CEMENT BOND LOG

Company	BONANZA CREEK ENERGY
Well	PRONGHORN FEDERAL F21-J24-31HNB
Field	WATTENBERG
County	WELD
State	COLORADO
Country	USA

Company BONANZA CREEK ENERGY OPERATING
Well PRONGHORN FEDERAL F21-J24-31HNB
Field WATTENBERG
County WELD
State COLORADO Country USA

Location: API # : 05-123-51321
2119 FSL & 659 FWL
LAT: 40.370170, LONG: -104.259250
SEC 30 TWP 5N RGE 61W

Other Services
NONE

			Elevation
Permanent Datum	GROUND LEVEL	Elevation 4527 FT	K.B. 4552 FT
Log Measured From	KELLY BUSHING, 25 FT ABOVE GL		D.F. 4551 FT
Drilling Measured From	KELLY BUSHING		G.L. 4527 FT

Date	29-DEC-2021
Run Number	ONE
Depth Driller	11,600 FT
Depth Logger	6568 FT
Bottom Logged Interval	6563 FT
Top Log Interval	SURFACE
Open Hole Size	NA
Type Fluid	WATER
Density / Viscosity	NA
Max. Recorded Temp.	210 DEG F
Estimated Cement Top	SURFACE
Time Well Ready	07:00
Time Logger on Bottom	17:20
Equipment Number	504
Location	WILLISTON, ND
Recorded By	SHAUN FERCHAK
Witnessed By	JOSH JOHNSON

Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625 IN	36 LB/FT	SURFACE	1606 FT
Prot. String				
Production String	5.5 IN	17 LB/FT	SURFACE	11,600 FT
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.

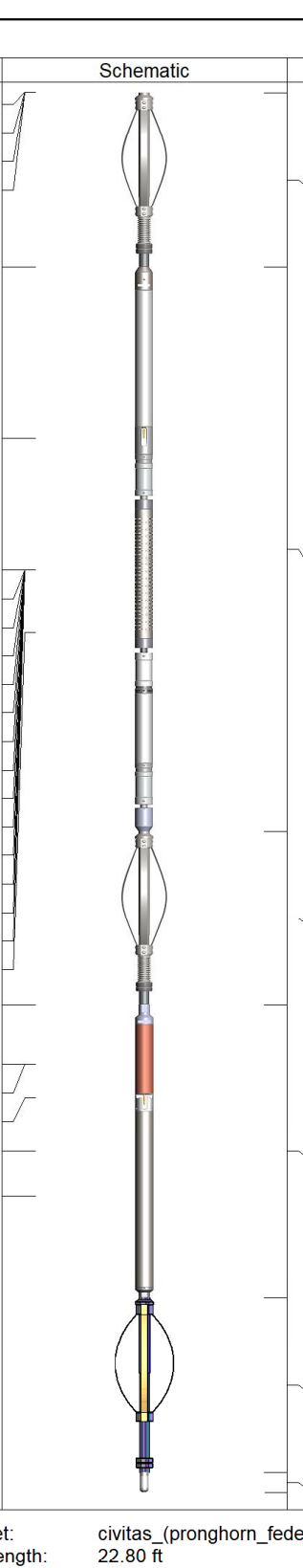
Comments

LOG MEASURED FROM KB AT 25'

FINAL

Sensor	Offset (ft)	Description	Length (ft)	O.D. (in)	Weight (lb
GCT_FMWR	22.80	CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00
mSec_Count	22.80				
RBT_Status	22.80				
Error_Ct	22.80				
RBT_HV	19.97				
RBT_Temp	17.17				
RBT_ACCZ	15.02	RBT8-RADII-275T (FW2103-061) Probe 2.75" RADII 8 Sector Bond Tool w/ Temperature	9.20	2.75	
RBT_ACCY	15.02				
RBT_ACCX	15.02				
WVFSYNC	15.02				
WVFS8	15.02				
WVFS7	15.02				
WVFS6	15.02				
WVFS5	15.02				
WVFS4	15.02				
WVFS3	15.02				
WVFS2	15.02				
WVFS1	15.02				
WVFCAL	15.02	CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00
WVF3FT	15.02				
WVF5FT	14.02				
GCT_HV	7.94				
CCL$2	6.97				
CCL$1	6.97				
GCT_Temp	6.42				
GR	5.56	GCacc-GCT275-0000 (FW2103-050) Probe 2.75" Gamma Ray - CCL w/ Temp	4.77	2.75	55.00
GCT_IntTemp	4.83				
		CENT-PTS275 BC275-0000 Centralizer	2.83	2.75	24.00
		Plug-FA108-0000 1.38" Bull Plug	0.33	1.38	1.00

