Company KINDER MORGAN
Well CB #1
Field McELMO DOME
County MONTEZUMA State CO

HALLIBURTON

CIRCUMFERENTIAL ACOUSTIC SCANNING TOOL

PIPE INSPECTION MODE

Company	KINDER MORGAN
Well	CB #1
Field	McELMO DOME
County	MONTEZUMA
State	CO

API No.: 05-083-06407-00
Serv #:
Location:
Other Services
NONE

Sec: 14 Twp: 38N Rge: 19W

Permanent Datum	GROUND LEVEL	Elevation 6664		Elevation K.B. 6680 D.F. 6679 G.L. 6664
Log Measured From	KB , 16 Ft. above perm. datum			
Drilling Measured From	KB			
Date @ Time Logged	SEPT 23 2013 @ 0800	Type Fluid in Hole	FRESH WATER	
Run No.	ONE	Density of Fluid	8.33	
Depth - Driller	8583	Fluid Level	SURFACE	
Depth - Logger	8188	Cement Top Est. Logged	NA	
Bottom - Logged Interval	8184	Equipment / Location	11726117 / GJ	
Top - Log Interval	SURFACE	Recorded by	RICHARD MACKIE	
Max. Recorded Temp.	NA	Witnessed by	MARSHALL GALLEGOS	

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented	5/28/1984		6/11/1984	
Primary / Squeeze	PRIMARY		PRIMARY	
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume	1520/300 sx		1500/100 sx	
Cement Type / Weight	Class H /	/	Class H /	/
Formulation	2% CaCl2			
Mud Type / Mud Wgt.	/	/	/	/

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25	SURFACE	2945	9.625	36#	0	2945
TWO	9.875	SURFACE	8330	7.625	26.4#-39#	0	8330

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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

NO LOG TO CORRELATE TO. KB USED AS ONLY REFRENCE

CASING IS MADE UP OF MULTIPLE WEIGHTS. 26.4#, 29.7#,33.7#, 39#, 33#

39# SECTION WHITE TRANSDUCER WAS USED
FOR ALL OTHER SECTIONS BROWN WAS USED

YOUR CREW TODAY: RICHARD MACKIE, ROBERT HOEY, JOSEPH FORSTER

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES!!!

Service Ticket No.	900763023	API No.	05-083-06407	PGM Ver	WARRIOR 12.7.7_

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

EQUIPMENT DATA

TELEMETRY		CROSSOVER		CAST ELECTRONICS		CAST HEAD	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11592690	Serial No.	11866329	Serial No.	12039242	Serial No.	11576422
Model No.	TTTCU-002	Model No.	XHU3	Model No.	CAST-M	Model No.	CAST-M
Diameter	1 11/16	Diameter	1 11/16	Diameter	2 3/4	Diameter	3 1/8

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ALL PASSES	8168	SURFACE	0	20	

	GAMMA RAY		INTERNAL RADIUS		THICKNESS			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ALL PASSES	0	150	2.9	3.9	.3	.55		

DIRECTIONAL INFORMATION

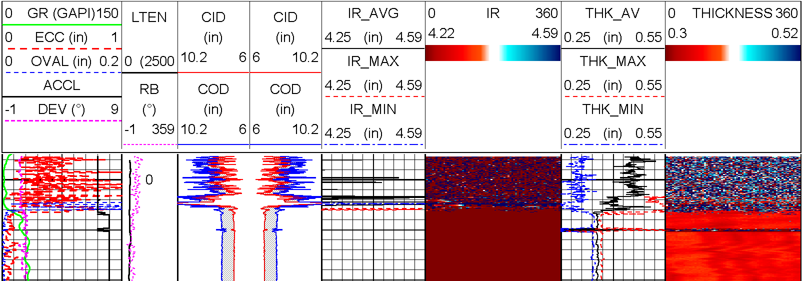
Maximum Deviation		deg. @		KOP		

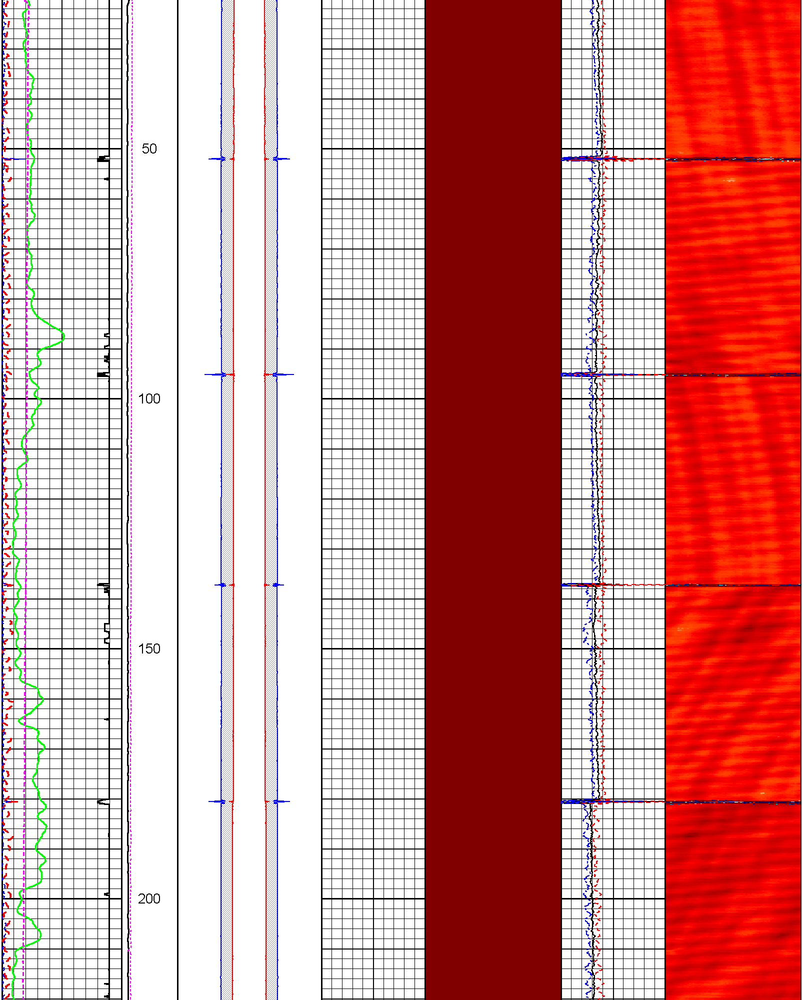
HALLIBURTON

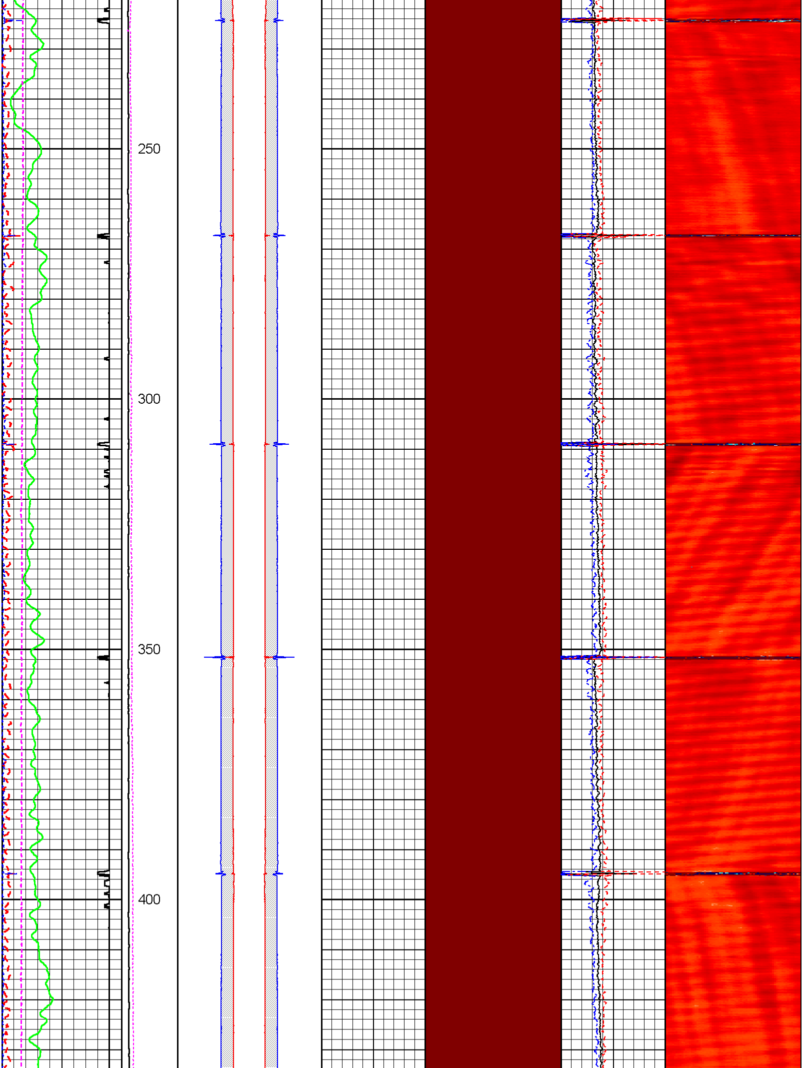
MAIN PASS

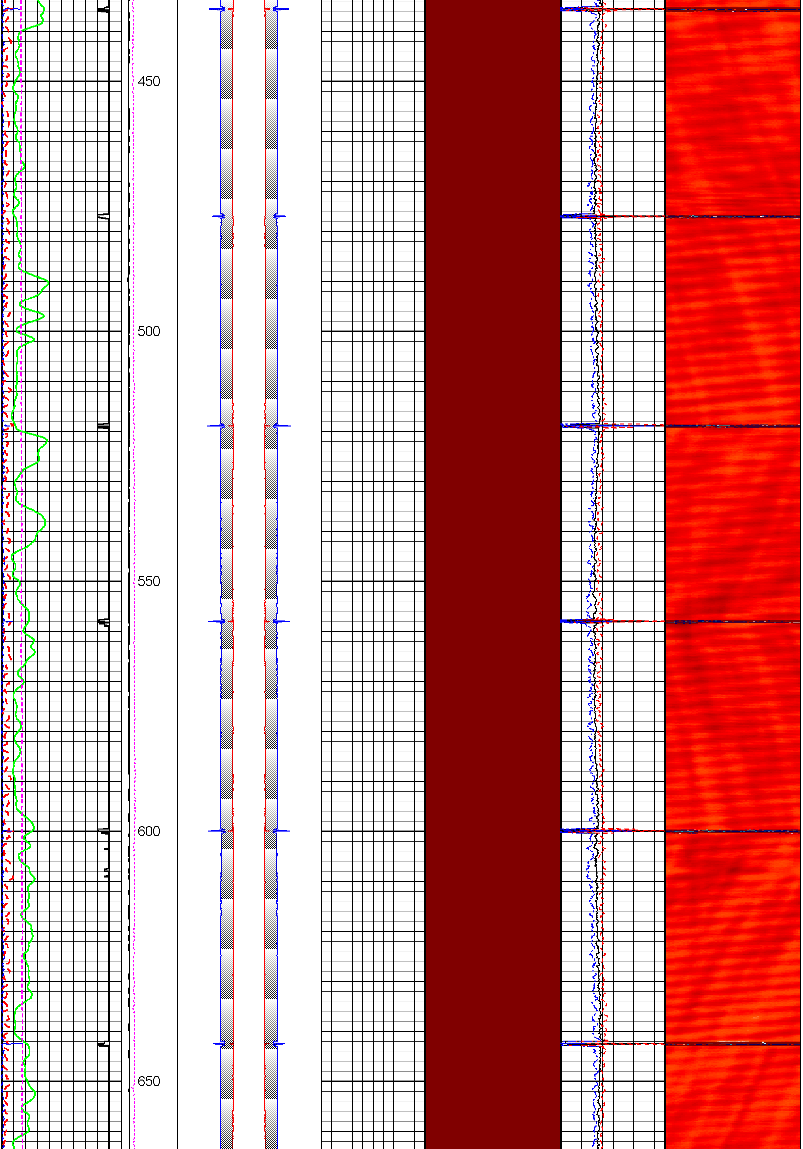
SALE 5" = 100'

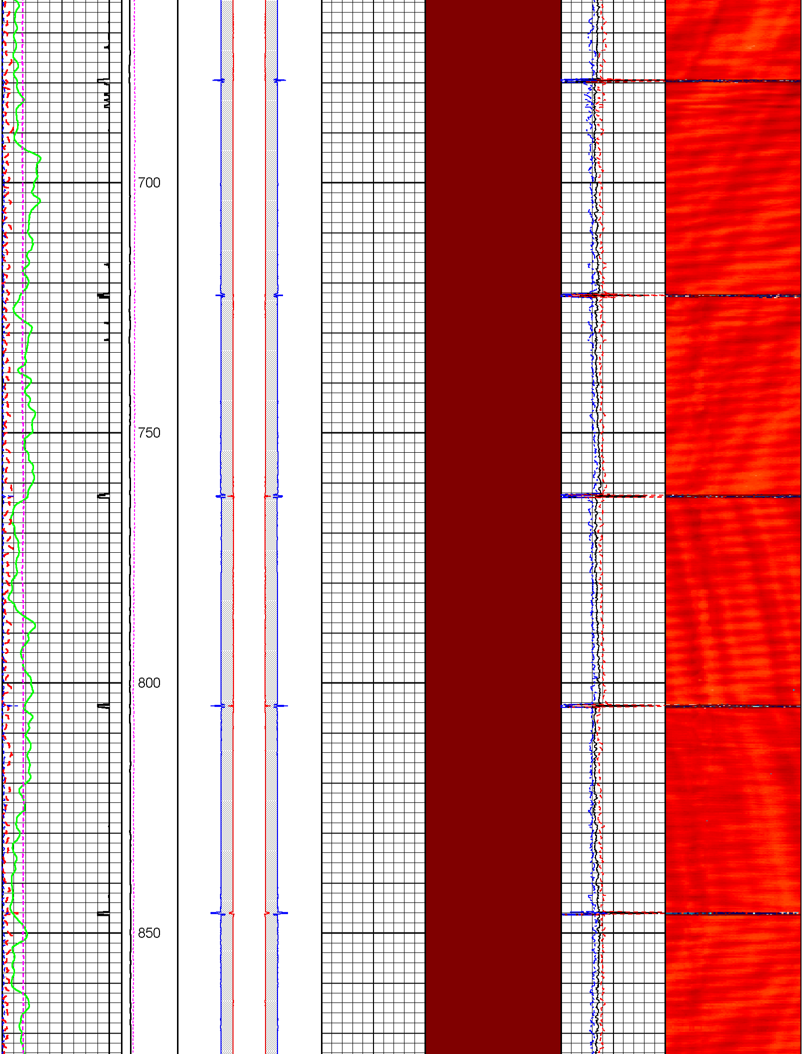
Database File:	c:\documents and settings\h102095\desktop\cb#1\cb1.db
Dataset Pathname:	MAIN
Presentation Format:	hcastpim
Dataset Creation:	Mon Sep 23 09:20:55 2013 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

