HALLIBURTON

ACOUSTIC CEMENT BOND / TEMPERATURE LOG

Company	OXY USA WTP LP
Well	SHELL 697-34-08B
Field	GRAND VALLEY
County	GARFIELD
State	CO

Company OXY USA WTP LP
Well SHELL 697-34-08B
Field GRAND VALLEY
County GARFIELD State CO

API No.: 05045177670000 Serv #: 7021924
Location: SURFACE HOLE:
1229' FNL & 1510' FEL
Sec: 03 Twp: 07S Rge: 97W

Other Services
KUTH
RMTE
HFWS

Permanent Datum	GROUND LEVEL	Elevation 6327'	Elevation	
Log Measured From	K.B. . 18 Ft. above perm. datum		K.B.	6345'
Drilling Measured From	K.B.		D.F.	6344'
			G.L.	6327'

Date @ Time Logged	01 DEC 2009 @ 18:15	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.34 PPG
Depth - Driller	7631'	Fluid Level	FULL
Depth - Logger	7512'	Cement Top Est. Logged	LOGGED
Bottom - Logged Interval	7508'	Equipment / Location	10971659 / GJ
Top - Log Interval	SURFACE	Recorded by	J. ARRASCUE
Max. Recorded Temp.	223 DGF	Witnessed by	R. STEVENS

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	24"	SURFACE	78'	N/A	N/A	N/A	N/A
TWO	12.25"	78'	1537'	9.625"	36#	SURFACE	1520'
THREE	7.875"	1537'	7631'	4.5"	11.6#	SURFACE	7582'

<<< Fold Here >>>

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

H.E.S. CBL / TEMPERATURE LOG DATED 01 DEC 2009 IS CORRELATED TO H.E.S. RMT LOG DATE 22 NOV 2009

LOGGED INTERVALS PER CUSTOMER REQUEST

SHORT JOINTS LOCATED @ 4828' - 4834' & 5806' - 5811'

CREW: R. YORK & S. PARSONS

THANK YOU FOR USING HALLIBURTON ENERGY SERVICES GRAND JUNCTION, CO

Service Ticket No. 7021924 API No. 05045177670000 PGM Ver 081210

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

EQUIPMENT DATA

GAMMA RAY		COLLAR LOCATOR		BOND LOG		TEMPERATURE TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	081008	Serial No.	081008	Serial No.	070571	Serial No.	081013
Model No.	GR-PROBE	Model No.	CCL-PROBE	Model No.	CBL-PROBE	Model No.	1.375 TEMP
Diameter	2.75"	Diameter	2.75"	Diameter	2.75"	Diameter	1.38"

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ONE	2000'	7512'	0	65	TEMPERATURE LOG SECTION
TWO	7512'	SURFACE	1500 PSI	65	MAIN LOG SECTION

Pass	GR Scale		CCL Scale		AMP Scale		TEMP Scale	
No.	L	R	L	R	L	R	L	R
ONE	0	200	-9	1	N/A	N/A	10	350
TWO	0	200	-9	1	0	100	N/A	N/A

DIRECTIONAL INFORMATION

Maximum Deviation	N/A	deg. @	N/A	KOP	N/A

HALLIBURTON

ACOUSTIC CEMENT BOND LOG

MAIN LOG SECTION - PRESSURE : 1500 PSI
5"=100'

Database File: c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_08b_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/MAIN_CB3
Presentation Format: cbl_main
Dataset Creation: Wed Dec 02 15:10:17 2009
Charted by: Depth in Feet scaled 1:240

HALLIBURTON

ACOUSTIC CEMENT BOND LOG

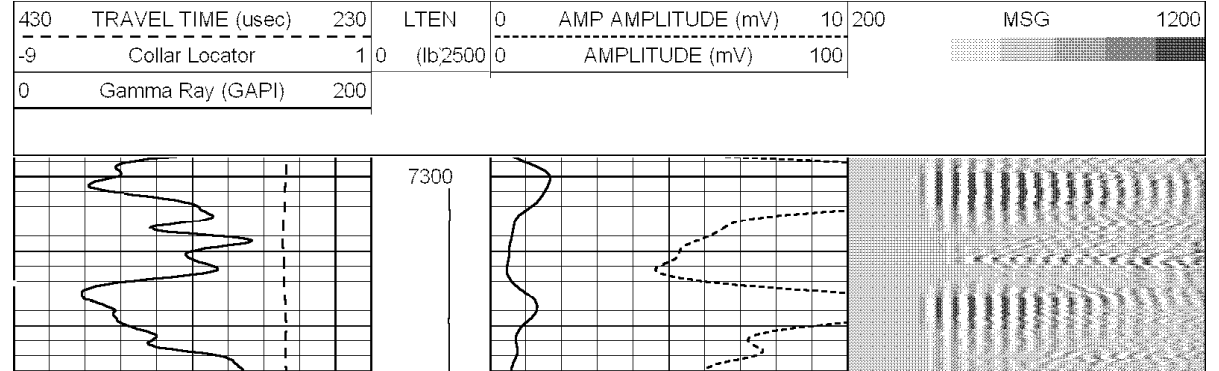
MAIN LOG SECTION - PRESSURE : 1500 PSI
5"=100'

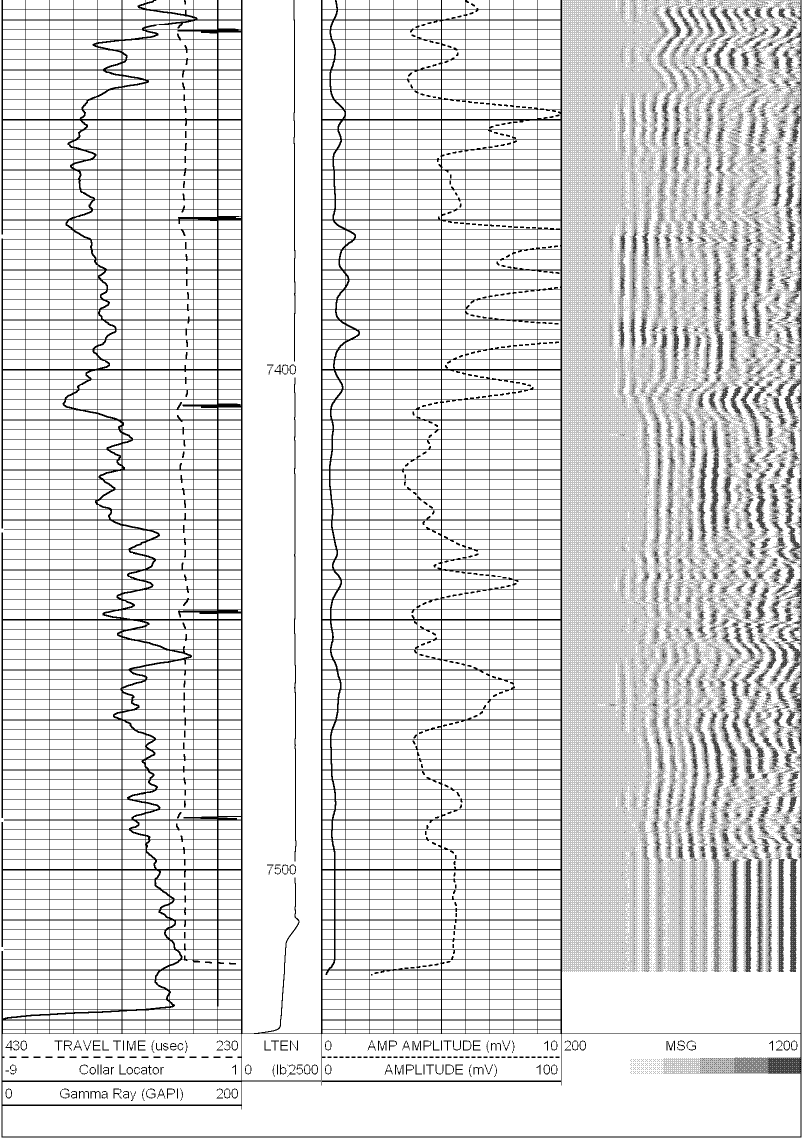
HALLIBURTON

ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION
5"=100'

Database File:	c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_08b_cbl.db
Dataset Pathname:	G_VALLEY/SHELL_697/run1/REPE_CB2
Presentation Format:	cbl_main
Dataset Creation:	Tue Dec 01 22:25:18 2009 by Calc Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240





HALLIBURTON

ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION
5"=100'

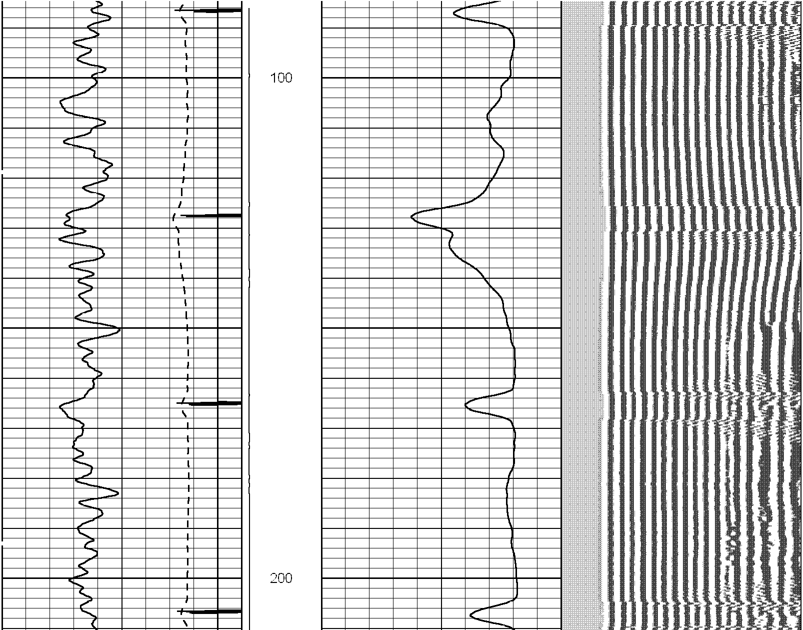
HALLIBURTON

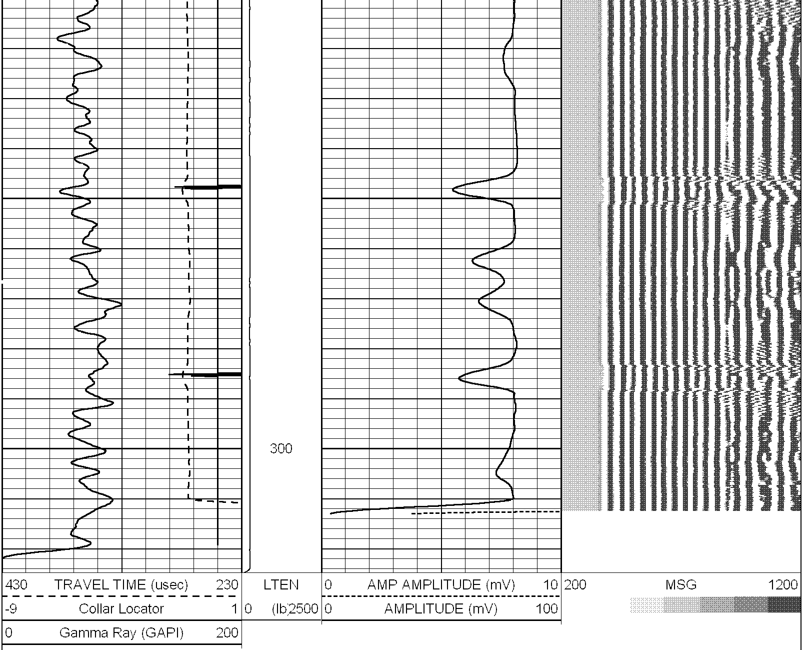
ACOUSTIC CEMENT BOND LOG

FREE PIPE LOG SECTION
5"=100'

