

OPERATOR: **Extraction Oil & Gas**

WELL NAME: **Duck Club 12W-20-8C**

FIELD NAME: DJ Basin - Wattenberg

DRILLING RIG: Patterson 901

API #: 05-001-10166

LAT/LONG: 39.97891, -104.73096

SURFACE HOLE: NWSW S12-T1S-R66W, 2408' FSL, 686' FWL

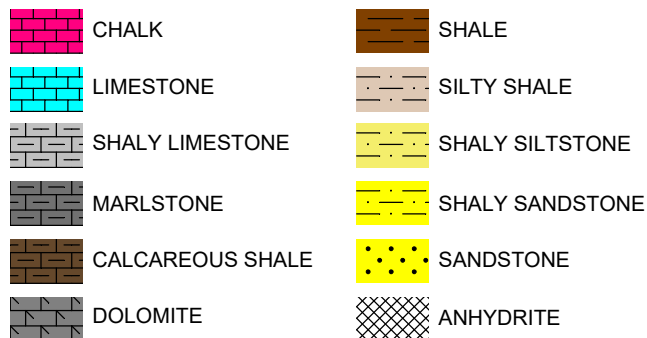
BOTTOM HOLE: S10-T1S-R66W, 1917' FSL, 2178' FEL



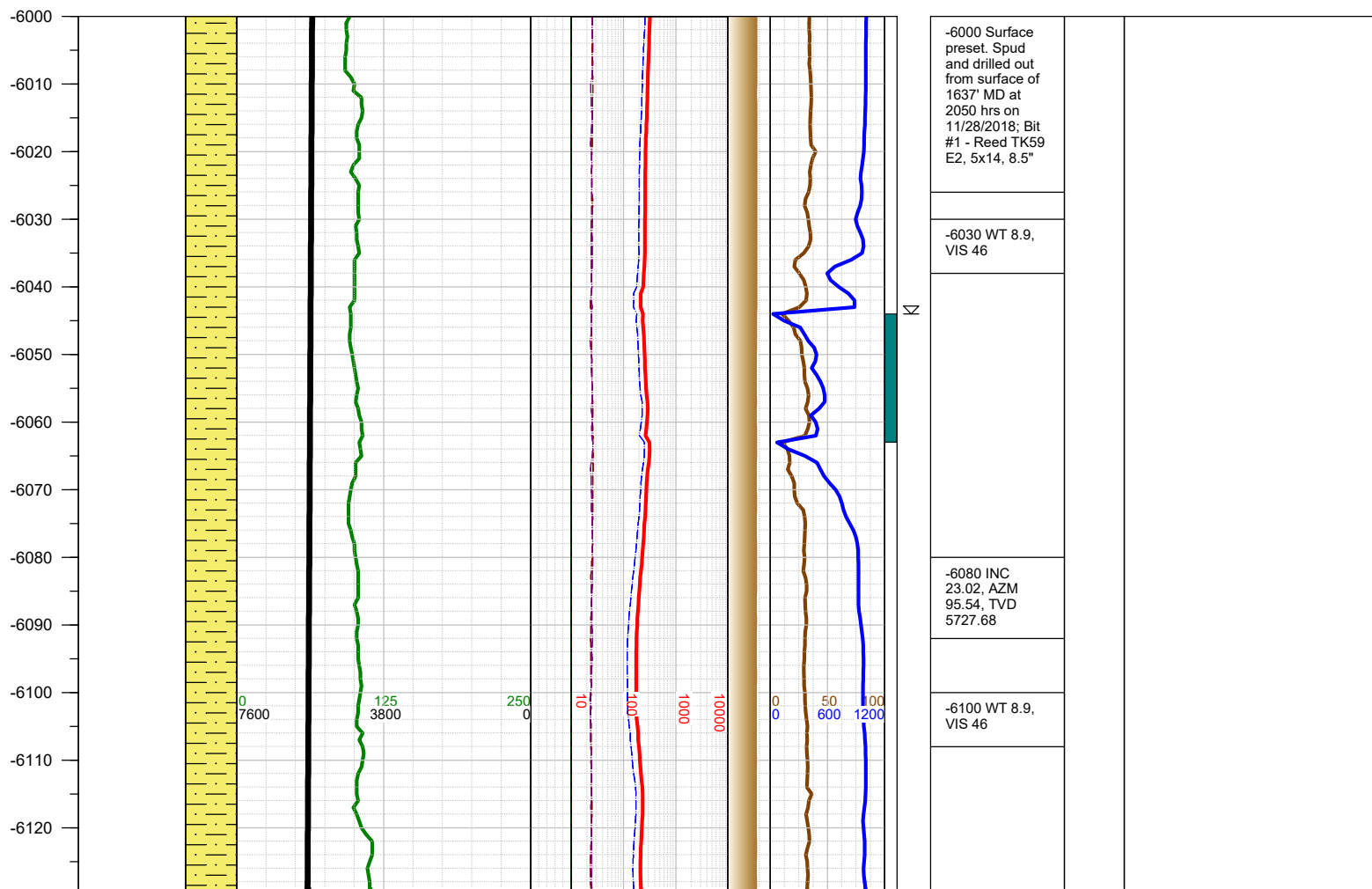
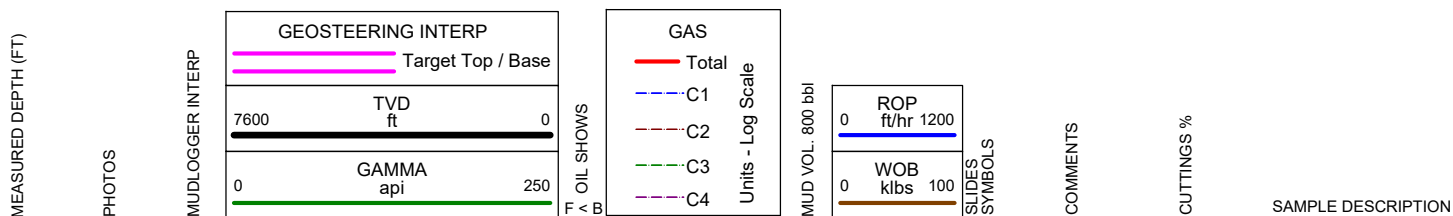
Earth Science Agency, LLC

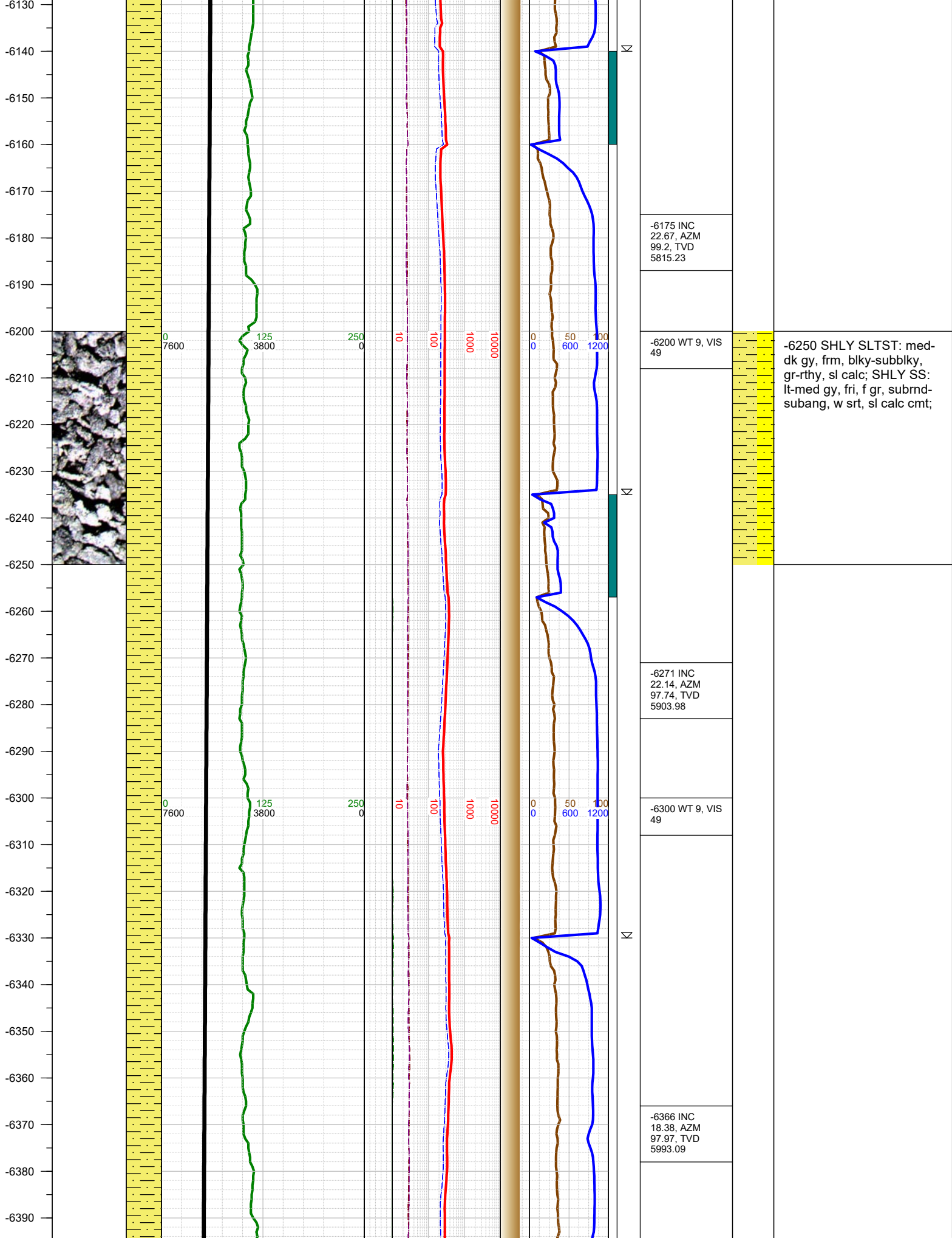
COUNTY: Adams  
STATE: Colorado  
GROUND ELEVATION: 5037'  
KELLY BUSHING: 5066'  
DRILLING FLUID: OBM  
TVD VS. MD: 7650' / 17815'  
SPUD DATE: November 28, 2018  
TD DATE: December 2, 2018  
  
DEPTHS LOGGED: 6000' - 17815'  
DATES LOGGED: November 29, 2018 - December 2, 2018  
GEOLOGISTS: Blake Eatherton, Madison Miller  
SCALE: 5" = 100'

