HALLIBURTON

CEMENT BOND LOG

Company URSA Operating Company LLC
Well YATER 12A-17-07-95
Field PARACHUTE
County GARFIELD State CO

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API No.: 05-04-52277900 Serv #: 902696803
Location: SURFACE HOLE LOCATION:
1717 FSL & 1129 FWL

Other Services
RMTi
(CAPTURE MODE)

Sec: 17 Twp: 7S Rge: 95W

Permanent Datum GROUND LEVEL Elevation 5519'
Log Measured From KB , 17 Ft. above perm. datum
Drilling Measured From KB

Elevation
K.B. 5536'
D.F.
G.L. 5519'

Date @ Time Logged	30-AUG-2015	Type Fluid in Hole	FRESH WATER
Run No.	ONE	Density of Fluid	8.3 ppg
Depth - Driller	7297'	Fluid Level	SURFACE
Depth - Logger	7175'	Cement Top Est. Logged	N/A
Bottom - Logged Interval	7170'	Equipment / Location	11808537 / RKS RS
Top - Log Interval	SURFACE	Recorded by	Pedro Gonzalez Baqueiro
Max. Recorded Temp.	185 degF	Witnessed by	CO REP

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
	7.875 in	SURFACE	7297'	4.5 in	11.5#	SURFACE	7282'

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

HES CEMENT BOND LOG CORRELATED WITH 17' KB
LOG INTERVALS PER CUSTOMER REQUEST
CBL RUN IN 4.5 IN CASING 11.5#

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY

Service Ticket No. 902696803 API No. 05-04-52277900 PGM Ver WARRIOR B1

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

TELEMETRY		XHU		RESERVOIR MONITOR TOOL i		CEMENT BOND TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11527445	Serial No.	12218041	Serial No.	12270693	Serial No.	6468
Model No.	TTTCU-002	Model No.	XHU-003	Model No.	RMTi	Model No.	CBLM
Diameter	1.69 in	Diameter	1.69 in	Diameter	2.13 in	Diameter	2.75 in

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ONE	7282'	SURFACE	0 PSIG	20 Ft/Min	

Pass	GAMMA RAY		AMPLITUDE		TRAVEL TIME			
	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0 api	150 api	0	100	400	200		

