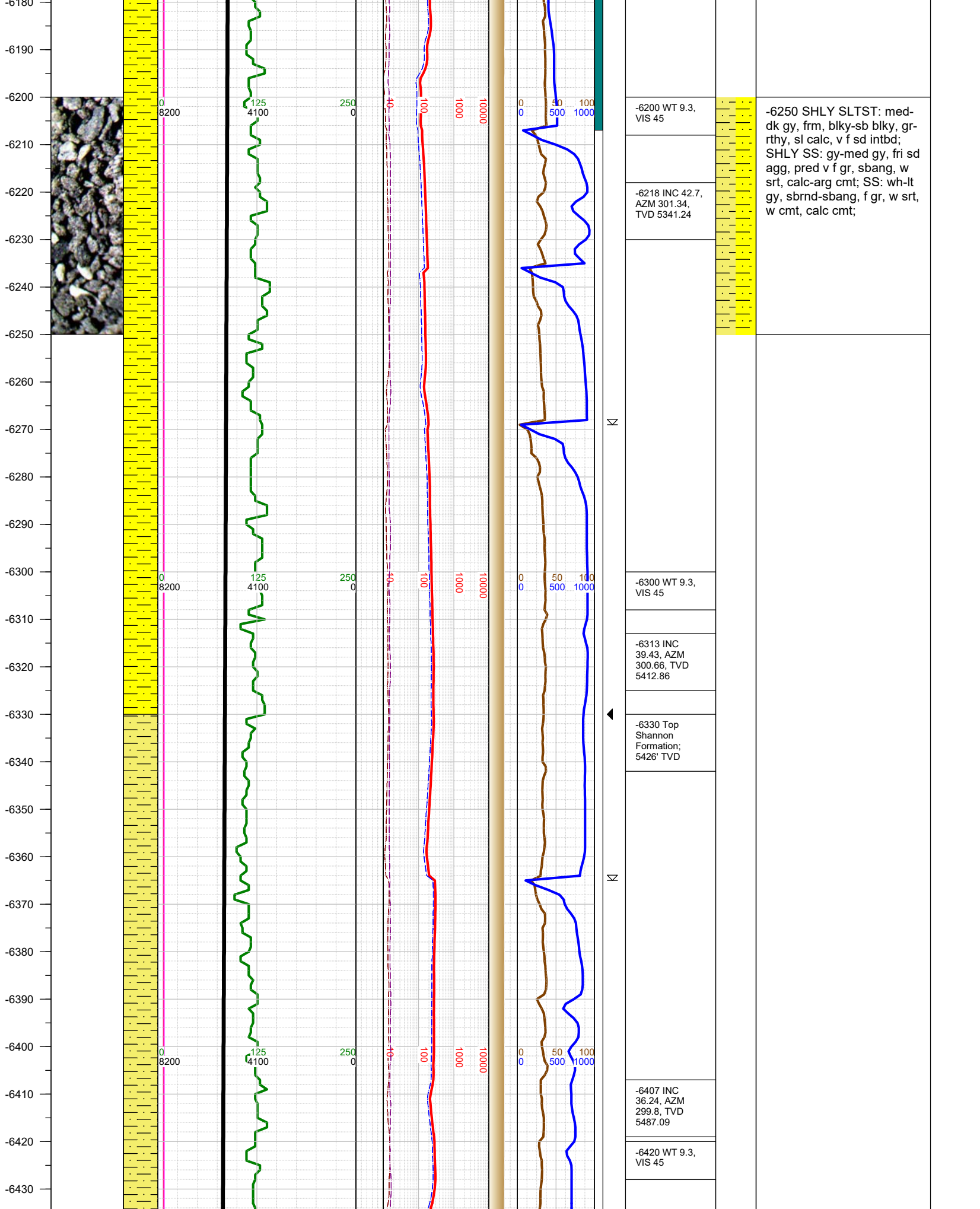
-5600 WT 9.3,
VIS 44

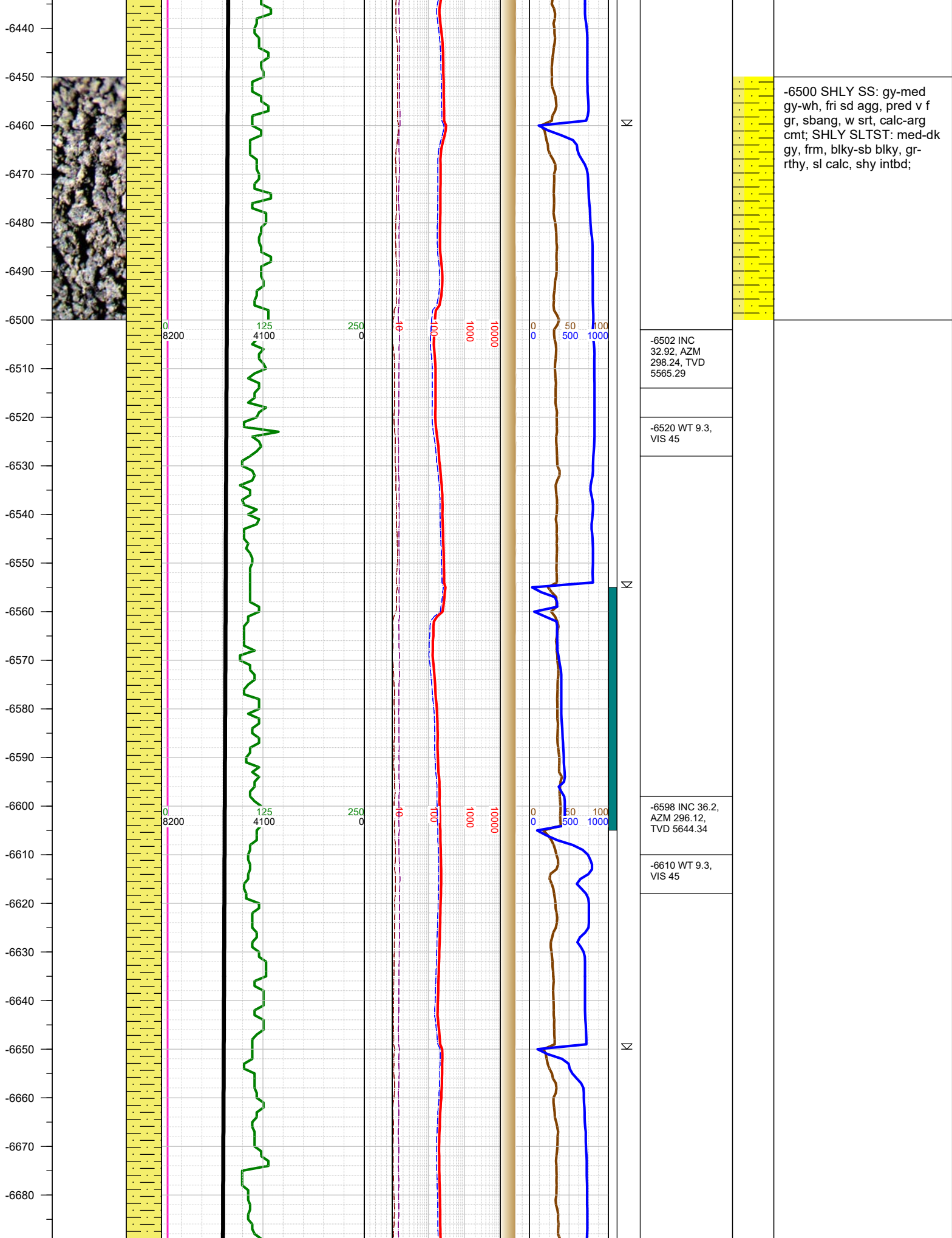
-5648 INC
45.28, AZM
301.63, TVD
4926.98

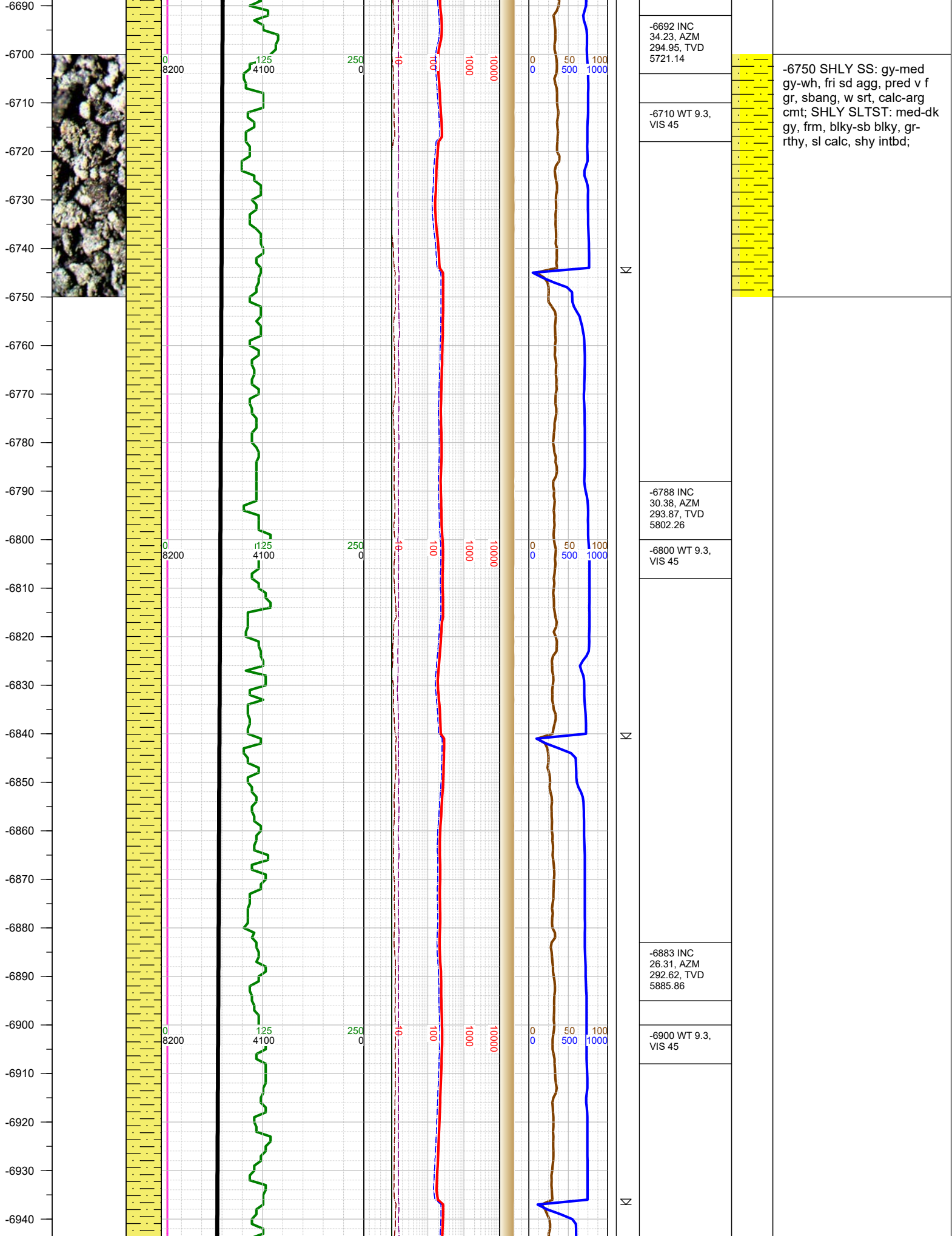
-5500 SHLY SS: gy-med
gy, fri sd agg, pred v f gr,
sbang, w srt, calc-arg cmt;
SHLY SLTST: med-dk gy,
frm, blk-y-sb blk-y, gr-rthy, sl
calc, tr shy intbd; tr py;

