J-W WIRELINE COMPANY

GAMMA RAY CCL
CEMENT BOND VDL

Company NOBLE ENERGY
Well HARRINGTON 15-11H5
Field WATTENBERG
County WELD
State COLO

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Well HARRINGTON 15-11H5
Field WATTENBERG
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Location: API # : 05-123-17992

1947' FSL & 2104' FWL

SEC 15 TWP 5N RGE 65W

Other Services

Permanent Datum Elevation
Log Measured From
Drilling Measured From

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

Date	DEC-14-2013		
Run Number	ONE		
Depth Driller			
Depth Logger	6500		
Bottom Logged Interval	6500	1100	
Top Log Interval	2500	100	
Open Hole Size	--------		
Type Fluid	WATER		
Density / Viscosity	--------		
Max. Recorded Temp.	--------		
Estimated Cement Top	100		
Time Well Ready	--------		
Time Logger on Bottom	--------		
Equipment Number	2833		
Location	STERLING,CO		
Recorded By	KYLE GIRDLER		
Witnessed By	KELLEY REINHARDT		

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String	3.5			
Production String				
Liner				

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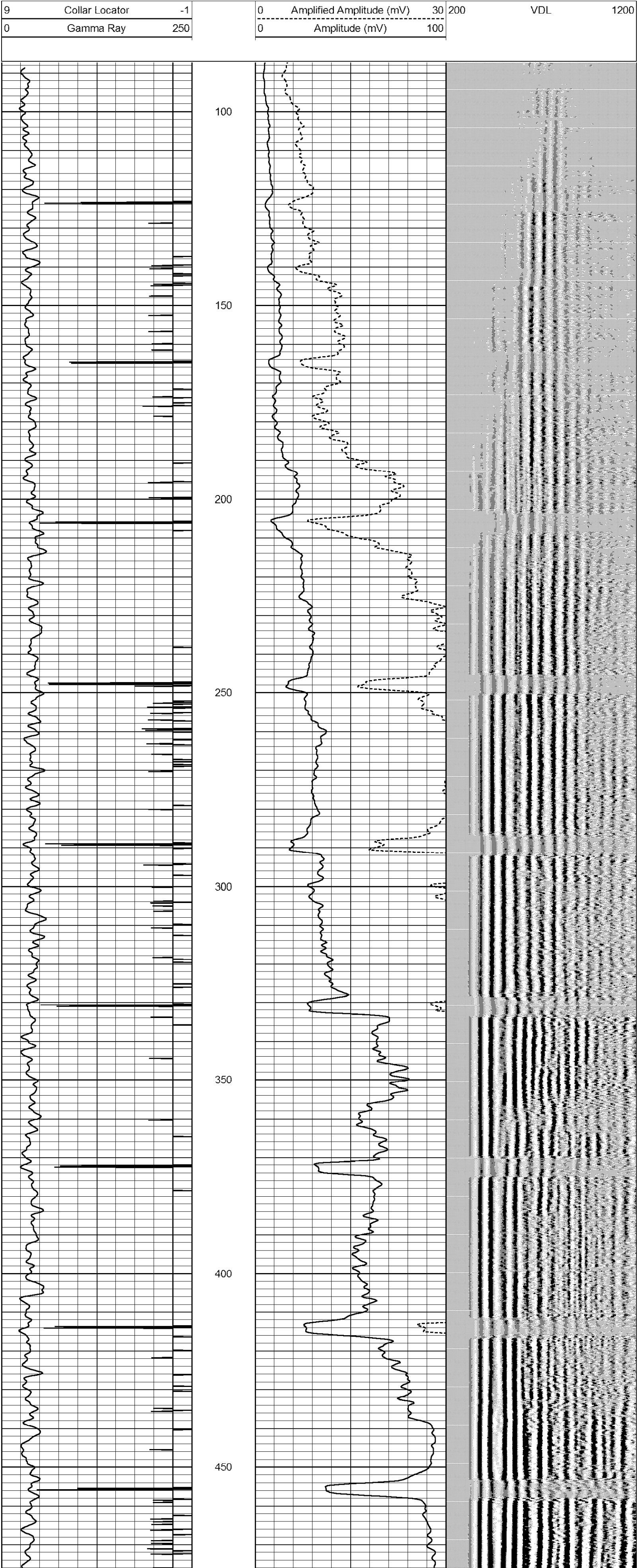
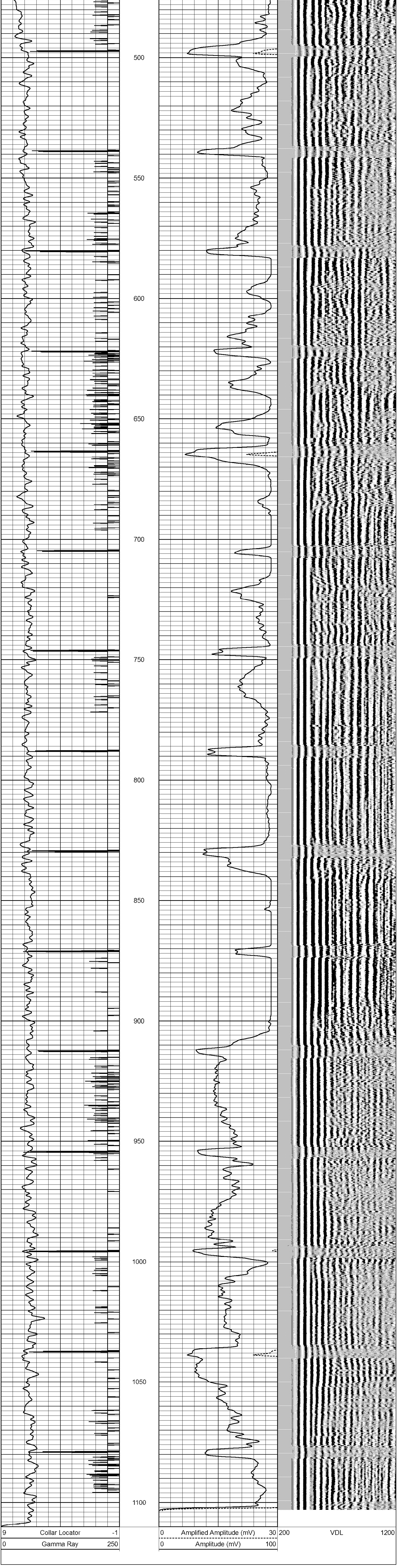
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

