CEMENT BOND LOG

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Company EXTRACTION O & G
Well THORNTON #12
Field WATTENBERG
County WELD State CO

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Field WATTENBERG
County WELD State CO

API No.: 05-123-40264-00 Serv #: 1066
Location: 332' FWL & 1157'FSL
LAT 40.585333
LONG -104.810373

Other Services
TEMPERATURE
CCL

Sec: 8 Twp: 7N Rge: 66W

Permanent Datum	GROUND LEVEL	Elevation 5039'	Elevation
Log Measured From	KB , 24 Ft. above perm. datum		K.B. 5063' D.F. 5062' G.L. 5039'
Drilling Measured From	KB		

Date @ Time Logged	28-FEB-15 @ 1230 HRS	Type Fluid in Hole	FRESH WATER
Run No.	ONE	Density of Fluid	8.4 LB/GL
Depth - Driller	17431'	Fluid Level	FULL
Depth - Logger	6900'	Cement Top Est. Logged	66'
Bottom - Logged Interval	6898'	Equipment / Location	GD-114 / CASPER WY
Top - Log Interval	SURFACE	Recorded by	M.FENN
Max. Recorded Temp.	211°F	Witnessed by	L. SIEGEL

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented				
Primary / Squeeze				
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume	/	/	/	/
Cement Type / Weight	/	/	/	/
Formulation				
Mud Type / Mud Wgt.	/	/	/	/

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
				9 5/8"	36#	SURFACE	823'
				7"	26#	SURFACE	8014'
				4 1/2"	13.5#	6935'	17431'

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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

Cement Bond Log was the initial log ran on the well dated 2/28/15
Cement top was estimated at 66'
Max temp on bottom was 211° F
Well logged under 900 PSI
Wireline Depth was to 6900' per company man request.
Gamma Survey to surface per procedure.

Your crew today was J.Baker, M.Stewart.

Thank you for using Gyrodata Logging Services, Casper, WY

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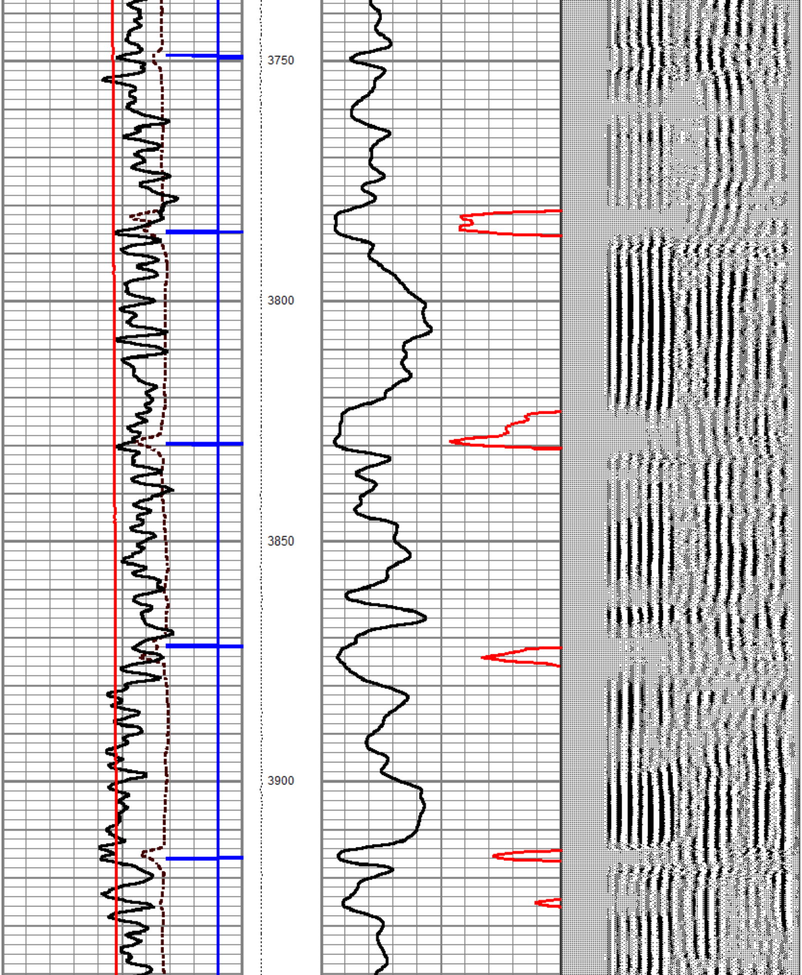
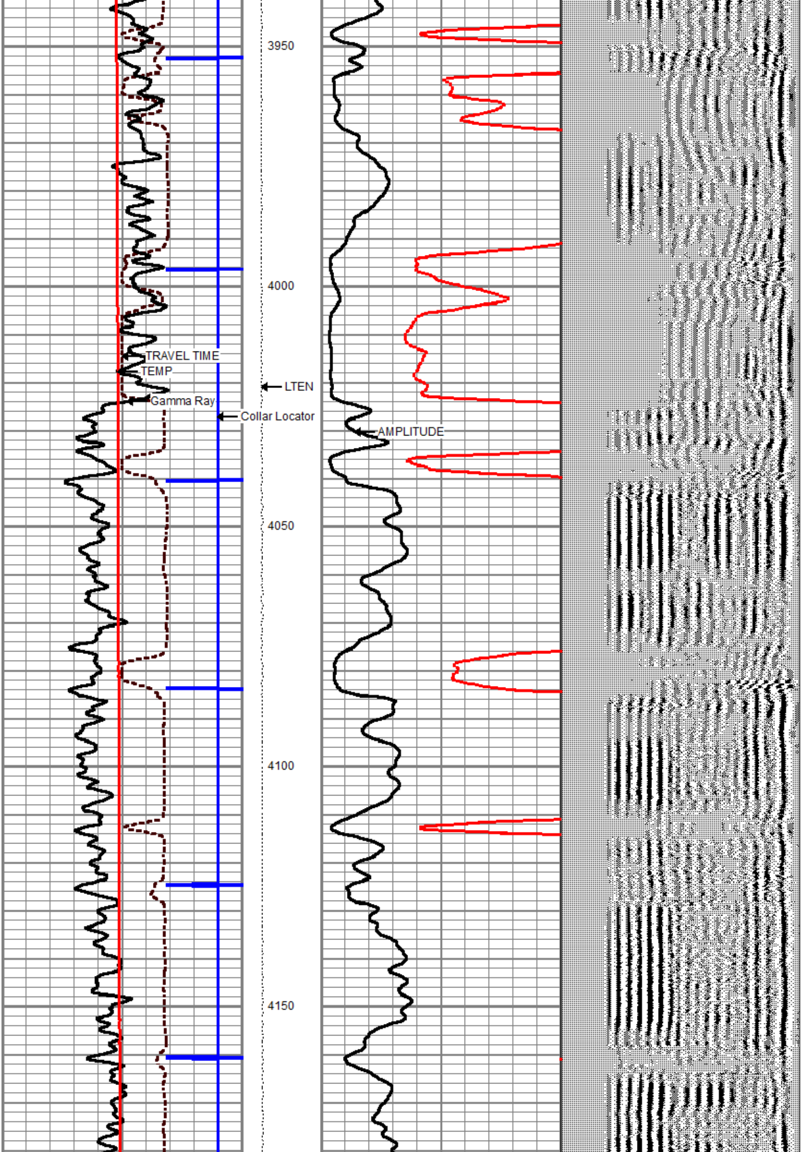
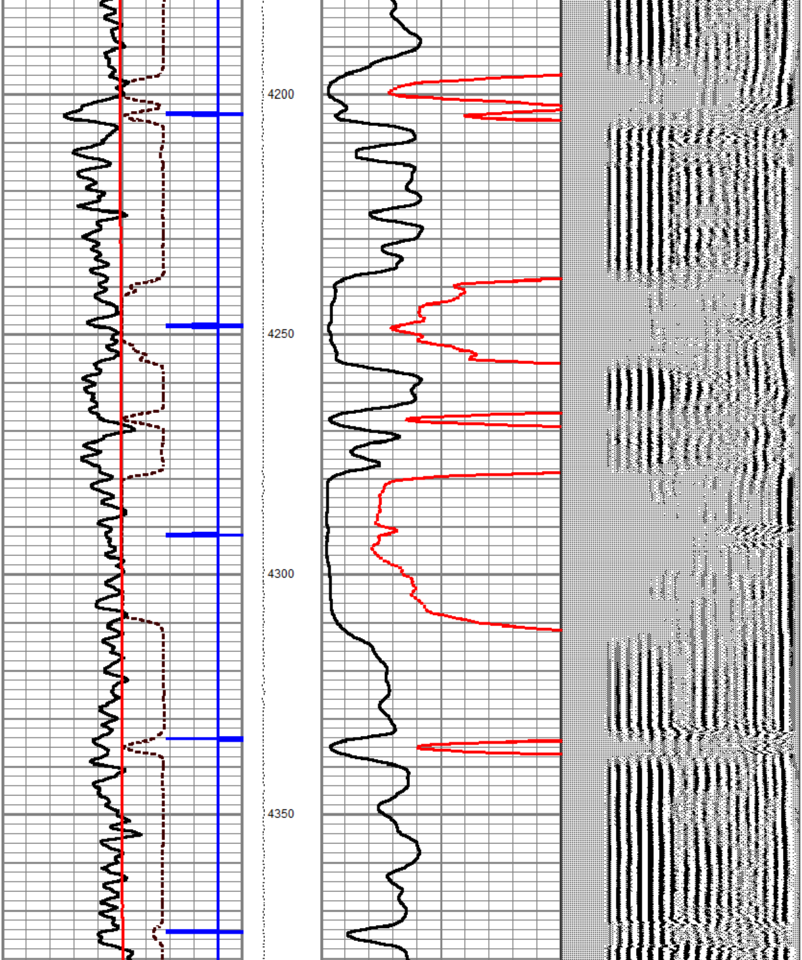
CEMENT BOND LOG PRESENTATION