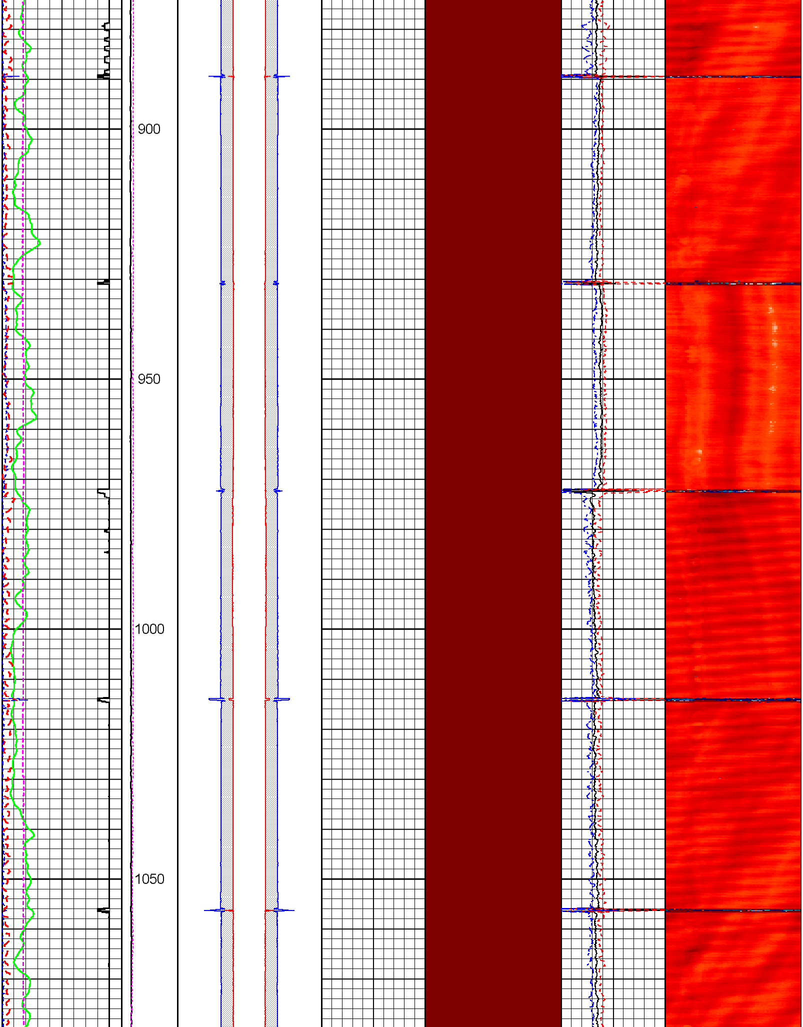


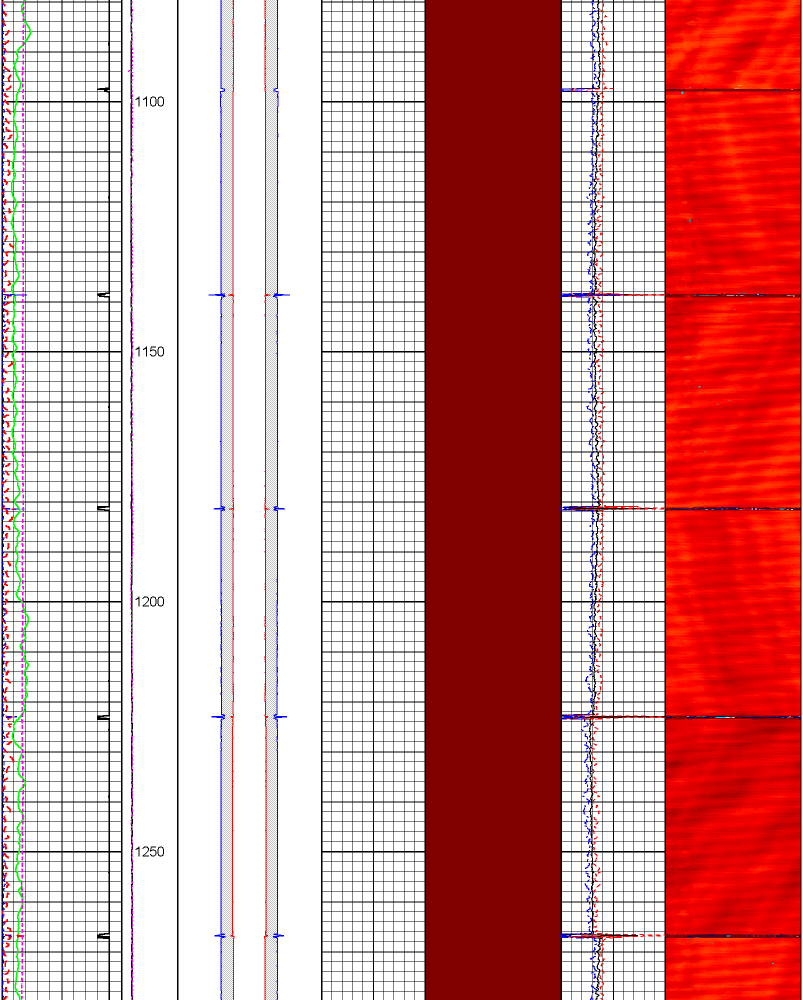


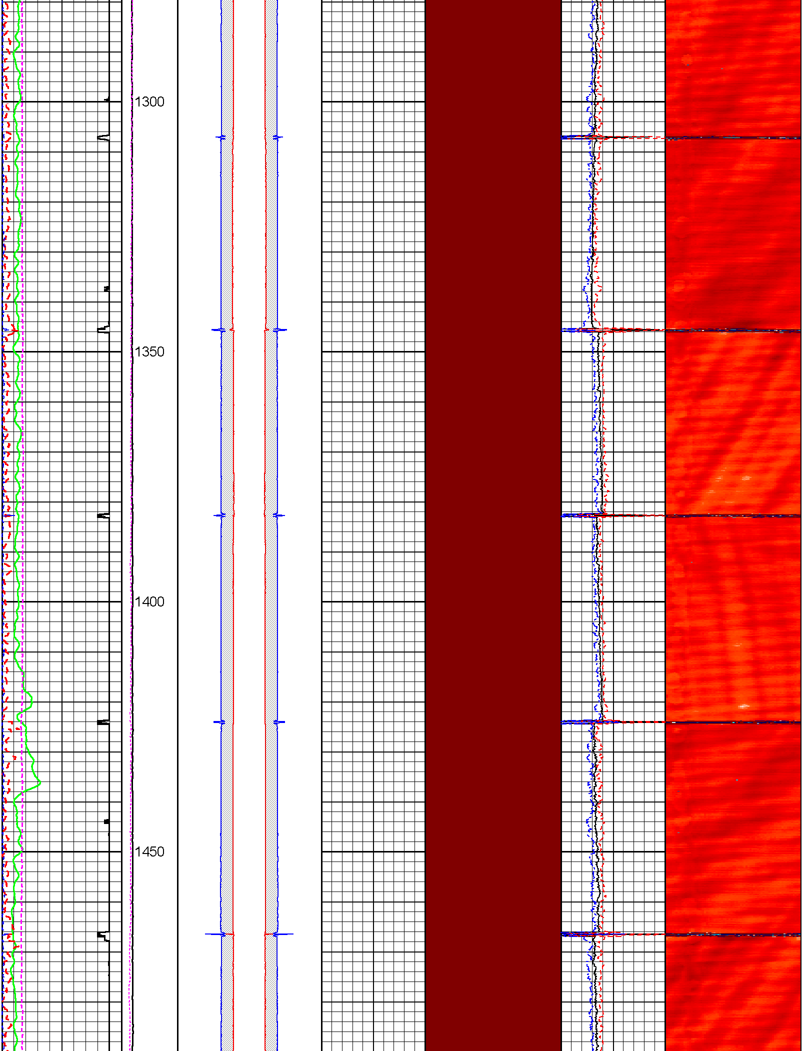


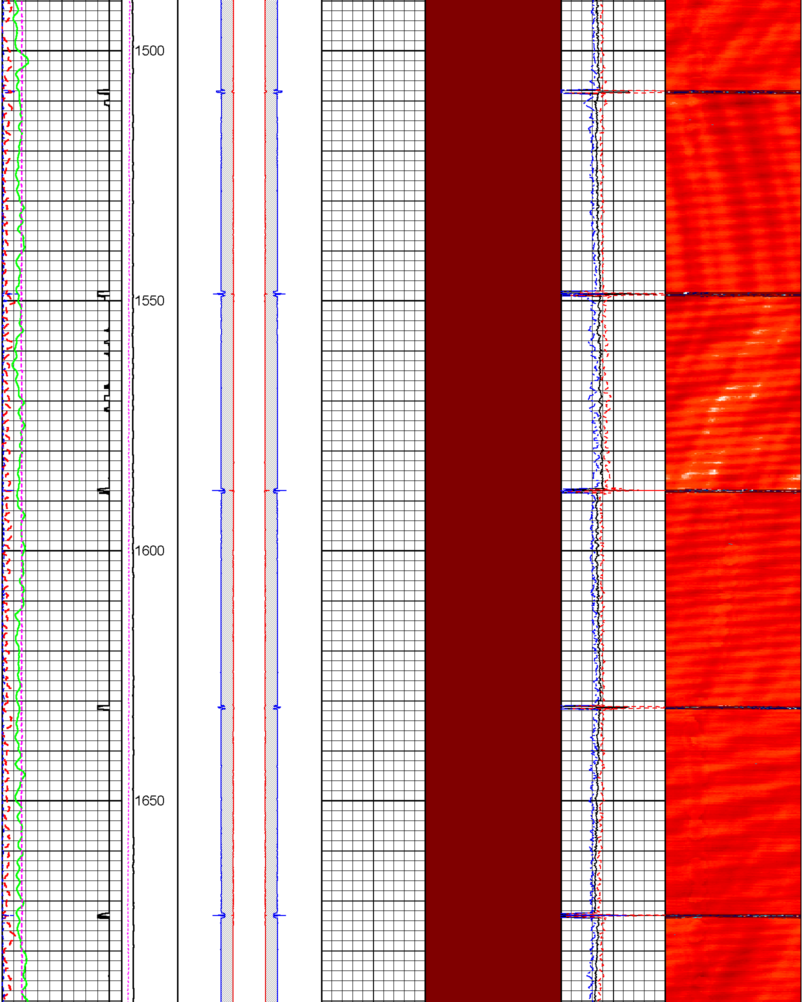


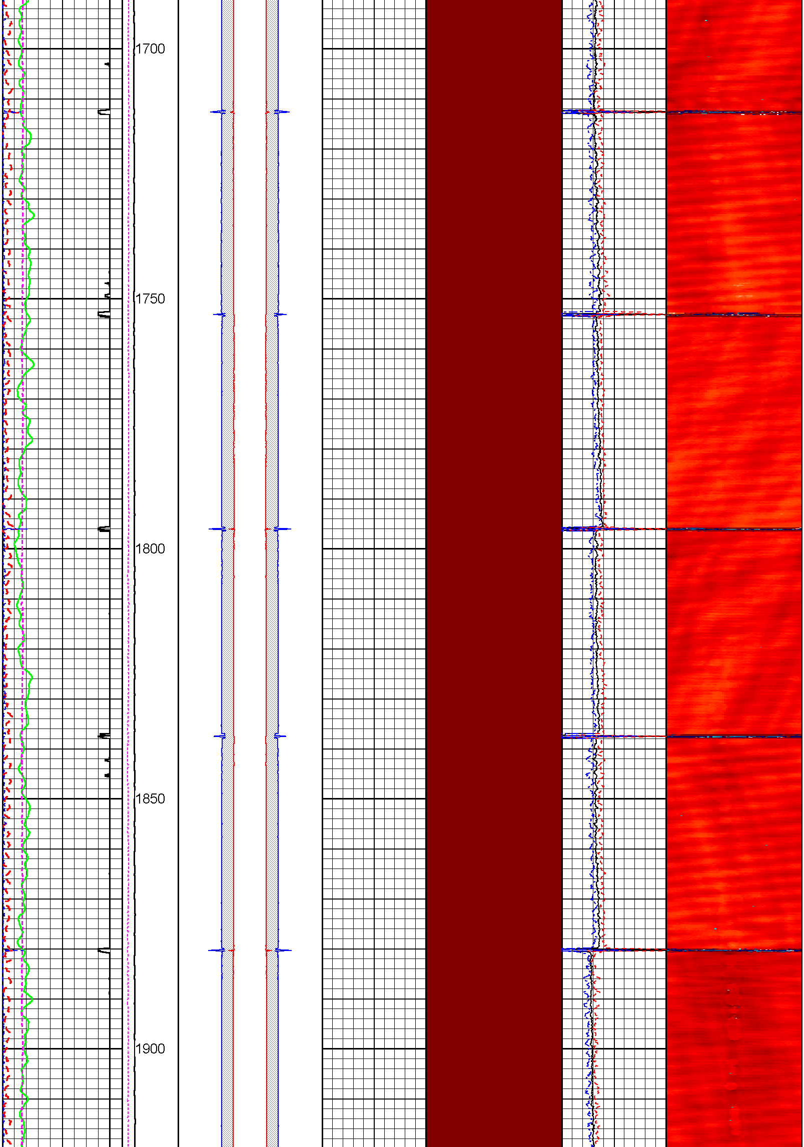


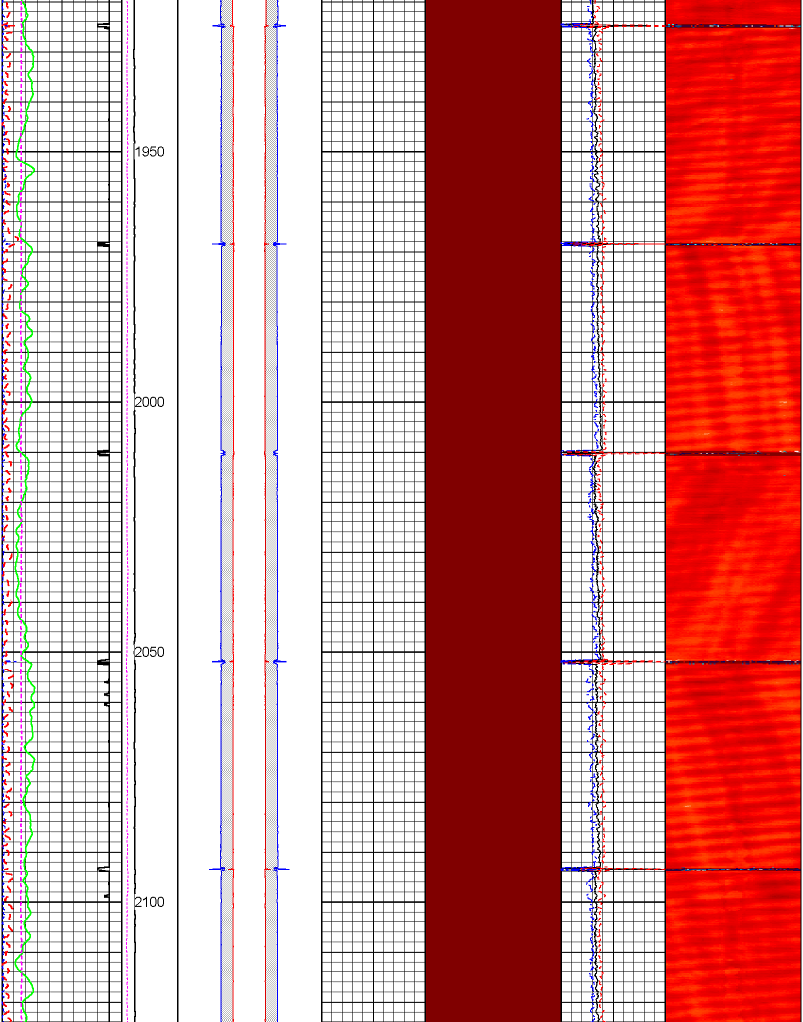


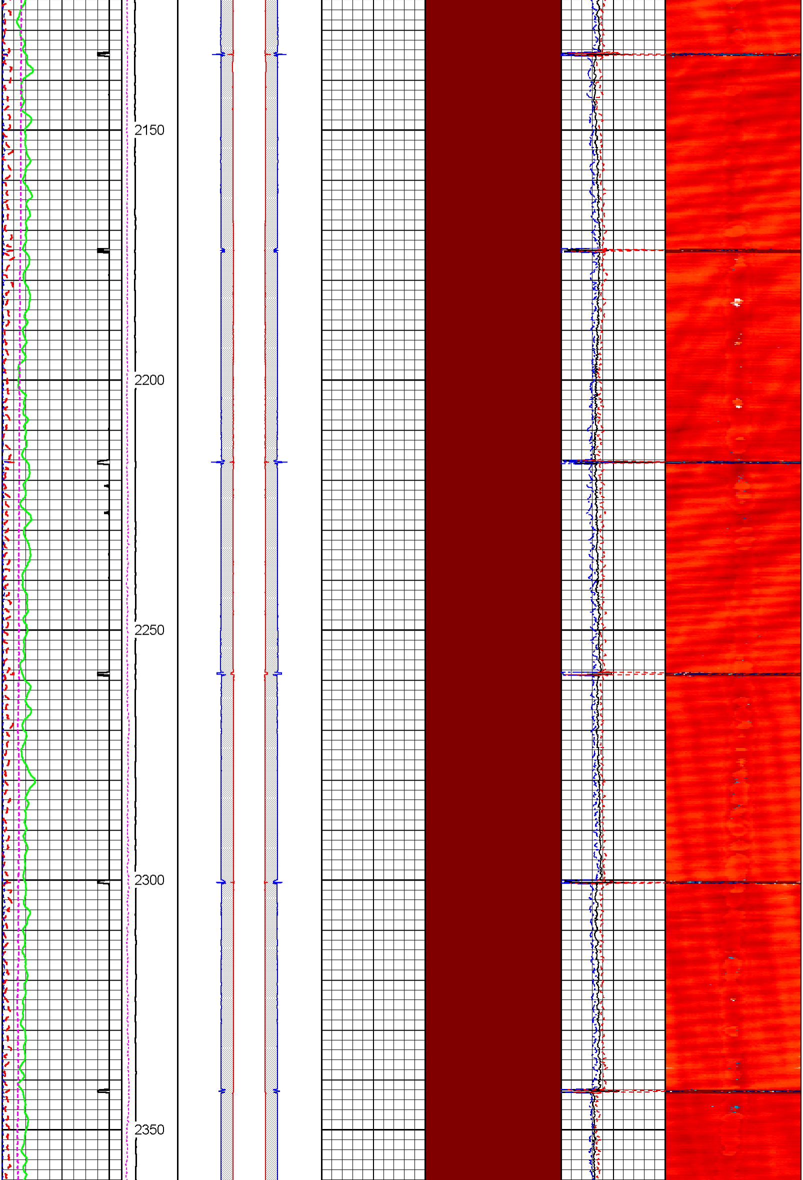


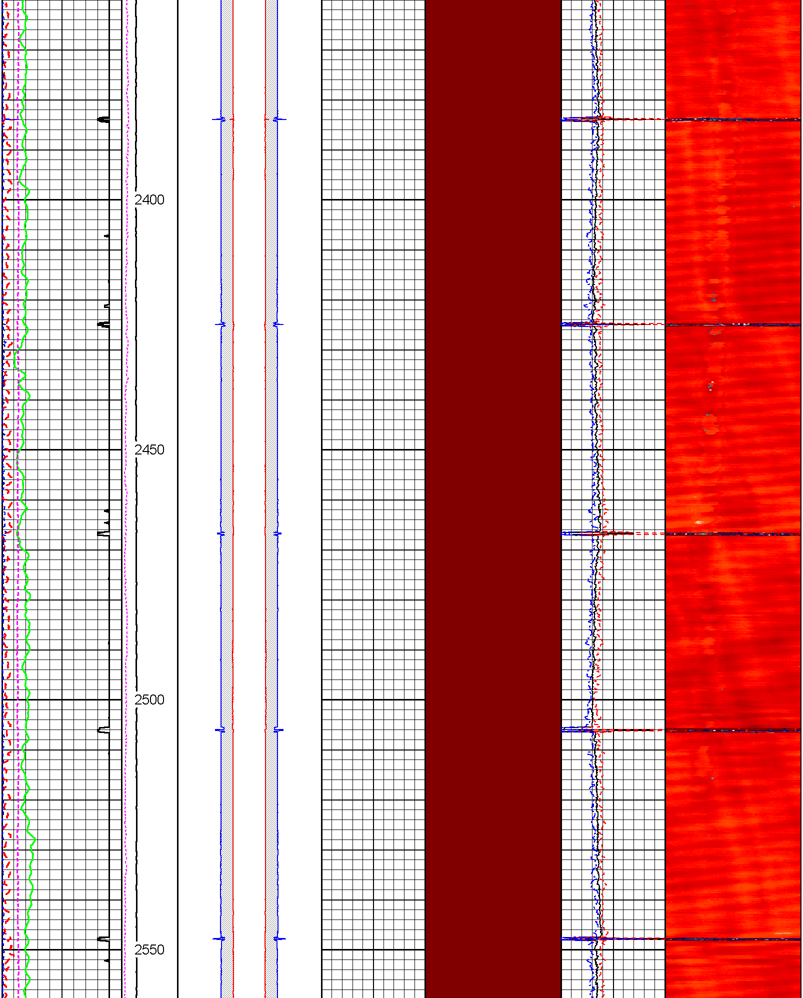


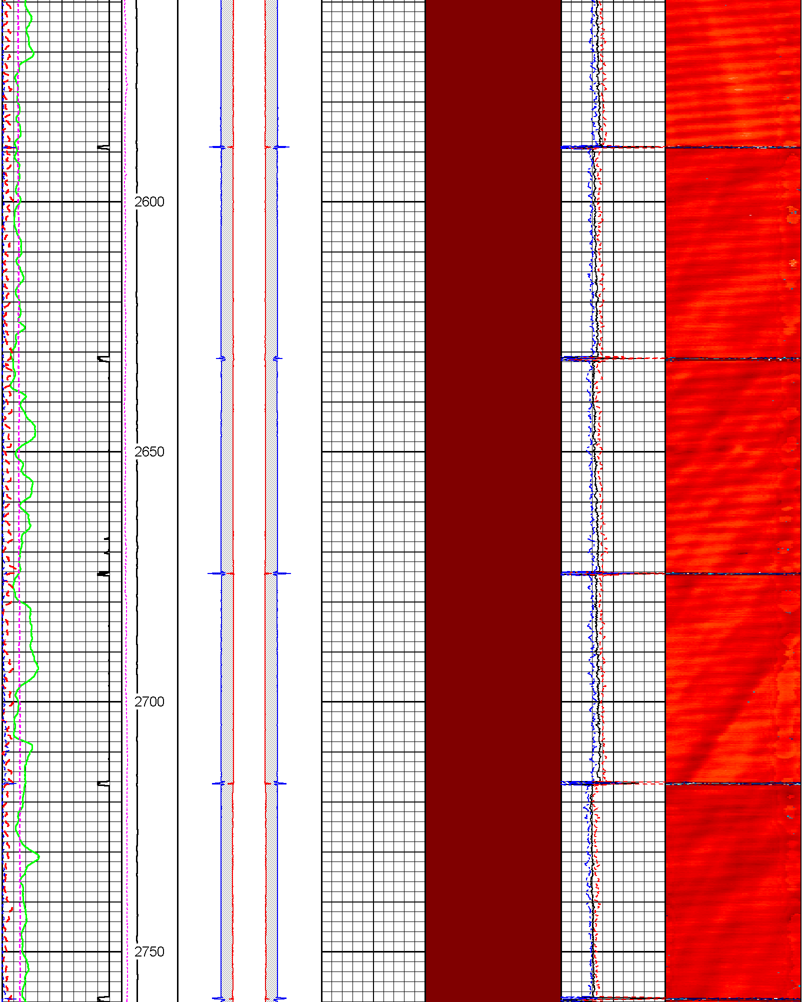


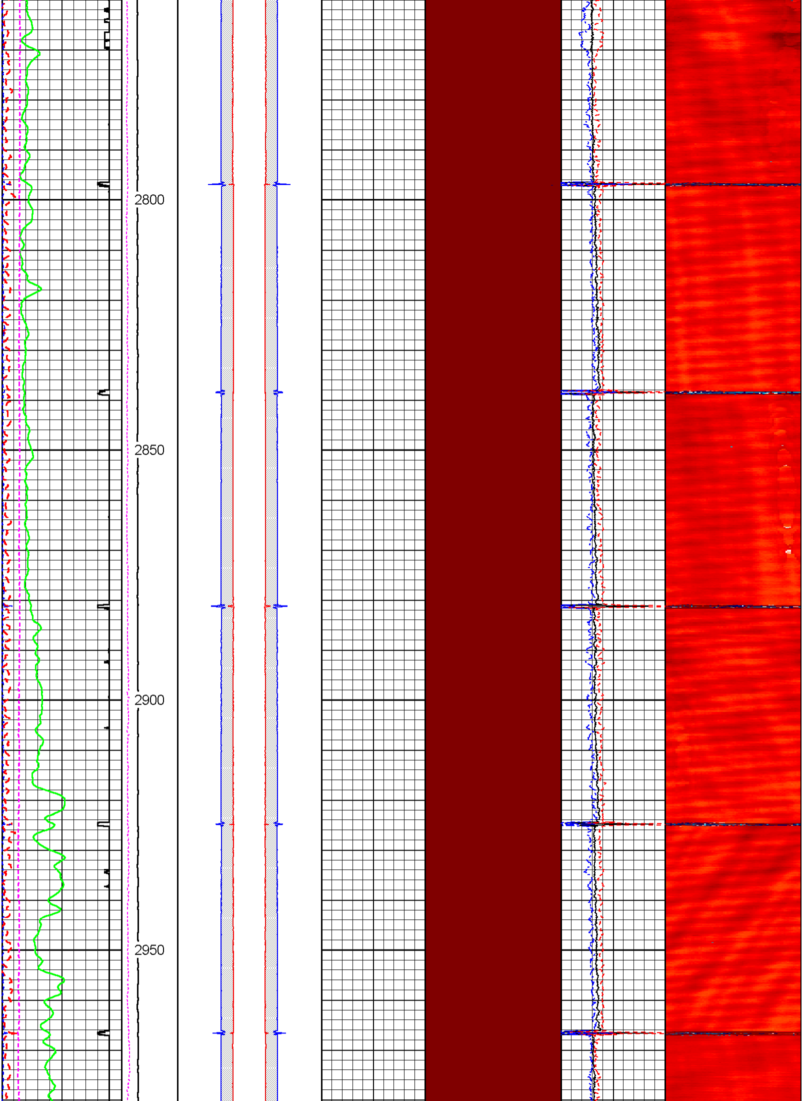


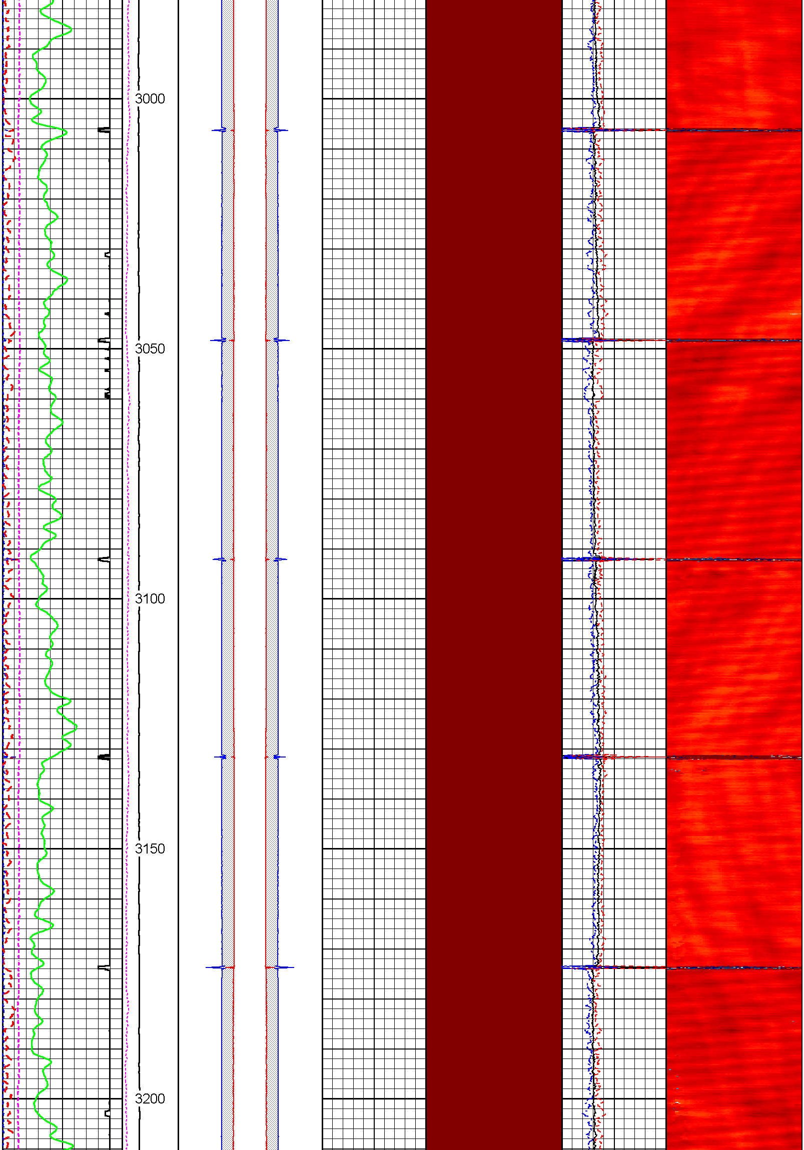


