

OPERATOR: **Extraction Oil & Gas**  
WELL NAME: **Northwest A S20-25-10N**  
FIELD NAME: DJ Basin - Wattenberg  
DRILLING RIG: Patterson 901  
API #: 05-014-20790

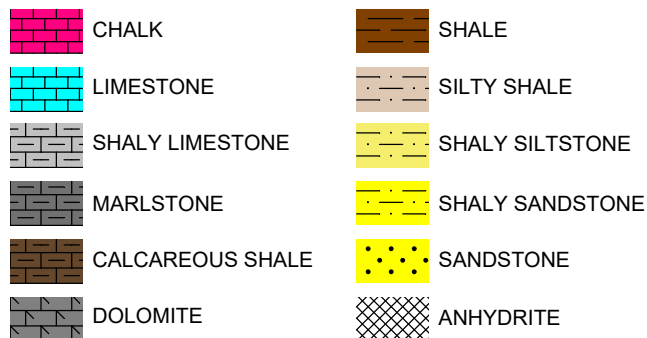
LAT/LONG: 39.983158, -105.012918  
SURFACE HOLE: NWNW S9-T1S-R68W, 1289' FNL, 814' FWL  
BOTTOM HOLE: S20-T1S-R68W, 2194' FNL, 2584' FWL



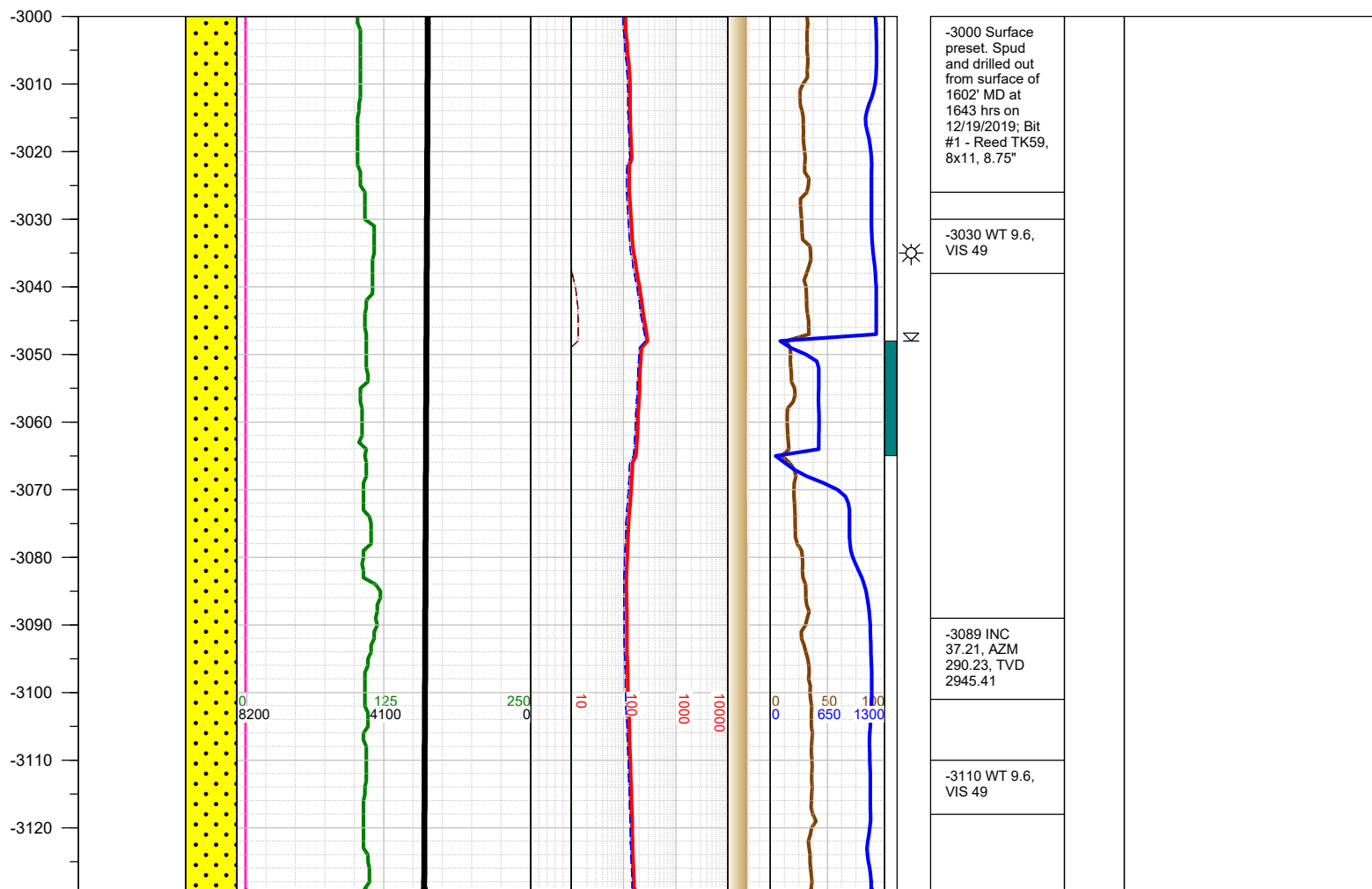
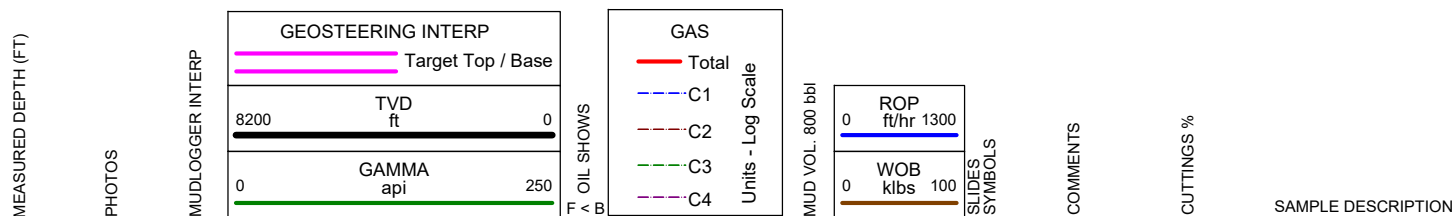
Earth Science Agency, LLC

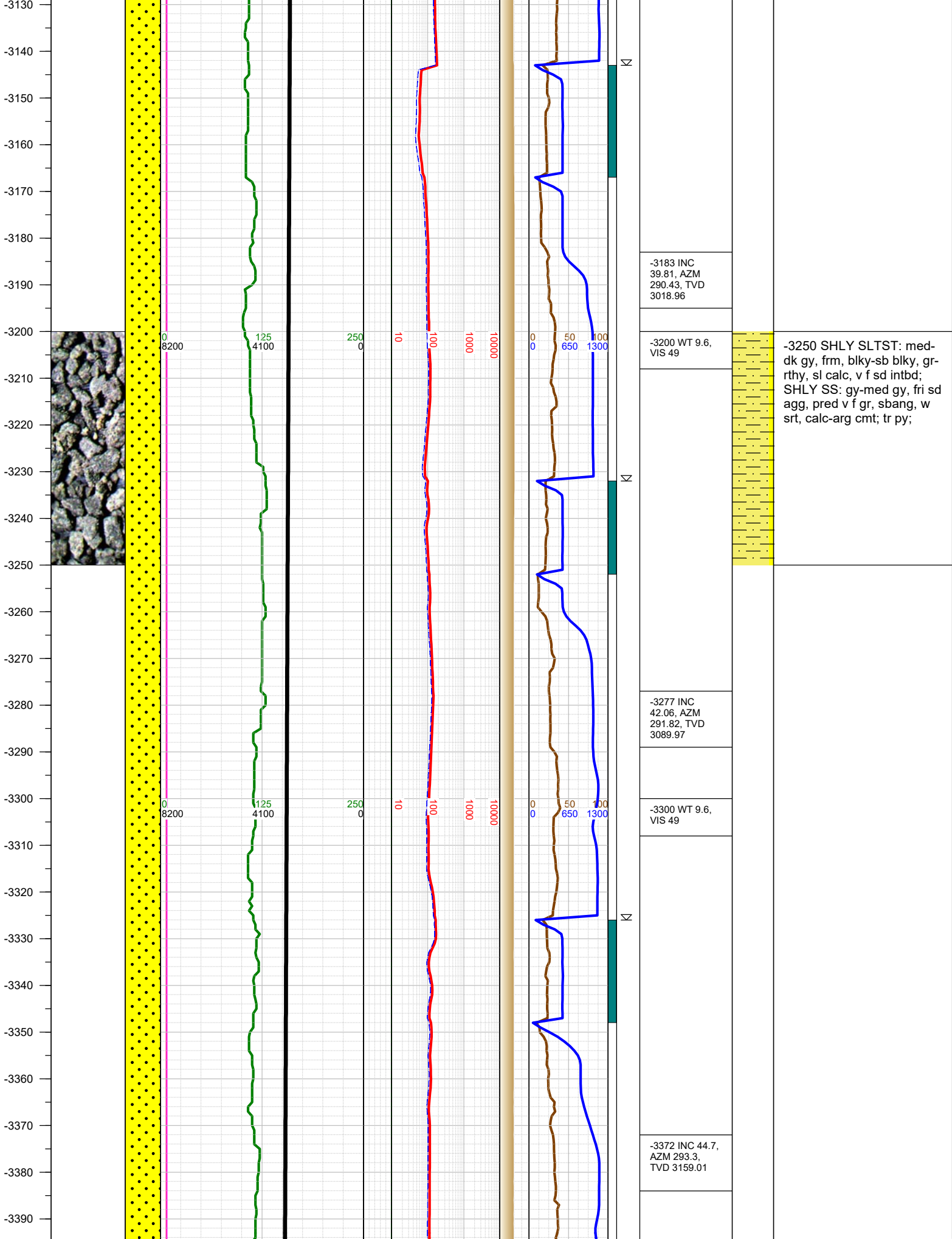
COUNTY: Broomfield  
STATE: Colorado  
GROUND ELEVATION: 5314'  
KELLY BUSHING: 5343'  
DRILLING FLUID: OBM  
TVD VS. MD: 7983' / 21955'  
SPUD DATE: December 19, 2019  
TD DATE: December 23, 2019  
  
DEPTHS LOGGED: 3000' - 21955'  
DATES LOGGED: December 19, 2019 - December 23, 2019  
GEOLOGISTS: Curtis Magnino, Kyle Newman  
SCALE: 5" = 100'

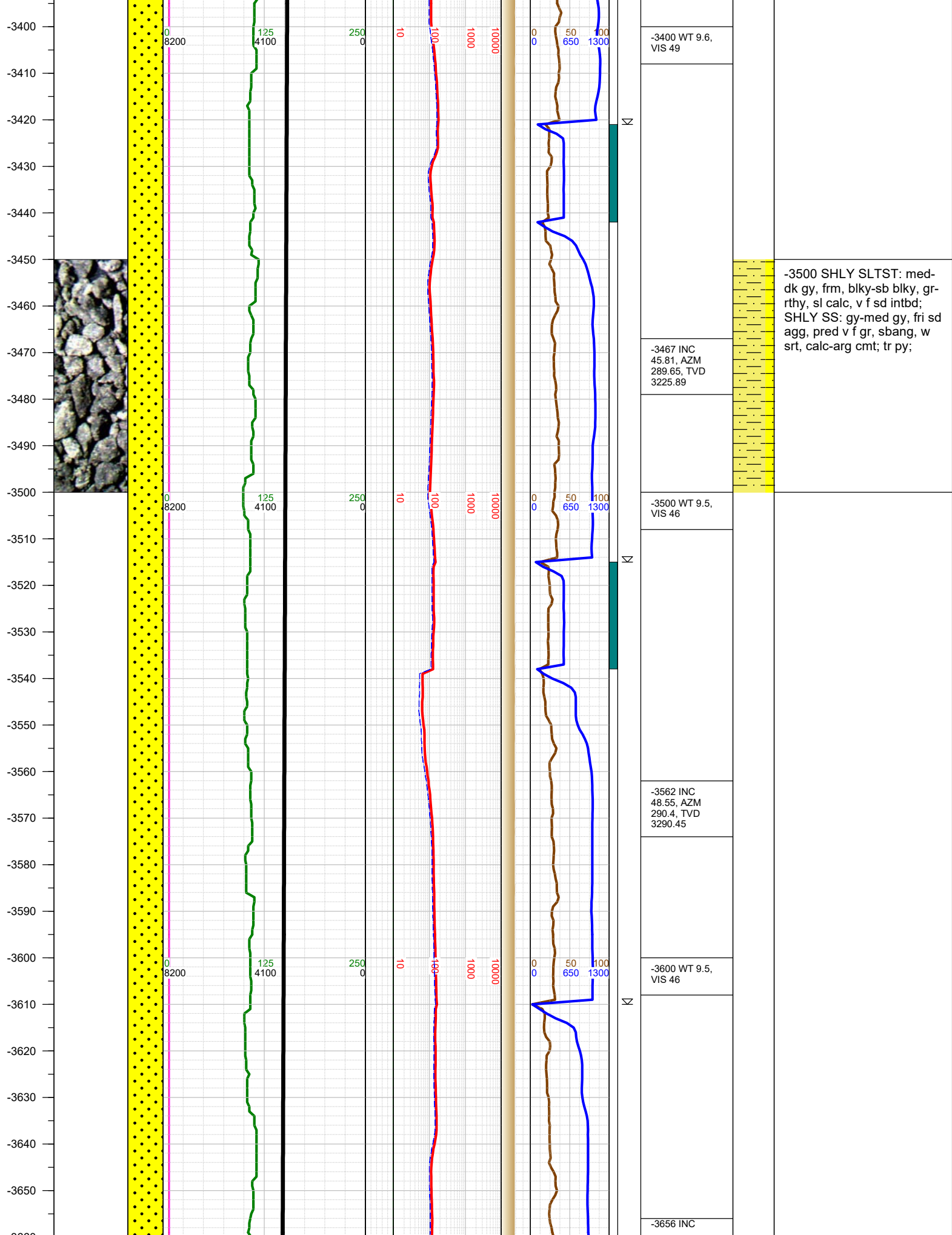
#### LEGEND

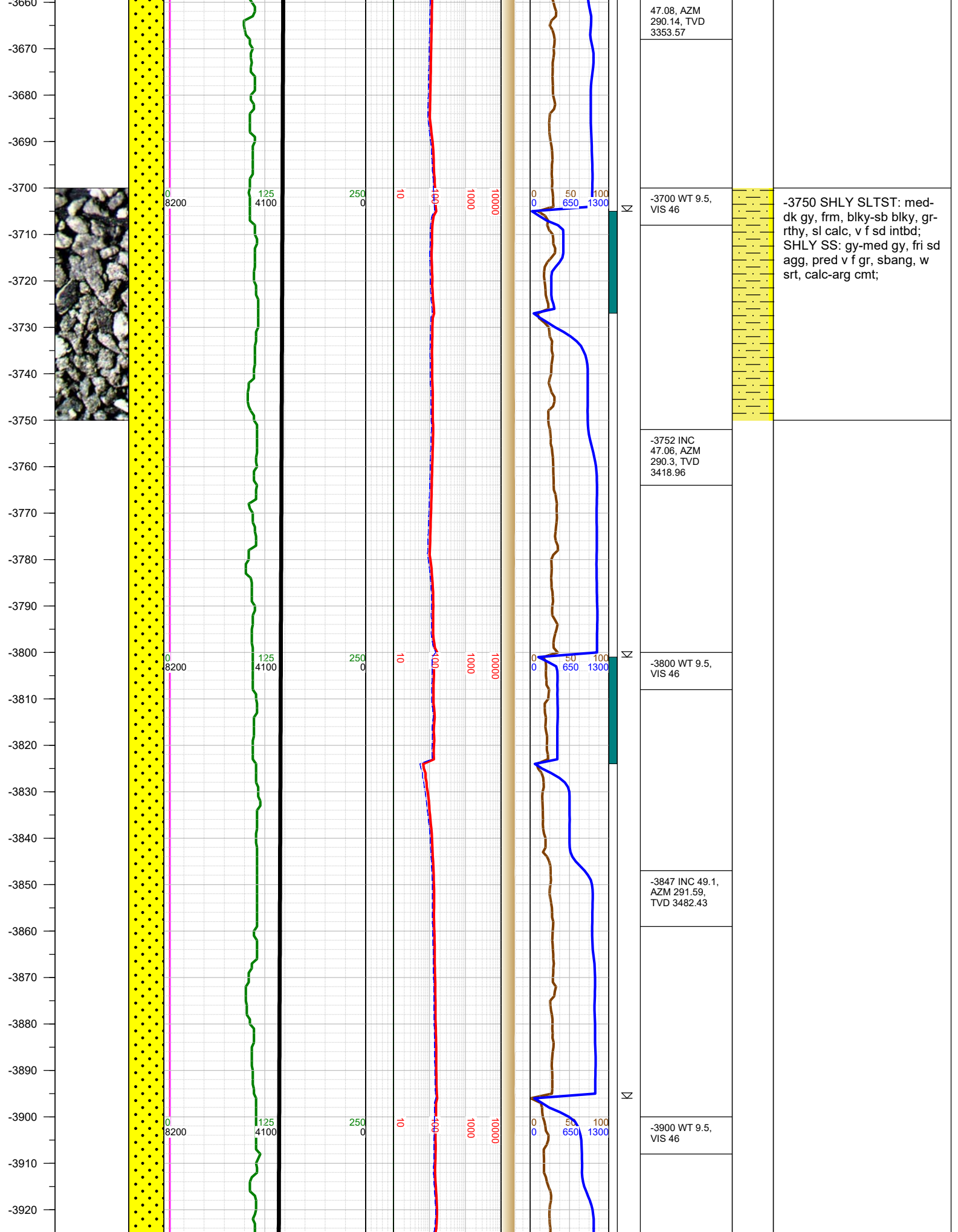


FORMATION CONNECTION MIDNIGHT NEW BIT GAS SHOW FAULT

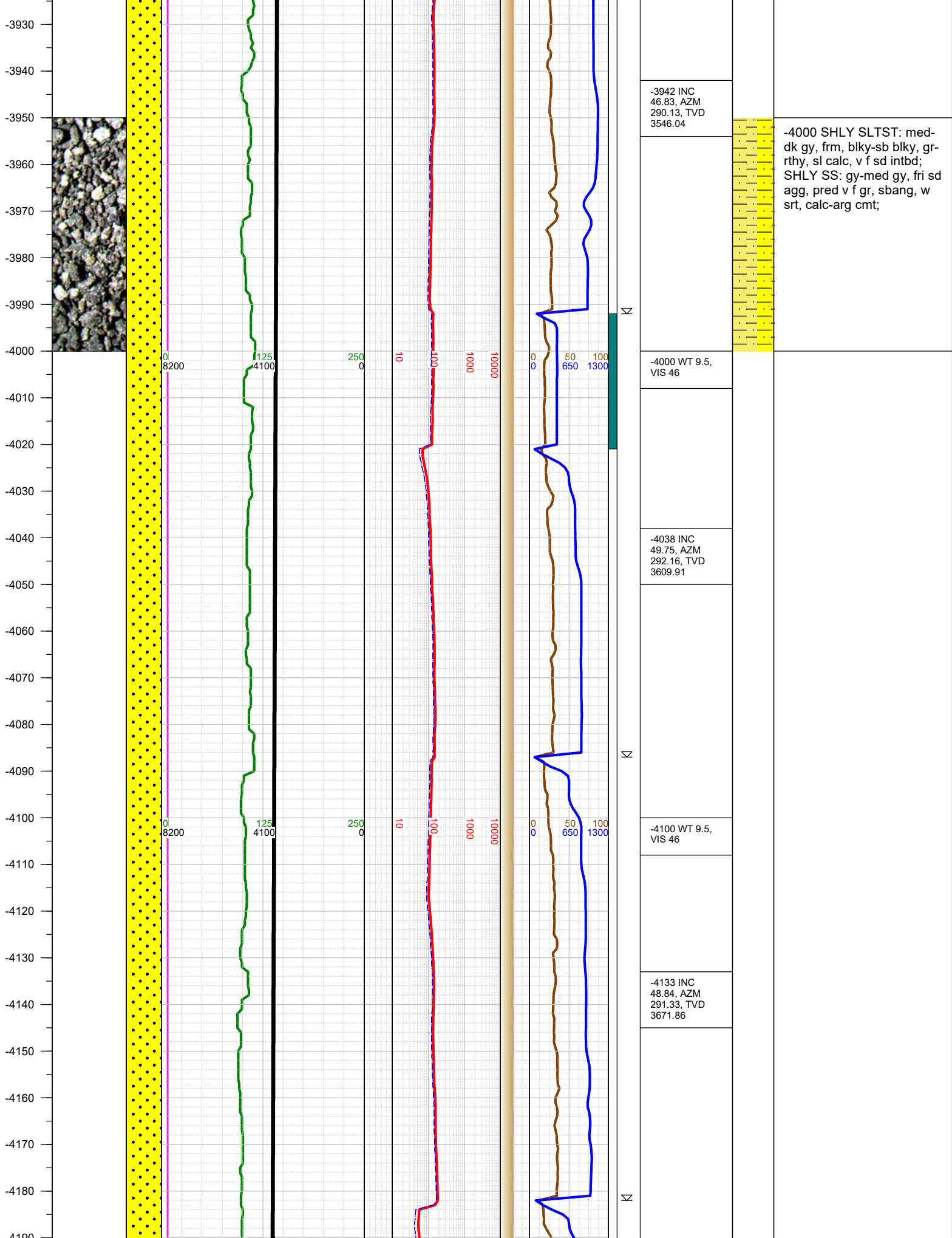




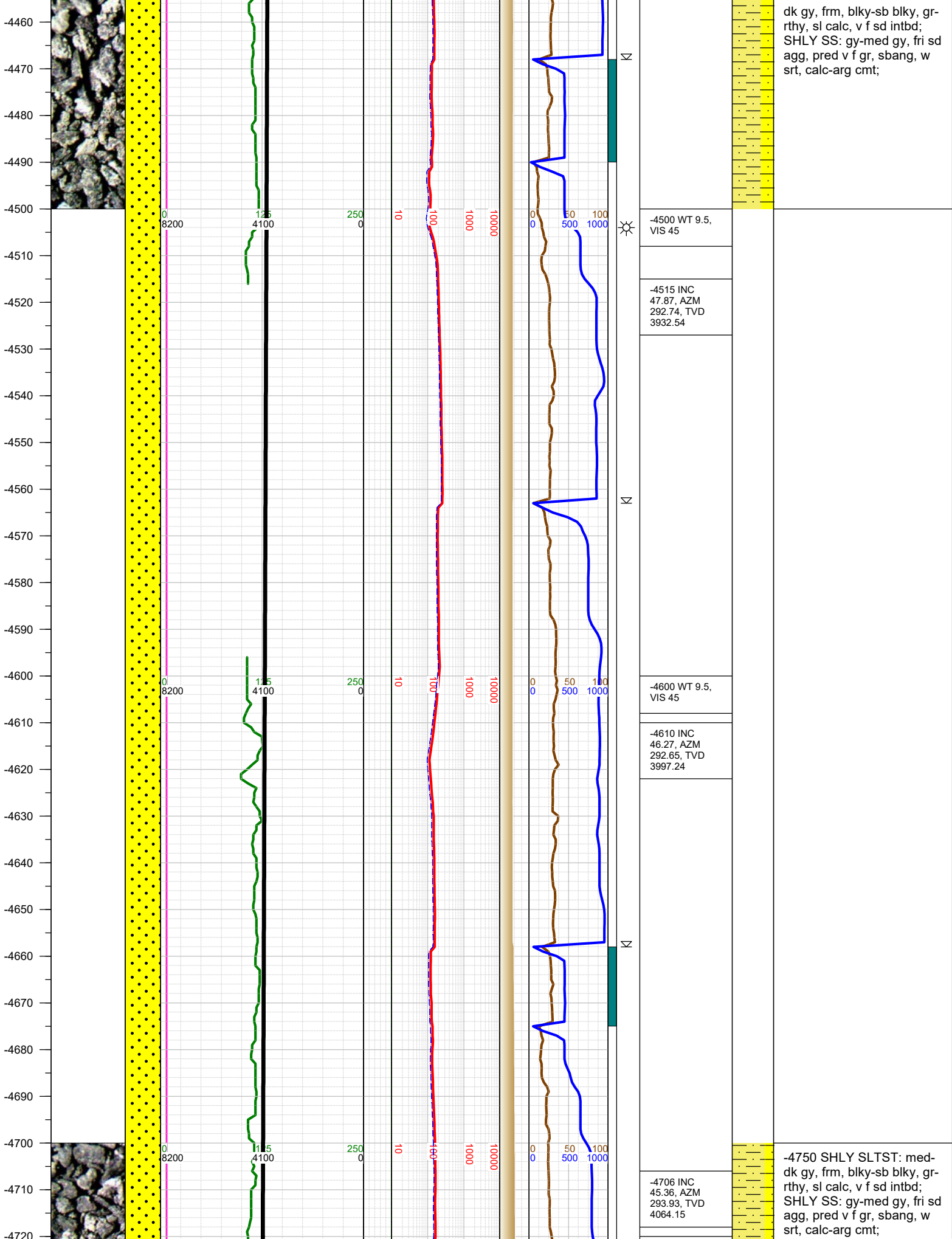








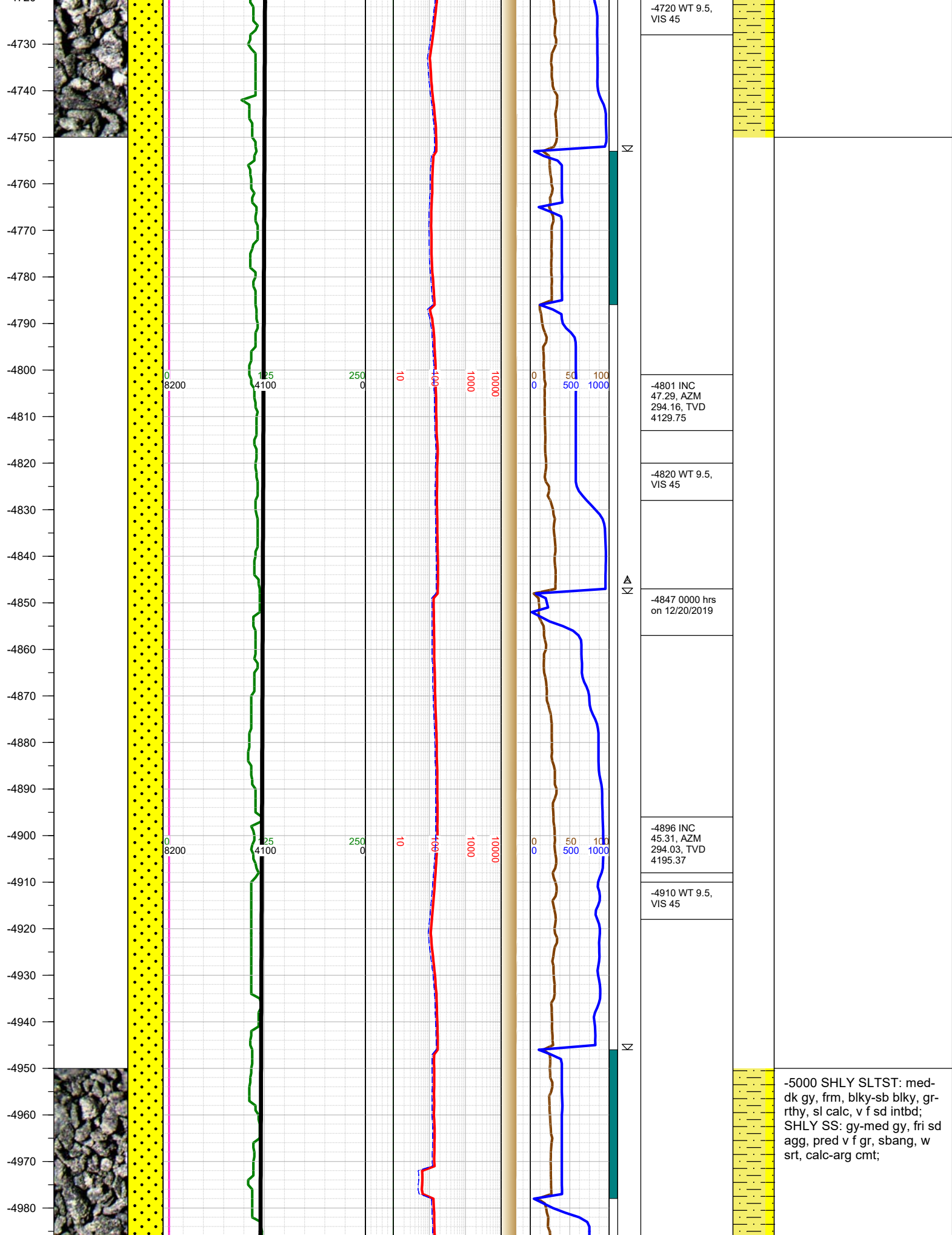




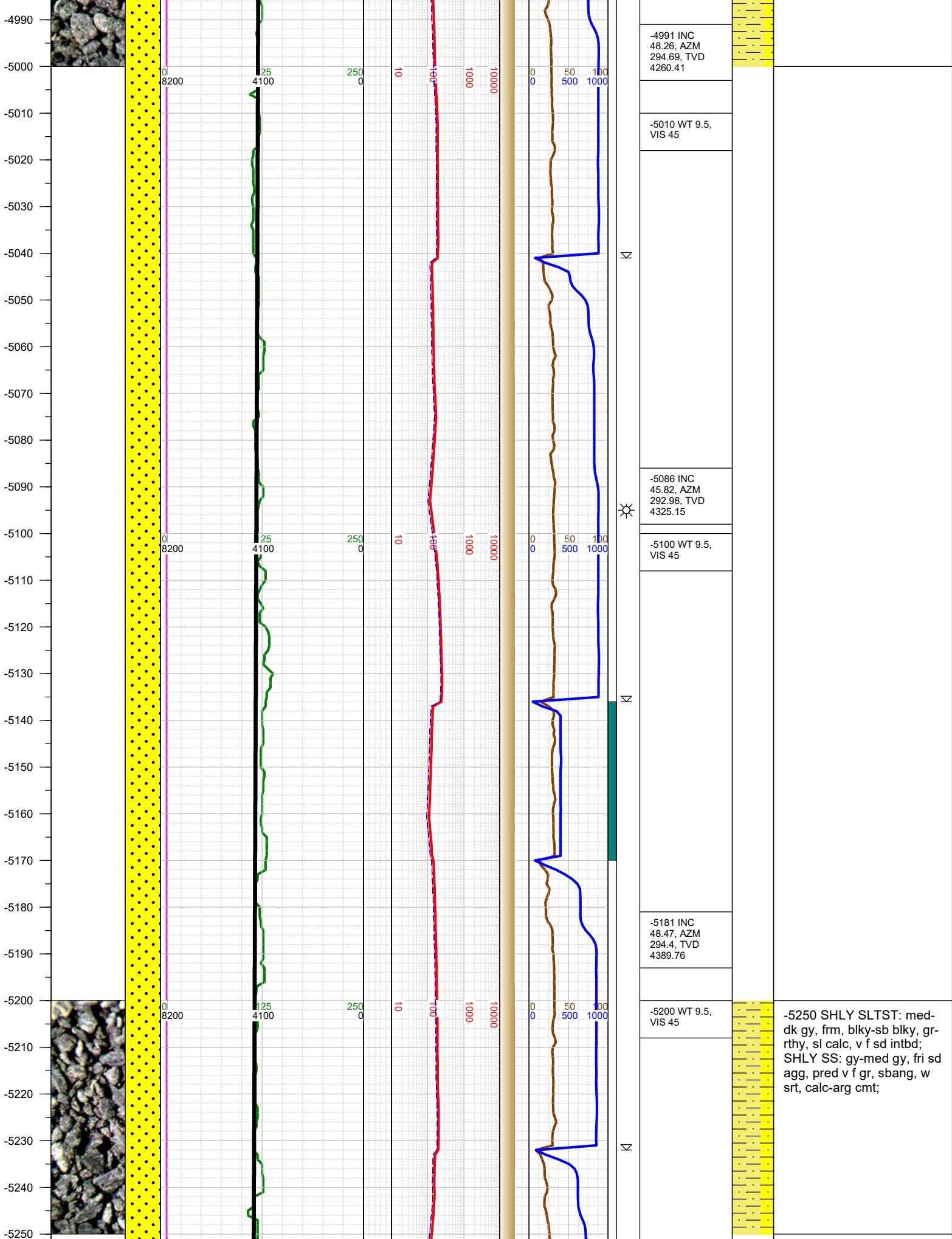
dk gy, frm, blkly-sb blkly, gr-rthy, sl calc, v f sd intbd; SHLY SS: gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;