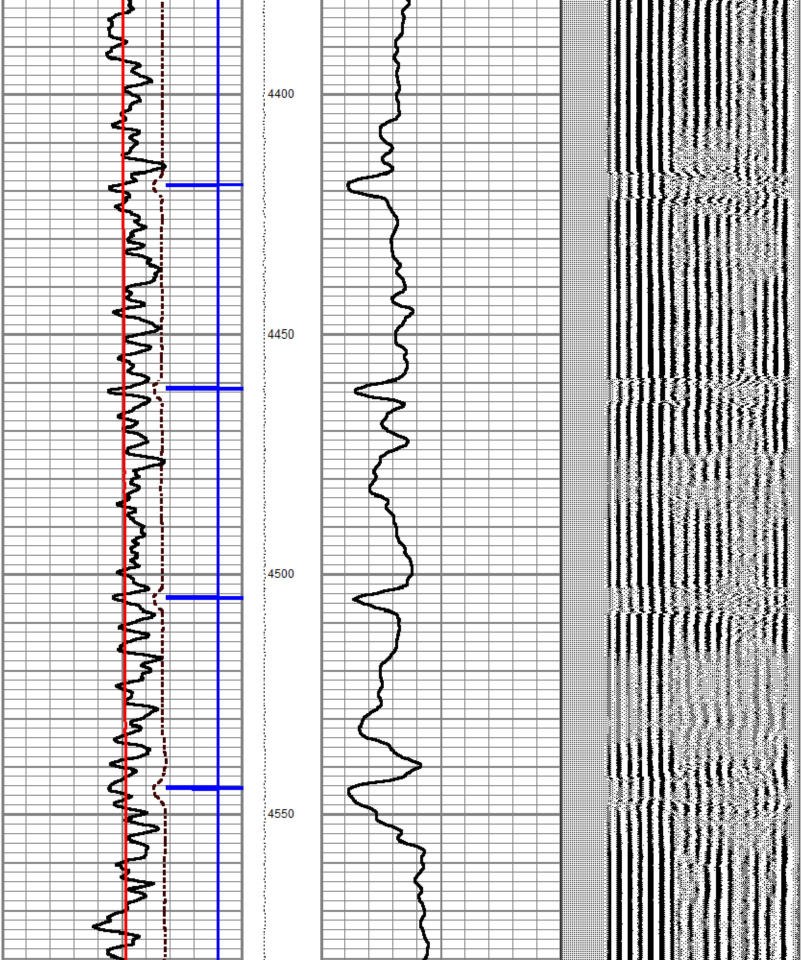
MAIN LOG SECTION / 900 PSI

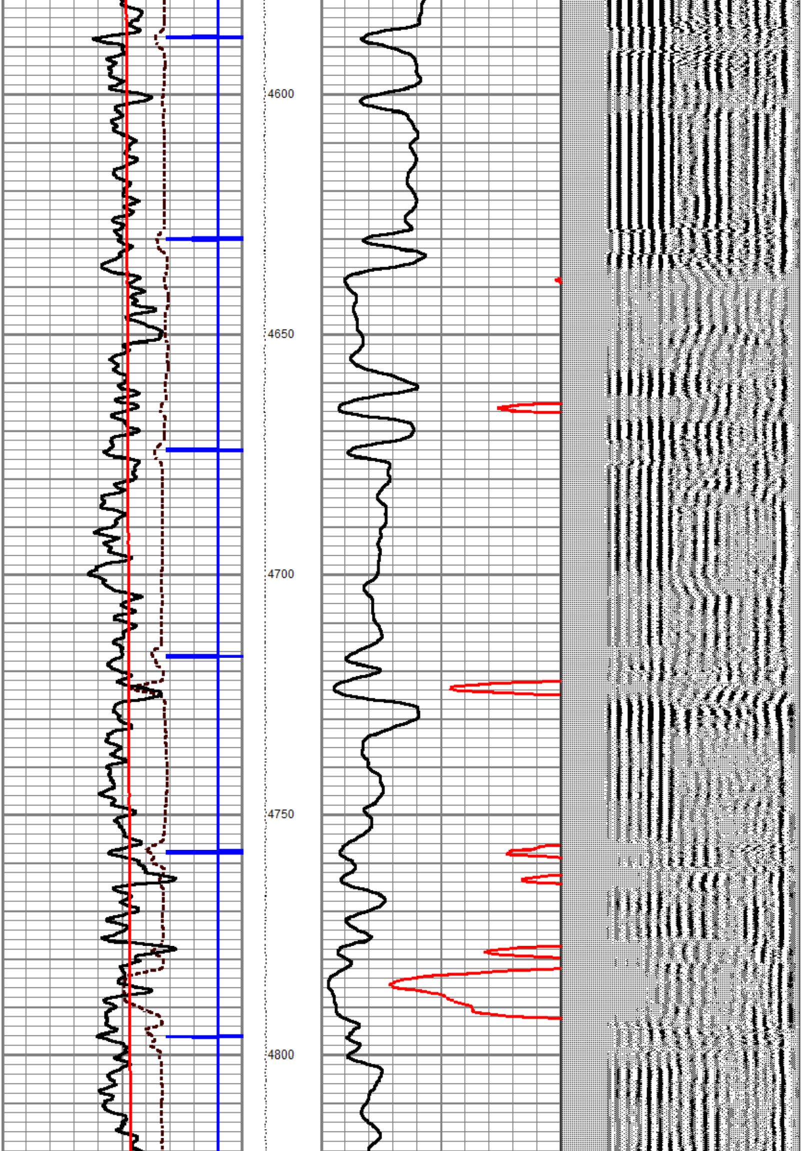
Database File	2015_extraction_thornton #12.db
Dataset Pathname	pass3.1
Presentation Format	cbl_drs
Dataset Creation	Sat Feb 28 15:36:30 2015
Charted by	Depth in Feet scaled 1:240