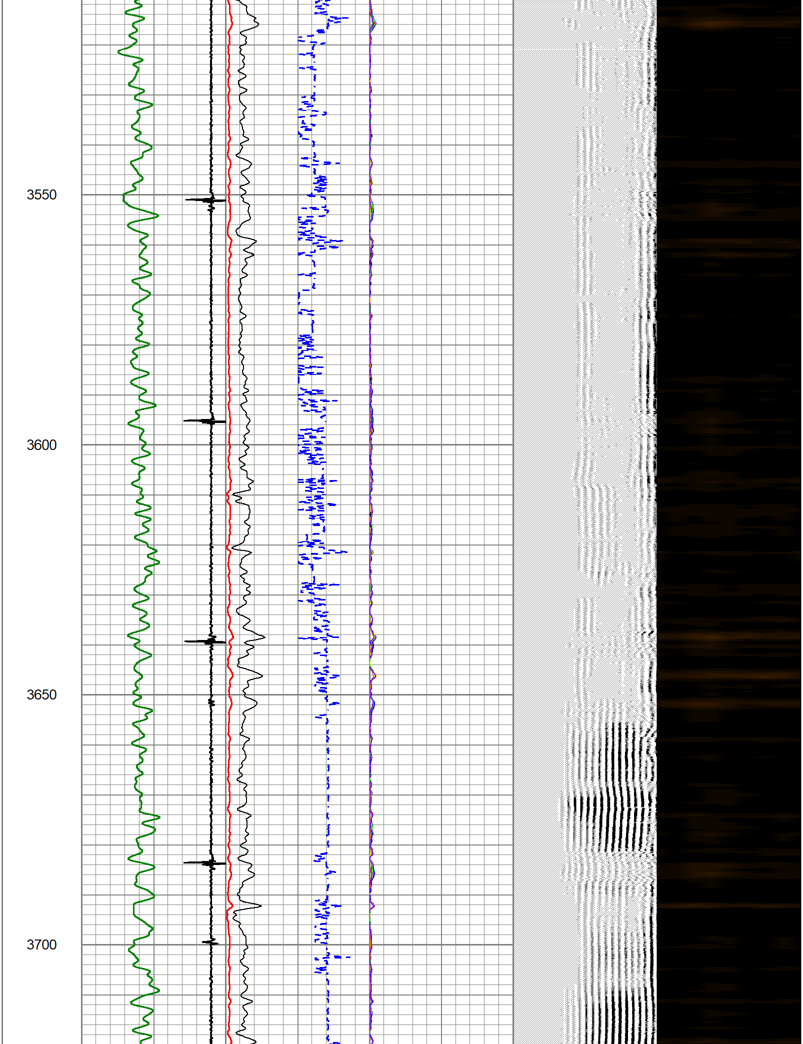
Schematic

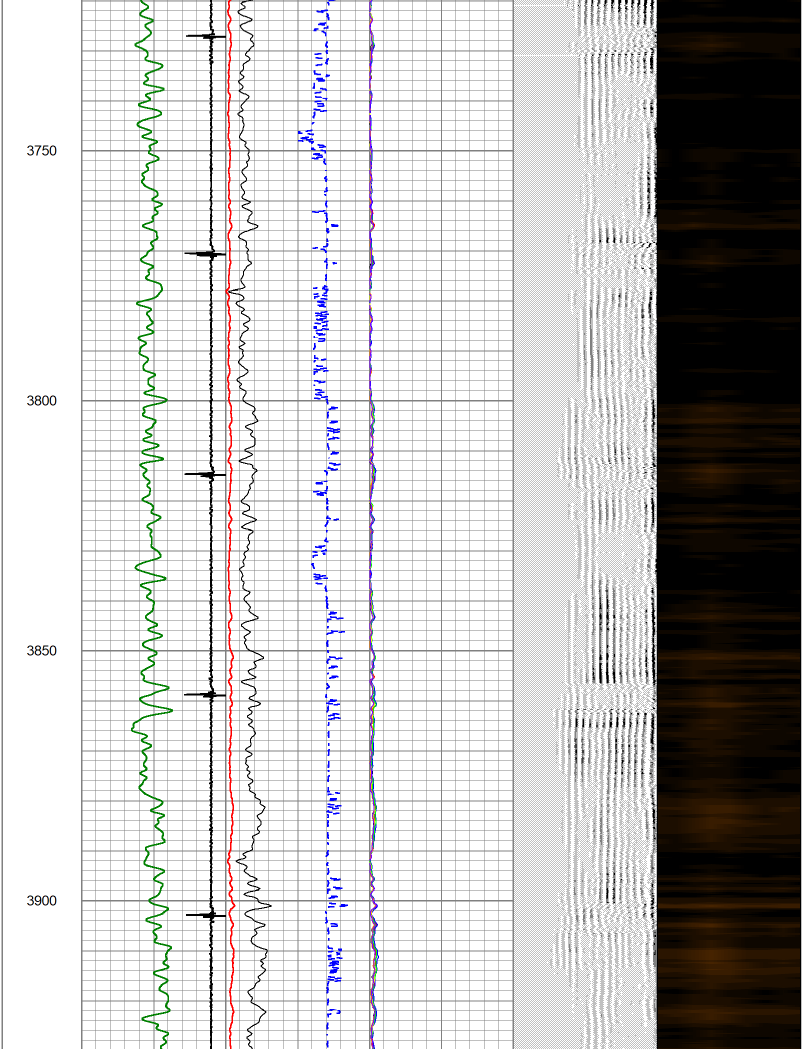


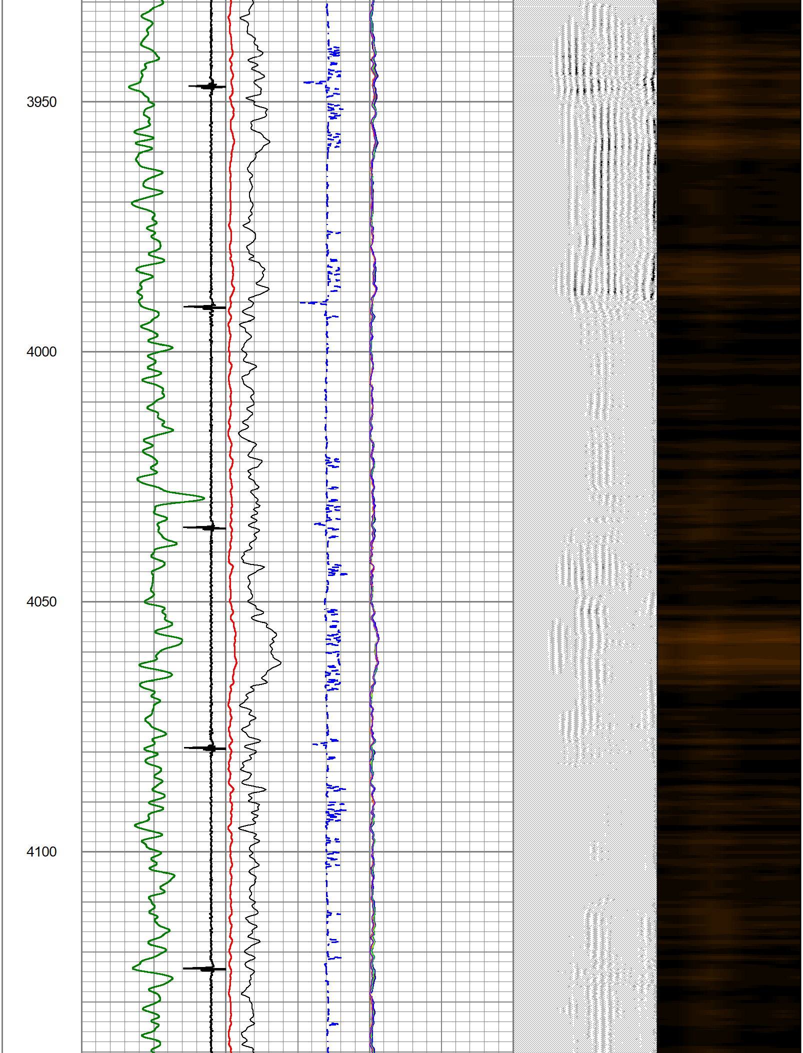
Dataset:	civitas_(pronghorn_federal-f21-j24-31hnb)_cbl_12292021.db: field/well/run1/main
Total length:	22.80 ft
Total weight:	128.00 lb
O.D.:	2.75 in