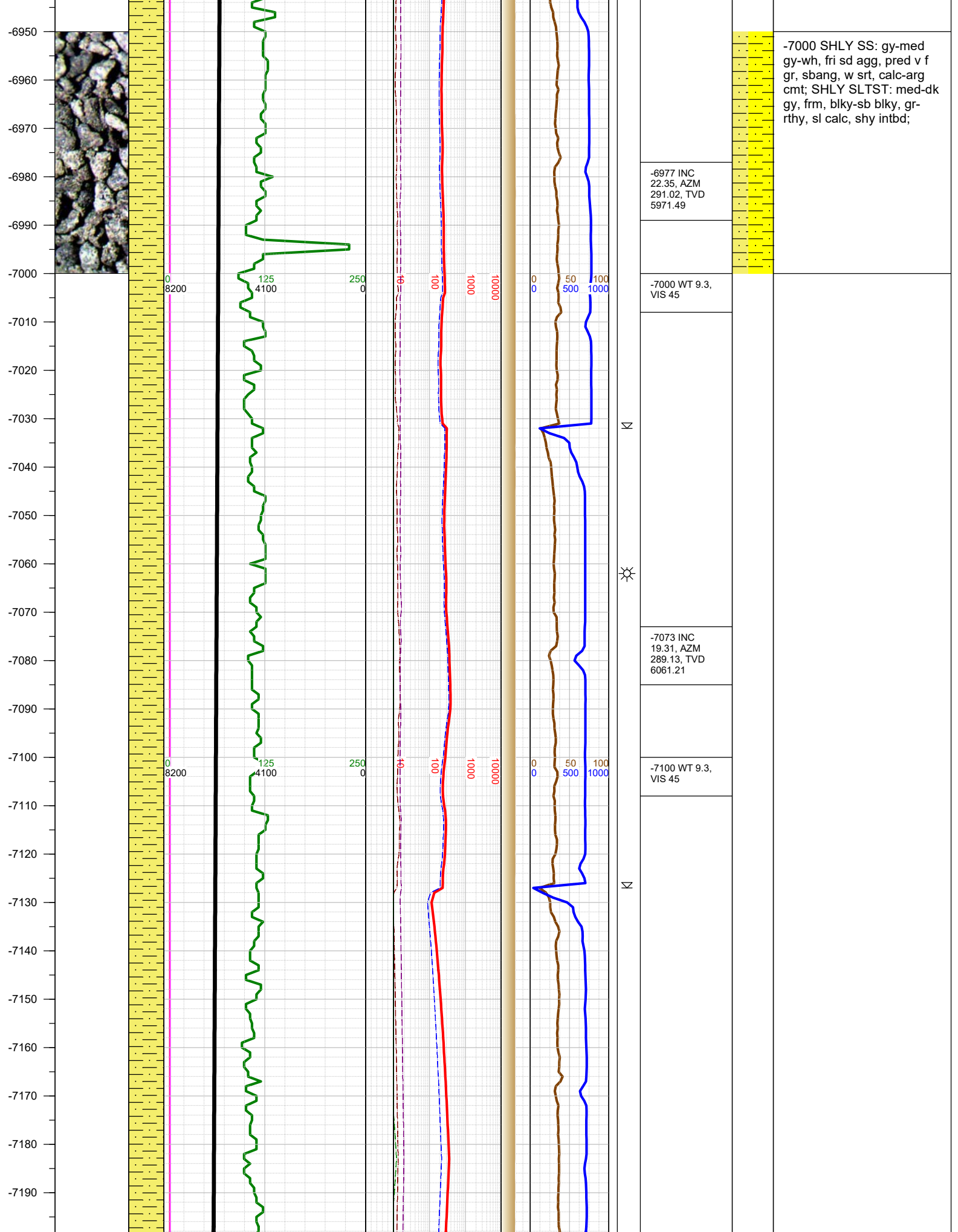


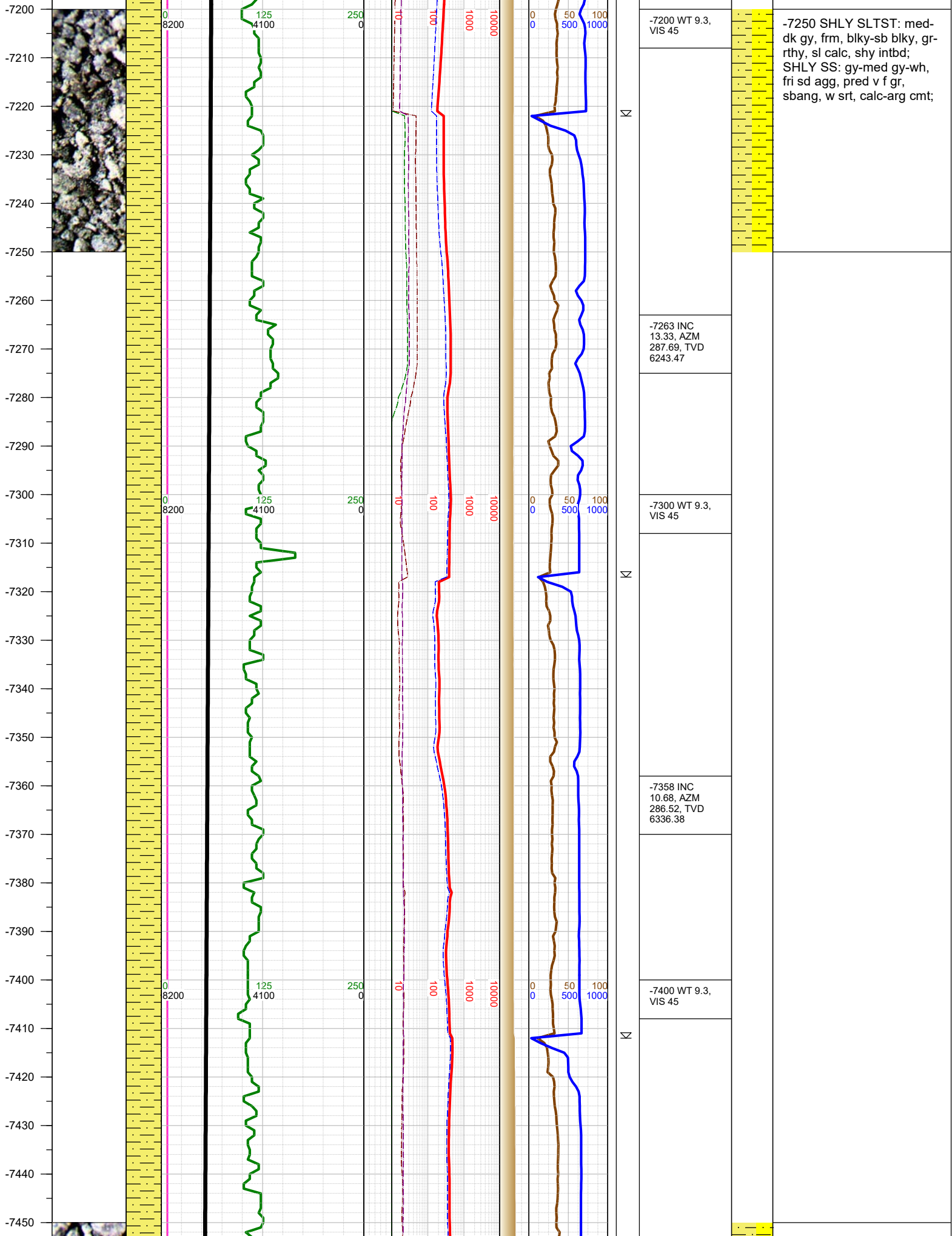


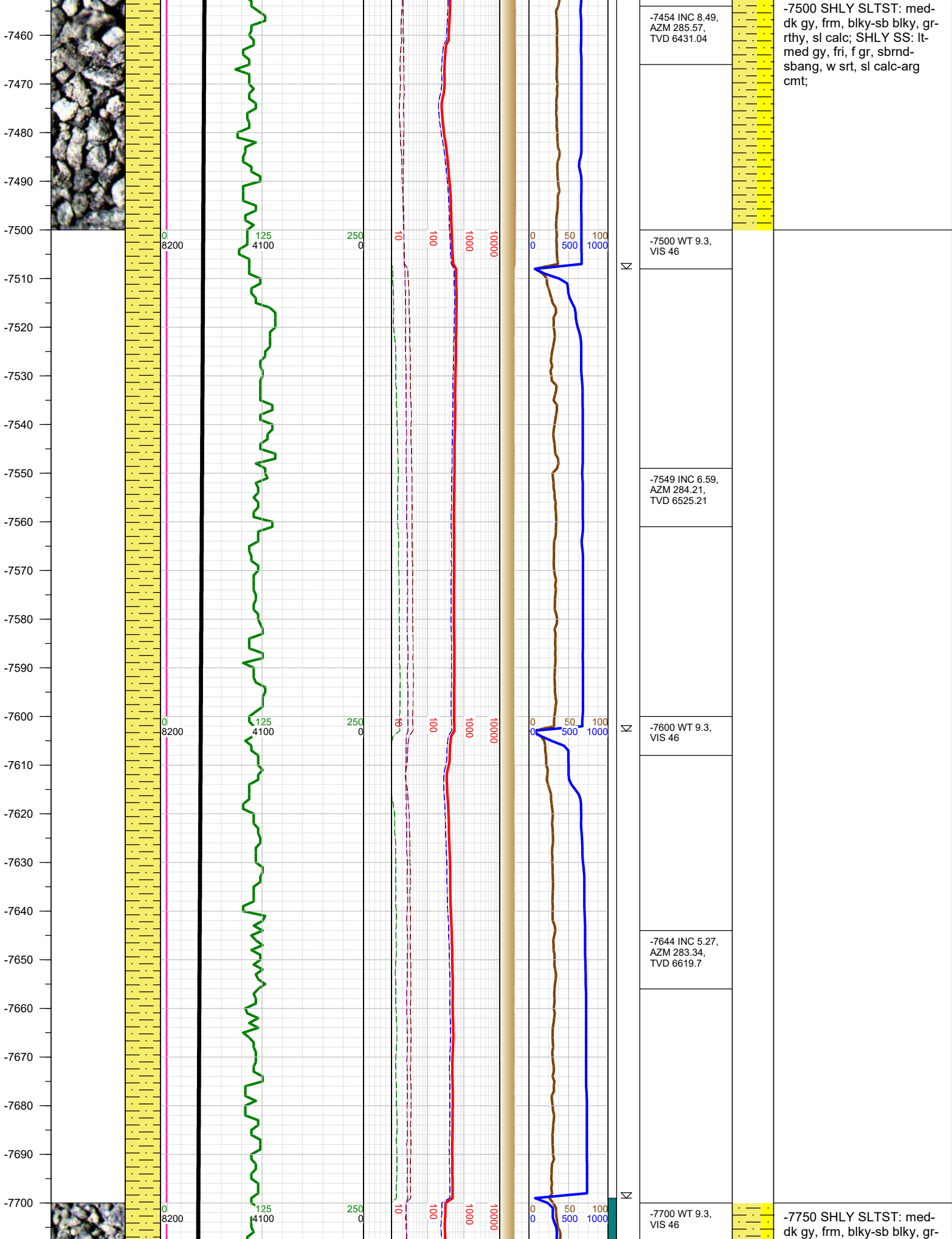


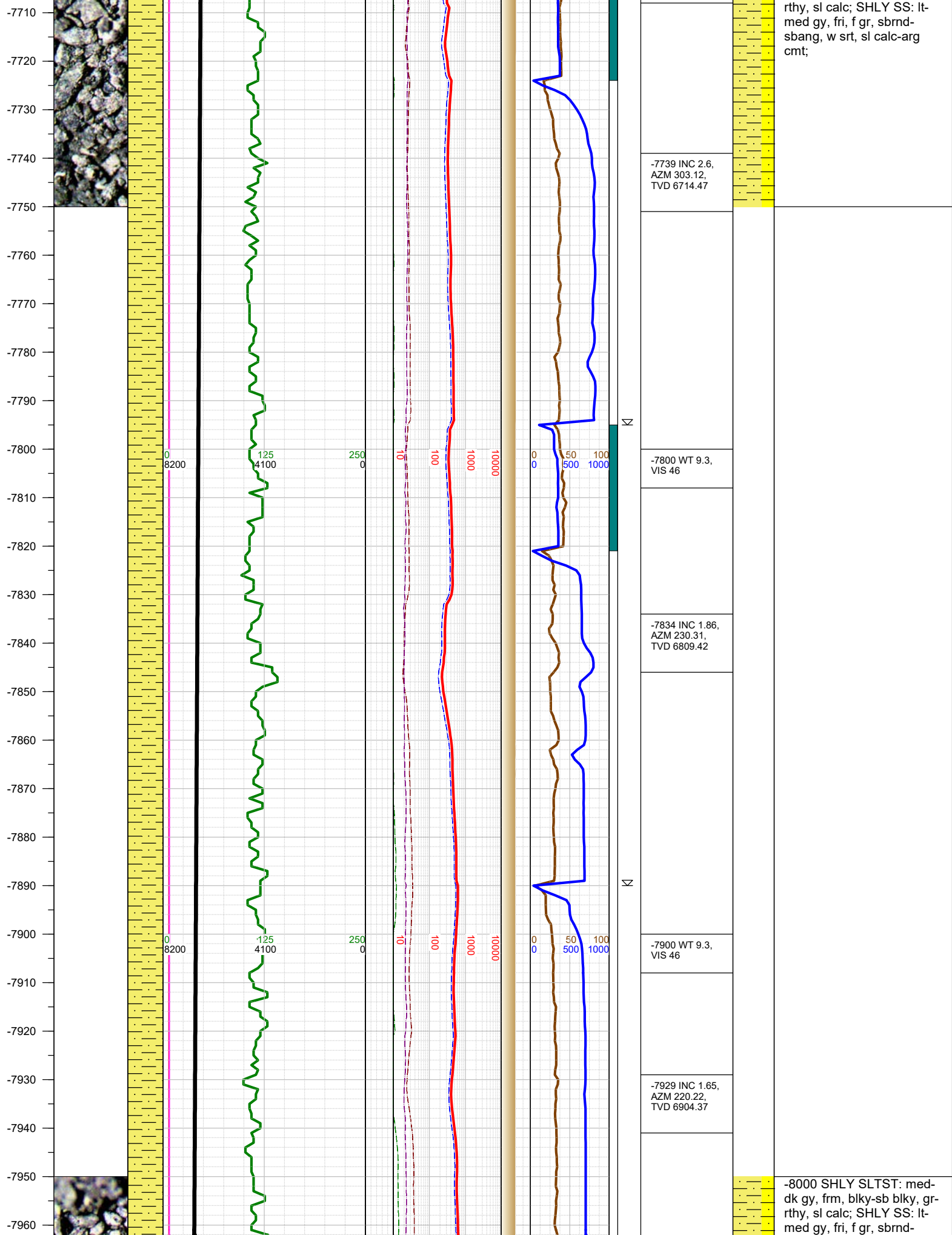


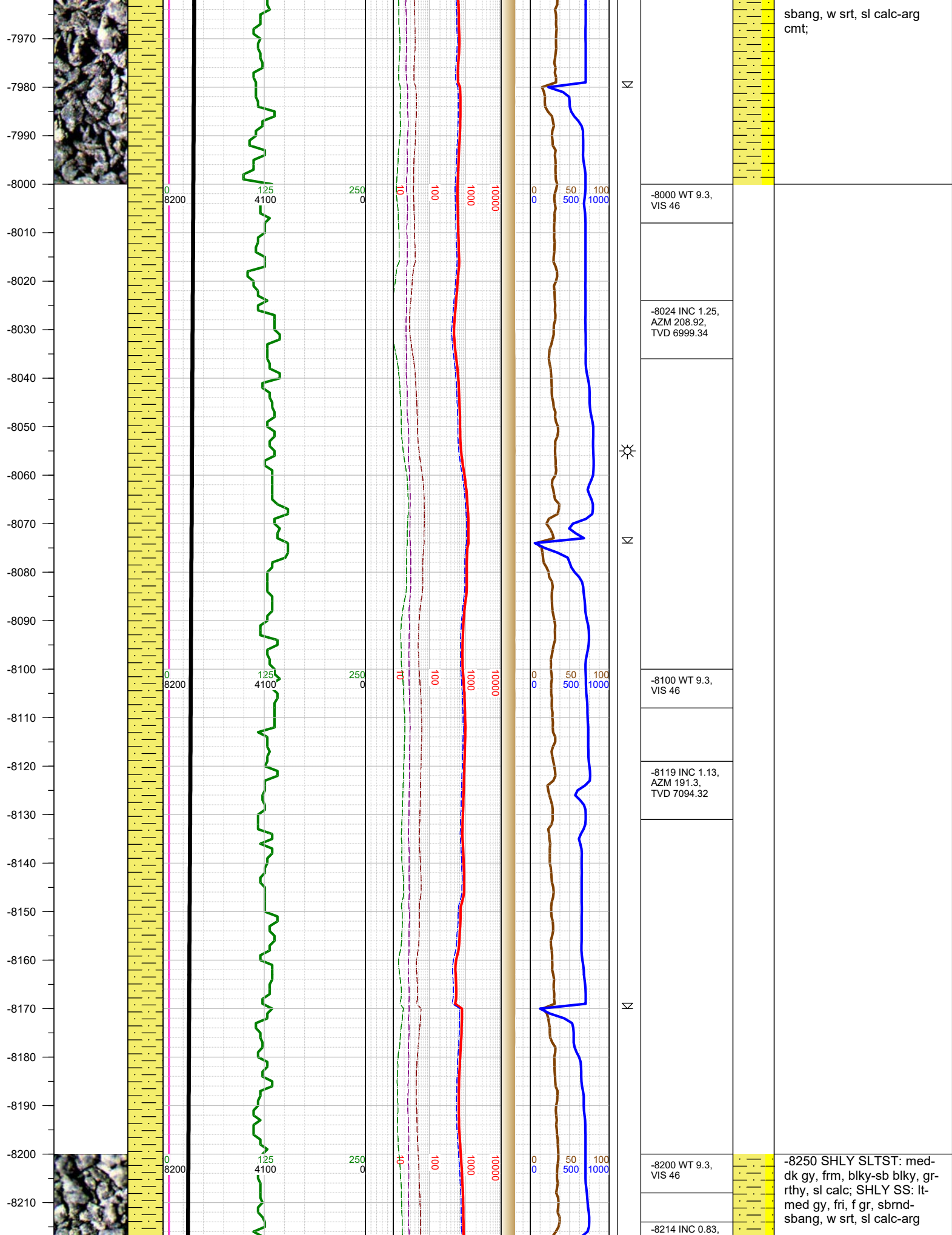


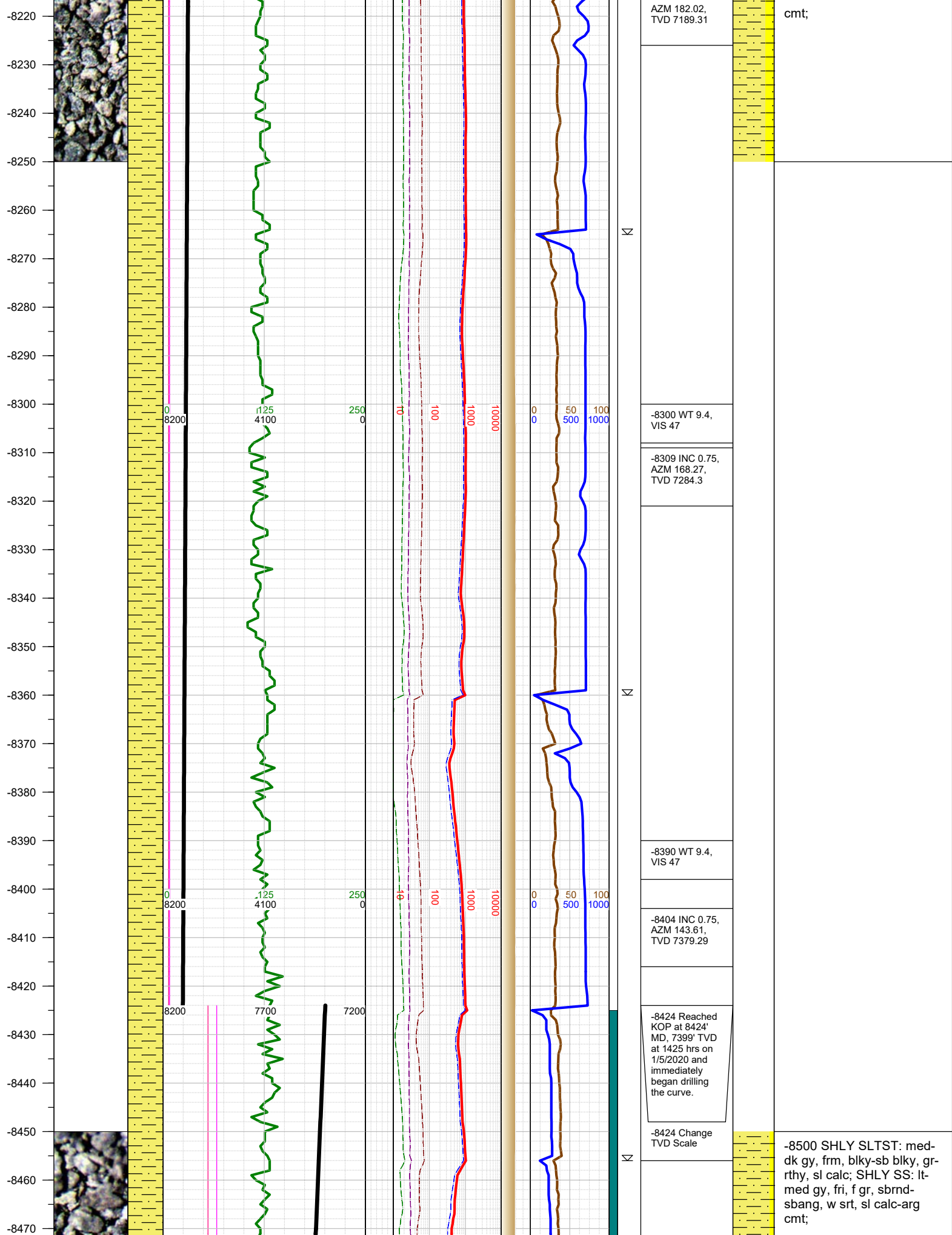


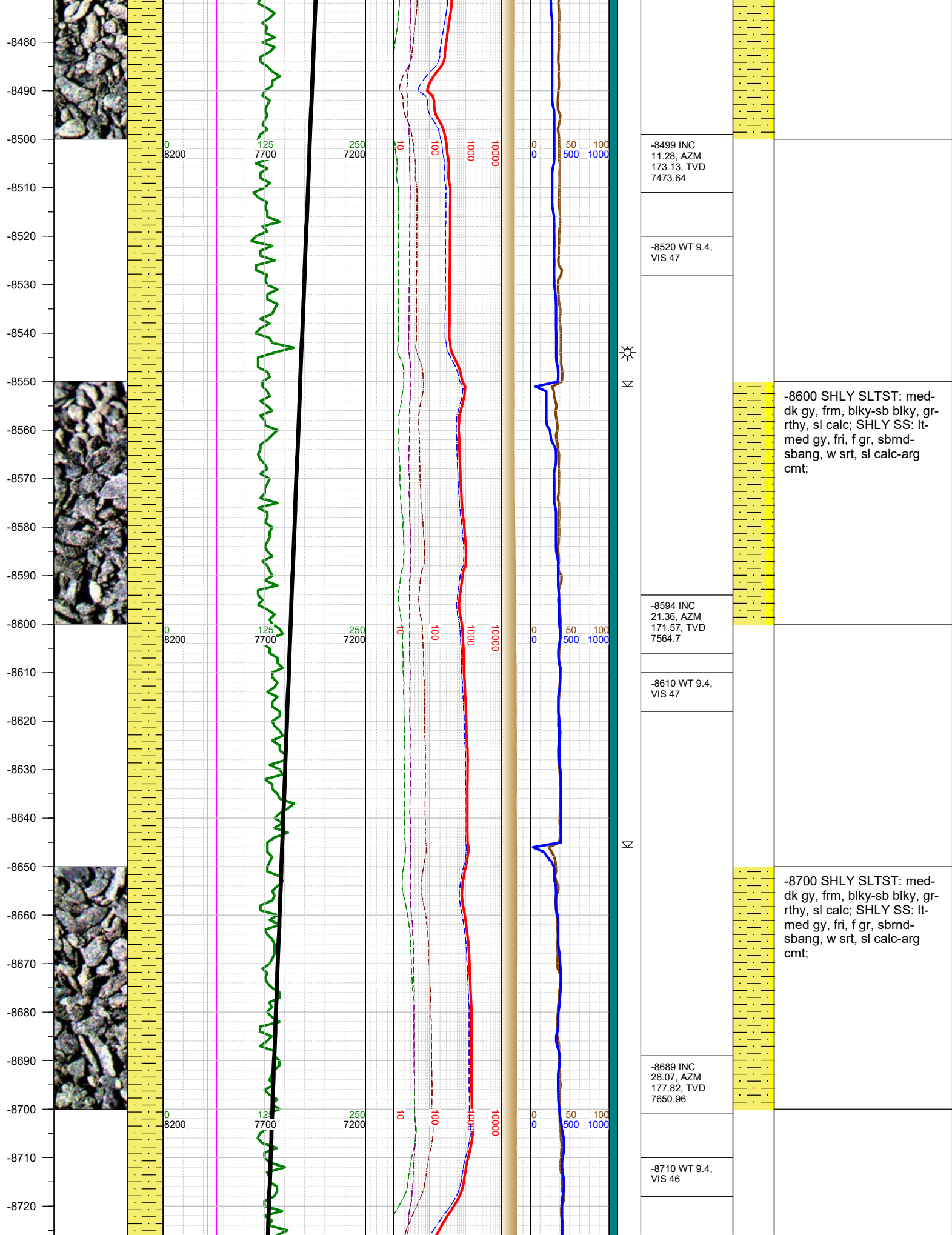


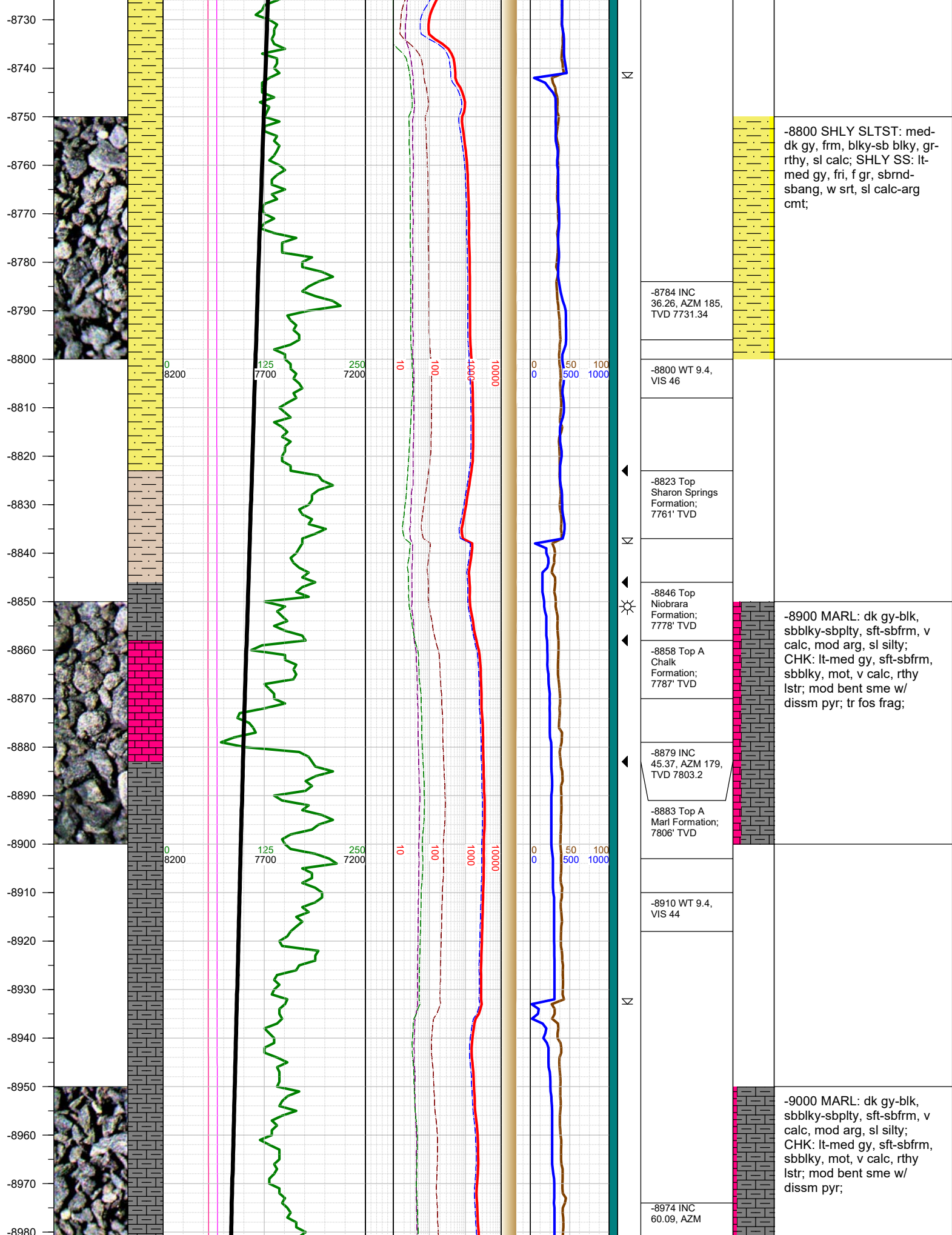


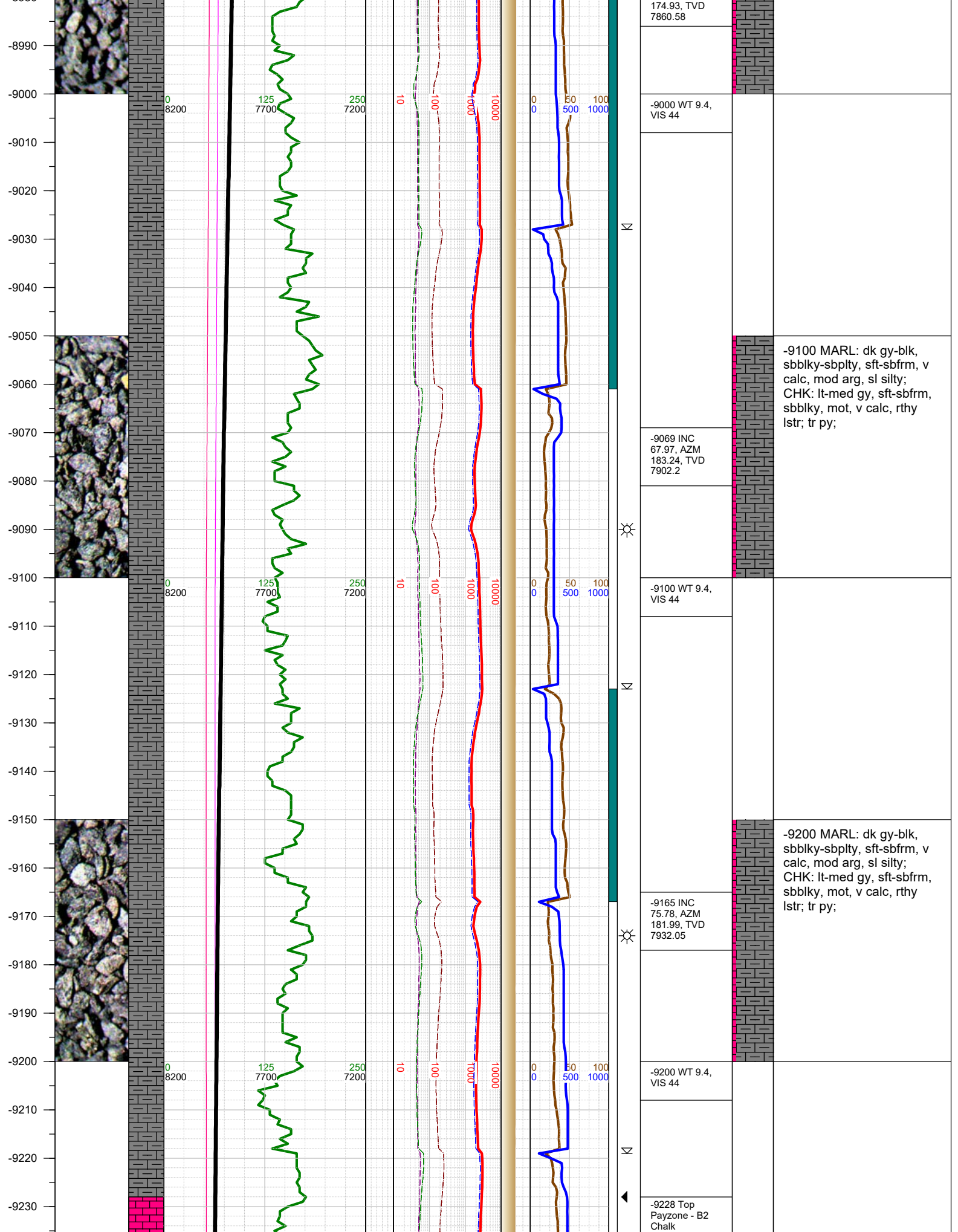


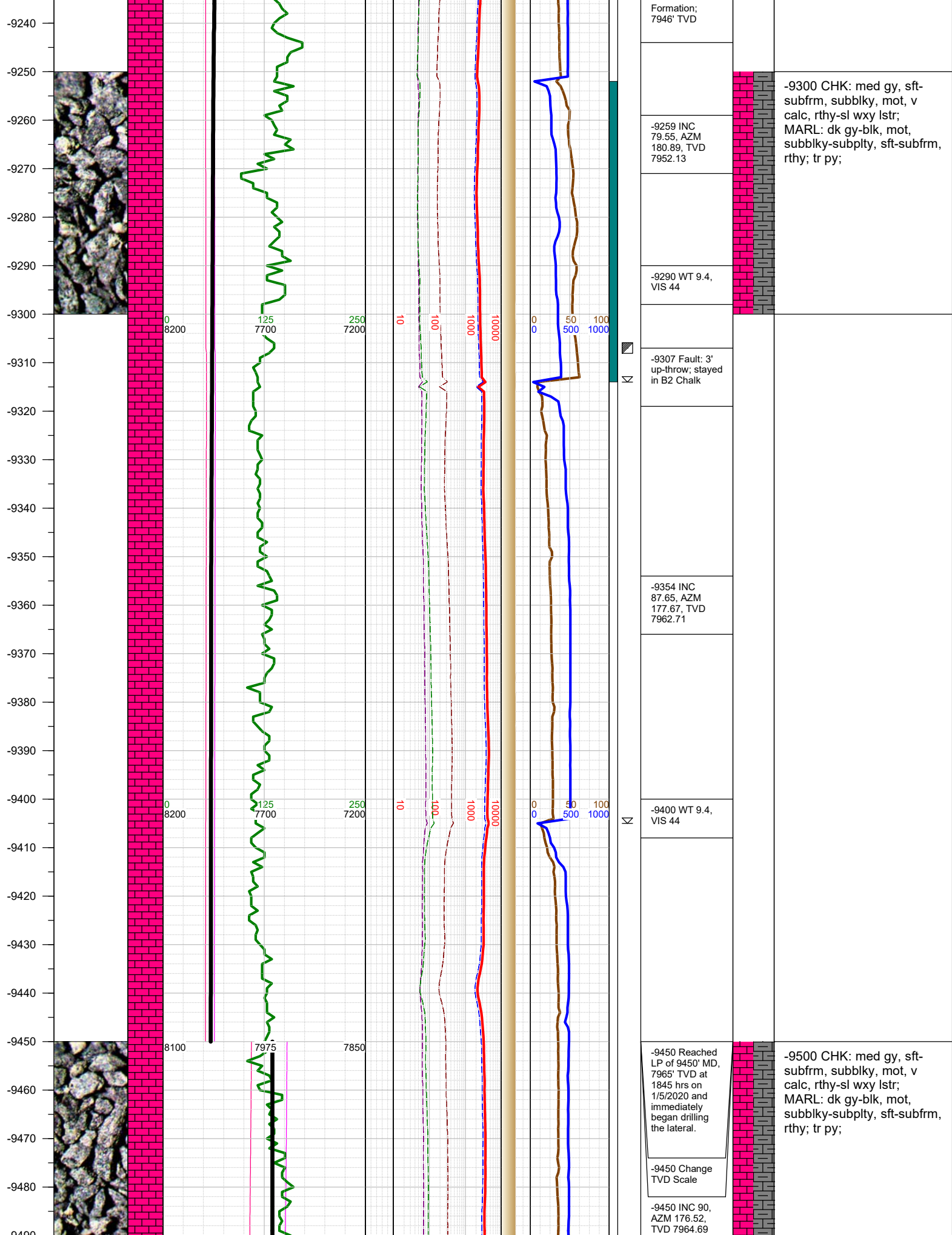


