RELIANCE OILFIELD SERVICES

Pulsed Neutron
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal GM 11-8
Field	Grand Valley
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC

Well Federal GM 11-8

Field Grand Valley

County Garfield State Colorado

Location: API # : 05-045-24021

SEC 8 TWP 7S RGE 96W

Other Services: RBL

Permanent Datum Ground Level Elevation 6172.4'

Log Measured From Kelly Bushing 24 FT

Drilling Measured From Kelly Bushing

Elevation: K.B. 6196.4' D.F. 6195.4' G.L. 6172.4'

Date	13-FEB-2019
Run Number	Two
Depth Driller	7412 FT
Depth Logger	7373 FT
Bottom Logged Interval	7366 FT
Top Log Interval	3792 FT
Open Hole Size	
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	---
Estimated Cement Top	---
Time Well Ready	ROA
Time Logger on Bottom	10:40
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	13 3/8	54.5	J-55	Surface	1038 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	7371 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 03-FEB-2019
Log ran from 7366 FT to 3792 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 gm 11-8\pn\tep_federal gm 11-8_pn_02-13-19.db
Dataset Pathname	SHIFTEDNEW/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Fri Feb 15 09:15:16 2019
Charted by	Depth in Feet scaled 1:240

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

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

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

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

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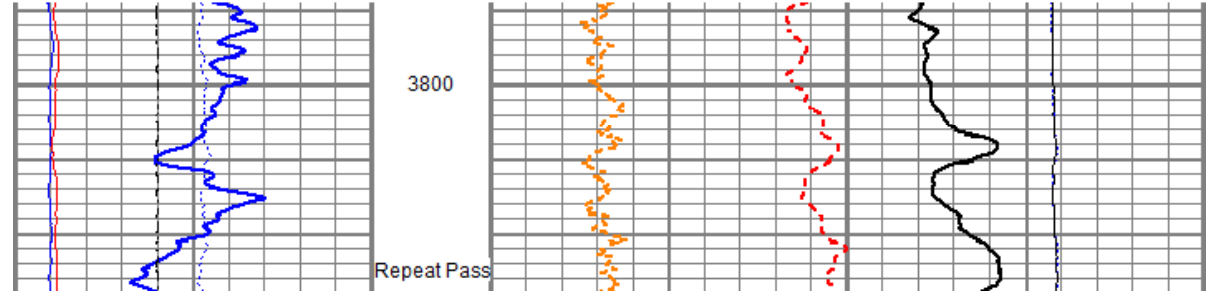
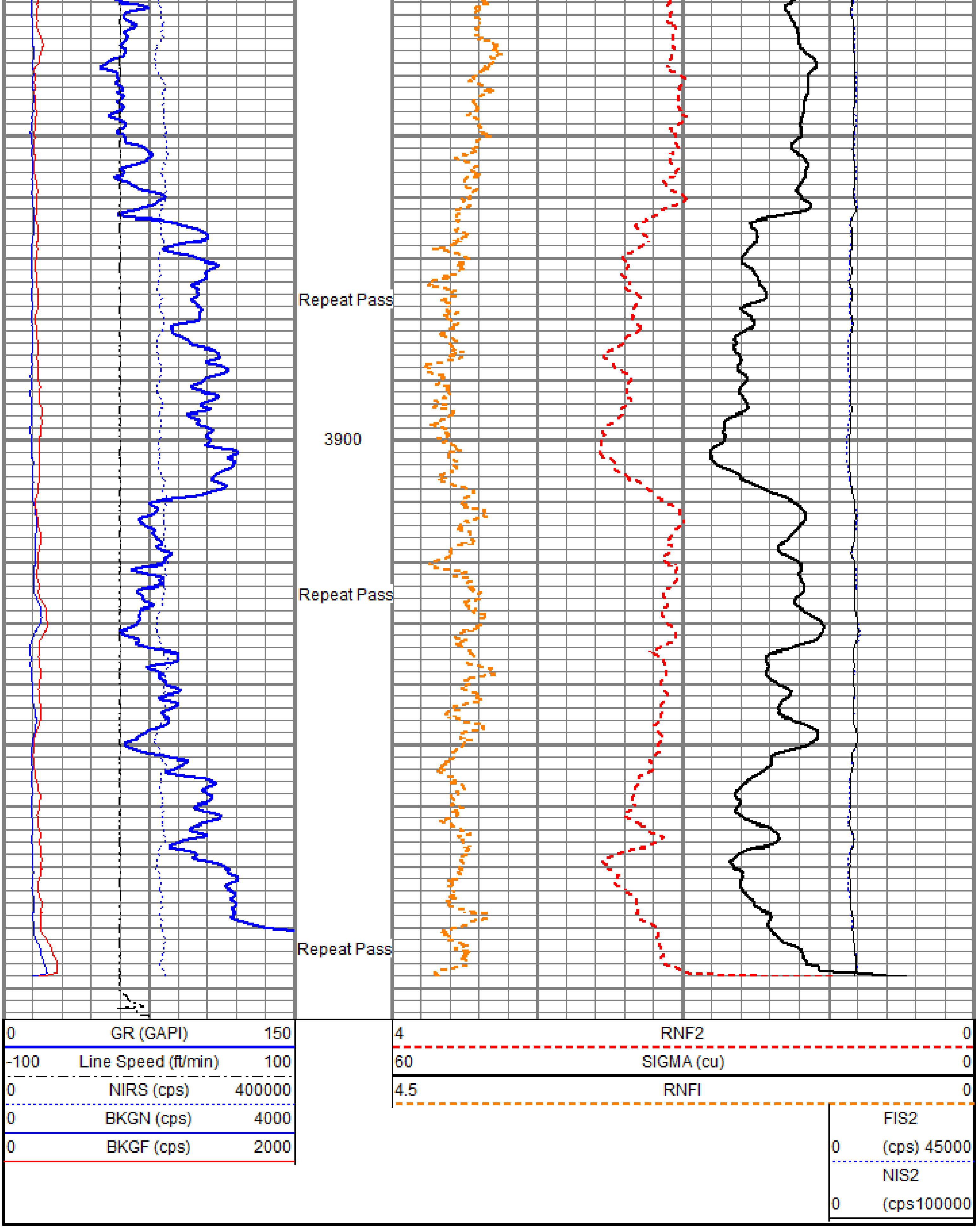
Repeat Pass

