

**RADIAL CEMENT BOND LOG**  
**GAMMA RAY**  
**CCL**

Company: Kerr McGee Oil & Gas  
 Well: HOUSTON STATE 31-16  
 Field: Wattenberg  
 County: WELD State: CO

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Location: SURF : 1756' FNL & 499' FWL SW/NW  
 BHL : 1249' & 42' FWL NW/NW  
 API # : 05-123-31427  
 SEC 16 TWP 3N RGE 67W  
 Permanent Datum: GL Elevation: 4773  
 Log Measured From: KB - 15'  
 Drilling Measured From: KB  
 Other Services: Elevation: KB, 4788  
 D.F. 4787  
 G.L. 4773

Date: 5-27-2014  
 Run Number: ONE  
 Depth Driller: 7325  
 Depth Logger: 1535  
 Bottom Logged Interval: 1524  
 Top Log Interval: SURFACE  
 Open Hole Size: 4.5  
 Type Fluid: WATER  
 Density / Viscosity: NA  
 Max. Recorded Temp.: 82  
 Estimated Cement Top: 416  
 Time Well Ready: NA  
 Time Logger on Bottom: NA  
 Equipment Number: 7770  
 Location: GREELEY  
 Recorded By: C.JONES  
 Witnessed By: D.POWELL

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE							
TWO							

Record	Size	Wgt/Ft	Top	Bottom
Casing Record				
Surface String				
Prot. String				
Production String				
Liner				

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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

RAN CBL TO VERIFY CEMENT TOP.  
 TIED INTO JW LOG FROM SEPT 8TH 2010.  
 THANK YOU FOR USING WARRIOR ENERGY!

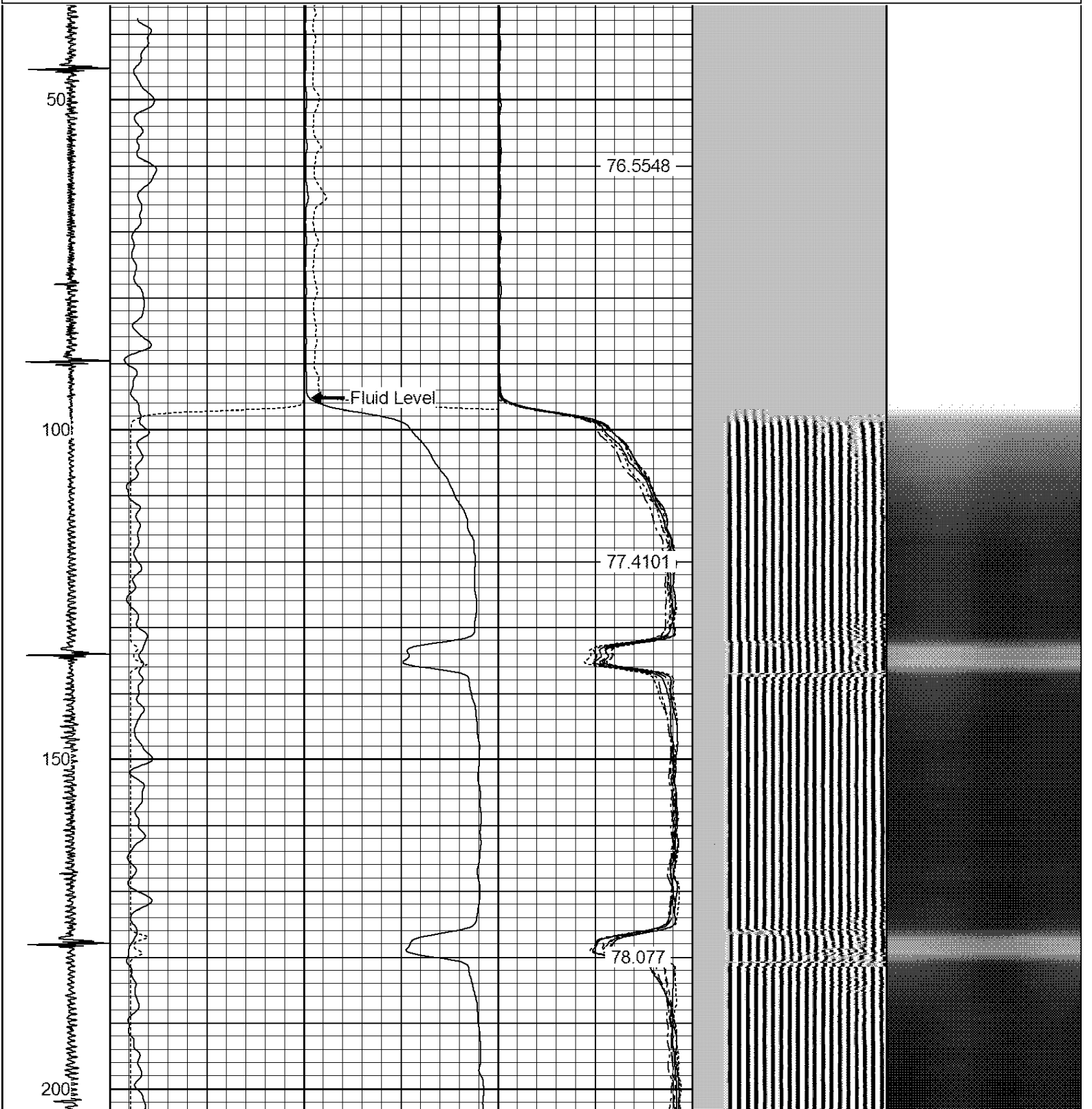
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)

