RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal PA 334-26
Field	Parachute
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal PA 334-26
Field Parachute
County Garfield State Colorado
Location: API # : 05-045-23705
SEC 26 TWP 6S RGE 95W

Other Services
PN

Permanent Datum	Ground Level	Elevation	5636.9'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 5660.9'
D.F. 5659.9'
G.L. 5636.9'

Date	02-SEP-2018
Run Number	One
Depth Driller	8484 FT
Depth Logger	8382 FT
Bottom Logged Interval	8368 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	236°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	12:00
Equipment Number	HD 331
Location	Grand Junction, CO
Recorded By	M. Kochevar
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	J-55	Surface	1128 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	8441 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 at 4335 FT - 4350 FT
Log ran from 8368 FT to surface
Recorded with 0 PSI Surface Induced Pressure

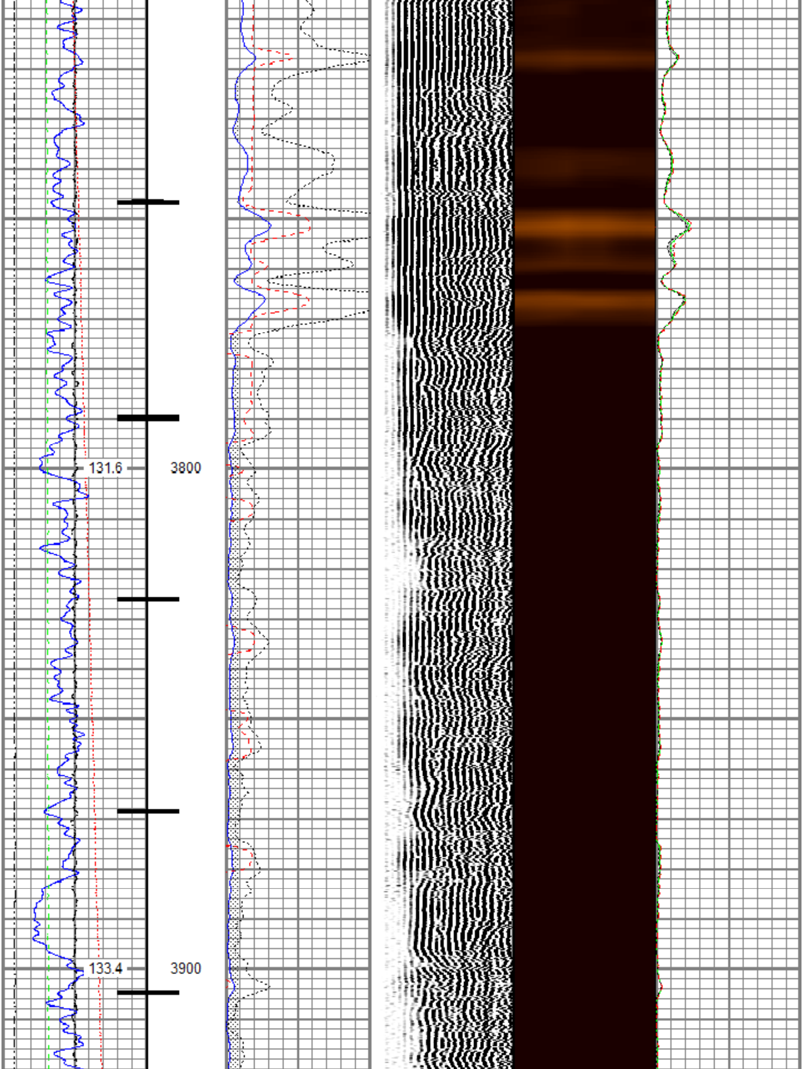
Thank you for choosing Reliance Oilfield Services, LLC!!

