



Well Services
E-LINE

RADIAL CEMENT BOND
GAMMA RAY
CCL LOG

Company NOBLE ENERGY
Well LOCKMAN C14-30
Field WATTENBURG
County WELD State CO

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Well LOCKMAN C14-30
Field WATTENBURG
County WELD
State CO

Location: API # : 05-123-30892
SE/SE
LAT. 40.32065096 LONG. -104.52809326
SEC 10 TWP 4N RGE 64W
Permanent Datum GL
Log Measured From K.B. OF 13'
Drilling Measured From KELLY BUSHING
Elevation 4,636'
Other Services
K.B. 4,649'
D.F. 4,648'
G.L. 4,636'

Date 7/11/2019

Run Number ONE
Depth Driller 6.963'
Depth Logger 1.655'
Bottom Logged Interval 1.645'
Top Log Interval SURFACE
Open Hole Size 7 7/8"
Type Fluid WATER
Density / Viscosity 1.0
Max. Recorded Temp. 95° DEG.
Estimated Cement Top 1.586'
Time Well Ready ON ARRIVAL
Time Logger on Bottom N/A
Equipment Number 3812
Location GREELEY, CO
Recorded By C.FORNENGO
Witnessed By C.JONES

Borehole Record
Run Number Bit From To Size Weight From To

Casing Record
Surface String 8 5/8" 24 # Wgt/Ft Top Bottom
Prot. String SURFACE 673'
Production String 4.5" 11.6# SURFACE 6,945'
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.

