RELIANCE
OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal RG 443-7-297
Field	Sulphur Creek
County	Rio Blanco
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal RG 443-7-297
Field Sulphur Creek
County Rio Blanco State Colorado
Location: API # : 05-103-12464
SEC 18 TWP 2S RGE 97W

Other Services

Permanent Datum	Ground Level	Elevation	6621'	Elevation
Log Measured From	Kelly Bushing	30 FT		K.B. 6651'
Drilling Measured From	Kelly Bushing			D.F. 6650' G.L. 6121'

Date	10-AUG-2021
Run Number	Two
Depth Driller	12750 FT
Depth Logger	12674 FT
Bottom Logged Interval	12660 FT
Top Log Interval	6995 FT
Open Hole Size	8.75"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	---
Estimated Cement Top	---
Time Well Ready	ROA
Time Logger on Bottom	8:11
Equipment Number	HD-0331
Location	Grand Junction, CO
Recorded By	P. Edwards
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	13 3/8	54.5	J-55	Surface	1434 FT
Intermediate #1	9 5/8	36	J-55	Surface	3441 FT
Intermediate #2	4 1/2	11.6	P-110	Surface	12706 FT
Liner					

<<< Fold Here >>>

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 10-AUG-2021

Thank you for choosing Reliance Oilfield Services, LLC!

RELIANCE
OILFIELD SERVICES

Main Pass

Database File	tep\federal rg 443-7-297\tep_federal rg 443-7-297_pn_08-11-21.db
Dataset Pathname	runSHIFTED/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Fri Aug 13 13:59:47 2021
Charted by	Depth in Feet scaled 1:240

0 GR (GAPI) 150
PN 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 -1
1 PN Porosity (Sandstone) 0

FIS2
0 (cps) 45000
NIS2
0 (cps100000

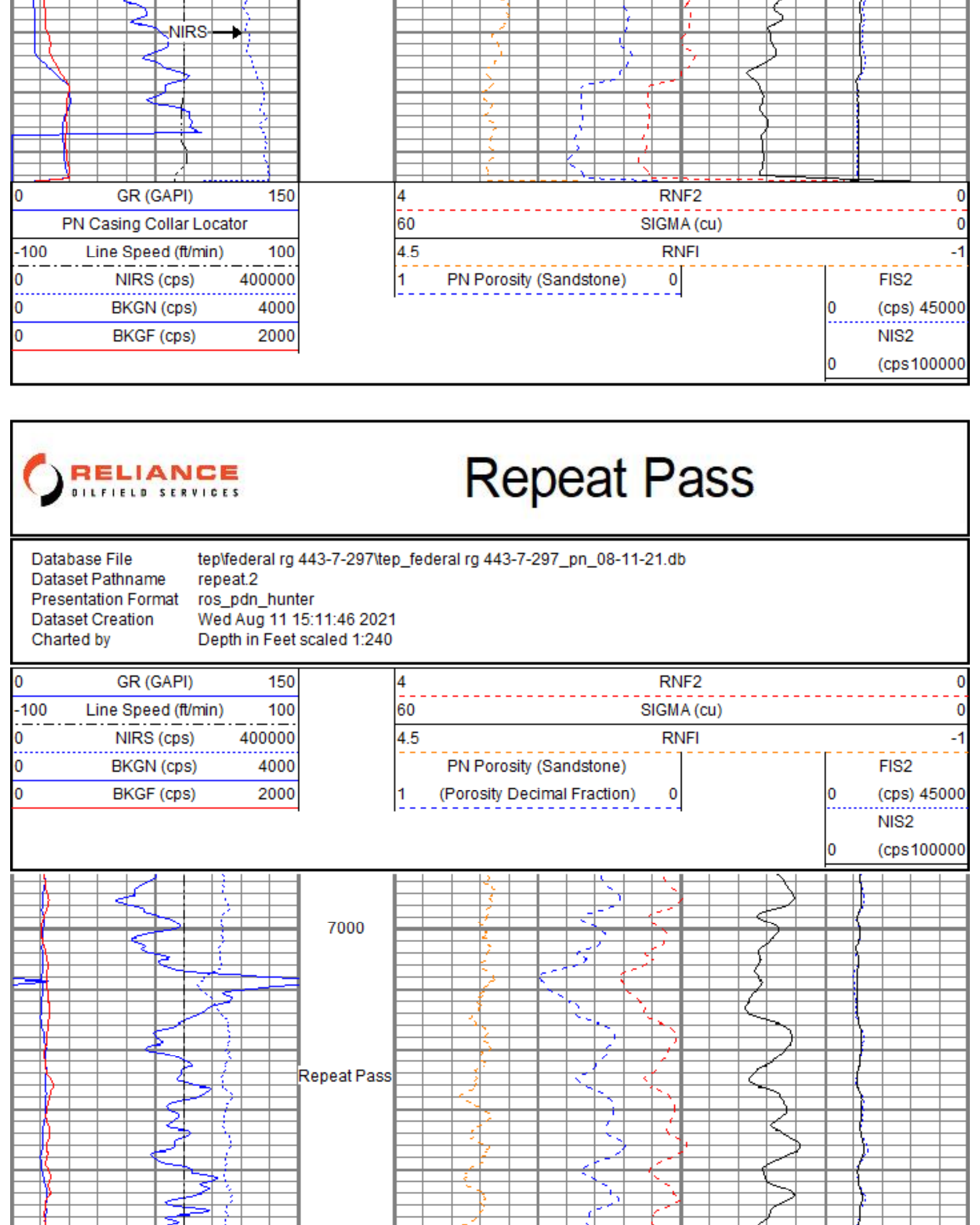
0	GR (GAPI)	150	4	RNF2		0
	PN Casing Collar Locator		60	SIGMA (cu)		0
-100	Line Speed (ft/min)	100	4.5	RNFI		-1
0	NIRS (cps)	400000	1	PN Porosity (Sandstone) 0		FIS2
0	BKGN (cps)	4000			0	(cps) 45000
0	BKGF (cps)	2000				NIS2
					0	(cps100000

