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CEMENT BOND LOG WITH GAMMA RAY

Company	BONANZA CREEK ENERGY OP. CO LLC
Well	ANTELOPE E-A-21HNB
Field	WATTENBERG
County	WELD
State	CO

Location: API # : 05123413710000
SHL: 507' FSL & 864' FWL SWSW
LAT: 40.379316
LONG: -104.335072
SEC 21 TWP 5N RGE 62W

Other Services: None

Permanent Datum	GL	Elevation	4640
Log Measured From	KB		
Drilling Measured From	KB...17' ABOVE GL		

Elevation
K.B. 4657
D.F. 4657
G.L. 4640

Date of Service	JULY 13, 2015
Run Number	1
Depth Driller or PBTD	N/A
Depth Logger	5945
Bottom Log Interval	5944
Top Log Interval	SURFACE
Open Hole Size	8.75"
Type Fluid	WATER
Fluid Level	34
Fluid Density	8.33 PPG
Max. Recorded Temperature	189 F
Max. Wellhead Pressure	0
Wellhead Connection	N/A
Estimated Cement Top	214
Unit Number	P1
Wireline Size	9/32"
Location	FT MORGAN, CO
Recorded By	SCHUMAN
Witnessed By	MR KEVIN BUNKER

	Size	Wt/Ft	Top	Bottom
Tubing Record				
Surface Casing	9.625"	36#	SURFACE	448
Production Casing	7"	26#	SURFACE	6799
Liner Record	4.5"	11.6#	5905	N/A

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
LOG CORRELATED TO RIG KB
S.O. # 2-280192

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THANK YOU FOR USING PIONEER ENERGY SERVICES

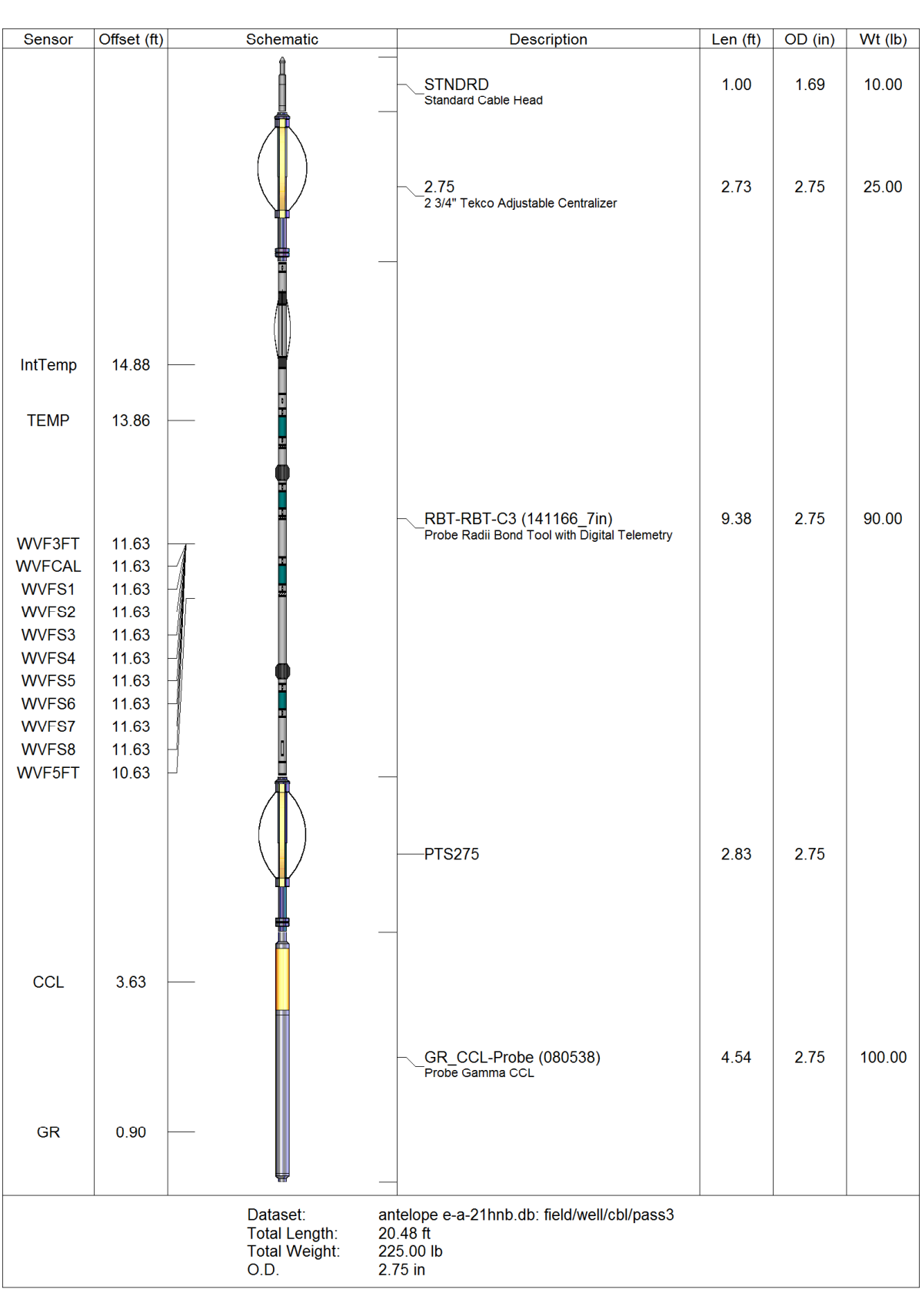
Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: SHAUN	CBL	141166
Operator: GENO	GR	080538
Operator: BRENT		
Operator:		

