RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company TEP Rocky Mountain LLC
Well Federal RWF 522-8
Field Rulison
County Garfield
State Colorado

Company	TEP Rocky Mountain LLC	
Well	Federal RWF 522-8	
Field	Rulison	
County	Garfield	State Colorado
Location:	API # : 05-045-24321	Other Services ---
SEC 8 TWP 6S RGE 94W		
Permanent Datum	Ground Level	Elevation 5979.6'
Log Measured From	Kelly Bushing 24 FT	Elevation K.B. 6003.6' D.F. 6002.6' G.L. 5979.6'
Drilling Measured From	Kelly Bushing	

Date	09-DEC-2020		
Run Number	One		
Depth Driller	9467 FT		
Depth Logger	9413 FT		
Bottom Logged Interval	9401 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	251°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	14:16		
Equipment Number	HD-0331		
Location	Grand Junction, CO		
Recorded By	A. Ellsworth		
Witnessed By	---		

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

Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	36	J-55	Surface	1040 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9425 FT
Intermediate #2					
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

Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged from 5704 - 5726 FT
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

RELIANCE OILFIELD SERVICES

Main Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal rwf 522-8_rbl_12-09-20\tep_federal rwf 522-8_rbl_12-09-20.db
Dataset Pathname	main.1
Presentation Format	ros_radii_tep
Dataset Creation	Fri Dec 11 10:42:59 2020
Charted by	Depth in Feet scaled 1:240

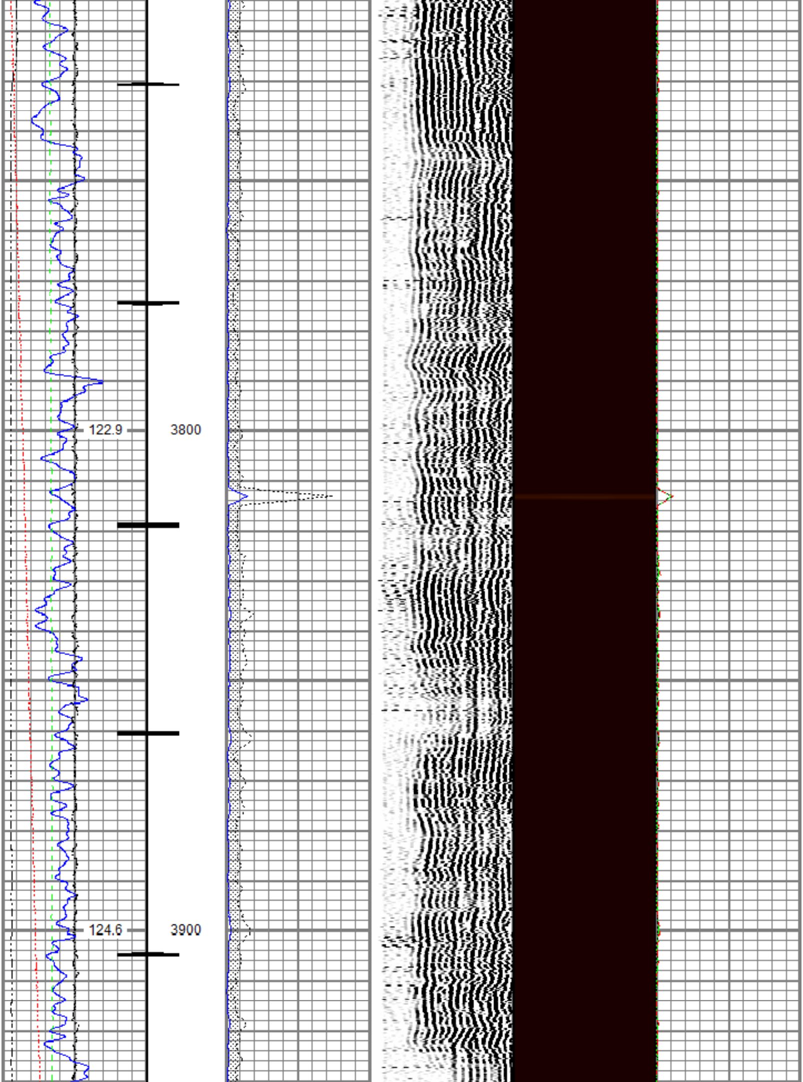
Gamma Ray
0 (GAPI) 200
Casing Collar Locator
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

