HALLIBURTON

RADIAL CEMENT BOND LOG

Company MINERAL RESOURCES
Well ISLAND GROVE 2-32
Field GREELEY
County WELD State CO

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API No.: 05-123-35463 Serv #: 9885708
Location: SHL: 1627 FSL, 272' FWL
BHL: 461' FNL, 1325' FWL
LAT/LON: 40.44167/-104.69566

Sec: 32 Twp: 6N Rge: 65W

Other Services

Permanent Datum G.L. Elevation 4647
Log Measured From K.B. 15 Ft. above perm. datum
Drilling Measured From K.B.

Elevation
K.B. 4662
D.F. 4662
G.L. 4647

Date @ Time Logged	10/12/2012@1628		Type Fluid in Hole	FRESH WATER
Run No.	ONE		Density of Fluid	8.33
Depth - Driller	11531		Fluid Level	SURFACE
Depth - Logger	6800		Cement Top Est. Logged	2750
Bottom - Logged Interval	6750		Equipment / Location	11875120 / GJ
Top - Log Interval	2350		Recorded by	NATHANIEL MILES
Max. Recorded Temp.	218		Witnessed by	RICK OHLEMEIER

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented				
Primary / Squeeze	PRIMARY	PRIMARY		
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume	650 SACKS	455 SACKS		
Cement Type / Weight	/	/	/	/
Formulation				
Mud Type / Mud Wgt.	/	/	/	/

	Borehole Record			Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
SURFACE	12.25	0	1603	9.625	36	0	1603
PROTECTION	8.75	1603	7501	7	26	0	7501
PRODUCTION	6.125	7501	11531	4.5	11.6	7501	11520

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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

THORIUM BLANKET: 230 GAPI
ESTIMATED TOC: 2750'

THANK YOU FOR USING HALLIBURTON ENERGY SERVICES
YOUR CREW TODAY: NATHANIEL MILES, RICHARD MACKIE, ZACH MACINTOSH, KEITH BIRLSON, AND JOSEPH FORSTER

Service Ticket No.	9885708	API No.	05-123-35463	PGM Ver	WARRIOR 7.0

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

EQUIPMENT DATA

TTTCU		RBT					
Run No.	ALL	Run No.	ALL	Run No.		Run No.	
Serial No.	214878	Serial No.	11002211	Serial No.		Serial No.	
Model No.	001	Model No.	011	Model No.		Model No.	
Diameter	1.69	Diameter	3.125	Diameter		Diameter	

LOGGING DATA

General Data

Pass No.	Depths From	Depths To	Well Head Pressure	Speed Ft/Min	Logging Run Comments
MAIN1			NONE	65	

	GR		AMPLITUDE		TRAVEL TIME			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ALL	0	200	0	100	650	150		

DIRECTIONAL INFORMATION

Maximum Deviation		deg. @		KOP		

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MAIN LOG SECTION

SCALE 1:240

Database File: island grove.db
Dataset Pathname: 2-32/10-12-RBT/MAIN1.1
Presentation Format: rbt
Dataset Creation: Fri Oct 12 20:03:46 2012 by Calc Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