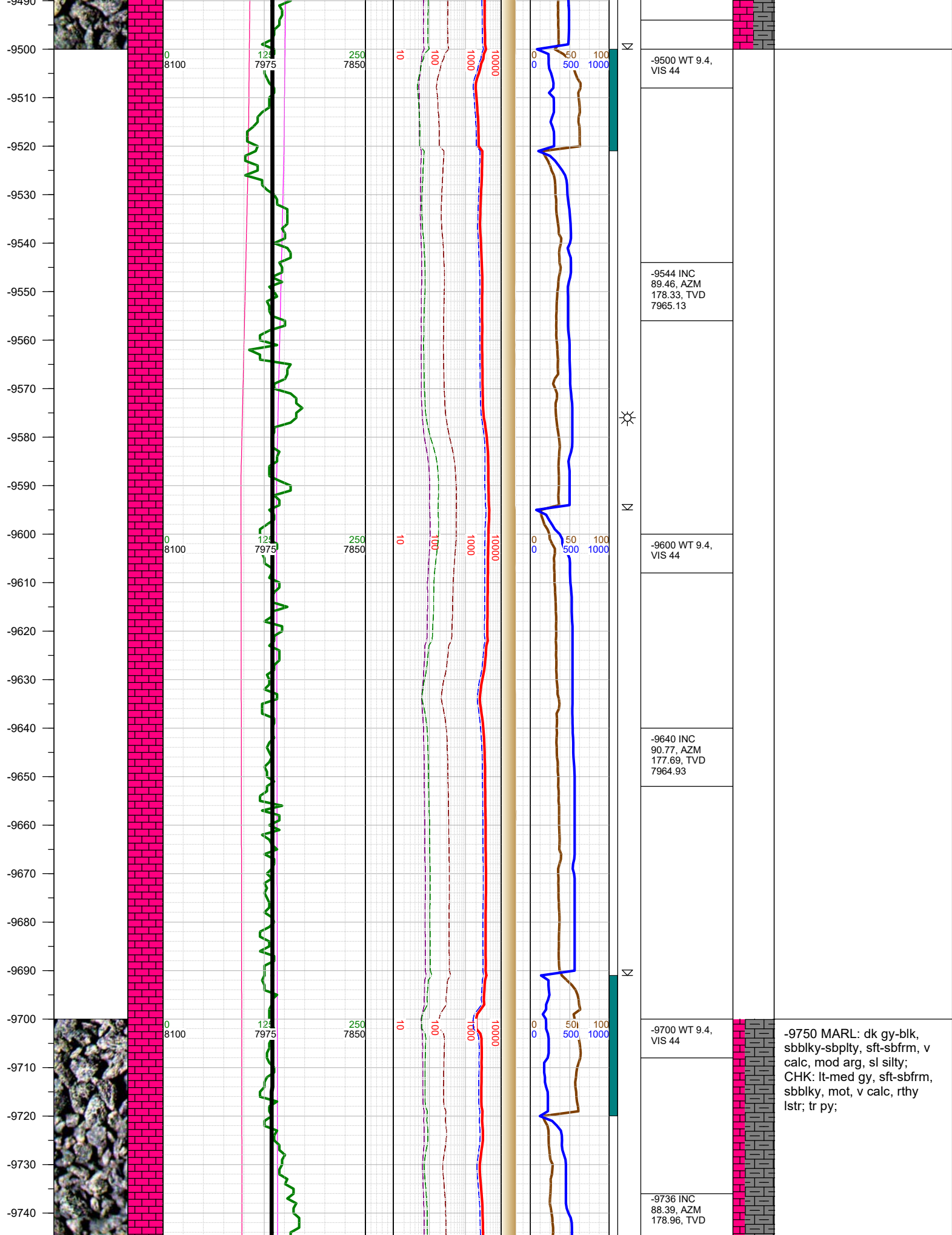


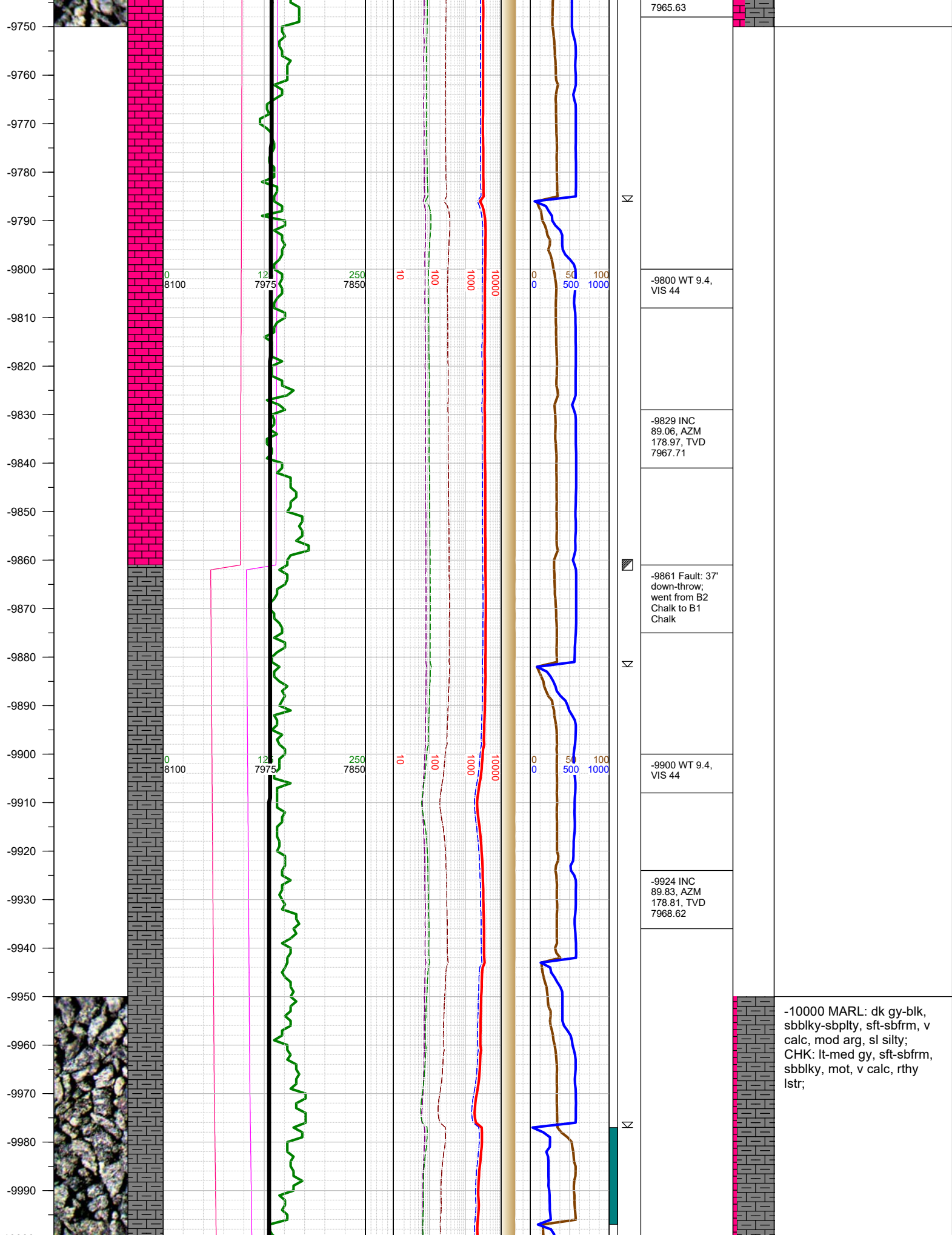


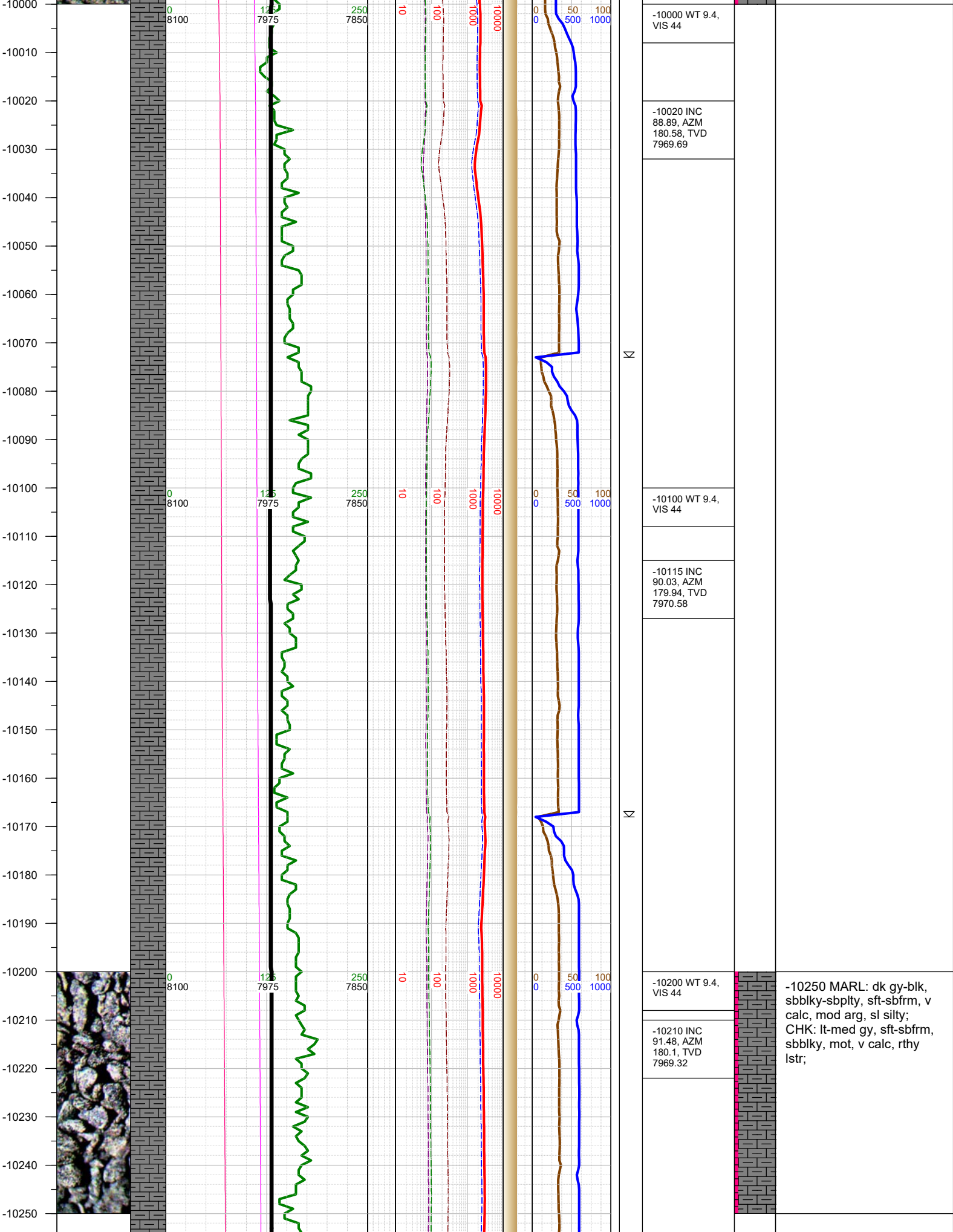


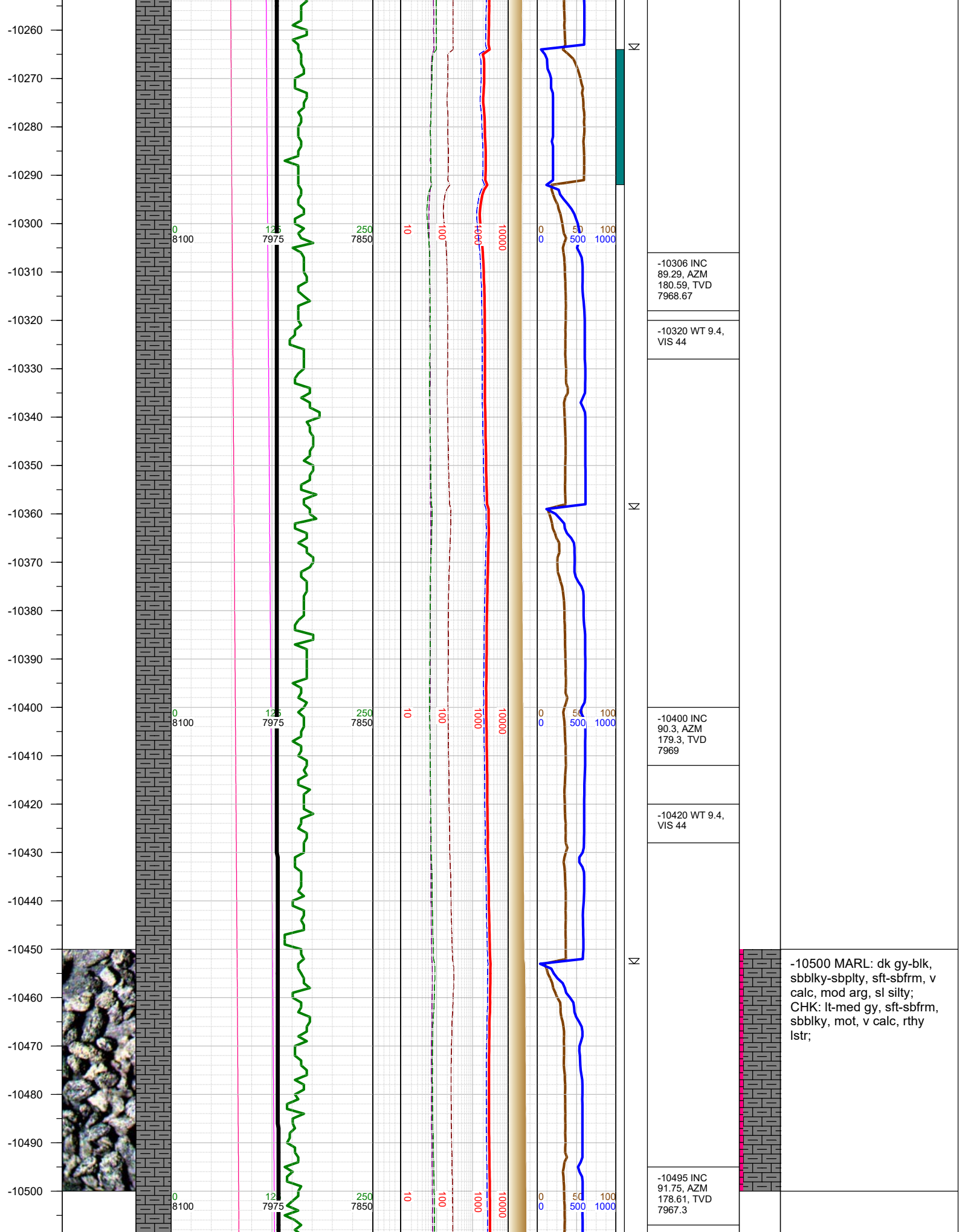


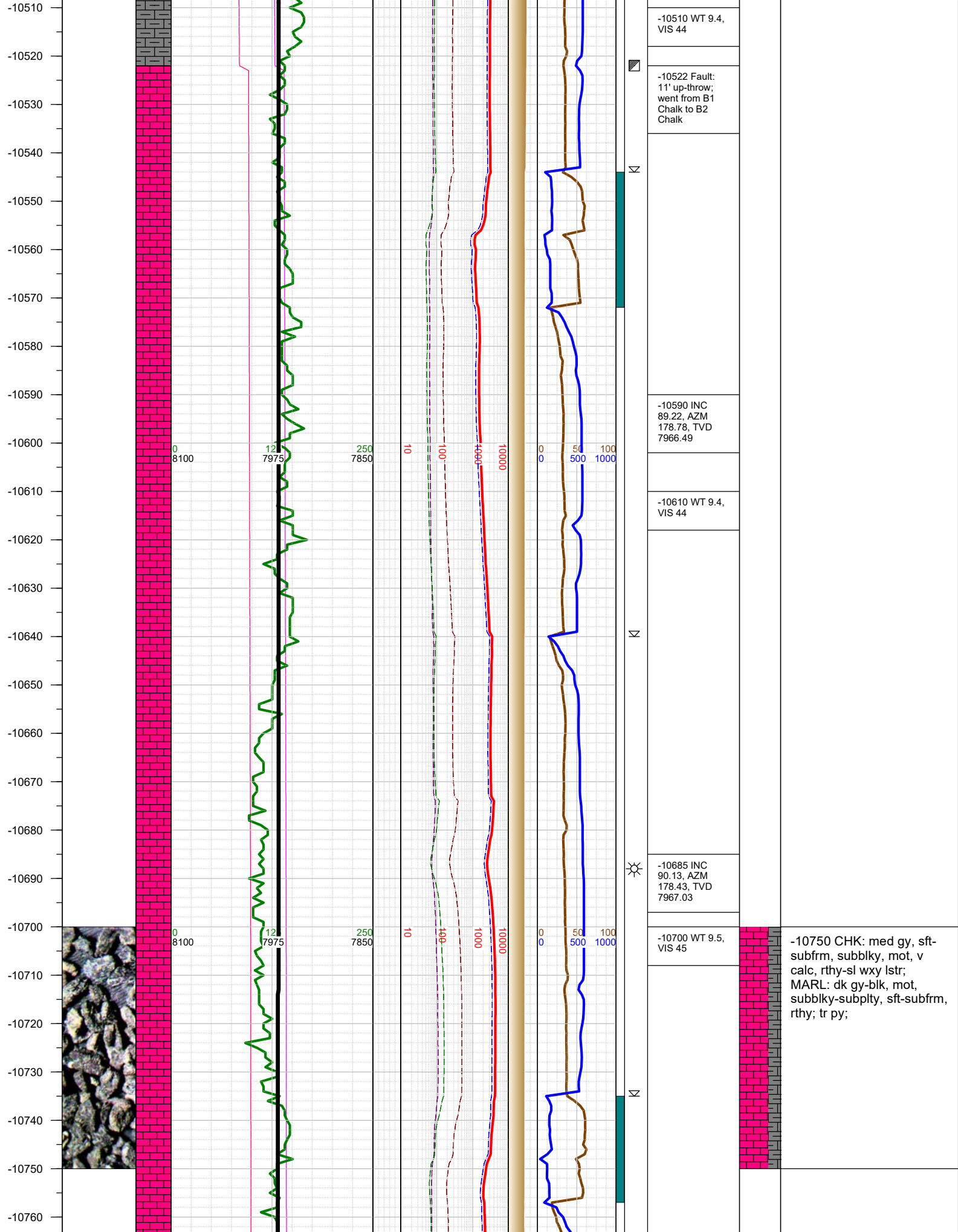


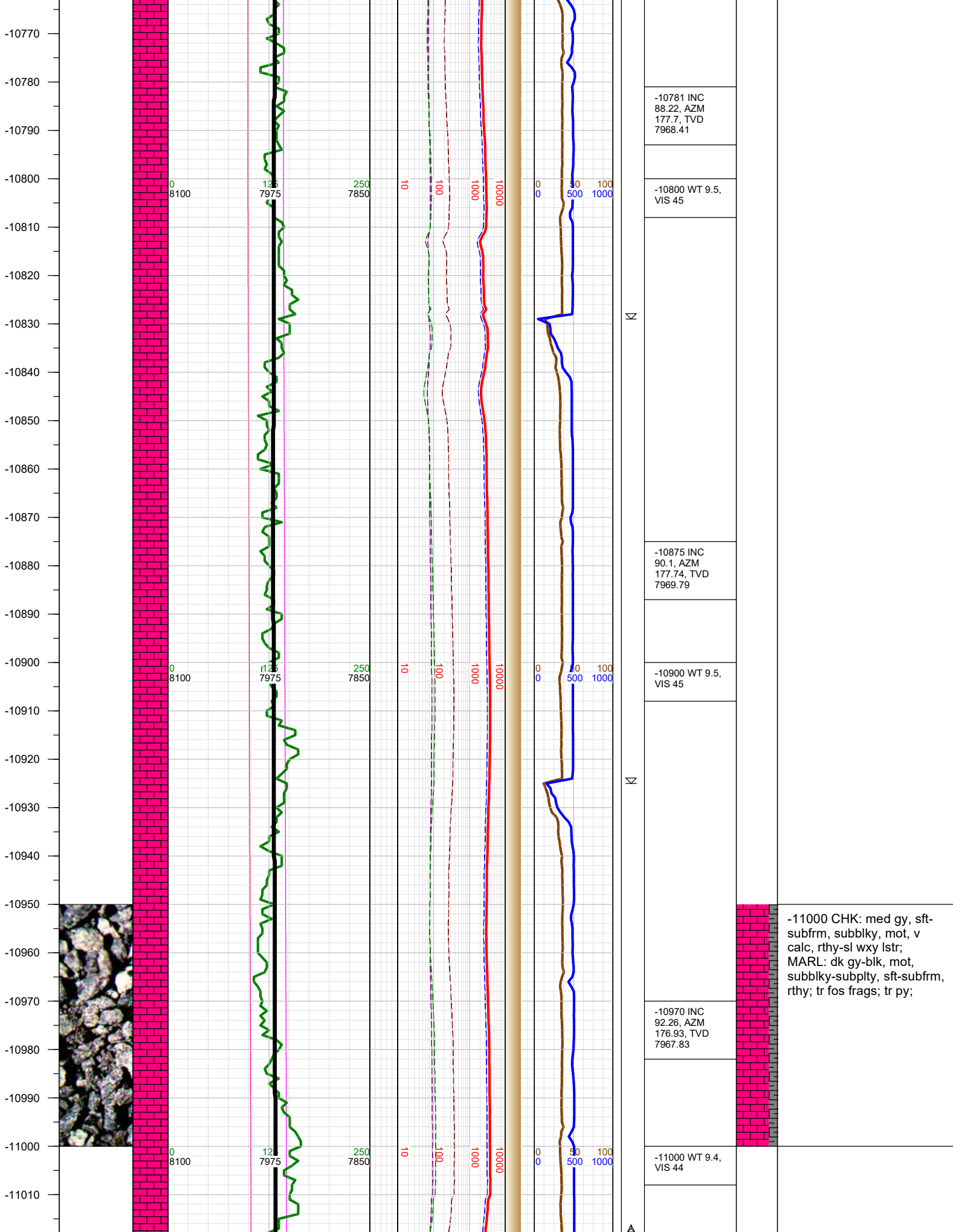


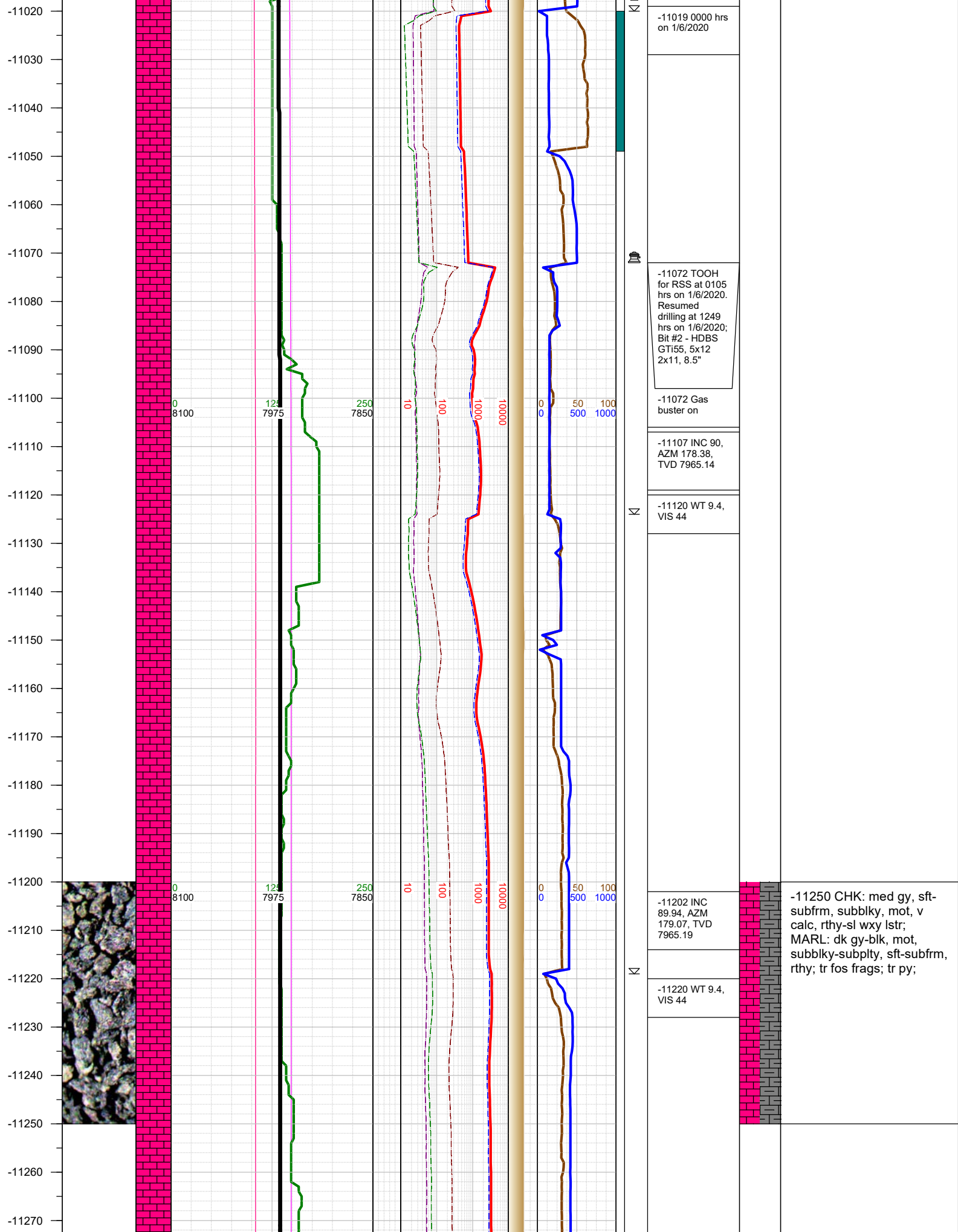


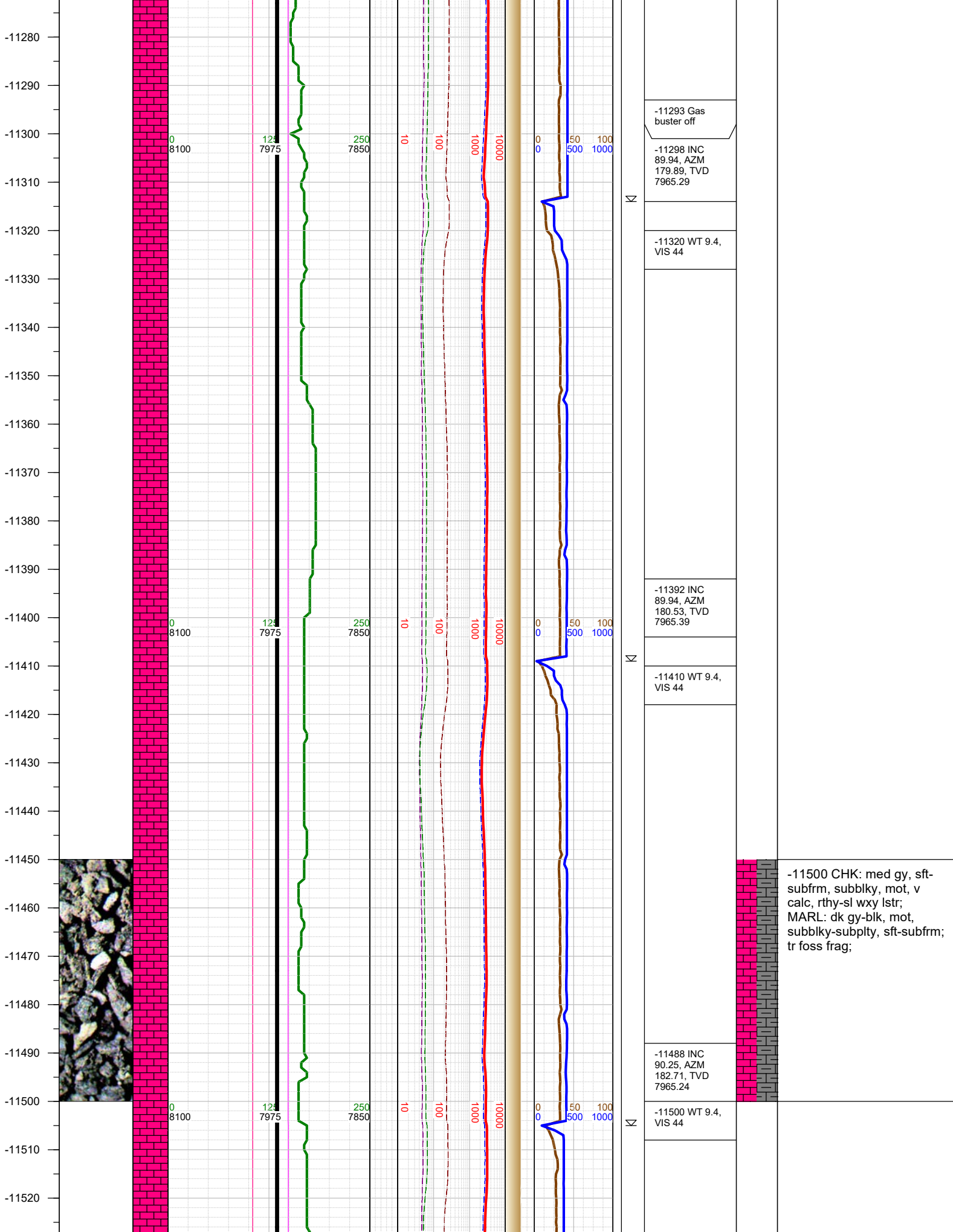




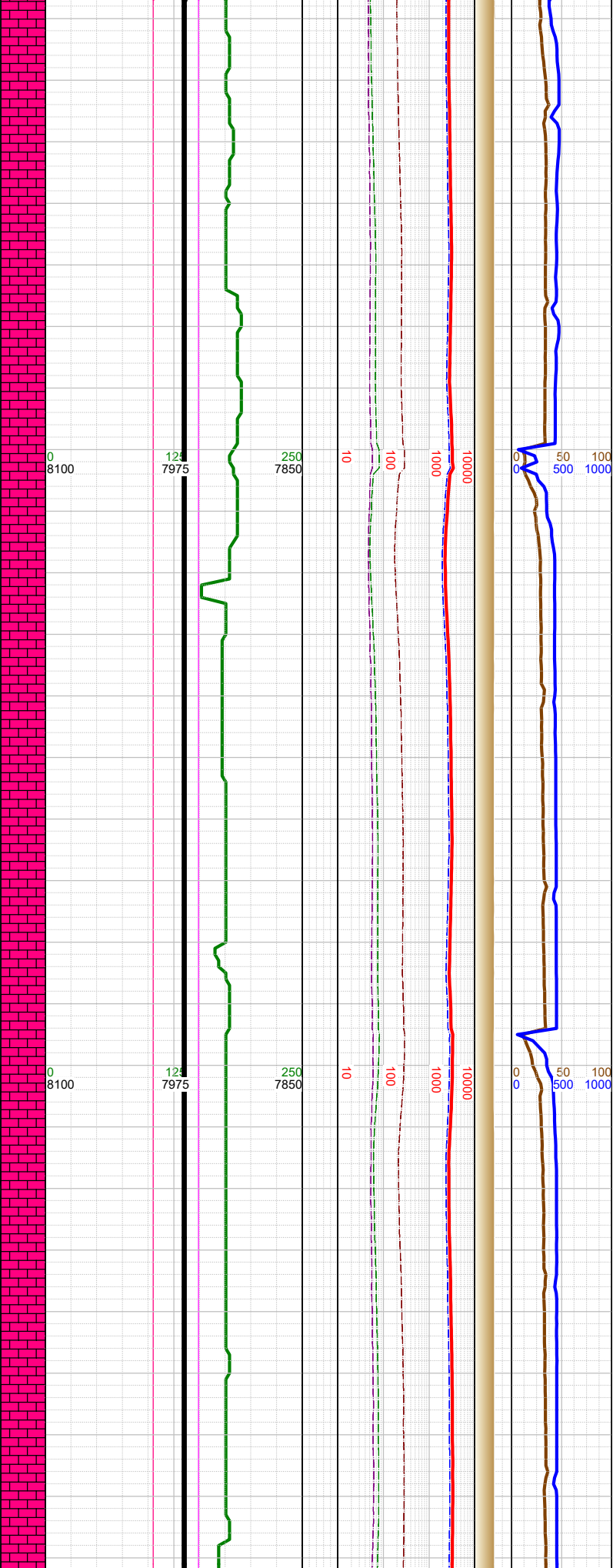
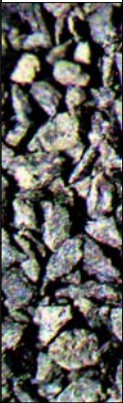