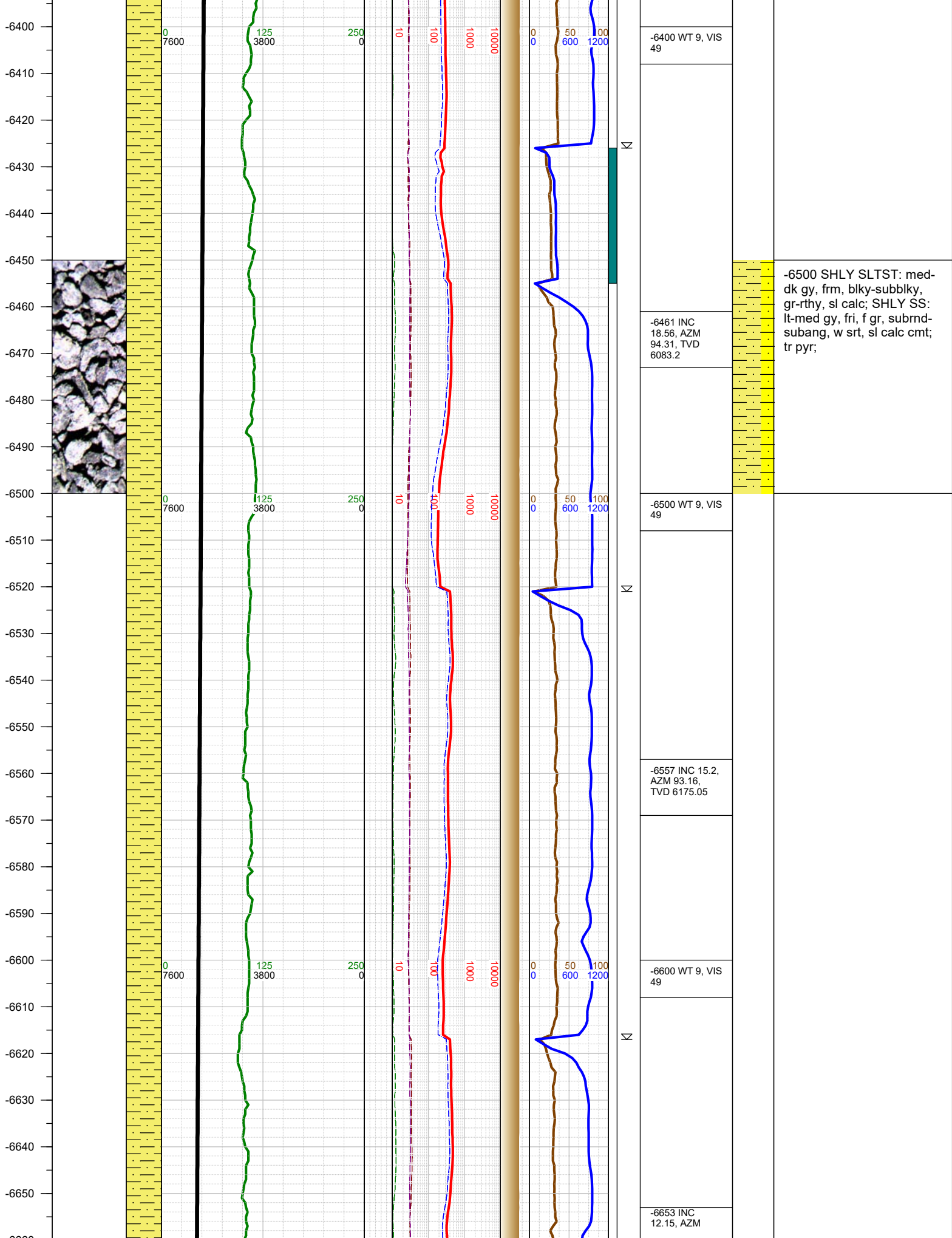
#### LEGEND

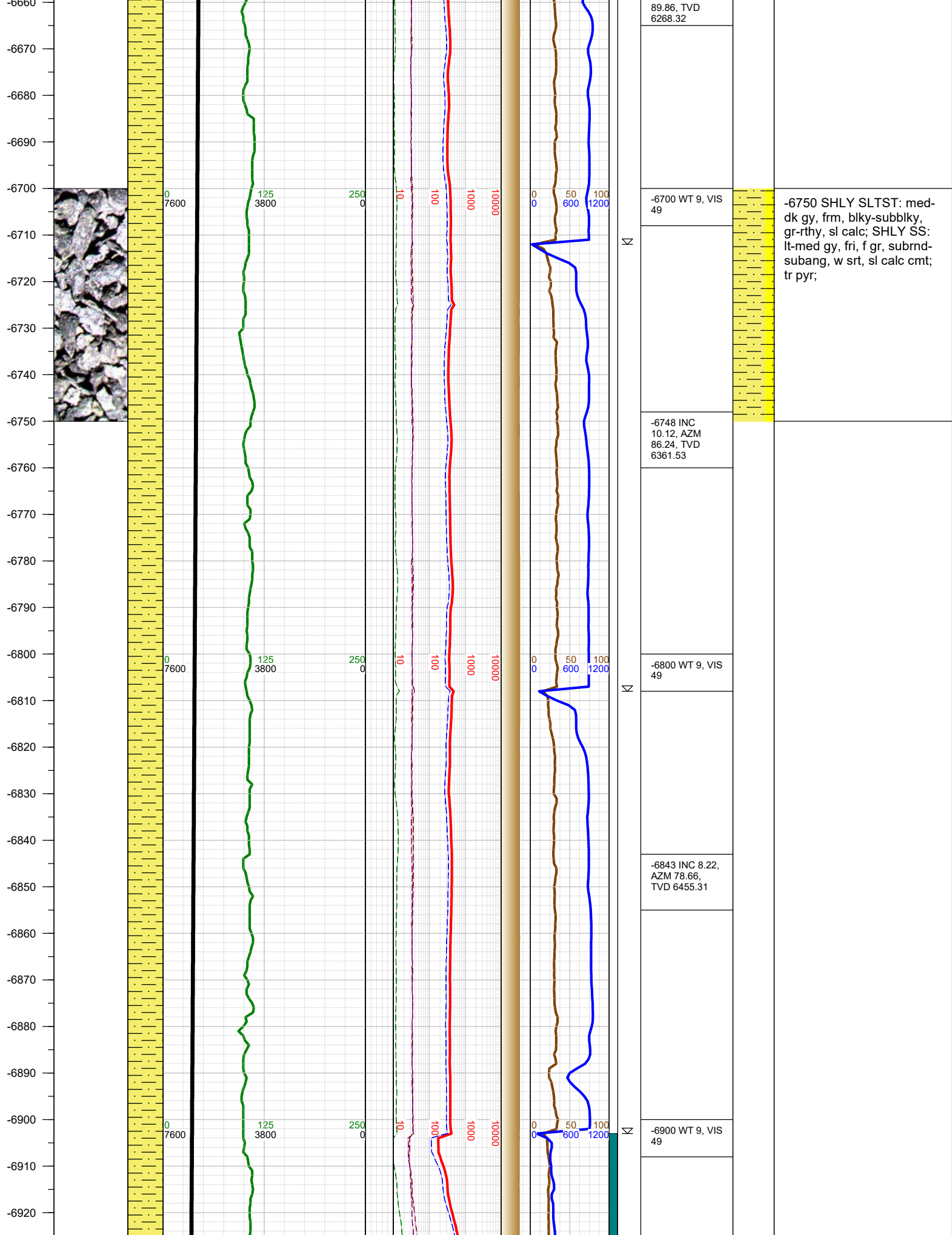


FORMATION CONNECTION MIDNIGHT NEW BIT GAS SHOW FAULT

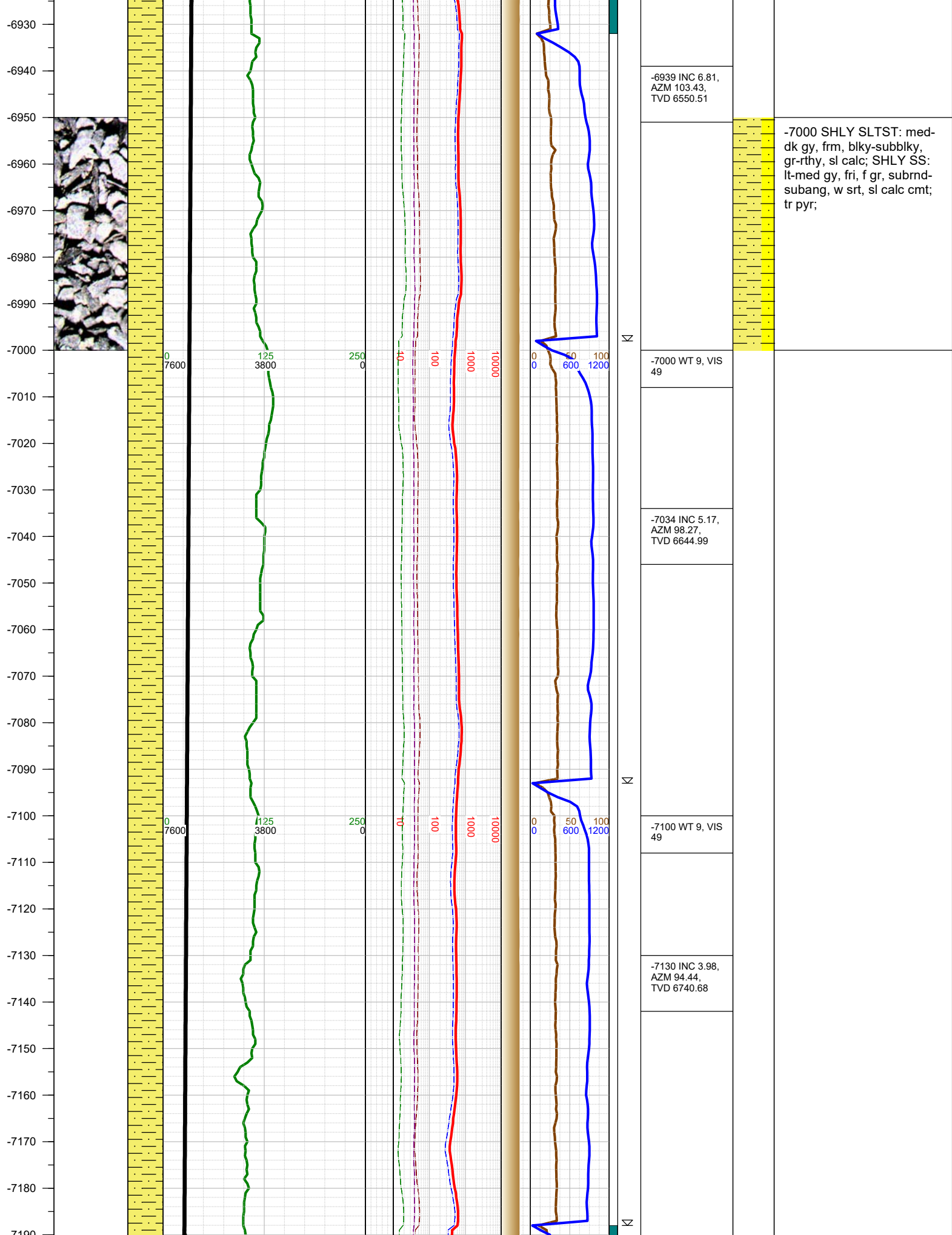


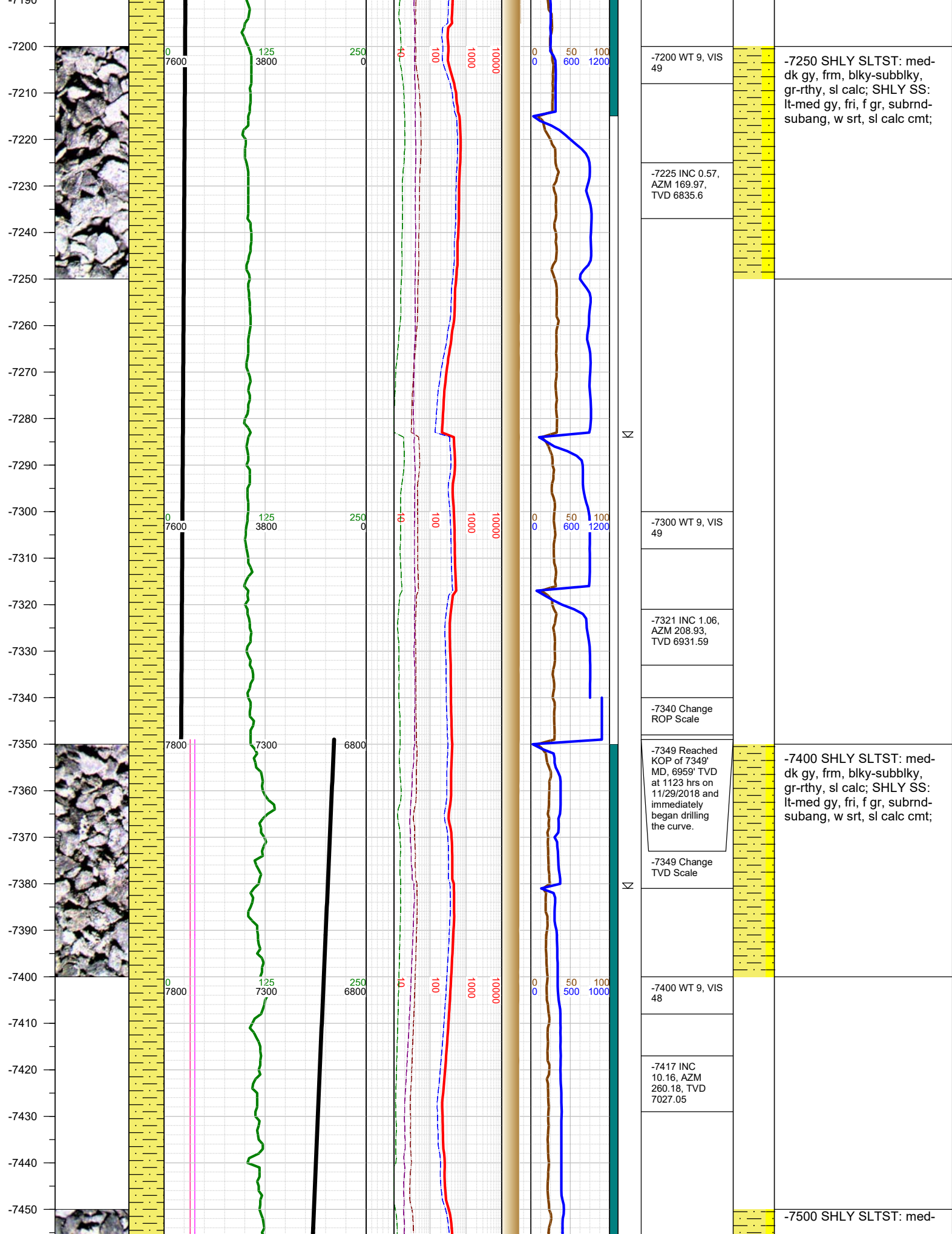


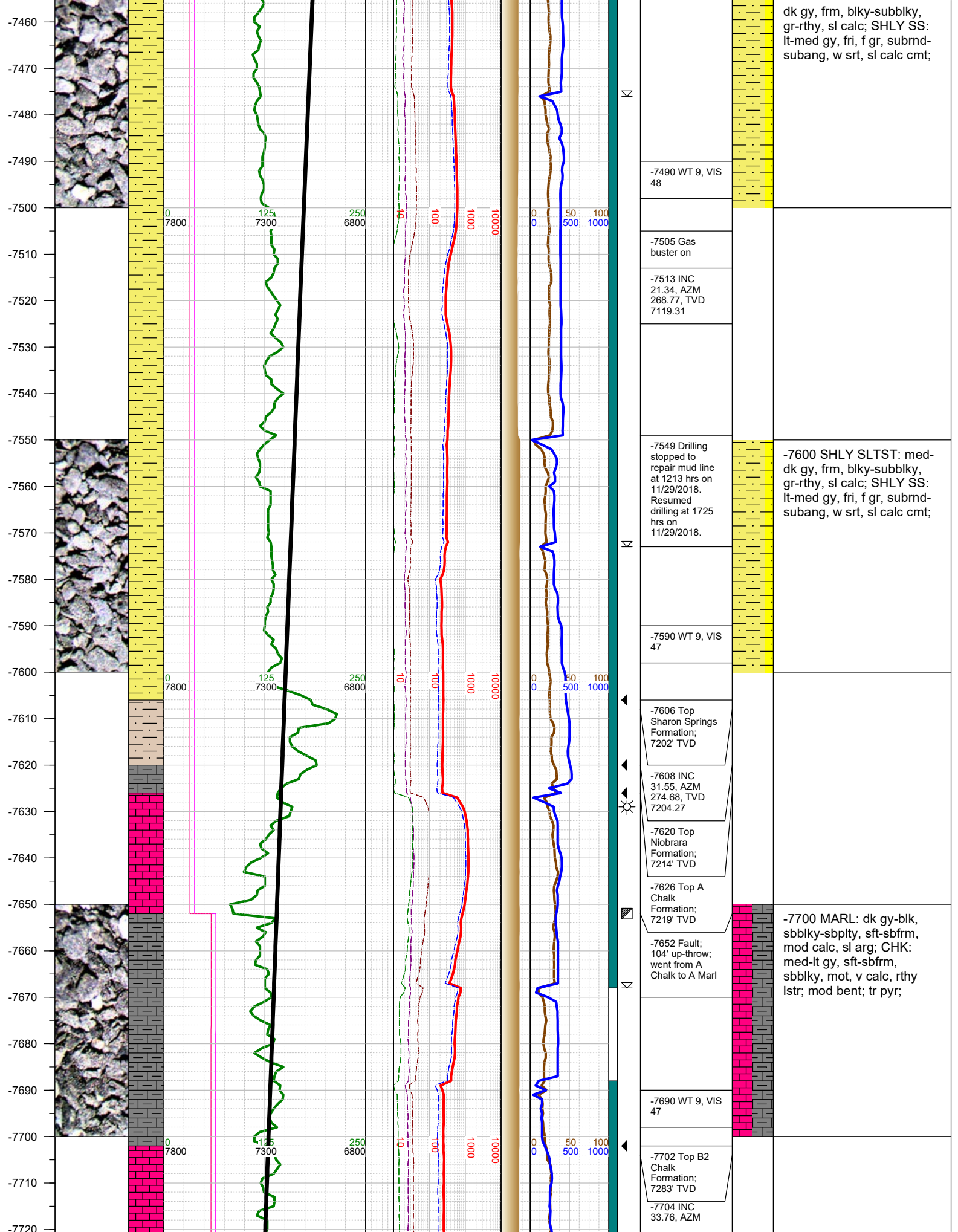




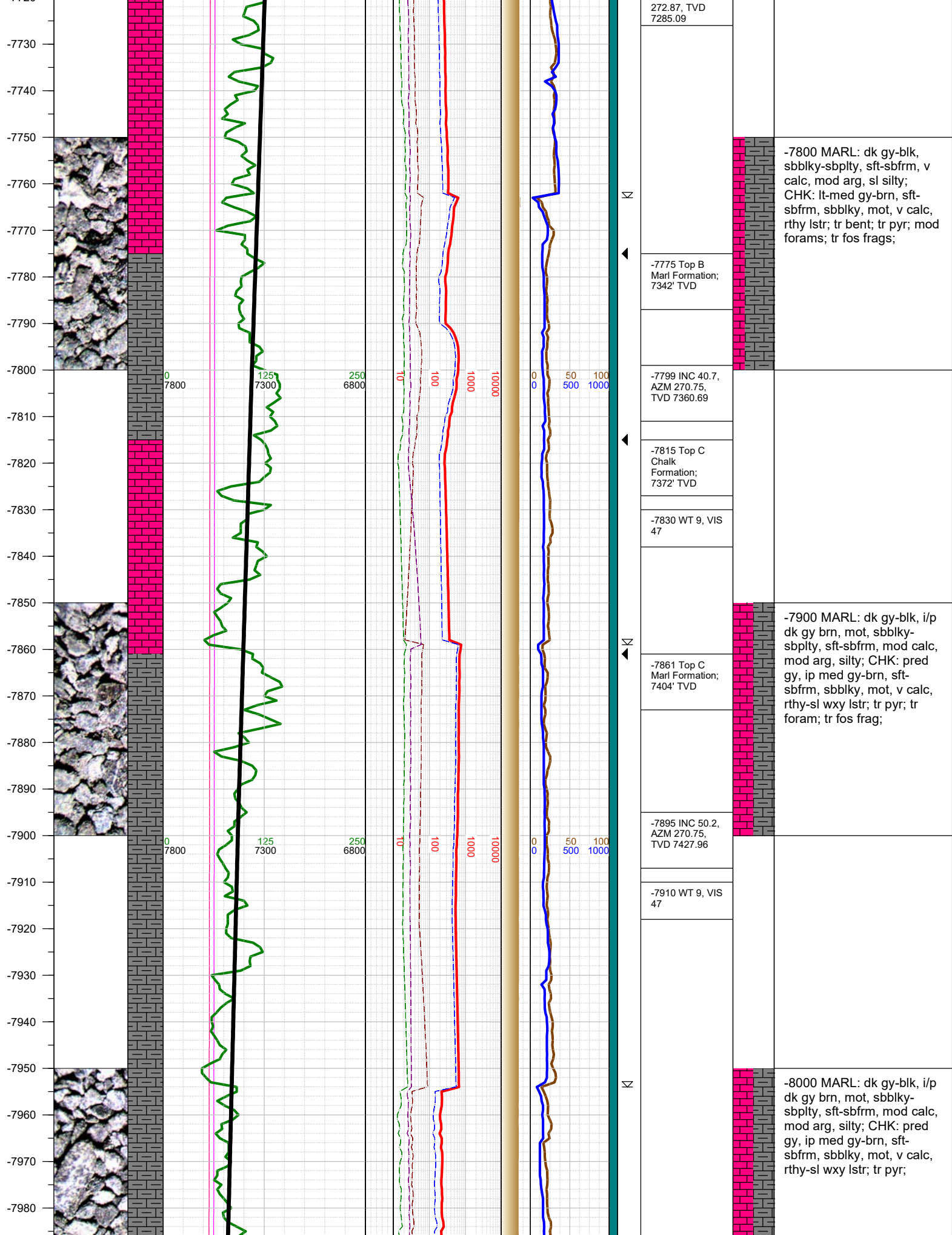




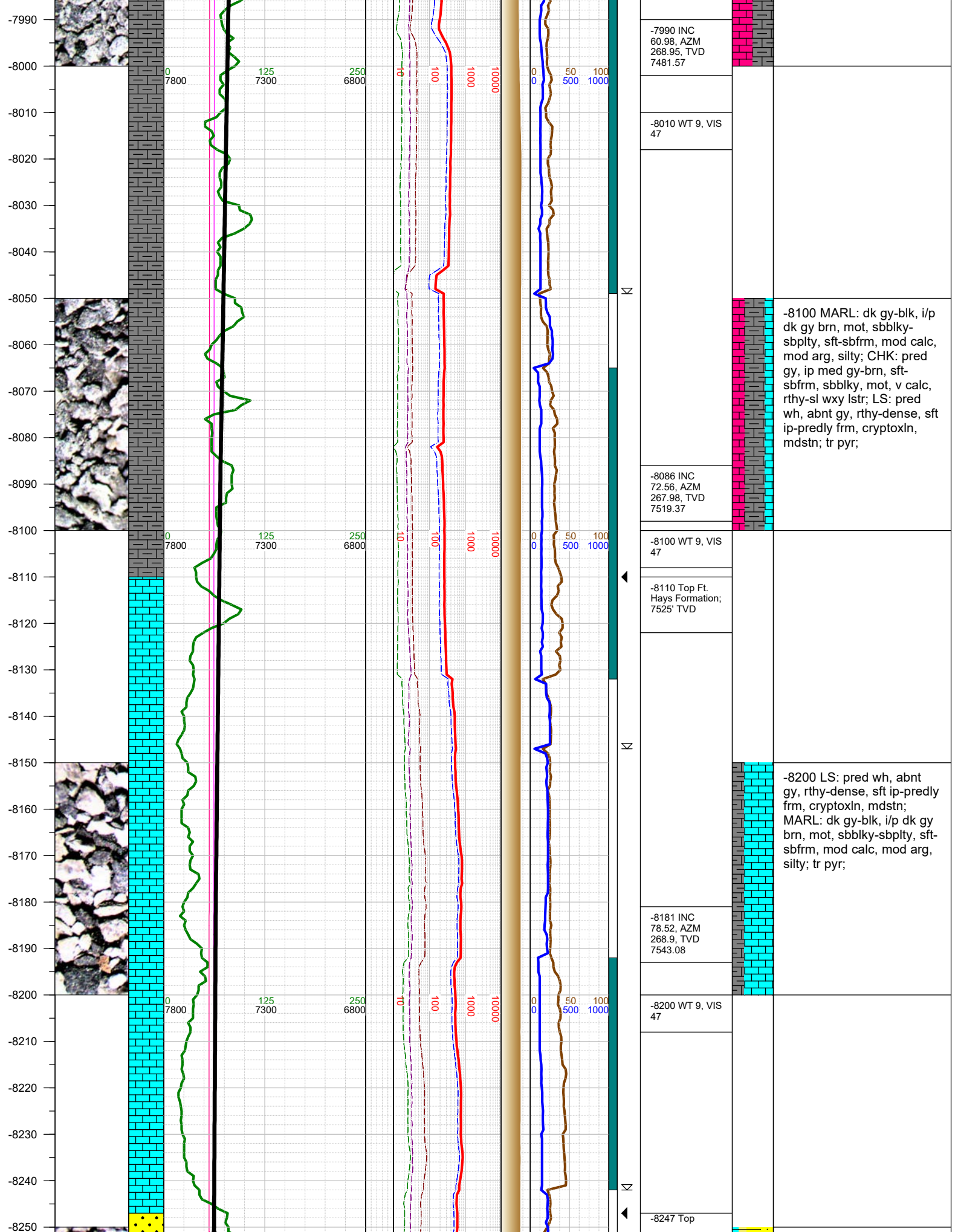


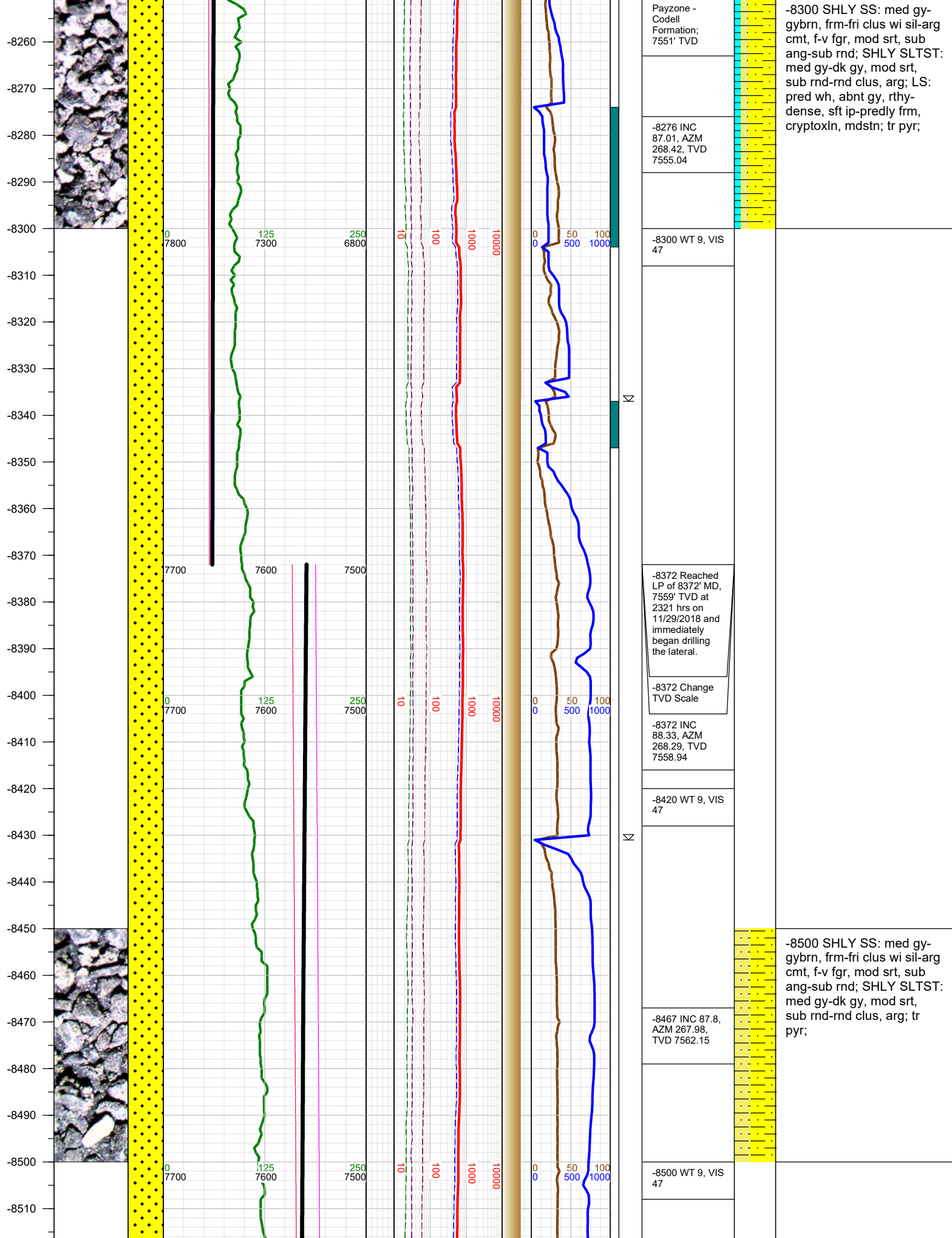




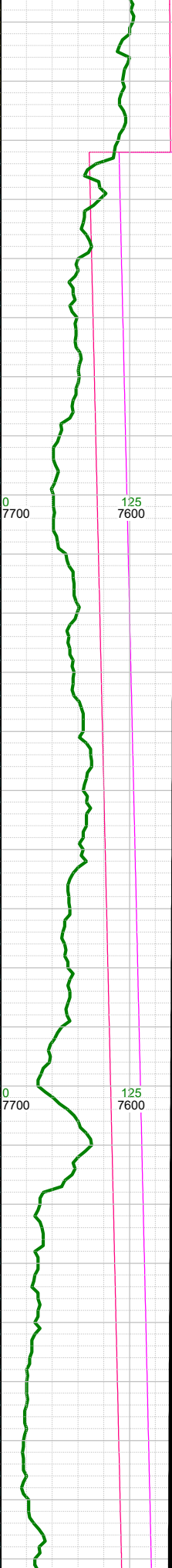
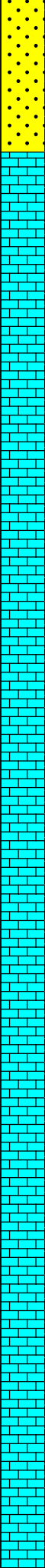




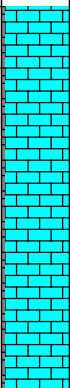




-8520  
-8530  
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-8690  
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-8750  
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-8780

