CEMENT BOND LOG

Company	**ConocoPhillips**
Well	**Big Sandy 3-65 36-31 2AH**
Field	**Niobrara**
County	**Adams**
State	**Colorado**

API # : 05-001-10101
Location:
Surface:
Lat. 39.746797222
Long. -104.62348888

SEC: 35 TWP: 3S RGE: 65W

Other Services

Elevation
K.B. 5549'
D.F. ----
G.L. 5524'

Company	ConocoPhillips
Well	Big Sandy 3-65 36-31 2AH
Field	Niobrara
County	Adams
State	Colorado

Permanent Datum: Ground Level Elevation: 5524'
Log Measured From: Kelly Bushing , 25 ft. above Permanent Datum.
Drilling Measured From: Kelly Bushing

Date	4/20/2018
Run Number	ONE
Plug Back T.D. Driller	----
Plug Back T.D. Logger	----
Bottom Logged Interval	7768'
Top Log Interval	Surface
Type Fluid	----
Density / Viscosity	----
Max. Recorded Temp.	237 °F
Time Logger on Bottom	0802
Equipment Number	GD112
Location	Casper, Wy
Recorded By	Garrett Graham
Witnessed By	Charlie Cameron

Casing Record				Tubing Record			
Size	Weight	From	To	Size	Weight	From	To
9 5/8"	36#	Surface	2080'				
5 1/2"	23#	Surface	18156'				

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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.

Ticket # : **RM0418PCBW451**
Your Crew Today: **Dan H. Joe T. and Eric R.**
Log Correlated to: **Marker Joint @ 7,287'**

Cement Data	
Date Cemented	----
Primary / Squeeze	----
Type / Weight	----
Main Pass Press.	500 Psi
Repeat Pass Press.	0 Psi

Bond Index	
Index %	**Est Top Depth**
20 % Bond	1980'
40 % Bond	1990'
60 % Bond	2124'
80 % Bond	7745'
100 % Bond	----

Comments

Log Correlated to Marker Joint @ 7,287'

45° @ 7,729'
KOP @ 10° @ 4,705'

Thank you for using Gyrodata

Eric Regnier: Rocky Mountain Wireline Manager EricR@Gyrodata.com

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Log Variables

Databasec:\programdata\warrior\data\2018_4_20_conoco_big_sandy_3_65_36_31_2ah\2018_4_20
Dataset field/well/run1/Main1/_vars_

Top - -2.40 ft

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MaxAPIID in
TEMP	0	237	0	0	0	0	0

MaxAPIWall in	MINAMPL mV	MinAPIID in	MINATTN db/ft	PPT usec
0	0	0	0	0

-2.40 ft - 7760.00 ft

BHTEMP_Src	BOREID in	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MaxAPIID in	MaxAPIWall in
TEMP	8.5	5.5	0.415	23	71.9	4.829	0.415

