RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	5-Mile Ranch SG 423-26
Field	Grand Valley
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well 5-Mile Ranch SG 423-26
Field Grand Valley
County Garfield State Colorado
Location: API # : 05-045-23947
SEC 26 TWP 7S RGE 96W

Other Services
PN

			Elevation
Permanent Datum	Ground Level	Elevation 5076.3'	K.B. 5100.3'
Log Measured From	Kelly Bushing	24 FT	D.F. 5099.3'
Drilling Measured From	Kelly Bushing		G.L. 5076.3

Date	27-NOV-2018
Run Number	One
Depth Driller	5564 FT
Depth Logger	5515 FT
Bottom Logged Interval	5501 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	178°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	16:55
Equipment Number	HD-0359
Location	Grand Junction, CO
Recorded By	Z. Fisher
Witnessed By	Dustin Welsh

Borehole Record

Run Number	Bit	From	To

Tubing Record

Size	Weight	From	To

Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1002 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	5524 FT
Intermediate #2					
Liner					

<<< Fold Here >>>

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 1864-1885 FT
Log ran from 5501 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

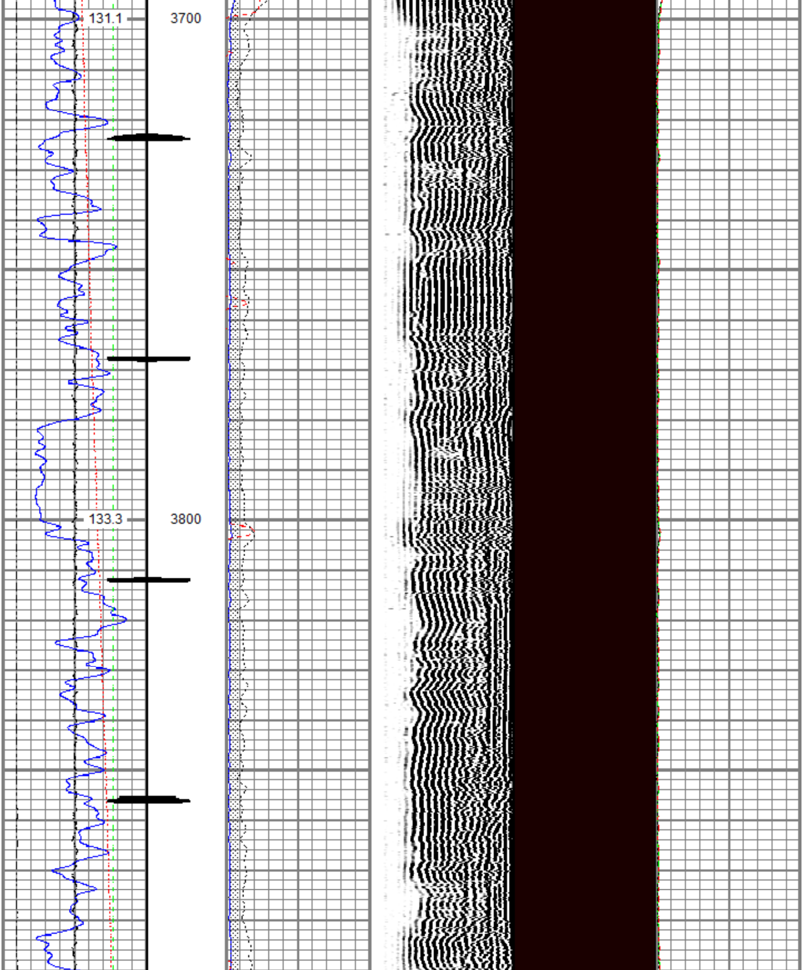
RELIANCE
OILFIELD SERVICES

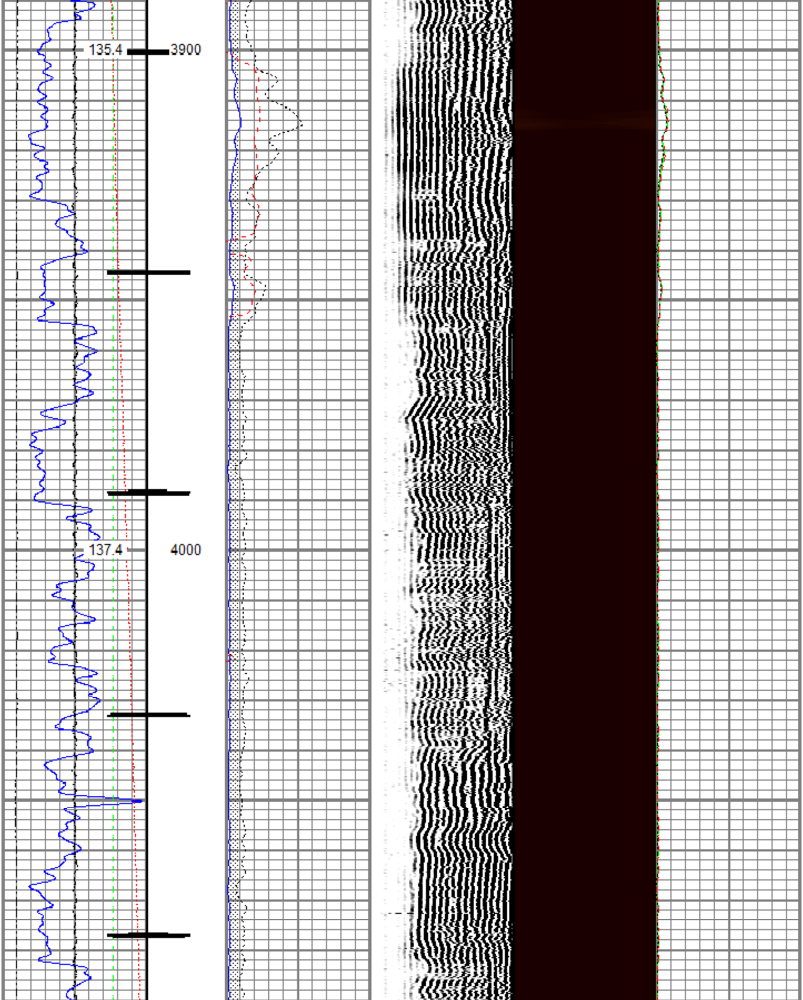
Main Pass

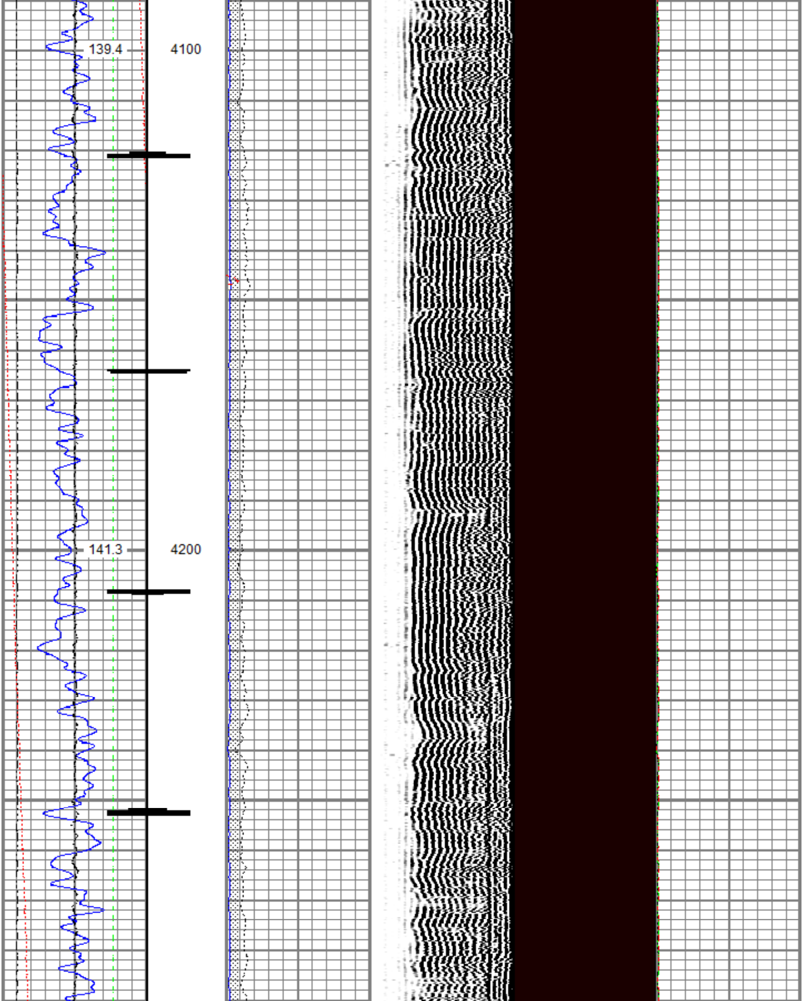
Recorded With 0 PSI Surface Induced Pressure