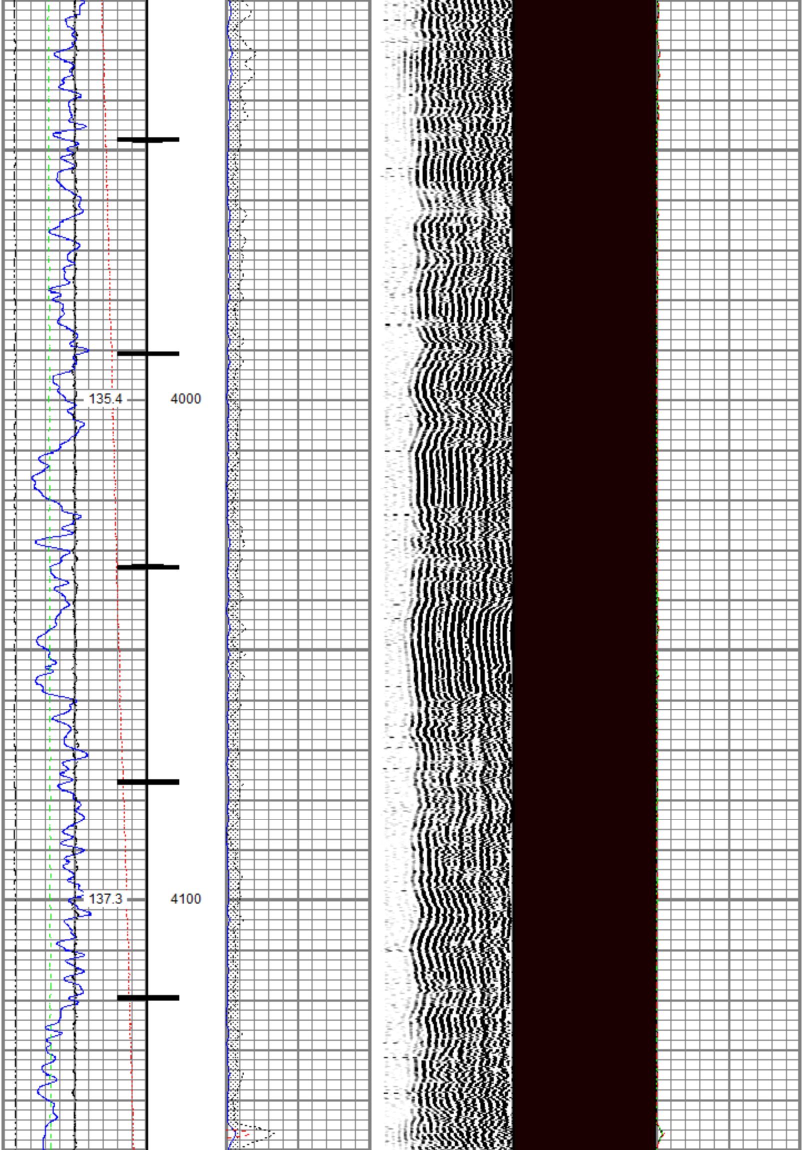
RELIANCE OILFIELD SERVICES

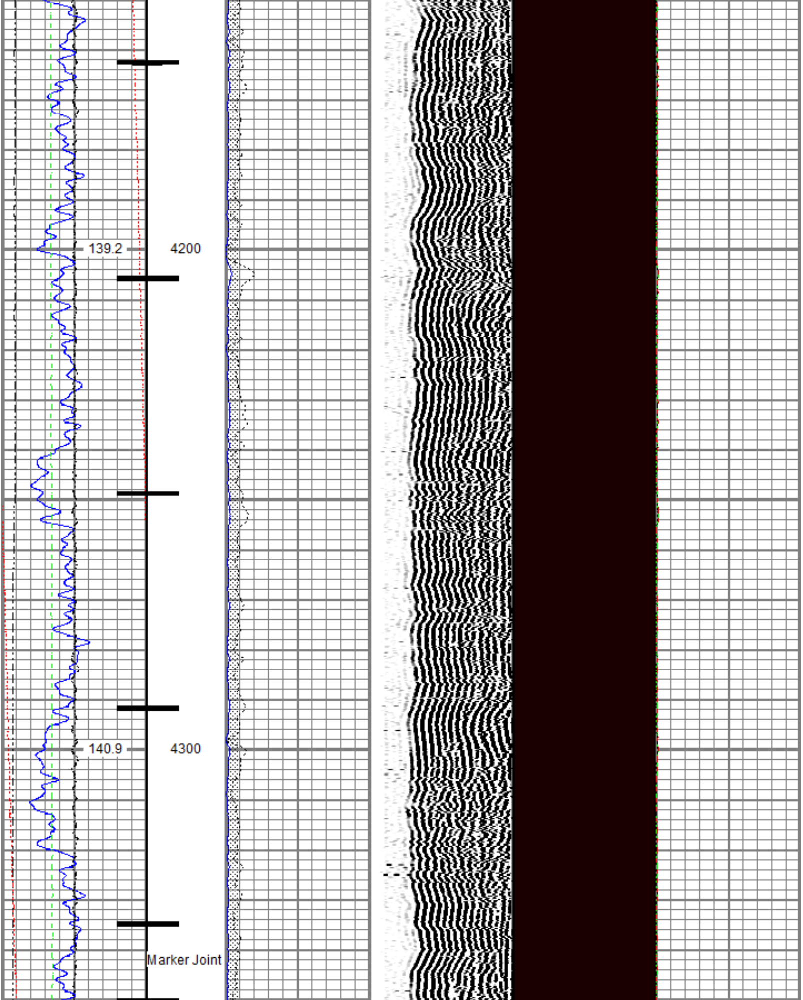
Main Pass

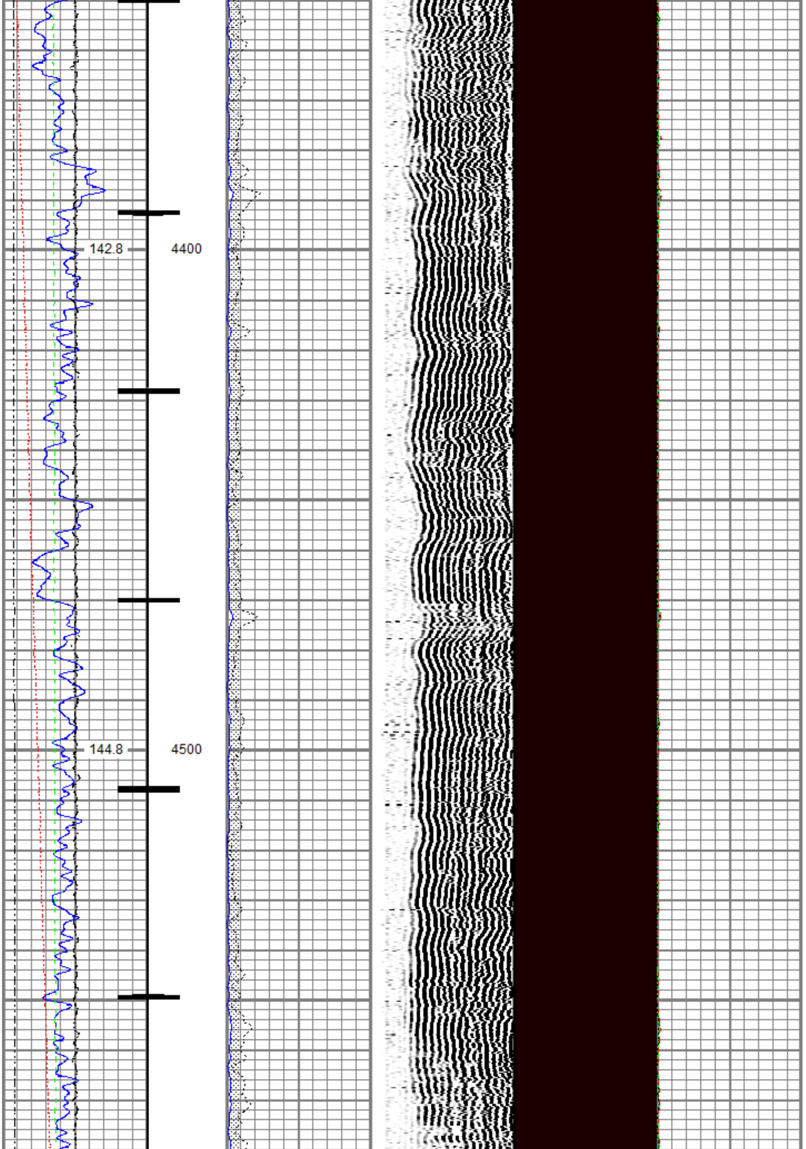
Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 334-26_rbl_09-02-18\tep_federal pa 334-26_rbl_09-02-18.db
Dataset Pathname	main.5
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Sep 04 15:11:11 2018
Charted by	Depth in Feet scaled 1:240


