RELIANCE
OILFIELD SERVICES

Pulsed Neutron
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal GM 322-8
Field	Grand Valley
County	Garfield
State	Colorado

Location: API # : 05-045-24022

SEC 8 TWP 7S RGE 96W

Permanent Datum	Ground Level	Elevation	6172.4'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Other Services
RBL

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

Company TEP Rocky Mountain LLC
Well Federal GM 322-8
Field Grand Valley
County Garfield
State Colorado

Date	05-FEB-2019		
Run Number	Two		
Depth Driller	7140 FT		
Depth Logger	7098 FT		
Bottom Logged Interval	7091 FT		
Top Log Interval	3806 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	19:00		
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	13 3/8	54.5	J-55	Surface	1037 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	7097 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 7091 FT to 3806 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!

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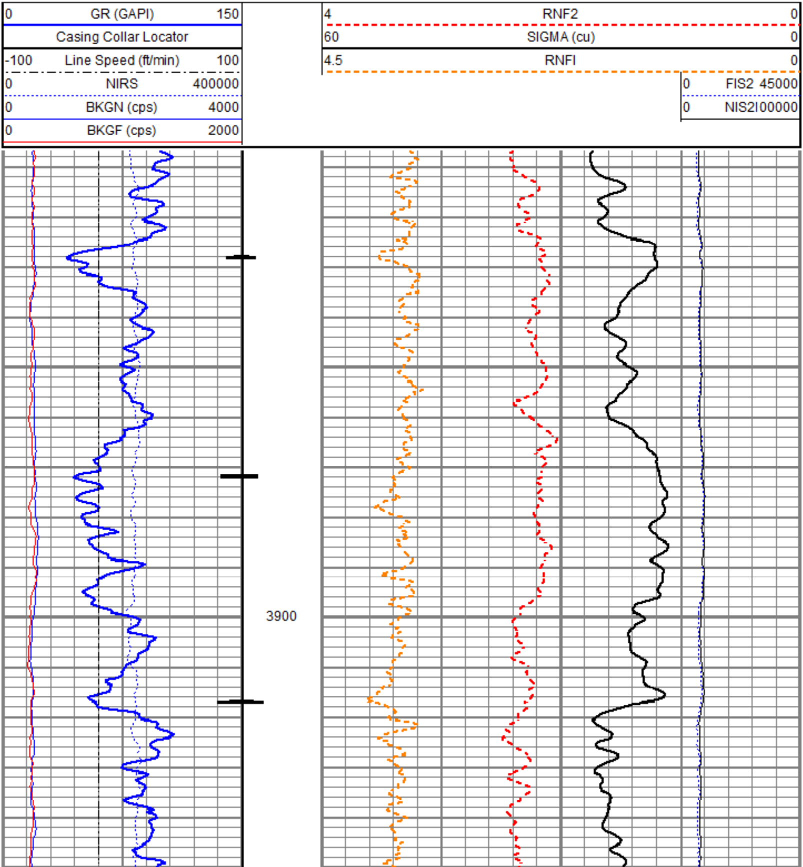
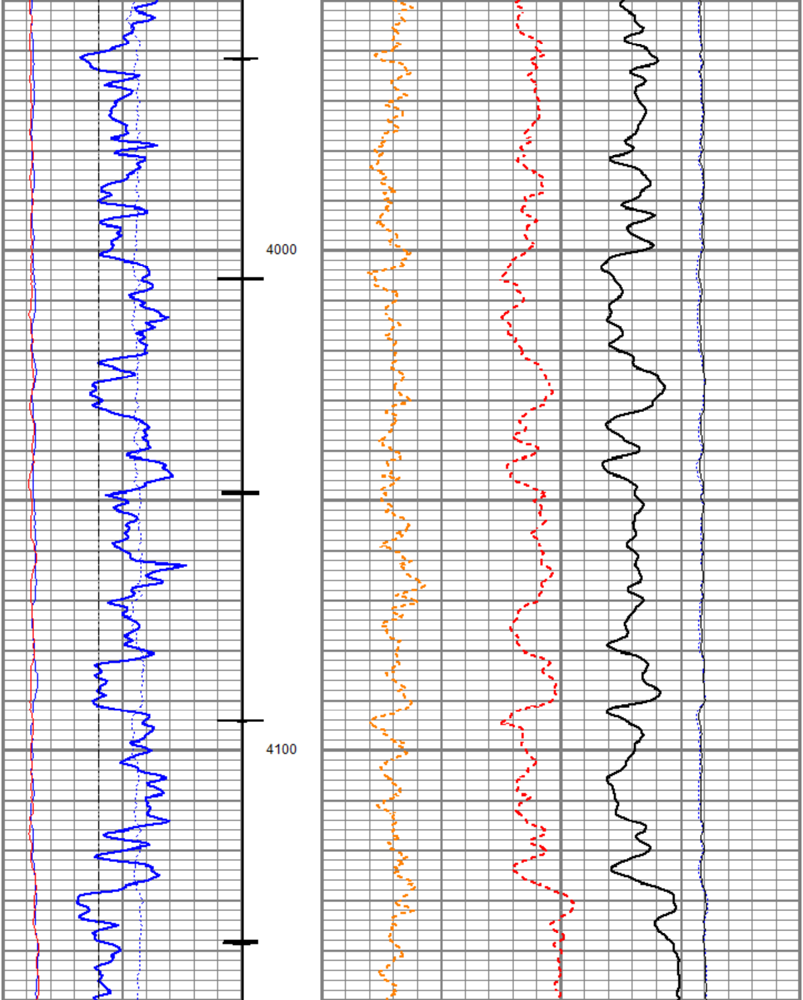
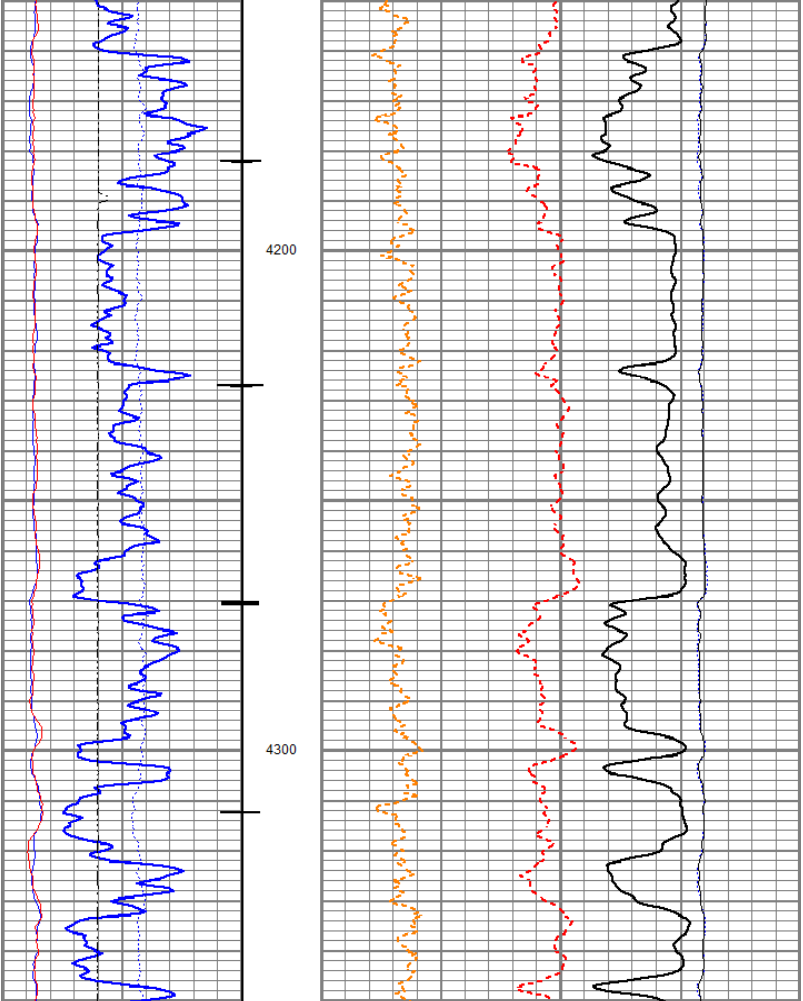
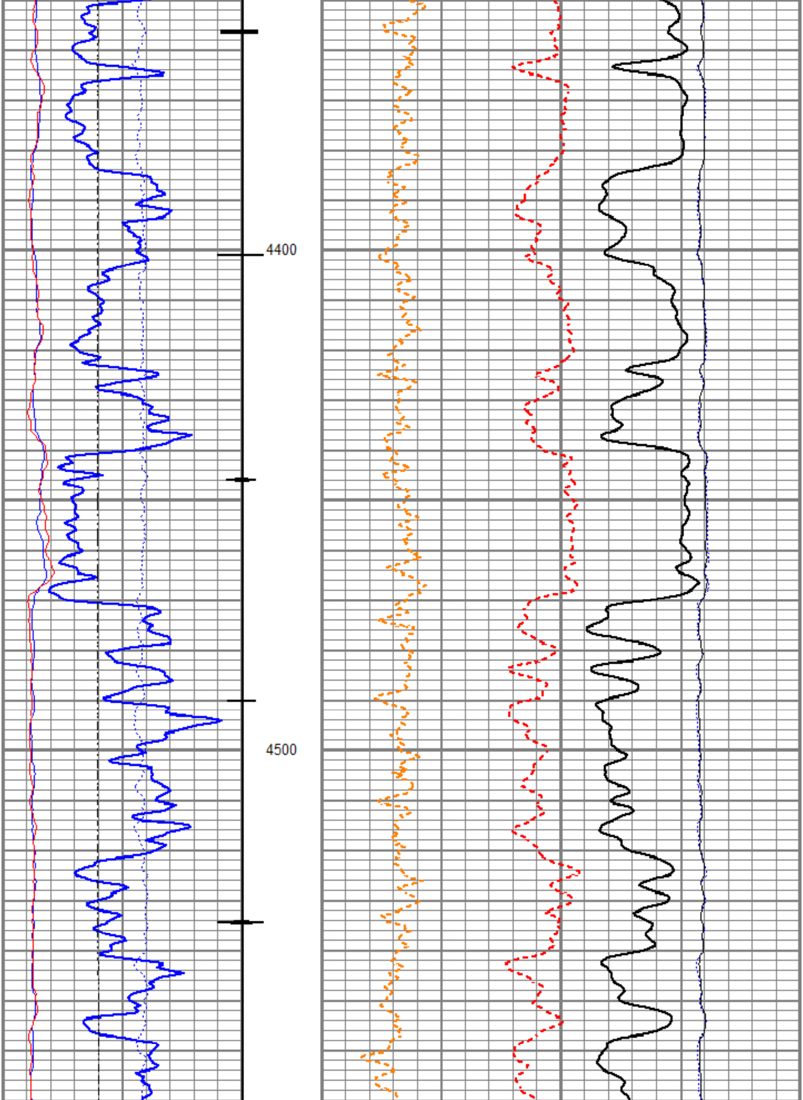
Main Pass