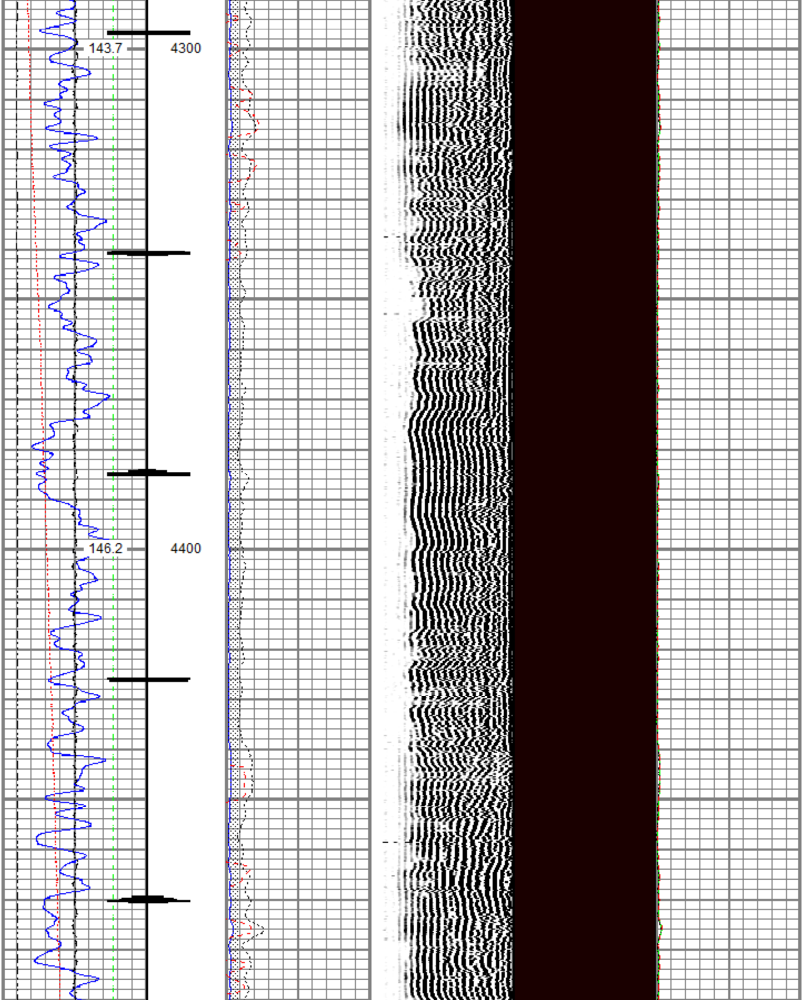
Database File	tep\tep_5-mile ranch sg 423-26_rbl_11-27-18\tep_5-mile ranch sg 423-26_rbl_11-27-18.db
Dataset Pathname	main
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 27 16:55:10 2018
Charted by	Depth in Feet scaled 1:240