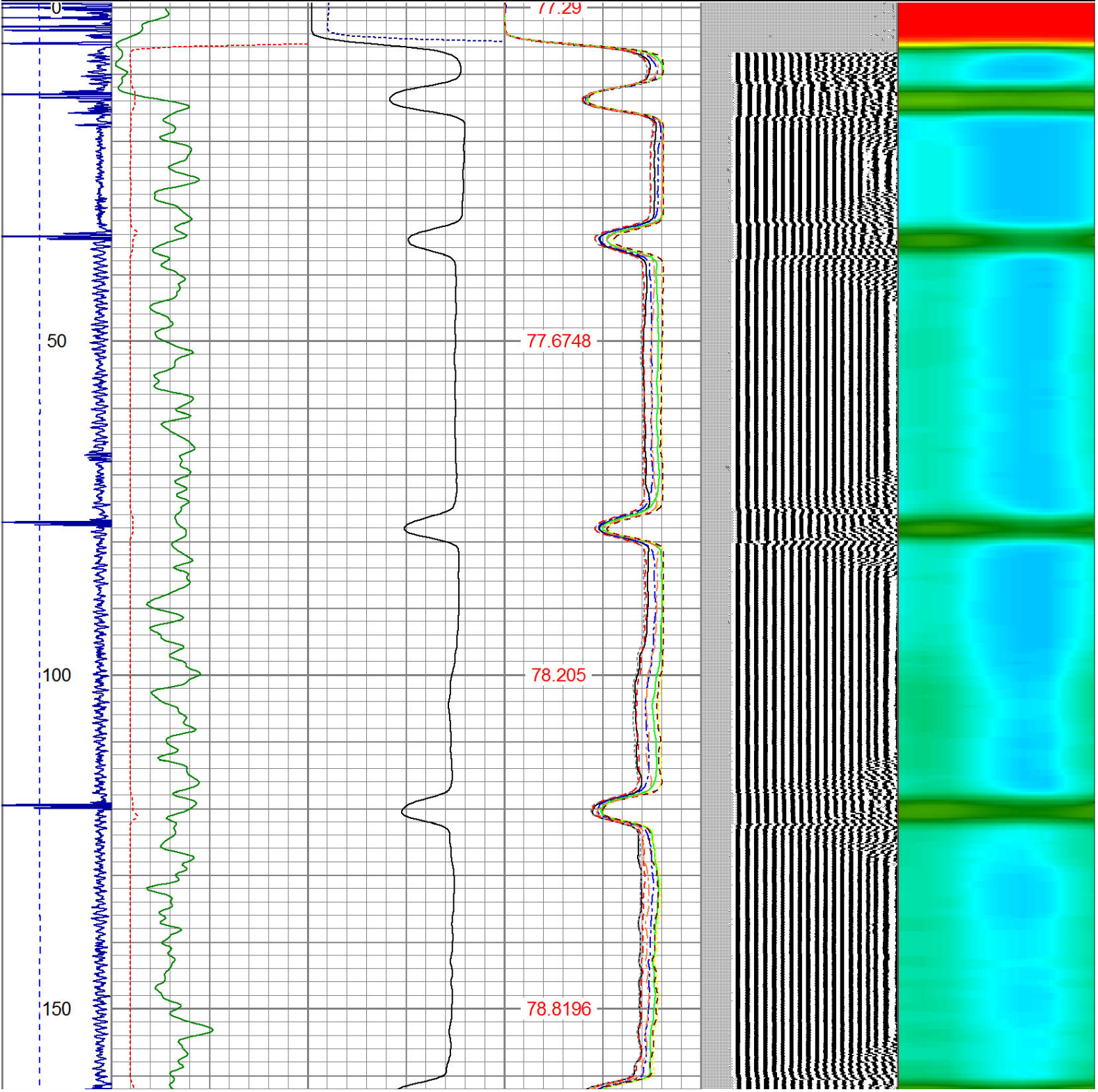
Comments

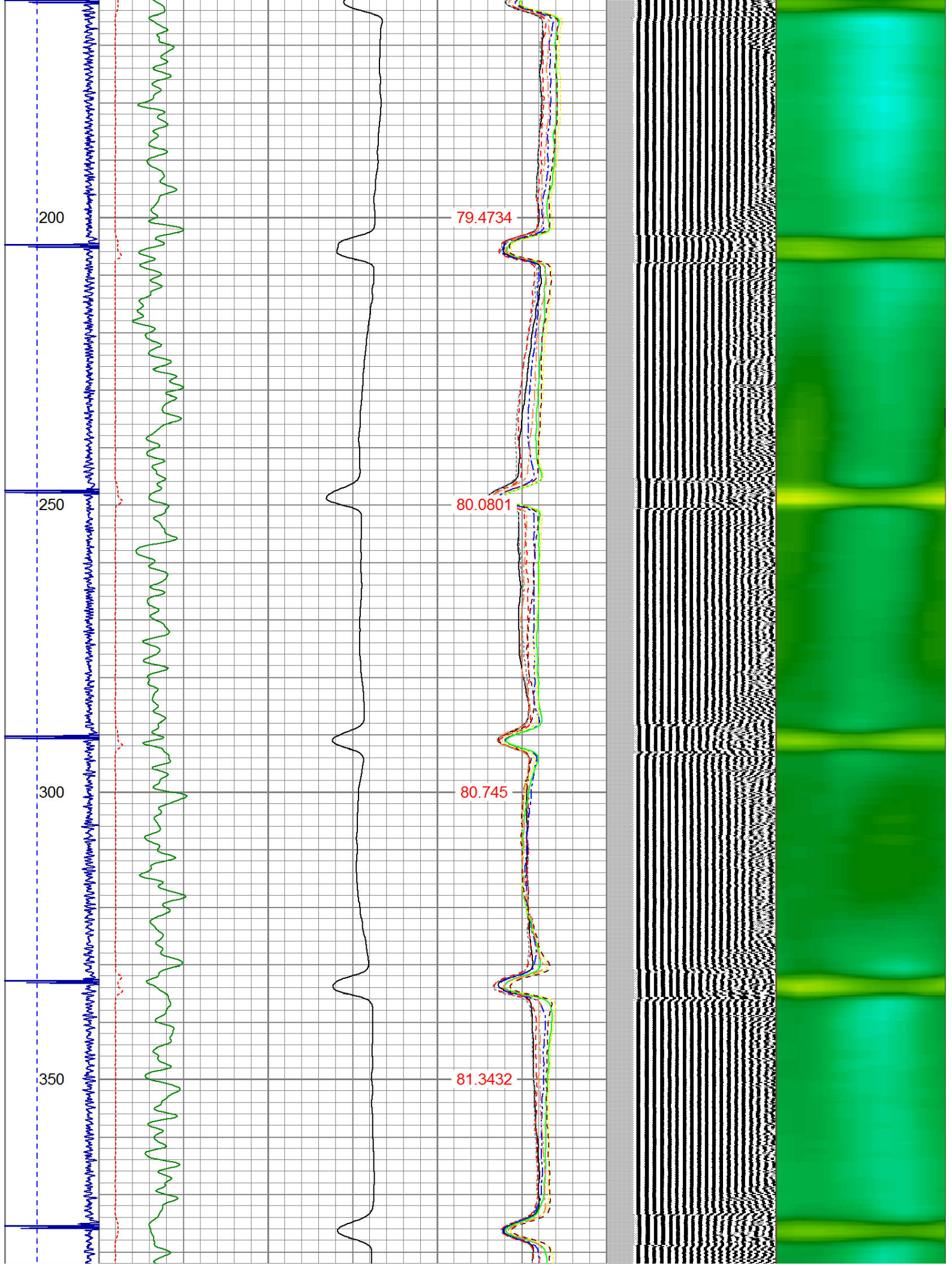
RAN CBL TO VERIFY CEMENT COVERAGE
LOG RAN OFF KB OF 13'