Log Variables

Database:C:\Warrior\Data\antelope e-a-21hnb.db
Dataset: field/well/cbl/pass3

Top - Bottom

XXXX	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASEOD in
0	0	26	0	1.5	0.08	0	7
PERFS	TDEPTH ft	BOTTEMP degF	BOREID in				
0	0	200	8.75				



Sensor	Offset (ft)	Description	Len (ft)	OD (in)	Wt (lb)
		STNDRD Standard Cable Head	1.00	1.69	10.00
		2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
IntTemp	14.88				
TEMP	13.86				
		RBT-RBT-C3 (141166_7in) Probe Radii Bond Tool with Digital Telemetry	9.38	2.75	90.00
WVF3FT	11.63				
WVFCAL	11.63				
WVFS1	11.63				
WVFS2	11.63				
WVFS3	11.63				
WVFS4	11.63				
WVFS5	11.63				
WVFS6	11.63				
WVFS7	11.63				
WVFS8	11.63				
WVF5FT	10.63				
		PTS275	2.83	2.75	
CCL	3.63				
		GR_CCL-Probe (080538) Probe Gamma CCL	4.54	2.75	100.00
GR	0.90				

Dataset: antelope e-a-21hnb.db: field/well/cbl/pass3
Total Length: 20.48 ft
Total Weight: 225.00 lb
O.D. 2.75 in

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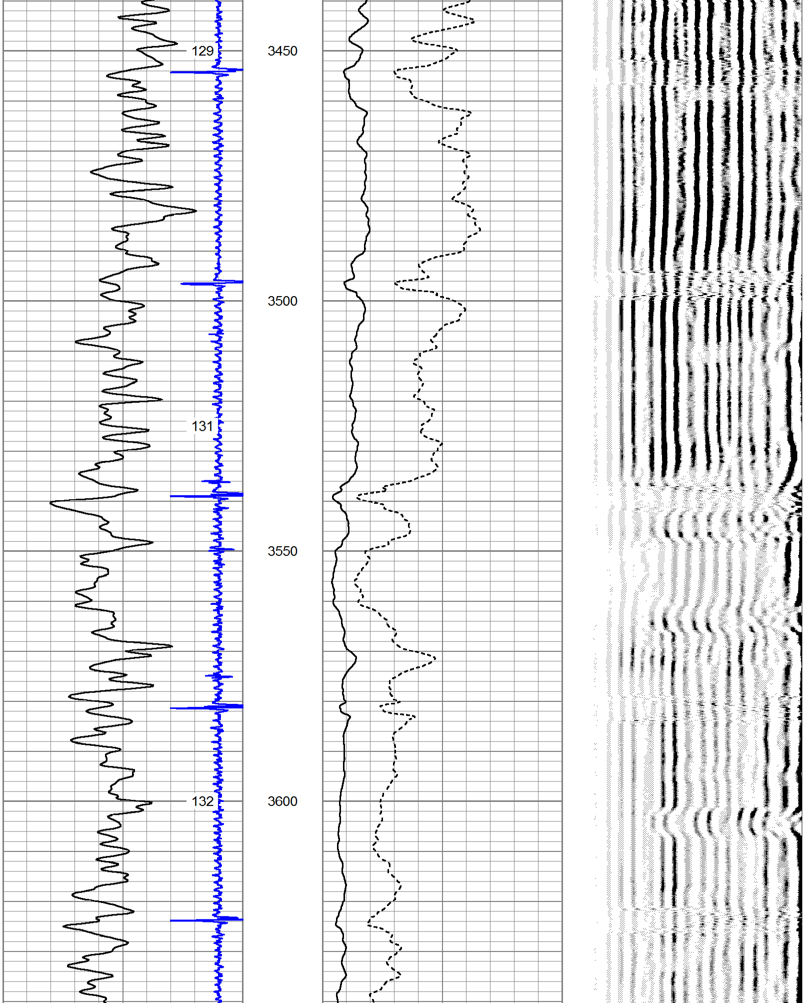
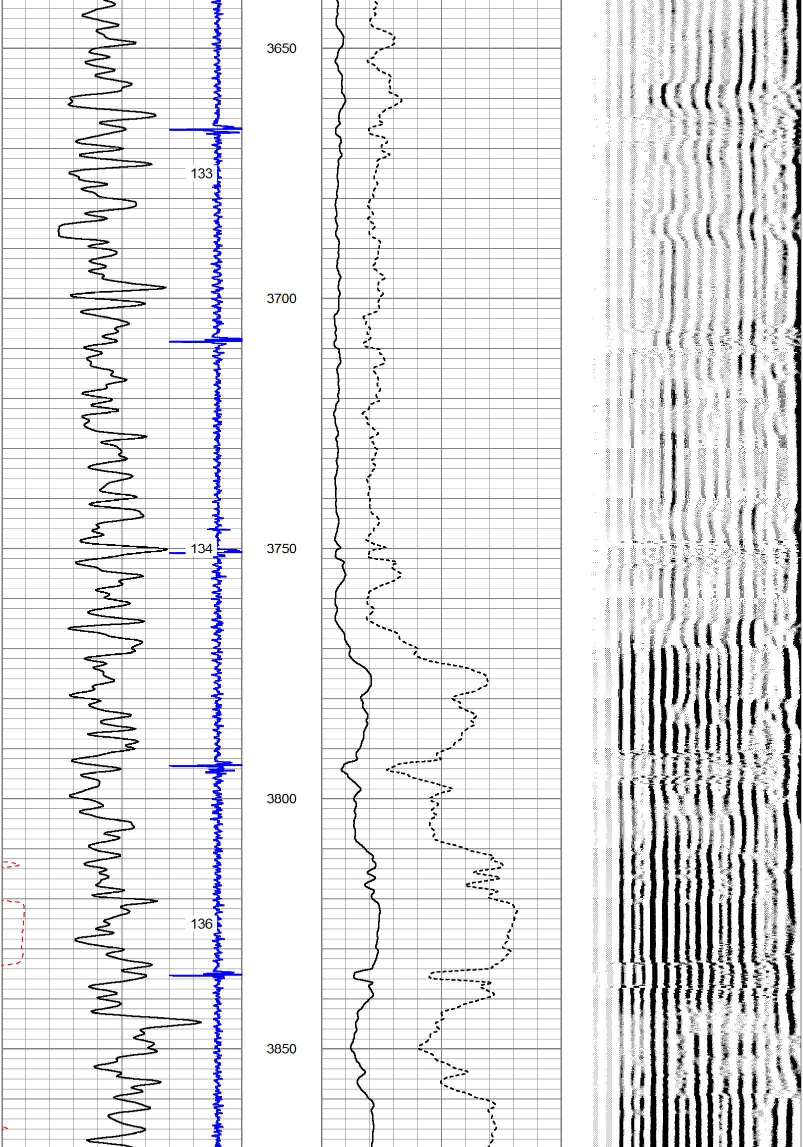
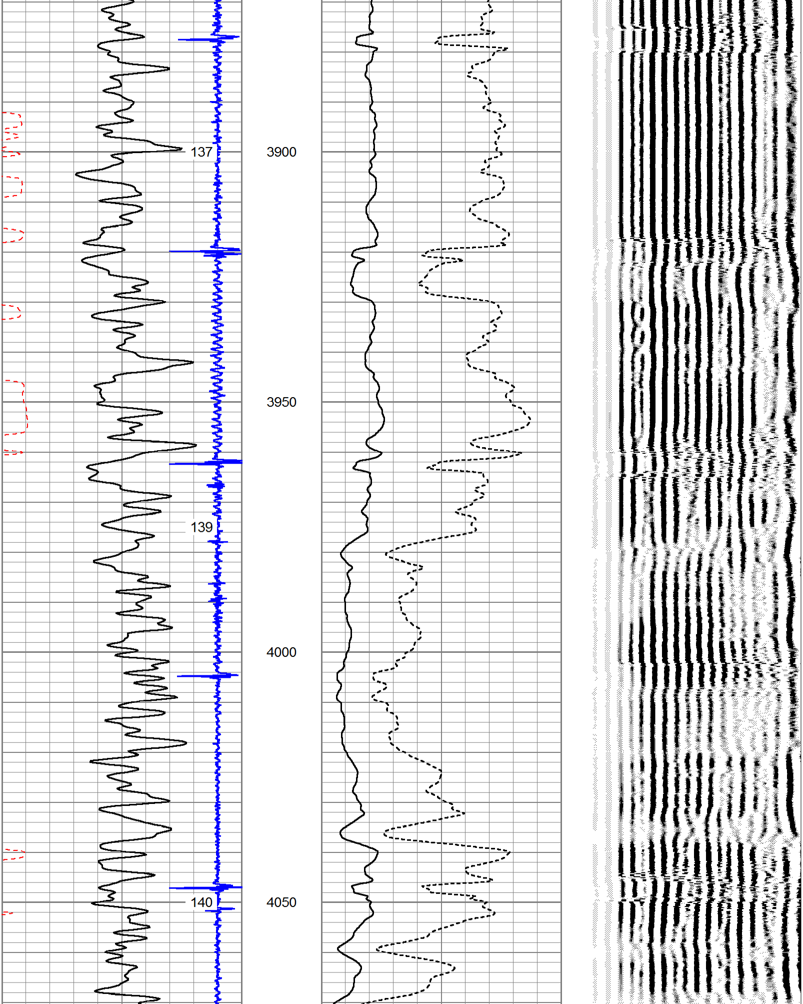
MAIN LOG