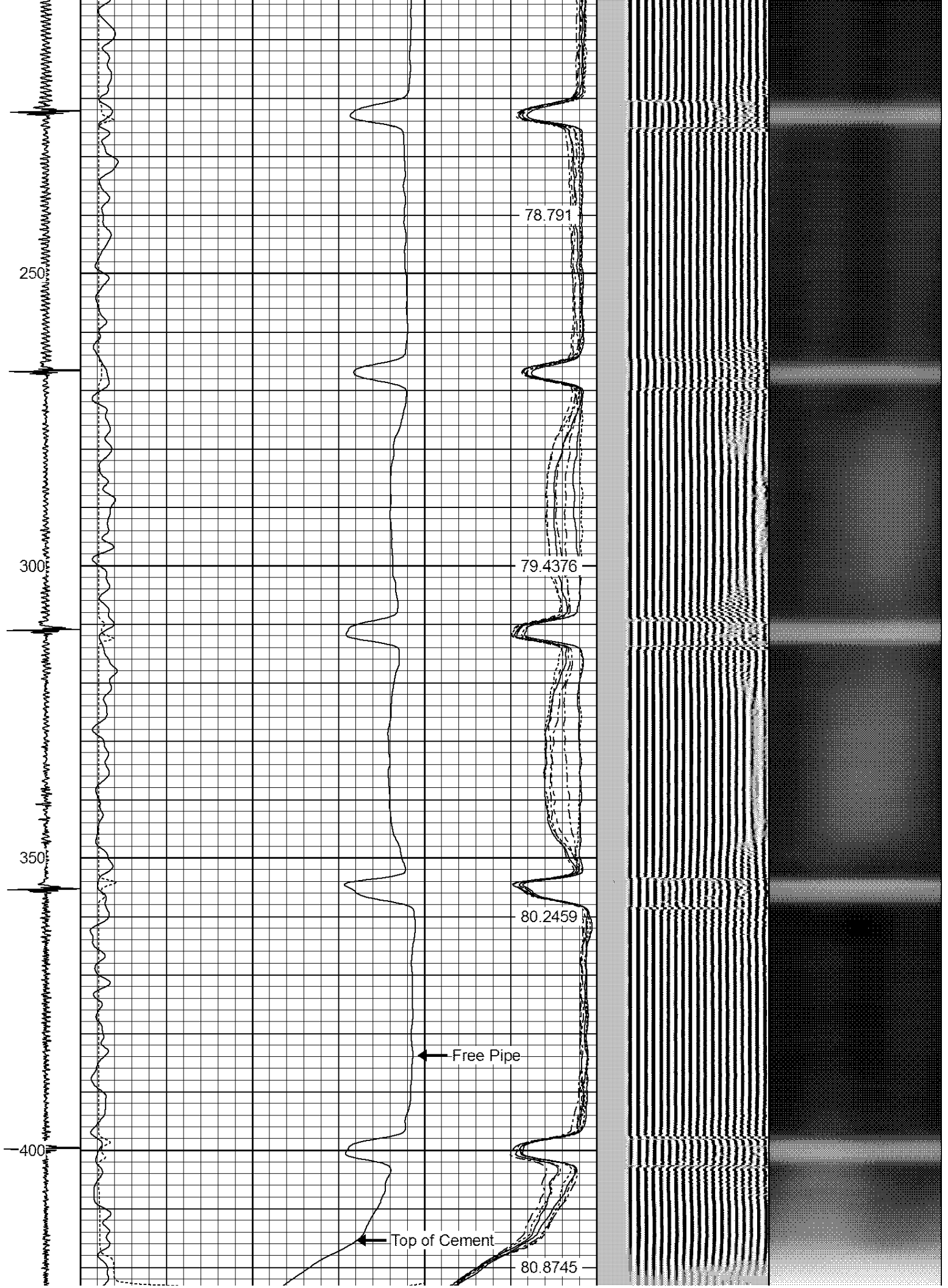
CNLSC	17.92		CNT-Probe_B (275) 6 bow centralizer	3.00	2.75	18.00
CNSSC	17.08					
HEADVOLT	16.25					
IntTemp	14.83					
WVFCAL	11.58		RBT-Probe (Base) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
WVFS1	11.58					
WVFS2	11.58					
WVFS3	11.58					
WVFS4	11.58					
WVFS5	11.58					
WVFS6	11.58					
WVFS7	11.58					
WVFS8	11.58					
WVFS5FT	10.58					
		CENT-Probe (PT_MONO2)	3.00	2.75	35.00	
CCL	3.64					
		GR-Probe (275) Probe 2.75"	4.33	2.75	30.00	
GR	0.90					

