SUPERIOR WELL SERVICES

CEMENT BOND LOG
GAMMA RAY C C L
V D L

Company	Noble Energy INC.
Well	MCKAY AB02-13
Field	Wattenberg
County	Weld
State	Colorado

Company Noble Energy INC.
Well MCKAY AB02-13
Field Wattenberg
County Weld State Colorado

Location: API #: 051233026700
SHL: 660' FSL & 660' FWL
BHL: 660' FSL & 660' FWL
LAT: 40.5967 DEG. LONG: -104.52334 DEG
SEC 2 TWP 7N RGE 64W

Other Services

Permanent Datum	GL	Elevation	4881
Log Measured From	KB		
Drilling Measured From	KB		

Elevation
K.B. 4894
D.F. 4894
G.L. 4881

Date	March 26, 2010	
Run Number	One	
Depth Driller	9085	
Depth Logger	9031	
Bottom Logged Interval	9030	
Top Log Interval	Surface	
Casing Size	7.0"	
Type Fluid	Water	
Density / Viscosity	Not Recorded	
Max. Recorded Temp.	263 deg F	
Estimated Cement Top	1925	
Time Well Ready	AM	
Time Logger on Bottom	AM	
Equipment Number	T5 (3344)	2.75 Tool 1 GRN
Location	Platteville, CO	
Recorded By	K. Monaghan	
Witnessed By	C. Hohnstein	

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	7.0"		Surface	TD
Prot. String				
Production String				
Liner				

<<< Fold Here >>>

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

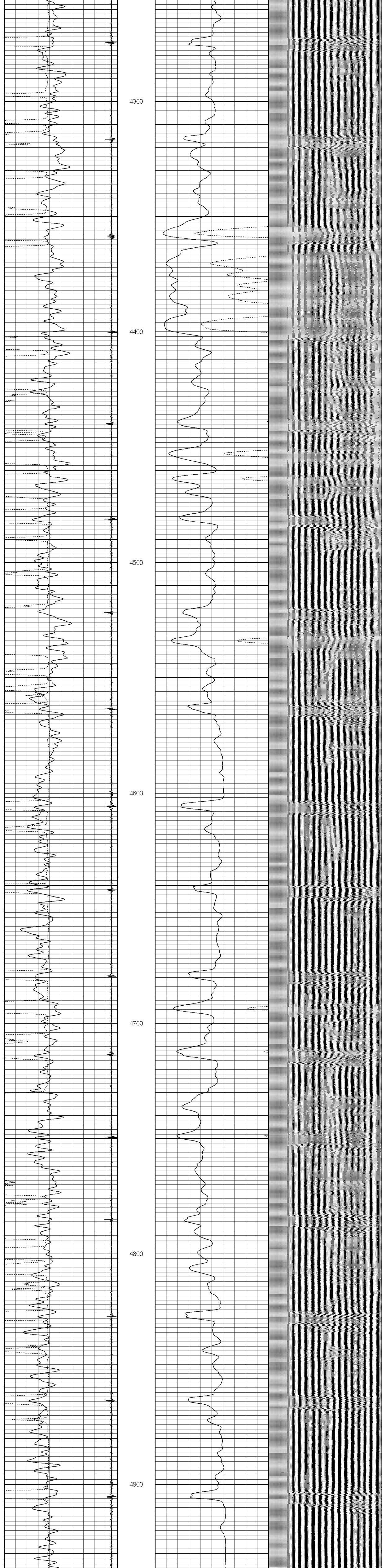
Thank You For Choosing Superior Well Services!!!
API# 05-123-30267-00
Correlated to Halliburton's
Spectral Density / Dual Spaced Neutron / Array Compensated / True Resistivity / Gamma Ray
(TIGHT HOLE)
Directions: Hwy 14 & 88, E 2MI TO RD 59, S 1 MI, W 1MI, S 1.2MI, E 2/10, N INTO

Database File:	cblnoble tight hole 3-26-10.db
Dataset Pathname:	pass8
Presentation Format:	nuexbond
Dataset Creation:	Fri Mar 26 09:33:52 2010 by Log Std Casedhole 09061
Charted by:	Depth in Feet scaled 1:240

