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Pioneer Energy Services

RADIAL BOND LOG WITH GAMMA RAY

Comp.	WHITING OIL & GAS CORP
Well	HORSETAIL 08B-1712
Field	WILDCAT
Co.	WELD
State	CO

Company	WHITING OIL & GAS CORP
Well	HORSETAIL 08B-1712
Field	WILDCAT
County	WELD State CO

Location: API # : 051234145100
380' FNL & 1890' FEL
NW/NE
SEC 8 TWP 10N RGE 57W

Other Services
JBGR

				Elevation
Permanent Datum	GL		Elevation 4891'	K.B. 4912'
Log Measured From	KB	21	Above Perm. Datum	D.F. N/A
Drilling Measured From	KB			G.L. 4891'

Date of Service	19-JUL-2016
Run Number	2
Depth Driller or PBTD	15992
Depth Logger	5240
Bottom Log Interval	5240
Top Log Interval	SURFACE
Open Hole Size	8.5"
Type Fluid	WELL
Fluid Level	SURFACE
Fluid Density	N/A
Max. Recorded Temperature	226 DEG F
Max. Wellhead Pressure	1500PSI
Wellhead Connection	7-1/16" 10K FLANGE
Estimated Cement Top	N/A
Unit Number	P-53
Wireline Size	9/32"
Location	FORT MORGAN
Recorded By	E. HESSLER
Witnessed By	BRAD KOTHE

	Size	Wt/Ft	Top	Bottom
Tubing Record				
Surface Casing	9-5/8"	36	SURFACE	2027'
Production Casing	5-1/2"	20	SURFACE	15983'
Liner Record				

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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.
CORRELATED TO MARKER JOINT 5173.9' - 5194.5' PER CLIENT

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: E. HESSLER	PROBE RBT-T	141167
Operator: T. WILLIAMS	CCL	080633
Operator: E. MILLER	GR	070155
Operator: M. GARCIA		

Log Variables

Database C:\ProgramData\Warrior\Data\whiting_horsetail-08b-1712_20160719_rcbl-jb.db
Dataset field/well/run2/pass5/_vars_

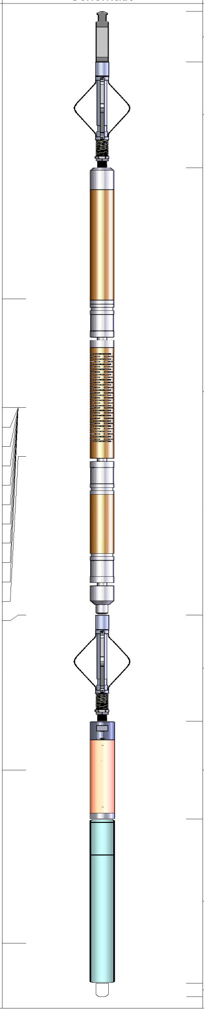
Top - Bottom

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV
TEMP	8.5	100	5.5	0	20	71.9

MINAMPL mV	MINATTN db/ft	PERFS	PPT usec	SRFTEMP degF	TDEPTH ft
1	0.08	0	0	0	0

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
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



Sensor	Offset (ft)
TEMP	14.28
WVFS8	12.05
WVFS7	12.05
WVFS6	12.05
WVFS5	12.05
WVFS4	12.05
WVFS3	12.05
WVFS2	12.05
WVFS1	12.05
WVFCAL	12.05
WVF3FT	12.05
WVF5FT	11.05
HEADVOLT	7.80
CCL	4.63
GR	1.08

Description	Length (ft)	O.D. (in)	Weight (lb
Cable Head-Titan 143 1 7/16" Titan Cable Head (1" Fish Top)	1.03	1.43	2.00
Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
SCBL-275 Probe w Temp New Mod (1411 Probe Radii Bond Tool with Temperature	9.17	2.75	95.00
Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
CCL_Logging-275 Probe (080633) Probe 2 3/4" Logging CCL	2.00	2.75	25.00
GR-275 Probe (070155) Probe 2.75" Gamma Ray Analog	3.36	2.75	40.00
Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00

Dataset:	whiting_horsetail-08b-1712_20160719_rcbl-jb.db: field/well/run2/pass5
Total length:	20.16 ft
Total weight:	207.00 lb
O.D.:	2.88 in