131.6
3800
133.4
3900


135.4
4000
137.3
4100


139.2
4200
140.9
4300
Marker Joint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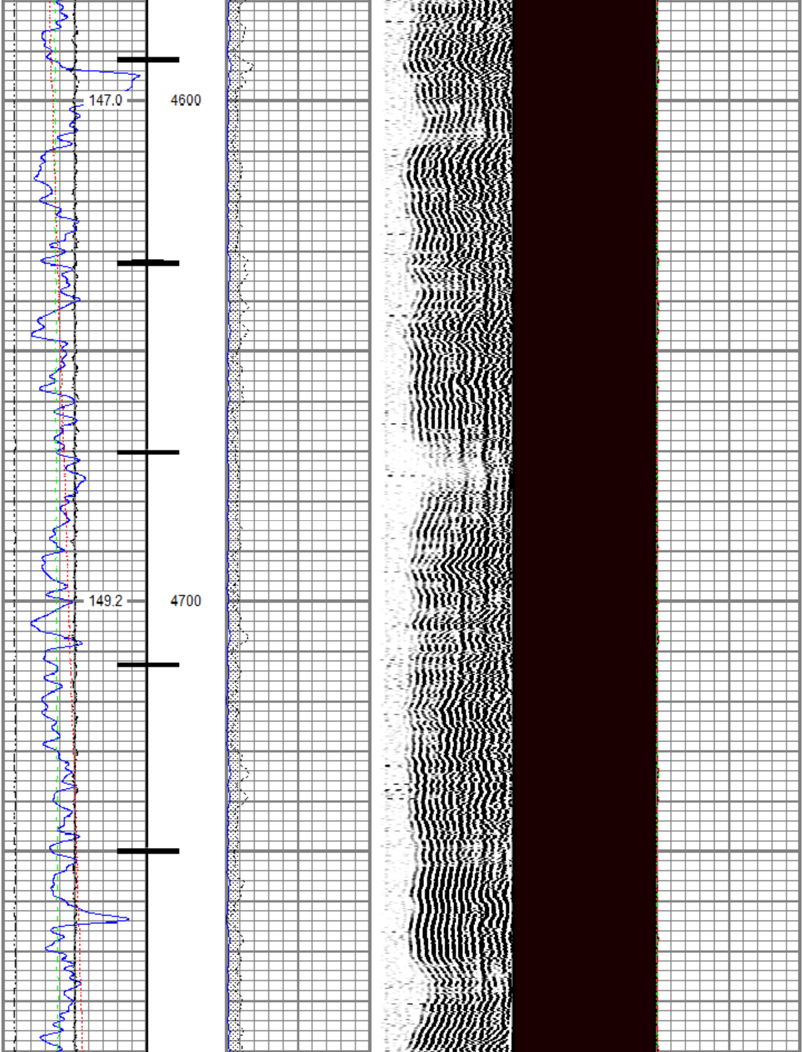
4400
144.8
4500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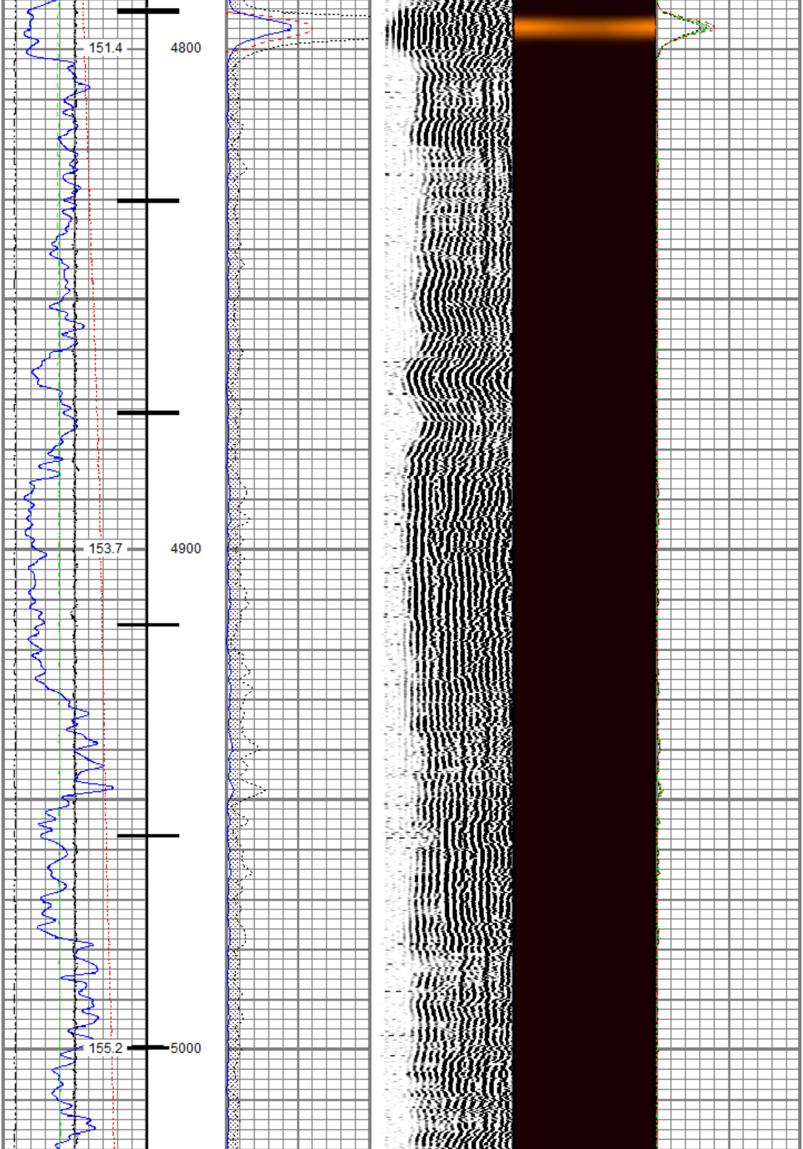
4600
149.2
4700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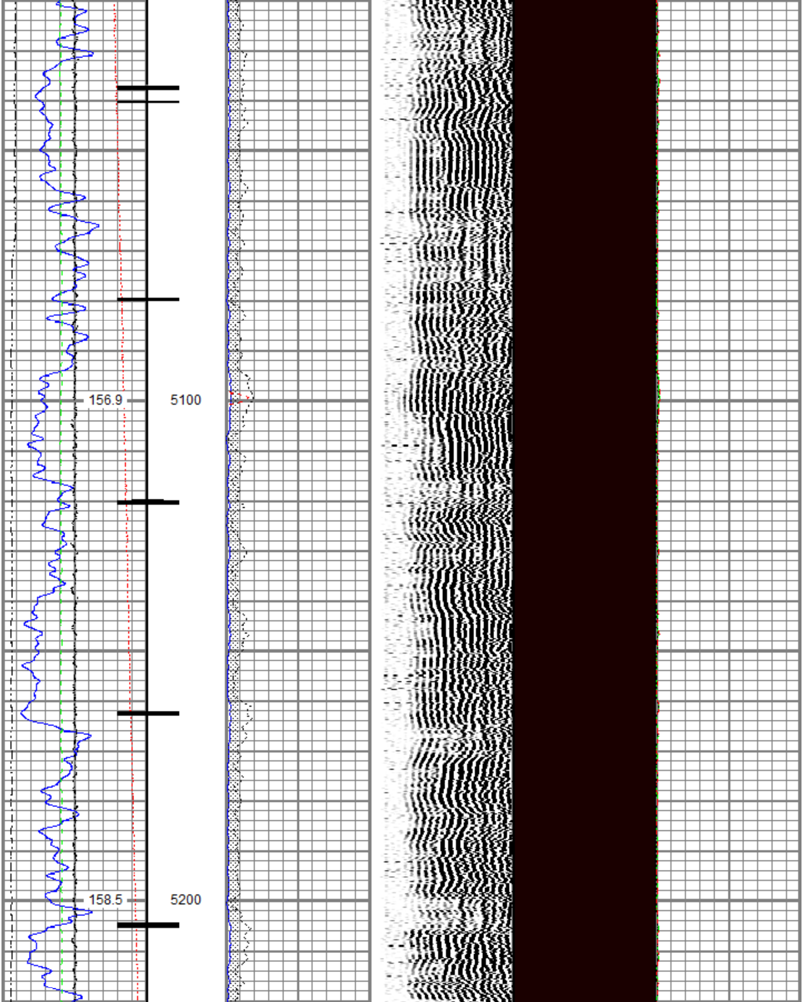
