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OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Ware SR 423-12
Field	Rulison
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Ware SR 423-12
Field Rulison
County Garfield State Colorado
Location: API # : 05-045-23440
1797' FSL & 2293' FWL NESW
SEC 12 TWP 7S RGE 94W
Other Services: RBL

			Elevation
Permanent Datum	Ground Level	Elevation 7479'	K.B. 7503'
Log Measured From	Kelly Bushing	24 FT	D.F. 7502'
Drilling Measured From	Kelly Bushing		G.L. 7479'

Date	19-DEC-2017
Run Number	One
Depth Driller	9484 FT
Depth Logger	9437 FT
Bottom Logged Interval	9431 FT
Top Log Interval	5376 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	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	32.3	H-40	Surface	1105 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9443 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 Reliance Bond Log dated 18-DEC-2017
Log ran from 9431 FT to 5376 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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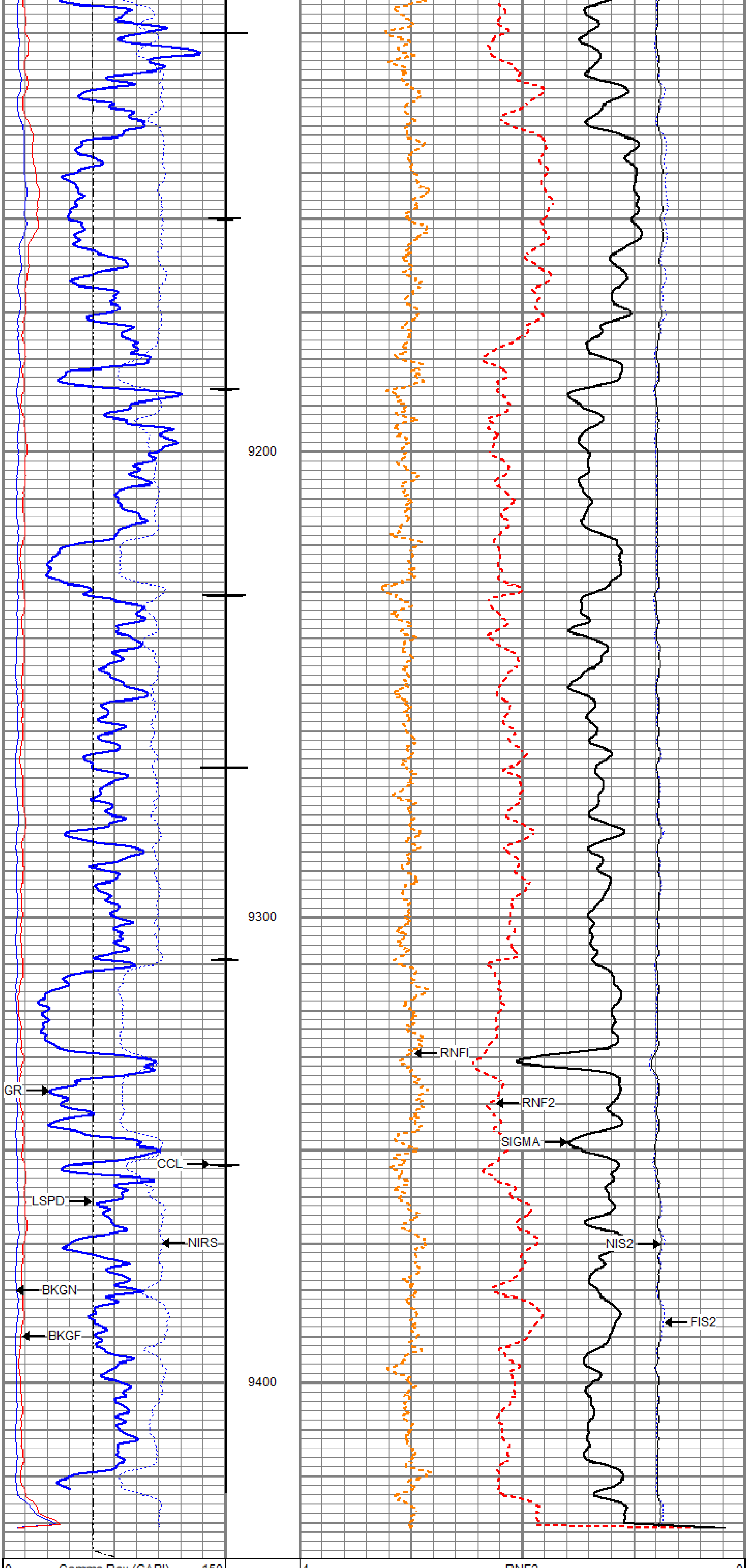
Main Pass

Database File	tep\sr 423-12\pn\tep_sr_423-12_pn_dec-19-2017.db
Dataset Pathname	main.3
Presentation Format	ros_pdn_hunter
Dataset Creation	Tue Dec 19 11:54:46 2017
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	(cps	100000