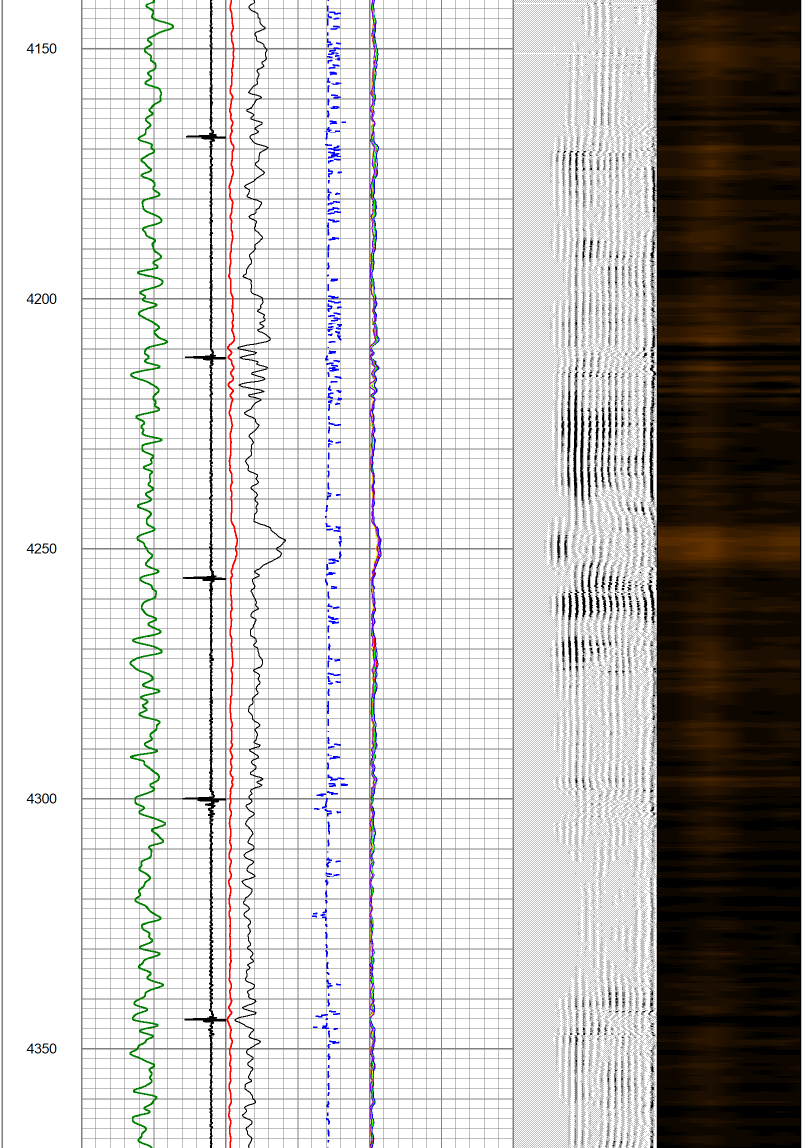
MAIN PASS

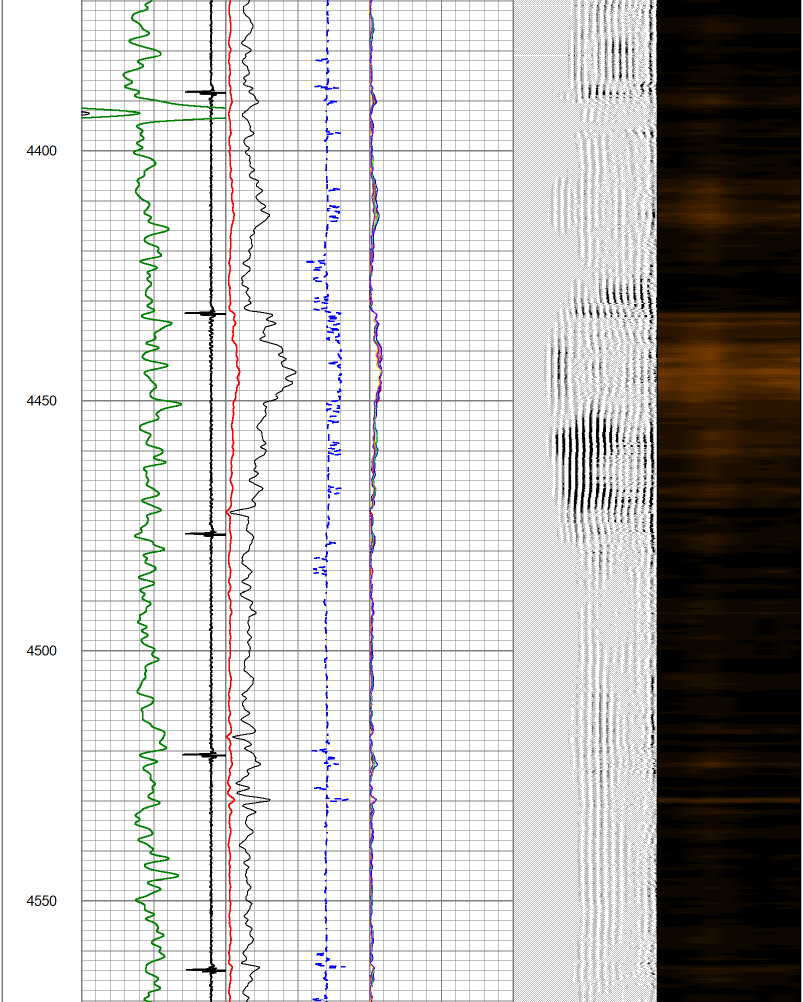
Database File	civitas_(pronghorn_federal-f21-j24-31hnb)_cbl_12292021.db
Dataset Pathname	main.2
Presentation Format	sfww_cbl_oasis-sectors
Dataset Creation	Thu Dec 30 02:32:18 2021
Charted by	Depth in Feet scaled 1:240