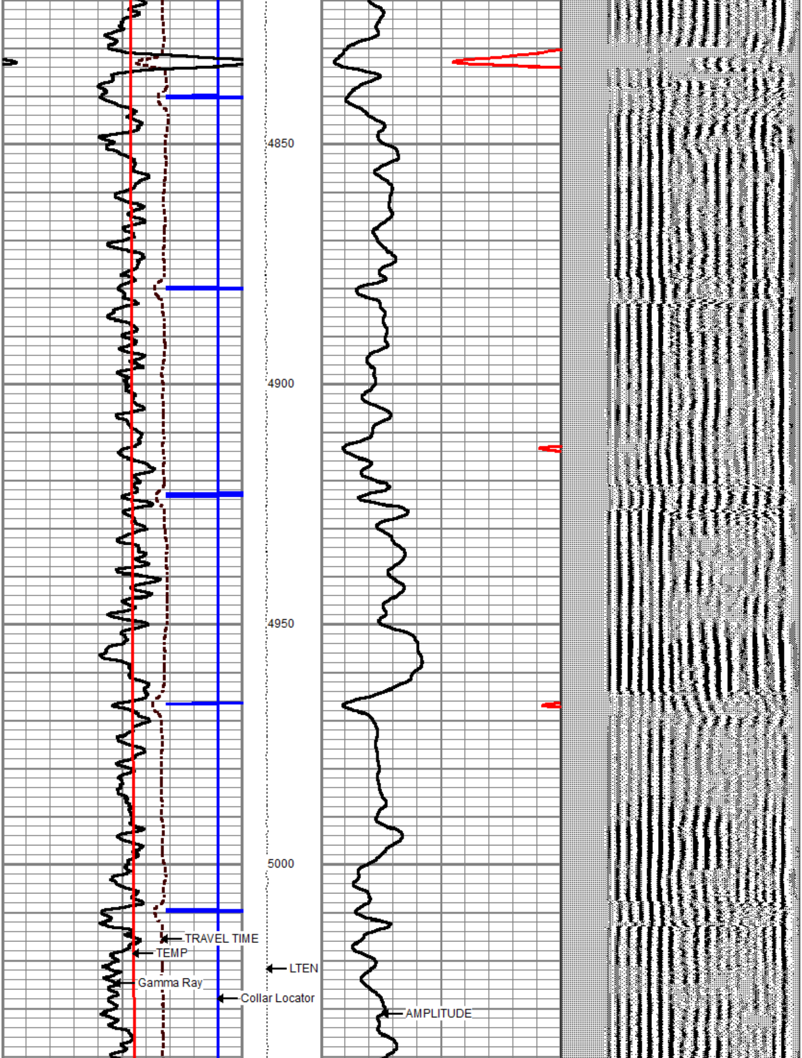


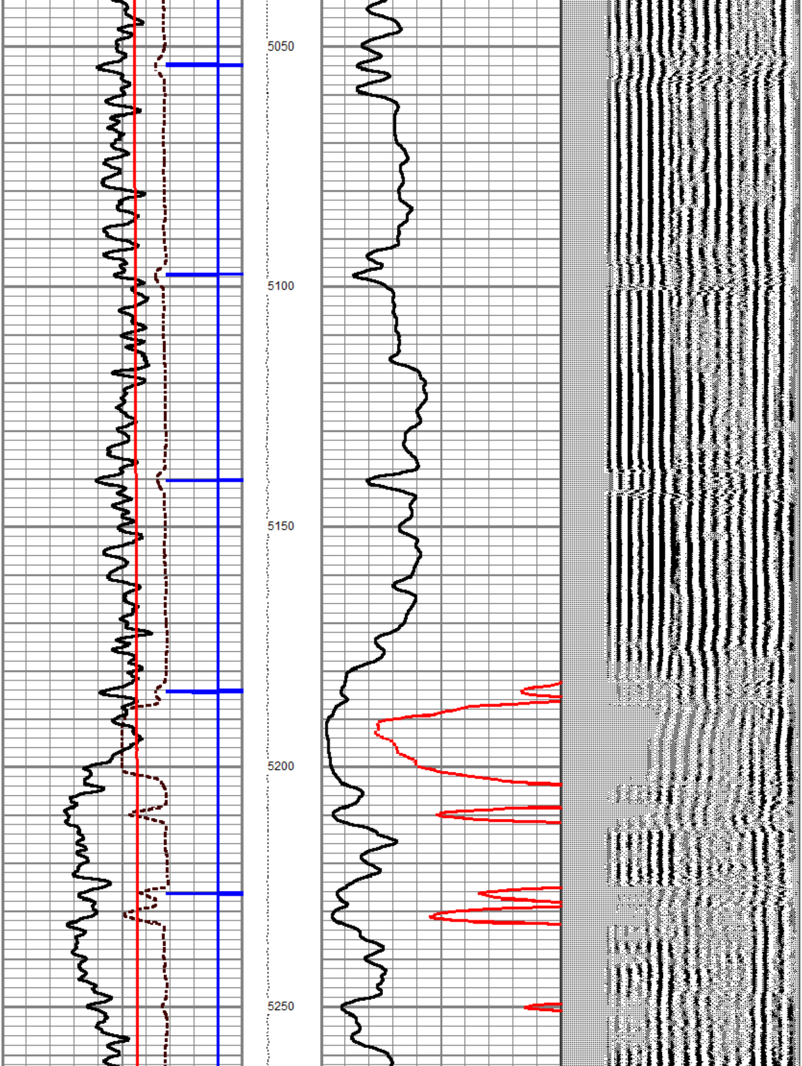


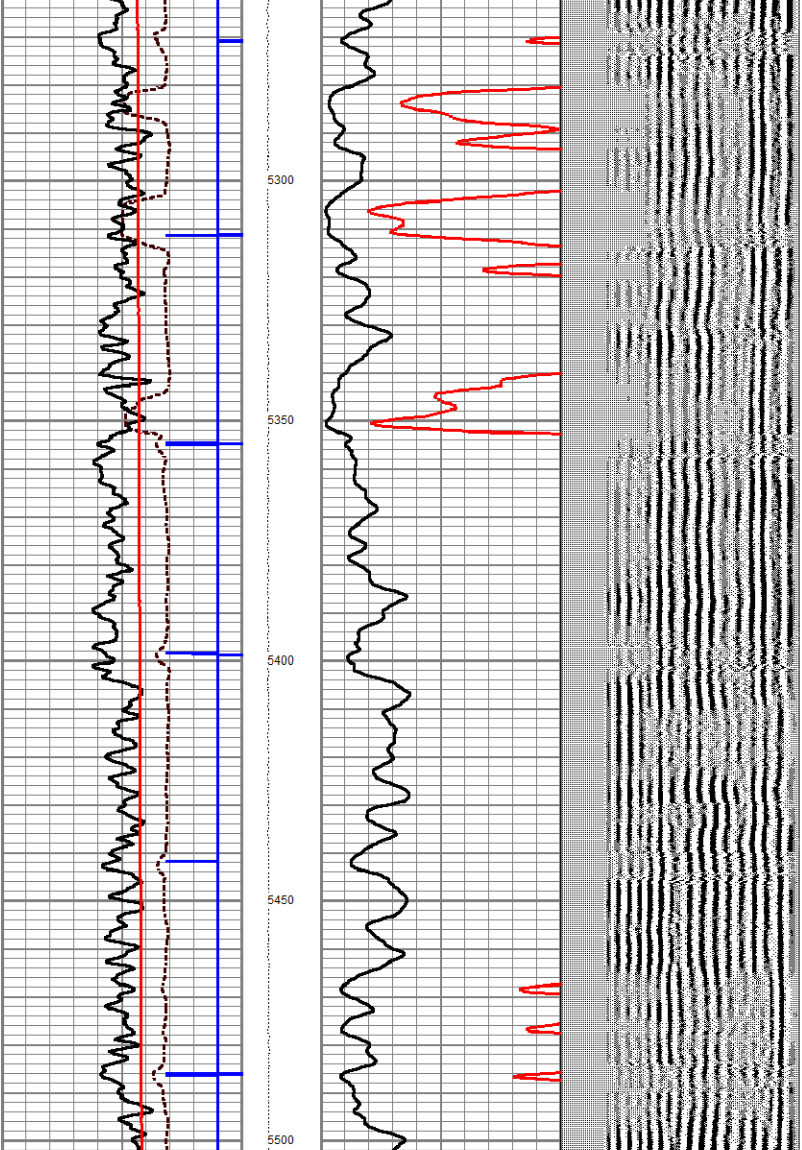


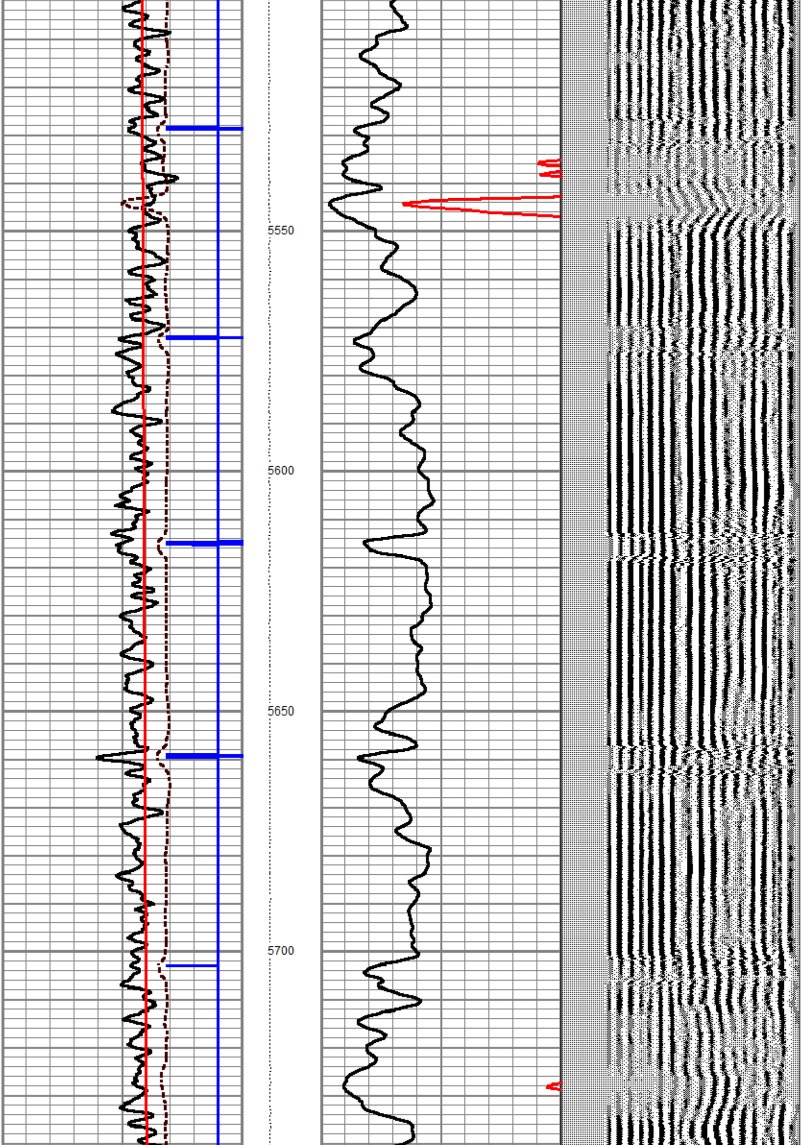


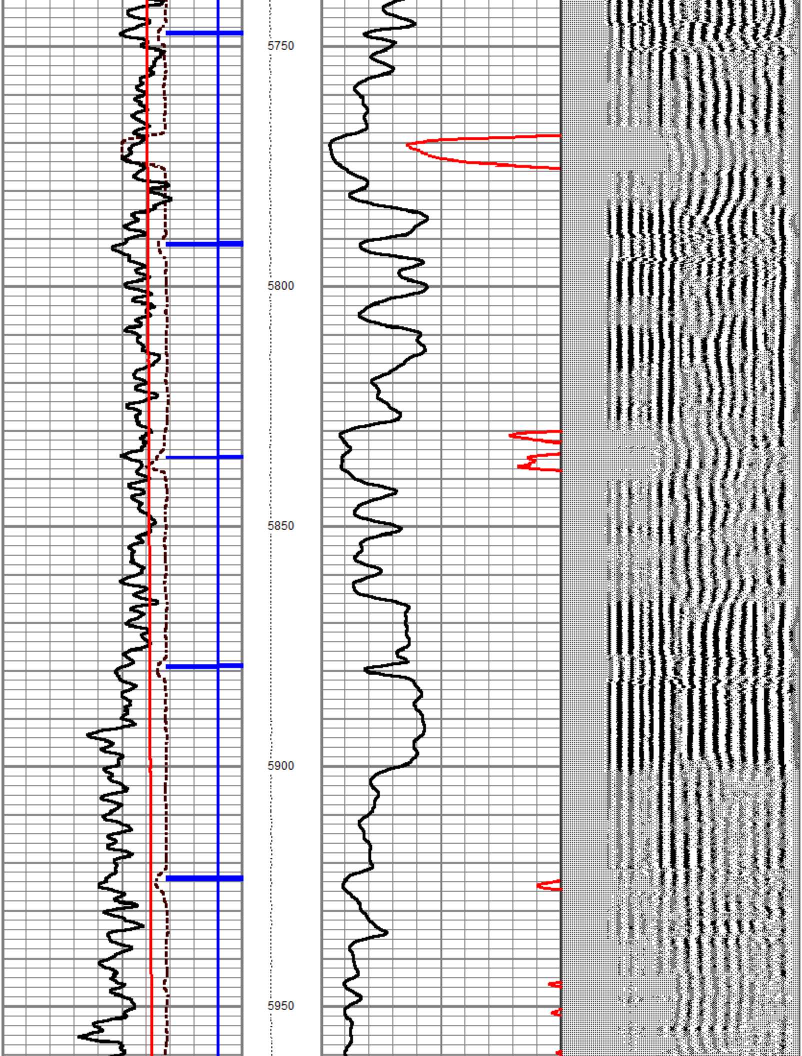


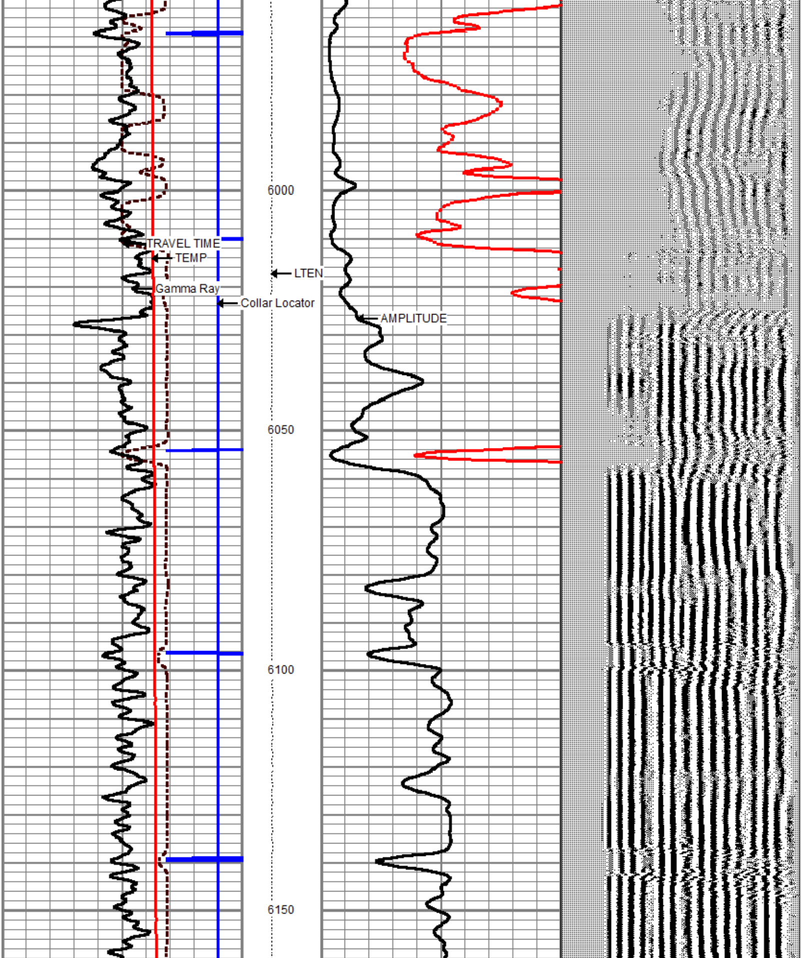