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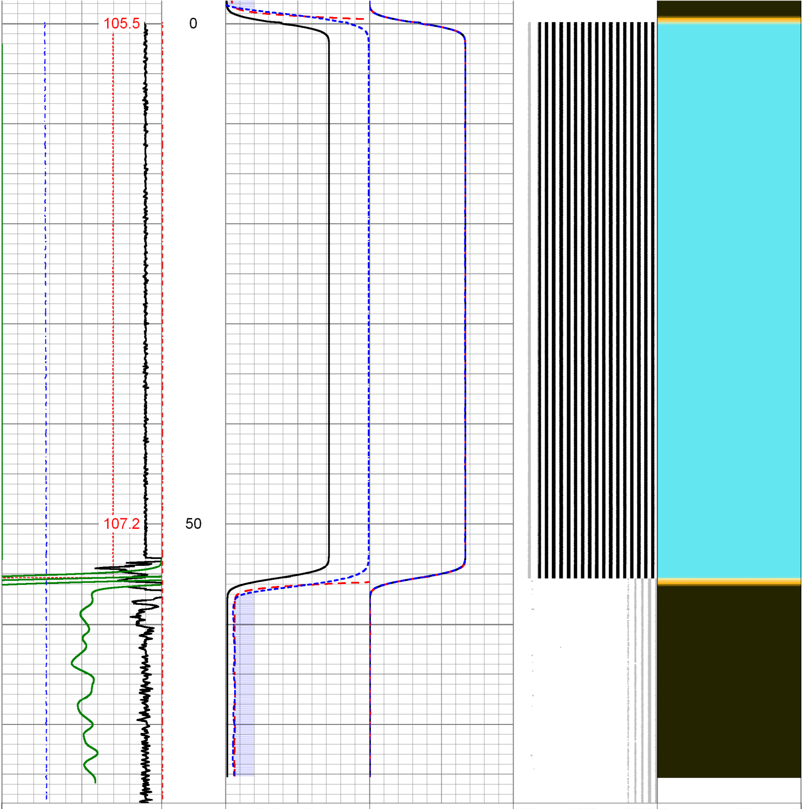
Internal Cal Check

Database File	whiting_horsetail-08b-1712_20160719_rcbl-jb.db
Dataset Pathname	run2/pass1
Presentation Format	pinr_scbl_whiting-co
Dataset Creation	Tue Jul 19 12:25:09 2016
Charted by	Time scaled 360/hour

3' Travel Time 400 (usec) 200	Line Tension 0 (3000	3' Amplitude 0 (mV) 100	Sector Amplitude Average 0 150	200 VDL 1200	1 Sector Map 8 10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5 0 (mV) 20	Sector Amplitude Maximum 0 150		
Gamma Ray 0 (GAPI) 200		1 Bond Index 0	Sector Amplitude Minimum 0 150		
60 TEMP (degF) 230					
TEMP (degF)					



3' Travel Time 400 (usec) 200	Line Tension 0 (3000	3' Amplitude 0 (mV) 100	Sector Amplitude Average 0 150	200 VDL 1200	1 Sector Map 8 10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5 0 (mV) 20	Sector Amplitude Maximum 0 150		
Gamma Ray 0 (GAPI) 200		1 Bond Index 0	Sector Amplitude Minimum 0 150		
60 TEMP (degF) 230					
TEMP (degF)					