30	Gamma Ray (GAPI)	130
9	CCL	-0.5
340	TT3 (usec)	240

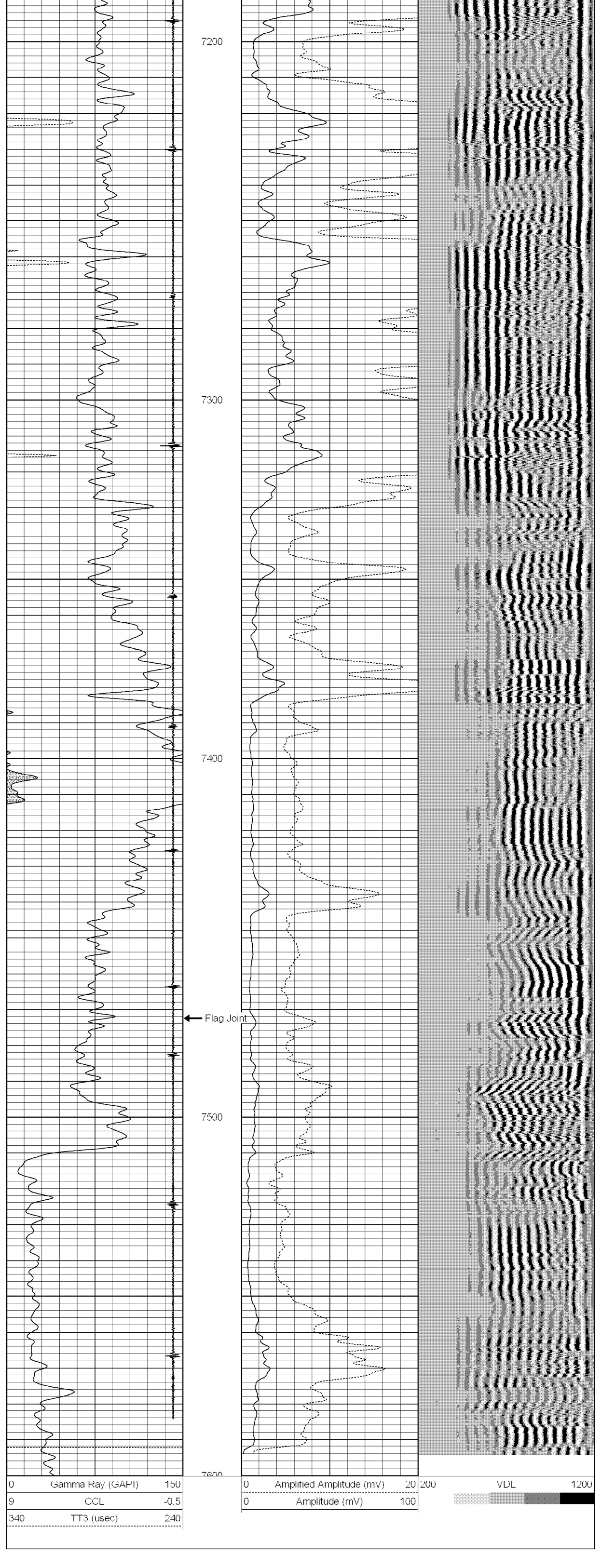
0	Amplified Amplitude (mV)	20
0	Amplitude (mV)	100

