RELIANCE OILFIELD SERVICES

Pulsed Neutron
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Clough NR 511-3
Field	Rulison
County	Garfield
State	Colorado

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Location: API # : 05-045-23914
SEC 3 TWP 6S RGE 94W

Other Services
RBL

Permanent Datum Ground Level Elevation 6719.1'
Log Measured From Kelly Bushing 24 FT
Drilling Measured From Kelly Bushing

Elevation
K.B. 6743.1'
D.F. 6742.1'
G.L. 6719.1'

Date	12-SEP-2018	
Run Number	One	
Depth Driller	10679 FT	
Depth Logger	10579 FT	
Bottom Logged Interval	10573 FT	
Top Log Interval	6252 FT	
Open Hole Size	8.750"	
Type Fluid	Water	
Density / Viscosity	8.34 lb/gal	
Max. Recorded Temp.	--	
Estimated Cement Top	--	
Time Well Ready	ROA	
Time Logger on Bottom	10:00	
Equipment Number	HD-0359	
Location	Grand Junction, CO	
Recorded By	Z. Fisher	
Witnessed By	D. Welsh	

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	J55	Surface	1125 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	10637 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 12-SEP-2018
Log ran from 10573 FT to 6252 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\tep_clough nr 511-23_pn_09-12-18\tep_clough nr 511-23_pn_09-12-18.db
Dataset Pathname	merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Fri Sep 14 11:05:56 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	(cps	100000

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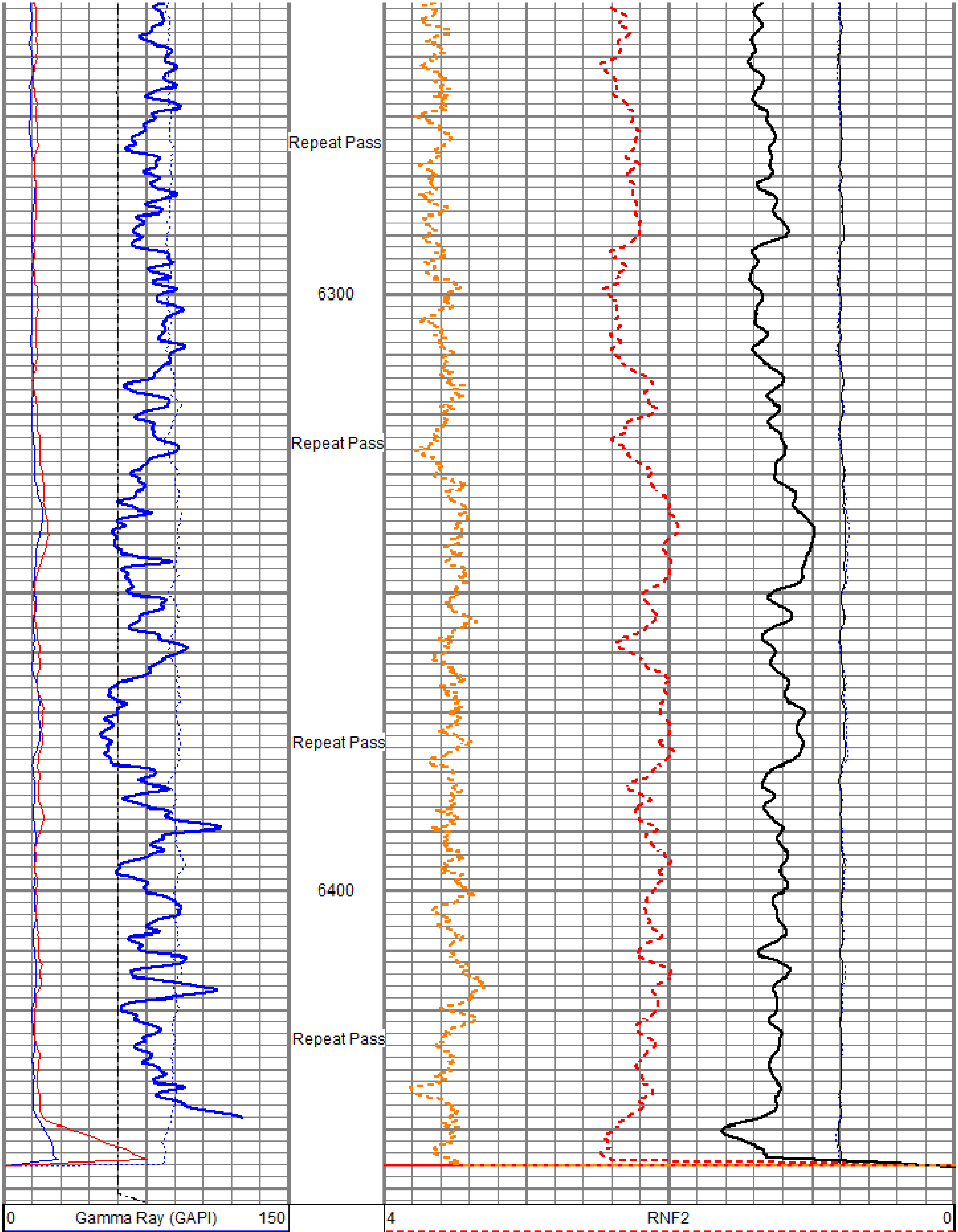
Repeat Pass