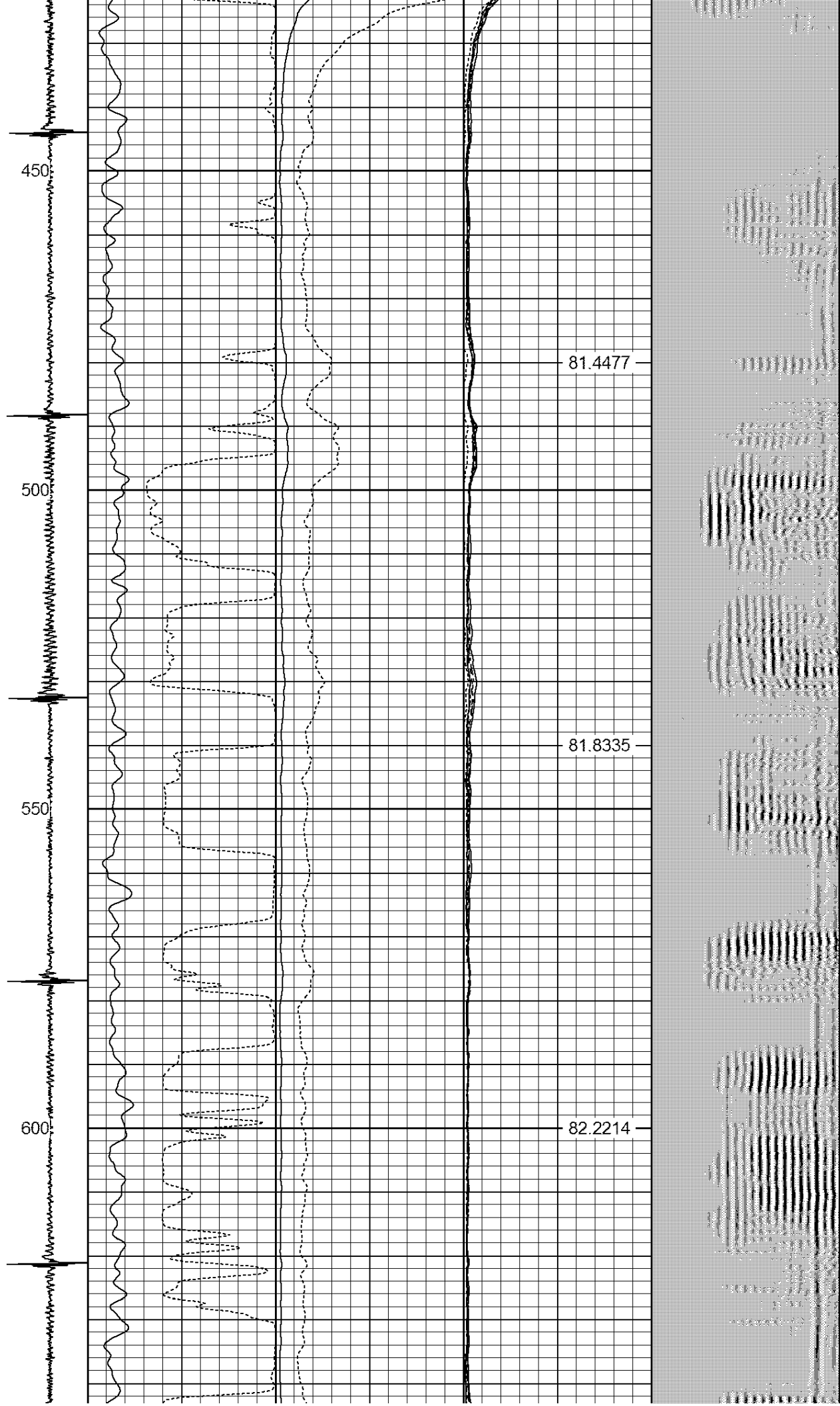
Dataset: houston state 31 16.db: field/well/run1/pass4  
 Total Length: 19.25 ft  
 Total Weight: 173.00 lb  
 O.D.: 2.75 in