4800
153.7
4900
155.2
5000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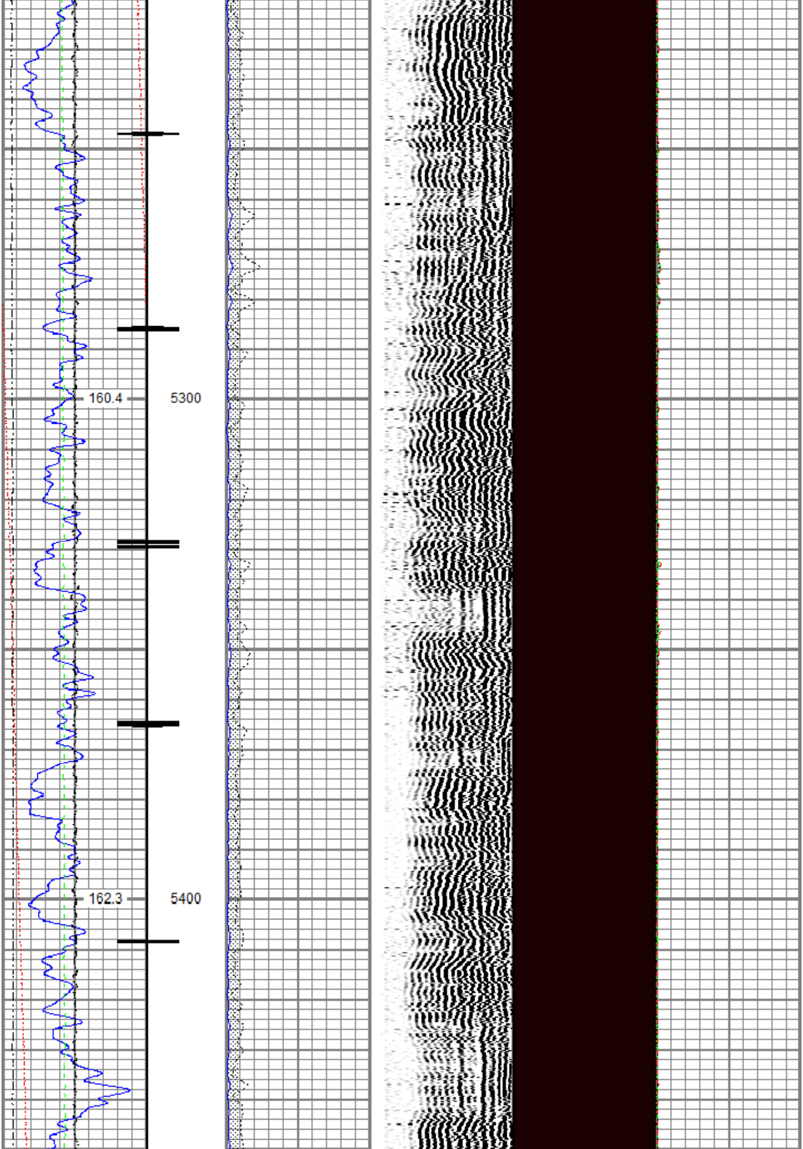
158.5
5200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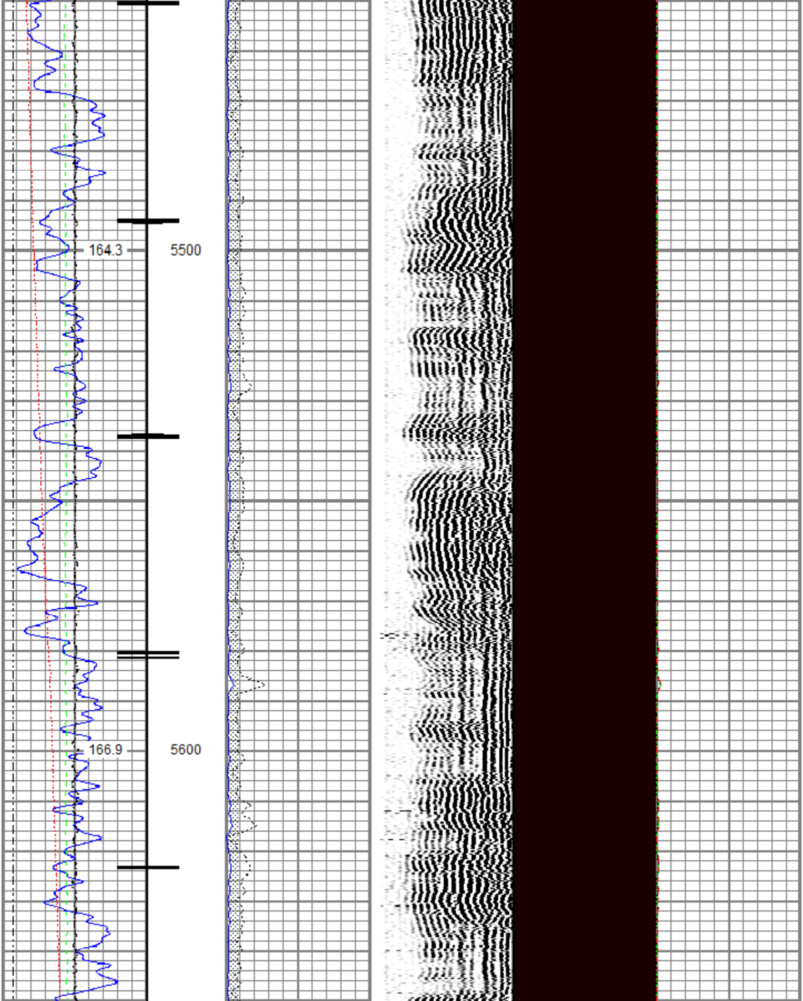
5300
162.3
5400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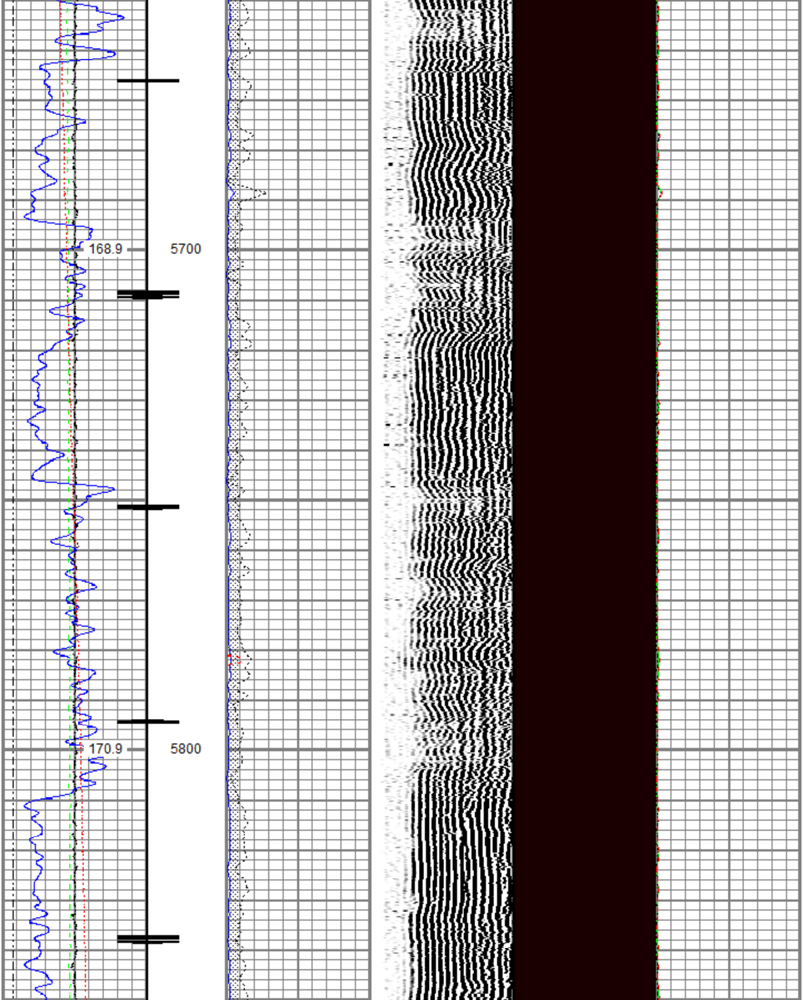