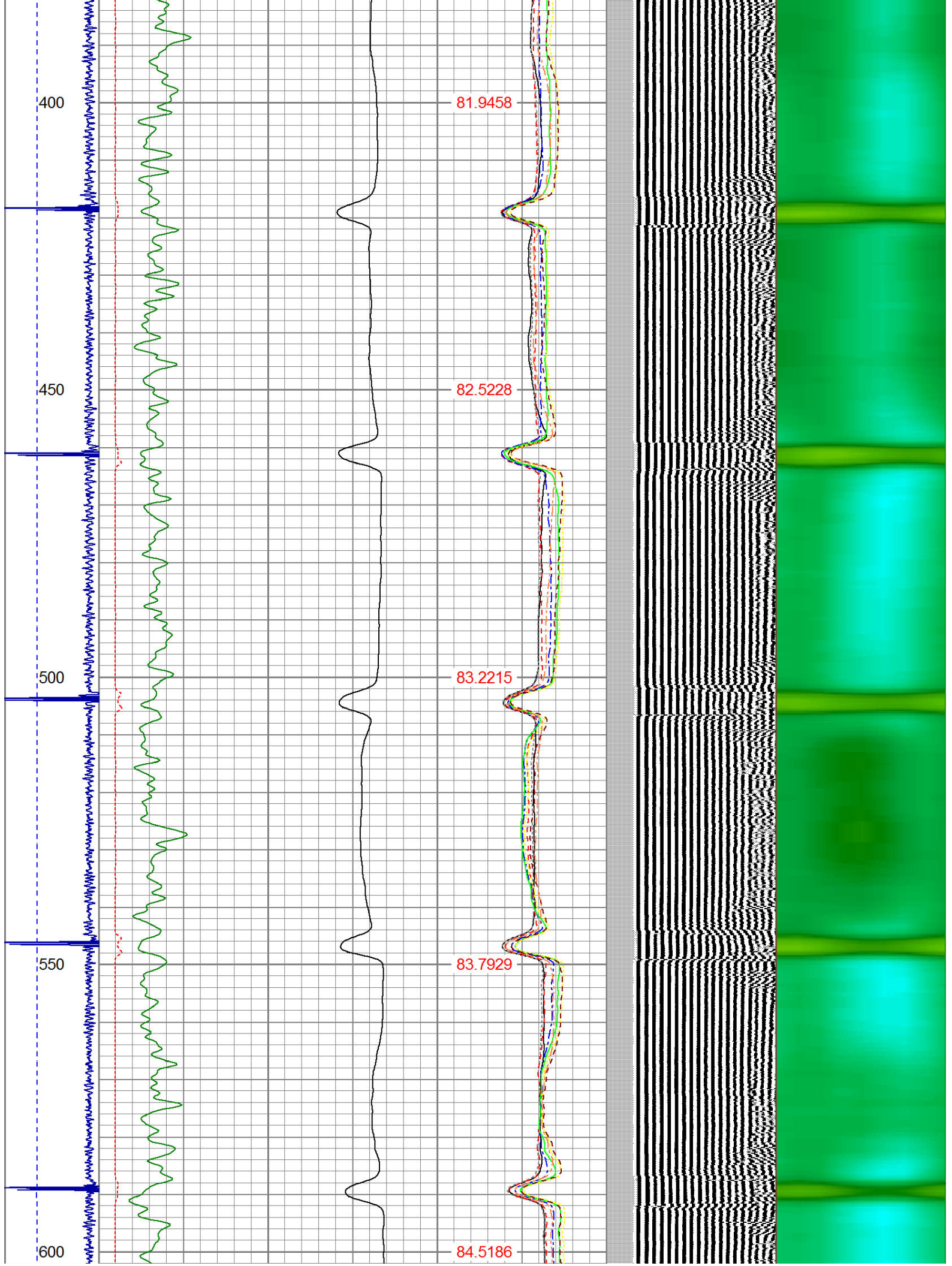
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HEAD/COIL	15.13		1_4	1.00	1.36	5.00