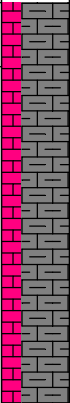
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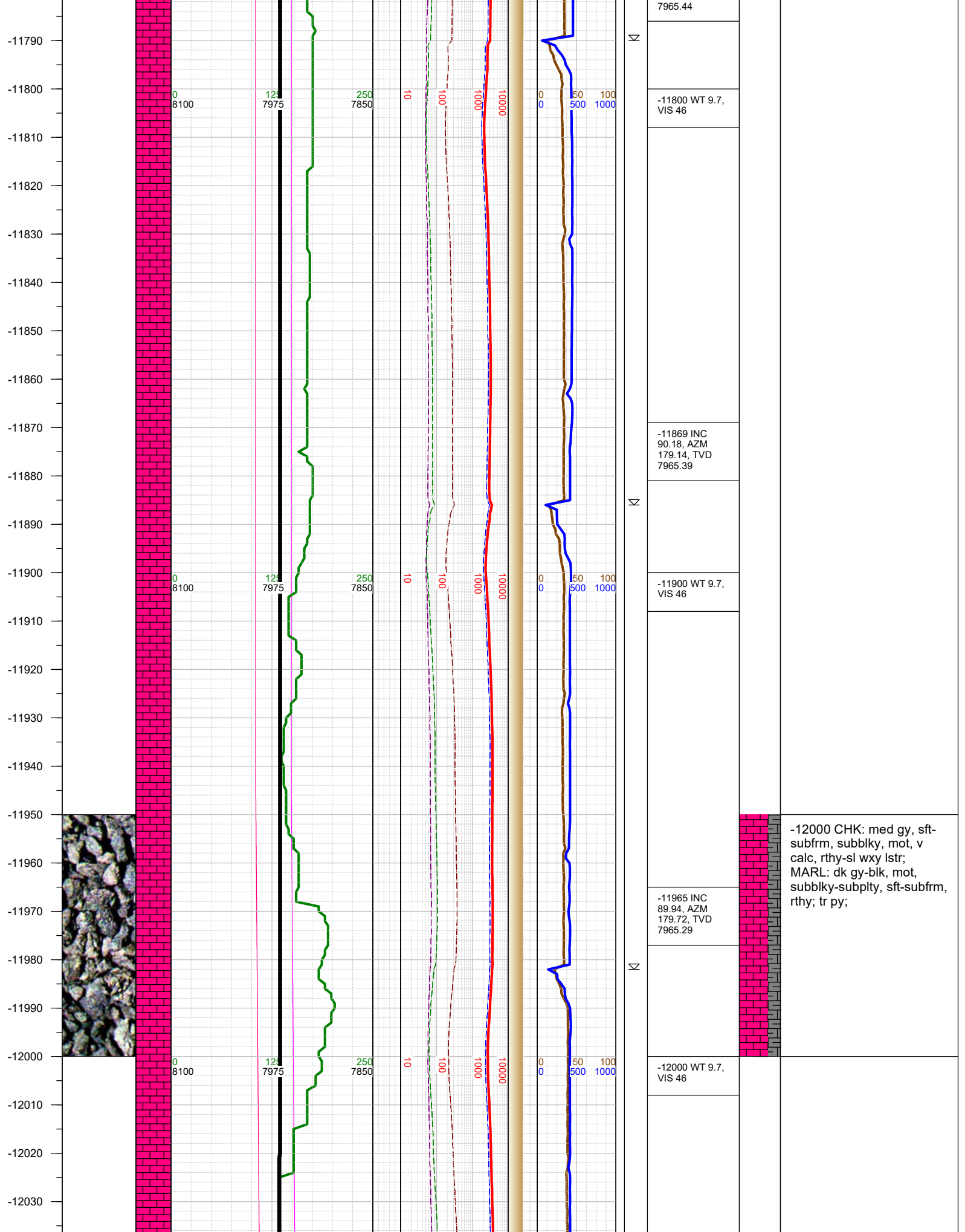
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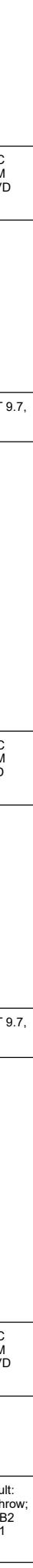
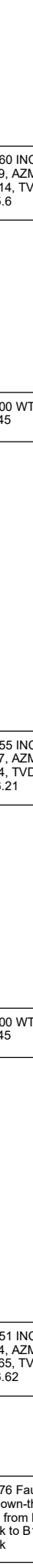
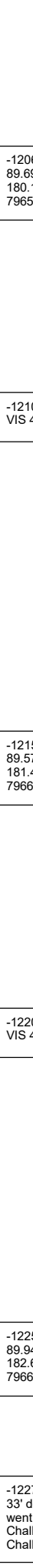
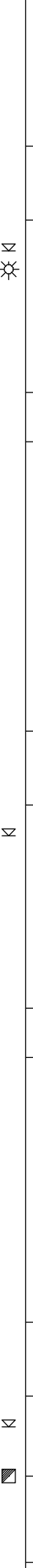
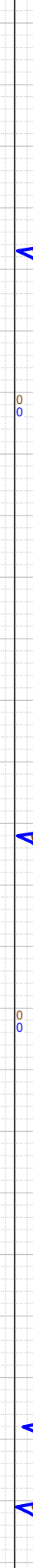
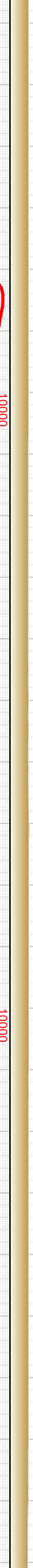
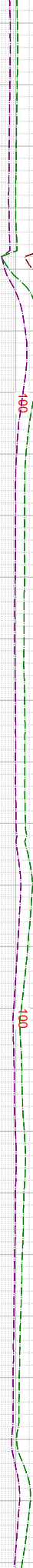
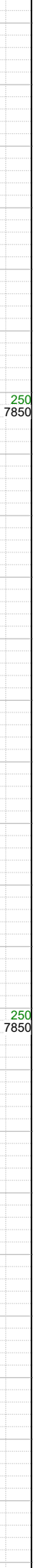
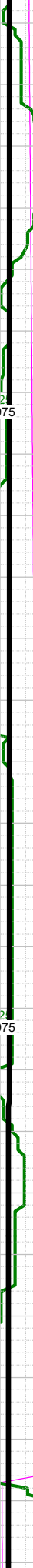
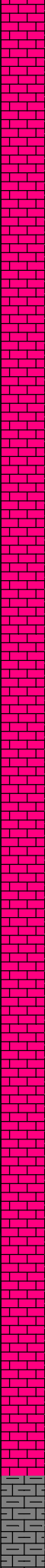
	-11583 INC 89.94, AZM 180.35, TVD 7965.08
	-11600 WT 9.4, VIS 44
	-11678 INC 89.88, AZM 179.41, TVD 7965.24
	-11700 WT 9.4, VIS 44
	-11774 INC 89.88, AZM 178.71, TVD



-11750 MARL: dk gy-blk,
sbbly-sbplty, sft-sbfrm, v
calc, mod arg, sl silty;
CHK: lt-med gy, sft-sbfrm,
sbbly, mot, v calc, rthy
lstr;



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-12060 INC
89.69, AZM
180.14, TVD
7965.6

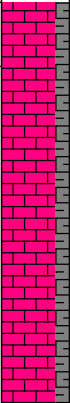
-12100 WT 9.7,
VIS 45

-12155 INC
89.57, AZM
181.4, TVD
7966.21

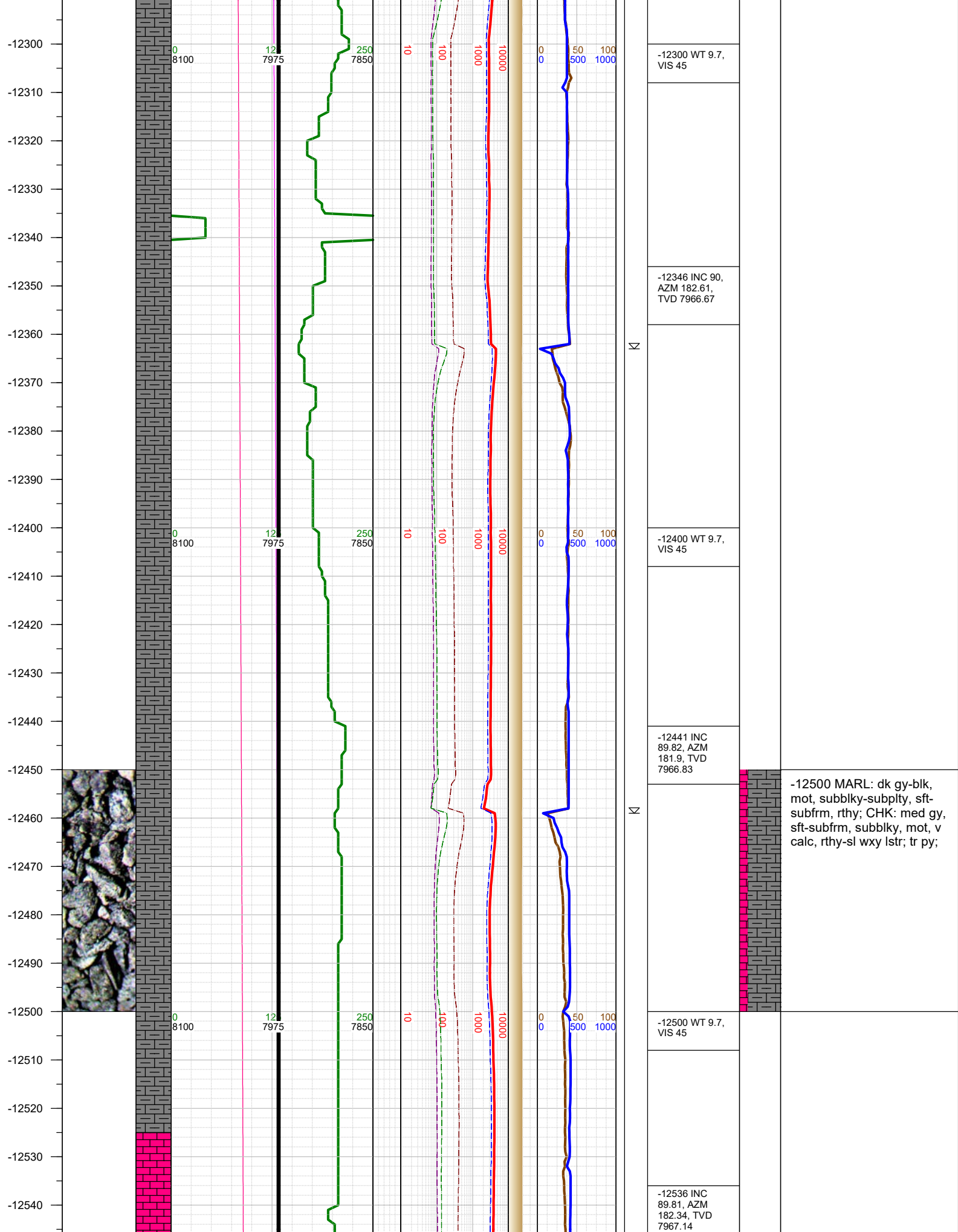
-12200 WT 9.7,
VIS 45

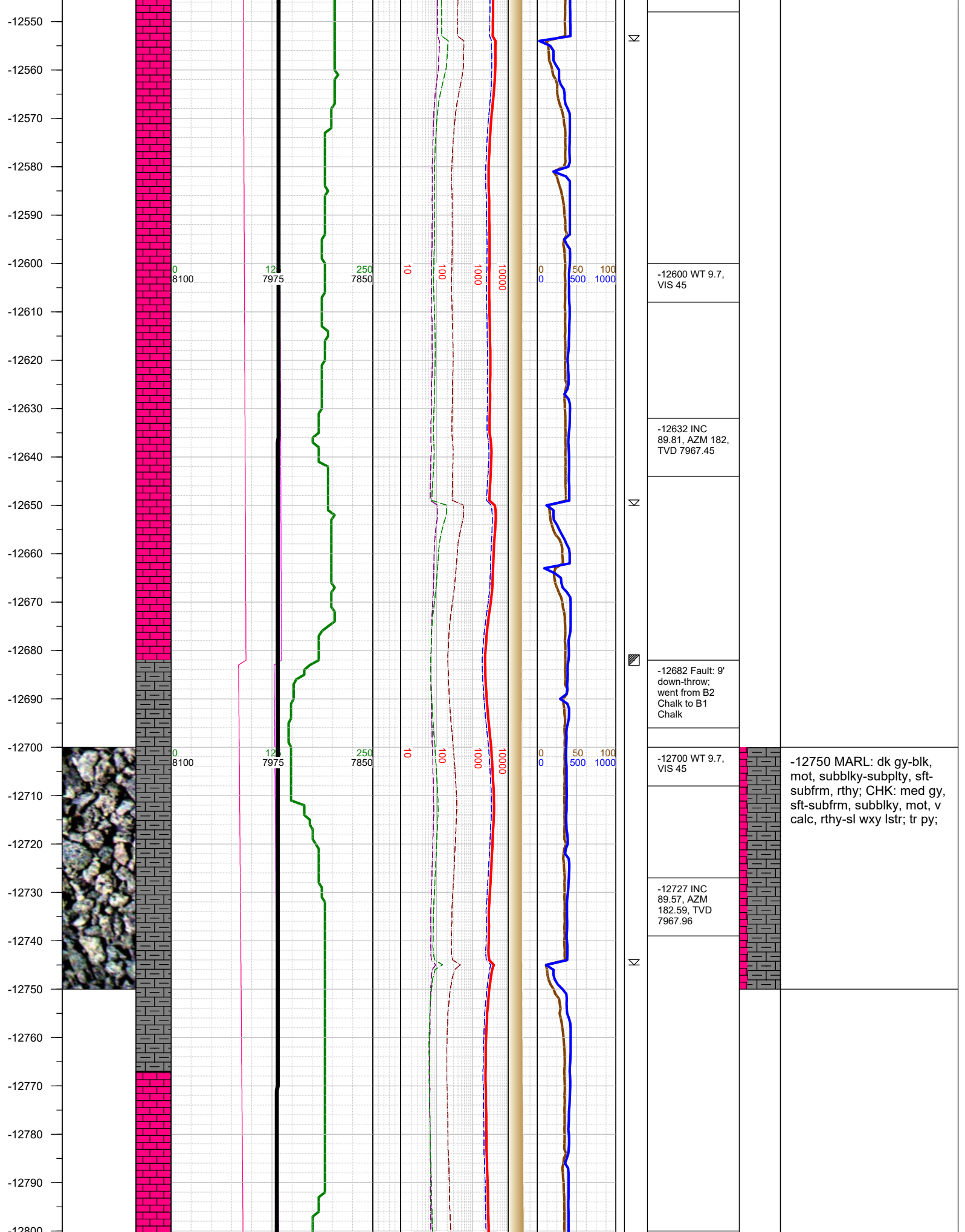
-12251 INC
89.94, AZM
182.65, TVD
7966.62

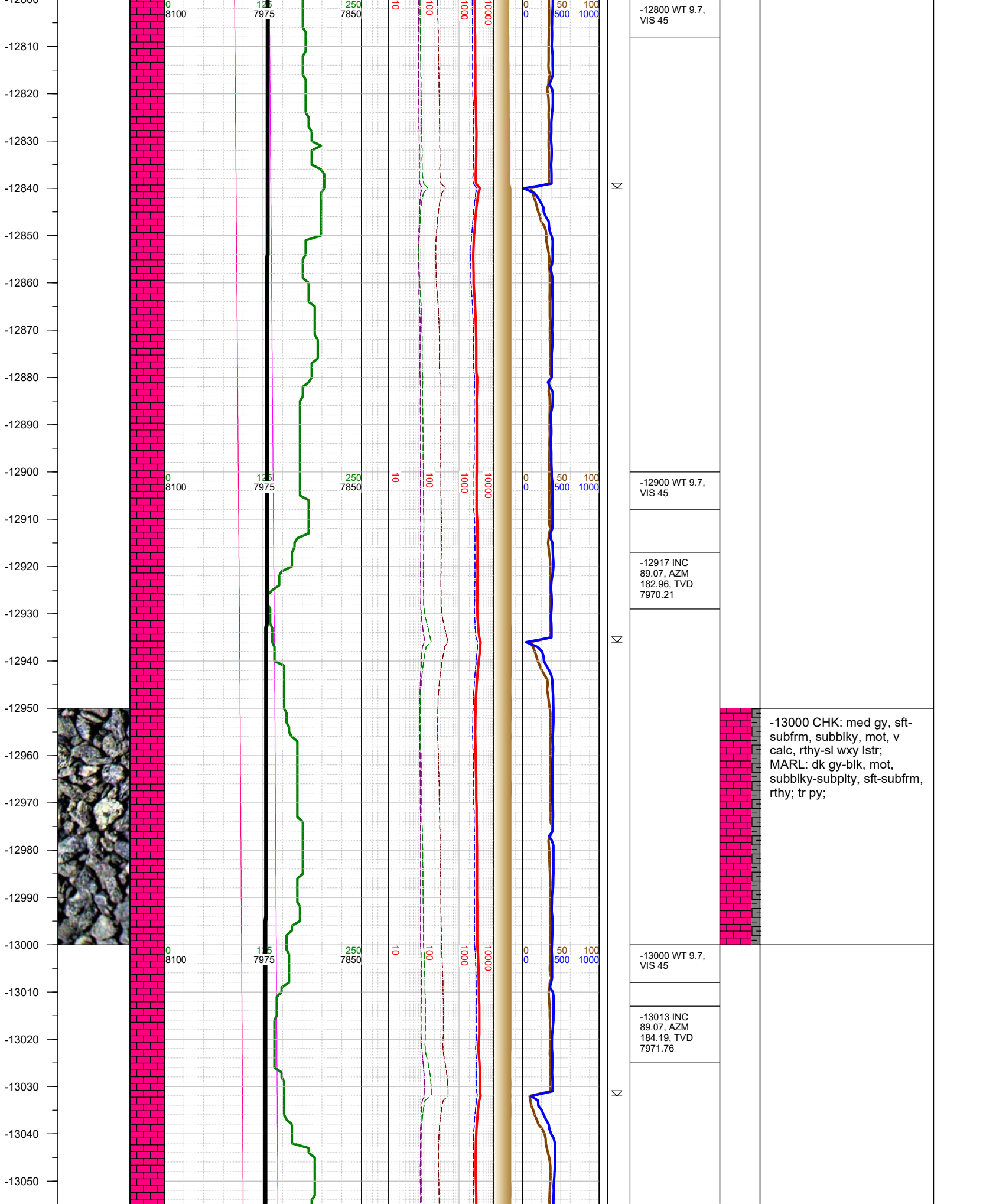
-12276 Fault:
33' down-throw;
went from B2
Chalk to B1
Chalk

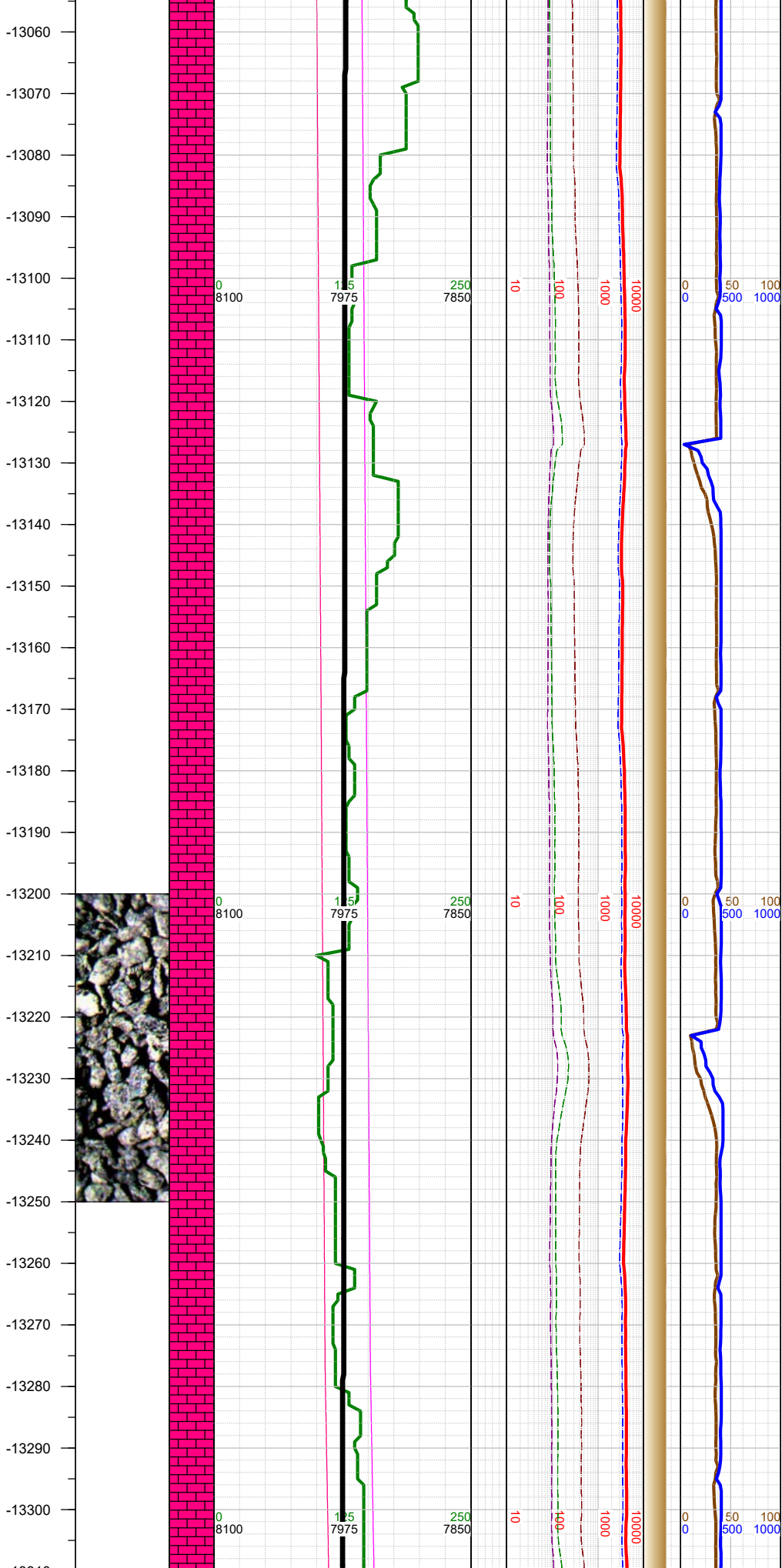


-12250 CHK: gy-med gy,
sft-subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subply, sft-subfrm,
rthy; tr py;