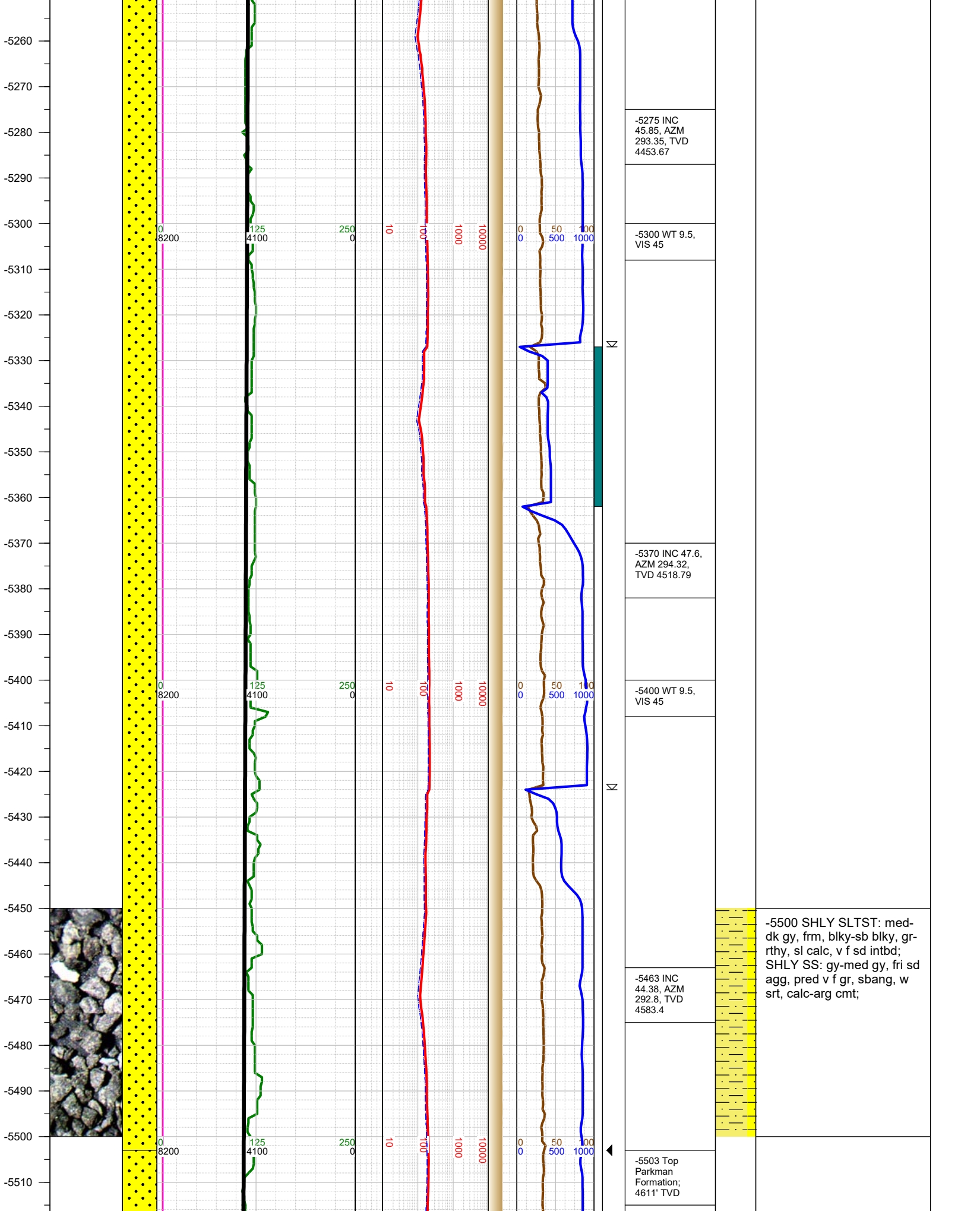
-4750 SHLY SLTST: med-dk gy, frm, blkly-sb blkly, gr-rthy, sl calc, v f sd intbd; SHLY SS: gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;



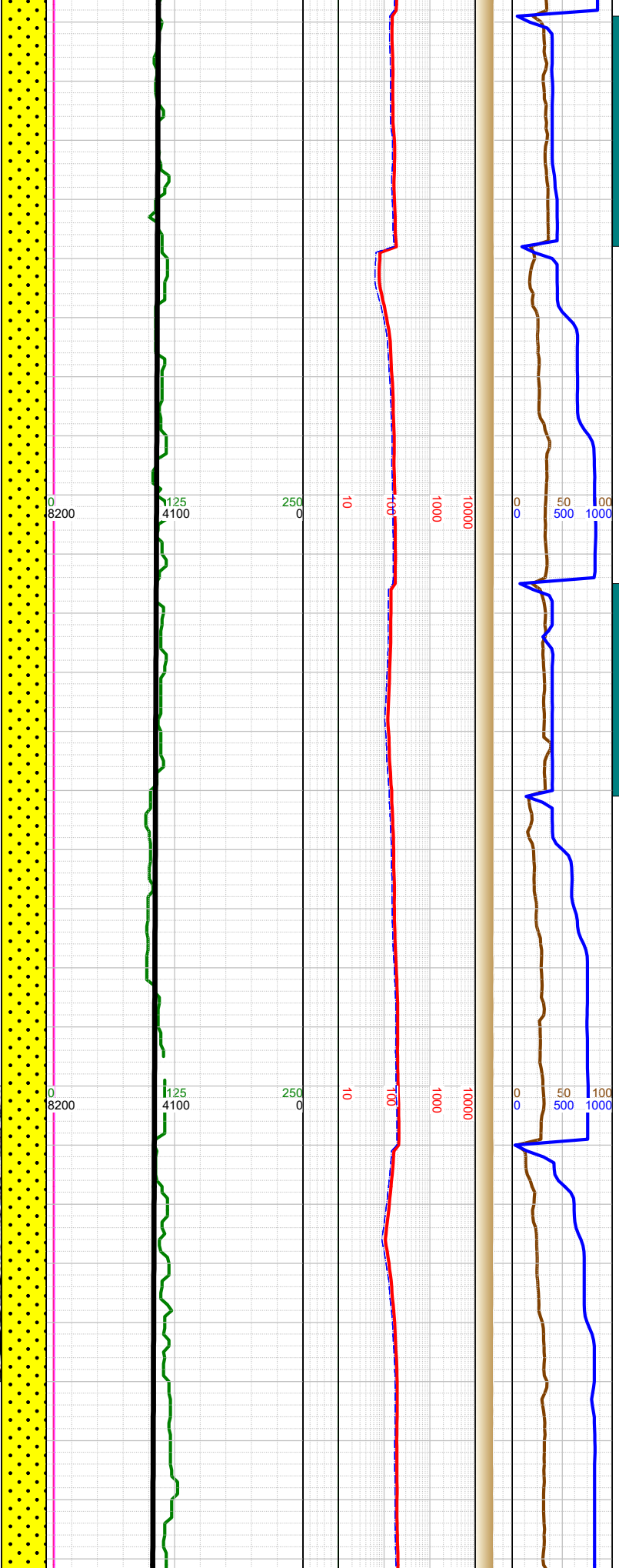








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-5520 WT 9.5,  
VIS 45

-5559 INC  
46.72, AZM  
293.99, TVD  
4650.63

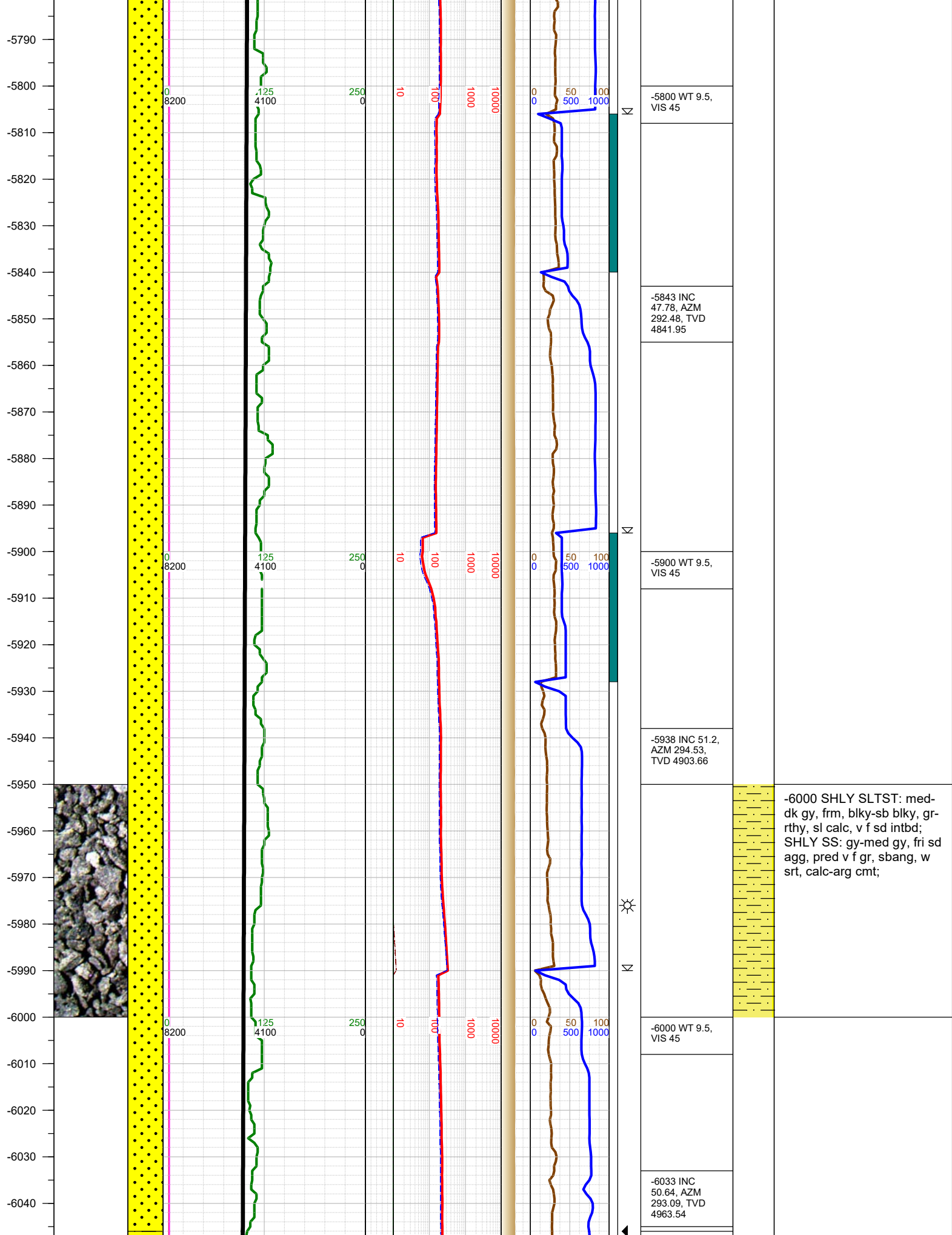
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-5654 INC  
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293.97, TVD  
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-5700 WT 9.5,  
VIS 45

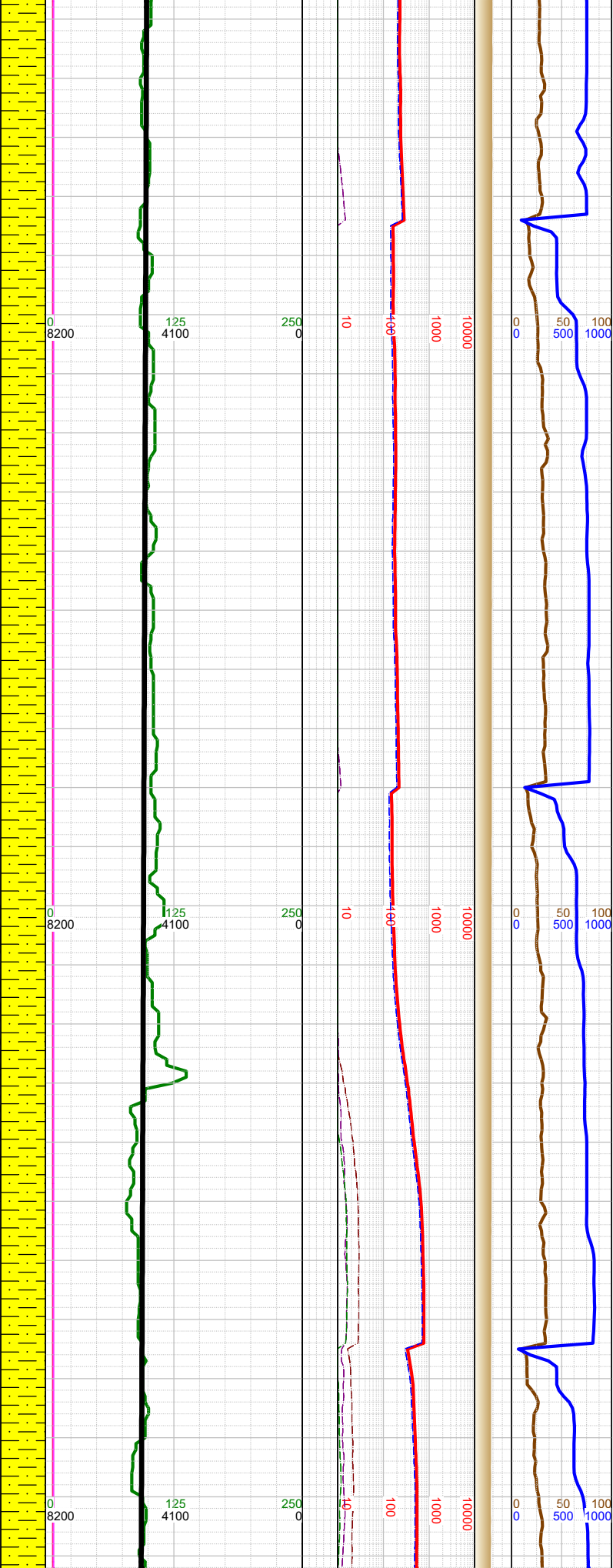
-5749 INC  
47.03, AZM  
292.75, TVD  
4778.33

-5750 SHLY SLTST: med-  
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agg, pred v f gr, sbang, w  
srt, calc-arg cmt;

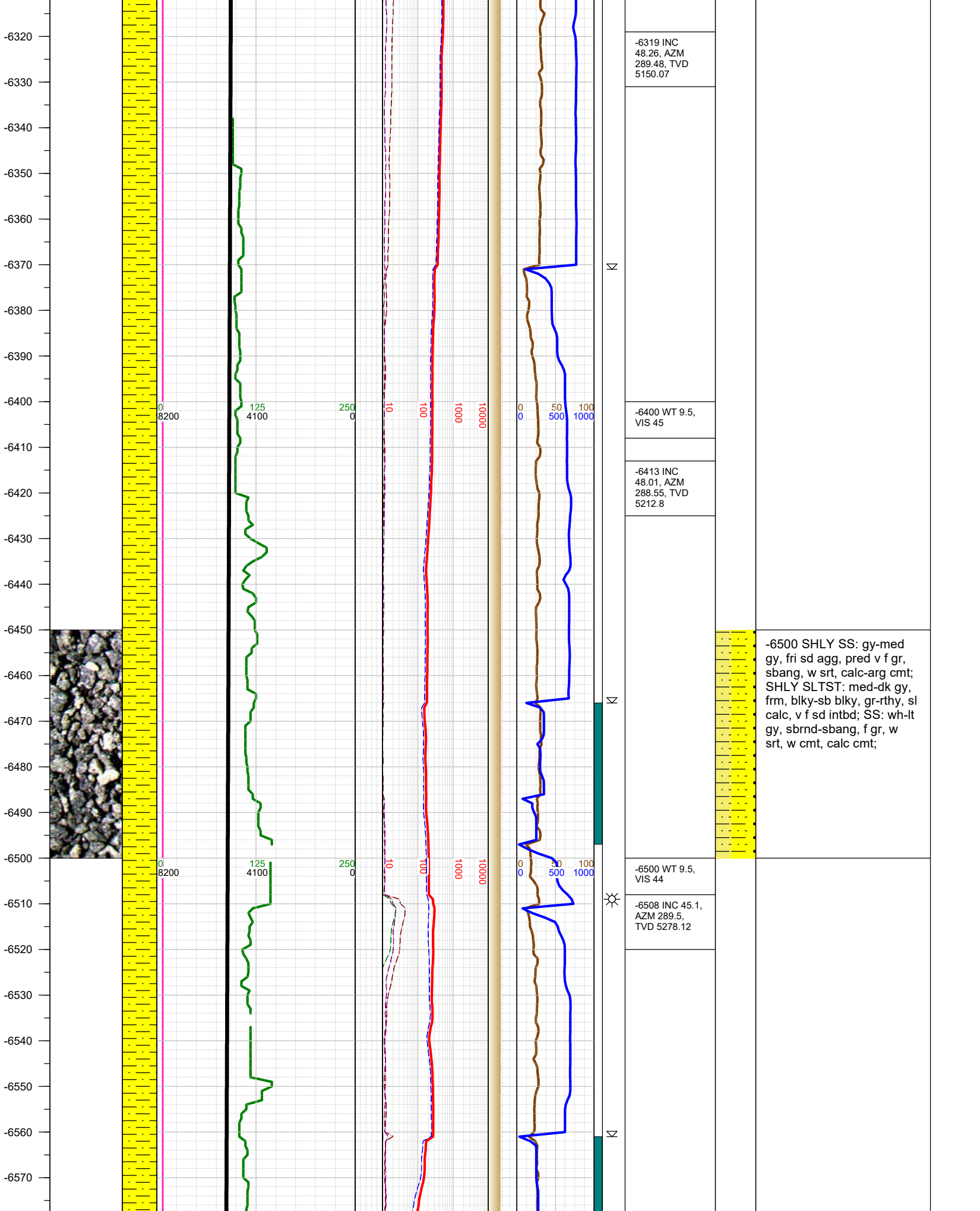




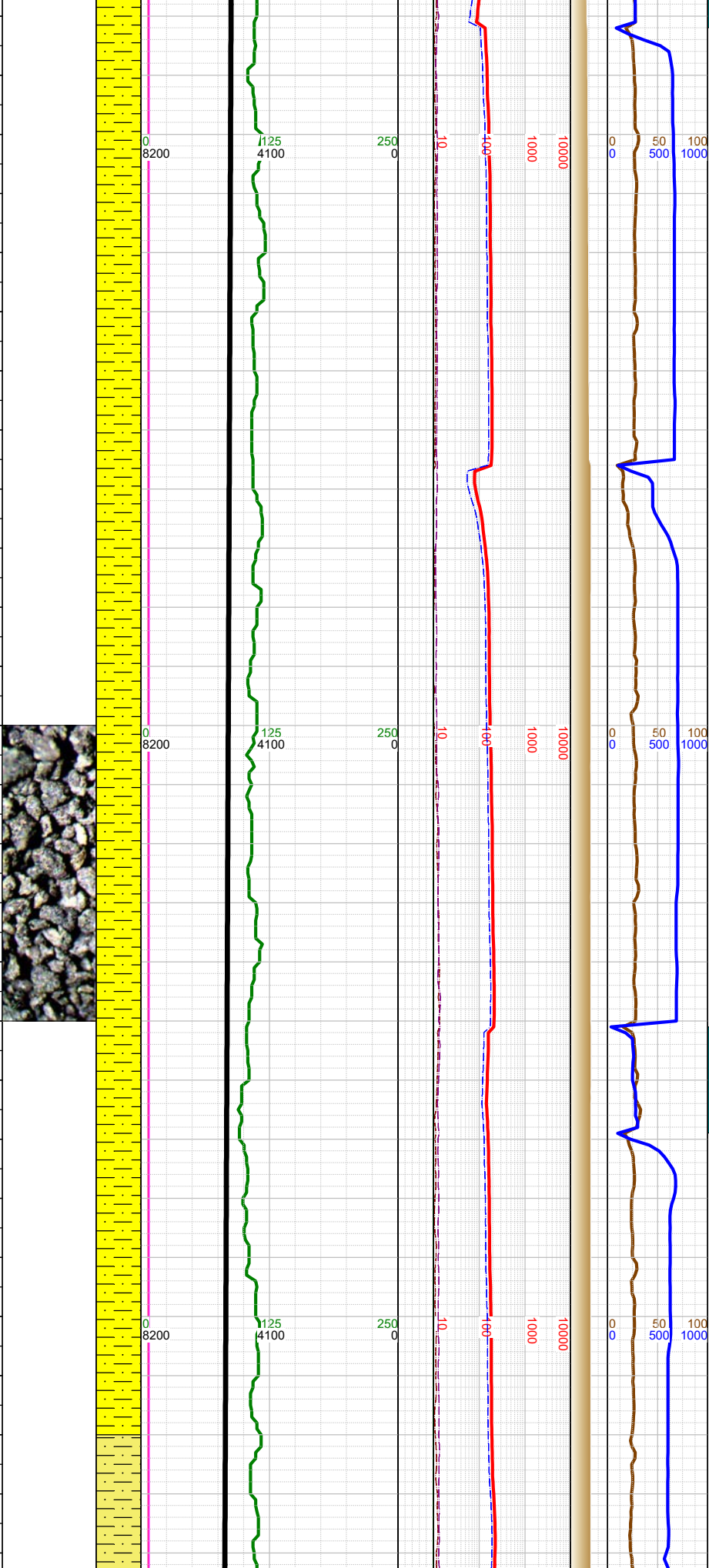
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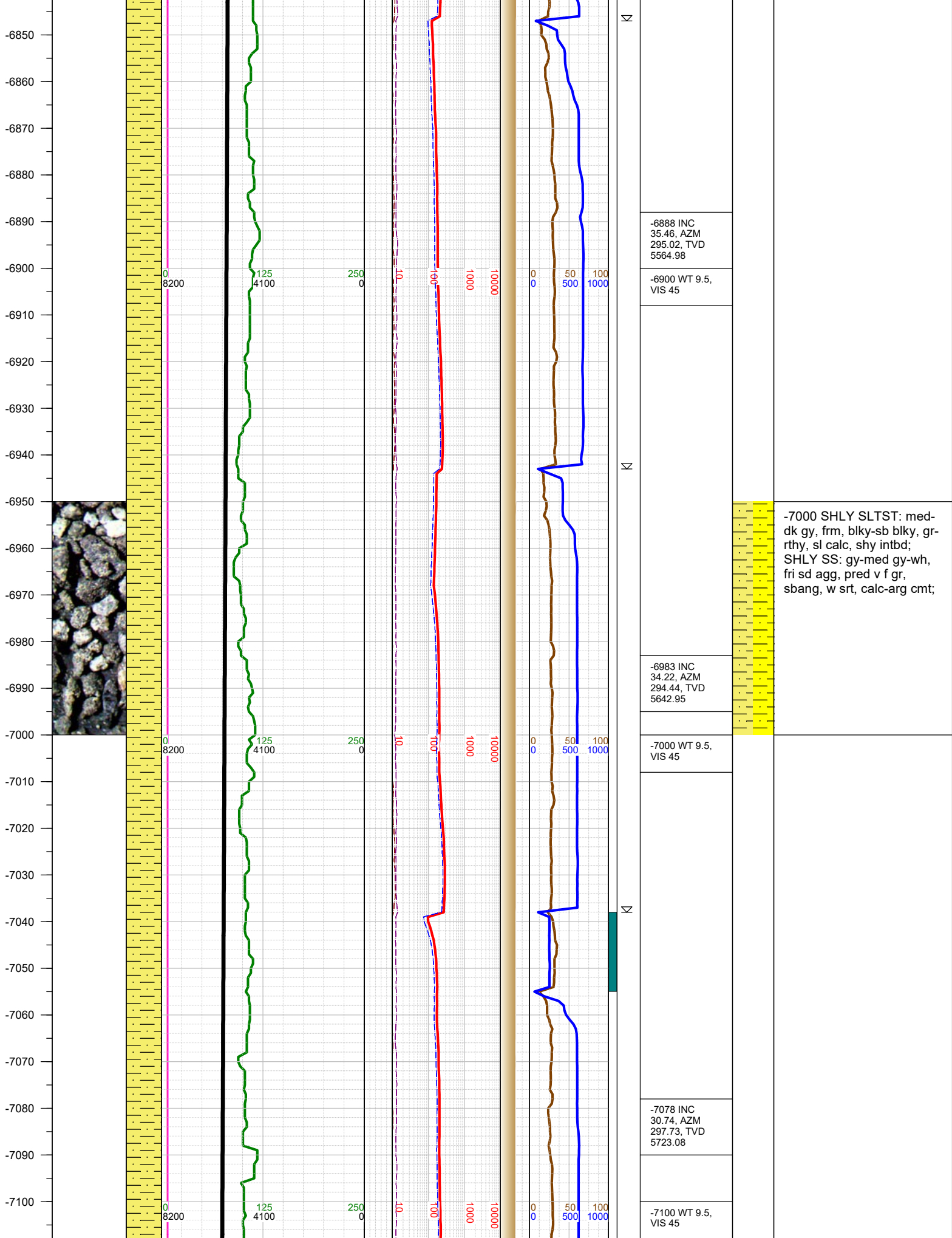
N	-6046 Top Sussex Formation; 4972 TVD		
	-6100 WT 9.5, VIS 45		
	-6128 INC 49.84, AZM 292.13, TVD 5024.31		
N			
	-6200 WT 9.5, VIS 45		-6250 SHLY SLTST: med- dk gy, frm, blk-y-sb blk-y, gr- rthy, sl calc, v f sd intbd; SHLY SS: gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SS: wh-lt gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt;
	-6223 INC 48.6, AZM 289.34, TVD 5086.36		
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	-6300 WT 9.5, VIS 45		



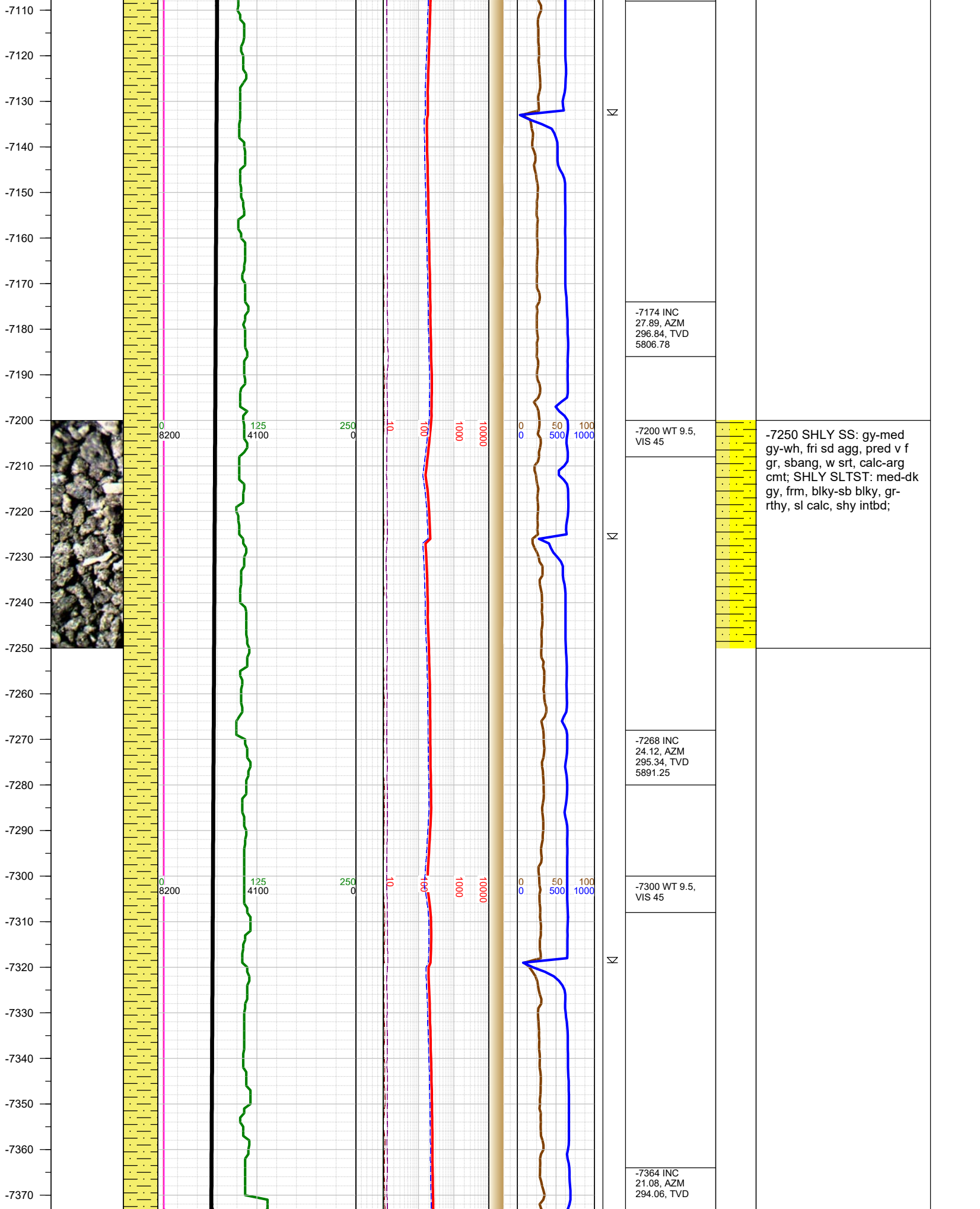
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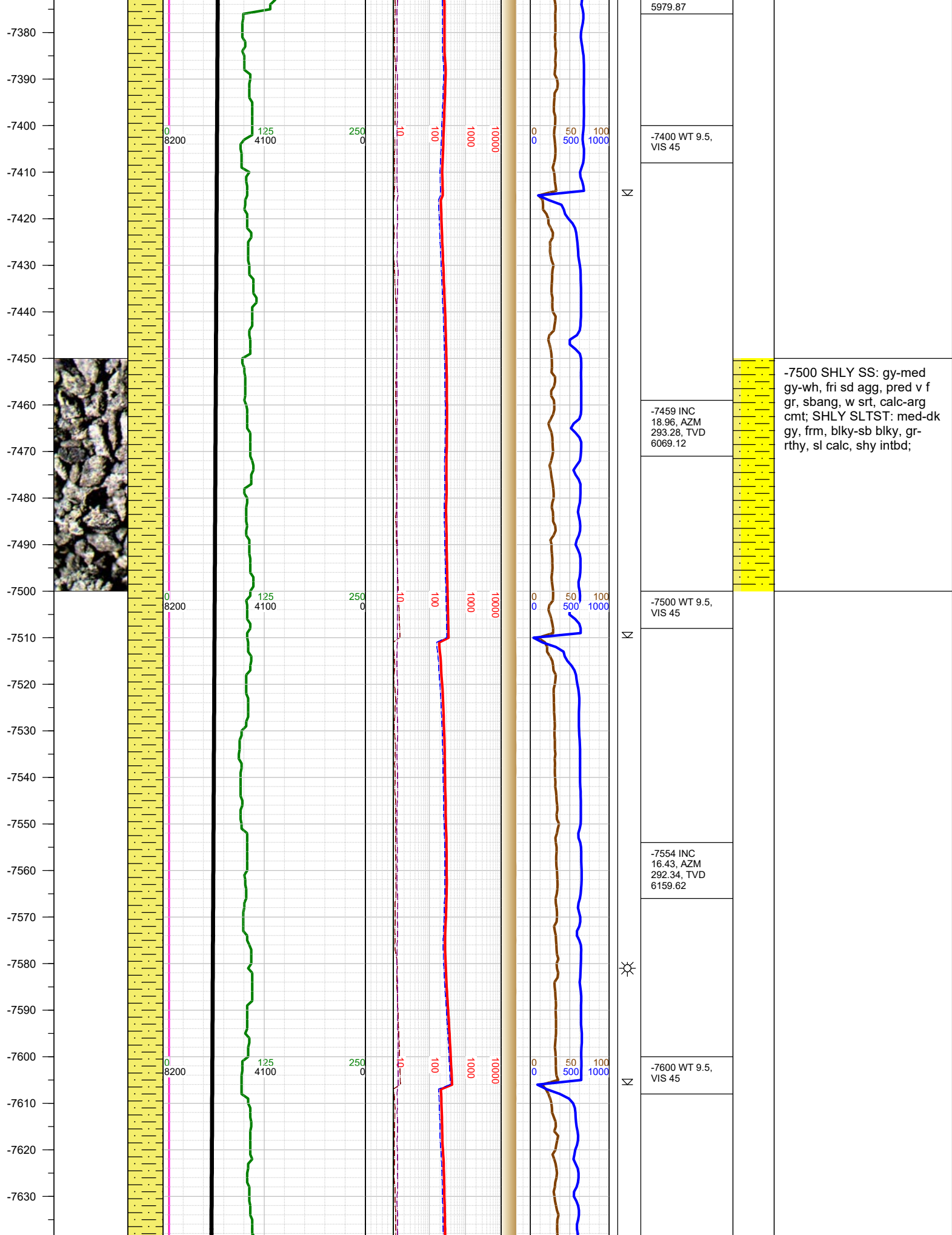