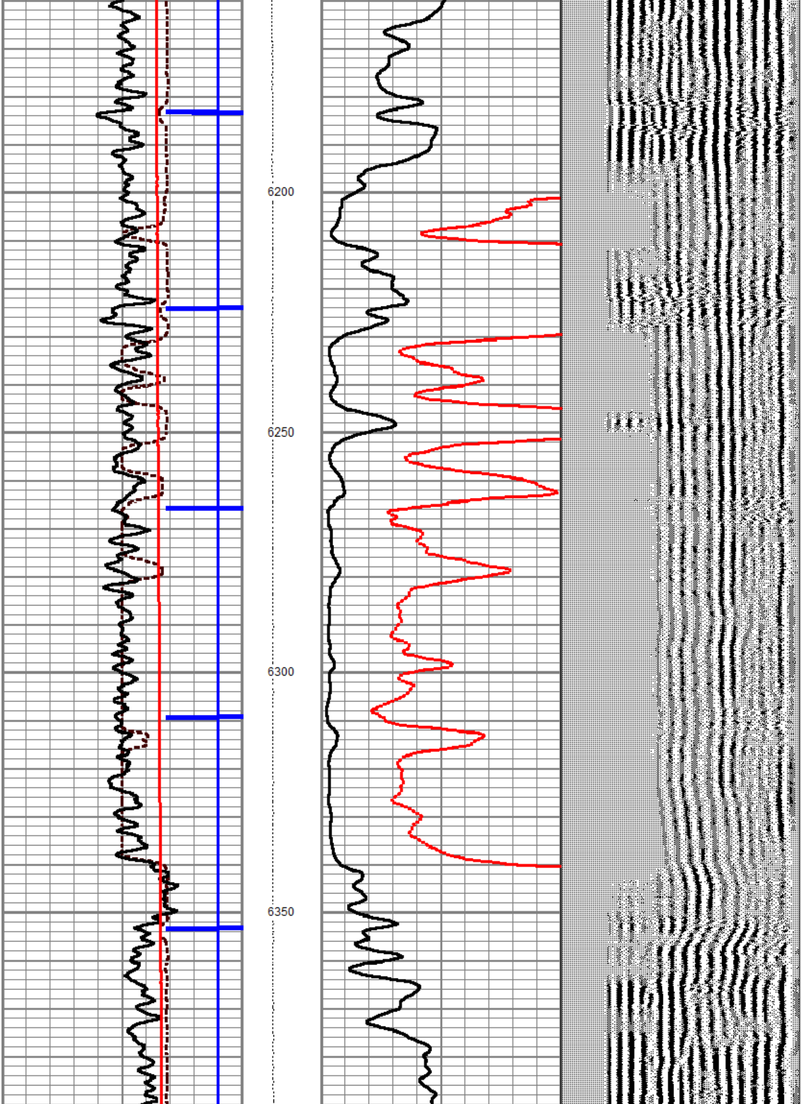


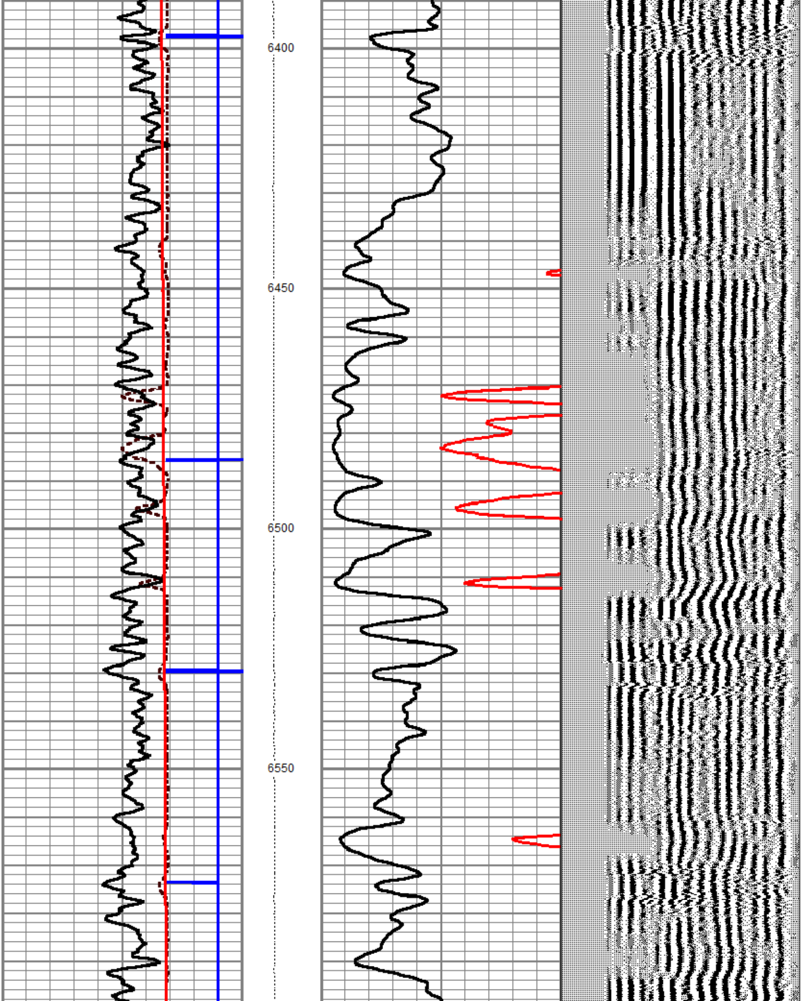


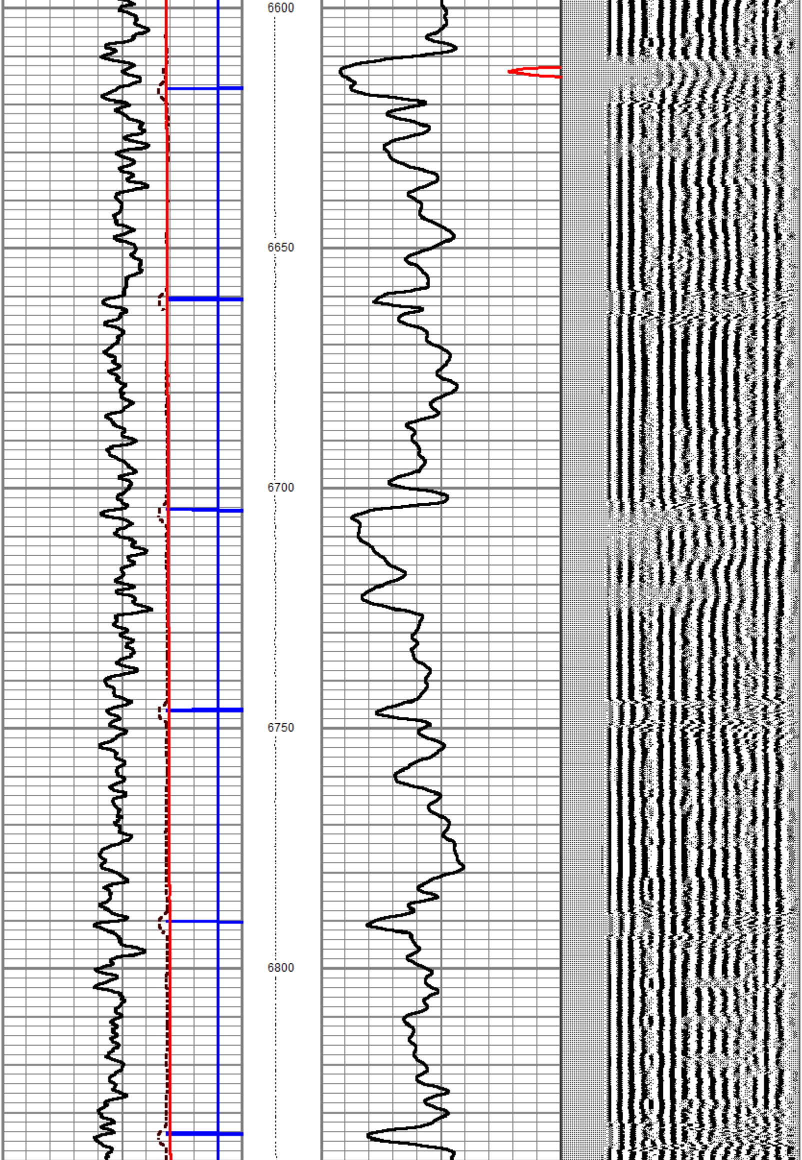


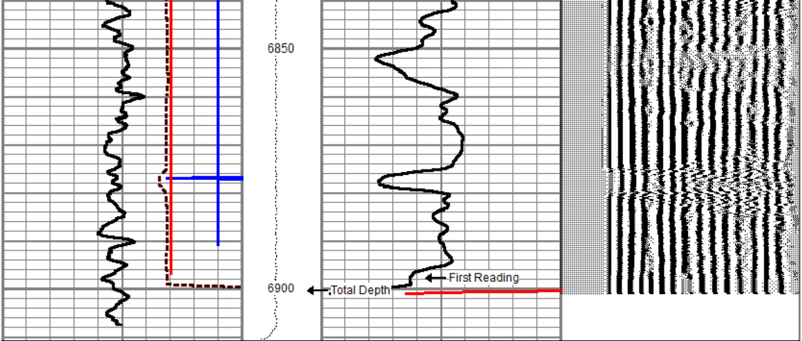












400 TRAVEL TIME (usec) 200
9 Collar Locator -1
0 Gamma Ray 200