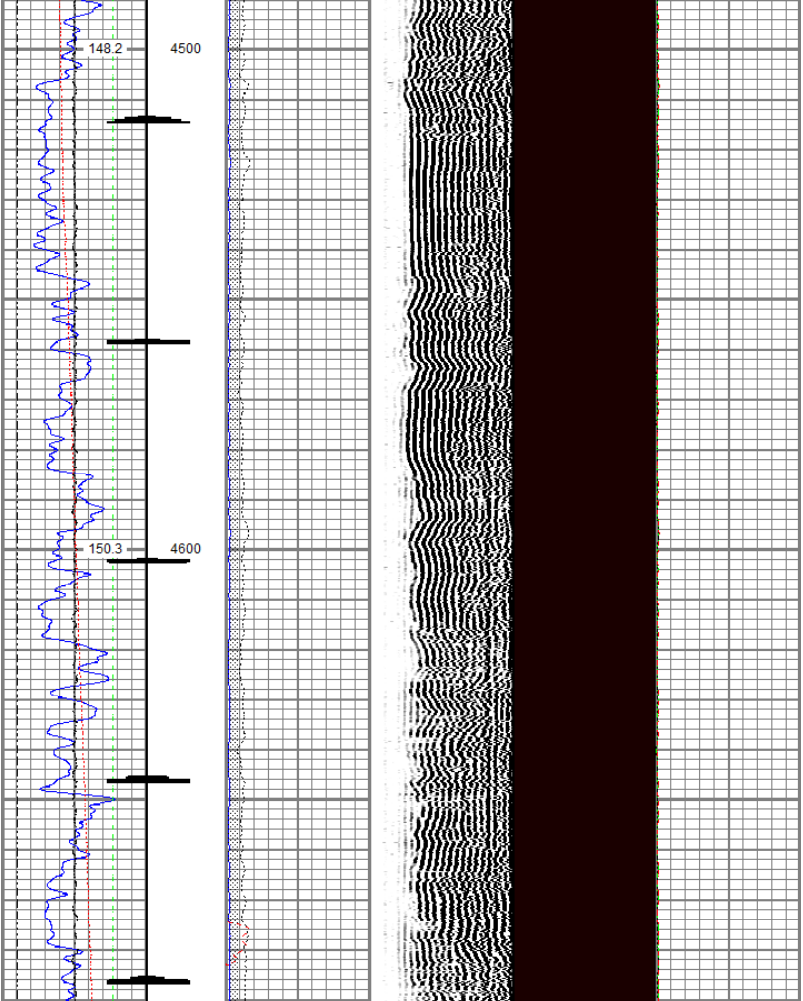
Curve	Left	Unit	Right
Gamma Ray	0	(GAPI)	200
Line Speed	-150	(ft/min)	150
Line Tension	0	(lb)	2000
Differential Temperature	-2	(degF)	2
Temperature	0	(degF)	20
CCL	10		0
3' Amplitude	0	(mV)	100
3' Amplitude x 5	0	(mV)	20
3' Travel Time	300	(usec)	200
5' Variable Density Log	200		1200
Sector Map	10		110
Average Amplitude	0		150
Mimimum Amplitude	0		150
Maximum Amplitude	0		150