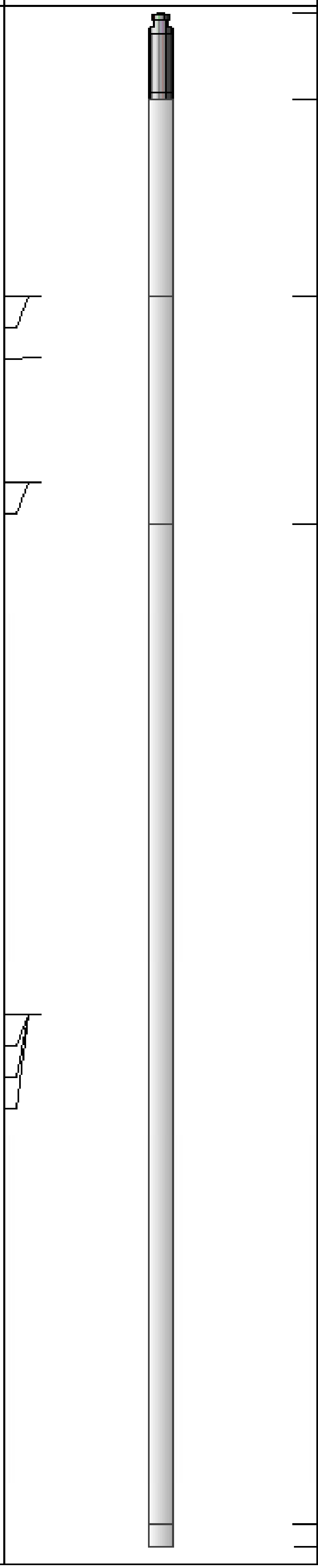
Database File	f:\data\tep\federal gm 11-8\pn\tep_federal gm 11-8_pn_02-13-19.db
Dataset Pathname	main4.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Thu Feb 14 08:53:05 2019
Charted by	Depth in Feet scaled 1:240

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
0	FIS2 (cps)	45000
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
			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 (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_federal gm 11-8_pn_02-13-19.db: field/well/run1/main4.2
Total length: 18.02 ft
Total weight: 86.48 lb
O.D.: 1.69 in

Calibration Report

Database File	f:\data\tep\federal gm 11-8\pn\tep_federal gm 11-8_pn_02-13-19.db
Dataset Pathname	main4.2
Dataset Creation	Thu Feb 14 08:53:05 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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