5' Variable Density Log
200 (usec) 1200

Sector Map

Average Amplitude
0 150
MimimumAmplitude
0 150
MaximumAmplitude
0 150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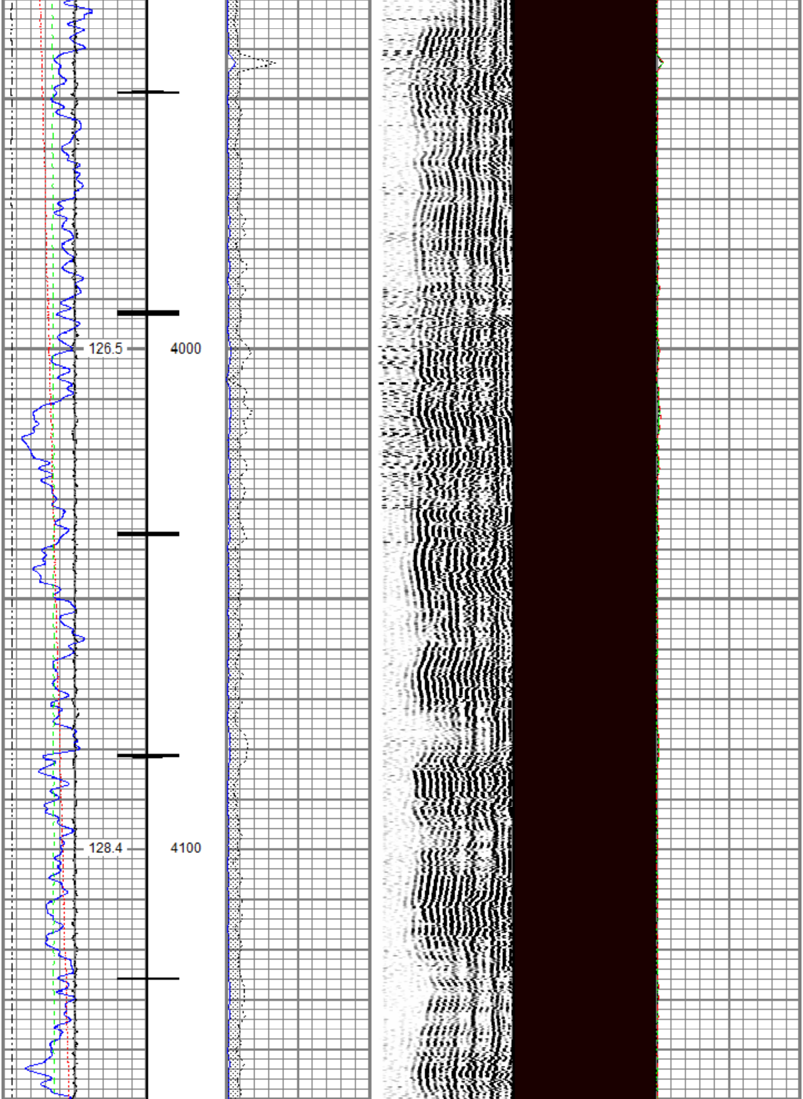
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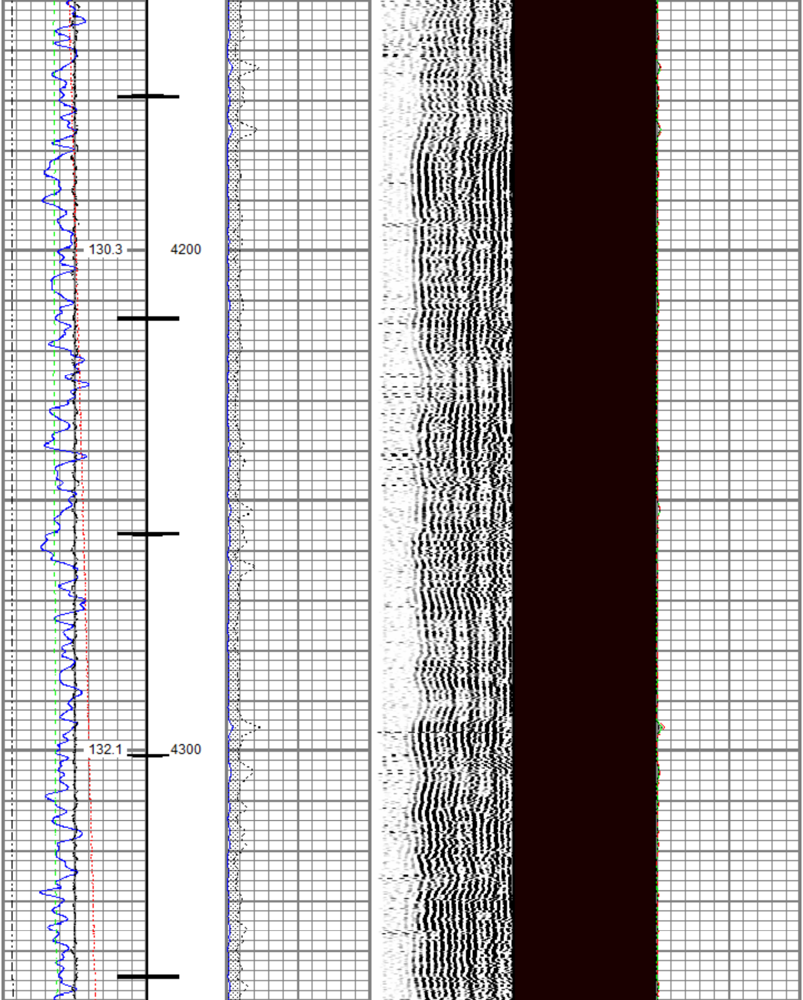
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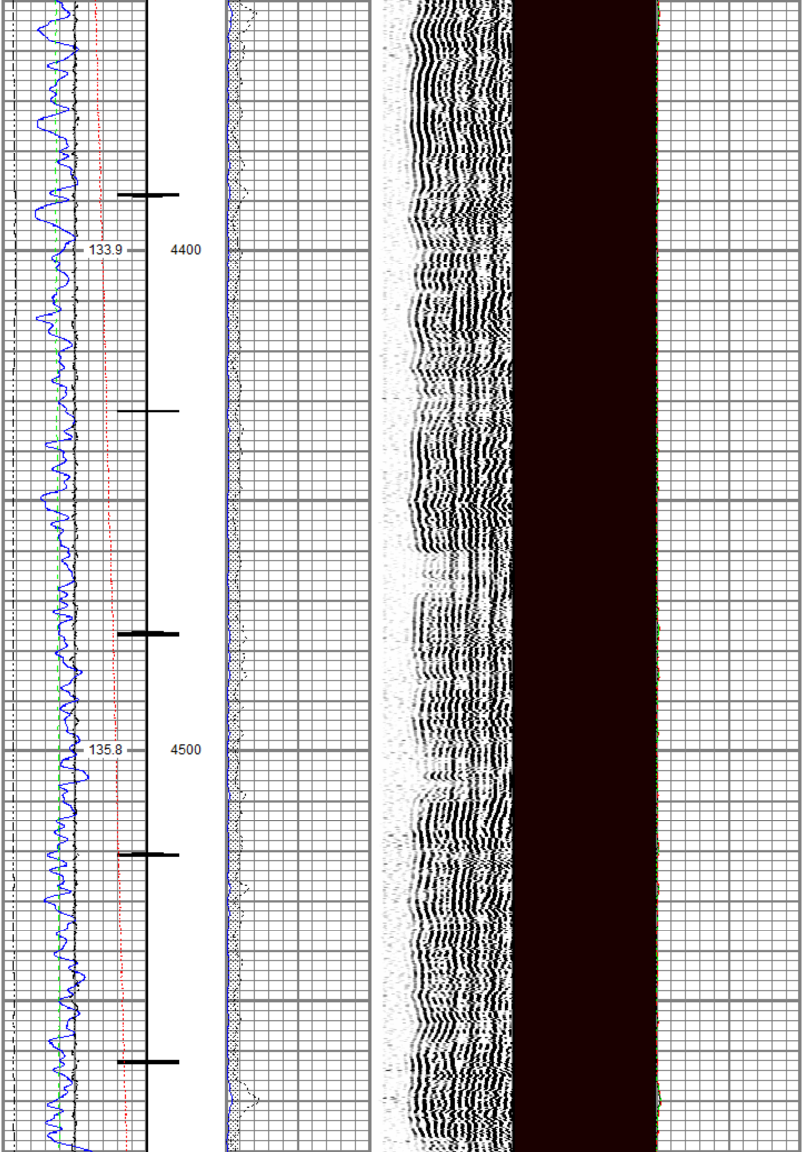
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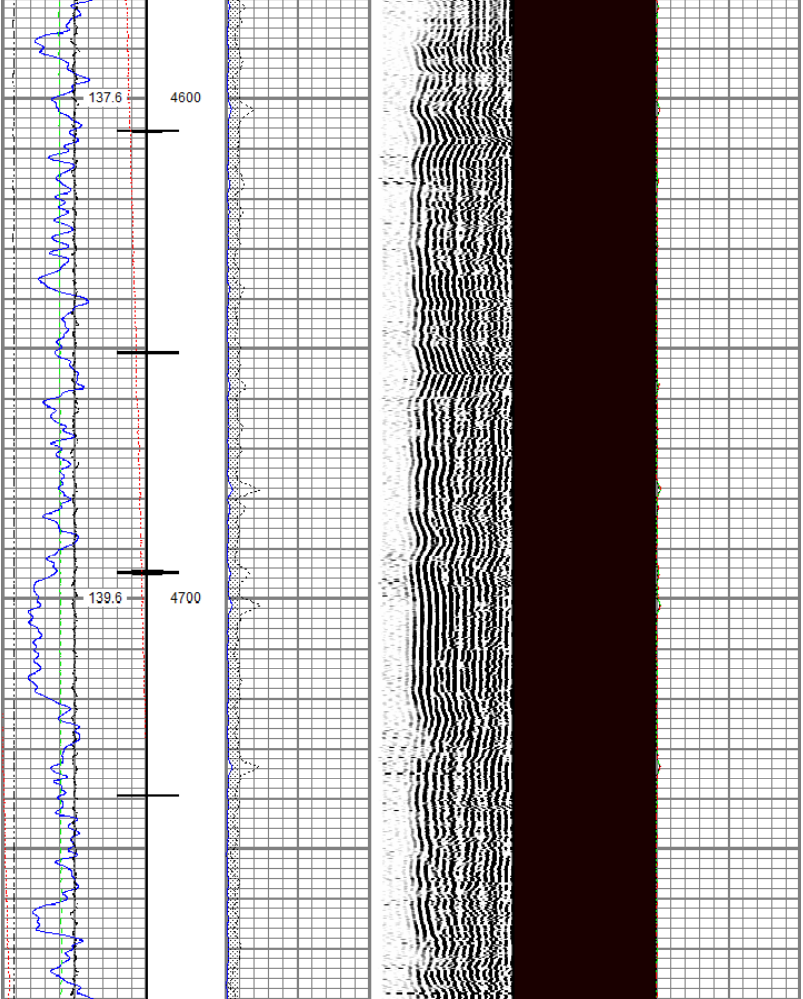
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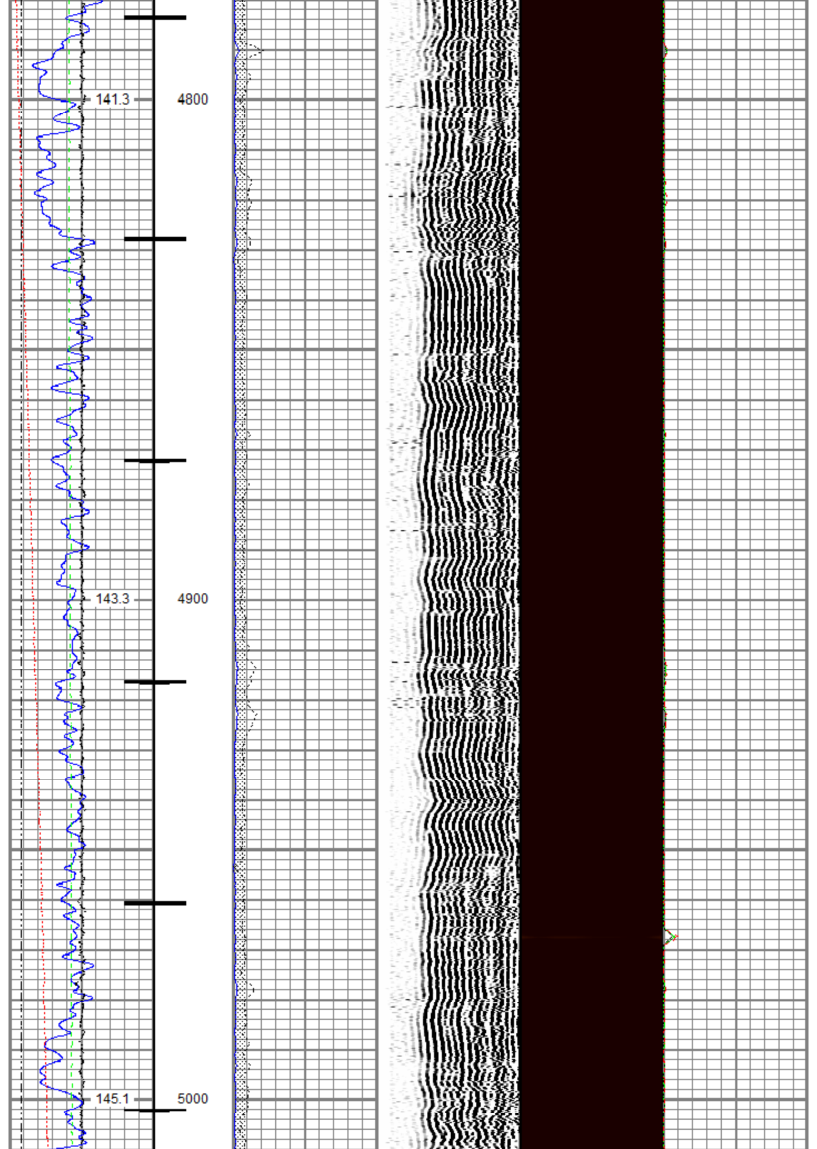