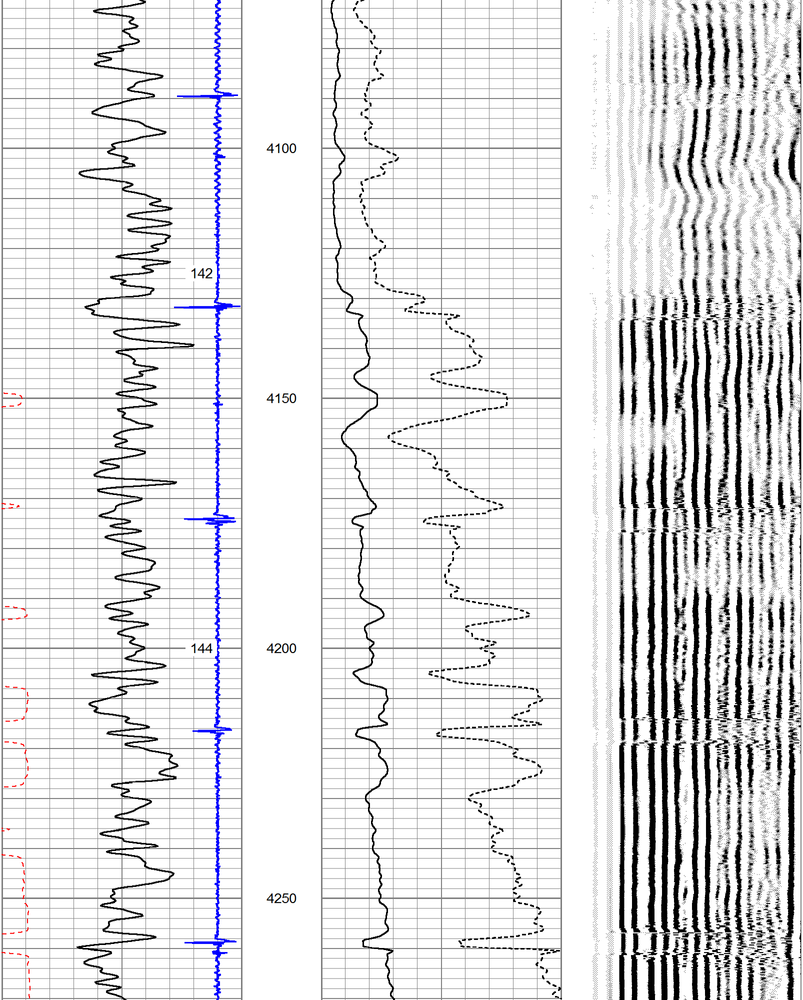
LOGGED WITH 0 PSI APPLIED AT SURFACE

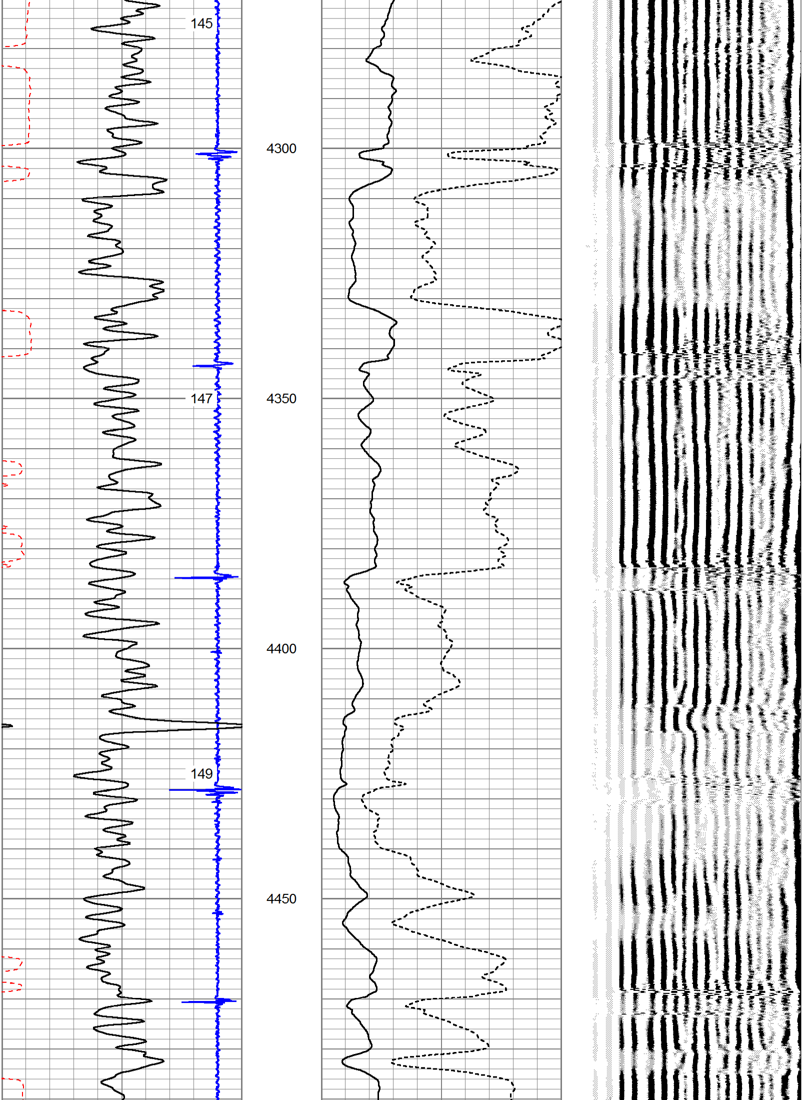
Database File: antelope e-a-21hnb.db
Dataset Pathname: cbl/pass3.1
Presentation Format: cbl_drs
Dataset Creation: Mon Jul 13 10:21:01 2015 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