5500
166.9
5600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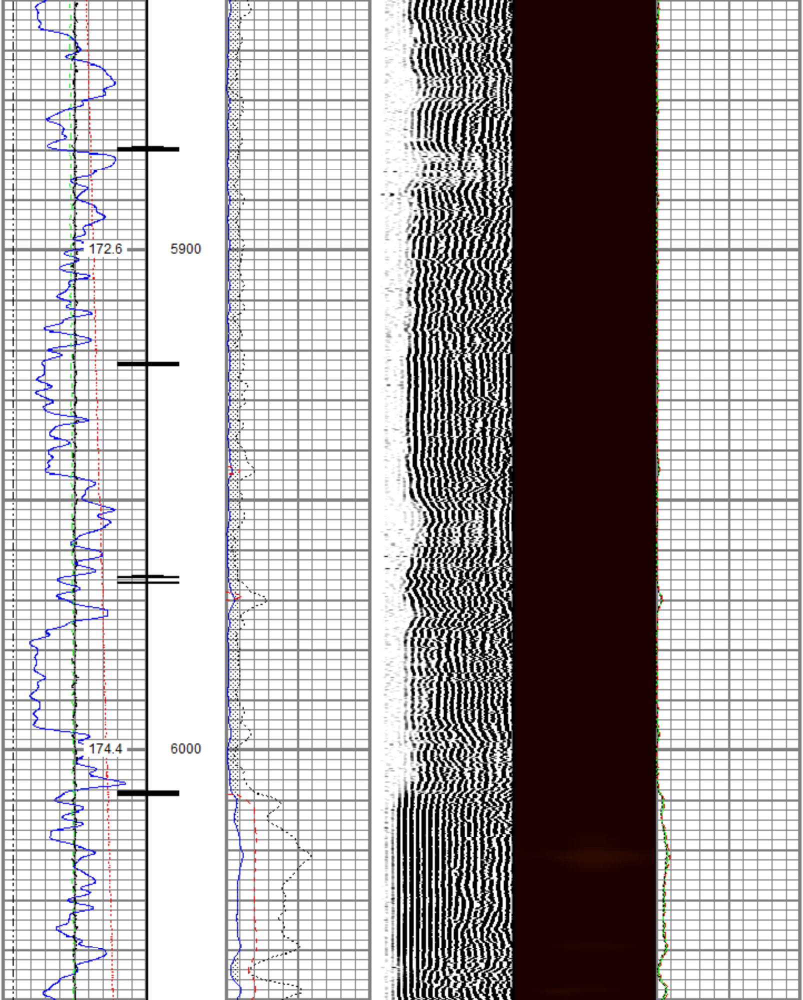
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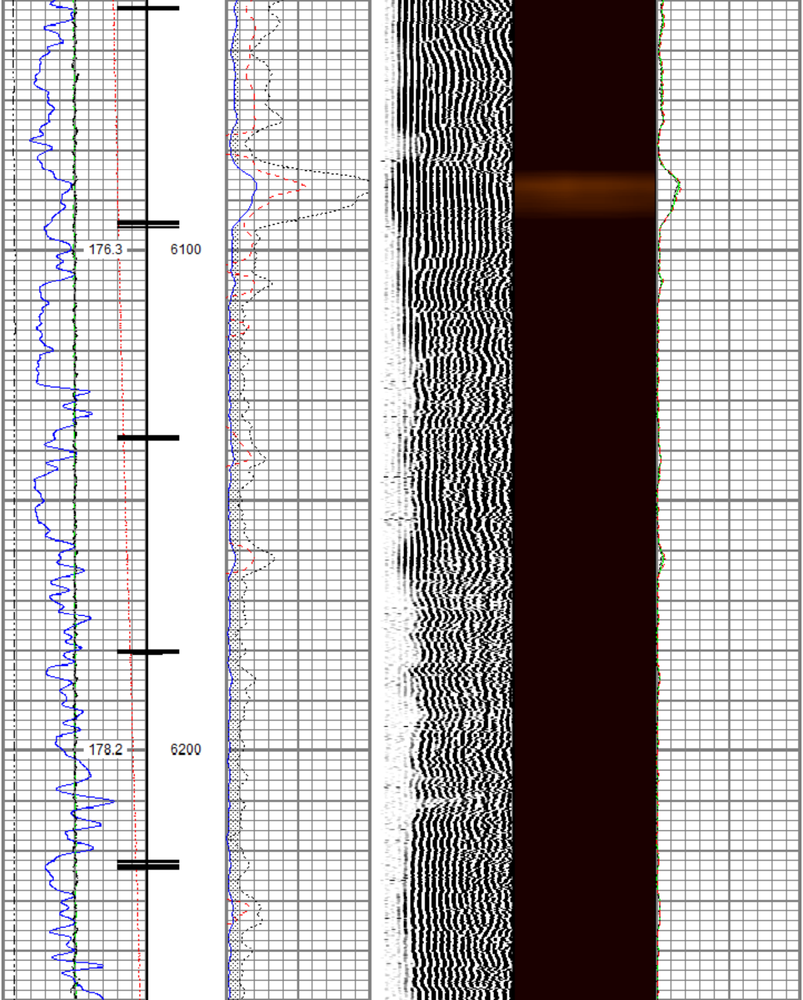
5900
174.4
6000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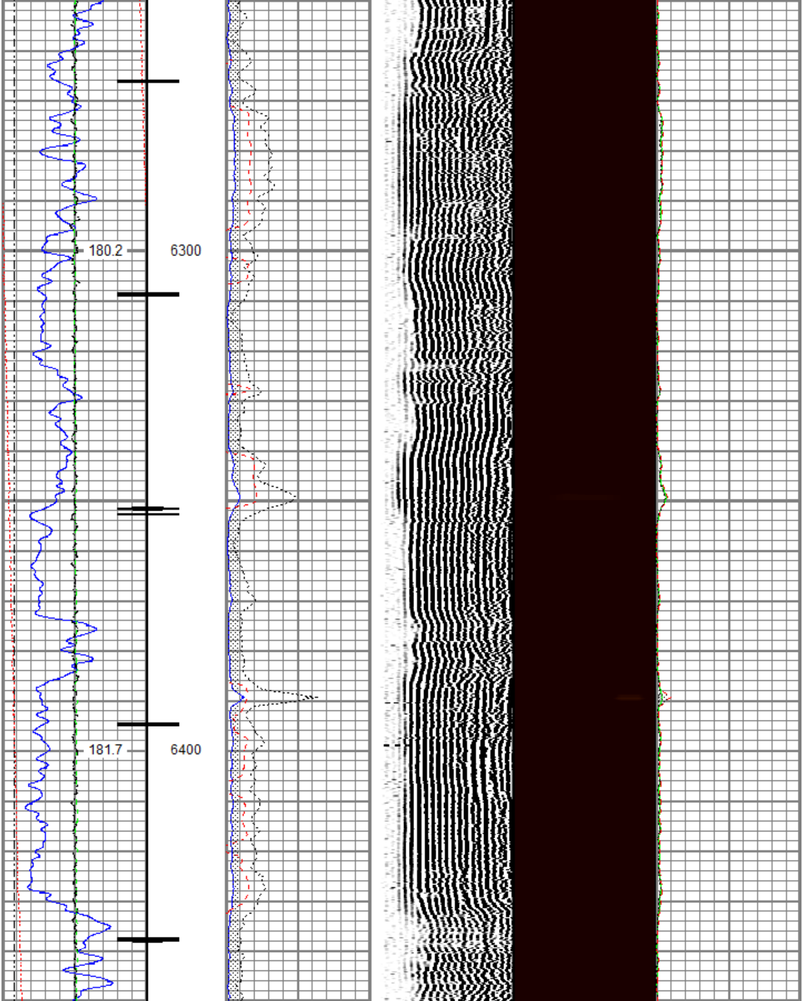
