

OPERATOR: **Extraction Oil & Gas**

WELL NAME: **Duck Club 12W-20-4N**

FIELD NAME: DJ Basin - Wattenberg

DRILLING RIG: Patterson 901

API #: 05-001-10157

LAT/LONG: 39.97922, -104.73094

SURFACE HOLE: NWSW S12-T1S-R66W, 2519' FSL, 691' FWL

BOTTOM HOLE: S10-T1S-R66W, 1598' FNL, 2179' FEL



Earth Science Agency, LLC

COUNTY: Adams

STATE: Colorado

GROUND ELEVATION: 5036'

KELLY BUSHING: 5065'

DRILLING FLUID: OBM

TVD VS. MD: 7416' / 17770'

SPUD DATE: December 17, 2018

TD DATE: December 20, 2018

DEPTHS LOGGED: 6000' - 17770'

DATES LOGGED: December 18, 2018 - December 20, 2018

GEOLOGISTS: Mitch Weller, Blake Eatherton

SCALE: 5" = 100'

#### LEGEND

CHALK

LIMESTONE

SHALY LIMESTONE

MARLSTONE

CALCAREOUS SHALE

DOLOMITE

SHALE

SILTY SHALE

SHALY SILTSTONE

SHALY SANDSTONE

SANDSTONE

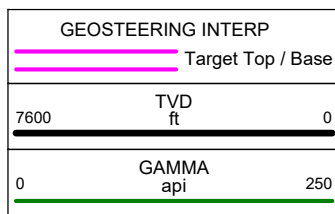
ANHYDRITE

FORMATION  $\approx$  CONNECTION  $\Delta$  MIDNIGHT NEW BIT GAS SHOW FAULT

MEASURED DEPTH (FT)