DIRECTIONAL INFORMATION

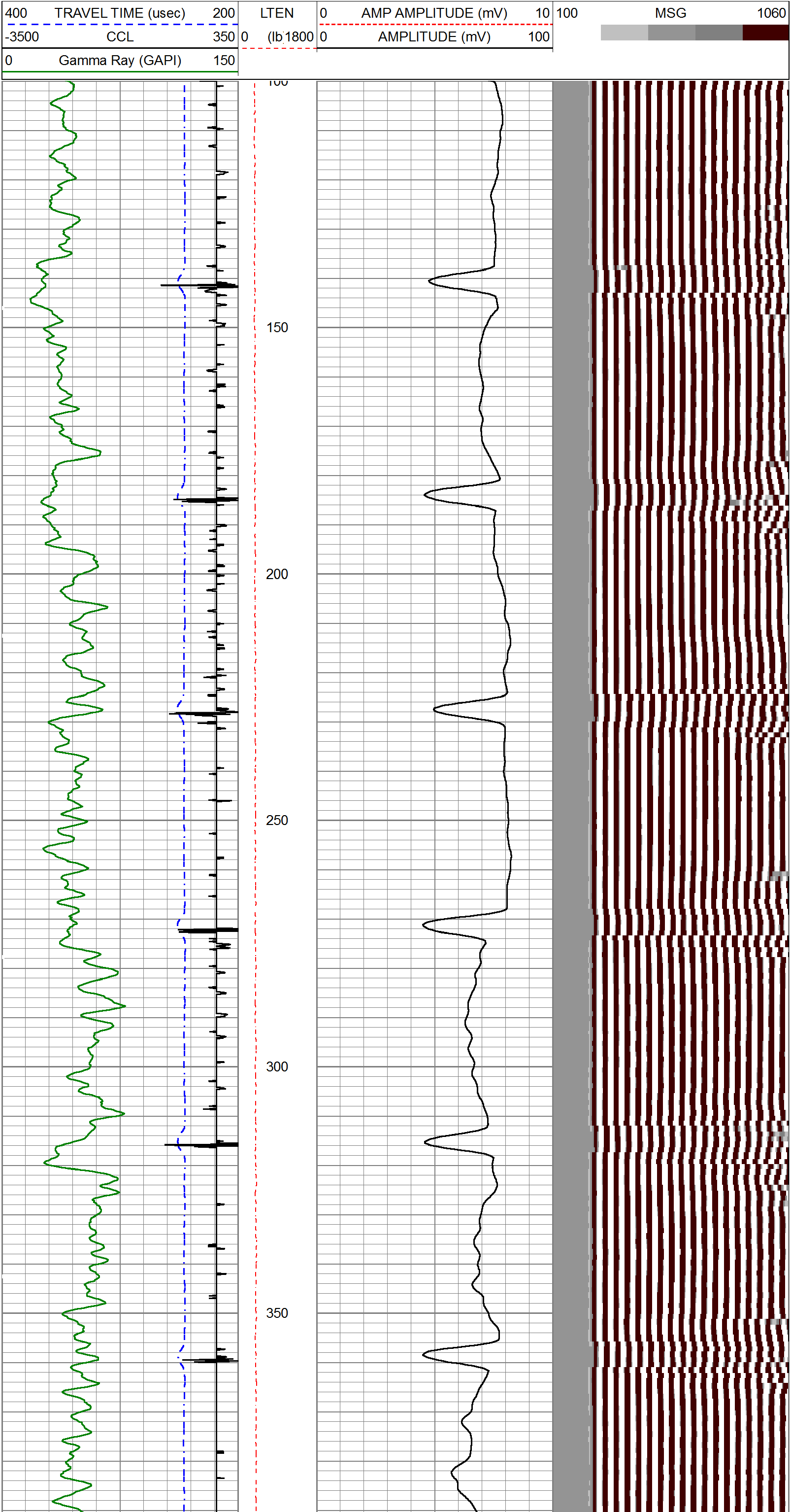
Maximum Deviation		deg. @		KOP	

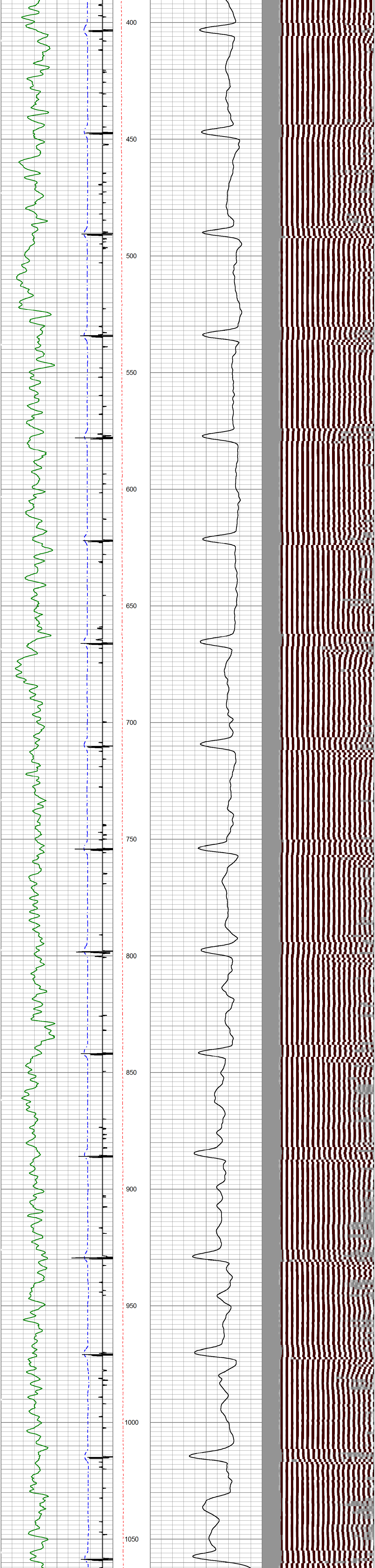
HALLIBURTON

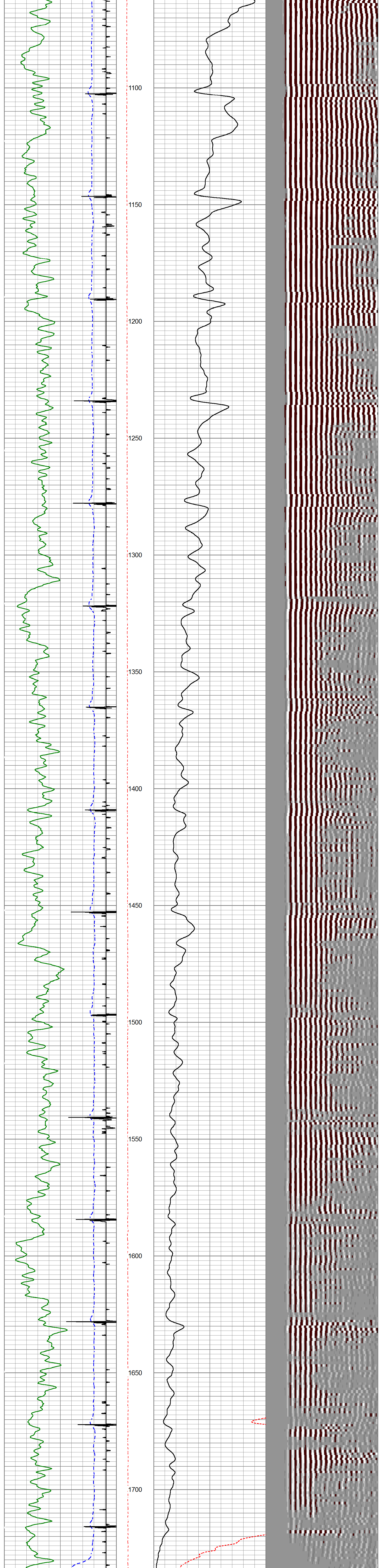
MAIN PASS

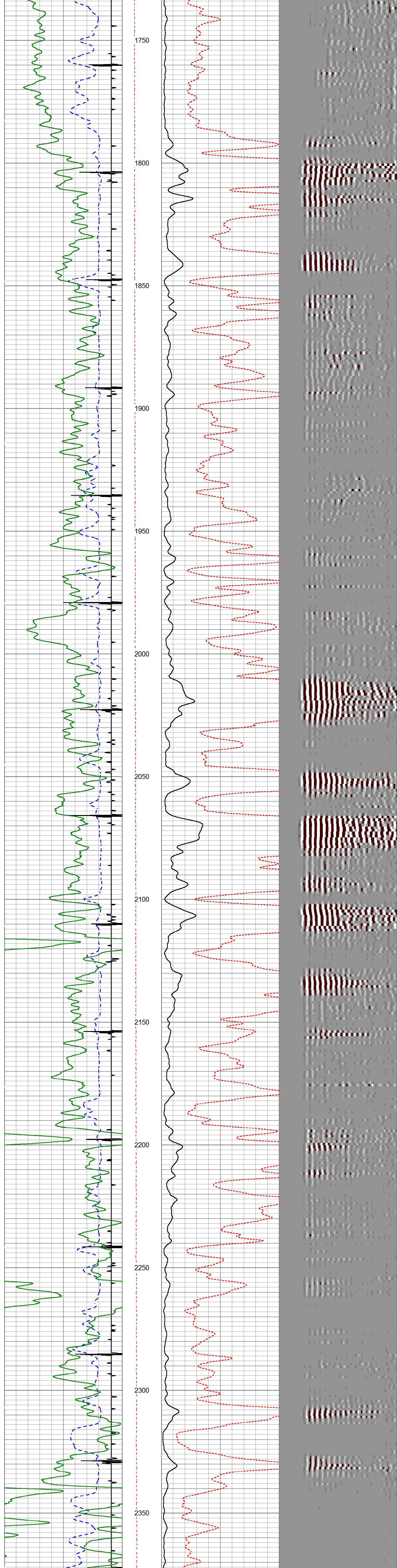
5 in = 100'