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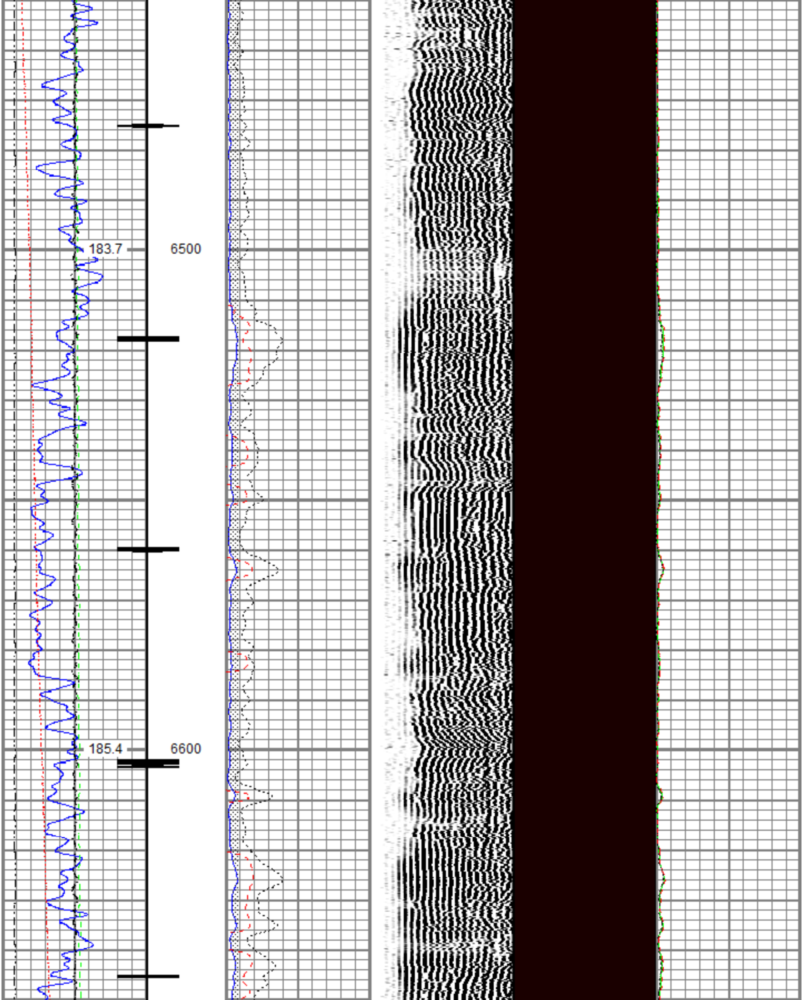
6300
181.7
6400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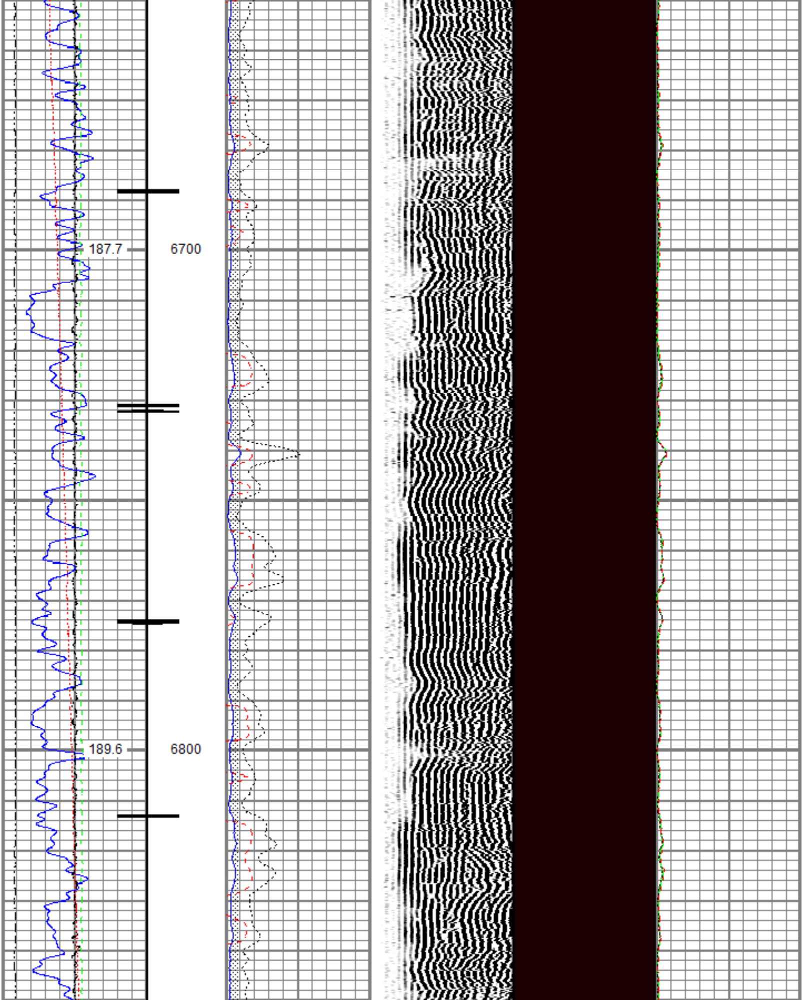
6600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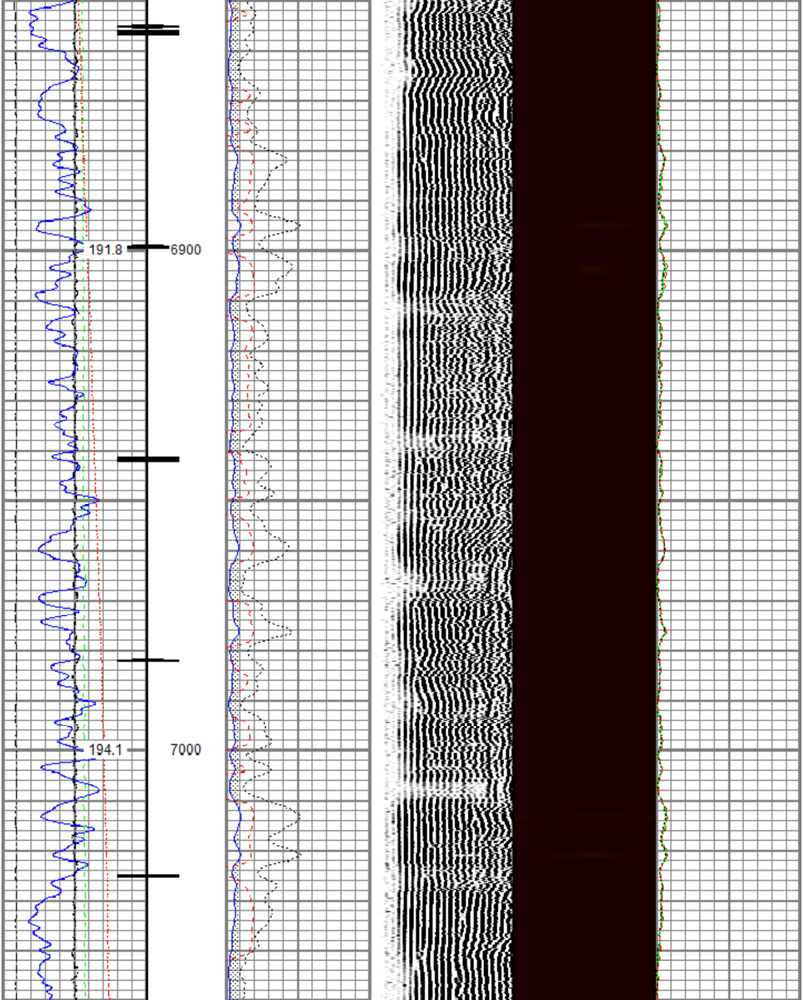
6700
189.6
6800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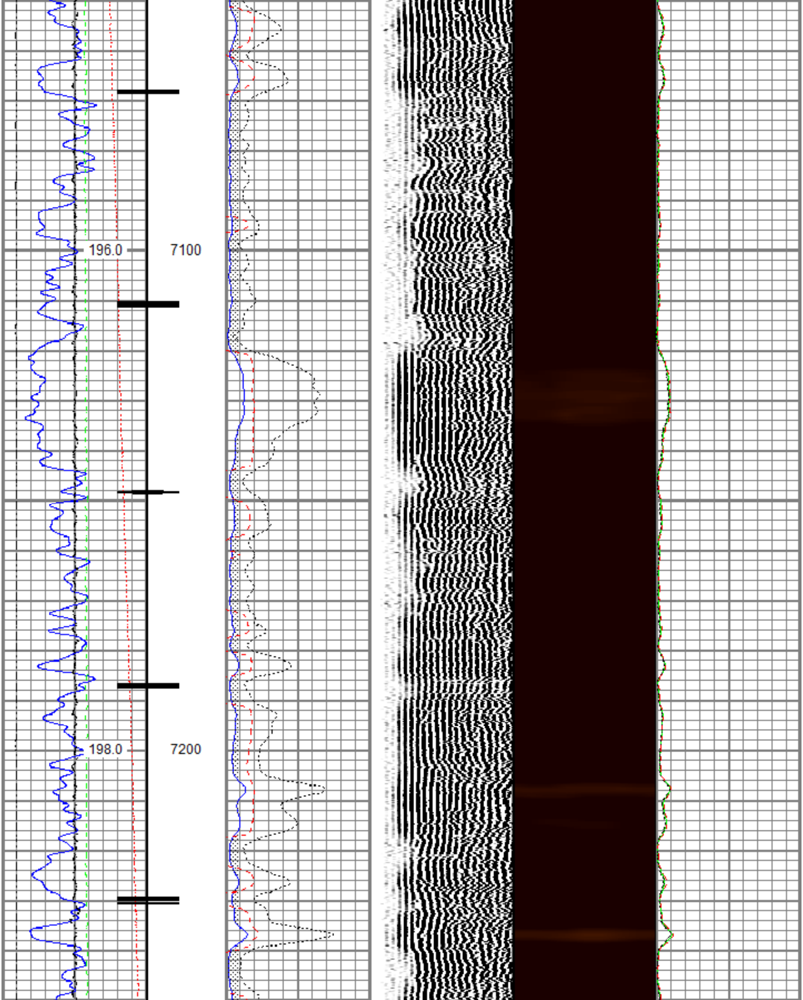