PHOTOS

MUDLOGGER INTERP



F & B

**GAS**

Total

C1

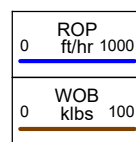
C2

C3

C4

Units - Log Scale

MUD VOL. 800 bbl

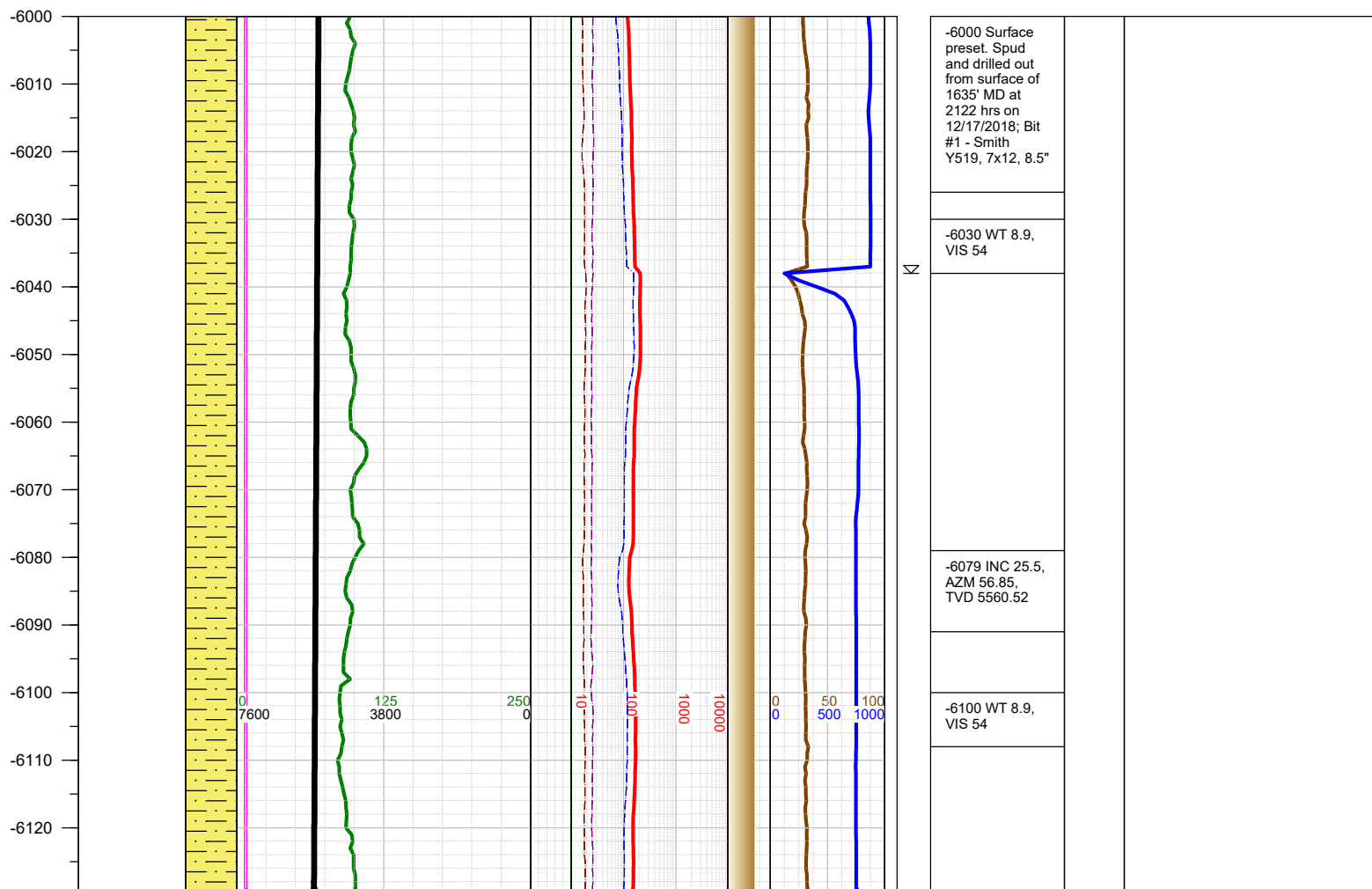


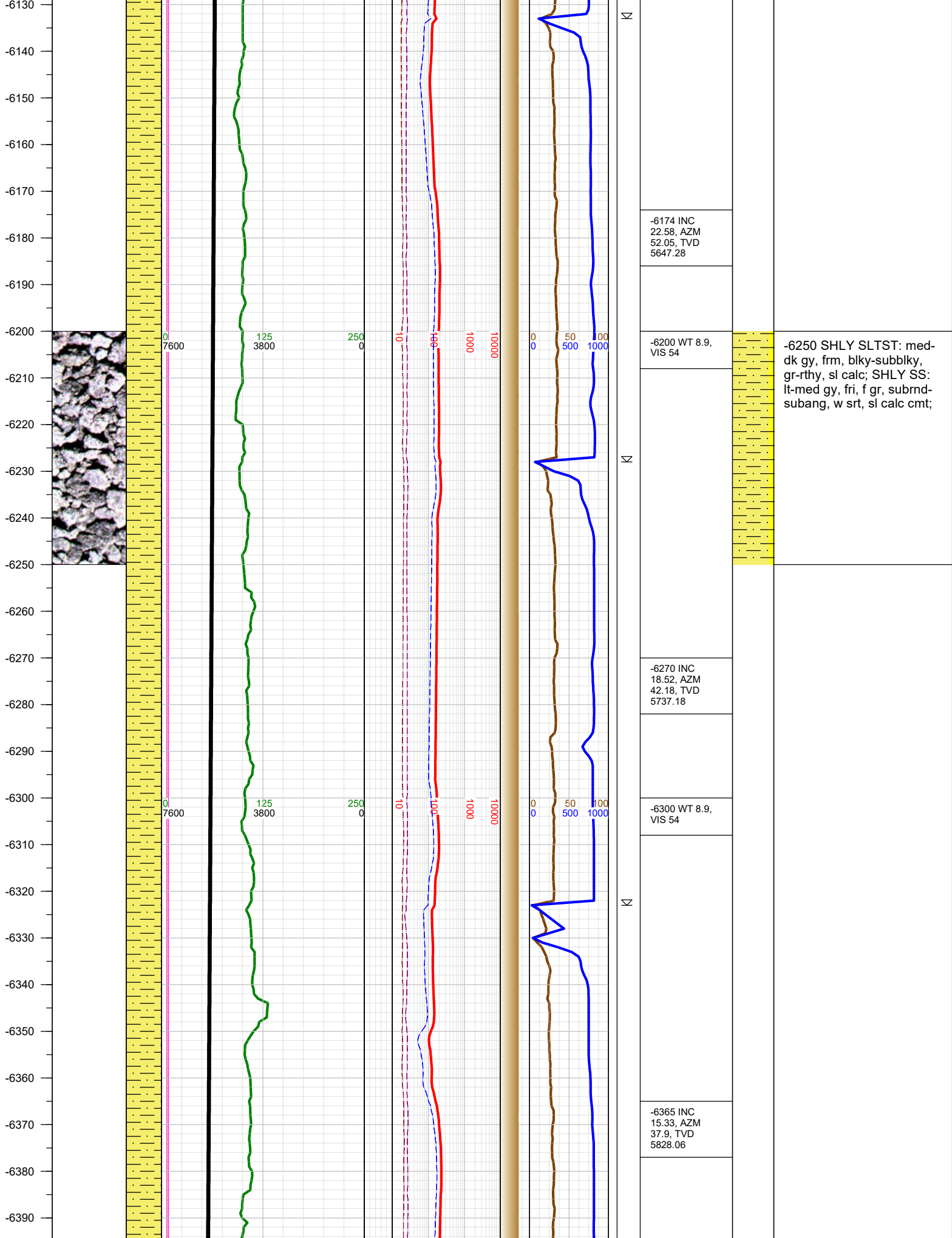
SLIDES  
SYMBOLS

COMMENTS

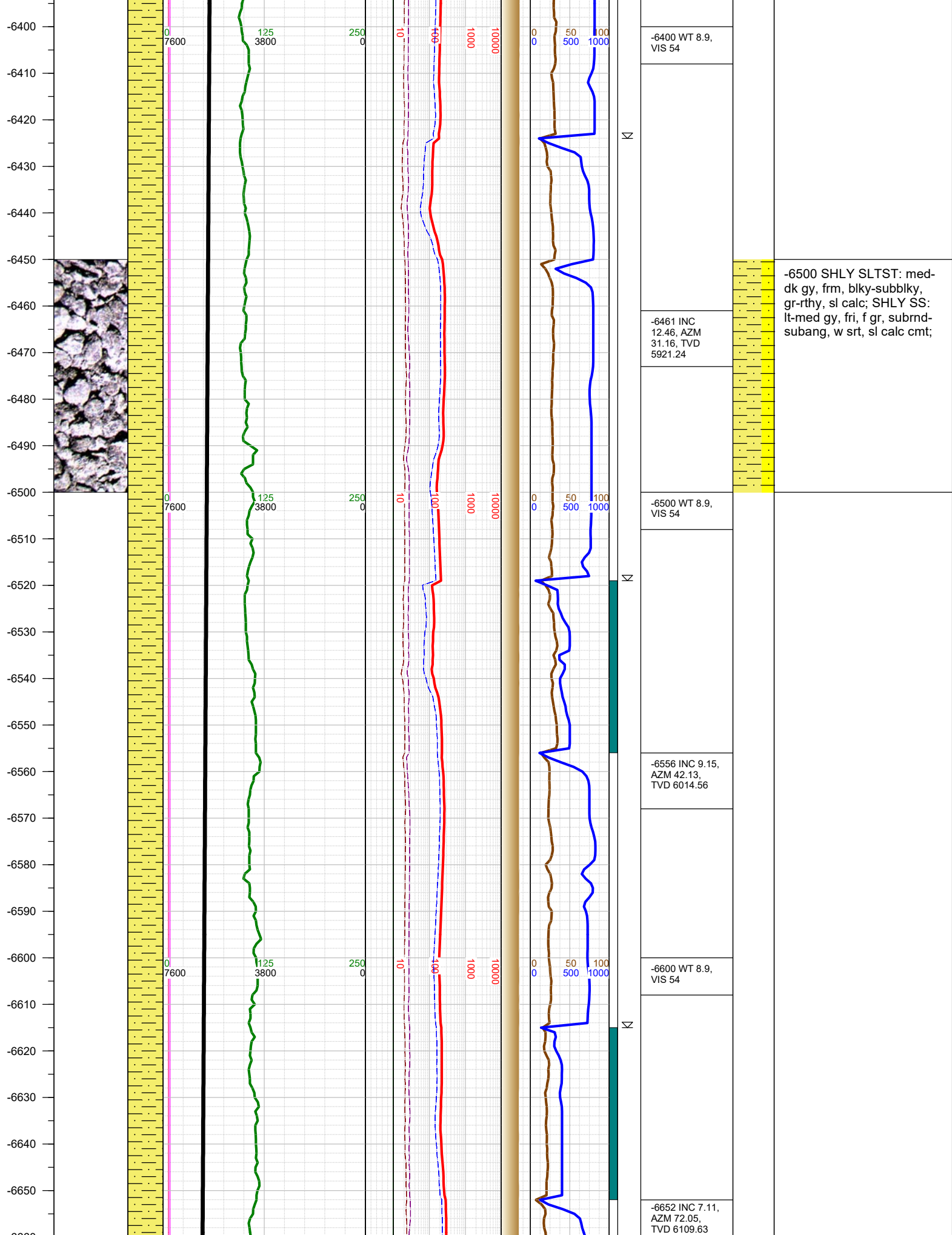
CUTTINGS %

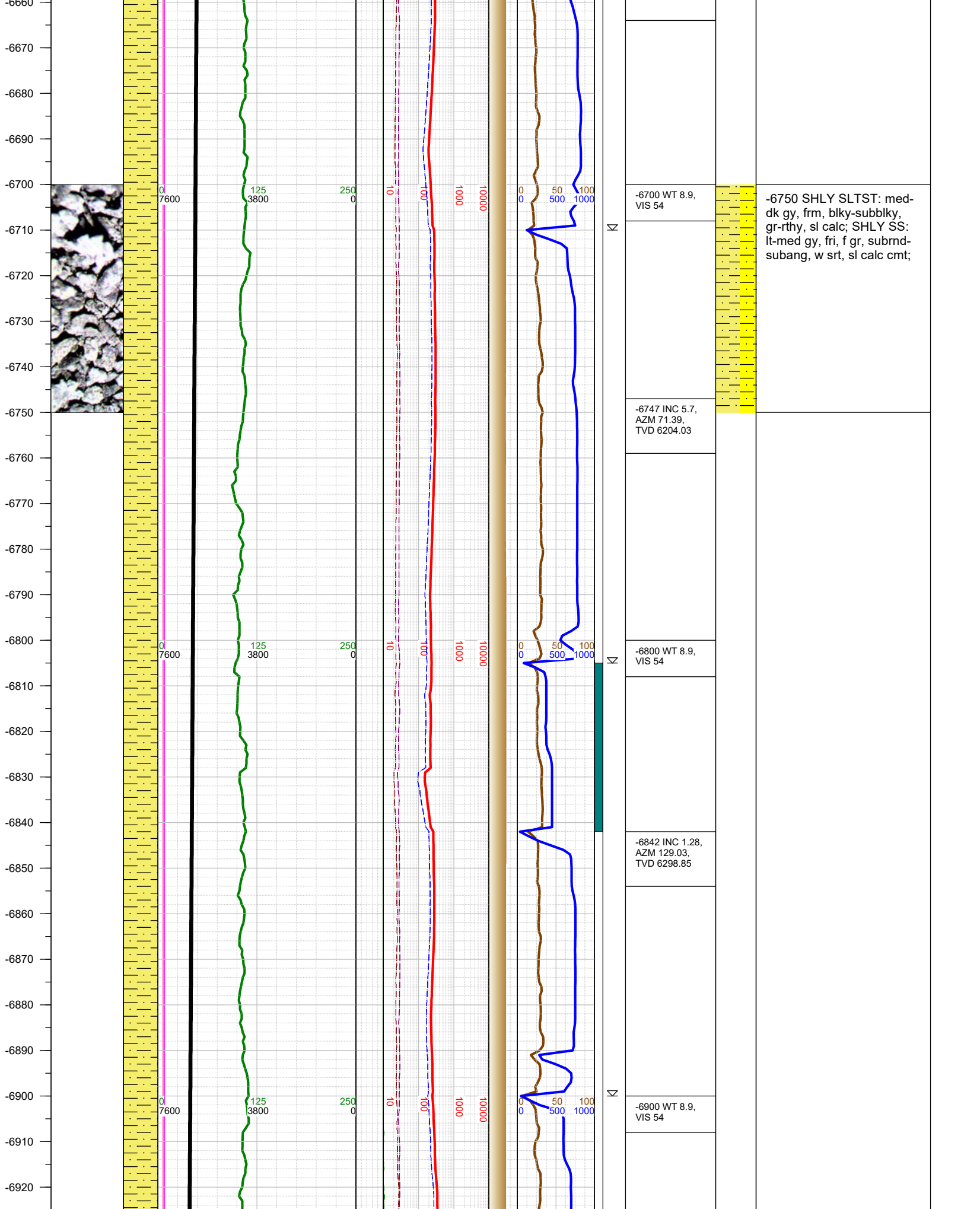
SAMPLE DESCRIPTION



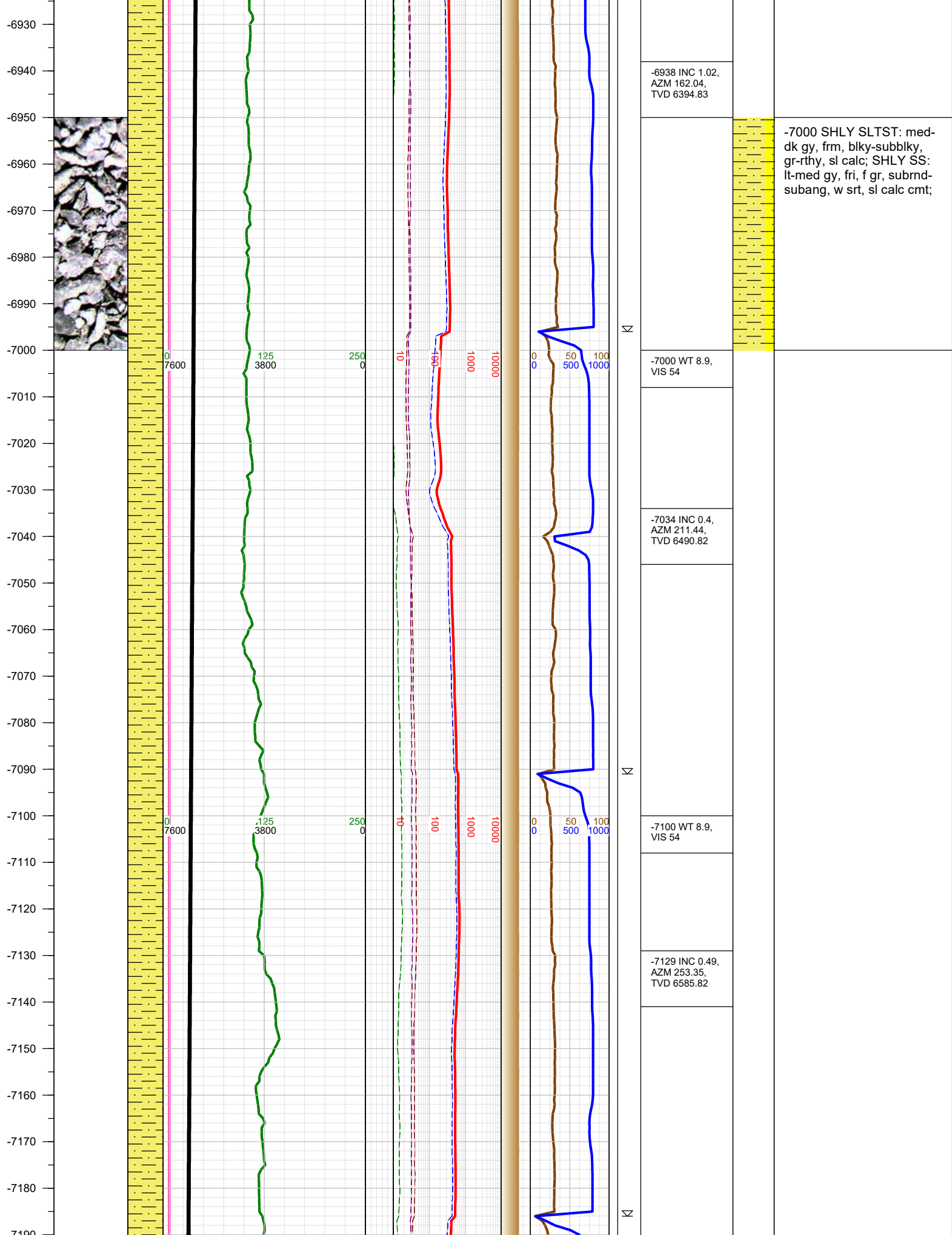


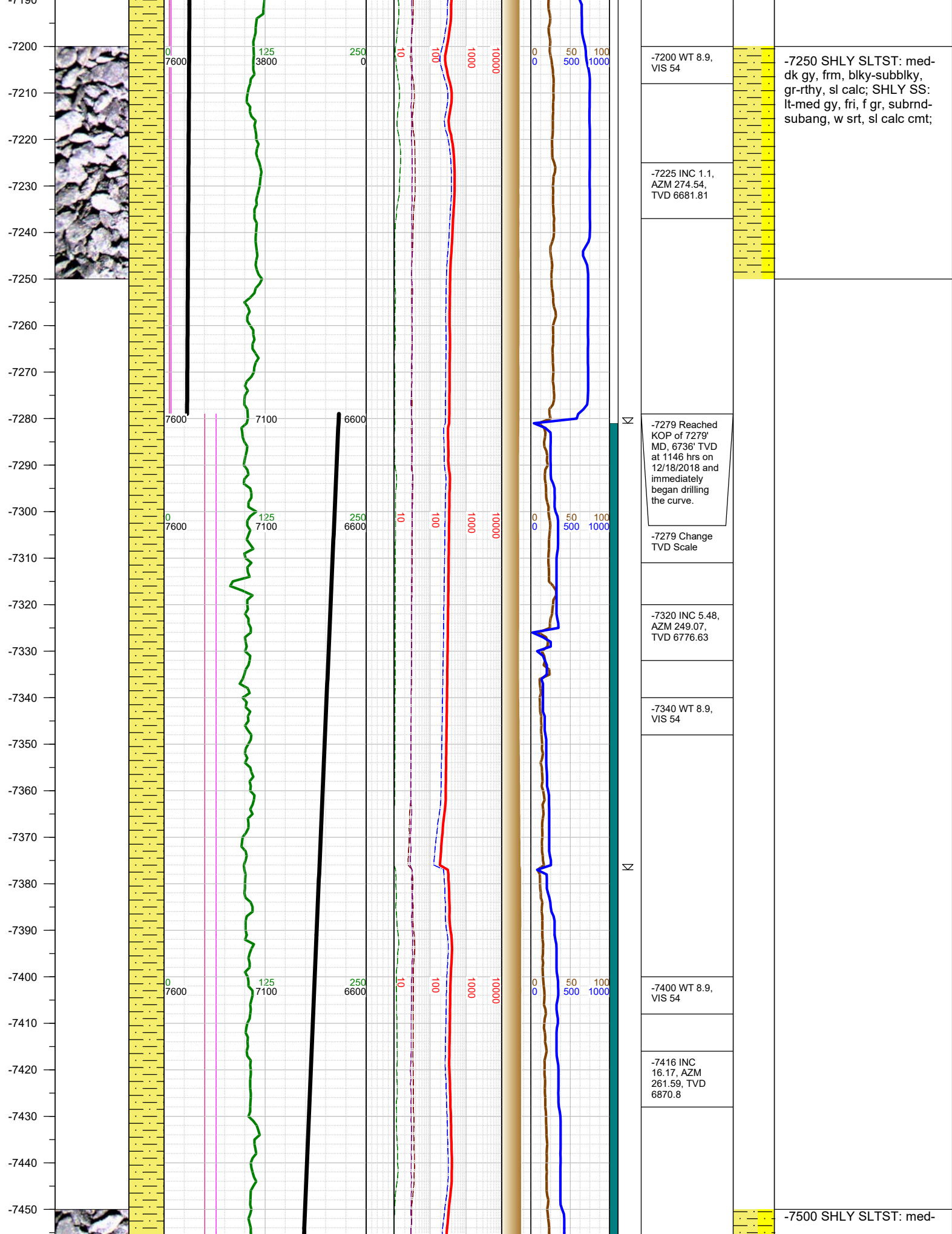
-6250 SHLY SLTST: med-dk gy, frm, blkly-subblky, gr-rthy, sl calc; SHLY SS: lt-med gy, fri, f gr, subrnd-subang, w srt, sl calc cmt;

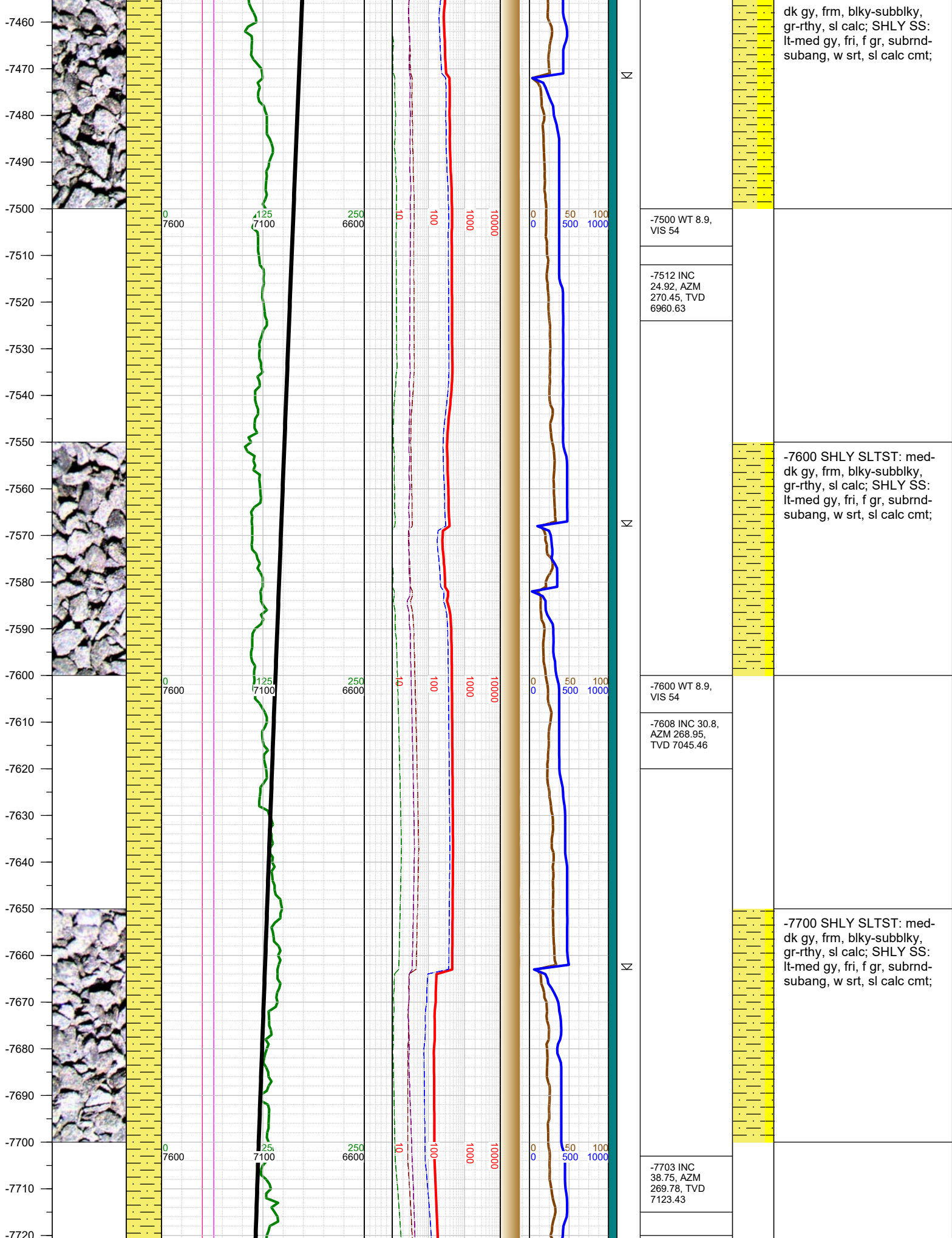




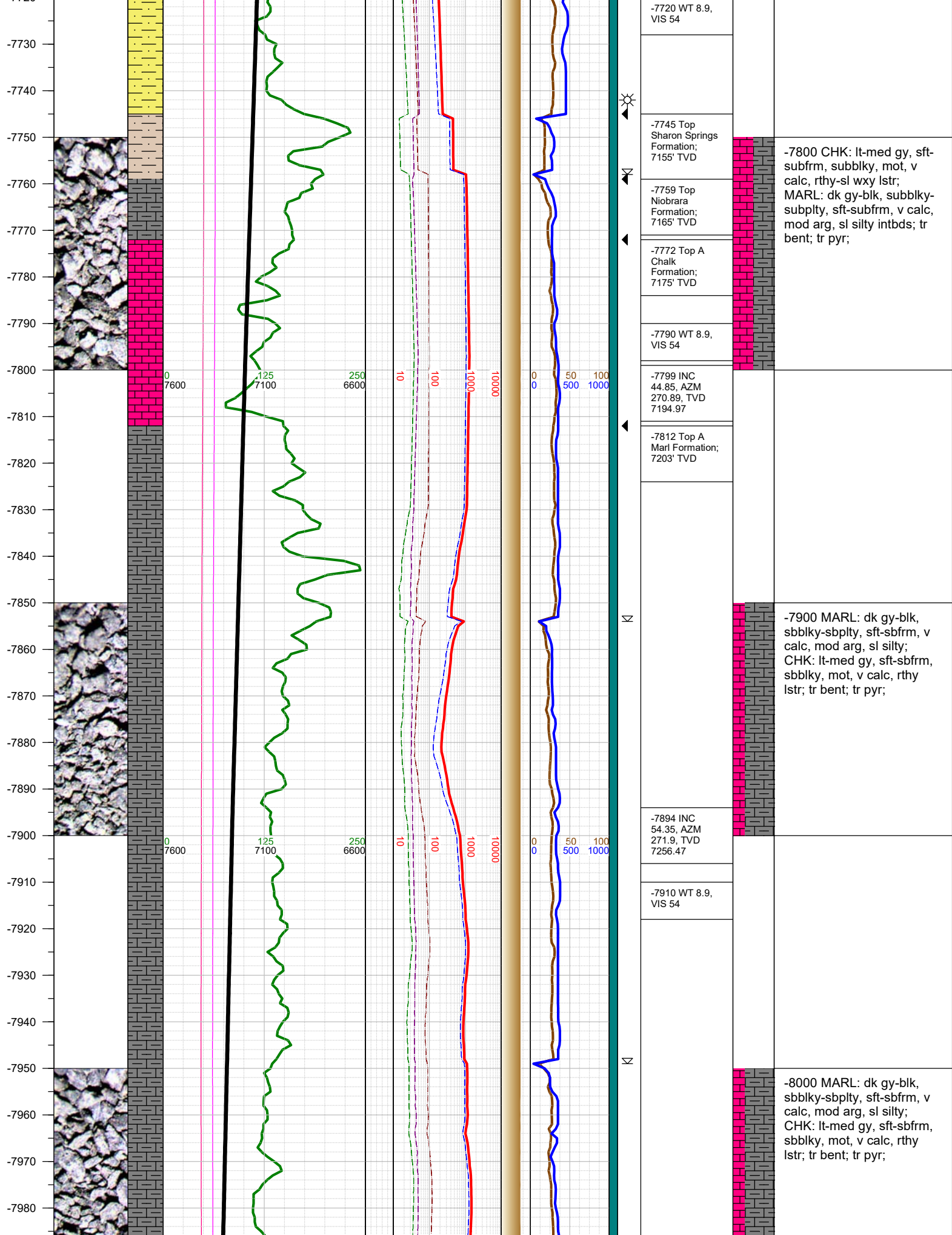




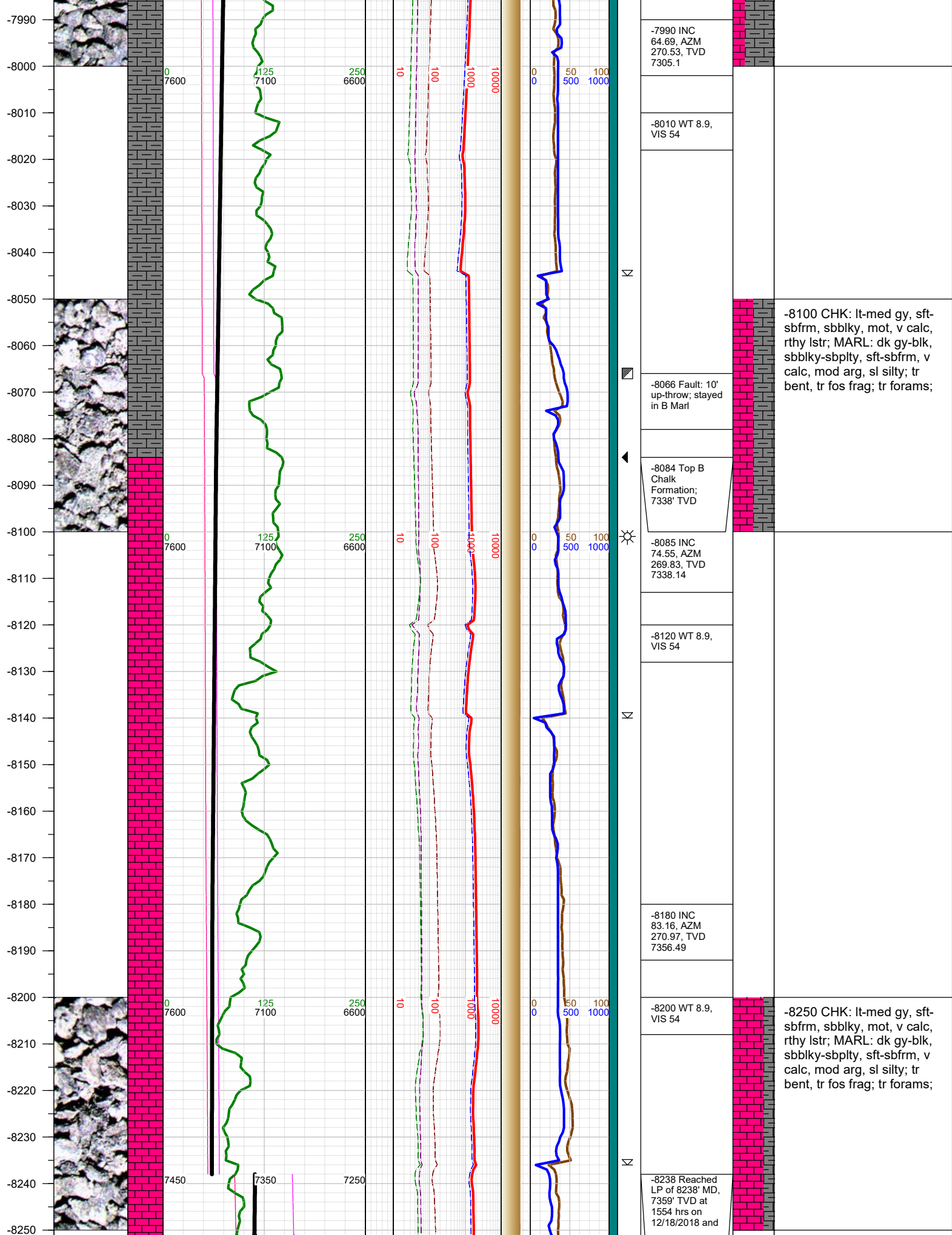


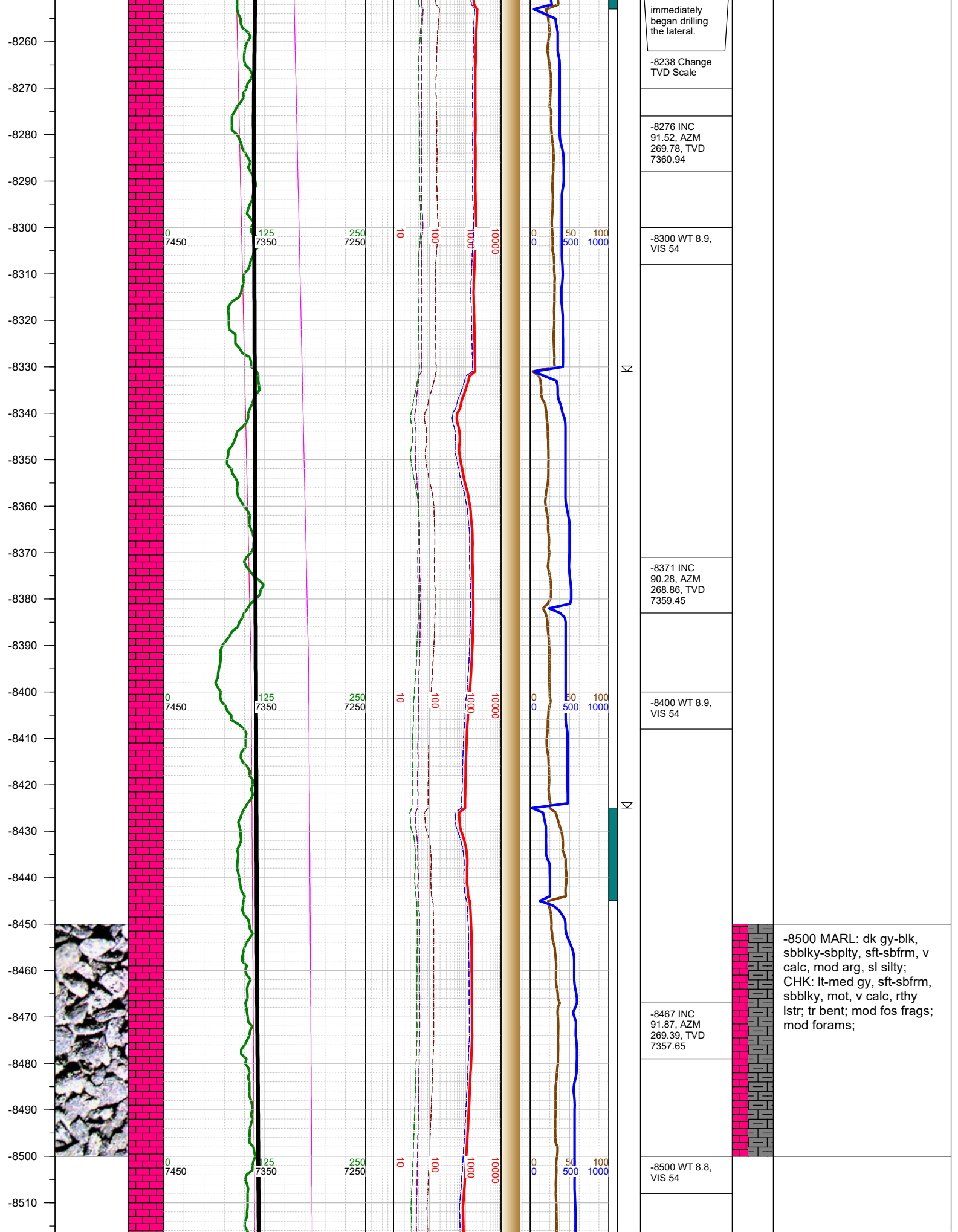




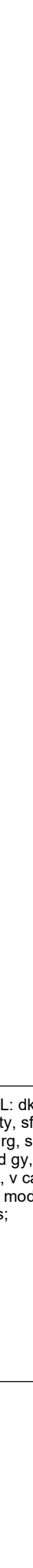
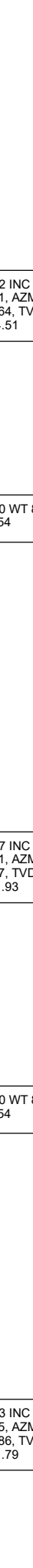
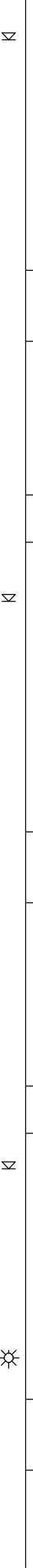
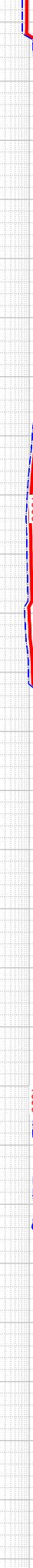
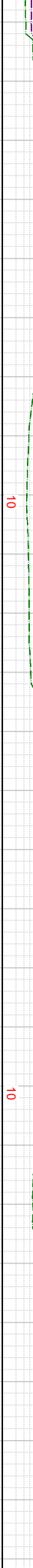
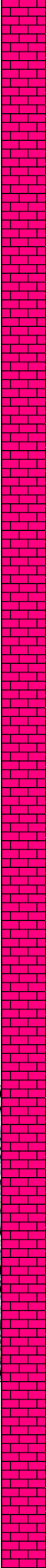
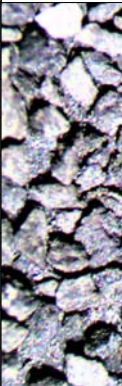