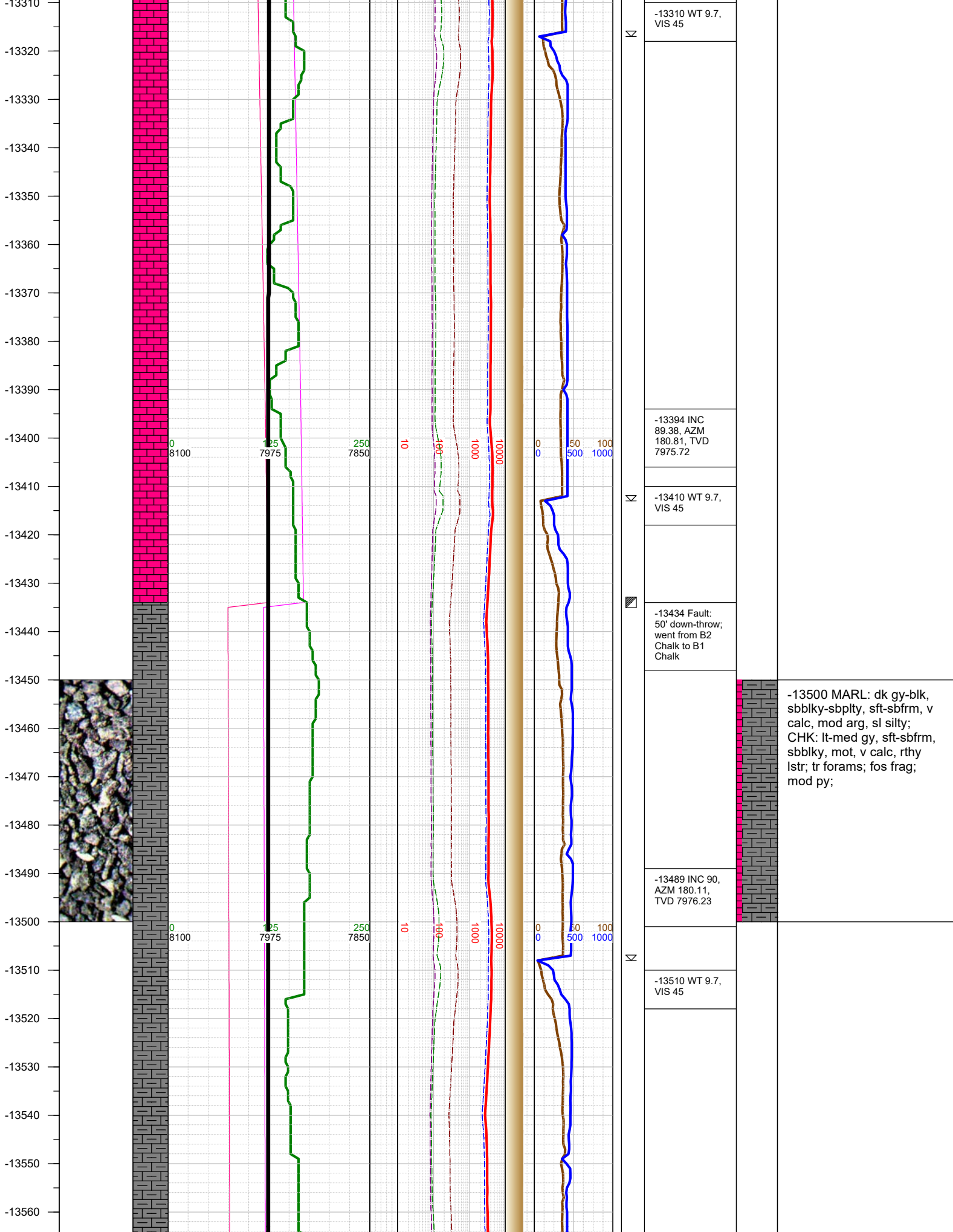


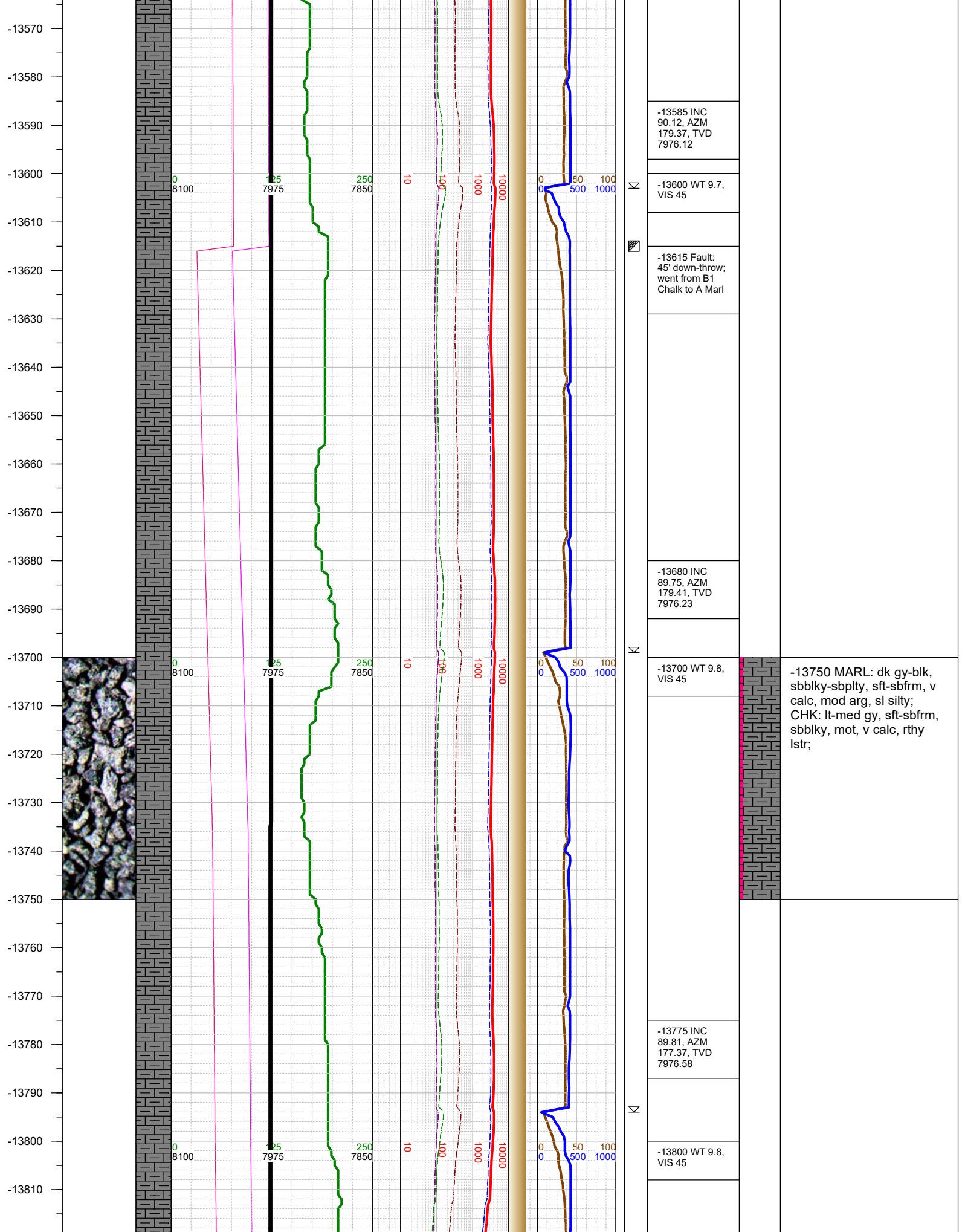


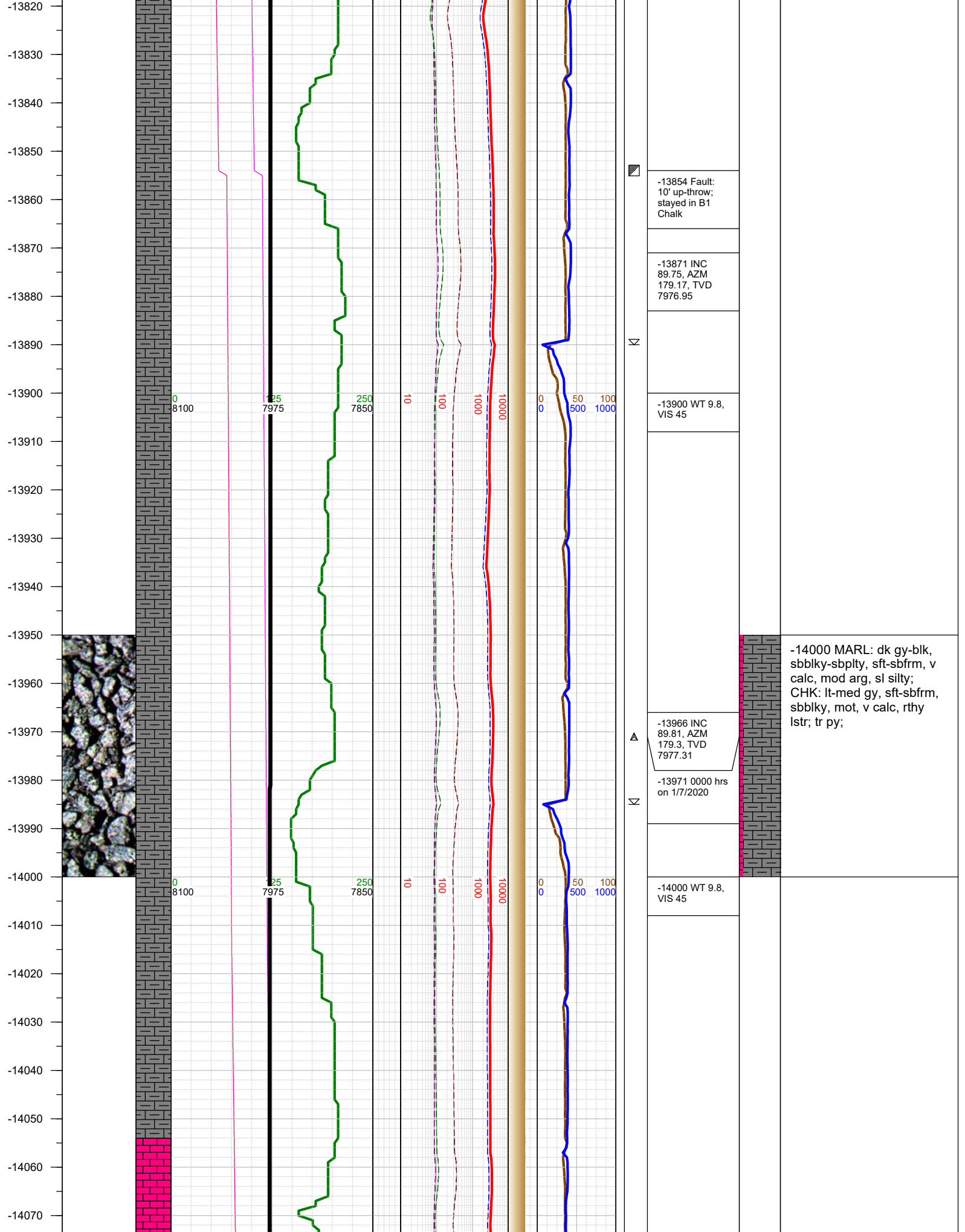


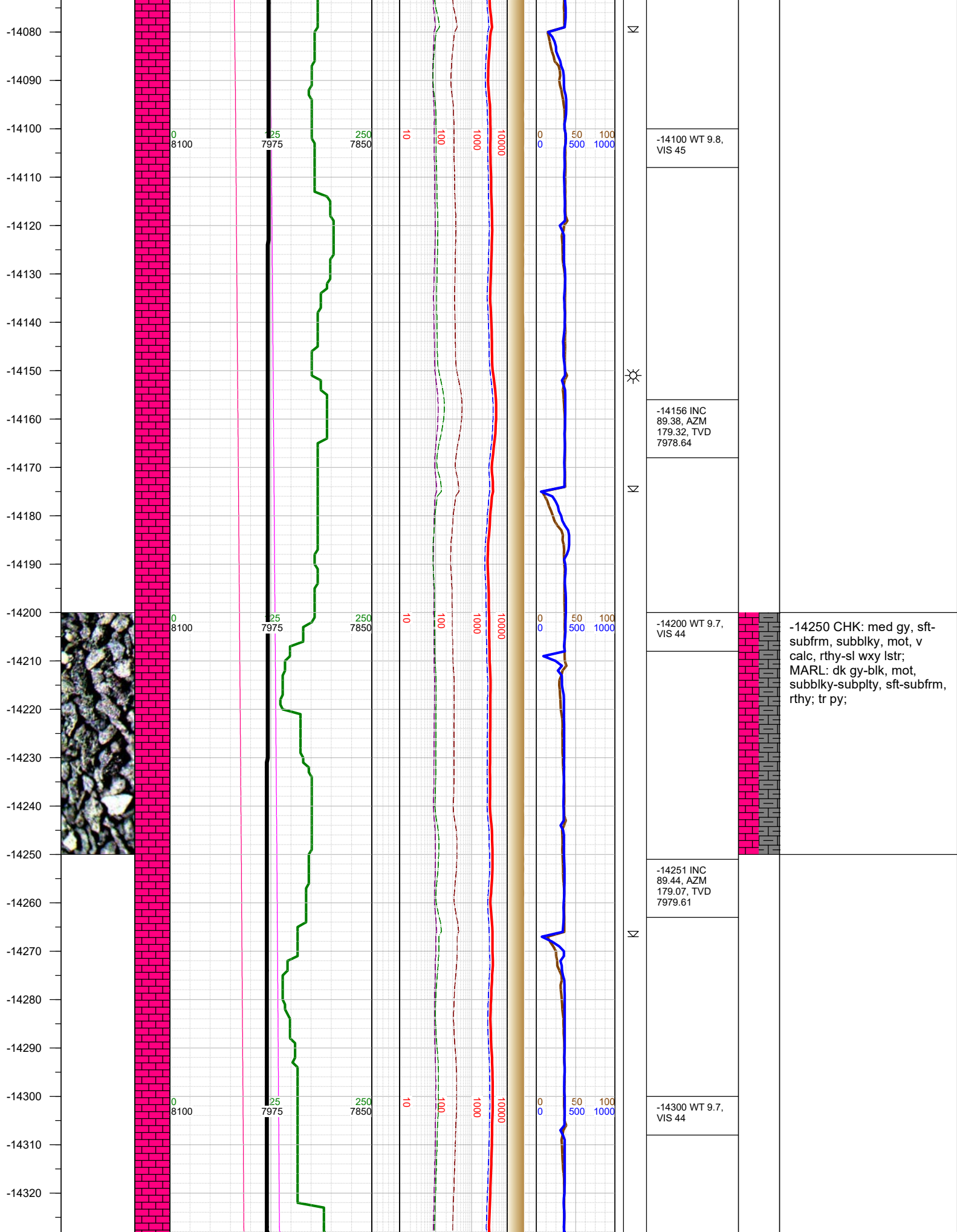


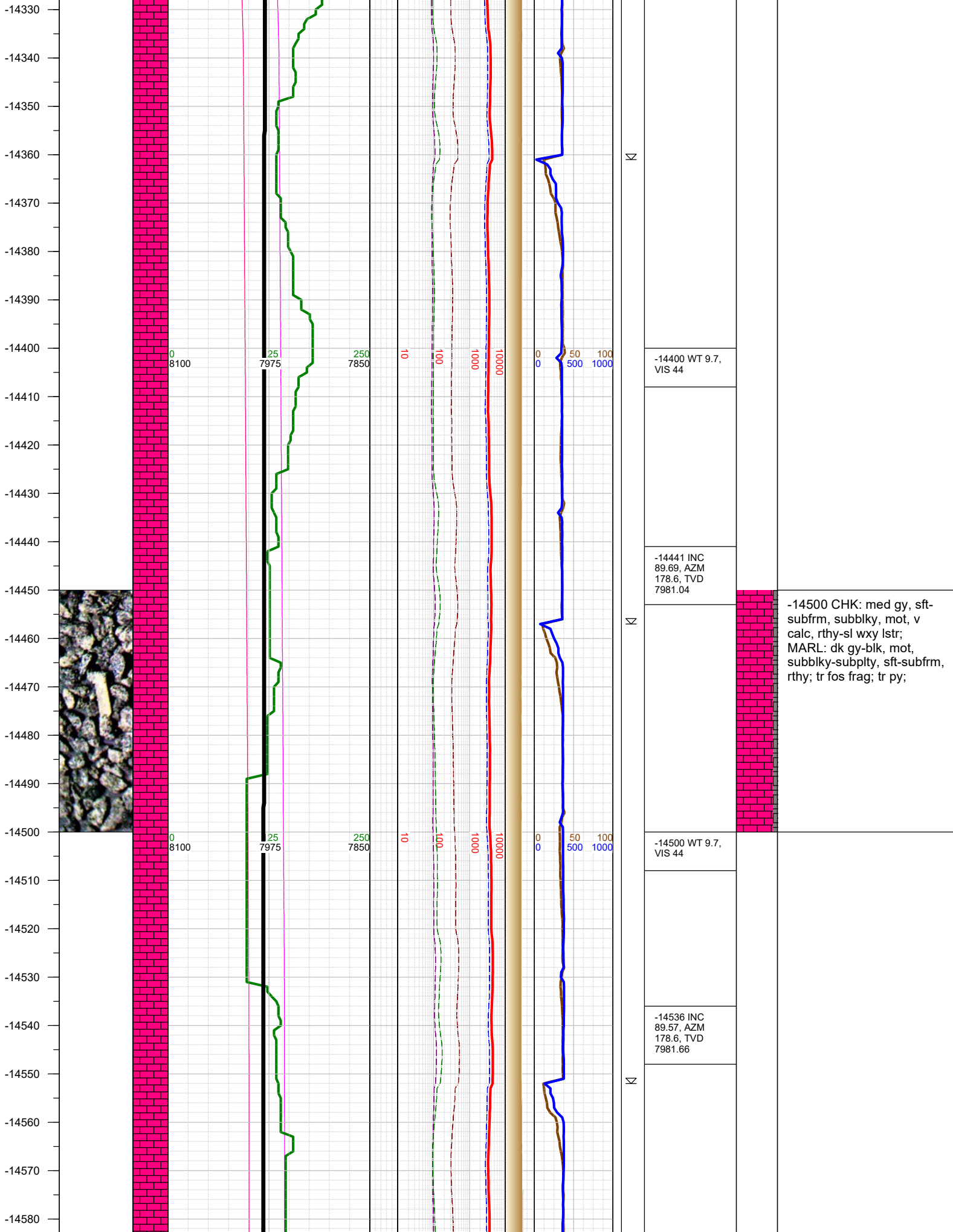
Σ		-13100 WT 9.7, VIS 45	
		-13108 INC 89.44, AZM 182.59, TVD 7972.99	
Σ		-13203 INC 89.63, AZM 181.92, TVD 7973.76	-13250 CHK: med gy, sft- subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr py;
		-13220 WT 9.7, VIS 45	
		-13298 INC 89.32, AZM 181.74, TVD 7974.63	



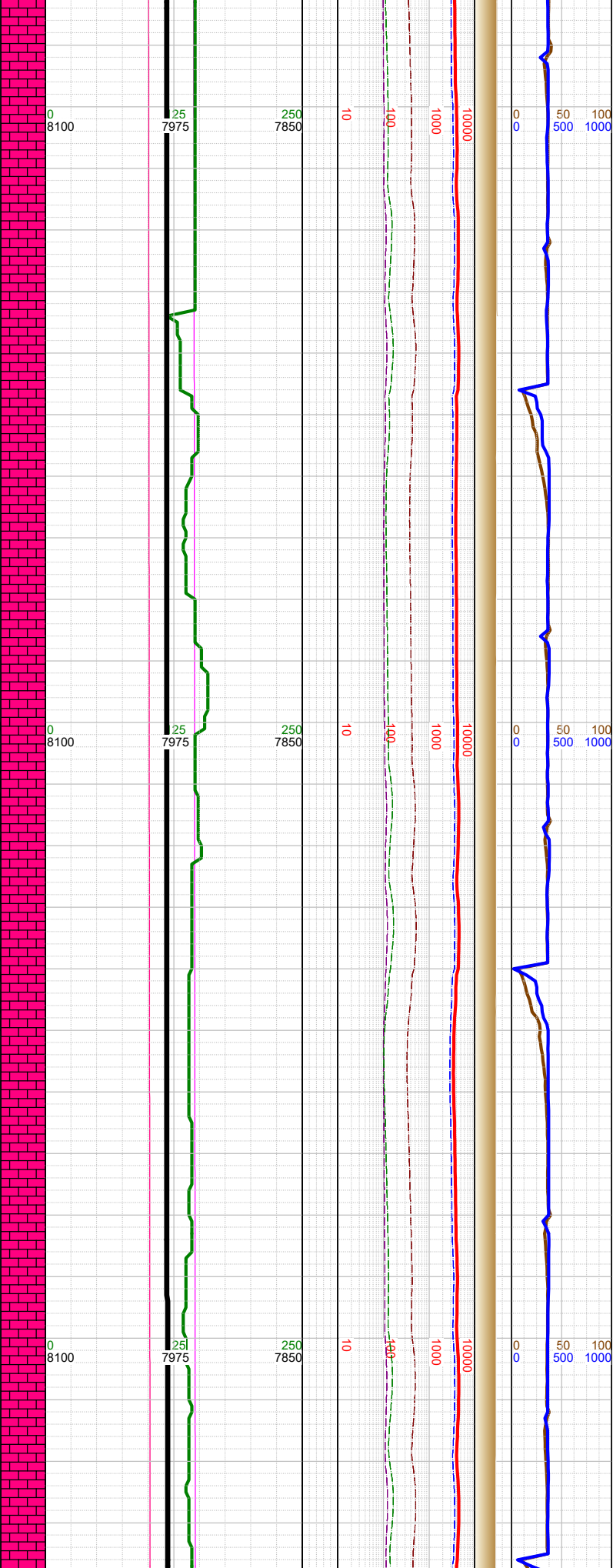








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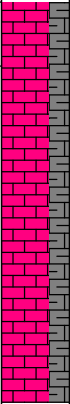


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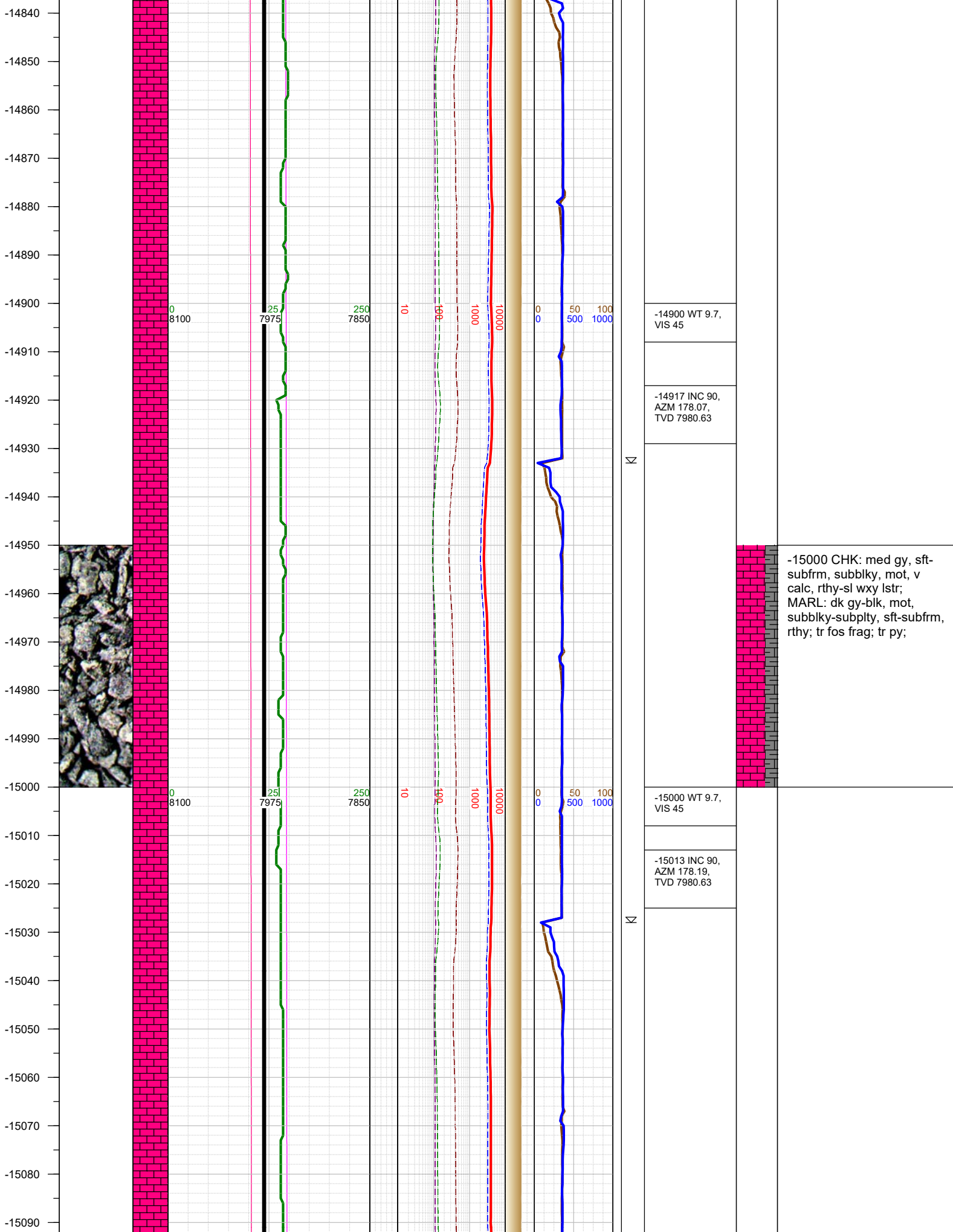
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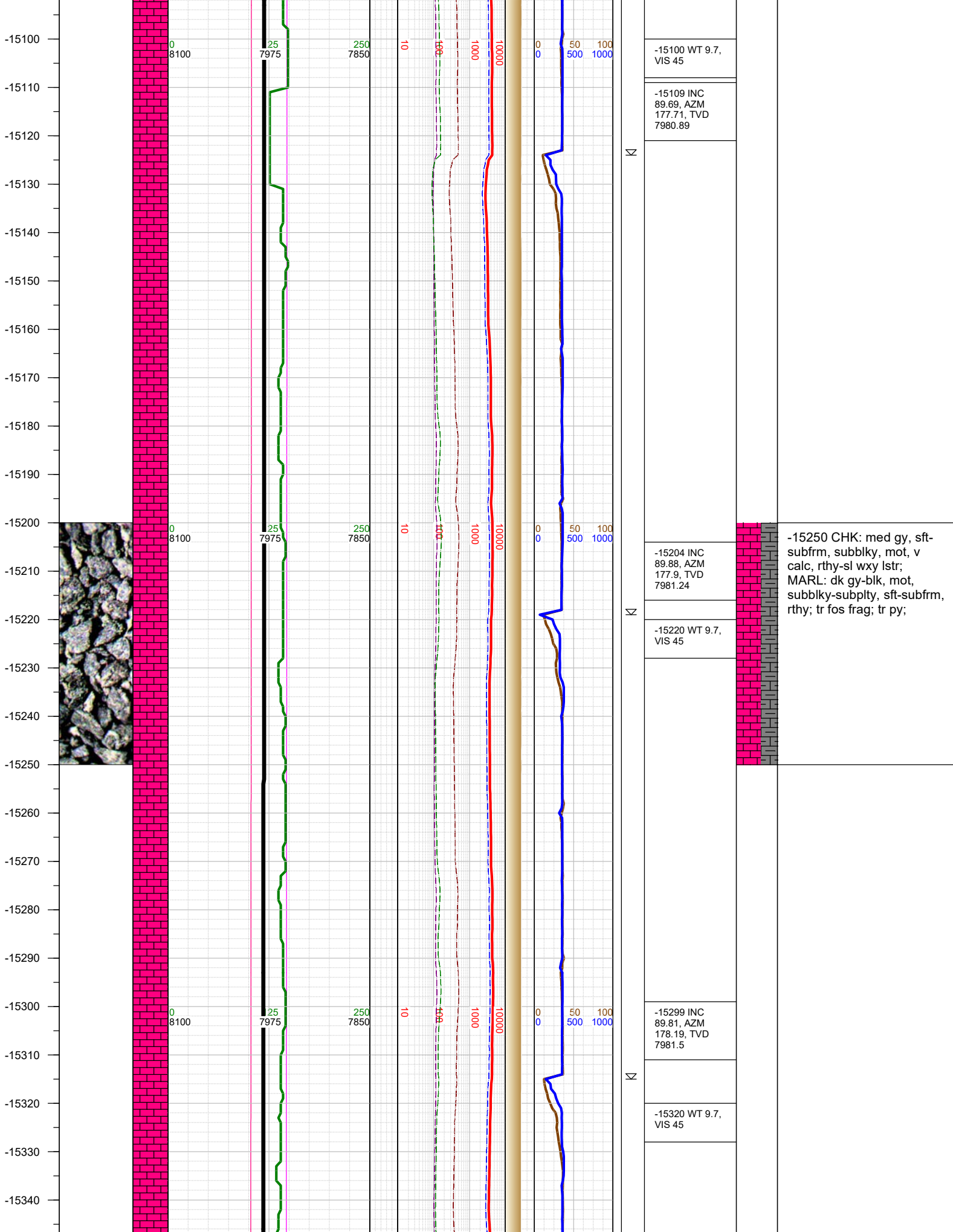
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	-14600 WT 9.7, VIS 45
	-14631 INC 89.81, AZM 178.9, TVD 7982.17
	-14700 WT 9.7, VIS 45
	-14800 WT 9.7, VIS 45
	-14822 INC 90.74, AZM 178.67, TVD 7981.24



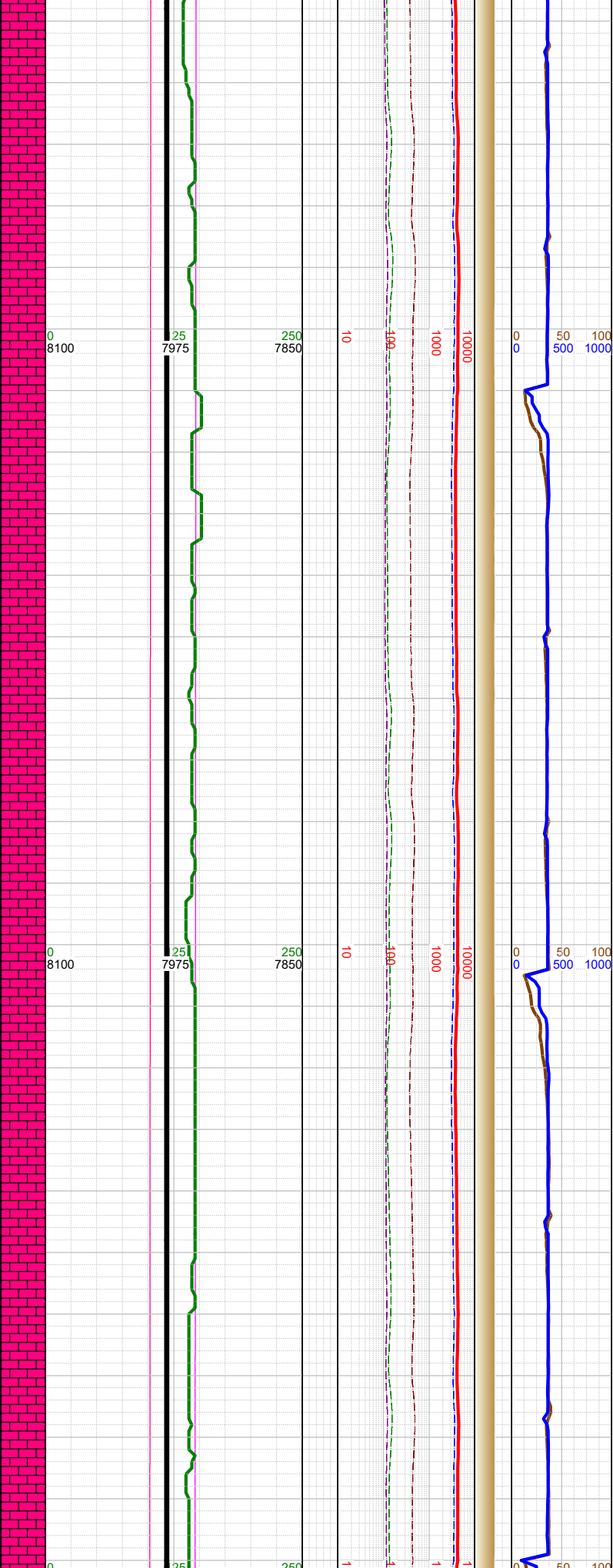
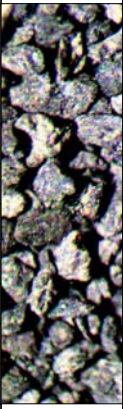
-14750 CHK: med gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr fos frag; tr py;





-15250 CHK: med gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; tr fos frag; tr py;

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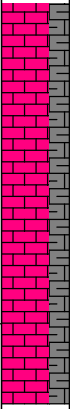
-15394 INC
89.88, AZM
178.08, TVD
7981.76

-15410 WT 9.7,
VIS 45

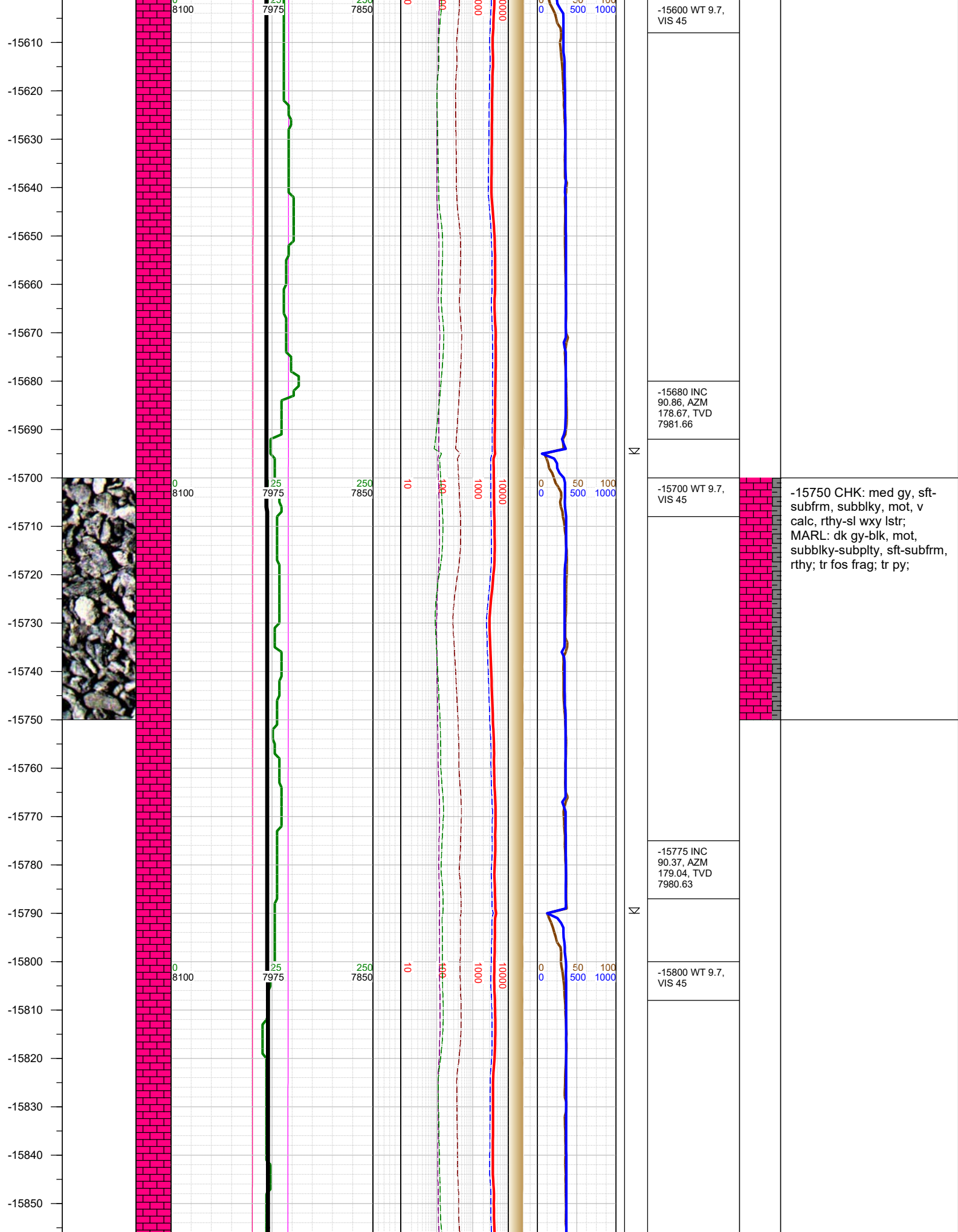
-15490 INC
89.69, AZM
178.17, TVD
7982.12