194.1
7000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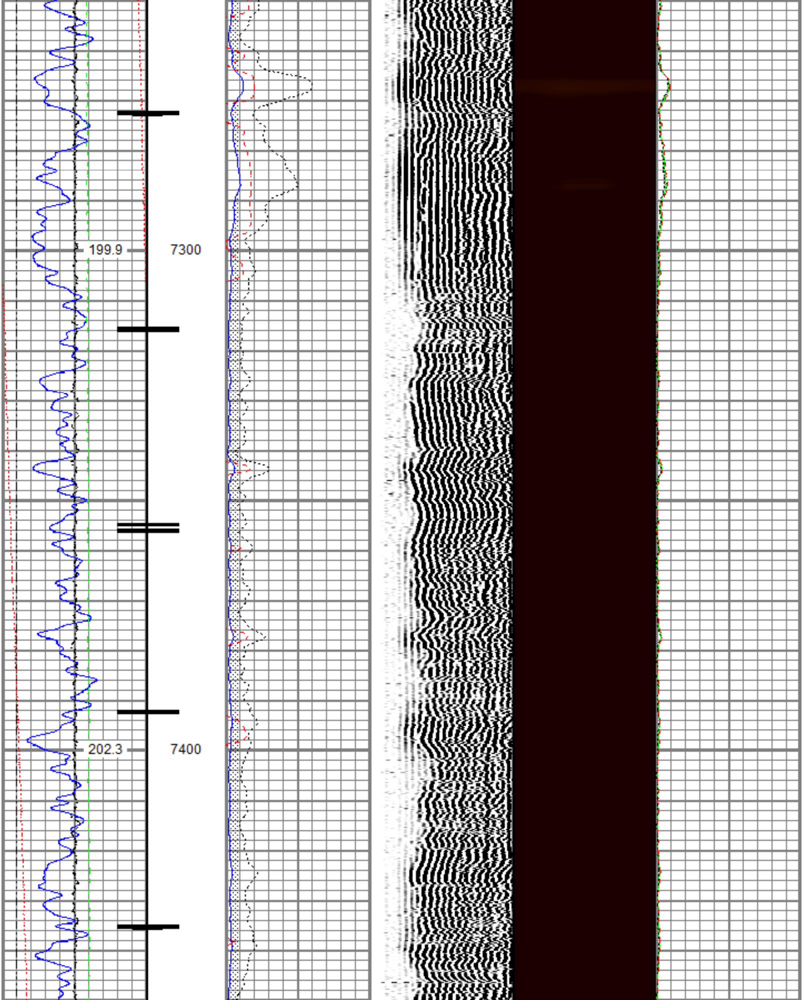
7100
198.0
7200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7300
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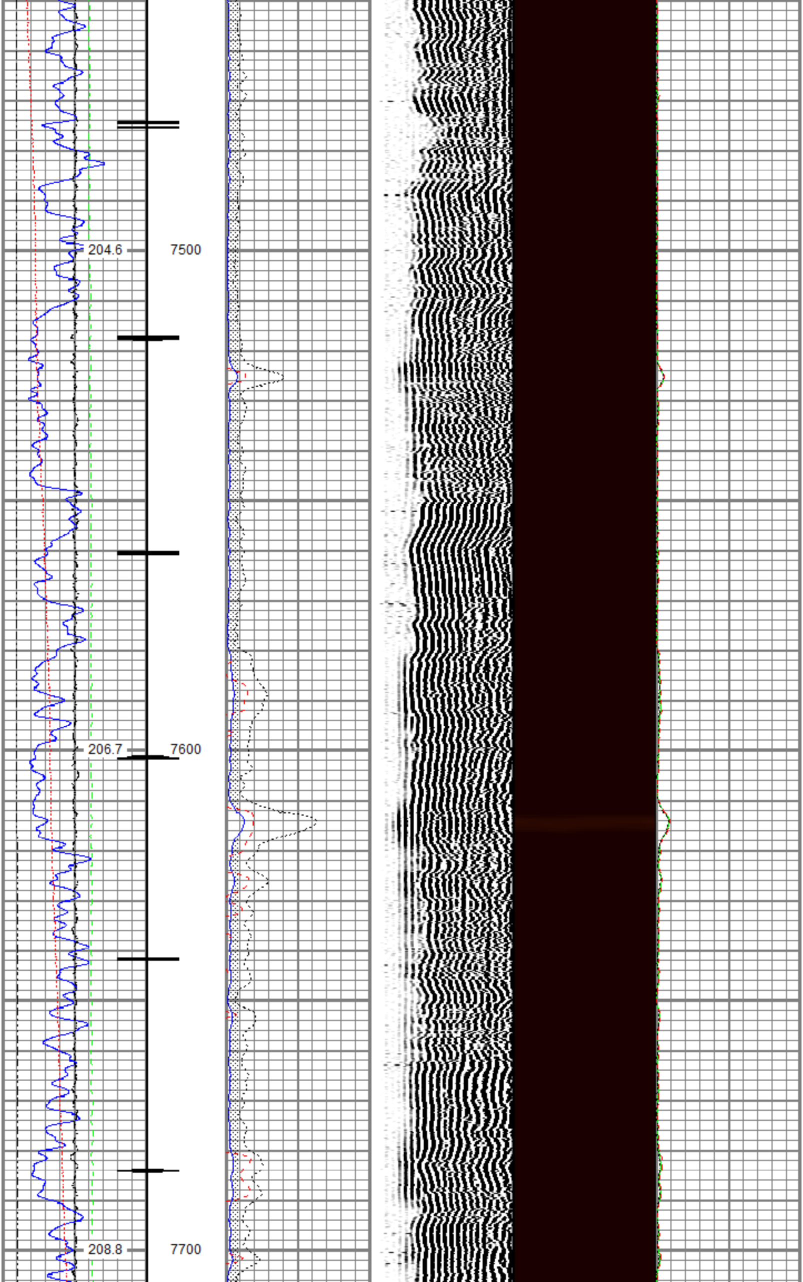
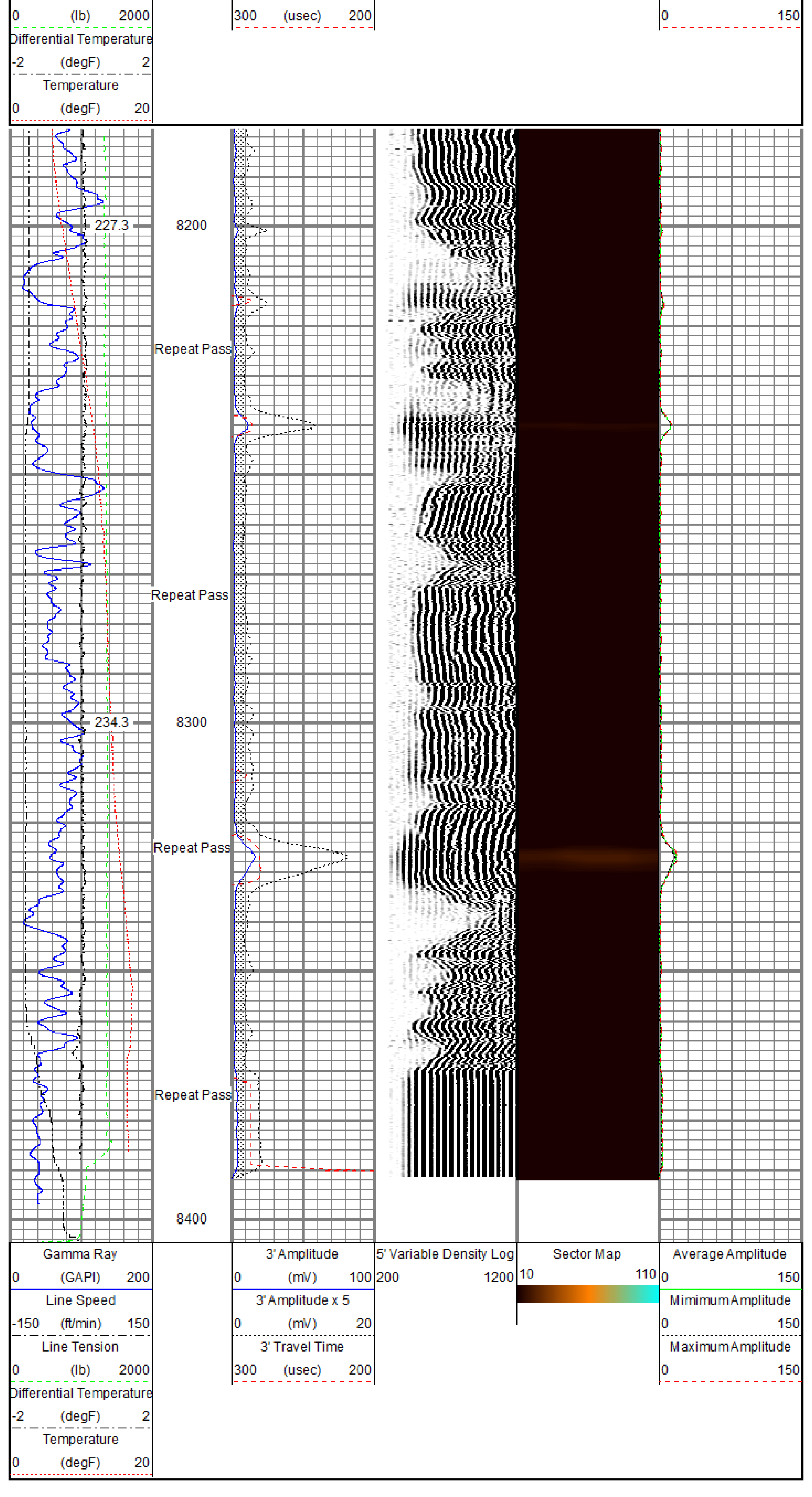