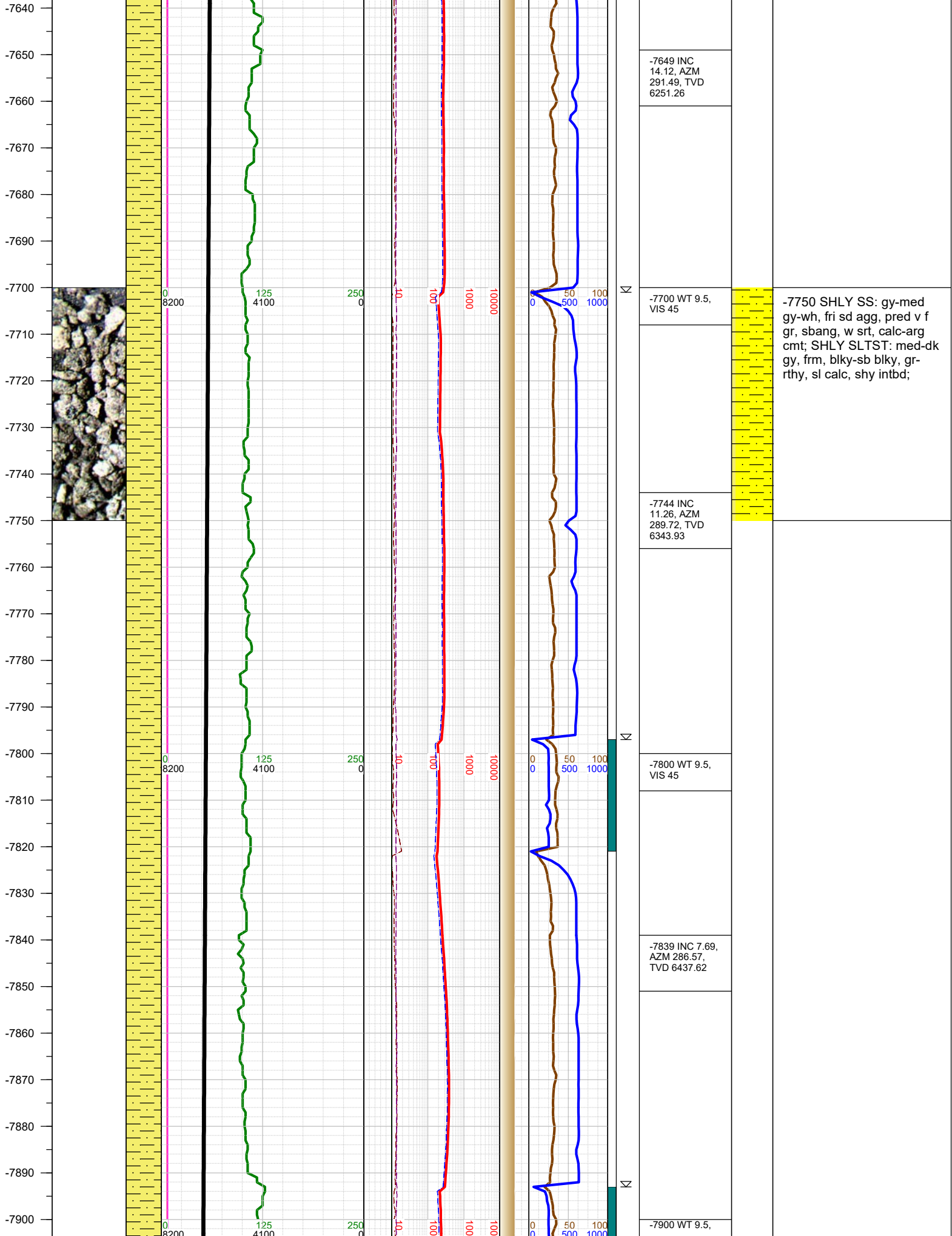
	-6603 INC 43.78, AZM 293.19, TVD 5345.96		
	-6620 WT 9.5, VIS 44		
	-6698 INC 42.22, AZM 292.85, TVD 5415.44		-6750 SHLY SLTST: med- dk gy, frm, blk-y-sb blk-y, gr- rthy, sl calc, v f sd intbd; SHLY SS: gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SS: wh-lt gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt;
	-6710 WT 9.5, VIS 44		
	-6793 INC 37.26, AZM 295.17, TVD 5488.48		
	-6810 WT 9.5, VIS 45		
	-6820 Top Shannon Formation; 5510' TVD		

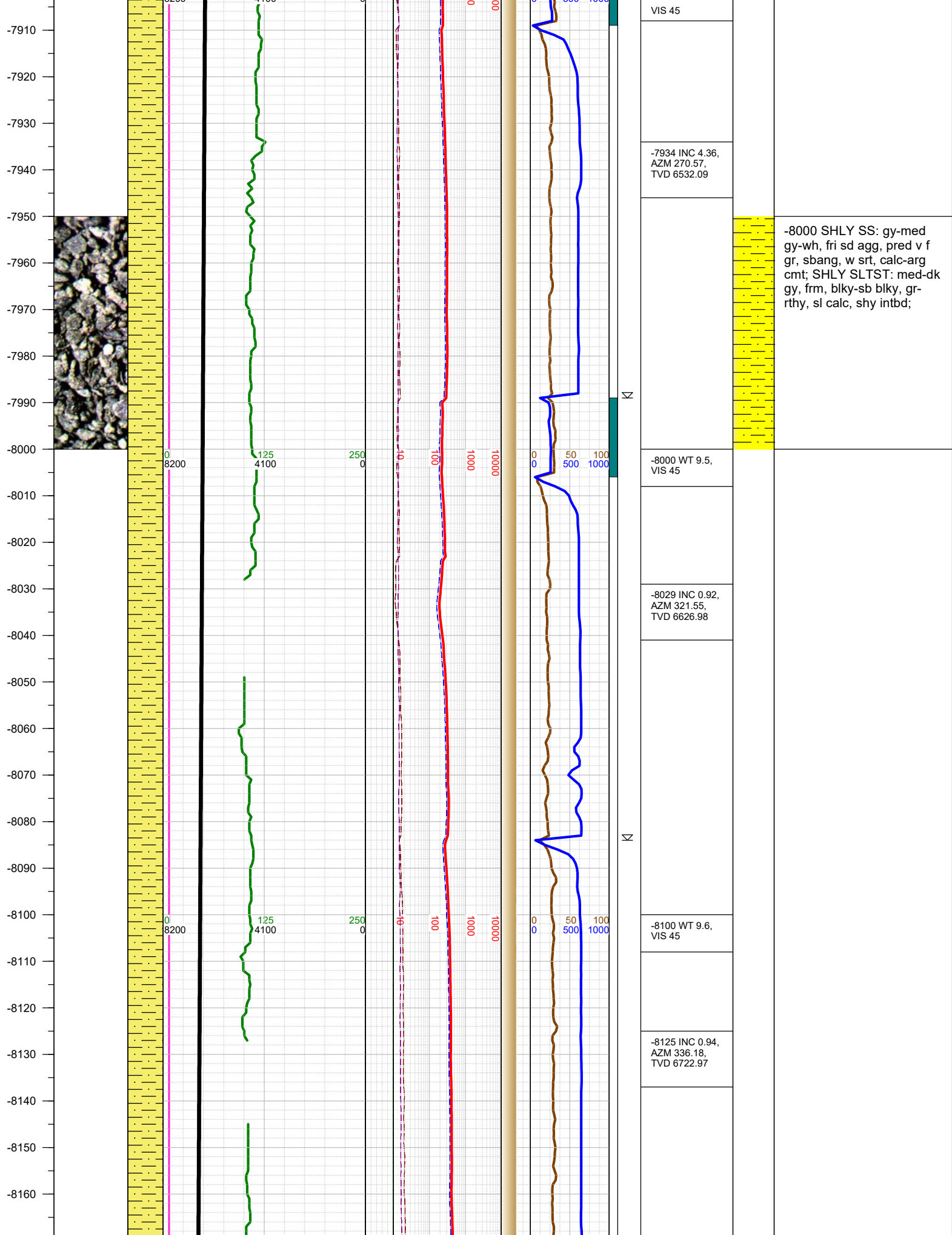




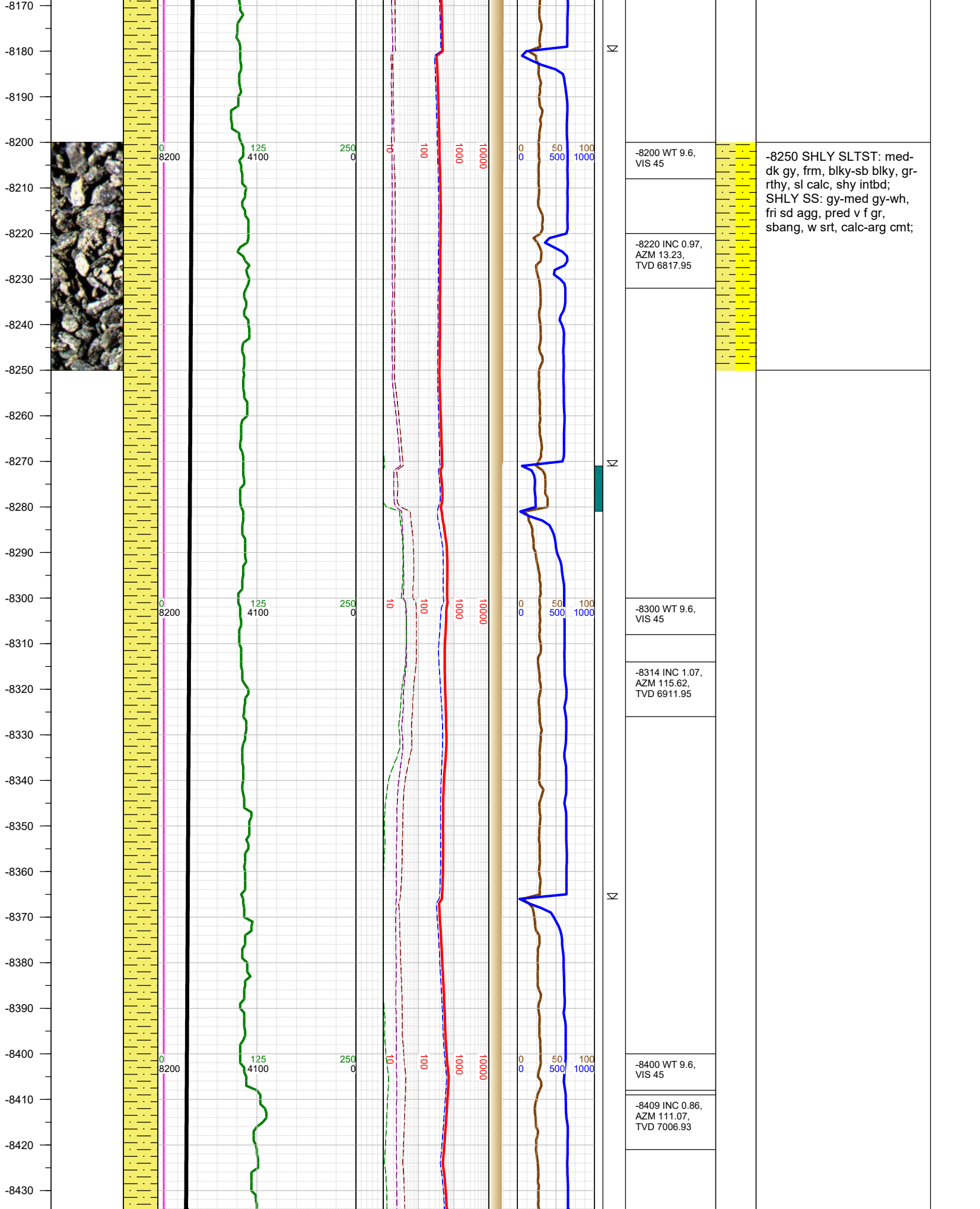


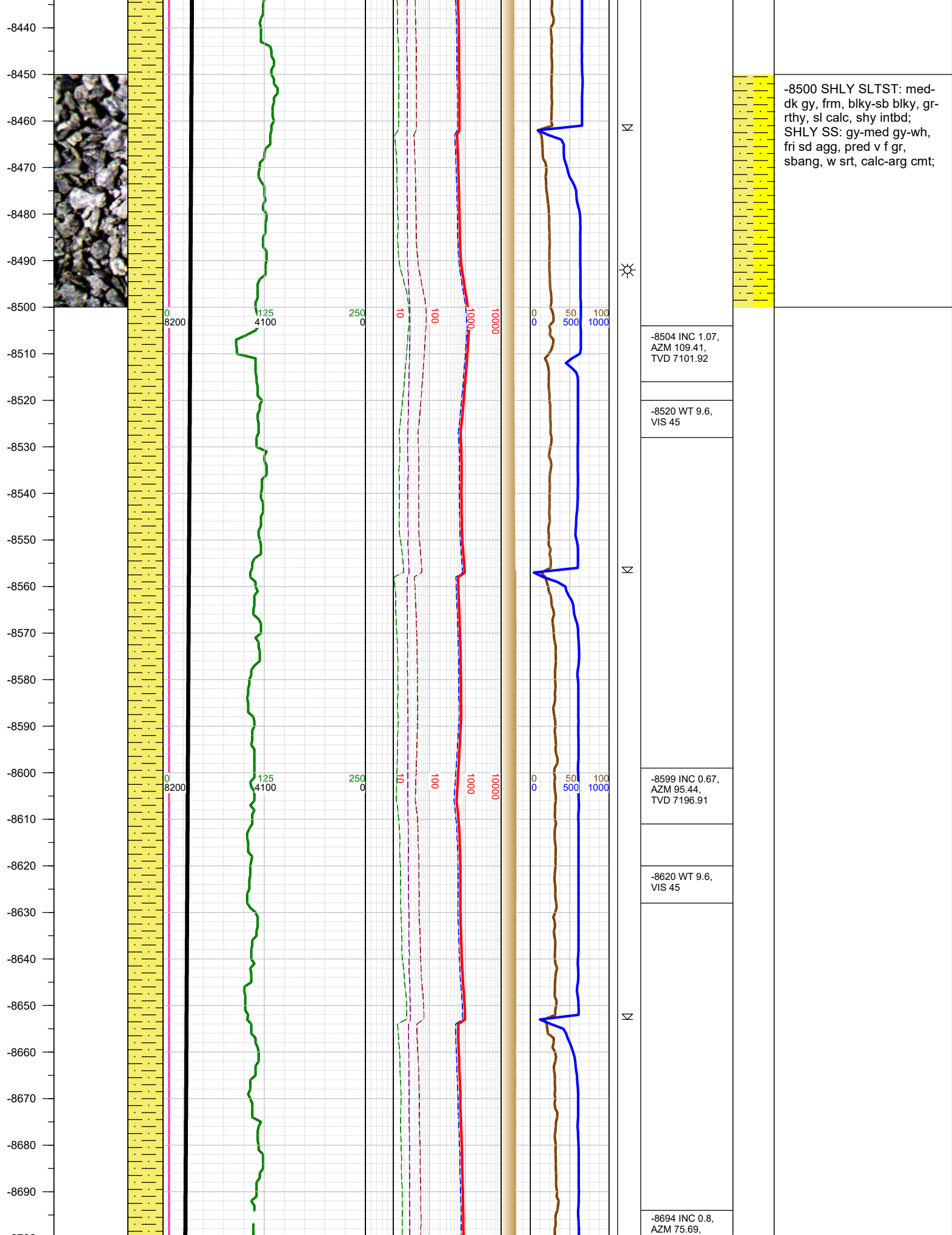




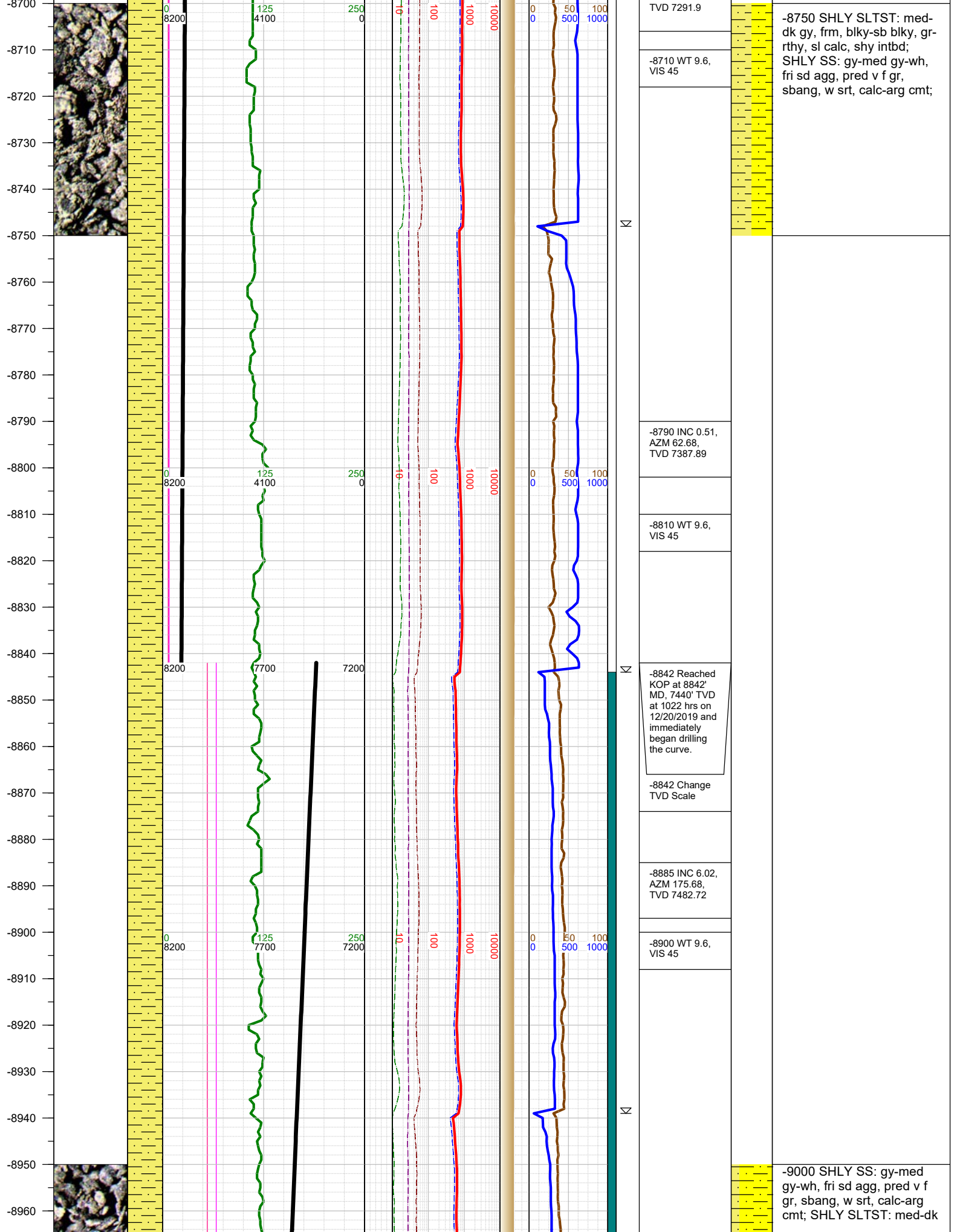




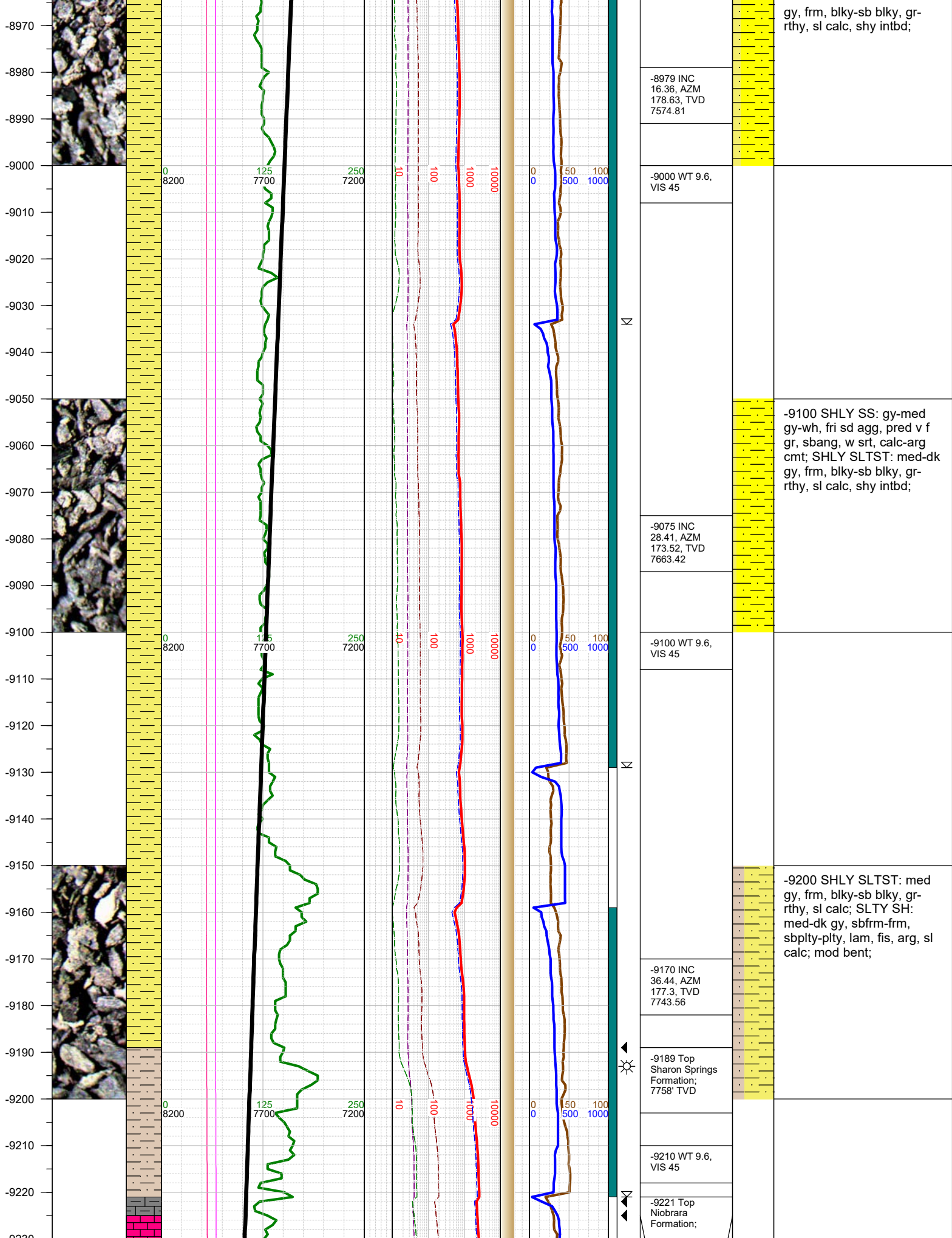




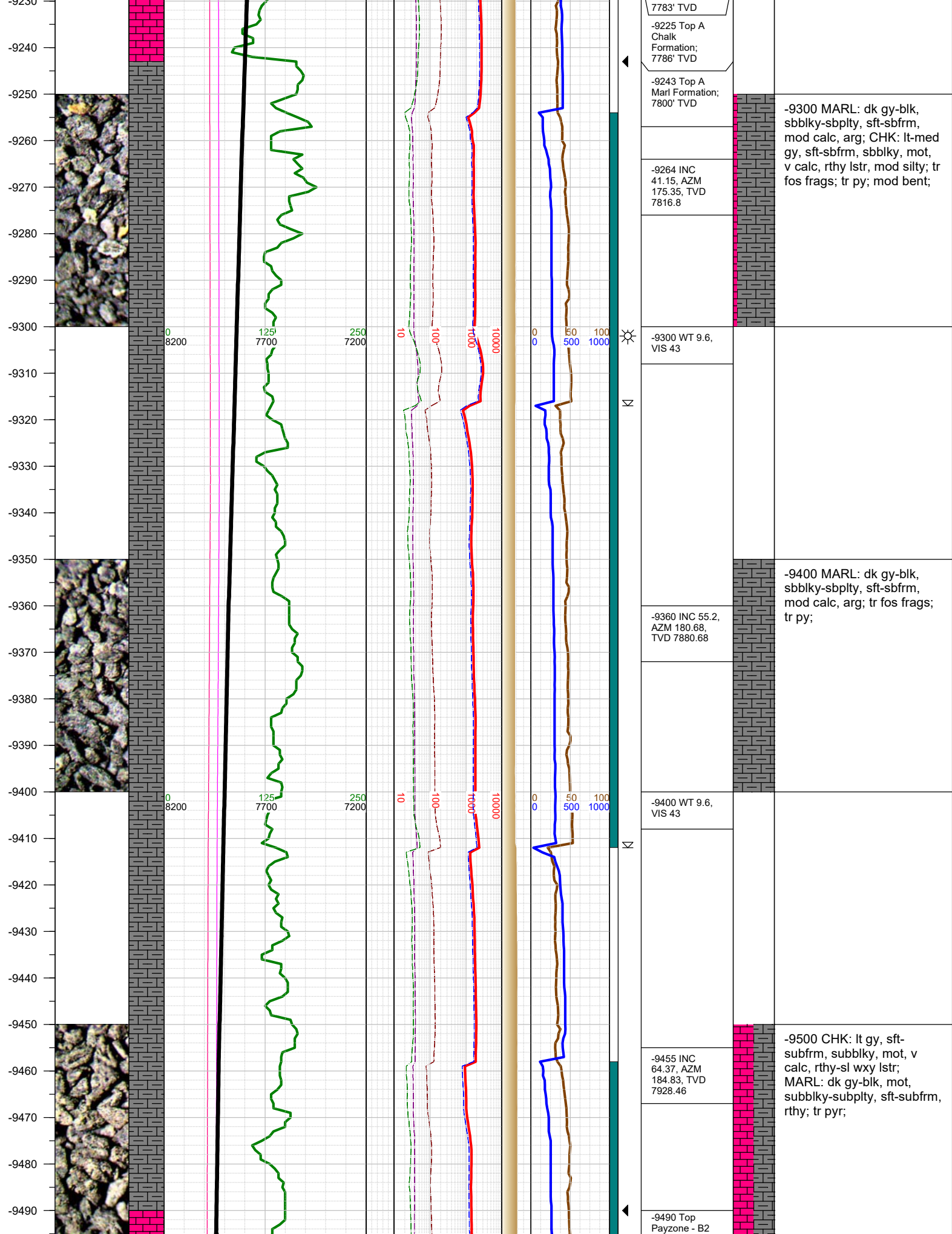
-8500 SHLY SLTST: med-  
dk gy, frm, blk-y-sb blk-y, gr-  
rthy, sl calc, shy intbd;  
SHLY SS: gy-med gy-wh,  
fri sd agg, pred v f gr,  
sbang, w srt, calc-arg cmt;