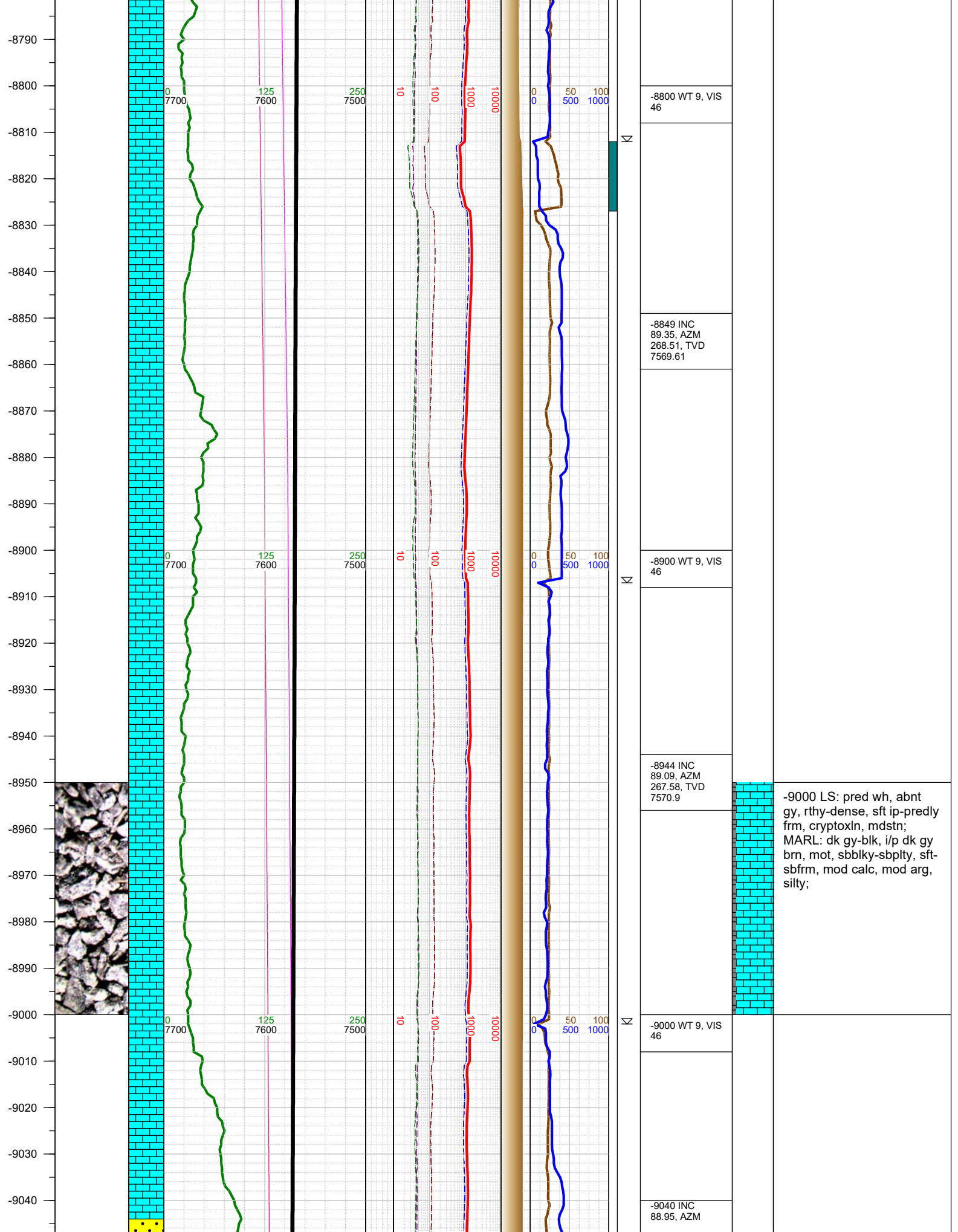


∇	-8542 Fault; 63' down-throw; went from Codell to Ft. Hays
▣	-8563 INC 89.53, AZM 268.9, TVD 7564.38
△	-8586 0000 hrs on 11/30/2018
∇	-8600 WT 9, VIS 47
∇	-8658 INC 89, AZM 267.67, TVD 7565.6
∇	-8700 WT 9, VIS 46
∇	-8753 INC 88.42, AZM 266.48, TVD 7567.74

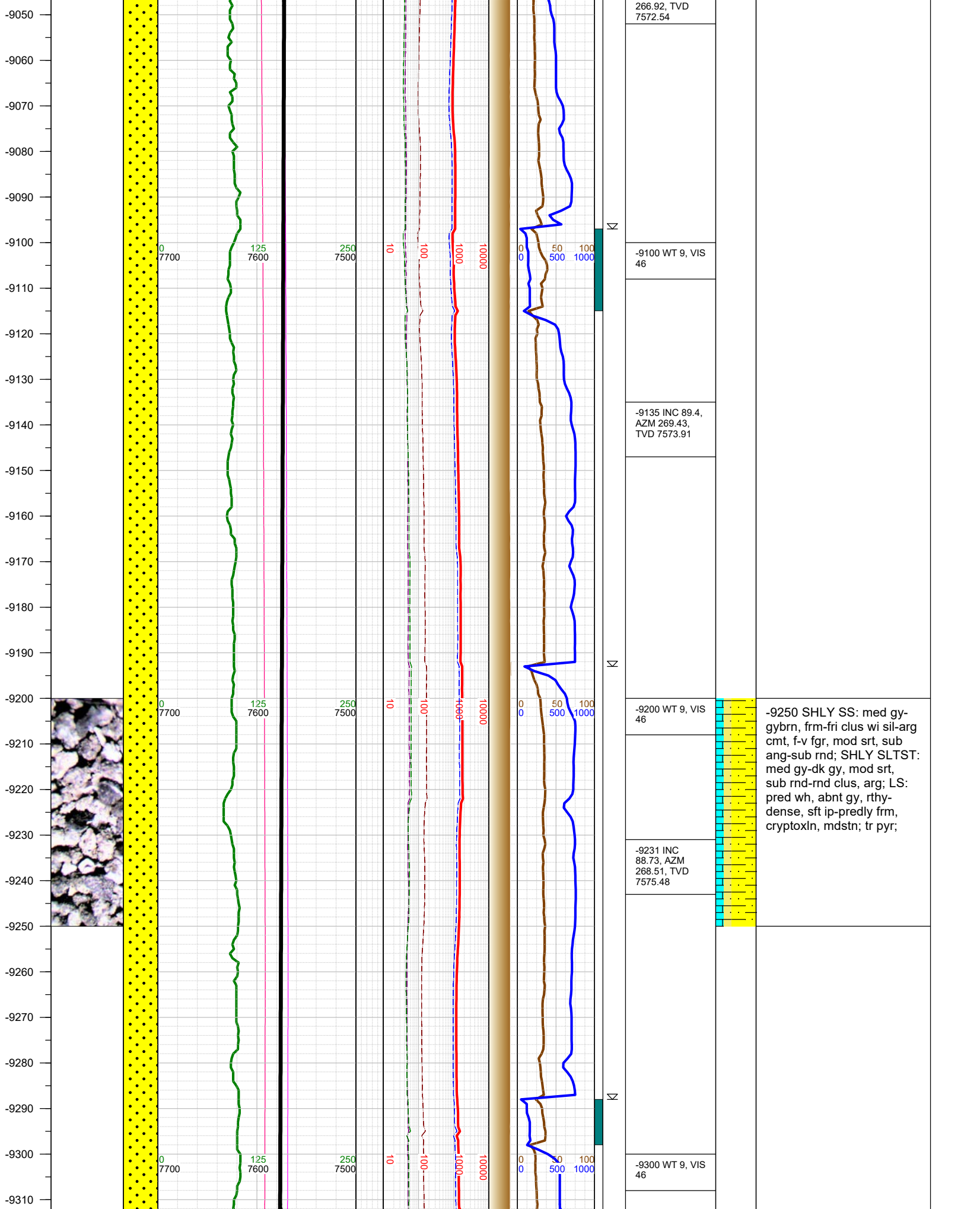


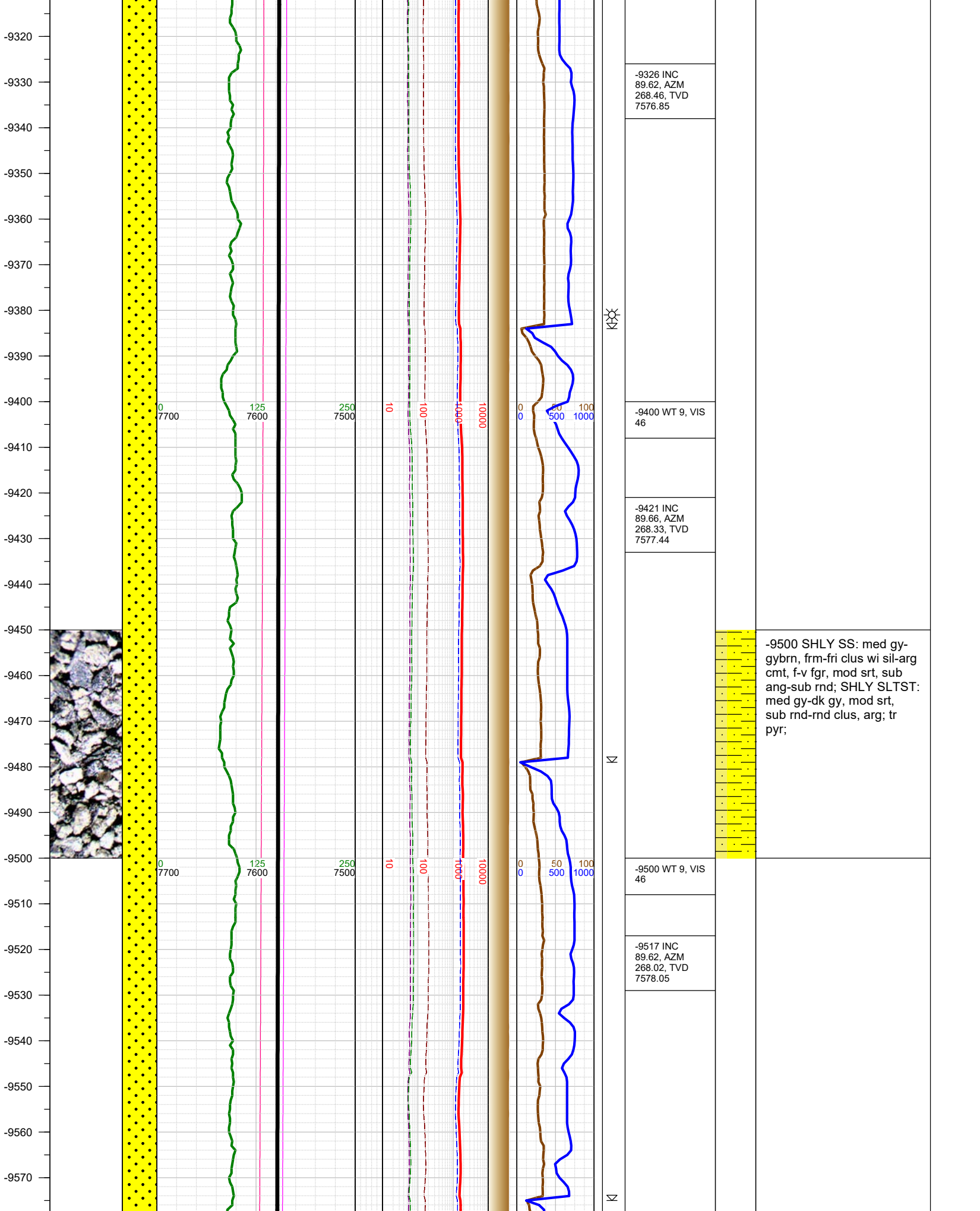
-8750 LS: pred wh, abnt gy, rthy-dense, sft ip-predly frm, cryptoxln, mdstn; MARL: dk gy-blk, i/p dk gy brn, mot, sbblky-sbplty, sft-sbfrm, mod calc, mod arg, silty;

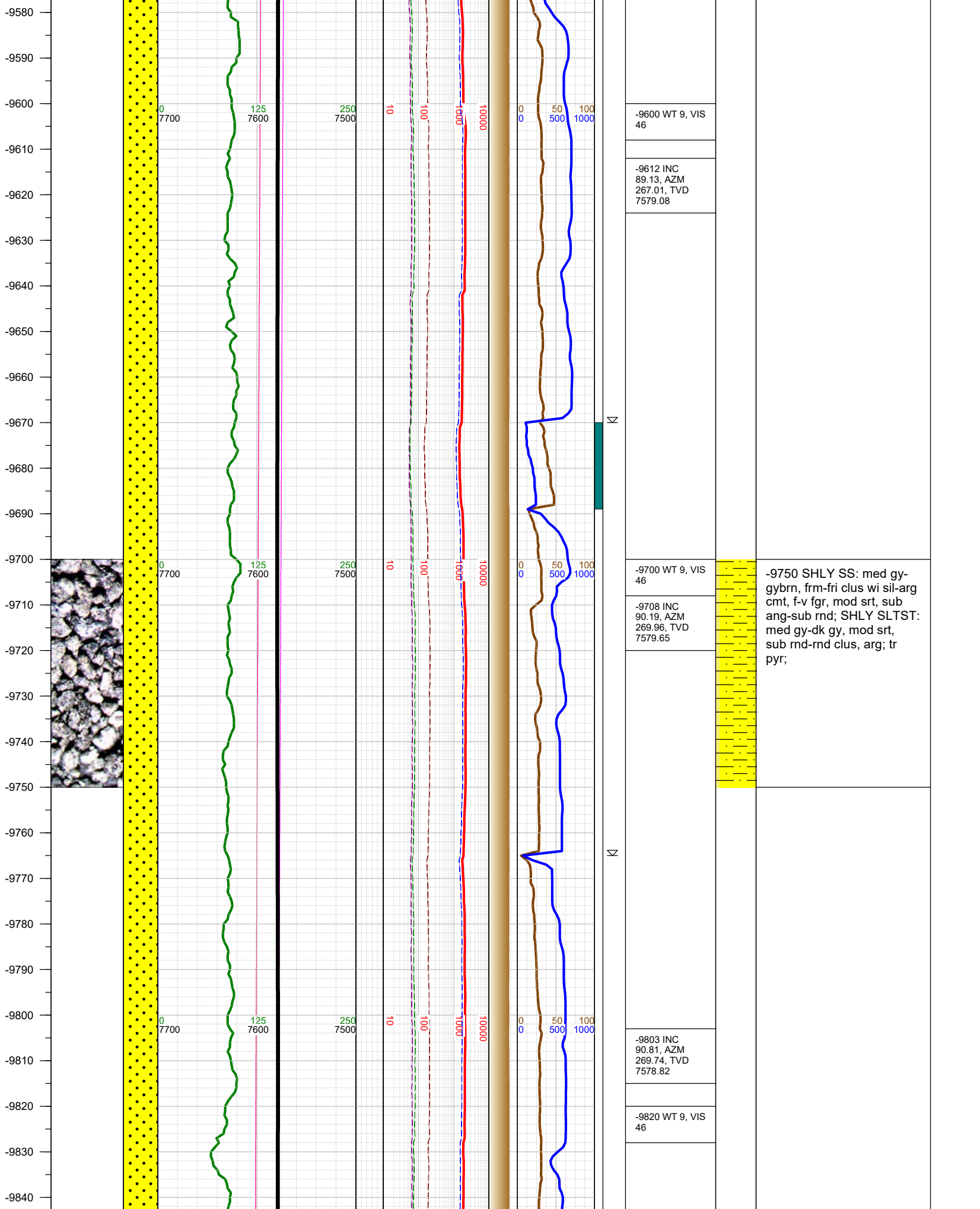




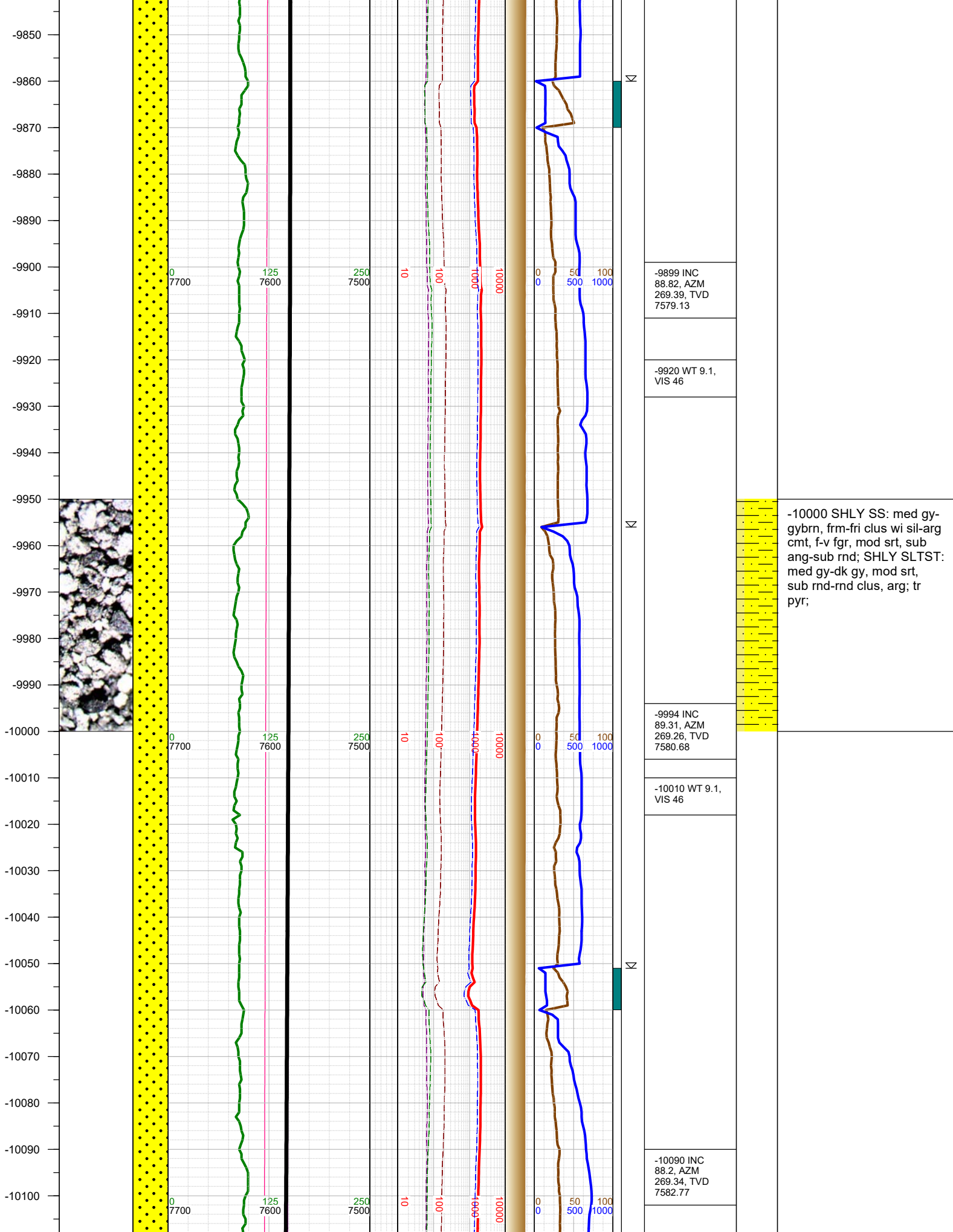




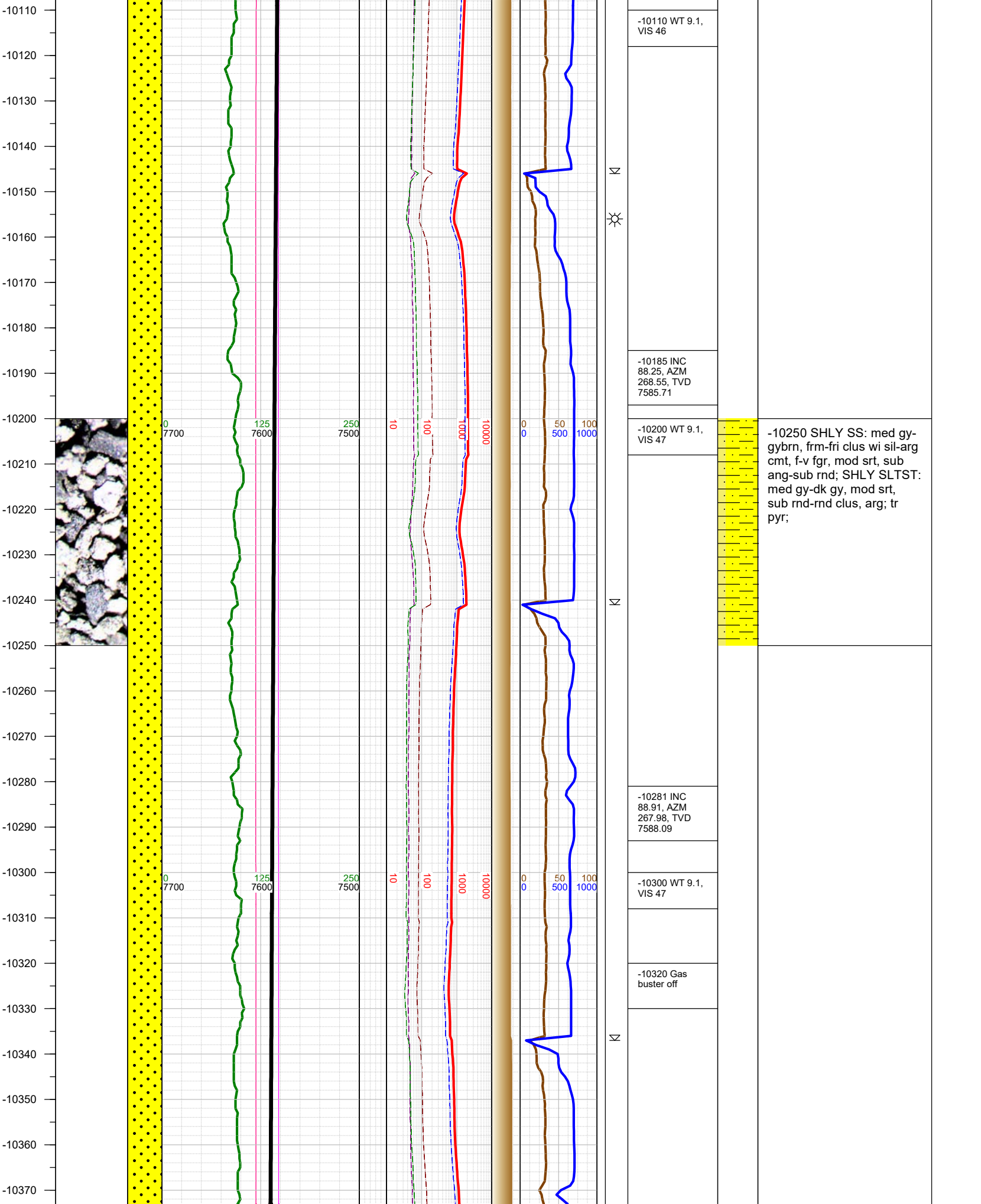




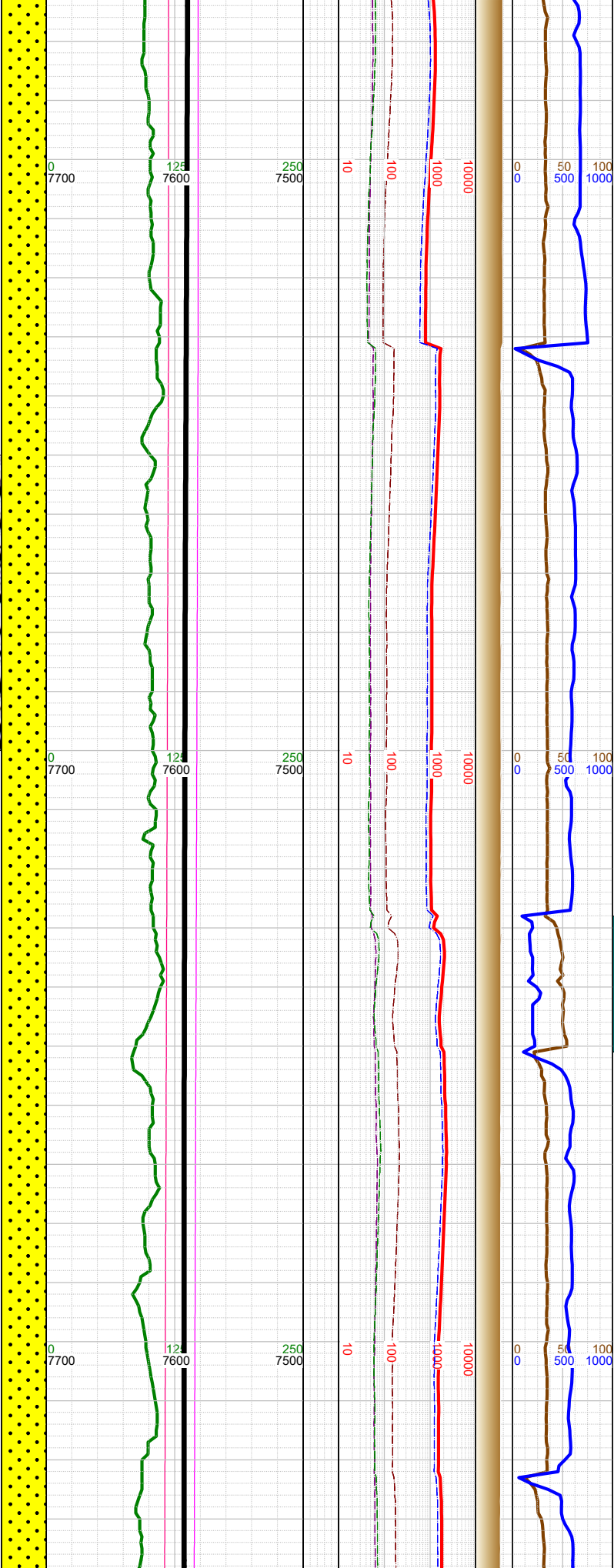
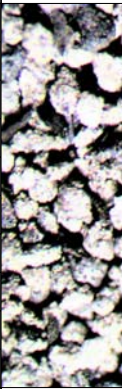