200	VDL	1200

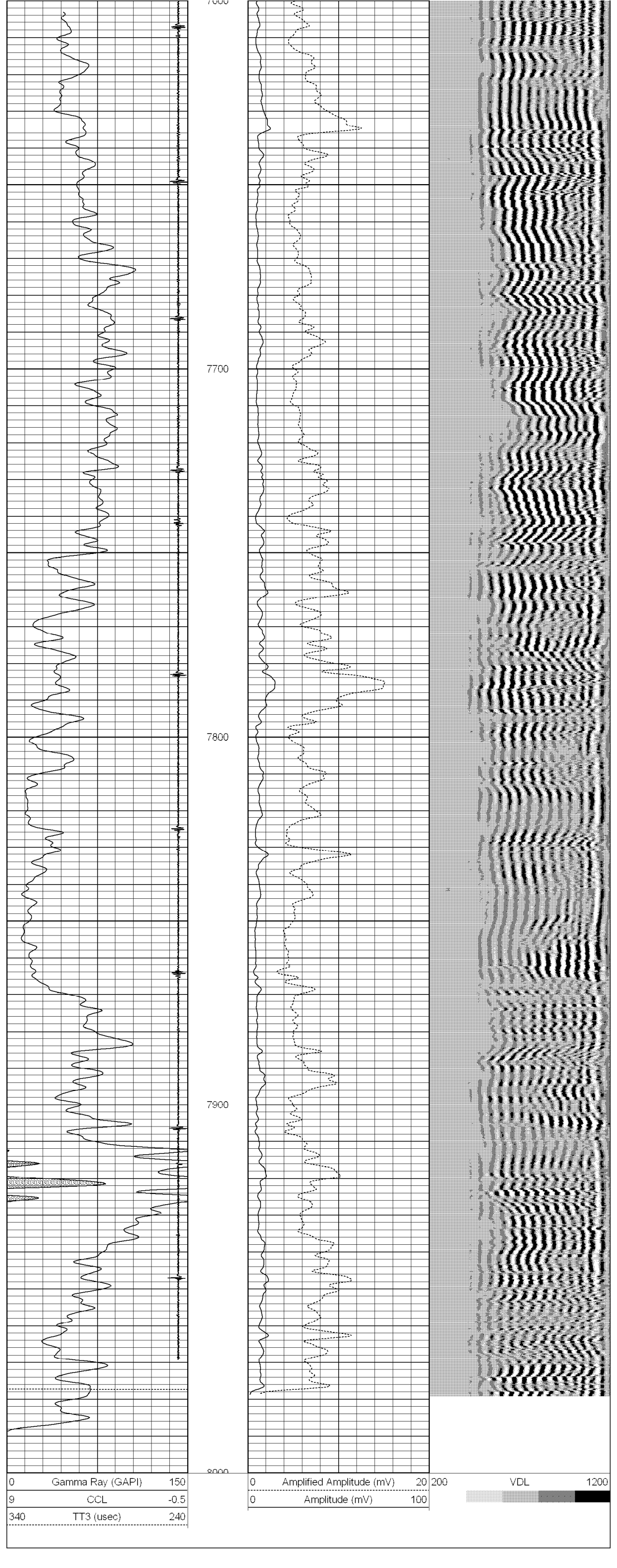


Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass7
Presentation Format: nuexbond
Dataset Creation: Fri Mar 26 09:07:46 2010 by Log Std Casedhole 09061
Charted by: Depth in Feet scaled 1:240

Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass6
Presentation Format: nuexbond
Dataset Creation: Fri Mar 26 08:59:47 2010 by Log Std Casedhole 09061
Charted by: Depth in Feet scaled 1:240

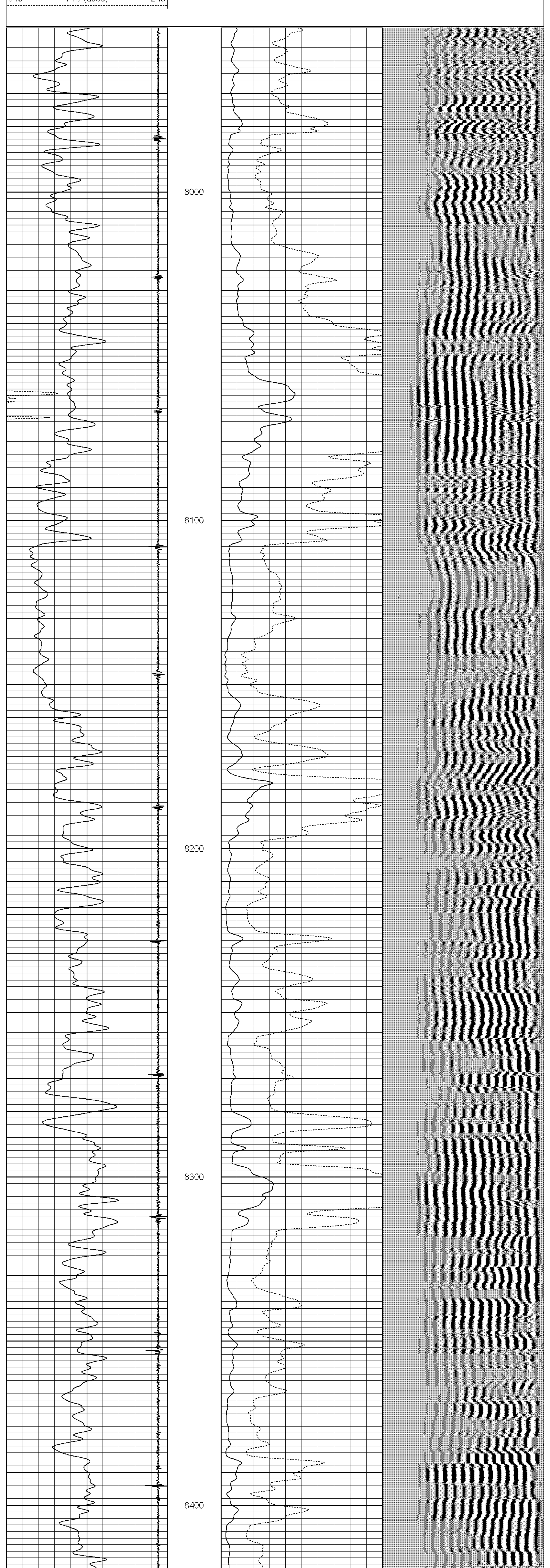


Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass5
Presentation Format: nuexbond
Dataset Creation: Fri Mar 26 08:53:26 2010 by Log Std Casedhole 09061
Charted by: Depth in Feet scaled 1:240