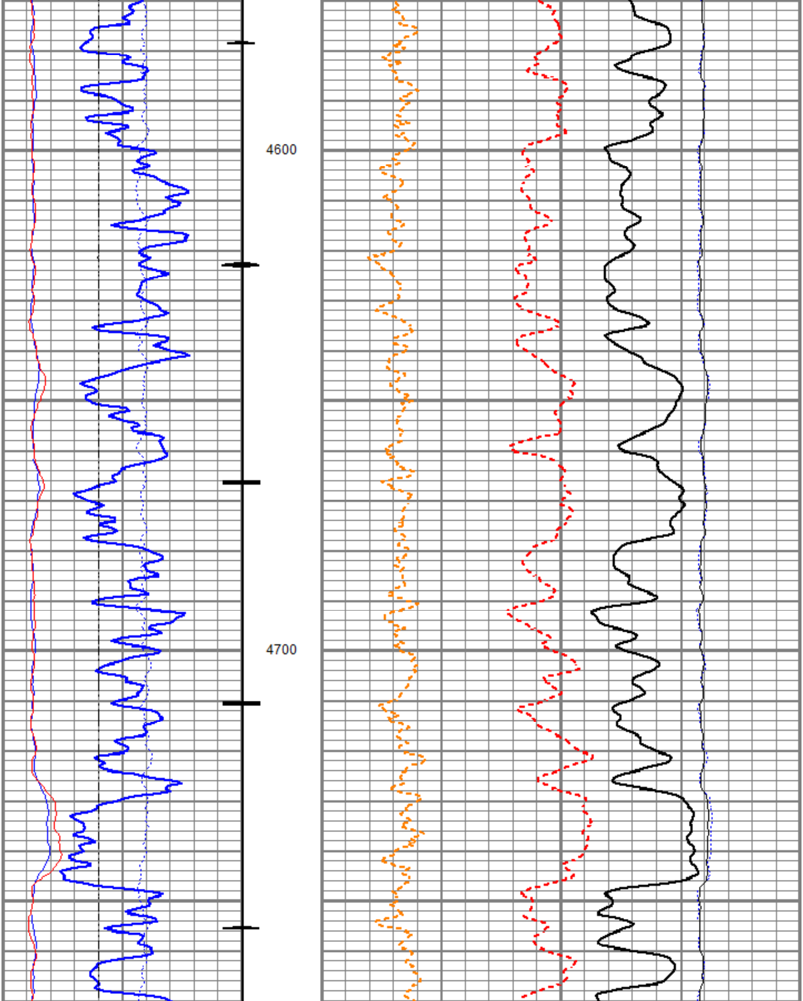
Database File	f:\data\tep\federal gm 322-8\pn\tep_federal gm 322-8_pn_02-05-19.db
Dataset Pathname	SHIFTED/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Tue Feb 12 12:39:55 2019
Charted by	Depth in Feet scaled 1:240