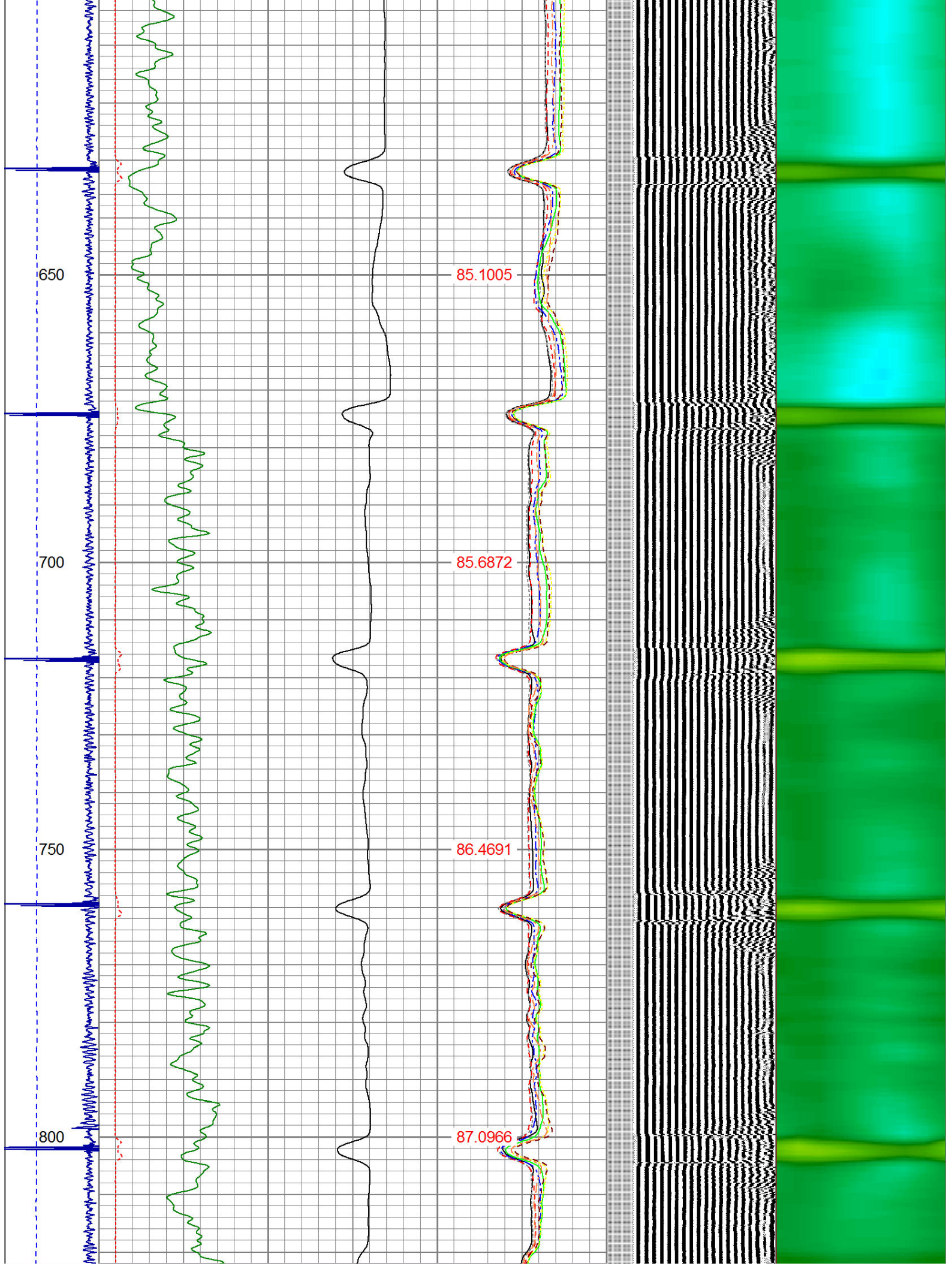
Tool Joint	Depth (ft)	Tool Joint	Weight (lb)	Length (ft)	Diameter (in)
HEADVOLT	10.15				
IntTemp	14.71				
WVFS3FT	11.46	RBT-Probe (Base) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
WVFCAL	11.46				
WVFS1	11.46				
WVFS2	11.46				
WVFS3	11.46				
WVFS4	11.46				
WVFS5	11.46				
WVFS6	11.46				
WVFS7	11.46				
WVFS8	11.46				
WVF5FT	10.46				
CNLSC	6.00	CNT-Probe_B (275) Bow centralizer	2.88	2.75	40.00
CNSSC	5.17				
CCL	3.64				
GR	0.90	GR-Probe (275) Probe 2.75"	4.33	2.75	30.00
Dataset: lockman c14-30.db: field/well/run1/pass2 Total Length: 17.13 ft Total Weight: 165.00 lb O.D. 2.75 in					