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-8562 INC  
91.91, AZM  
268.64, TVD  
7354.51

-8600 WT 8.8,  
VIS 54

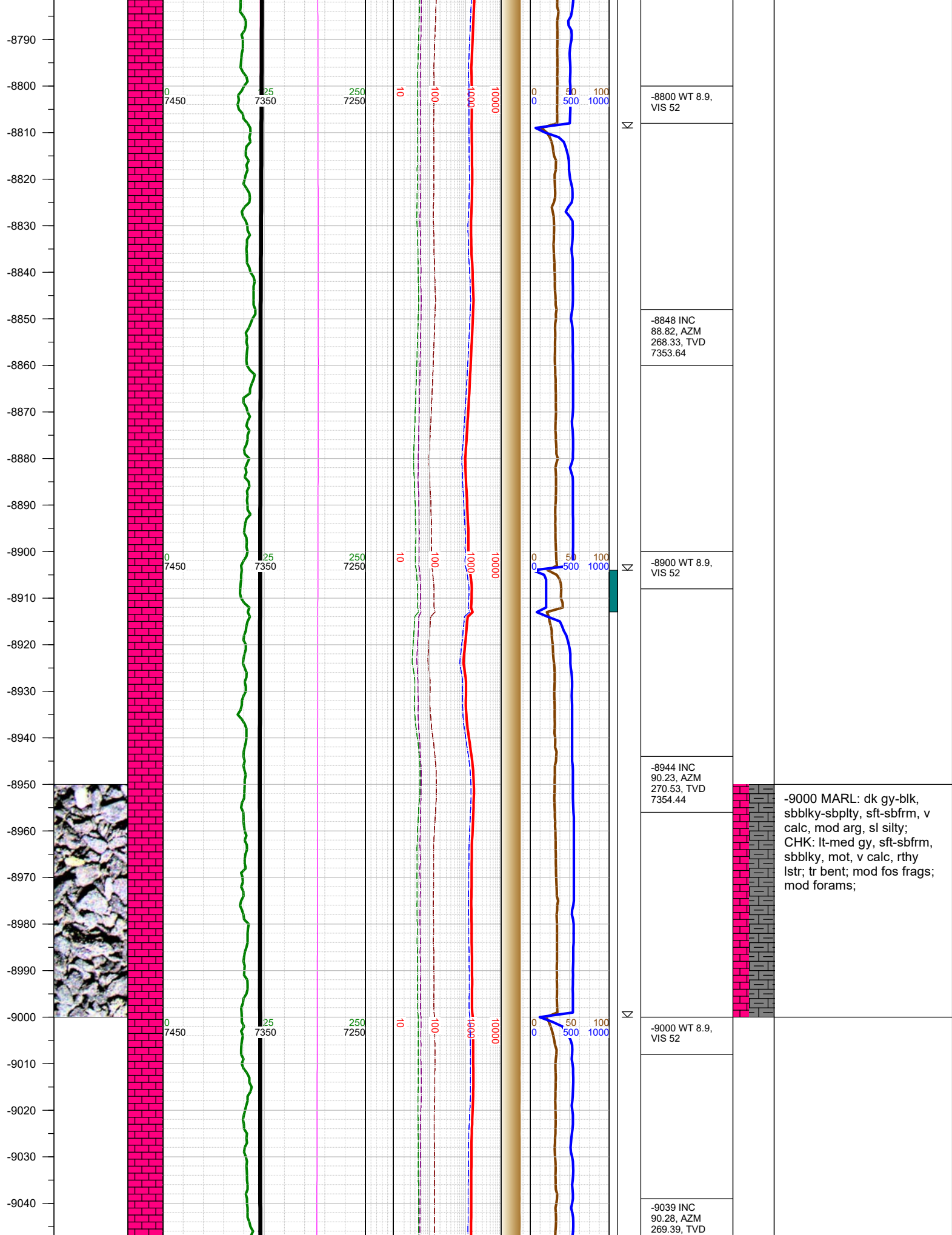
-8657 INC  
91.21, AZM  
269.7, TVD  
7351.93

-8700 WT 8.8,  
VIS 54

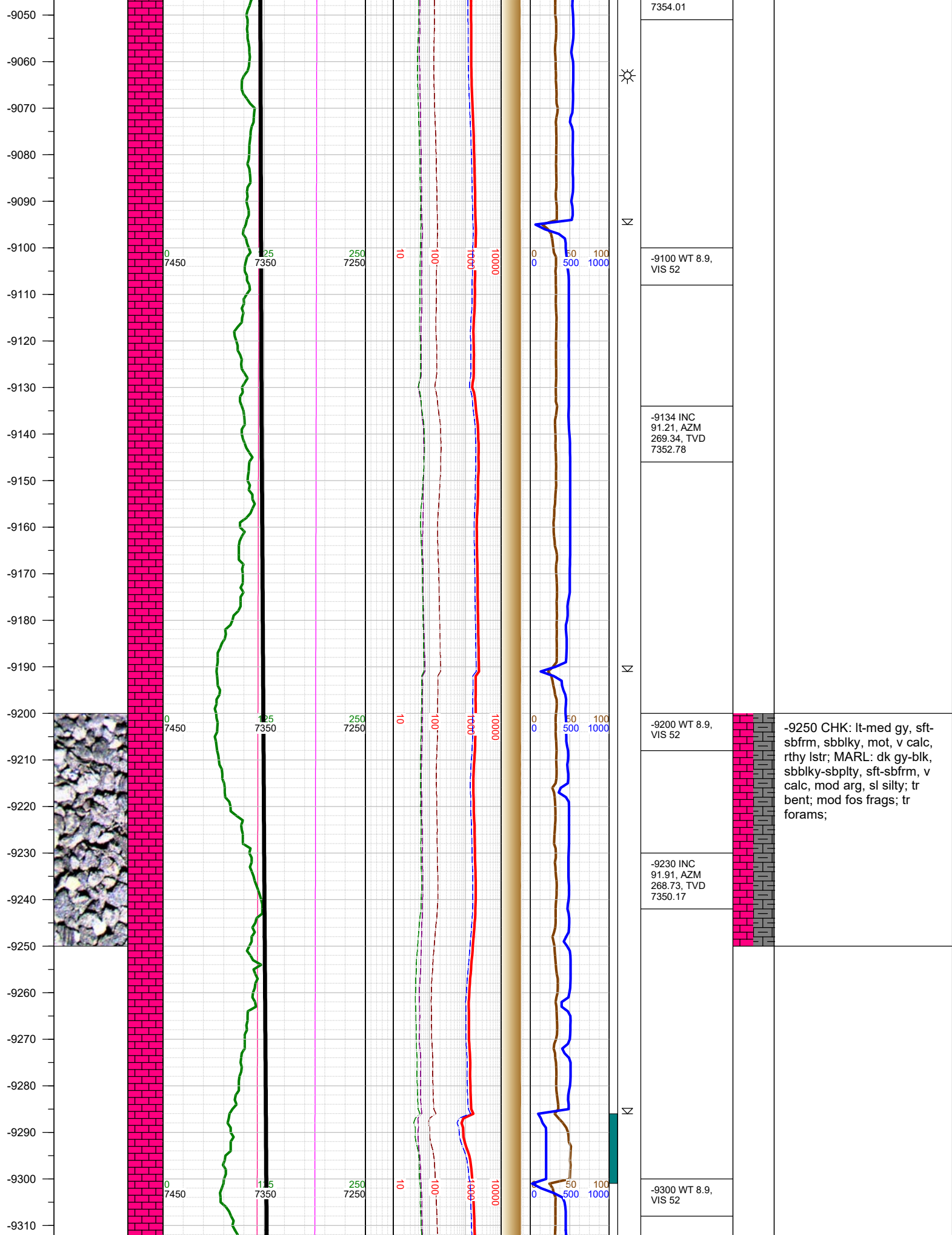
-8753 INC  
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268.86, TVD  
7351.79

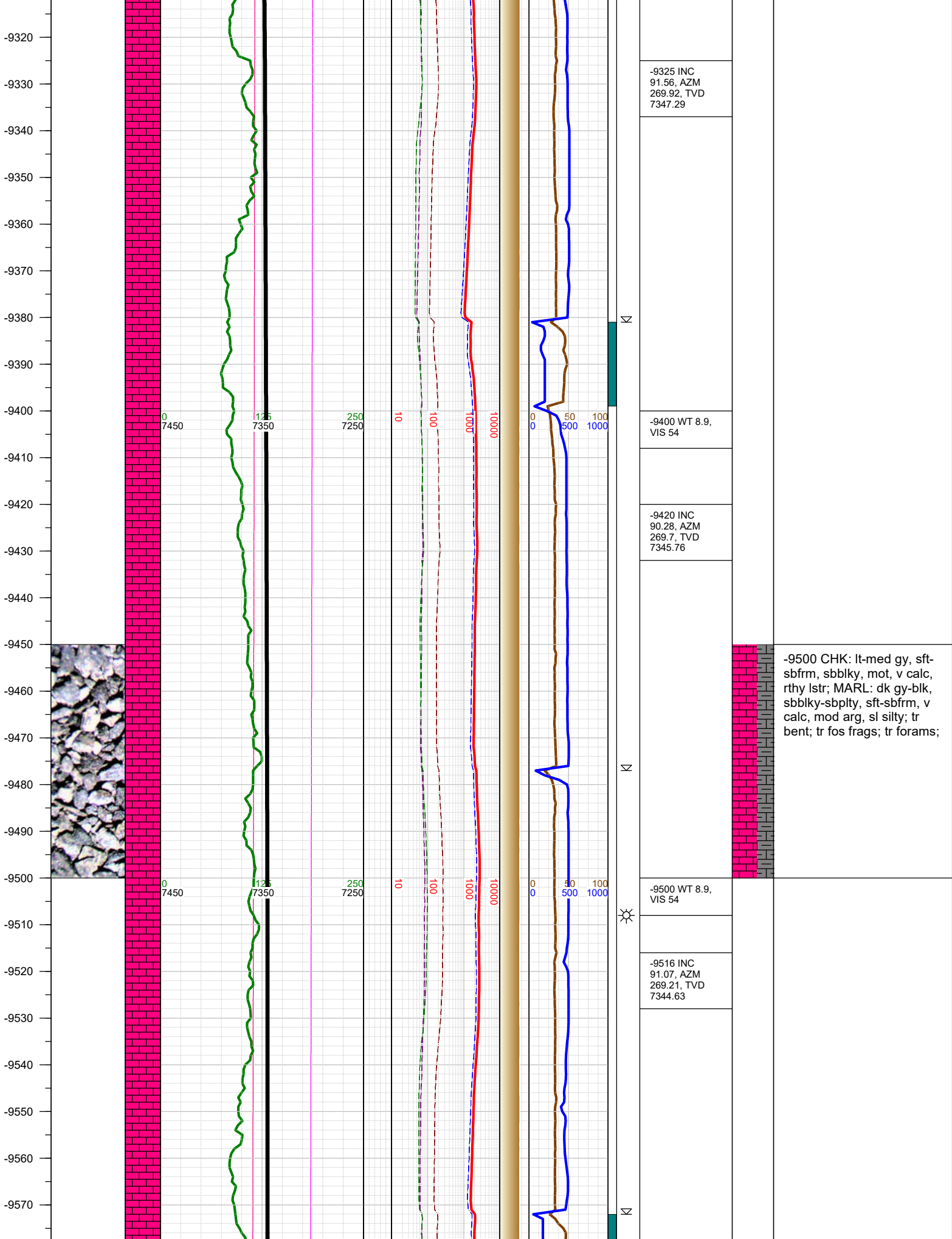
-8750 MARL: dk gy-blk,  
sbbkly-sbplty, sft-sbfrm, v  
calc, mod arg, sl silty;  
CHK: lt-med gy, sft-sbfrm,  
sbbkly, mot, v calc, rthy  
lstr; tr bent; mod fos frags;  
mod forams;