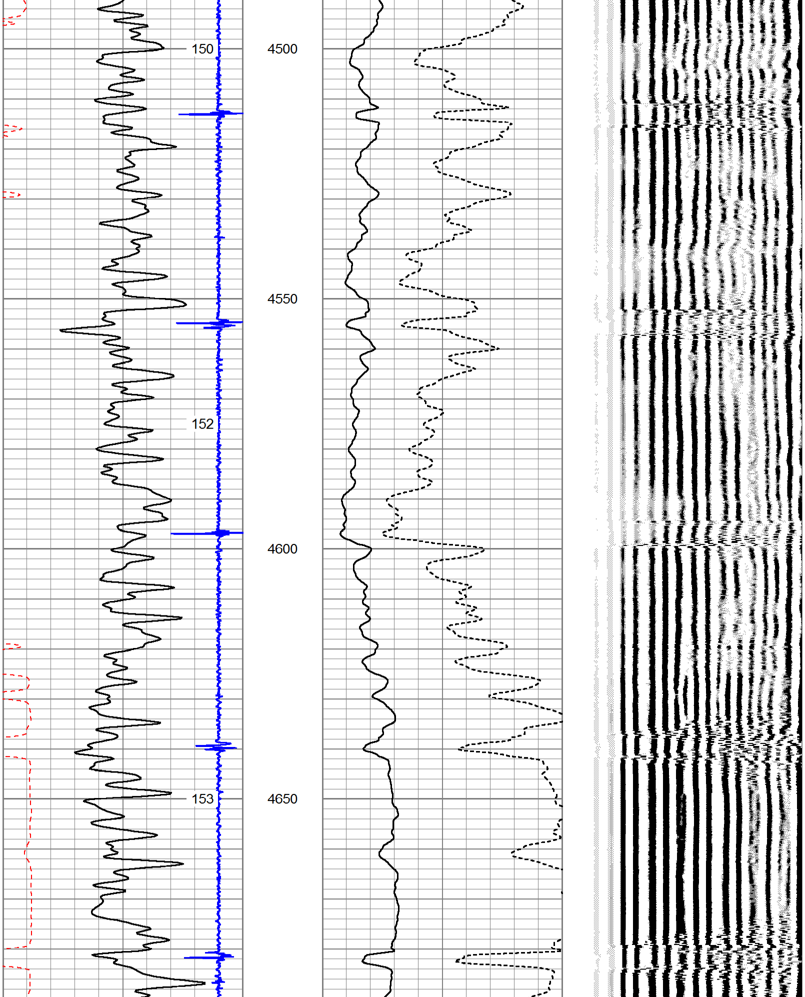


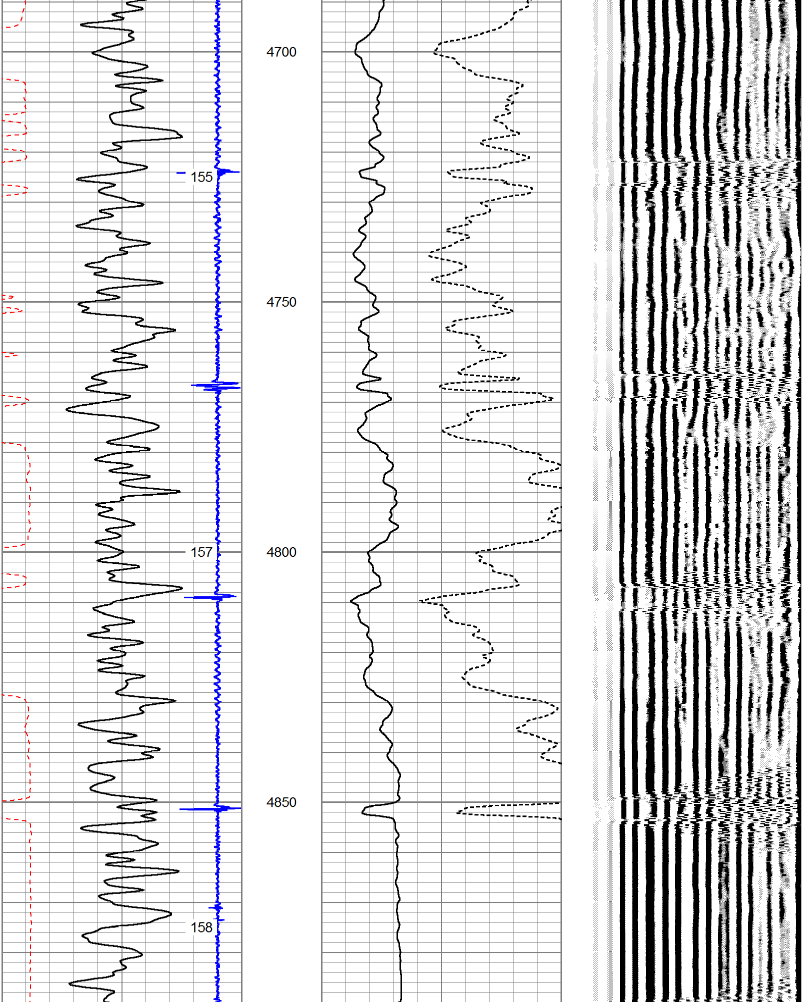


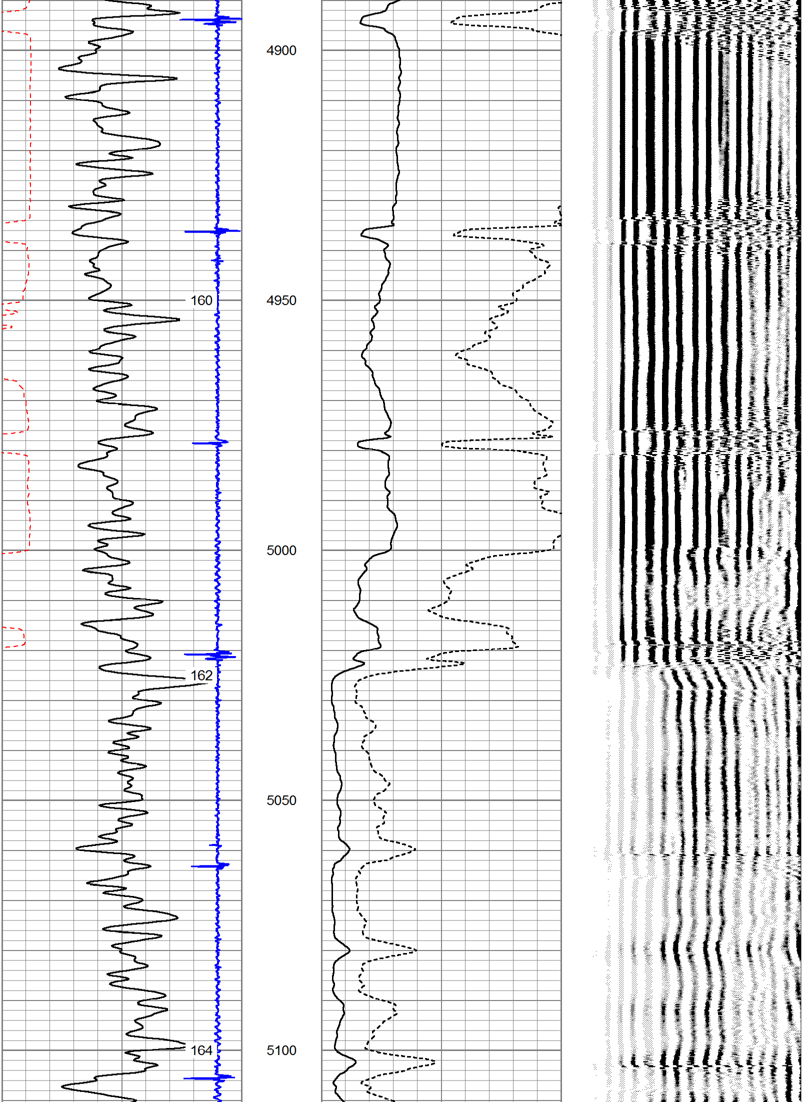