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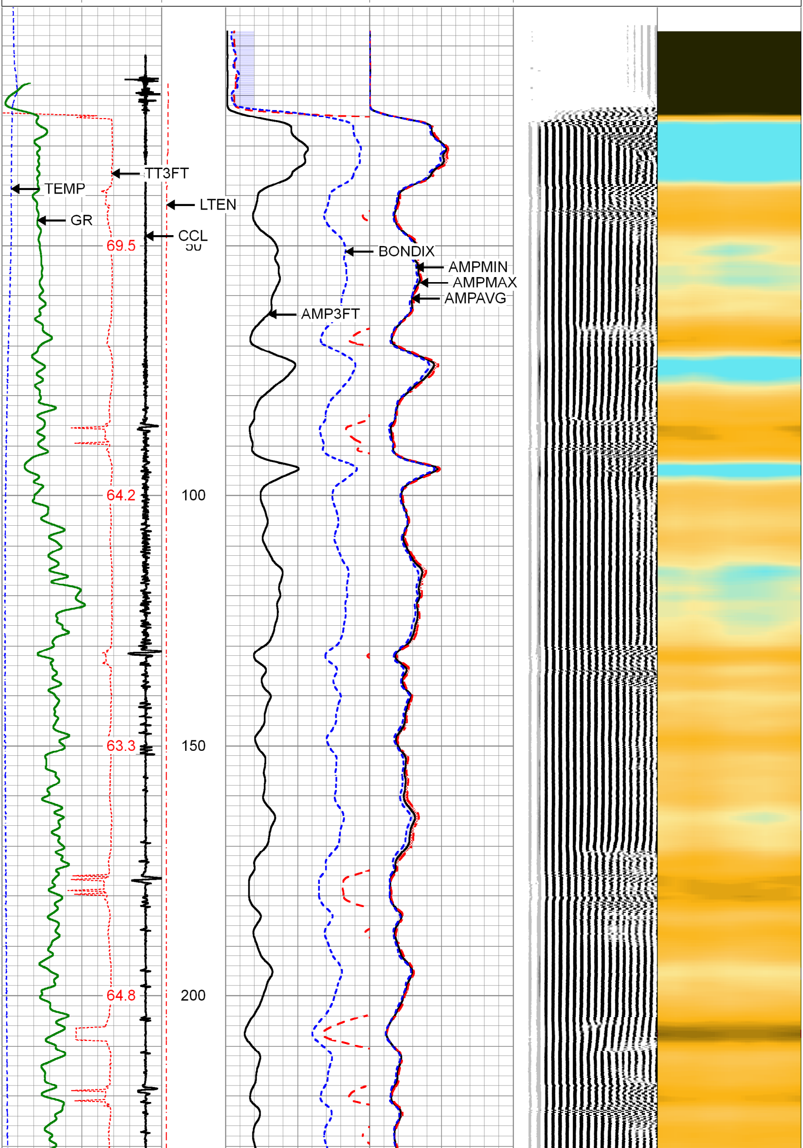
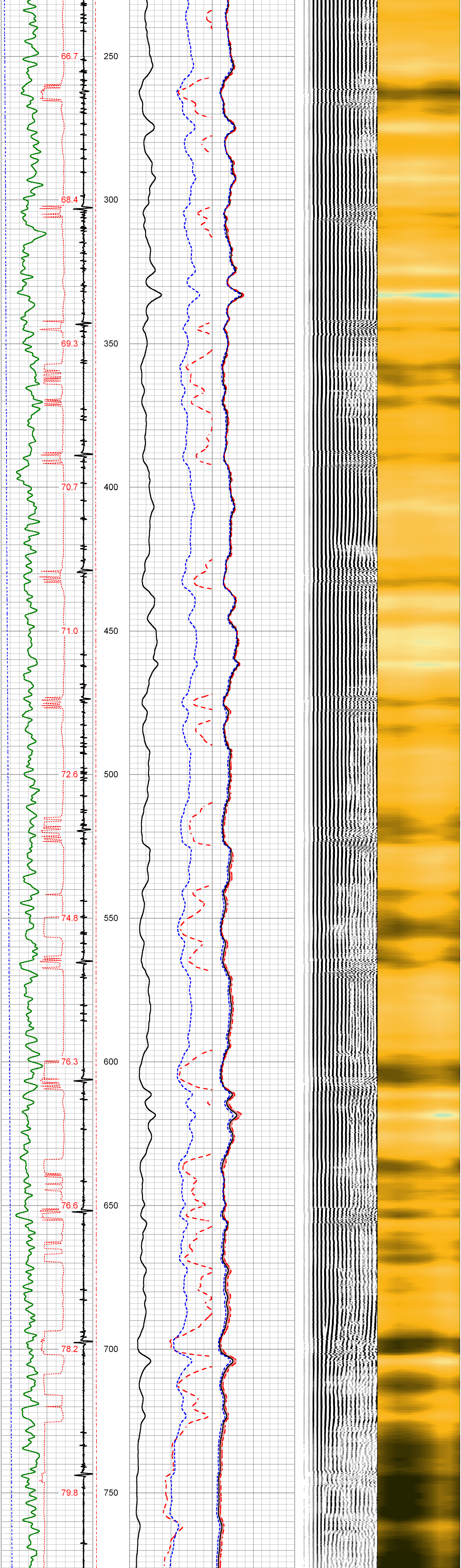
MAIN LOG