-10380  
-10390  
-10400  
-10410  
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-10500  
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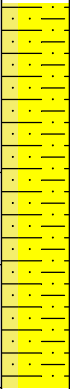


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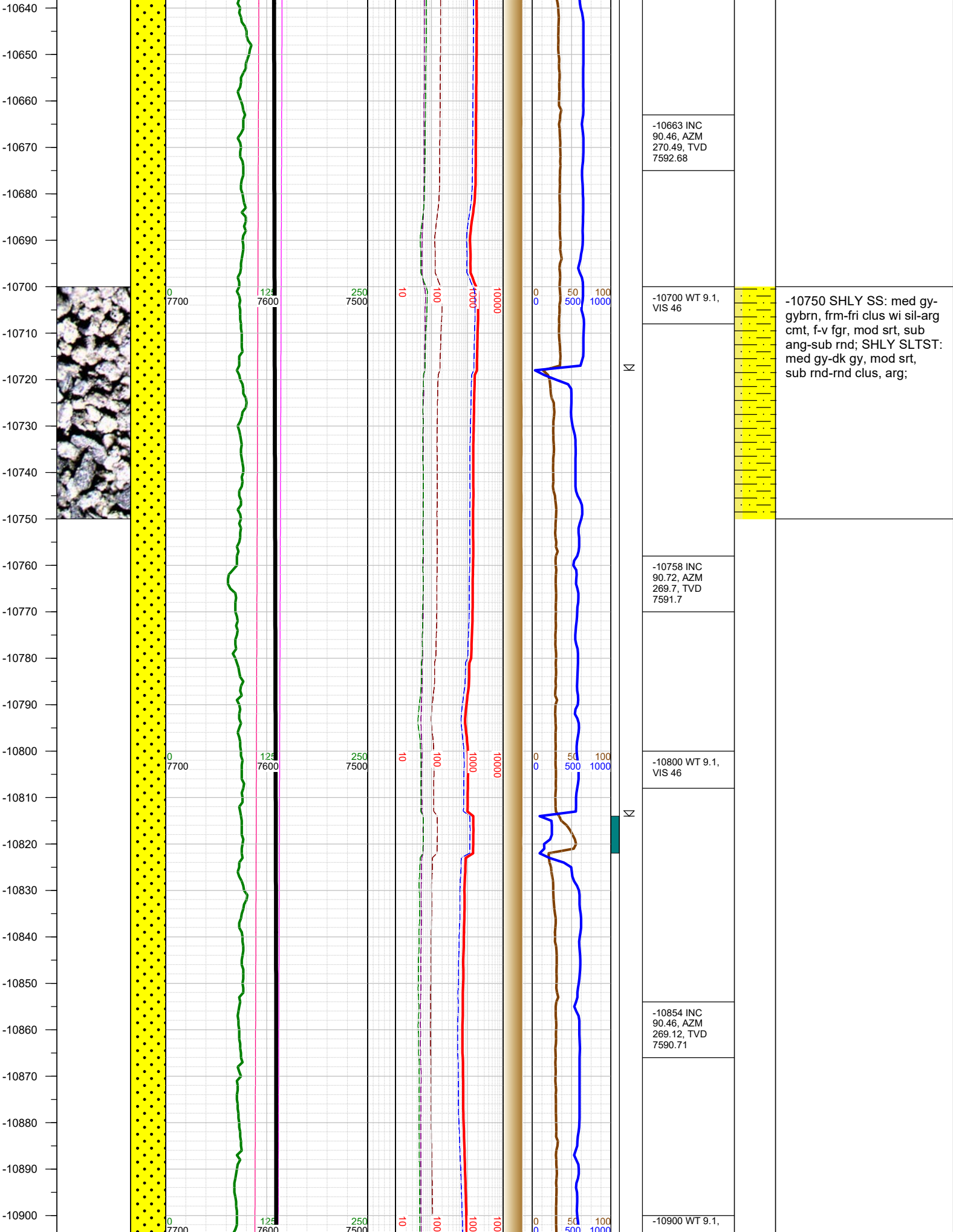
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-10377 INC 88.69, AZM 267.05, TVD 7590.1	
-10400 WT 9.1, VIS 47	
-10472 INC 89.17, AZM 266.43, TVD 7591.88	
-10500 WT 9.1, VIS 47	
-10567 INC 89.7, AZM 270.4, TVD 7592.81	
-10600 WT 9.1, VIS 47	



-10500 SHLY SS: med gy-  
gybrn, frm-fri clus wi sil-arg  
cmt, f-v fgr, mod srt, sub  
ang-sub rnd; SHLY SLTST:  
med gy-dk gy, mod srt,  
sub rnd-rnd clus, arg;



-10663 INC  
90.46, AZM  
270.49, TVD  
7592.68

-10700 WT 9.1,  
VIS 46

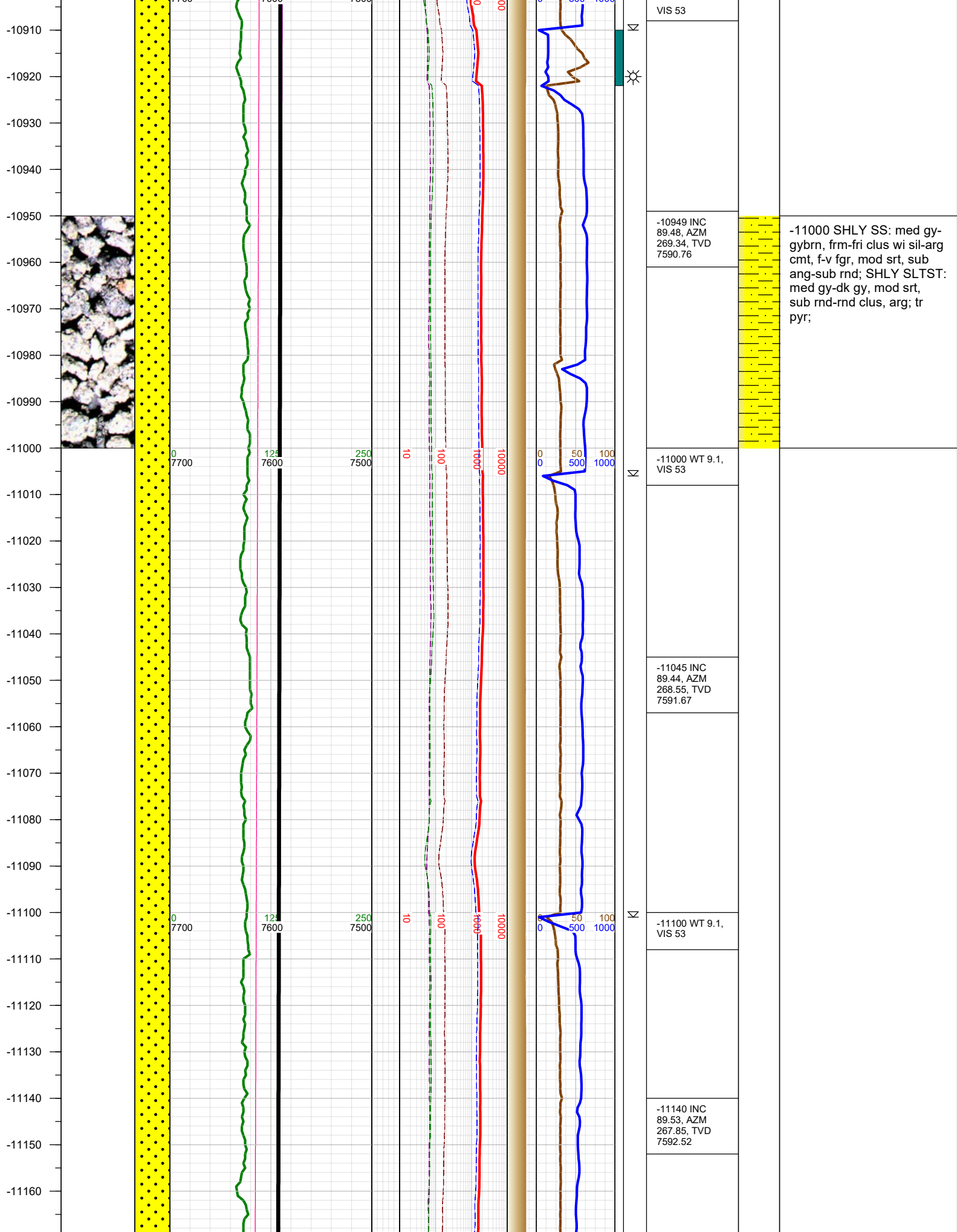
-10758 INC  
90.72, AZM  
269.7, TVD  
7591.7

-10800 WT 9.1,  
VIS 46

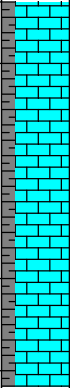
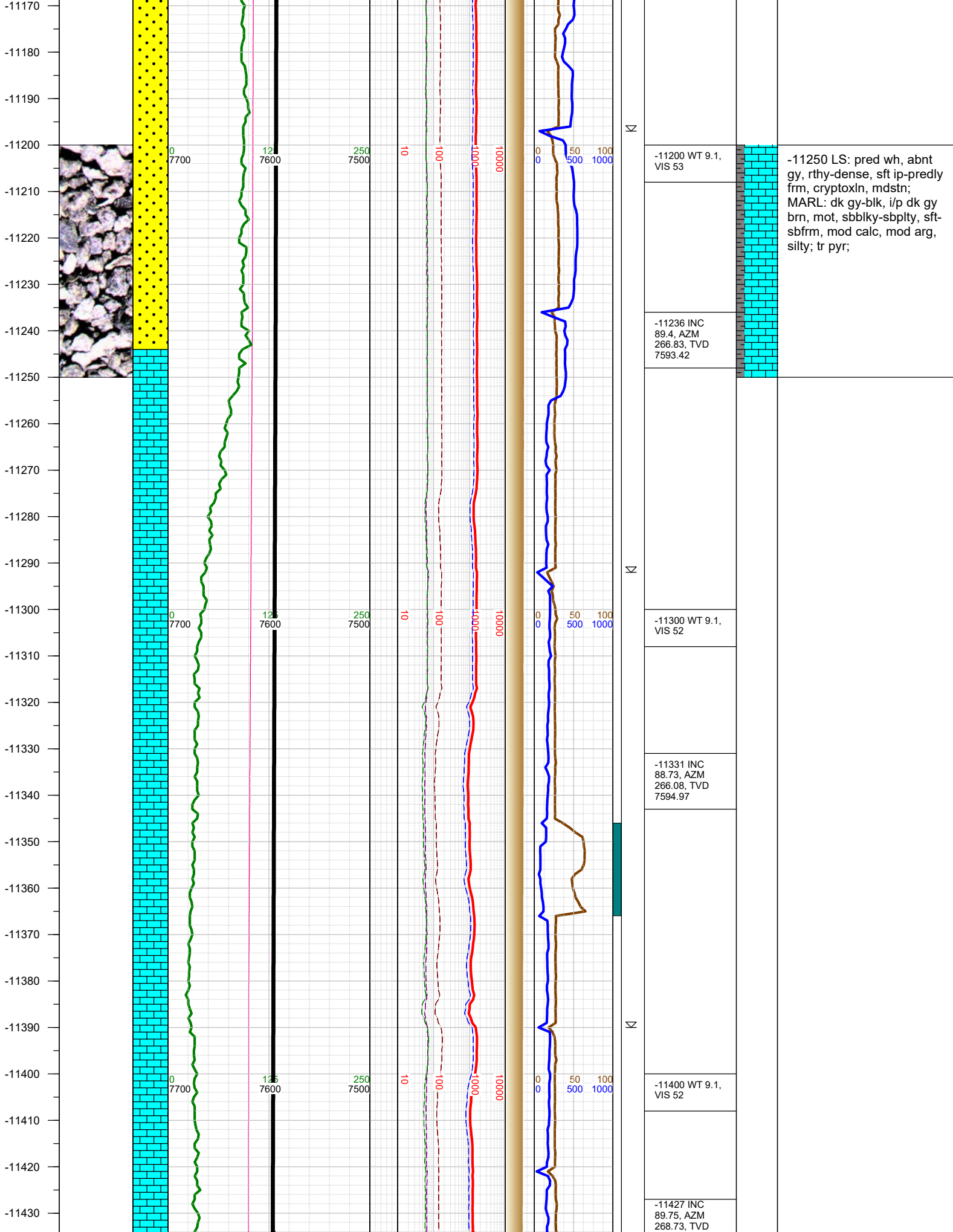
-10854 INC  
90.46, AZM  
269.12, TVD  
7590.71

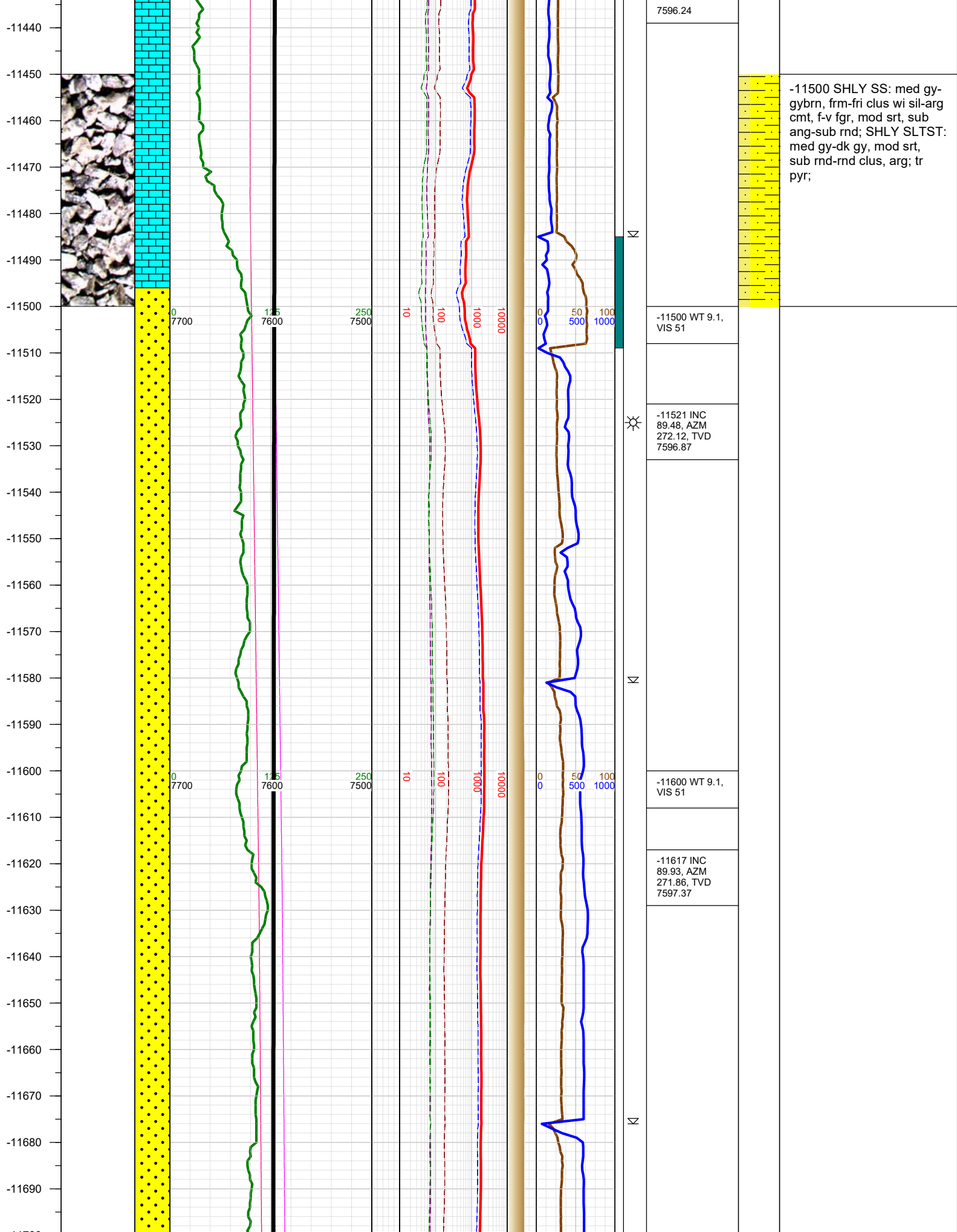
-10900 WT 9.1,

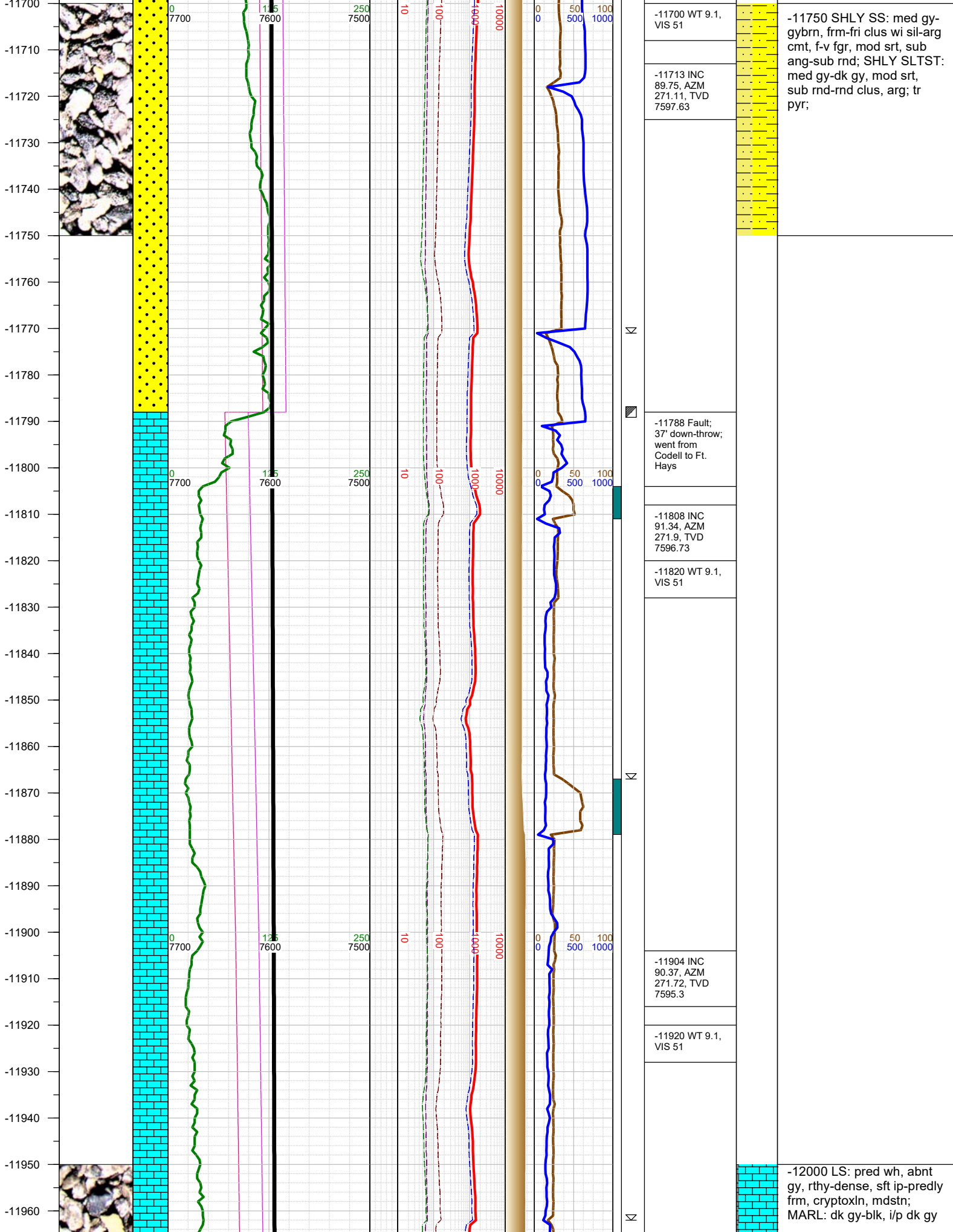
-10750 SHLY SS: med gy-  
gybrn, frm-fri clus wi sil-arg  
cmt, f-v fgr, mod srt, sub  
ang-sub rnd; SHLY SLTST:  
med gy-dk gy, mod srt,  
sub rnd-rnd clus, arg;