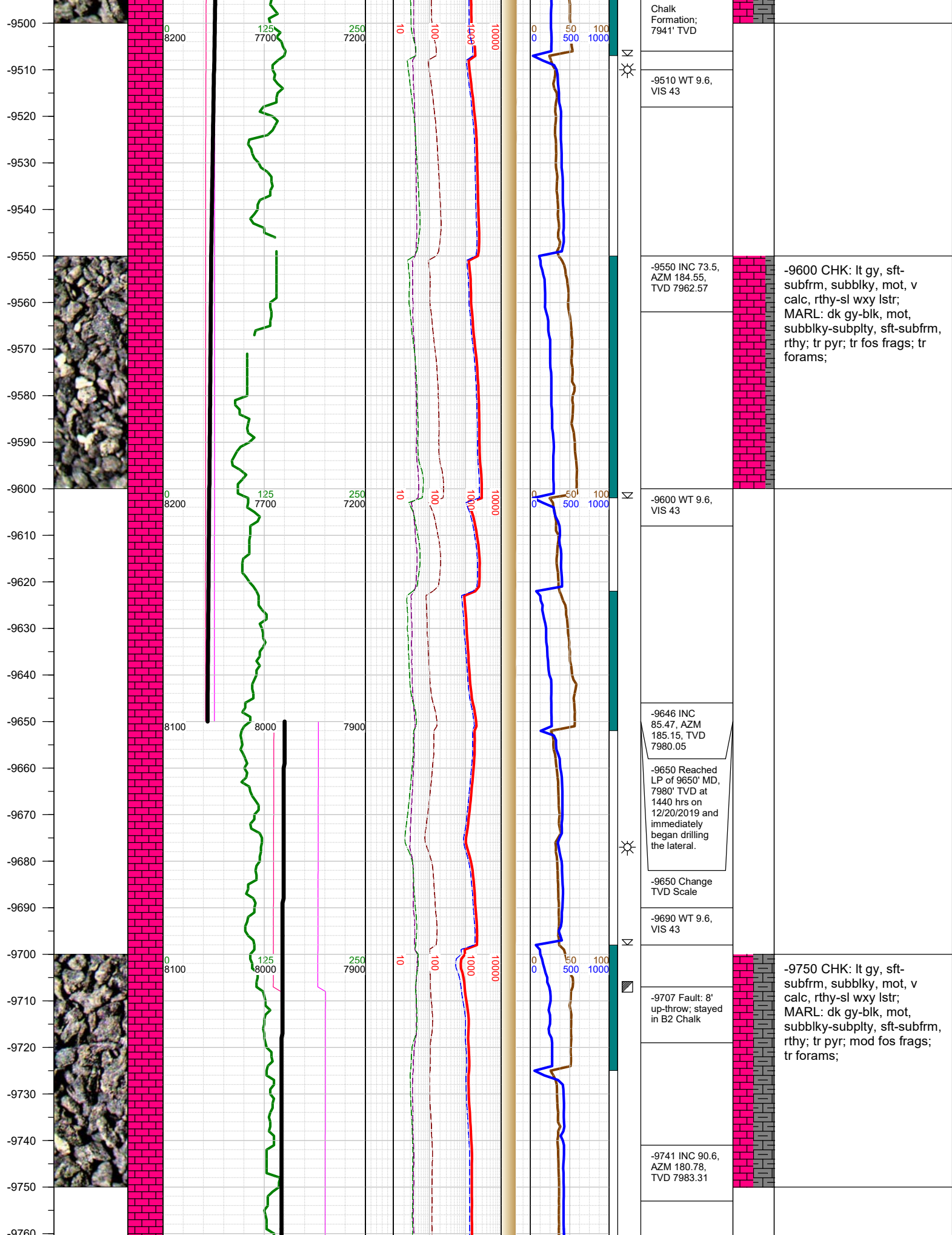


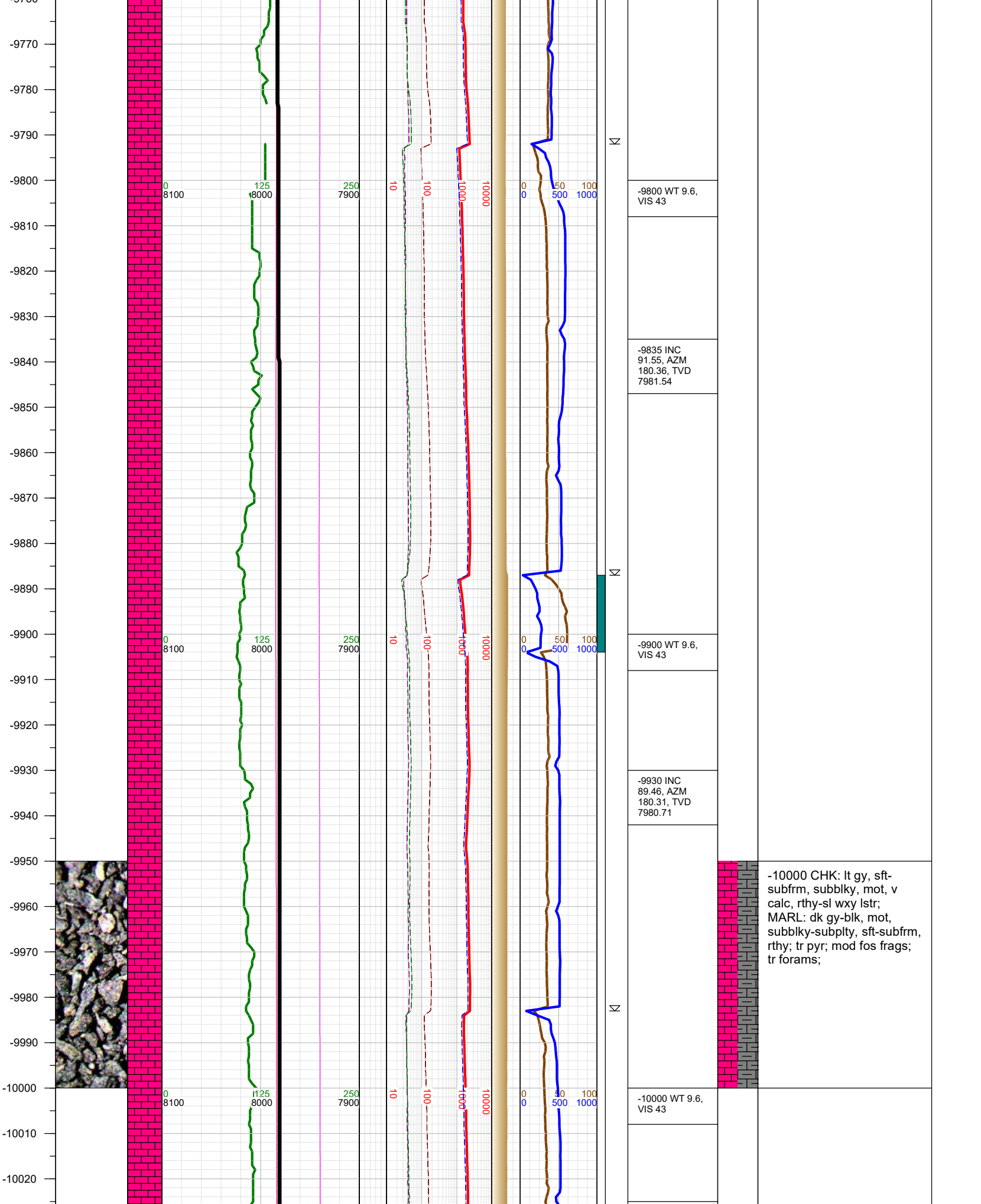




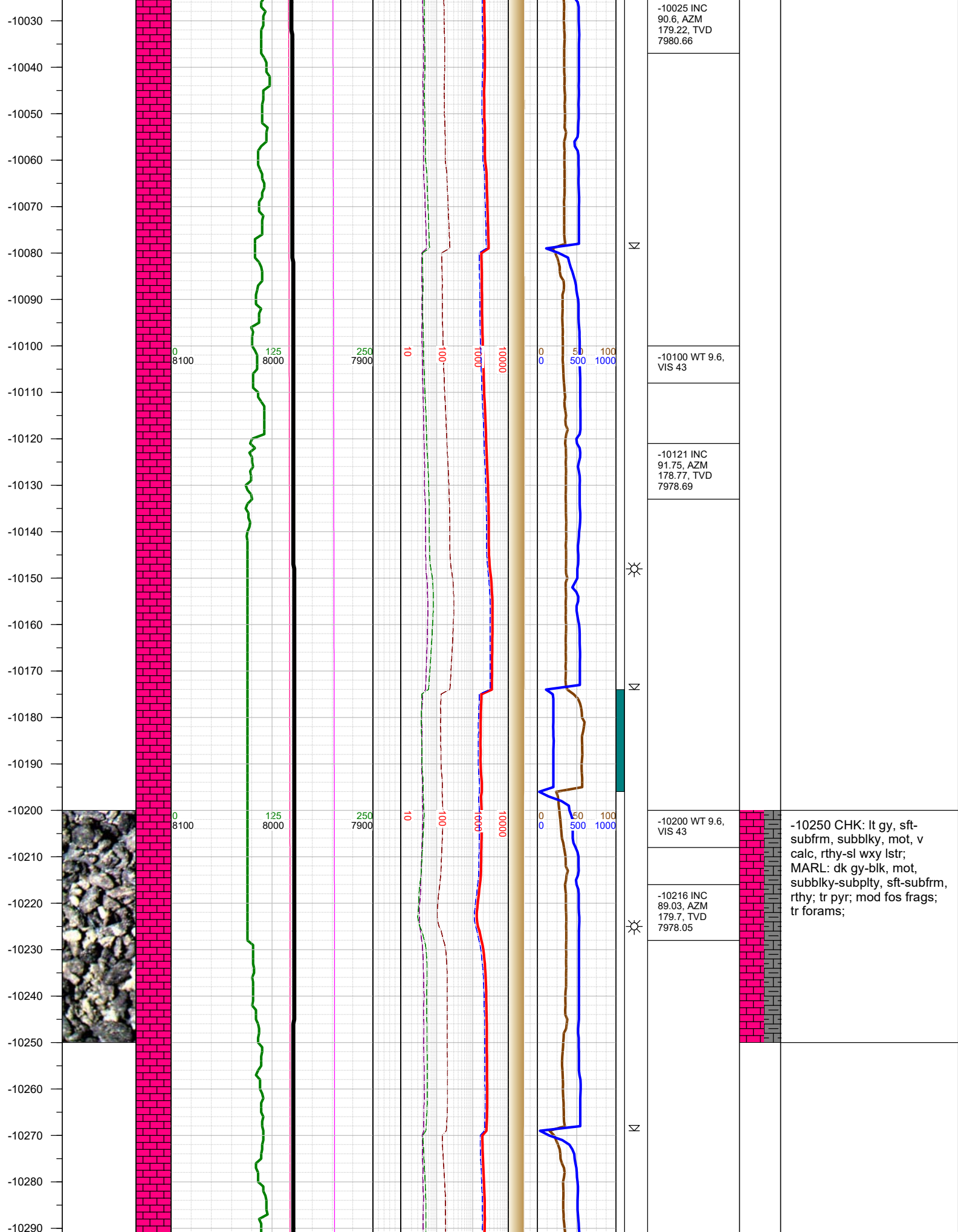




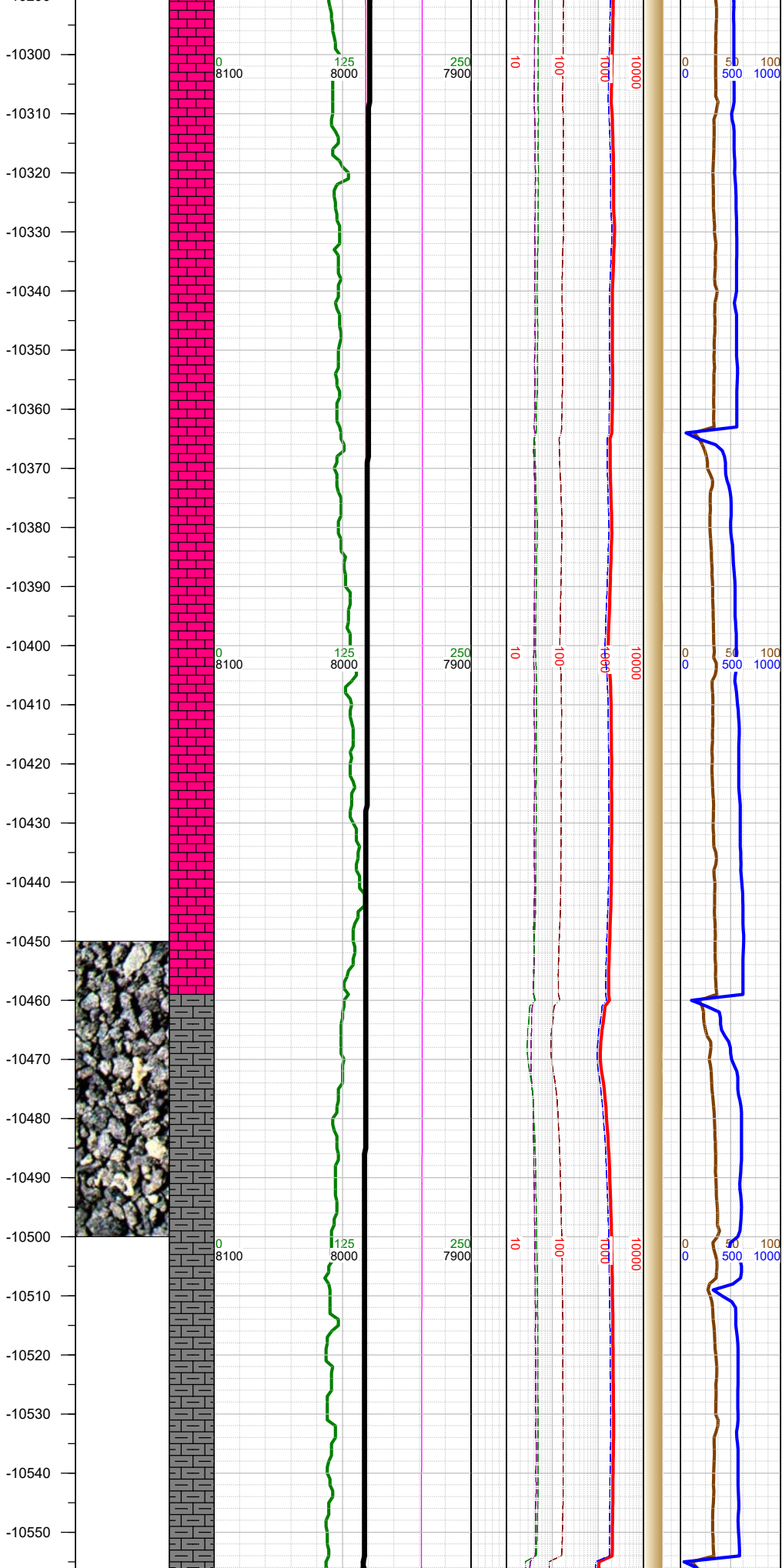






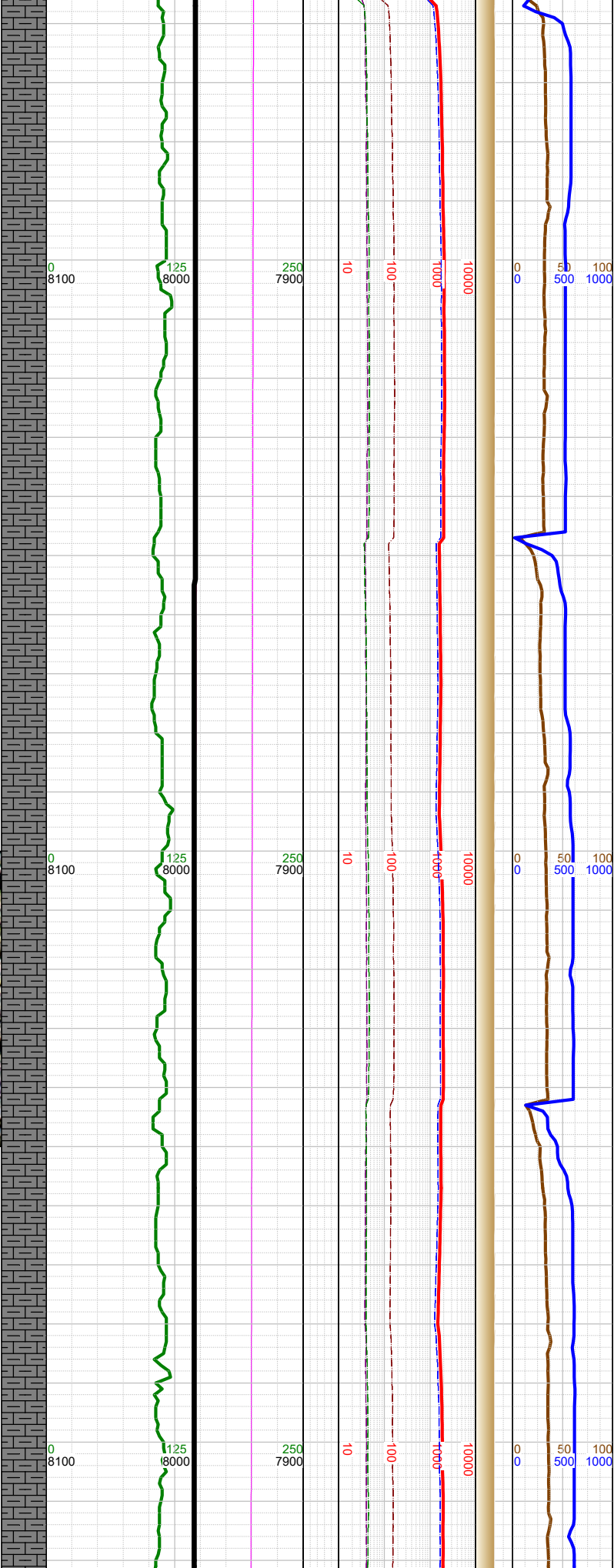






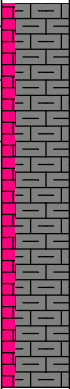
	-10300 WT 9.6, VIS 44	
	-10311 INC 89.16, AZM 180.14, TVD 7979.55	
	-10405 INC 88.92, AZM 179.21, TVD 7981.13	
	-10420 WT 9.6, VIS 44	
	-10500 INC 89.09, AZM 178.79, TVD 7982.77	-10500 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr; mod fos frags; tr forams;
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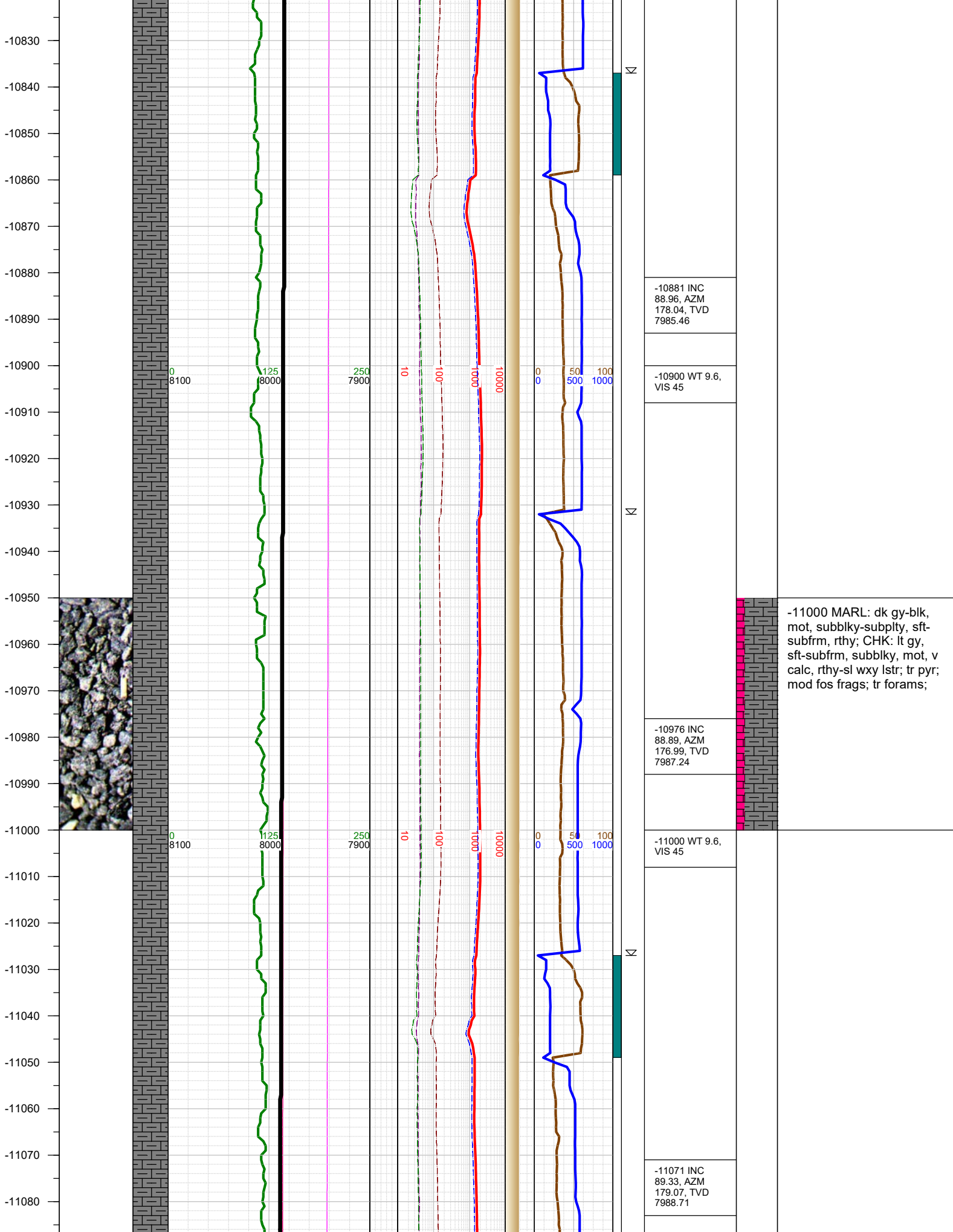


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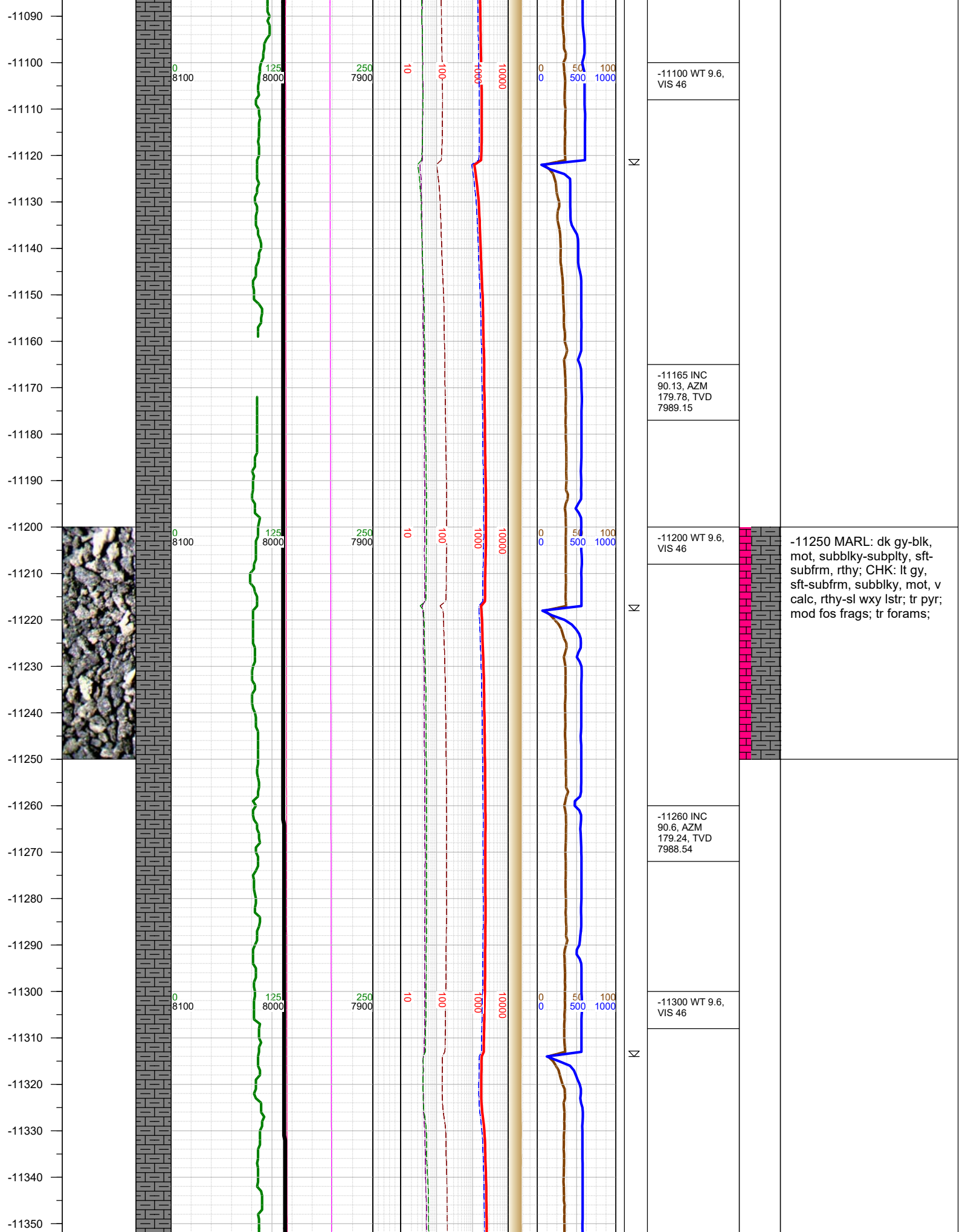
	-10595 INC 89.36, AZM 178.58, TVD 7984.05
	-10610 WT 9.6, VIS 44
	-10691 INC 89.77, AZM 177.55, TVD 7984.78
	-10710 WT 9.6, VIS 45
	-10785 INC 90.23, AZM 176.05, TVD 7984.78
	-10800 WT 9.6, VIS 45



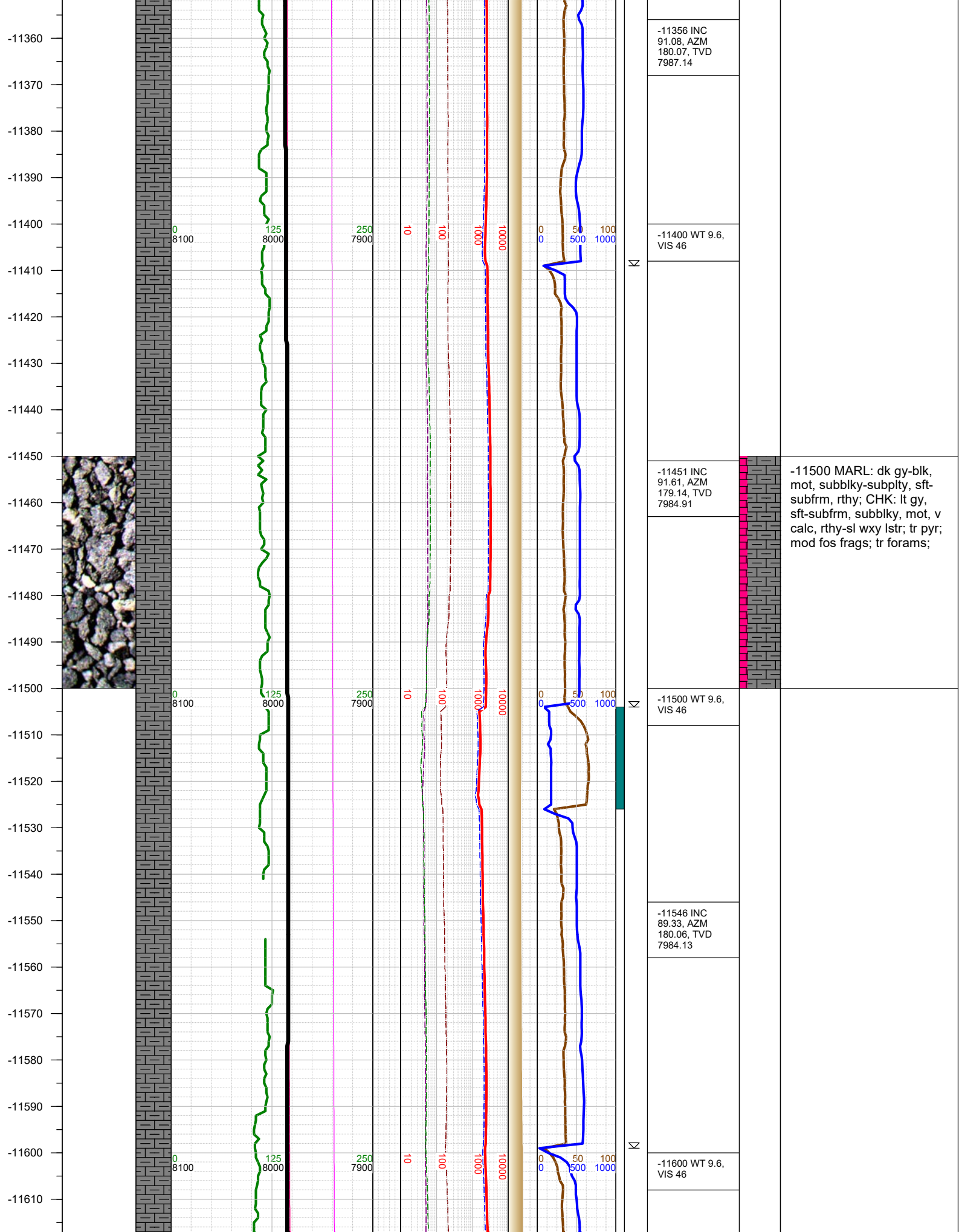
-10750 MARL: dk gy-blk,  
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mod fos frags; tr forams;

