RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal RWF 512-17
Field	Rulison
County	Garfield
State	Colorado

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Well Federal RWF 512-17
Field Rulison
County Garfield State Colorado
Location: API # : 05-045-24038
SEC 17 TWP 6S RGE 94W

Other Services
RBL

Permanent Datum	Ground Level	Elevation 6175'	Elevation
Log Measured From	Kelly Bushing	24 FT	K.B. 6199' D.F. --- G.L. 6175'
Drilling Measured From	Kelly Bushing		

Date	24-JUN-2019
Run Number	One
Depth Driller	8973 FT
Depth Logger	8911 FT
Bottom Logged Interval	8905 FT
Top Log Interval	4772 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	36	J-55	Surface	1137 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	8932 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 24-JUN-2019
Log ran from 8905 FT to 4772 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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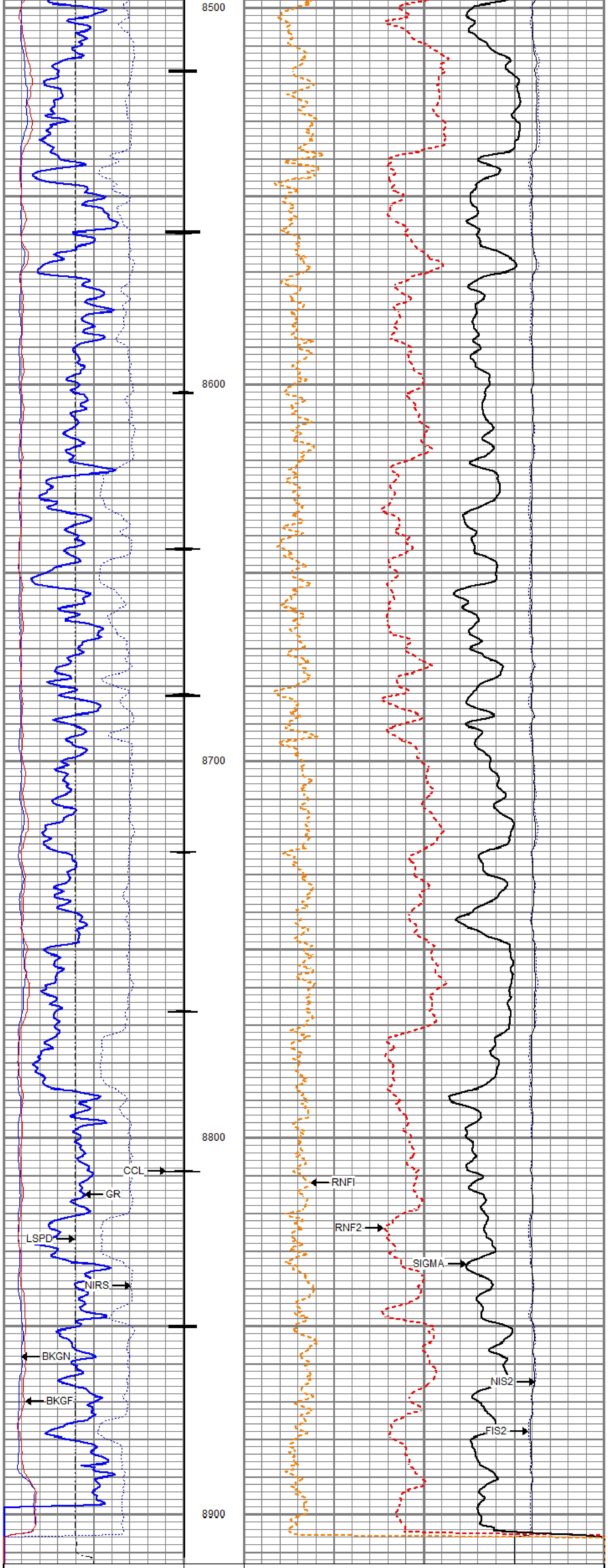
Main Pass

Database File	f:\data\tep\federal rwf 512-17\pn\tep_federal rwf 512-17_pn_06-24-19.db
Dataset Pathname	runSHIFTED/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Fri Jun 28 14:21:34 2019
Charted by	Depth in Feet scaled 1:240



