RELIANCE
OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Ware SR 512-12
Field	Rulison
County	Garfield
State	Colorado

Company	TEP Rocky Mountain LLC		
Well	Ware SR 512-12		
Field	Rulison		
County	Garfield	State	Colorado
Location:	API # : 05-045-23444		Other Services
	1801' FSL & 2302' FWL NESW		RBL
	SEC 12 TWP 7S RGE 94W		
Permanent Datum	Ground Level	Elevation 7479'	Elevation
Log Measured From	Kelly Bushing	24 FT	K.B. 7503'
Drilling Measured From	Kelly Bushing		D.F. 7502' G.L. 7479'

Date	31-DEC-2017
Run Number	One
Depth Driller	9942 FT
Depth Logger	9905 FT
Bottom Logged Interval	9900 FT
Top Log Interval	5800 FT
Open Hole Size	8.750"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	---
Estimated Cement Top	---
Time Well Ready	---
Time Logger on Bottom	---
Equipment Number	---
Location	Grand Junction, CO
Recorded By	J.Donnelly
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	32.3	H-40	Surface	1130 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9899 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 Reliance Bond Log dated 31-DEC-2017
Log ran from 9900 FT to 5800 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

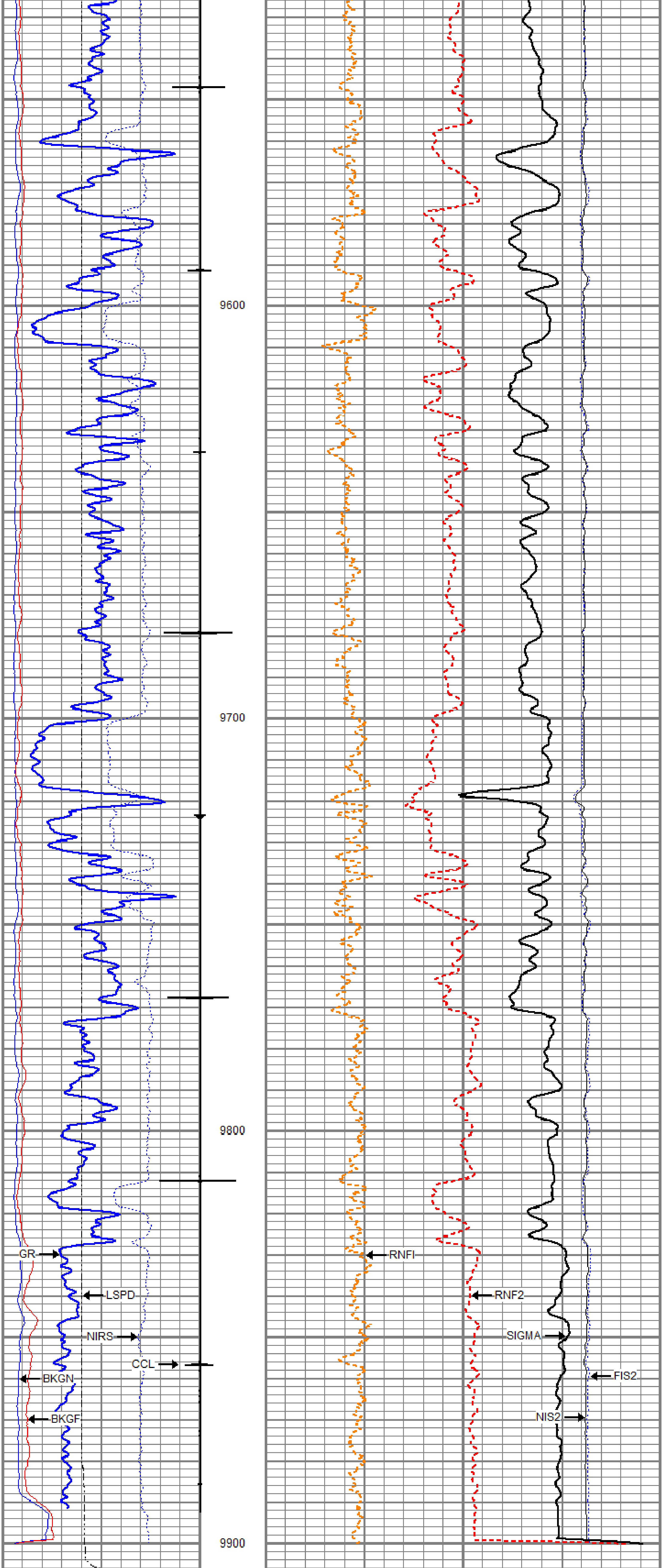
RELIANCE
OILFIELD SERVICES

Main Pass

Database File	tep\ware sr 512-12\20180102\pn\tep_ware sr 512-12_pn_12-31-2017.db
Dataset Pathname	main.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Mon Jan 01 18:03:19 2018
Charted by	Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 150
Casing Collar Locator
-100 Line Speed (ft/min) 100
0 NIRS (cps) 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
FIS2
0 (cps) 45000
NIS2
0 (cps100000



0 Gamma Ray (GAPI) 150
Casing Collar Locator
-100 Line Speed (ft/min) 100
0 NIRS (cps) 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
FIS2
0 (cps) 45000
NIS2
0 (cps100000