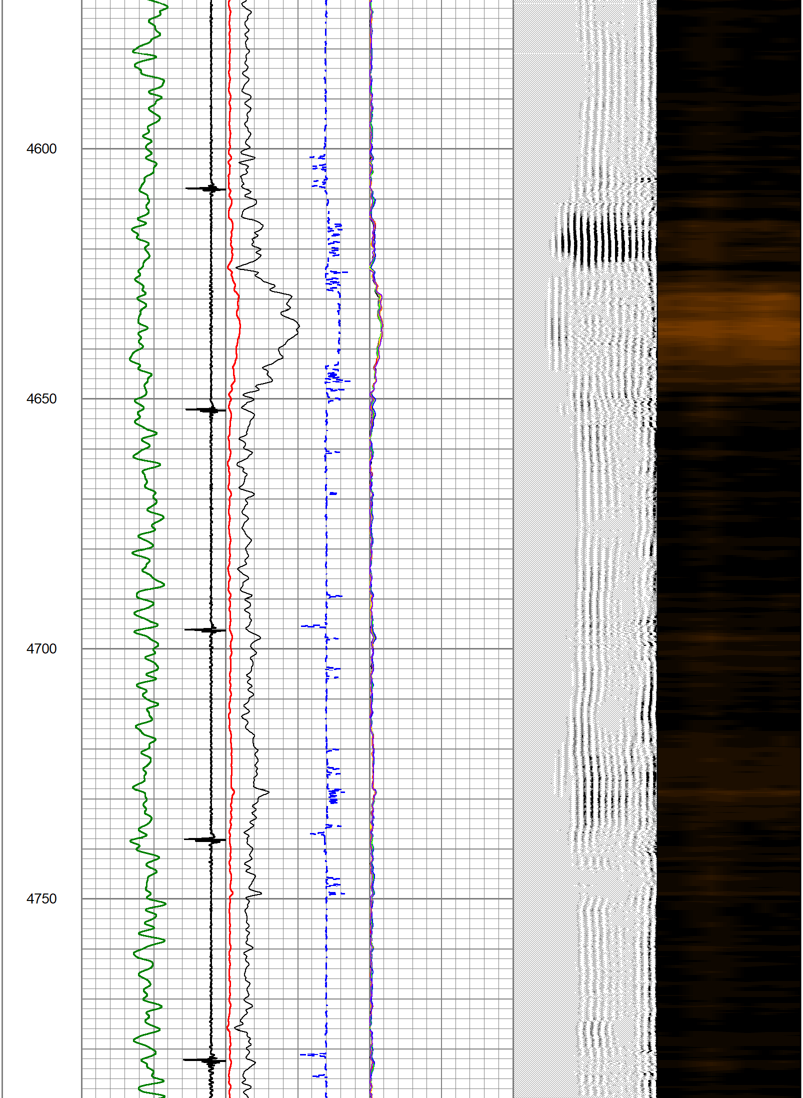


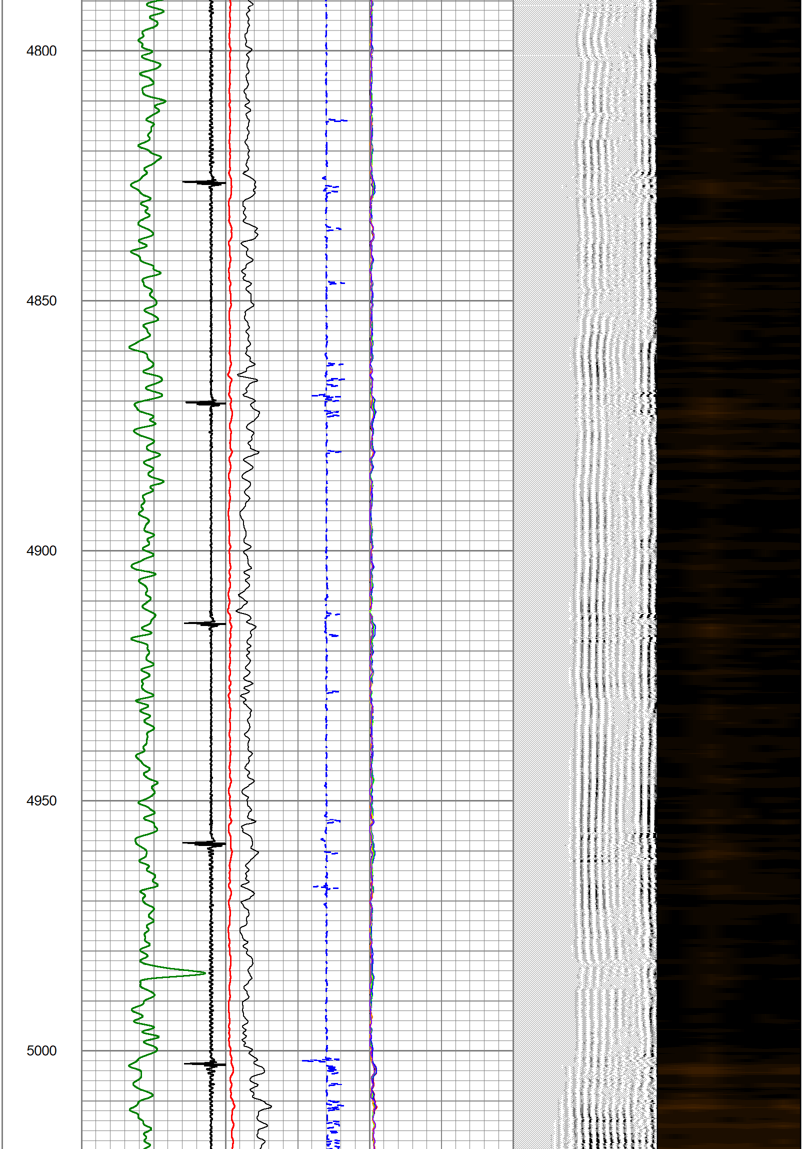


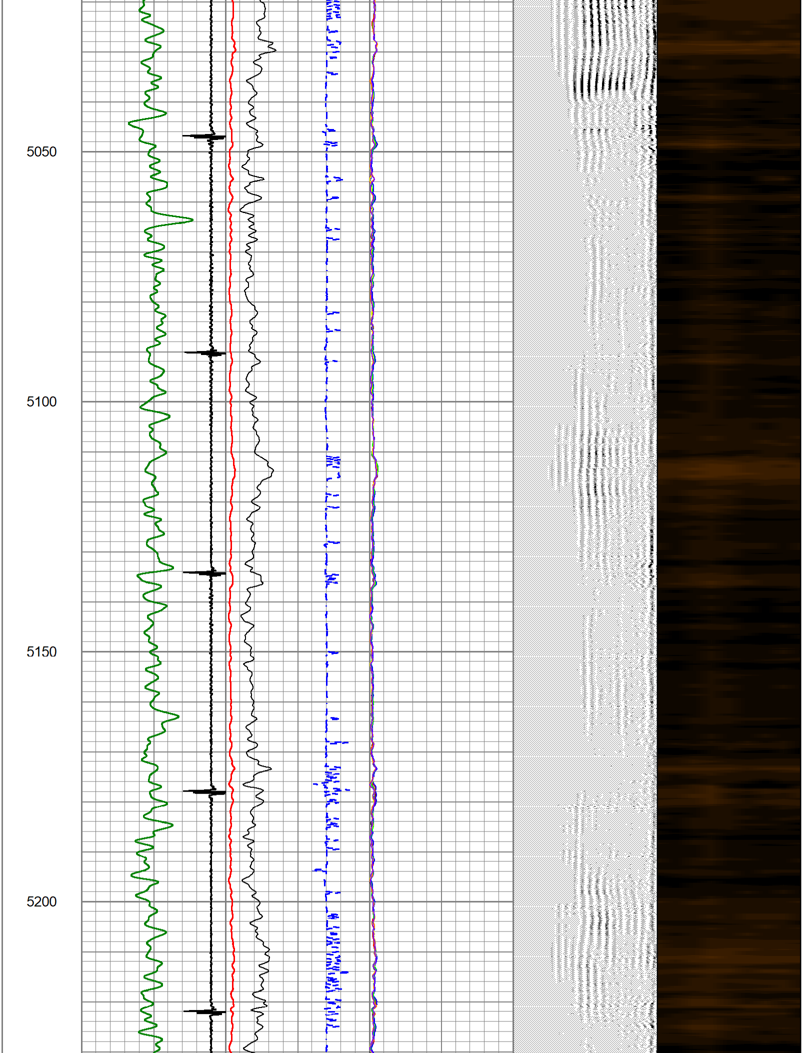


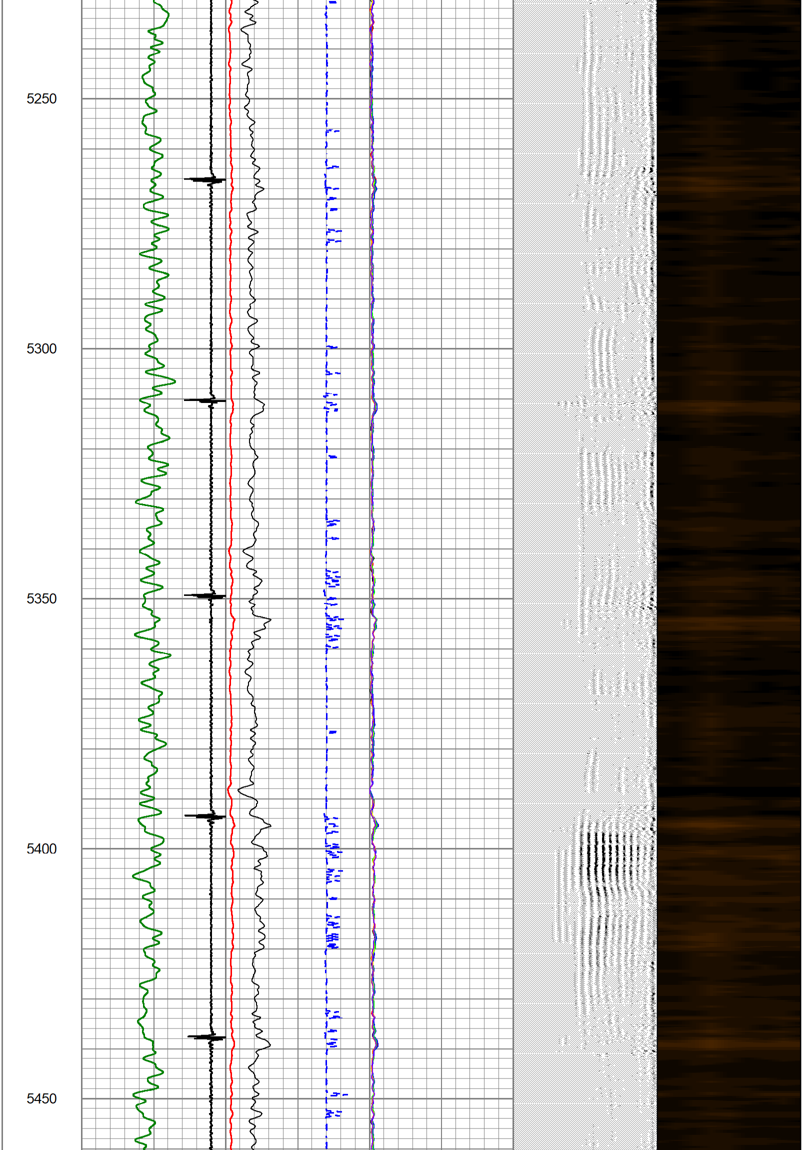