Database File:	c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_08b_cbl.db
Dataset Pathname:	G_VALLEY/SHELL_697/run1/F_PIPE2
Presentation Format:	cbl_main
Dataset Creation:	Tue Dec 01 22:23:33 2009 by Calc Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

430	TRAVEL TIME (usec)	230	LTEN	0	AMP AMPLITUDE (mV)	10	200	MSG	1200
-9	Collar Locator	1	0 (lb 2500	0	AMPLITUDE (mV)	100			
0	Gamma Ray (GAPI)	200							





HALLIBURTON

ACOUSTIC CEMENT BOND LOG

FREE PIPE LOG SECTION

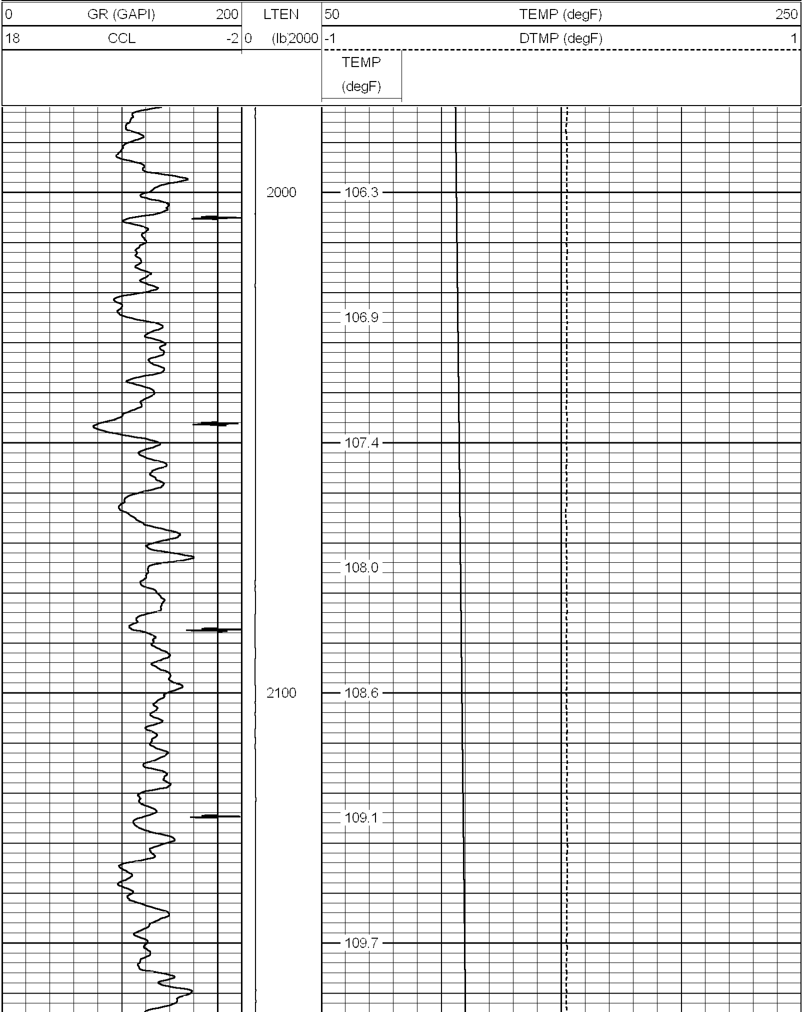
5"=100'