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143.3
4900
145.1
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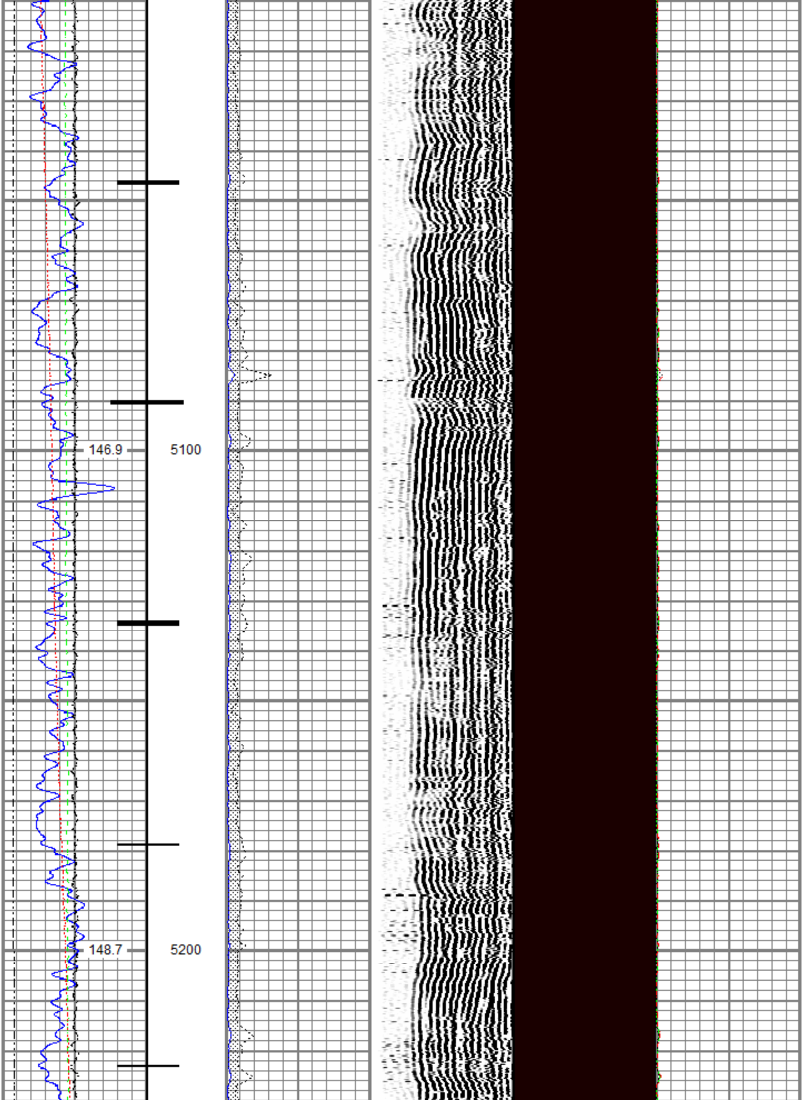
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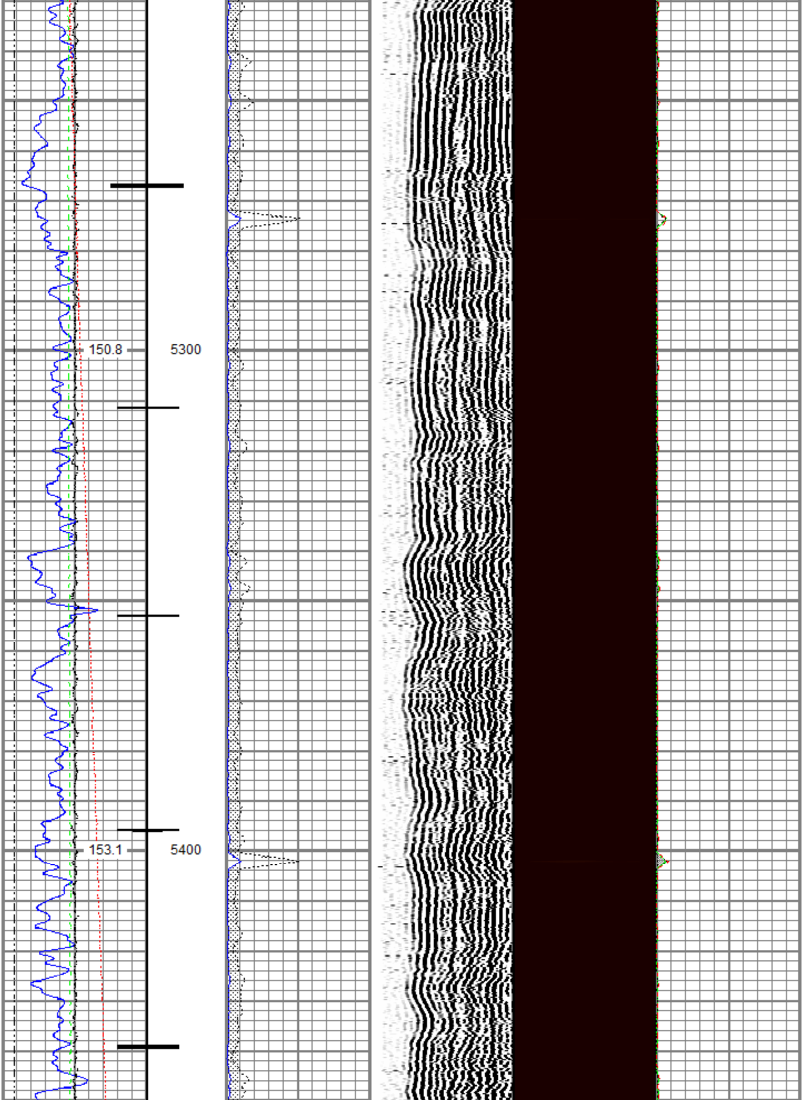
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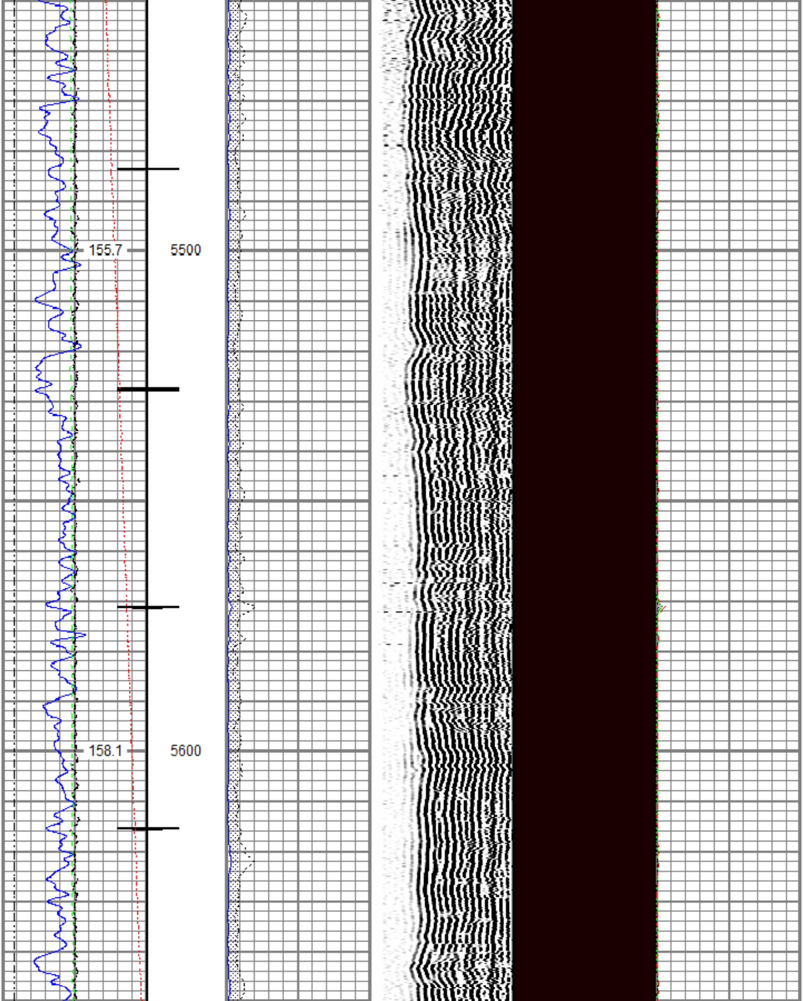