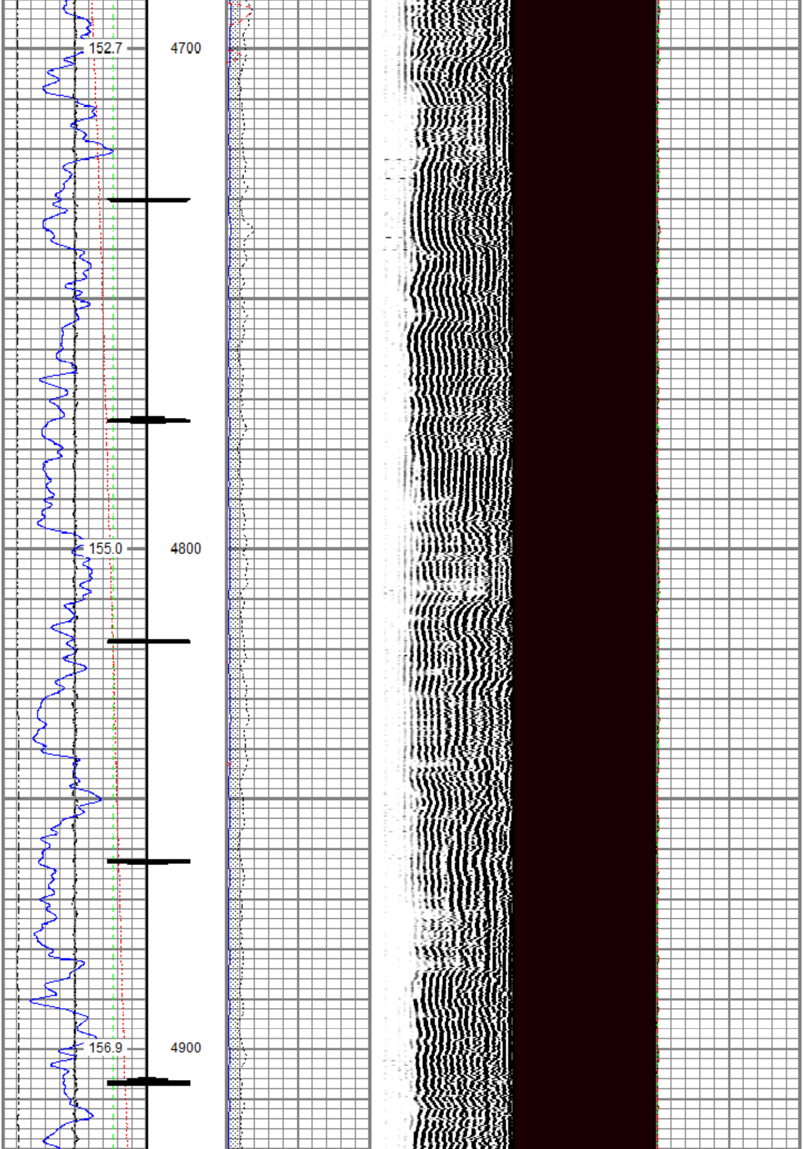


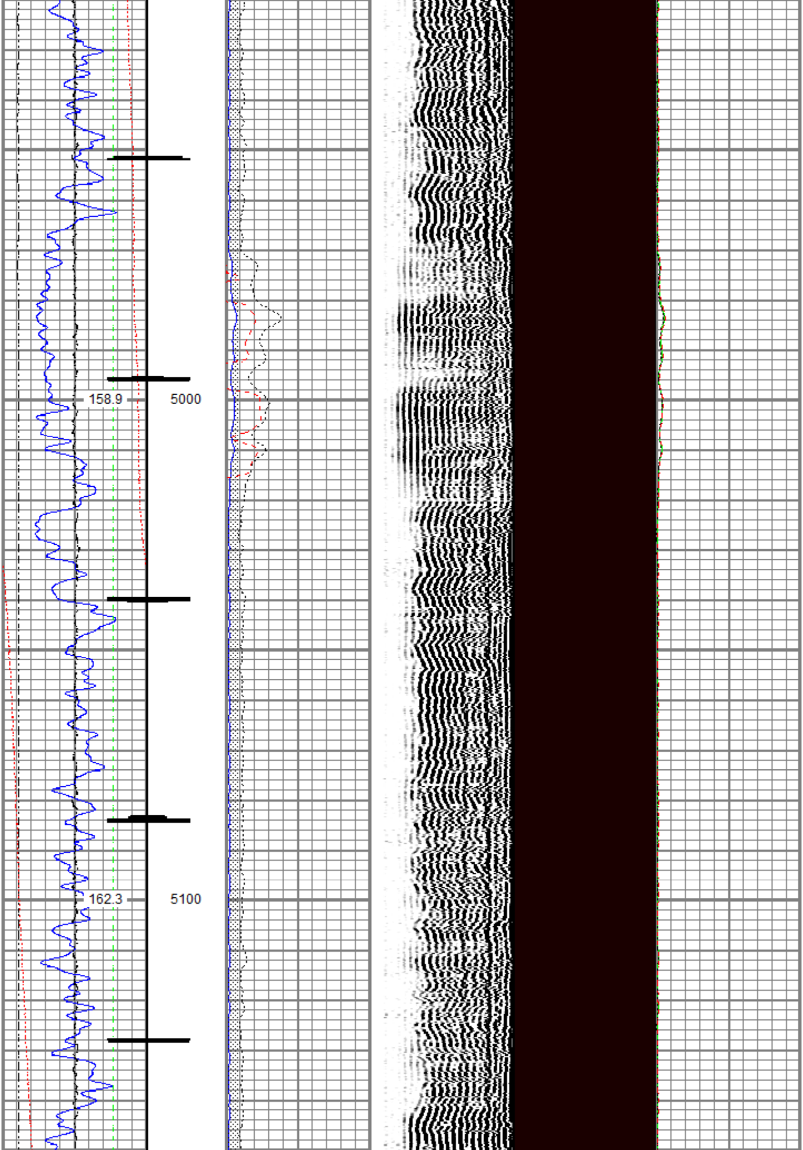