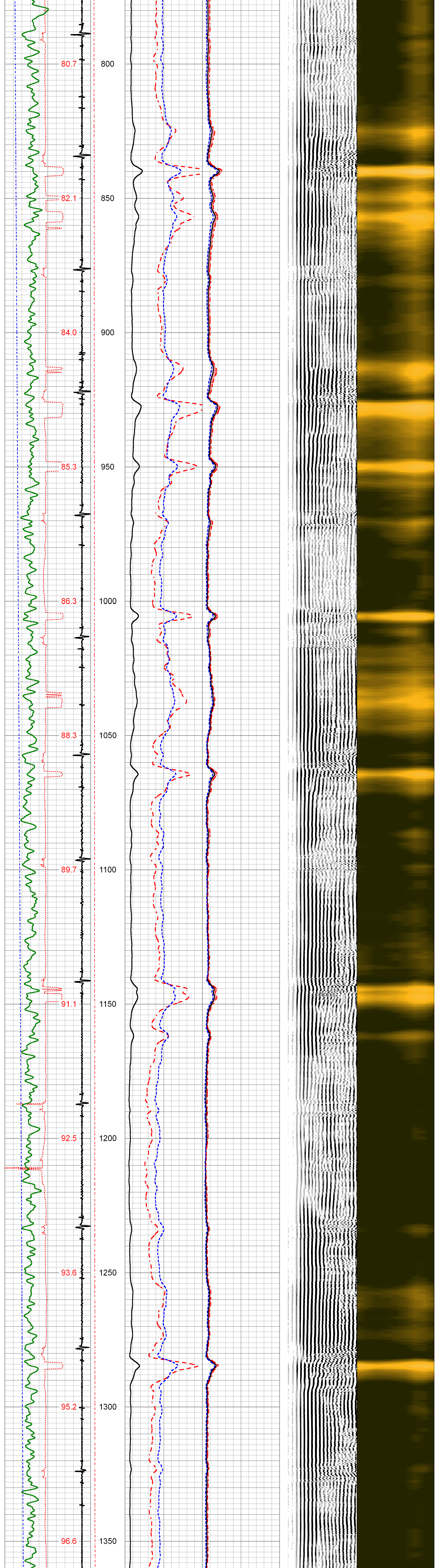
1500 PSI APPLIED AT SURFACE

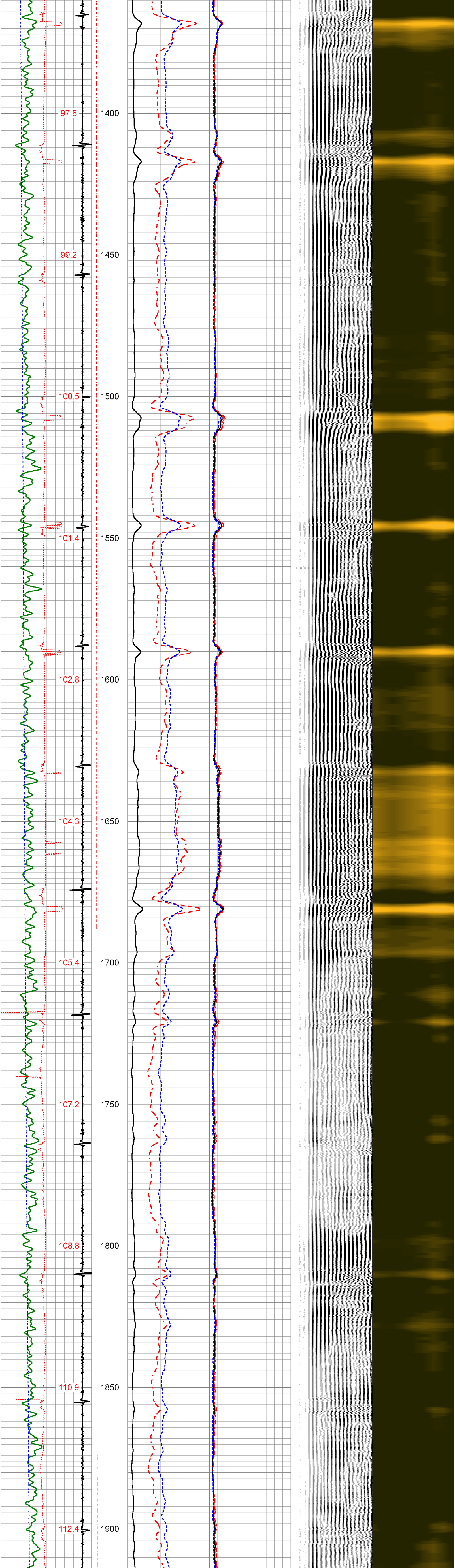
Database File	whiting_horsetail-08b-1712_20160719_rcbl-jb.db
Dataset Pathname	run2/pass5
Presentation Format	pinr_scbl_whiting-co
Dataset Creation	Tue Jul 19 13:05:29 2016
Charted by	Depth in Feet scaled 1:240

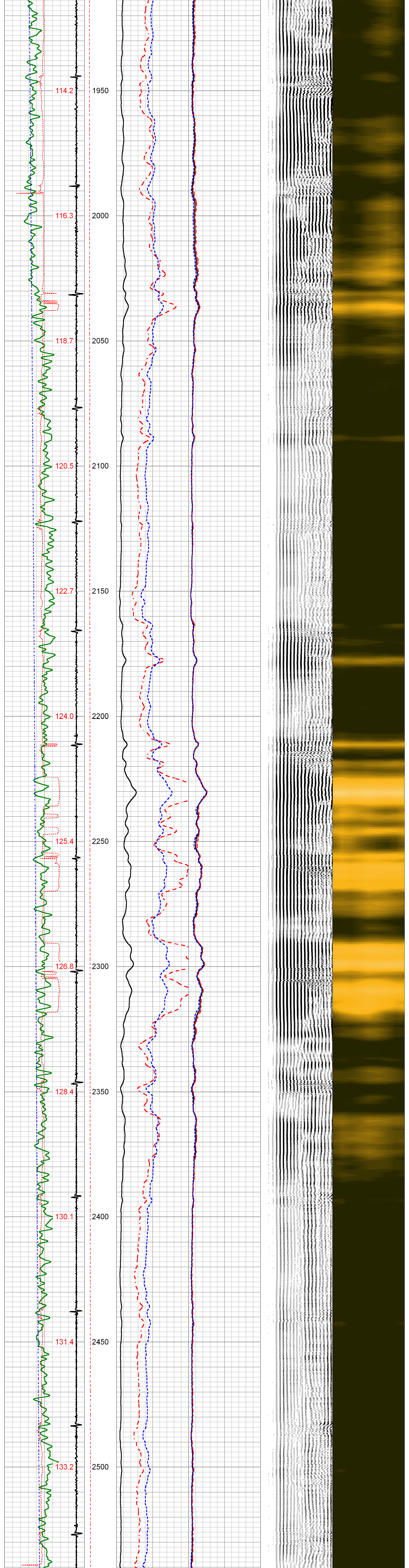
3' Travel Time 400 (usec) 200	Line Tension 0 (3000	3' Amplitude 0 (mV) 100	Sector Amplitude Average 0 150	200 VDL 1200	1 Sector Map 8 10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5 0 (mV) 20	Sector Amplitude Maximum 0 150		
Gamma Ray 0 (GAPI) 200		1 Bond Index 0	Sector Amplitude Minimum 0 150		
60 TEMP (degF) 230					
TEMP (degF)					

