



Pioneer Energy Services

Microresistivity Log

API No.	15-065-23,959-00-00		
Company	Cobalt Energy, LLC		
Well	SD Unit 'A' No. 1 - 19		
Field	Allodium East		
County	Graham	State	Kansas
Location	836' FSL & 2599' FEL		
Sec: 19	Twp: 6 S	Rge: 25 W	Elevation 2597
Log Measured From	Ground Level	Kelly Bushing	5 Ft. Above Perm. Datum
Drilling Measured From	Kelly Bushing		
Date	8/16/2013		
Run Number	Two		
Depth Driller	3925		
Depth Logger	3925		
Bottom Logged Interval	3924		
Top Log Interval	3400		
Casing Driller	8.625 @ 345		
Casing Logger	345		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	900		
Density / Viscosity	9.3	53	
pH / Fluid Loss	10.0	6.8	
Source of Sample	Flowline		
Rm @ Meas. Temp	.32	@ 76	
Rmf @ Meas. Temp	.24	@ 76	
Rmc @ Meas. Temp	.43	@ 76	
Source of Rmf / Rmc	Charts		
Rm @ BHT	.21	@ 115	
Operating Rig Time	4 1/2 Hours		
Max Rec. Temp. F	115		
Equipment Number	108		
Location	Hays		
Recorded By	D. Martin		
Witnessed By	Paul Gunzelman		

Other Services
CNL/CDL
DIL

Elevation
K.B. 2602
D.F. 2597
G.L. 2597

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Thank you for using Log-Tech, Inc.
(785) 625-3858

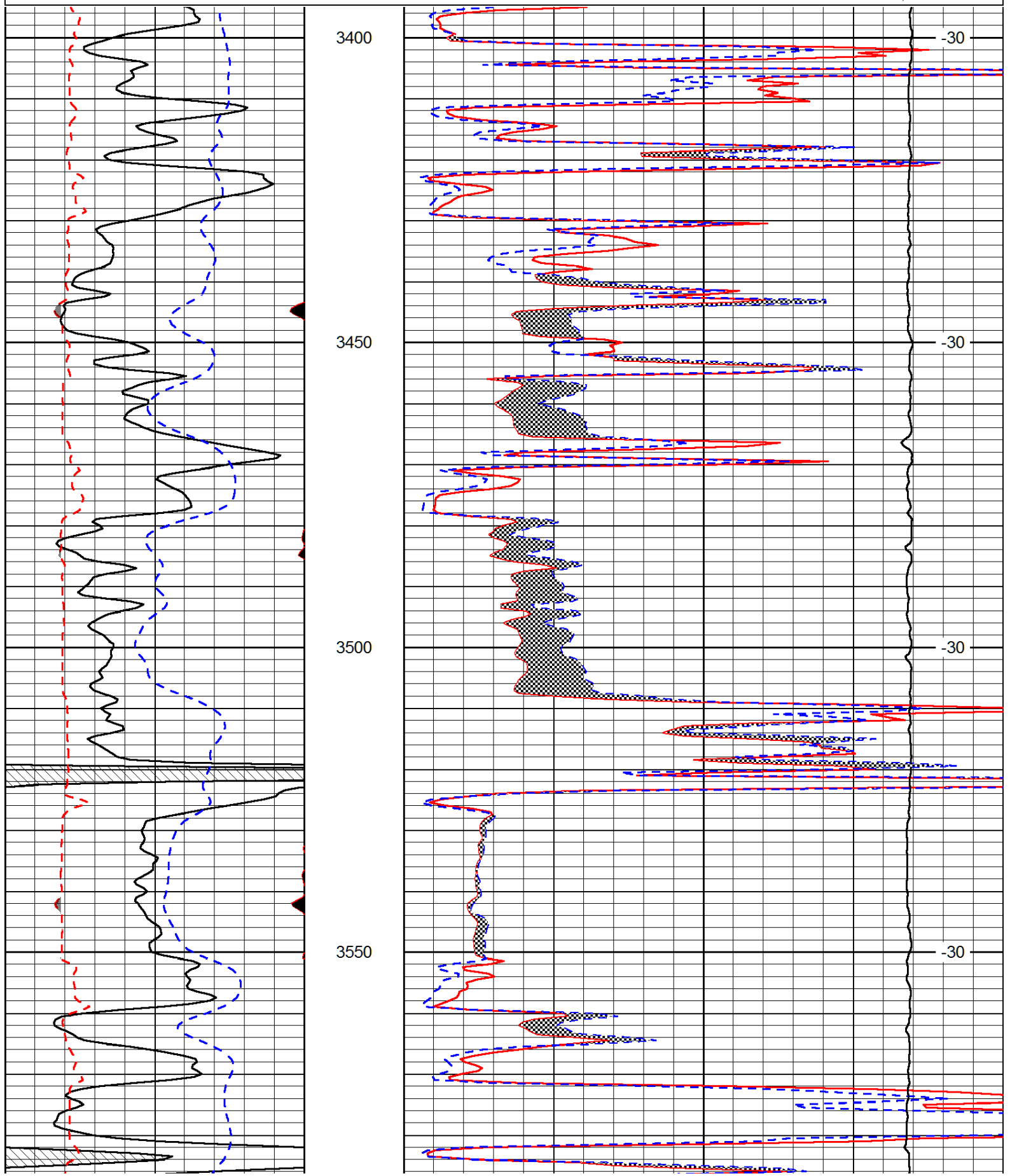
Hill City, KS
17 W to 100 Rd.(Co. Line), 11 N to 110N Rd.(AA Rd.),
1/4 E, N Into