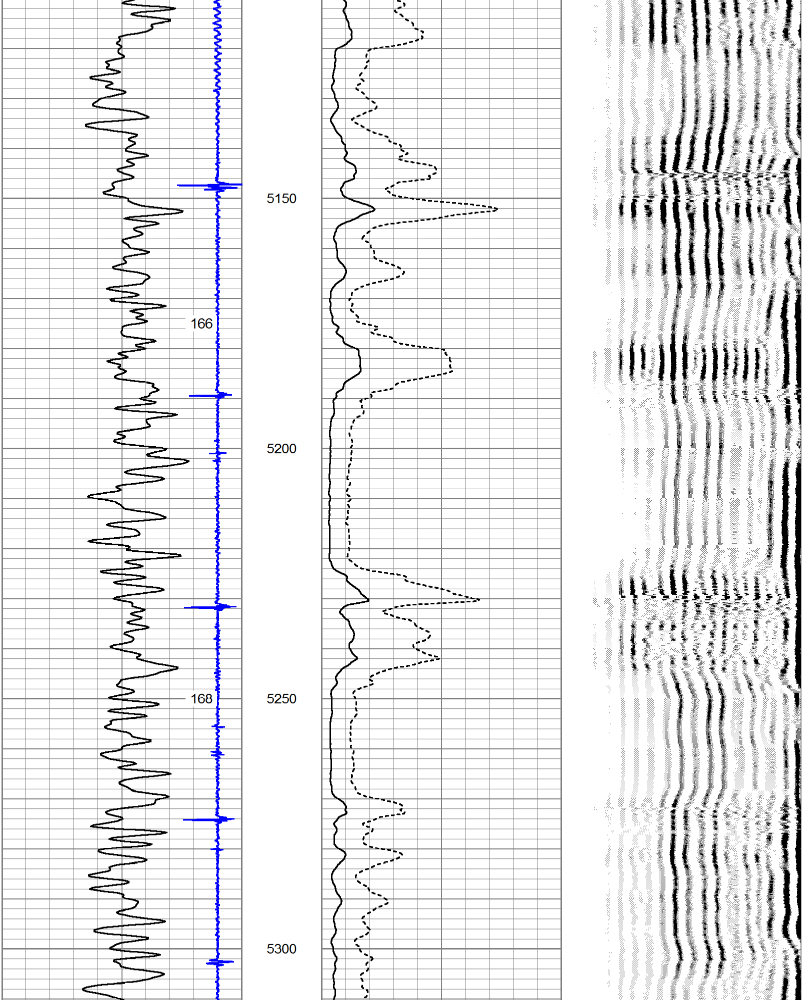


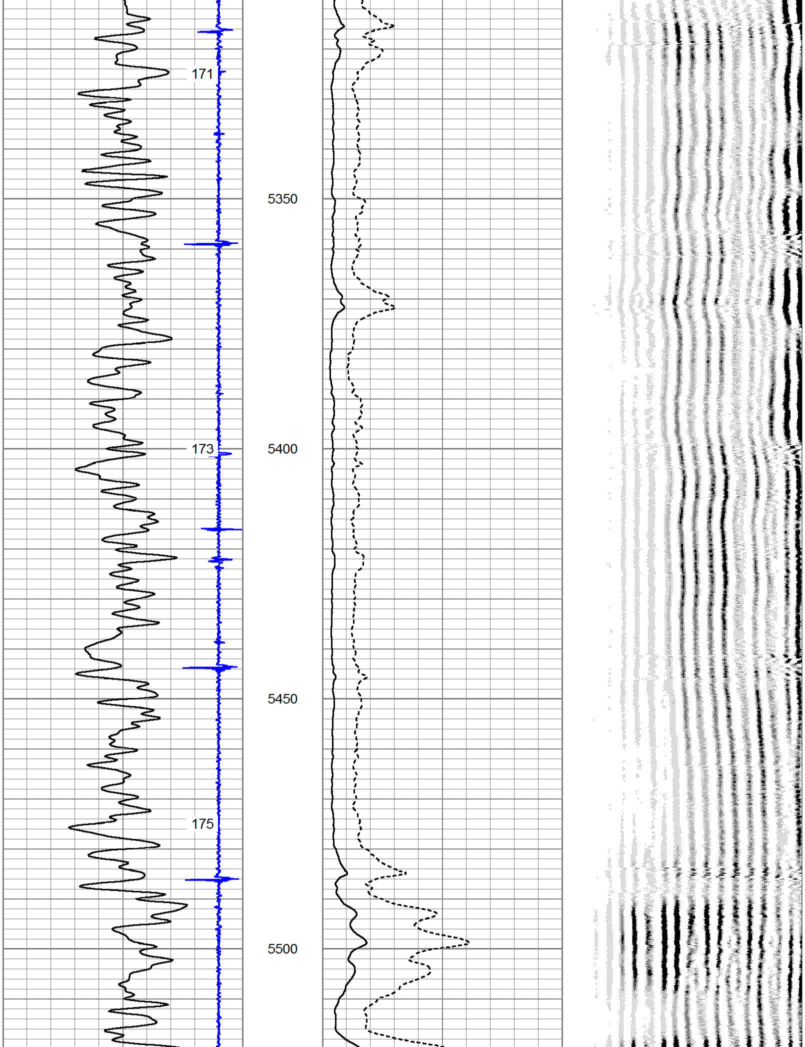