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MAIN LOG SECTION

SCALE 1:240

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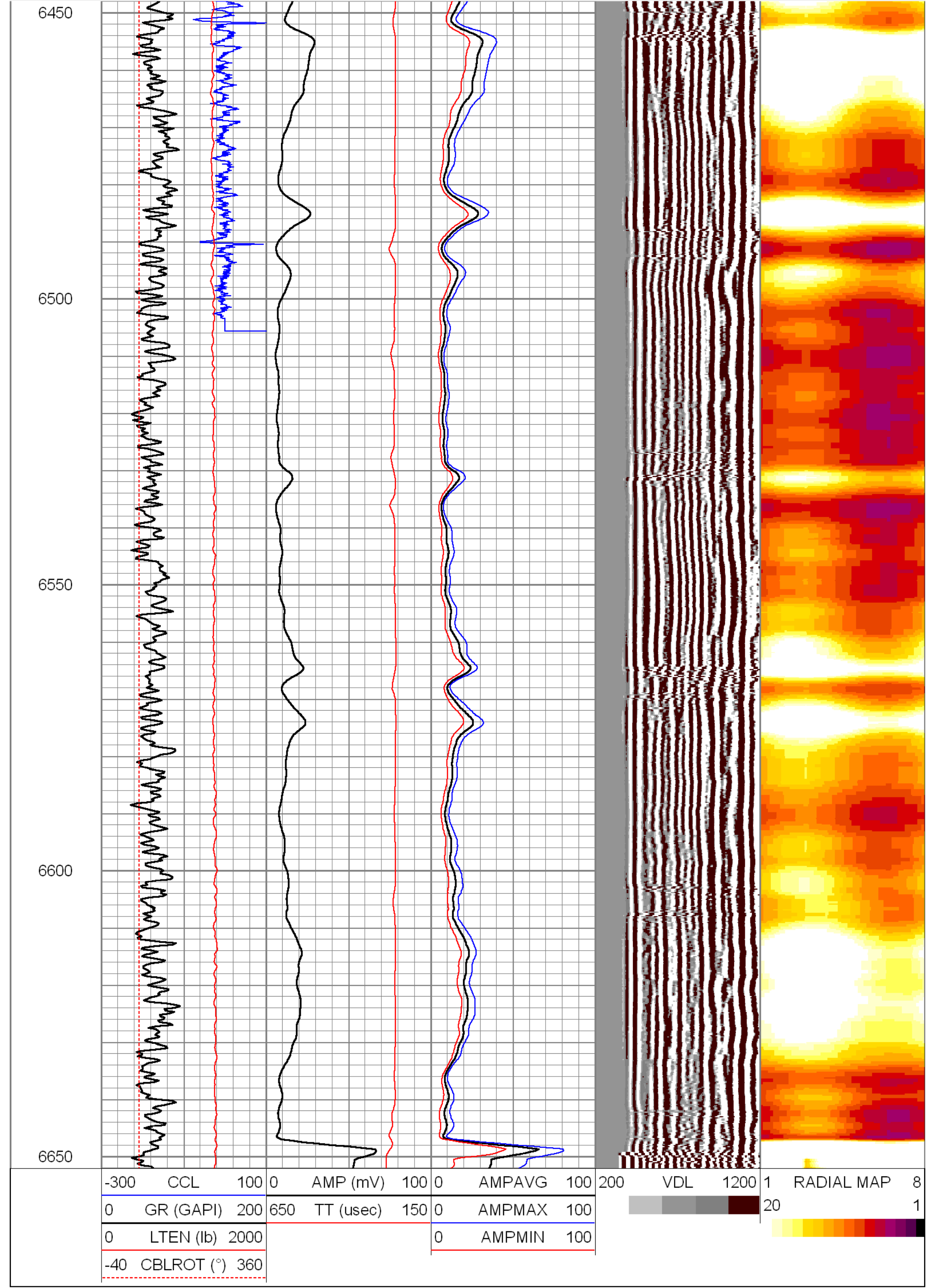
REPEAT LOG SECTION

SCALE 1:240

Database File:	island grove.db
Dataset Pathname:	2-32/10-12-RBT/REPEAT1
Presentation Format:	rbt
Dataset Creation:	Fri Oct 12 16:07:22 2012 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240



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REPEAT LOG SECTION

SCALE 1:240

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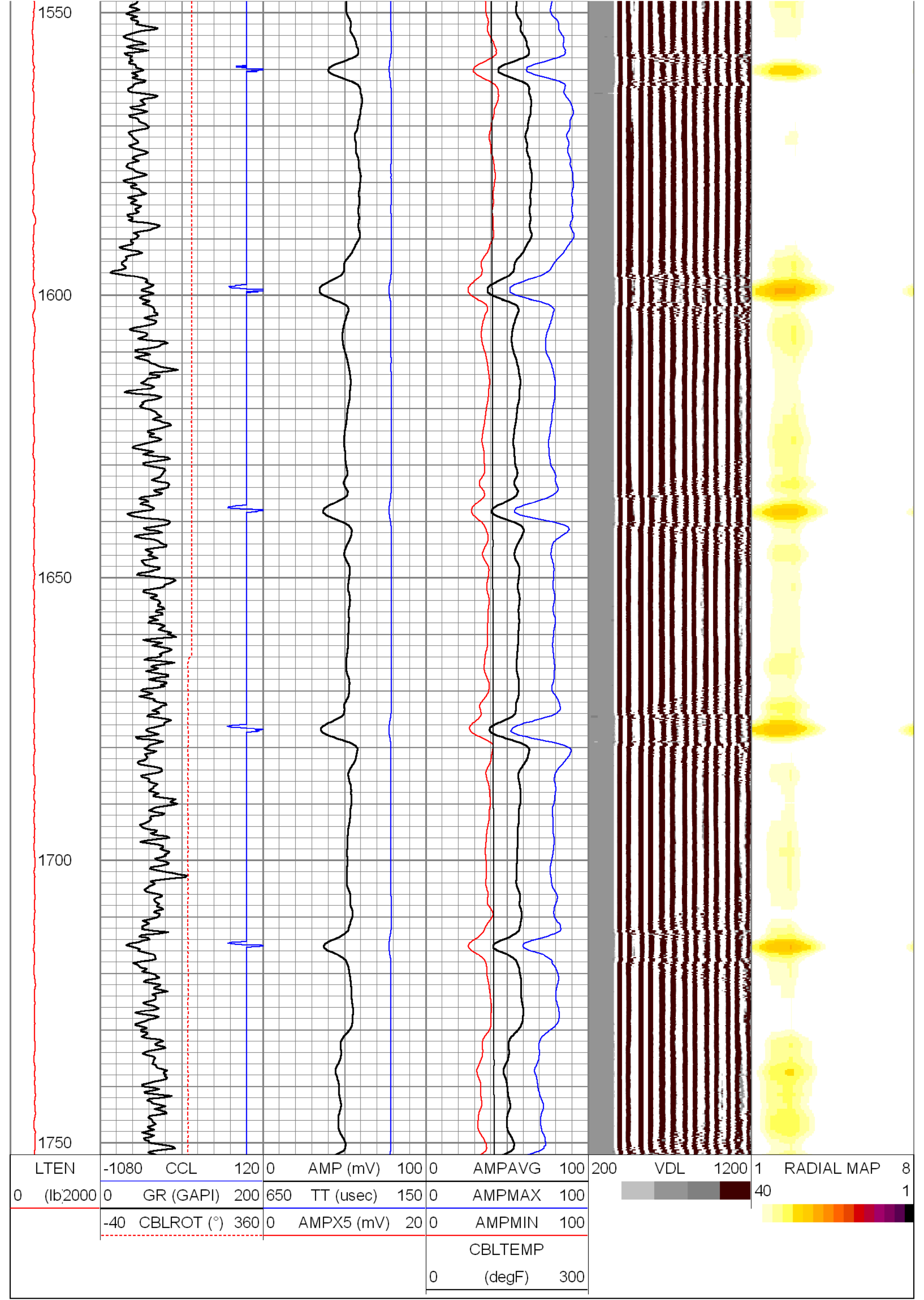
FREE PIPE LOG SECTION

