RELIANCE
OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company TEP Rocky Mountain LLC
Well Ware SR 433-12
Field Rulison
County Garfield
State Colorado

Company	TEP Rocky Mountain LLC		
Well	Ware SR 433-12		
Field	Rulison		
County	Garfield	State	Colorado
Location:	API # : 05-045-23456		Other Services
	1794' FSL & 2305' FWL NESW		RBL
	SEC 12 TWP 7S RGE 94W		
Permanent Datum	Ground Level	Elevation 7479'	Elevation
Log Measured From	Kelly Bushing 24 FT		K.B. 7503' D.F. 7502' G.L. 7479'
Drilling Measured From	Kelly Bushing		

Date	31-DEC-2017
Run Number	One
Depth Driller	9596 FT
Depth Logger	9557 FT
Bottom Logged Interval	9551 FT
Top Log Interval	5434 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	32.3	H-40	Surface	1118 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9554 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 31-DEC-2017
Log ran from 9551 FT to 5434 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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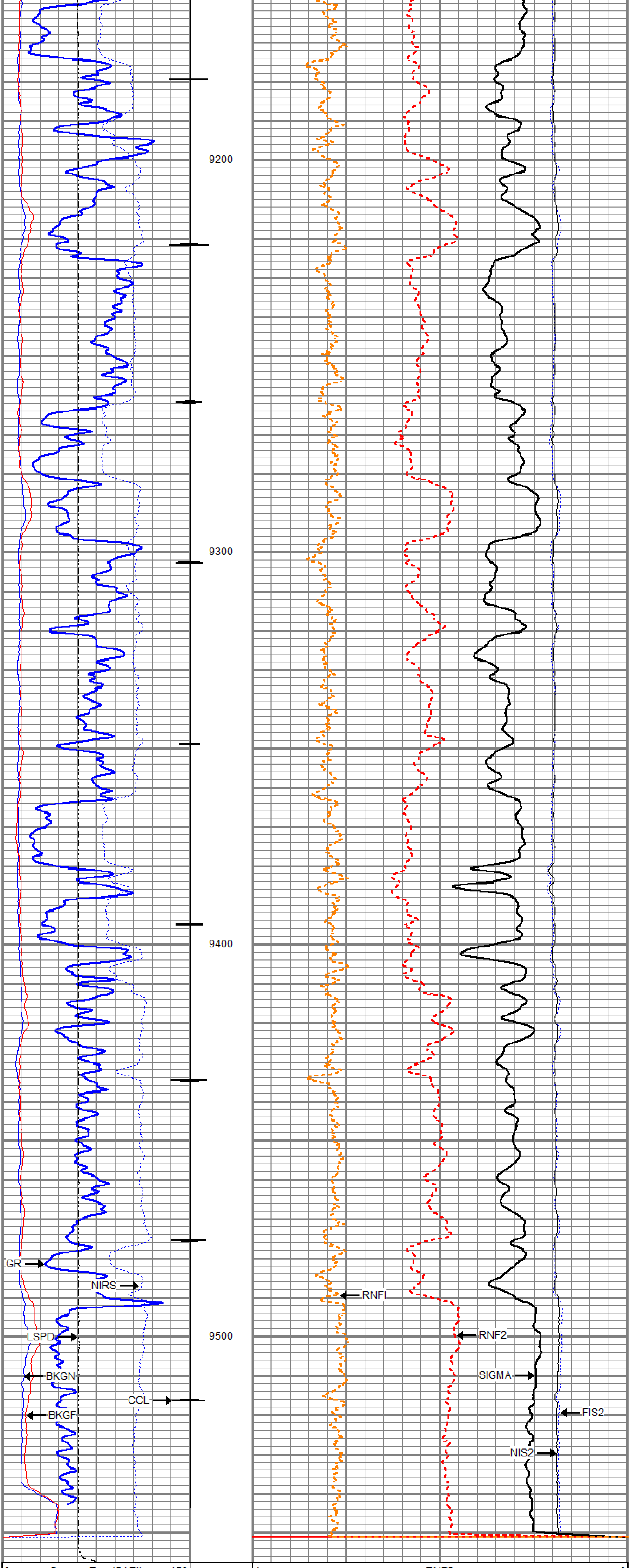
Main Pass

Database File tep\ware sr 433-12\20180102\pn\tep_ware sr 433-12_pn_12-31-2017.db
Dataset Pathname main.2
Presentation Format ros_pdn_hunter
Dataset Creation Mon Jan 01 17:30:49 2018
Charted by Depth in Feet scaled 1:240