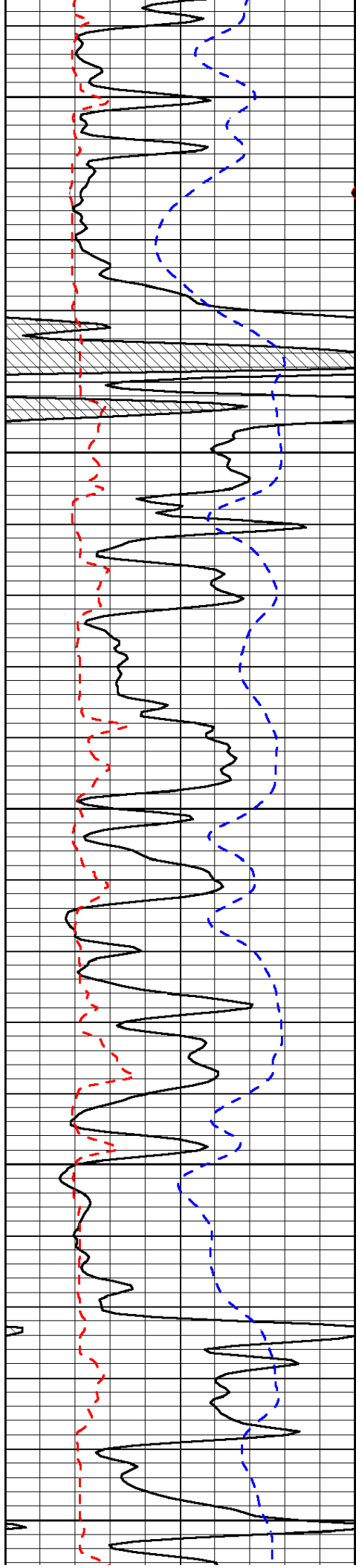
Database File: cobalt_sdunita_1-19hd.db
Dataset Pathname: dil/cobstk
Presentation Format: micro
Dataset Creation: Sat Aug 17 01:01:28 2013
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	Mud Cake (in)	7.875
-200	SP (mV)	0

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

LSPD
(ft/min)