MINAMPL mV	MinAPIID in	PPT usec
2.6	4.643	238

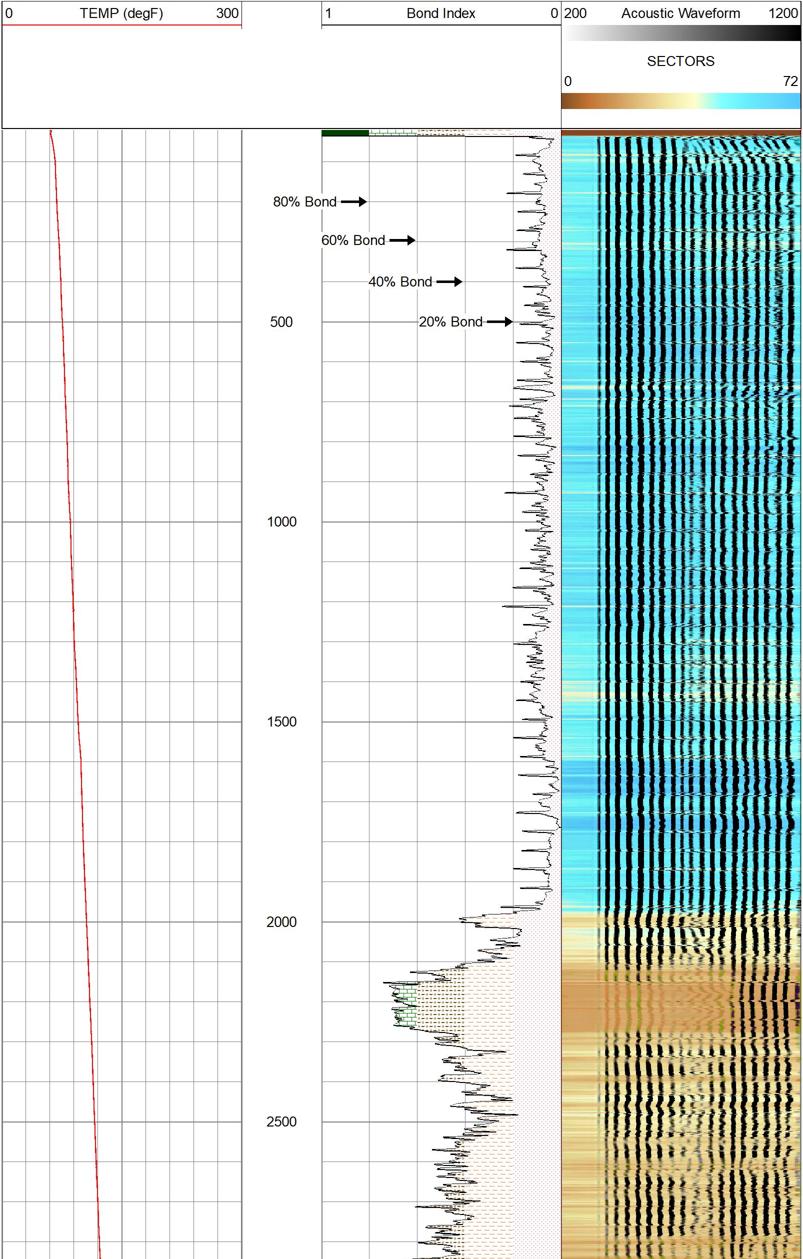
7760.00 ft - Bottom

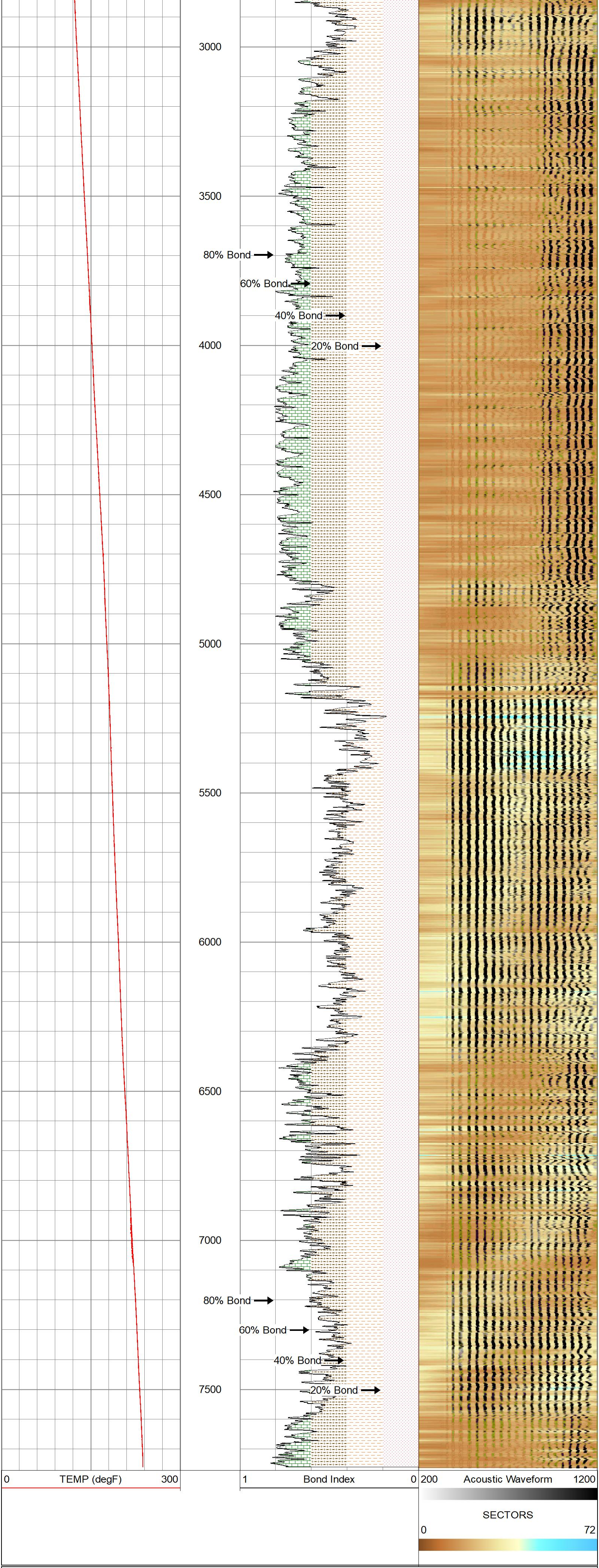
BHTEMP_Src	BOREID in	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MaxAPIID in	MaxAPIWall in
TEMP	0	0	0	0	0	0	0

MINAMPL mV	MinAPIID in	PPT usec
0	0	0

BOND INDEX

Database File	2018_4_20_conoco_big_sandy_3_65_36_31_2ah\2018_4_20_conoco_big_sandy_3_65_36_31_2ah.db
Dataset Pathname	Bond
Presentation Format	bndindx_msg-sec
Dataset Creation	Fri Apr 20 12:41:30 2018
Charted by	Depth in Feet scaled 1:3000