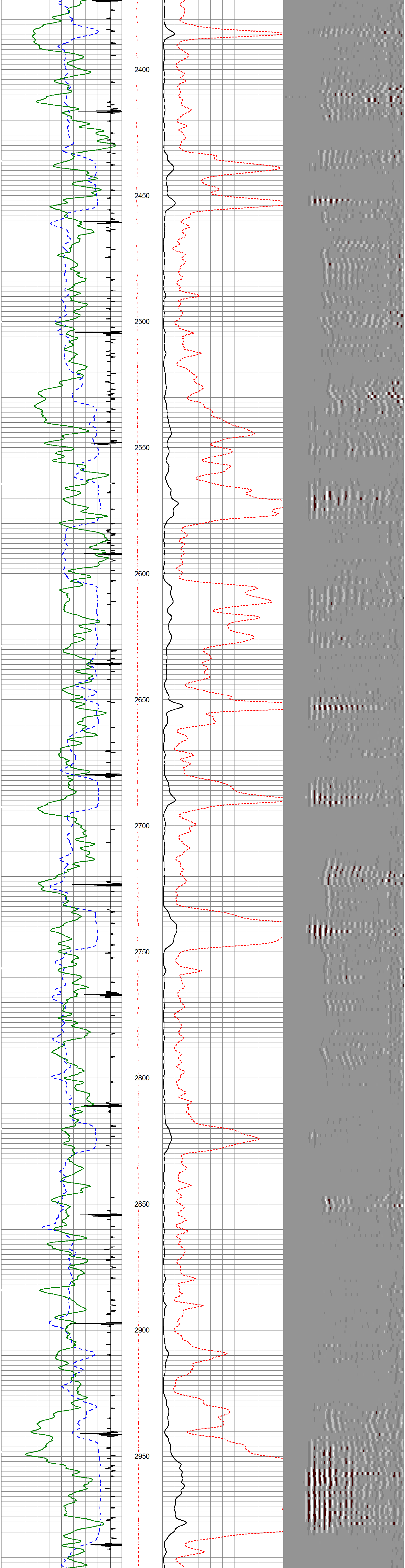
Database File c:\users\hb64775\desktop\yater_12a_17_07_95\yater 12a-17-07-95.db
Dataset Pathname GF/YATER12A-17-07-95/run1/MAIN
Presentation Format cbl_main
Dataset Creation Sun Aug 30 15:24:33 2015
Charted by Depth in Feet scaled 1:240