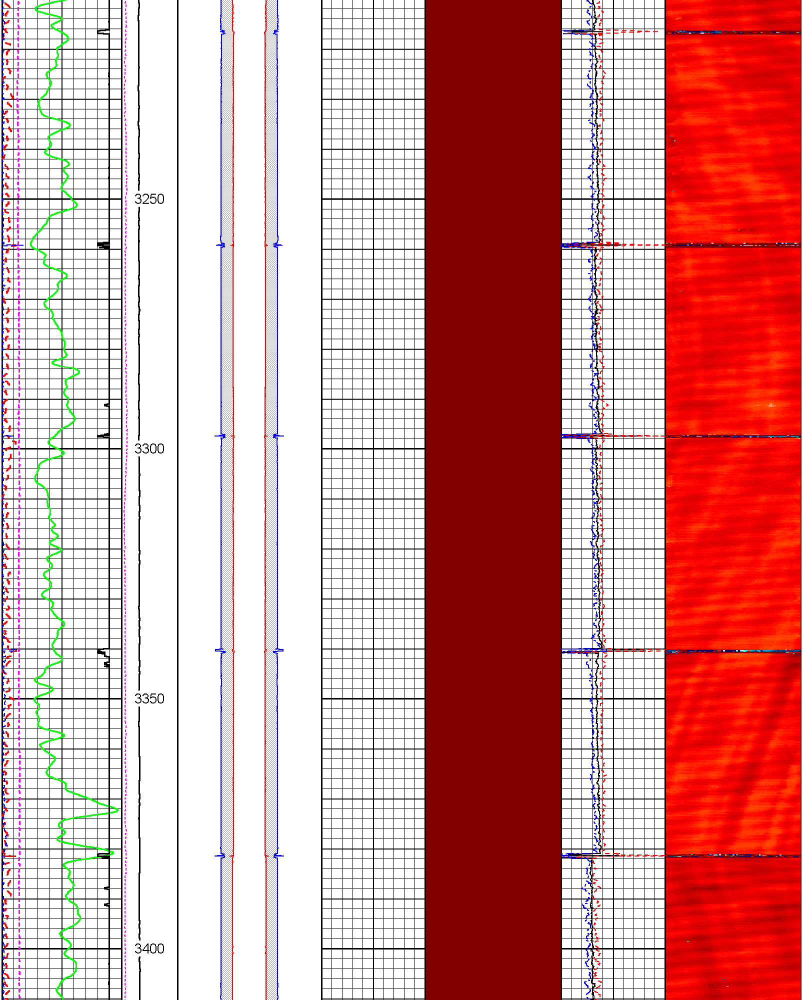


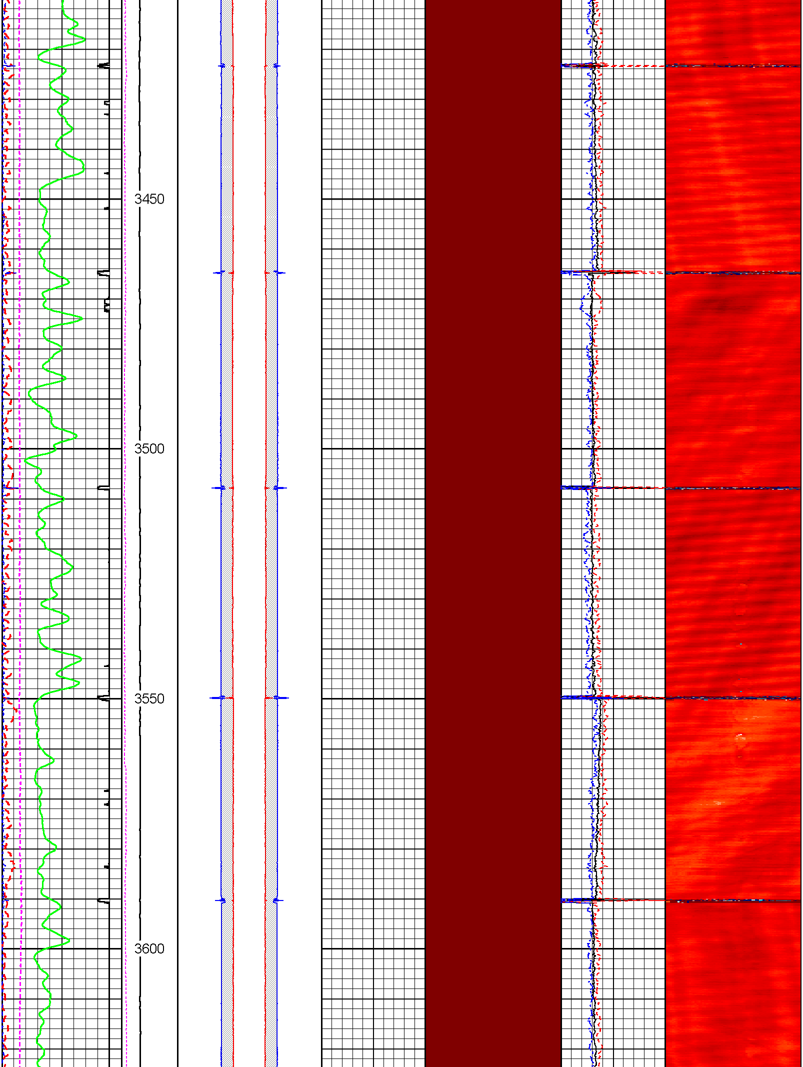


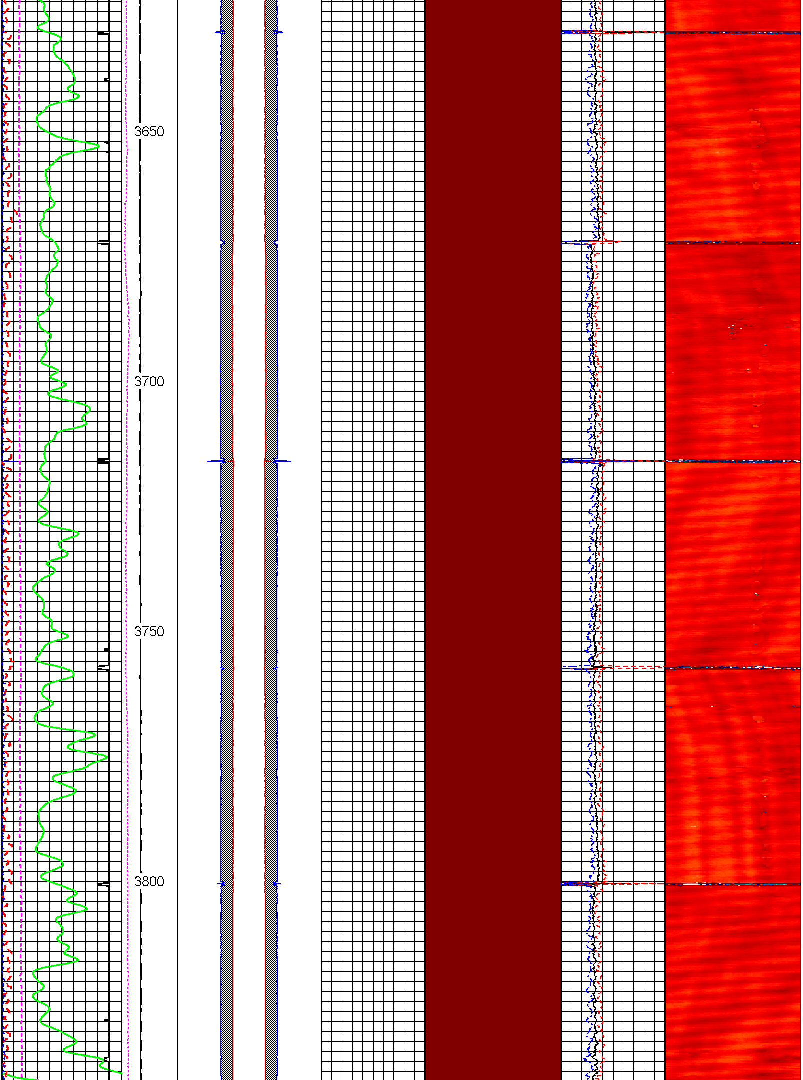








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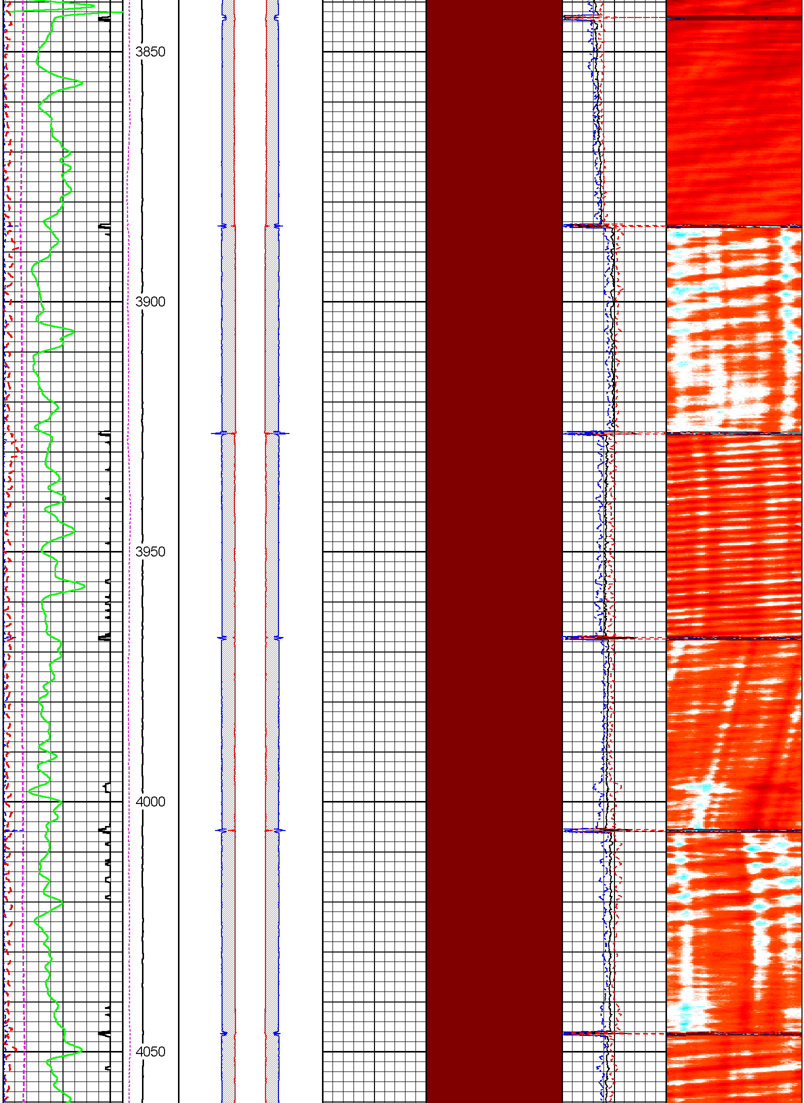
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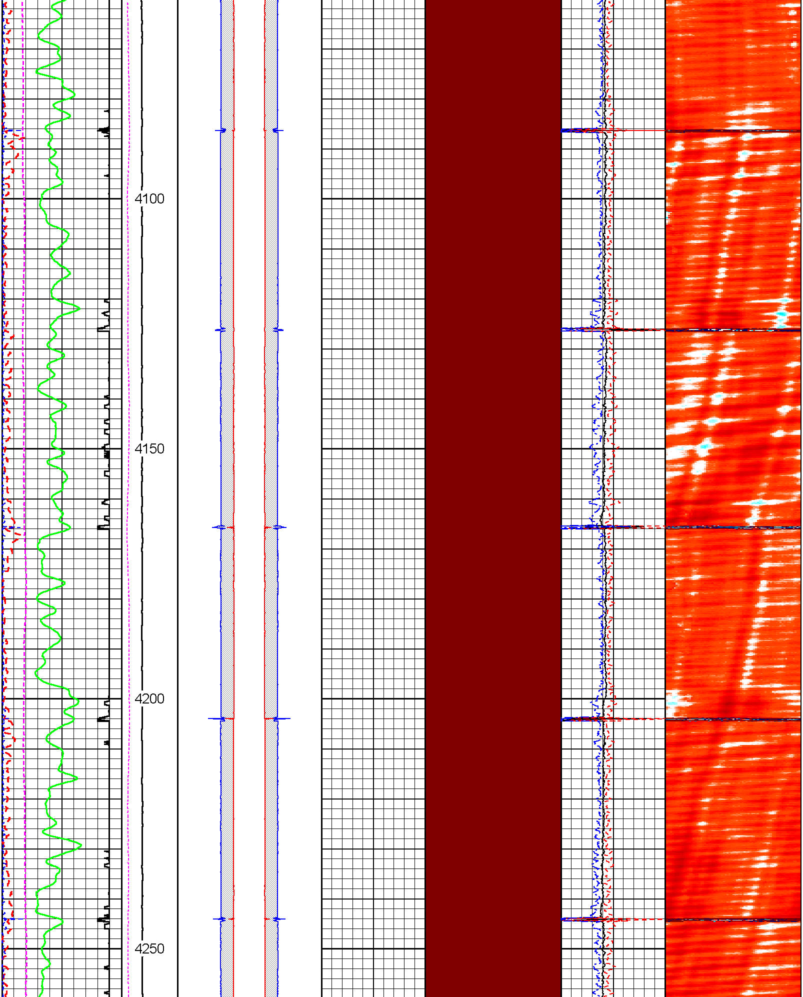
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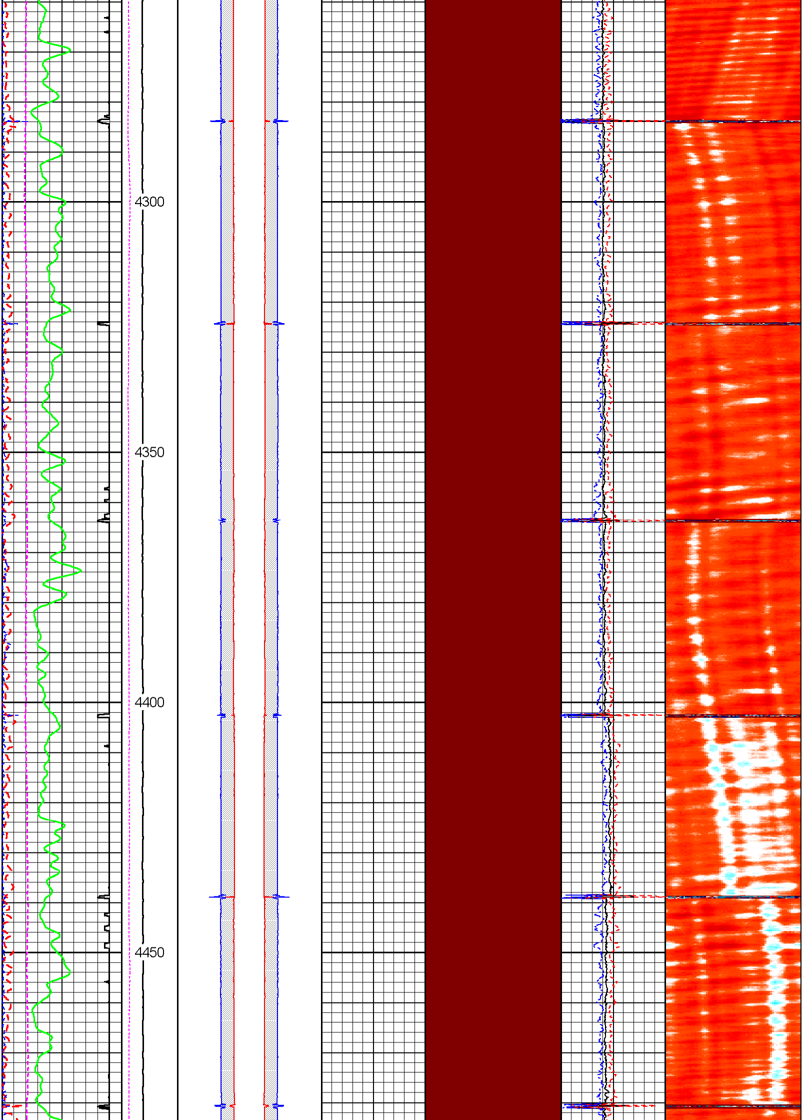
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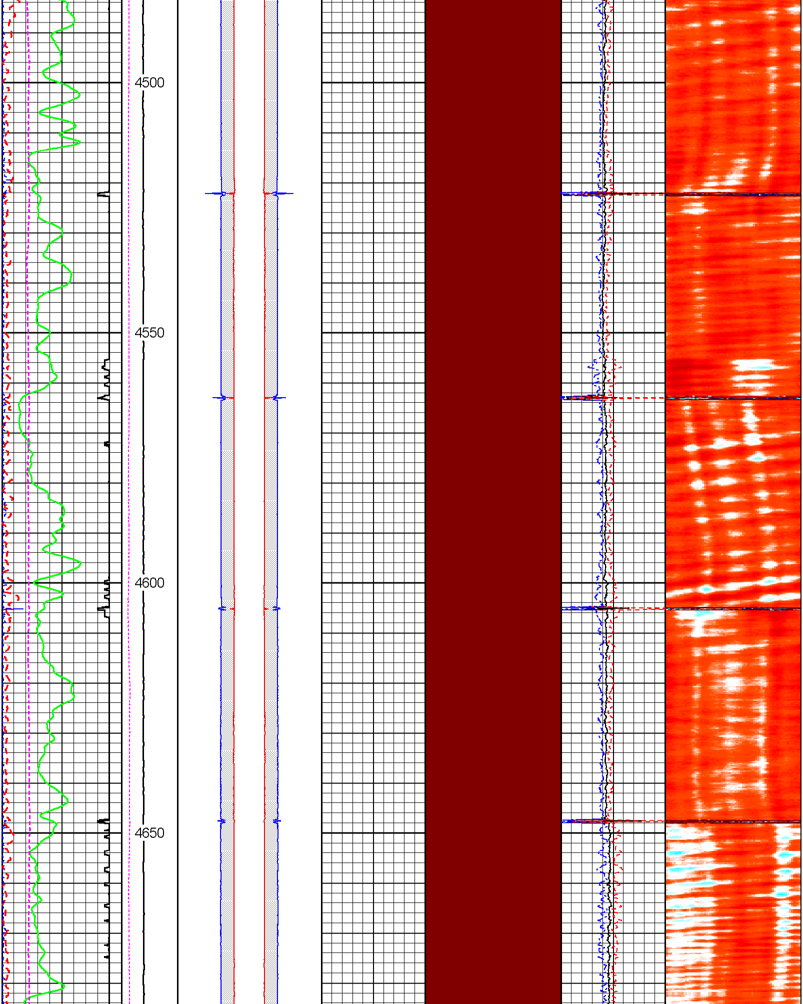