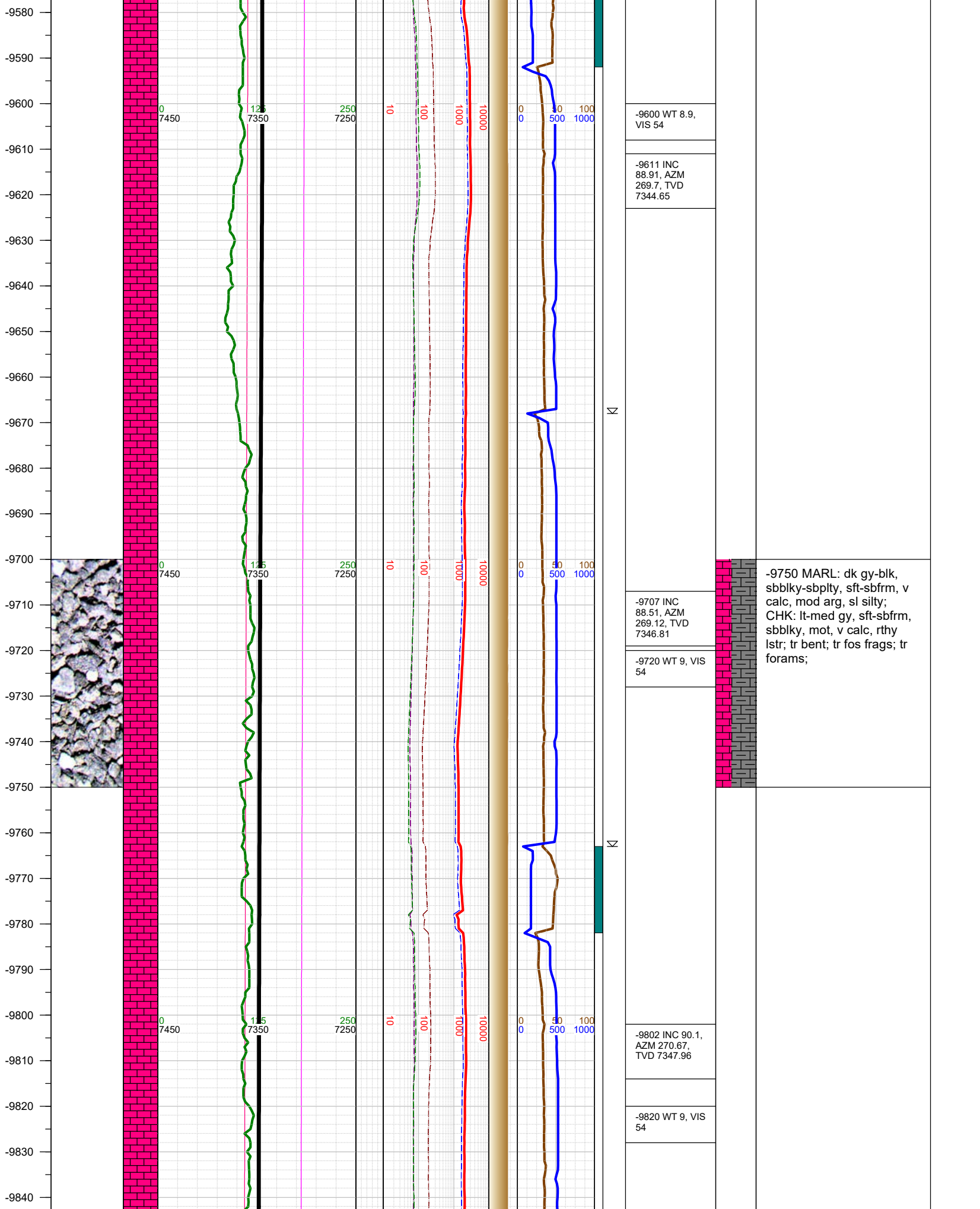




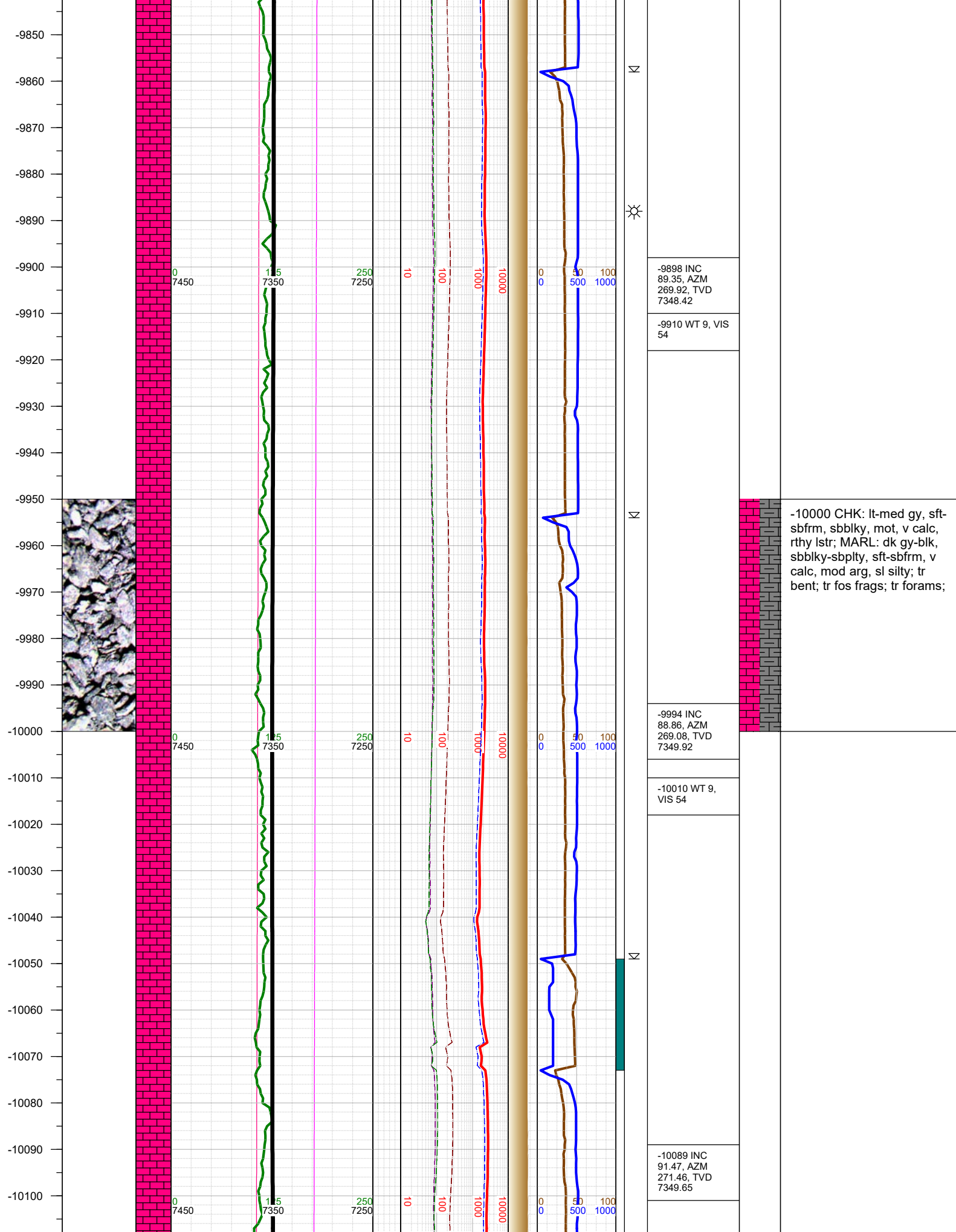




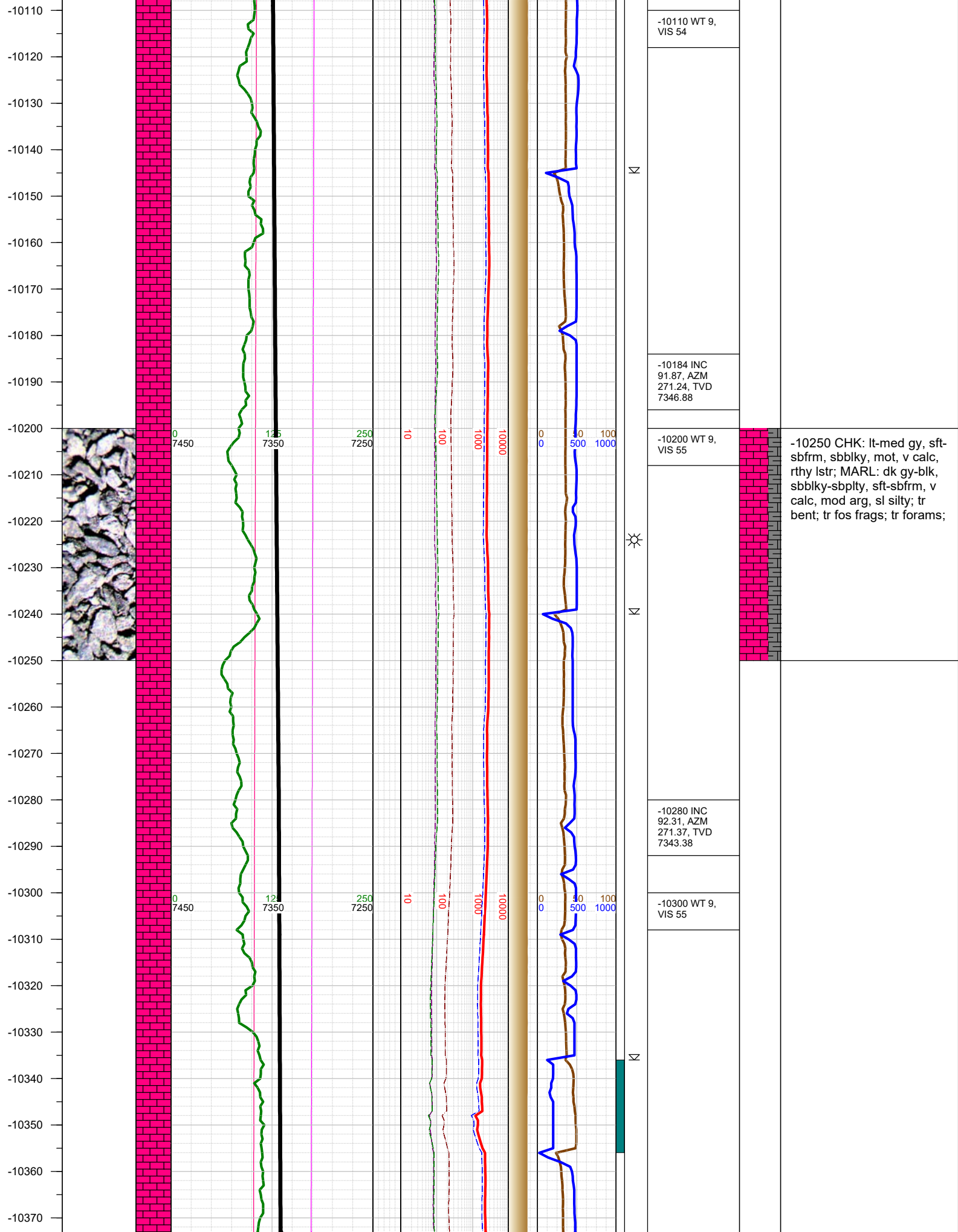


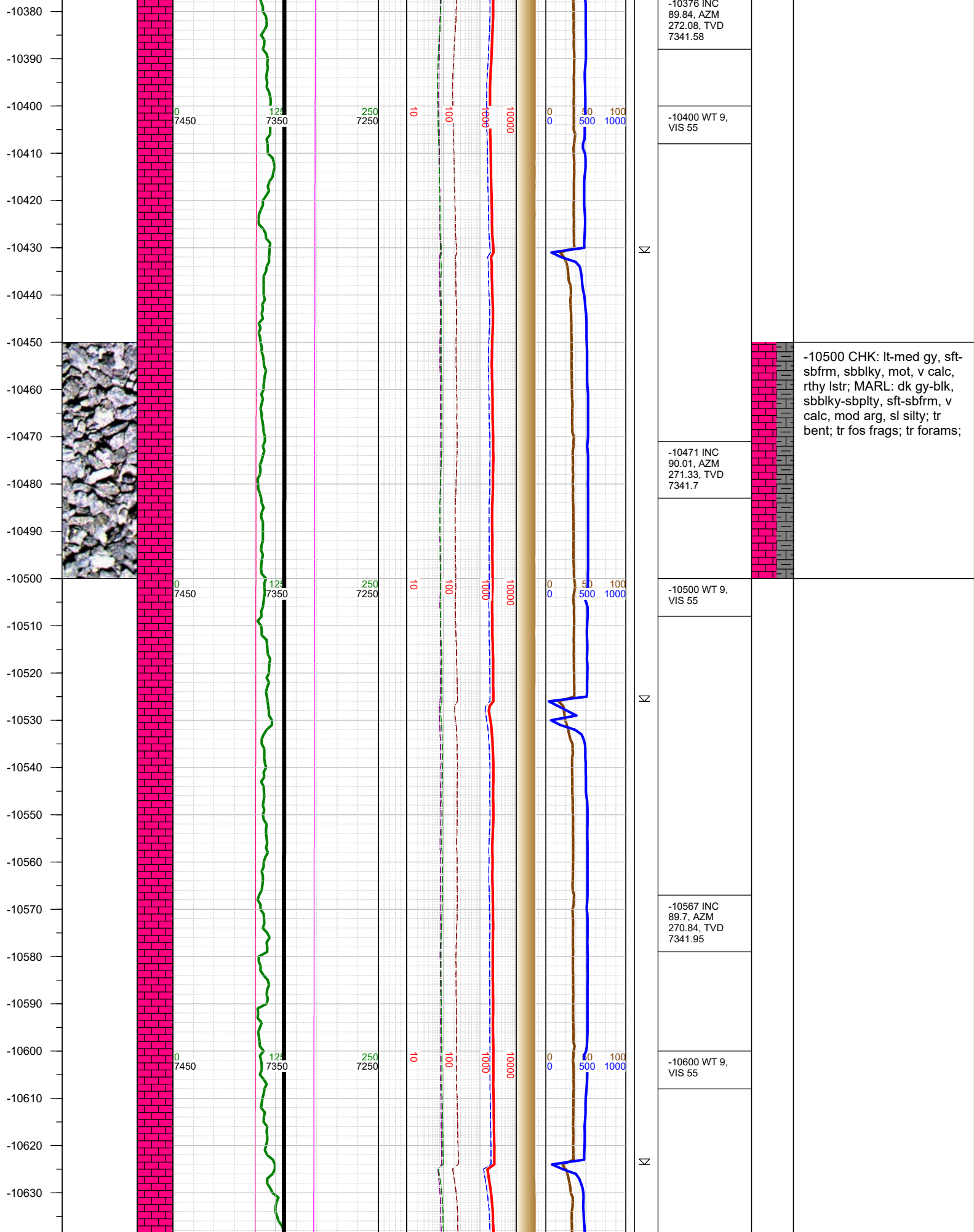


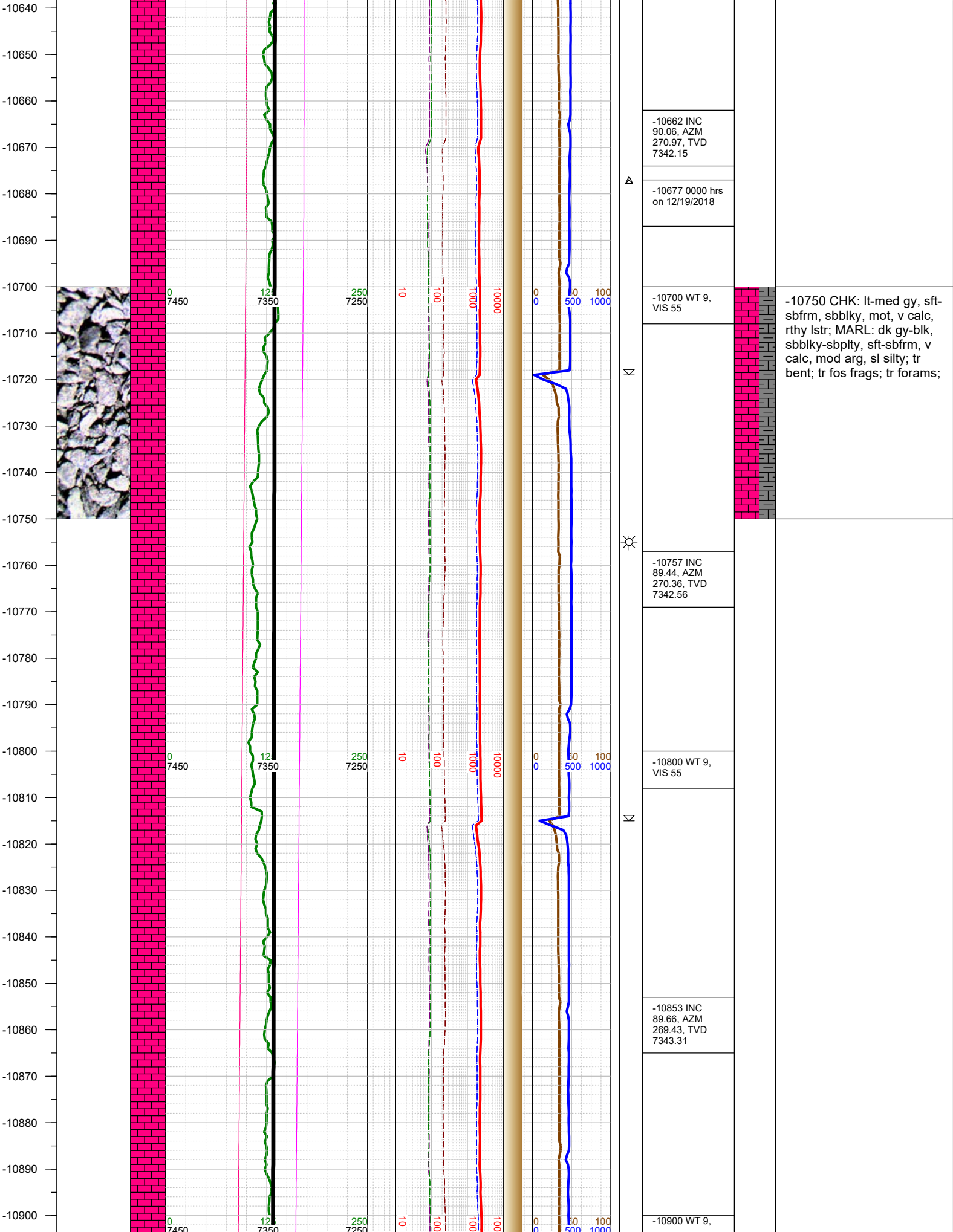




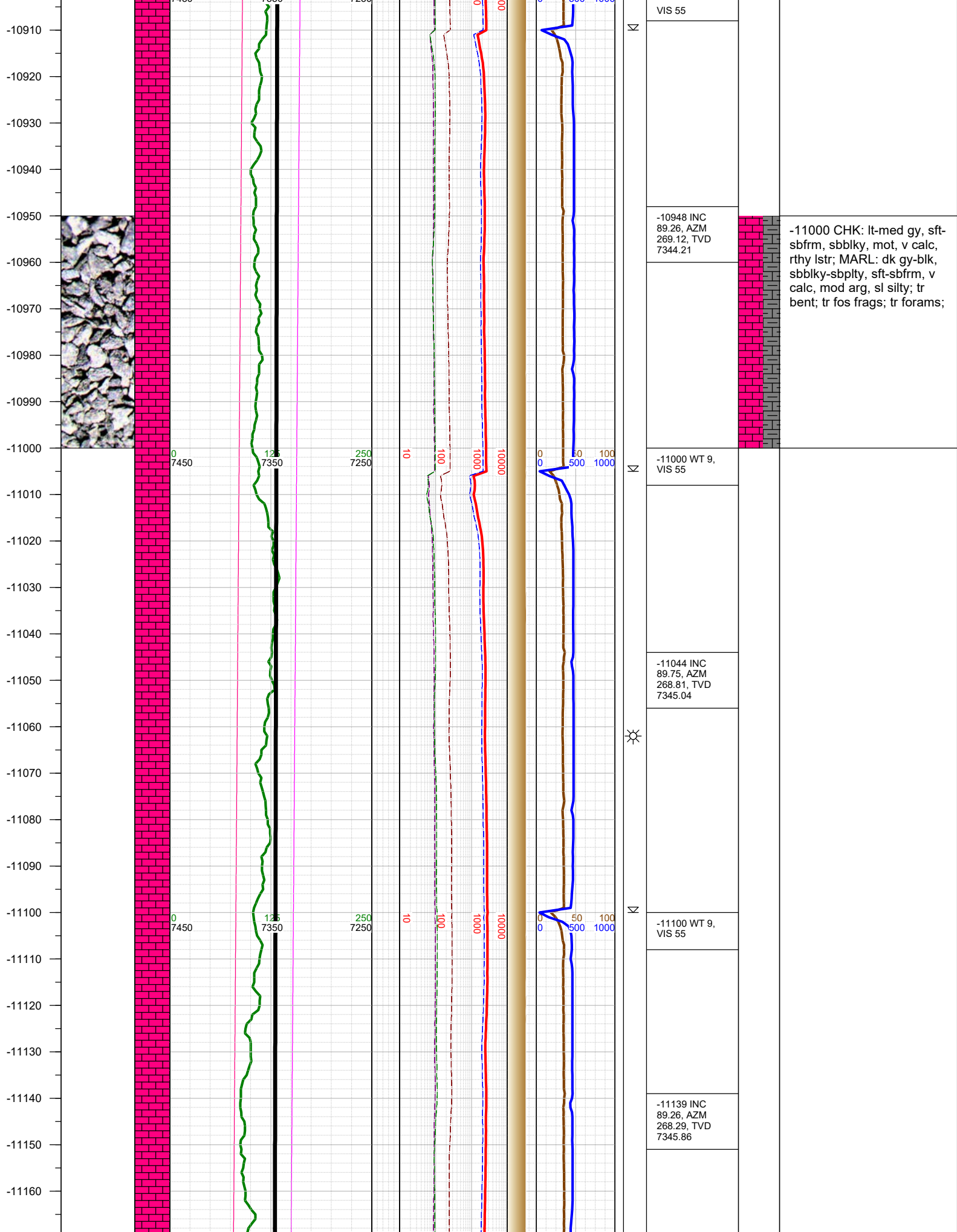




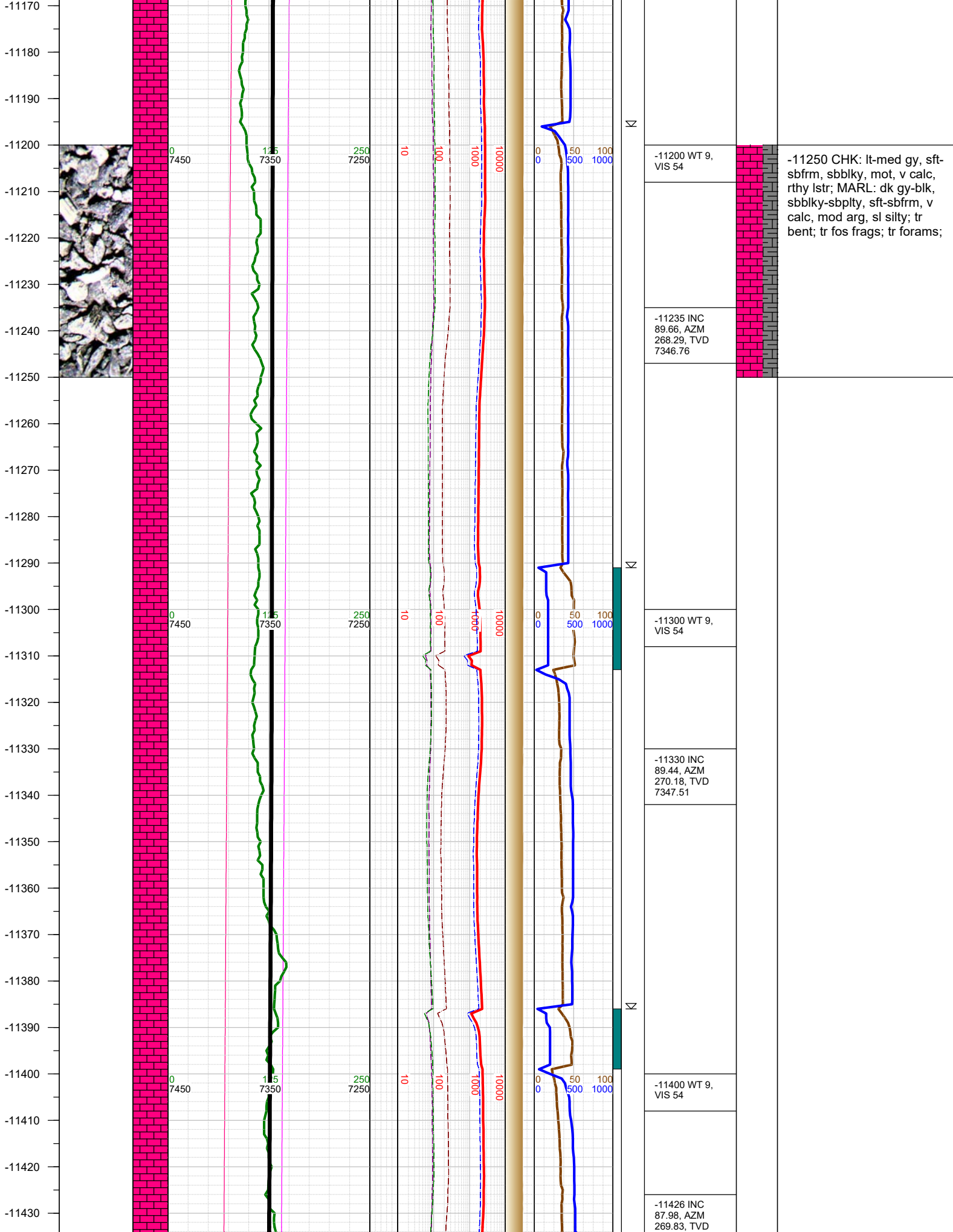


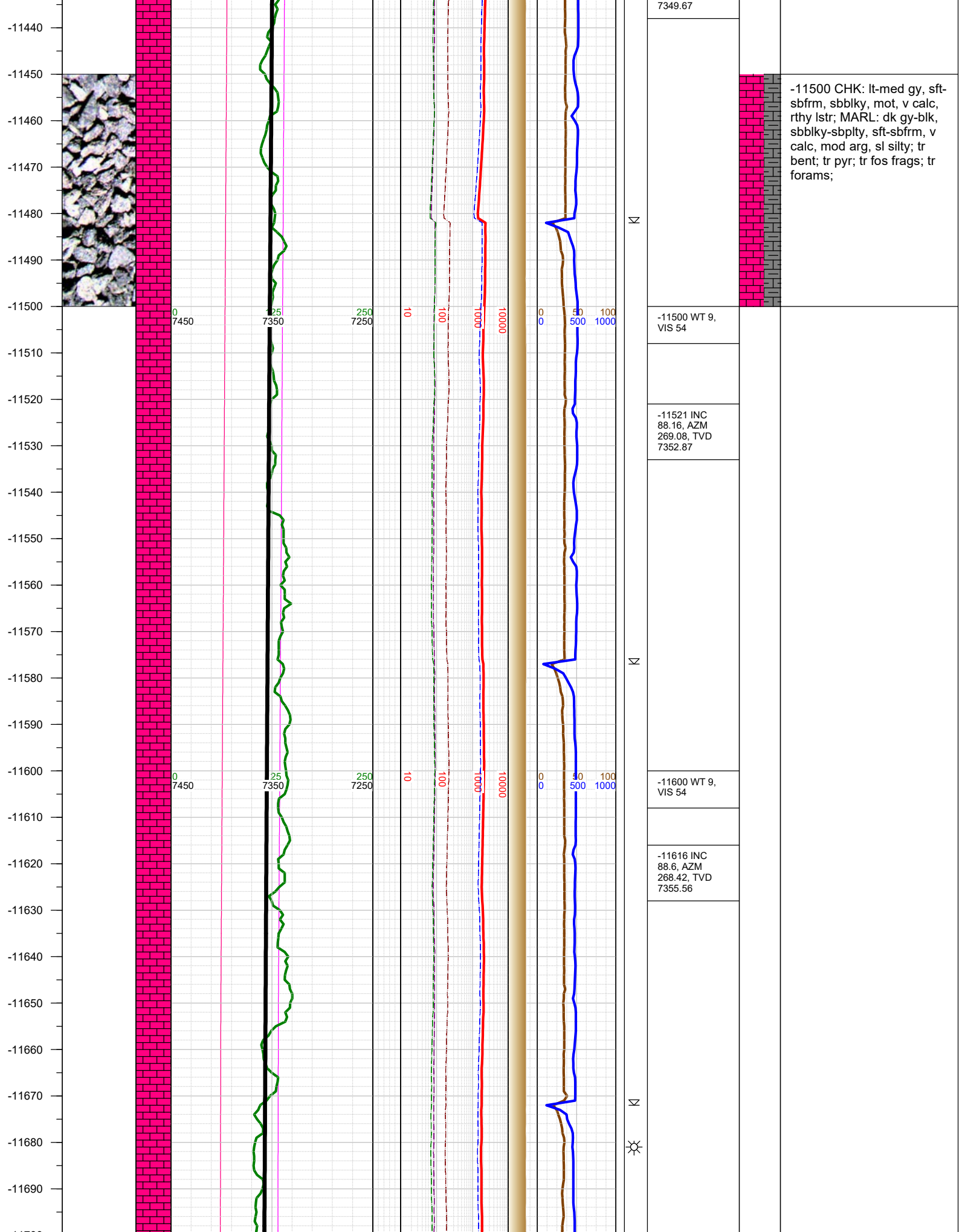


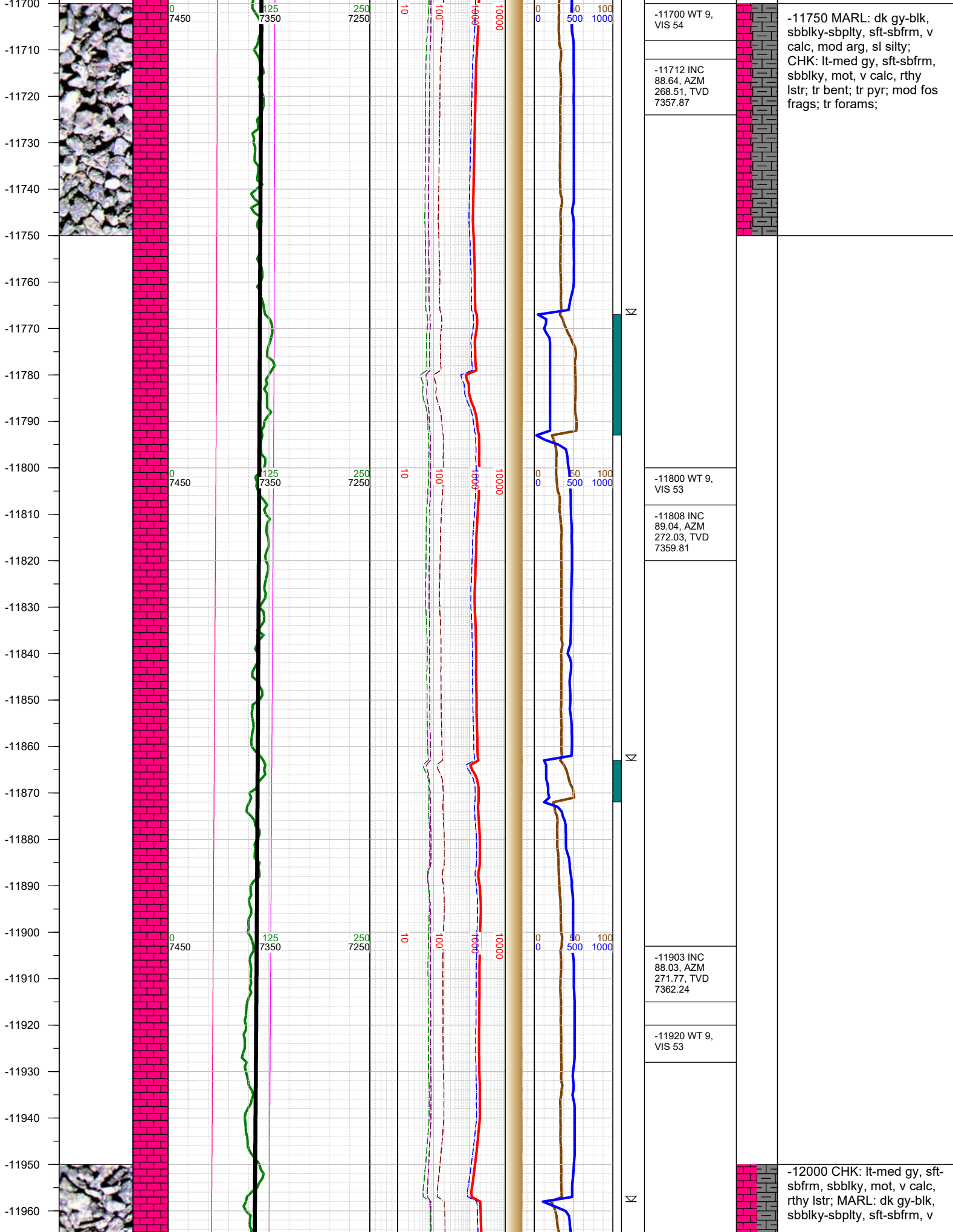






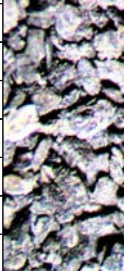








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-11999 INC  
88.38, AZM  
271.06, TVD  
7365.25

-12020 WT 9,  
VIS 53

-12094 INC 89,  
AZM 270.36,  
TVD 7367.42

-12110 WT 9,  
VIS 54

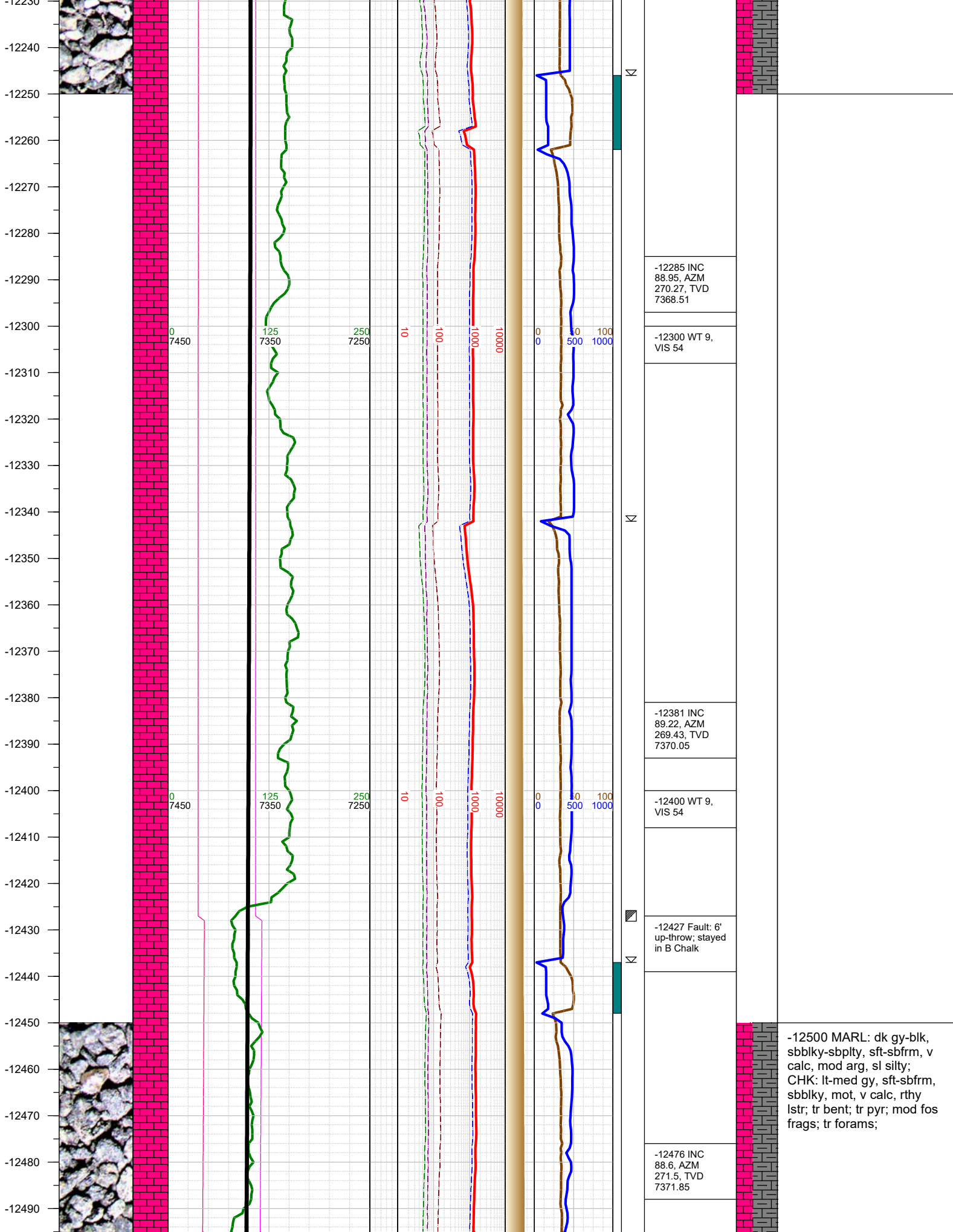
-12154 Fault: 8'  
down-throw;  
stayed in B  
Chalk

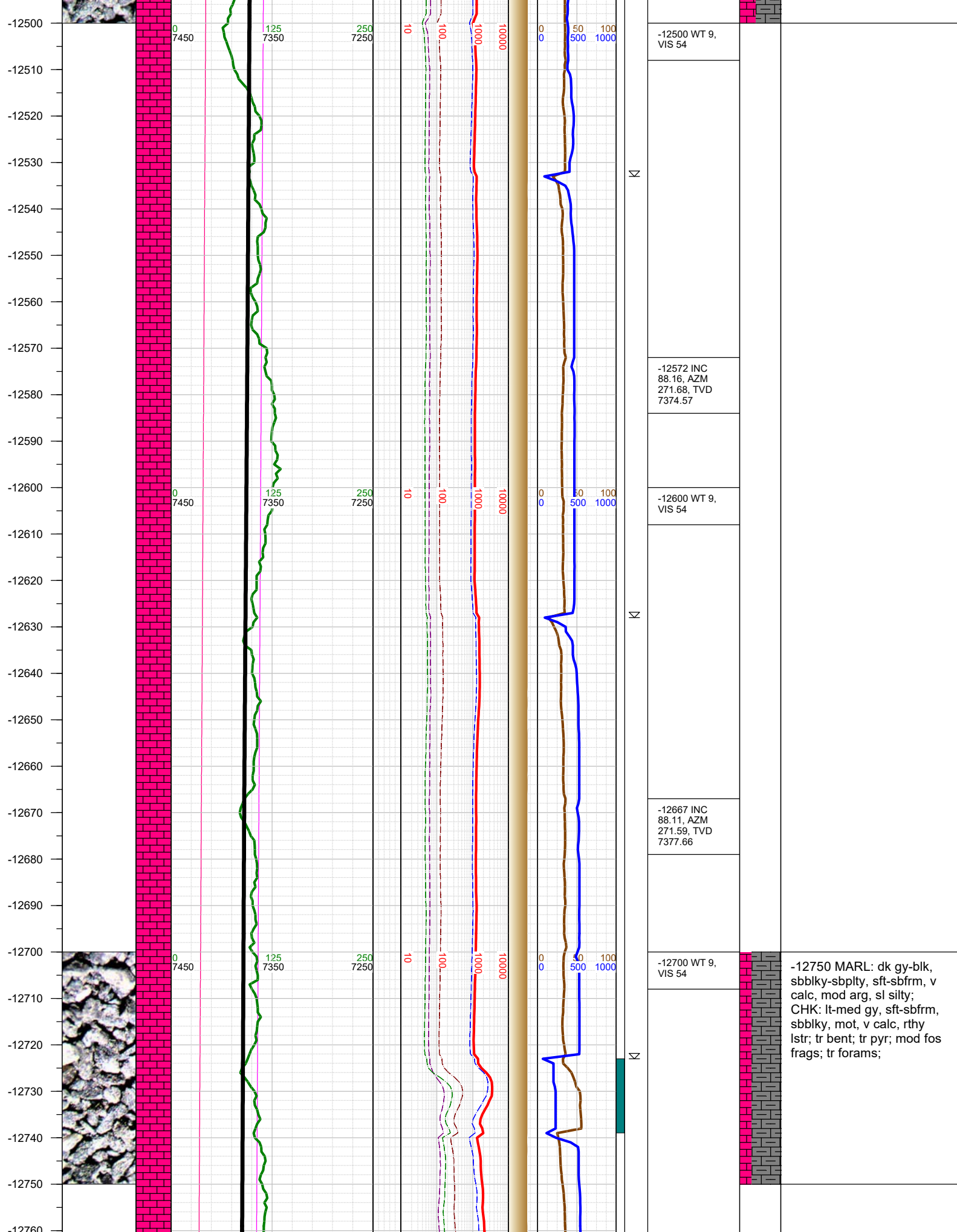
-12190 INC  
90.37, AZM  
270.4, TVD  
7367.95

-12210 WT 9,  