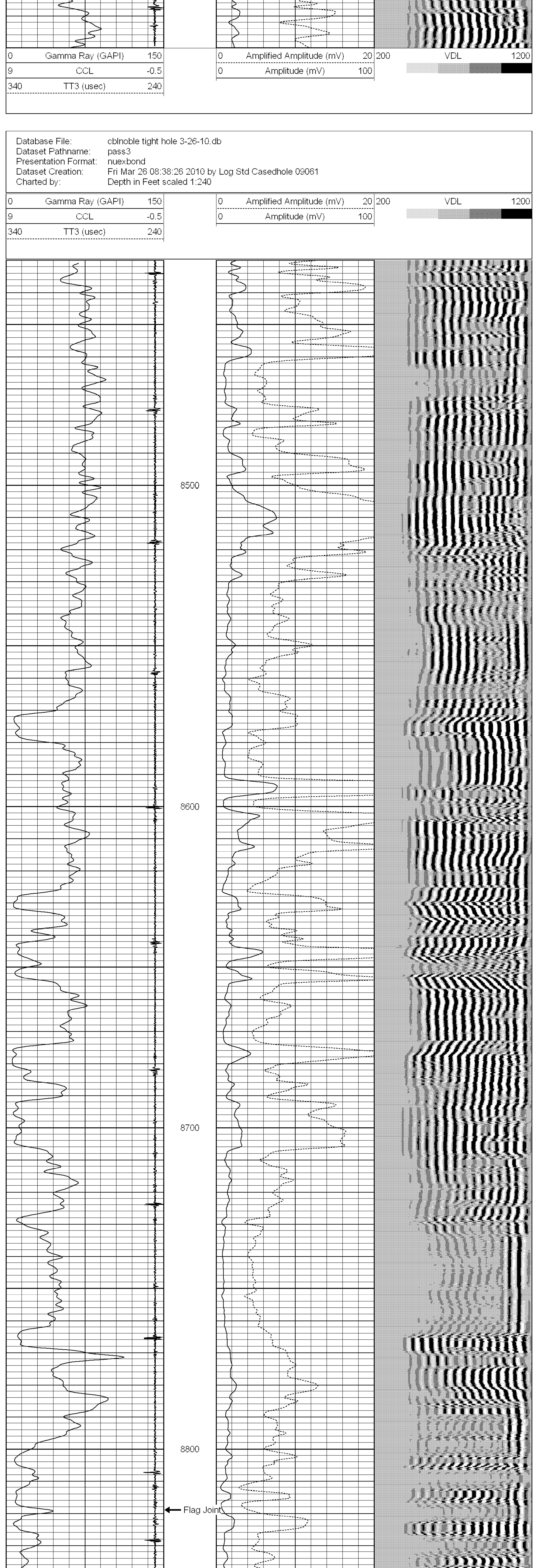


Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass4
Presentation Format: nuexbond
Dataset Creation: Fri Mar 26 08:46:24 2010 by Log Std Casedhole 09061
Charted by: Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 150
9 CCL -0.5
340 TT3 (usec) 240
0 Amplified Amplitude (mV) 20
0 Amplitude (mV) 100
200 VDL 1200



Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass3
Presentation Format: nuexbond
Dataset Creation: Fri Mar 26 08:38:26 2010 by Log Std Casedhole 09061
Charted by: Depth in Feet scaled 1:240



Calibration Report

Database File: cblnoble tight hole 3-26-10.db
Dataset Pathname: pass2
Dataset Creation: Fri Mar 26 08:09:40 2010 by Log Std Casedhole 09061

Gamma Ray Calibration Report

Serial Number:	234GR-328	
Tool Model:	TekcoGR	
Performed:	Thu Aug 02 12:04:45 2007	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.8000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	234B35C-8013	
Tool Model:	TEKCO	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	735.800	ft

Master Calibration, performed Fri Mar 26 08:09:03 2010:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.010	2.500	1.100	62.165	24.331	1.338
CAL	-0.011	1.877				
5'	-0.009	2.390	1.100	62.165	25.455	1.323
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						
S8						

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.011	1.877	1.000	0.000

Air Zero Calibration, performed Mon Nov 16 12:23:36 2009:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1			
S2			
S3			
S4			
S5			
S6			
S7			
S8			