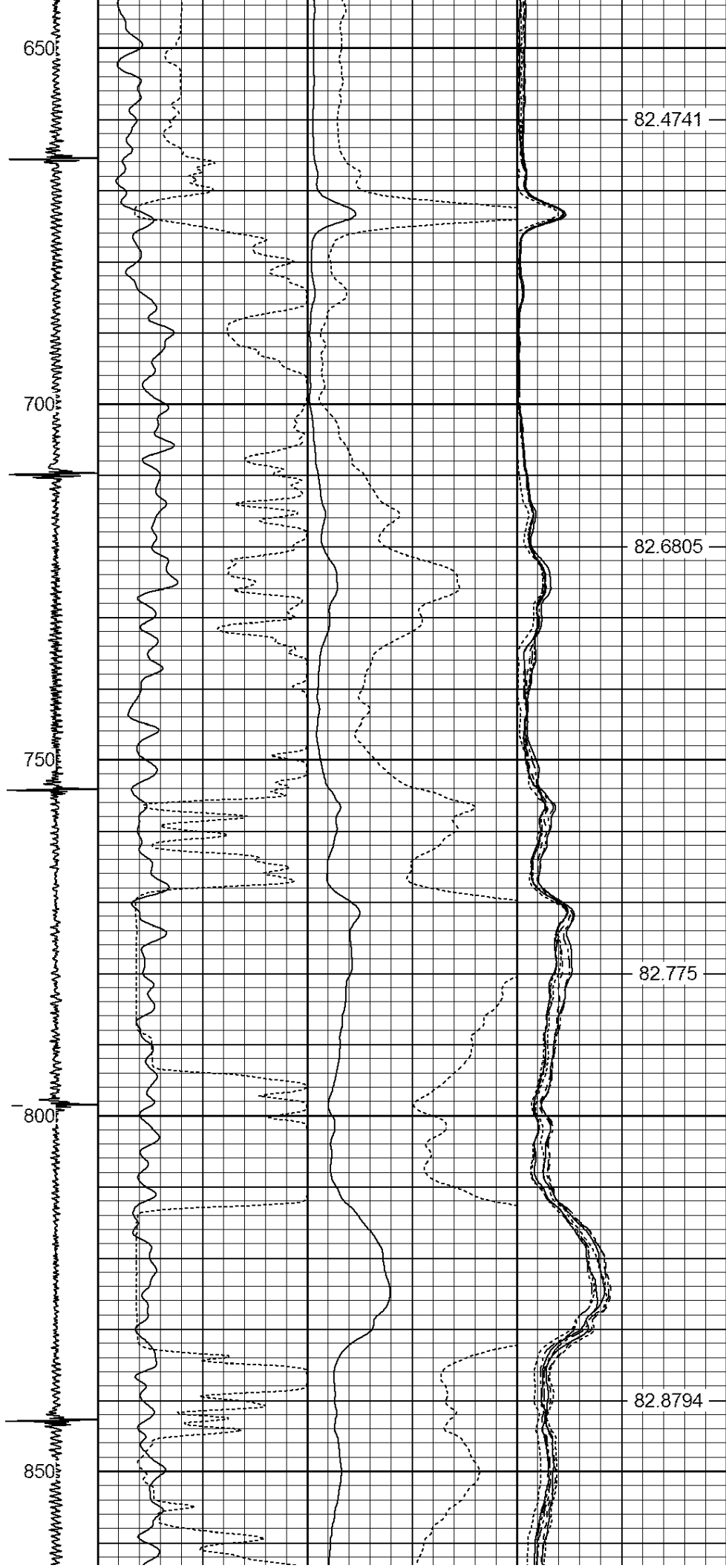
Database File: houston state 31 16.db  
 Dataset Pathname: pass4  
 Presentation Format: ips\_rbt

-9	CCL	5	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
LSPD			0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPS2	100				1		100
(ft/min)			200	GR (GAPI)	400				0	AMPS4	100						
0		250							0	AMPS5	100						
									0	AMPS6	100						
									0	AMPS7	100						
									0	AMPS8	100						
										IntTemp							
										(degF)							