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	(cps	100000

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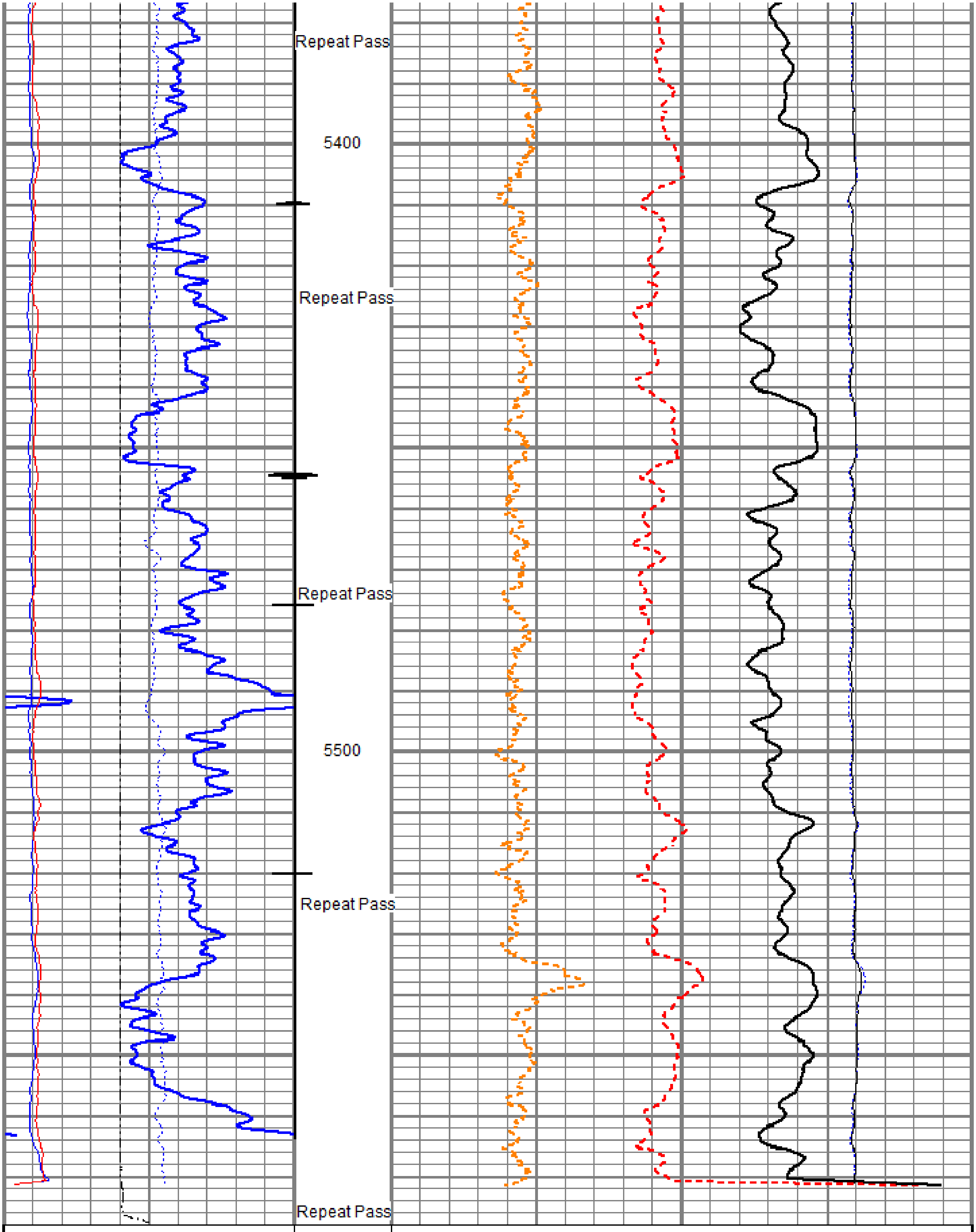
Repeat Pass

Database File	tep\sr 423-12\pn\tep_sr_423-12_pn_dec-19-2017.db
Dataset Pathname	repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Tue Dec 19 11:56:28 2017
Charted by	Depth in Feet scaled 1:240

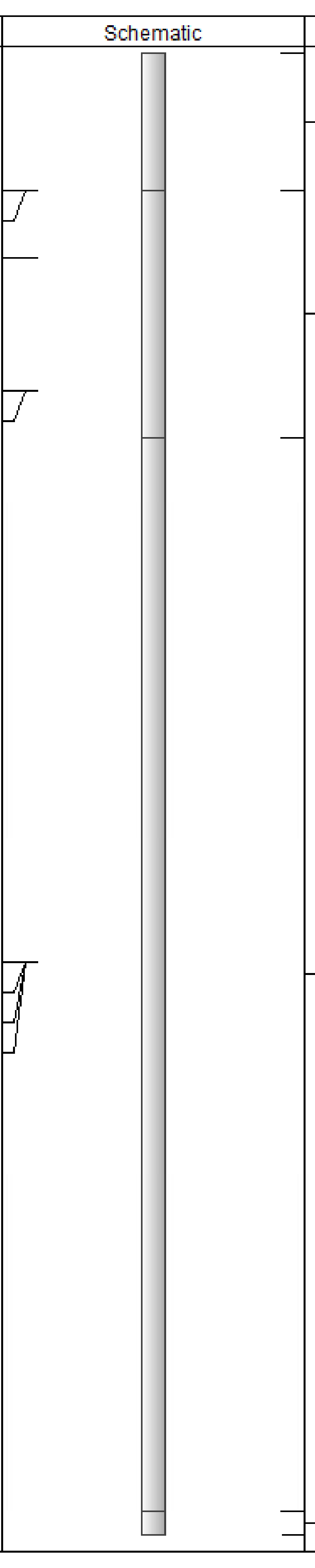
0	Gamma Ray (GAPI)	150
	Casing Collar Locator	
-100	Line Speed (ft/min)	100
0	NIRS (cps)	400000
0	BKGN (cps)	4000
0	BKGF (cps)	2000

4	RNF2	0
60	SIGMA (cu)	0
4.5	RNFI	0
	FIS2	
0	(cps)	45000
	NIS2	
0	(cps	100000



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	(cps	100000

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_sr_423-12_pn_dec-19-2017.db: field/well/run1/main.3
Total length:	16.21 ft
Total weight:	78.01 lb
O.D.:	1.69 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\sr 423-12\pn\tep_sr_423-12_pn_dec-19-2017.db
Dataset Pathname	main.3
Dataset Creation	Tue Dec 19 11:54:46 2017

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/

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