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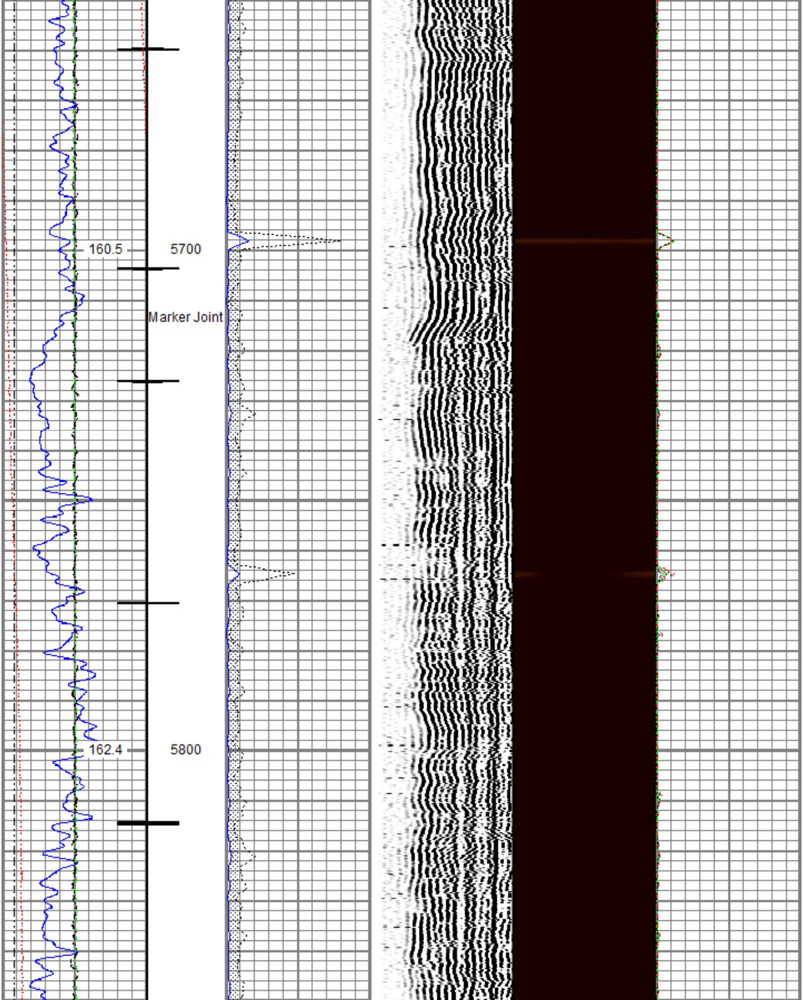
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Marker Joint
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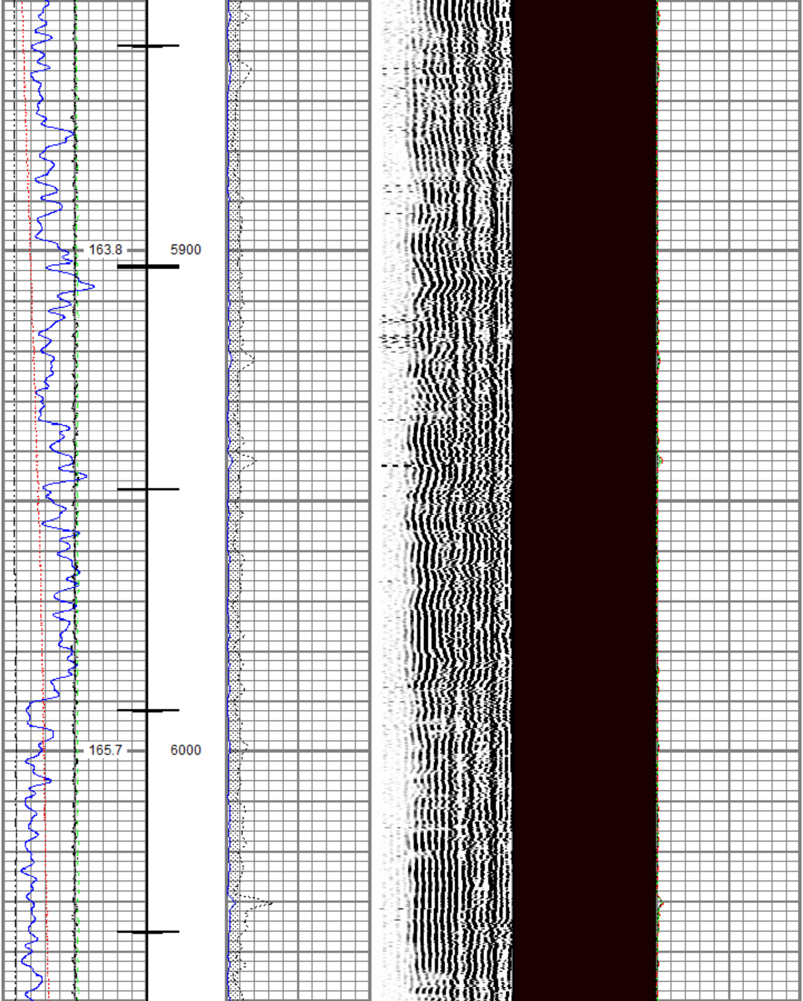
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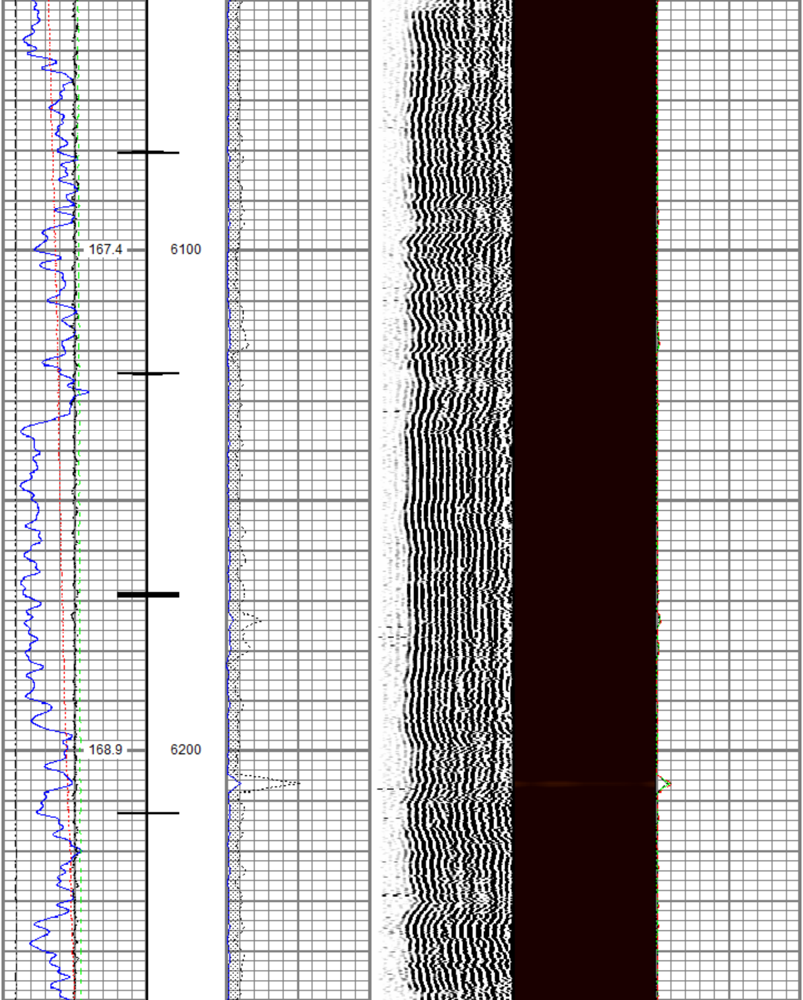