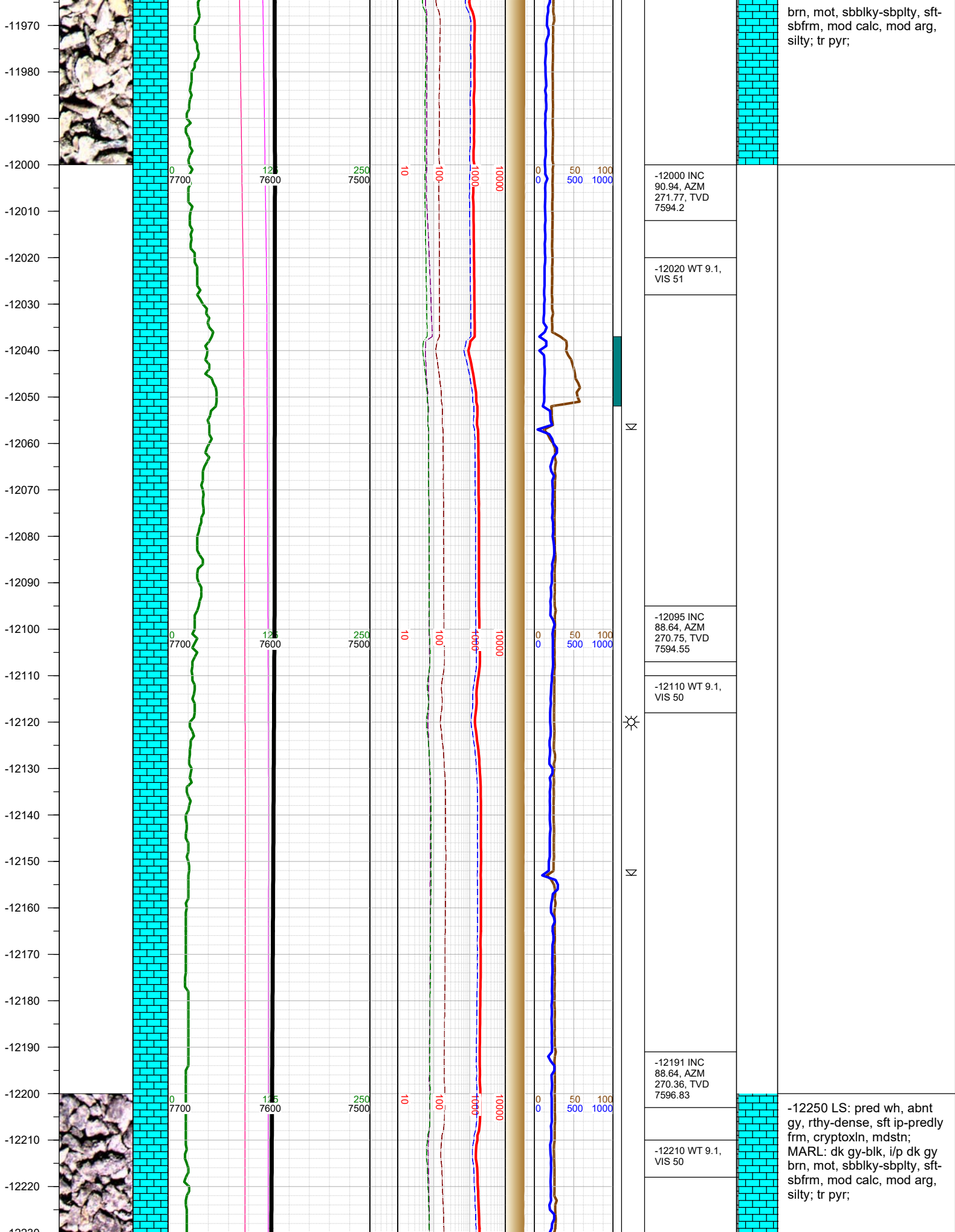




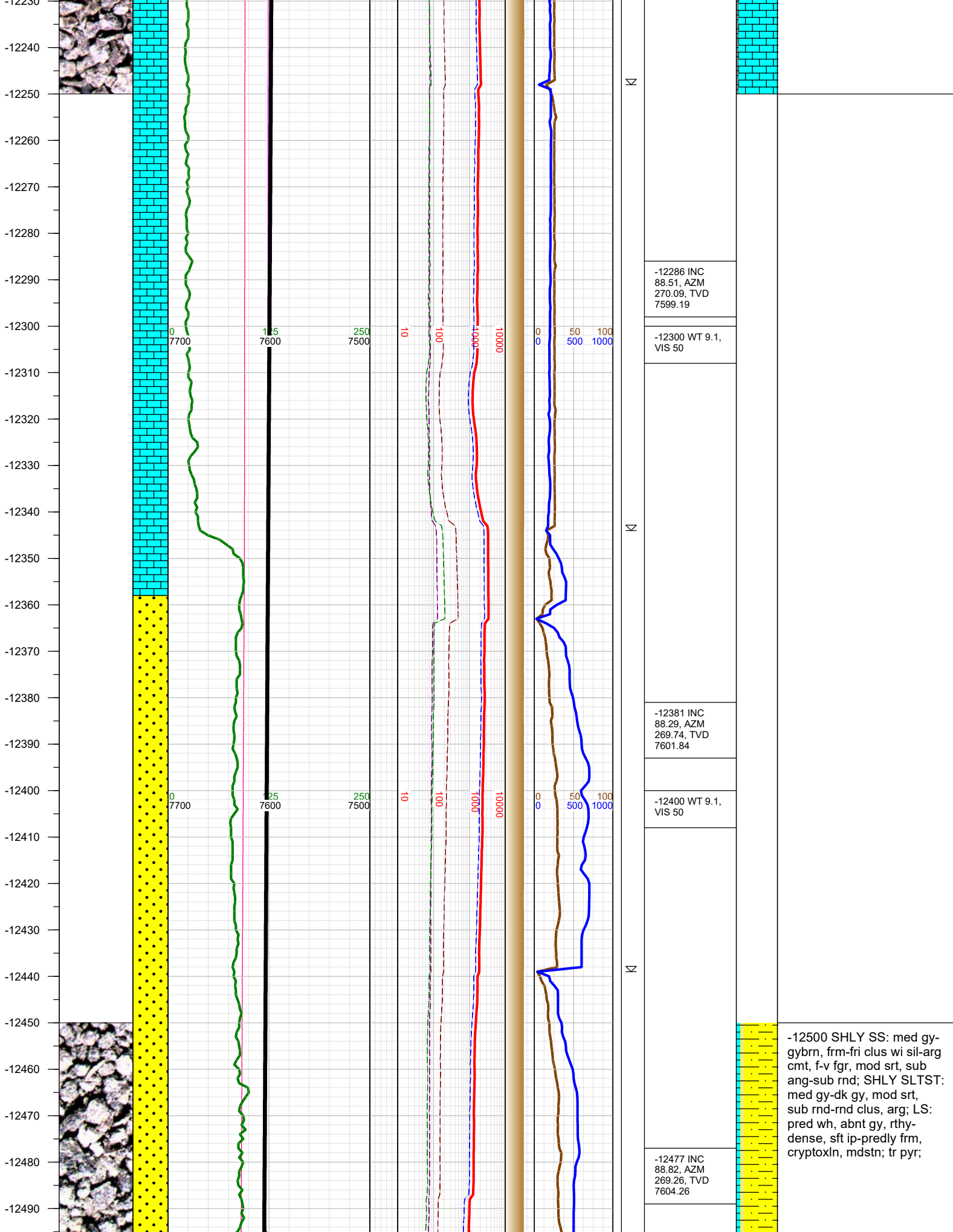












-12286 INC  
88.51, AZM  
270.09, TVD  
7599.19

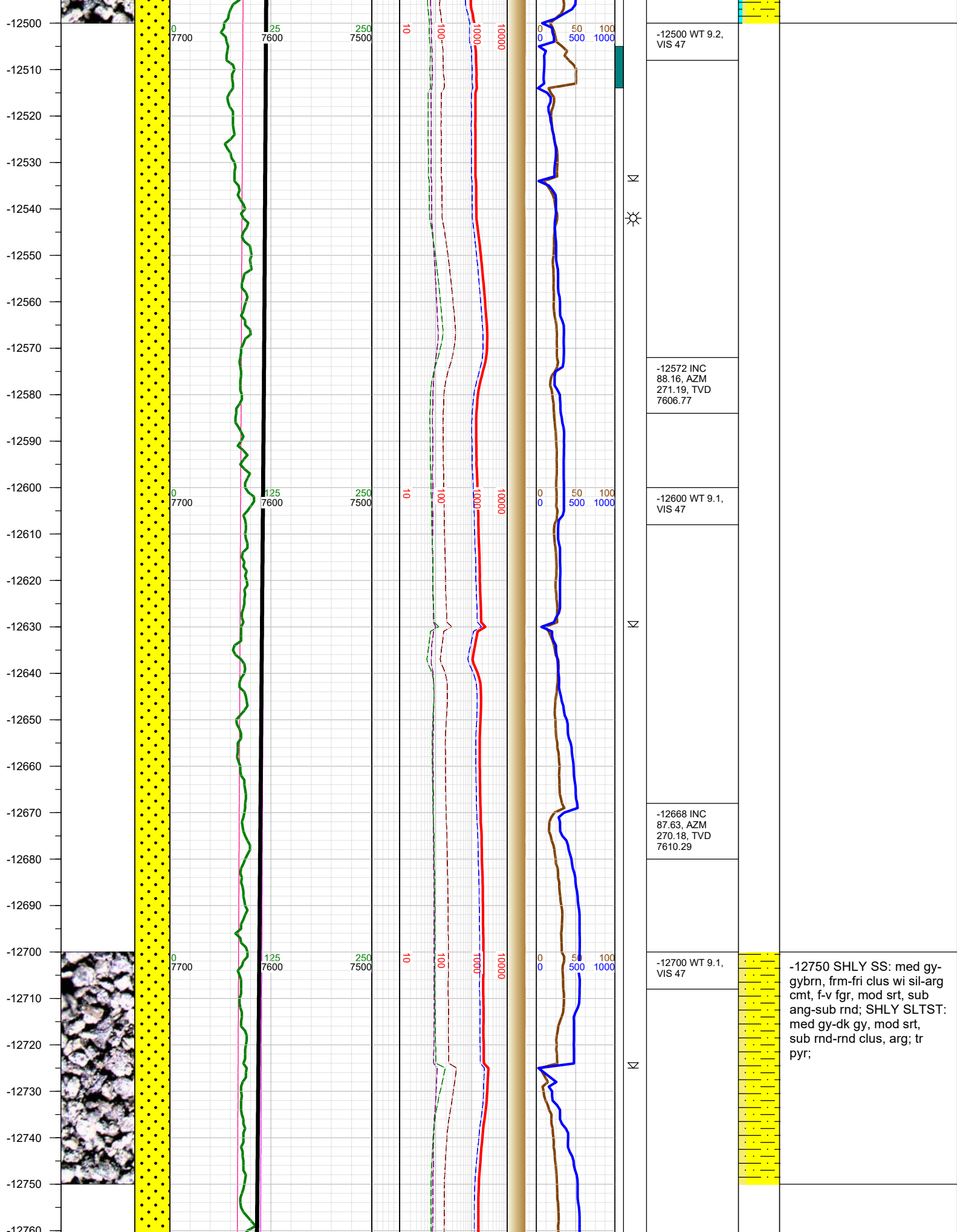
-12300 WT 9.1,  
VIS 50

-12381 INC  
88.29, AZM  
269.74, TVD  
7601.84

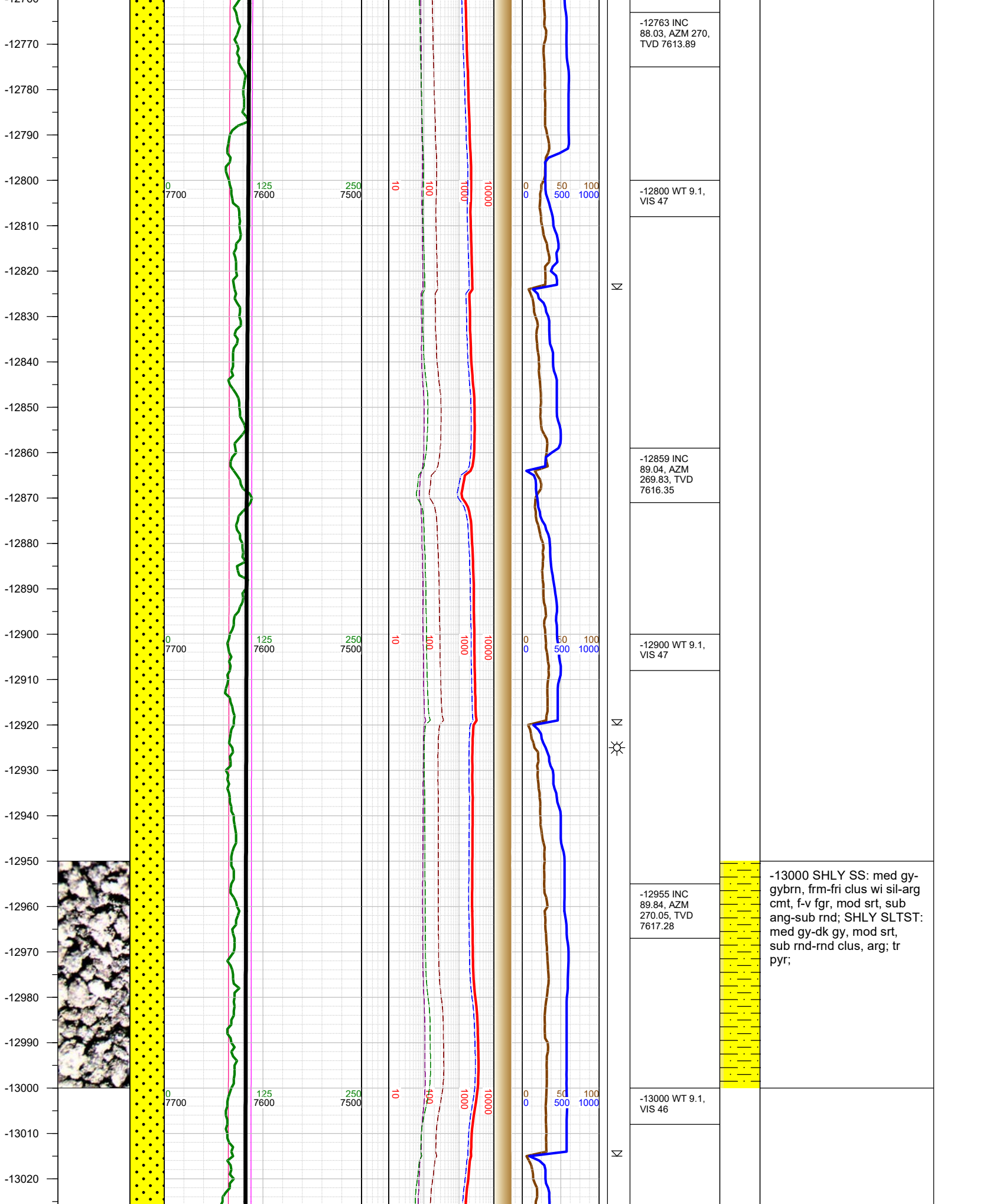
-12400 WT 9.1,  
VIS 50

-12477 INC  
88.82, AZM  
269.26, TVD  
7604.26

-12500 SHLY SS: med gy-  
gybrn, frm-fri clus wi sil-arg  
cmt, f-v fgr, mod srt, sub  
ang-sub rnd; SHLY SLTST:  
med gy-dk gy, mod srt,  
sub rnd-rnd clus, arg; LS:  
pred wh, abnt gy, rthy-  
dense, sft ip-predly frm,  
cryptoxln, mdstn; tr pyr;



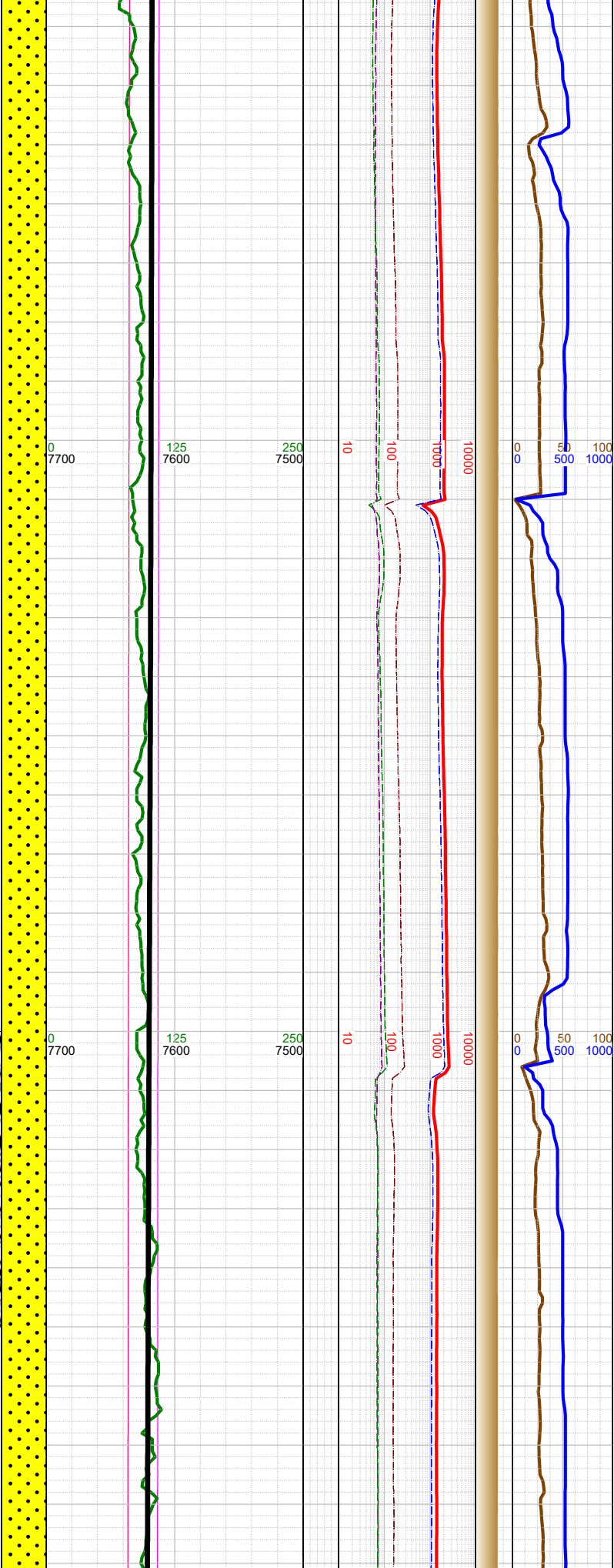
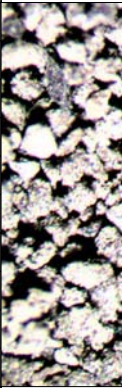
-12750 SHLY SS: med gy-gybrn, frm-fri clus wi sil-arg cmt, f-v fgr, mod srt, sub ang-sub rnd; SHLY SLTST: med gy-dk gy, mod srt, sub rnd-rnd clus, arg; tr pyr;



-13000 SHLY SS: med gy-gybrn, frm-fri clus wi sil-arg cmt, f-v fgr, mod srt, sub ang-sub rnd; SHLY SLTST: med gy-dk gy, mod srt, sub rnd-rnd clus, arg; tr pyr;