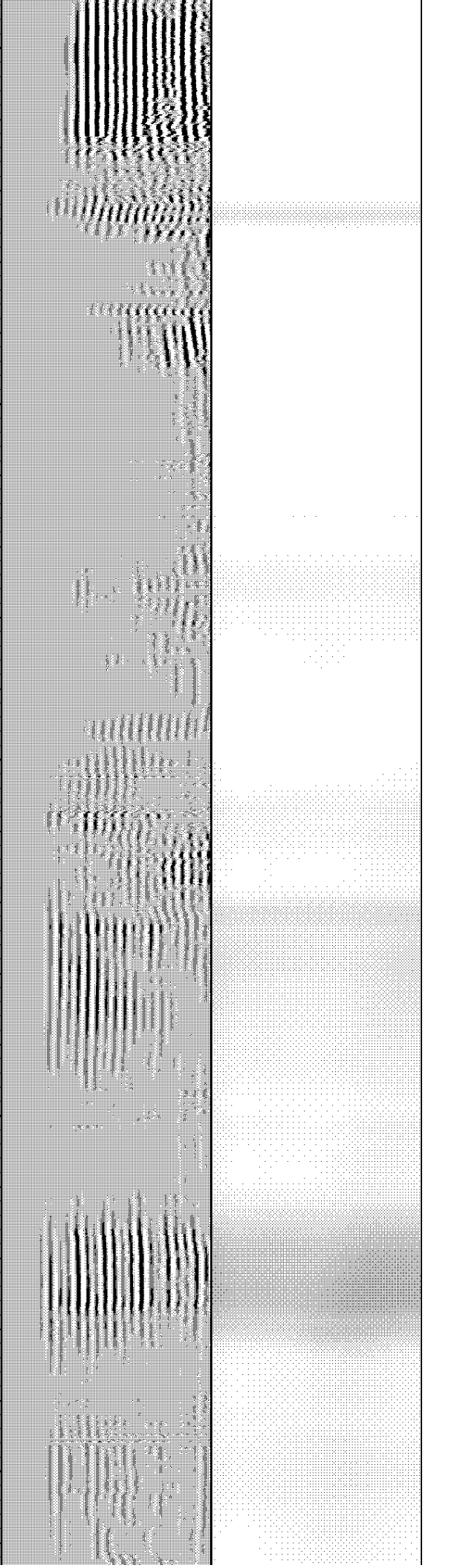


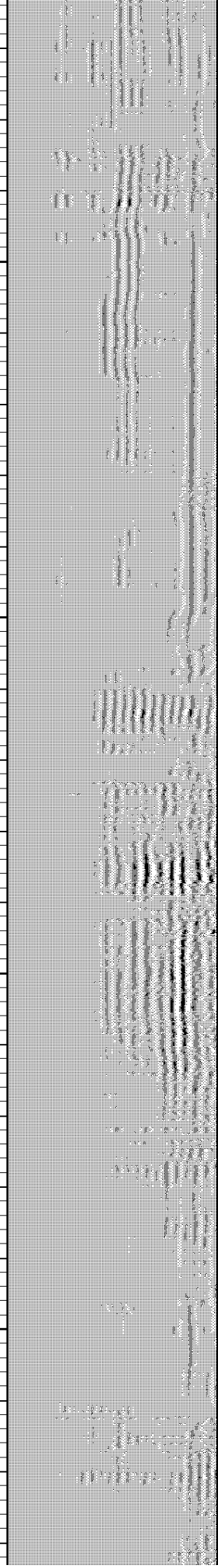
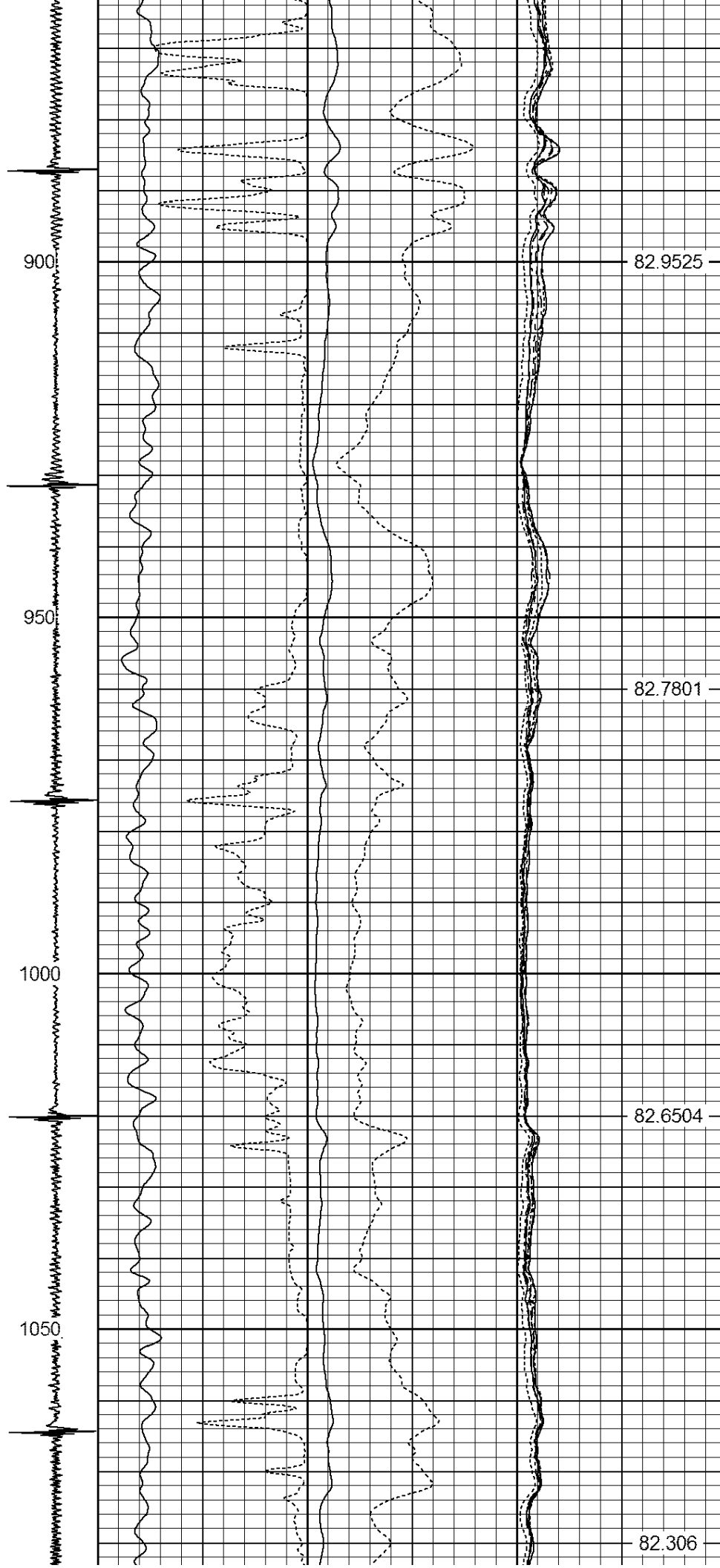
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