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



Min	Curve	Max
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

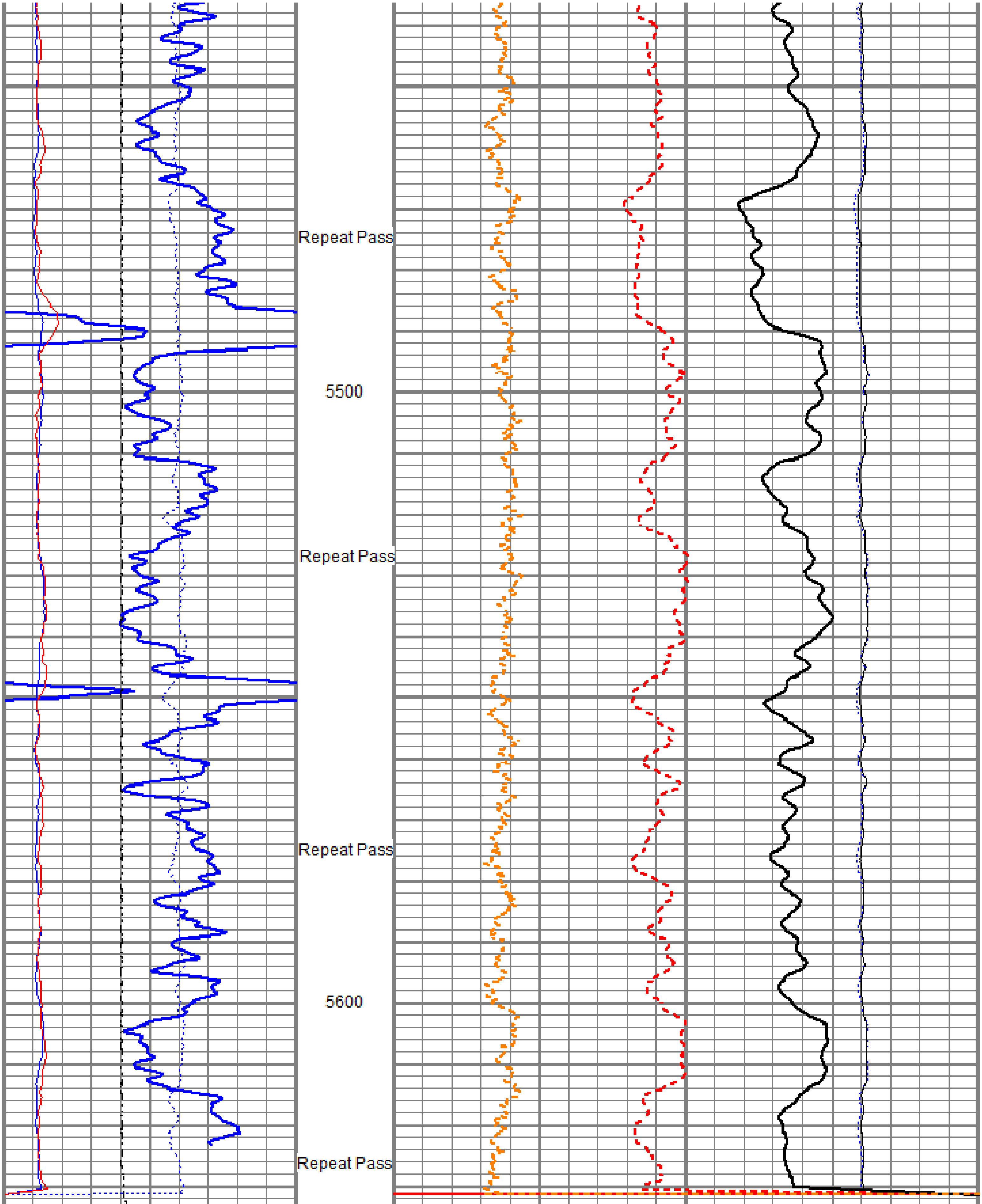
Min	Curve	Max
4	RNF2	0
60	SIGMA (cu)	0
4.5	RNFI	0
0	FIS2 (cps)	45000
0	NIS2 (cps	100000

Repeat Pass

Database File tep\ware sr 433-12\20180102\pn\tep_ware sr 433-12_pn_12-31-2017.db
Dataset Pathname repeat.2
Presentation Format ros_pdn_hunter
Dataset Creation Mon Jan 01 17:39:27 2018
Charted by Depth in Feet scaled 1:240

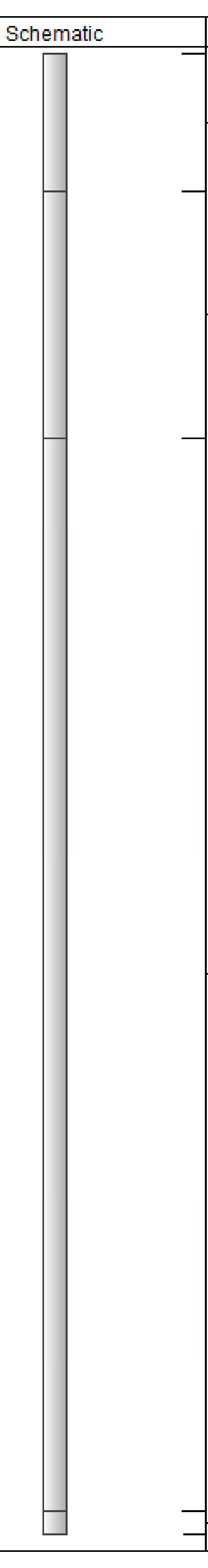
Min	Curve	Max
0	Gamma Ray (GAPI)	150
-100	Line Speed (ft/min)	100
0	NIRS (cps)	400000
0	BKGN (cps)	4000
0	BKGF (cps)	2000

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



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

Min	Curve	Max
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
			HWS_TCU-001 (001705) HWS Telemetry Control Unit	1.52	1.69	7.80
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97					
			HWS_GCL-001 (001681) 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-RAS001 (003041) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (000001) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset: tep_ware sr 433-12_pn_12-31-2017.db: field/well/run1/main.2
Total length: 16.21 ft
Total weight: 78.01 lb
O.D.: 1.69 in

Calibration Report

Database File c:\programdata\warrior\data\tep\ware sr 433-12\20180102\pn\tep_ware sr 433-12_pn_12-31-2017.db
Dataset Pathname main.2
Dataset Creation Mon Jan 01 17:30:49 2018

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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