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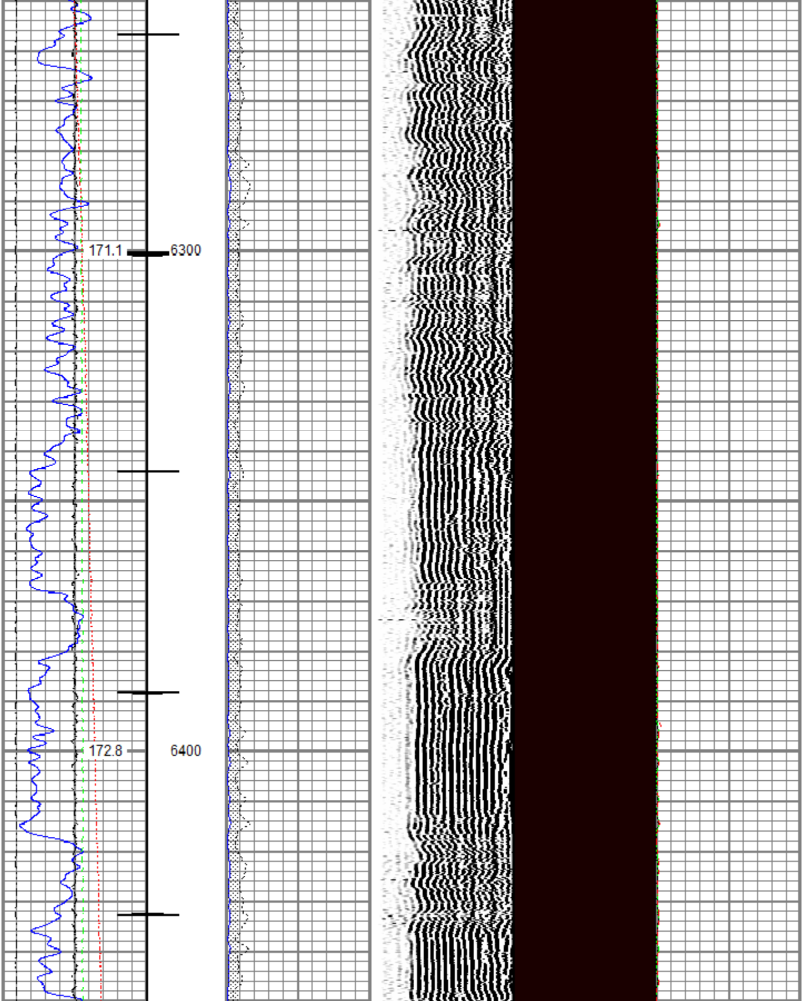
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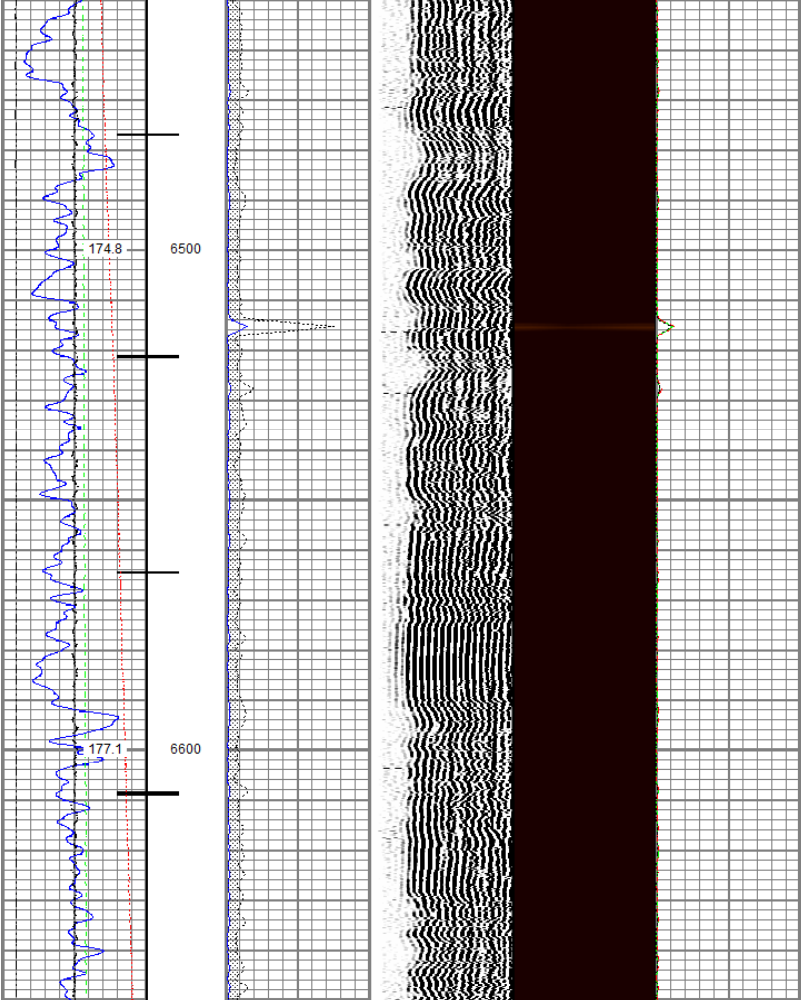
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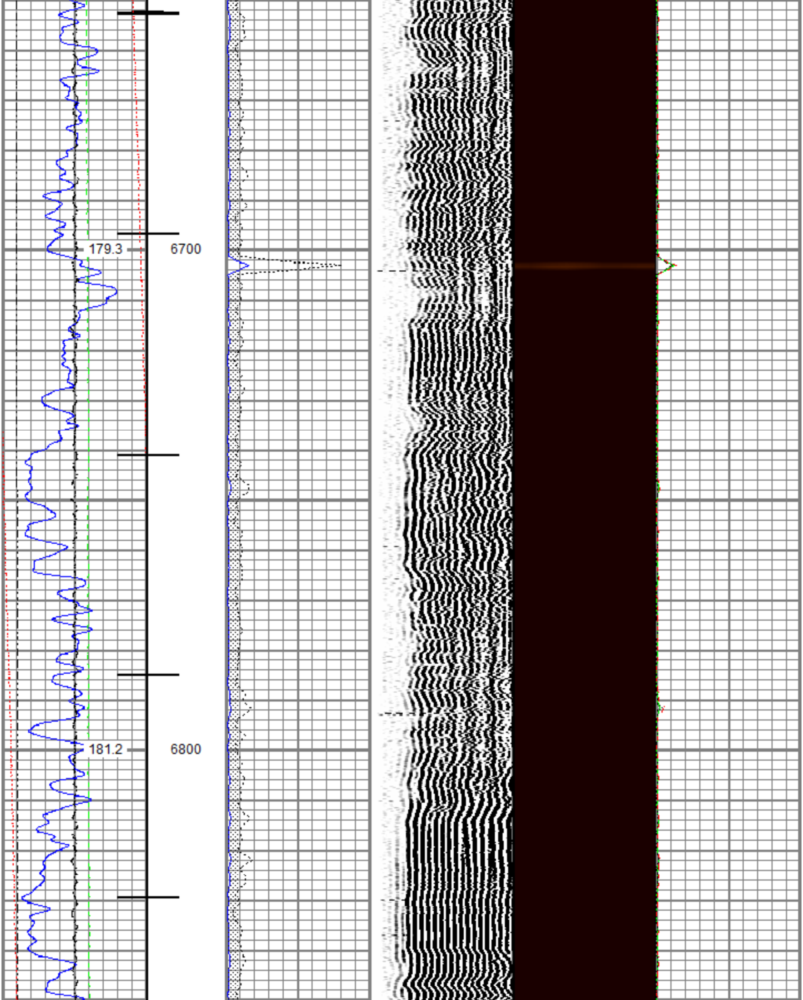
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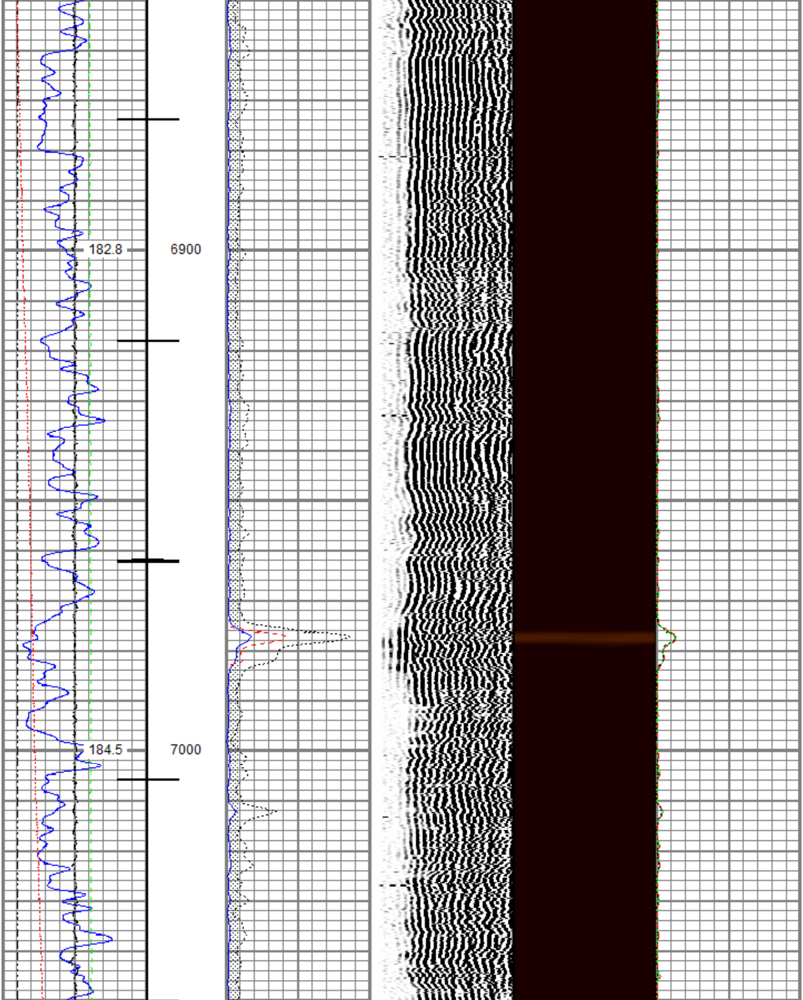