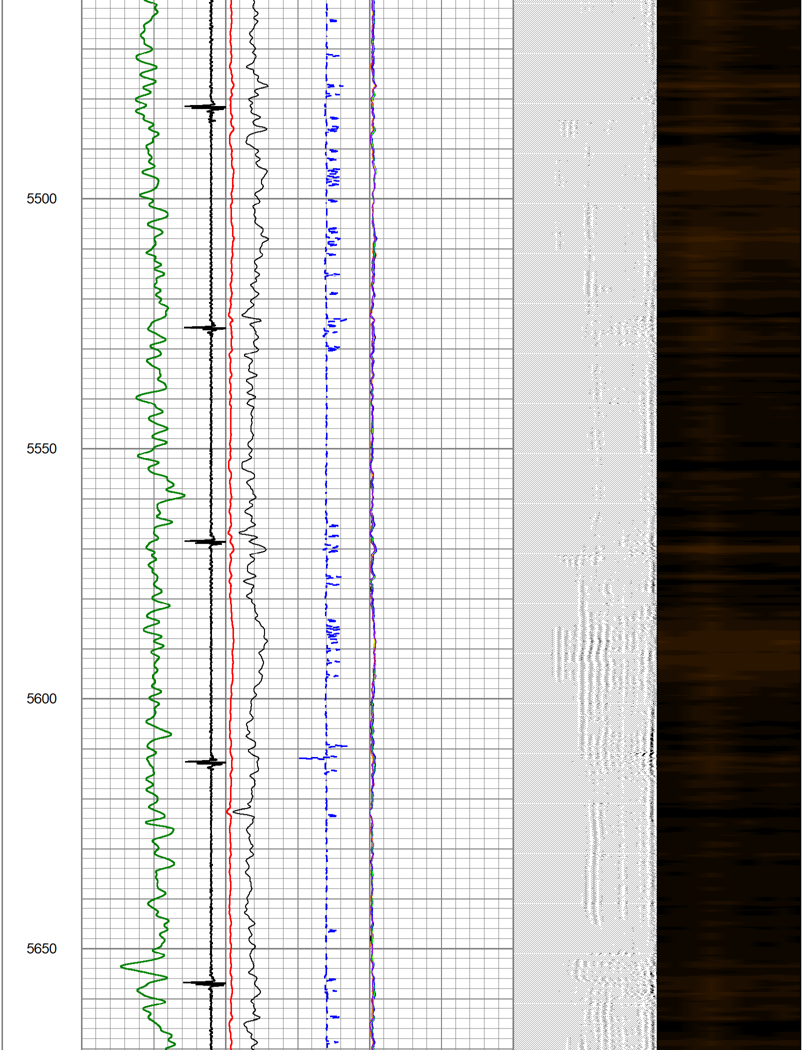


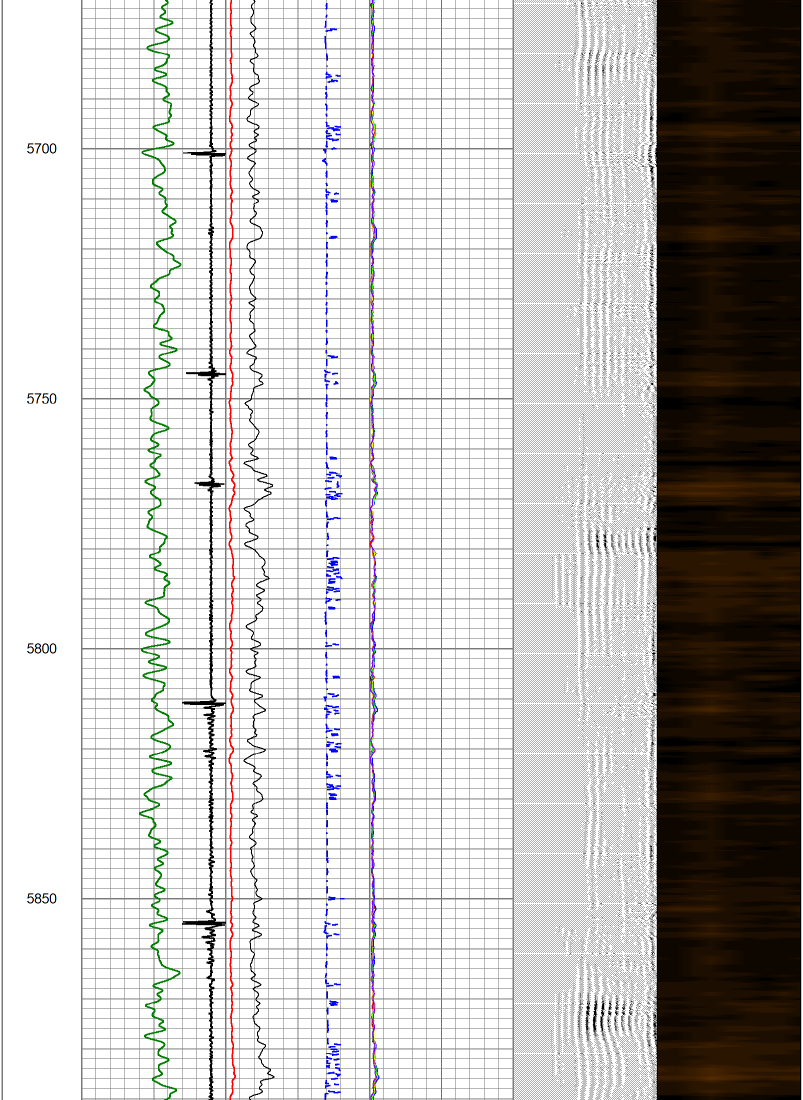


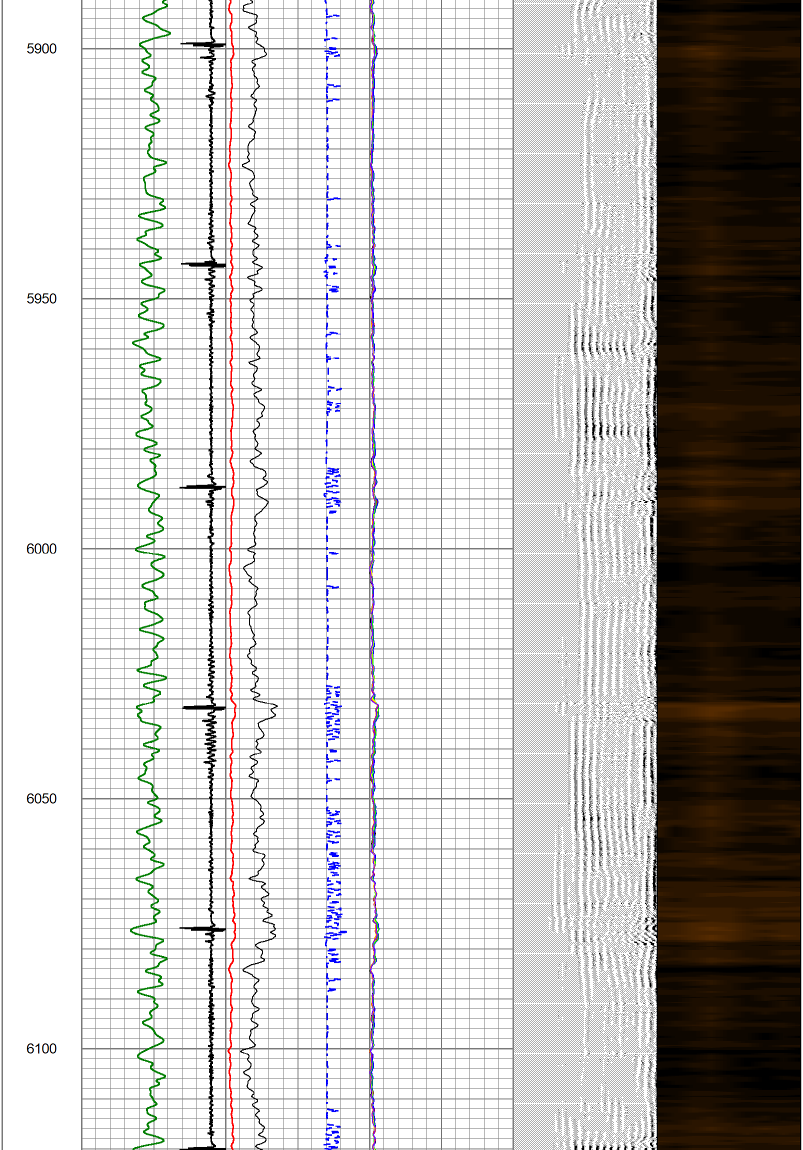


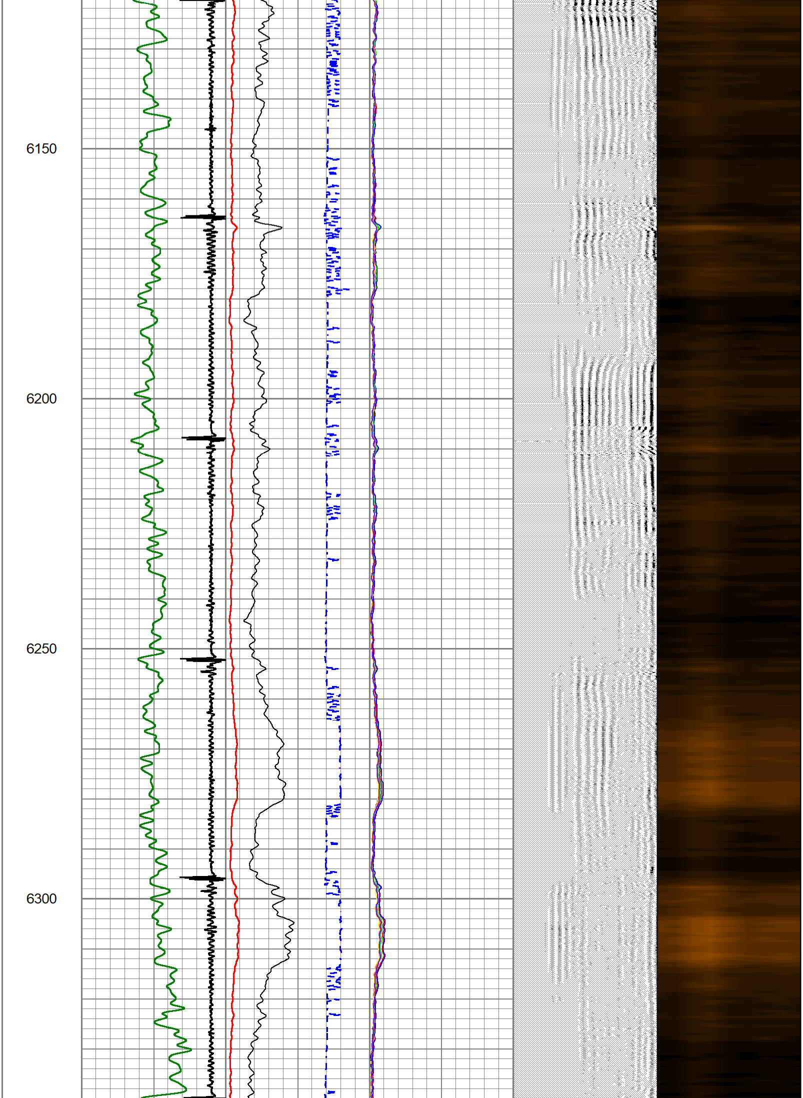