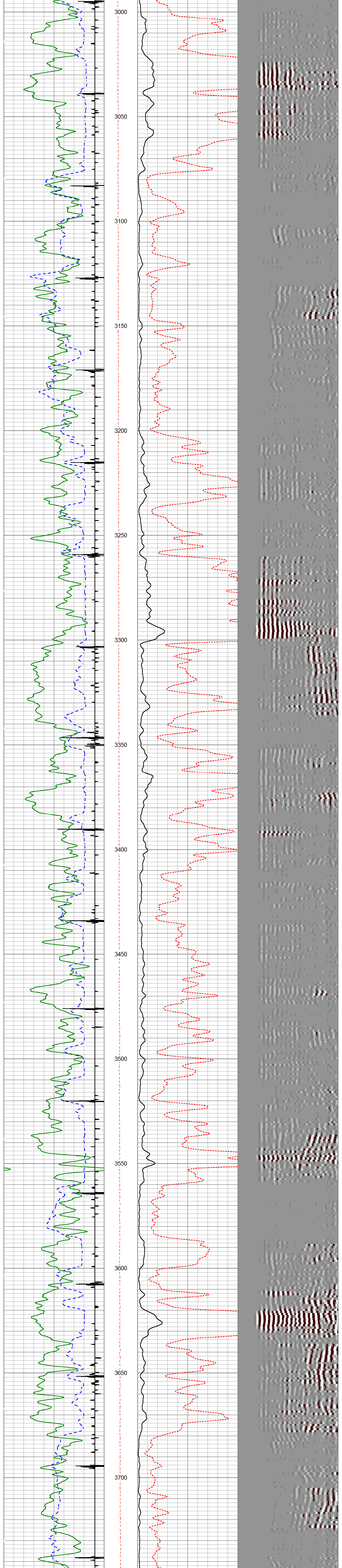


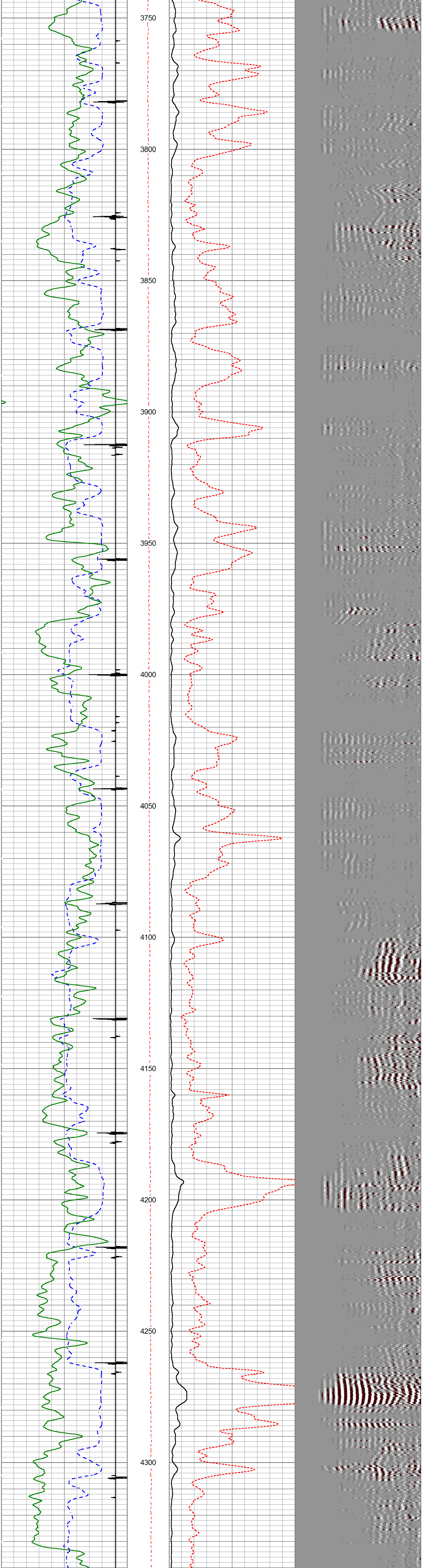


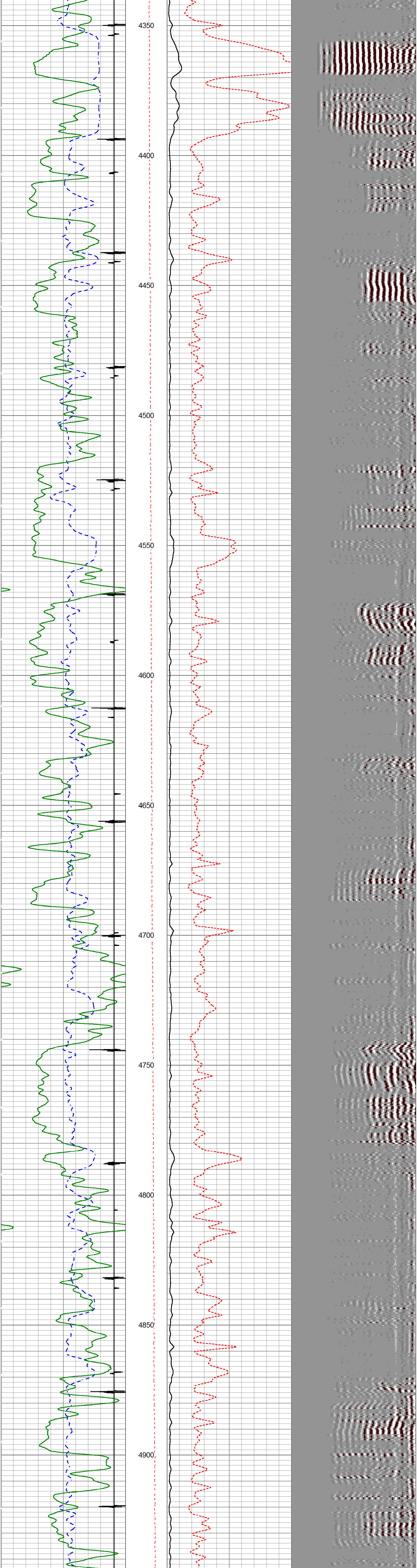


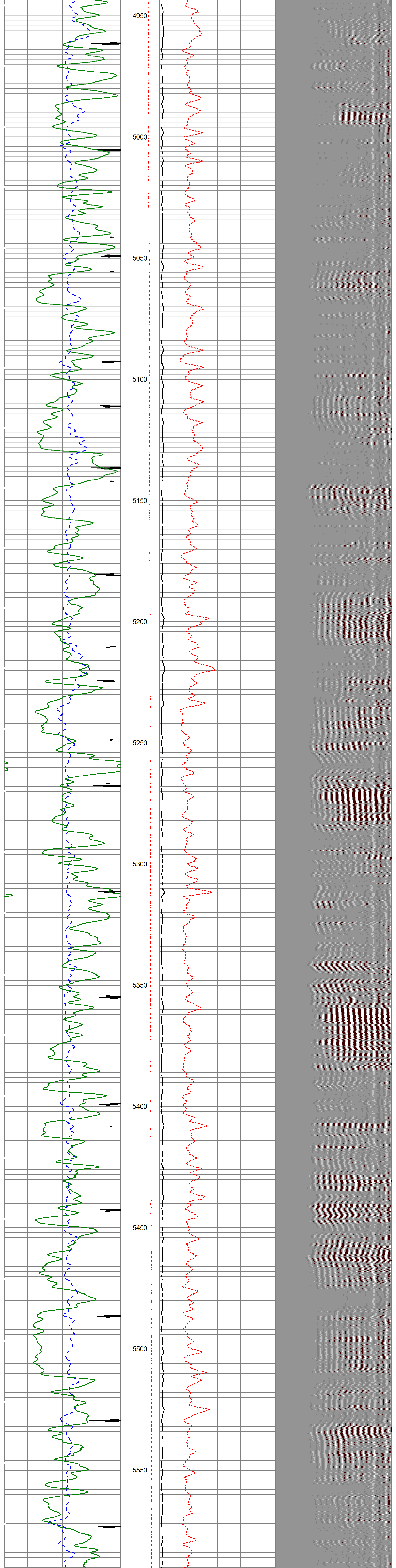


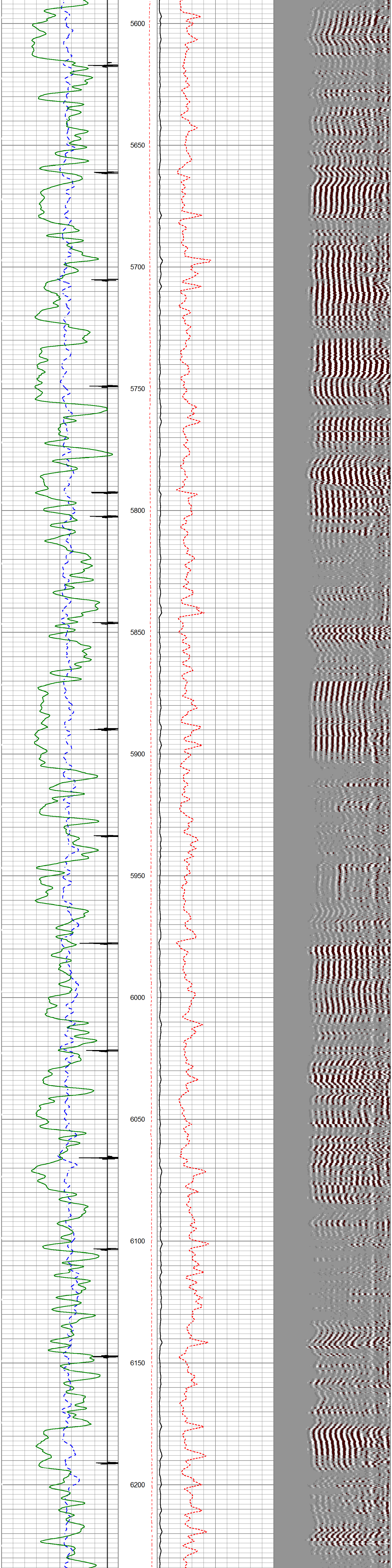