VIS 54

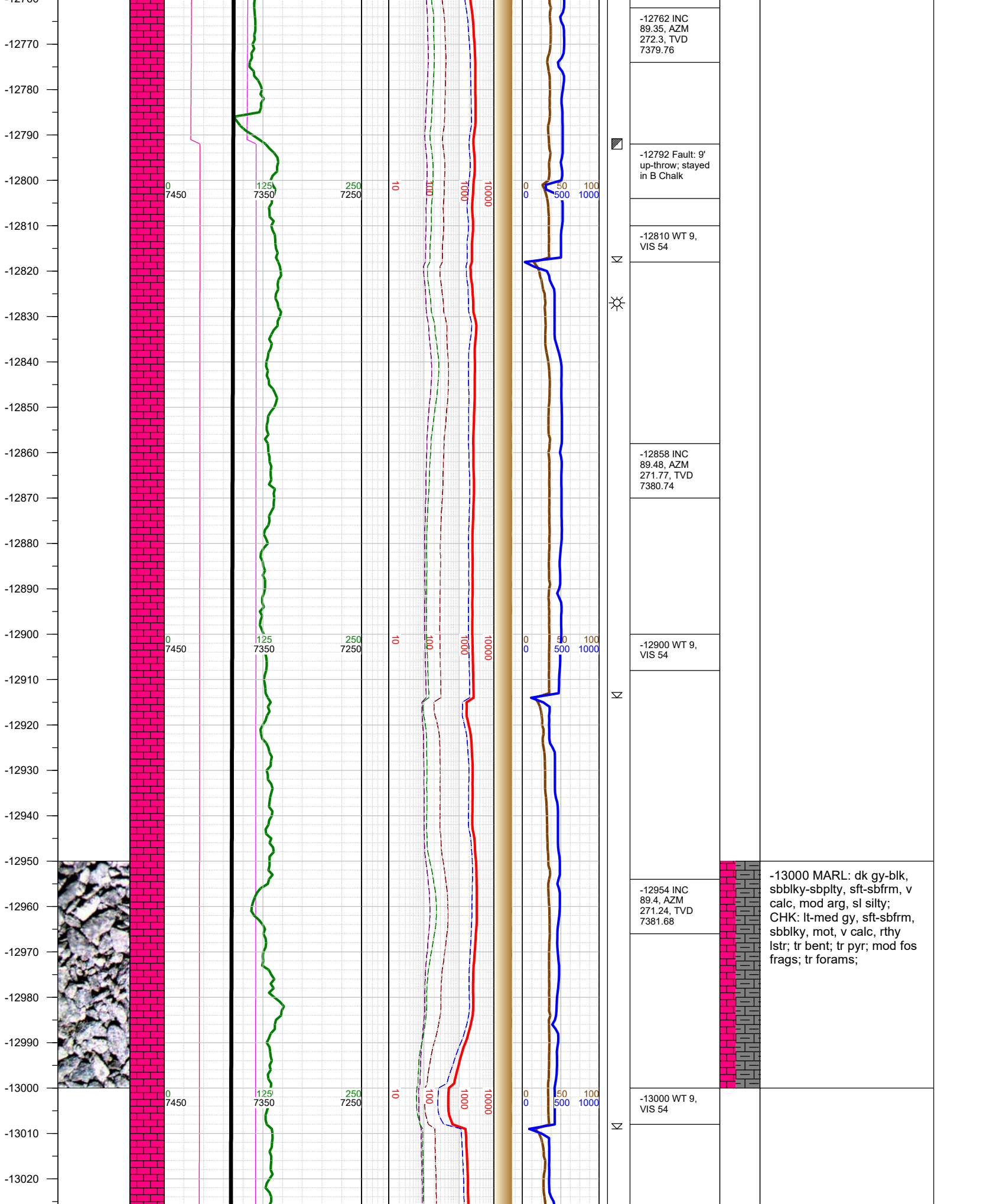
calc, mod arg, sl silty; tr  
bent; mod fos frags; tr  
forams;

-12250 MARL: dk gy-blk,  
sbbkly-sbplty, sft-sbfrm, v  
calc, mod arg, sl silty;  
CHK: lt-med gy, sft-sbfrm,  
sbbkly, mot, v calc, rthy  
lstr; tr bent; tr pyr; mod fos  
frags; tr forams;

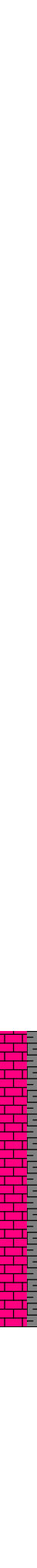
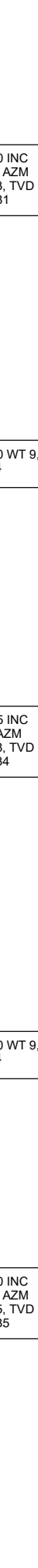
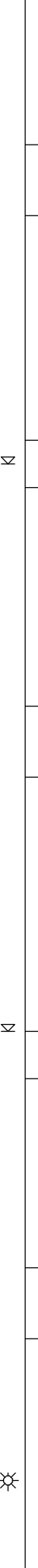
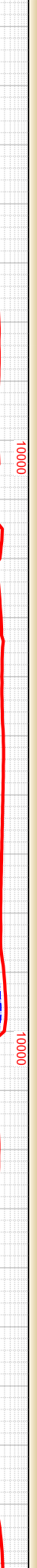
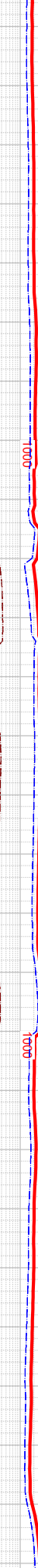
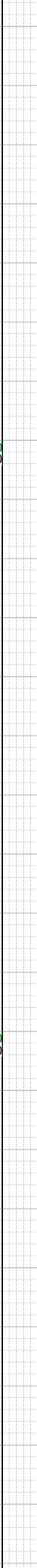
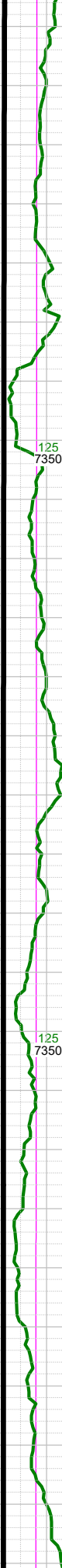
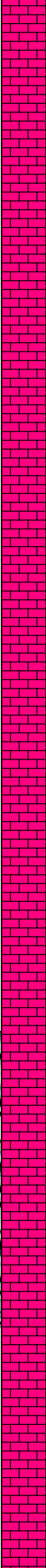
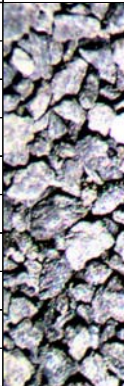








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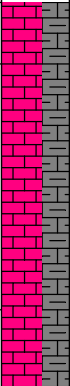
-13050 INC  
89.26, AZM  
270.93, TVD  
7382.81