0	GR (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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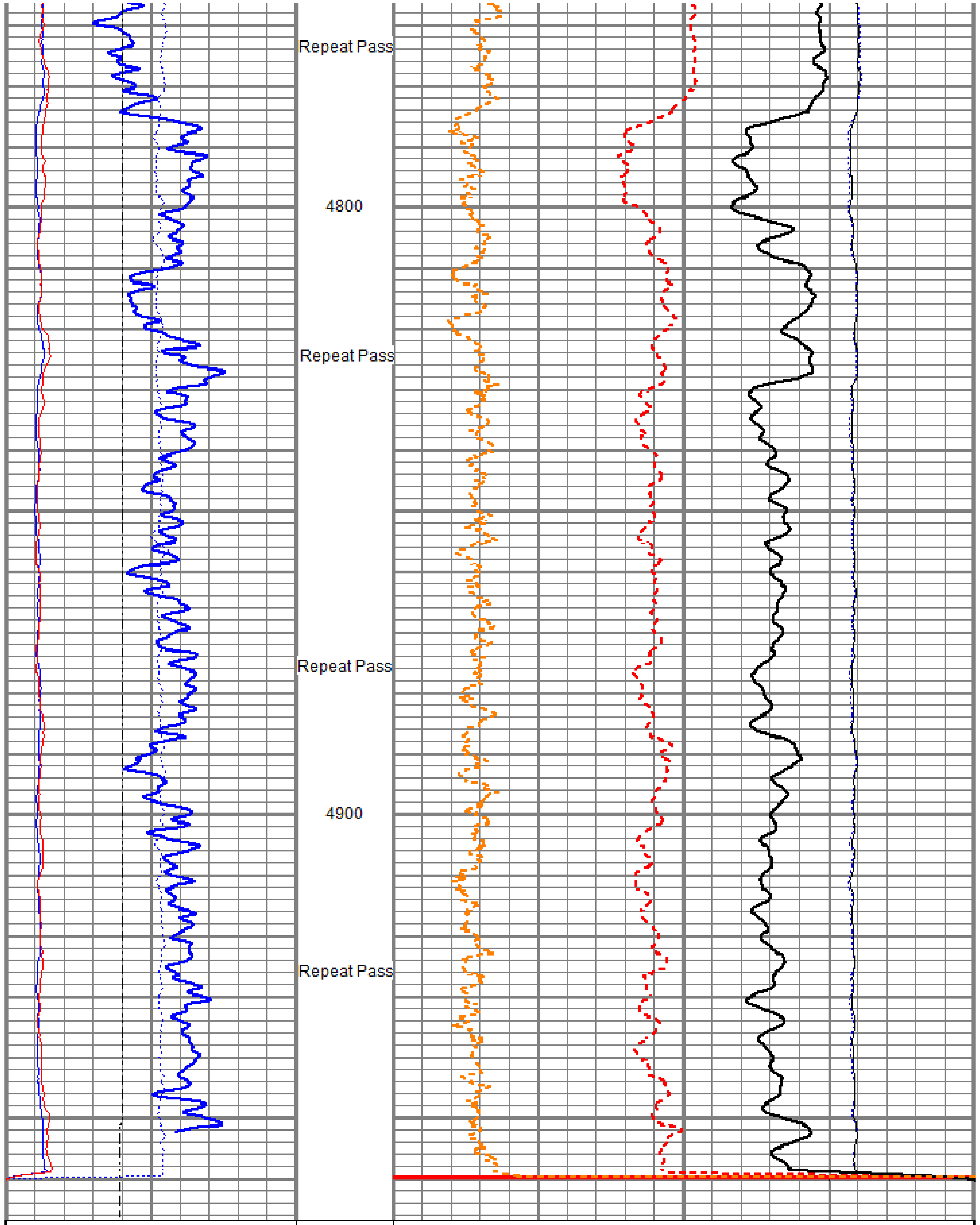
Repeat Pass

Database File	f:\data\tep\federal rwf 512-17\pn\tep_federal rwf 512-17_pn_06-24-19.db
Dataset Pathname	Repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Tue Jun 25 15:07:20 2019
Charted by	Depth in Feet scaled 1:240

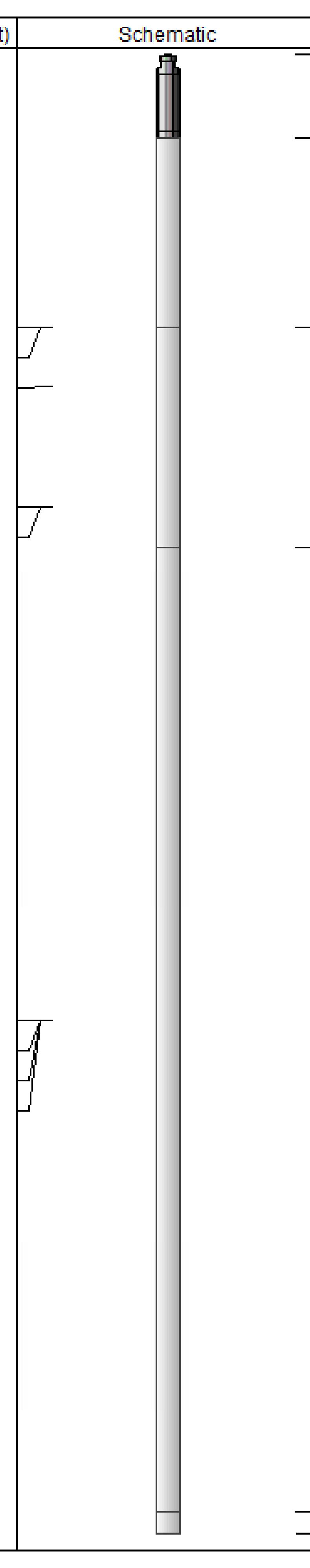
0	GR (GAPI)	150
-100	Line Speed (ft/min)	100
0	NIRS (cps)	400000
0	BKGN (cps)	4000
0	BKGF (cps)	2000

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



0	GR (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	(cps	100000

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-16875 GO Titan 1-11/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.69	5.40
			HWS_TCU-002 (001705) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97					
			HWS_GCL-001 (001475) 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-RAS002 (003041) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (001724) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset:	tep_federal rwf 512-17_pn_06-24-19.db: field/well/run1/Main1.2
Total length:	18.02 ft
Total weight:	86.48 lb
O.D.:	1.69 in

Calibration Report

Database File	f:\data\tep\federal rwf 512-17\pn\tep_federal rwf 512-17_pn_06-24-19.db
Dataset Pathname	Main1.2
Dataset Creation	Tue Jun 25 15:23:30 2019

Gamma Ray Calibration Report

Serial Number:	001475	
Tool Model:	001	
Performed:	Fri Oct 19 14:55:00 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	
Calibrator Reading:	1.0	
Sensitivity:	1.0000	GAPI/

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