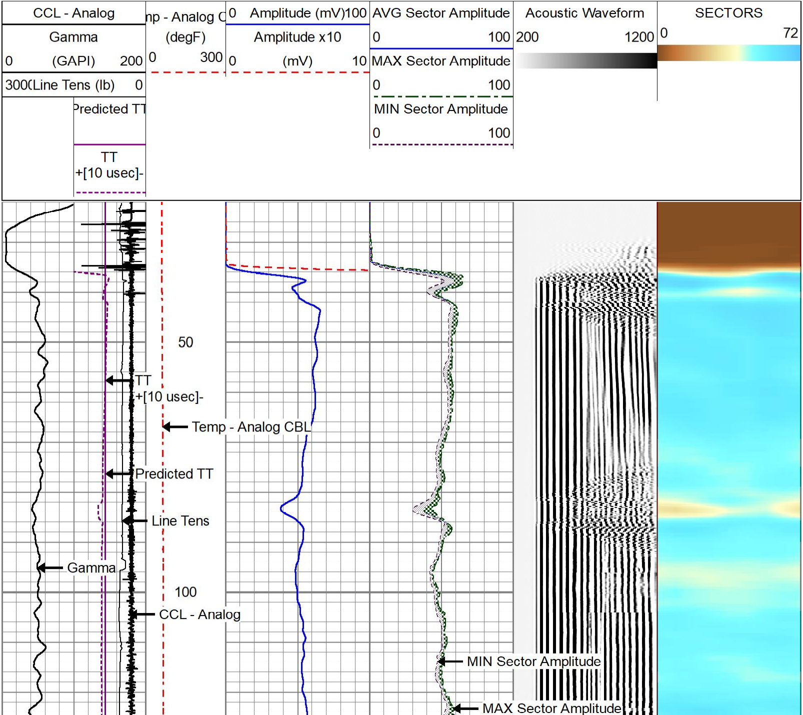


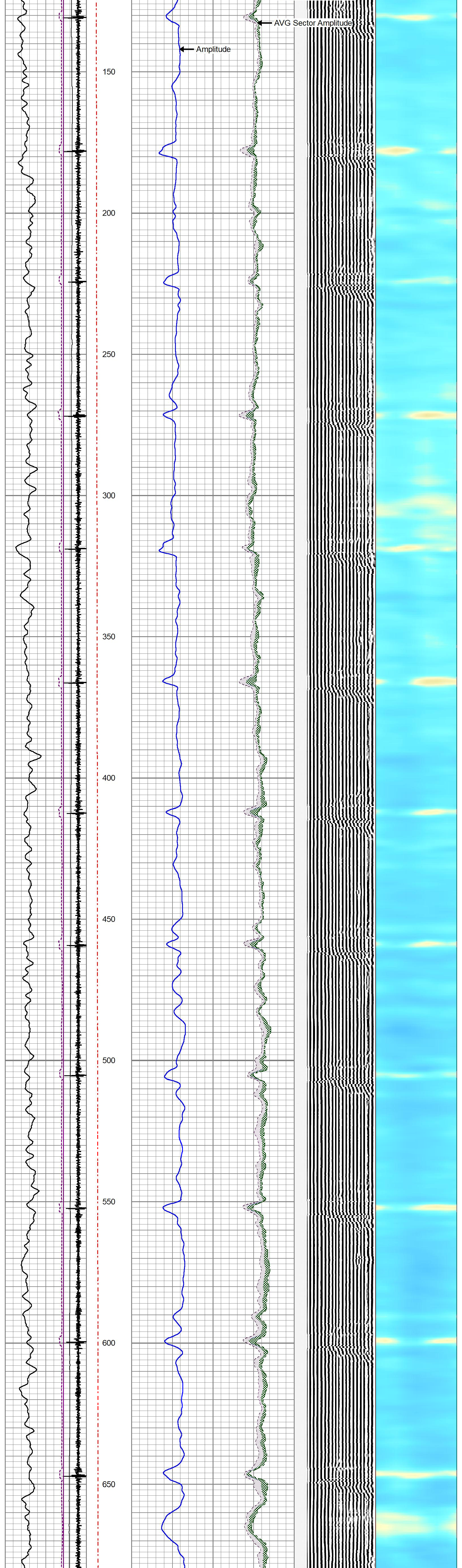
BOND INDEX

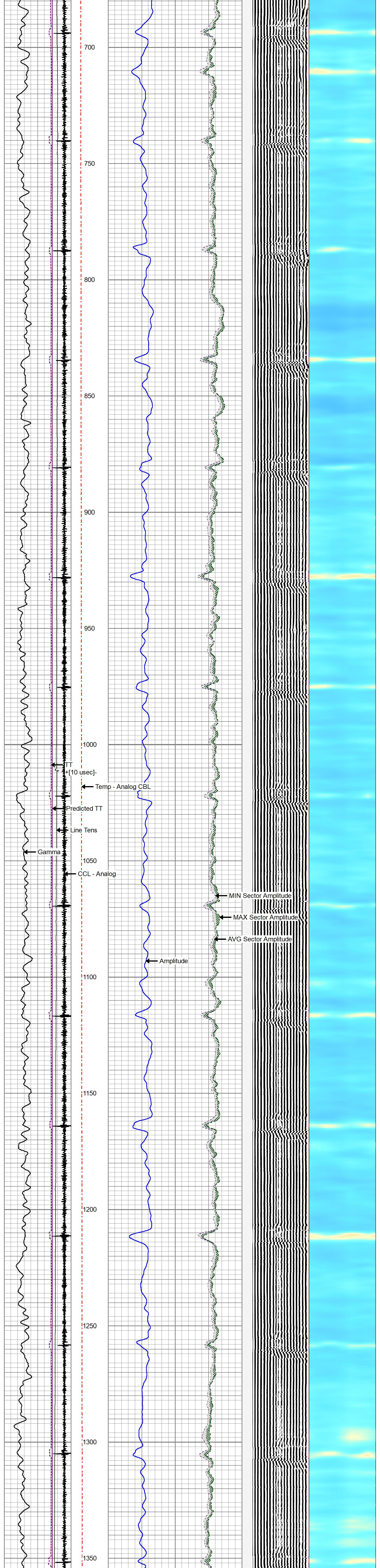
MAIN PASS - Ran with 500 PSI

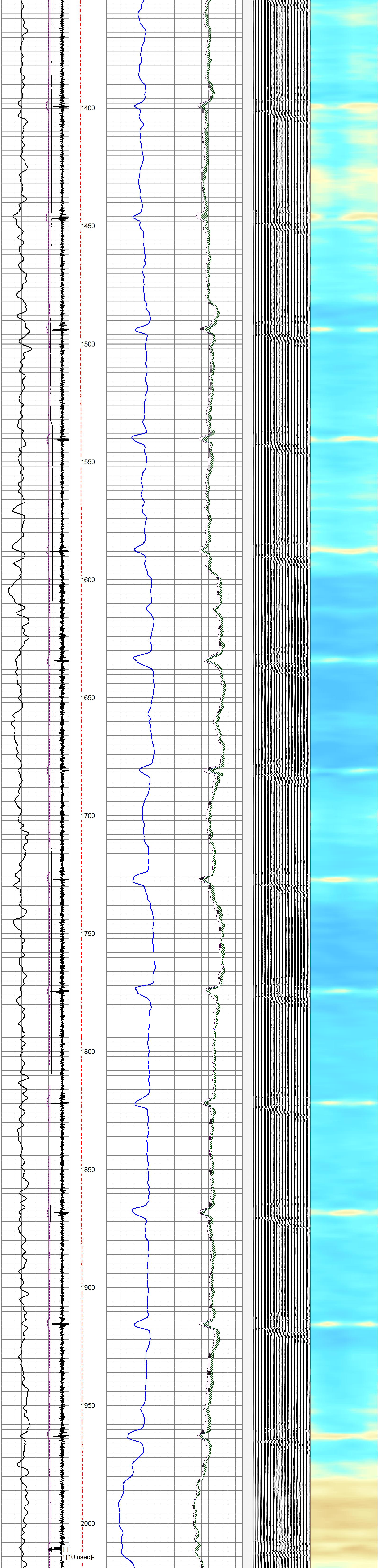
5 in / 100 ft

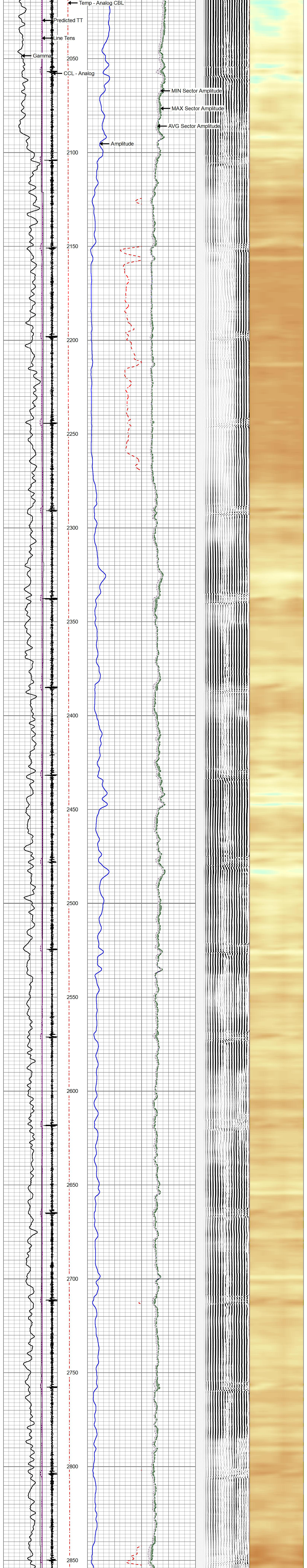
Database File	2018_4_20_conoco_big_sandy_3_65_36_31_2ah\2018_4_20_conoco_big_sandy_3_65_36_31_2ah.db
Dataset Pathname	Main1
Presentation Format	rcbl_8s
Dataset Creation	Fri Apr 20 12:37:54 2018
Charted by	Depth in Feet scaled 1:240