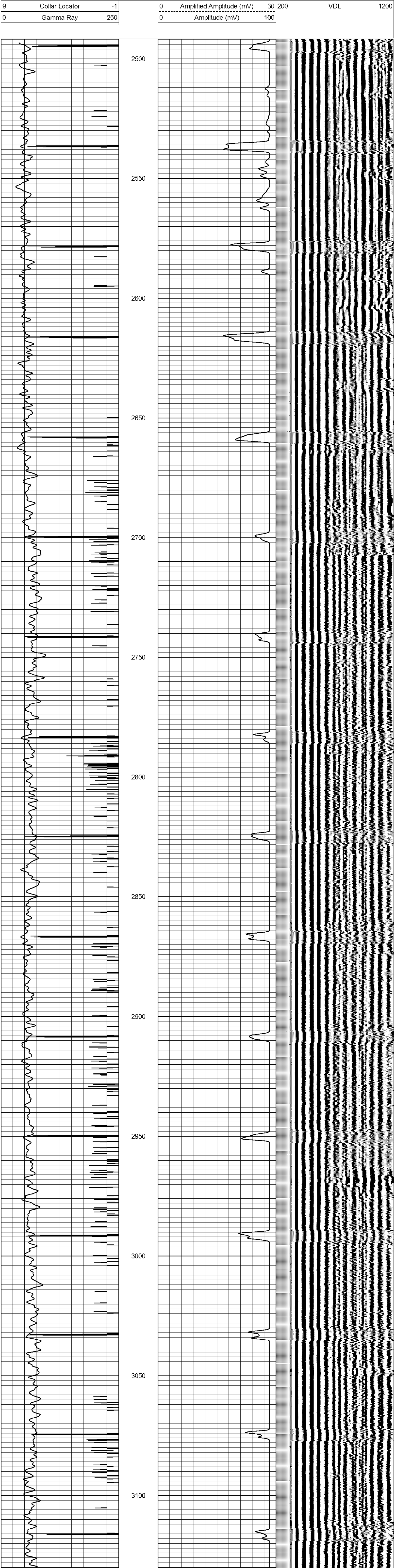
THANK YOU FORUSING J-W WIRELINE

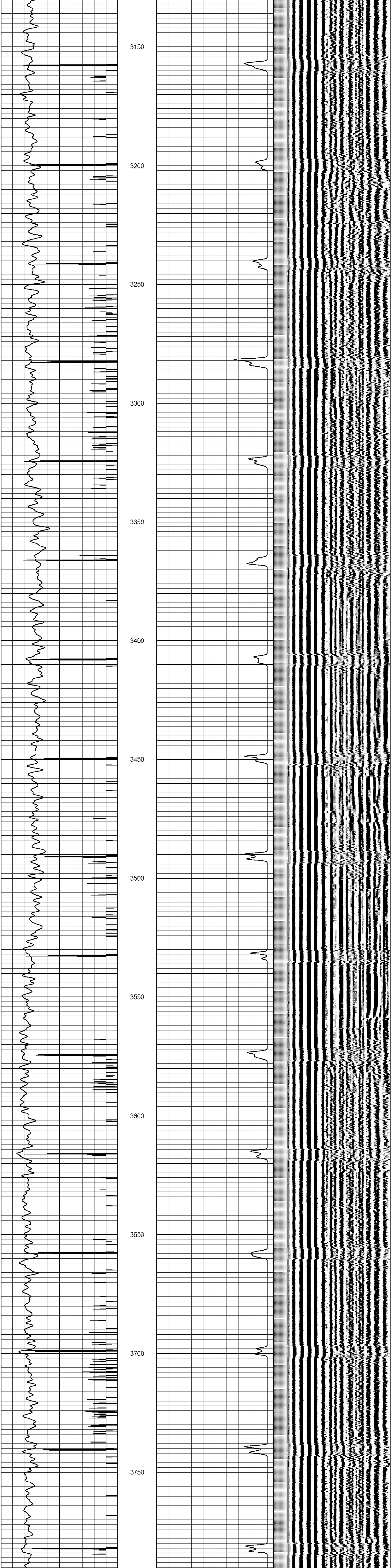
Database File: harrington log.db
Dataset Pathname: pass6
Presentation Format: scbl_dr
Dataset Creation: Sat Dec 14 10:21:30 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