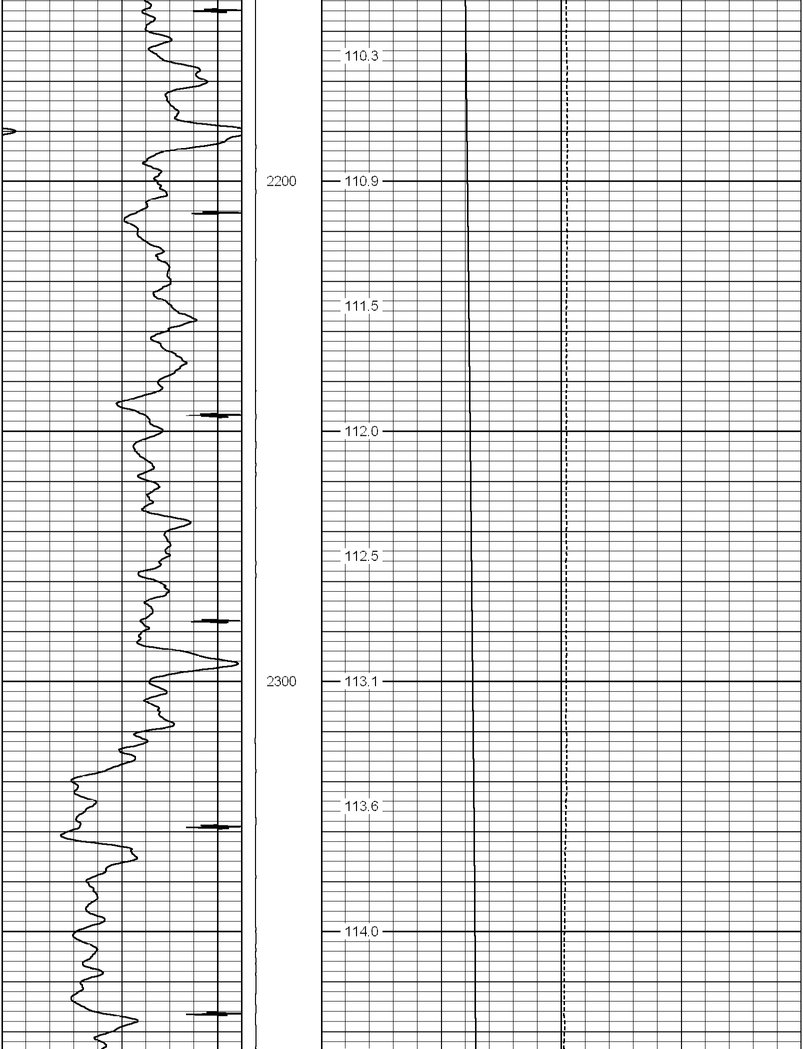
HALLIBURTON

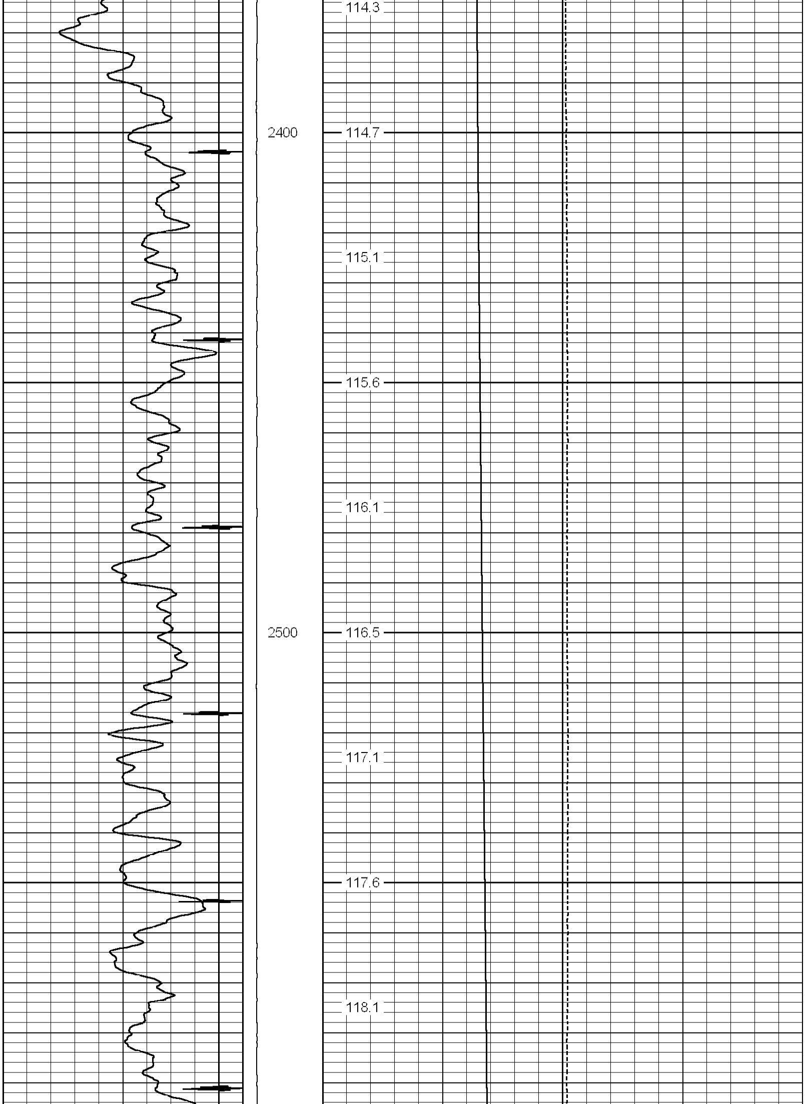
TEMPERATURE LOG

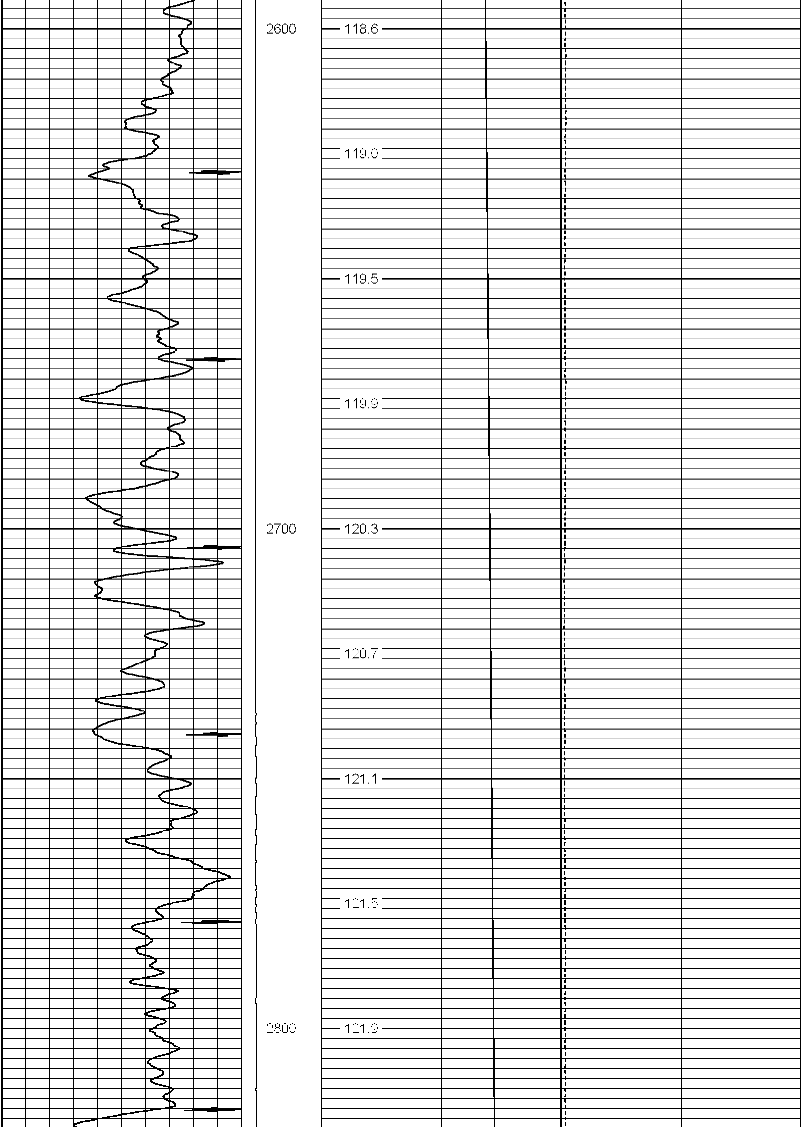
5"=100'

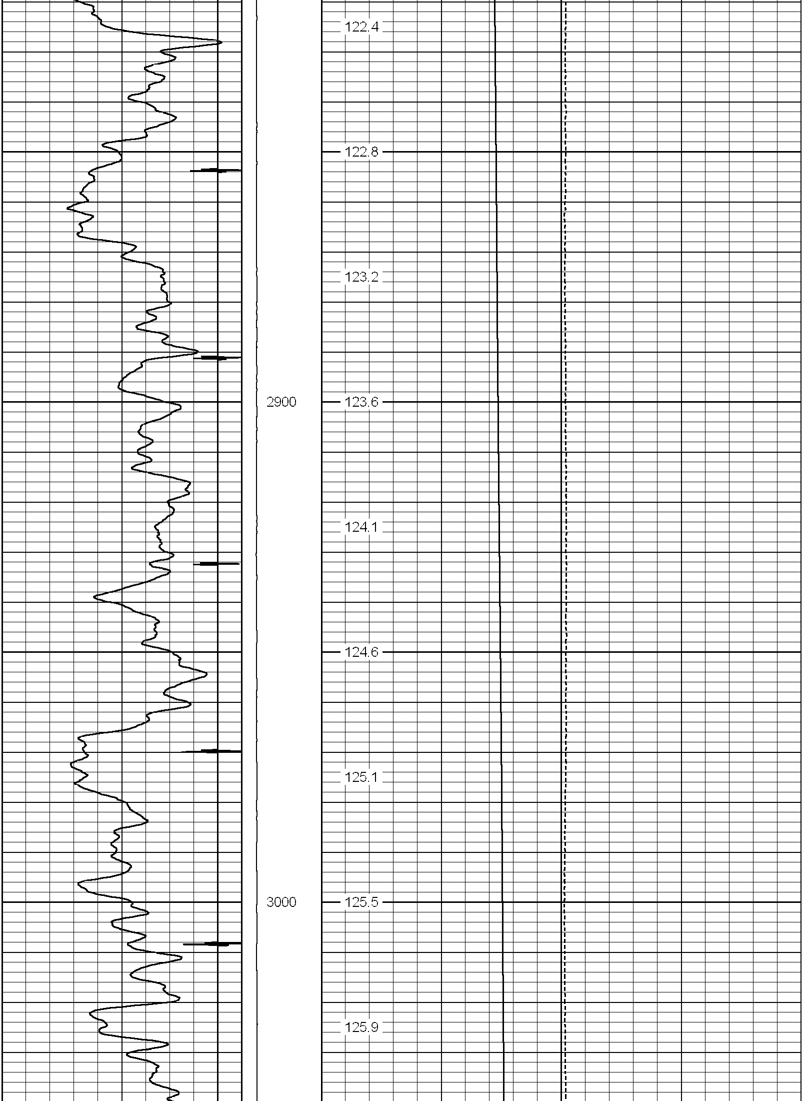
Database File:	c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_08b_cbl.db
Dataset Pathname:	G_VALLEY/SHELL_697/run1/LD_TEMP3
Presentation Format:	temp
Dataset Creation:	Wed Dec 02 15:43:02 2009
Charted by:	Depth in Feet scaled 1:240