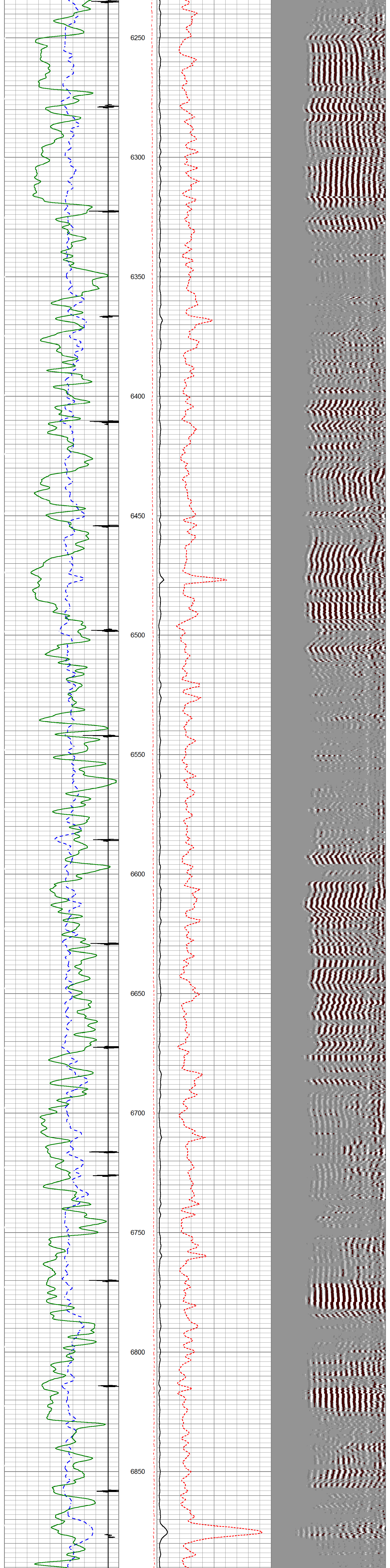


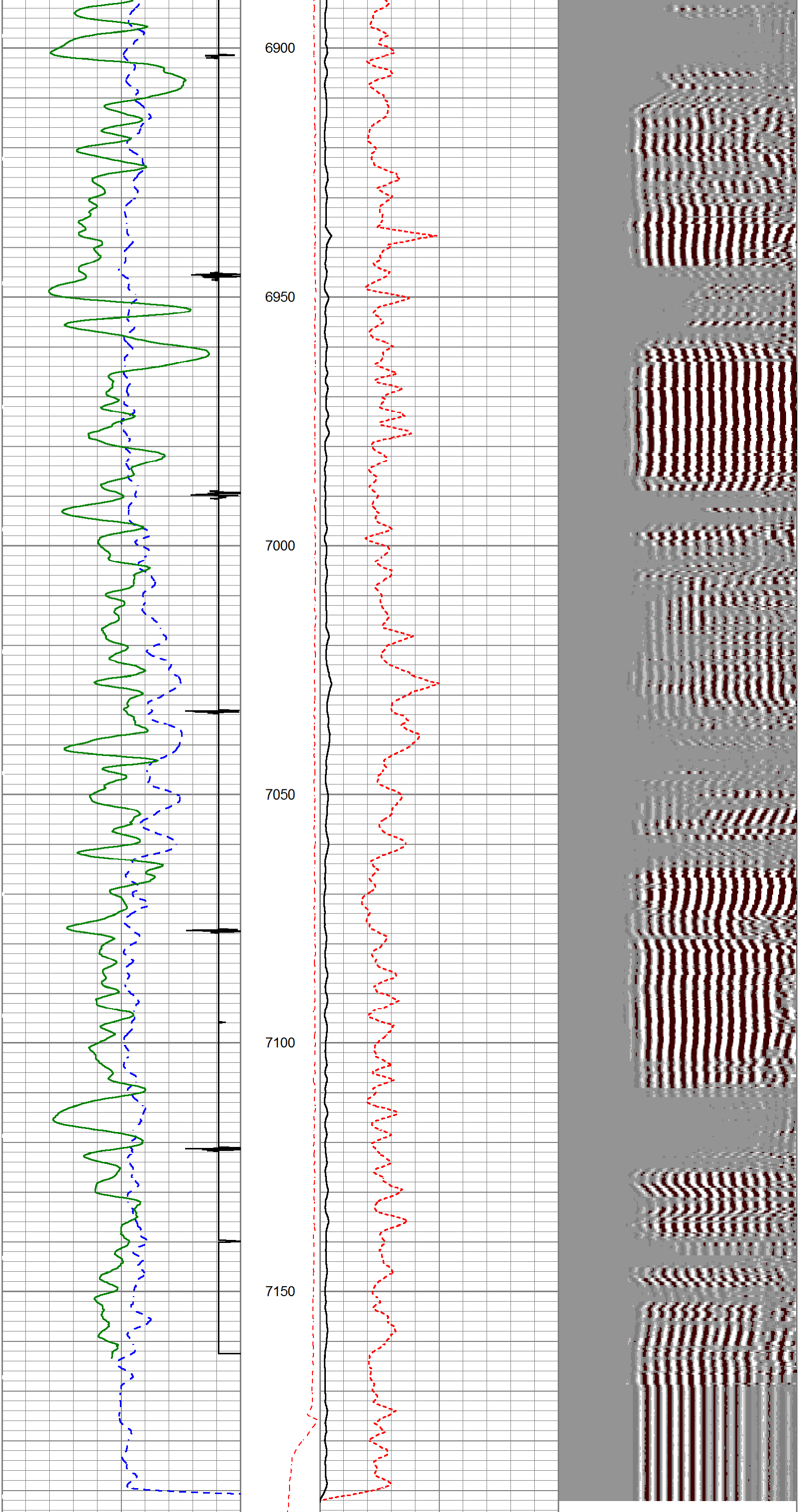












400 TRAVEL TIME (usec) 200	LTEN	0 AMP AMPLITUDE (mV) 10	100 MSG 1060
-3500 CCL 350	0 (lb 1800	0 AMPLITUDE (mV) 100	
0 Gamma Ray (GAPI) 150			

