RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal PA 311-26
Field	Parachute
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC

Well Federal PA 311-26

Field Parachute

County Garfield State Colorado

Location: API # : 05-045-23719

SEC 26 TWP 6S RGE 95W

Other Services

PN

			Elevation
Permanent Datum	Ground Level	Elevation 5636.9'	K.B. 5660.9'
Log Measured From	Kelly Bushing	24 FT	D.F. 5659.9'
Drilling Measured From	Kelly Bushing		G.L. 5636.9'

Date	02-SEP-2018
Run Number	One
Depth Driller	9396 FT
Depth Logger	9325 FT
Bottom Logged Interval	9310 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	238°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	15:45
Equipment Number	HD-0359
Location	Grand Junction, CO
Recorded By	J. Donnelly
Witnessed By	J.Skalla

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	H-40	Surface	1135 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9355 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 5284 FT to 5298 FT
Log ran from 9310 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

RELIANCE
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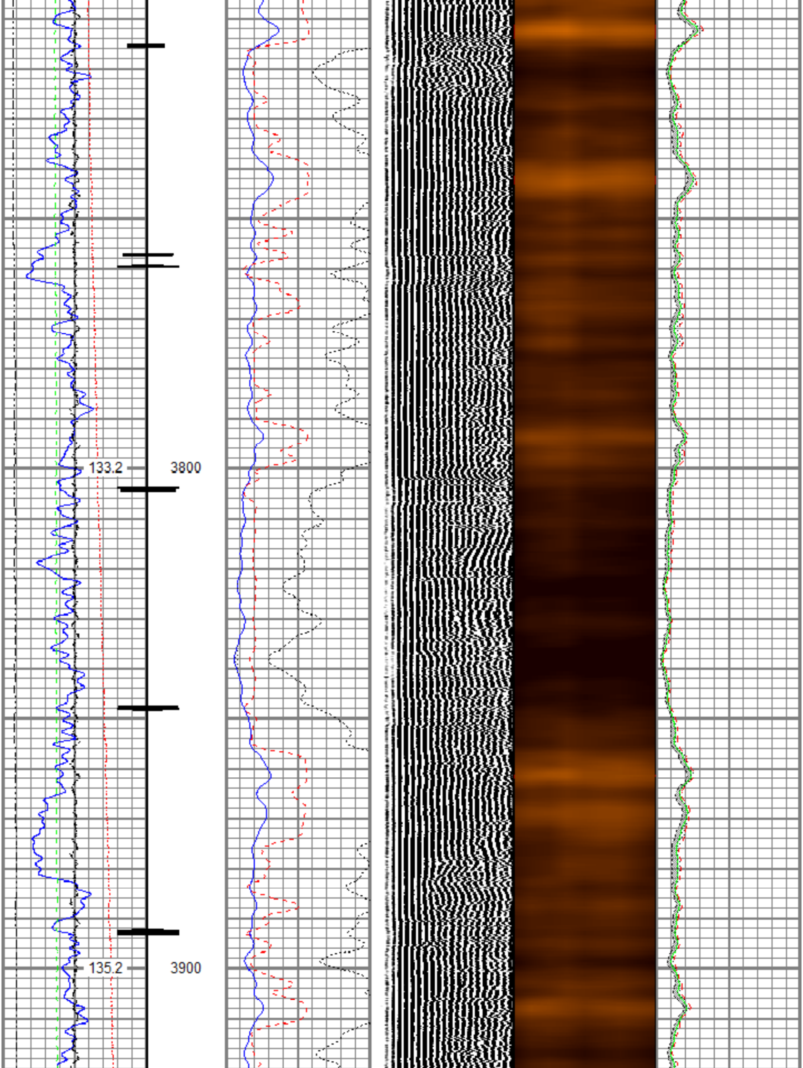
Main Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 311-26_rbl_09-02-18\tep_federal pa 311-26_rbl_09-02-18.db
Dataset Pathname	main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Sep 04 08:47:33 2018
Charted by	Depth in Feet scaled 1:240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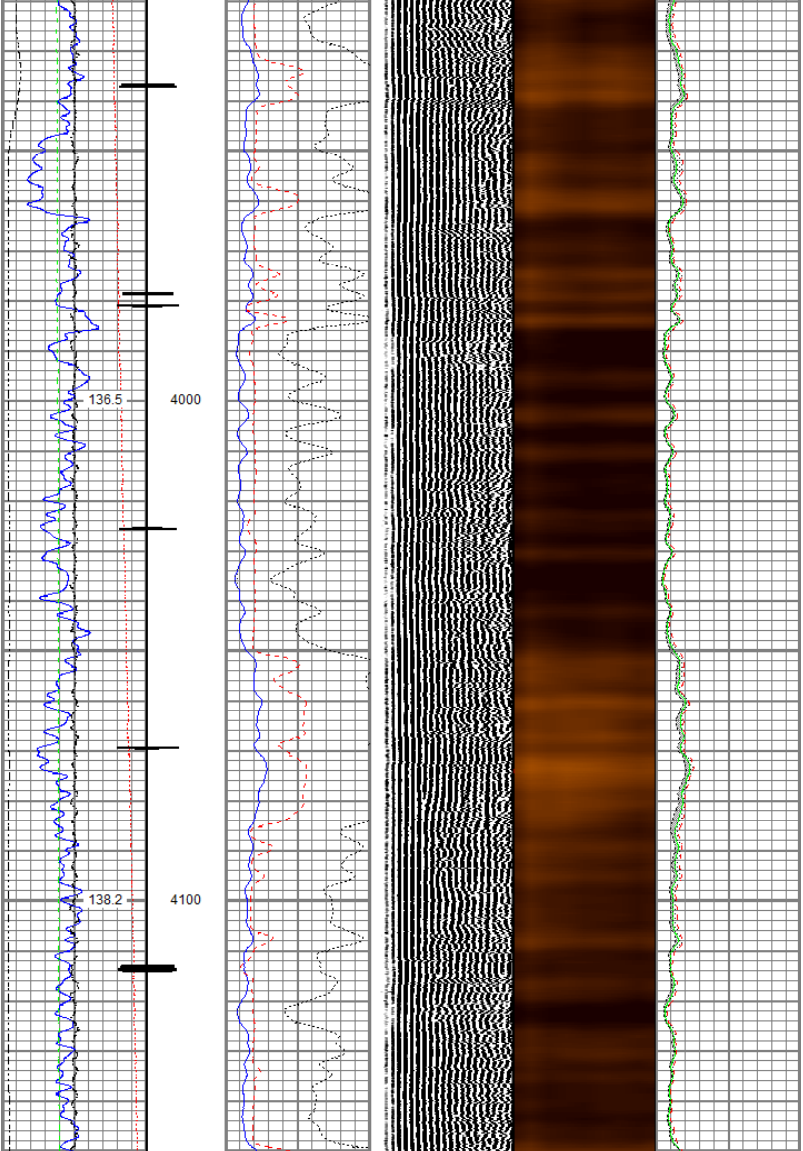
3800
135.2
