HALLIBURTON

RADIO CEMENT BOND LOG

FIELD PRINT

Company	BILL BARRETT CORPORATION
Well	FEDERAL 32B-20-691
Field	GIBSON GULCH
County	GARFIELD State CO

Company BILL BARRETT CORPORATION
Well FEDERAL 32B-20-691
Field GIBSON GULCH
County GARFIELD State CO

API No.: 05045196780000 Serv #: 8448284
Location: SHL: 2631' FNL & 1756' FEL
BHL: 2090' FNL & 1992' FEL
Other Services
RMTE
JB-GR

Sec: 20 Twp: 6S Rge: 91W

Permanent Datum	GROUND LEVEL	Elevation	6453'
Log Measured From	K.B. , 23 Ft. above perm. datum		
Drilling Measured From	K.B.		

Elevation
K.B. 6476'
D.F. 6475'
G.L. 6453'

Date @ Time Logged	04/ SEPT/11 @ 6:30	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.3 PPG
Depth - Driller	7672'	Fluid Level	SURFACE
Depth - Logger	7654'	Cement Top Est. Logged	LOGGED
Bottom - Logged Interval	7646'	Equipment / Location	10971659 / GJ
Top - Log Interval	SURFACE	Recorded by	J.ARRASCUE
Max. Recorded Temp.	209 DGF	Witnessed by	N/A

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
ONE	14.75"	SURFACE	853'	9 5/8"	36 #	SURFACE	853'
ONE	7.875"	853'	7672'	4.5"	11.6 #	SURFACE	7672'

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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 WHCIH 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 RADIO CEMENT BOND LOG CORRELATED ON BOTTOM
TO WEATHERFORD TEMPERATURE DATED , AUG 10,2011
LOGGED INTERVALS PER CUSTOMER REQUEST
RBT & RMTE RAN IN COMBO
RUN JUNK BASKET & GAUGE RING 3.75"

SHORT JOINTS : 6667' - 6688'

CREW: A. GAULT & D.WILLIAMS

THANK YOU FOR USING HALLIBURTON ENERGY SERVICES GRAND JUNCTION, CO

Service Ticket No. 8448284 API No. 05045196780000 PGM Ver 101102_R1

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

EQUIPMENT DATA

GAMMA RAY		RBT					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	10002718	Serial No.	2211	Serial No.		Serial No.	
Model No.	GR-PROBE	Model No.	RBT-004	Model No.		Model No.	
Diameter	1 11/16"	Diameter	3 1/8"	Diameter		Diameter	

LOGGING DATA

General Data

Pass No.	Depths From	Depths To	Well Head Pressure	Speed Ft/Min	Logging Run Comments
ONE	7654'	SURFACE	0	REC	MAIN PASS

Pass	GAMMA RAY Scale		CCL Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	-5400	600				

DIRECTIONAL INFORMATION

Maximum Deviation		deg. @		KOP	

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MAIN LOG SECTION

5"=100'

Database File: c:\warrior\data\bill_barrett\fed_32b_20_691\fed_32b_20_691_rbt_rmt.db
Dataset Pathname: GG/F_32B2069/run1/MAIN_1
Presentation Format: radial
Dataset Creation: Sun Sep 04 06:26:24 2011 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

3700
3800
3900
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
5300
5400
5500
5600
5700
5800
5900
6000
6100
6200
6300
6400
6500
6600
SHORT JOINT
6700
6800
6900
7000
7100
7200
7300
7400
7500
7600
TT
GR
CCL
TENSION
AMPMIN
AMPMAX
AMPAVG
AMPx5
AMP
T.D.
360 TT (usec) 160
-5400 CCL 600
0 GR (GAPI) 150
TENSION
0 (lb) 2500
0 AMP (mV) 100
0 AMPx5 (mV) 10
0 AMPAVG 100
0 AMPMAX 100
0 AMPMIN 100
200 MSG 1200
1 SECTORS 8
1 100

0 GR (GAPI) 150	AMPMIN 100

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MAIN LOG SECTION

5"=100'