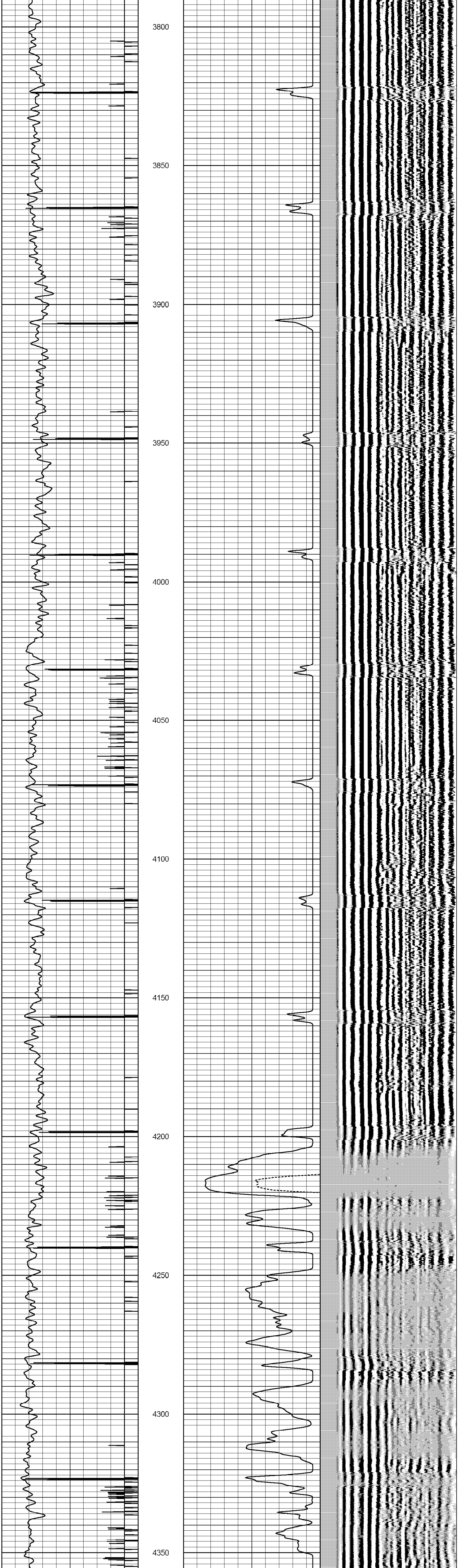


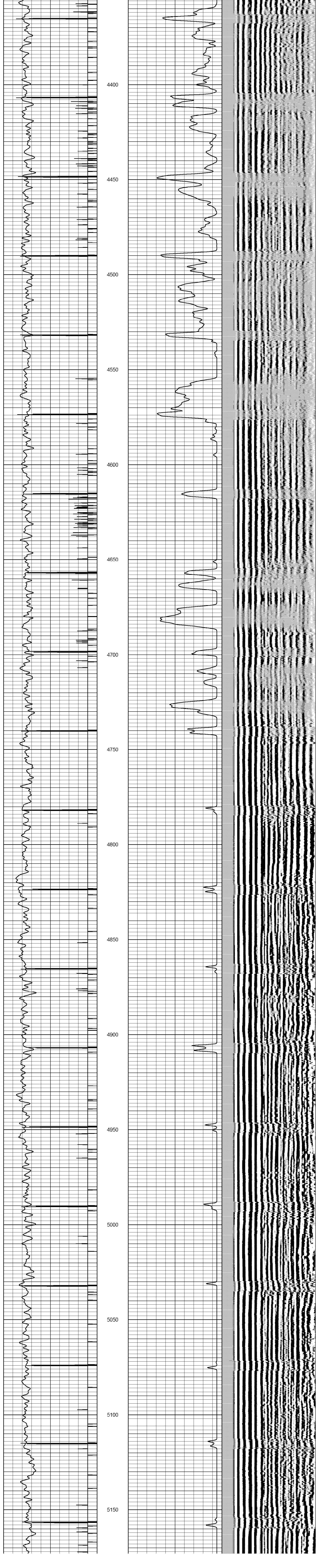


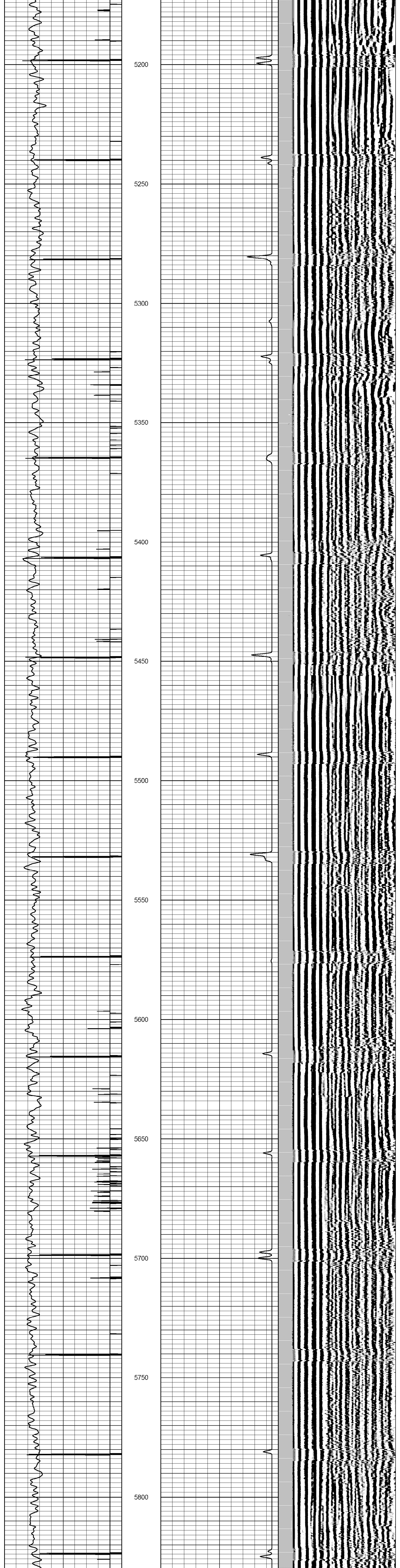
Database File:	harrington log.db
Dataset Pathname:	pass4
Presentation Format:	scbl_dr
Dataset Creation:	Sat Dec 14 09:22:06 2013 by Log SCH 111116
Charted by:	Depth in Feet scaled 1:240