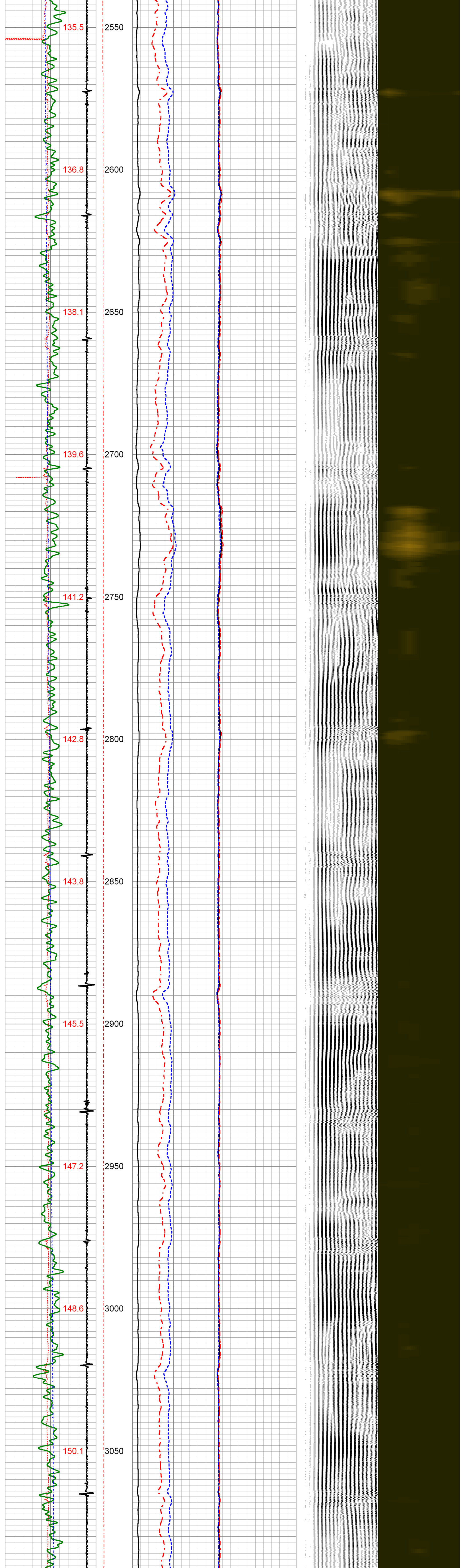


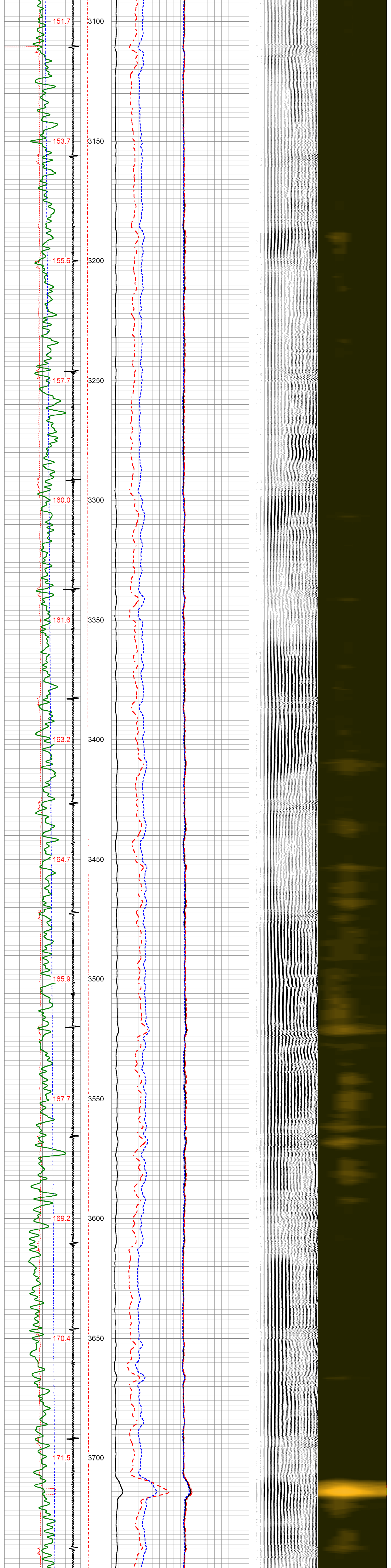


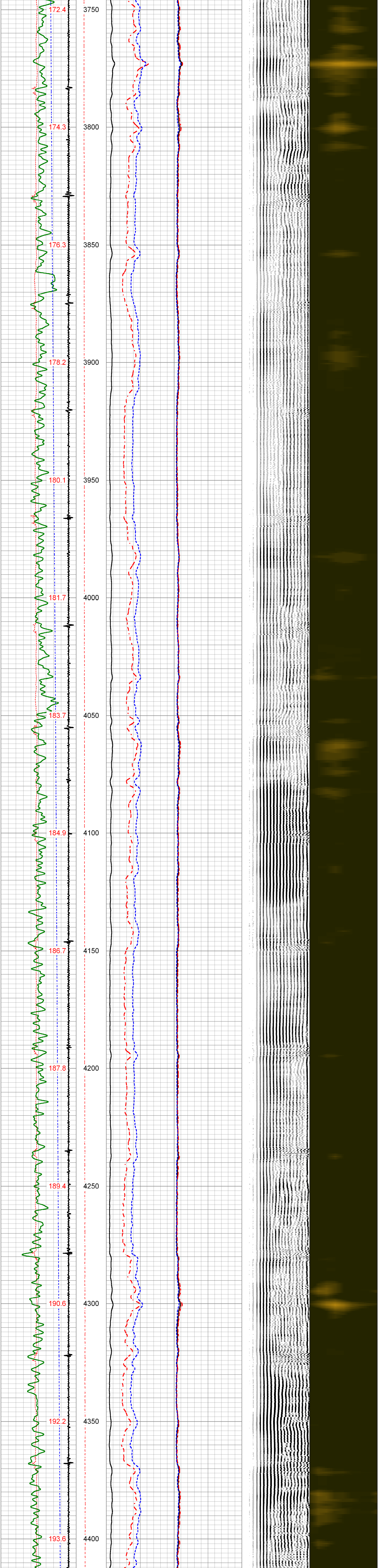


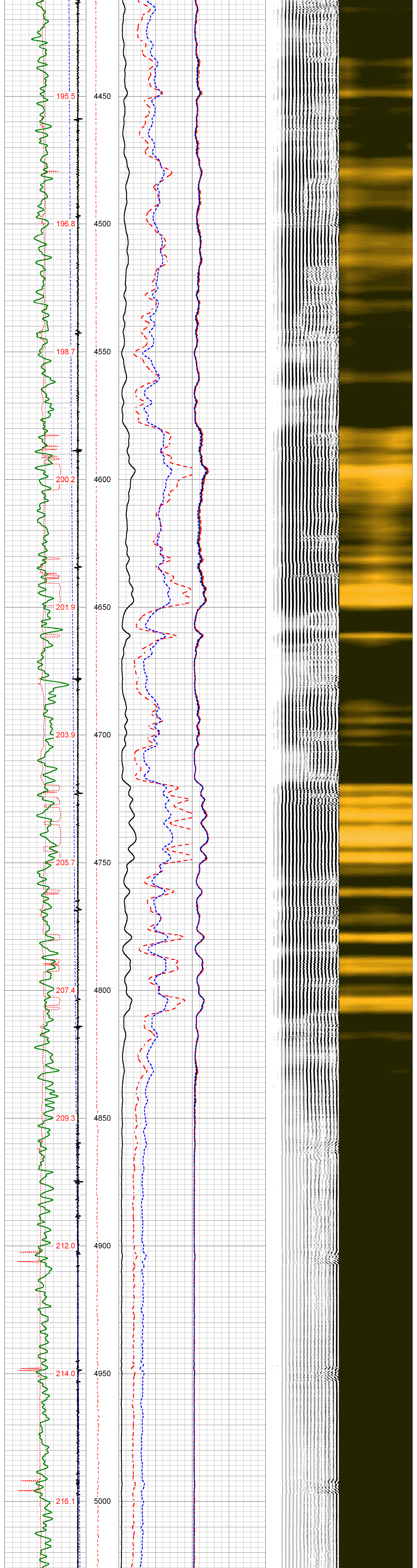


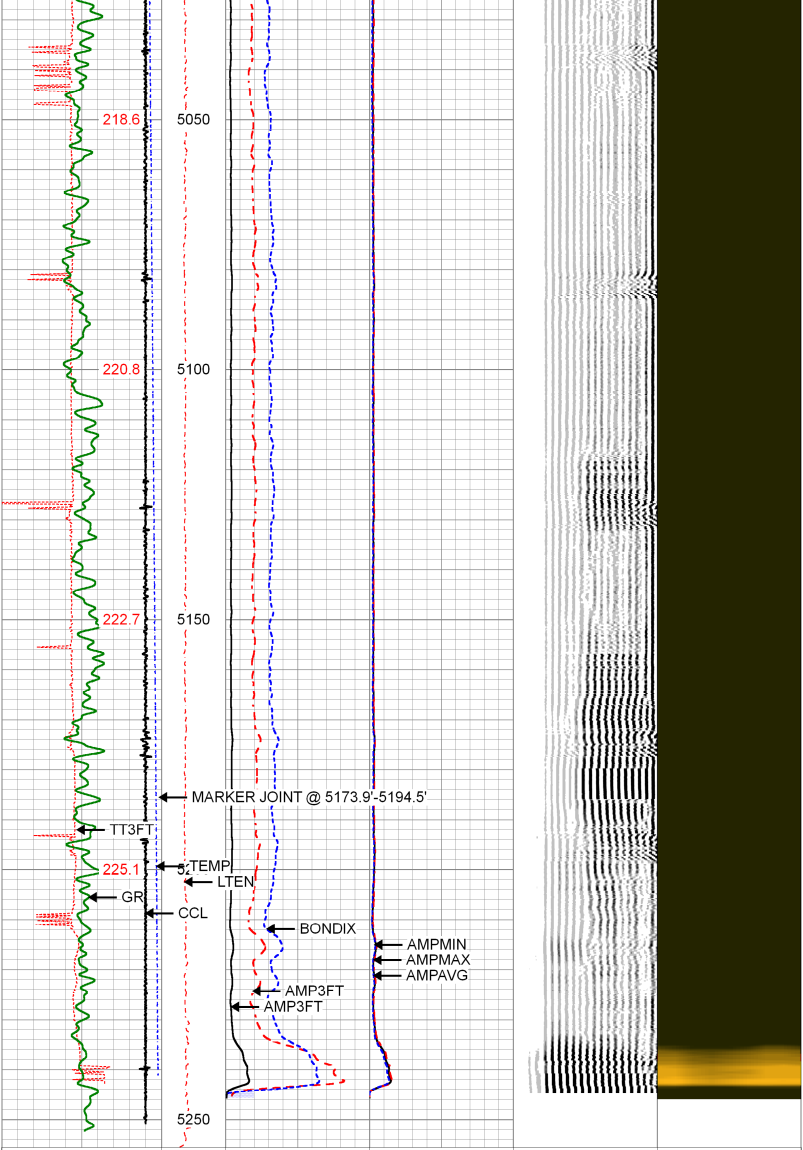












3' Travel Time	Line Tension	3' Amplitude	Sector Amplitude Average	200 VDL 1200	1 Sector Map 8
400 (usec) 200	0 (3000	0 (mV) 100	0 150		10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5	Sector Amplitude Maximum		
Gamma Ray		0 (mV) 20	0 150		
0 (GAPI) 200		1 Bond Index 0	Sector Amplitude Minimum		
60 TEMP (degF) 230			0 150		
TEMP (degF)					