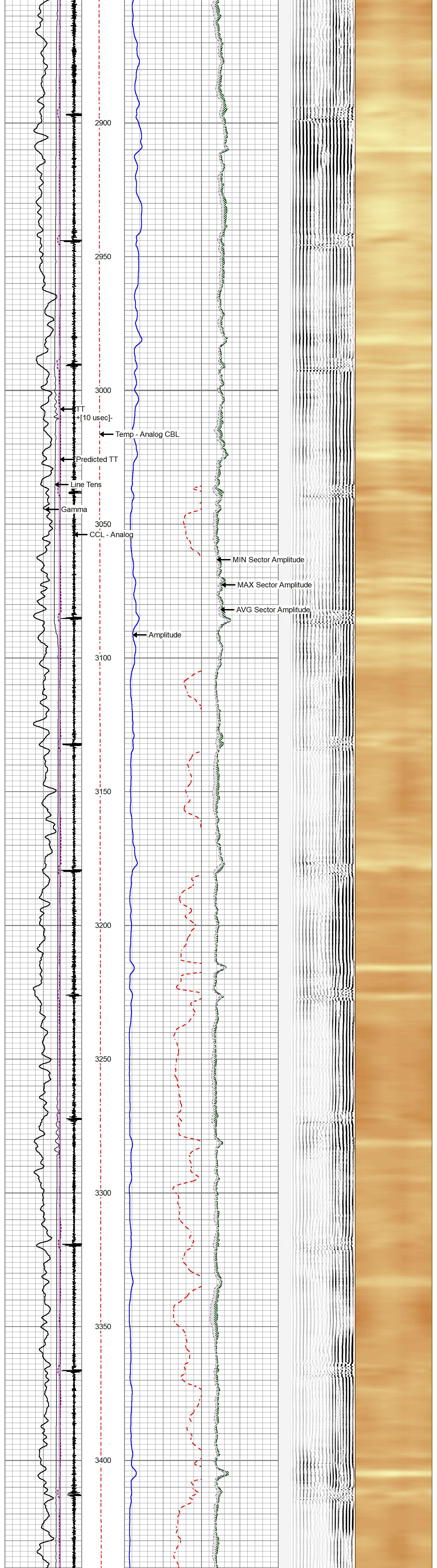


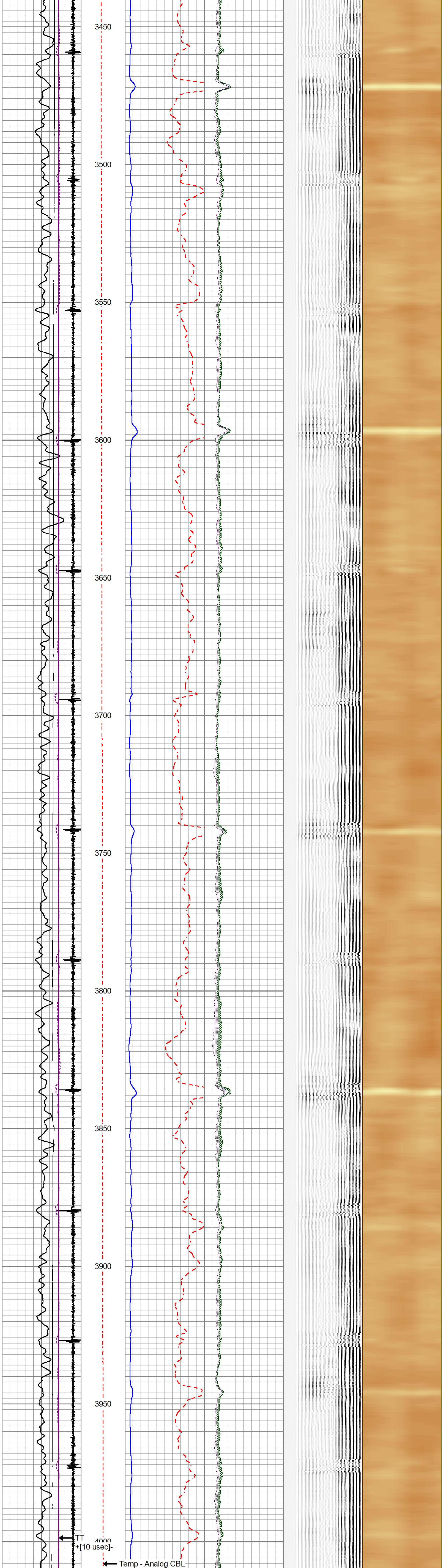


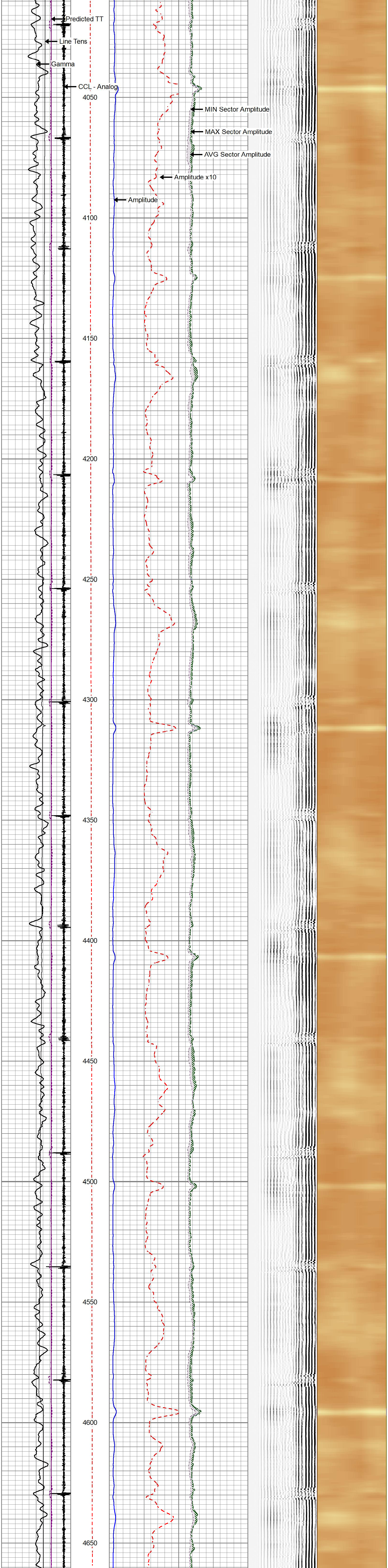


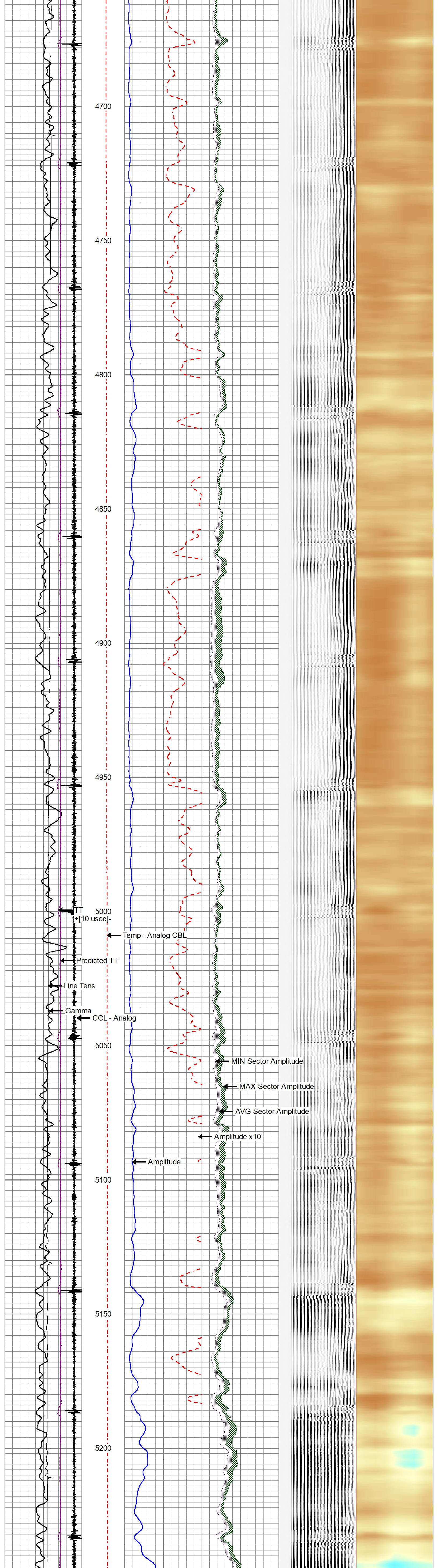


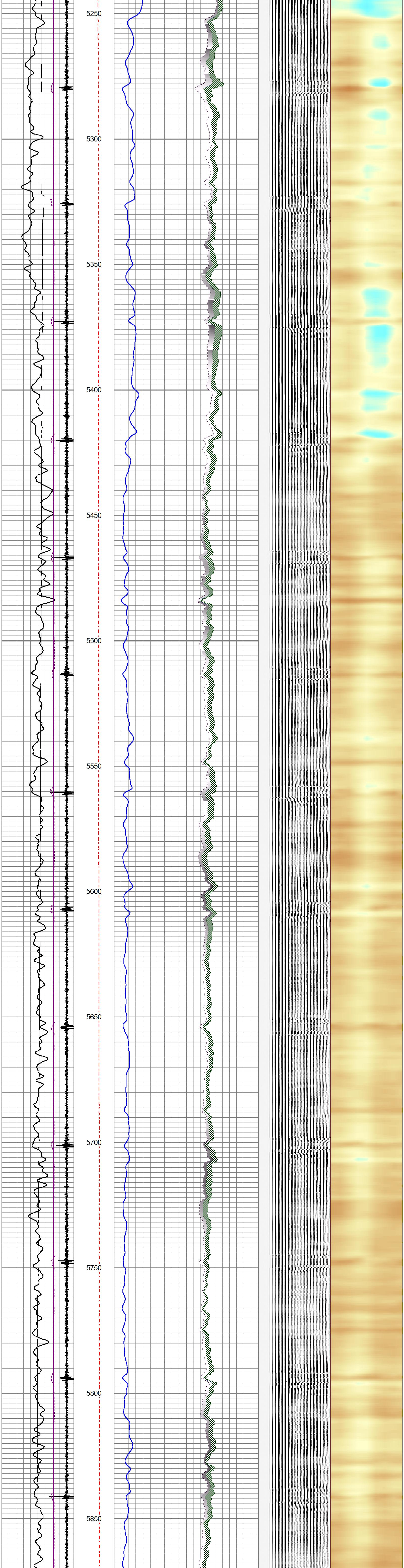



2900
2950
3000
TT
+[10 usec]-
Temp - Analog CBL
Predicted TT
Line Tens
Gamma
3050
CCL - Analog
MIN Sector Amplitude
MAX Sector Amplitude
AVG Sector Amplitude
Amplitude
3100
3150
3200
3250
3300
3350
3400


3450
3500
3550
3600
3650
3700
3750
3800
3850
3900
3950
4000
TT
+[10 usec]-
Temp - Analog CBL


Predicted TT
Line Tens
Gamma
CCL - Analog
MIN Sector Amplitude
MAX Sector Amplitude
AVG Sector Amplitude
Amplitude x10
Amplitude
4050
4100
4150
4200
4250
4300
4350
4400
4450
4500
4550
4600
4650