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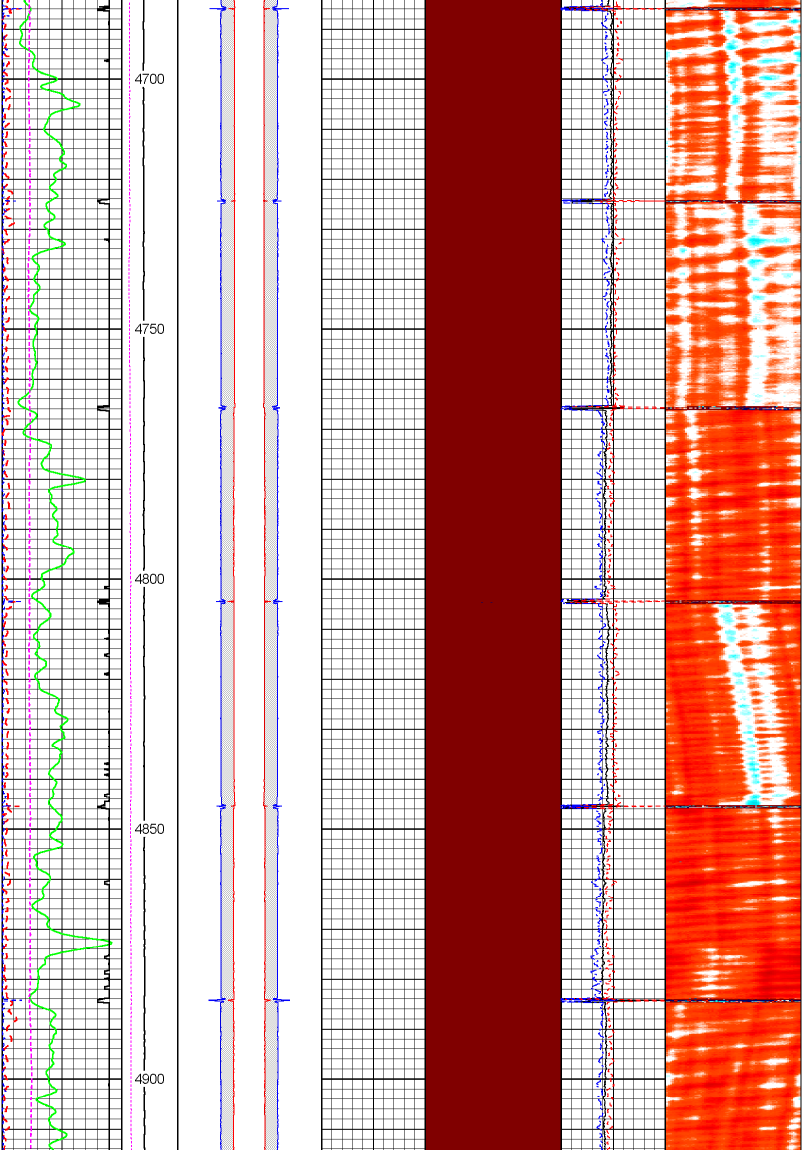
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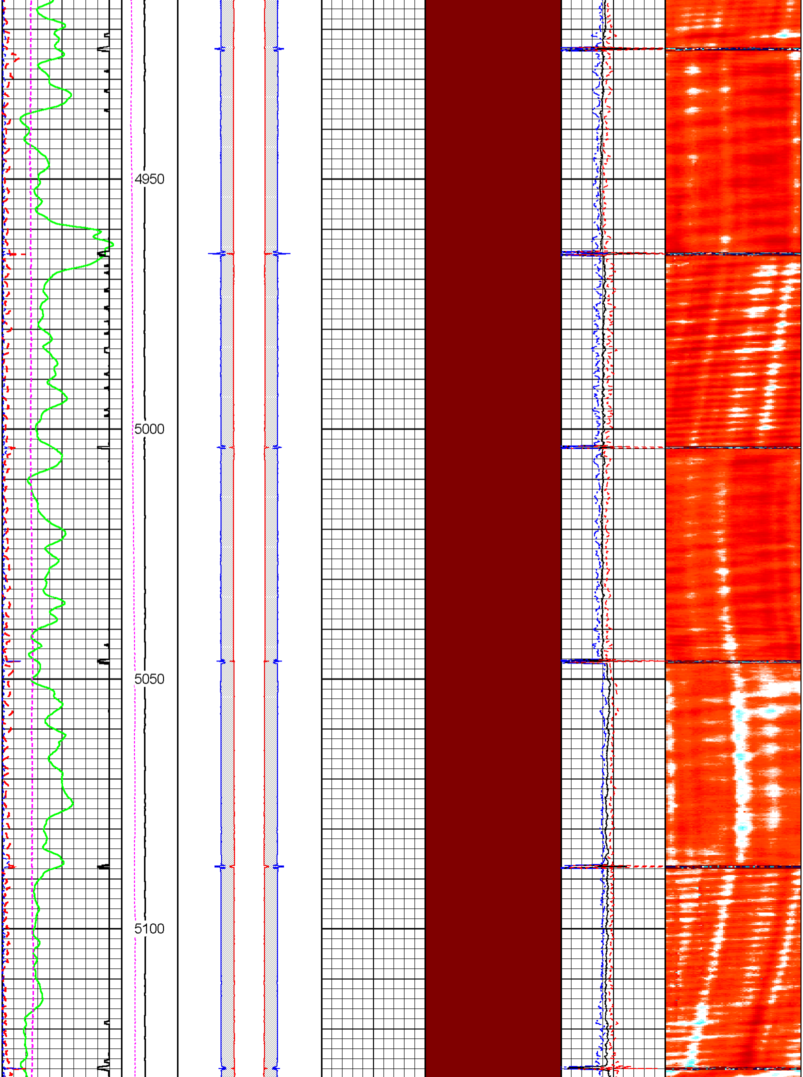
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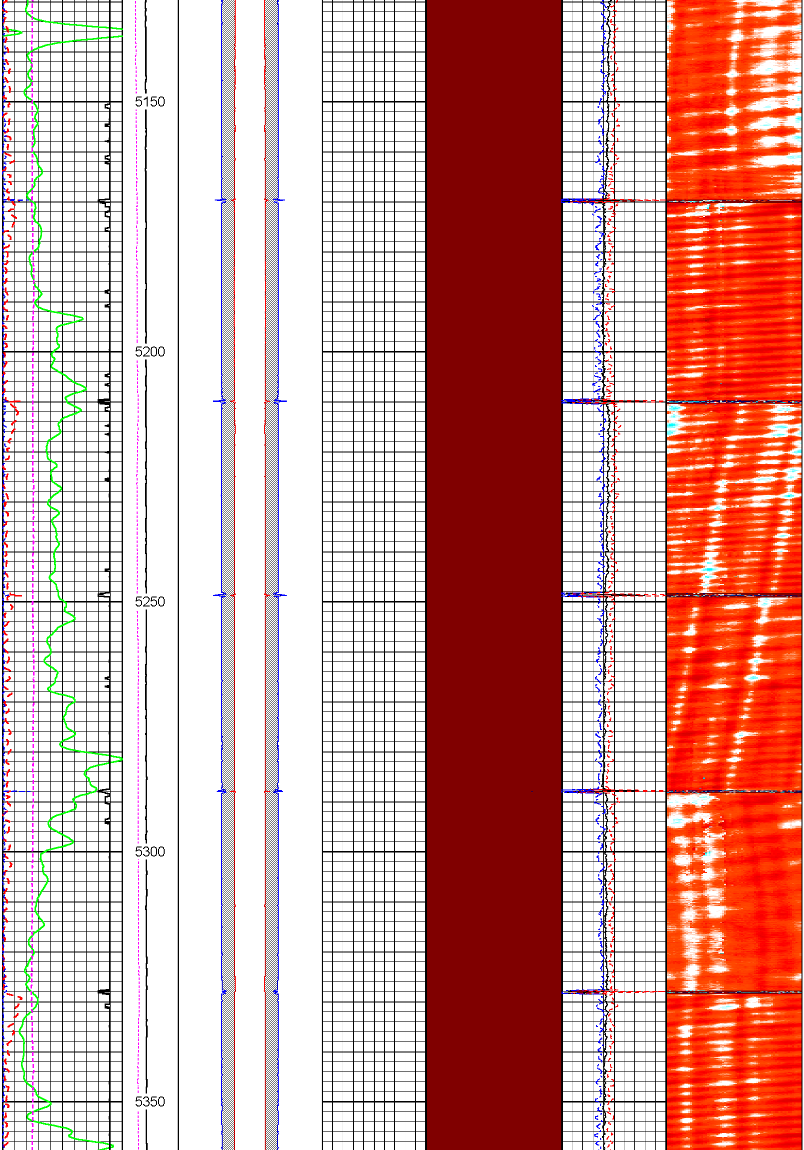
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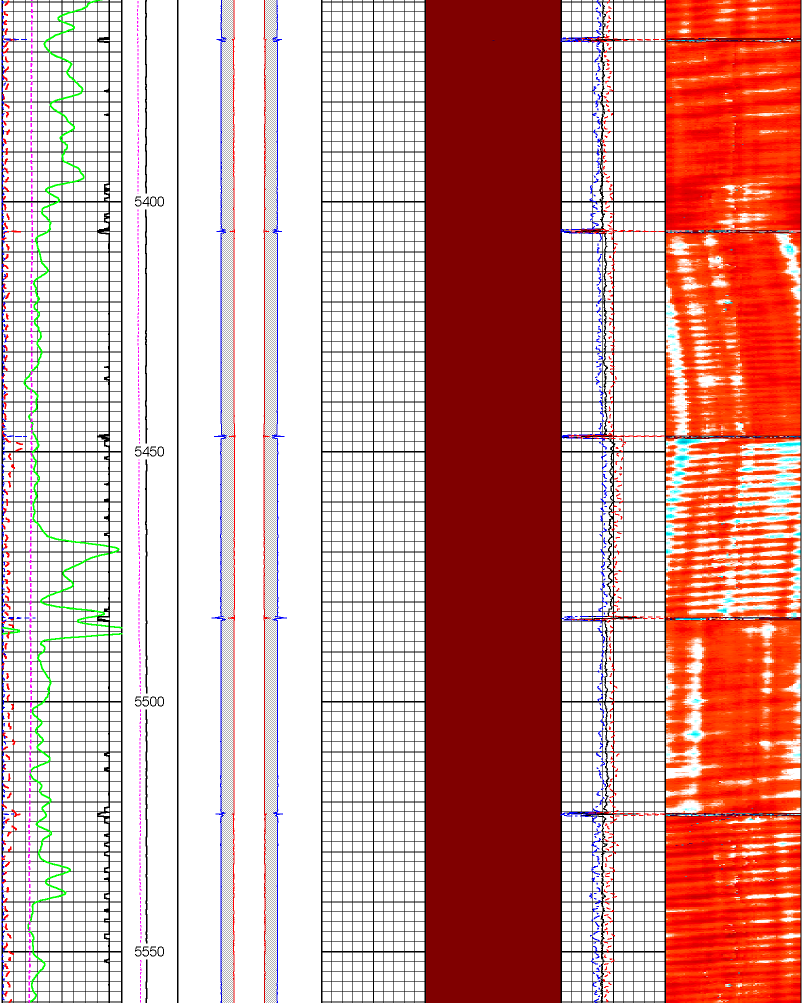
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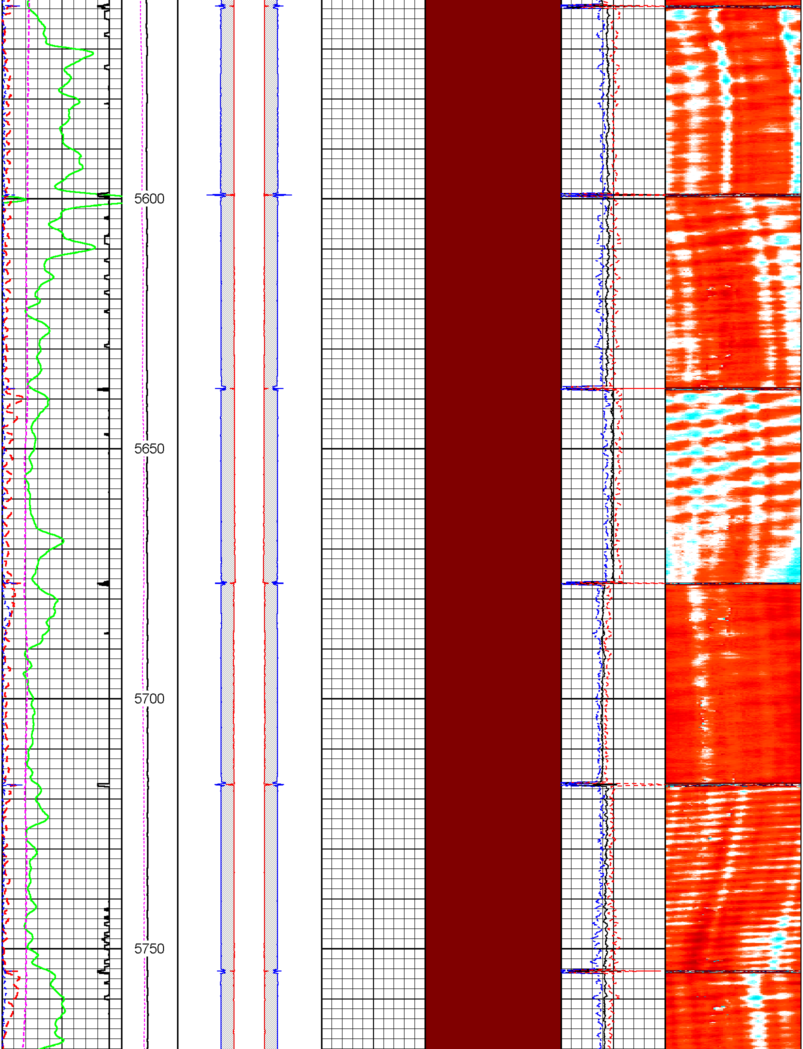