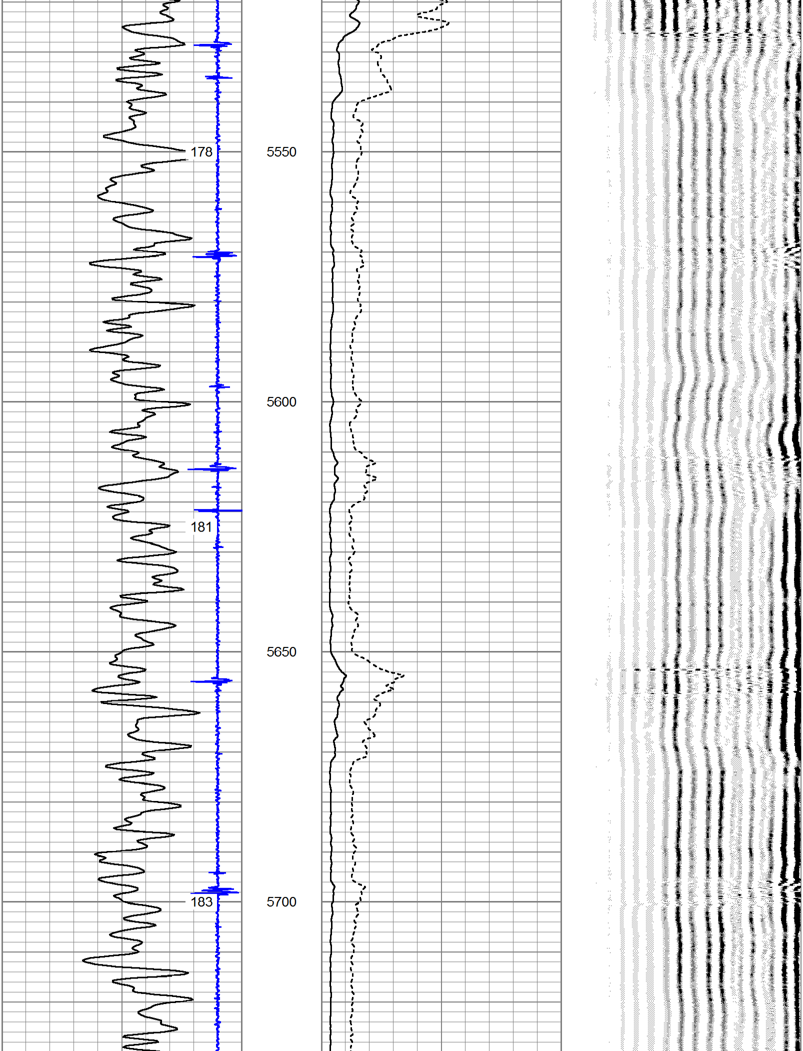


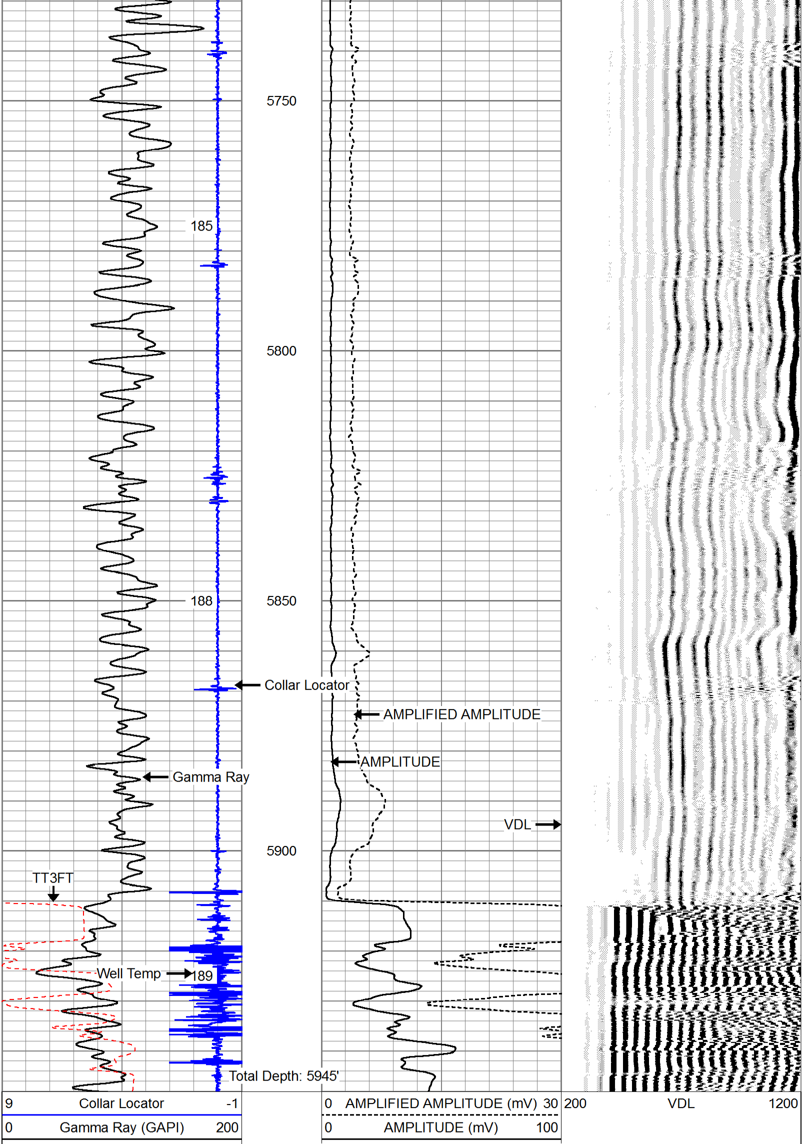












300 TT3FT (usec) 200

Well Temp (degF)