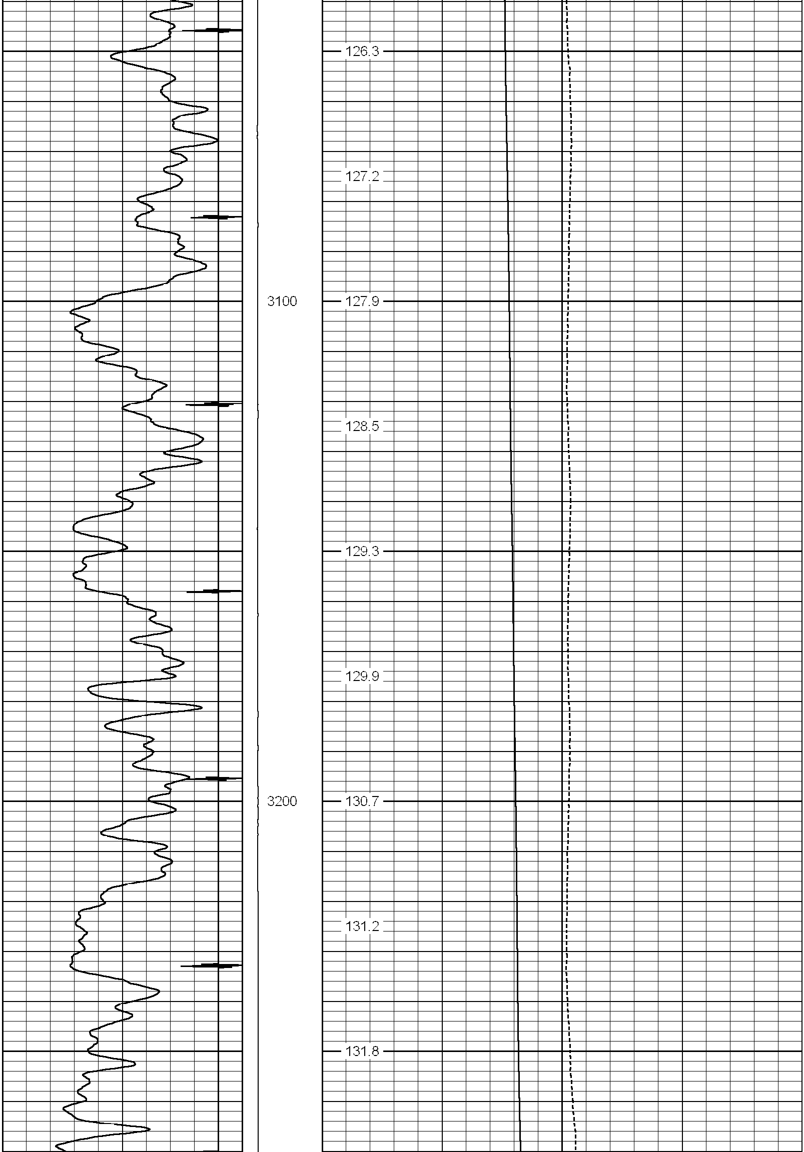


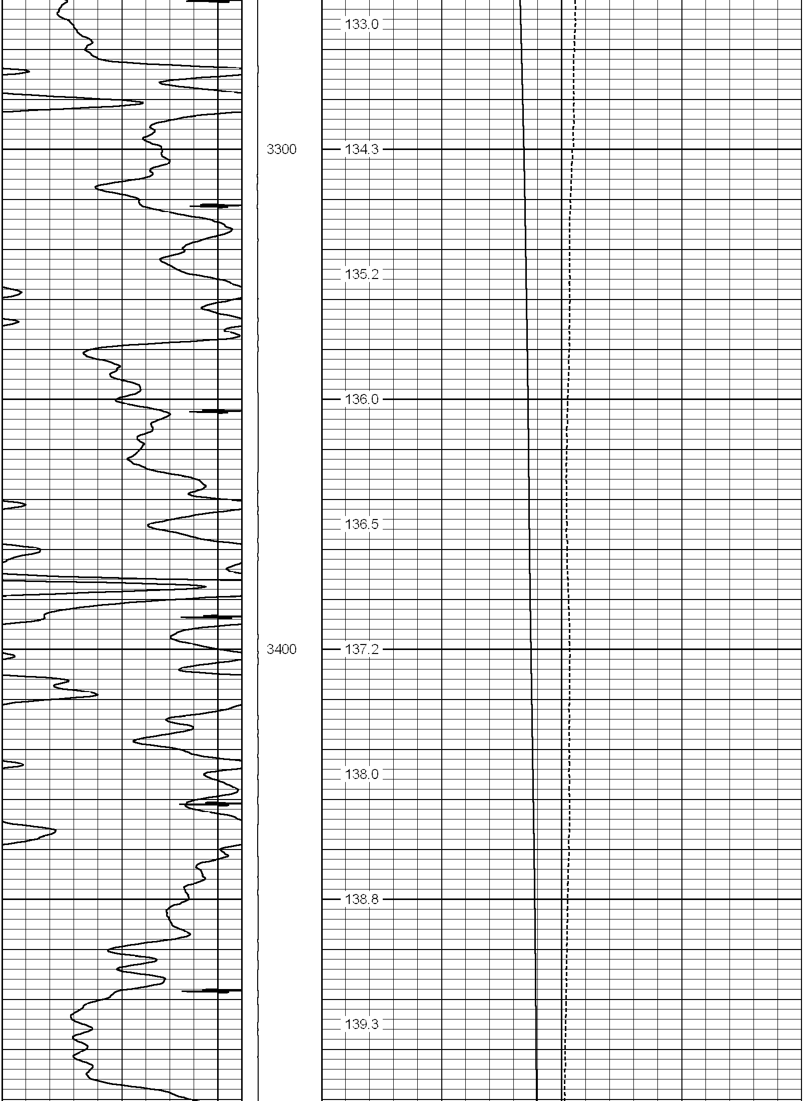


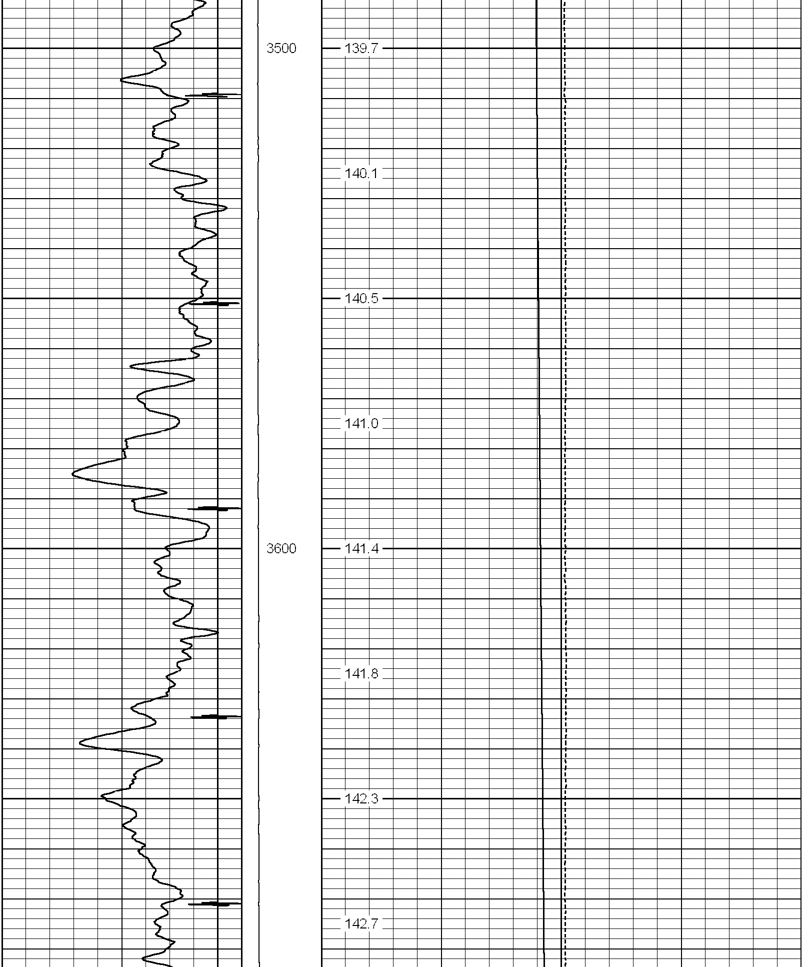


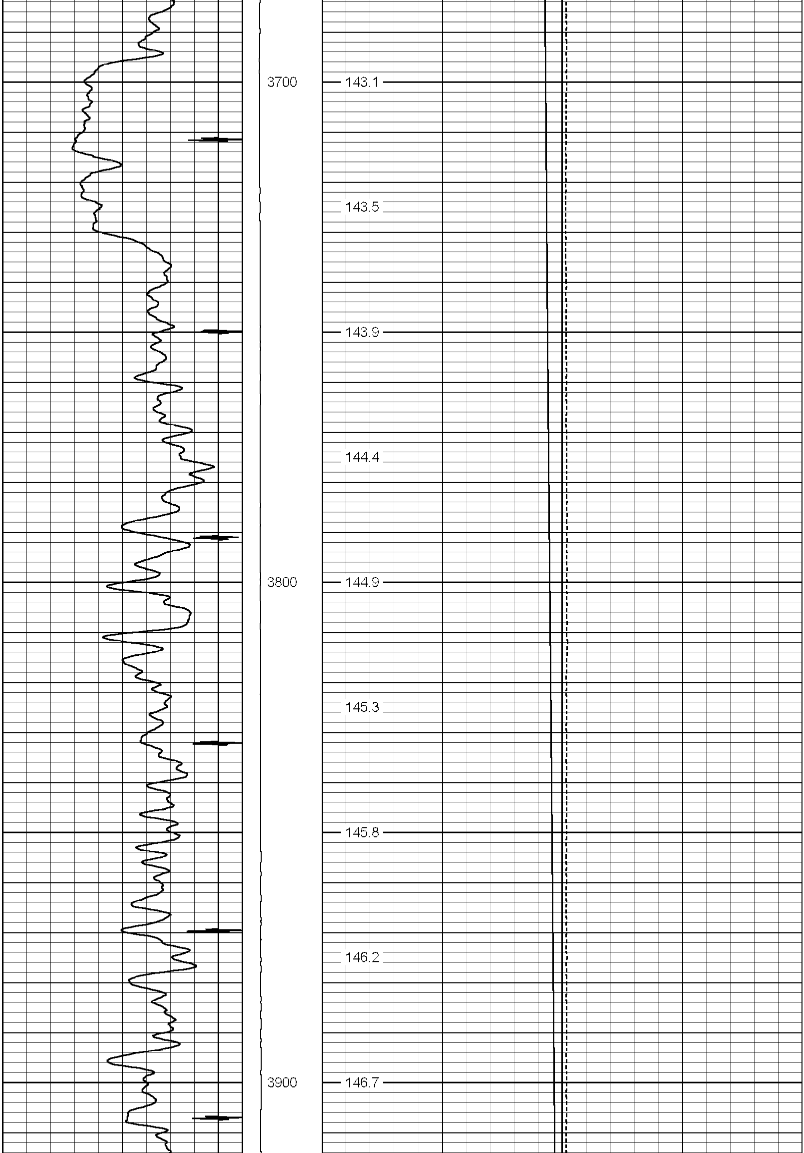


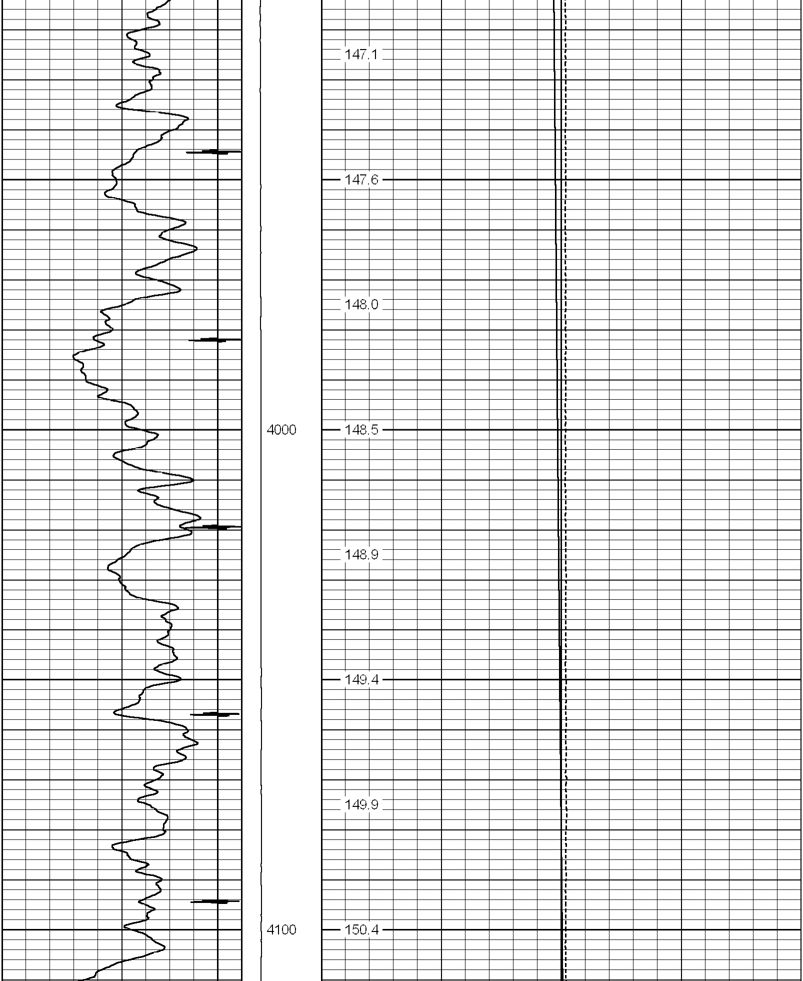


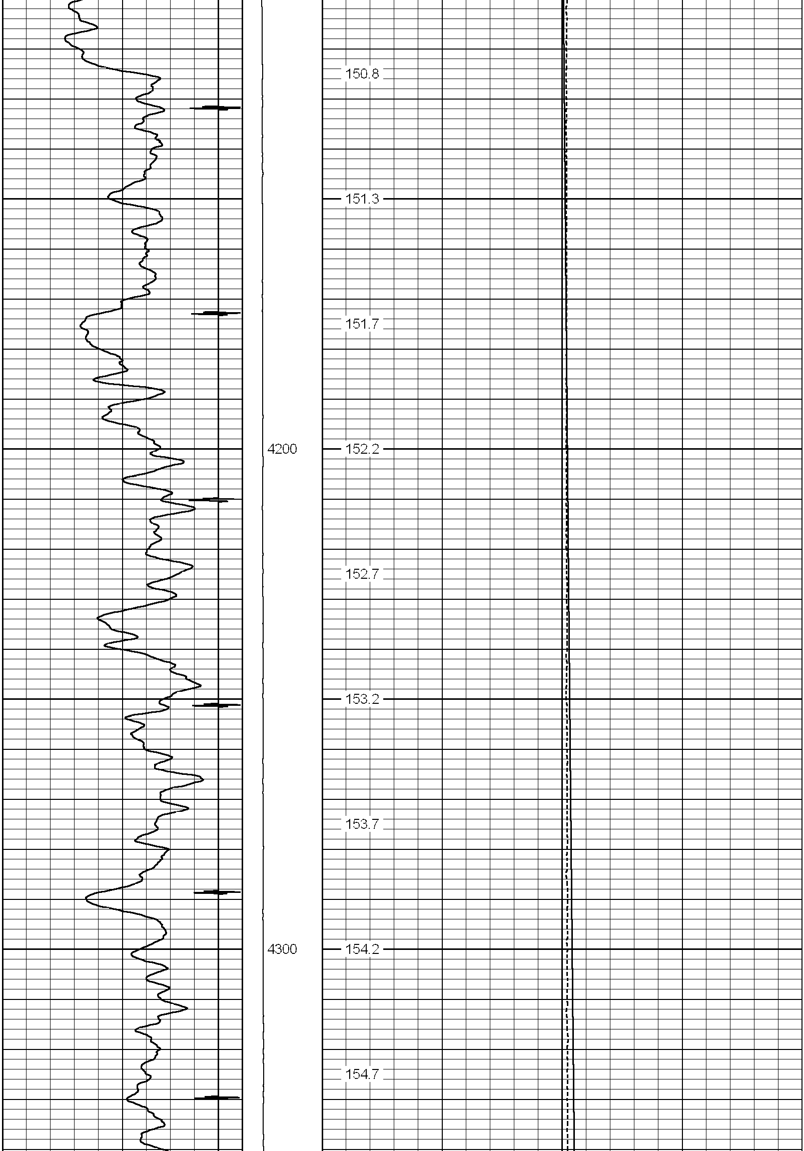


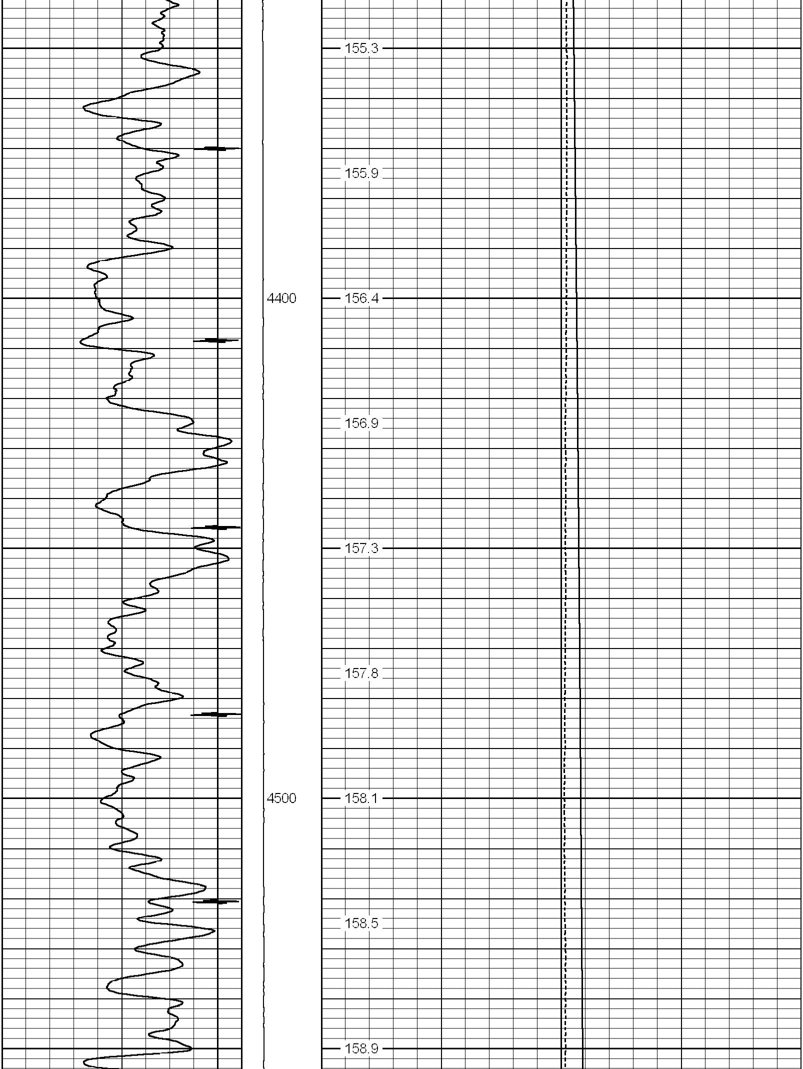