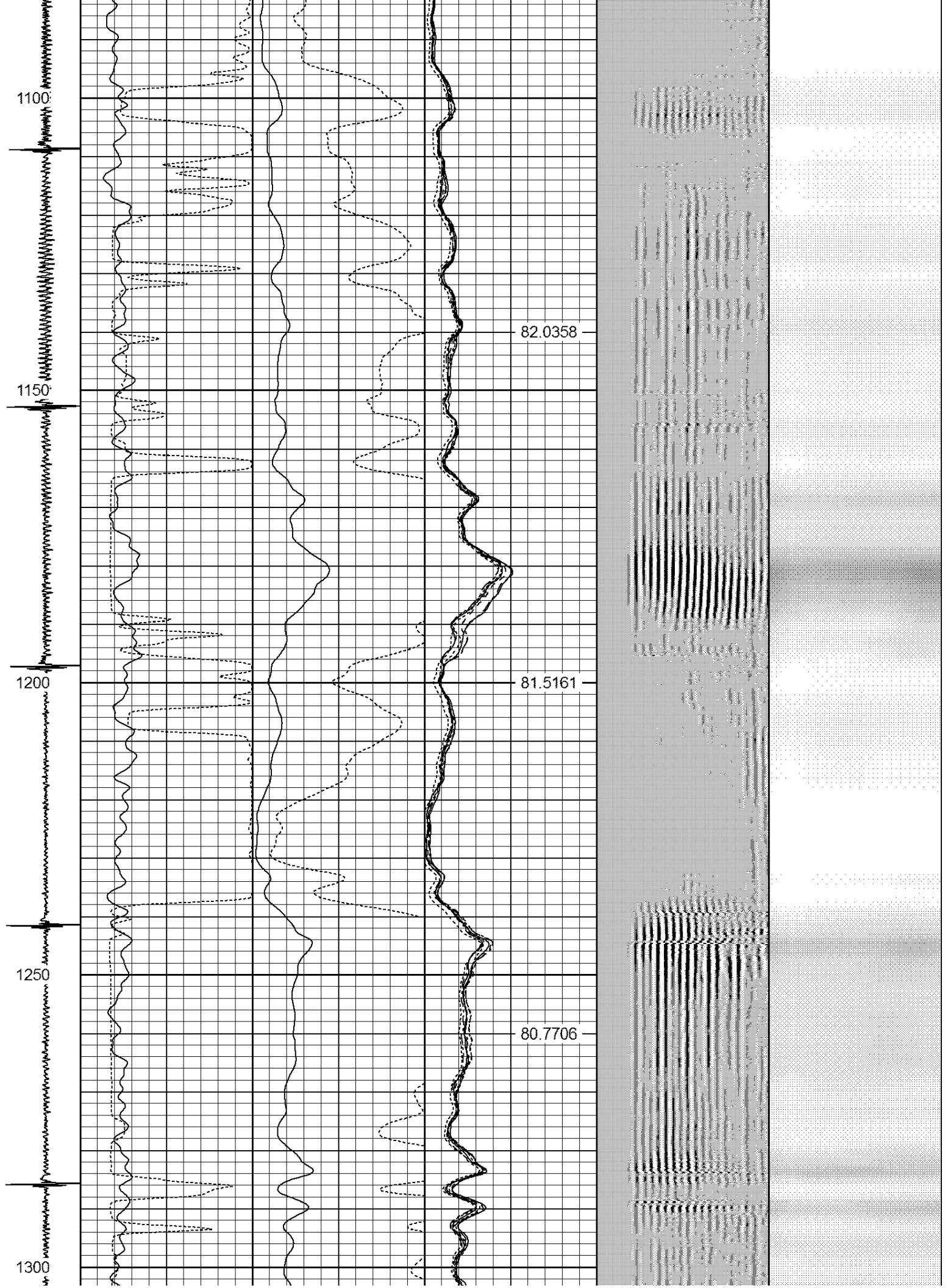
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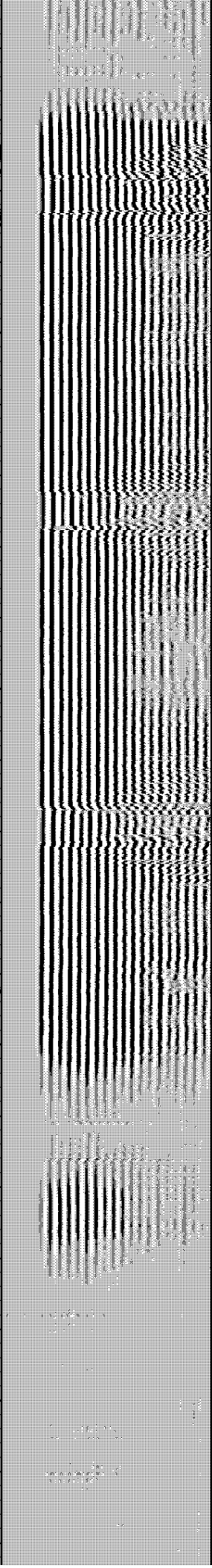