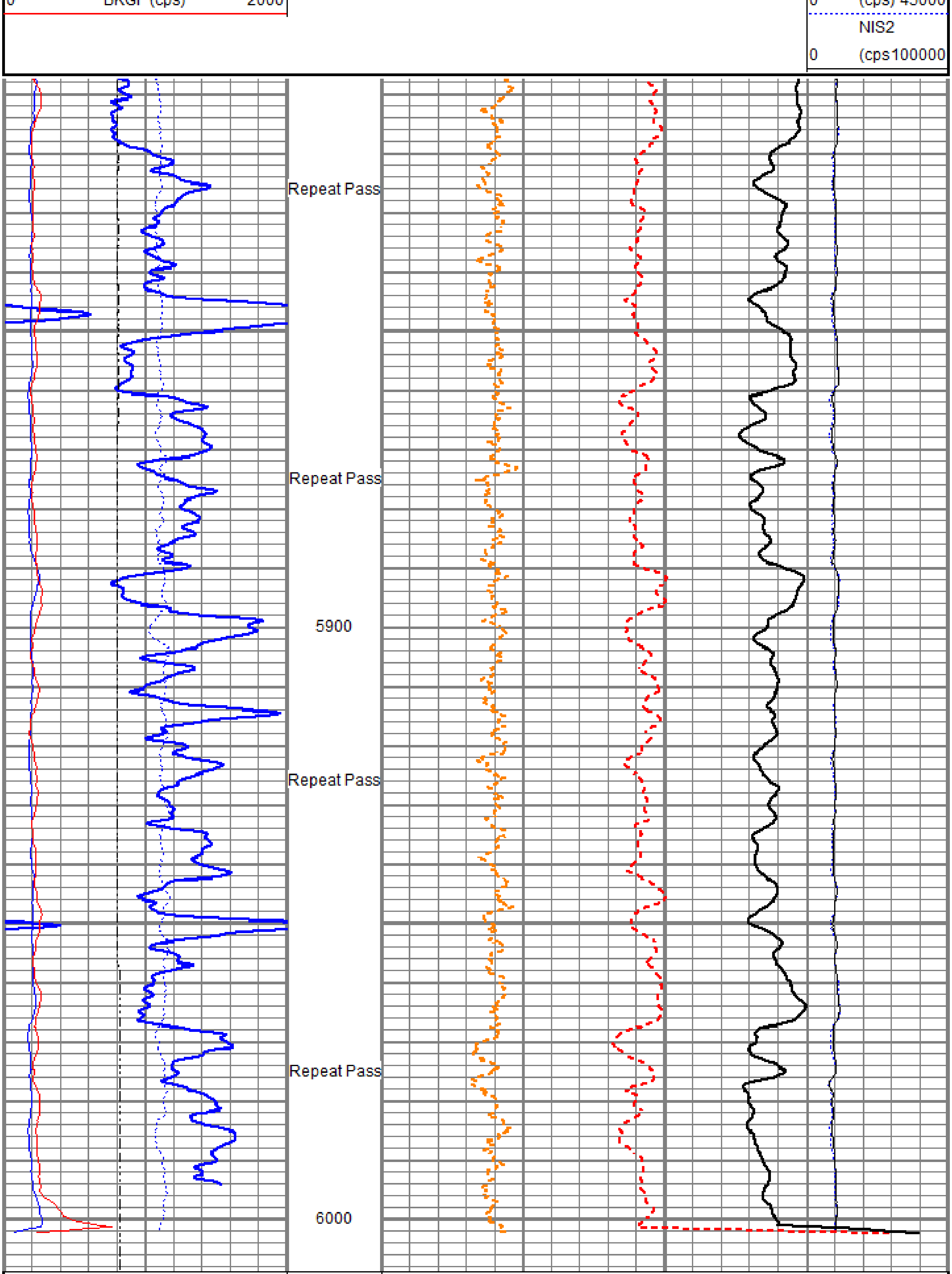
RELIANCE OILFIELD SERVICES

Repeat Pass

Database File	tep\ware sr 512-12\20180102\pn\tep_ware sr 512-12_pn_12-31-2017.db
Dataset Pathname	repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Mon Jan 01 18:08:32 2018
Charted by	Depth in Feet scaled 1:240

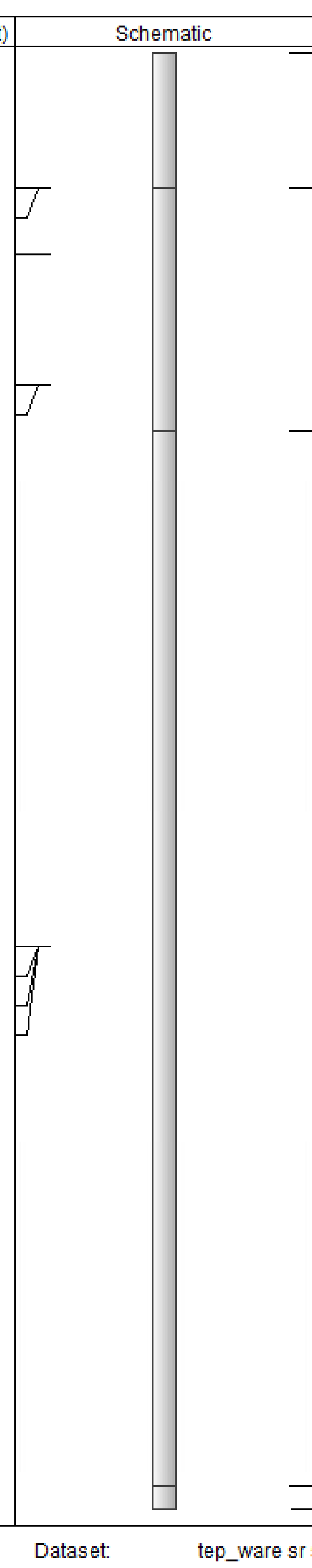
0 Gamma Ray (GAPI) 150
-100 Line Speed (ft/min) 100
0 NIRS (cps) 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
FIS2
0 (cps) 45000
NIS2
0 (cps100000



0 Gamma Ray (GAPI) 150
-100 Line Speed (ft/min) 100
0 NIRS (cps) 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
FIS2
0 (cps) 45000
NIS2
0 (cps100000

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			HWS_TCU-001 (001705) HWS Telemetry Control Unit	1.52	1.69	7.80
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97					
			HWS_GCL-001 (001681) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
GCL_GR GCL_GR	12.50 12.50					
Long Far Near Anci	6.25 6.25 6.25 6.25		HWS_RAS-RAS001 (003041) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (000001) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset:	tep_ware sr 512-12_pn_12-31-2017.db: field/well/run1/main.2
Total length:	16.21 ft
Total weight:	78.01 lb
O.D.:	1.69 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\ware sr 512-12\20180102\pn\tep_ware sr 512-12_pn_12-31-2017.db
Dataset Pathname	main.2
Dataset Creation	Mon Jan 01 18:03:19 2018

Gamma Ray Calibration Report

Serial Number:	001681	
Tool Model:	001	
Performed:	(Not Performed)	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	
Calibrator Reading:	1.0	
Sensitivity:	1.0000	GAPI/

RELIANCE OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	Ware SR 512-12
Field	Rulison
County	Garfield
State	Colorado