3900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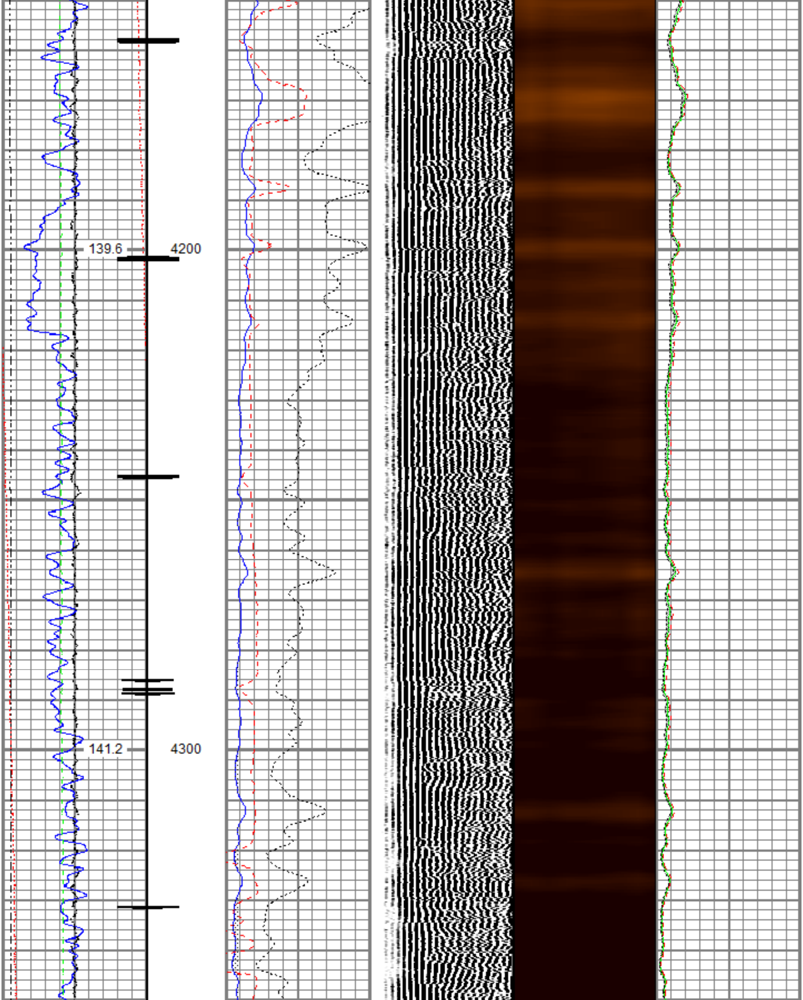
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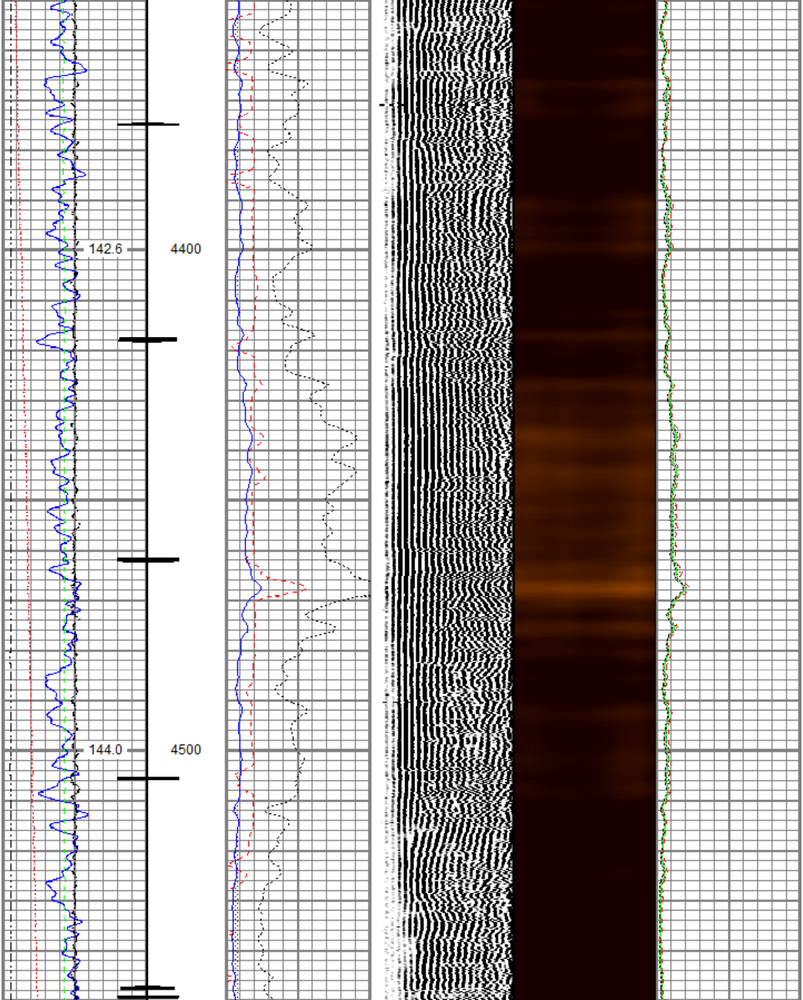
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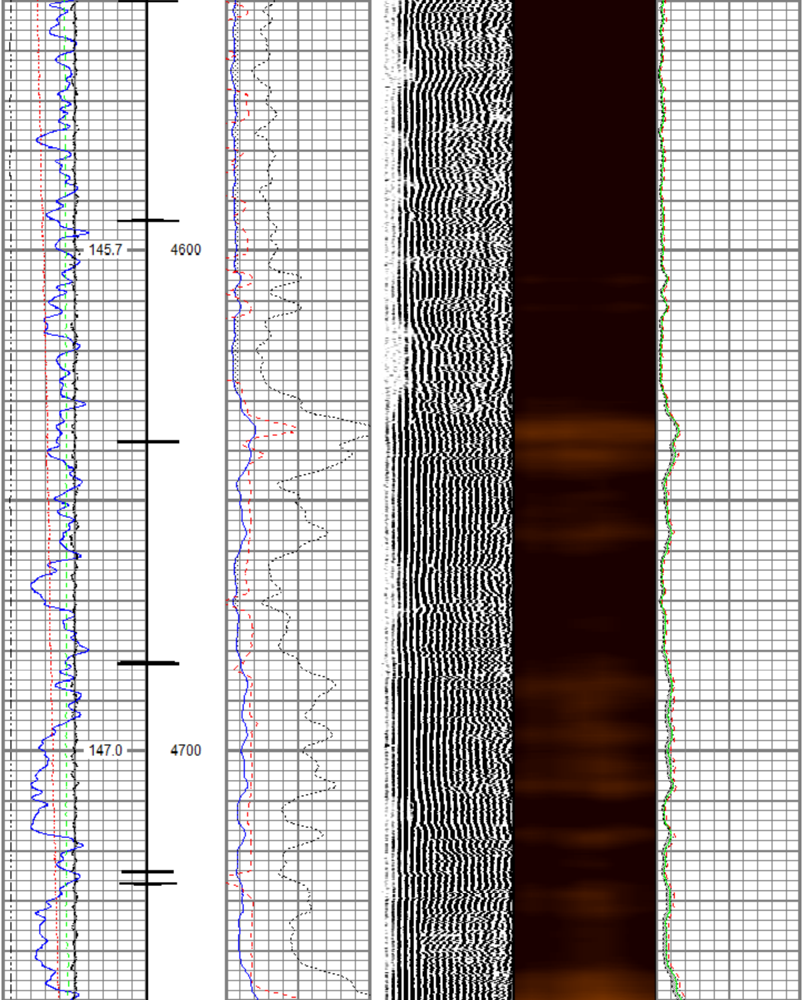
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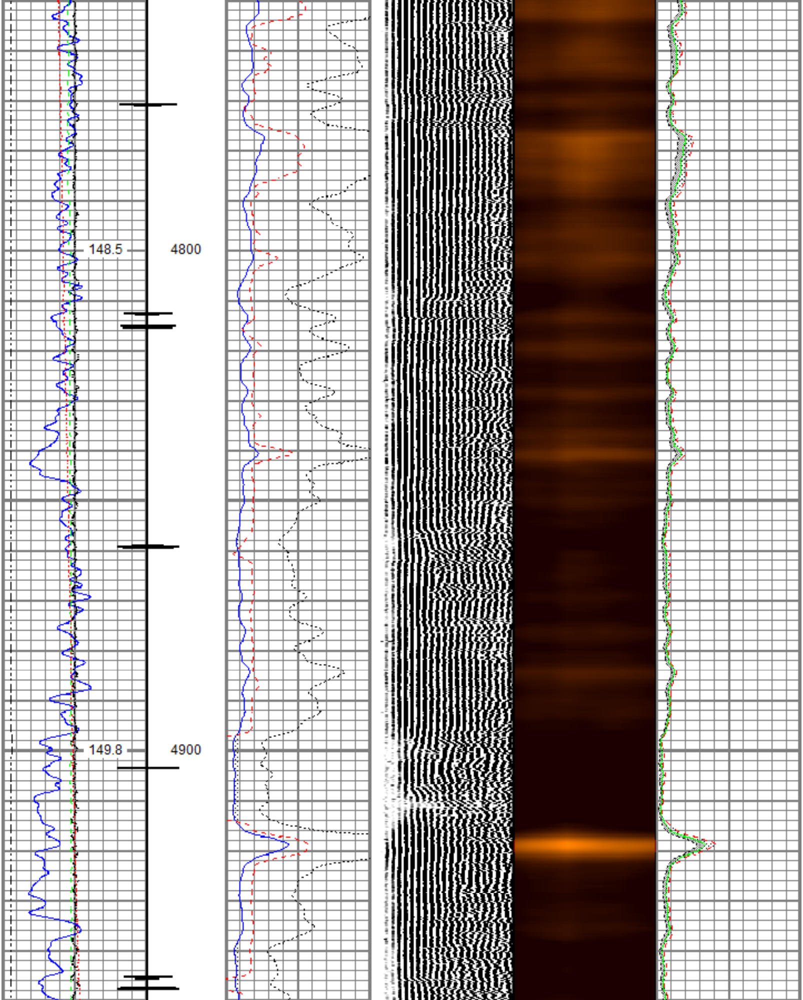
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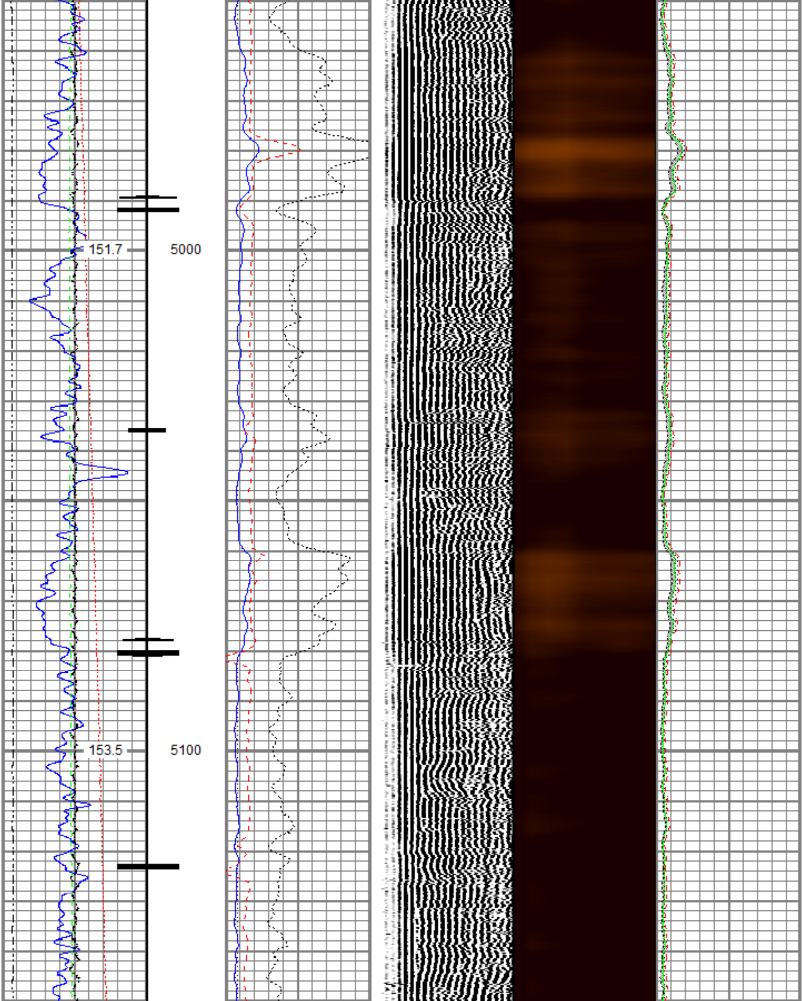
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153.5