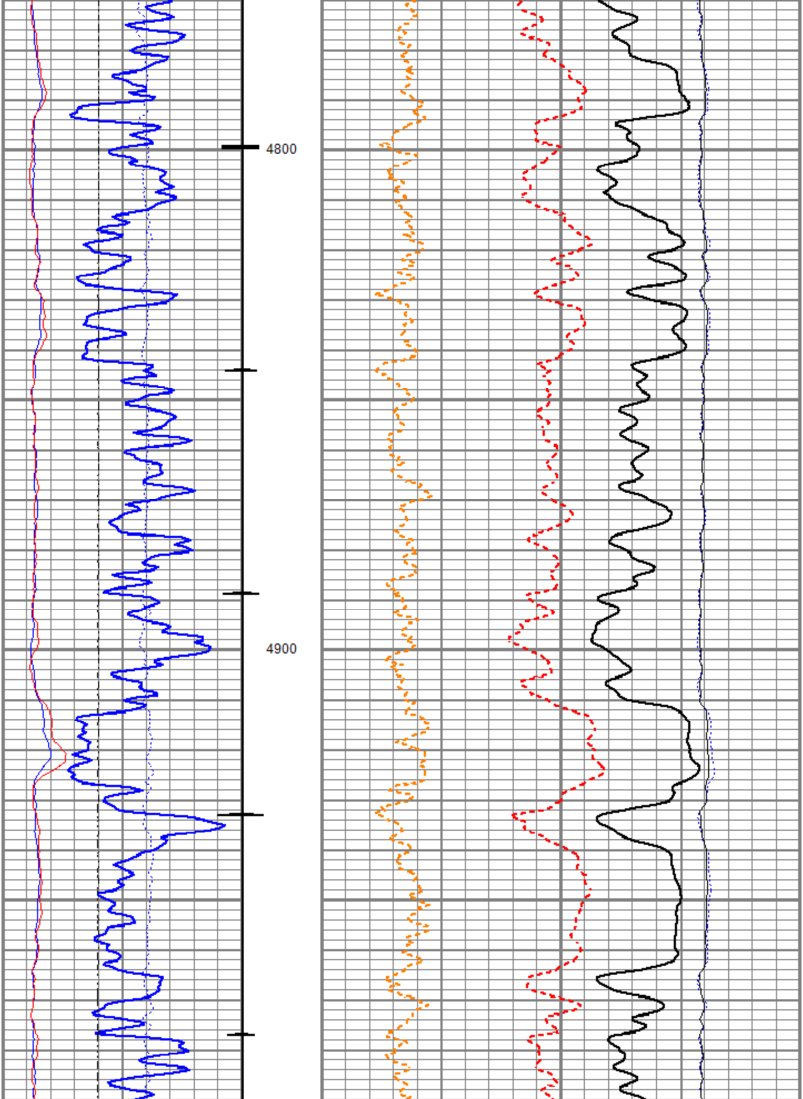


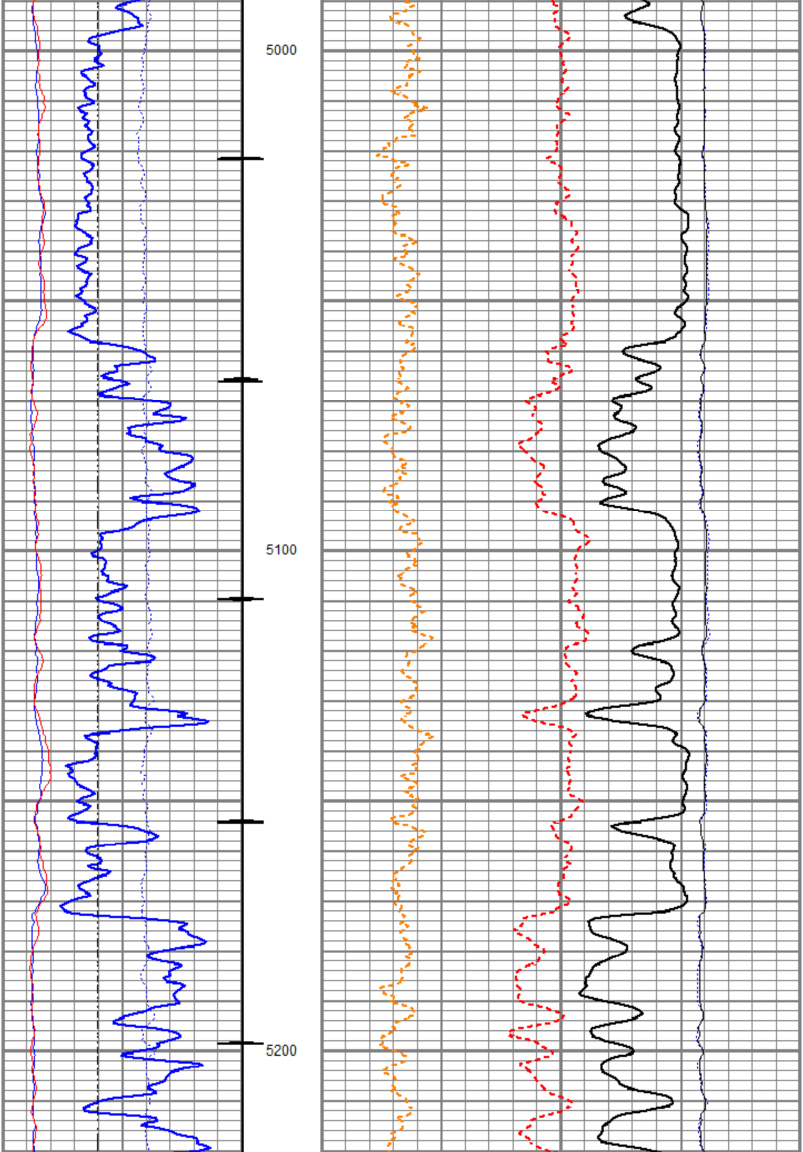


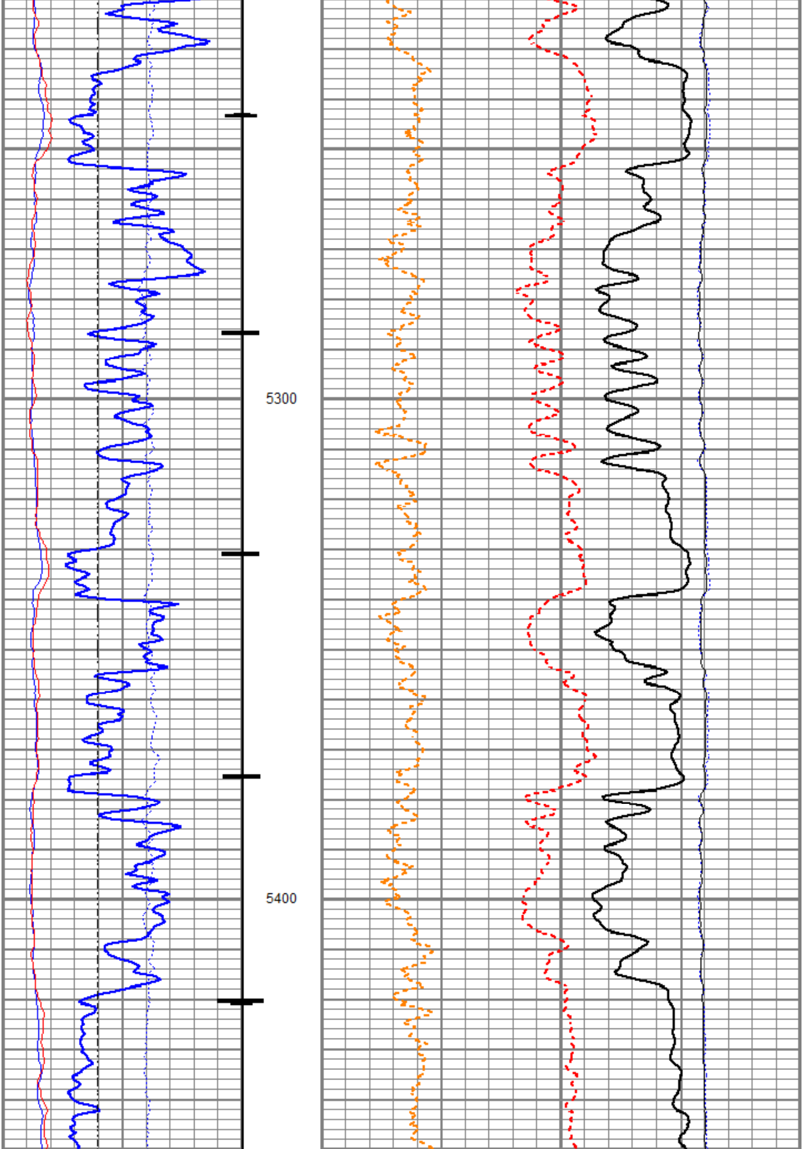


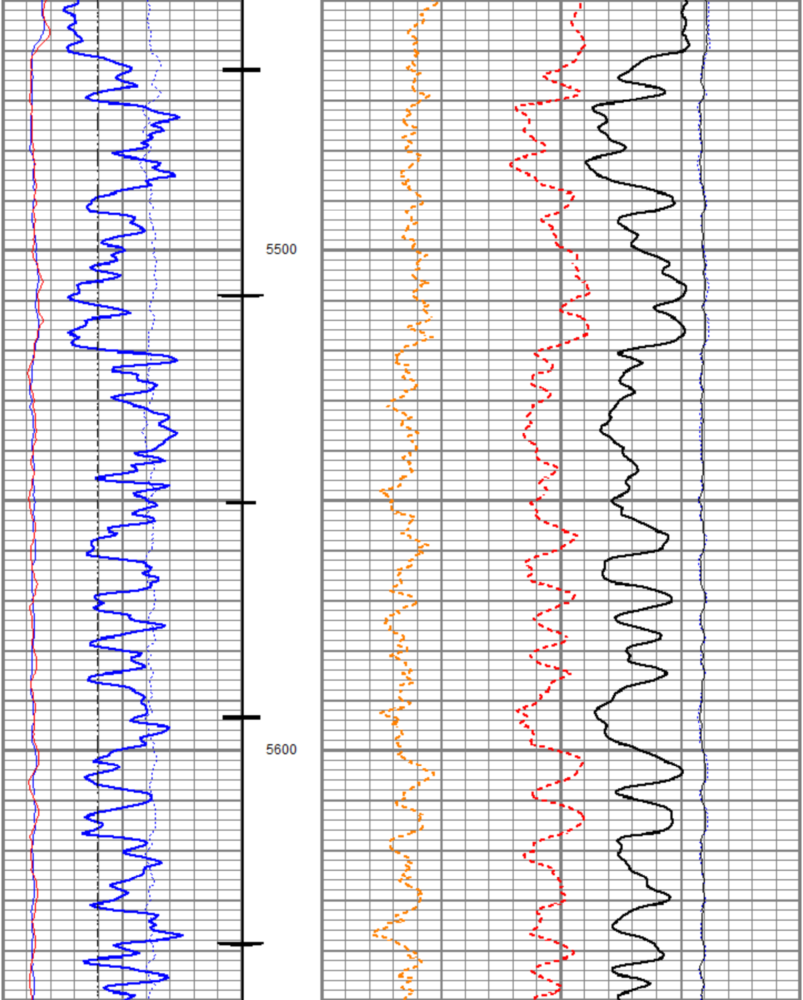


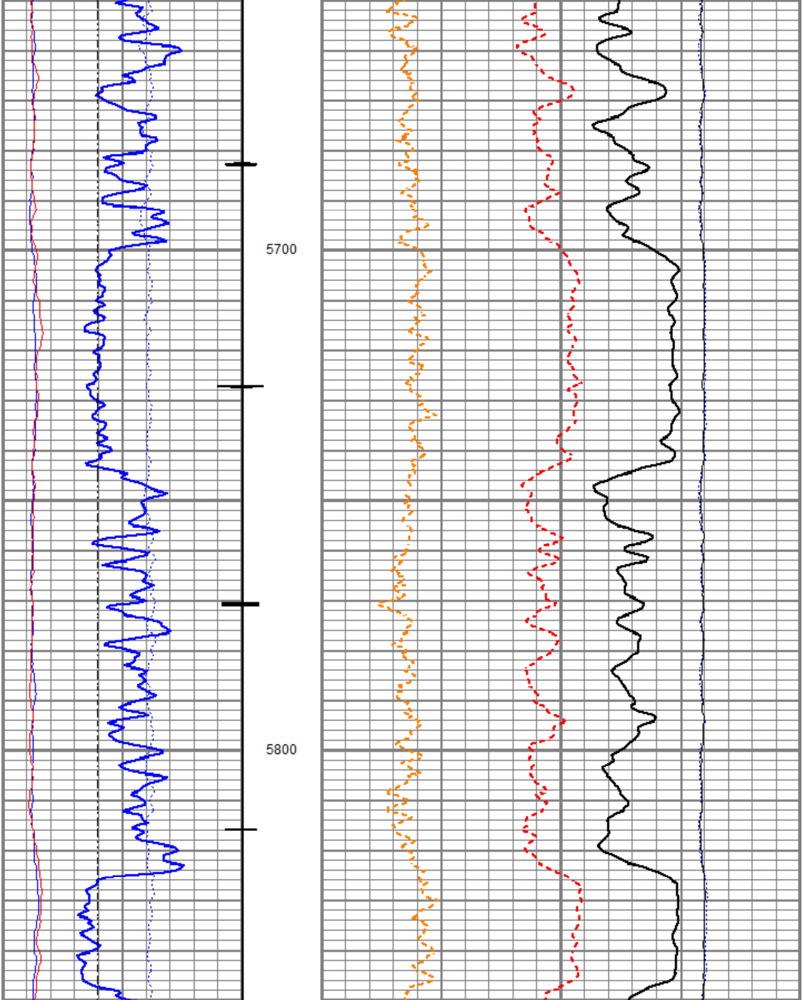


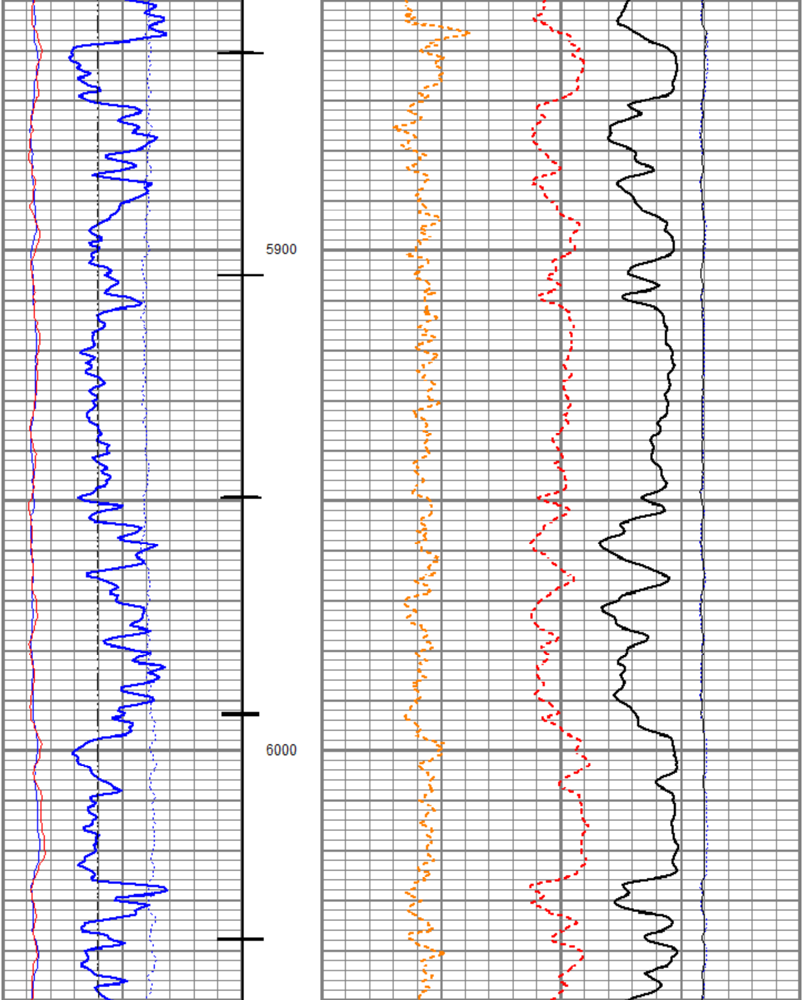


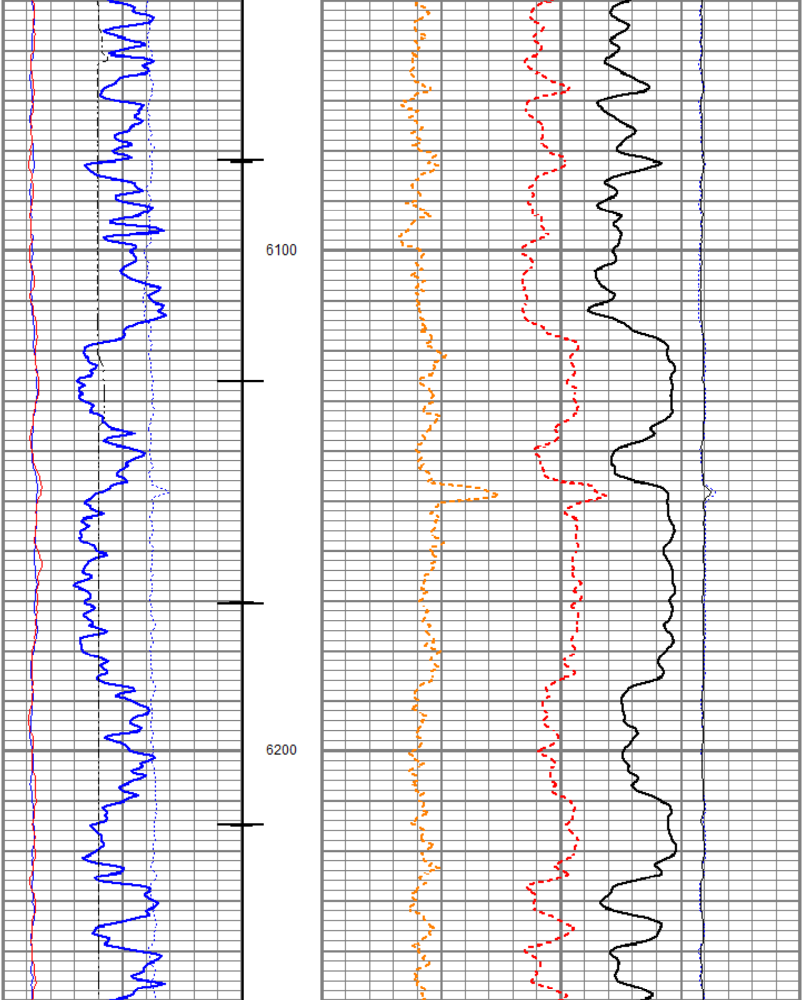


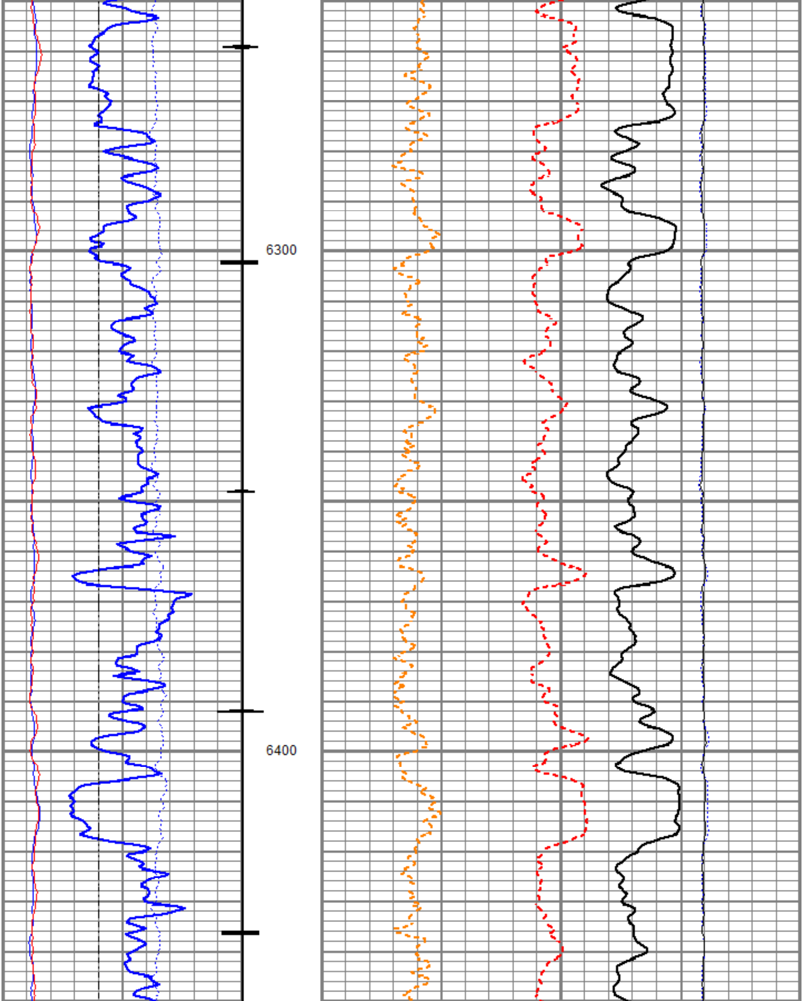


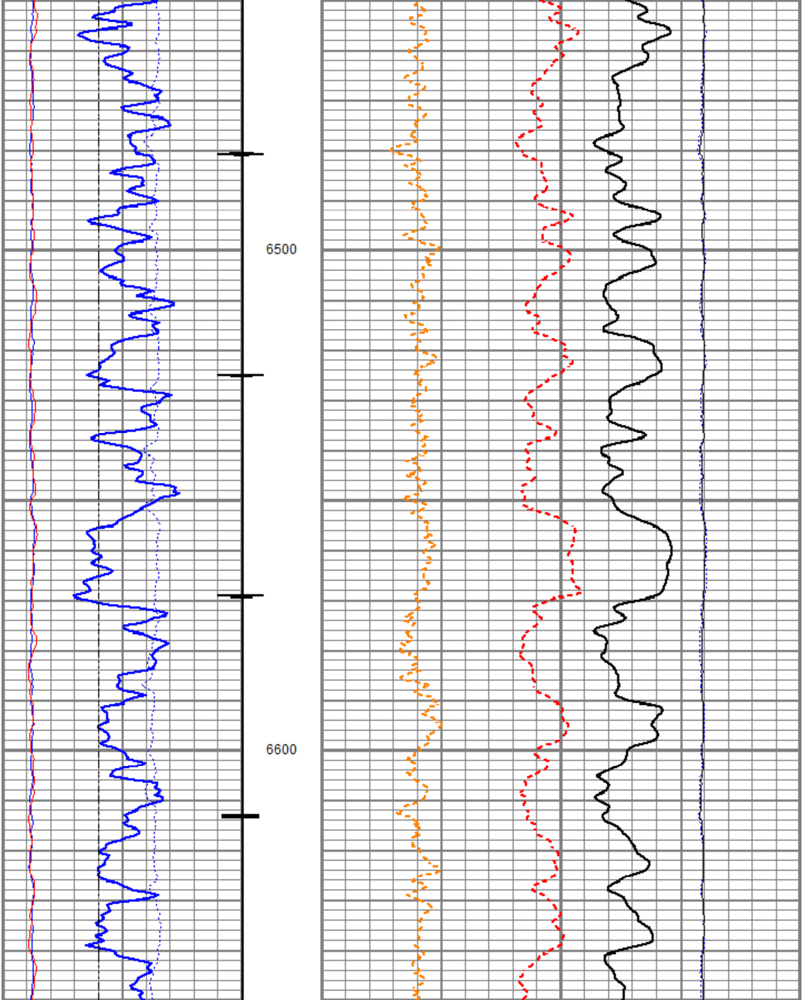