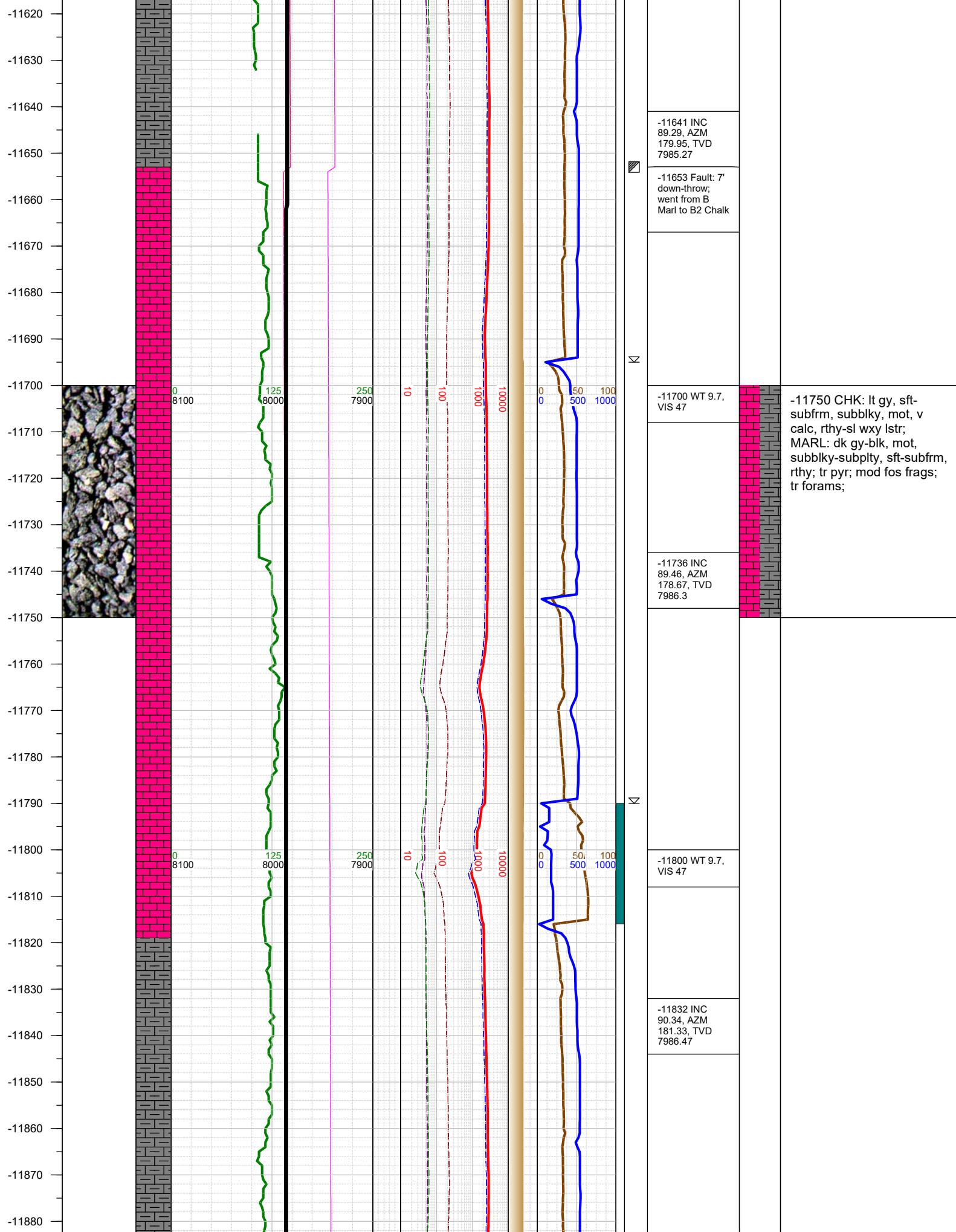


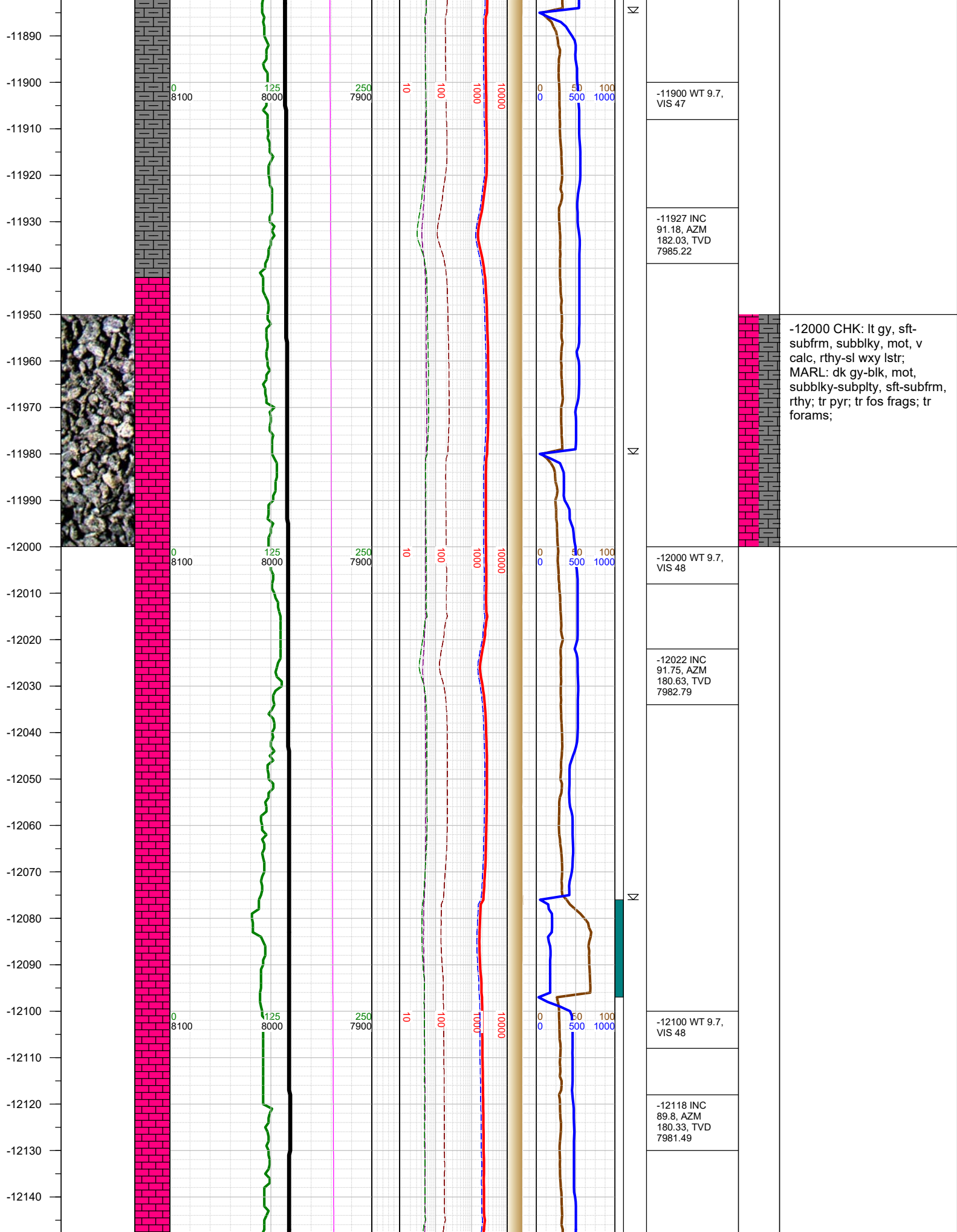




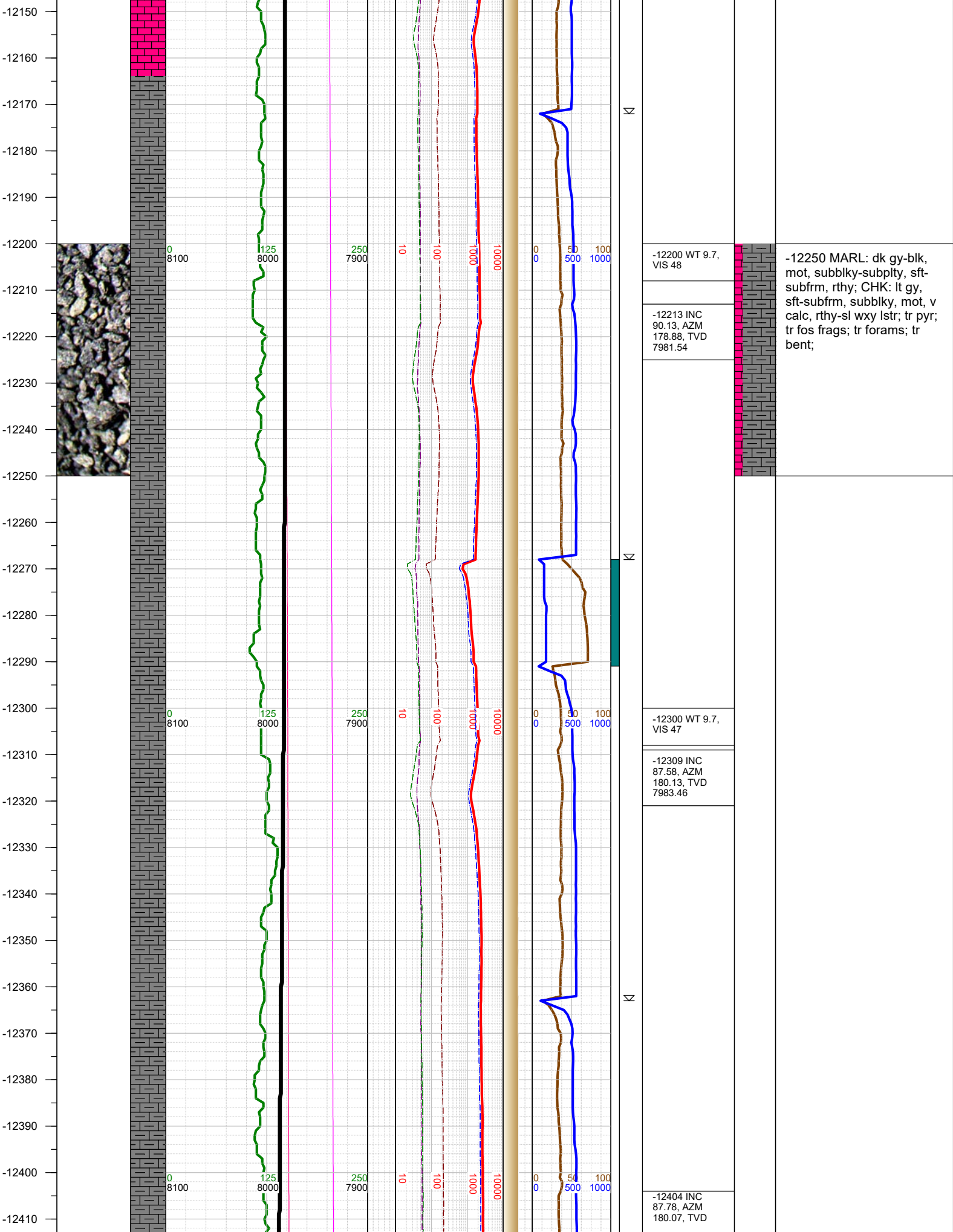




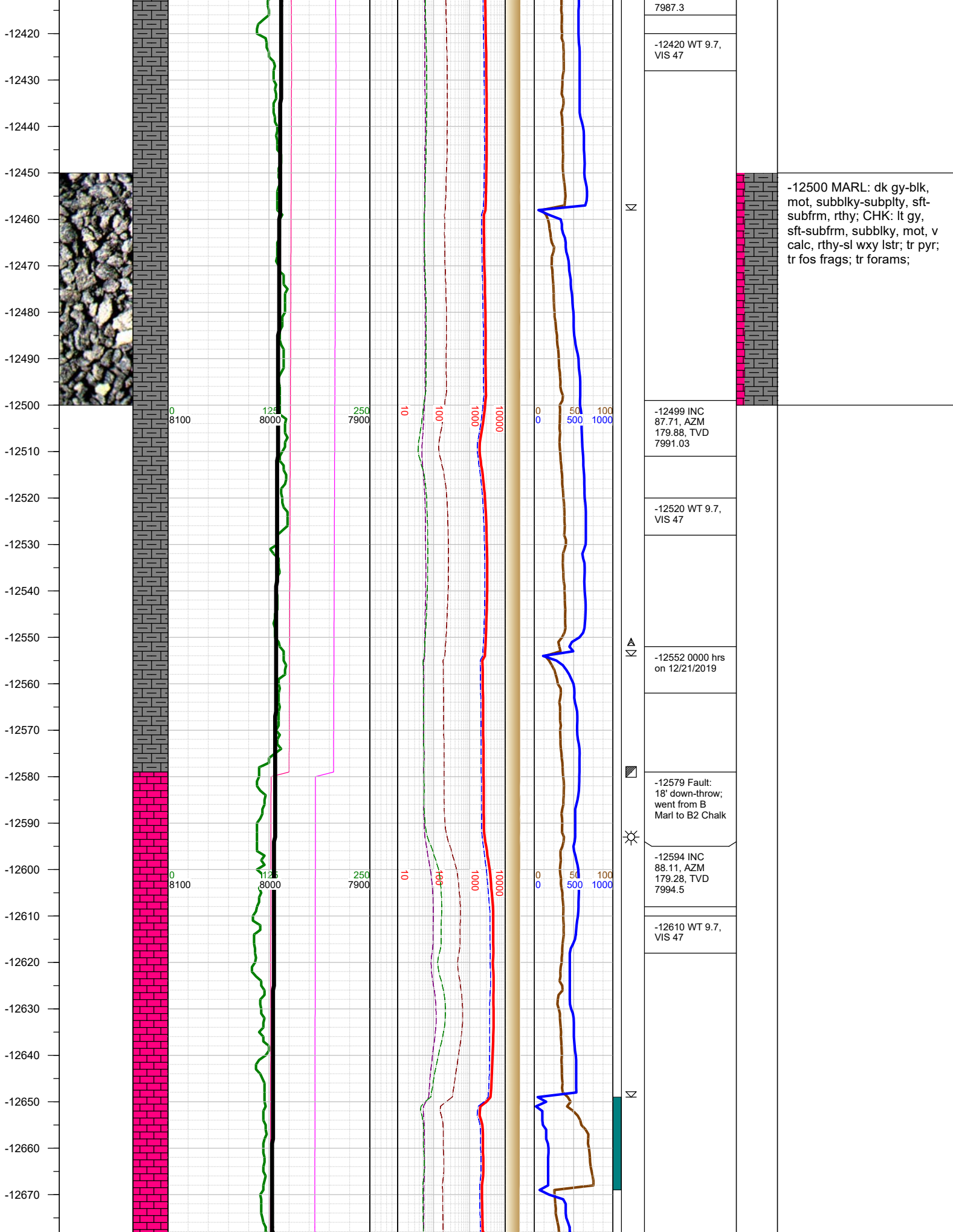


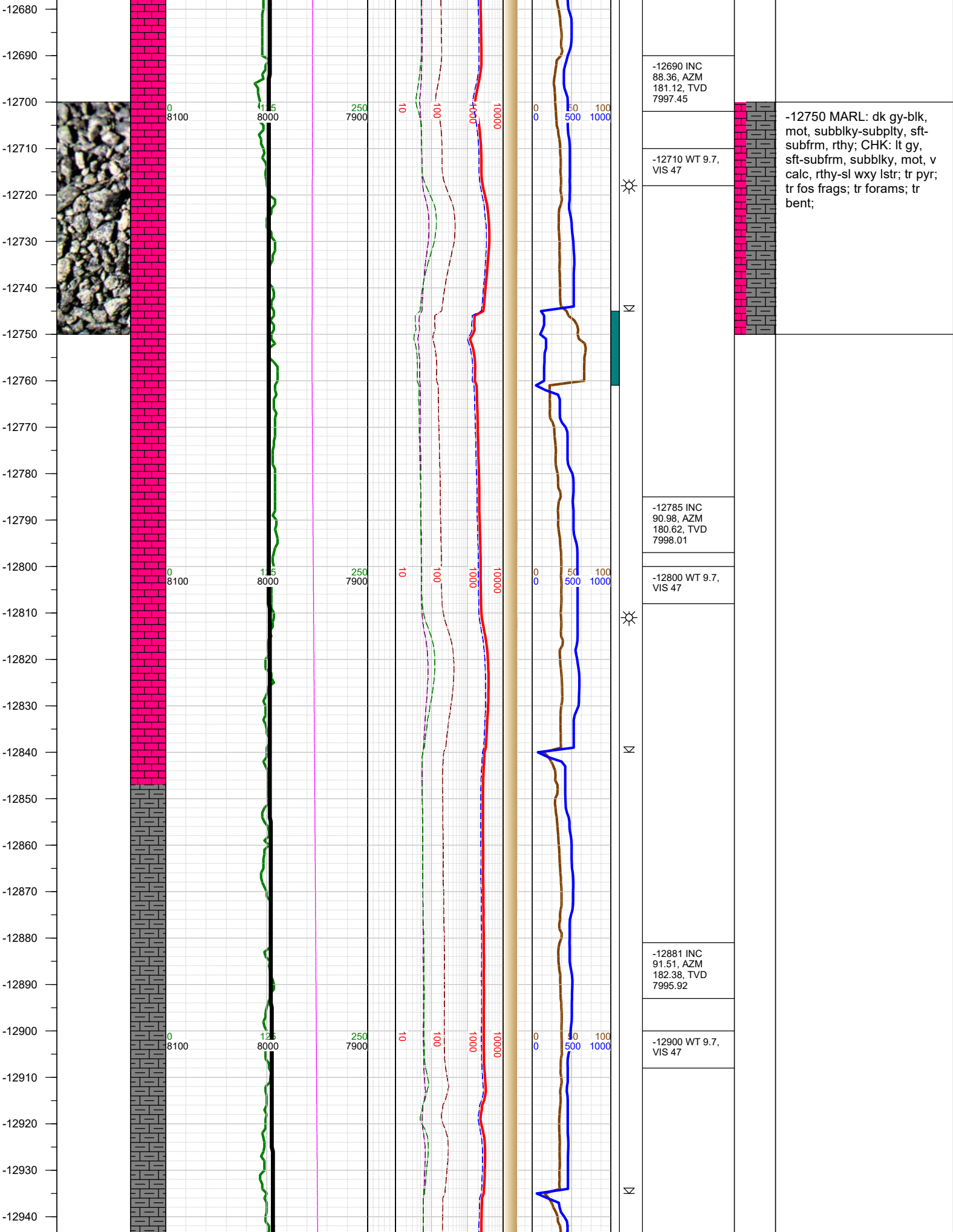


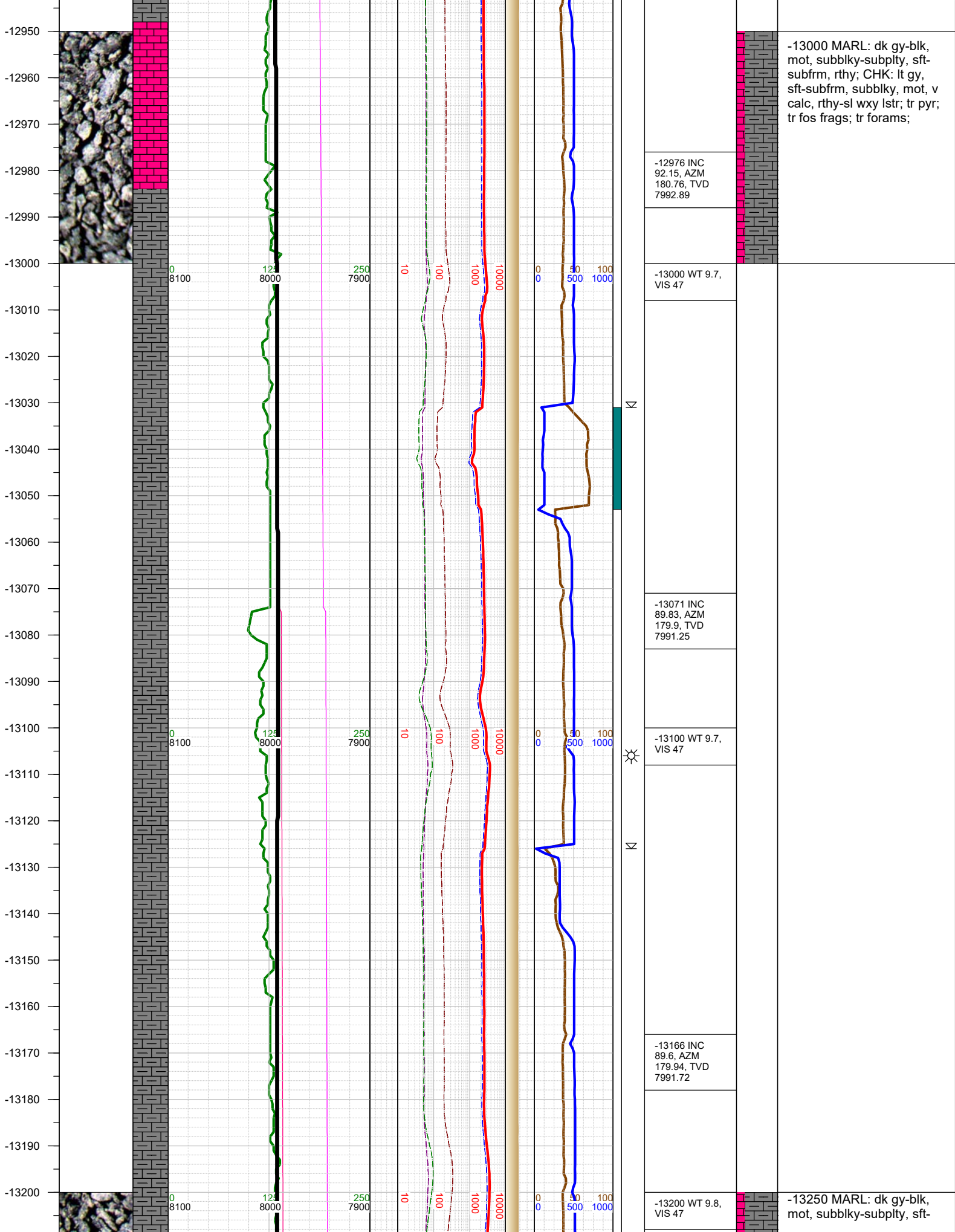




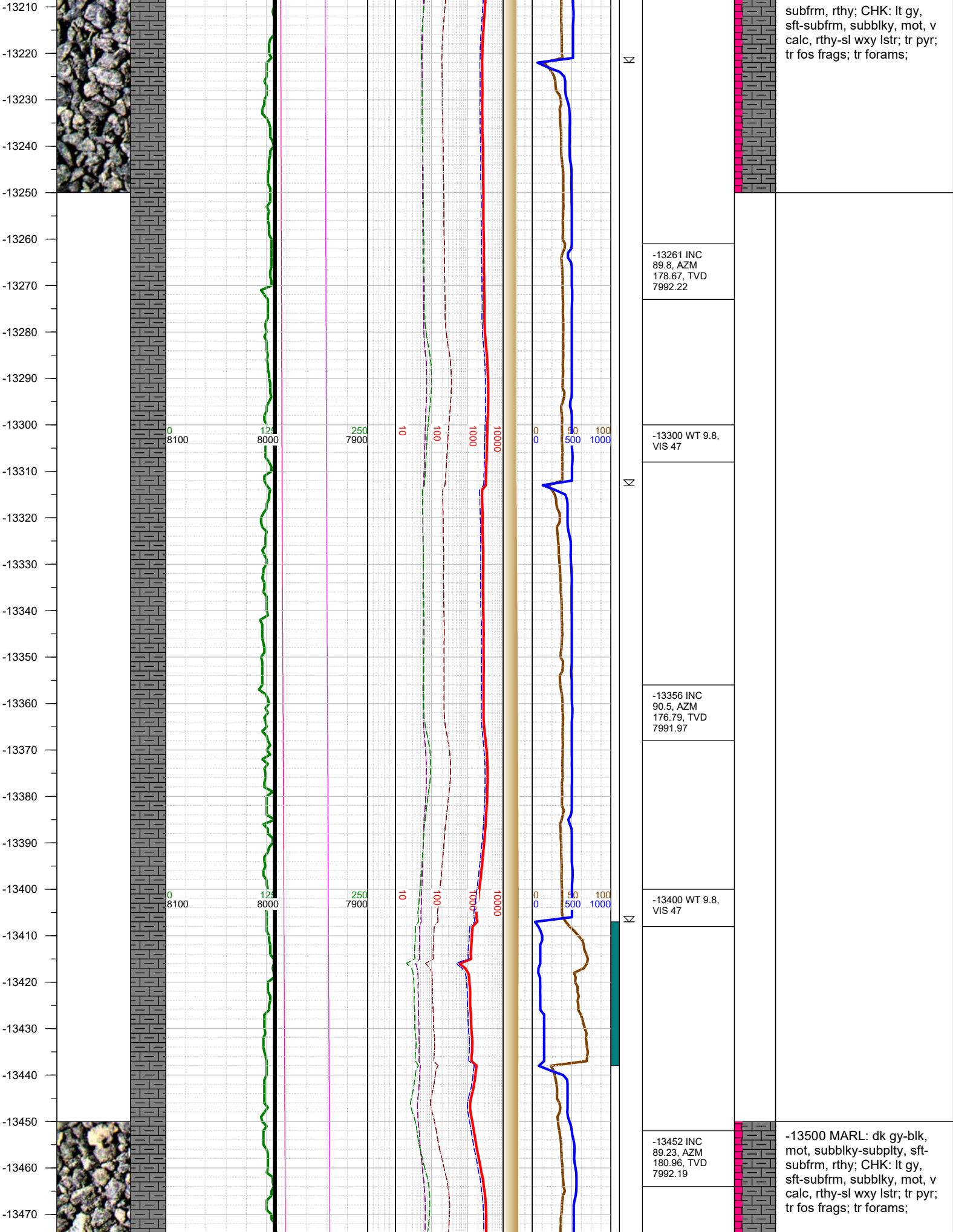


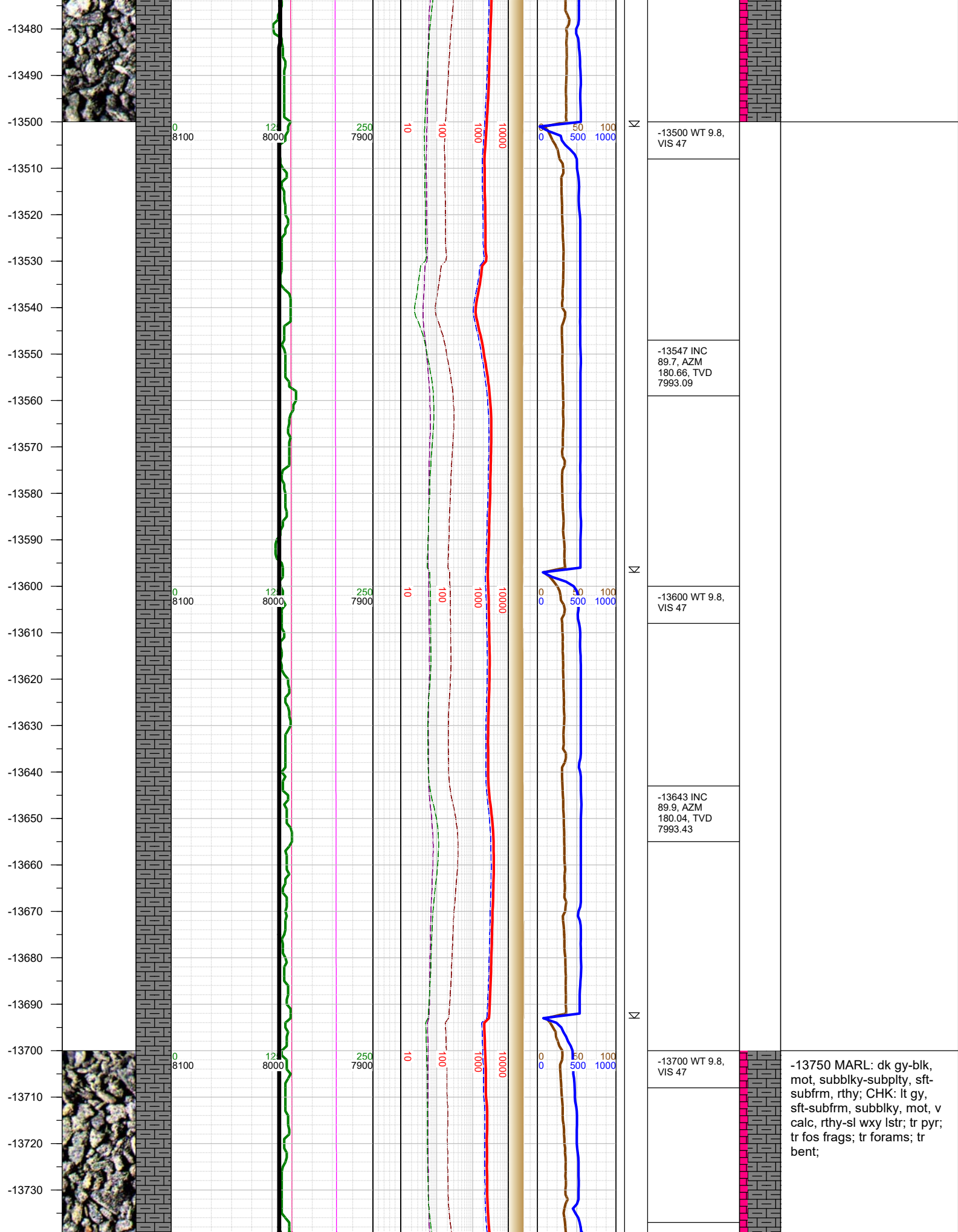


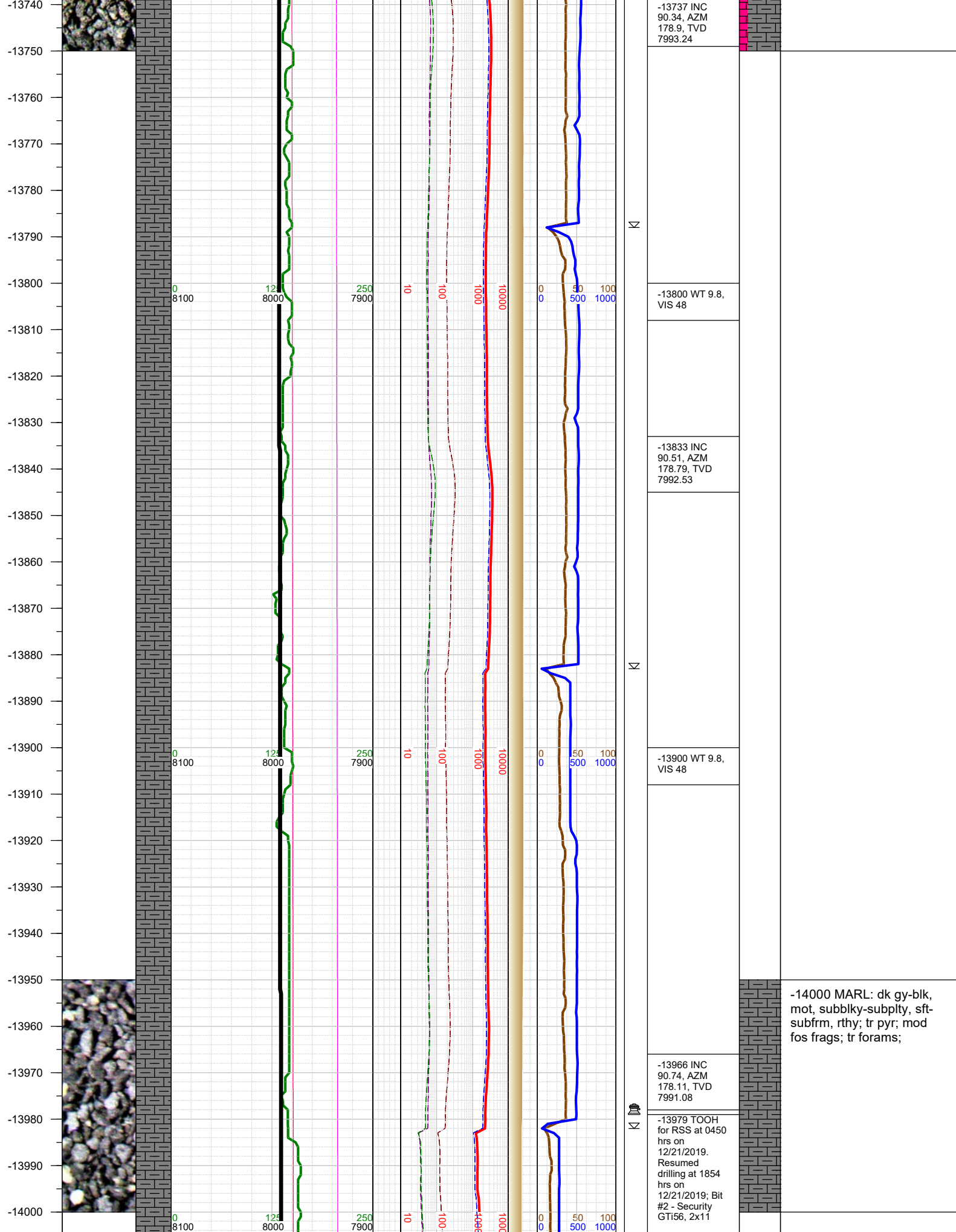




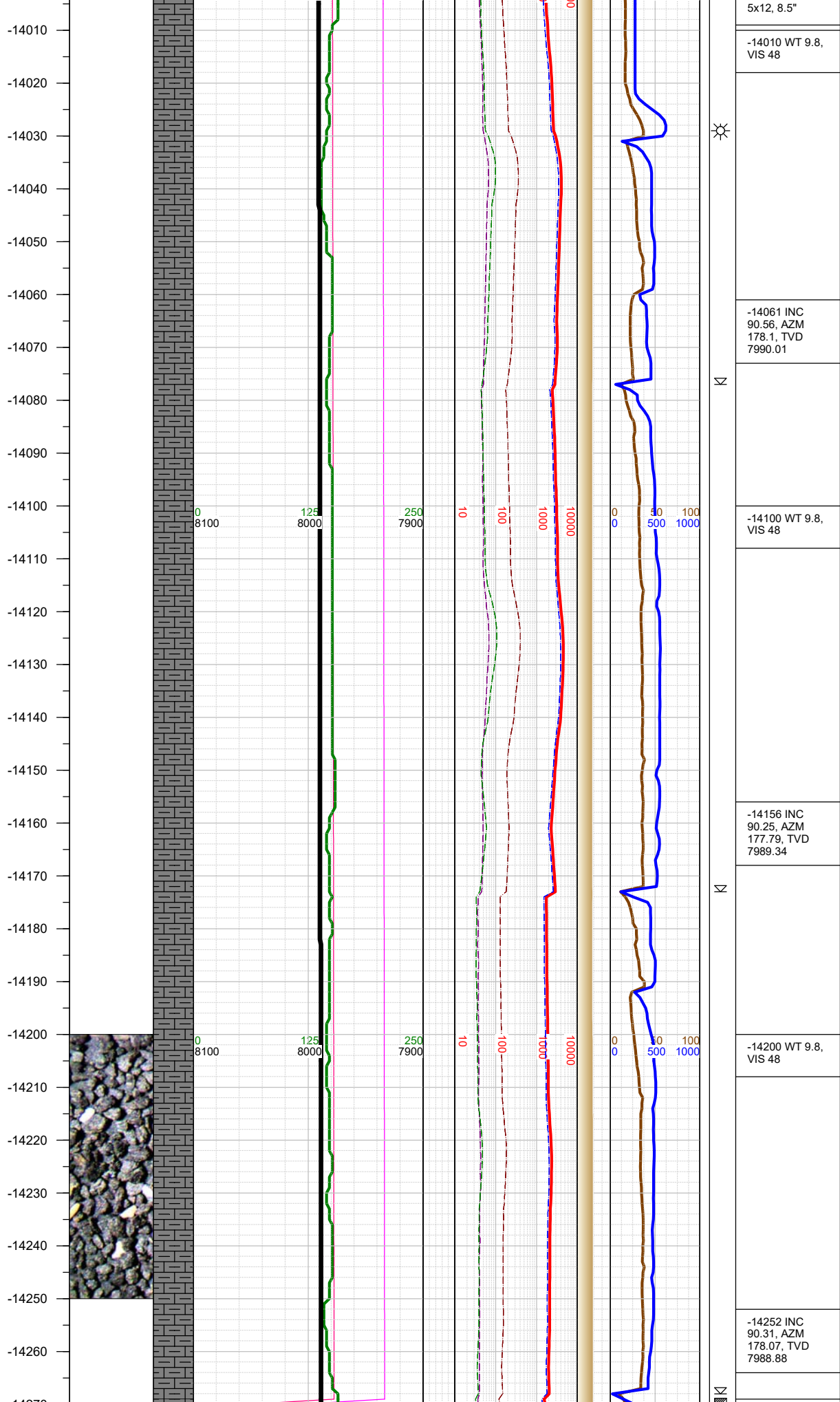








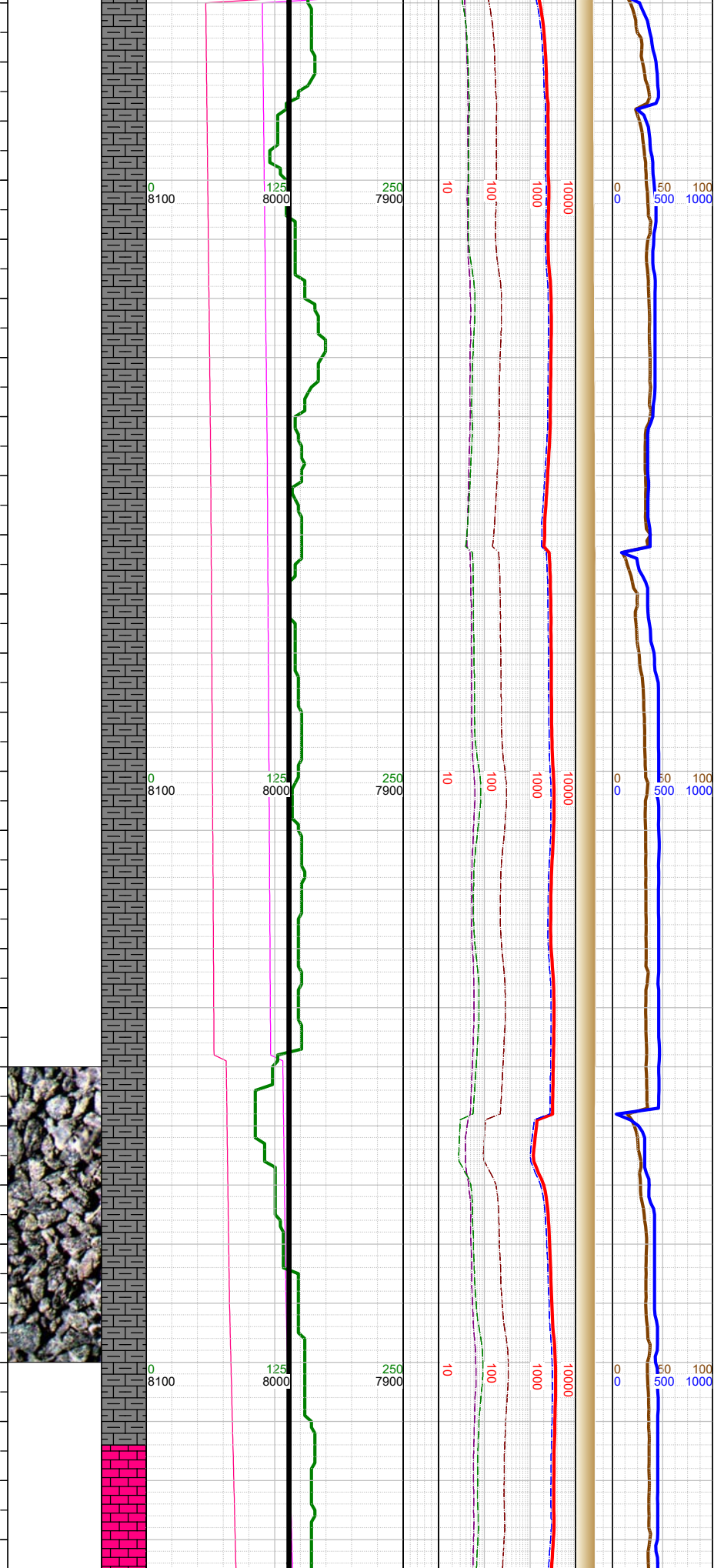




5x12, 8.5"	
-14010 WT 9.8, VIS 48	
-14061 INC 90.56, AZM 178.1, TVD 7990.01	
-14100 WT 9.8, VIS 48	
-14156 INC 90.25, AZM 177.79, TVD 7989.34	
-14200 WT 9.8, VIS 48	
-14252 INC 90.31, AZM 178.07, TVD 7988.88	

-14250 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; mod pyr; mod fos frags; tr forams;

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-14269 Fault: 76' down-throw; went from B Marl to B1 Chalk

-14300 WT 9.8, VIS 48

-14400 WT 9.8, VIS 48

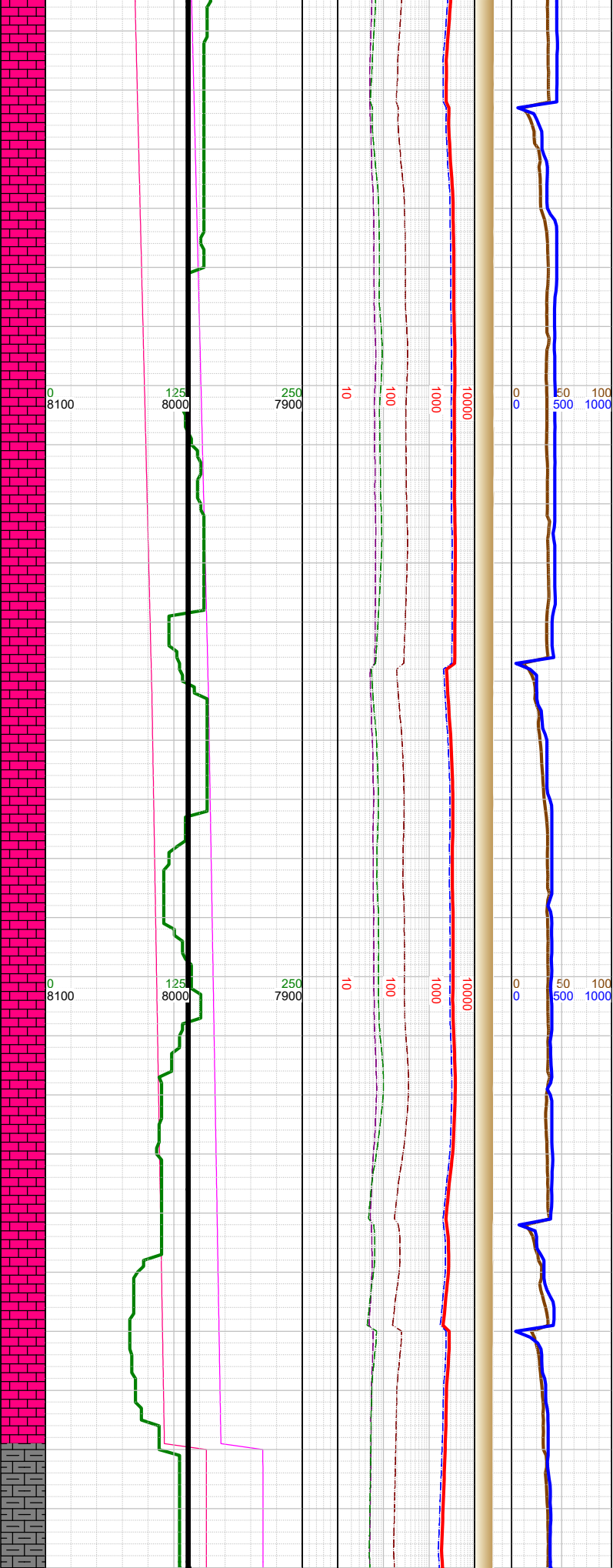
-14441 INC 89.88, AZM 178.67, TVD 7988.57