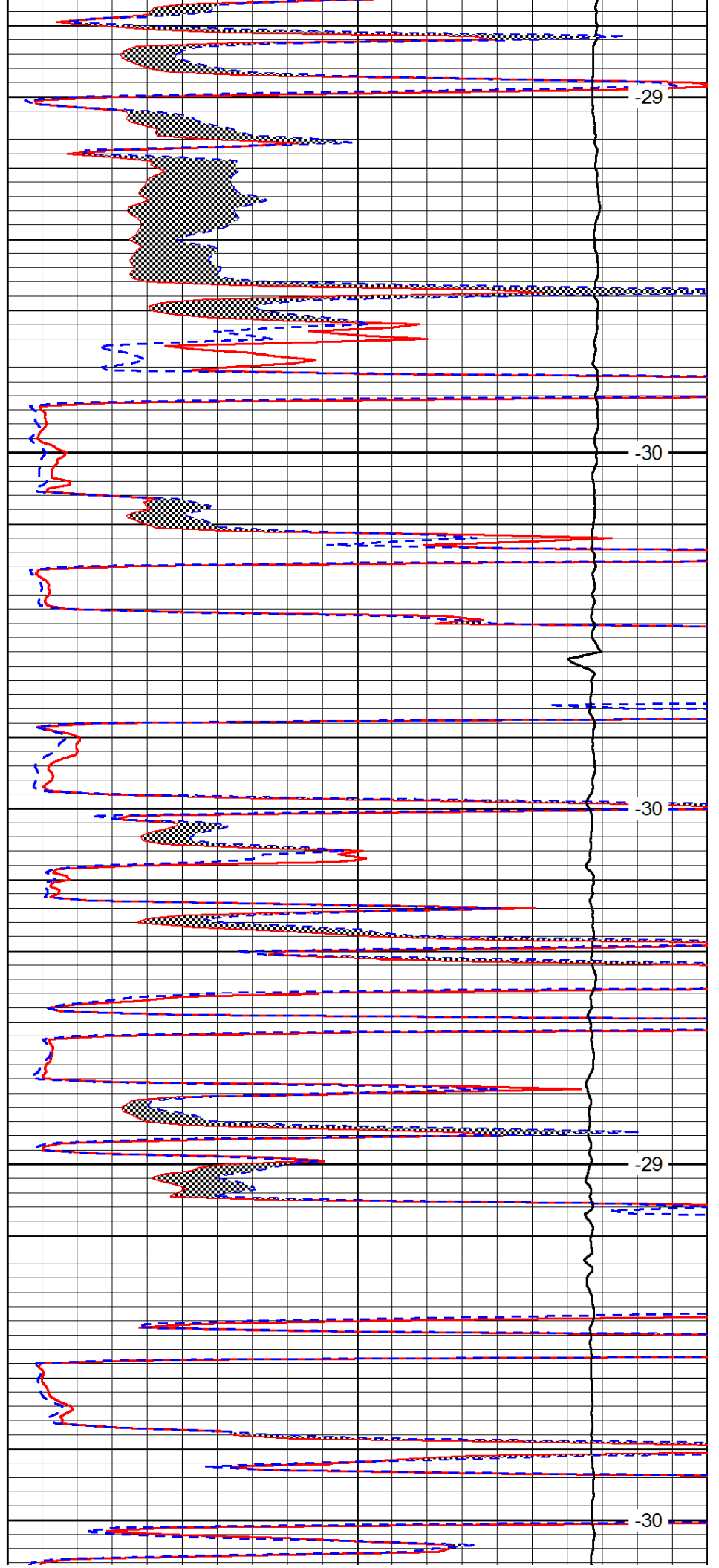
3600

3650

3700

3750

3800



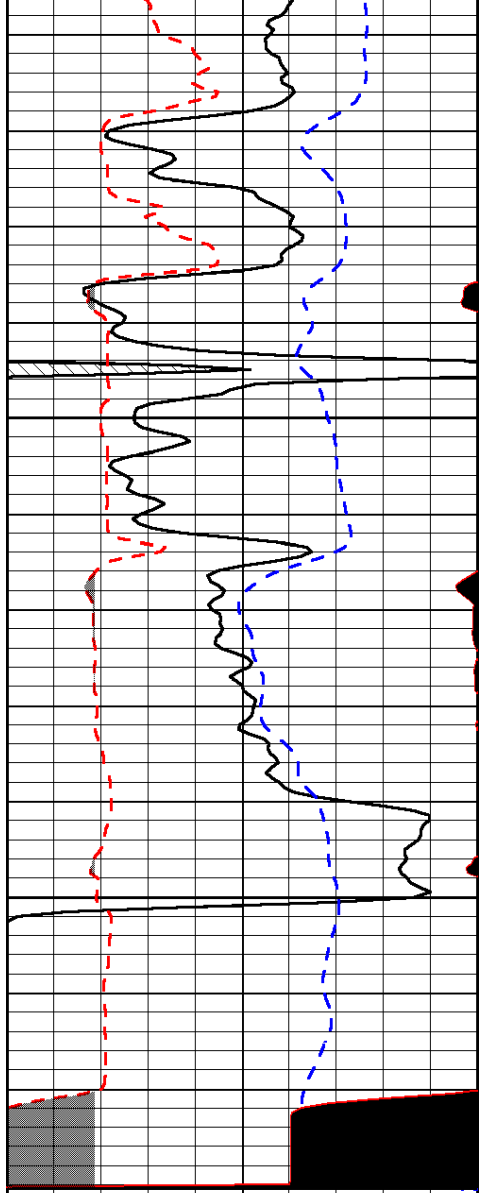
-29