-13100 WT 9,  
VIS 54

-13145 INC  
90.1, AZM  
270.58, TVD  
7383.34

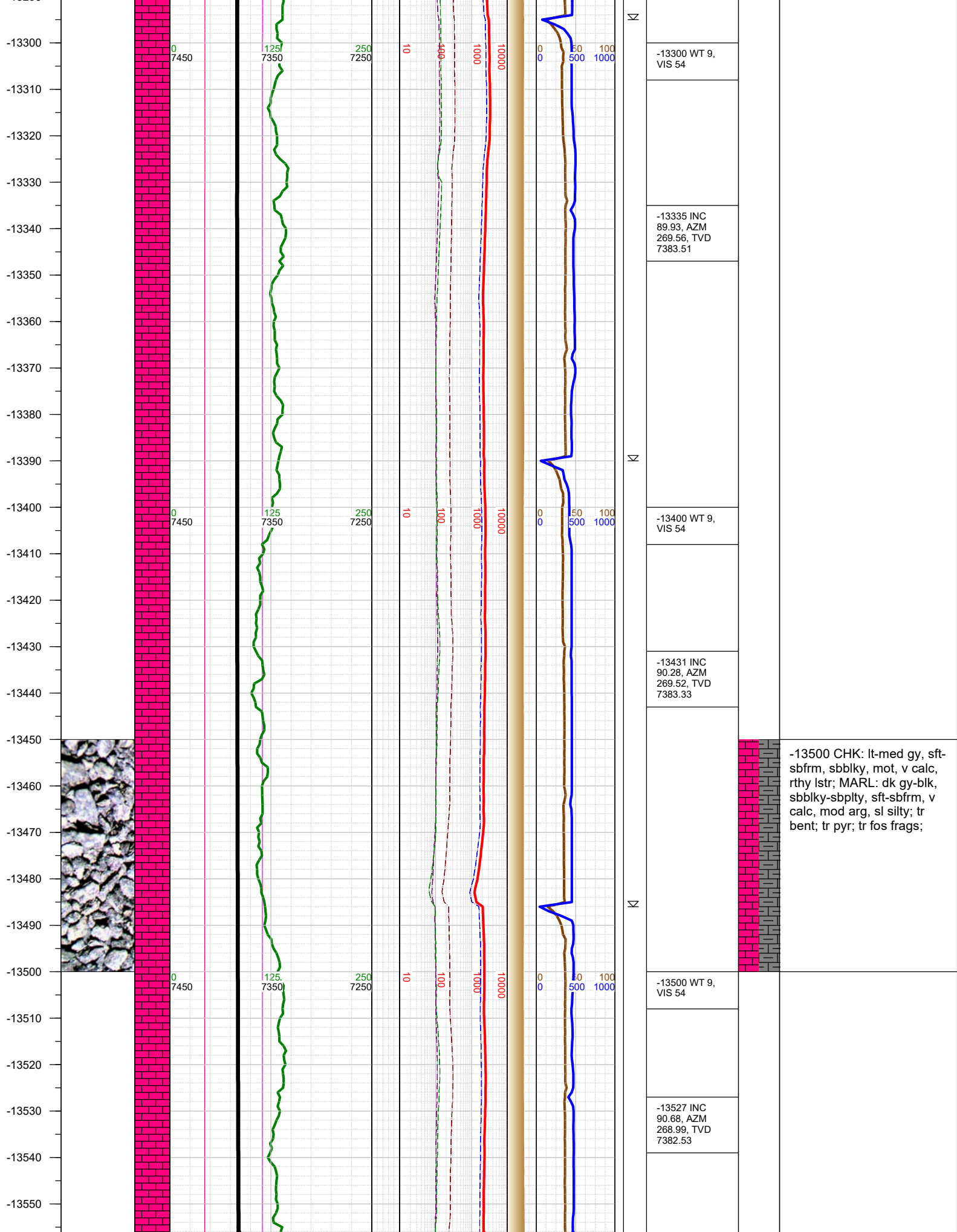
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-13240 INC  
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270.05, TVD  
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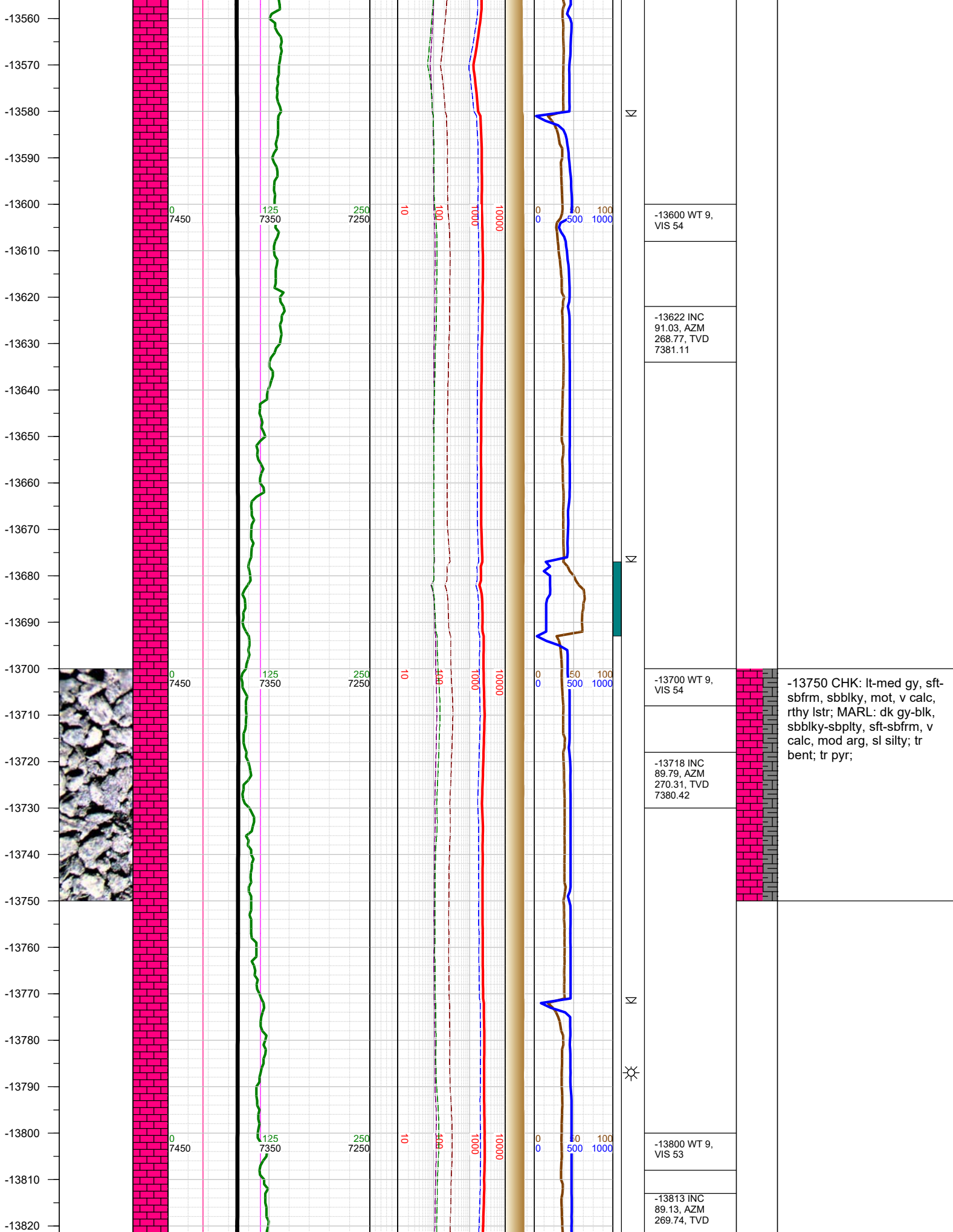


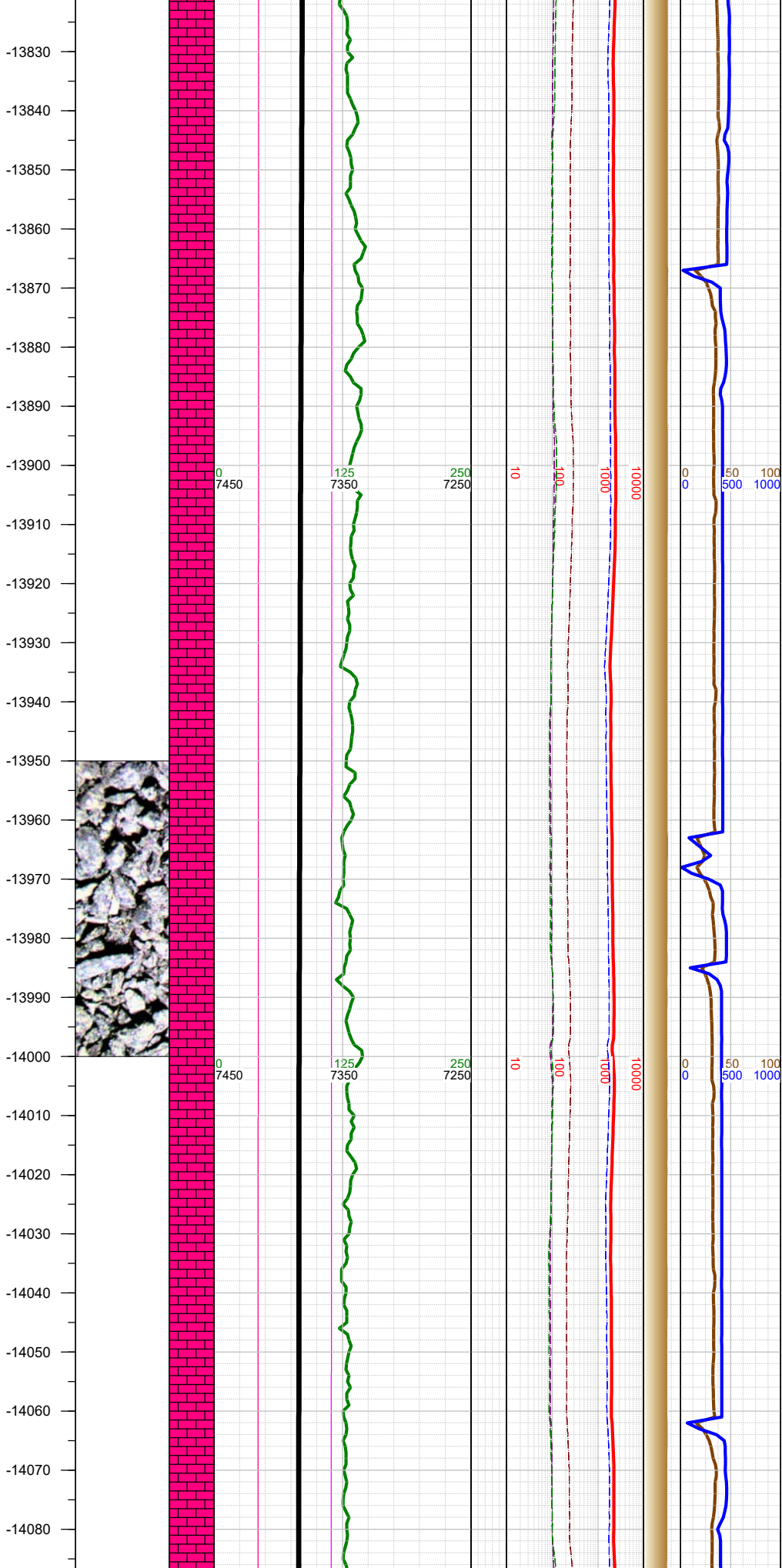
-13250 CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr; MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty; tr bent; tr pyr; tr fos frags;