-14448 Fault: 9' up-throw; stayed in B1 Chalk

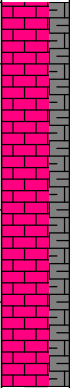
-14500 WT 9.8, VIS 48

-14500 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr;

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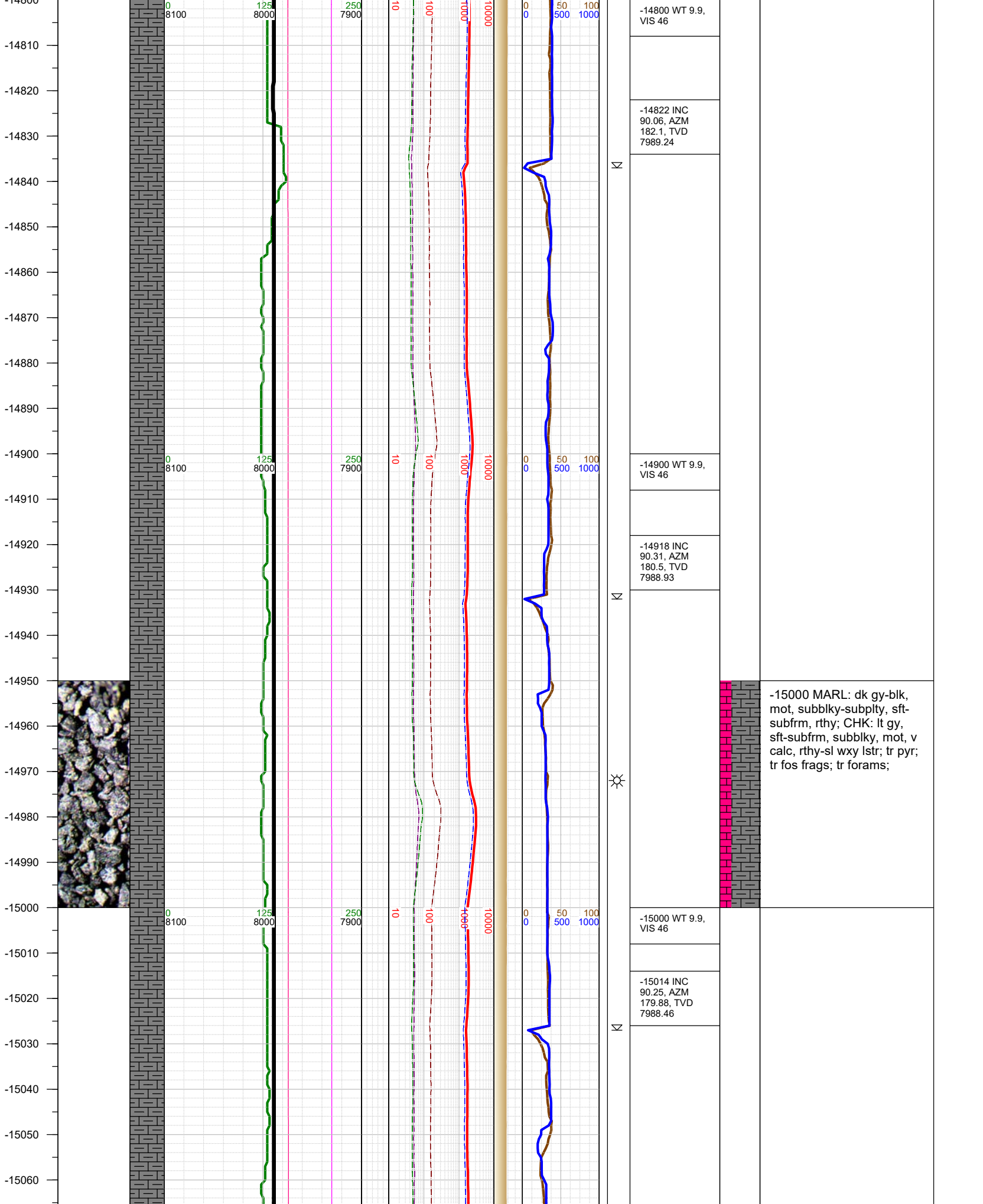


N	-14536 INC 90.25, AZM 178.64, TVD 7988.47
	-14600 WT 9.8, VIS 48
N	-14632 INC 89.75, AZM 180.37, TVD 7988.47
	-14700 WT 9.9, VIS 46
N	-14727 INC 89.63, AZM 181.09, TVD 7988.98
	-14779 Fault: 33' up-throw; went from B2 Chalk to B Marl

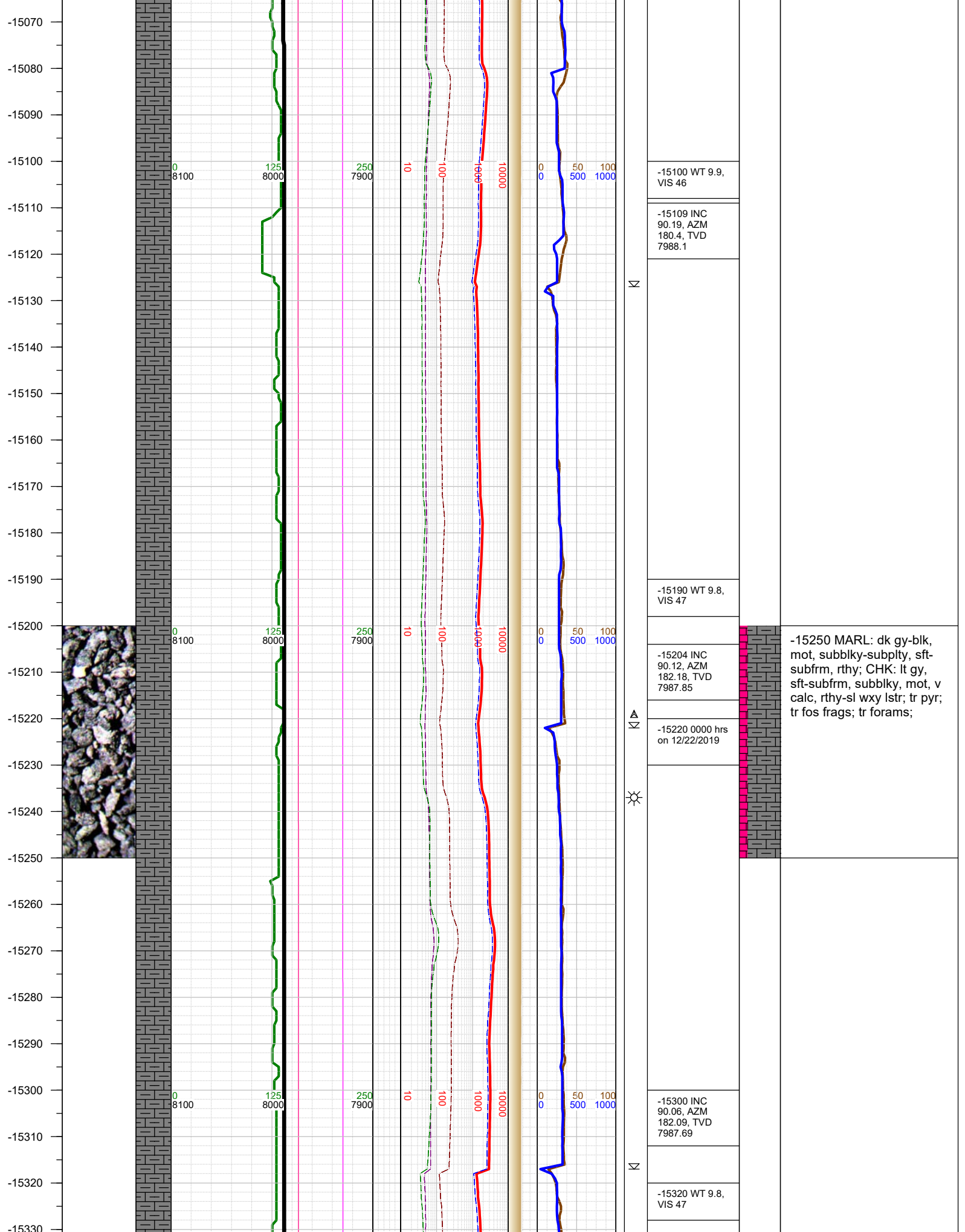


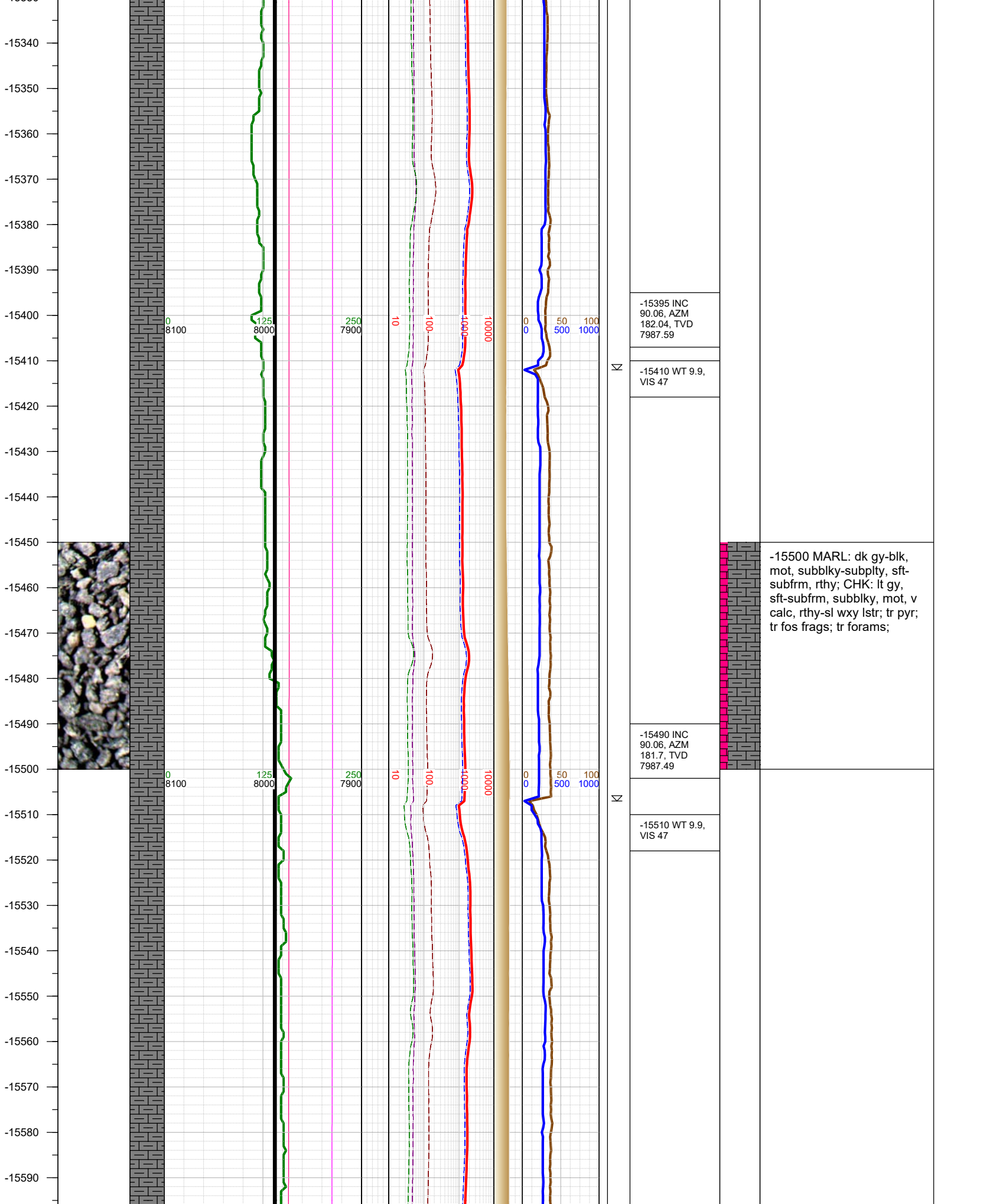
-14750 CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr pyr; tr fos frags; tr forams;



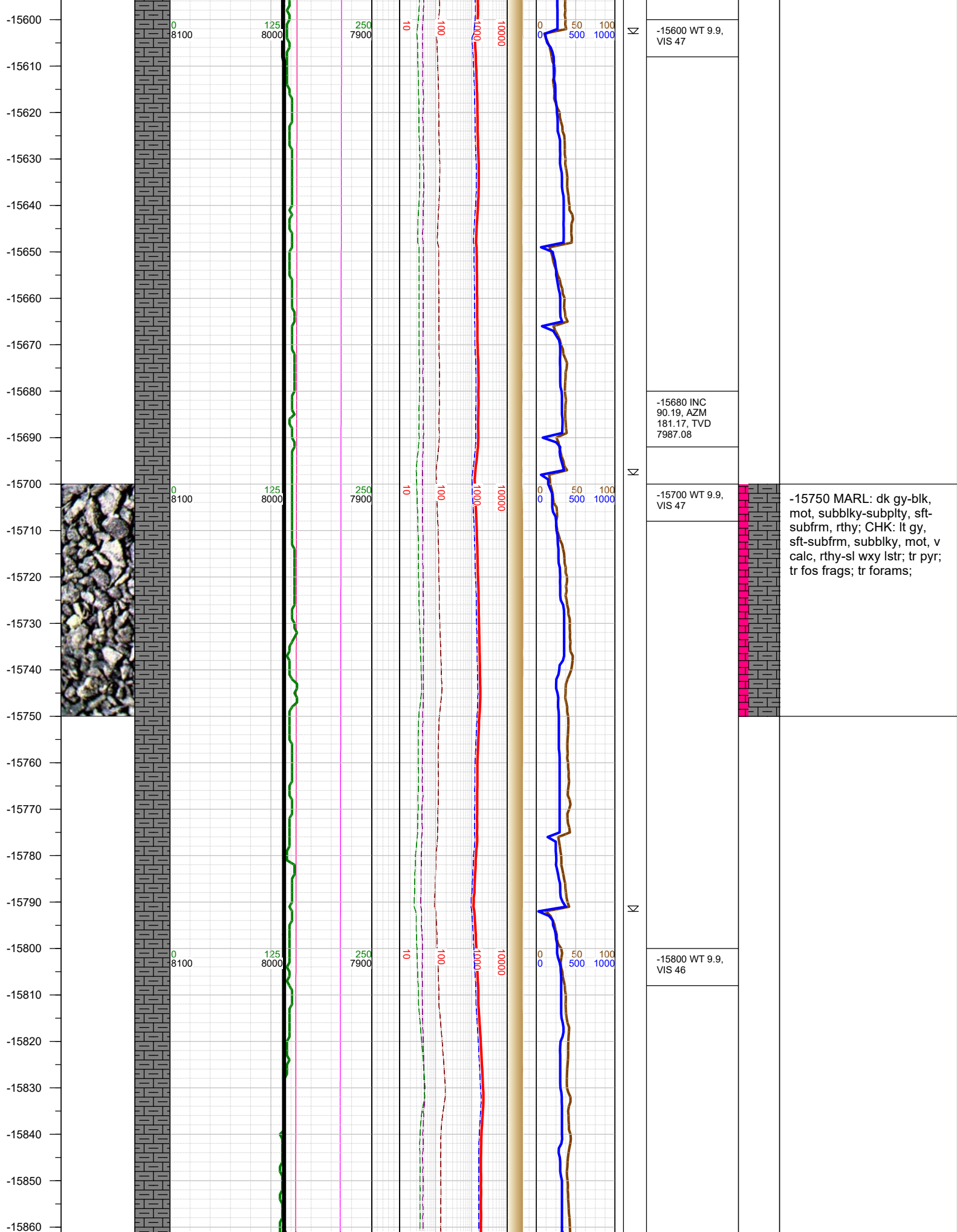


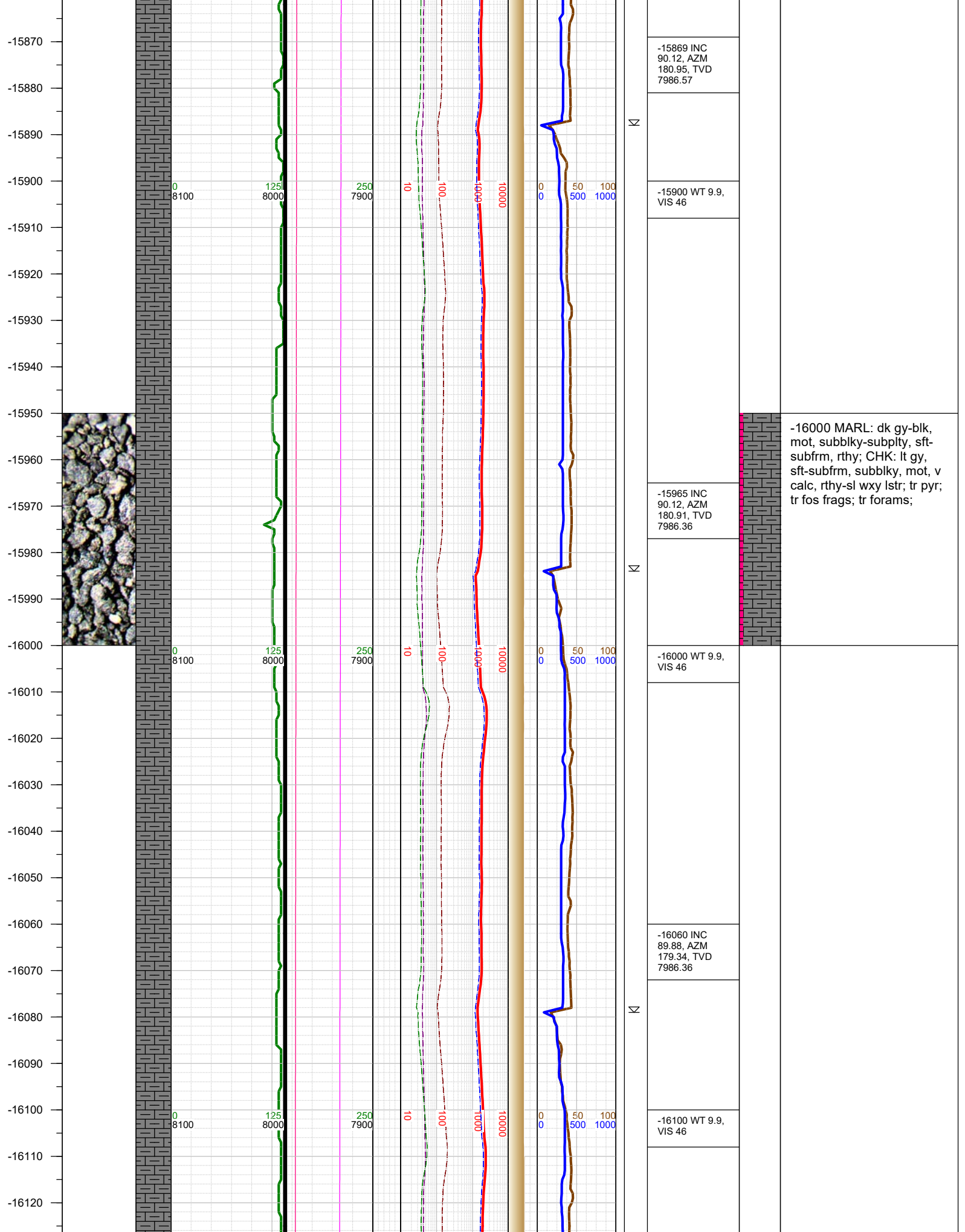
-15000 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr; tr fos frags; tr forams;

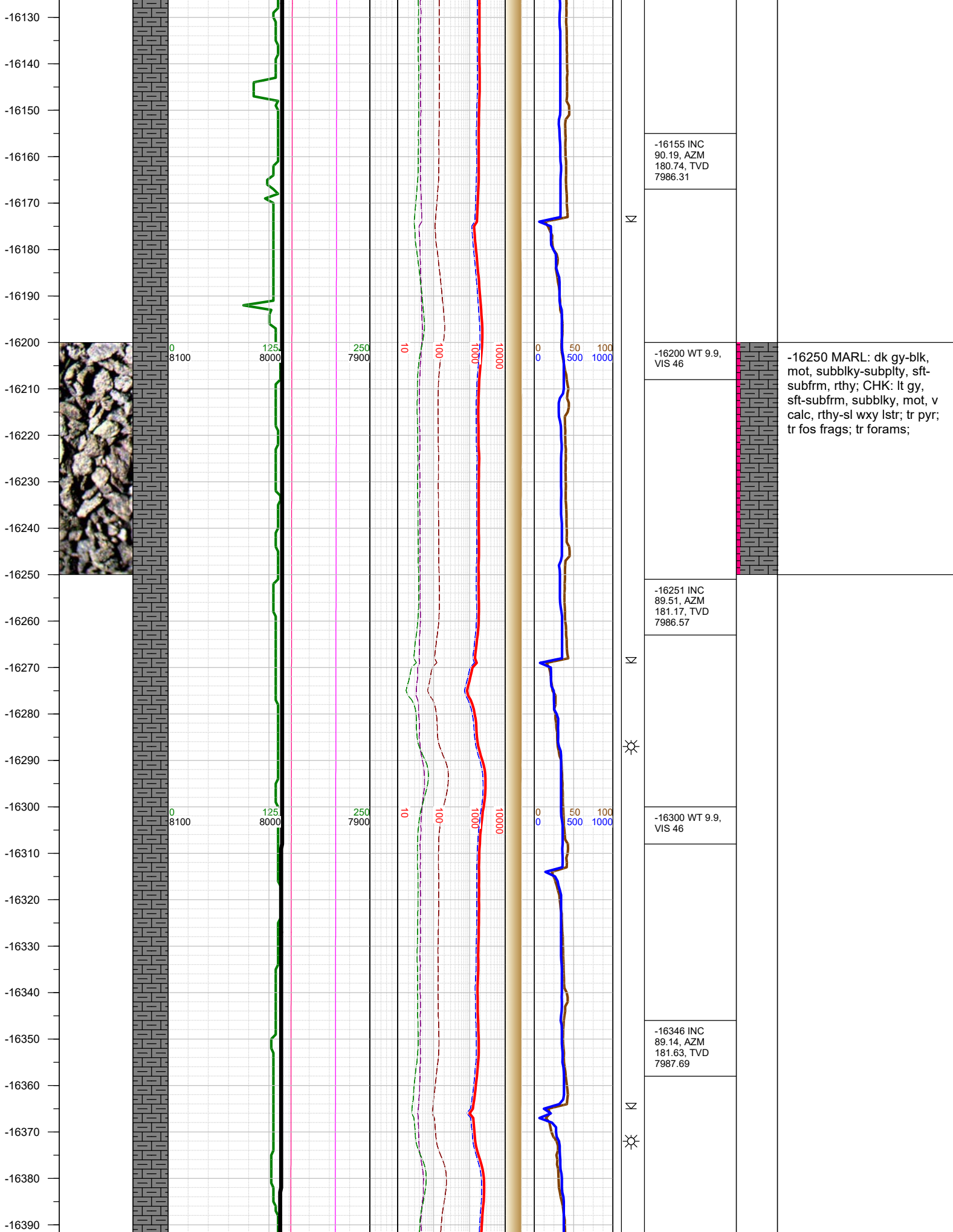




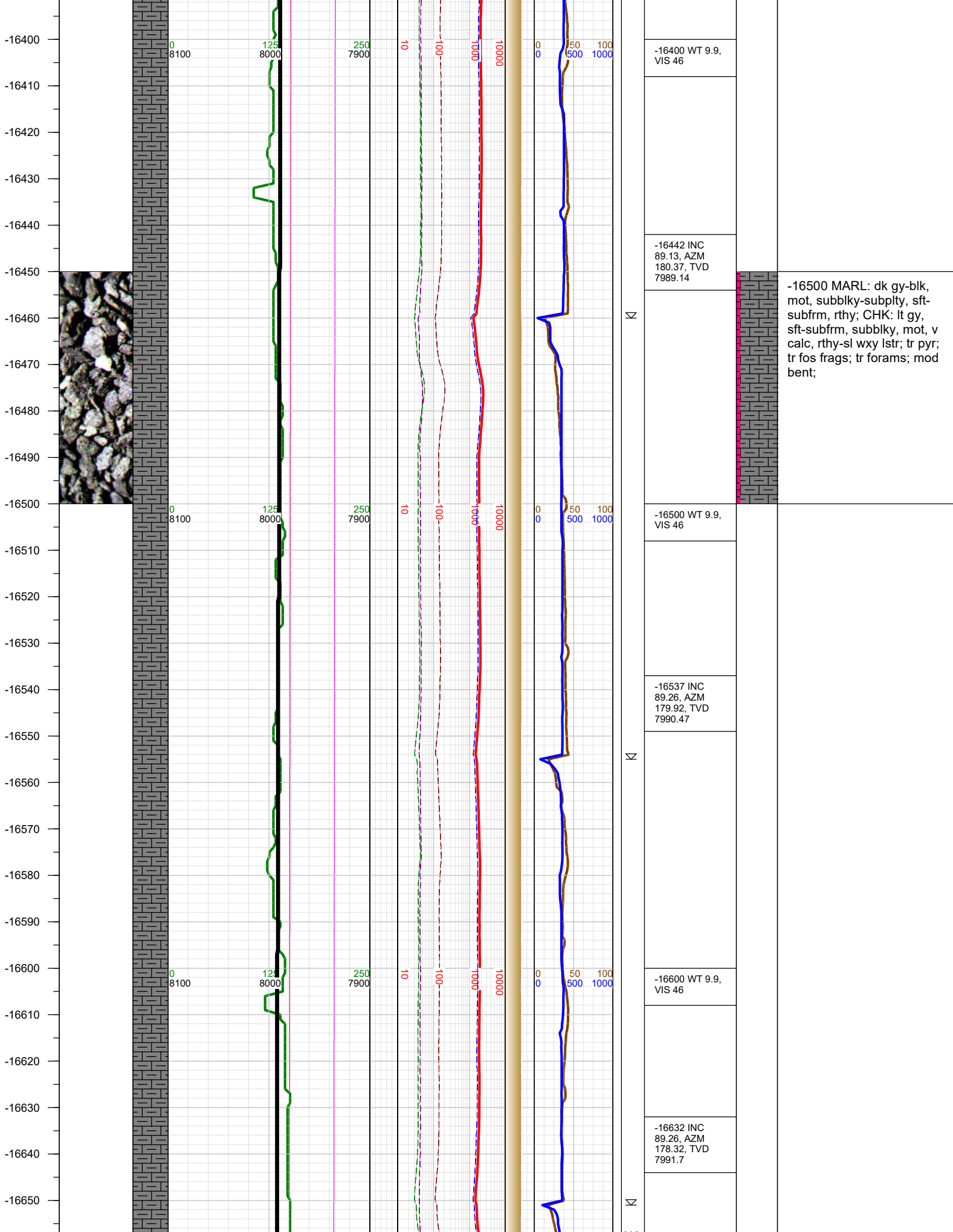


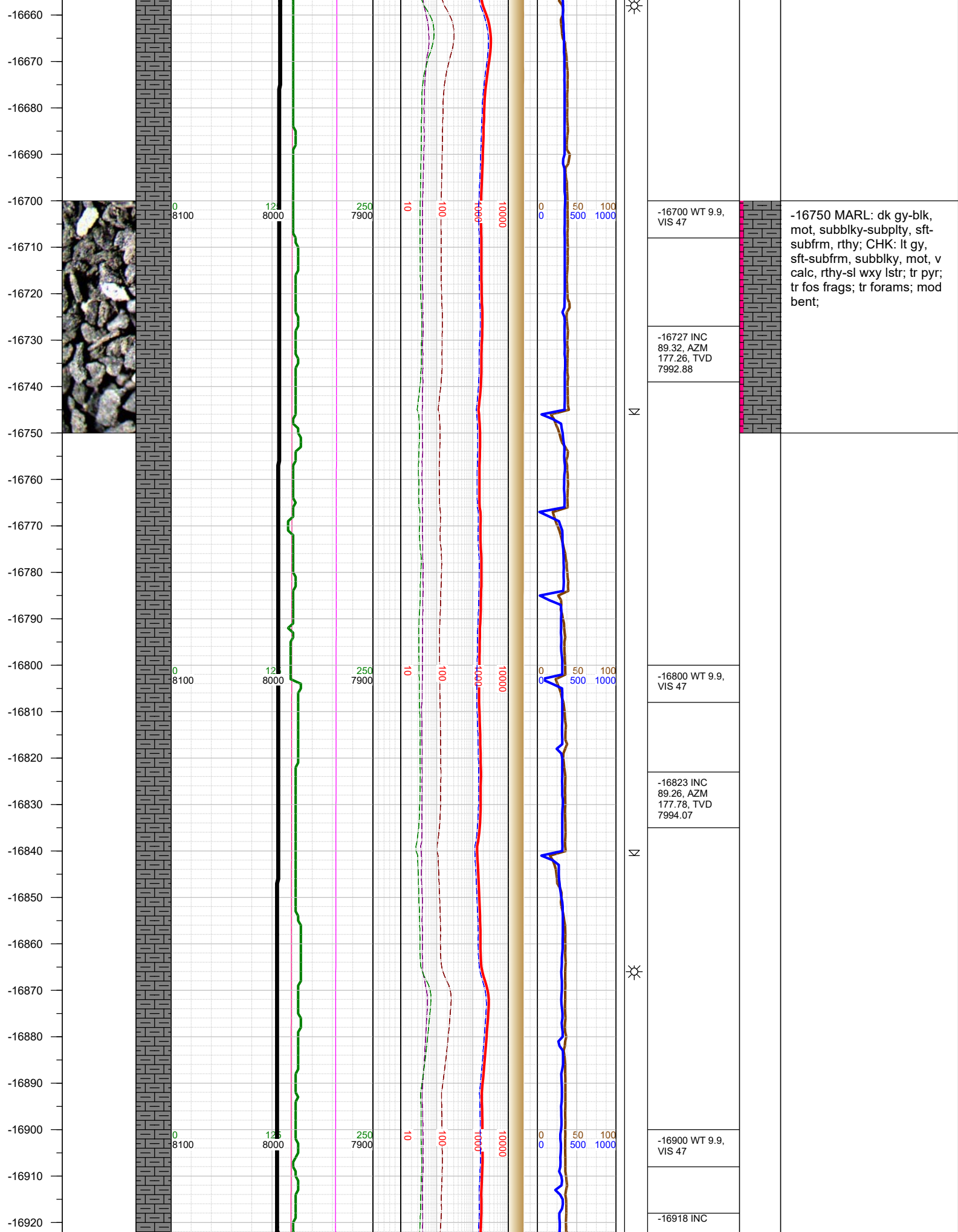




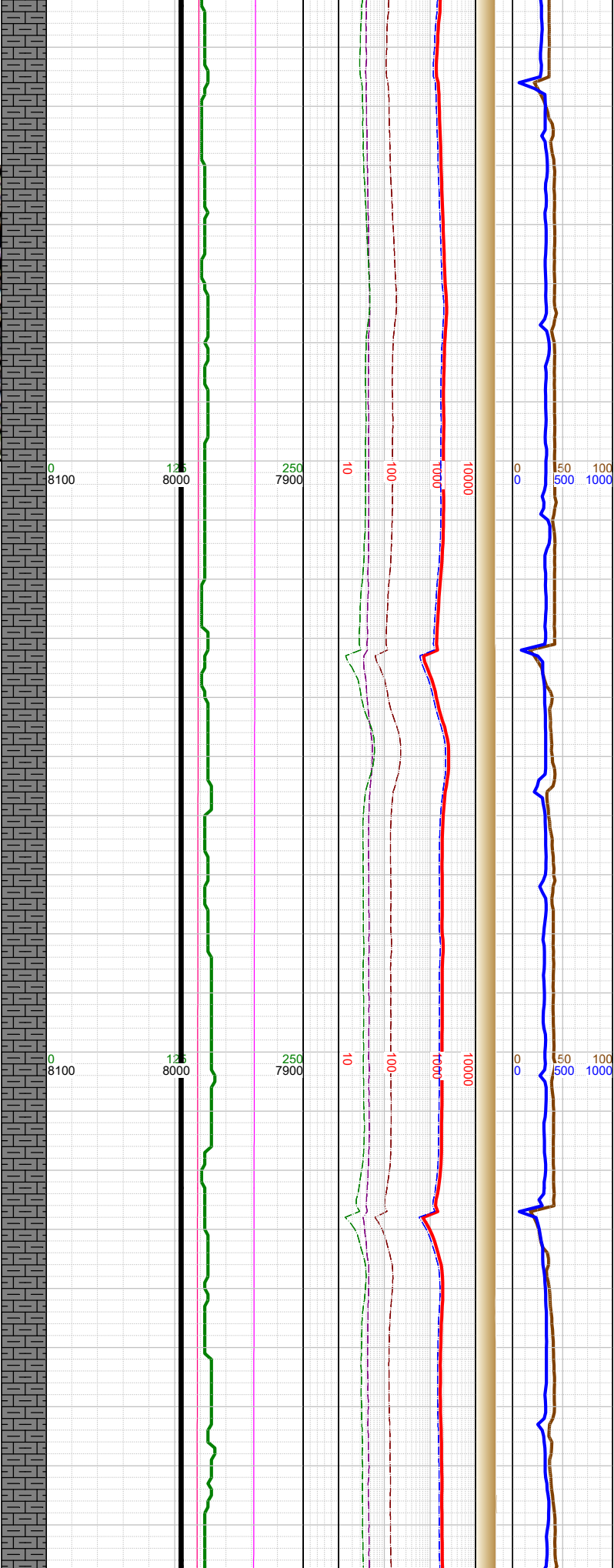
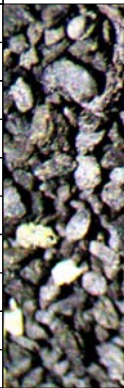