-15510 WT 9.7,
VIS 45

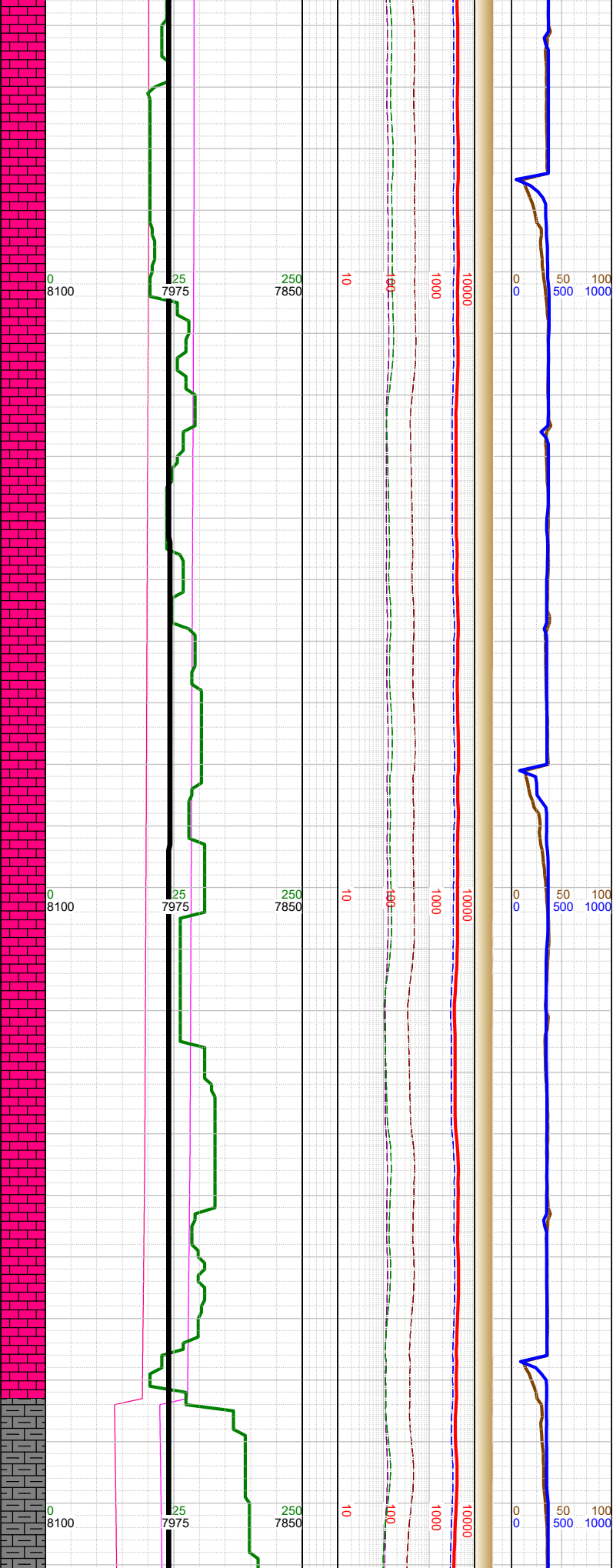
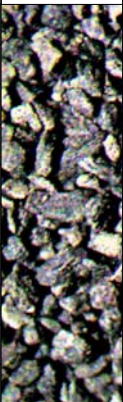
-15585 INC 90,
AZM 178.5,
TVD 7982.37



-15500 CHK: med gy, sft-
subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subplty, sft-subfrm,
rthy; tr fos frag; tr py;



-15860
-15870
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-15990
-16000
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-16090
-16100
-16110



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-15869 INC
90.68, AZM
179.36, TVD
7979.77

-15900 WT 9.9,
VIS 46

-15964 INC
89.94, AZM
179.85, TVD
7979.26

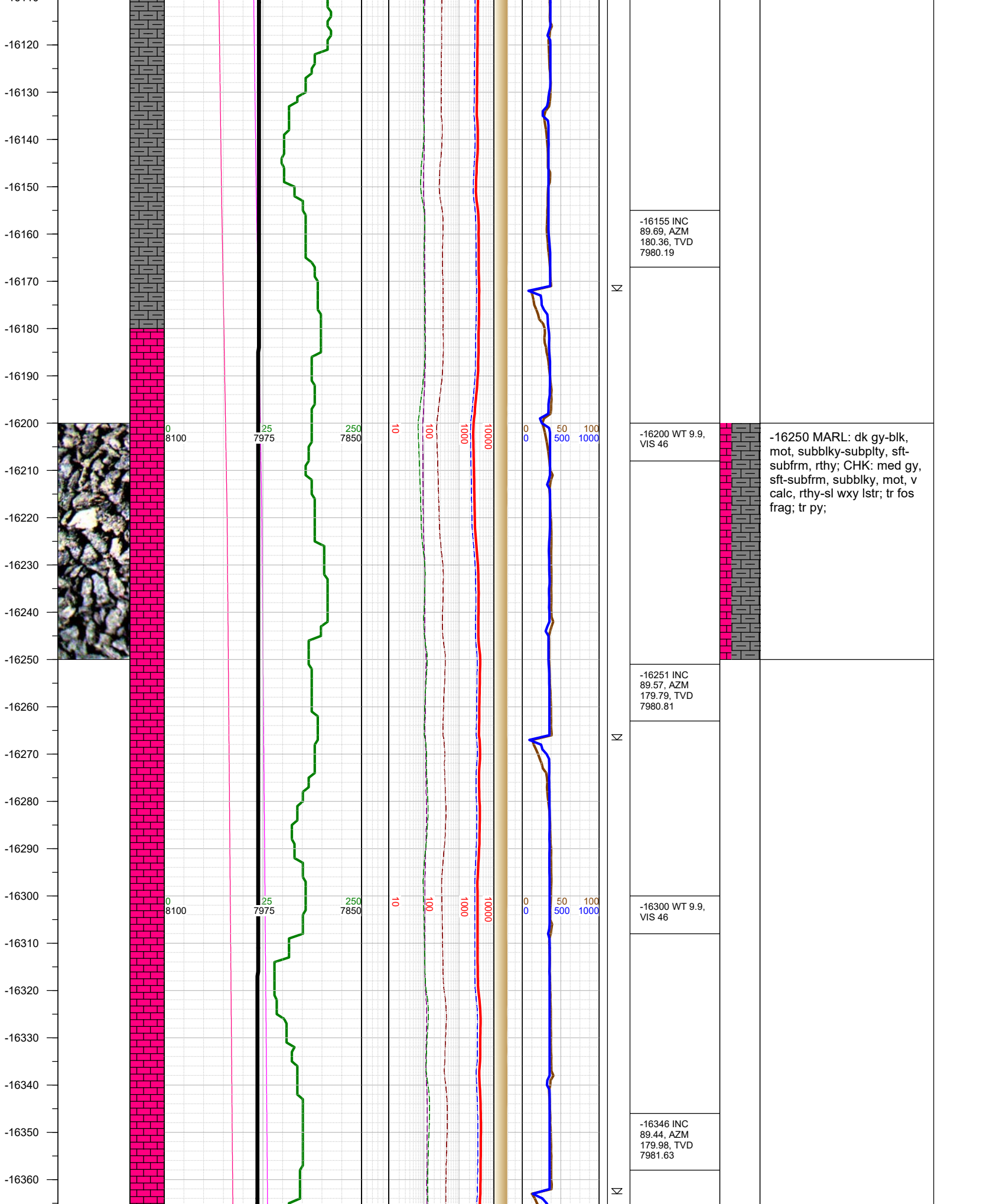
-16000 WT 9.9,
VIS 46

-16060 INC
89.63, AZM
180.66, TVD
7979.62

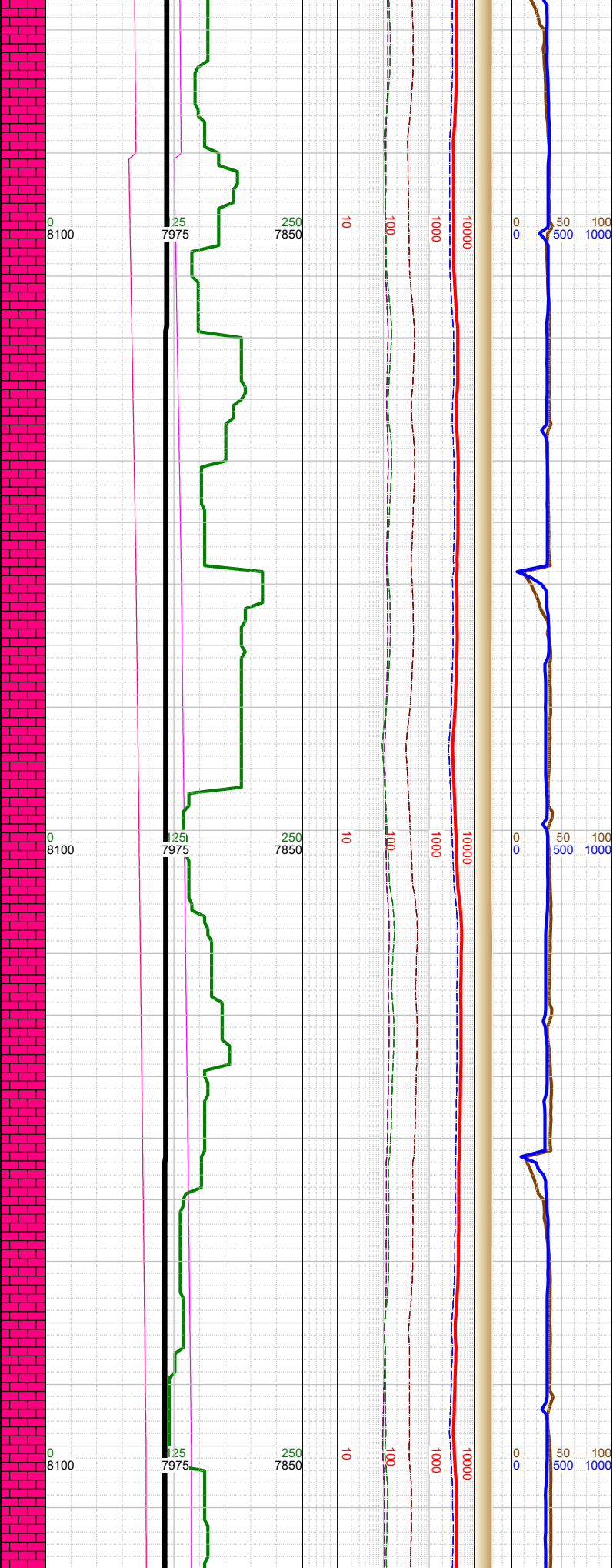
-16083 Fault:
27" down-throw;
went from B2
Chalk to B1
Chalk

-16100 WT 9.9,
VIS 46

-16000 CHK: med gy, sft-
subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subppty, sft-subfrm,
rthy; tr fos frag; tr py;



-16370
-16380
-16390
-16400
-16410
-16420
-16430
-16440
-16450
-16460
-16470
-16480
-16490
-16500
-16510
-16520
-16530
-16540
-16550
-16560
-16570
-16580
-16590
-16600
-16610
-16620



-16390 Fault: 7'
down-throw;
stayed in B2
Chalk

-16410 WT 9.9,
VIS 46

-16442 INC
89.38, AZM
180.18, TVD
7982.61



-16500 CHK: med gy, sft-
subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subply, sft-subfrm,
rthy; tr fos frag; tr py;



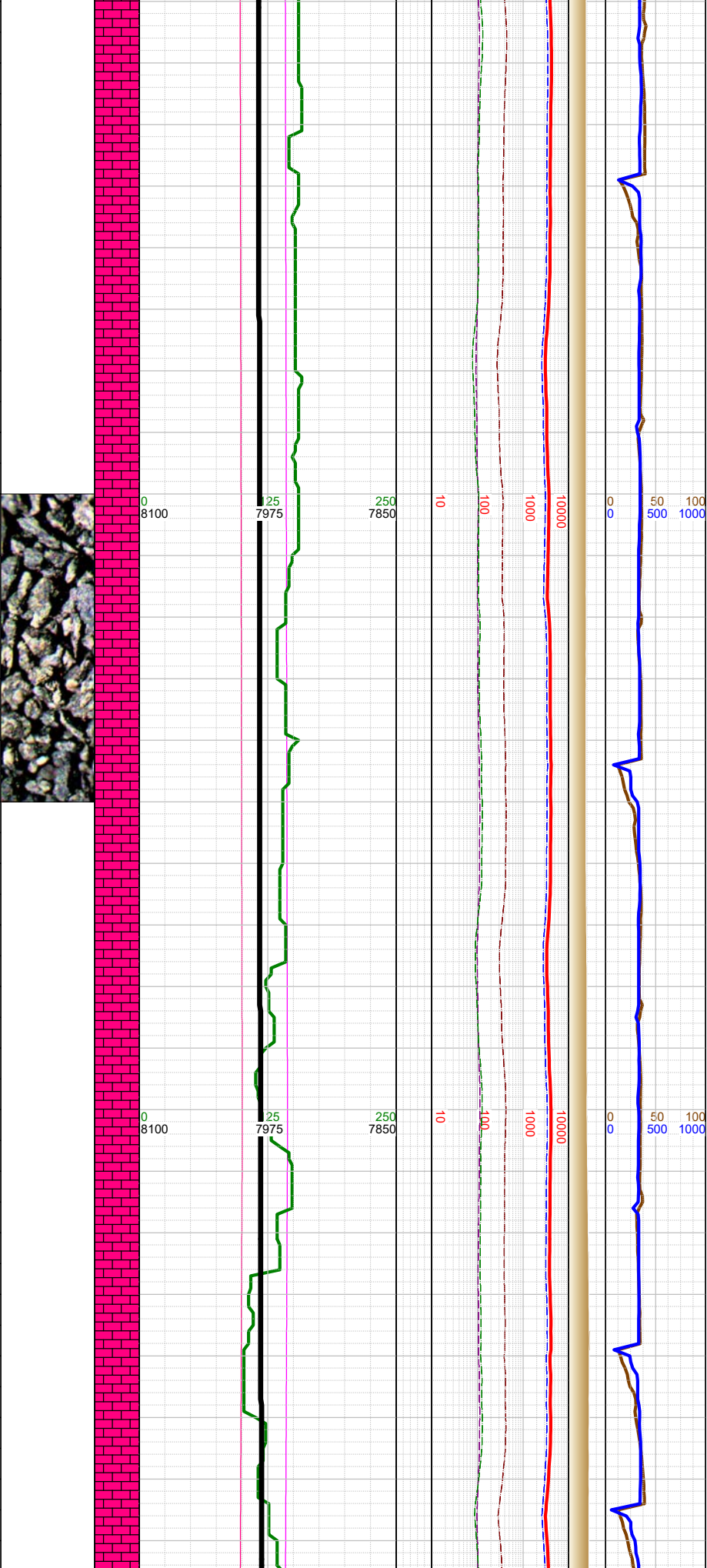
-16500 WT 9.9,
VIS 46

-16537 INC
89.75, AZM
180.14, TVD
7983.33



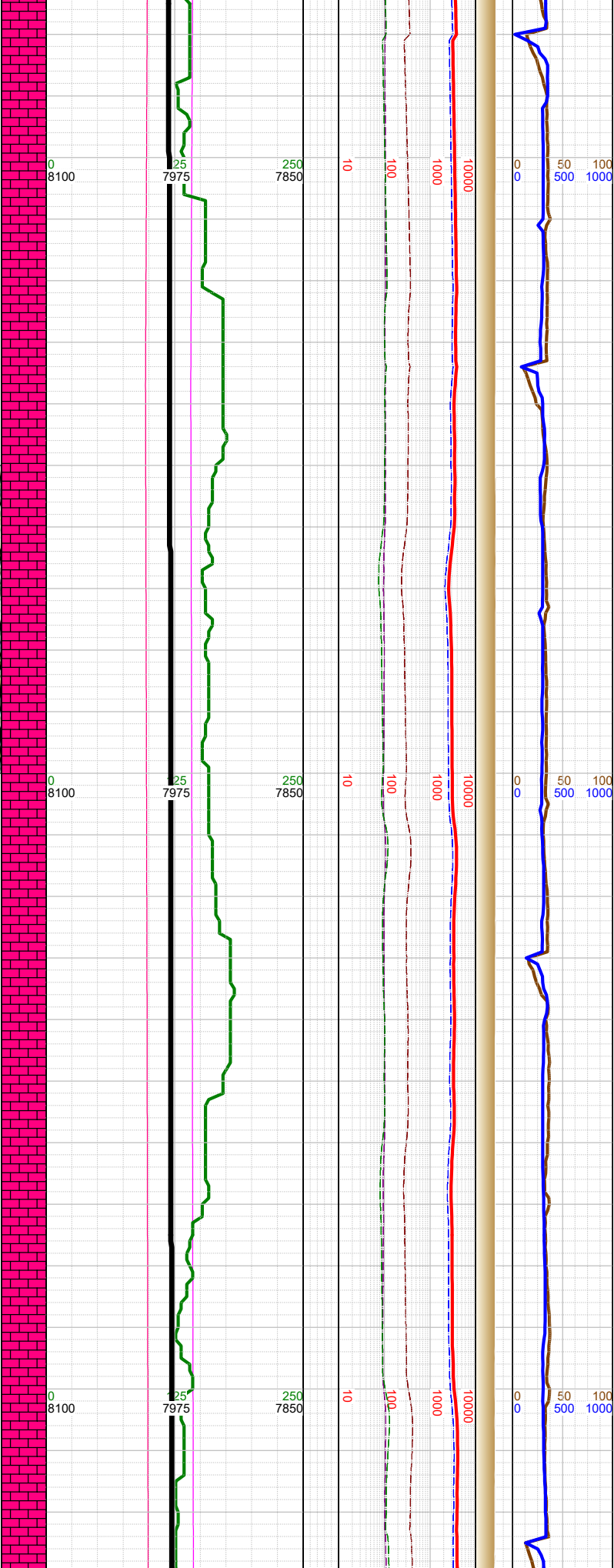
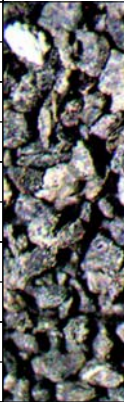
-16600 WT 9.9,
VIS 43

-16620
-16630
-16640
-16650
-16660
-16670
-16680
-16690
-16700
-16710
-16720
-16730
-16740
-16750
-16760
-16770
-16780
-16790
-16800
-16810
-16820
-16830
-16840
-16850
-16860
-16870



N	-16632 INC 90, AZM 180.45, TVD 7983.53		
N	-16700 WT 9.9, VIS 43		-16750 CHK: med gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; tr fos frag; tr forams; tr py;
	-16727 INC 90.49, AZM 181.66, TVD 7983.13		
N	-16800 WT 9.9, VIS 43		
	-16823 INC 91.05, AZM 180.29, TVD 7981.83		

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-16980
-16990
-17000
-17010
-17020
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-17060
-17070
-17080
-17090
-17100
-17110
-17120



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-16900 WT 9.9,
VIS 43

-16918 INC
91.17, AZM
180.16, TVD
7979.99

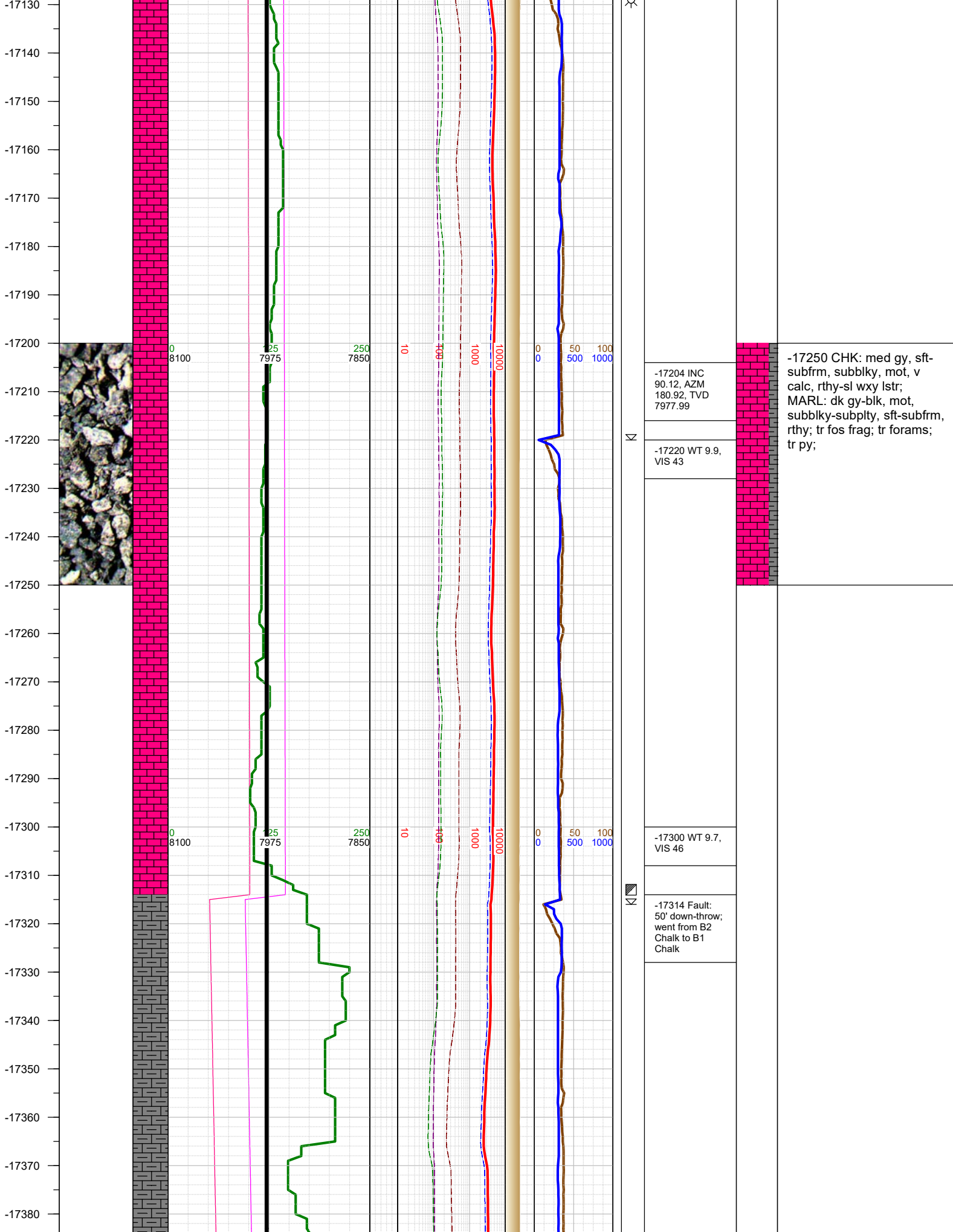
-17000 WT 9.9,
VIS 43

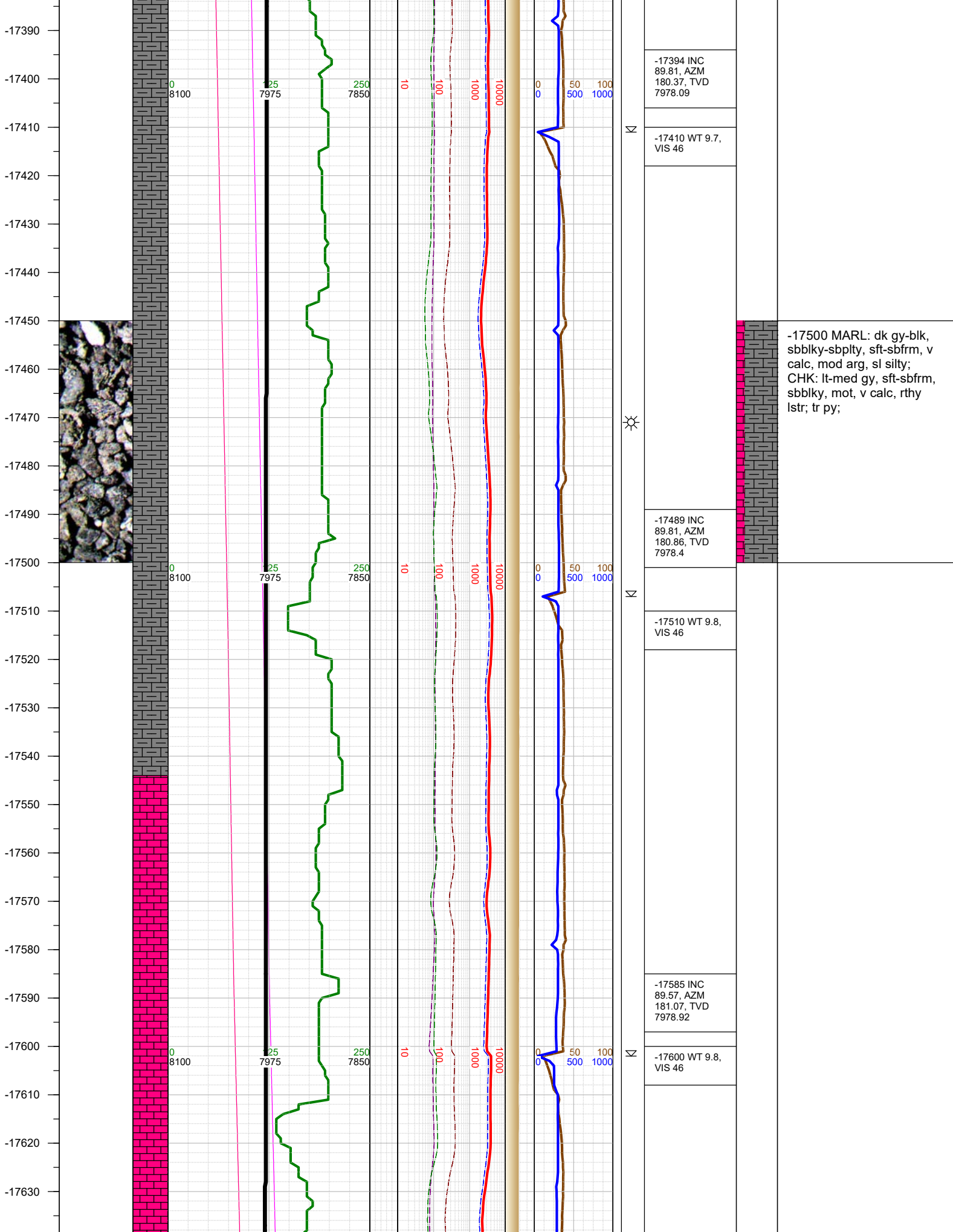
-17013 INC
90.43, AZM
180.49, TVD
7978.66