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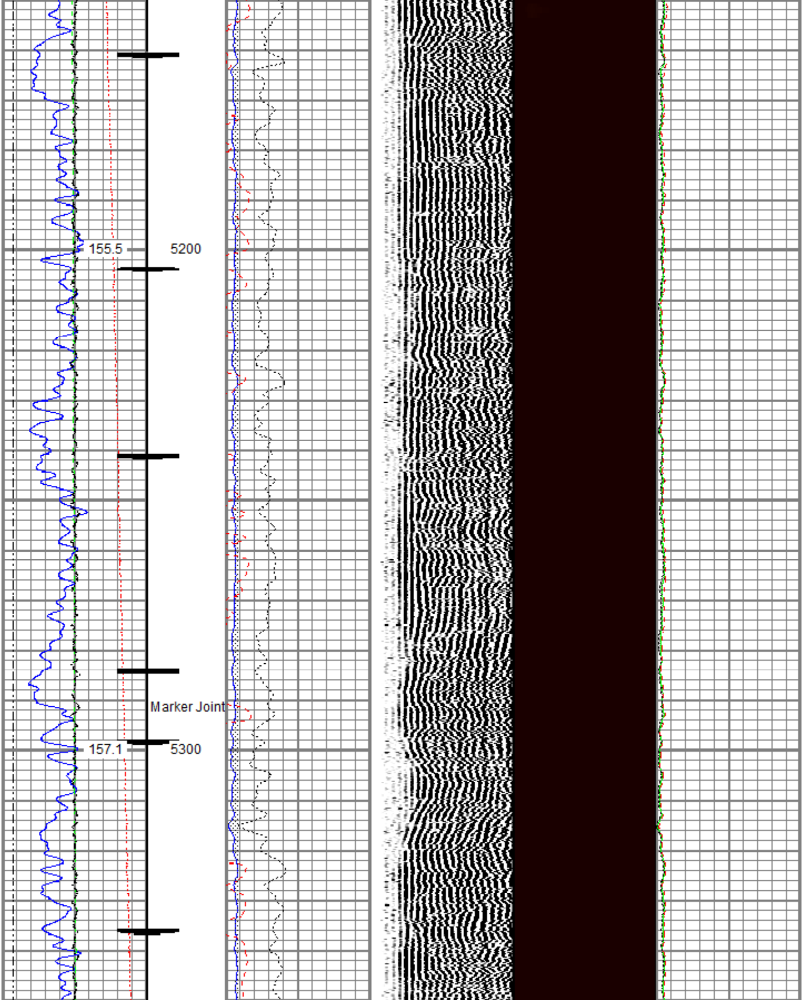
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Marker Joint
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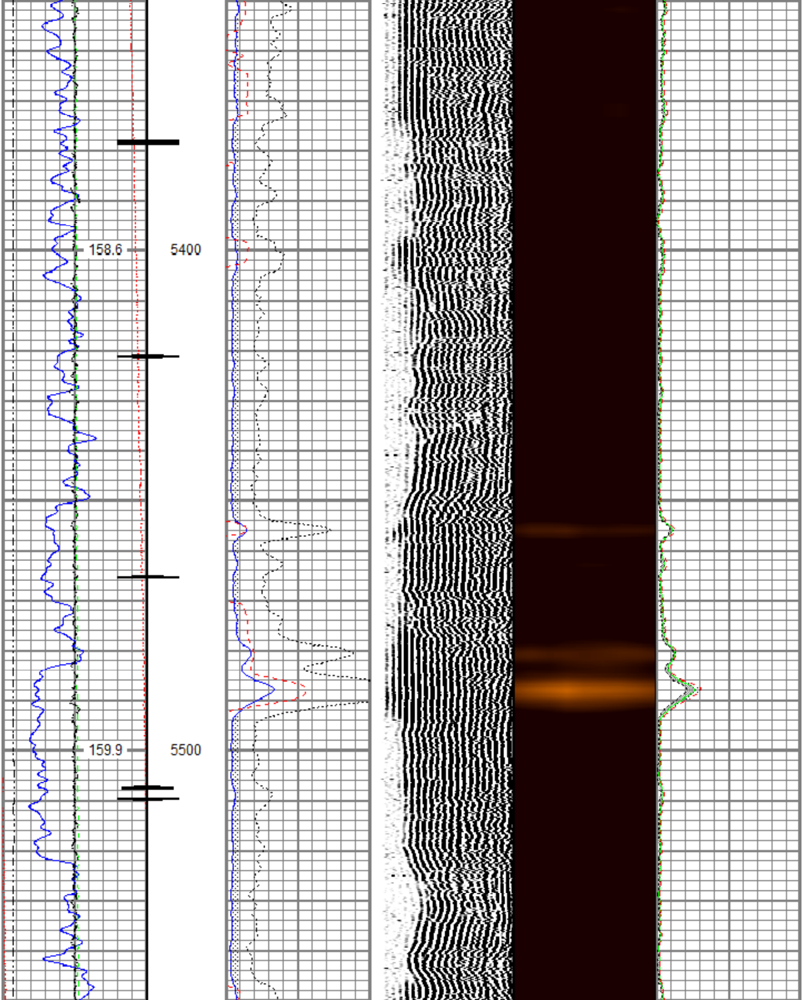
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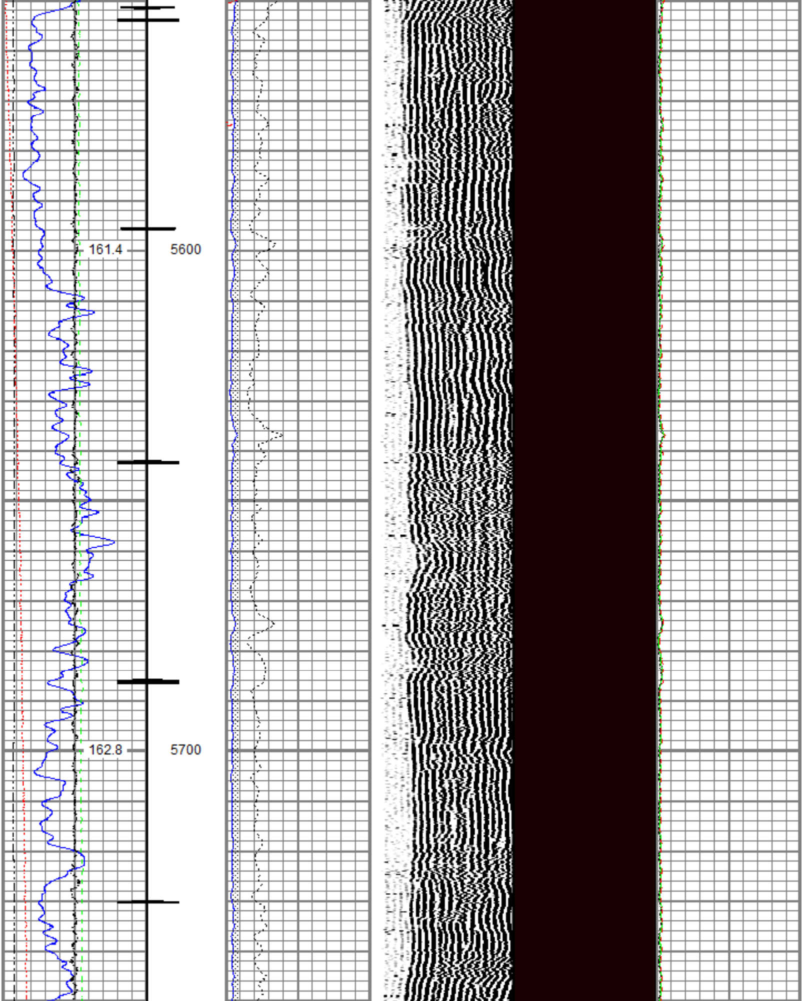
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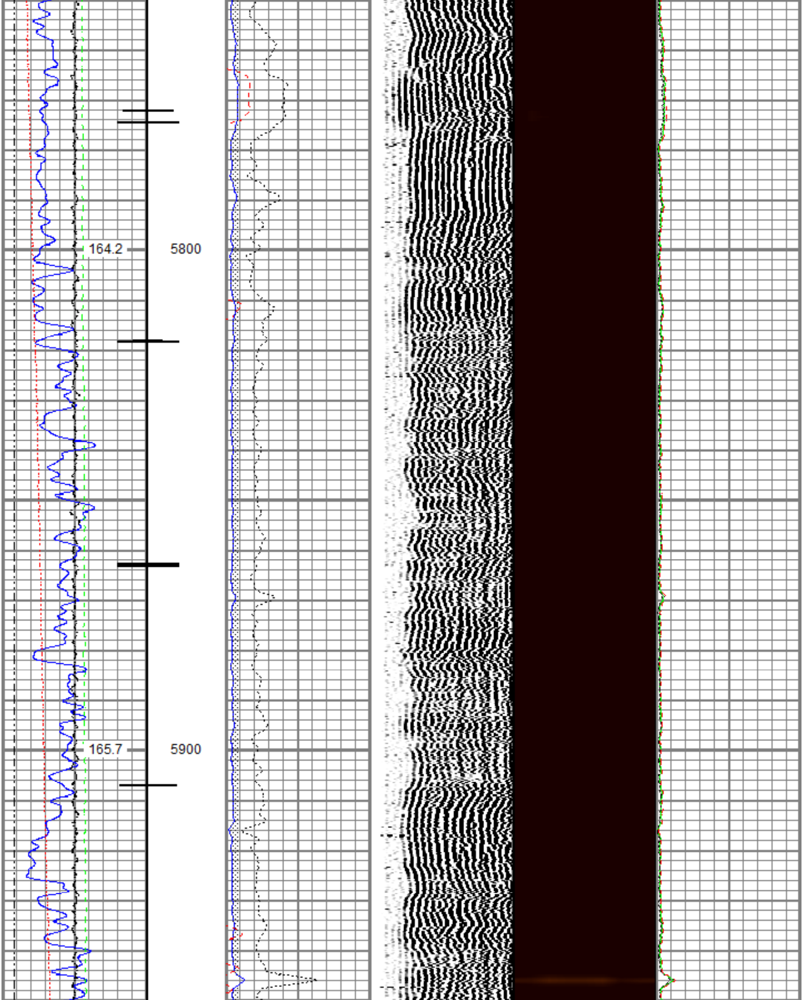
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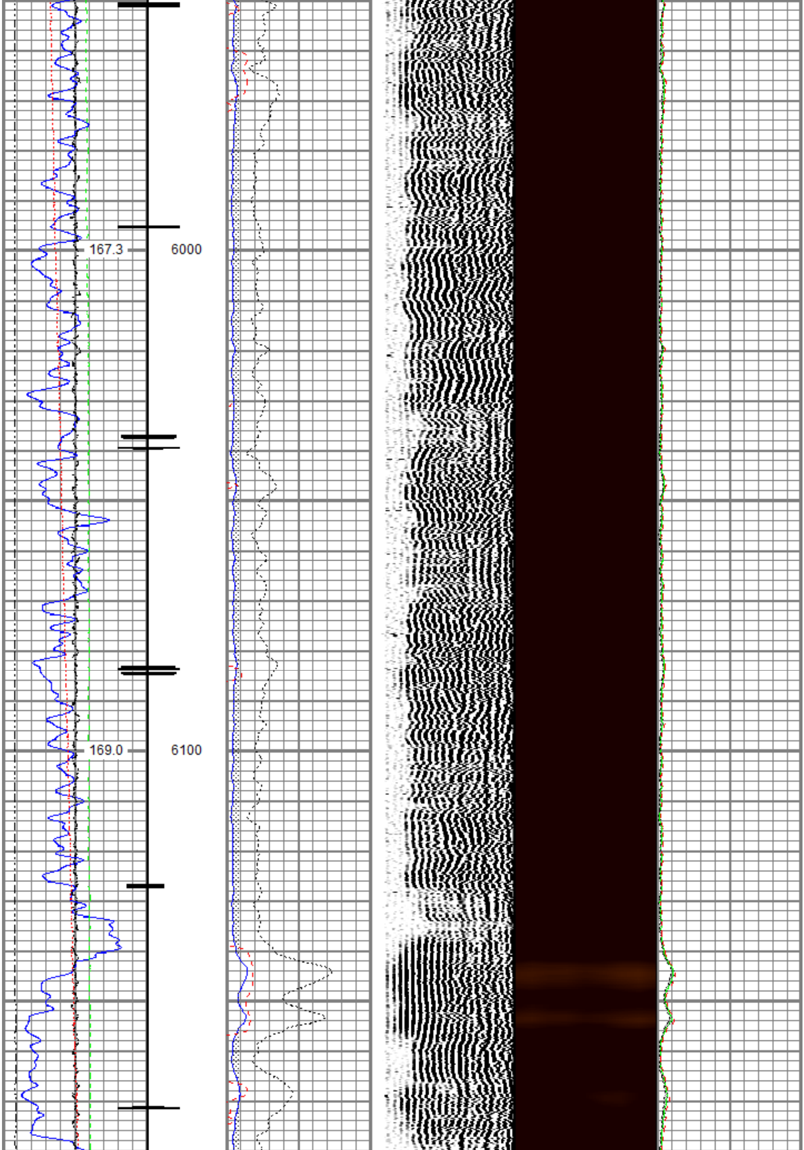