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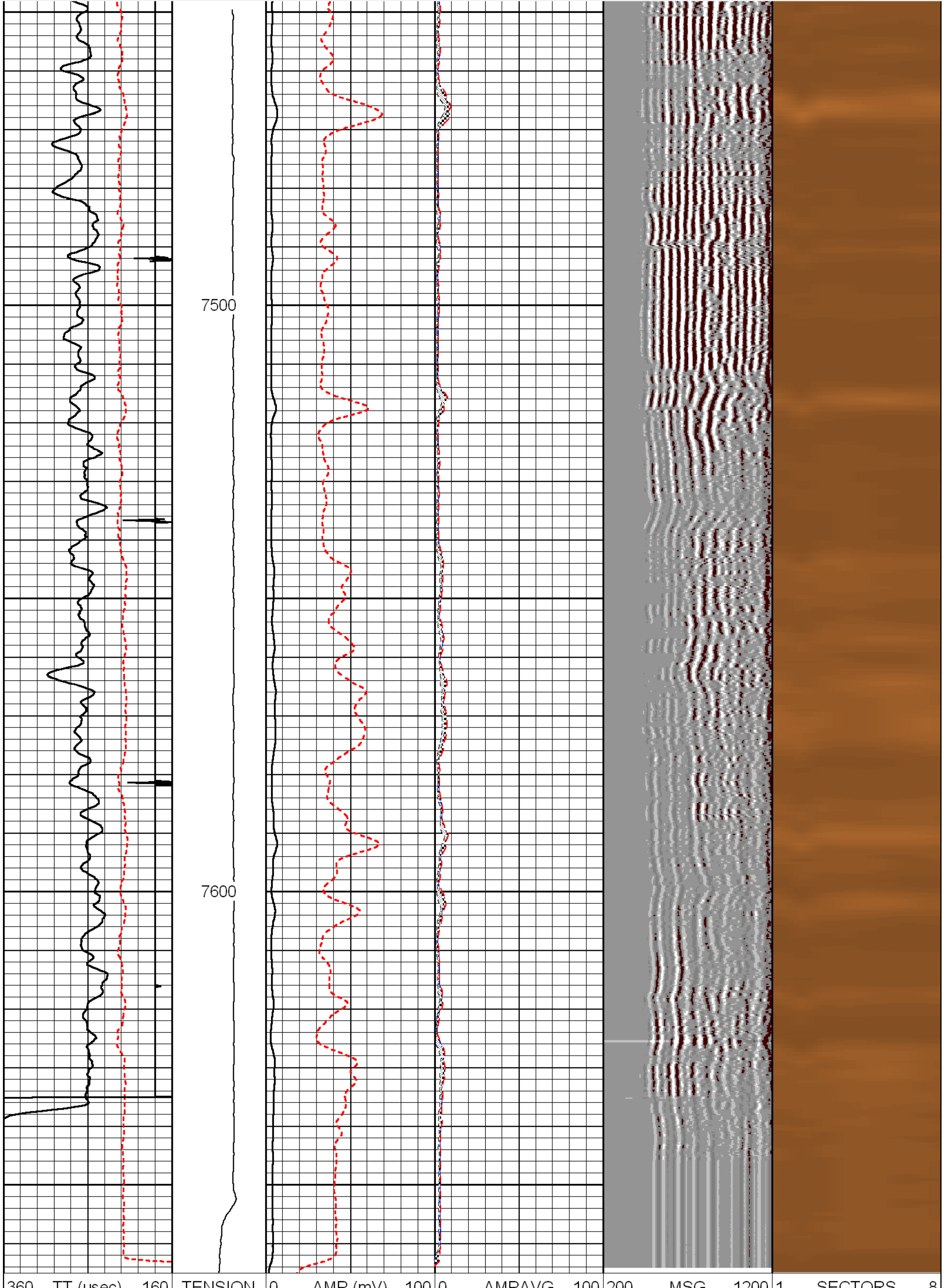
REPEAT LOG SECTION

5"=100'

Database File: c:\warrior\data\bill_barrett\fed_32b_20_691\fed_32b_20_691_rbt_rmt.db
Dataset Pathname: GG/F_32B2069/run1/REPEAT_2
Presentation Format: radial
Dataset Creation: Sun Sep 04 06:12:17 2011 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

360 TT (usec) 160	TENSION	0 AMP (mV) 100	0 AMPAVG 100	200 MSG 1200	1 SECTORS 8
-5400 CCL 600	0 (lb) 2500	0 AMPx5 (mV) 10	0 AMPMAX 100		1 100
0 GR (GAPI) 150			0 AMPMIN 100		



360 TT (usec) 160	TENSION	0 AMP (mV) 100	0 AMPAVG 100	200 MSG 1200	1 SECTORS 8
-5400 CCL 600	0 (lb) 2500	0 AMPx5 (mV) 10	0 AMPMAX 100		1 100
0 GR (GAPI) 150			0 AMPMIN 100		