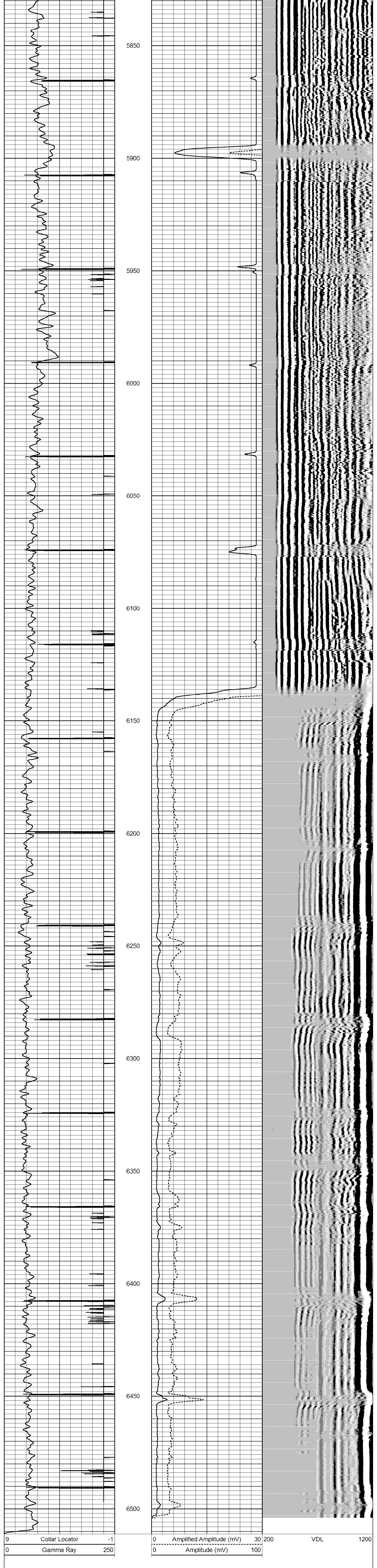












Calibration Report

Database File:	harrington log.db
Dataset Pathname:	pass4
Dataset Creation:	Sat Dec 14 09:22:06 2013 by Log SCH 111116

Gamma Ray Calibration Report

Serial Number:	168	
Tool Model:	Tek-Co	
Performed:	Sun Jun 13 14:33:21 1993	
Calibrator Value:	1.0	
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	1681	
Tool Model:	168	
Calibration Casing Diameter:	3.500	in
Calibration Depth:	1095.525	ft

Master Calibration, performed Sat Dec 14 08:54:17 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	2.497	1.000	94.517	37.512	0.847
CAL	0.005	2.500				
5'	0.004	0.590	1.000	94.517	159.493	0.393
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						
S8						

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.005	2.500	1.000	0.000

Air Zero Calibration, performed Sat Dec 14 08:43:11 2013:

	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			

Temperature Calibration Report

Serial Number:	1681	
Tool Model:	168	
Performed:	Wed Mar 10 09:15:15 2010	

	Reference	Reading
Low Reference:	0.00 degF	0.00 usec
High Reference:	1.00 degF	1.00 usec

Gain:	1.00
Offset:	-200.00
Delta Spacing	2