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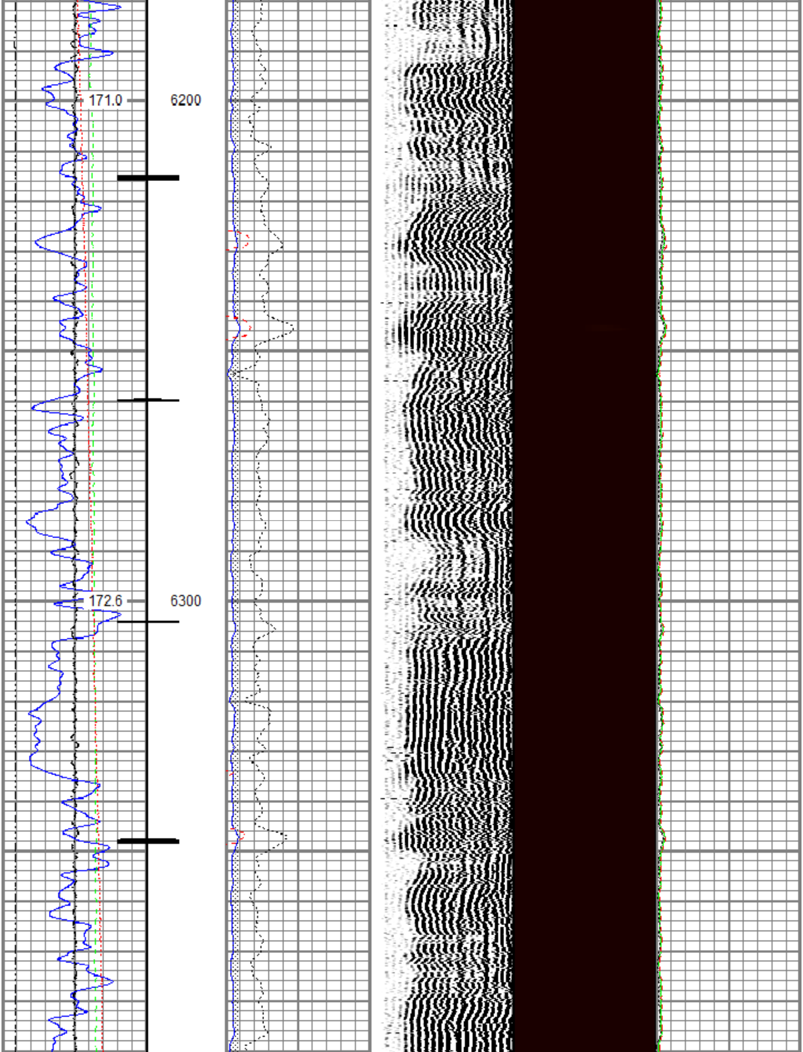
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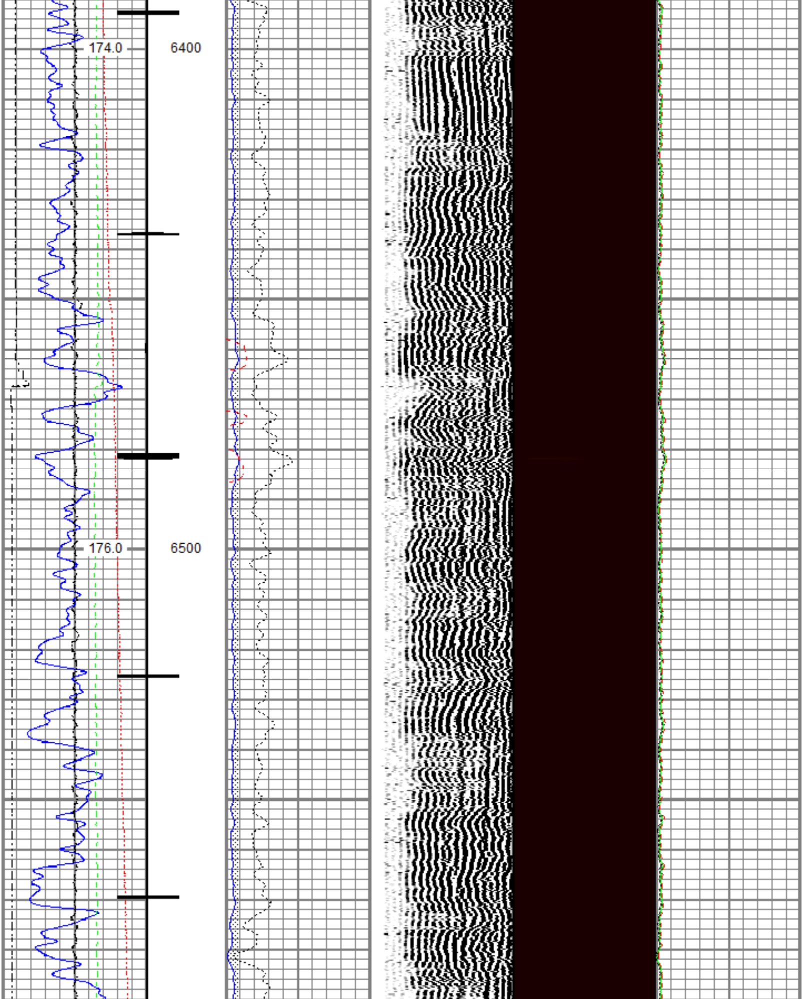
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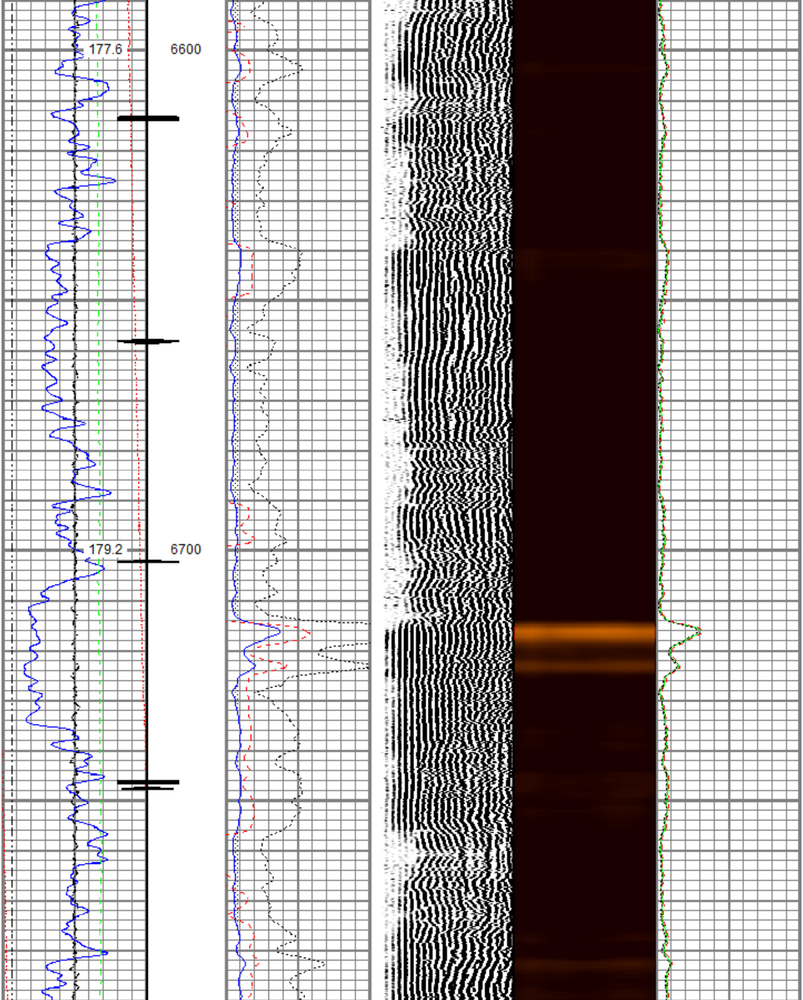
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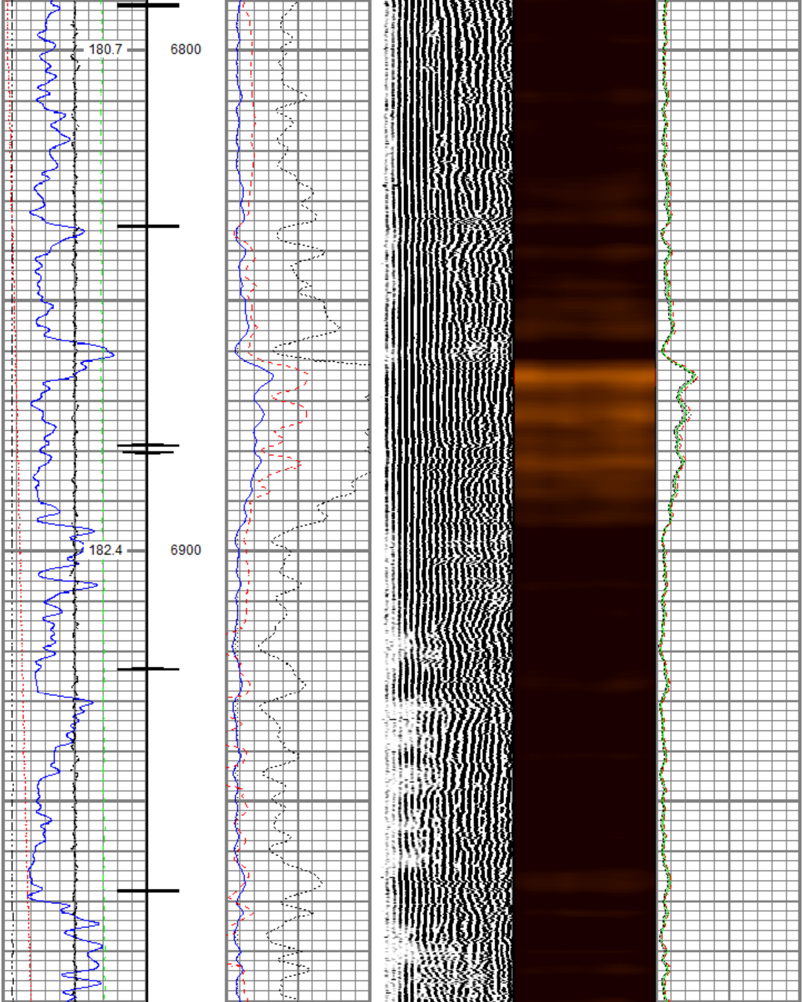
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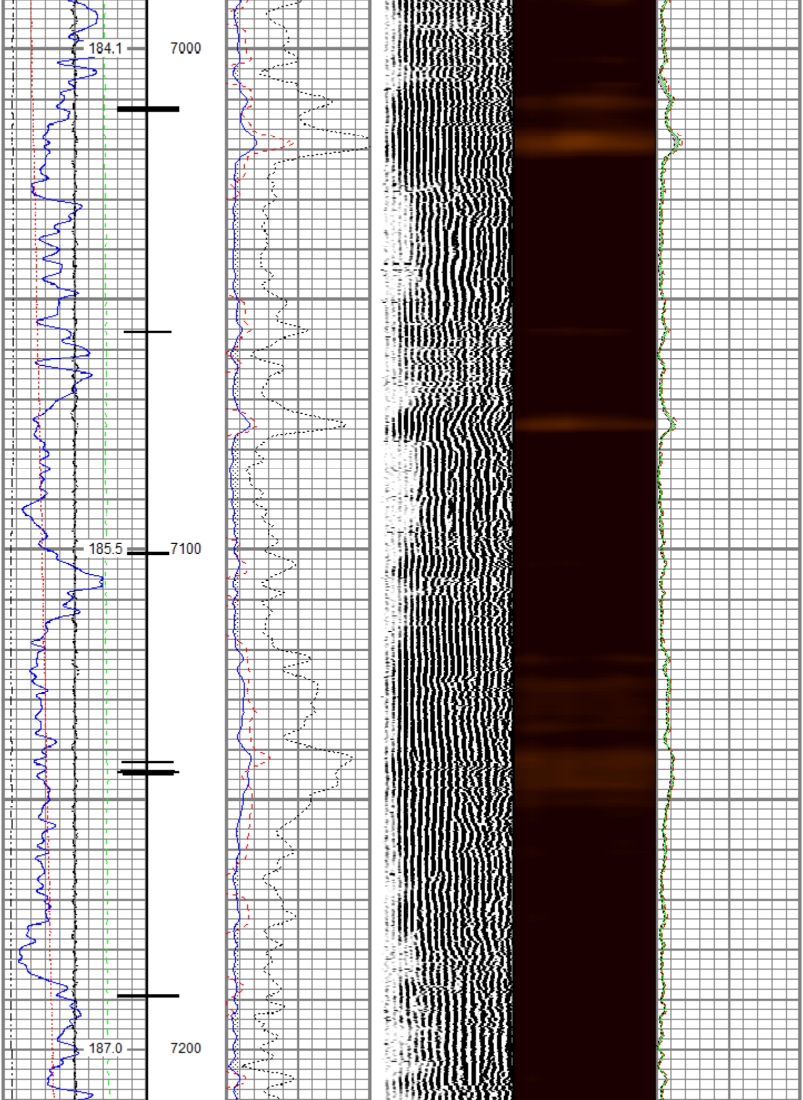
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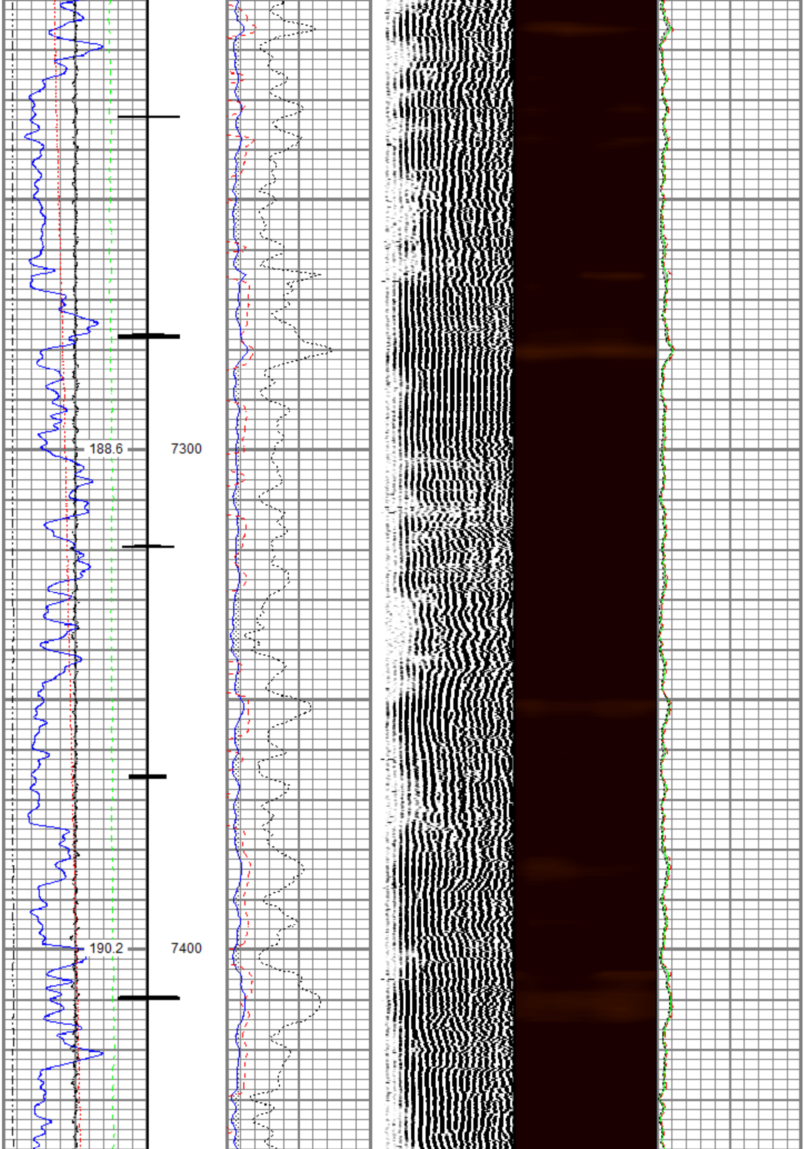