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REPEAT LOG SECTION

5"=100'

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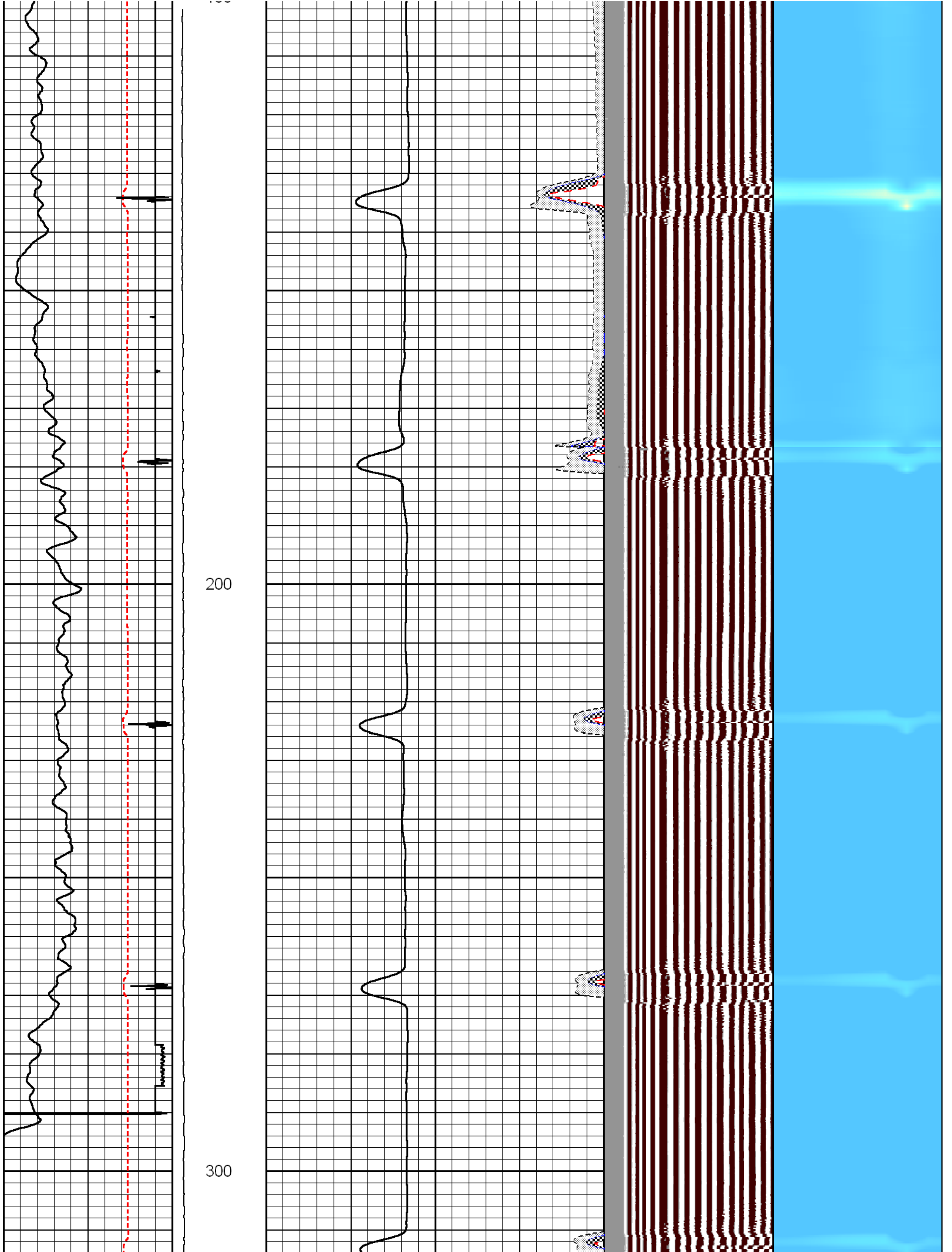
FREE PIPE LOG SECTION

5"=100'

Database File: c:\warrior\data\bill_barrett\fed_32b_20_691\fed_32b_20_691_rbt_rmt.db
Dataset Pathname: GG/F_32B2069/run1/F_PIPE1
Presentation Format: radial
Dataset Creation: Sun Sep 04 05:01:25 2011 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

360 TT (usec) 160	TENSION	0 AMP (mV) 100	0 AMPAVG 100	200 MSG 1200	1 SECTORS 8
-5400 CCL 600	0 (lb) 2500	0 AMPx5 (mV) 10	0 AMPMAX 100		1 100
0 GR (GAPI) 150			0 AMPMIN 100		