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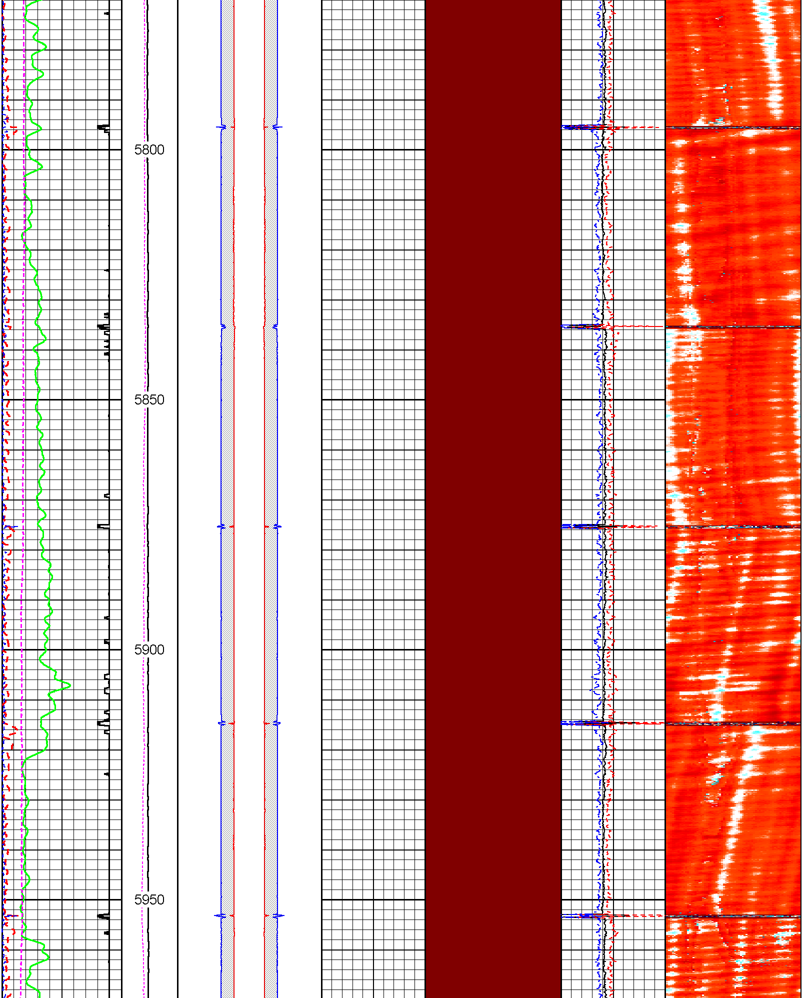
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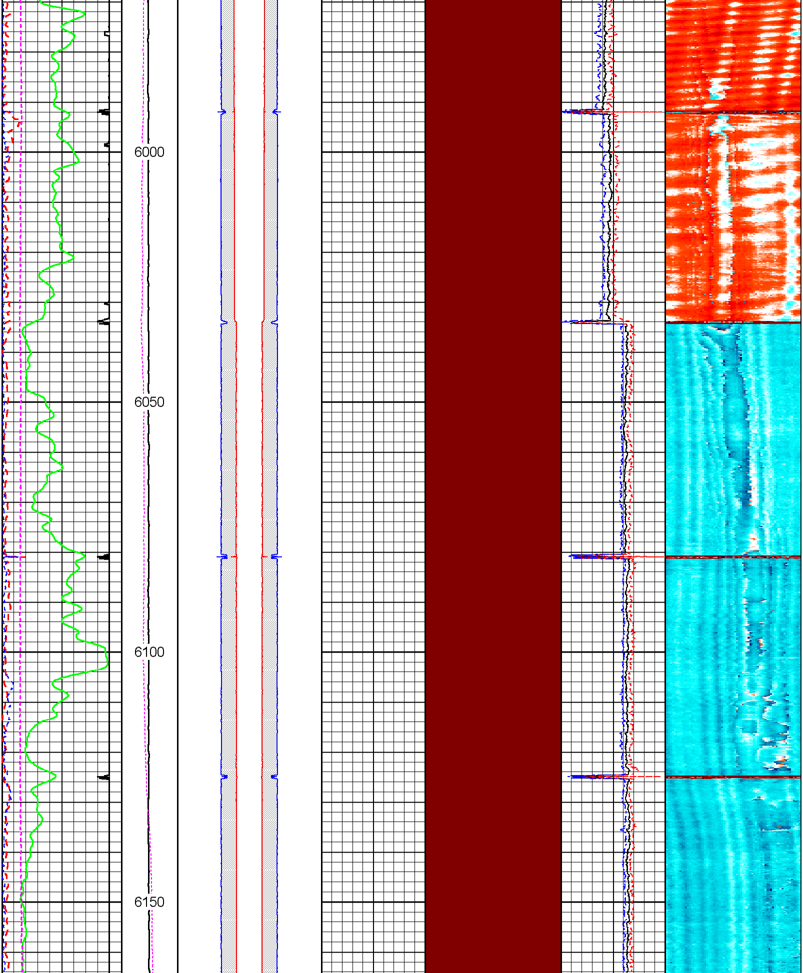
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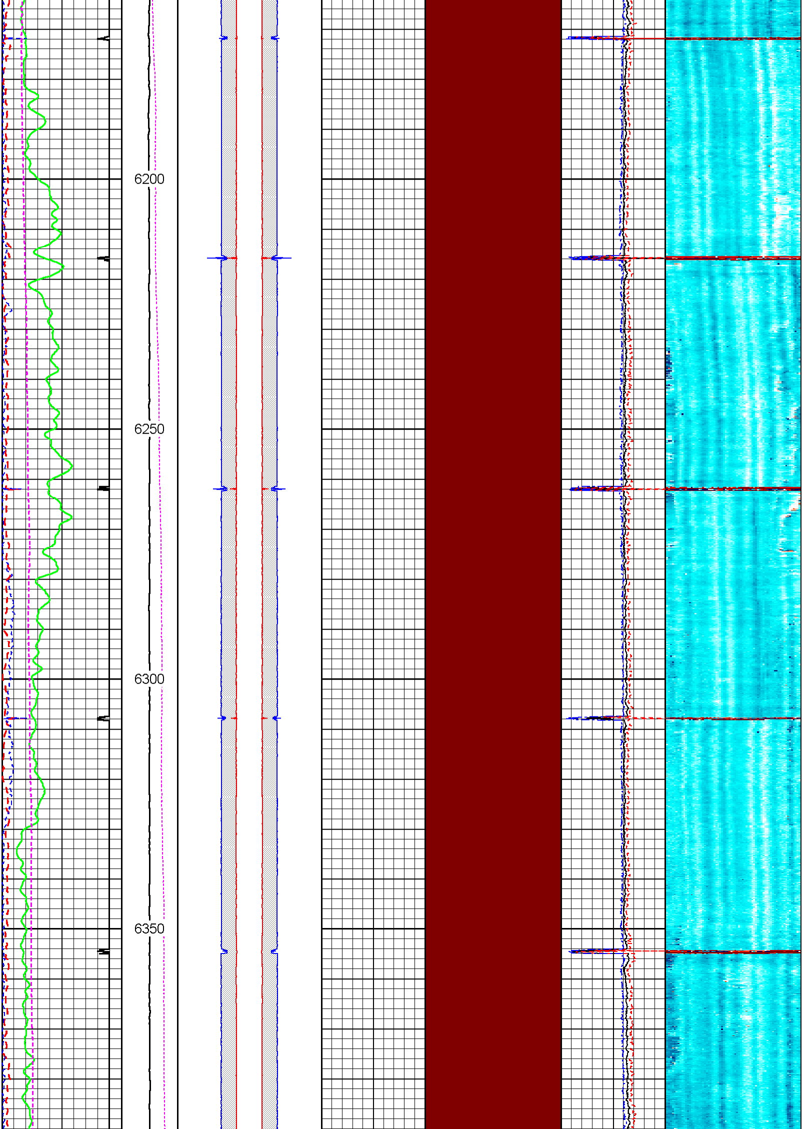
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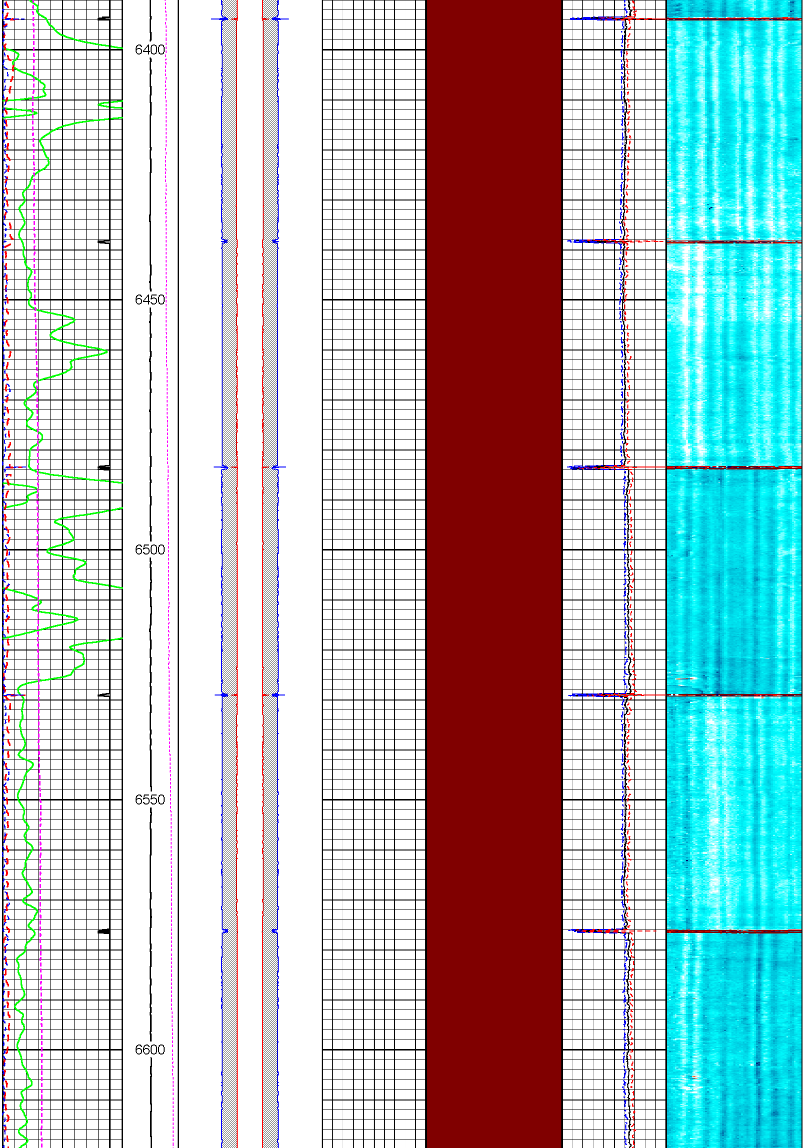
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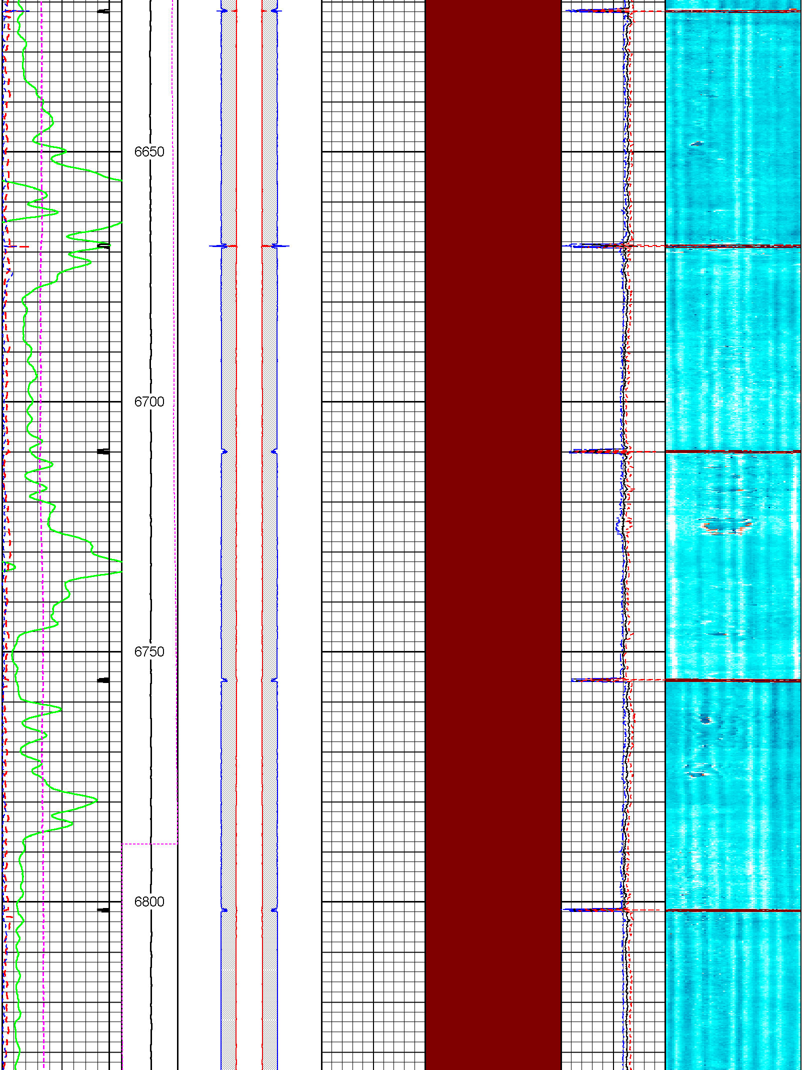