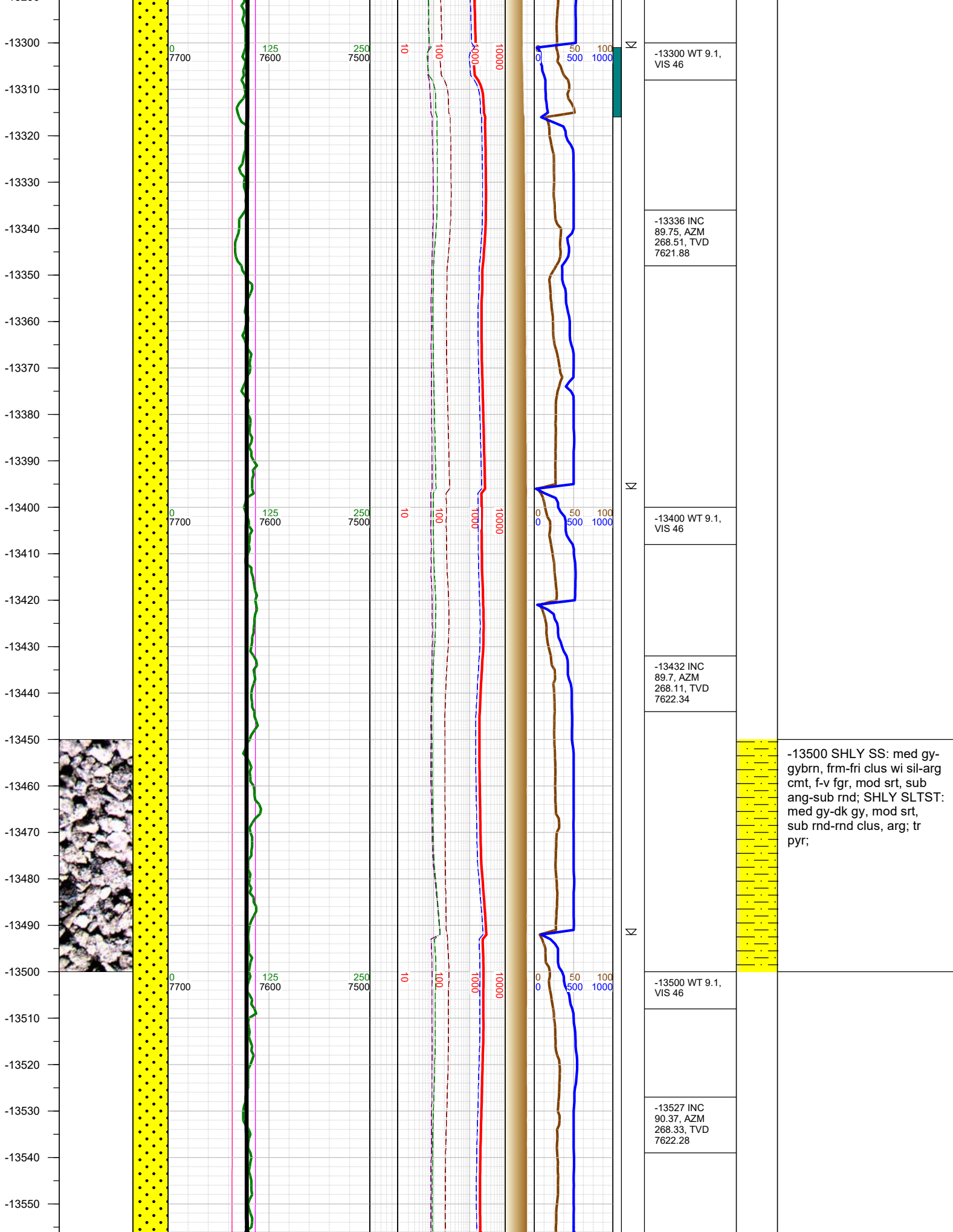


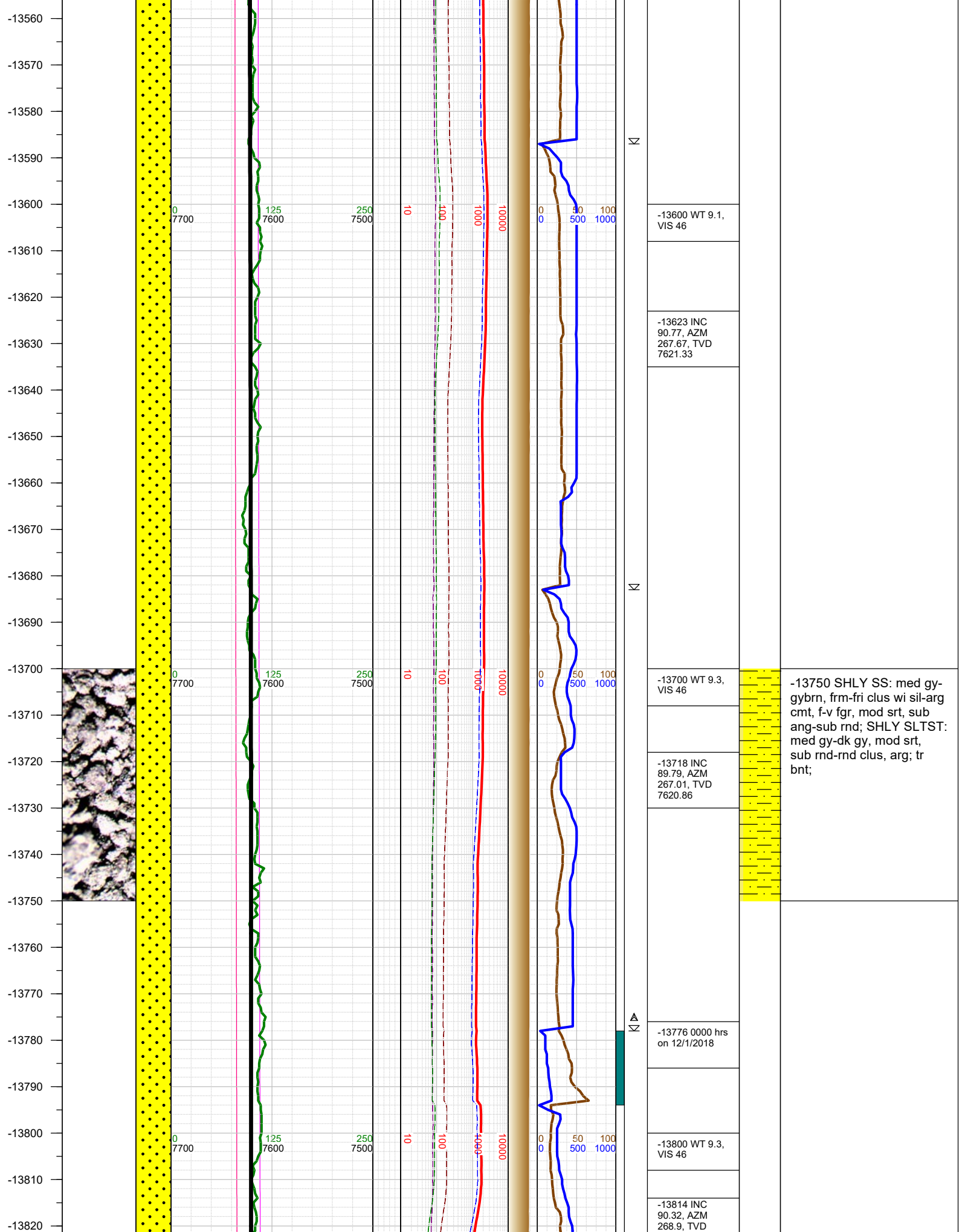
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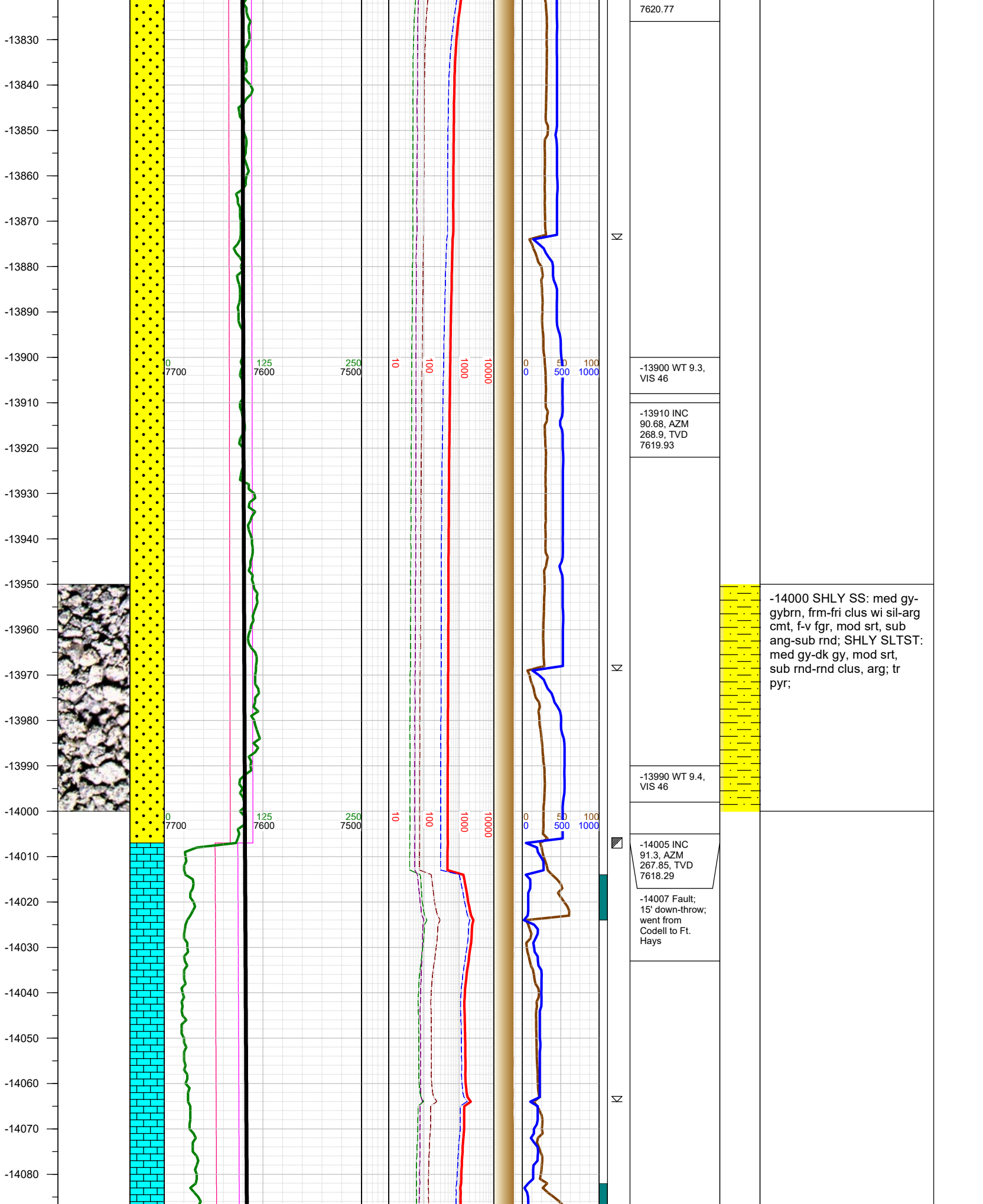
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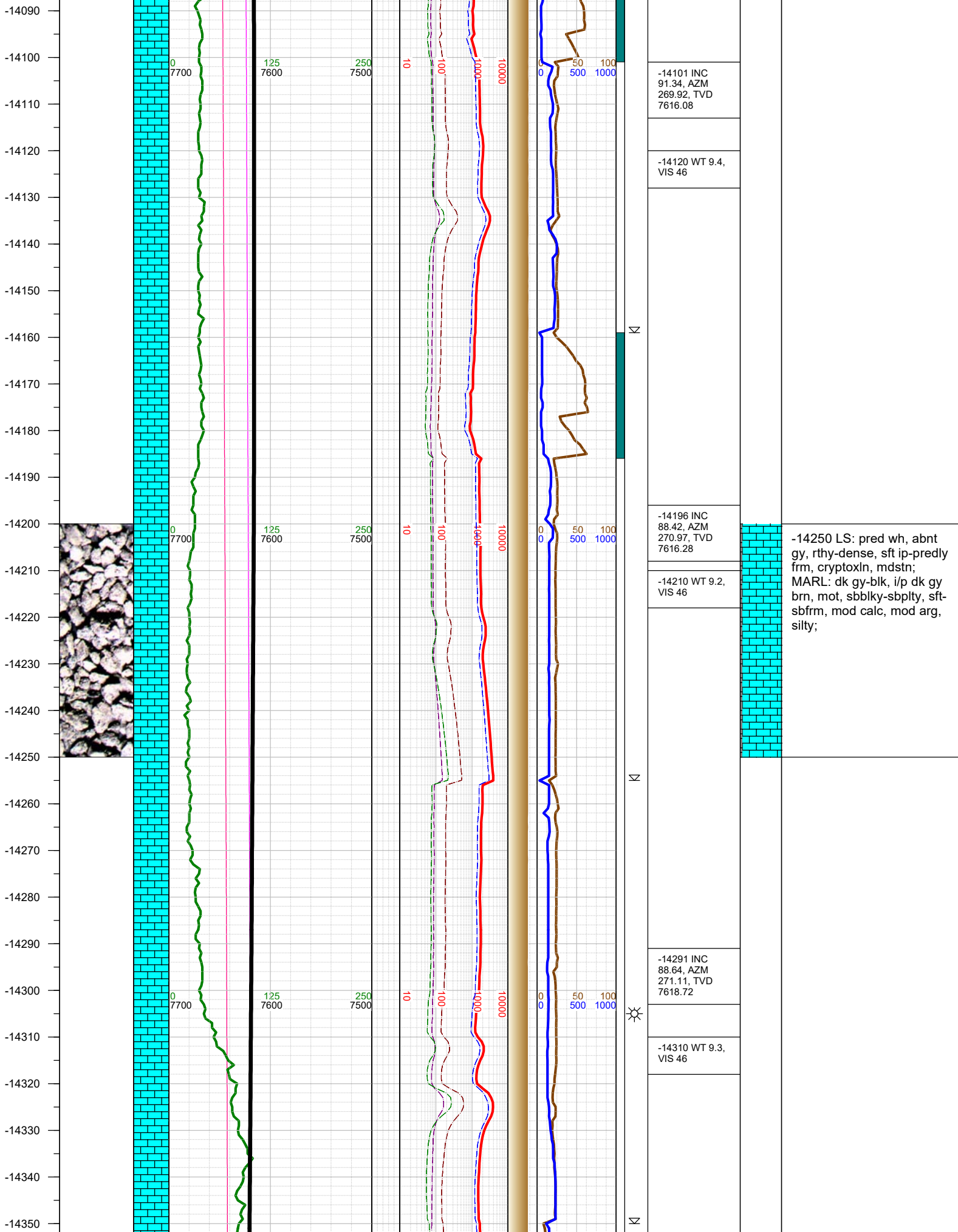
<div>-13050 INC 89.4, AZM 269.17, TVD 7617.91</div>		
<div>-13100 WT 9.1, VIS 46</div>		
<div>-13146 INC 89.26, AZM 268.29, TVD 7619.04</div>		
<div>-13200 WT 9.1, VIS 46</div>		<div>-13250 SHLY SS: med gy- gybrn, frm-fri clus wi sil-arg cmt, f-v fgr, mod srt, sub ang-sub rnd; SHLY SLTST: med gy-dk gy, mod srt, sub rnd-rnd clus, arg; tr pyr;</div>
<div>-13241 INC 88.78, AZM 267.23, TVD 7620.66</div>		

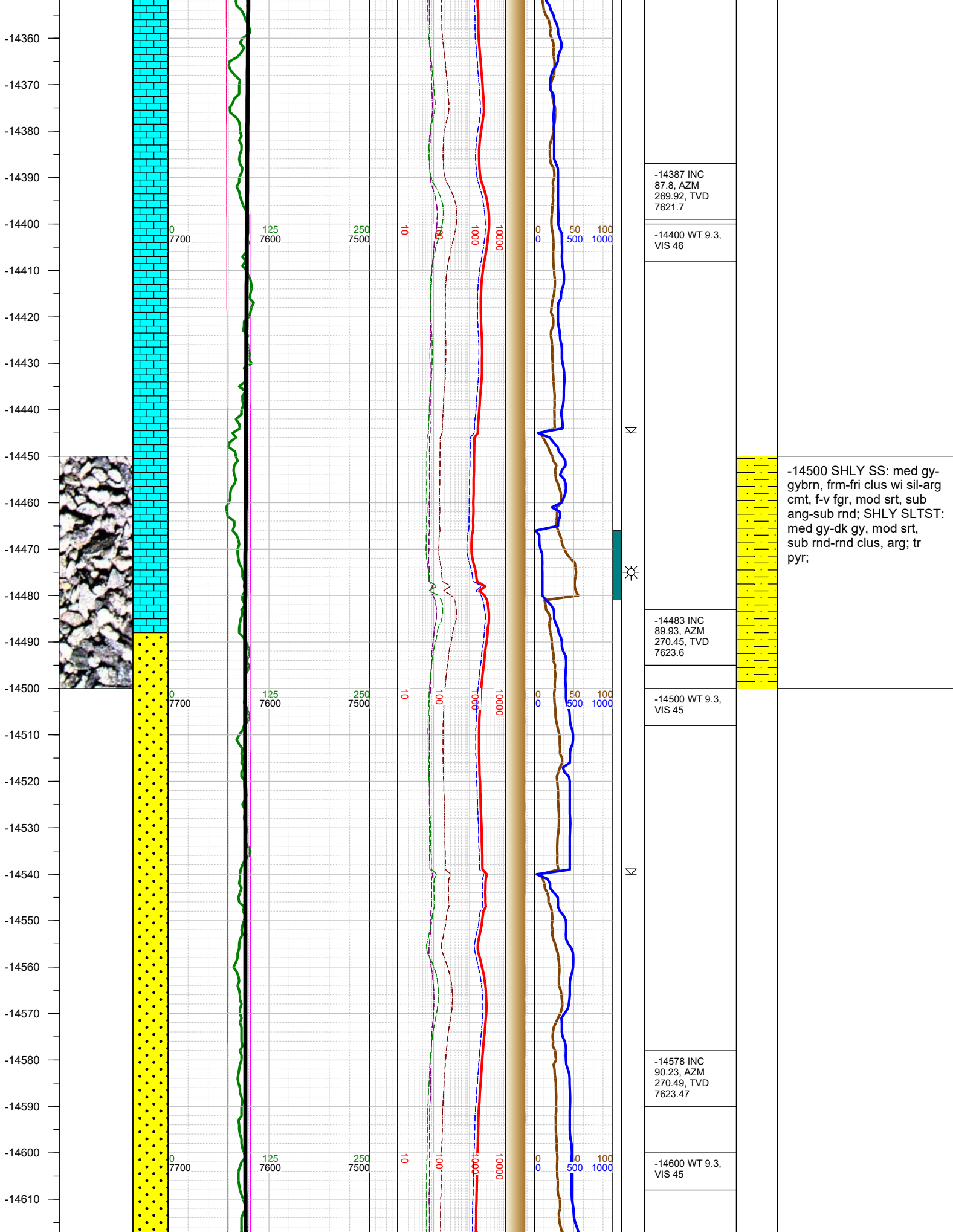












-14387 INC  
87.8, AZM  
269.92, TVD  
7621.7

-14400 WT 9.3,  
VIS 46

-14483 INC  
89.93, AZM  
270.45, TVD  
7623.6

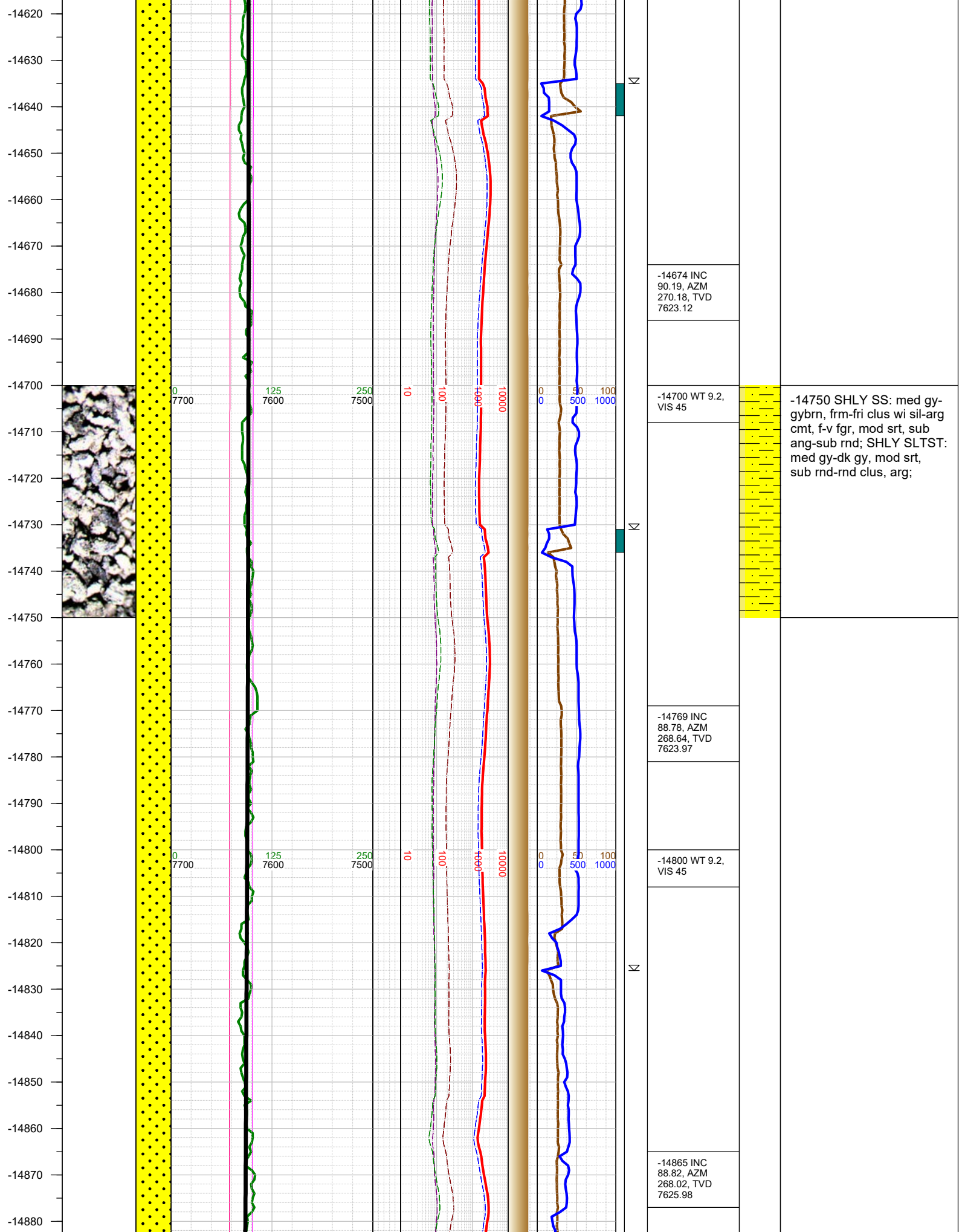
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VIS 45