REPEAT SECTION

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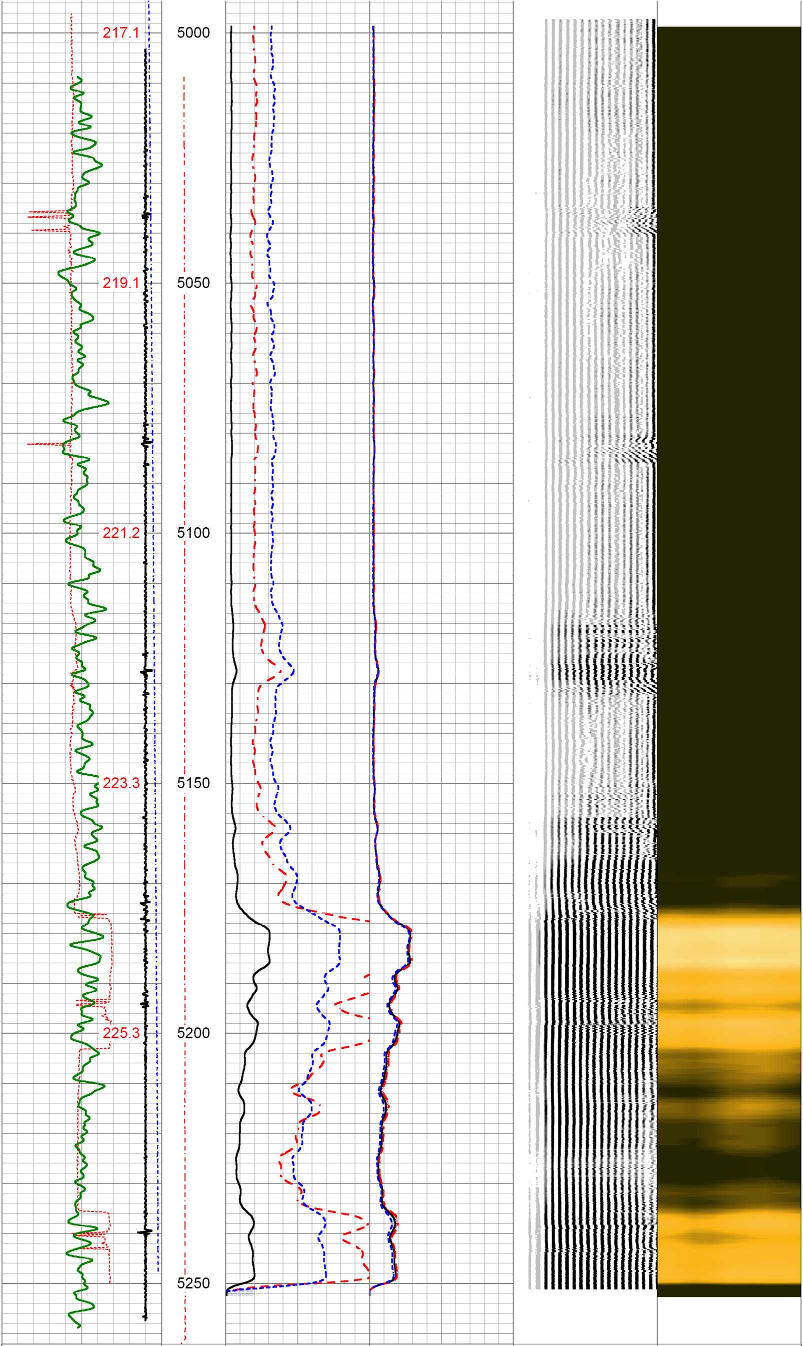
0 PSI APPLIED AT SURFACE

Database File whiting_horsetail-08b-1712_20160719_rcbl-jb.db
Dataset Pathname run2/pass3
Presentation Format pinr_scbl_whiting-co
Dataset Creation Tue Jul 19 12:57:56 2016
Charted by Depth in Feet scaled 1:240

3' Travel Time	Line Tension	3' Amplitude	Sector Amplitude Average	200 VDL 1200	1 Sector Map 8
400 (usec) 200	0 (3000	0 (mV) 100	0 150		10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5	Sector Amplitude Maximum		
Gamma Ray		0 (mV) 20	0 150		
0 (GAPI) 200		1 Bond Index 0	Sector Amplitude Minimum		
60 TEMP (degF) 230			0 150		
TEMP (degF)					



3' Travel Time	Line Tension	3' Amplitude	Sector Amplitude Average	200 VDL 1200	1 Sector Map 8
400 (usec) 200	0 (3000	0 (mV) 100	0 150		10 60
-9 Collar Locator 1		3' Amplified Amplitude X 5	Sector Amplitude Maximum		
Gamma Ray		0 (mV) 20	0 150		
0 (GAPI) 200		Bond Index			

60 TEMP (degF) 230		Sector Amplitude Minimum
	TEMP (degF)	0 150

Calibration Report

Database File	whiting_horsetail-08b-1712_20160719_rcbl-jb.db
Dataset Pathname	run2/pass5
Dataset Creation	Tue Jul 19 13:05:29 2016

Gamma Ray Calibration Report

Serial Number:	070155	
Tool Model:	275 Probe	
Performed:	Tue Jul 19 09:21:31 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	1411-67	
Tool Model:	275 Probe w Temp New Mod	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	40.117	ft

Master Calibration, performed Tue Jul 19 12:25:04 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	1.541	1.000	71.921	46.121	0.865
CAL	0.002	1.543				
5'	0.002	1.493	1.000	71.921	47.564	0.912
SUM						
S1	0.001	1.549	0.000	100.000	64.589	-0.076
S2	0.002	1.562	0.000	100.000	64.096	-0.144
S3	0.002	1.565	0.000	100.000	63.963	-0.125
S4	0.002	1.572	0.000	100.000	63.694	-0.138
S5	0.002	1.562	0.000	100.000	64.110	-0.149
S6	0.003	1.558	0.000	100.000	64.287	-0.165
S7	0.002	1.552	0.000	100.000	64.539	-0.156
S8	0.002	1.555	0.000	100.000	64.425	-0.156

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	1.543	1.000	0.000

Air Zero Calibration, performed Tue Jul 19 12:23:08 2016:

	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:	1411-67			
Tool Model:	275 Probe w Temp New Mod			
Performed:	Tue Jul 19 09:21:25 2016			
	Reference		Reading	
Low Reference:	0.00	degF	0.00	degF
High Reference:	1.00	degF	1.00	degF
Gain:	1.00			
Offset:	0.00			
Delta Spacing	1			

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Company	WHITING OIL & GAS CORP
Well	HORSETAIL 08B-1712
Field	WILDCAT
County	WELD
State	CO