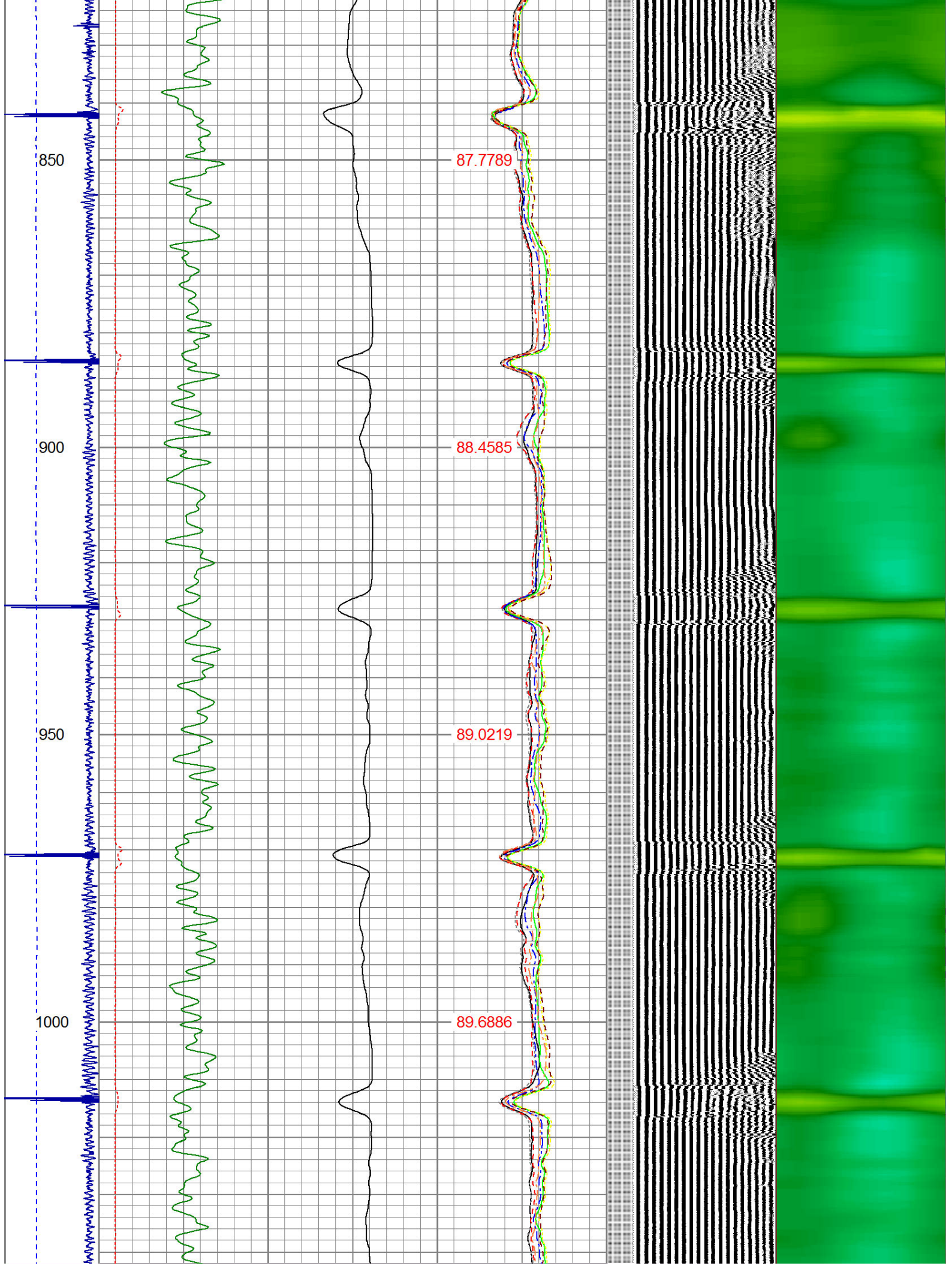
Dataset Creation:		Thu Jul 11 13:19:48 2019 by Log SCH 120126																				
Charted by:		Depth in Feet scaled 1:240																				
-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8					
LSPD (ft/min)	0		0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPS2	100			1								
	200		200	GR (GAPI)	400				0	AMPS3	100											
0	250								0	AMPS4	100											
										0	AMPS5	100										
										0	AMPS6	100										
										0	AMPS7	100										
										0	AMPS8	100										
										IntTemp												
										(degF)												