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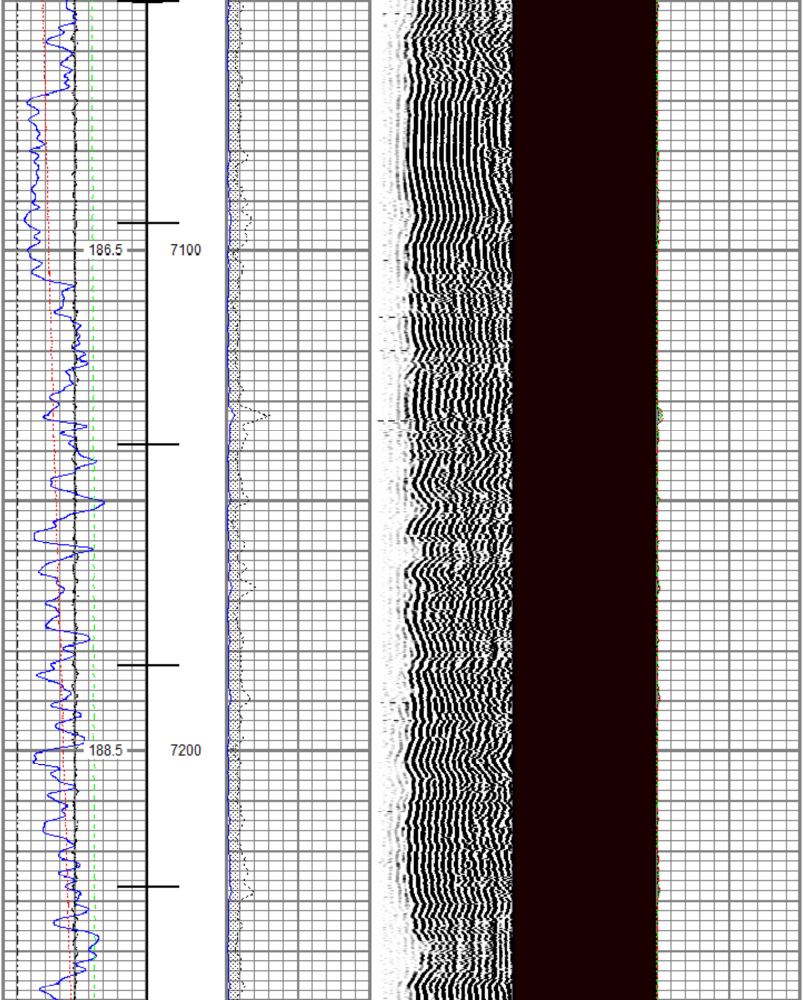
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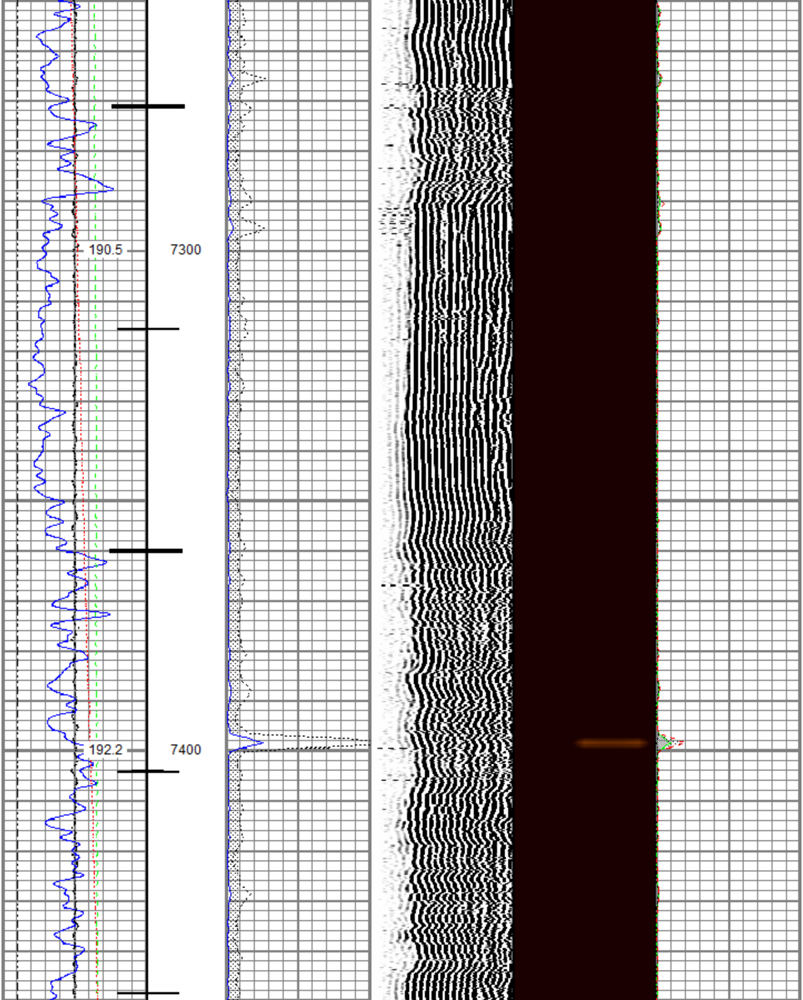
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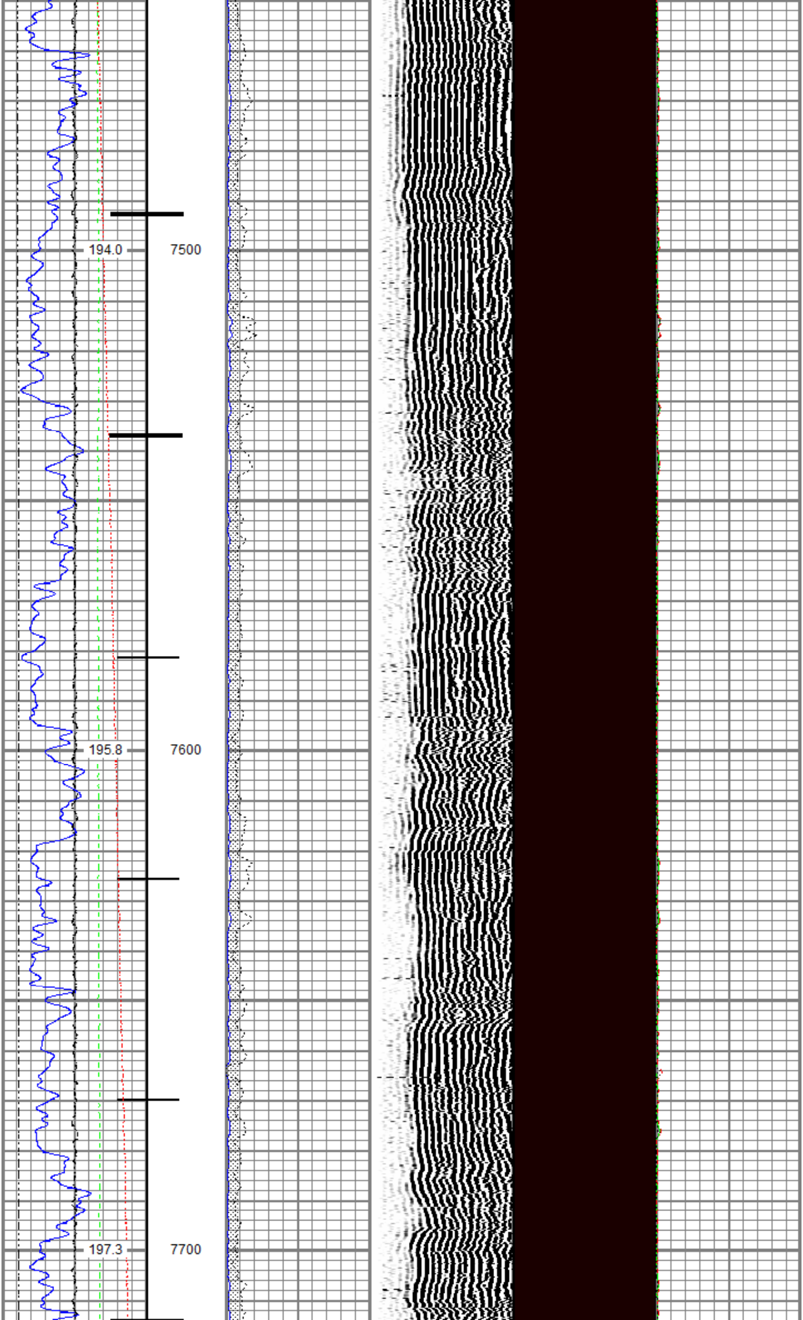
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7500
195.8
7600
197.3
7700