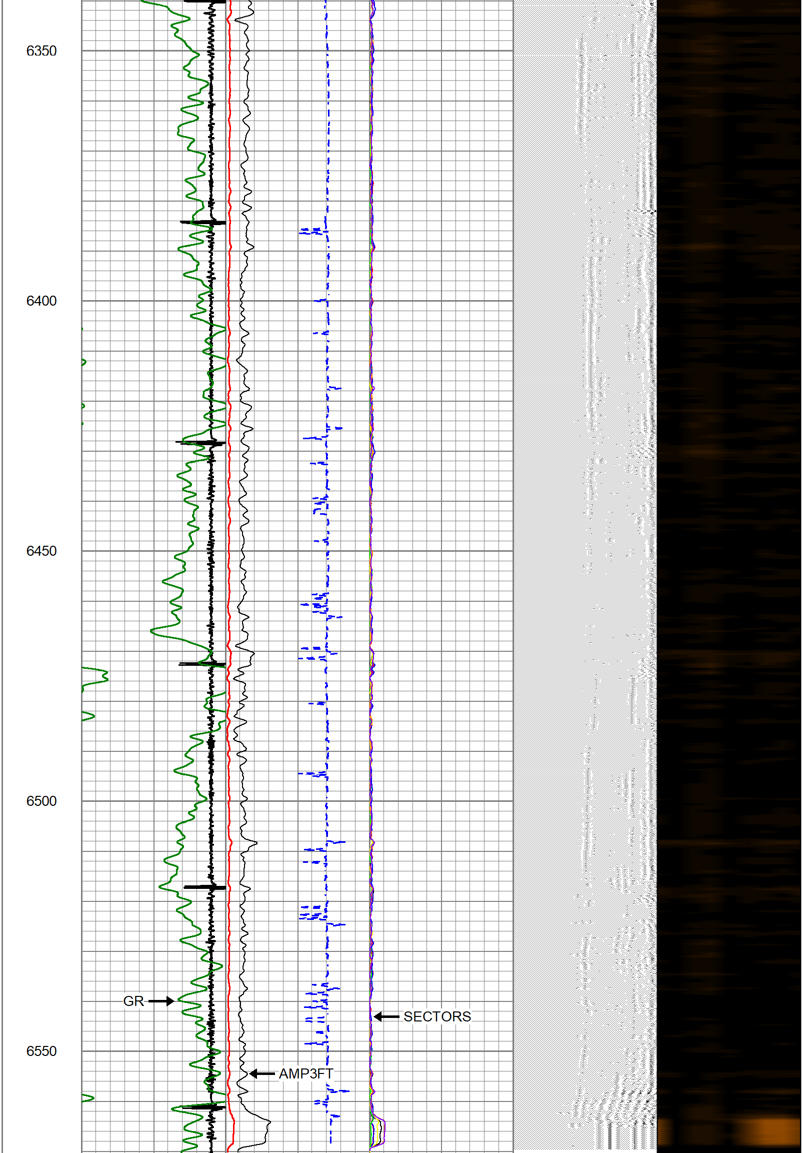


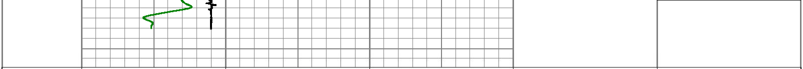












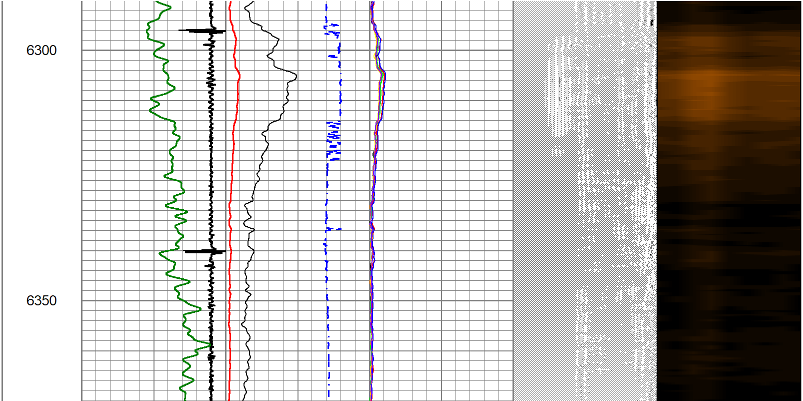
-9 CCL 1	0 AMP (mV) 100	0 AMPS1 100	200 VDL (usec) 1200	1 RADIAL MAP 8
0 GR (GAPI) 150	650 TT (usec) 150	0 AMPS2 100		
	0 AMPx5 (mV) 20	0 AMPS3 100		
		0 AMPS4 100		
		0 AMPS5 100		
		0 AMPS6 100		
		0 AMPS7 100		
		0 AMPS8 100		