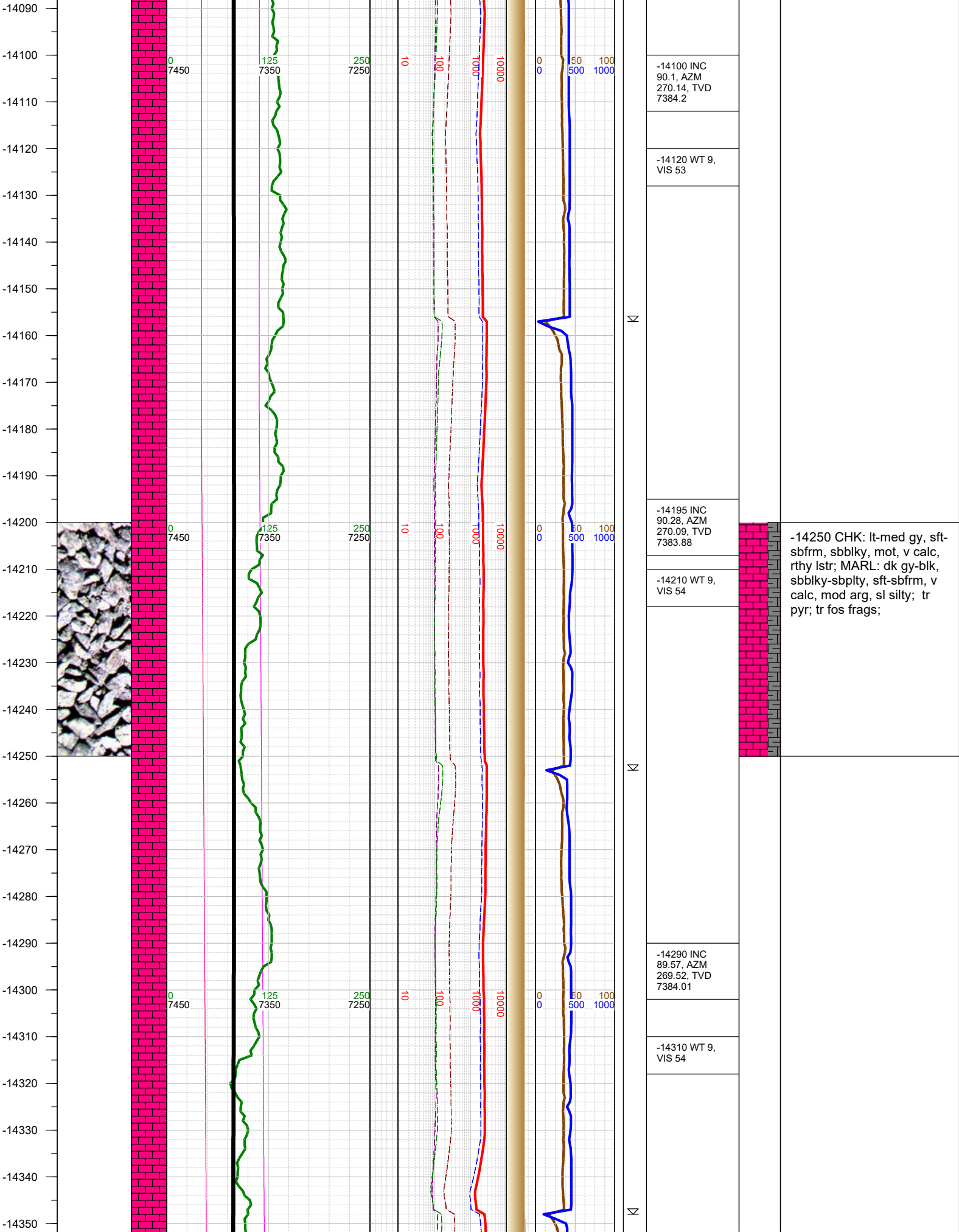




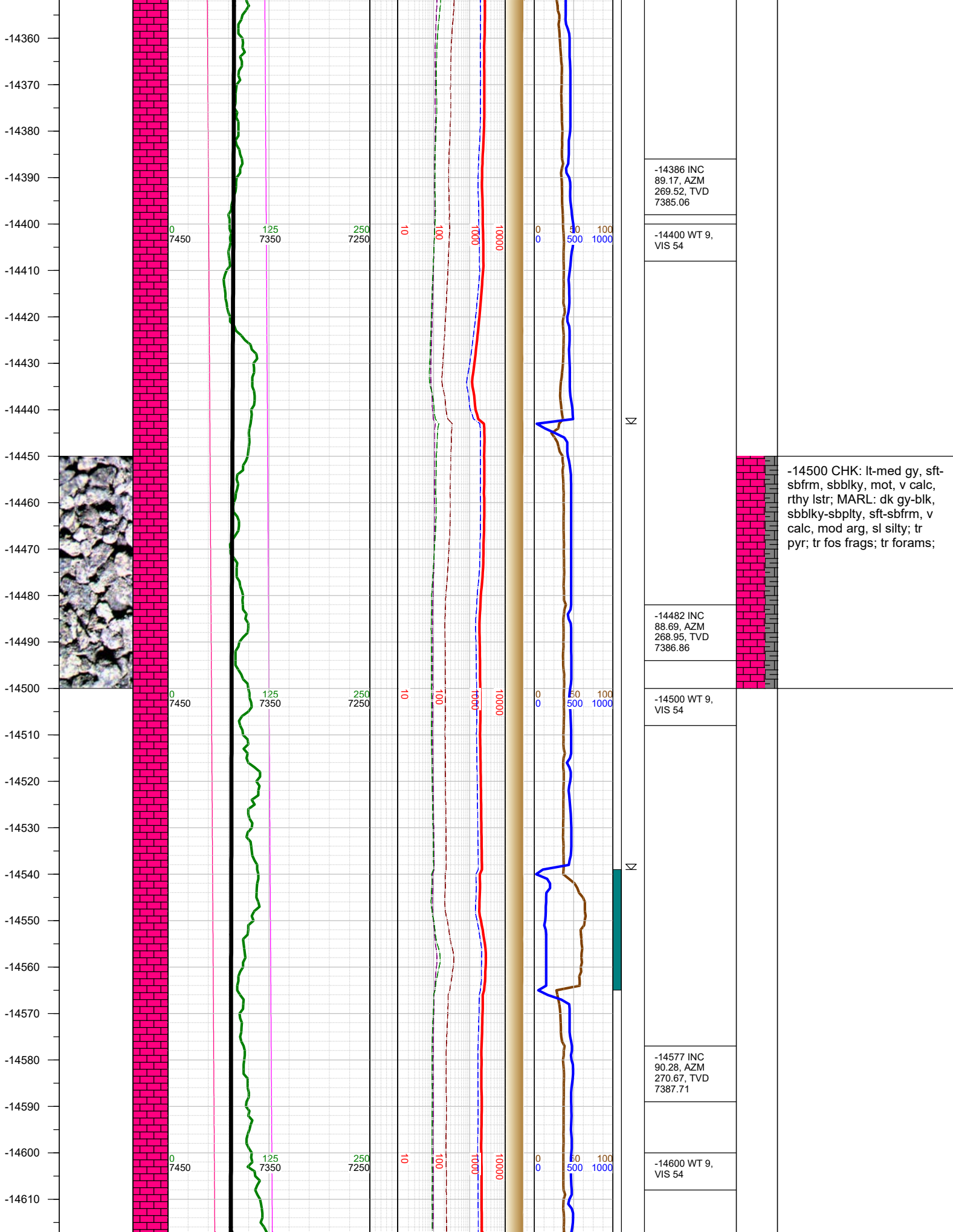


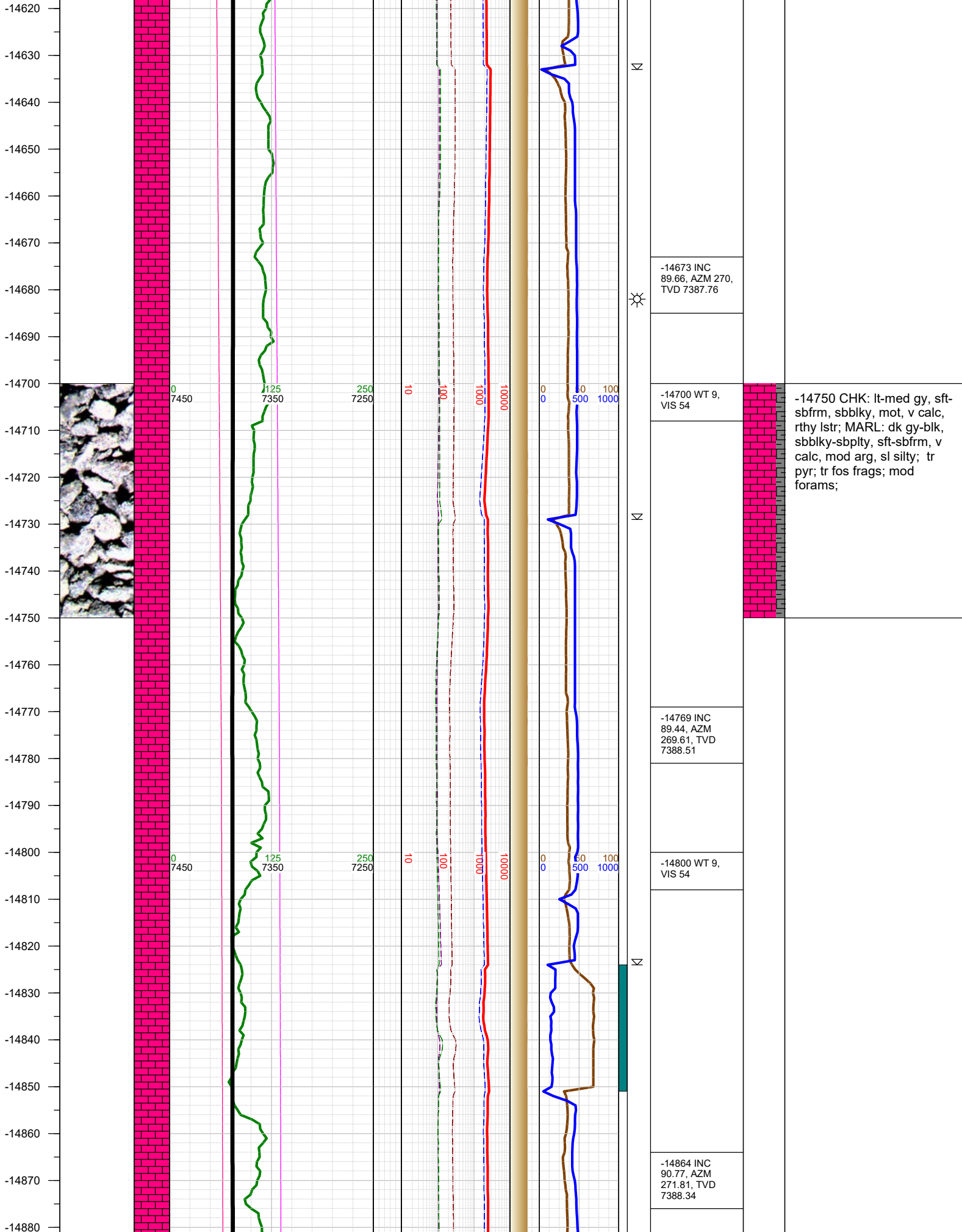


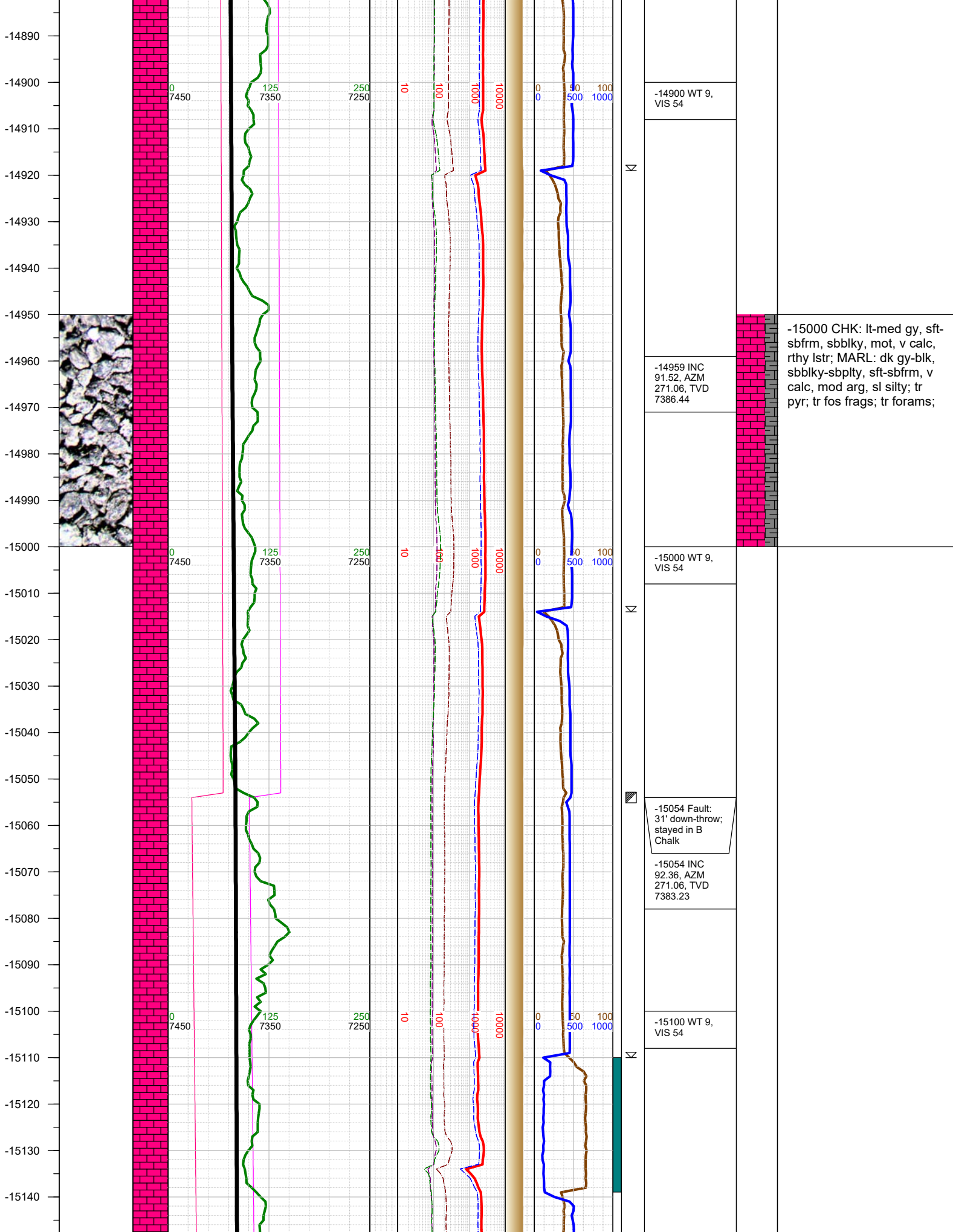
7381.32		
-13900 WT 9, VIS 53		
-13909 INC 89.09, AZM 269.34, TVD 7382.81		
		<p>-14000 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty; CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr; tr bent;</p>
-14004 INC 89.57, AZM 269.43, TVD 7383.92		
-14020 WT 9, VIS 53		



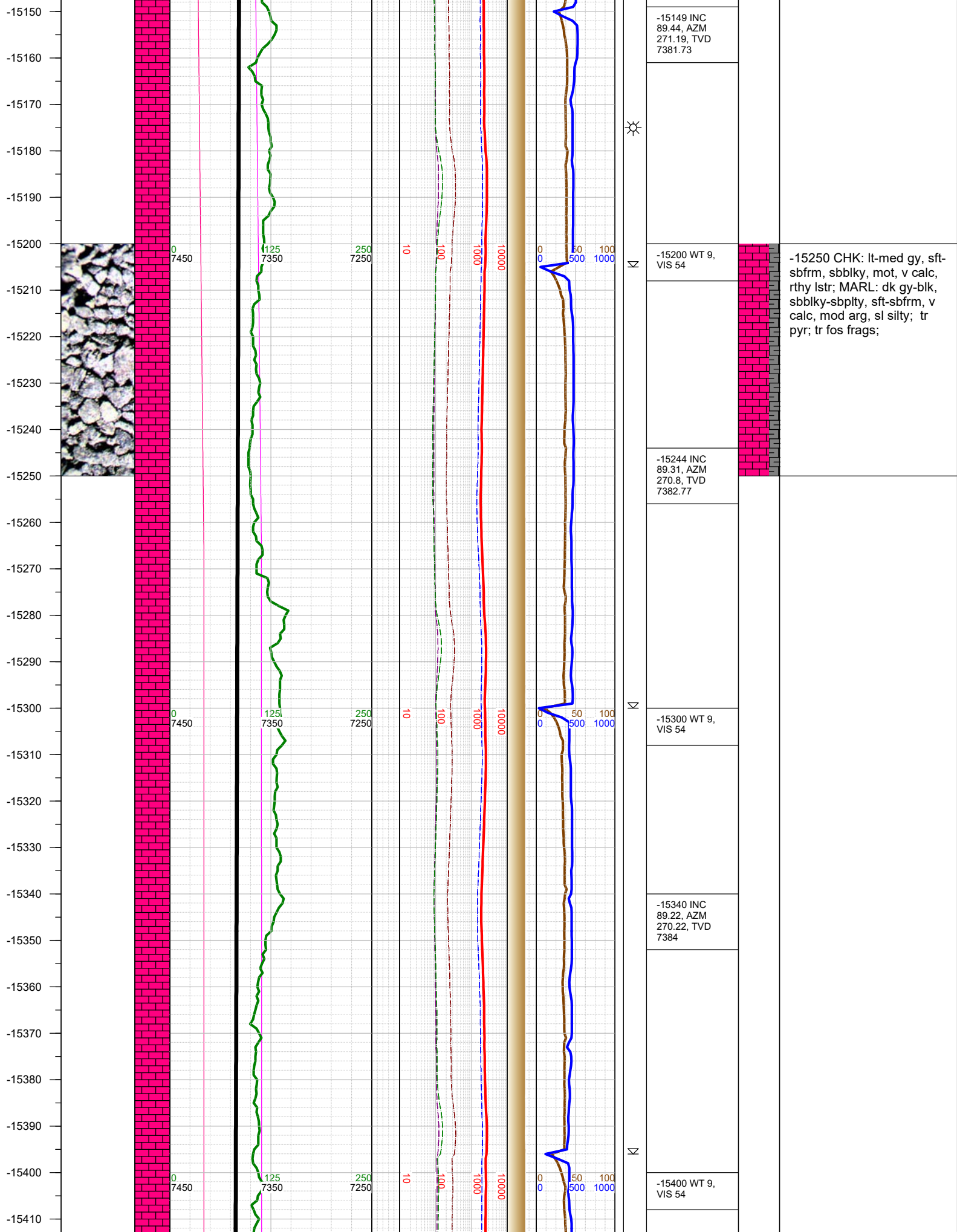




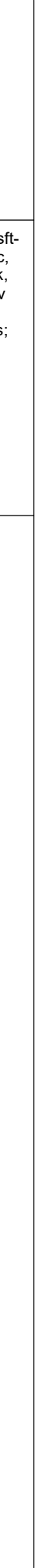
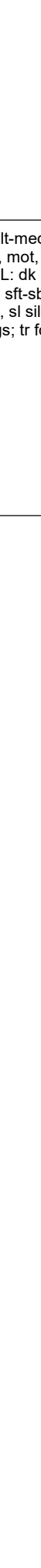
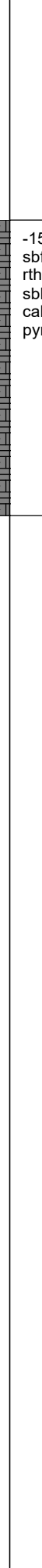
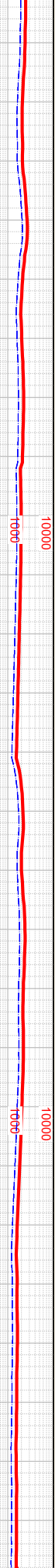
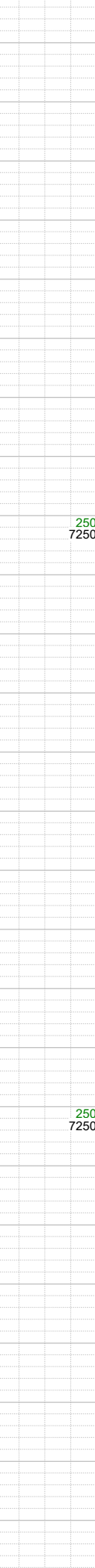
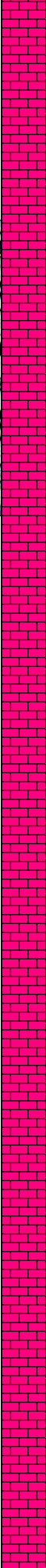
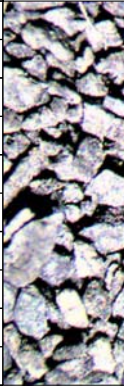








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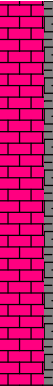
-15435 INC  
89.31, AZM  
269.56, TVD  
7385.22

-15500 WT 9,  
VIS 53

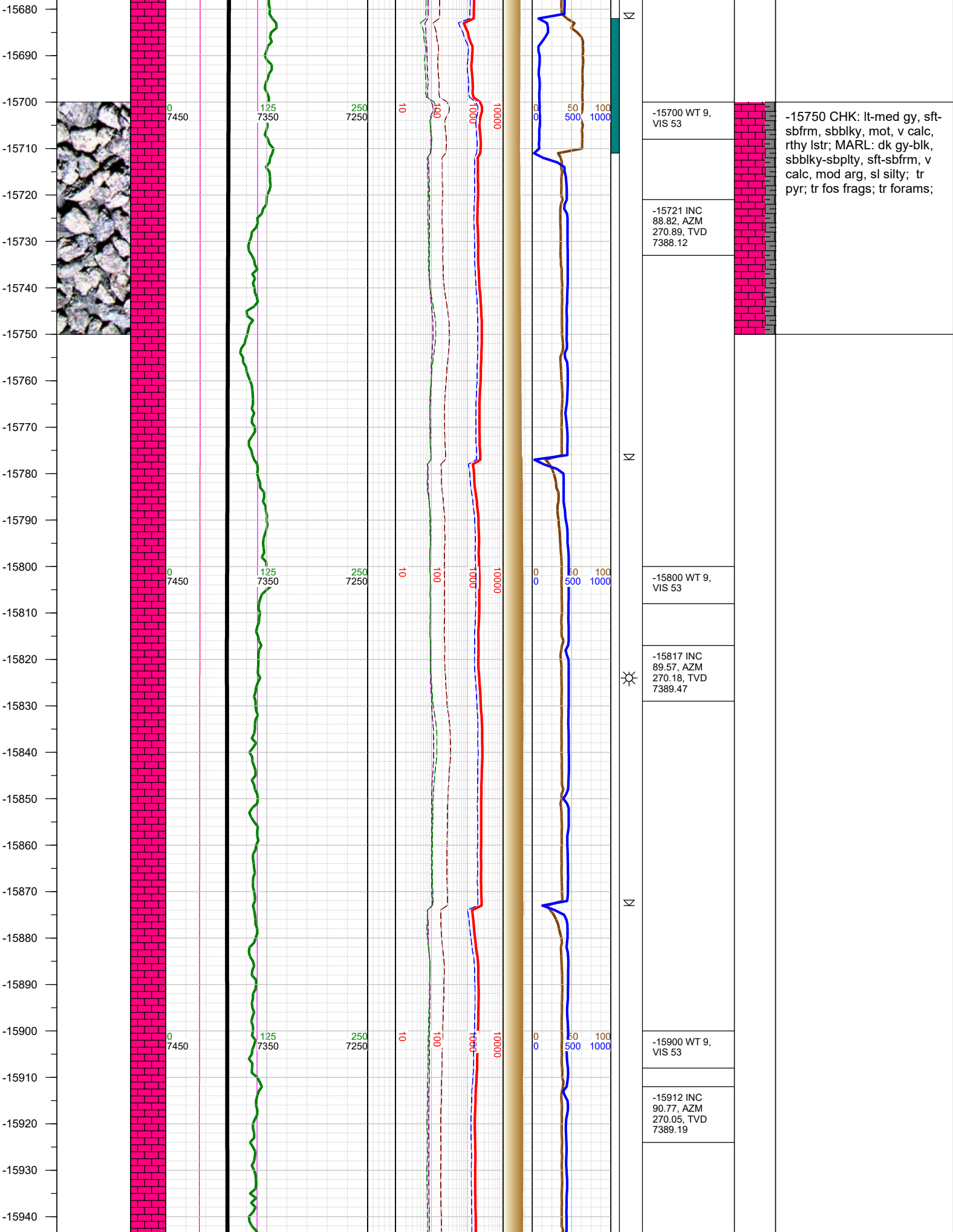
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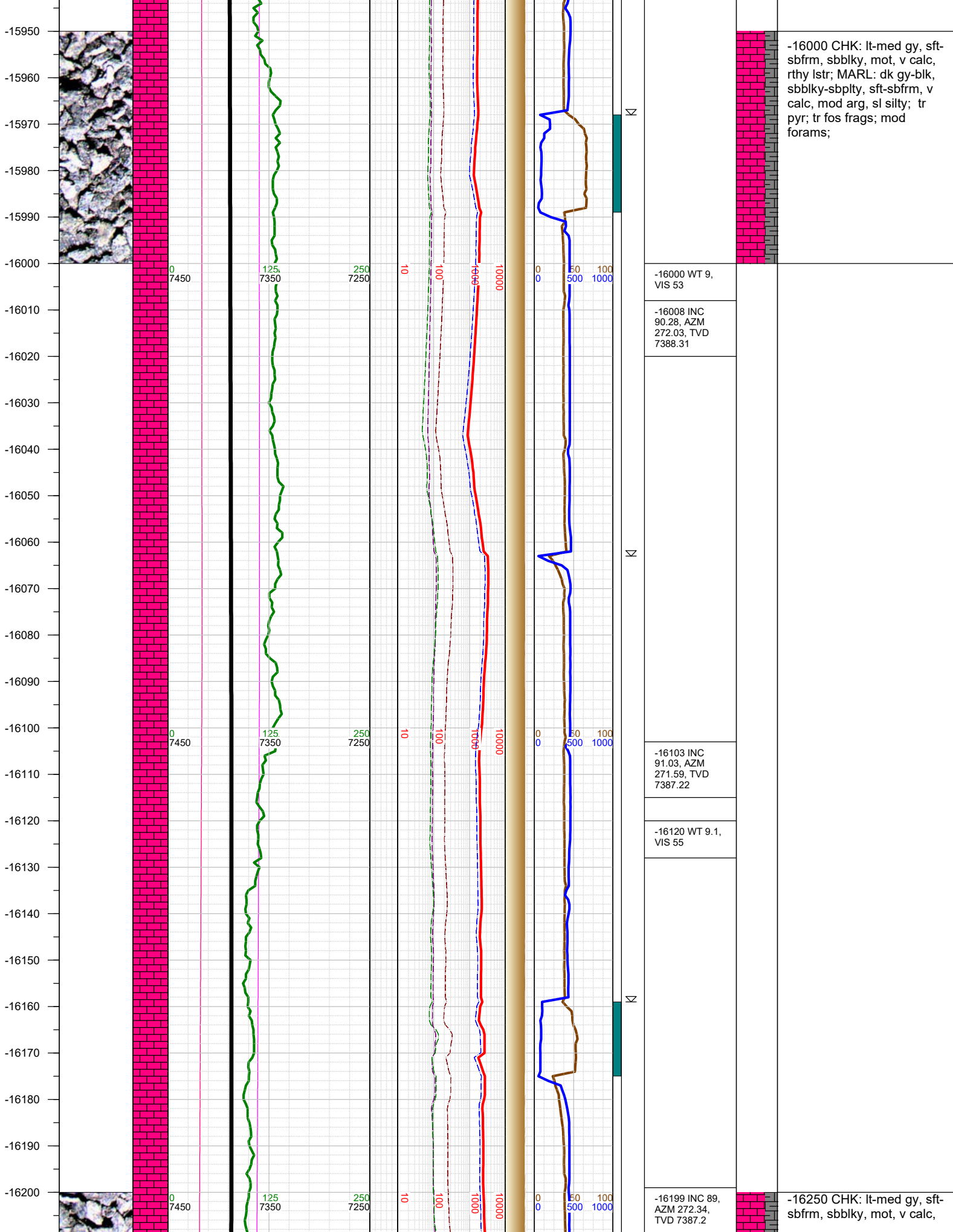
-15626 INC  
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268.11, TVD  
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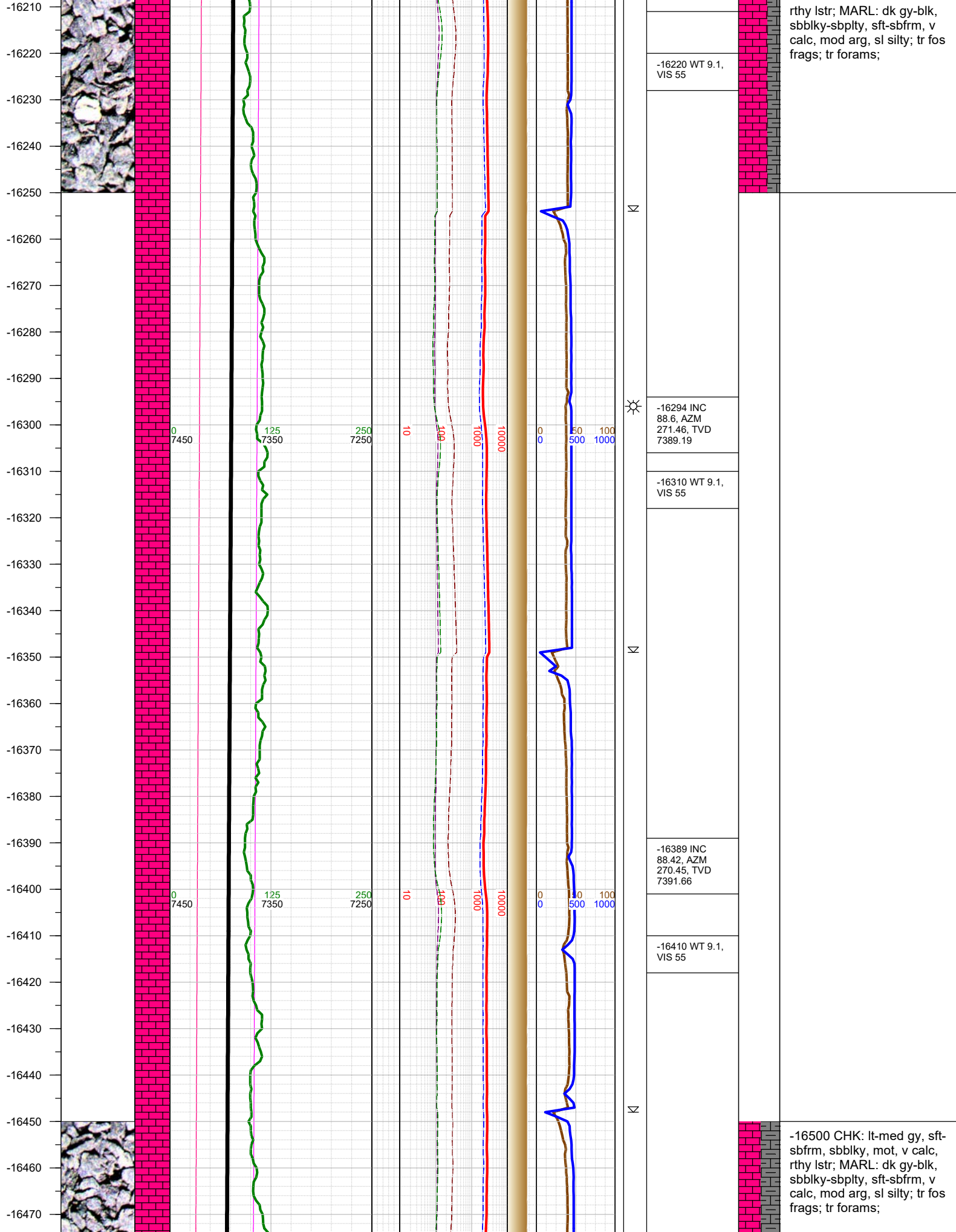