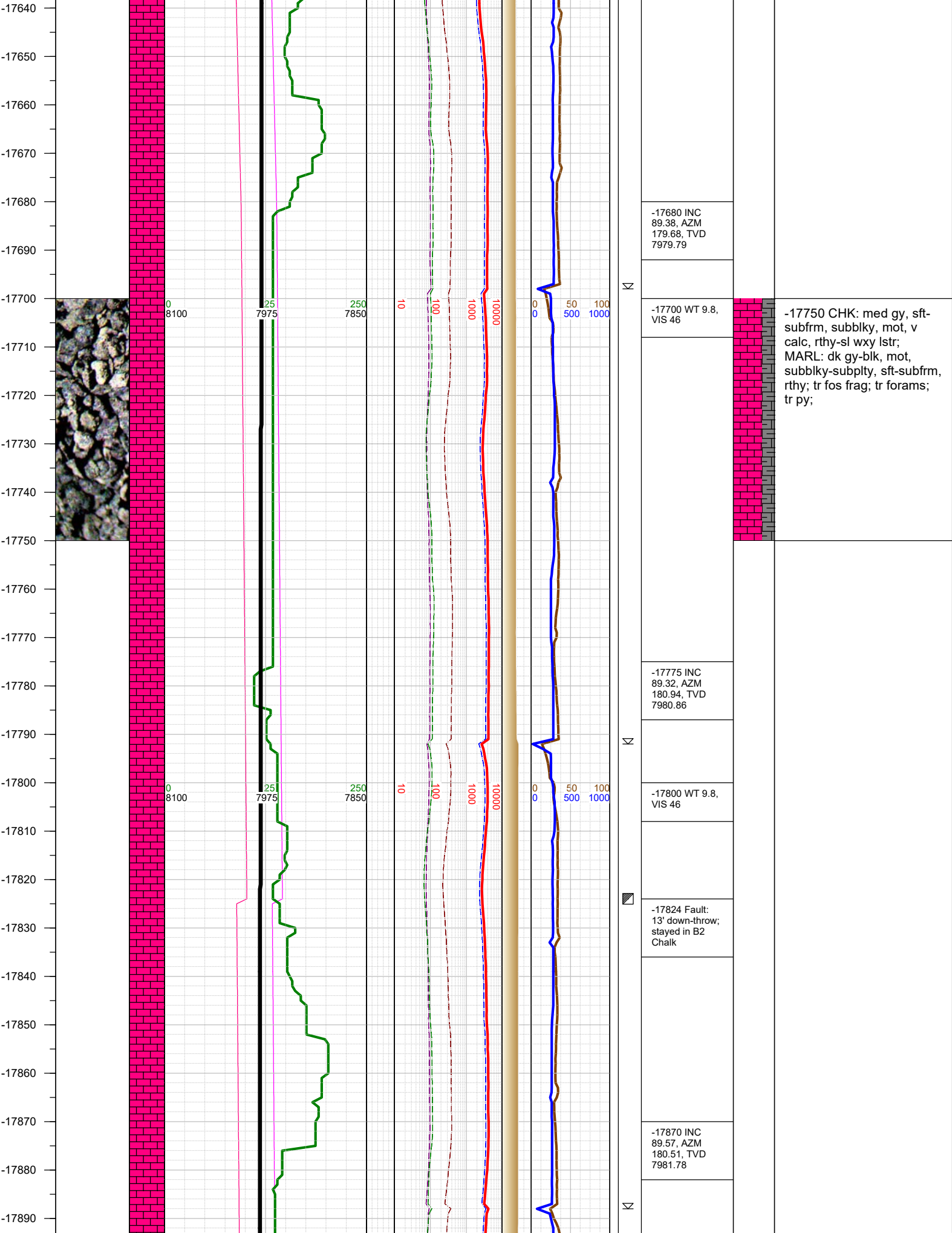
-17100 WT 9.9,
VIS 43

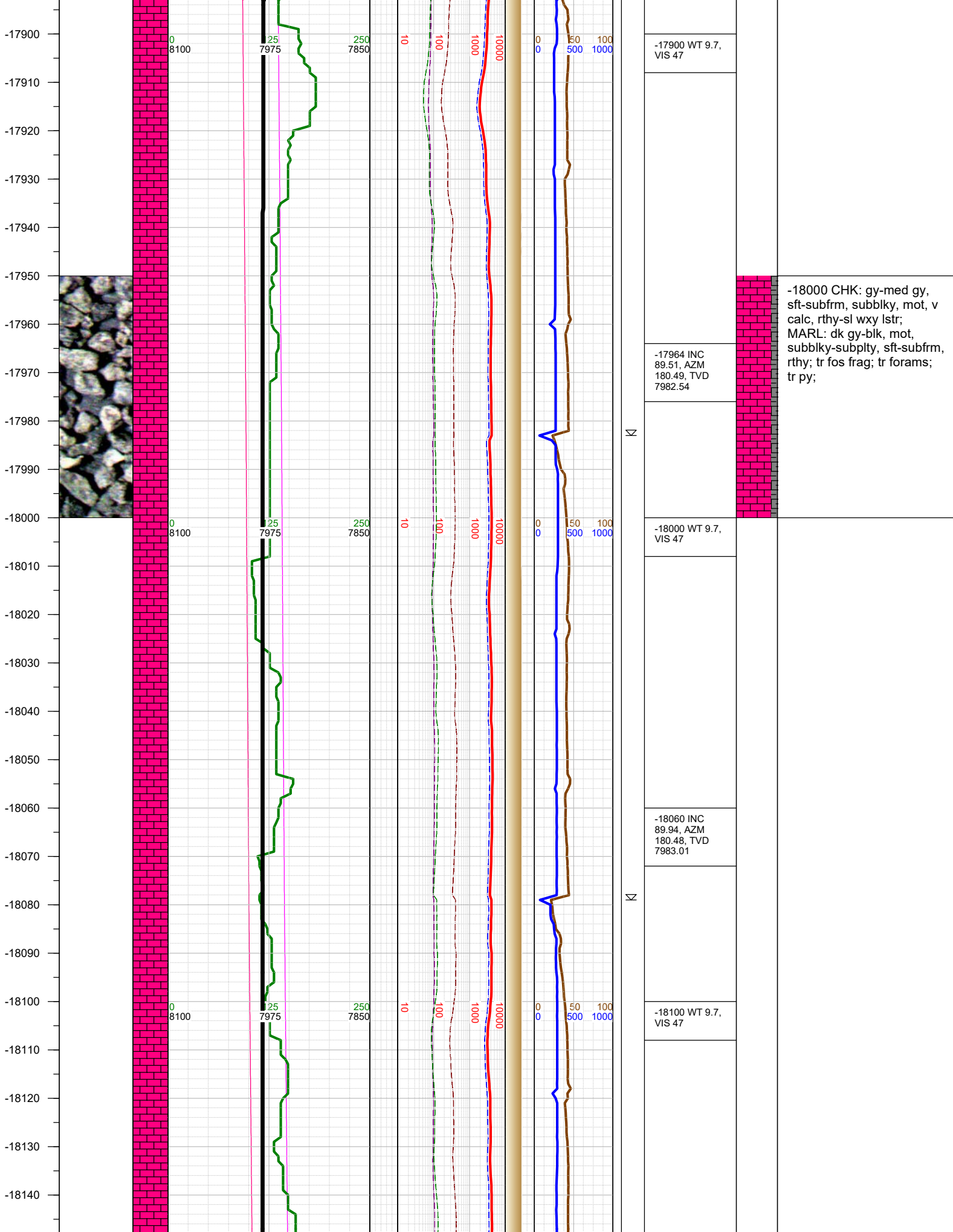
-17109 INC
90.12, AZM
180.86, TVD
7978.19

-17000 CHK: med gy, sft-
subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subplty, sft-subfrm,
rthy; tr fos frag; tr forams;
tr py;









-17900 WT 9.7,
VIS 47

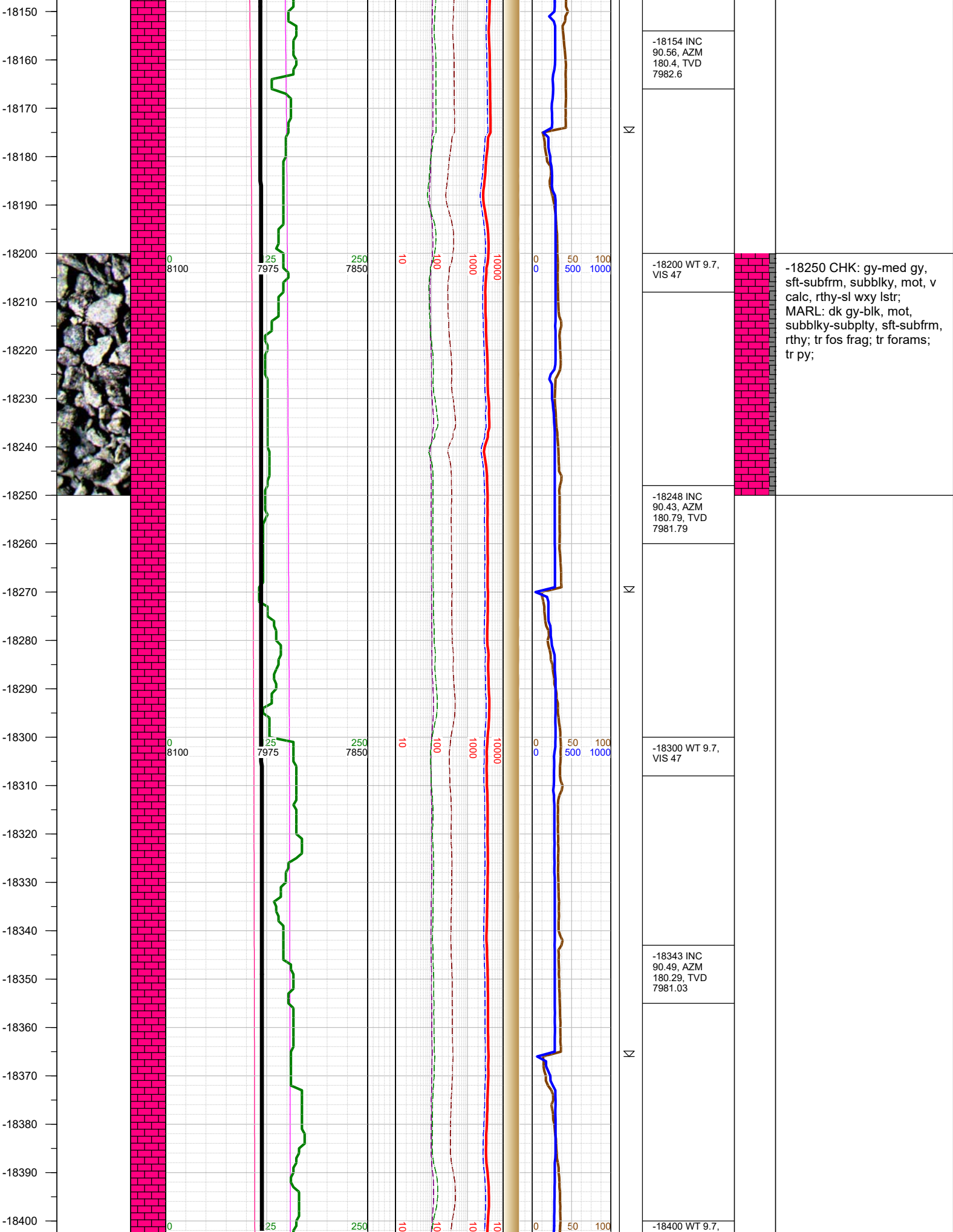
-17964 INC
89.51, AZM
180.49, TVD
7982.54

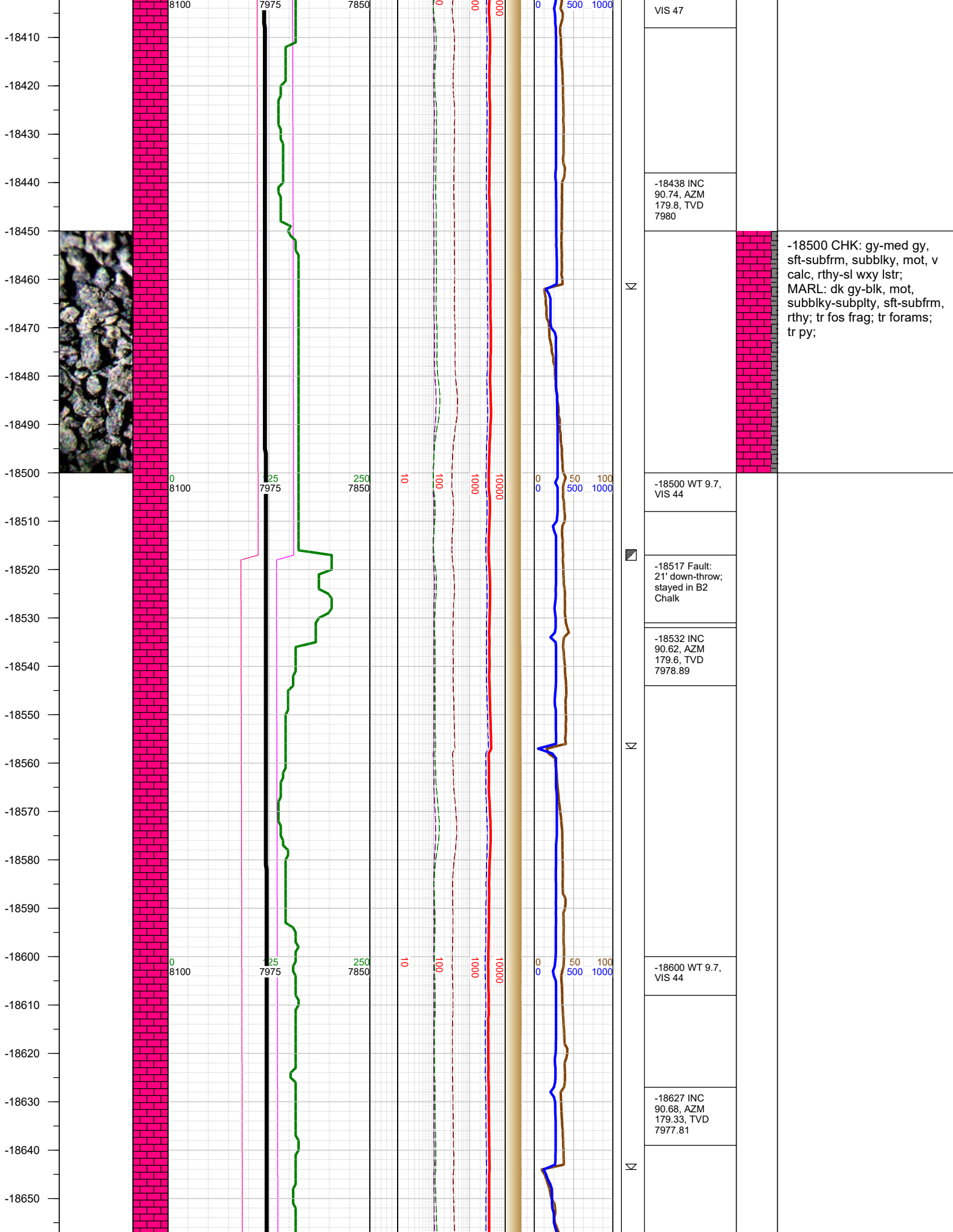
-18000 WT 9.7,
VIS 47

-18060 INC
89.94, AZM
180.48, TVD
7983.01

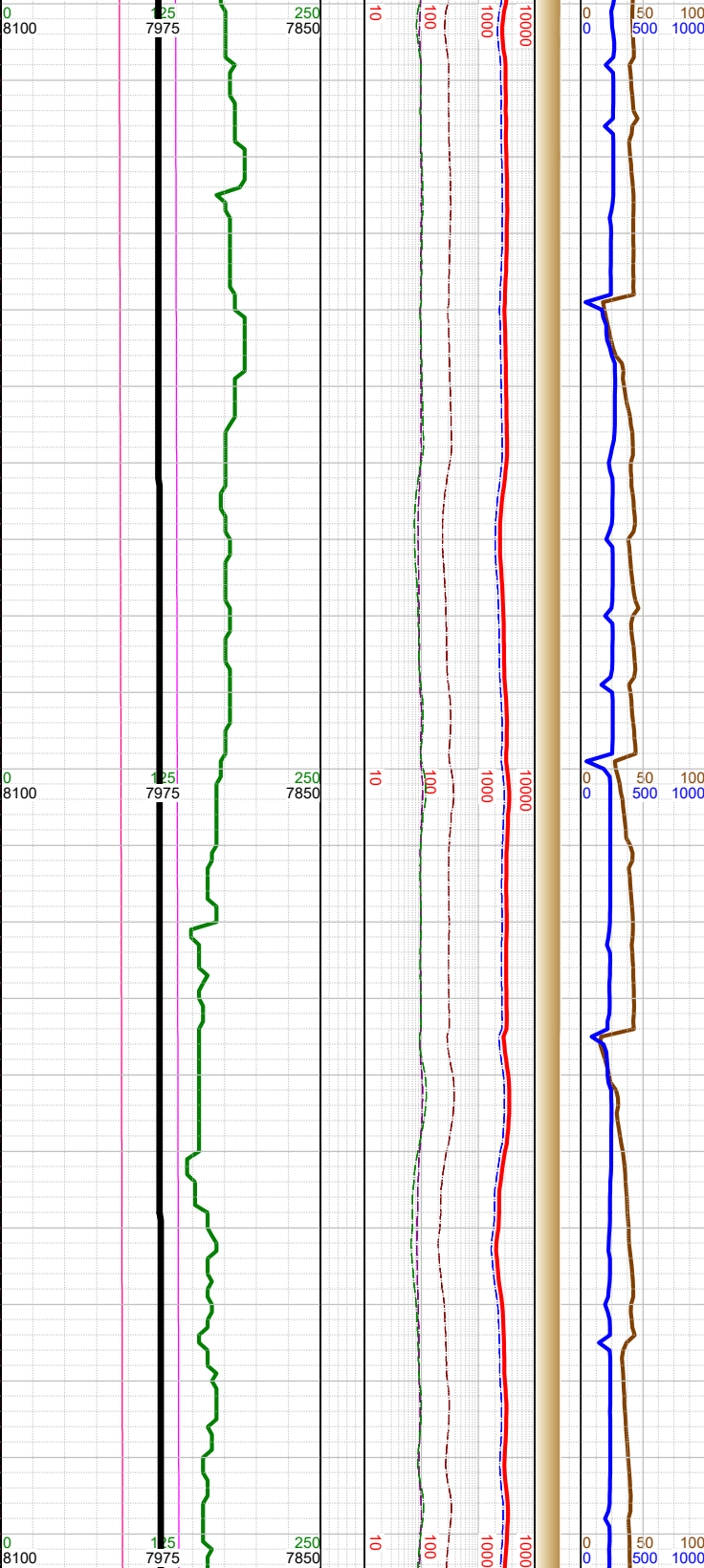
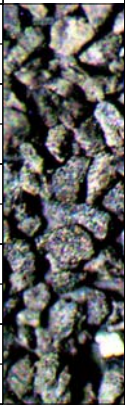
-18100 WT 9.7,
VIS 47

-18000 CHK: gy-med gy,
sft-subfrm, subblky, mot, v
calc, rthy-sl wxy lstr;
MARL: dk gy-blk, mot,
subblky-subply, sft-subfrm,
rthy; tr fos frag; tr forams;
tr py;





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-18800
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-18900
-18910

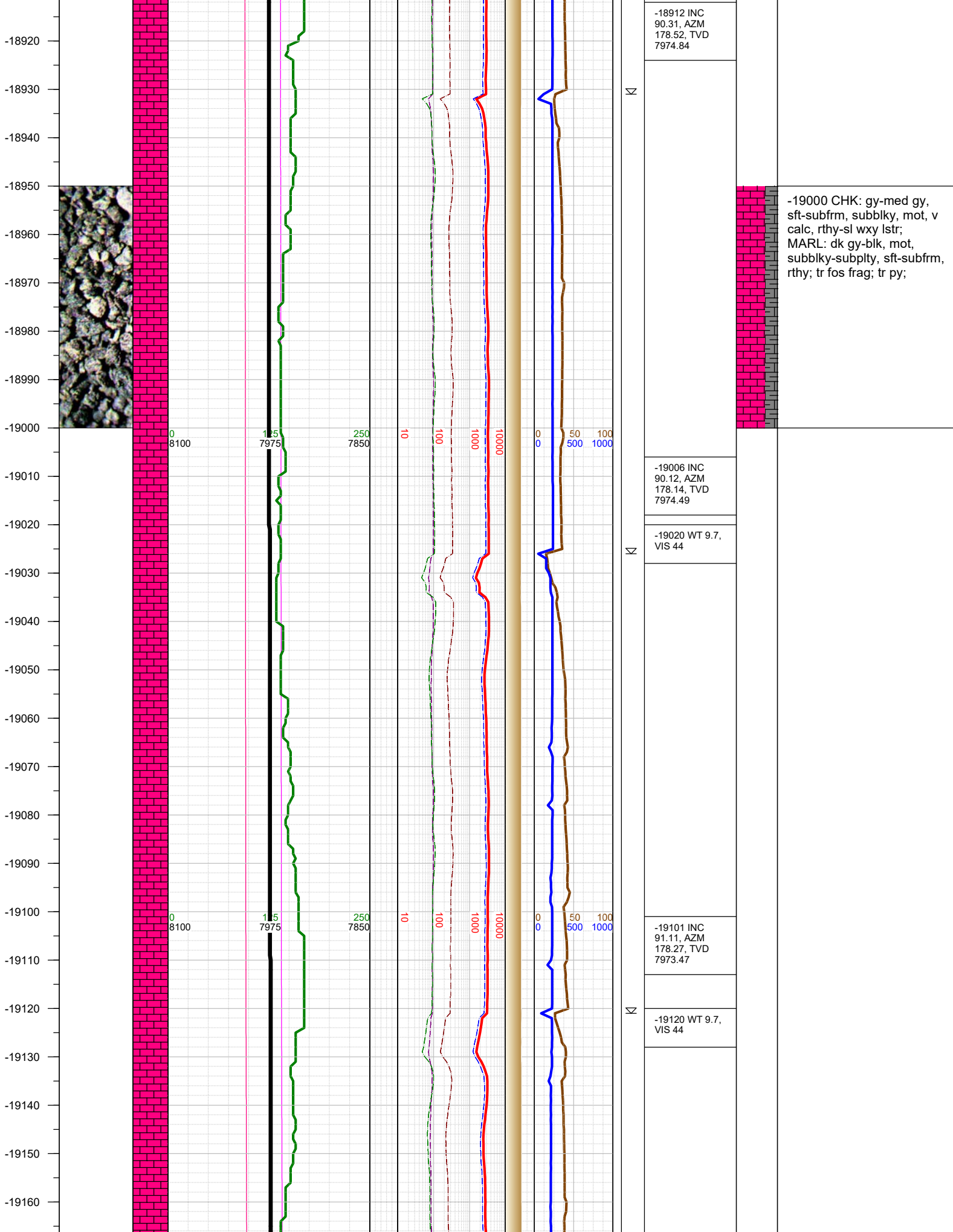


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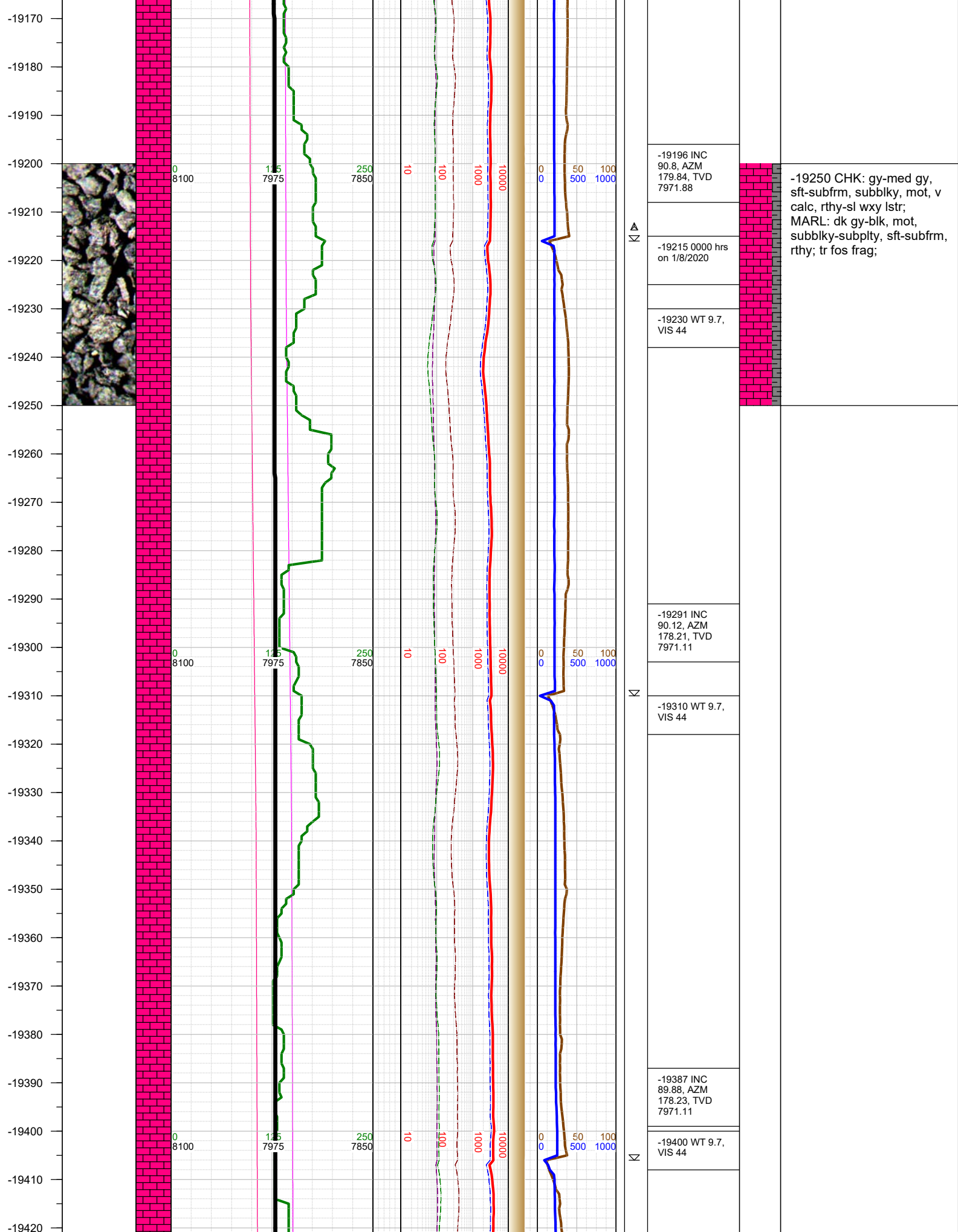
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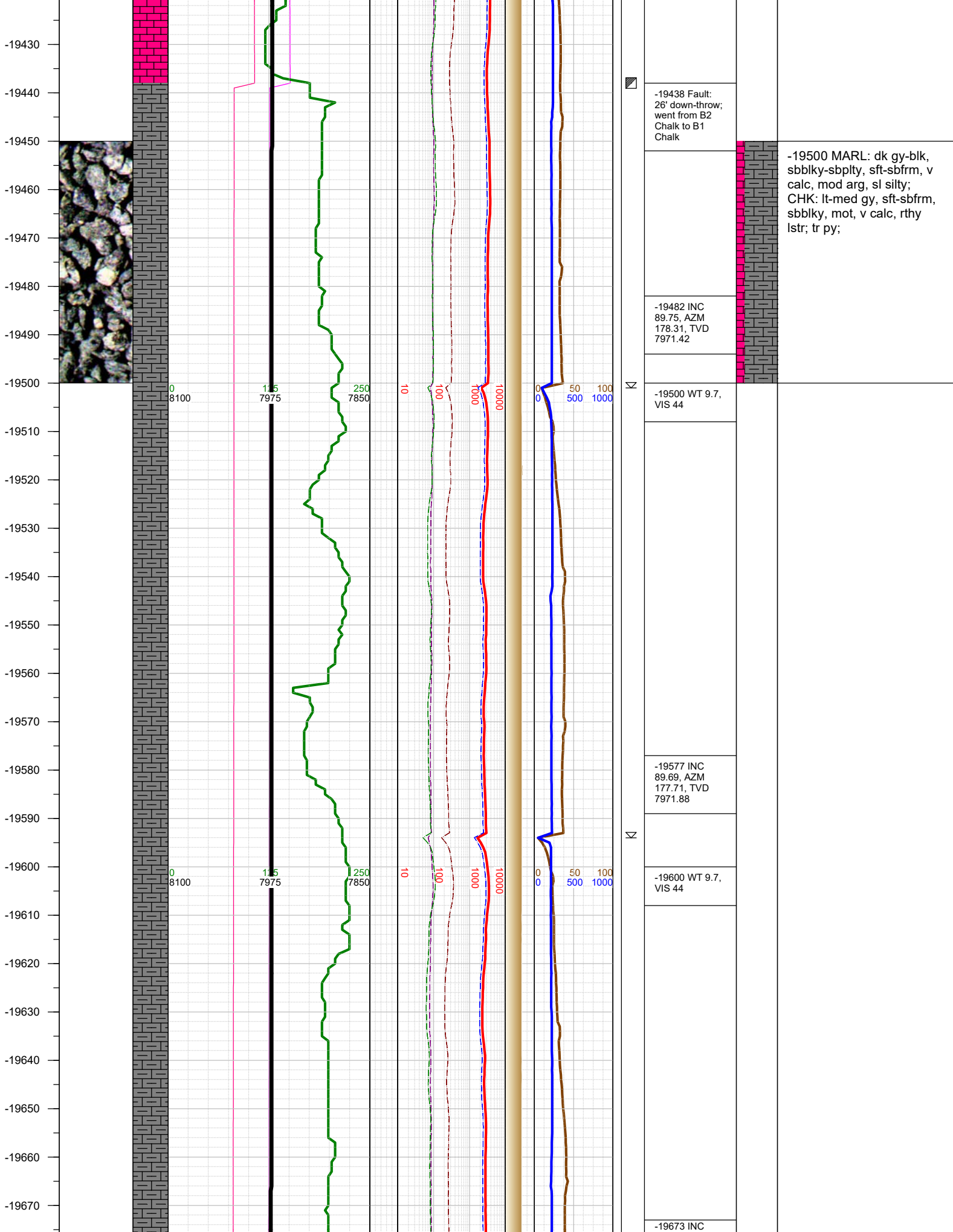
-18700 WT 9.7, VIS 44	
-18722 INC 90.56, AZM 178.68, TVD 7976.79	
-18800 WT 9.7, VIS 44	
-18816 INC 90.74, AZM 178.65, TVD 7975.72	
-18900 WT 9.7, VIS 44	