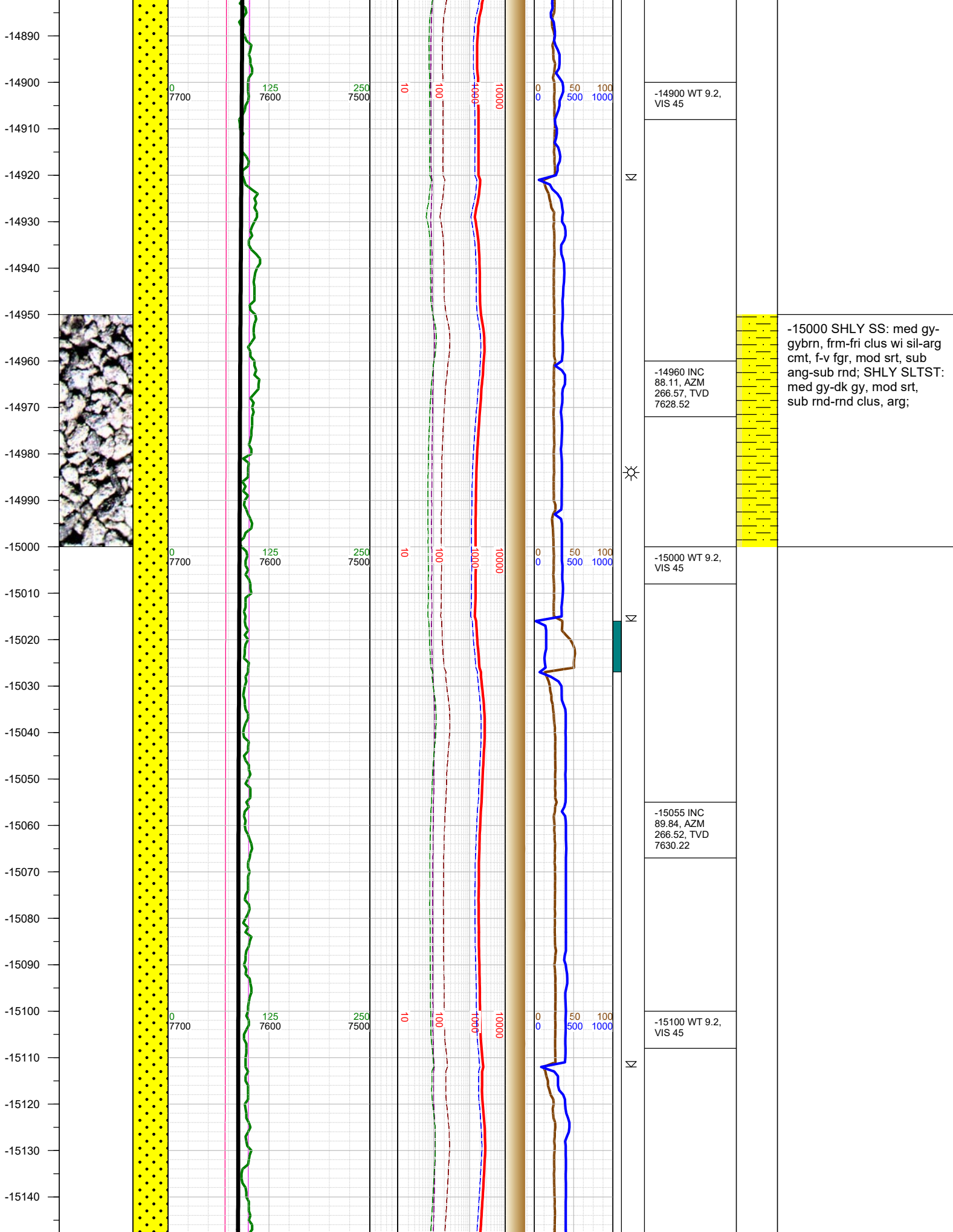
-14578 INC  
90.23, AZM  
270.49, TVD  
7623.47

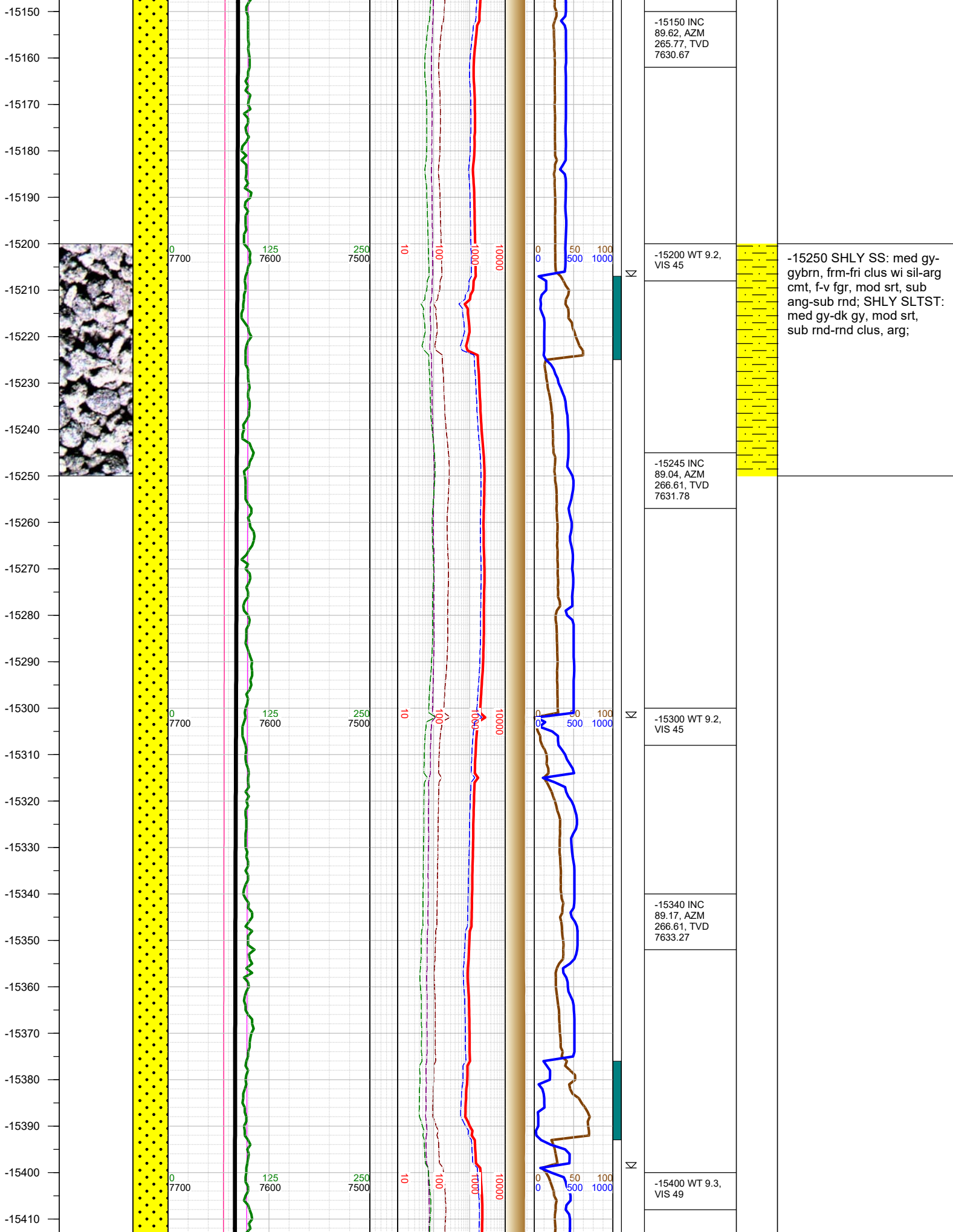
-14600 WT 9.3,  
VIS 45

-14500 SHLY SS: med gy-  
gybrn, frm-fri clus wi sil-arg  
cmt, f-v fgr, mod srt, sub  
ang-sub rnd; SHLY SLTST:  
med gy-dk gy, mod srt,  
sub rnd-rnd clus, arg; tr  
pyr;









-15150 INC  
89.62, AZM  
265.77, TVD  
7630.67

-15200 WT 9.2,  
VIS 45

-15245 INC  
89.04, AZM  
266.61, TVD  
7631.78

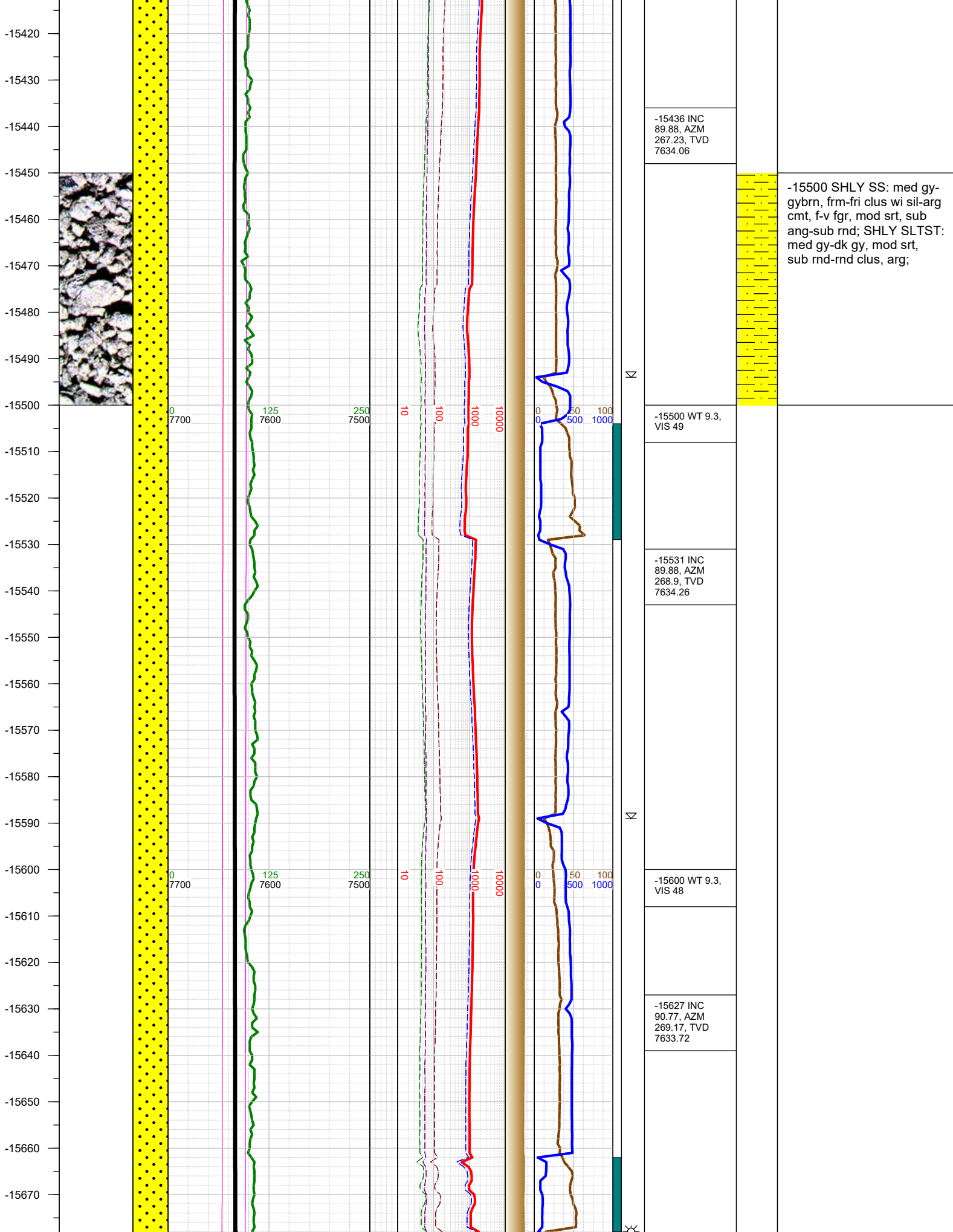
-15300 WT 9.2,  
VIS 45

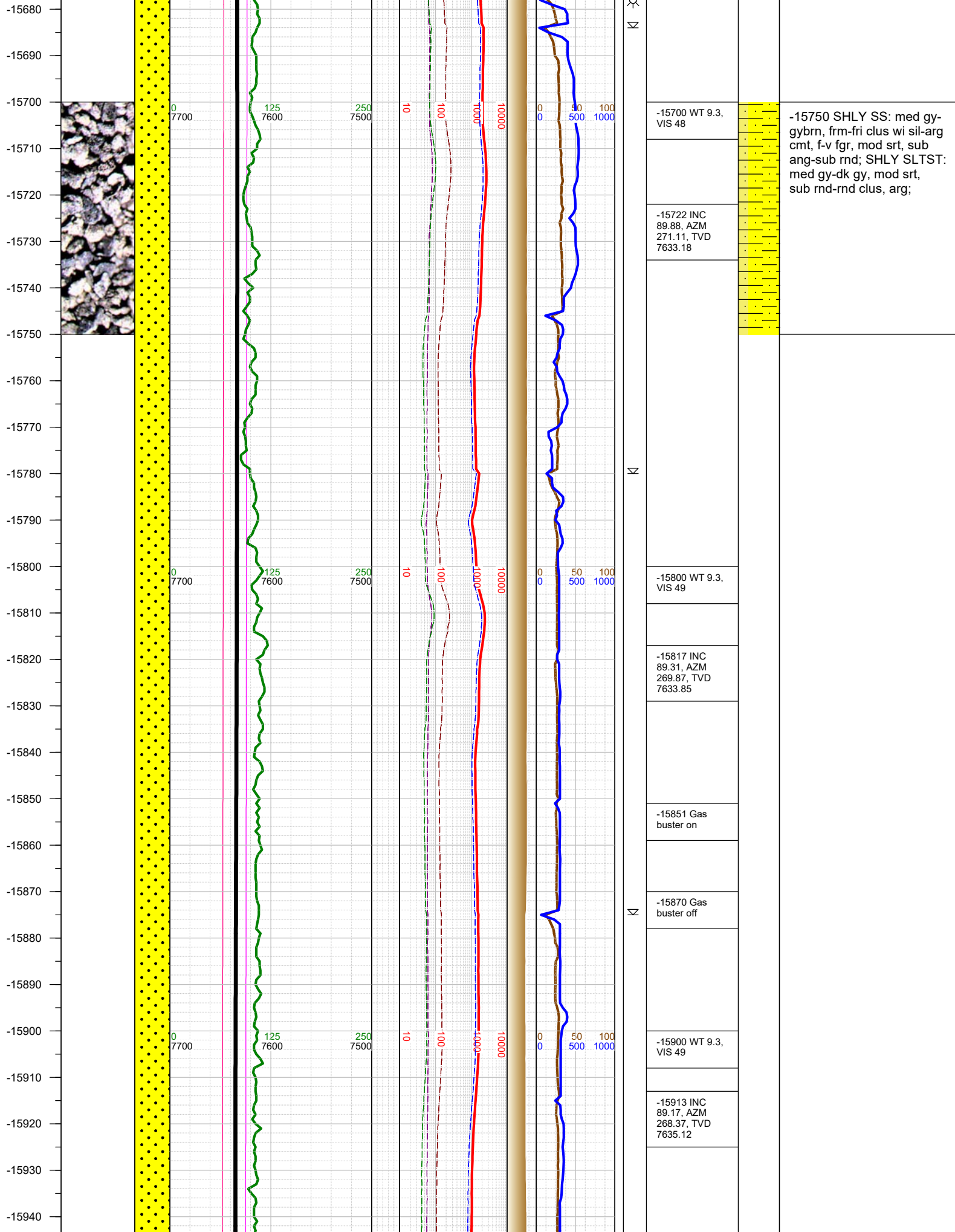
-15340 INC  
89.17, AZM  
266.61, TVD  
7633.27

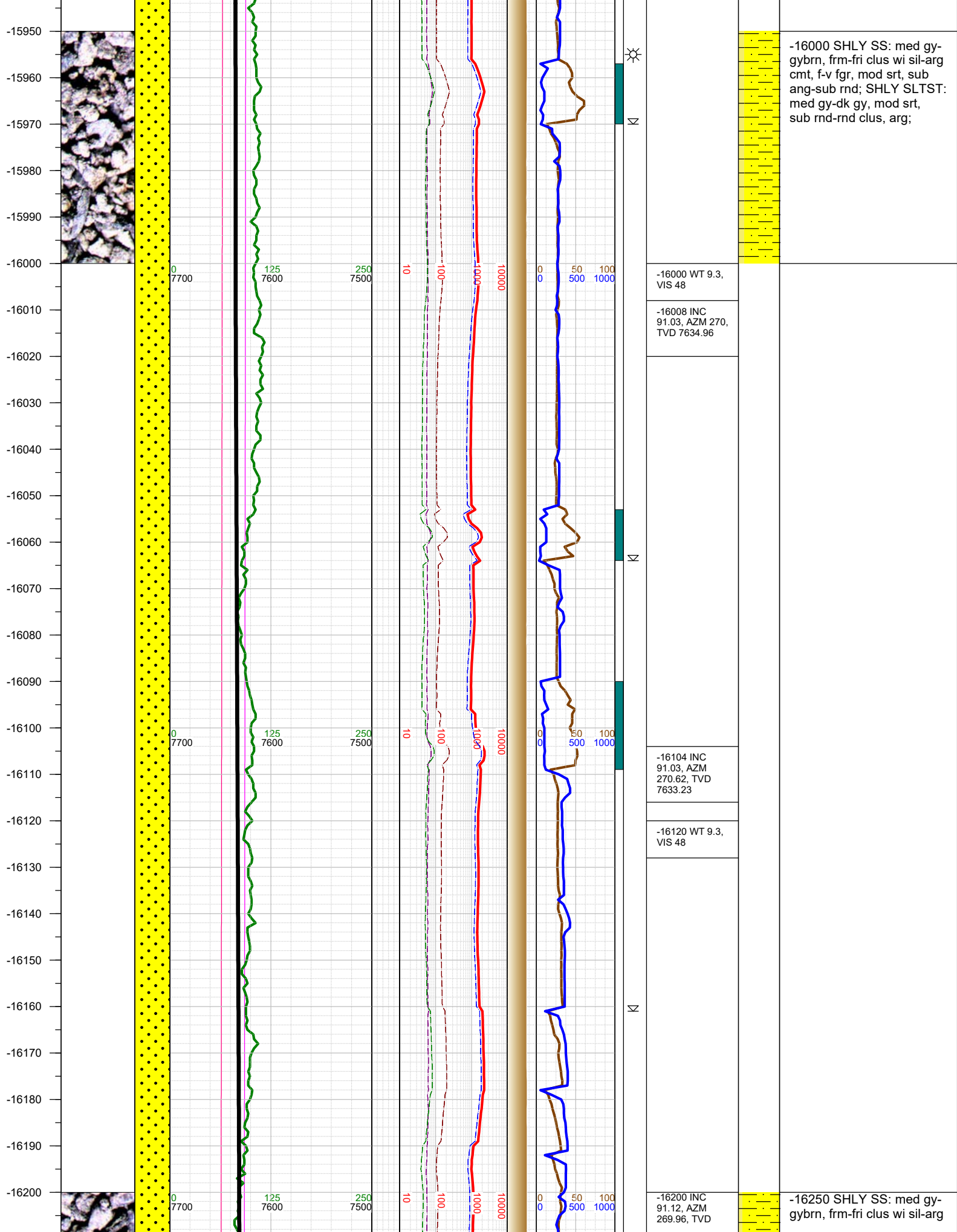
-15400 WT 9.3,  
VIS 49

-15250 SHLY SS: med gy-  
gybrn, frm-fri clus wi sil-arg  
cmt, f-v fgr, mod srt, sub  
ang-sub rnd; SHLY SLTST:  
med gy-dk gy, mod srt,  
sub rnd-rnd clus, arg;