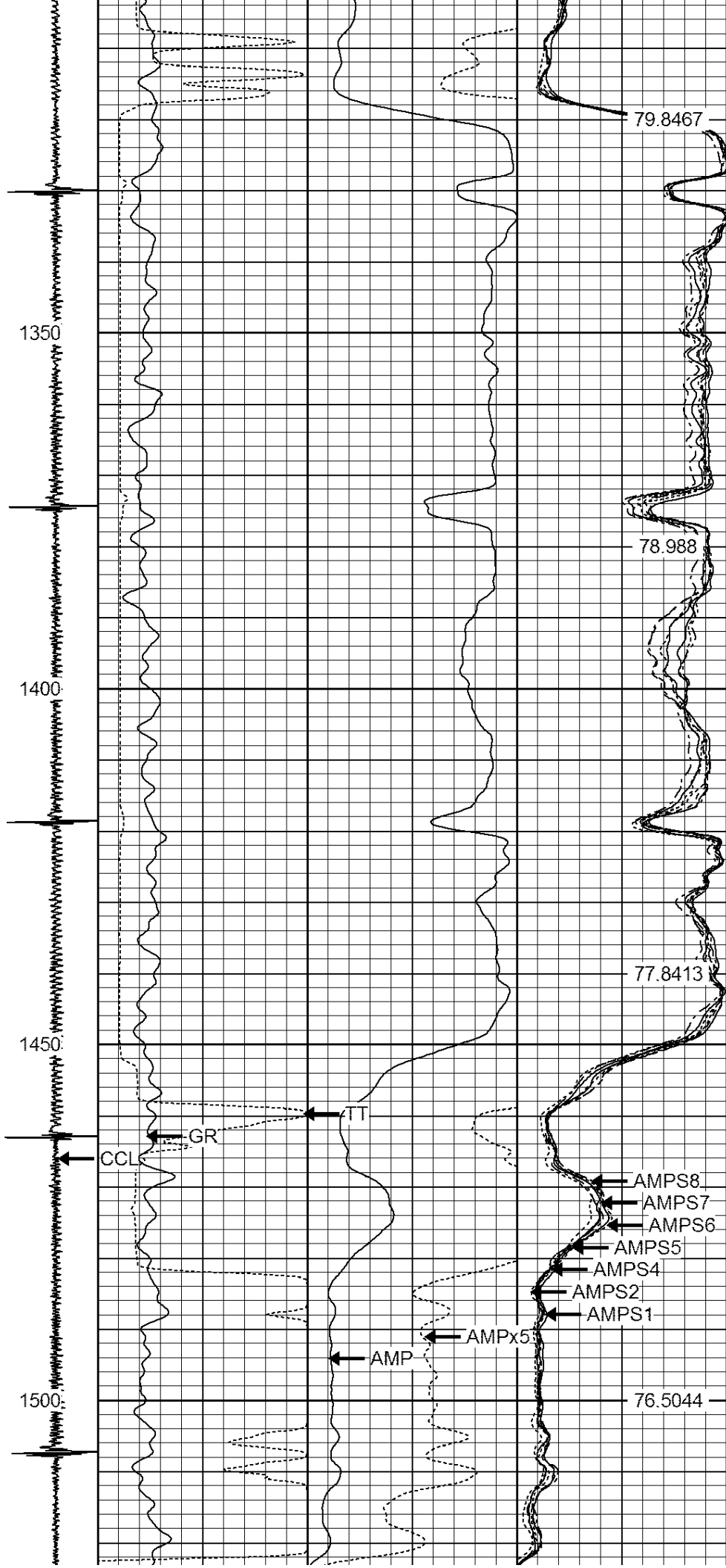
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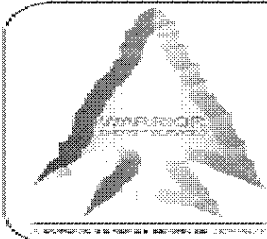
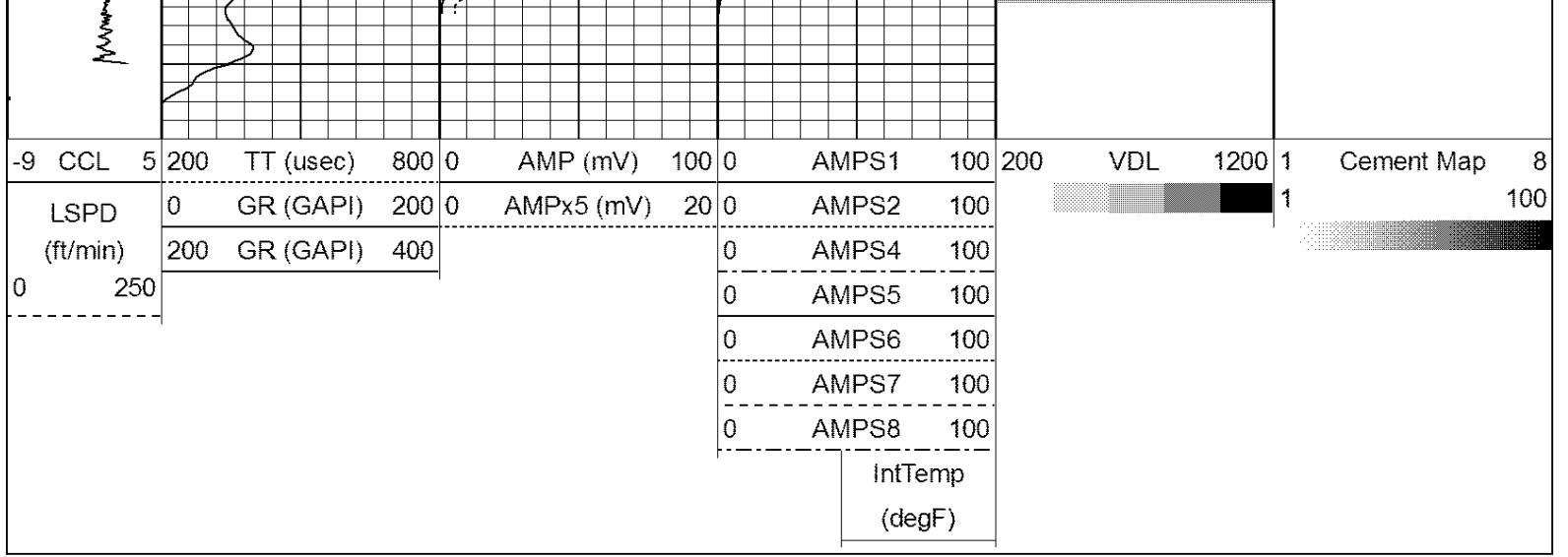
82.8794











**WARRIOR**  
ENERGY SERVICES

Company Kerr McGee Oil and Gas  
 Well HOUSTON STATE 31-16  
 Field WATTENBERG  
 County WELD  
 State CO