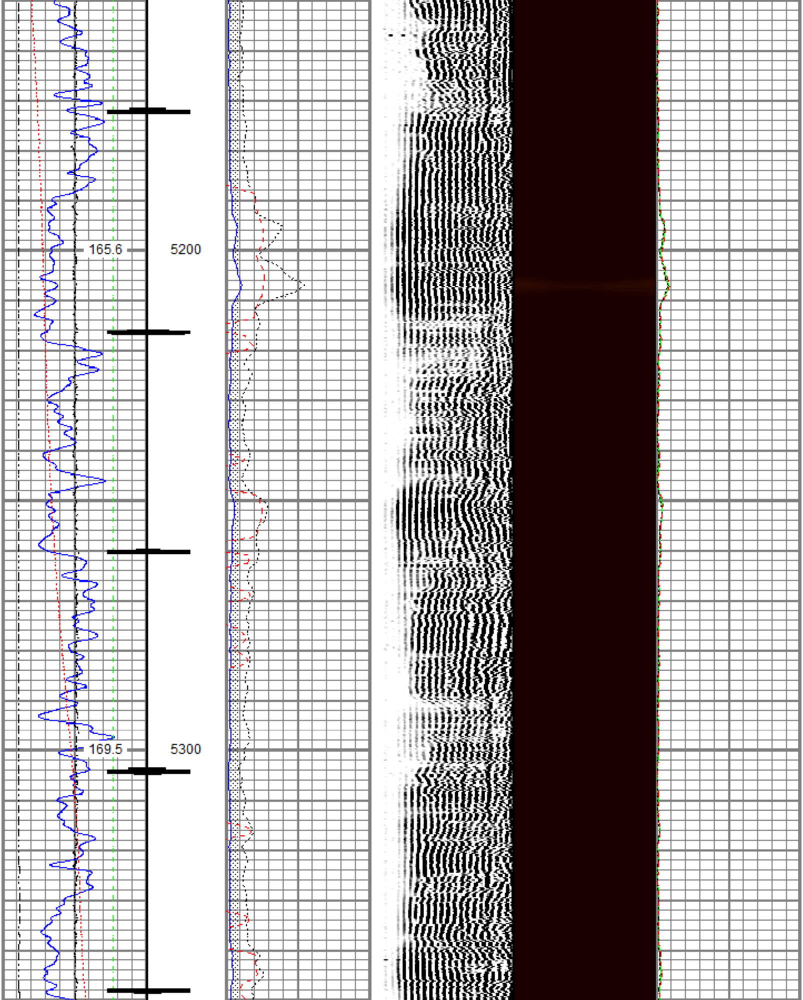


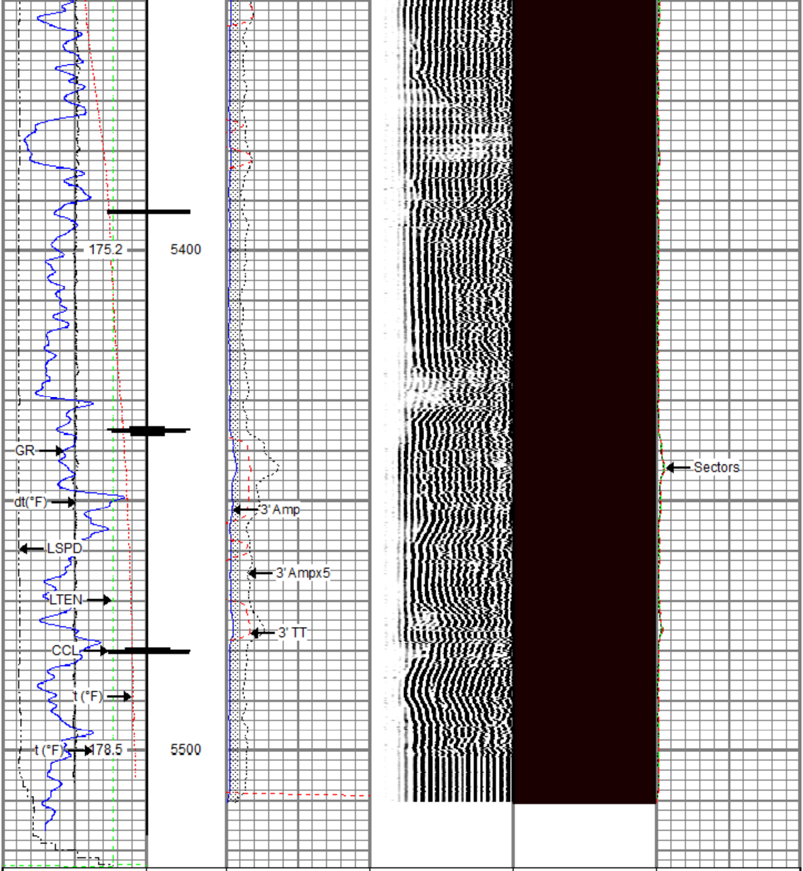