RELIANCE
OILFIELD SERVICES

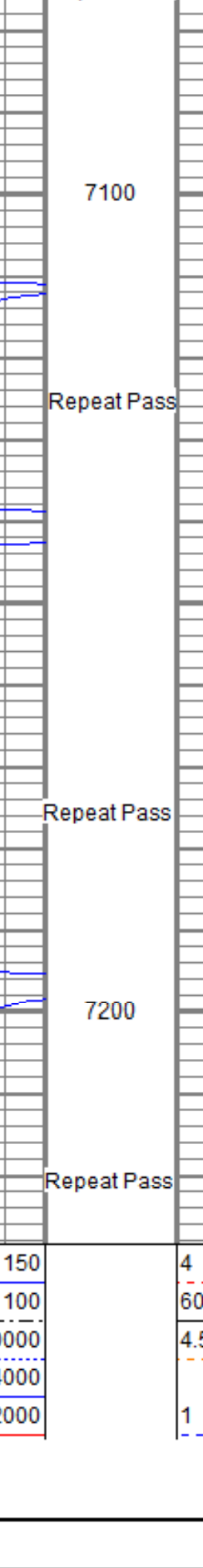
Repeat Pass

Database File tep\federal rg 443-7-297\tep_federal rg 443-7-297_pn_08-11-21.db
Dataset Pathname repeat.2
Presentation Format ros_pdn_hunter
Dataset Creation Wed Aug 11 15:11:46 2021
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		-1
0	BKGN (cps)	4000		PN Porosity (Sandstone)		FIS2
0	BKGF (cps)	2000	1	(Porosity Decimal Fraction) 0	0	(cps) 45000
						NIS2
					0	(cps100000



0	GR (GAPI)	150	4	RNF2		0
-100	Line Speed (ft/min)	100	60	SIGMA (cu)		0
0	NIRS (cps)	400000	4.5	RNFI		-1
0	BKGN (cps)	4000		PN Porosity (Sandstone)		FIS2
0	BKGF (cps)	2000	1	(Porosity Decimal Fraction) 0	0	(cps) 45000
						NIS2
					0	(cps100000

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 (001878) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97					
			HWS_GCL-001 (000142) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
GCL_GR	12.50					
Long Far Near Anci	6.25 6.25 6.25 6.25		HWS_RAS-RAS002 (003045) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (001970) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset: tep_federal rg 443-7-297_pn_08-11-21.db: field/well/run1/mainpass.2
Total length: 18.02 ft
Total weight: 86.48 lb
O.D.: 1.69 in

Calibration Report

Database File c:\programdata\warrior\data\tep\federal rg 443-7-297\tep_federal rg 443-7-297_pn_08-11-21.db
Dataset Pathname mainpass.2
Dataset Creation Wed Aug 11 15:06:42 2021

RAS Calibration Report

Calibration Date: Wed Jul 28 11:14 2021 Meas #: 003045

Water Tank

Description	Curve	Standard	Mean	Dev
Sigma Near	SIGN	23.1	24.2	0.28
Sigma Far	SIGF	22.8	23.4	0.27
Ratio Near-Long Capture	RNL2	5.79	6.18	0.04
Ratio Near-Long Burst	RNLB	6.49	6.50	0.03
Ratio Near-Far Capture	RNF2	1.85	1.94	0.01
Ratio Near-Far Burst	RNFB	2.03	2.09	0.01
Spectral Hydrogen Index	HIS2	12.84	12.83	0.14
Carbon-Oxygen Ratio	CORS	1.34	1.37	0.04
Ratio Burst-Capture Near	RNBC	1.46	1.74	0.01
Ratio Burst-Capture Far	RFBC	1.50	1.68	0.01

Hydrocarbon Tank

Description	Curve	Standard	Mean	Dev
Sigma Near	SIGN	25.7	26.4	0.39
Sigma Far	SIGF	25.1	25.6	0.40
Ratio Near-Long Capture	RNL2	1.78	2.15	0.01
Ratio Near-Long Burst	RNLB	2.57	3.37	0.01
Ratio Near-Far Capture	RNF2	0.98	1.12	0.01
Ratio Near-Far Burst	RNFB	1.30	1.48	0.01
Spectral Hydrogen Index	HIS2	16.68	16.64	0.20
Carbon-Oxygen Ratio	CORS	1.51	1.62	0.05
Ratio Burst-Capture Near	RNBC	2.23	2.49	0.02
Ratio Burst-Capture Far	RFBC	2.09	2.14	0.01

Gamma Ray Calibration Report

Serial Number:	000142	
Tool Model:	001	
Performed:	(Not Performed)	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	
Calibrator Reading:	1.0	
Sensitivity:	1.0000	GAPI/

RELIANCE
OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	Federal RG 443-7-297
Field	Sulphur Creek
County	Rio Blanco
State	Colorado