360 TT (usec) 160	TENSION	0 AMP (mV) 100	0 AMPAVG 100	200 MSG 1200	1 SECTORS 8
-5400 CCL 600	0 (lb) 2500	0 AMPx5 (mV) 10	0 AMPMAX 100		1 100
0 GR (GAPI) 150			0 AMPMIN 100		

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FREE PIPE LOG SECTION

5"=100'

Calibration Report

Database File: C:\Warrior\Data\BILL_BARRETT\FED_32B_20_691\fed_32b_20_691_rbt_rmt.db
Dataset Pathname: GG/F_32B2069/run1/MAIN_1
Dataset Creation: Sun Sep 04 06:26:24 2011 by Log Halliburton Casedho

Segmented Cement Bond Log Calibration Report

Serial Number: 2211
Tool Model: 004

Calibration Casing Diameter: 4.500 in
Calibration Depth: 100.362 ft

Master Calibration, performed Sun Sep 04 04:57:36 2011:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.001	0.715	2.000	81.196	110.955	1.837
5FT	0.003	0.825	2.000	81.196	96.253	1.747
S1	0.004	0.933	0.000	100.000	107.672	-0.473
S2	0.004	0.927	0.000	100.000	108.435	-0.466
S3	0.004	0.822	0.000	100.000	122.225	-0.452
S4	0.004	0.785	0.000	100.000	128.179	-0.562
S5	0.004	0.775	0.000	100.000	129.688	-0.562
S6	0.004	0.798	0.000	100.000	125.952	-0.558
S7	0.003	0.841	0.000	100.000	119.283	-0.373
S8	0.003	0.894	0.000	100.000	112.270	-0.356

Calibration Report

Serial Number: 2211
Tool Model: 004
Performed:

	Reference (degF)	Reading ()
Low:	0.000	0.000
High:	1.000	1.000
	Gain = 1.000	Offset = 0.000

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11680606-A

Shop Calibration Performed: Thu Aug 25 15:24:40 2011

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
ITCR2	3148	3250	-102	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60.13	60.00	0.0257	5.50	<6.00
Fe	206.55	206.00	0.0929	-----	-----
NGAIN = 0.997	NZOFF = 0.0				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60.15	60.00	0.0369	5.55	<6.50
Fe	208.89	208.00	0.0909	-----	-----
FGAIN = 0.995	FZOFF = 0.2				

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.44	0.01	+/-0.03	
LIRI2	1.64	1.64	0.00	+/-0.20	
TCCR2	4952	4700	252	+/-1000	cps
ITCR2	3144	3250	-106	+/-250	cps

Capture Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	81.00	80.00	1.00	+/-15.00	V
FCAP	10197	10000	197	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.93	0.95	-0.02	+/-0.10	
N/F Inel Norm	0.60	0.61	-0.01	+/-0.06	
RNF	1.08	1.05	0.03	+/-0.10	
RINCF					
SGFN	24.07	24.00	0.07	+/-1.00	cu
SGFF	22.93	22.85	0.08	+/-0.50	cu
FSIN	24811	24000	811	+/-2000	
FCAP	10475	10000	475	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.89			<5.00	
NBKG	151			<500	cps
FBKG	111			<500	cps
RTN	0.42	0.40	0.02	+/-0.25	usec
RTF	0.45	0.40	0.05	+/-0.25	usec

Calibration Software Modules

HRMTI Module 2011.3.25.0
RMTI Module 2011.3.25.1

Log Data Acquisition Software Modules

HRMTI Module 2011.3.25.0
RMTI Module 2011.3.25.1

Gamma Ray Calibration Report

Type / Serial: 001 / 10002718

SHOP CALIBRATION Sat Sep 03 12:32:28 2011

	Counts/Sec.	Gain	Offset	Jig	Units
Background	39.6				cps
Calibrator	330.3				cps
		1.4035			GAPI/cps