0 TEMP (degF) 300
LTEN
0 (lb) 2000
0 AMP AMPLITUDE x 10 (mV) 10
0 AMPLITUDE (mV) 100
200 VDL 1200

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CEMENT BOND LOG PRESENTATION

MAIN LOG SECTION / 900 PSI

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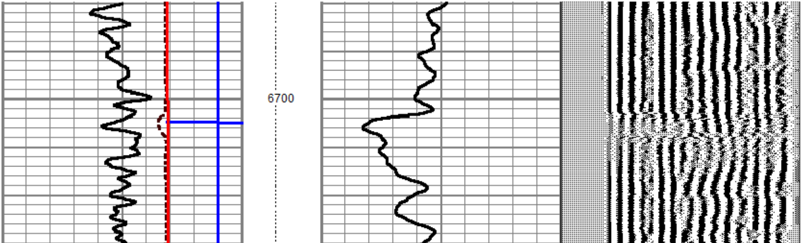
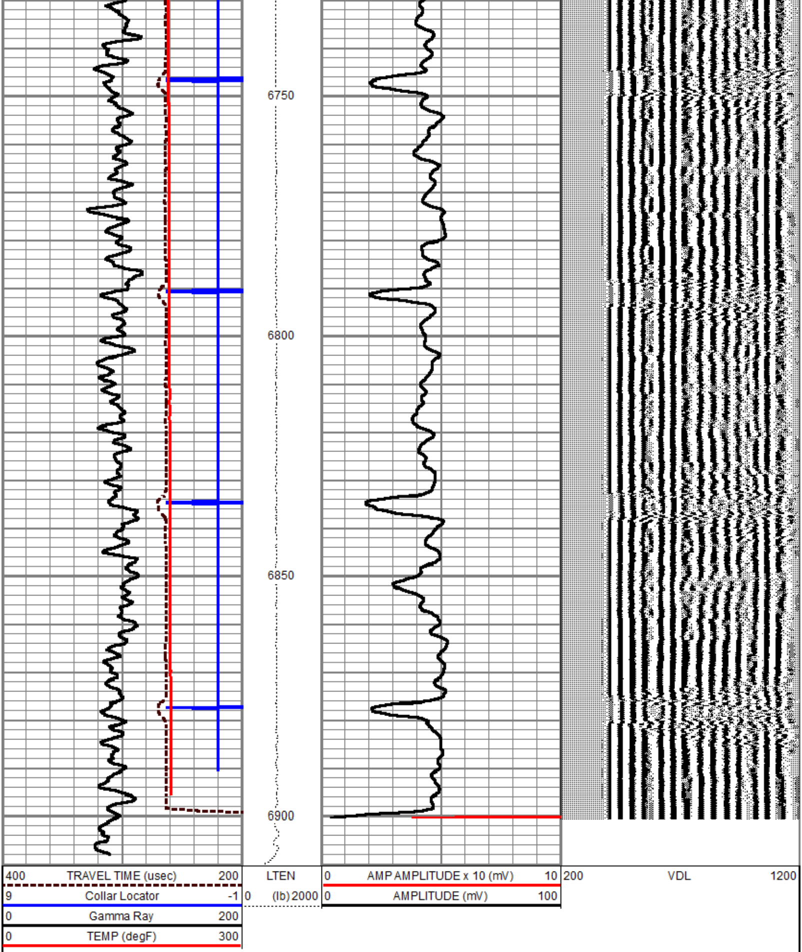
CEMENT BOND LOG PRESENTATION

REPEAT LOG SECTION / 0 PSI

Database File	2015_extraction_thornton #12.db
Dataset Pathname	pass1
Presentation Format	cbl_drs
Dataset Creation	Sat Feb 28 13:12:58 2015
Charted by	Depth in Feet scaled 1:240

400 TRAVEL TIME (usec) 200
9 Collar Locator -1
0 Gamma Ray 200
0 TEMP (degF) 300
LTEN
0 (lb) 2000
0 AMP AMPLITUDE x 10 (mV) 10
0 AMPLITUDE (mV) 100
200 VDL 1200