4700
4750
4800
4850
4900
4950
5000
TT
+[10 usec]-
Temp - Analog CBL
Predicted TT
Line Tens
Gamma
CCL - Analog
5050
MIN Sector Amplitude
MAX Sector Amplitude
AVG Sector Amplitude
Amplitude x10
Amplitude
5100
5150
5200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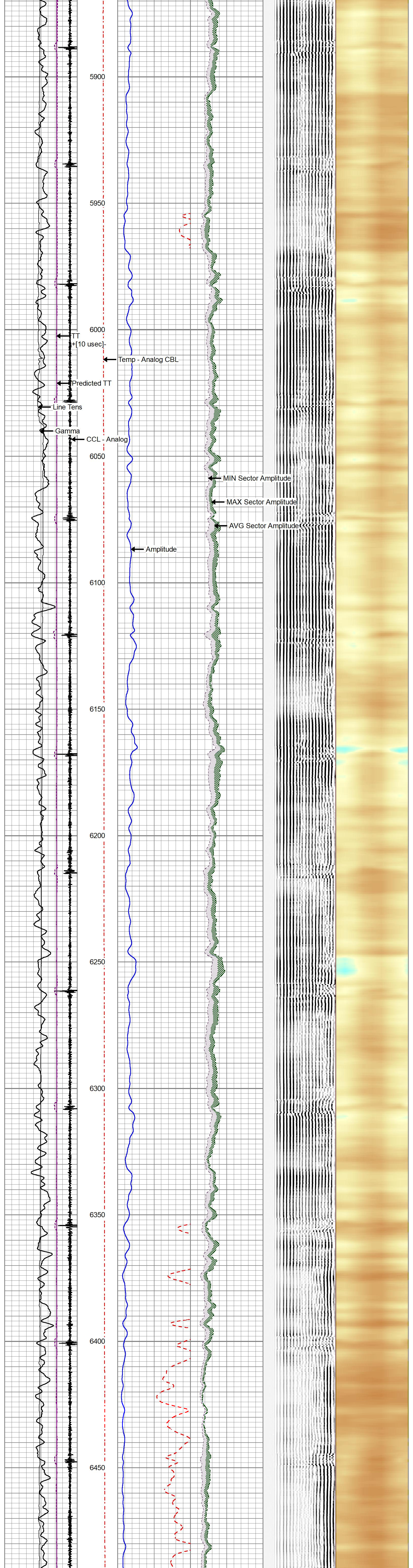
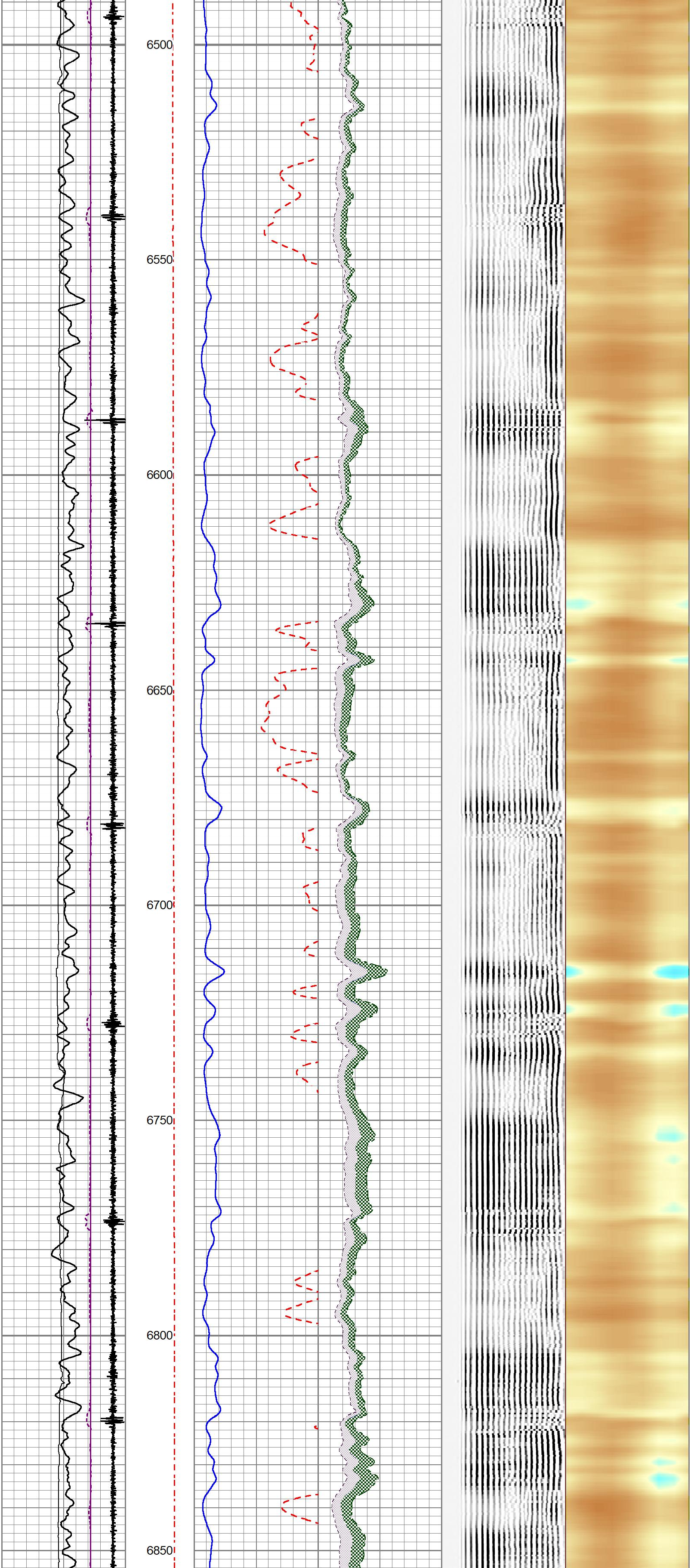
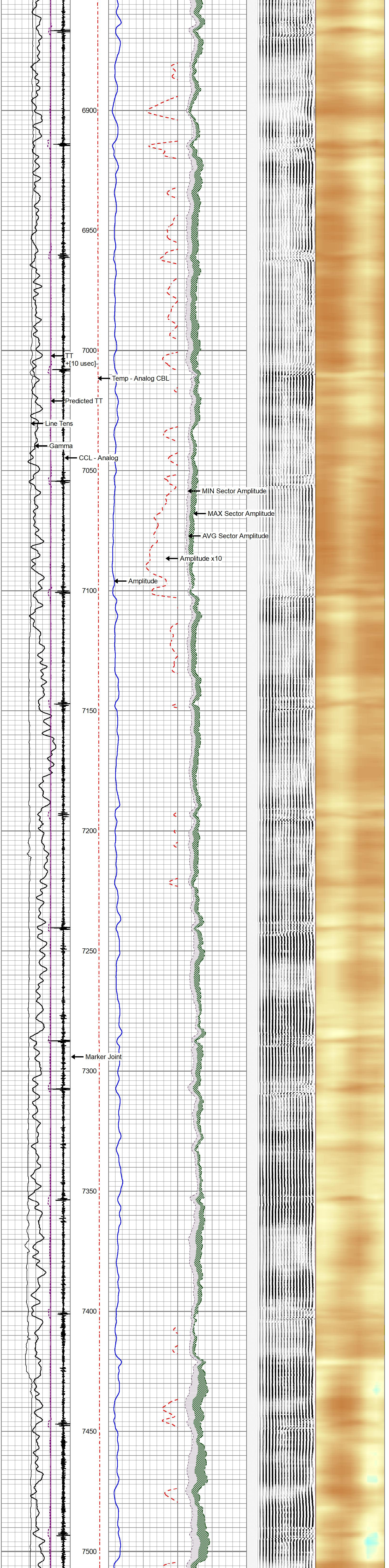
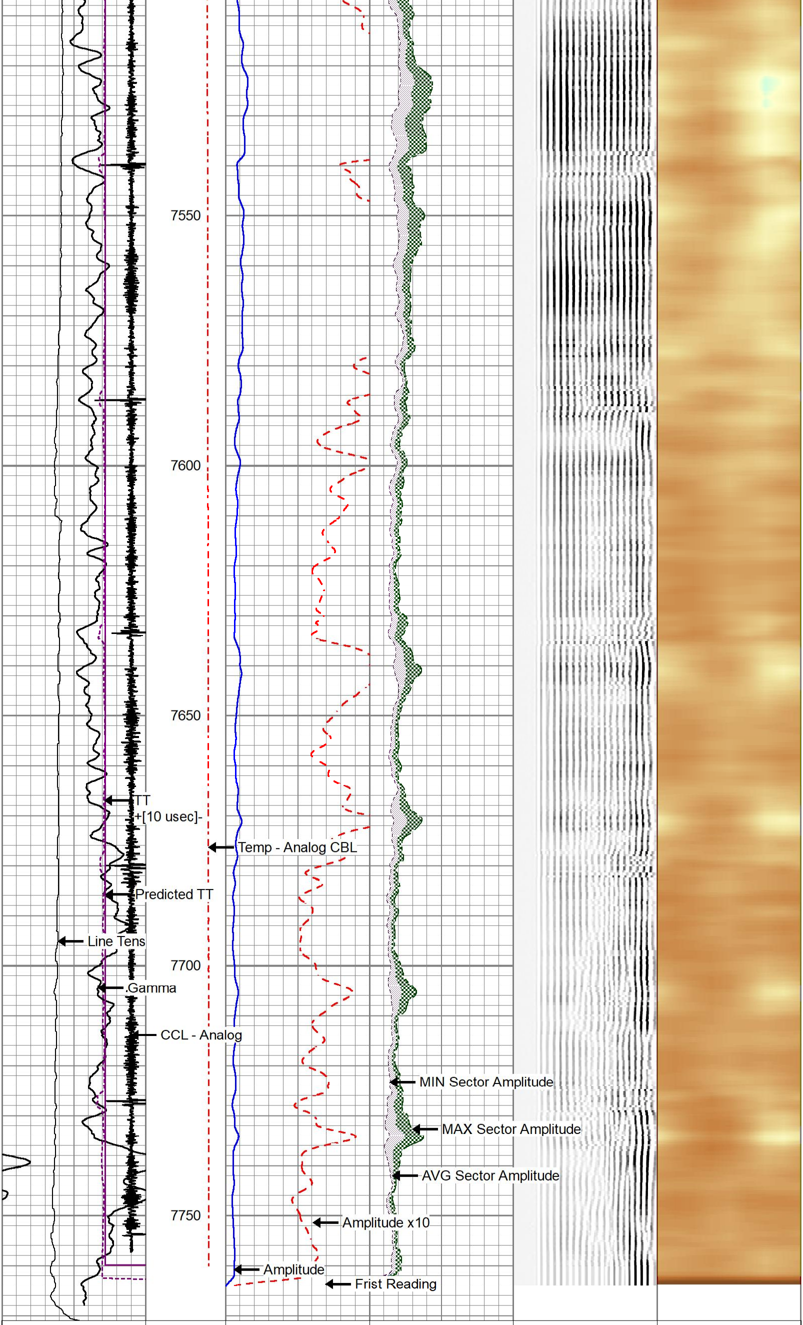
5300
5350
5400
5450
5500
5550
5600
5650
5700
5750
5800
5850