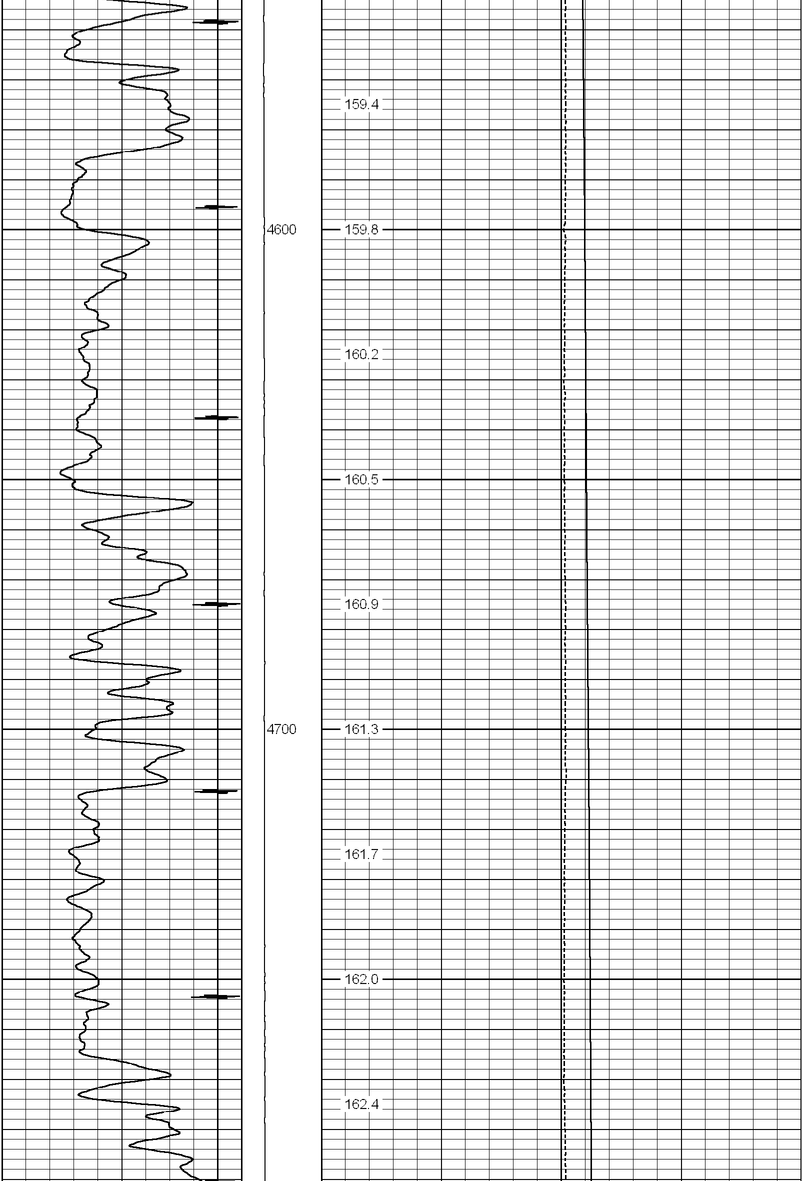


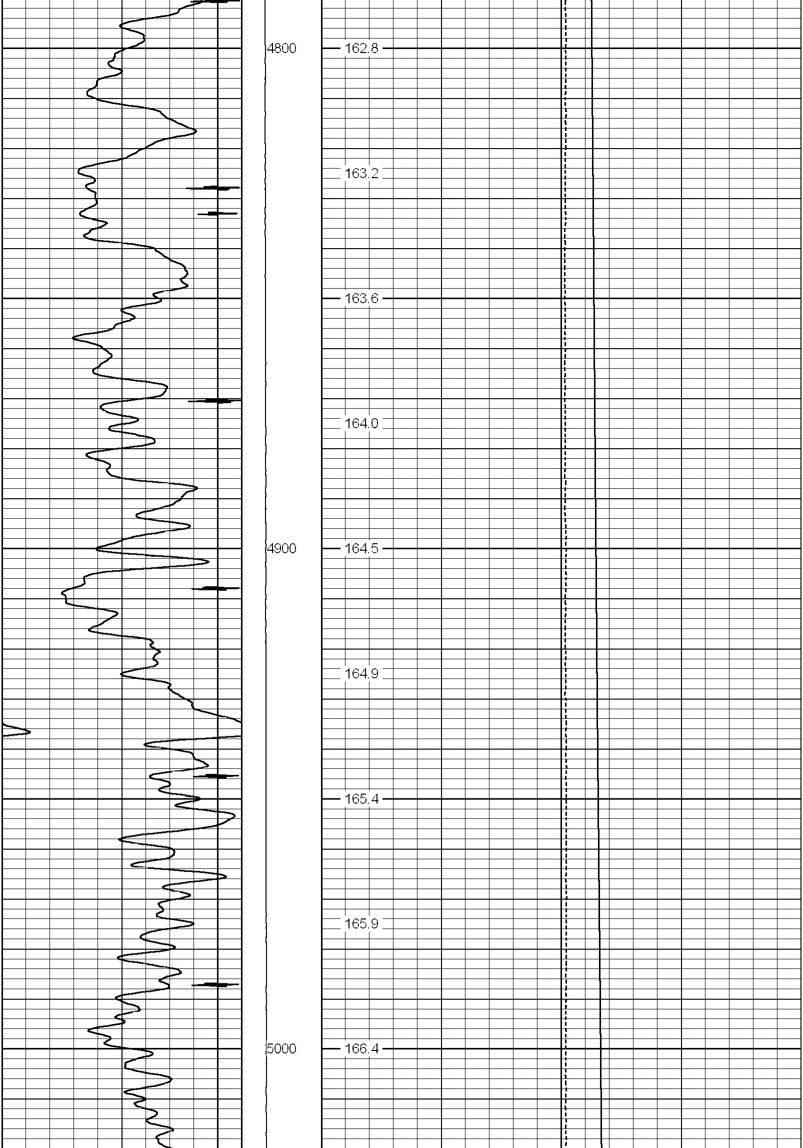


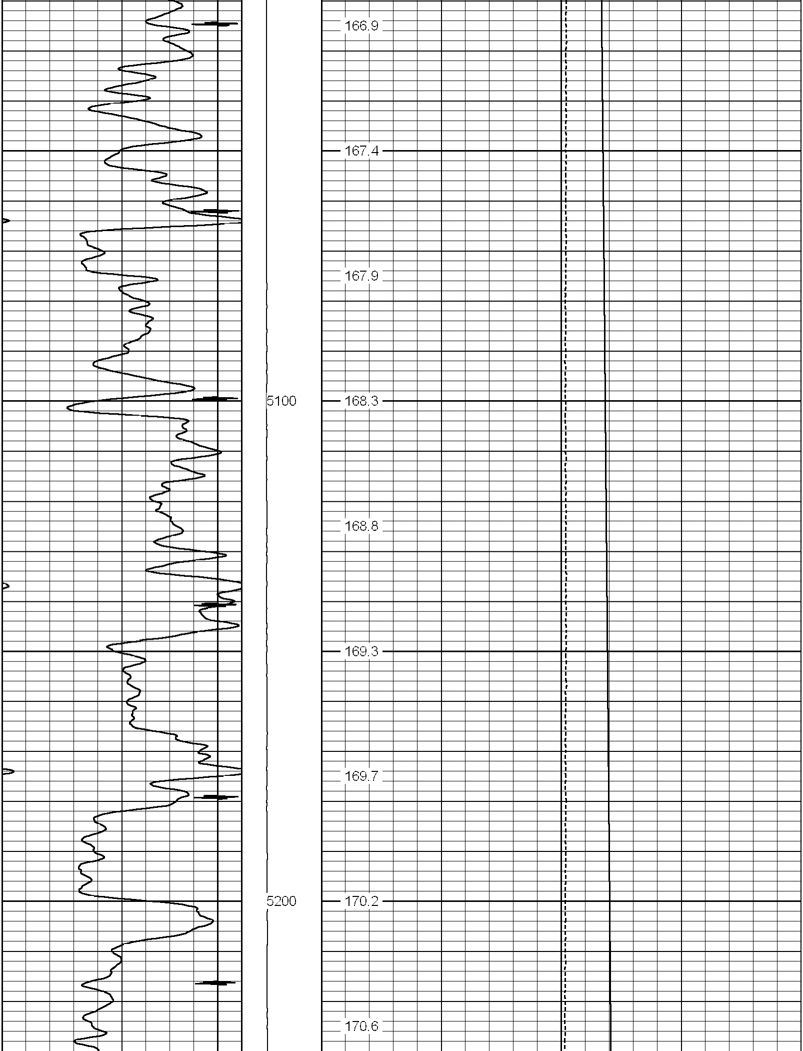


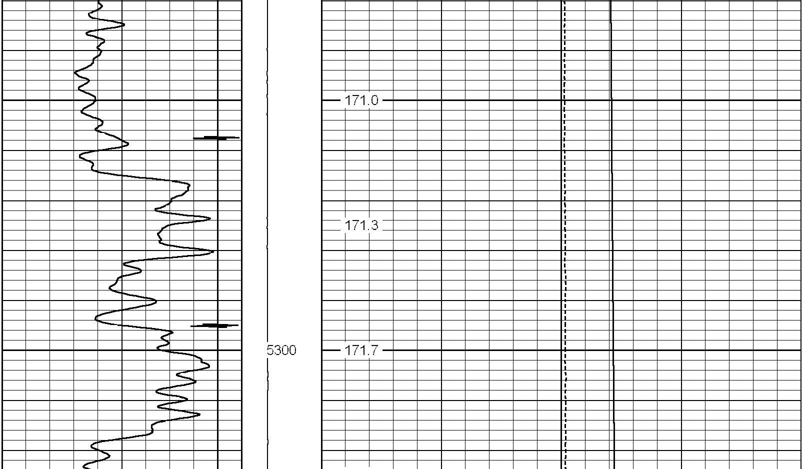


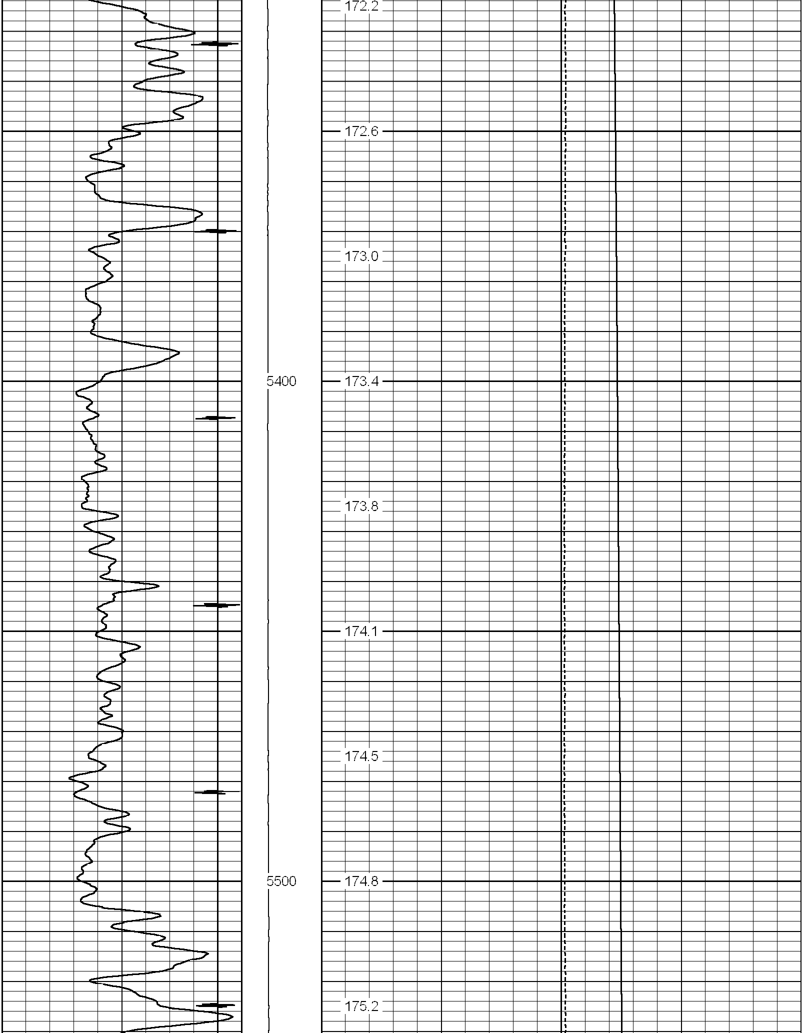


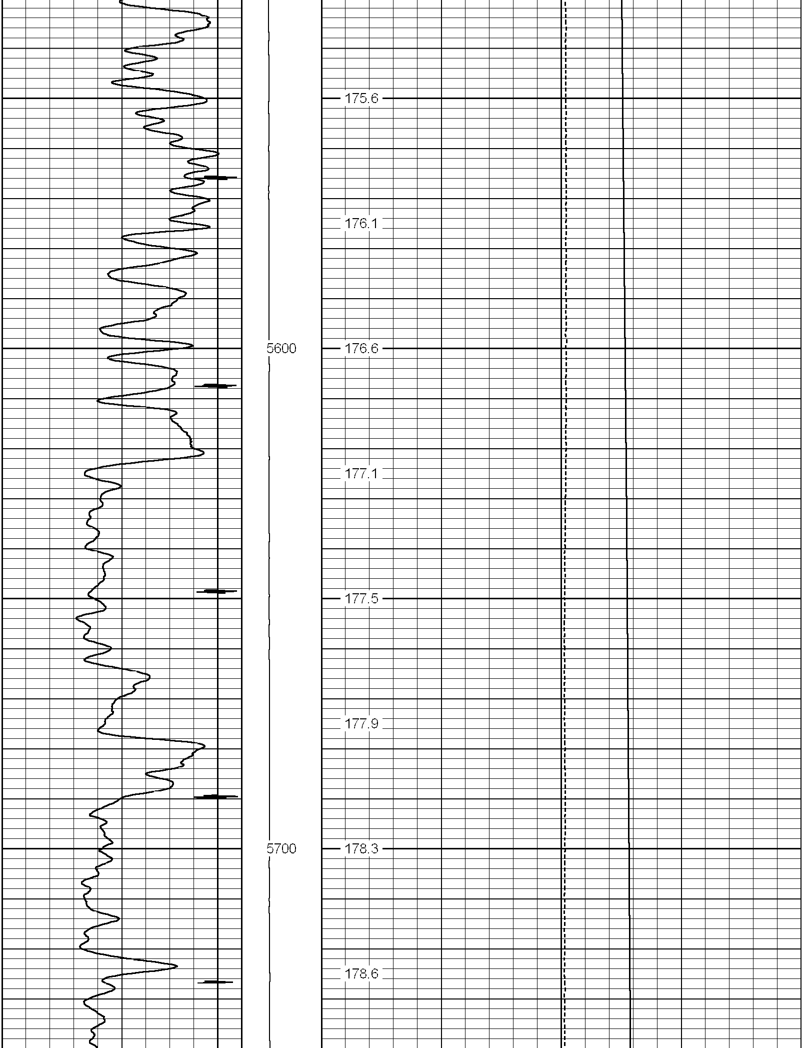


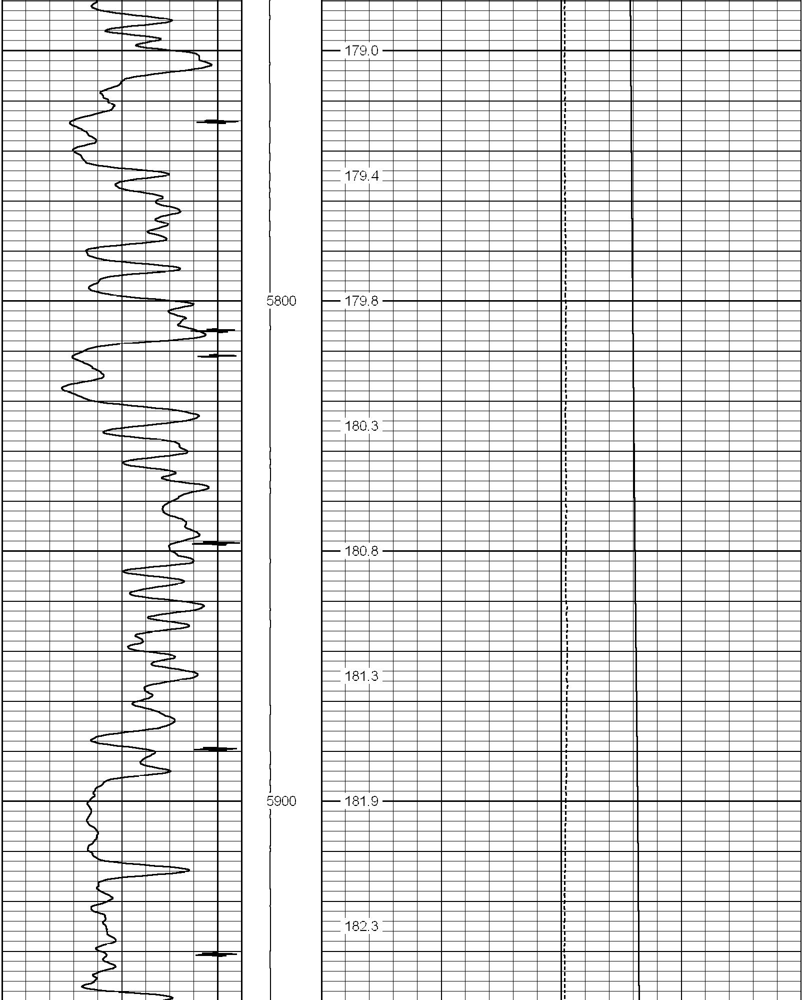


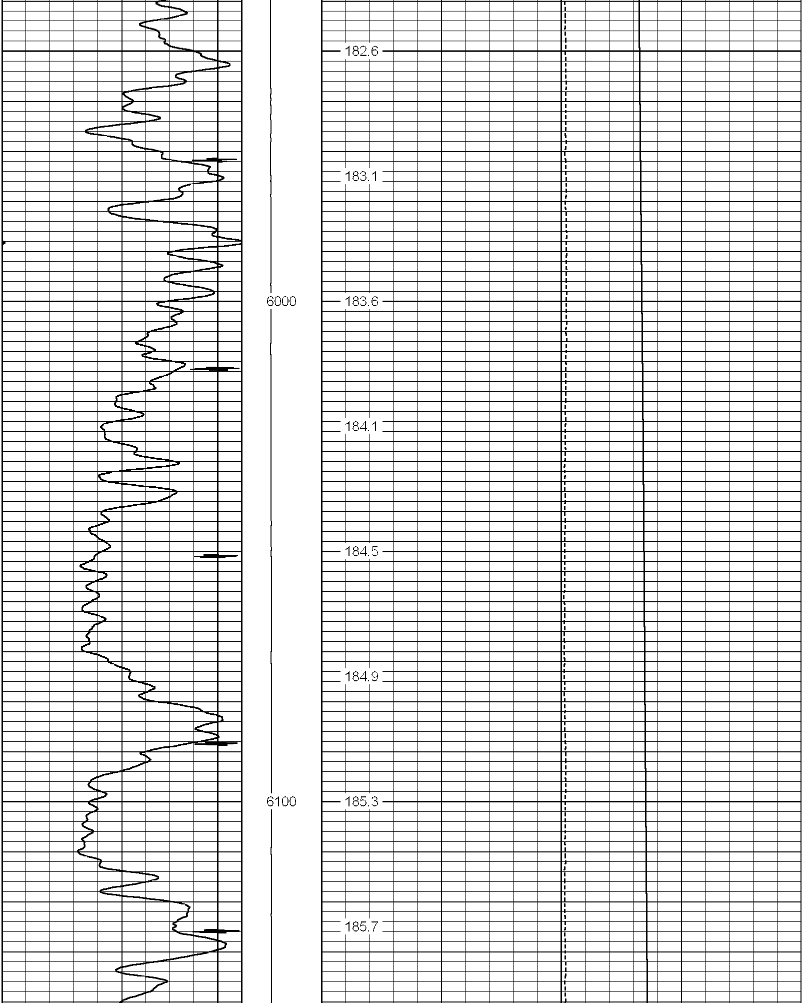