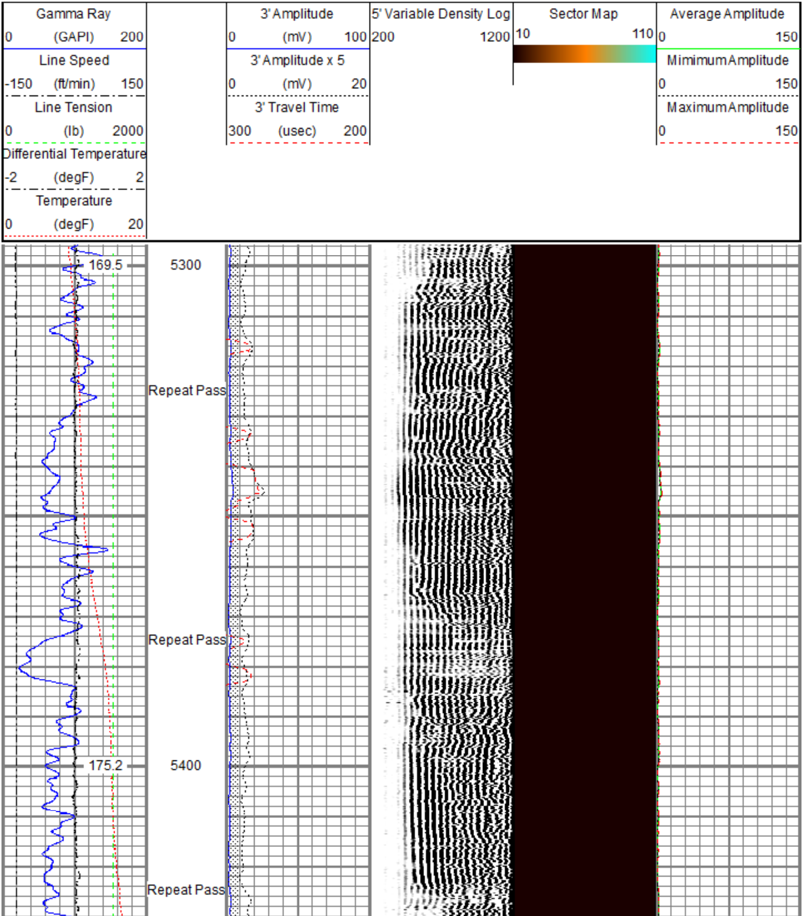
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				
10 CCL 0				