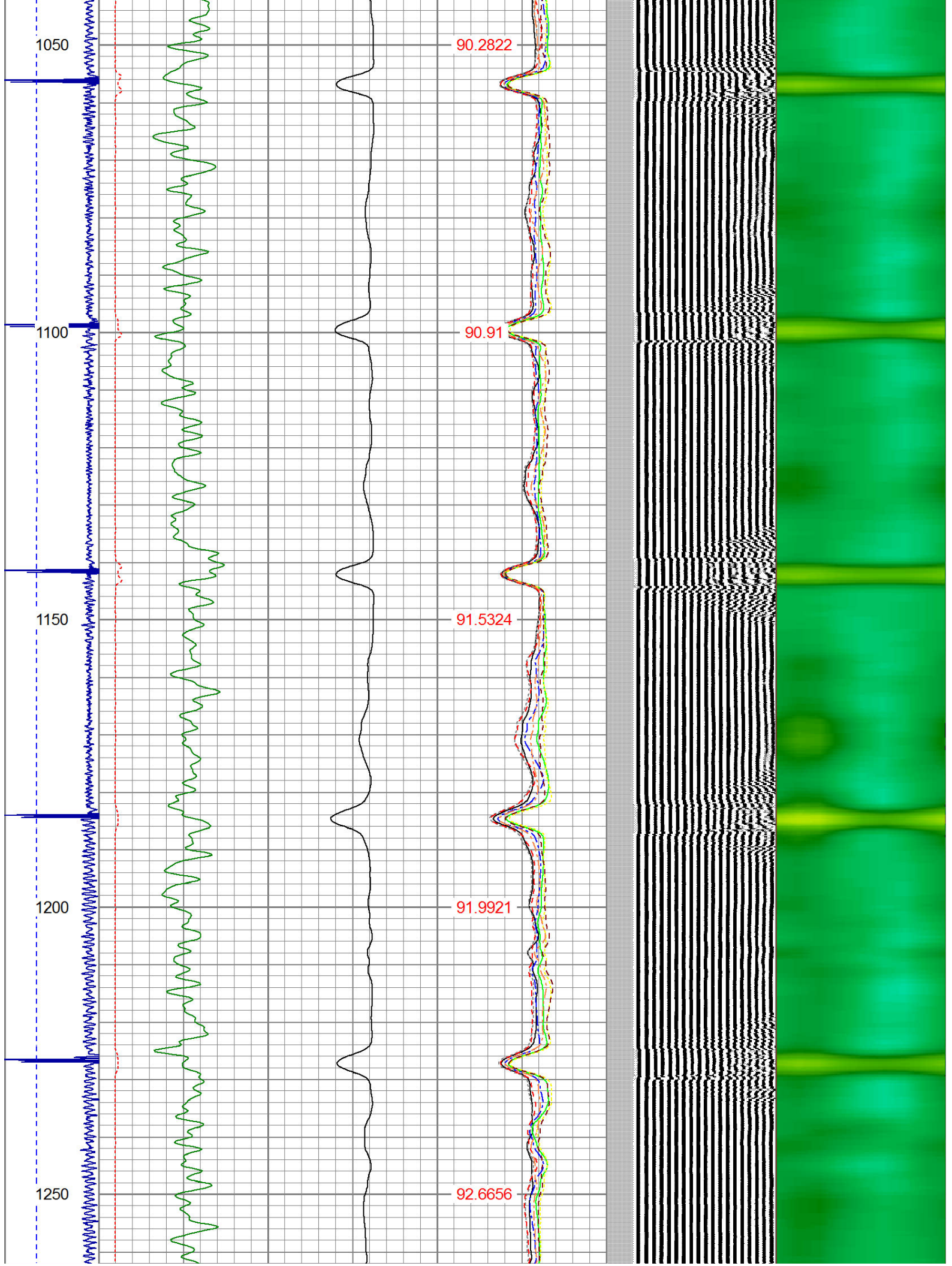


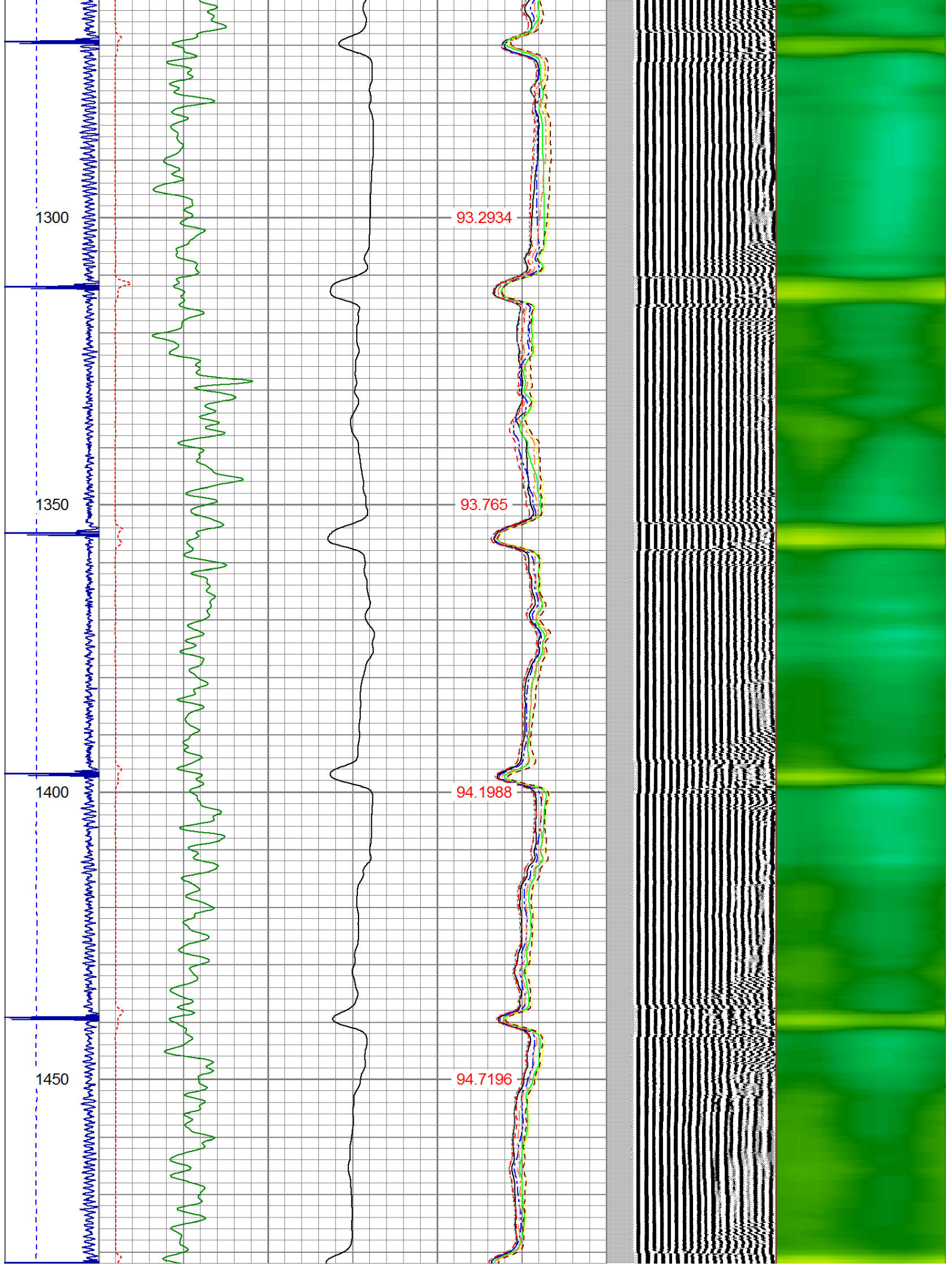


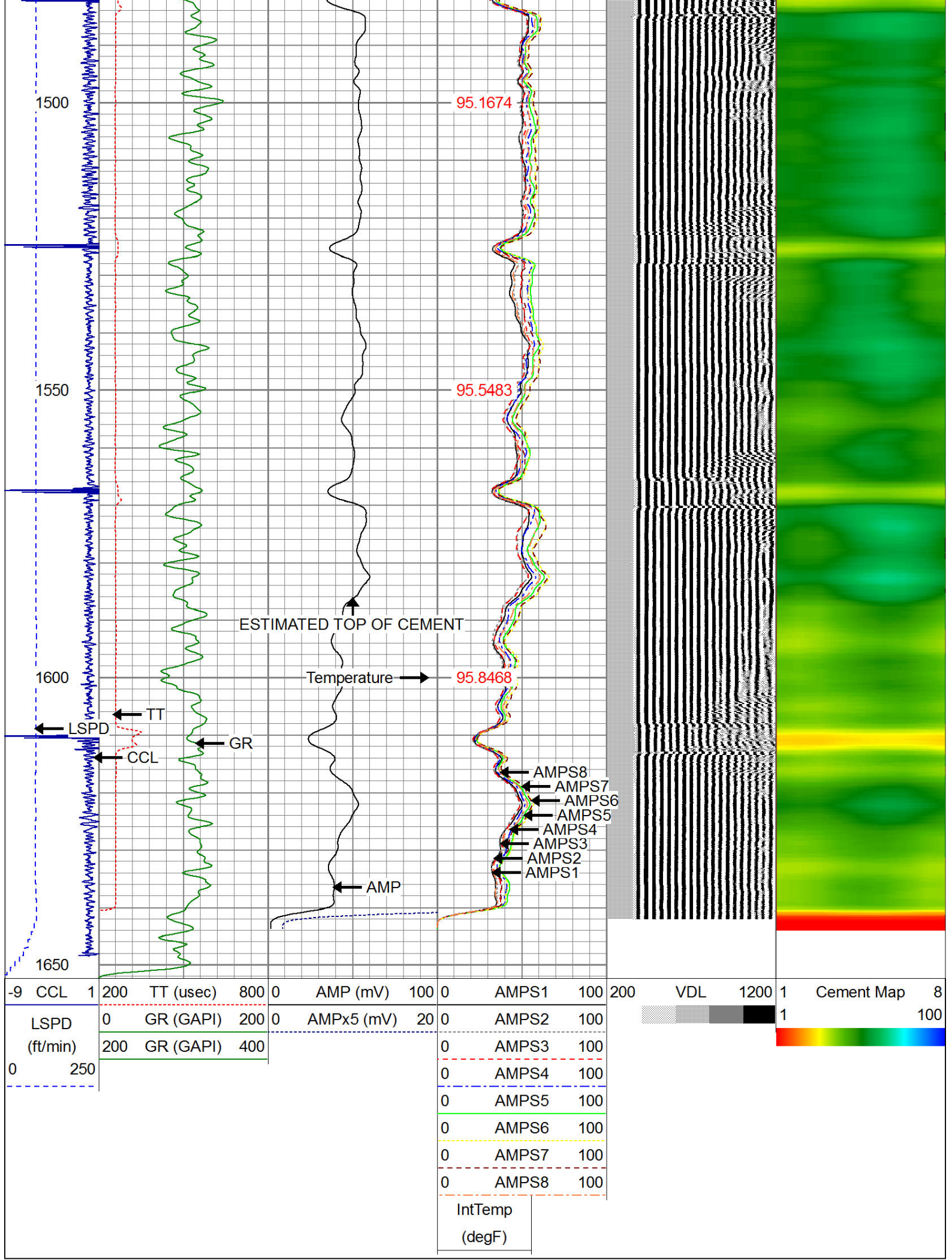












Gamma Ray Calibration Report			
Serial Number:	275		
Tool Model:	Probe		
Performed:	Tue Sep 23 07:13:12 2014		
Calibrator Value:	100.0	GAPI	
Background Reading:	35.0	cps	
Calibrator Reading:	160.0	cps	
Sensitivity:	1.0000	GAPI/cps	

Compensated Neutron Calibration Report			
Serial Number:	275		
Tool Model:	Probe_B		

CALIBRATION		Wed Jul 30 08:47:19 2008			
	Detector	Readings		Target	Normalization
	Short Space	5001.20	cps	0.00	cps
	Long Space	1029.31	cps	0.00	cps
					1.0000
					1.0000

PRE-SURVEY VERIFICATION					
	Detector	Readings		Measured	Target
1)	Short Space		cps		
	Long Space		cps	pu	pu
2)	Short Space		cps		