PRIMARY VERIFICATION Sat Sep 03 12:36:18 2011

Background	56.3		cps
Calibrator	466.4		cps
Difference		410.1	GAPI

BEFORE SURVEY VERIFICATION

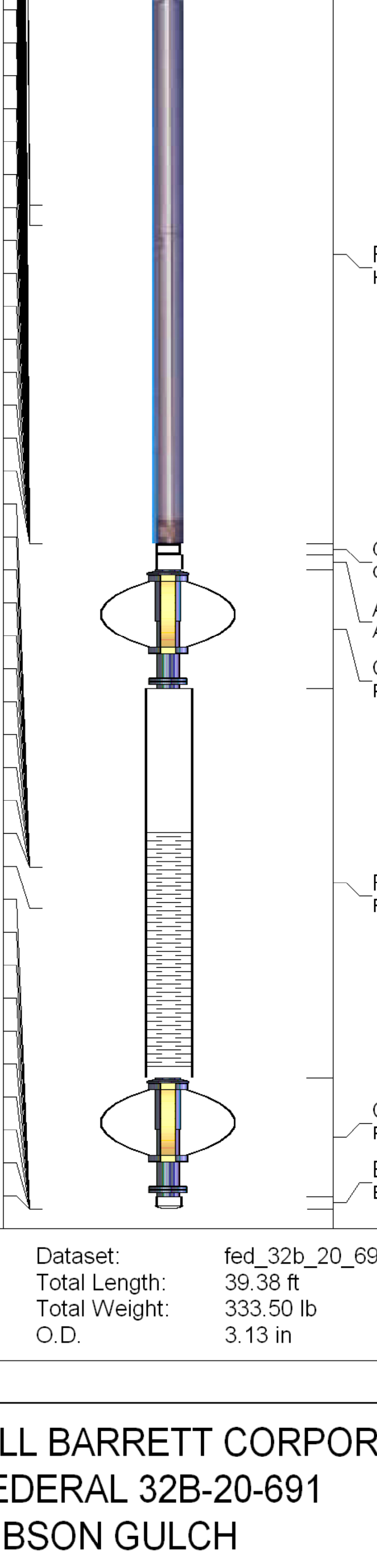
Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Sensor	Offset (ft)
RmtGenRepPv	16.19
RmtGenIspCmc	16.19
RmtGenIspPv	16.19
RmtGenIspl	16.19
RmtGenCmd	16.19
RmtGenPv	16.19
RmtGenI	16.19
RmtGenP5VI	16.19
RmtGenTemp	16.19
RmtGenP15VI	16.19
RmtGen200V	16.19
RmtGenP33V	16.19
RmtGenP5V	16.19
RmtGenClampV	16.19
RmtGenSyncV	16.19
RmtGenLvdsV	16.19
RmtGen15BusV	16.19
RmtGenIonI	16.19
RmtNDetStat	16.19
RmtNPrgSt1	16.19
RmtNPMI	16.19
RmtNPMHV	16.19
RmtNTemp	16.19
RmtFDetStat	16.19
RmtFPrgSt1	16.19
RmtFPMI	16.19
RmtFPMHV	16.19
RmtFTemp	16.19
WVF3FT	8.32
WVFS1	8.32
WVFS2	8.32
WVFS3	8.32
WVFS4	8.32
WVFS5	8.32
WVFS6	8.32
WVFS7	8.32
WVFS8	8.32
CBLTEMP	8.32
CBLROT	8.32
WVF5FT	7.32
LLMTEN	0.00
XHUERR1	0.00
XHUERR2	0.00
XHUTEMP	0.00
XHUCURR	0.00
XHUVOLT	0.00
XHUSTAT	0.00
TSTAMP	0.00
ITEMPX	0.00
HVOLTX	0.00

Schematic



Description	Len (ft)	OD (in)	Wt (lb)
STND_CH 1.4375 IN CABLE HEAD	1.00	1.44	1.00
TTTCU-001 (10002718) Through Tubing Telemetry Cartridge - Ultrawire	6.55	1.69	33.00
XHU-003 (11721046) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RMTI-A (11680606) Halliburton RMTI Tool	14.06	2.13	77.00
GoxSondex Go Box x Sondex Pin CrossOver	0.27	1.69	1.00
AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
CENT-Probe (PTS_MONO) Probe 2 3/4 Centralizer	2.88	2.75	35.00
RBT-004 (2211) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
CENT-Probe (PT_MONO2) Probe 2 3/4 Centralizer	2.88	2.75	35.00
BUL-001 (000001) Bullnose	0.30	1.69	1.50

Dataset: fed_32b_20_691_rbt_rmt.db: GG/F_32B2069/run1/MAIN_1
Total Length: 39.38 ft
Total Weight: 333.50 lb
O.D. 3.13 in

Company	BILL BARRETT CORPORATION
Well	FEDERAL 32B-20-691
Field	GIBSON GULCH
County	GARFIELD
State	CO

HALLIBURTON

RADIO CEMENT
BOND LOG