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REPEAT SECTION

LOGGED WITH 0 PSI APPLIED AT SURFACE

Database File:	antelope e-a-21hnb.db
Dataset Pathname:	cbl/pass2
Presentation Format:	cbl_drs
Dataset Creation:	Mon Jul 13 08:59:56 2015 by Log 7.0 B1
Charted by:	Depth in Feet scaled 1:240

9 Collar Locator -1

0 Gamma Ray (GAPI) 200

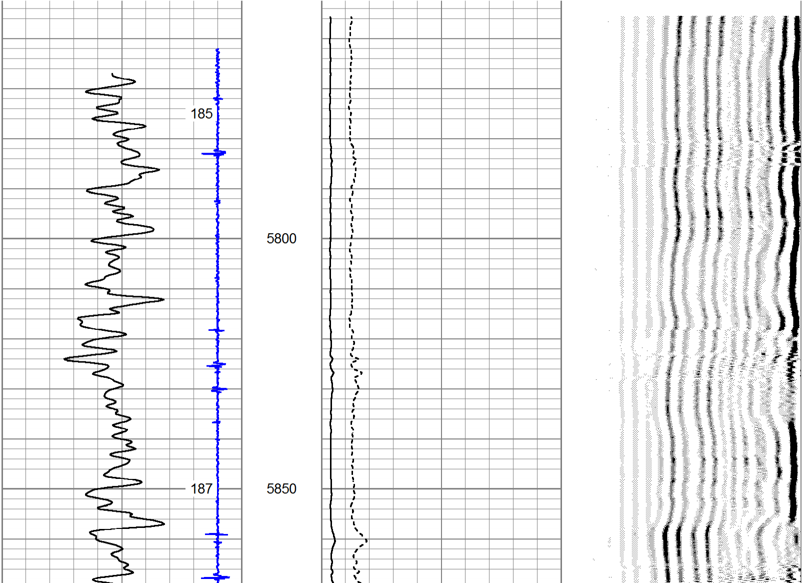
300 TT3FT (usec) 200

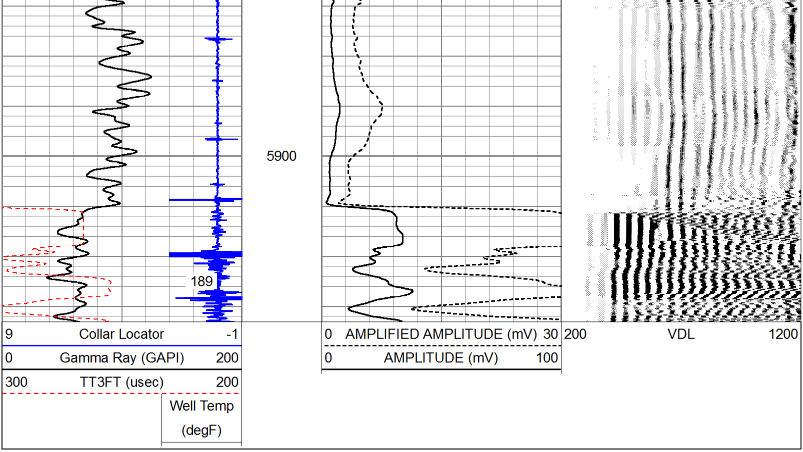
Well Temp (degF)

0 AMPLIFIED AMPLITUDE (mV) 30

0 AMPLITUDE (mV) 100

200 VDL 1200





Calibration Report

Database File: antelope e-a-21hnb.db
Dataset Pathname: cbl/pass2
Dataset Creation: Mon Jul 13 08:59:56 2015 by Log 7.0 B1

Gamma Ray Calibration Report

Serial Number:	080538	
Tool Model:	Probe	
Performed:	Fri Jun 19 07:51:27 2015	
Calibrator Value:	260.0	GAPI
Background Reading:	0.2	cps
Calibrator Reading:	175.5	cps
Sensitivity:	1.4880	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	141166_7in	
Tool Model:	RBT-C3	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	1978.408	ft

Master Calibration, performed Thu Jun 25 10:33:13 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.013	1.742	1.500	62.300	60.000	1.300
CAL	0.012	1.733				
5'	0.013	1.747	1.500	71.900	95.916	0.259
SUM						
S1	0.009	1.737	0.000	100.000	137.367	-1.279
S2	0.013	1.741	0.000	100.000	137.399	-1.776
S3	0.013	1.739	0.000	100.000	137.600	-1.747
S4	0.012	1.740	0.000	100.000	137.484	-1.677
S5	0.012	1.738	0.000	100.000	137.827	-1.686
S6	0.013	1.740	0.000	100.000	137.510	-1.806

S7	0.012	1.738	0.000	100.000	137.773	-1.697
S8	0.012	1.738	0.000	100.000	137.905	-1.710

Temperature Calibration Report

Serial Number: 141166_7in
Tool Model: RBT-C3
Performed: Fri Jul 10 17:04:47 2015

	Reference	Reading
Low Reference:	34.00 degF	0.18 degF
High Reference:	222.00 degF	238.98 degF

Gain: 0.80
Offset: 10.01
Delta Spacing 1

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Company	BONANZA CREEK ENERGY OP. CO LLC		
Well	ANTELOPE E-A-21HNB		
Field	WATTENBERG		
County	WELD		
State	CO	Country	USA