SCALE 1:240

Database File:	island grove.db
Dataset Pathname:	2-32/10-12-RBT/MAIN1
Presentation Format:	rbt
Dataset Creation:	Fri Oct 12 16:28:42 2012 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240



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FREE PIPE LOG SECTION

SCALE 1:240

Log Variables

Database:C:\Warrior\Data\island grove.db
Dataset: field/2-32/10-12-RBT/MAIN1.1

Top - Bottom

PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	CASEOD in	PERFS	TDEPTH ft
233	26	62	0	0.8	7	0	0

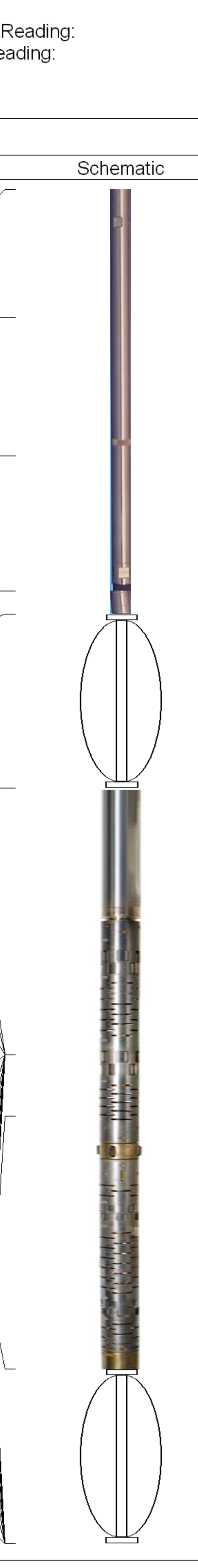
BOTTEMP degF	BITSIZE in
218	9.625

Calibration Report

Database File:	island grove.db
Dataset Pathname:	2-32/10-12-RBT/MAIN1.1
Dataset Creation:	Fri Oct 12 20:03:46 2012 by Calc Halliburton Casedho

Gamma Ray Calibration Report

Serial Number:	000001	
Tool Model:	001	
Performed:	Fri Oct 12 15:07:11 2012	
Calibrator Value:	230.0	GAPI
Background Reading:	48.0	cps
Calibrator Reading:	193.4	cps
Sensitivity:	1.5815	GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
TTTCU	22.08					
CCL	19.99					
			TTTCU-001 (000001) Through Tubing Telemetry Cartridge - Ultrawire	6.55	1.69	33.00
GR	17.73					
AUH	15.53		AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
CENT	15.15					
			CBLINLINE	2.83	3.25	
RBT	12.31					
WVF3FT	7.97					
WVFS1	7.97					
WVFS2	7.97					
WVFS3	7.97					
WVFS4	7.97		RBT-004 (000001) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00
WVFS5	7.97					
WVFS6	7.97					
WVFS7	7.97					
WVFS8	7.97					
CBLTEMP	7.97					
CBLROT	7.97					
WVF5FT	6.97					
CENT	2.83					
LLMTEN	0.00					
XHUTEMP	0.00					
XHUCURR	0.00					
XHUVOLT	0.00					
XHUSTAT	0.00		CBLINLINE	2.83	3.25	
TSTAMP	0.00					
ITEMPX	0.00					
HVOLTX	0.00					

Dataset:	island grove.db: field/2-32/10-12-RBT/MAIN1.1
Total Length:	22.08 ft
Total Weight:	176.00 lb
O.D.:	3.25 in

Company	MINERAL RESOURCES
Well	ISLAND GROVE 2-32
Field	GREELEY
County	WELD
State	CO

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RADIAL
CEMENT BOND LOG