Database File	tep\tep_clough nr 511-23_pn_09-12-18\tep_clough nr 511-23_pn_09-12-18.db
Dataset Pathname	repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Wed Sep 12 13:57:31 2018
Charted by	Depth in Feet scaled 1:240

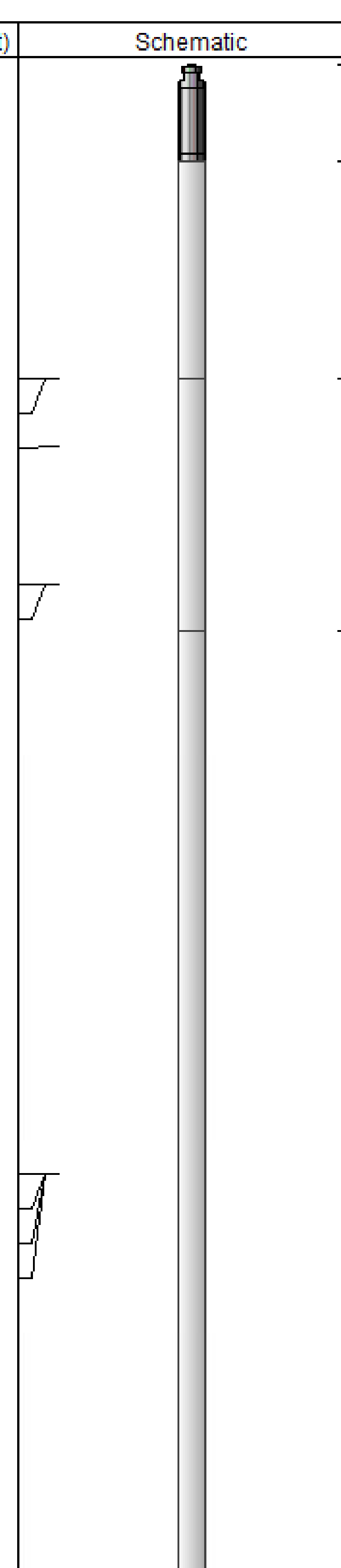
0	Gamma Ray (GAPI)	150
-100	Line Speed (ft/min)	100
0	NIRS (cps)	400000
0	BKGN (cps)	4000
0	BKGF (cps)	2000

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



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	(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 (001704) 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 (003040) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (001725) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset: tep_clough nr 511-23_pn_09-12-18.db: field/well/run1/repeat.2
Total length: 18.02 ft
Total weight: 86.48 lb
O.D.: 1.69 in

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