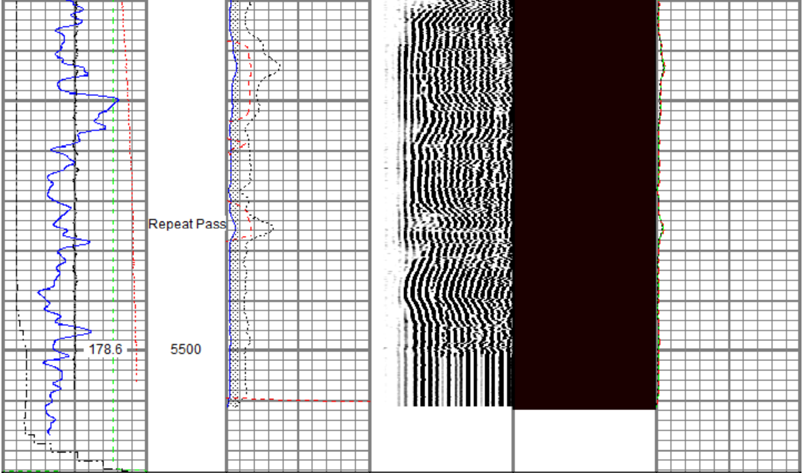
RELIANCE
OILFIELD SERVICES

Repeat Pass

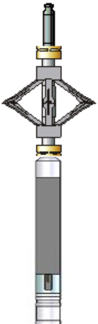
Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_5-mile ranch sg 423-26_rbl_11-27-18\tep_5-mile ranch sg 423-26_rbl_11-27-18.db
Dataset Pathname	repeat
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 27 16:52:03 2018
Charted by	Depth in Feet scaled 1:240

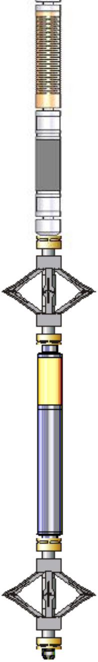




Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200	10 110	0 150
Line Speed		3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150		0 (mV) 20			0 150
Line Tension		3' Travel Time			Maximum Amplitude
0 (lb) 2000		300 (usec) 200			0 150
Differential 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 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
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
HEADVOLT	9.85
CCL$2	6.42
CCL$1	6.42
GR	5.18



Probe Radii-2750 RBT (101013) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
Probe GR-CCL-2750 GOB (FW1211-081) 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_5-Mile Ranch SG 423-26_RBL_11-27-18.db: field/well/run1/main
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_5-Mile Ranch SG 423-26_RBL_11-27-18\TEP_5-Mile Ranch SG 42
Dataset Pathname	main
Dataset Creation	Tue Nov 27 16:55:10 2018

Gamma Ray Calibration Report

Serial Number:	FW1211-081	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:22:44 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	112.4	cps
Calibrator Reading:	1008.7	cps
Sensitivity:	0.7107	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	32.598	ft

Master Calibration, performed Tue Nov 27 14:17:43 2018:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.005	0.764	0.800	81.196	104.569	1.272
CAL	0.757	0.756				
5'	-0.003	0.735	0.800	81.196	108.963	1.143
SUM						
S1	-0.005	0.721	0.000	100.000	137.850	0.660
S2	-0.005	0.727	0.000	100.000	136.695	0.646
S3	-0.004	0.723	0.000	100.000	137.438	0.591
S4	-0.004	0.747	0.000	100.000	133.078	0.551
S5	-0.004	0.741	0.000	100.000	134.297	0.489
S6	-0.004	0.733	0.000	100.000	135.629	0.608
S7	-0.004	0.704	0.000	100.000	141.224	0.524
S8	-0.004	0.764	0.000	100.000	130.174	0.574

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.757	0.756	1.000	0.000

Air Zero Calibration, performed Tue Nov 27 14:18:03 2018:

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

Temperature Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 13:21:13 2017	
	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF
Gain:	0.89	
Offset:	0.60	
Delta Spacing	1	

RELIANCE
OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	5-Mile Ranch SG 423-26
Field	Grand Valley
County	Garfield
State	Colorado