RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Clough NR 314-3
Field	Rulison
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Clough NR 314-3
Field Rulison
County Garfield State Colorado
Location: API # : 05-045-23915
SEC 3 TWP 6S RGE 94W

Other Services
RBL

			Elevation
Permanent Datum	Ground Level	Elevation 6719.1'	K.B. 6743.1'
Log Measured From	Kelly Bushing	24 FT	D.F. 6742.1'
Drilling Measured From	Kelly Bushing		G.L. 6719.1'

Date	15-JAN-2019
Run Number	One
Depth Driller	10170 FT
Depth Logger	10091 FT
Bottom Logged Interval	10086 FT
Top Log Interval	5724 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	1109 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	10128 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 15-JAN-2019
Log ran from 10086 FT to 5724 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\clough nr 314-3\pn\tep_clough nr 314-3_pn_01-14-19.db
Dataset Pathname	SHIFTED/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Thu Jan 17 13:05:51 2019
Charted by	Depth in Feet scaled 1:240

0	GR (GAPI)	150	4	RNF2	0
	Casing Collar Locator		60	SIGMA (cu)	0
-100	Line Speed (ft/min)	100	4.5	RNFI	0
0	NIRS	400000	0	FIS2	45000
0	BKGN (cps)	4000	0	NIS2	100000
0	BKGF (cps)	2000			

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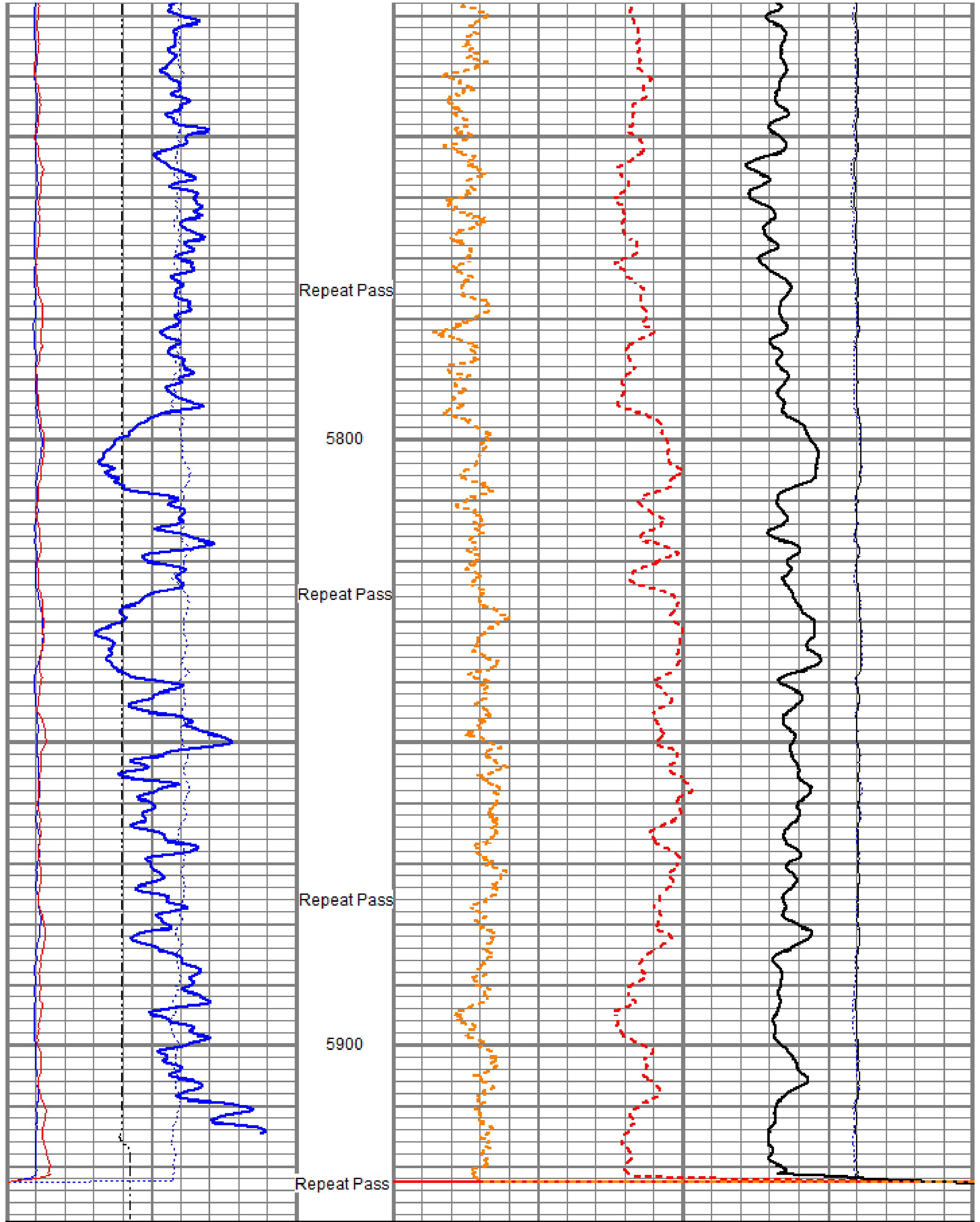
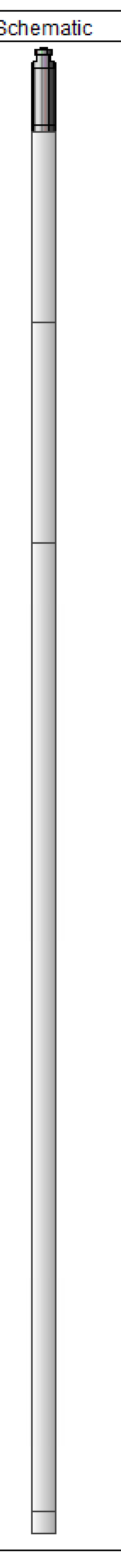
Repeat Pass

Database File f:\data\tep\clough nr 314-3\pn\tep_clough nr 314-3_pn_01-14-19.db
Dataset Pathname Repeat.2
Presentation Format ros_pdn_hunter
Dataset Creation Tue Jan 15 18:35:11 2019
Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	4	RNF2	0
-100	Line Speed (ft/min)	100	60	SIGMA (cu)	0
0	NIRS (cps)	400000	4.5	RNFI	0
0	BKGN (cps)	4000	0	FIS2 (cps)	45000
0	BKGF (cps)	2000	0	NIS2 (cps)	100000



0	GR (GAPI)	150	4	RNF2	0
-100	Line Speed (ft/min)	100	60	SIGMA (cu)	0
0	NIRS (cps)	400000	4.5	RNFI	0
0	BKGN (cps)	4000	0	FIS2 (cps)	45000
0	BKGF (cps)	2000	0	NIS2 (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
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97		HWS_TCU-002 (001704) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
GCL_GR GCL_GR	12.50 12.50		HWS_GCL-001 (001681) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
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 (001725) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset: tep_clough nr 314-3_pn_01-14-19.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\clough nr 314-3\pn\tep_clough nr 314-3_pn_01-14-19.db
Dataset Pathname main1.2
Dataset Creation Tue Jan 15 19:48:42 2019

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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