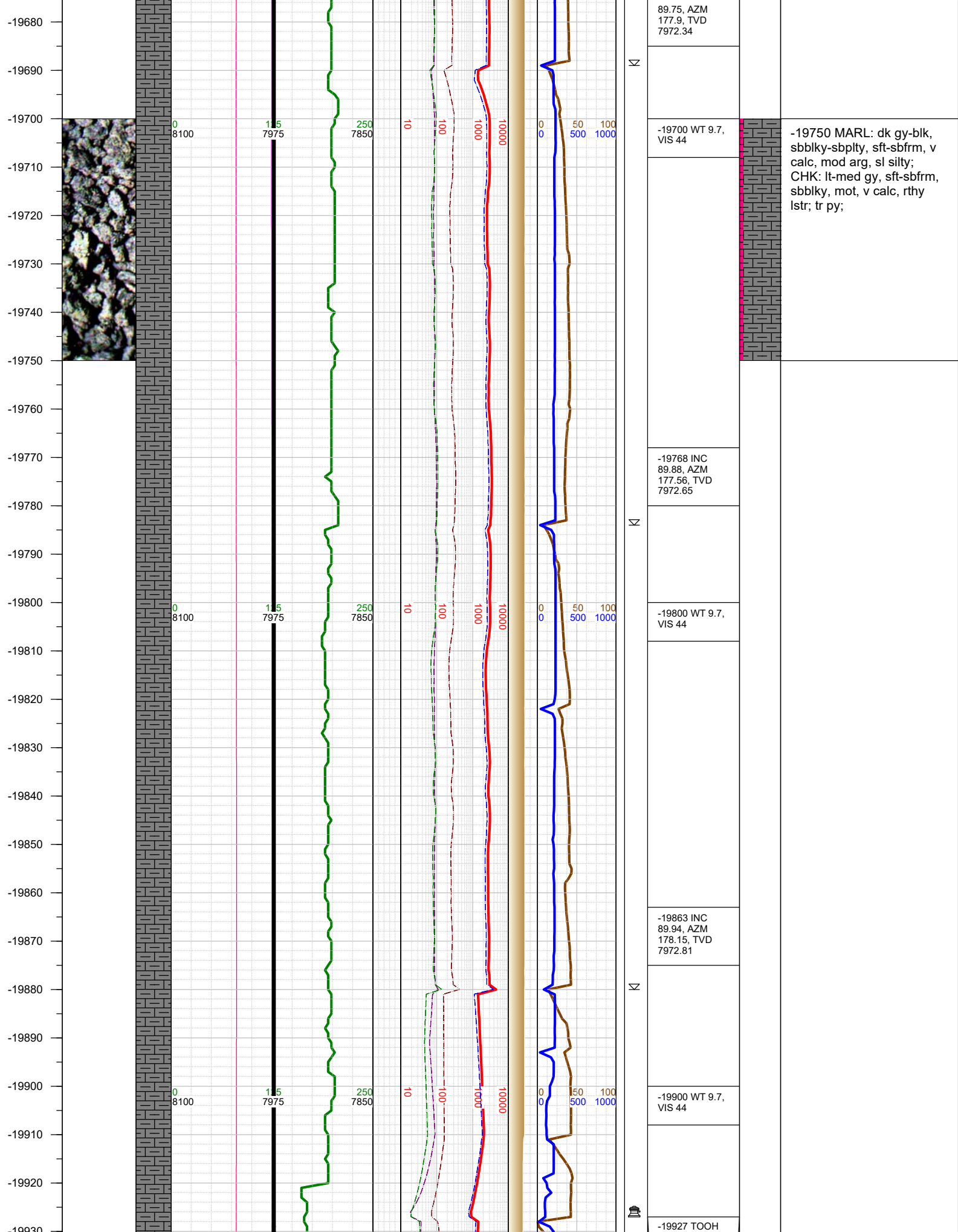
-18750 CHK: med gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; tr fos frag; tr forams;



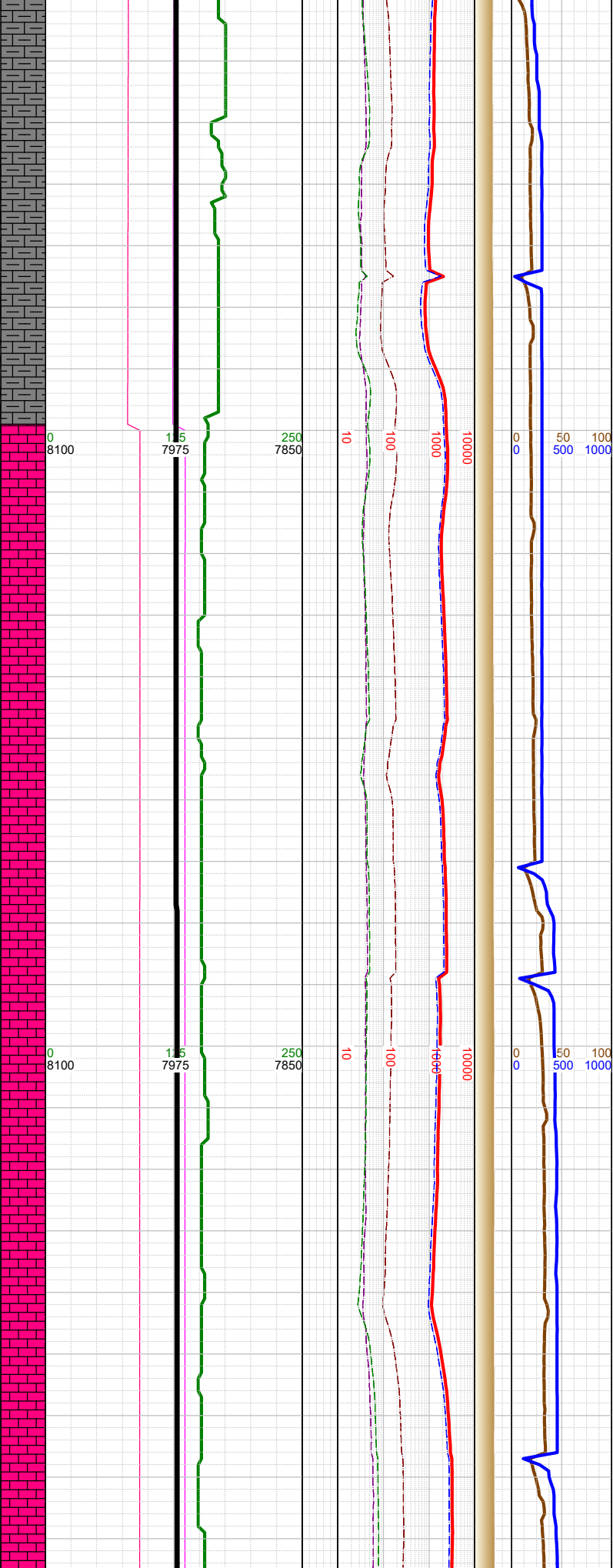
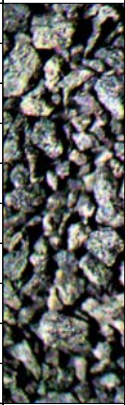
-19000 CHK: gy-med gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; tr fos frag; tr py;







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-20070
-20080
-20090
-20100
-20110
-20120
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-20160
-20170
-20180



for bit at 0450
hrs on 1/8/2020.
Resumed
drilling at 1905
hrs on
1/08/2020; Bit
#3 - Security
GTi55HEO,
7x12, 8.5"

-19927 Gas
buster on

-19957 INC 90,
AZM 176.33,
TVD 7972.86

-19999 Fault:
12' up-throw;
went from B1
Chalk to B2
Chalk

-20020 WT 9.7,
VIS 44

-20052 INC
90.43, AZM
179.07, TVD
7972.5

-20100 WT 9.7,
VIS 44

-20147 INC
90.37, AZM
179.16, TVD
7971.83

⌵

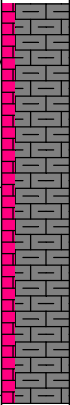
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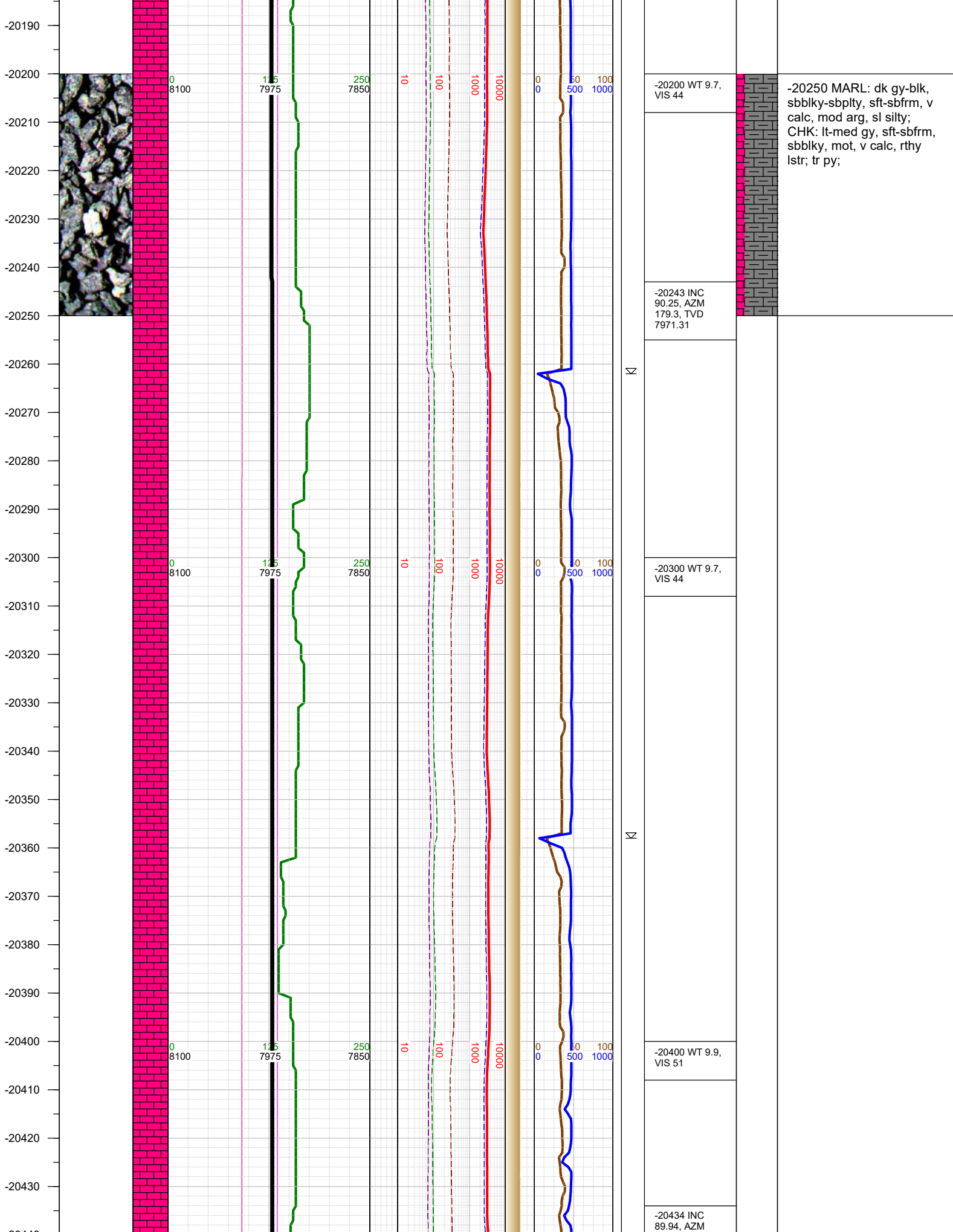
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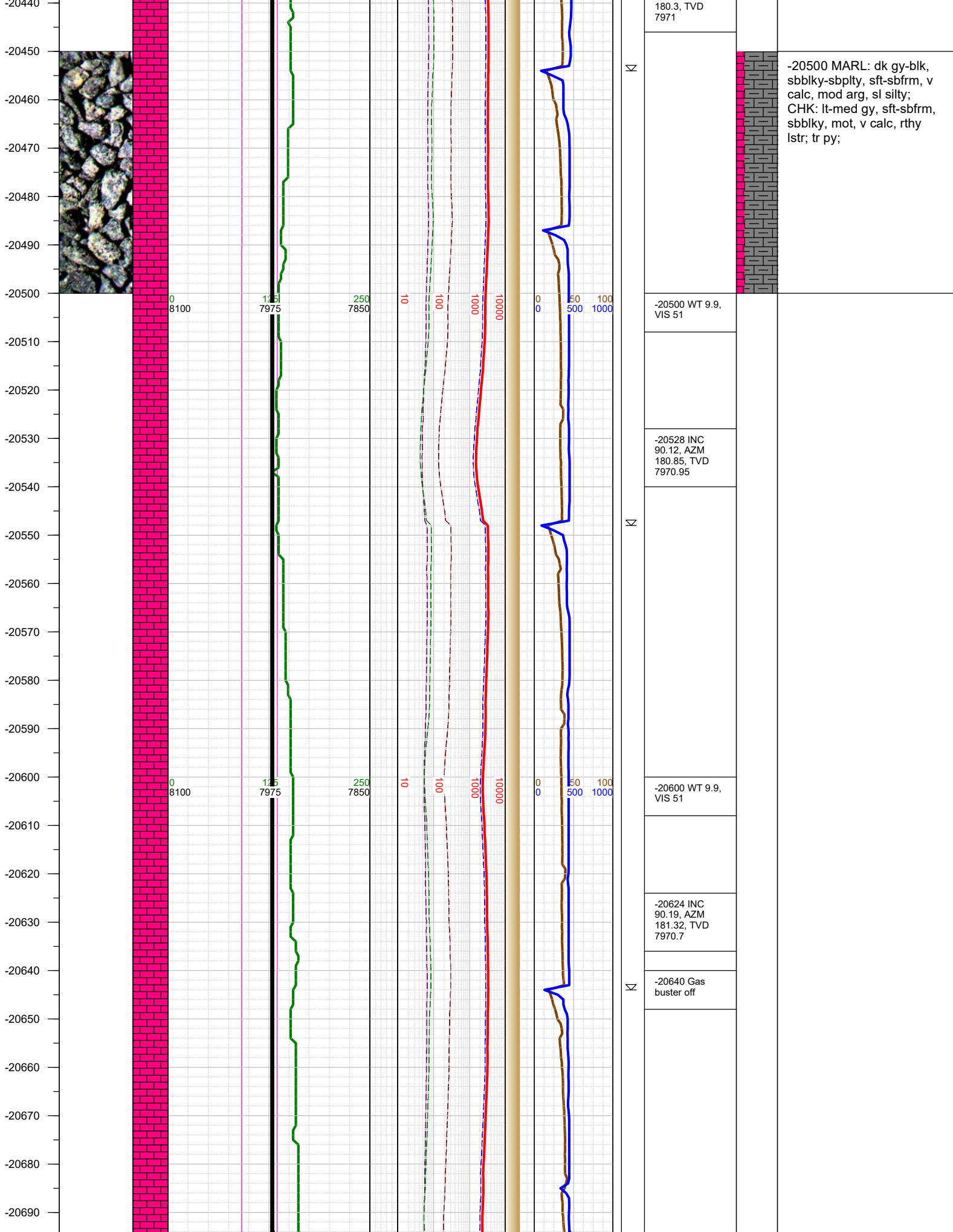
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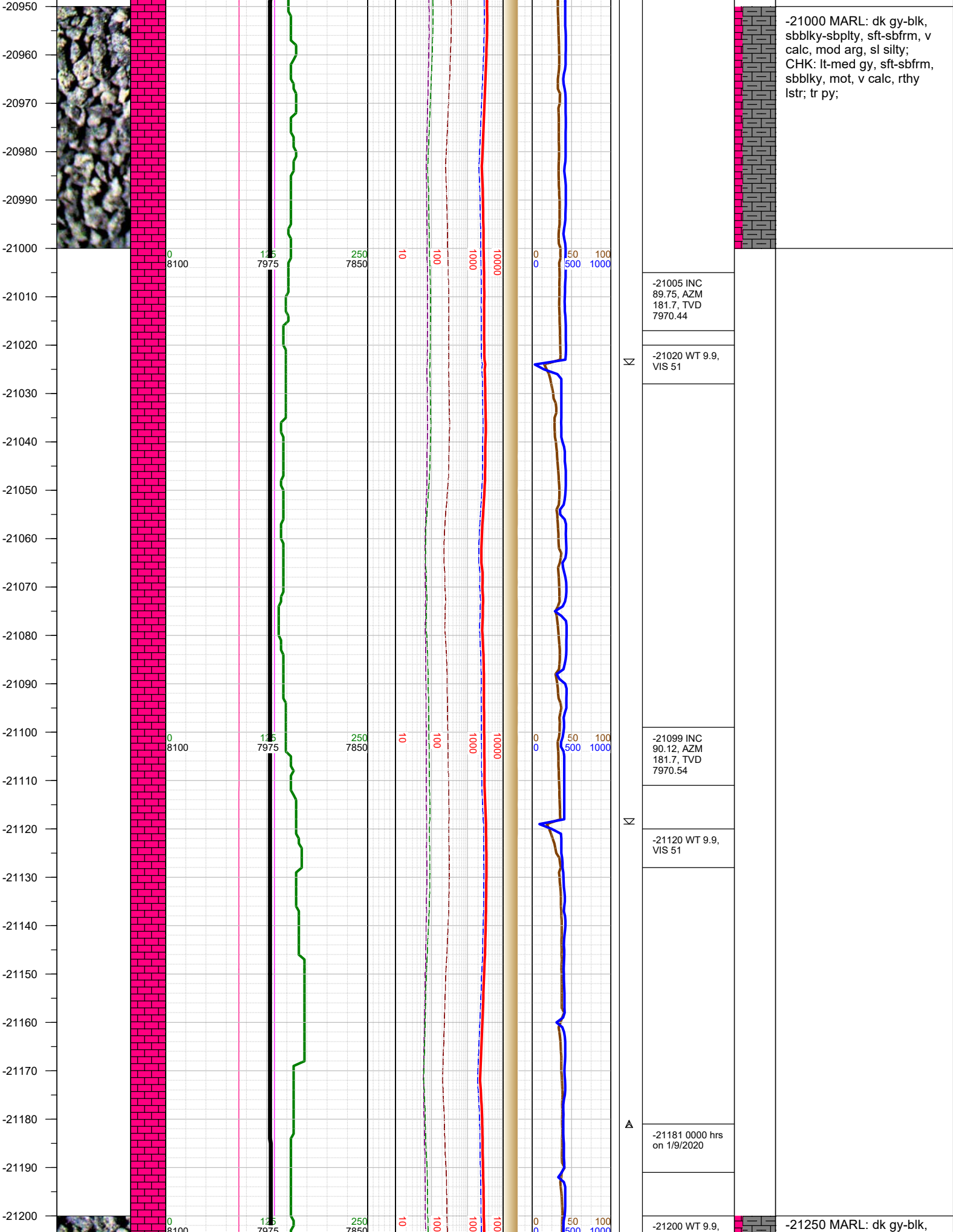
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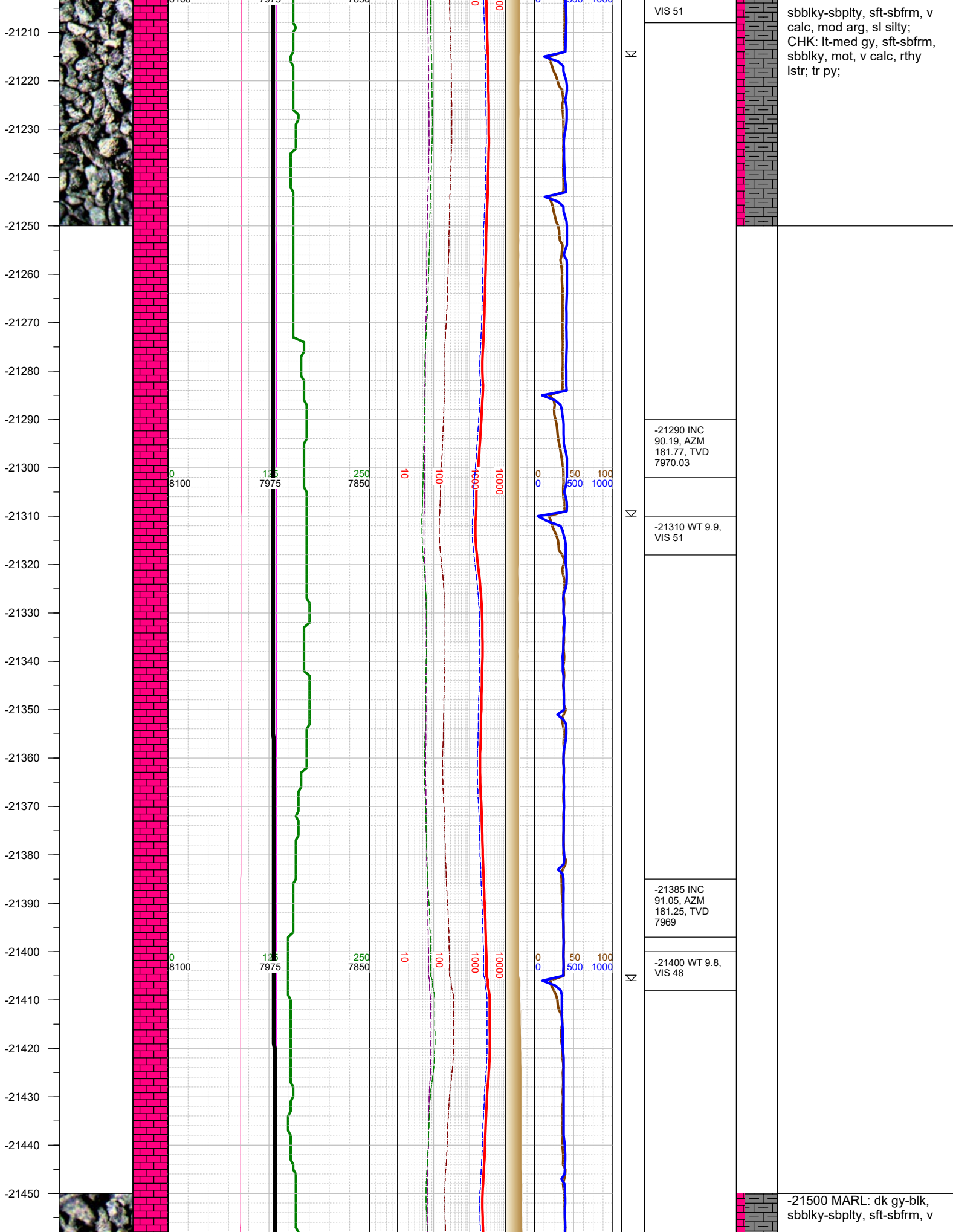


-20000 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm, v
calc, mod arg, sl silty;
CHK: lt-med gy, sft-sbfrm,
sbbly, mot, v calc, rthy
lstr; tr py;

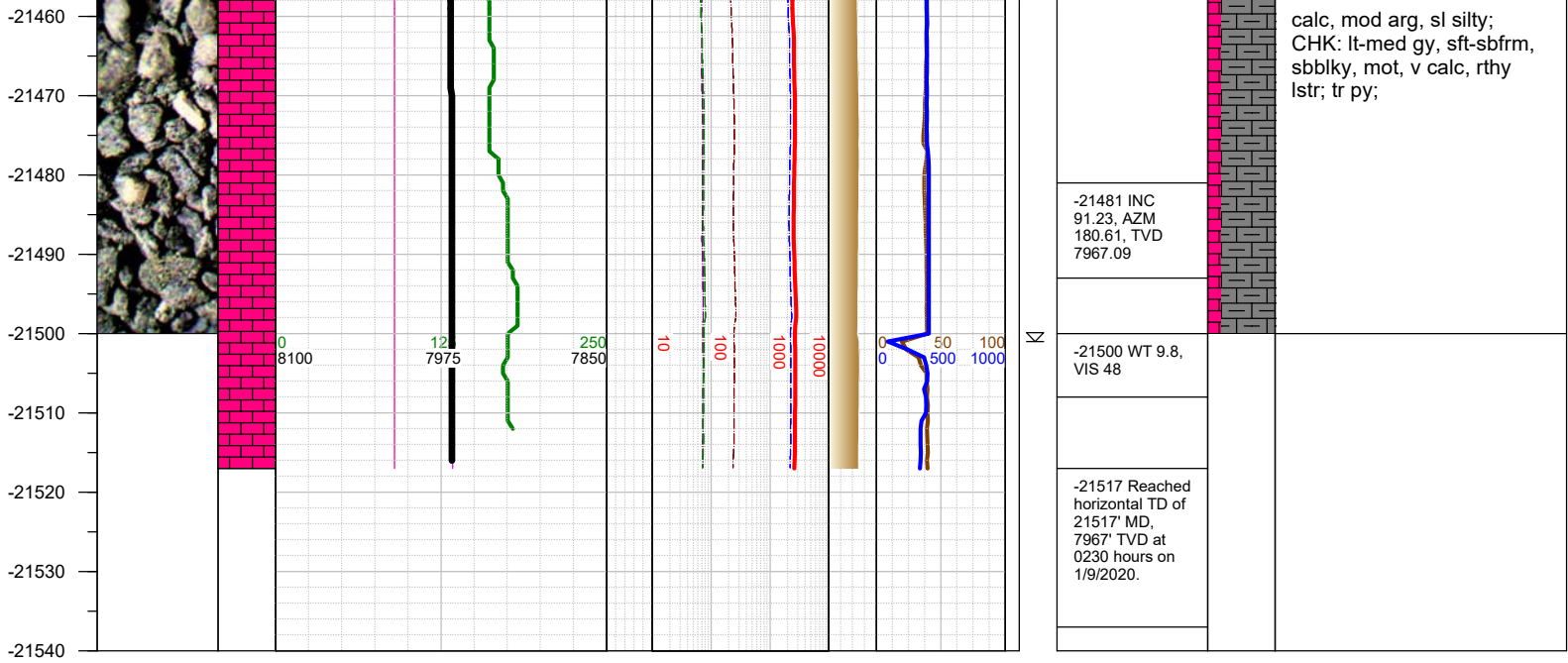








sbblky-sbplty, sft-sbfrm, v
calc, mod arg, sl silty;
CHK: lt-med gy, sft-sbfrm,
sbblky, mot, v calc, rthy
lstr; tr py;



TOTAL DEPTH = 21517'

Thank you for using Earth Science Agency