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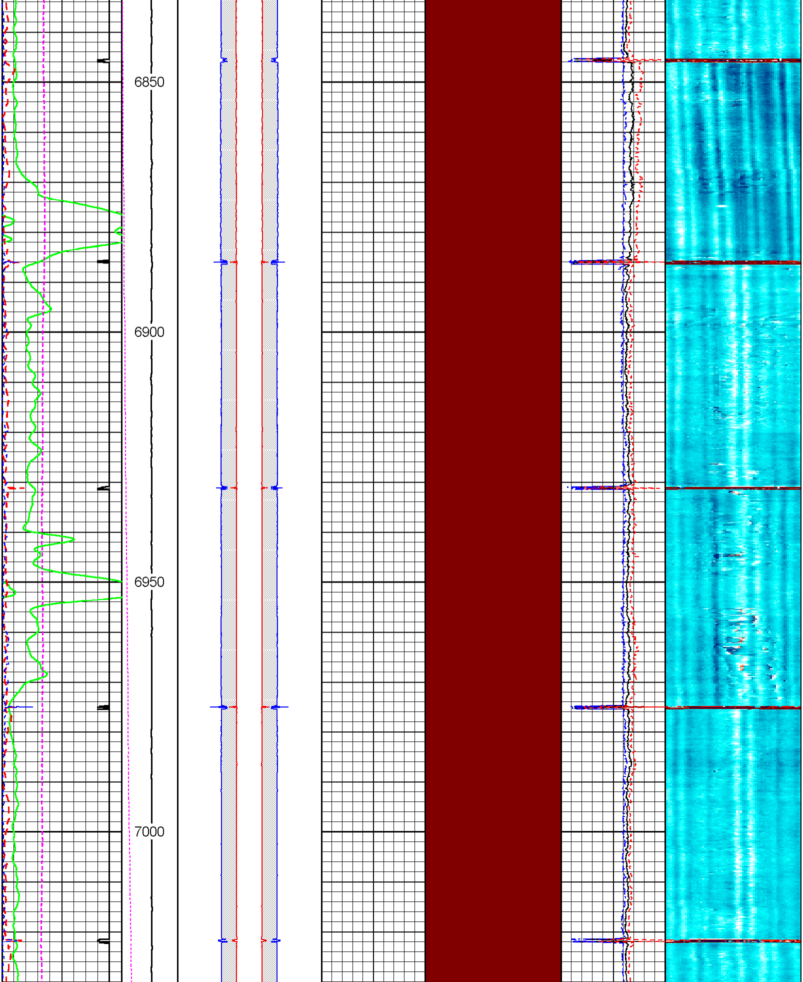
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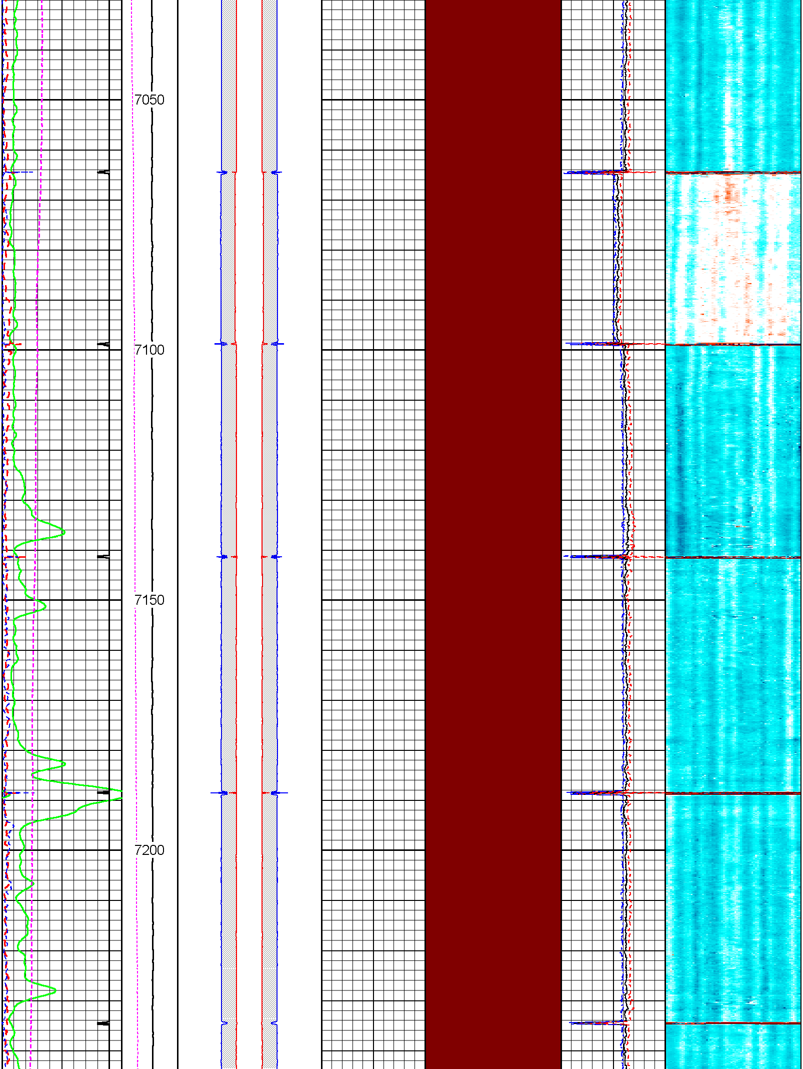
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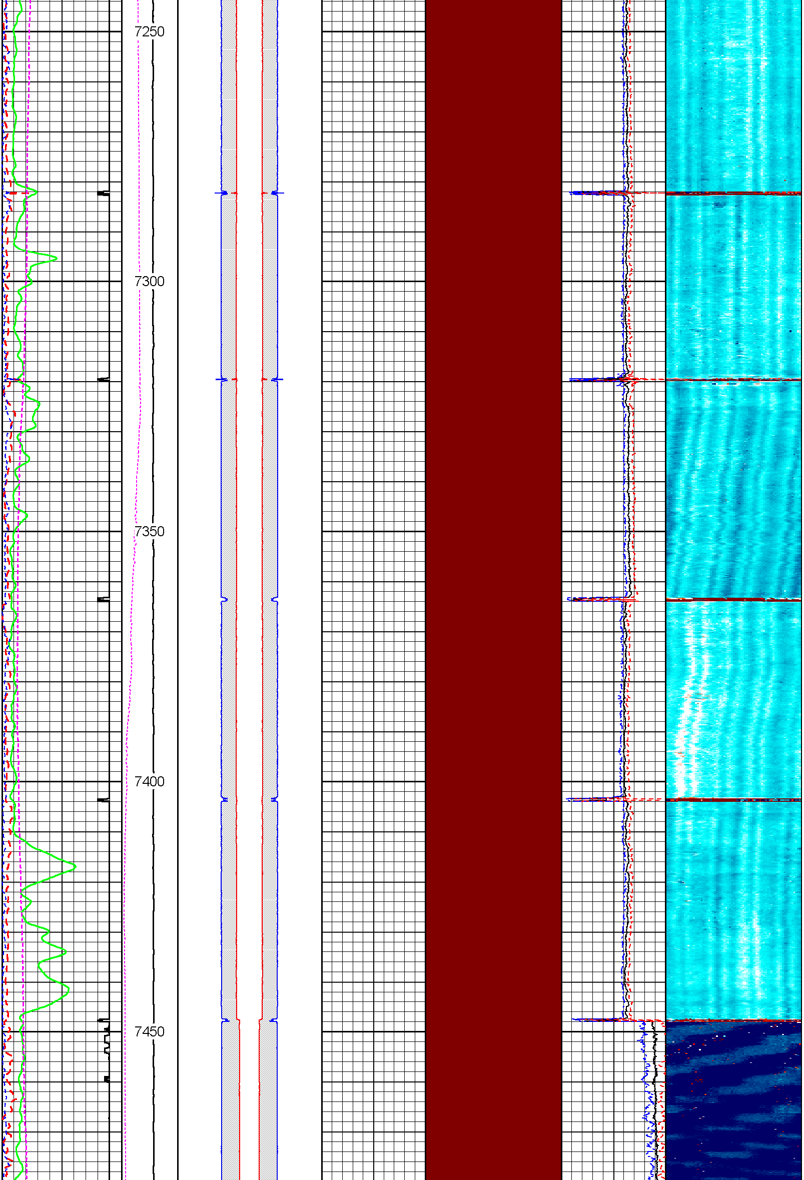
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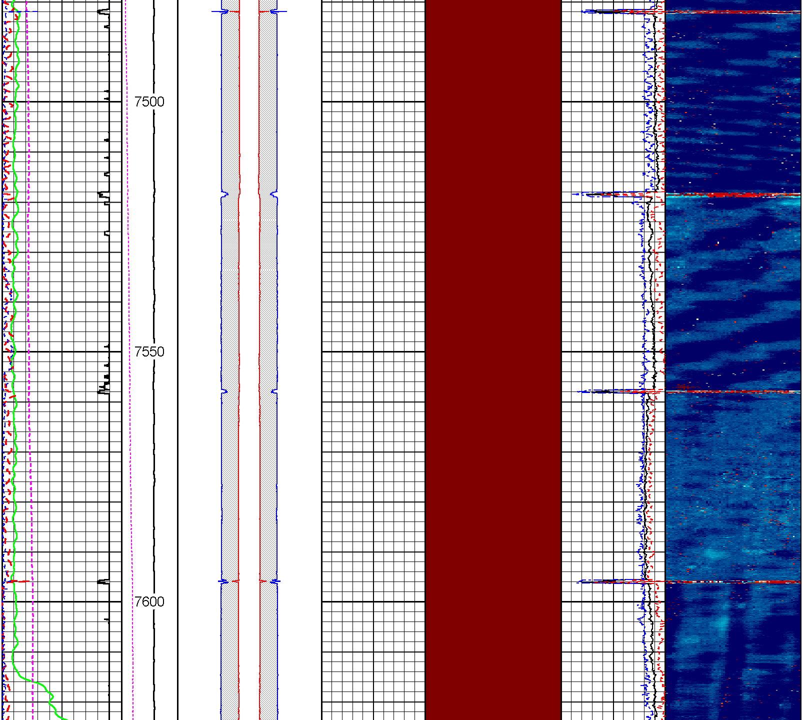
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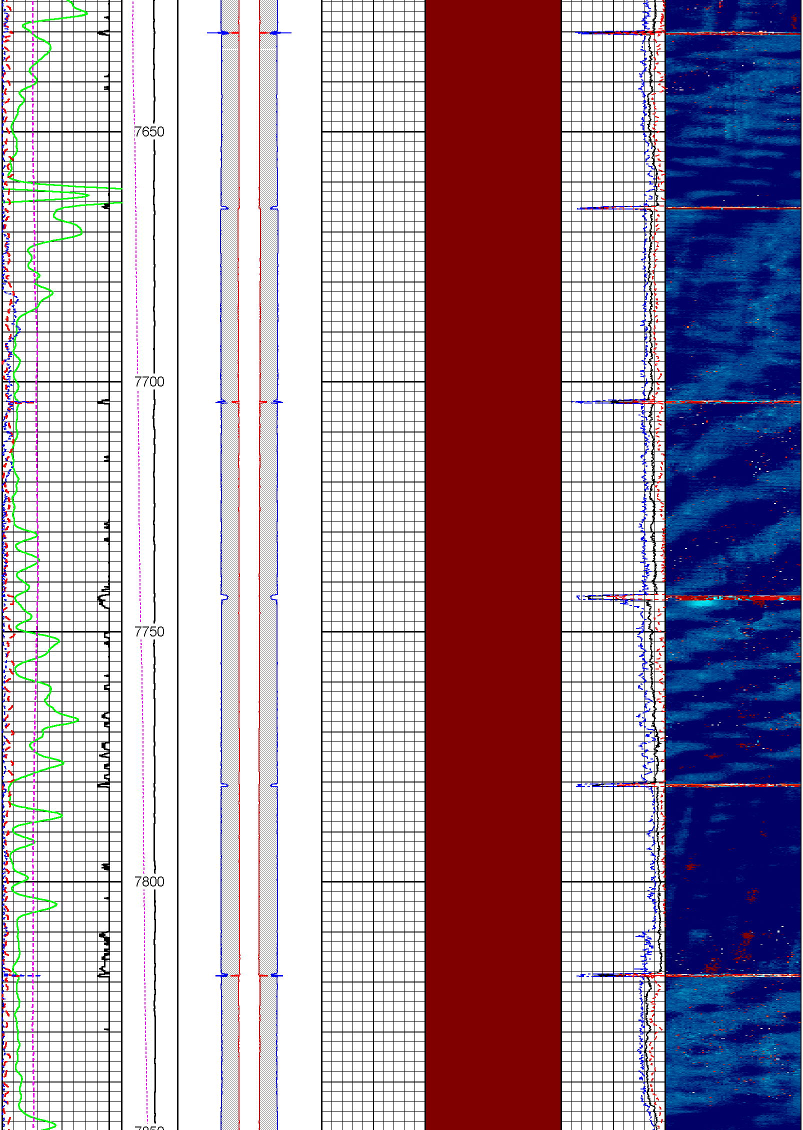