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 150
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	300 (usec) 200			0 150
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

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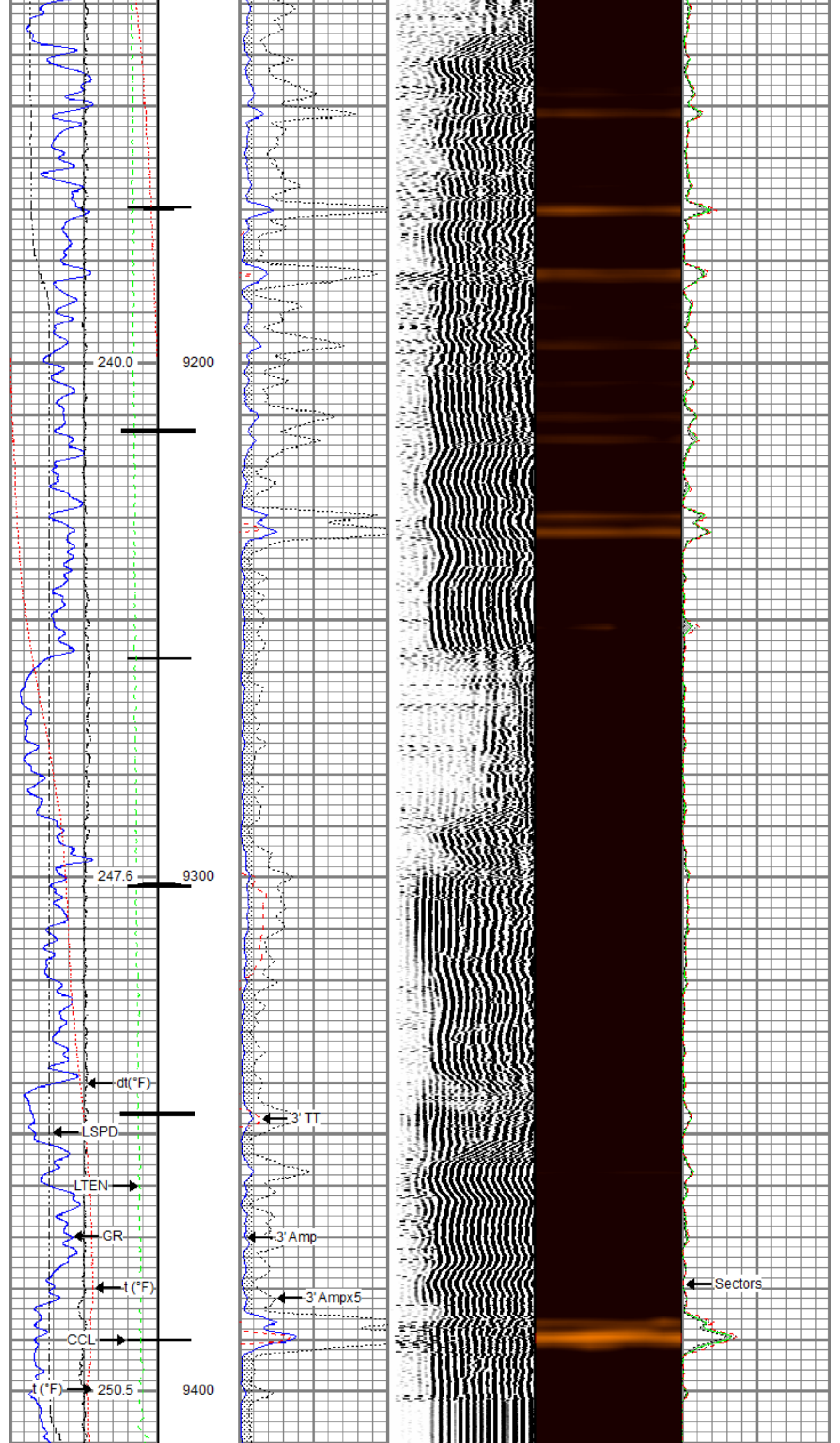
Repeat Pass