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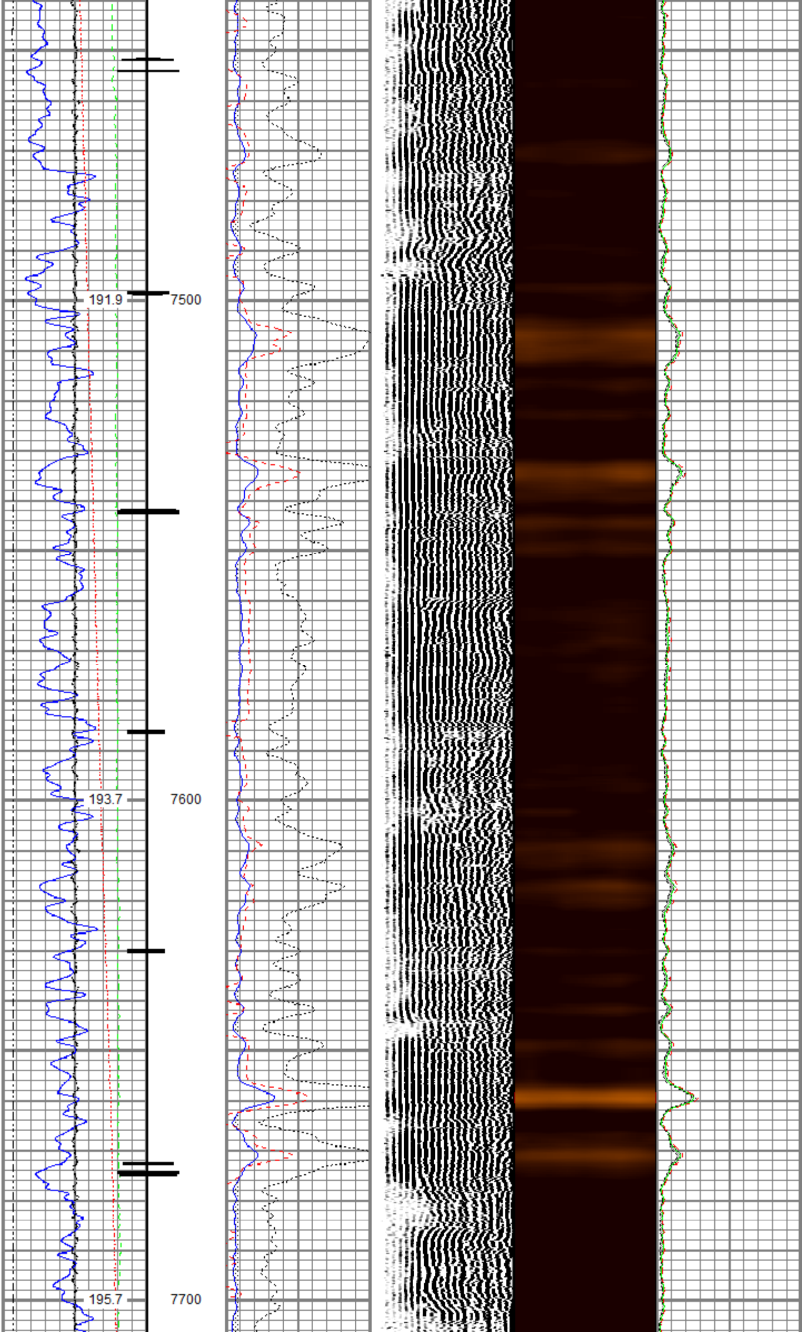
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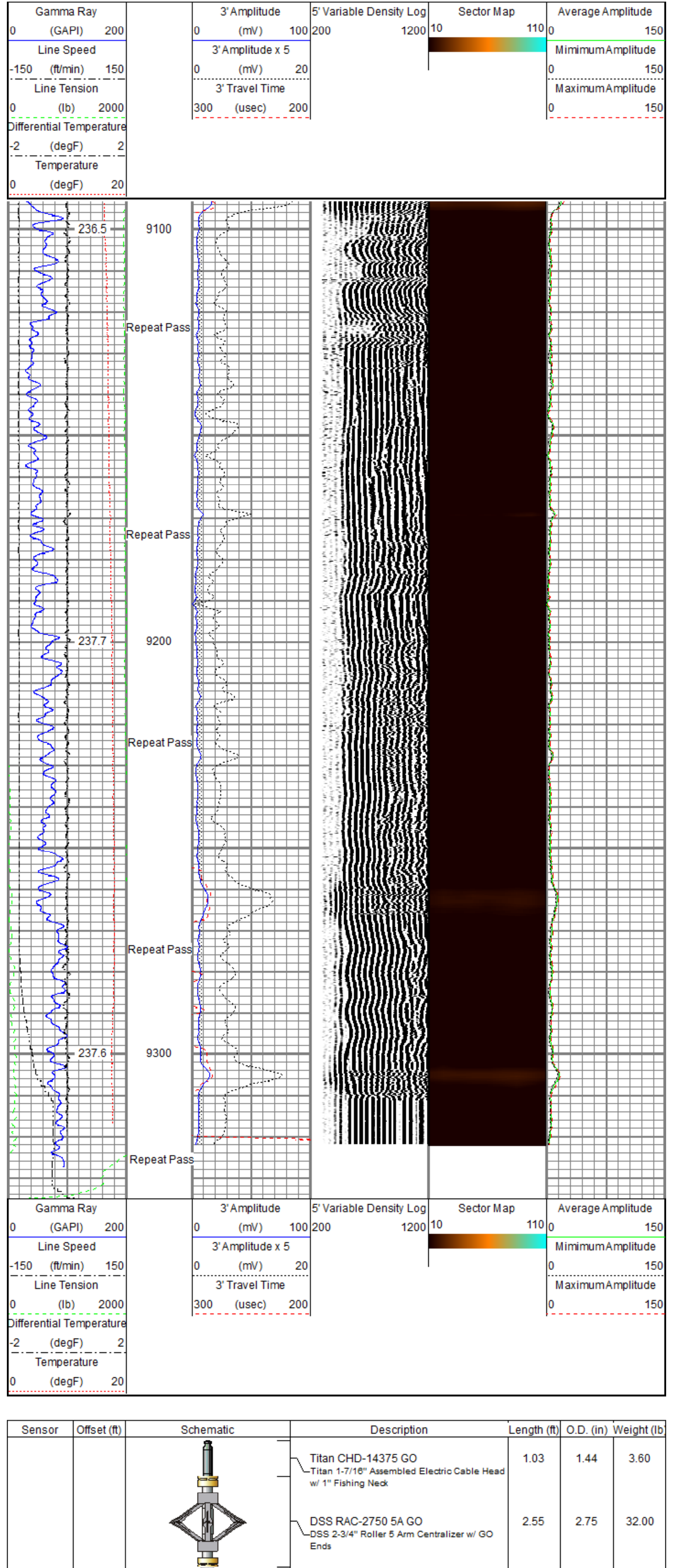
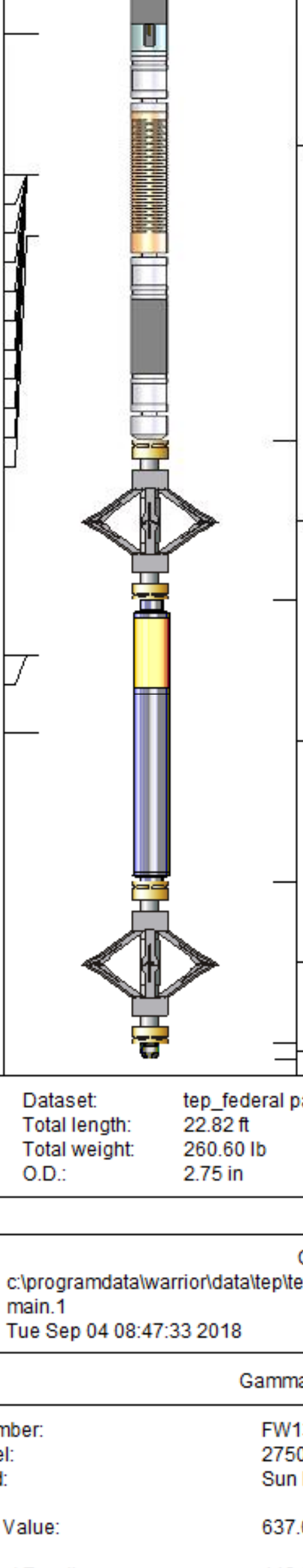
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 311-26_rbl_09-02-18\tep_federal pa 311-26_rbl_09-02-18.db
Dataset Pathname	repeat.2
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Sep 04 08:56:18 2018
Charted by	Depth in Feet scaled 1:240