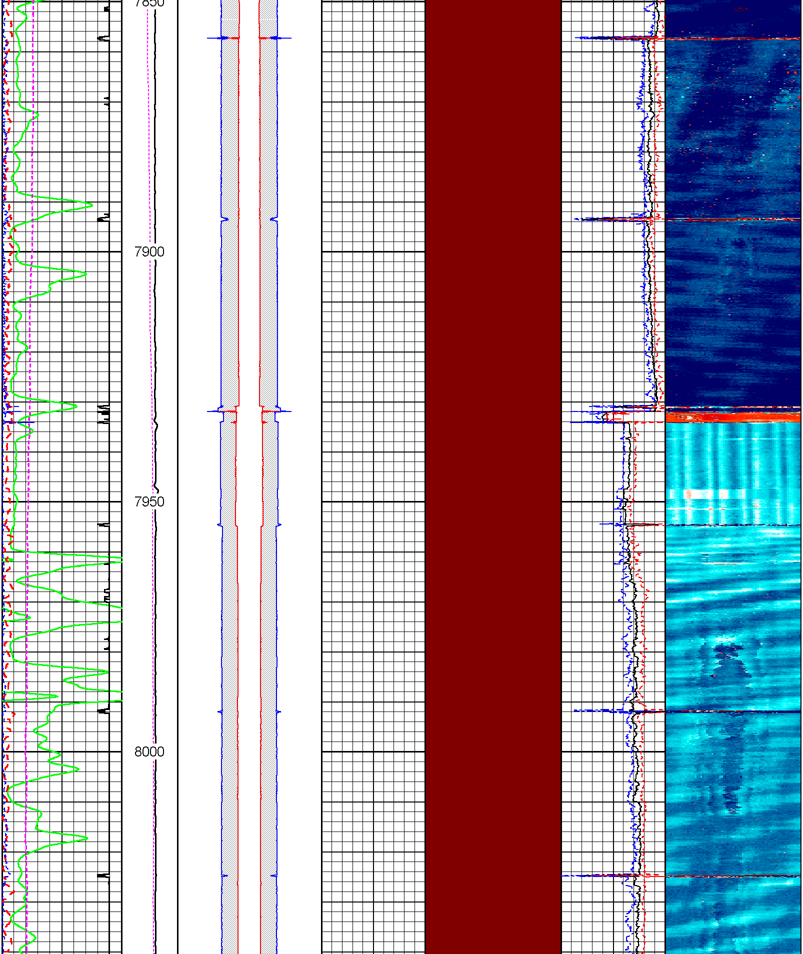

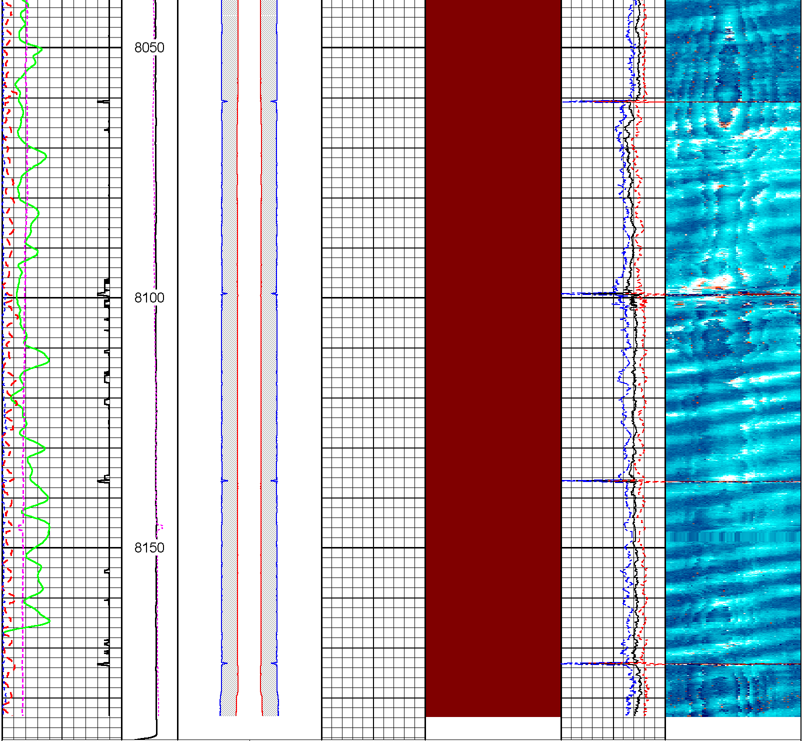

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HALLIBURTON

MAIN PASS

SALE 5" = 100'

HALLIBURTON

MAIN PASS 39#

SCALE 5"=100'