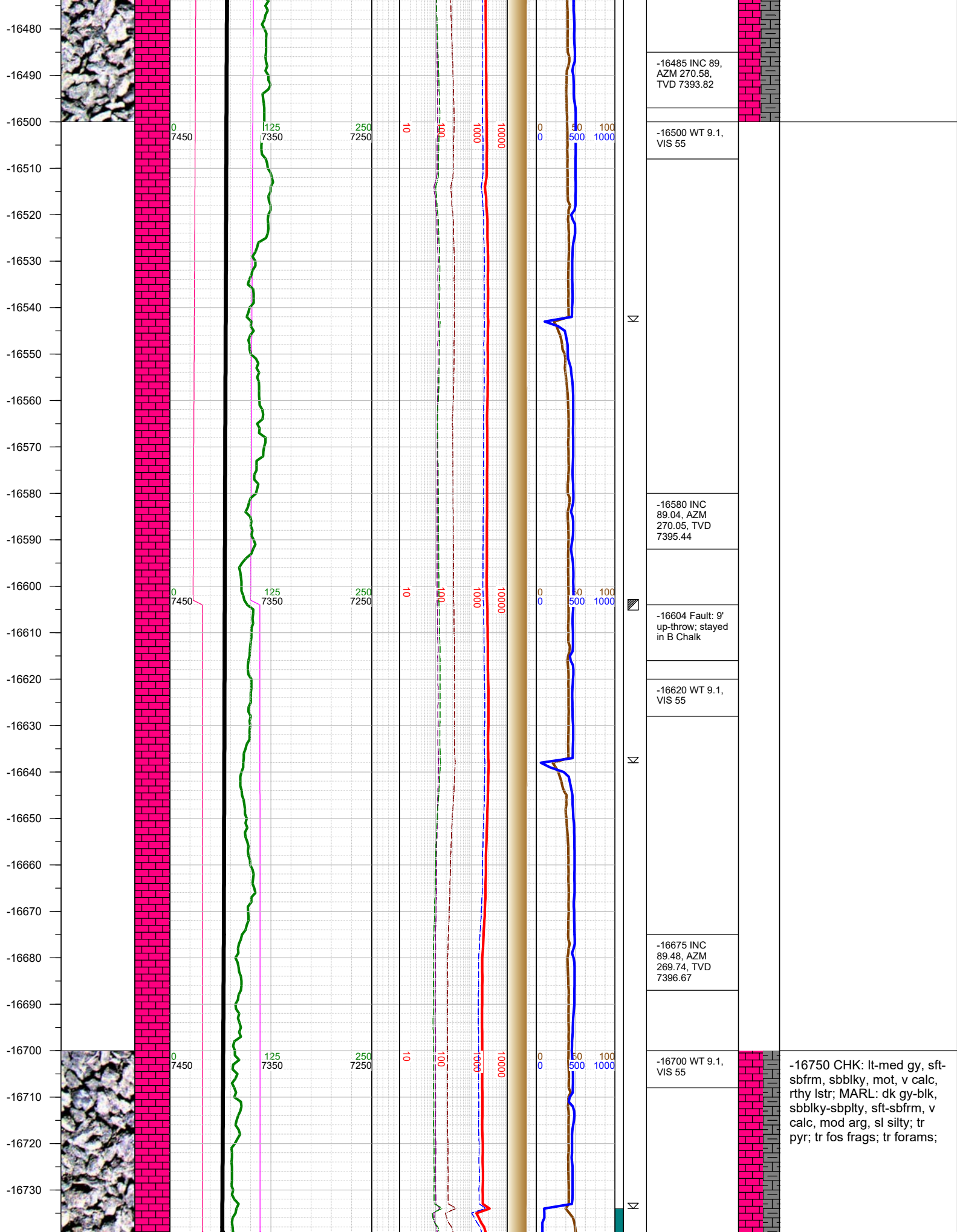
-15500 CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr; MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty; tr pyr; tr fos frags; tr forams;



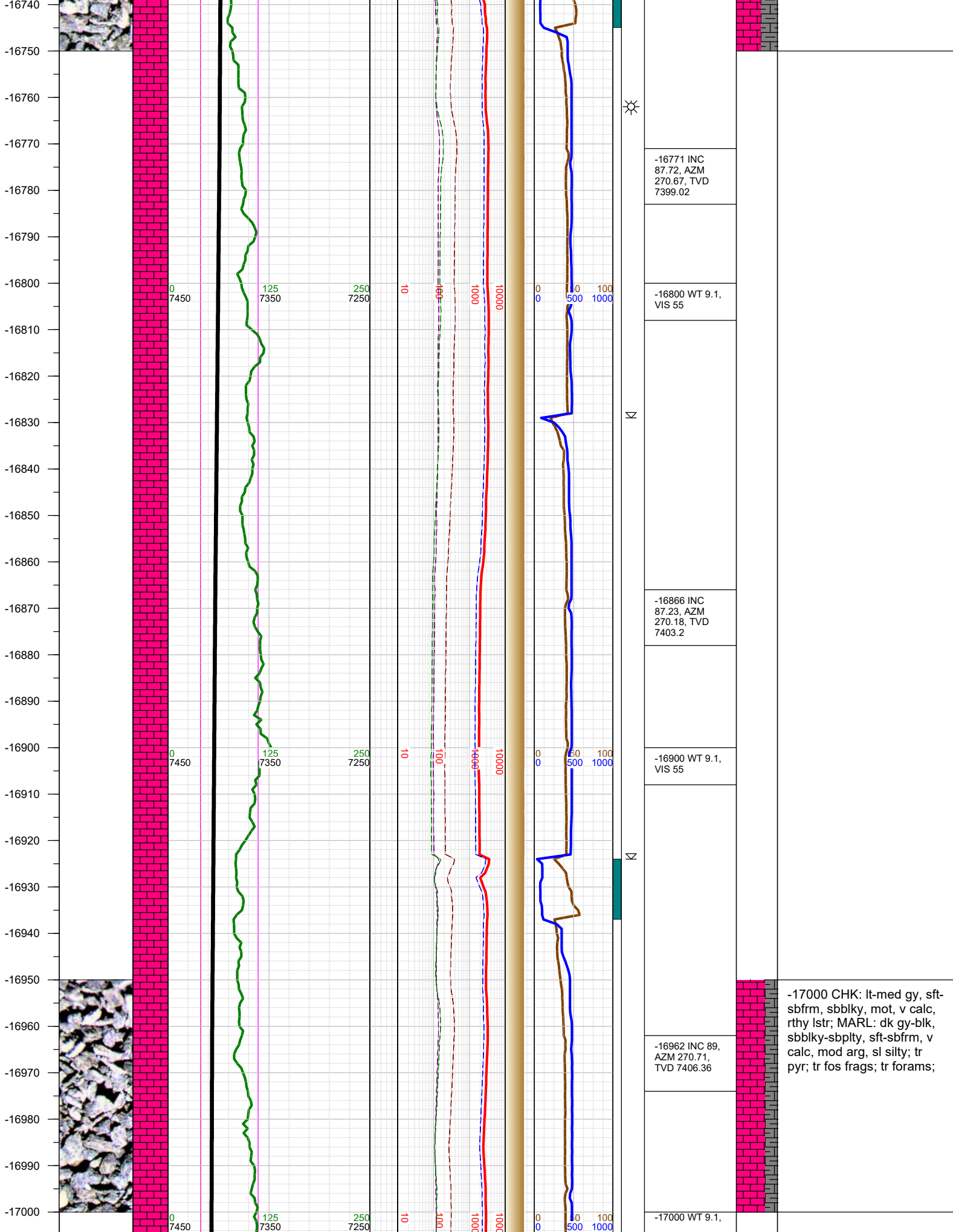




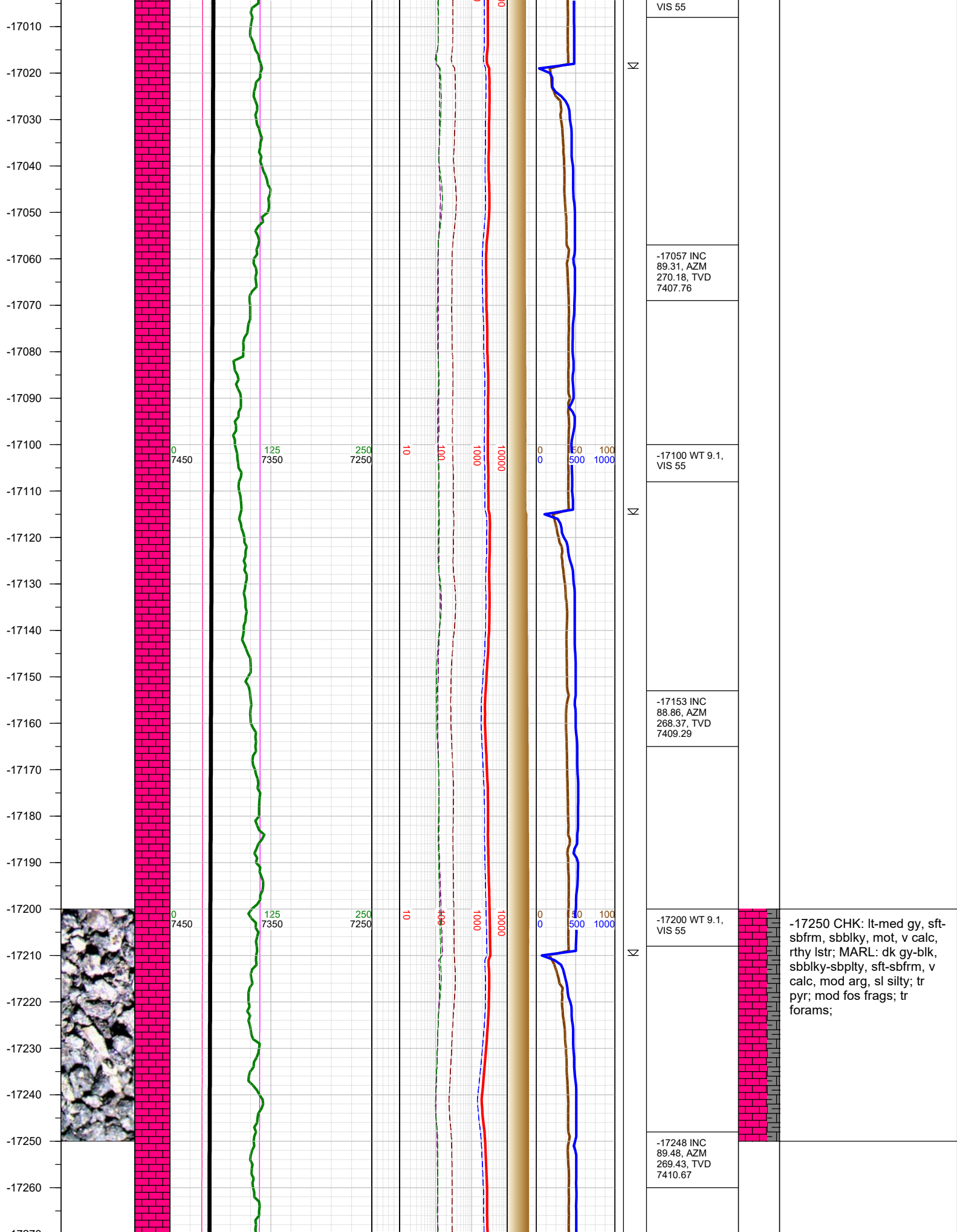




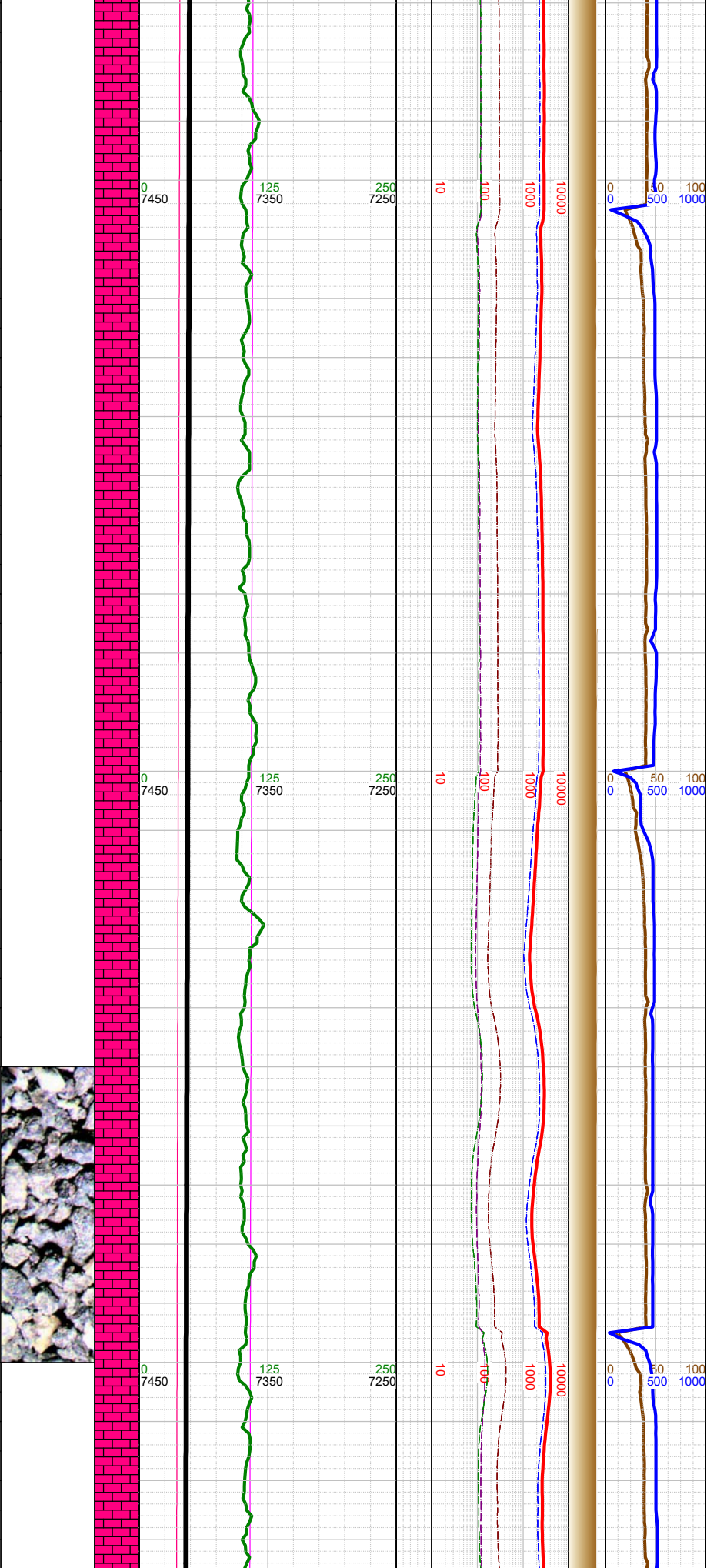




-17000 CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr; MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty; tr pyr; tr fos frags; tr forams;

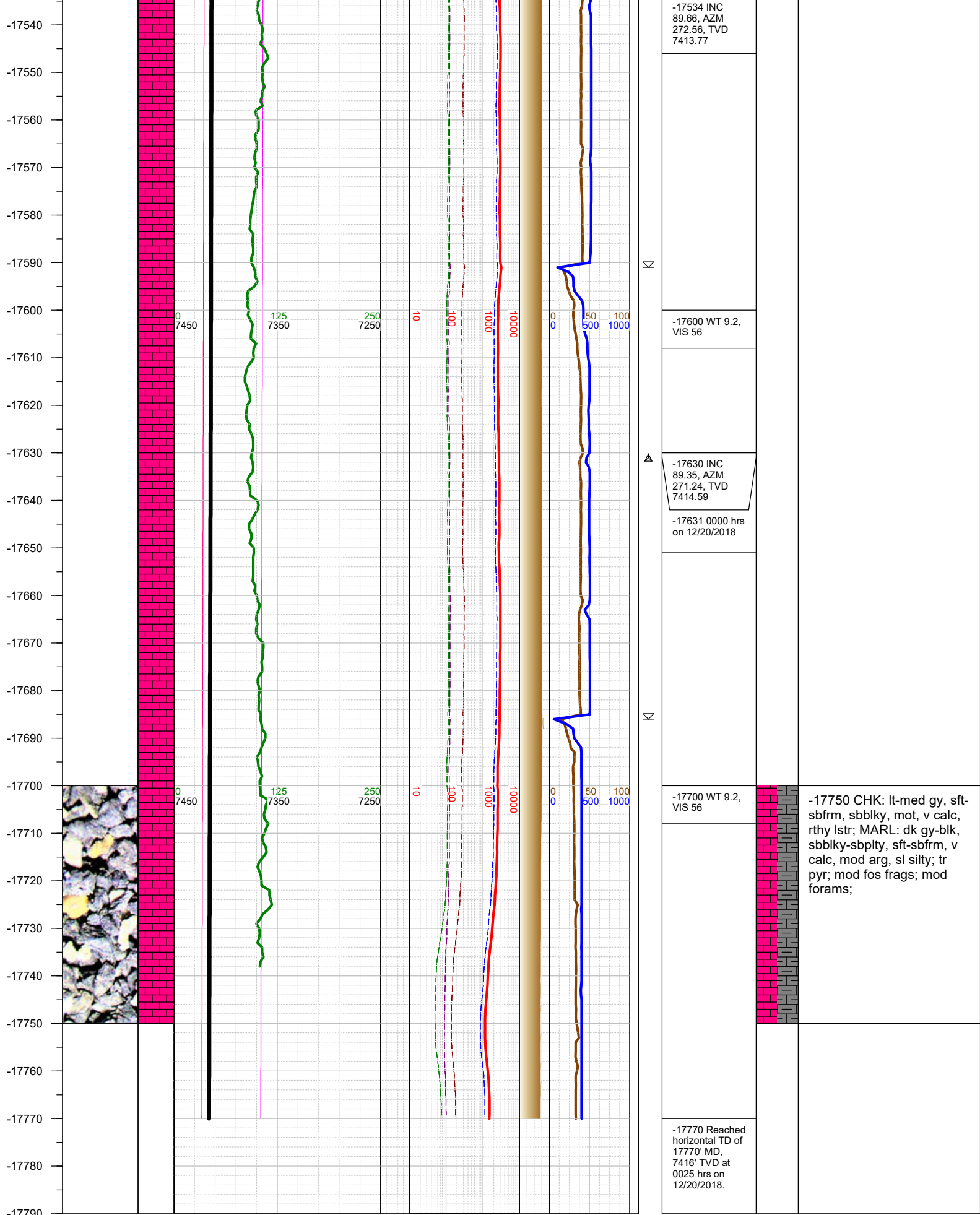


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-17440  
-17450  
-17460  
-17470  
-17480  
-17490  
-17500  
-17510  
-17520  
-17530



N	-17300 WT 9.1, VIS 54	
S	-17343 INC 89.31, AZM 270.45, TVD 7411.67	
N	-17400 WT 9.1, VIS 54	
	-17439 INC 89.26, AZM 271.55, TVD 7412.87	
		-17500 CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr; MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, v calc, mod arg, sl silty; tr pyr; mod fos frags; tr forams;
N	-17500 WT 9.1, VIS 54	





TOTAL DEPTH = 17770'

Thank you for using Earth Science Agency