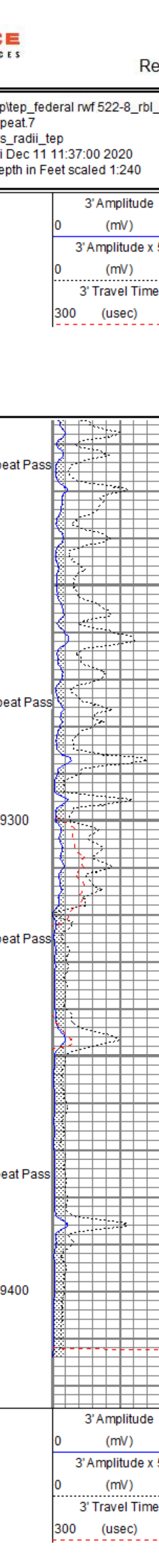
Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal rwf 522-8_rbl_12-09-20\tep_federal rwf 522-8_rbl_12-09-20.db
Dataset Pathname	repeat.7
Presentation Format	ros_radii_tep
Dataset Creation	Fri Dec 11 11:37:00 2020
Charted by	Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				



Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				



Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60
			BTA-MUD BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends	2.92	2.72	25.00
TEMP	14.19					
			Probe Radii-2750 RBT (ROFS-RBT-0002) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS8	11.96					
WVFS7	11.96					
WVFS6	11.96					
WVFS5	11.96					
WVFS4	11.96					
WVFS3	11.96					
WVFS2	11.96					
WVFS1	11.96					
WVFCAL	11.96					
WVF3FT	11.96					
WVF5FT	10.96					
			BTA-MUD BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends	2.92	2.72	25.00
CCL	3.88					
			Probe GR-CCL ANL-2750 A (051217) Probe 2.75" Analog 4 Channel Pulse Gamma Ray/CCL Combined	4.54	2.75	55.00
GR	1.14					
			GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset: tep_federal rwf 522-8_rbl_12-09-20.db: field/well/run1/main.1
Total length: 21.05 ft
Total weight: 214.60 lb
O.D.: 2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\tep_federal rwf 522-8_rbl_12-09-20\tep_federal rwf 522-8_rbl_12-09-20.db
Dataset Pathname	main.1
Dataset Creation	Fri Dec 11 10:42:59 2020

Gamma Ray Calibration Report

Serial Number:	051217	
Tool Model:	2750 A	
Performed:	Mon Oct 01 11:32:35 2018	
Calibrator Value:	637.0	GAPI
Background Reading:	115.3	cps
Calibrator Reading:	1027.7	cps
Sensitivity:	0.6982	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	ROFS-RBT-0002	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	68.342	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.745	0.800	81.196	108.924	0.082
CAL	0.003	0.800				
5'	0.009	0.607	0.800	81.196	134.527	-0.439
SUM						
S1	0.006	0.767	0.000	100.000	131.443	-0.787
S2	0.009	0.756	0.000	100.000	133.918	-1.217
S3	0.008	0.731	0.000	100.000	138.335	-1.153
S4	0.007	0.720	0.000	100.000	140.137	-0.964
S5	0.009	0.736	0.000	100.000	137.469	-1.237
S6	0.006	0.759	0.000	100.000	132.884	-0.811
S7	0.009	0.773	0.000	100.000	130.774	-1.132
S8	0.009	0.778	0.000	100.000	130.118	-1.177

Air Zero Calibration, performed Wed Dec 09 09:18:04 2020:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.004	0.000	-0.000
5'	0.004	0.000	0.001
SUM			
S1	-0.001	0.000	-0.000
S2	0.004	0.000	0.000
S3	0.002	0.000	0.001
S4	0.004	0.000	-0.001
S5	0.002	0.000	0.002
S6	0.005	0.000	-0.002
S7	0.003	0.000	0.000
S8	0.004	0.000	-0.001

Temperature Calibration Report

Serial Number:	ROFS-RBT-0002	
Tool Model:	2750 RBT	
Performed:	Wed Oct 14 10:20:48 2020	
	Reference	Reading
Low Reference:	100.00 degF	109.31 degF
High Reference:	235.00 degF	267.00 degF
Gain:	0.86	
Offset:	6.43	
Delta Spacing	1	

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Company	TEP Rocky Mountain LLC
Well	Federal RWF 522-8
Field	Rulison
County	Garfield
State	Colorado