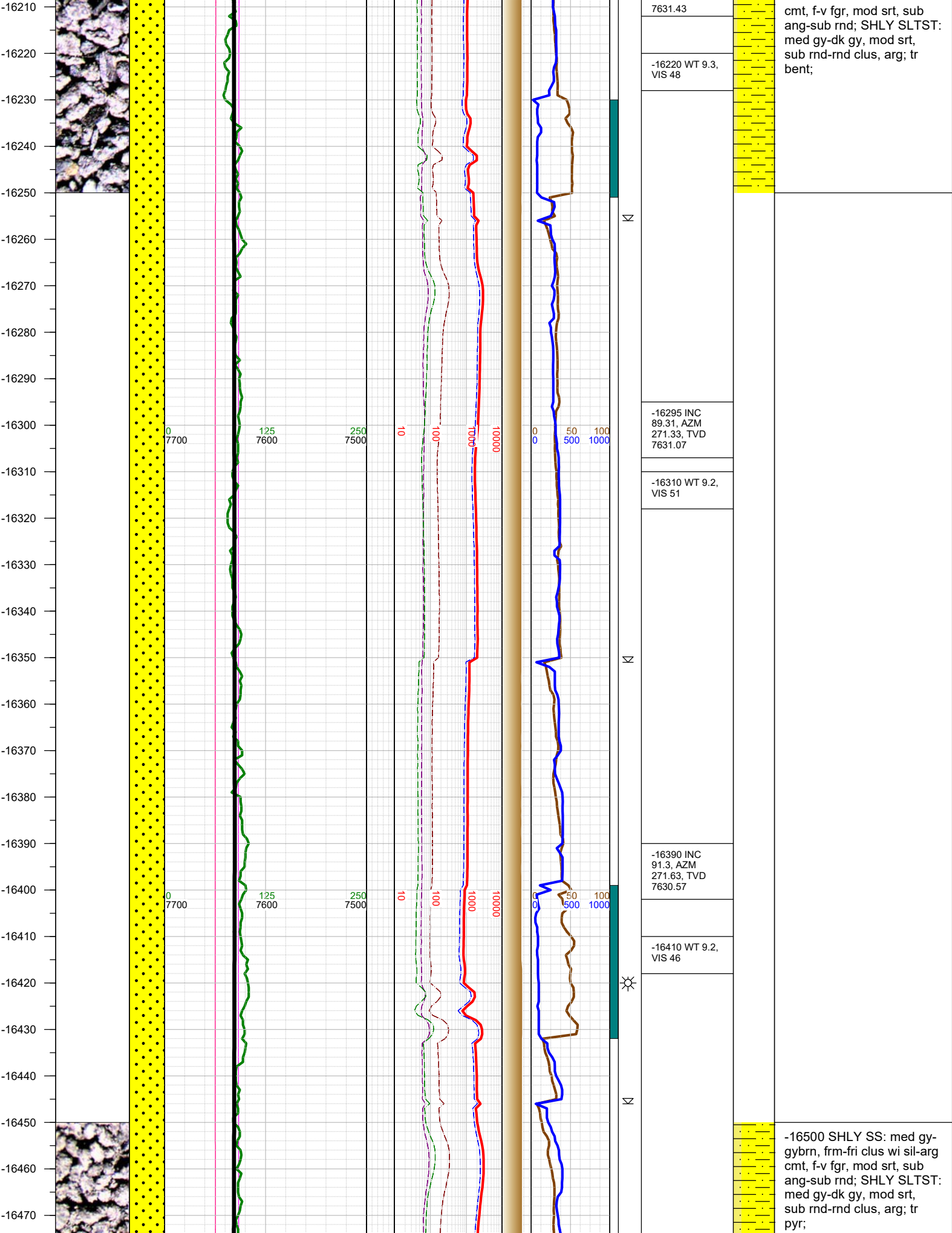


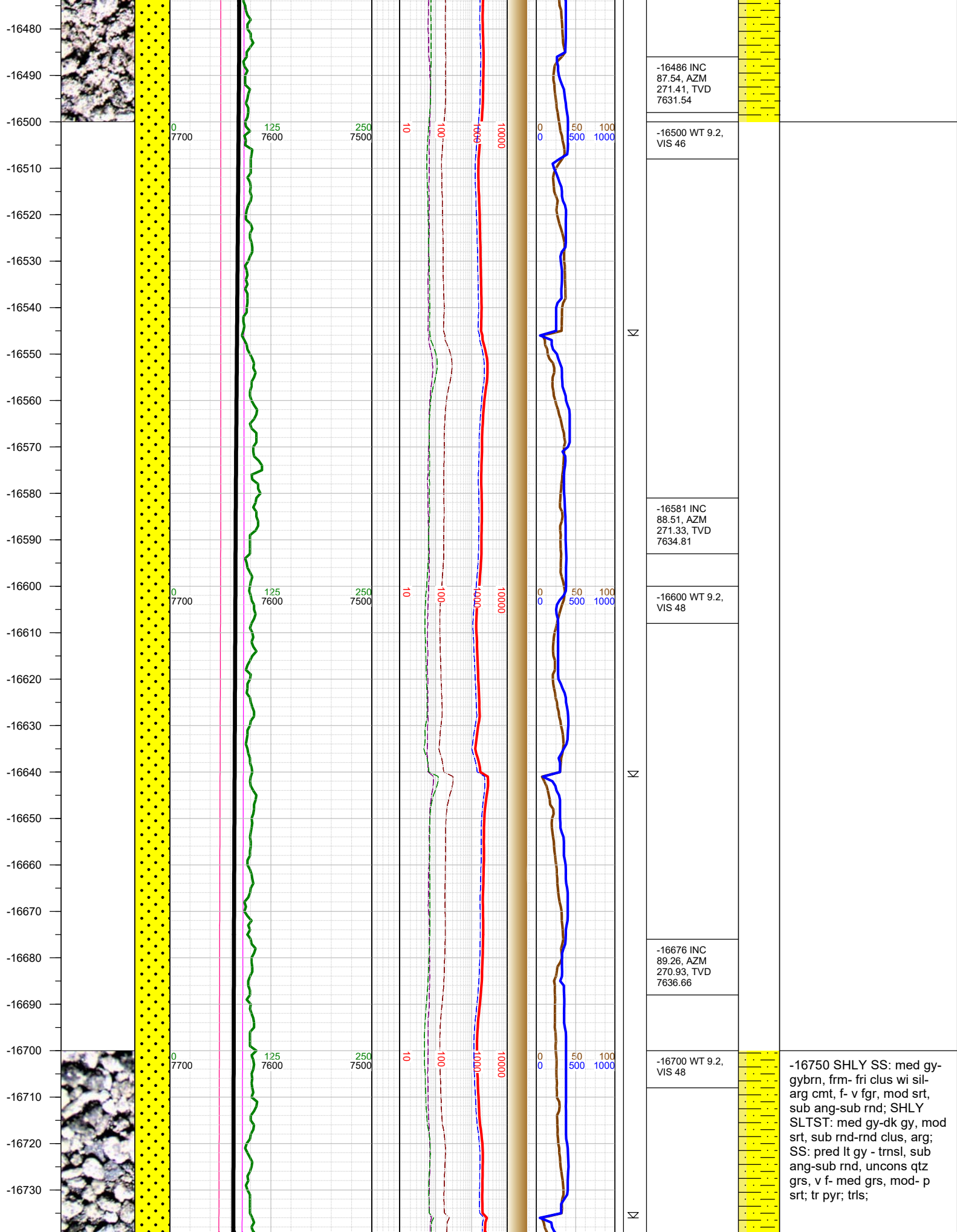


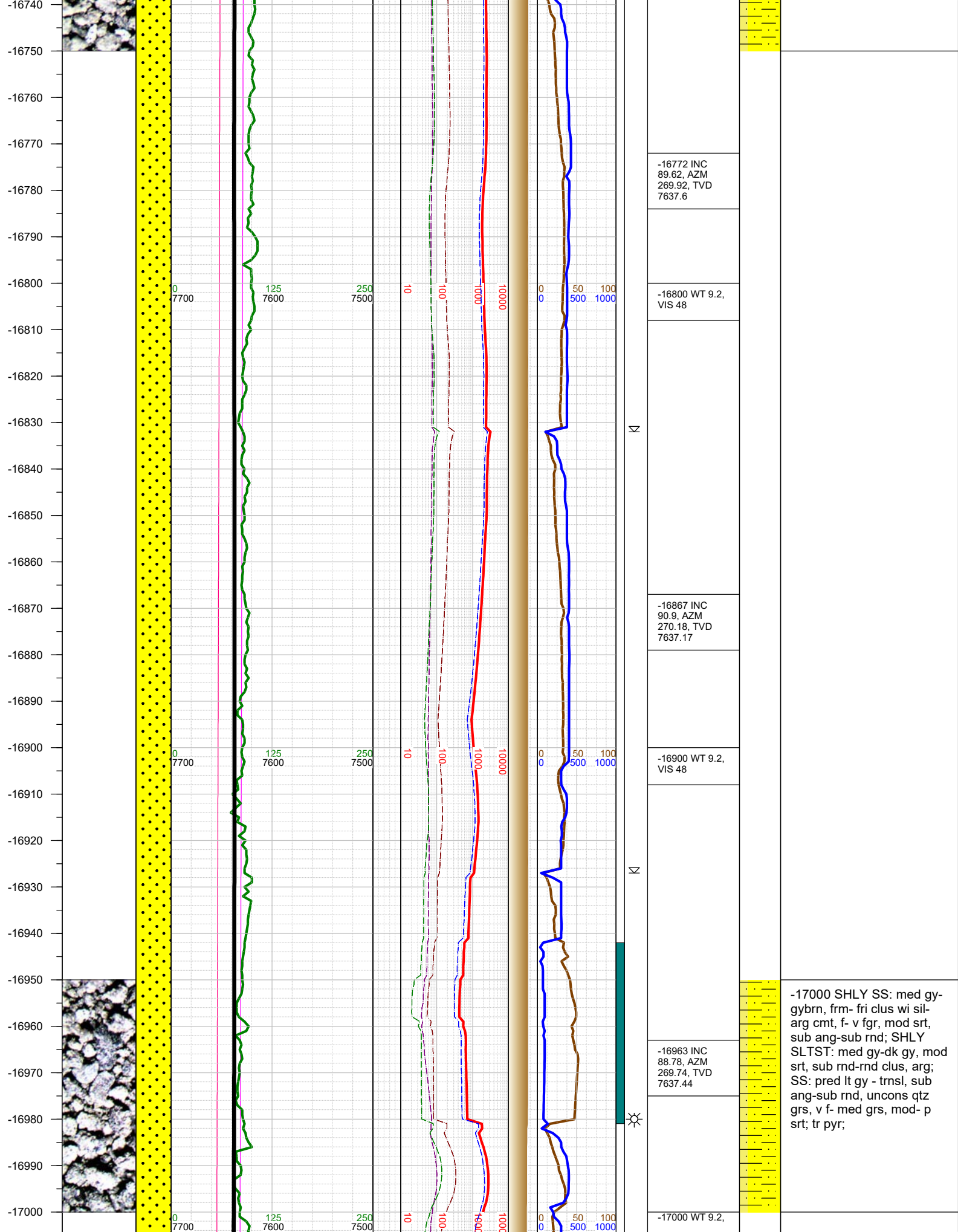




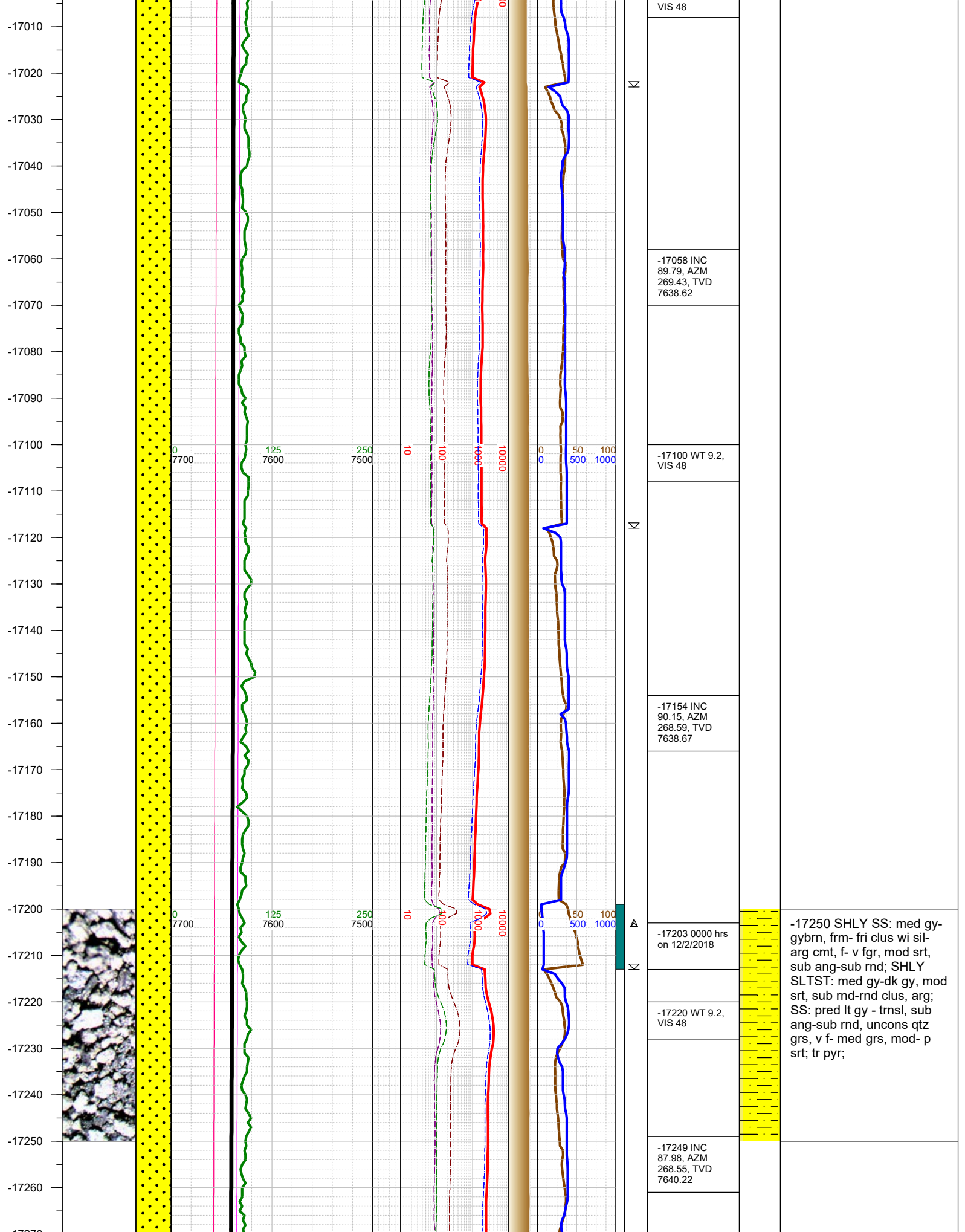


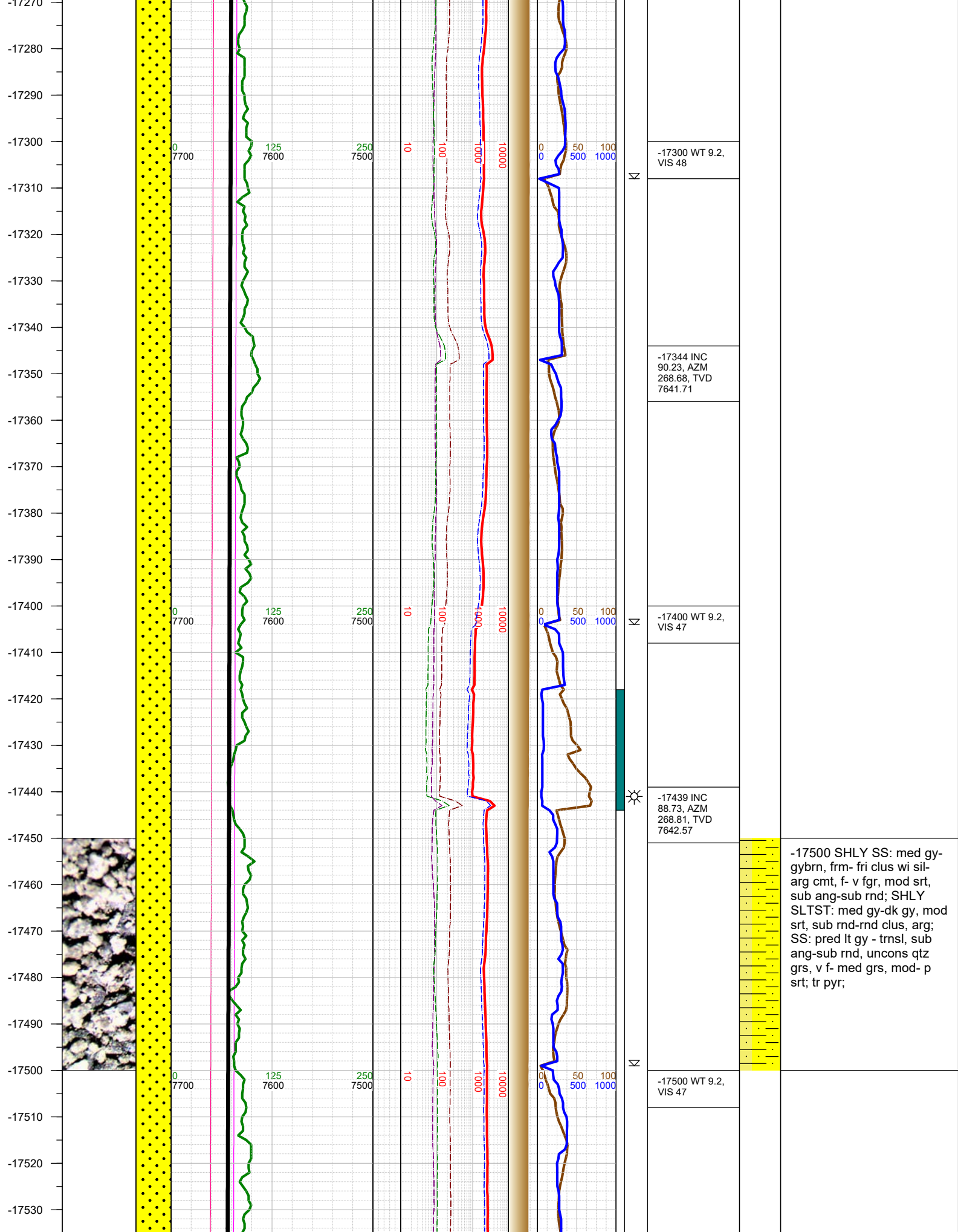


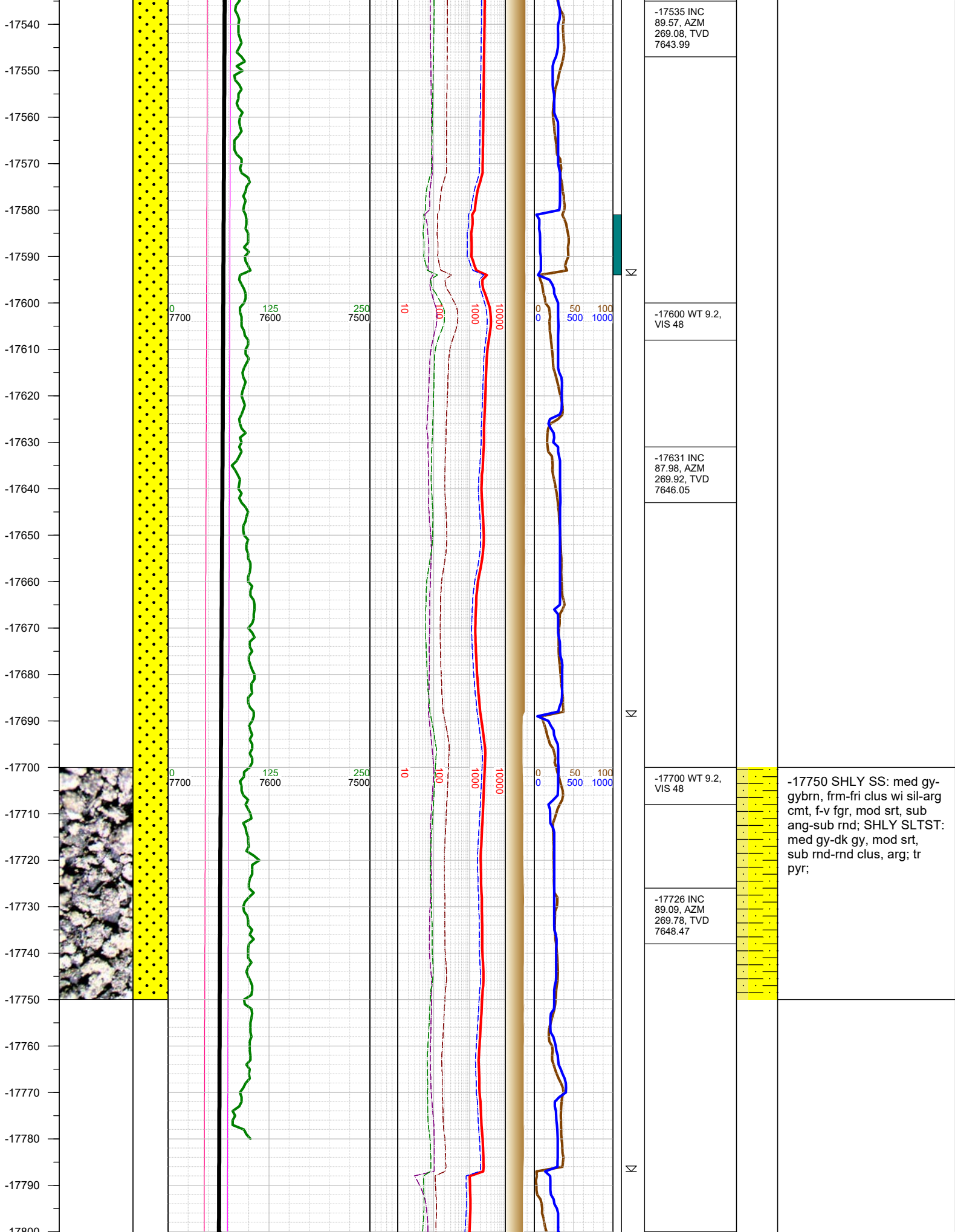




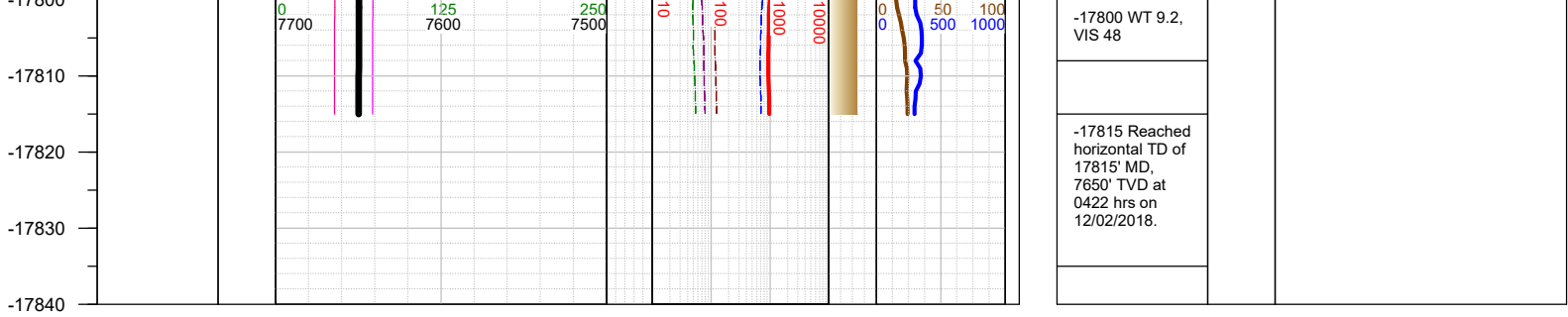












TOTAL DEPTH = 17815'

Thank you for using Earth Science Agency