5900
5950
6000
TT
+[10 usec]-
Temp - Analog CBL
Predicted TT
Line Tens
Gamma
CCL - Analog
6050
MIN Sector Amplitude
MAX Sector Amplitude
AVG Sector Amplitude
Amplitude
6100
6150
6200
6250
6300
6350
6400
6450


6500
6550
6600
6650
6700
6750
6800
6850





CCL - Analog	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		

gyrodata

MAIN PASS - Ran with 500 PSI

5 in / 100 ft

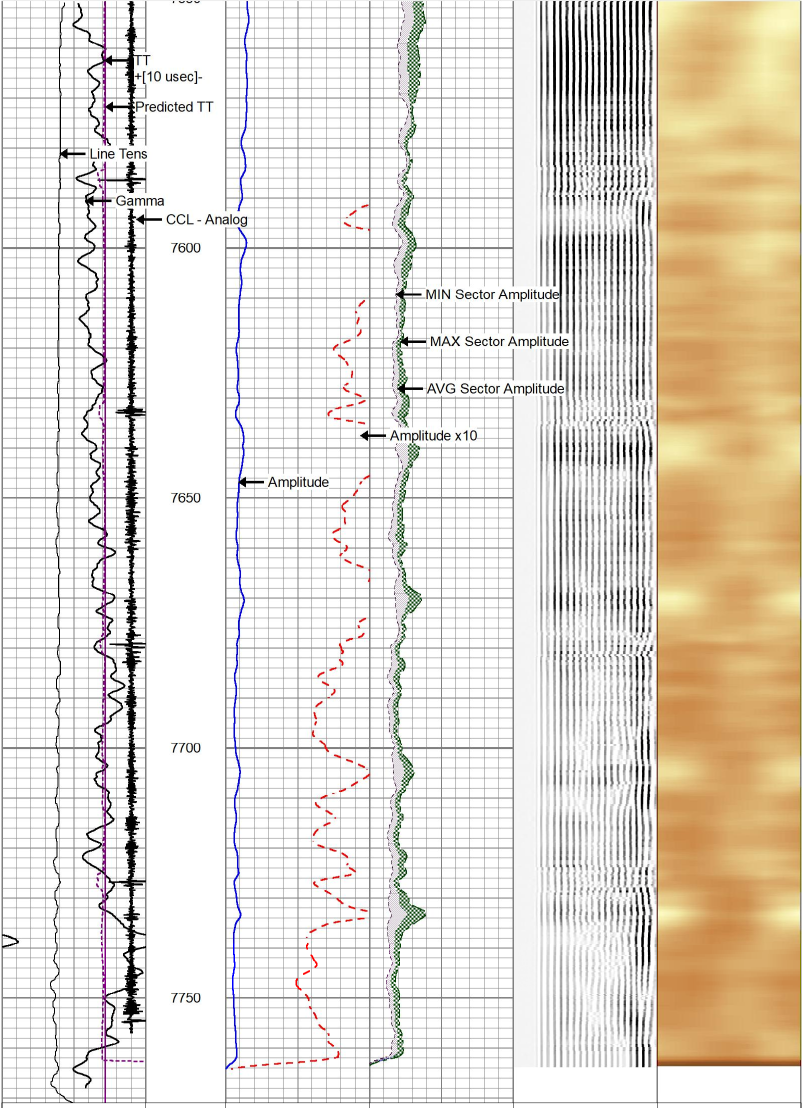
gyrodata

REPEAT PASS - Ran with 0 PSI

5 in / 100 ft

Database File	2018_4_20_conoco_big_sandy_3_65_36_31_2ah\2018_4_20_conoco_big_sandy_3_65_36_31_2ah.db
Dataset Pathname	Repeat
Presentation Format	rcbl_8s
Dataset Creation	Fri Apr 20 13:20:42 2018
Charted by	Depth in Feet scaled 1:240

CCL - Analog	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		



CCL - Analog	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		

REPEAT PASS - Ran with 0 PSI

5 in / 100 ft

Calibration Report

Database File	c:\programdata\warrior\data\2018_4_20_conoco_big_sandy_3_65_36_31_2ah\2018_4_20_conoco_big_san
Dataset Pathname	Main1
Dataset Creation	Fri Apr 20 12:37:54 2018

Gamma Ray Calibration Report

Serial Number:	ISHV2-03	
Tool Model:	2 3/4" TekCo	
Performed:	Tue Dec 13 00:23:06 2016	
Calibrator Value:	194.0	GAPI
Background Reading:	58.9	cps
Calibrator Reading:	300.8	cps
Sensitivity:	0.8020	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	IT4B1-01	
Tool Model:	2 3/4" RIB Analog	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	1709.307	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.003	1.171	0.000	71.900	61.252	0.181
CAL	-0.005	0.510				
5'	-0.002	1.236	0.000	71.900	58.102	0.097
SUM						
S1	0.009	0.773	0.000	71.900	94.104	-0.886
S2	0.018	0.809	0.000	71.900	90.832	-1.607
S3	0.024	0.925	0.000	71.900	79.829	-1.913
S4	0.027	1.038	0.000	71.900	71.079	-1.887
S5	0.031	1.097	0.000	71.900	67.415	-2.071
S6	0.022	0.958	0.000	71.900	76.859	-1.710
S7	0.014	0.886	0.000	71.900	82.495	-1.179
S8	0.009	0.789	0.000	71.900	92.093	-0.786

Internal Reference Calibration, performed Fri Aug 25 16:20:58 2017:

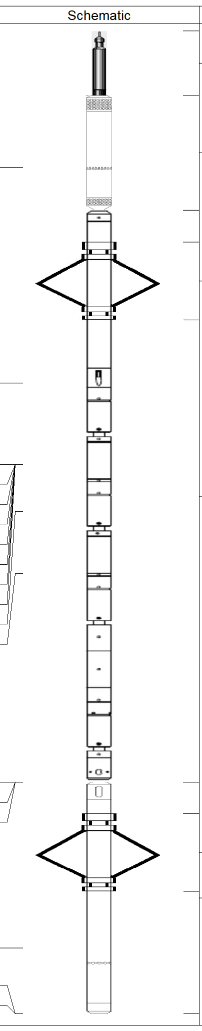
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.005	0.510	1.000	0.000

Air Zero Calibration, performed Fri Aug 25 16:20:58 2017:

	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

Temperature Calibration Report

Serial Number:	IT4B1-01			
Tool Model:	2 3/4" RIB Analog			
Performed:	Fri Aug 26 11:07:15 2016			
	Reference		Reading	
Low Reference:	0.00	degF	0.00	usec
High Reference:	1.00	degF	1.00	usec
Gain:	0.33			
Offset:	0.00			
Delta Spacing	1			

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			CableHead-TitanConeType2	1.03	1.44	3.60
CCL	13.50		CCL_Log-2 3/4" TekCo (IPSN7-03)	1.83	2.75	33.00
			Antelope-Overbody	1.25	2.75	
TEMP	10.05					
WVFS8	8.76					
WVFS7	8.76					
			RBTA-2 3/4" RIB Analog (IT4B1-01)	9.13	2.75	102.00
WVFS6	8.76					
WVFS5	8.76					
WVFS4	8.76					
WVFS3	8.76					
WVFS2	8.76					
WVFS1	8.76					
WVF3FT	8.01					
WVF5FT	7.01					
WVFSYNC	3.68					
WVFTEMP	3.68					
WVFCAL	3.68					
			Antelope-Overbody	1.25	2.75	
			GR_Log-2 3/4" TekCo (ISHV2-03)	3.68	2.75	47.00
GR	1.04					
LOCTIM	0.00					
UTCTIM	0.00					

Dataset:	2018_4_20_conoco_big_sandy_3_65_36_31_2ah.db: field/well/run1/Main1
Total length:	15.67 ft
Total weight:	185.60 lb
O.D.:	2.75 in

Company	ConocoPhillips
Well	Big Sandy 3-65 36-31 2AH
Field	Niobrara
County	Adams
State	Colorado
Country	U.S.A.