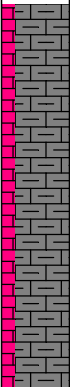




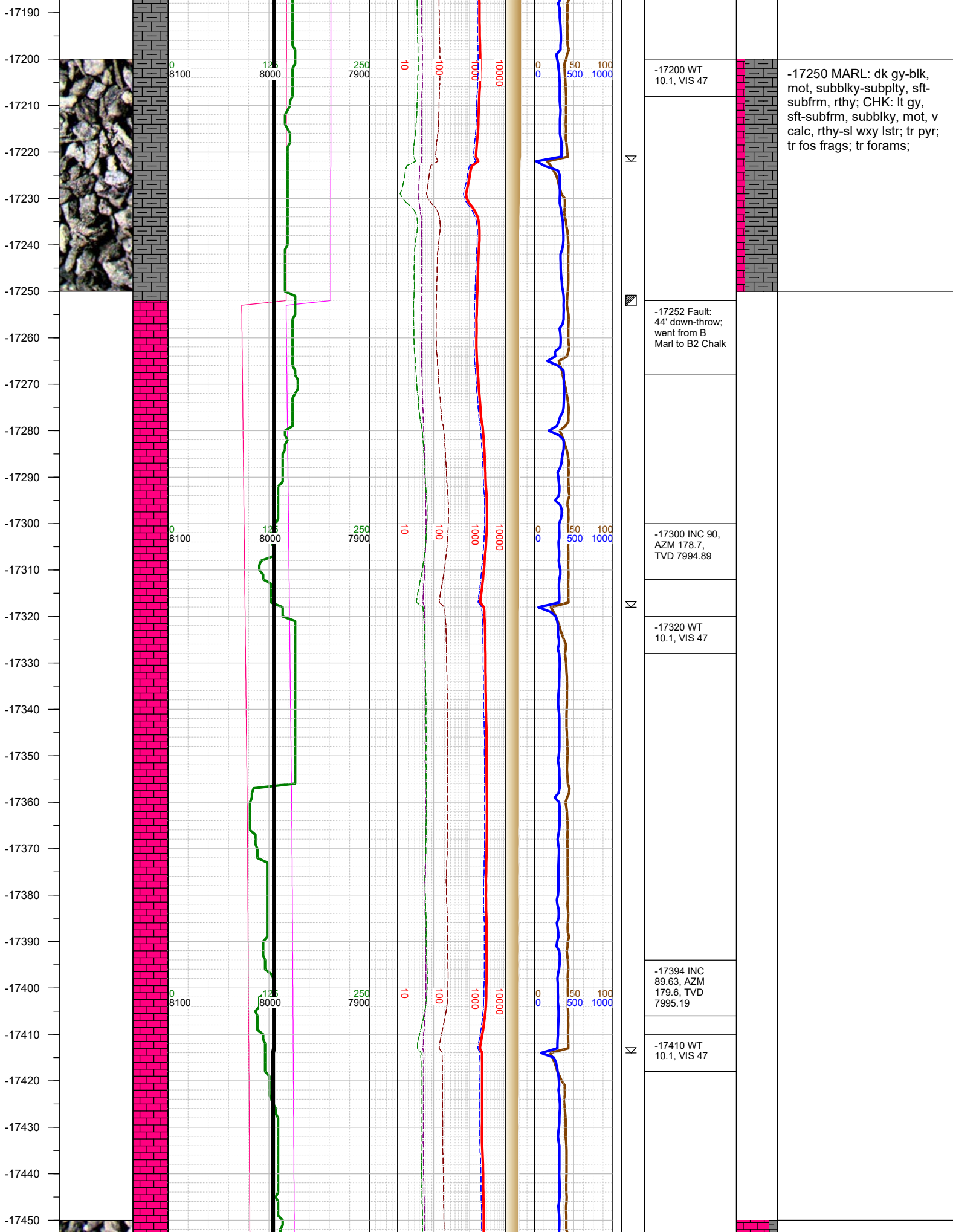


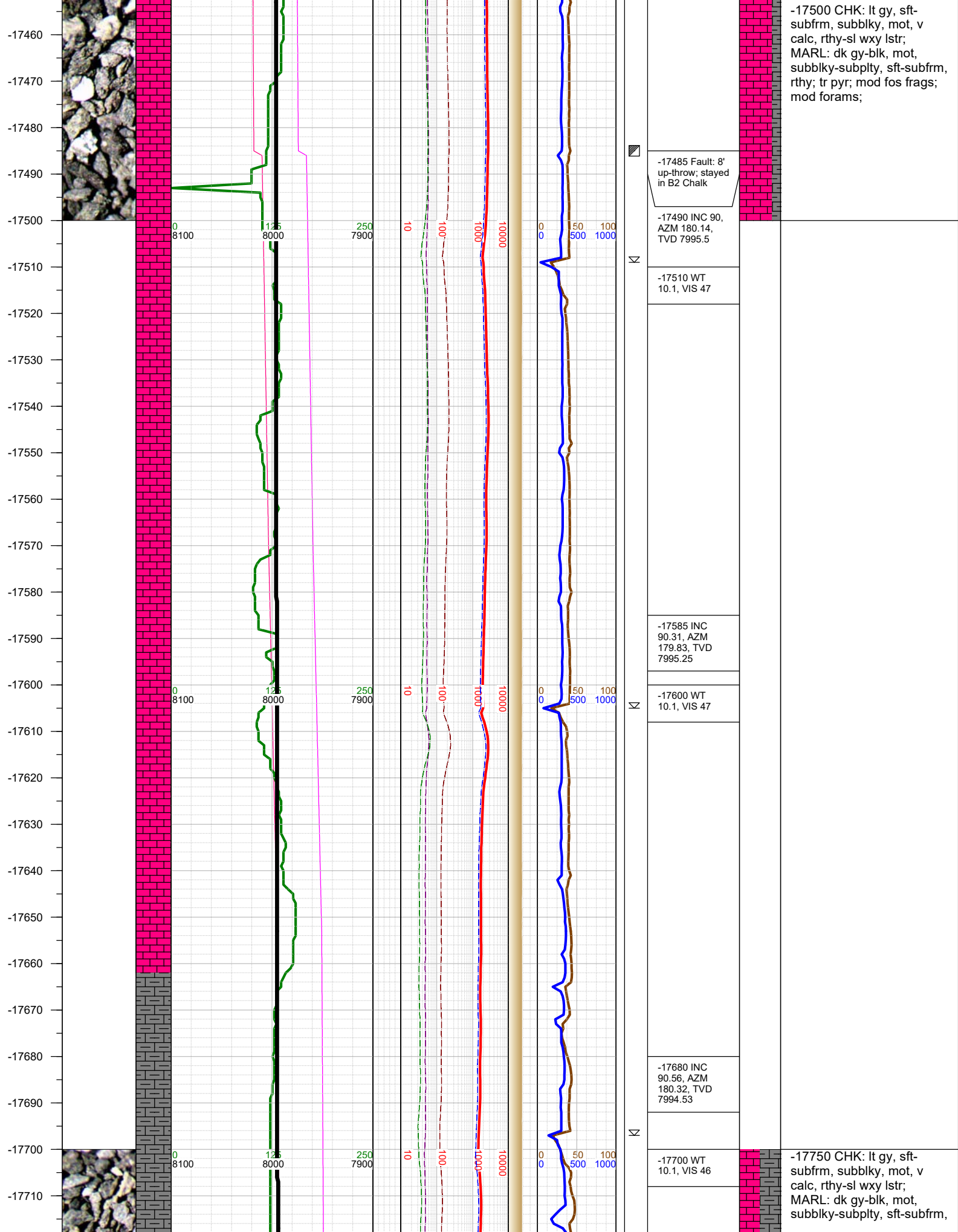
-16930  
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-16980  
-16990  
-17000  
-17010  
-17020  
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-17100  
-17110  
-17120  
-17130  
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-17160  
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-17180

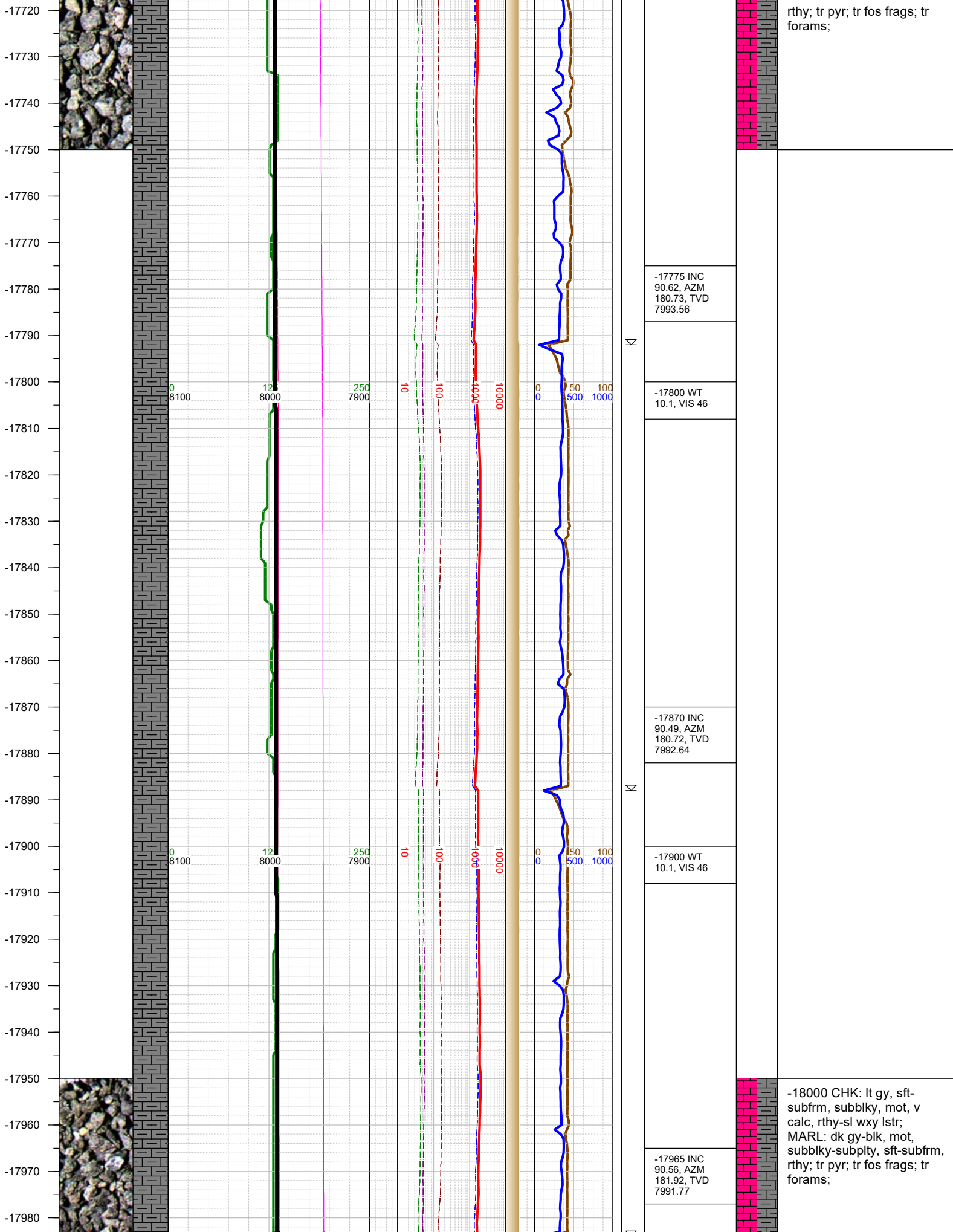


N	89.88, AZM 178.66, TVD 7994.79		-17000 MARL: dk gy-blk, mot, subblky-subplty, sft- subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr; tr fos frags; tr forams;
	-17000 WT 9.9, VIS 47		
N	-17013 INC 90, AZM 177.74, TVD 7994.89		
	-17100 WT 9.9, VIS 47		
N	-17109 INC 90, AZM 178.48, TVD 7994.89		

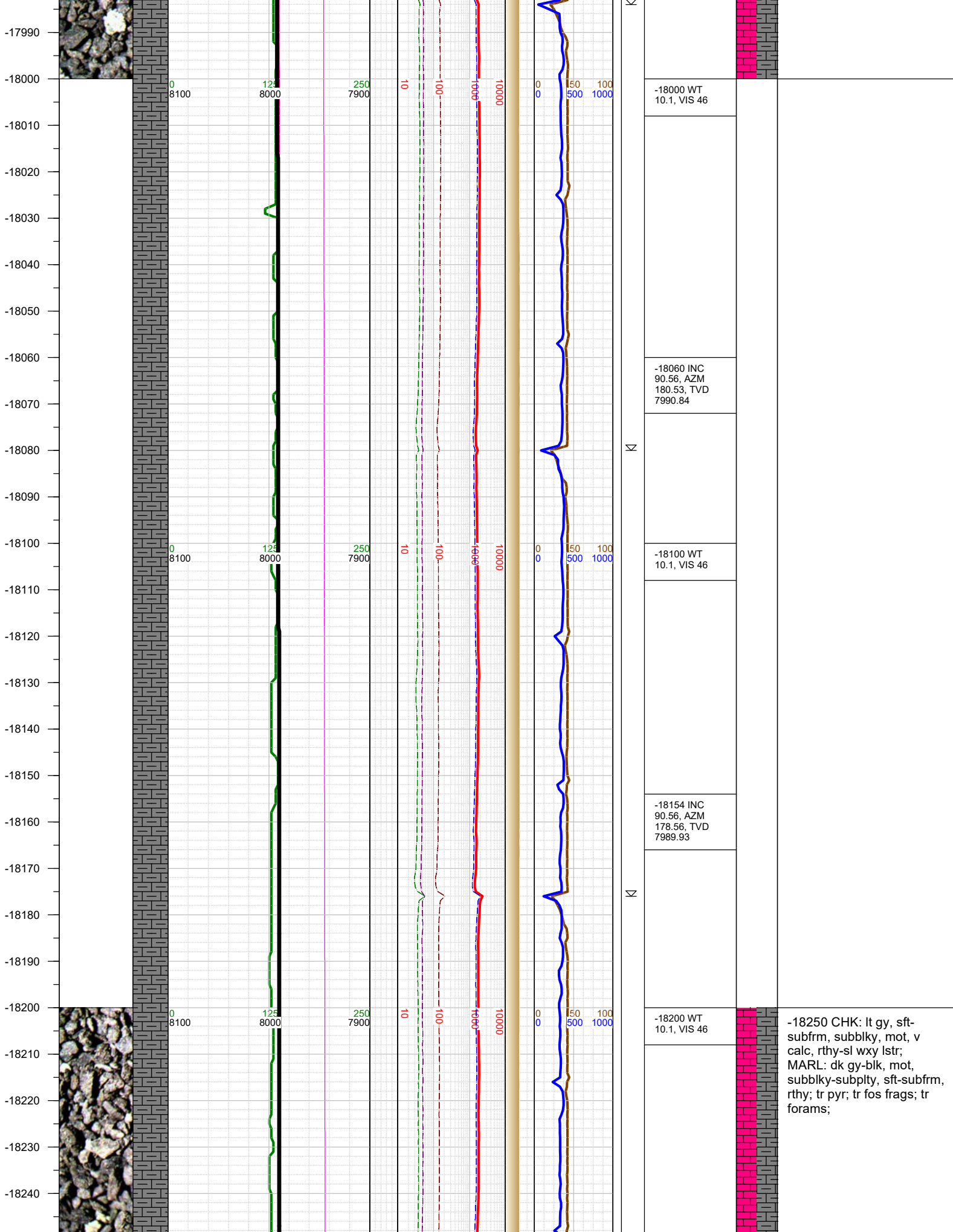


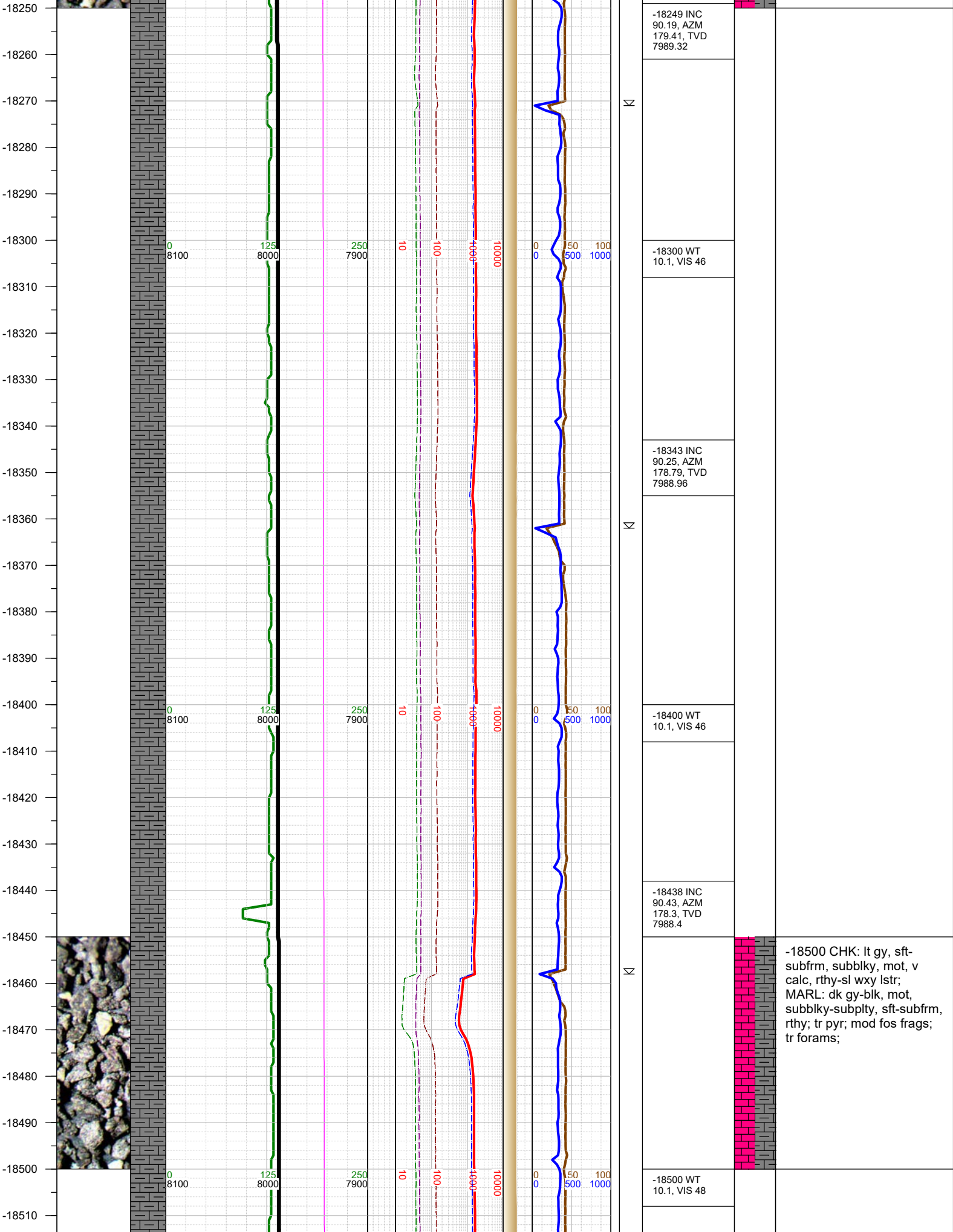


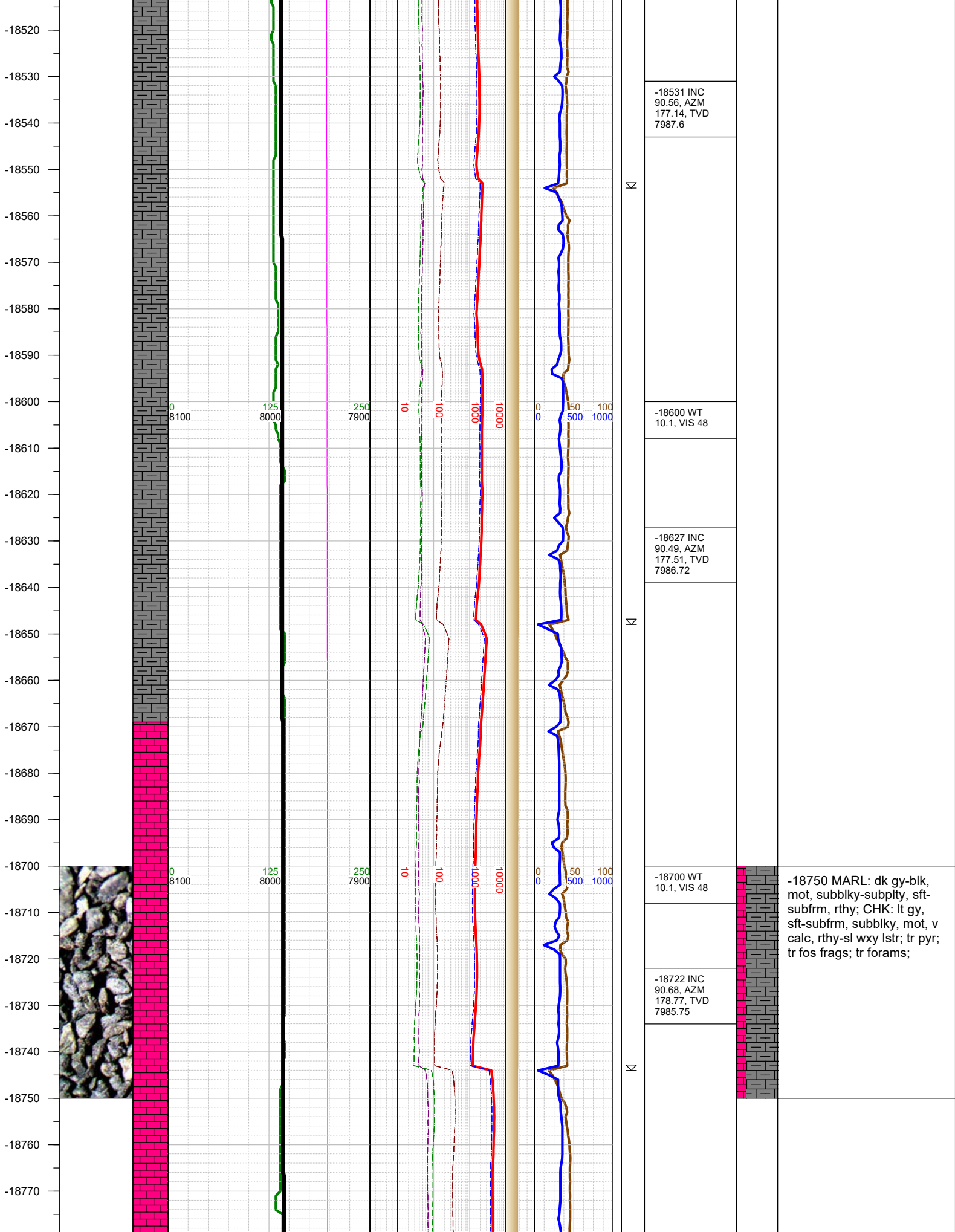




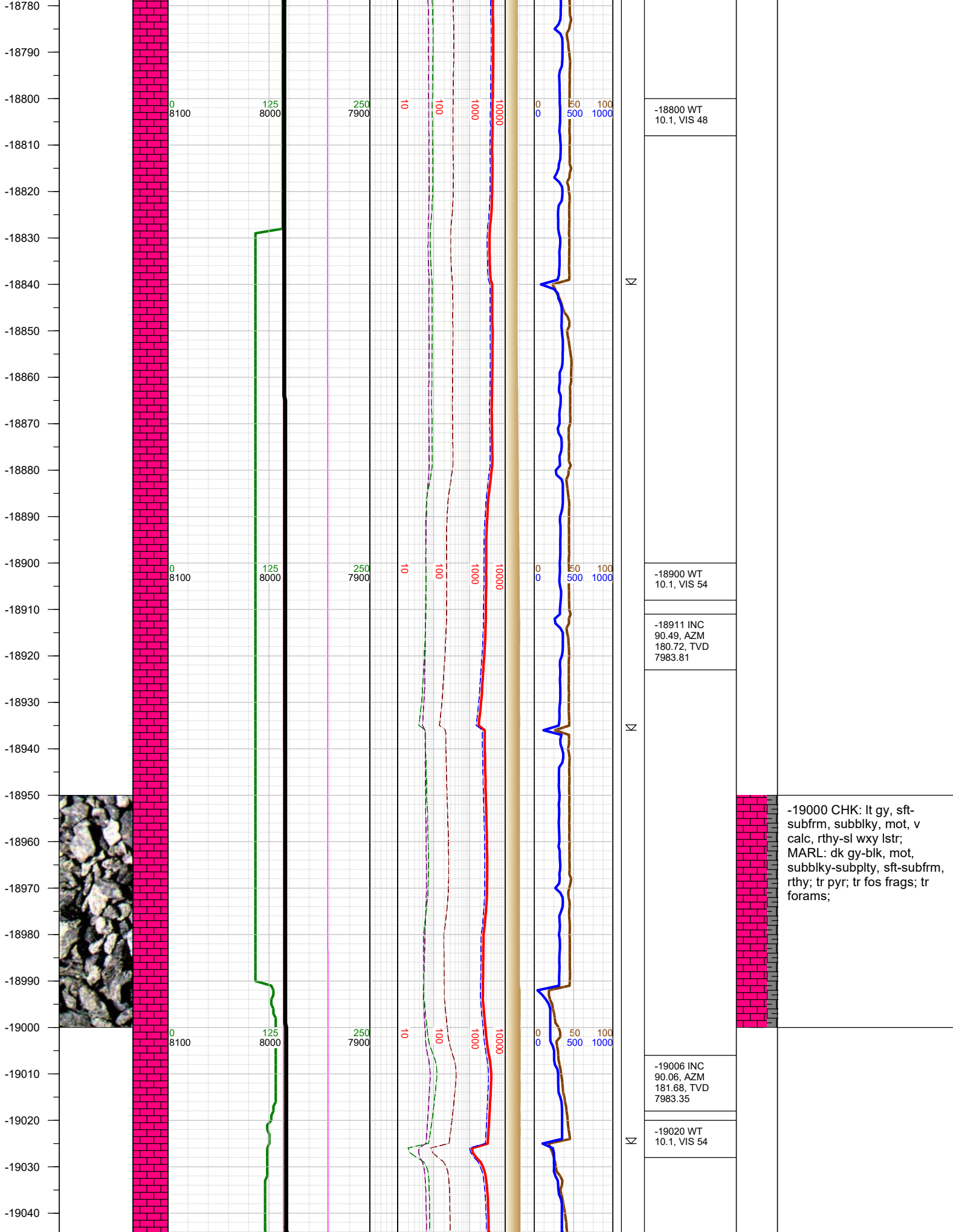


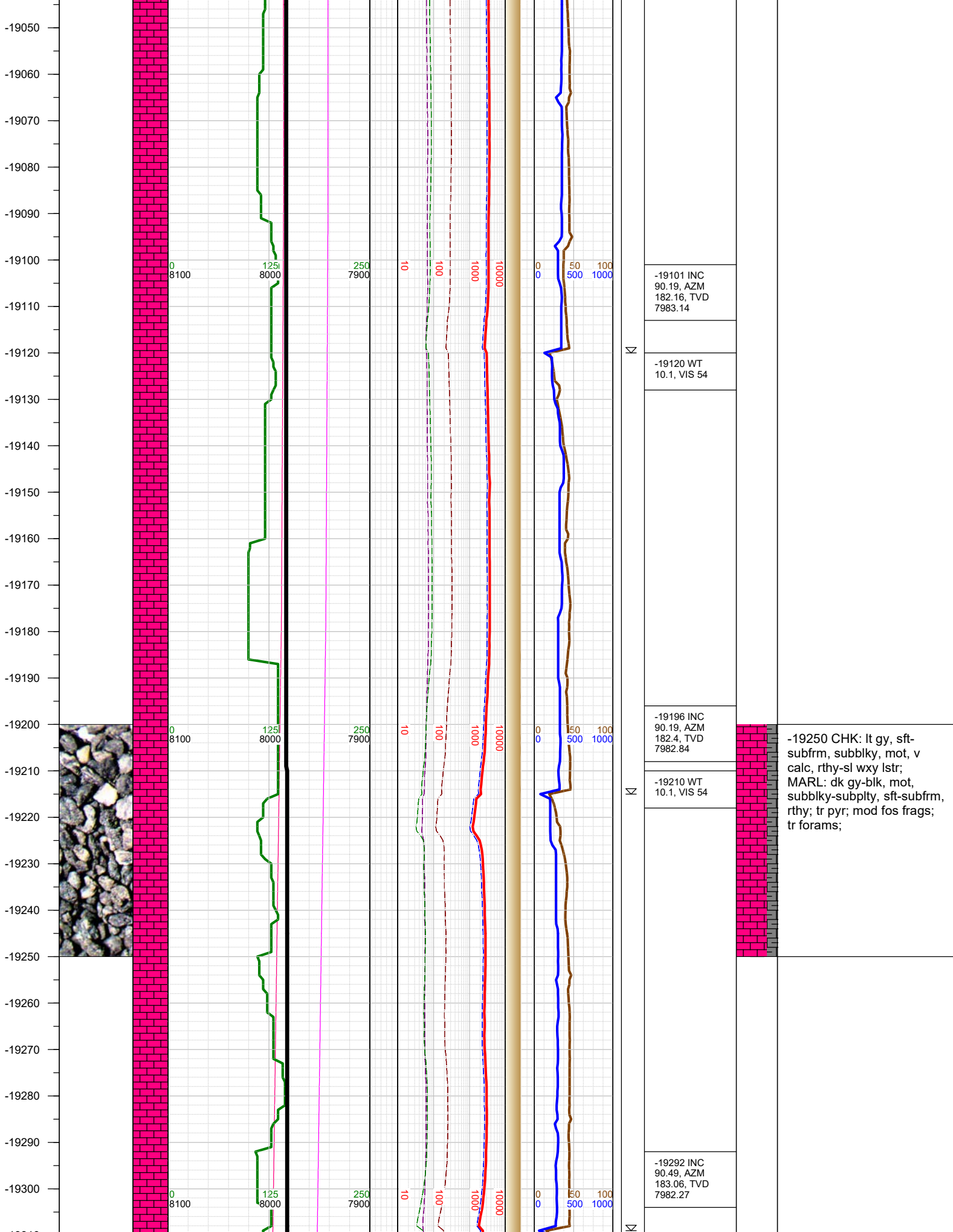




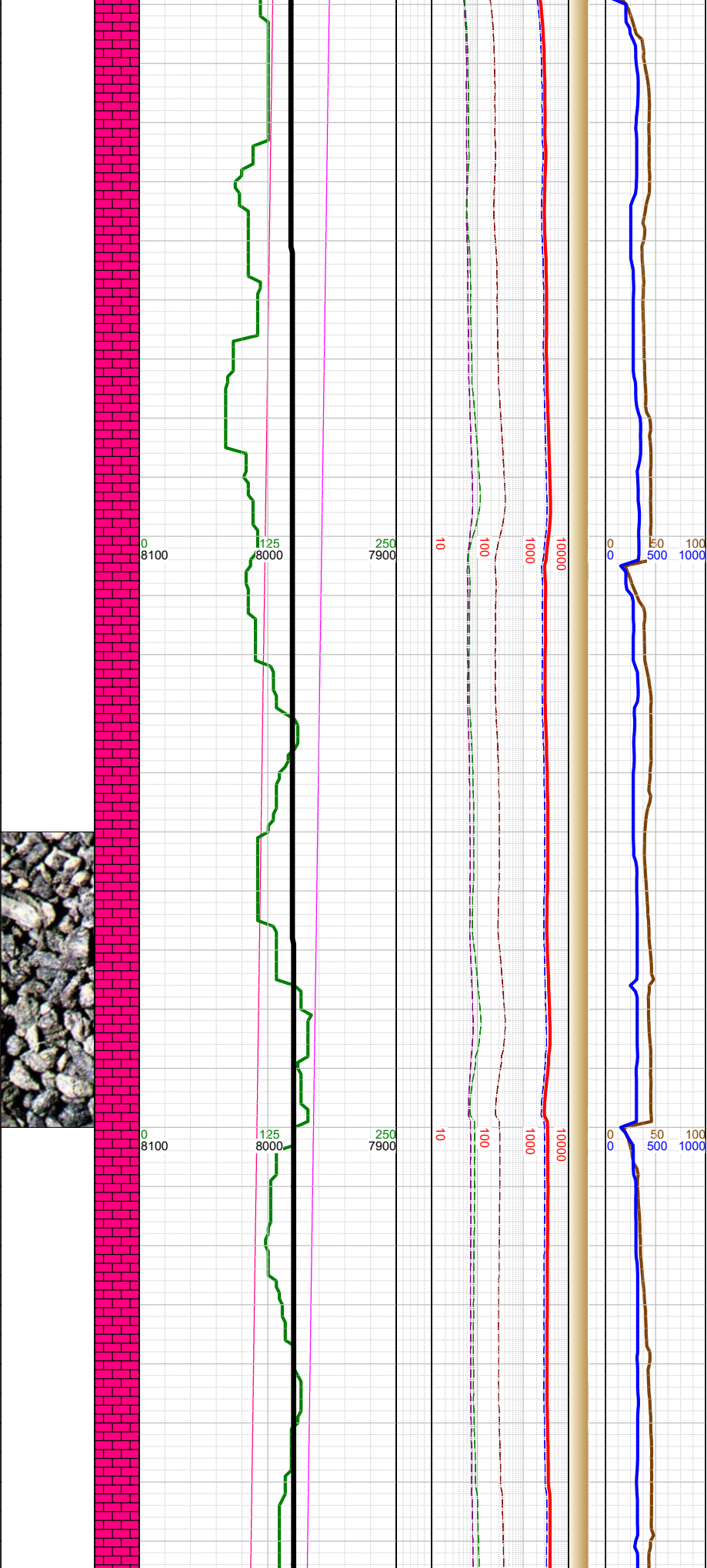








-19310  
-19320  
-19330  
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-19360  
-19370  
-19380  
-19390  
-19400  
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-19500  
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-19570