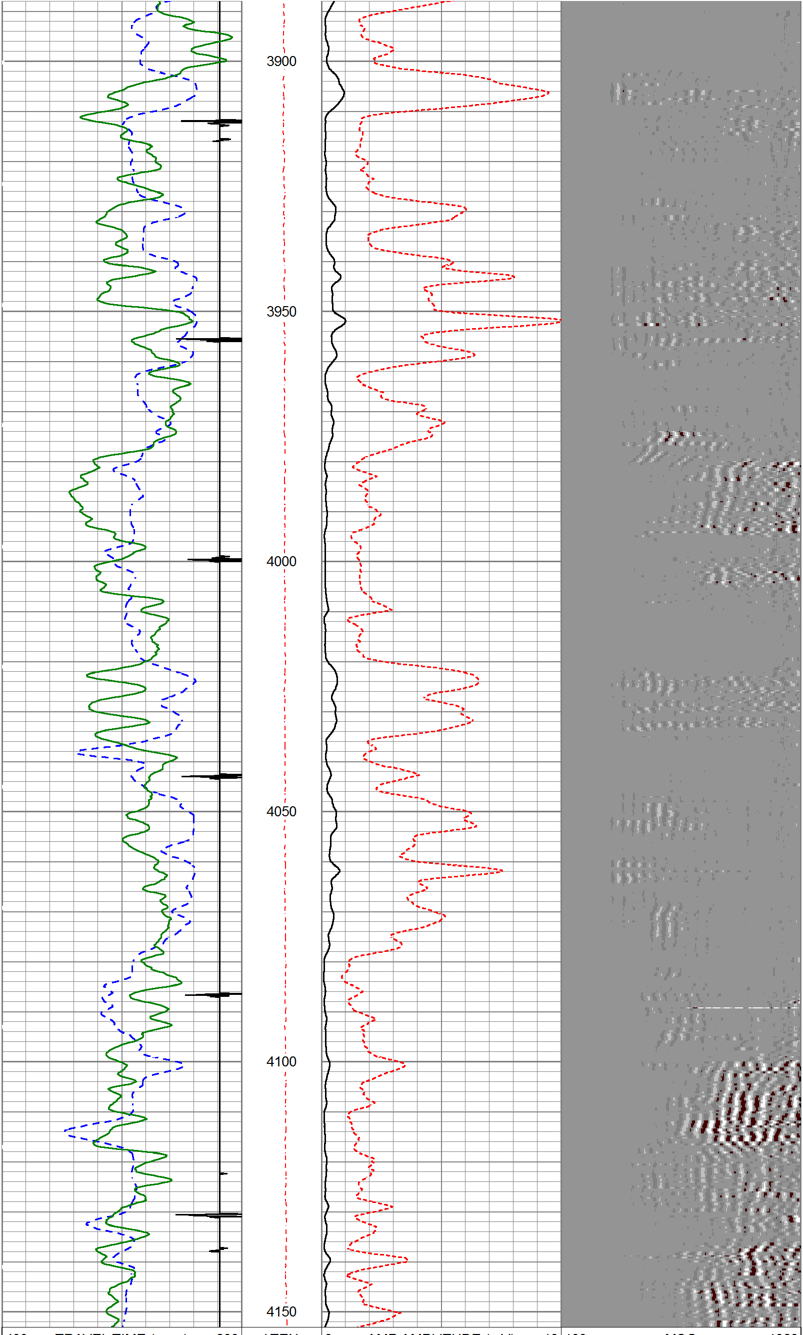
HALLIBURTON

REPEAT PASS

5 in = 100'

Database File	c:\users\hb64775\desktop\yater_12a_17_07_95\yater 12a-17-07-95.db
Dataset Pathname	GF/YATER12A-17-07-95/run1/REPEAT
Presentation Format	cbl_main
Dataset Creation	Sun Aug 30 14:55:15 2015
Charted by	Depth in Feet scaled 1:240

400 TRAVEL TIME (usec) 200	LTEN	0 AMP AMPLITUDE (mV) 10	100 MSG 1060
-3500 CCL 350	0 (lb 1800	0 AMPLITUDE (mV) 100	
0 Gamma Ray (GAPI) 150			