Sensor	Offset (ft)	Description	Length (ft)	O.D. (in)	Weight (lb)
		Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
		DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
TEMP	16.33				
WVFS8	14.10	Probe Radii-2750 RBT (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	14.10				
WVFS6	14.10				
WVFS5	14.10				
WVFS4	14.10				
WVFS3	14.10				
WVFS2	14.10				
WVFS1	14.10				
WVFCAL	14.10				
WVF3FT	14.10				
WVF5FT	13.10				
		DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
CCL$2	6.42				
CCL$1	6.42				
GR	5.18	Probe GR-CCL-2750 GOB (FW1307-038) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined	4.51	2.75	55.00
		DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
		GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset:	tep_federal pa 311-26_rbl_09-02-18.db: field/well/run1/main.1
Total length:	22.82 ft
Total weight:	260.60 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\tep_federal pa 311-26_rbl_09-02-18\tep_federal pa 311-26_rbl_09-02-18.db
Dataset Pathname	main.1
Dataset Creation	Tue Sep 04 08:47:33 2018

Gamma Ray Calibration Report

Serial Number:	FW1307-038	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:44:12 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	113.2	cps
Calibrator Reading:	1022.4	cps
Sensitivity:	0.7007	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	32.100	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.023	0.611	0.800	81.196	126.775	3.686
CAL	-0.005	0.740				
5'	-0.009	0.555	0.800	81.196	142.593	2.108
SUM						
S1	-0.017	0.788	0.000	100.000	124.221	2.125
S2	-0.028	0.694	0.000	100.000	138.483	3.943
S3	-0.023	0.647	0.000	100.000	149.189	3.442
S4	-0.023	0.585	0.000	100.000	164.404	3.762
S5	-0.020	0.596	0.000	100.000	162.276	3.244
S6	-0.024	0.599	0.000	100.000	160.538	3.823
S7	-0.027	0.631	0.000	100.000	152.002	4.058
S8	-0.023	0.703	0.000	100.000	137.738	3.129

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.005	0.740	1.000	0.000

Air Zero Calibration, performed Sun Sep 02 08:36:44 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.002	0.000	-0.000
5'	0.008	0.000	-0.001
SUM			
S1	-0.002	0.000	0.001
S2	-0.002	0.000	0.000
S3	-0.003	0.000	0.001
S4	-0.002	0.000	-0.000
S5	-0.003	0.000	-0.000
S6	-0.002	0.000	0.000
S7	-0.002	0.000	-0.000
S8	-0.002	0.000	-0.000

Temperature Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 13:24:58 2017	
	Reference	Reading
Low Reference:	100.00 degF	107.47 degF
High Reference:	350.00 degF	404.08 degF
Gain:	0.84	
Offset:	9.42	
Delta Spacing	1	

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