-30

-30

-29

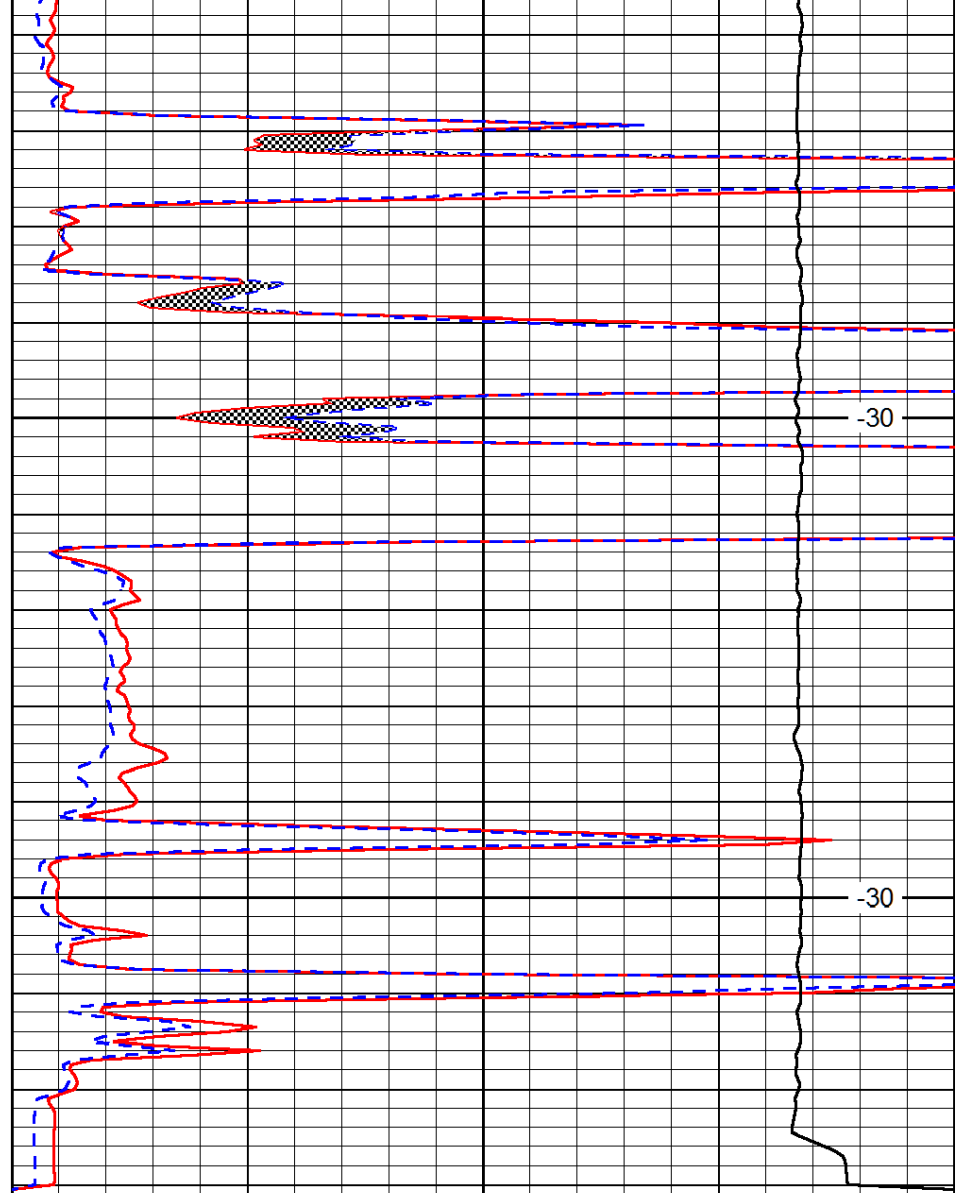
-30



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