-19310 WT  
10.1, VIS 54

-19387 INC  
90.49, AZM  
181.57, TVD  
7981.45

-19400 WT  
10.2, VIS 52

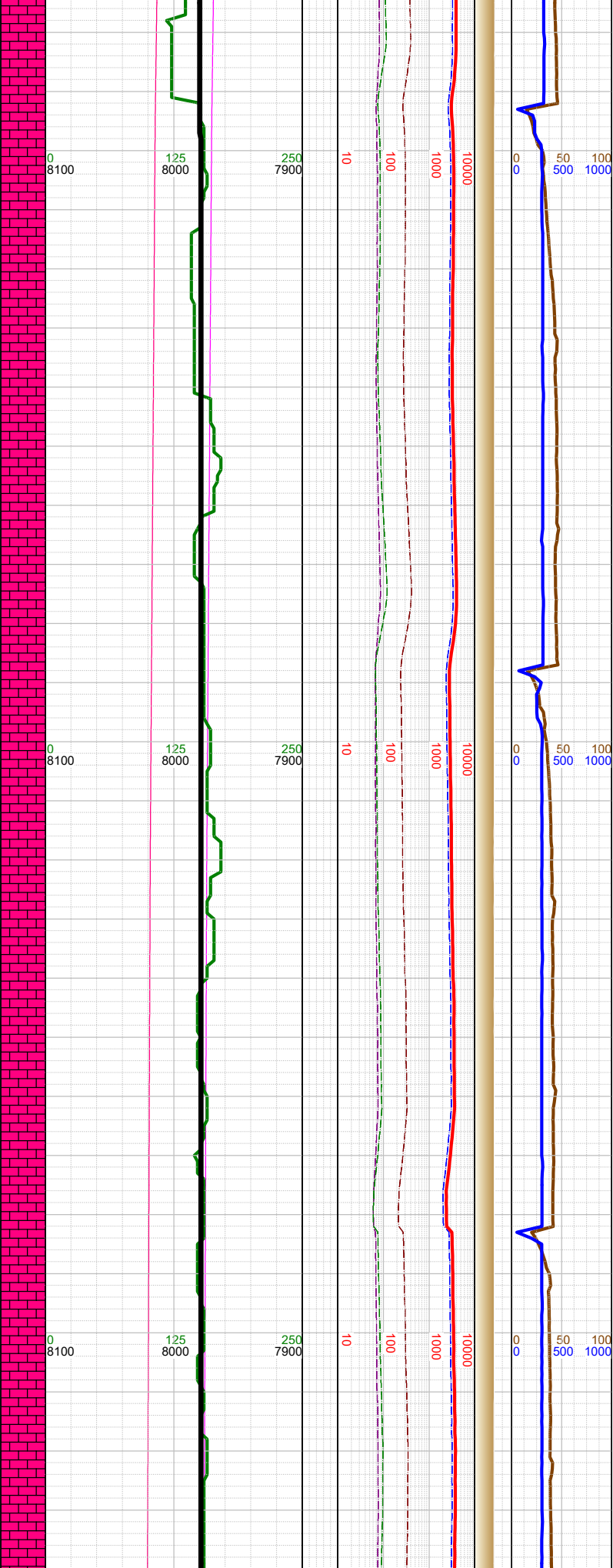
-19482 INC  
90.49, AZM  
181.43, TVD  
7980.63

-19500 WT  
10.2, VIS 52

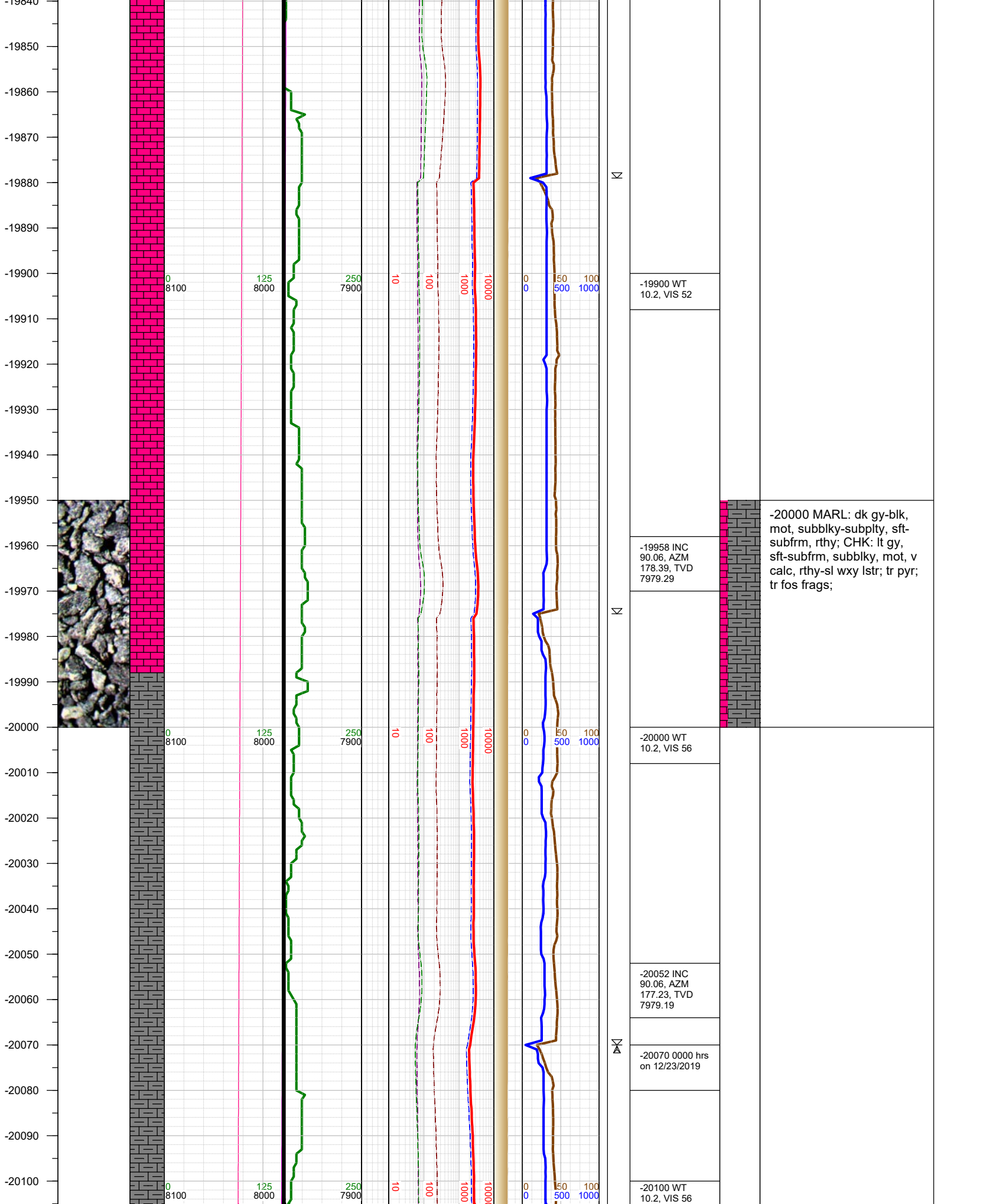
-19500 CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr pyr; tr fos frags; tr forams;



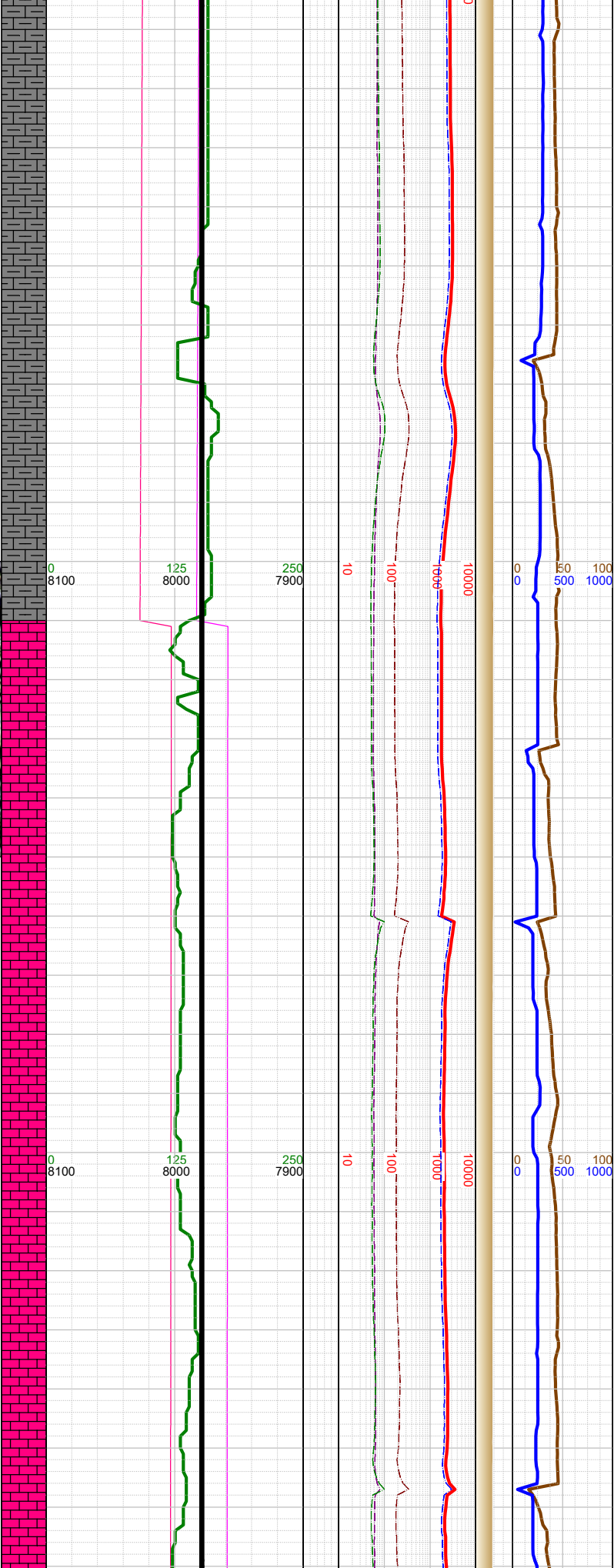
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-19800  
-19810  
-19820  
-19830  
-19840



N	-19577 INC 90.43, AZM 180.16, TVD 7979.86		
	-19600 WT 10.2, VIS 52		
N	-19673 INC 90.25, AZM 178.44, TVD 7979.29		
	-19700 WT 10.2, VIS 52	<div></div>	-19750 CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr pyr; tr fos frags; tr forams;
N	-19768 INC 89.88, AZM 177.81, TVD 7979.19		
	-19800 WT 10.2, VIS 52		



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-20240  
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-20290  
-20300  
-20310  
-20320  
-20330  
-20340  
-20350  
-20360  
-20370



-20147 INC 90,  
AZM 177.82,  
TVD 7979.14

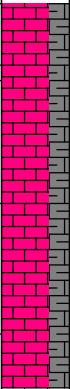
-20200 WT  
10.2, VIS 56

-20210 Fault:  
24' up-throw;  
went from B1  
Chalk to B2  
Chalk

-20243 INC  
89.94, AZM  
178.71, TVD  
7979.19

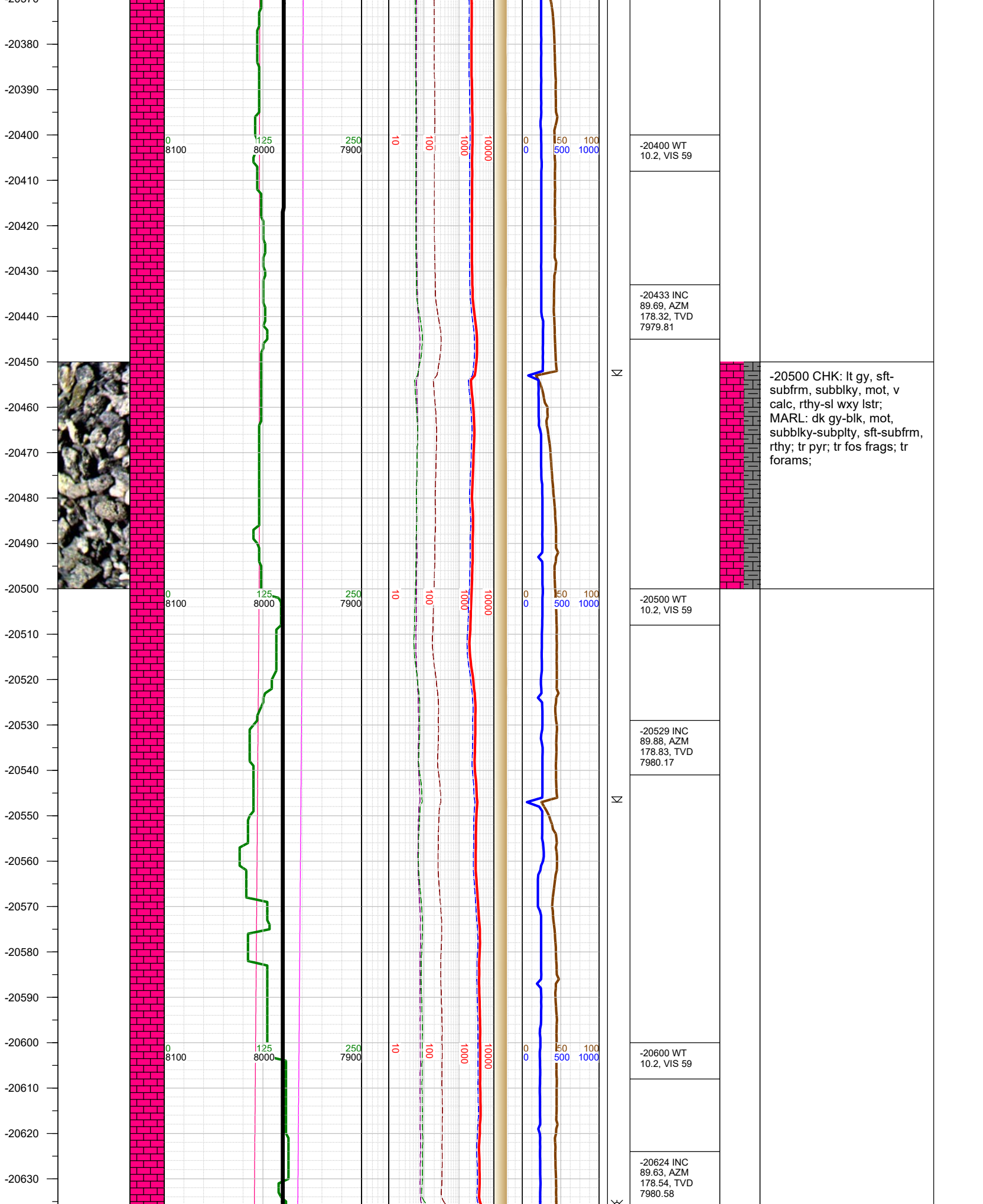
-20300 WT  
10.2, VIS 56

-20338 INC  
89.81, AZM  
179.02, TVD  
7979.4



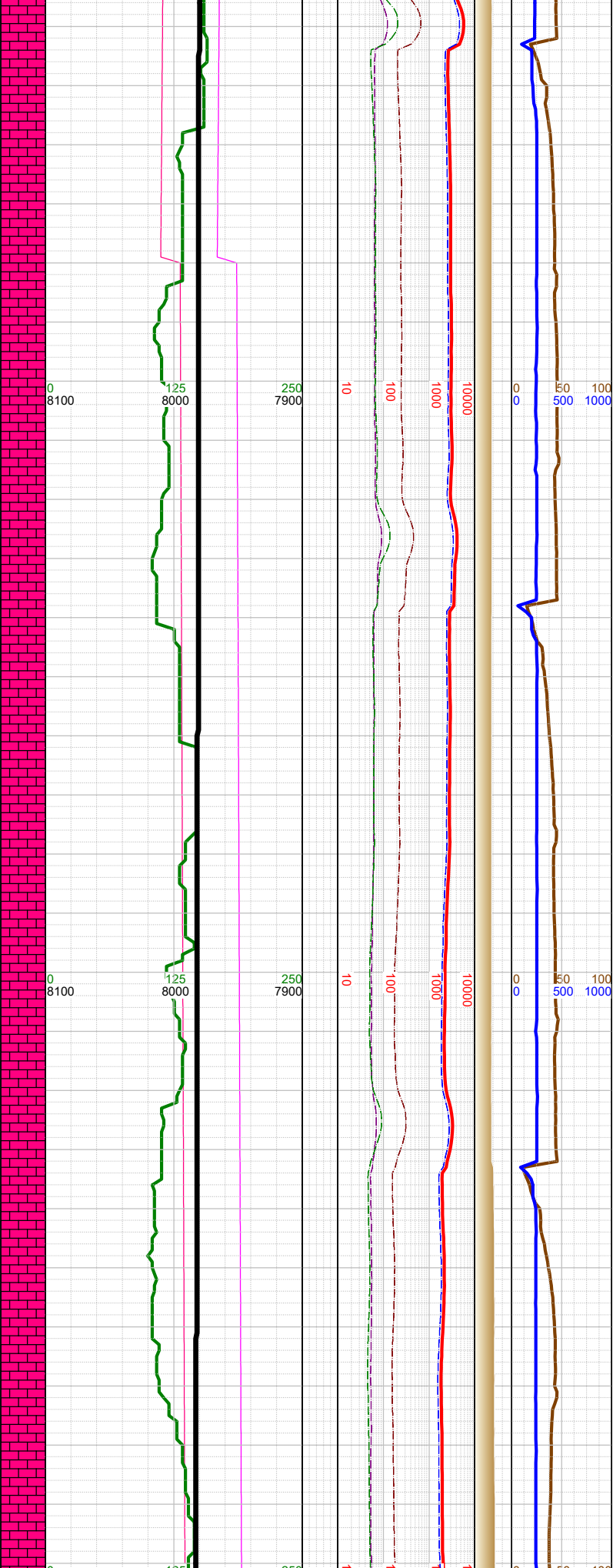
-20250 CHK: lt gy, sft-  
subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr;  
MARL: dk gy-blk, mot,  
subblky-subplty, sft-subfrm,  
rthy; tr pyr; tr fos frags; tr  
forams;



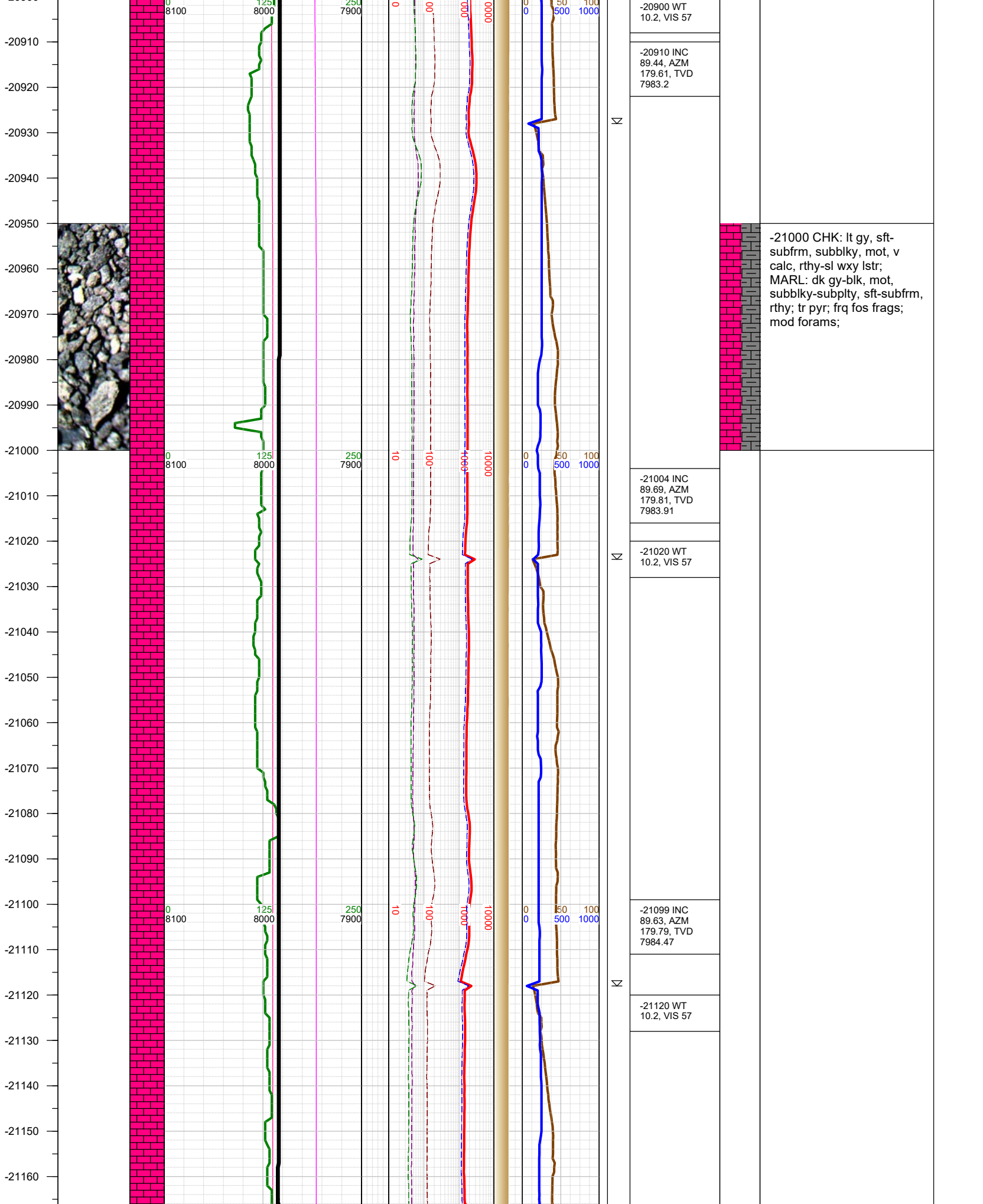


-20500 CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr pyr; tr fos frags; tr forams;

-20640  
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-20880  
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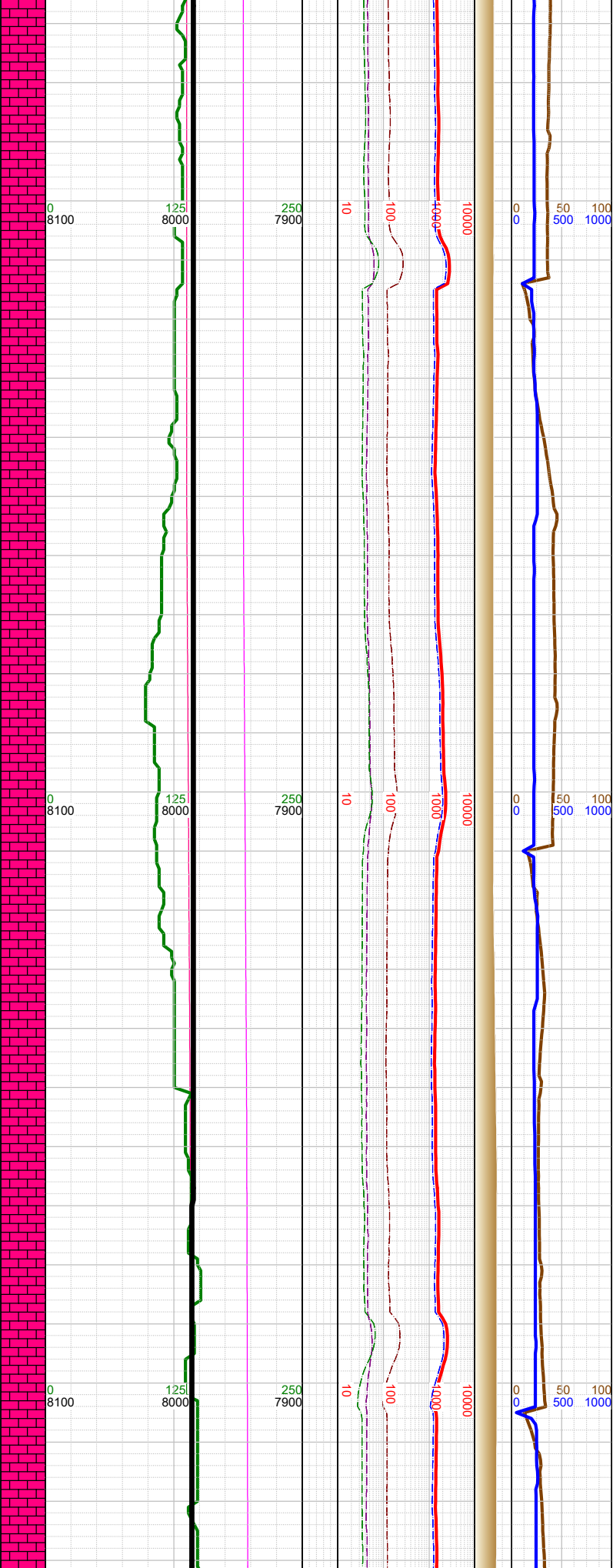


N			
		-20679 Fault: 15' up-throw; stayed in B2 Chalk	
		-20700 WT 10.2, VIS 57	-20750 CHK: lt gy, sft- subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr pyr; tr fos frags; tr forams;
		-20719 INC 89.44, AZM 180.05, TVD 7981.34	
N			
		-20800 WT 10.2, VIS 57	
		-20815 INC 89.44, AZM 179.4, TVD 7982.28	
N			





-21170  
-21180  
-21190  
-21200  
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-21400  
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-21420  
-21430



N

N

N

-21195 INC  
89.88, AZM  
182.1, TVD  
7984.88

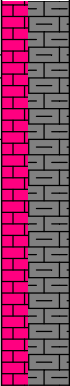
-21210 WT  
10.2, VIS 55

-21290 INC  
89.63, AZM  
181.8, TVD  
7985.29

-21310 WT  
10.2, VIS 55

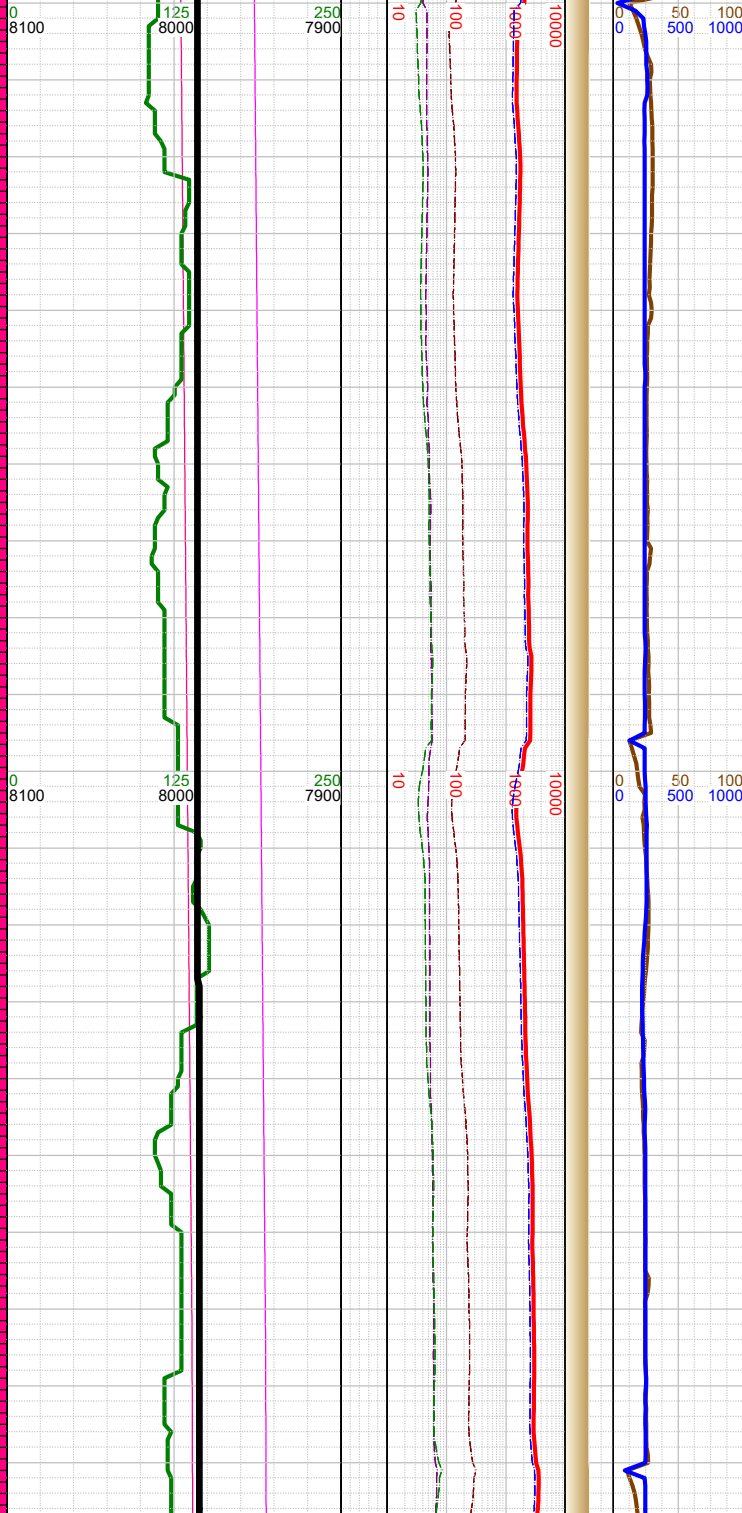
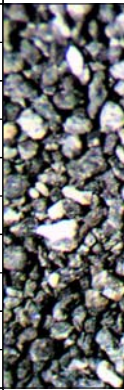
-21385 INC  
89.75, AZM  
182.45, TVD  
7985.81

-21400 WT  
10.2, VIS 55



-21250 MARL: dk gy-blk,  
mot, subblky-subply, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr pyr;  
abdt fos frags; mod forams;

-21440  
-21450  
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-21470  
-21480  
-21490  
-21500  
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-21600  
-21610  
-21620  
-21630  
-21640  
-21650  
-21660  
-21670  
-21680  
-21690



-21481 INC 90,  
AZM 182.3,  
TVD 7986.01



-21485 Fault:  
11' down-throw;  
stayed in B2  
Chalk

-21510 WT  
10.2, VIS 53



-21576 INC  
90.12, AZM  
182.39, TVD  
7985.91

-21600 WT  
10.2, VIS 53



-21672 INC  
90.31, AZM  
182.25, TVD  
7985.55

-21500 CHK: lt gy, sft-  
subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr;  
MARL: dk gy-blk, mot,  
subblky-subplty, sft-subfrm,  
rthy; tr pyr; frq fos frags;  
mod forams;