204.6
7500
206.7
7600
208.8
7700

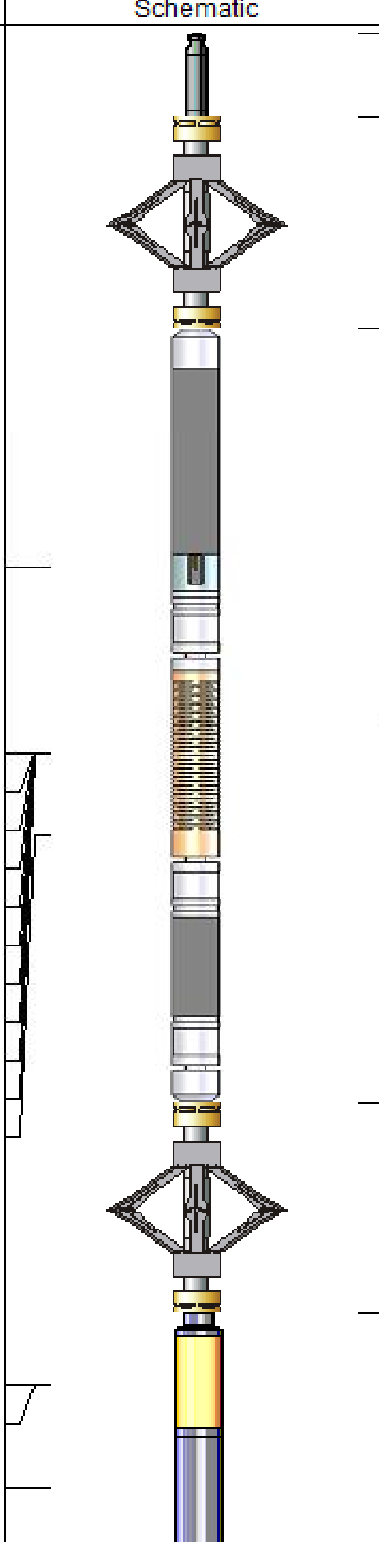
RELIANCE OILFIELD SERVICES

Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 334-26_rbl_09-02-18\tep_federal pa 334-26_rbl_09-02-18.db
Dataset Pathname	repeat.4
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Sep 04 15:14:36 2018
Charted by	Depth in Feet scaled 1:240



Sensor	Offset (ft)	Schematic	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					
			Probe Radii-2750 RBT (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS5	14.10					
WVFS8	14.10					
WVFS7	14.10					
WVFS6	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 (FW1211-026) 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 334-26_rbl_09-02-18.db: field/well/run1/main.5
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 334-26_rbl_09-02-18\tep_federal pa 334-26_rbl_09-02-18.db
Dataset Pathname	main.5
Dataset Creation	Tue Sep 04 15:11:11 2018

Gamma Ray Calibration Report

Serial Number:	FW1211-026	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:17:31 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	113.6	cps
Calibrator Reading:	1015.2	cps
Sensitivity:	0.7065	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	474.429	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	0.543	0.800	81.196	148.669	0.426
CAL	0.002	0.744				
5'	0.004	0.536	0.800	81.196	151.162	0.209
SUM						
S1	0.003	0.630	0.000	100.000	159.593	-0.549
S2	0.003	0.610	0.000	100.000	164.998	-0.567
S3	0.002	0.564	0.000	100.000	178.087	-0.390
S4	0.004	0.513	0.000	100.000	196.537	-0.798
S5	0.003	0.563	0.000	100.000	178.570	-0.543
S6	0.003	0.563	0.000	100.000	178.570	-0.543
S7	0.002	0.587	0.000	100.000	171.176	-0.426
S8	0.005	0.642	0.000	100.000	157.039	-0.759

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.744	1.000	0.000

Air Zero Calibration, performed Sun Sep 02 09:02:51 2018:

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