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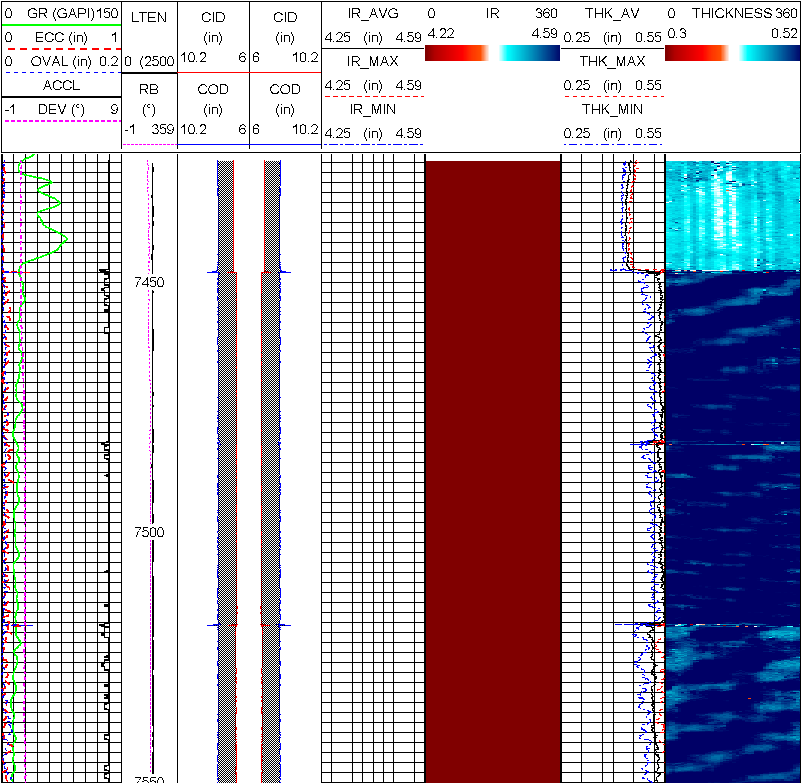
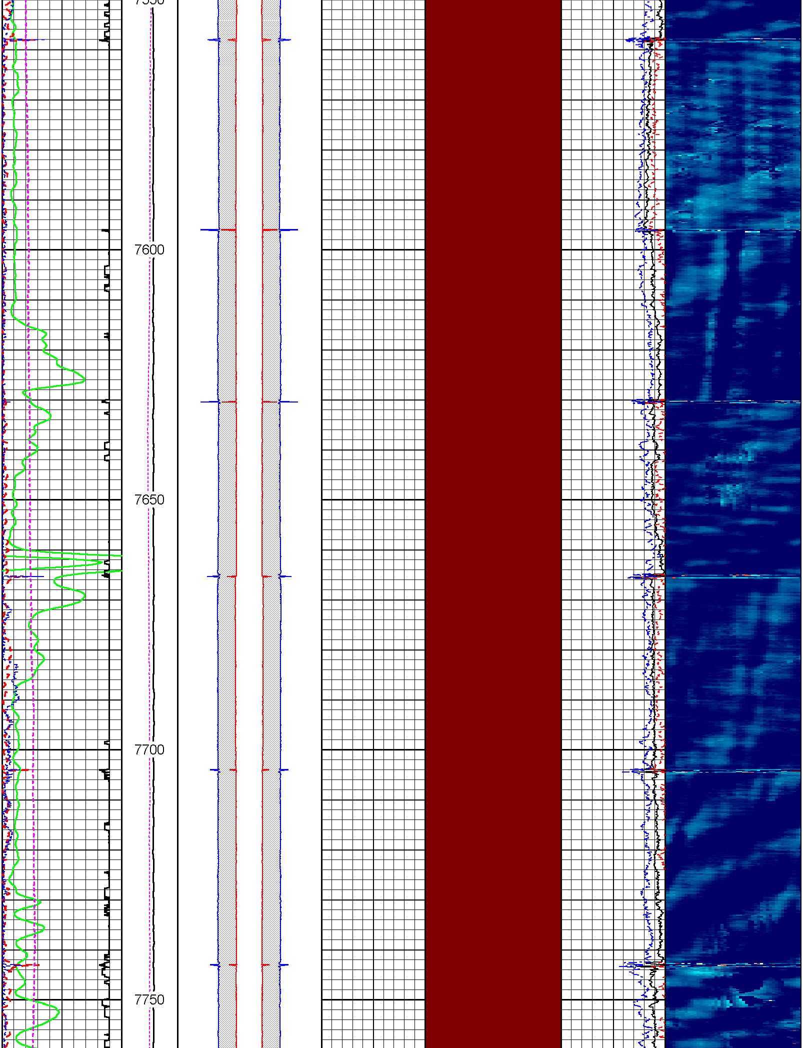
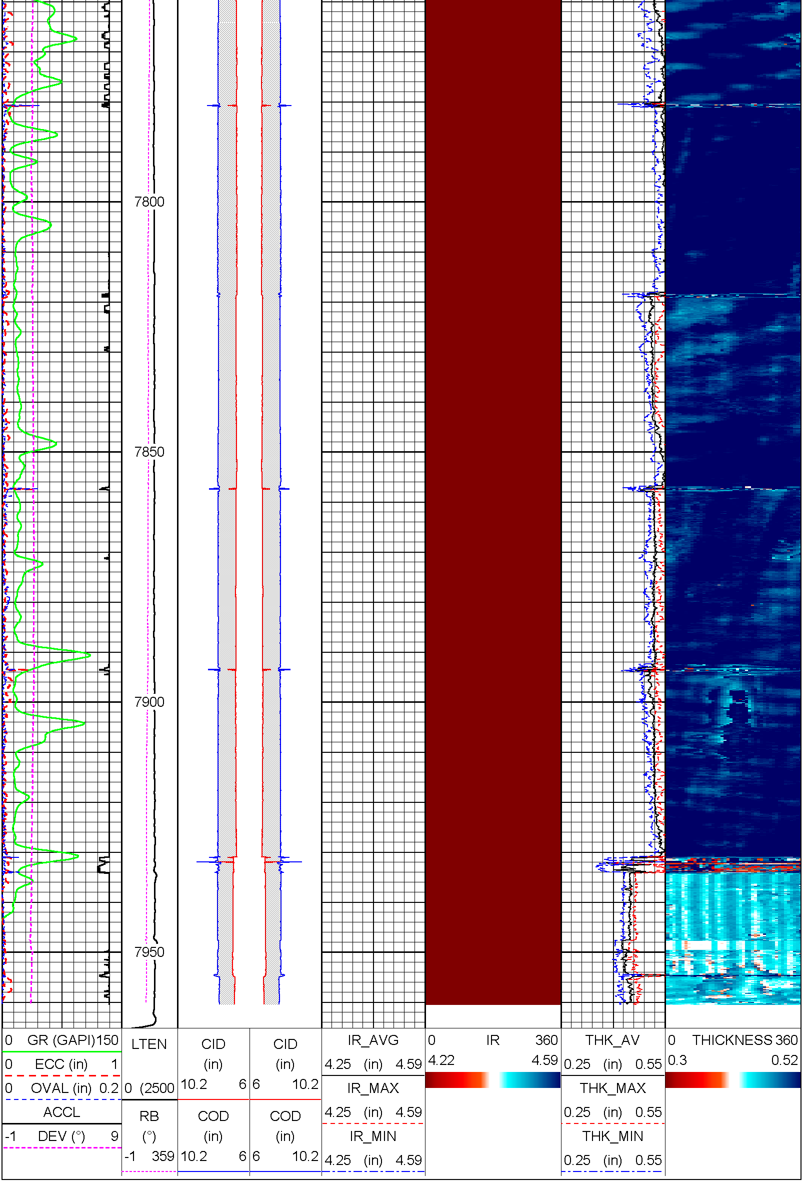
Presentation Format:	hcastpim
Dataset Creation:	Mon Sep 23 18:12:16 2013 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240







HALLIBURTON

MAIN PASS 39#

SCALE 5"=100'

HALLIBURTON

REPEAT PASS

SCALE 5" = 100'

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Dataset Pathname:	REPEAT
Presentation Format:	hcastpim
Dataset Creation:	Mon Sep 23 08:53:25 2013 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

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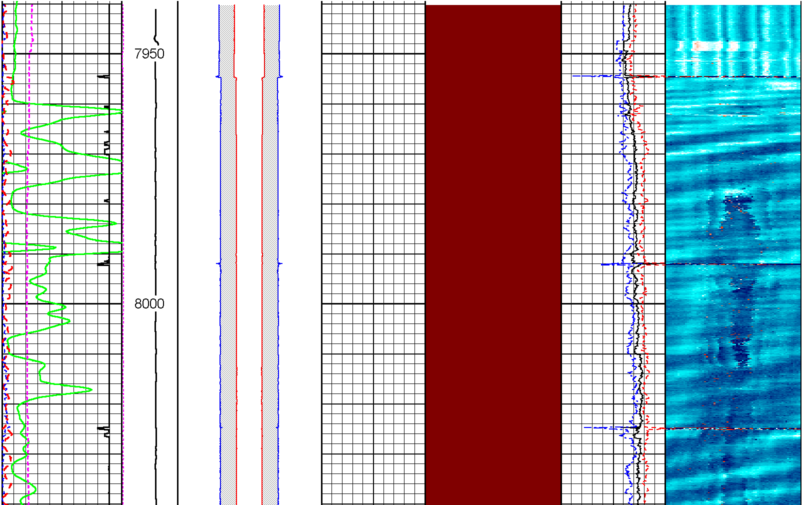

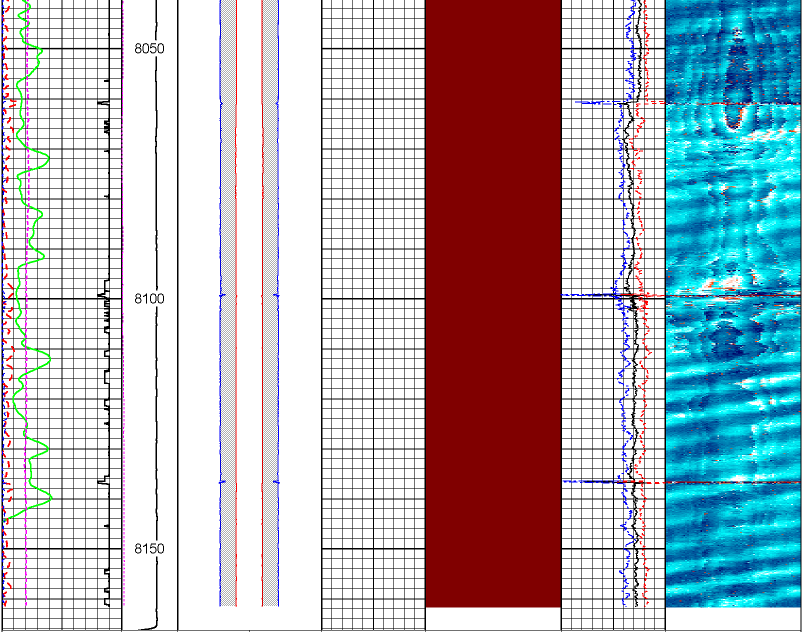

0 GR (GAPI) 150 0 ECC (in) 1 0 OVAL (in) 0.2 ACCL -1 DEV (°) 9	LTEN 0 (2500 RB (°) -1 359	CID (in) 10.2 6 COD (in) 10.2 6	CID (in) 6 10.2 COD (in) 6 10.2	IR_AVG 4.25 (in) 4.59 IR_MAX 4.25 (in) 4.59 IR_MIN 4.25 (in) 4.59	0 IR 360 4.22 4.59	THK_AV 0.25 (in) 0.55 THK_MAX 0.25 (in) 0.55 THK_MIN 0.25 (in) 0.55	0 THICKNESS 360 0.3 0.52

HALLIBURTON

REPEAT PASS

SCALE 5" = 100'

Calibration Report

Database File:	C:\Documents and Settings\h102095\Desktop\CB#1\cb1.db
Dataset Pathname:	MAIN
Dataset Creation:	Mon Sep 23 09:20:55 2013 by Log Halliburton Casedho

Circumferential Acoustic Scanning Tool Shop Calibration Report

Serial-Model:	438_11576422-4 3/8 SCAN
Calibration Performed:	Mon Sep 23 07:38:54 2013

	Mudcell Transducer		Main Transducer		
	Measured	Expected	Measured	Expected	Units
W/O Calibrator	48.60	44.00	N/A	N/A	usec
W Calibrator	40.00	35.00	54.80	50.00	usec

Calibrated Offsets

Name	Value	Units
TCAL	4.7986	usec
MCAL	5.5914	usec

XY Accelerometers Calibration Report

Performed: Sun Sep 22 10:12:25 2013

	Low Read.	High Read.		Low Ref.	High Ref.	
X Accelerometer	-1.000	1.003	gee	-1.000	1.000	gee
Y Accelerometer	-1.011	1.009	gee	-1.000	1.000	gee

Gamma Ray Calibration Report

Type / Serial: 002 / 11592690

SHOP CALIBRATION Sun Sep 22 10:05:44 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	35.3				cps
Calibrator	314.3				cps
		1.5524			GAPI/cps

PRIMARY VERIFICATION Sun Sep 22 10:08:35 2013

Background	55.1				cps
Calibrator	470.2				cps
Difference				415.1	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

Warrior Report

Database File: C:\Documents and Settings\h102095\Desktop\CB#1\cb1.db
Dataset Pathname: MAIN/_report_/cfg
Dataset Creation: Mon Sep 23 09:20:55 2013 by Log Halliburton Casedho

CAST Downlink Configuration Data

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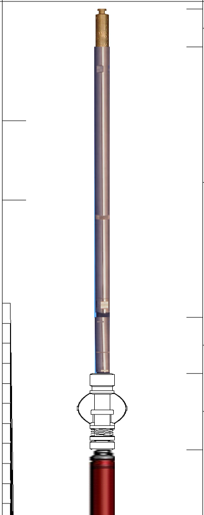
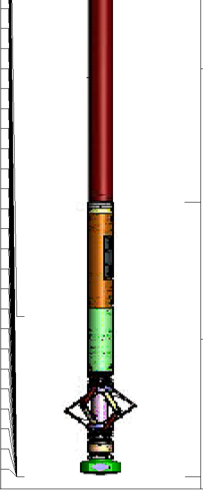
Job-ID	1	
Log-ID	2	
Casing-OD	7.62	in
Effec-Xducer-Radius	1.80	in
Head-Size	4.37	in
Casing-Weight	33.70	lb/ft
Tool-Mode	PIM	
Xducer-Type	Brown350	
Num-Shots	72	
Inhibit-Sample	120	
Peak-Offset	40	
Sample-Start	120	
Resonance-Offset	90	
Resonance-Window	64	
Target-Motor-Speed	230	rpm

CAST Calculation Parameters

TCAL	4.799	usec
MCAL	5.591	usec

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			STND_CH 1.4375 IN CABLE HEAD	1.08	1.44	1.00
CCL	24.69					
			TTTCU-002 (11592690) Through Tubing Telemetry Cartridge - Ultrawire	7.66	1.69	37.00
GR	22.43					
MCWV	4.54					
LLMTEN	0.00					
UTCTIM	0.00		XHU-003 (11866329) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
LOCTIM	0.00					
SCAN	0.00					
LWV	0.00					
			2.75 2 3/4" Tekco Adjustable Centralizer	2.17	2.75	25.00
TStat	0.00					
AccX1	0.00					
AccY1	0.00					
Ps0	0.00					
PsP3	0.00					

PsP5	0.00
PsM5	0.00
PsP15	0.00
PsM15	0.00
AccX2	0.00
AccY2	0.00
ITemp	0.00
MTemp	0.00
PsP400	0.00
MVolt	0.00
MCurr	0.00
MSpd	0.00
TLINITCNT	0.00
XHUERR1	0.00
XHUERR2	0.00
XHUTEMP	0.00
XHUSTAT	0.00
XHUCUR1	0.00
XHUCUR2	0.00
XHUCUR3	0.00
XHUCUR4	0.00
TSTAMP	0.00
ITEMPX	0.00
HVOLTX	0.00



HAL-CAST-M-ELECT-CAST-M-Elect (12037.582) CAST M ELECTRONIC	2.75	30.00
HAL-CAST-M-4 3/8 SCAN (438_115764227.78 4 3/8 SCAN CASTM	4.38	276.00

Dataset:	cb1.db: field/well/run1/MAIN
Total Length:	27.85 ft
Total Weight:	376.00 lb
O.D.	4.38 in

Company	KINDER MORGAN
Well	CB #1
Field	McELMO DOME
County	MONTEZUMA
State	CO

HALLIBURTON

CIRCUMFERENTIAL
ACOUSTIC SCANNING TOOL
PIPE INSPECTION MODE