400 TRAVEL TIME (usec) 200	LTEN	0 AMP AMPLITUDE (mV) 10	100 MSG 1060
-3500 CCL 350	0 (lb 1800	0 AMPLITUDE (mV) 100	
0 Gamma Ray (GAPI) 150			

Calibration Report

Database File	c:\users\hb64775\desktop\yater_12a_17_07_95\yater 12a-17-07-95.db
Dataset Pathname	GF/YATER12A-17-07-95/run1/MAIN
Dataset Creation	Sun Aug 30 15:24:33 2015

Cement Bond Log Shop Calibration Report

Serial-Model:	11836468-A
Calibration Performed:	Sun Aug 30 14:56:52 2015

Free Pipe Calibration

	Measured	Units
TT	245.0	usec
Amplitude	659.1	mV
Log Base Line	18.6	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.124	

Reservoir Monitor Tool I Calibration Report

Serial-Model:	12270693-A
Shop Calibration Performed:	Mon Aug 24 17:04:42 2015

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	89.00	80.00	9.00	+/-15.00	V
ITCR2	3322	3250	72	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0264	5.41	<6.00
Fe	206	206 +/-2	0.0959	-----	-----
NGAIN = 0.998	NZOFF = 0.2				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.

H	60	60 +/-2	0.0342	5.95	<6.50
Fe	210	208 +/-2	0.0906	-----	-----

FGAIN = 0.989 FZOFF = 0.6

Flask Temperature 63.9 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.37	1.36	0.00	+/-0.05	
TCCR2	5423	5000	423	+/-1000	cps
ITCR2	3288	3200	88	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	88.00	80.00	8.00	+/-15.00	V
FCAP	9842	10000	-158	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.99	0.95	0.04		
N/F Inel Norm	0.64	0.61	0.03		
RNF	1.01	1.07	-0.06	+/-0.12	
RINC	1.56	1.64	-0.08	+/-0.18	
SGFN	24.06	24.00	0.06	+/-0.50	cu
SGFF	22.89	22.85	0.04	+/-0.50	cu
FSIN	23868	24000	-132	+/-2000	cps
FCAP	10056	10000	56	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.84			<5.00	
NBKG	215			<500	cps
FBKG	100			<500	cps
RTN	0.39	0.40	-0.01	+/-0.10	usec
RTF	0.41	0.40	0.01	+/-0.10	usec

Calibration Software Modules

HRMTI Module	2015.5.4.0
RMTI Module	2015.5.15.1

Log Data Acquisition Software Modules

HRMTI Module	2015.5.4.0
RMTI Module	2015.5.15.1

Gamma Ray Calibration Report

Type / Serial: 002 / 11527445

SHOP CALIBRATION Tue Jul 28 11:11:16 2015

	Counts/Sec.	Gain	Offset	Jig	Units
Background	36.6				cps
Calibrator	183.8				cps
		1.6514			GAPI/cps

PRIMARY VERIFICATION

Background	61.0		cps
Calibrator	301.3		cps
Difference		240.3	GAPI

BEFORE SURVEY VERIFICATION

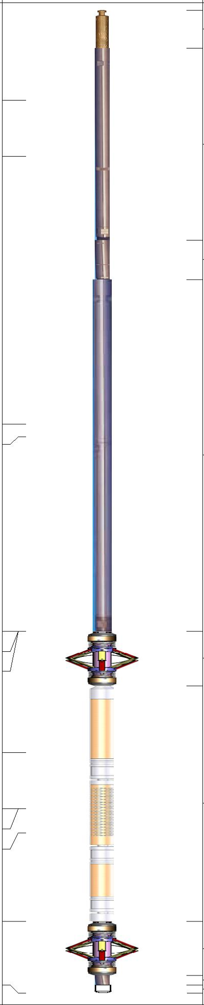
Background	60.0		cps
Calibrator	300.9		cps
Difference		240.9	GAPI

AFTER SURVEY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Sensor	Offset (ft)
CCL	35.55
GR	33.29
RmtTFGT	22.64
RmtTNGT	22.14
RmtFP5V	14.39
RmtNFwvMcsPl	14.39
RmtCommFWa	14.39
Temp	9.57
TT3FT	7.32
AMP3FT	7.32
WVF5FT	6.36
WVF3FT	2.84
LLMTEN	0.00

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb
STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
TTTCU-002 (11527445) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RMTI-A (12270693) Halliburton RMTI Tool	14.00	2.13	77.00
CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
HCBLM-A (11836468) Halliburton HCBLM Tool	9.38	2.75	116.00
CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
BUL-001 (000001) Bullnose	0.30	1.69	1.50

Dataset: yater 12a-17-07-95.db: GF/YATER12A-17-07-95/run1/MAIN
Total length: 39.12 ft
Total weight: 355.50 lb
O.D.: 3.13 in

Company	URSA Operating Company LLC
Well	YATER 12A-17-07-95
Field	PARACHUTE
County	GARFIELD
State	CO

HALLIBURTON

CEMENT BOND LOG