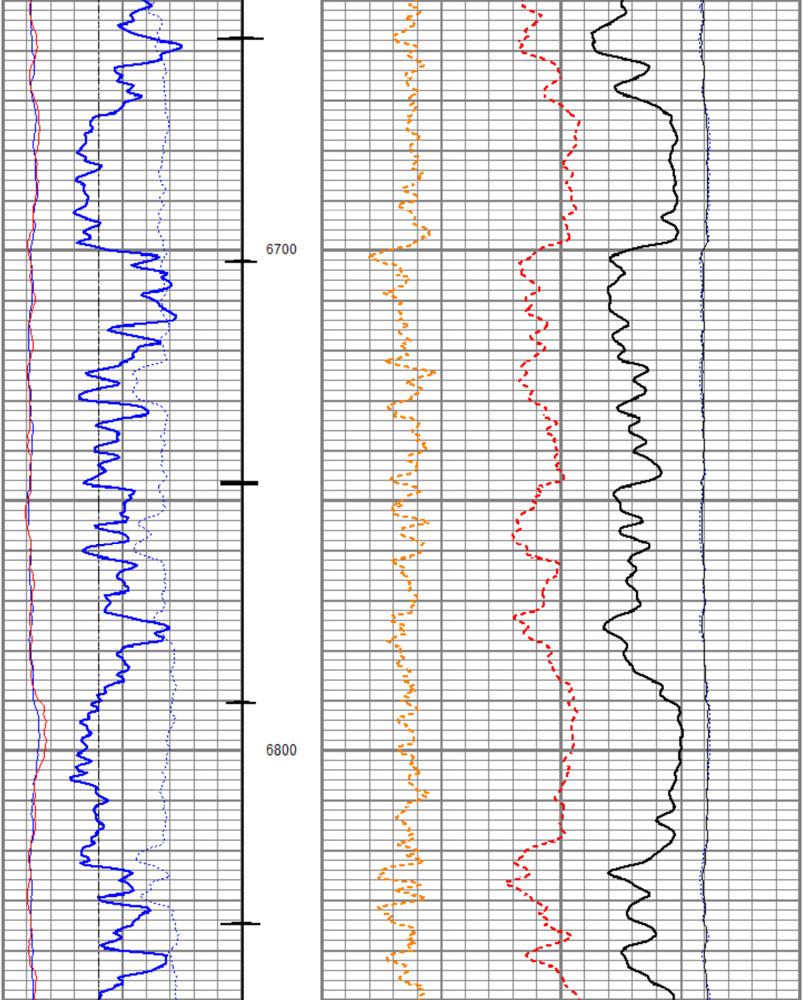


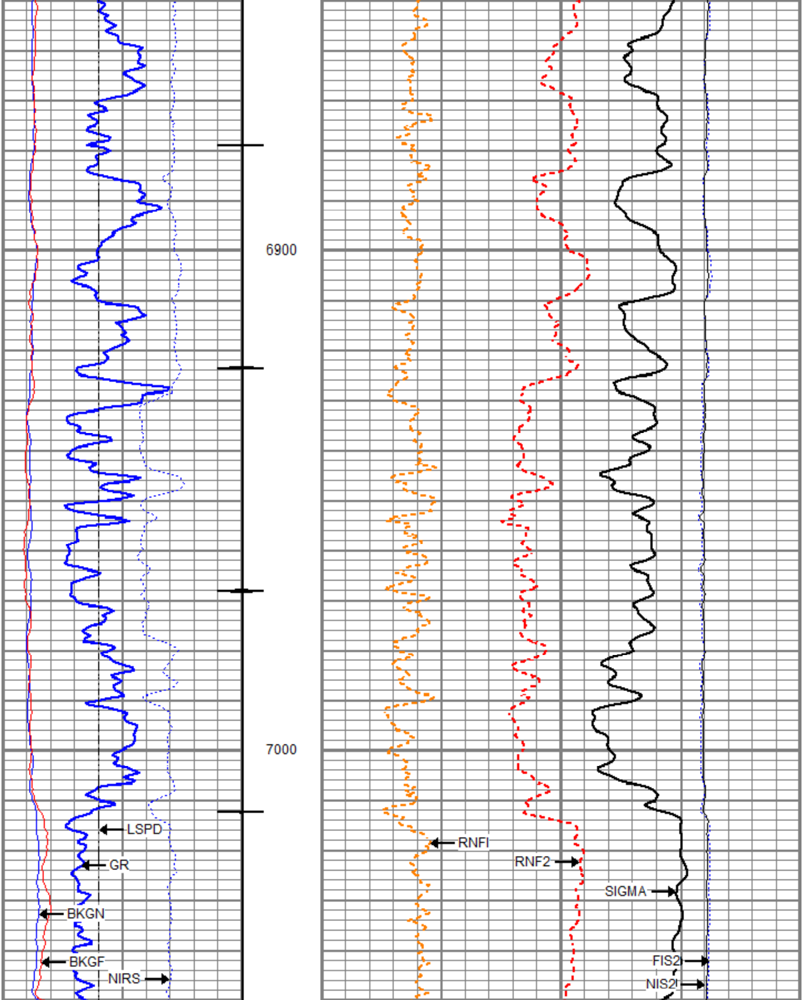


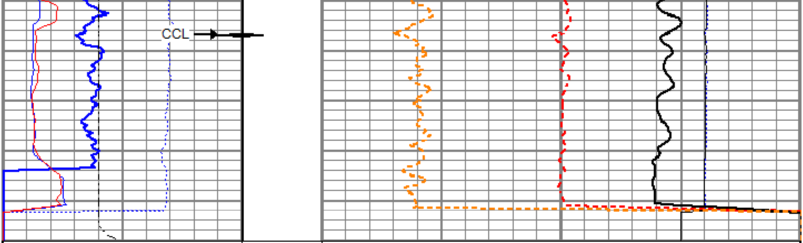












0 GR (GAPI) 150

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 NIS2100000

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Repeat Pass

Database File	f:\data\tep\federal gm 322-8\pn\tep_federal gm 322-8_pn_02-05-19.db