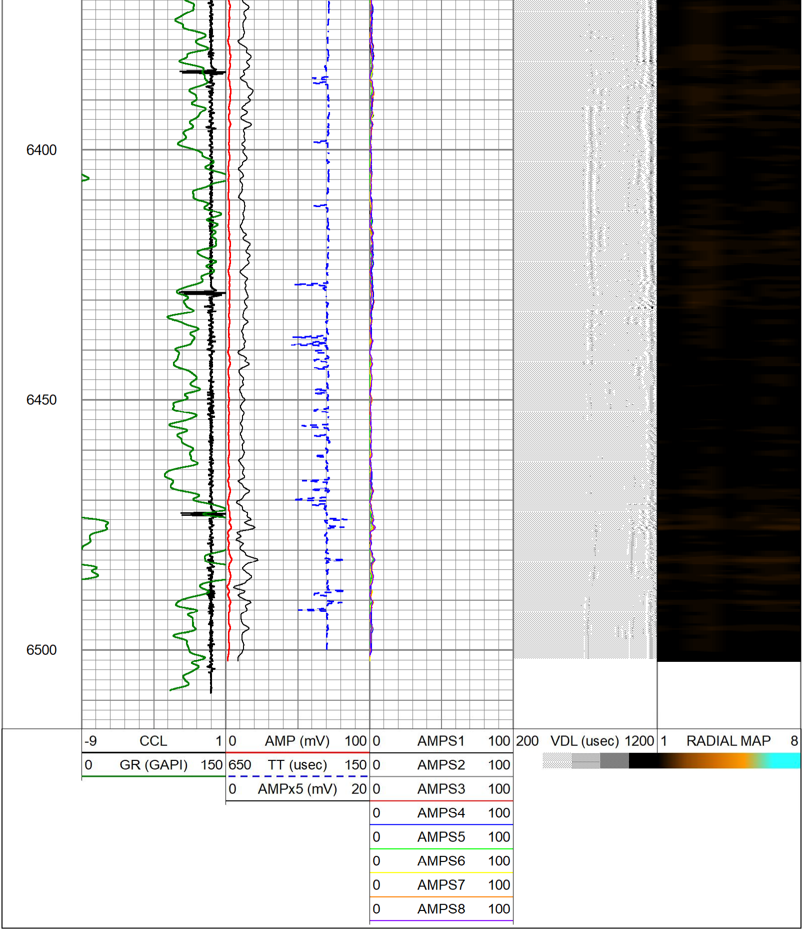
SureFire
WIRELINE WEST
LLC

REPEAT PASS

Database File	civitas_(pronghorn_federal-f21-j24-31hnb)_cbl_12292021.db
Dataset Pathname	repeat.2
Presentation Format	sfww_cbl_oasis-sectors
Dataset Creation	Thu Dec 30 02:30:13 2021
Charted by	Depth in Feet scaled 1:240

-9 CCL 1	0 AMP (mV) 100	0 AMPS1 100	200 VDL (usec) 1200	1 RADIAL MAP 8
0 GR (GAPI) 150	650 TT (usec) 150	0 AMPS2 100		
	0 AMPx5 (mV) 20	0 AMPS3 100		
		0 AMPS4 100		
		0 AMPS5 100		
		0 AMPS6 100		
		0 AMPS7 100		
		0 AMPS8 100		





Calibration Report

Database File	civitas_(pronghorn_federal-f21-j24-31hnb)_cbl_12292021.db
Dataset Pathname	main
Dataset Creation	Wed Dec 29 18:19:25 2021

Gamma Ray Calibration Report

Serial Number:	FW2103-050	
Tool Model:	GCT275-0000	
Performed:	Fri Dec 17 23:30:45 2021	
Calibrator Value:	120.0	GAPI
Background Reading:	30.0	cps
Calibrator Reading:	210.0	cps
Sensitivity:	0.6667	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW2103-061	
Tool Model:	RADII-275T	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	-59.033	ft

Master Calibration, performed Mon Dec 27 15:17:12 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.005	1.034	1.000	72.000	69.006	0.639
CAL	-0.002	1.000				
5'	0.000	0.937	1.000	72.000	75.796	0.979
SUM						
S1	0.007	1.002	0.000	72.000	72.394	-0.517
S2	0.008	0.994	0.000	72.000	73.026	-0.602
S3	0.007	0.993	0.000	72.000	73.023	-0.510
S4	0.006	0.975	0.000	72.000	74.321	-0.444
S5	0.006	0.983	0.000	72.000	73.688	-0.446
S6	0.004	0.988	0.000	72.000	73.157	-0.297
S7	0.006	0.969	0.000	72.000	74.792	-0.460
S8	0.006	1.022	0.000	72.000	70.836	-0.403

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.002	1.000	1.000	0.000

Air Zero Calibration, performed Mon Dec 27 15:12:43 2021:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Inclinometer Calibration Report

Performed: (Not Performed)

	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	0.00	1.00	0.00	1.00	gee
Y Accelerometer	0.00	1.00	0.00	1.00	gee
Z Accelerometer	0.00	1.00	0.00	1.00	gee

Log Variables

DatabaseC:\ProgramData\Warrior\Data\civitas_(pronghorn_federal-f21-j24-31hnb)_cbl_12292021.d
Dataset field/well/run1/main/_vars_

Top - Bottom

BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft
7.875	100	5.5	0.304	17	72	1	0.8

PERFS	PPT usec	SRFTEMP degF	TDEPTH ft
No	0	0	0

Variable Description

BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude
MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

SureFire
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LLC

Company	BONANZA CREEK ENERGY OPERATING COMPANY LLC		
Well	PRONGHORN FEDERAL F21-J24-31HNB		
Field	WATTENBERG		
County	WELD		
State	COLORADO	Country	USA