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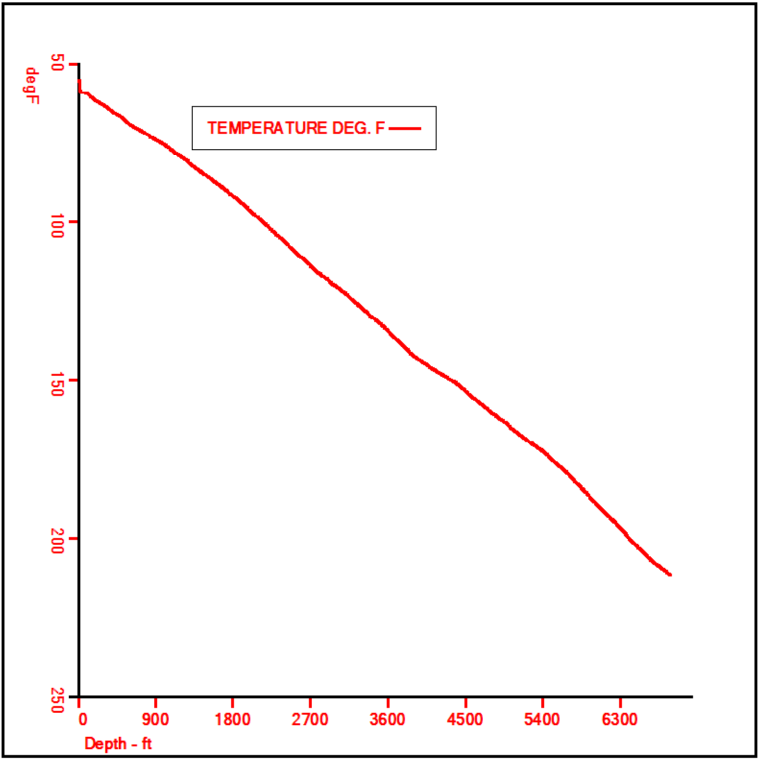
CEMENT BOND LOG PRESENTATION

REPEAT LOG SECTION / 0 PSI



Log Variables

DatabaseC:\ProgramData\Warrior\Data\2015_extraction_thornton #12.db
Dataset field/well/run1/pass3.1

Top - Bottom

BHTEMP_Src	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASEOD in	PERFS	TDEPTH ft
1	0	26	62	1.7	0.8	0	7	0	7000

BOTTEMP degF	BOREID in
250	8.75

Calibration Report

Database File	2015_extraction_thornton #12.db
Dataset Pathname	pass3.1
Dataset Creation	Sat Feb 28 15:36:30 2015

Gamma Ray Calibration Report

Serial Number: 234GR-IPCD9-02
Tool Model: GR-Tek-Co
Performed: Tue Feb 25 16:32:03 2014

Calibrator Value: 120.0

Background Reading: 100.8 cps
Calibrator Reading: 244.7 cps

Sensitivity: 0.8337 /cps

Segmented Cement Bond Log Calibration Report

Serial Number: 234RIBT-IT4B1-01-FIELD-12-3-14
Tool Model: 275 H/T RIB with I/E Temp

Calibration Casing Diameter: 5.500 in
Calibration Depth: 963.892 ft

Master Calibration, performed Sat Feb 28 15:36:28 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.364	2.000	71.921	192.471	1.821
CAL	0.000	0.283				
5'	-0.013	0.506	2.000	71.921	134.889	3.719
SUM						
S1	-0.003	0.527	0.000	100.000	188.609	0.588
S2	-0.014	0.531	0.000	100.000	183.265	2.653
S3	-0.020	0.465	0.000	100.000	206.323	4.133
S4	-0.013	0.510	0.000	100.000	191.124	2.472
S5	-0.012	0.490	0.000	100.000	199.401	2.380
S6	-0.011	0.461	0.000	100.000	211.907	2.229
S7	-0.000	0.461	0.000	100.000	216.482	0.098
S8	0.000	0.479	0.000	100.000	208.877	-0.003

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	0.283	1.000	0.000

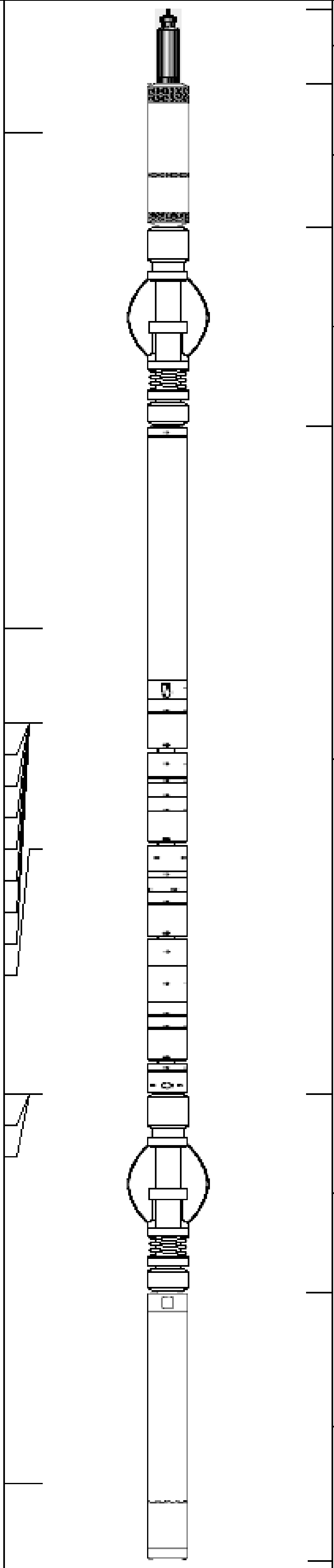
Air Zero Calibration, performed Wed Dec 31 17:00:00 1969:

	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:	234RIBT-IT4B1-01-FIELD-12-3-14			
Tool Model:	275 H/T RIB with I/E Temp			
Performed:	Wed Dec 03 07:38:31 2014			
	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)
			TitanConeType2 Cable Head 1 7/16 Cone Type II	1.03	1.44	3.60
CCL	19.56					
			CCL-275tekco (234CCL-1PSN7-002) 2 3/4" 450 Deg. "F" TekCo CCL Earth Mag	1.96	2.75	20.00
			2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
TEMP	12.77					
WVFS8	11.48					
WVFS7	11.48		275 H/T RIB with I/E Temp (234RIBT-IT4B1-01-D-12-3 Tekco 2.75" 450 Deg. F RIB with I/E Temp	9.13	2.75	102.00
WVFS6	11.48					
WVFS5	11.48					
WVFS4	11.48					
WVFS3	11.48					
WVFS2	11.48					
WVFS1	11.48					
WVF5FT	9.73					
WVFSYNC	6.40					
WVFTEMP	6.40					
WVFCAL	6.40					
			2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
			GR-GR-Tek-Co (234GR-IPCD9-02) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
GR	1.04					

Dataset:	2015_extraction_thornton #12.db: field/well/run1/pass3.1
Total length:	21.25 ft
Total weight:	215.60 lb
O.D.:	2.75 in

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Company	**EXTRACTION O & G**		
Well	**THORNTON #12**		
Field	**WATTENBERG**		
County	**WELD**		
State	**CO**	**Country**	**USA**