Dataset Pathname	repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Wed Feb 06 00:27:35 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

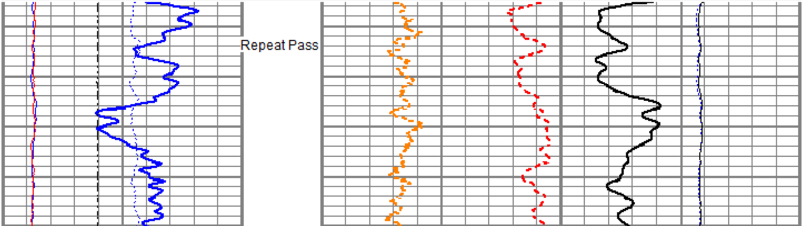
4 RNF2 0

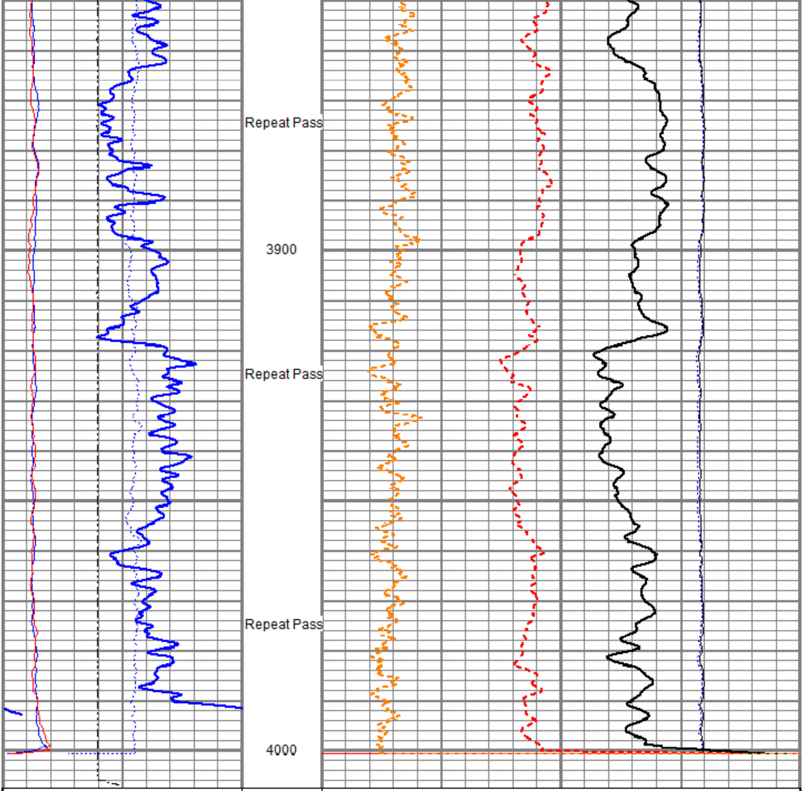
60 SIGMA (cu) 0

4.5 RNFI 0

FIS2
0 (cps) 45000

NIS2
0 (cps100000





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

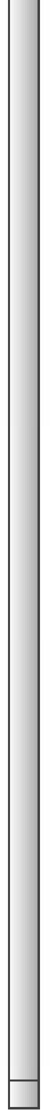
Min	Curve	Max
4	RNF2	0
60	SIGMA (cu)	0
4.5	RNFI	0

FIS2
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 (001704) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
TCUTEMP	14.69					
TCUVOLT	14.69					
GCL_CCL	13.97					
			HWS_GCL-001 (001681) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
GCL_GR	12.50					
GCL_GR	12.50					

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_federal gm 322-8_pn_02-05-19.db: field/well/run1/main2.2
Total length:	18.02 ft
Total weight:	86.48 lb
O.D.:	1.69 in

Calibration Report

Database File	f:\data\tep\federal gm 322-8\pn\tep_federal gm 322-8_pn_02-05-19.db
Dataset Pathname	main2.2
Dataset Creation	Wed Feb 06 00:26:42 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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