	Long Space		cps	pu	
3)	Short Space		cps		
	Long Space		cps	pu	

POST-SURVEY VERIFICATION					
	Detector	Readings		Measured	Target
1)	Short Space		cps		
	Long Space		cps	pu	pu
2)	Short Space		cps		
	Long Space		cps	pu	pu
3)	Short Space		cps		
	Long Space		cps	pu	pu

Segmented Cement Bond Log Calibration Report			
Serial Number:	Base		
Tool Model:	Probe		
Calibration Casing Diameter:	4.500	in	
Calibration Depth:	204.373	ft	

	Raw (v)		Calibrated (mV)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	2.500	2.000	81.196	31.731	1.869
CAL	0.004	2.500				
5'	0.004	2.500	2.000	81.196	31.725	1.884
SUM						
S1	0.004	2.500	0.500	81.196	32.324	0.386
S2	0.004	2.500	0.500	81.196	32.330	0.372
S3	0.004	2.500	0.500	81.196	32.326	0.380
S4	0.004	2.500	0.500	81.196	32.330	0.371
S5	0.004	2.500	0.500	81.196	32.327	0.379
S6	0.004	2.500	0.500	81.196	32.326	0.380
S7	0.004	2.500	0.500	81.196	32.329	0.373
S8	0.004	2.500	0.500	81.196	32.326	0.381

Internal Reference Calibration, performed Tue Jun 05 07:53:42 2012:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	2.500	1.000	0.000

Air Zero Calibration, performed Thu Jul 11 12:56:55 2019:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.007		0.000		-0.003	
5'	0.011		0.000		-0.007	
SUM						
S1	0.010		0.000		-0.007	
S2	0.009		0.000		-0.005	
S3	0.009		0.000		-0.005	
S4	0.007		0.000		-0.003	
S5	0.007		0.000		-0.004	
S6	0.007		0.000		-0.004	
S7	0.007		0.000		-0.003	
S8	0.009		0.000		-0.005	



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