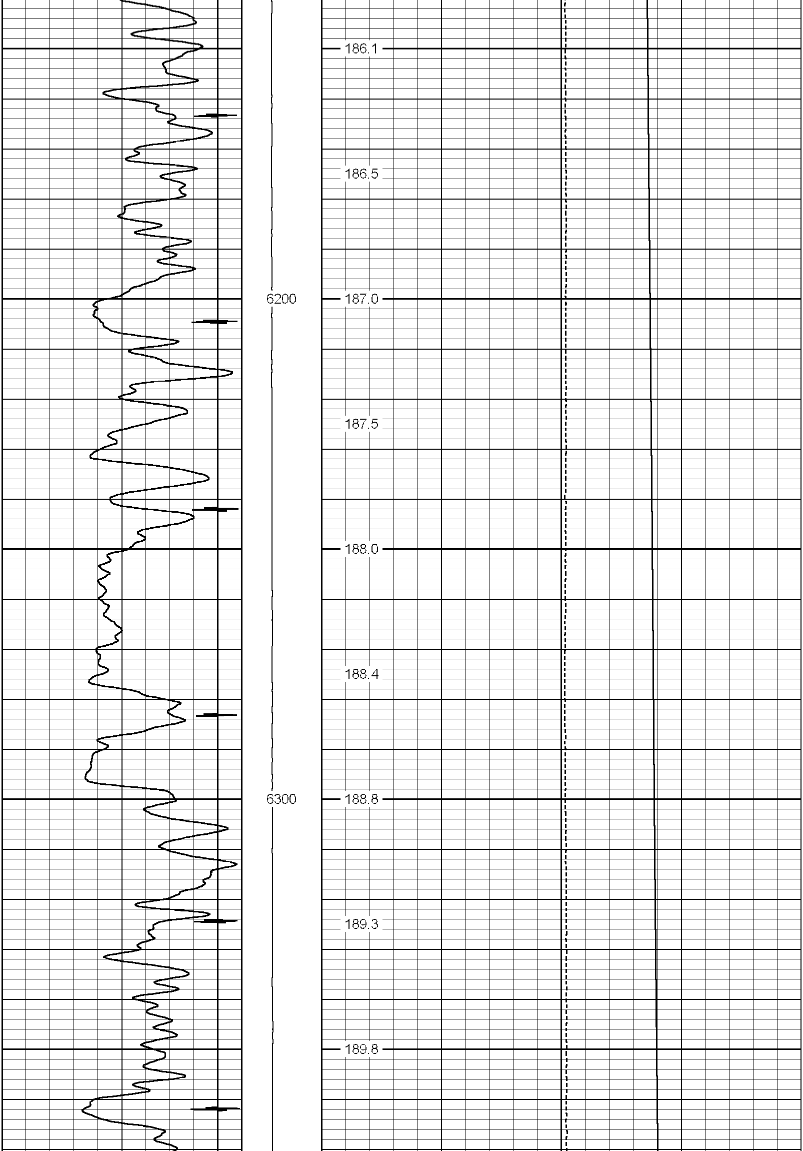


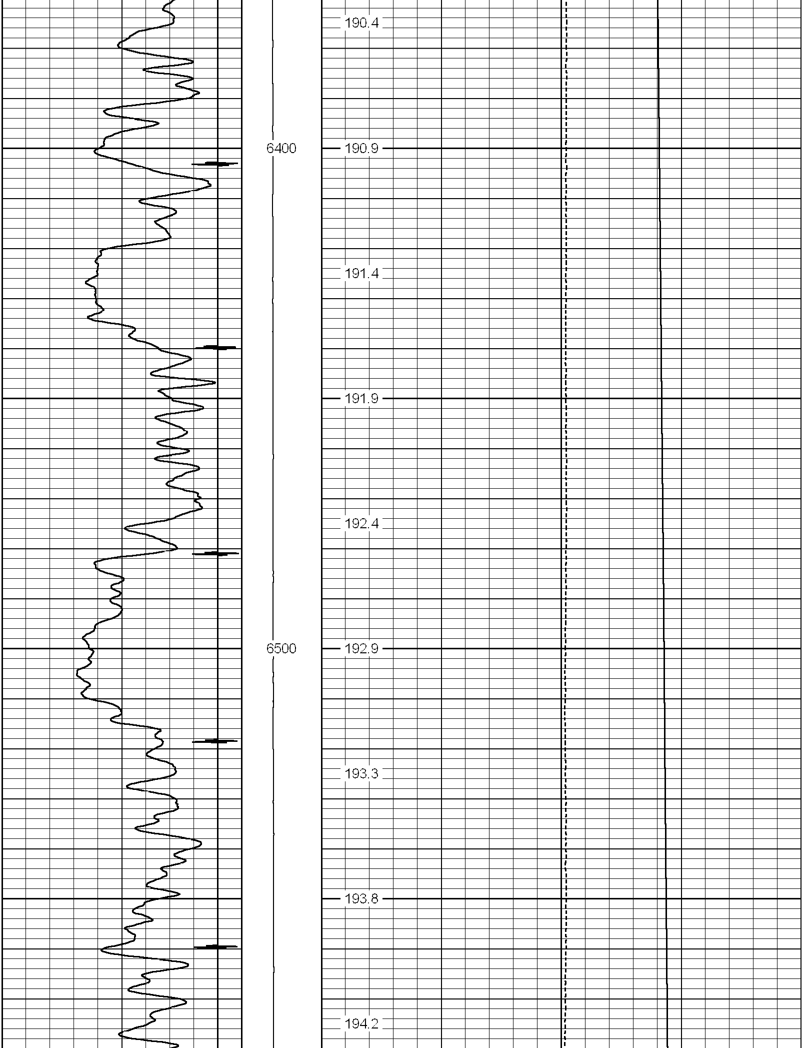


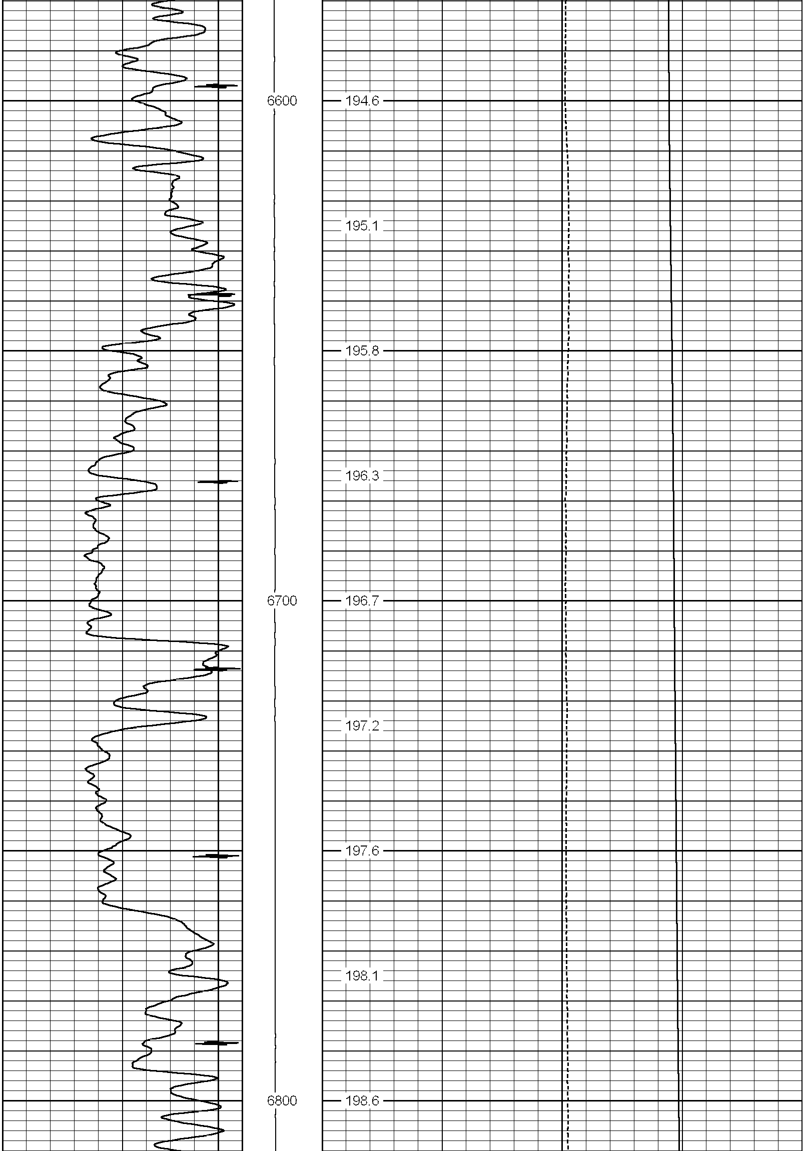


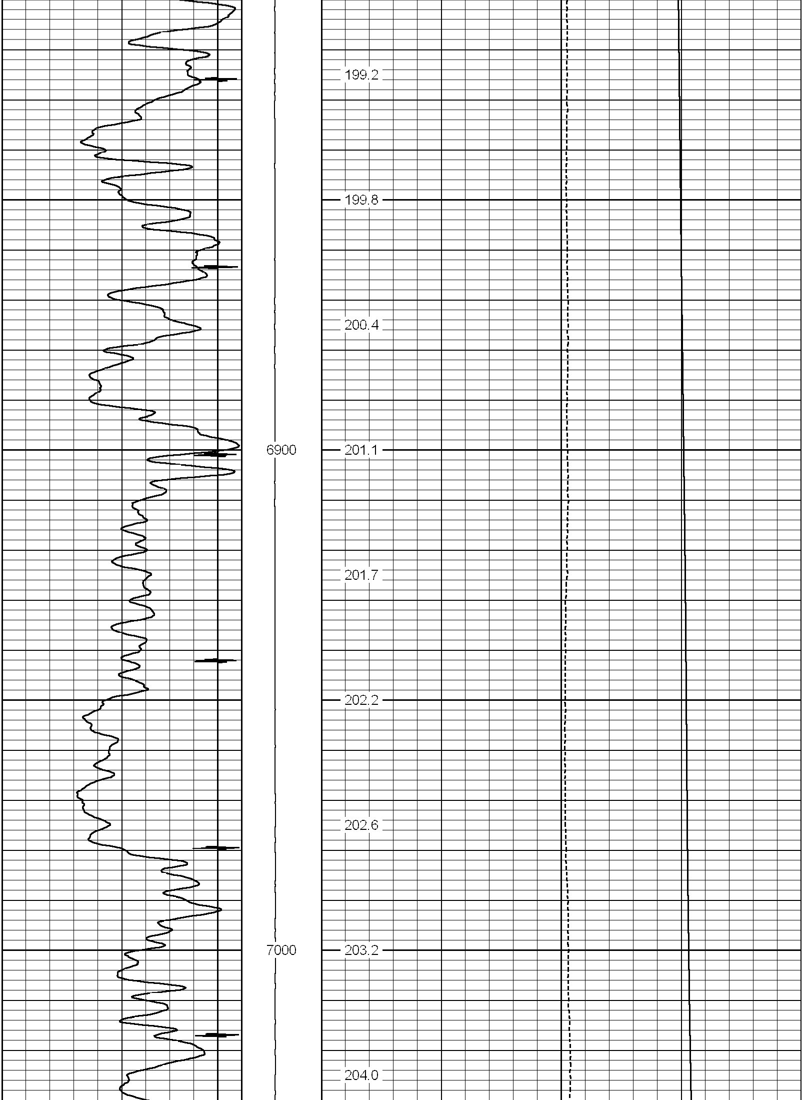


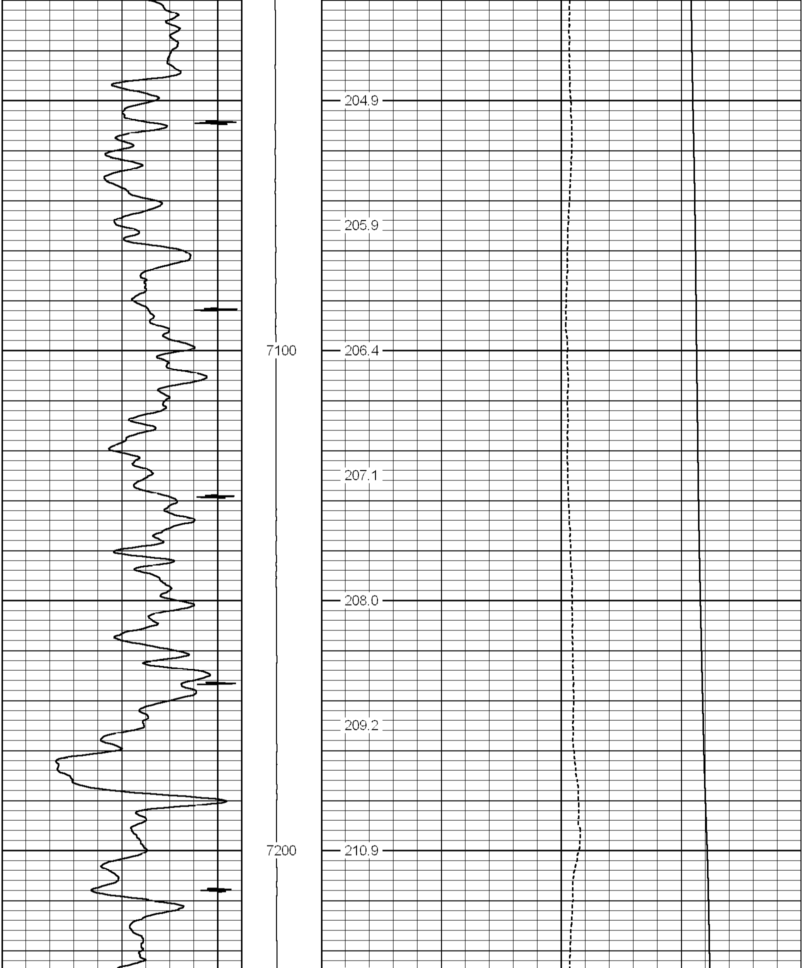


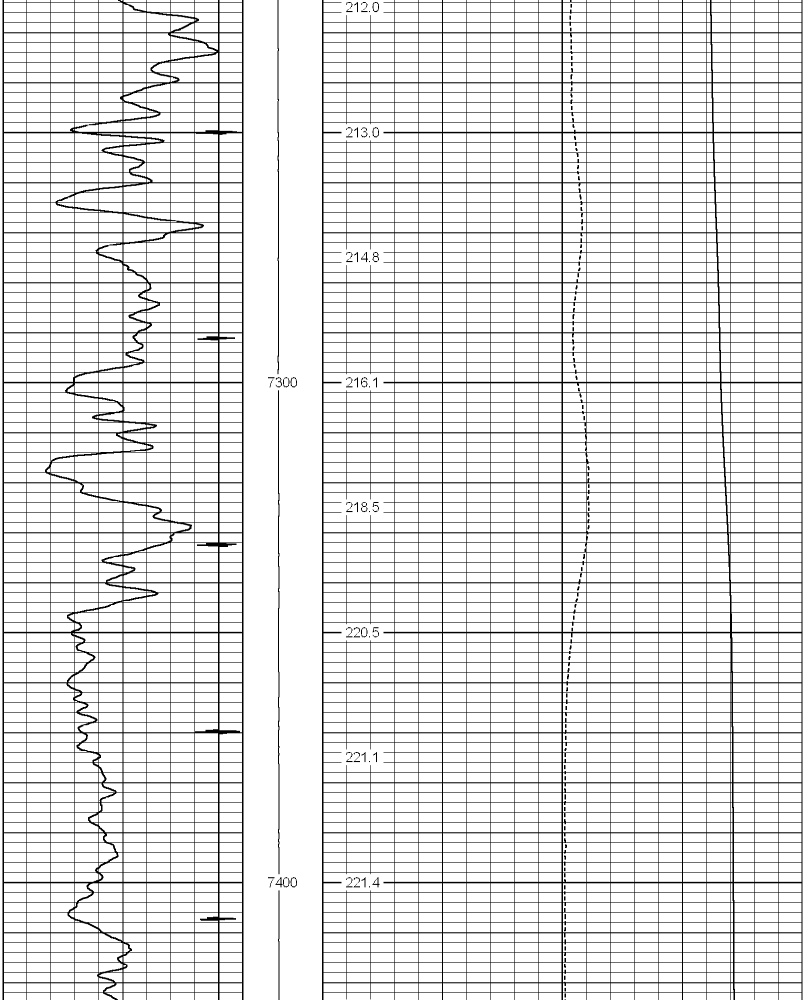


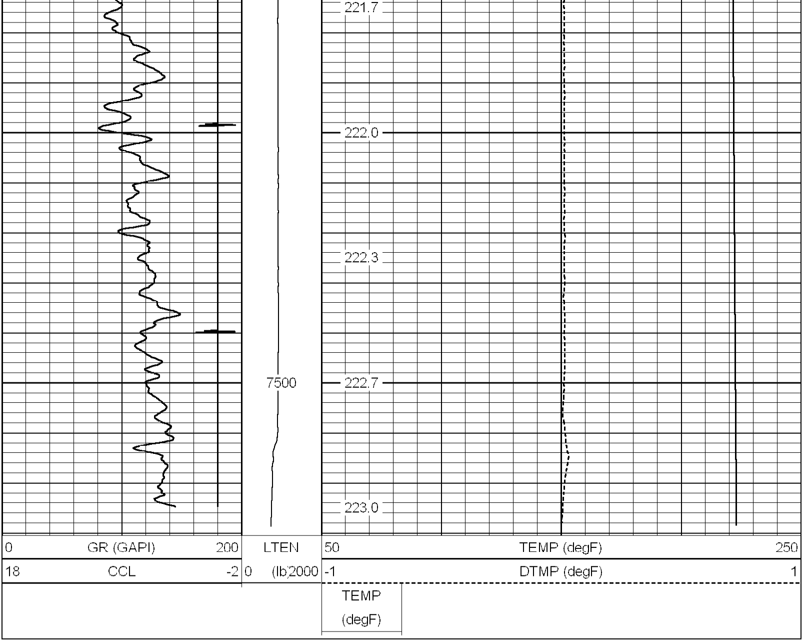












HALLIBURTON

TEMPERATURE LOG

5"=100'

Calibration Report

Database File: C:\Warrior\Data\OXY\OXY_SHELL_CBL_TEMP\shell_697_34_08B_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/LD_TEMP3
Dataset Creation: Wed Dec 02 15:43:02 2009

Temperature Calibration Report

Serial Number: 081013
Tool Model: 1.375TEMP
Performed: Tue Dec 01 00:45:10 2009

	Reference		Reading	
Low Reference:	0.00	degF	0.00	cps
High Reference:	1.00	degF	10.00	cps

Gain: 0.10
Offset: 0.00
Delta Spacing 1

Gamma Ray Calibration Report

Type / Serial: Probe / 081008

SHOP CALIBRATION

Tue Dec 01 00:50:18 2009

	Counts/Sec.	Gain	Offset	Jig	Units
Background	82.2				cps
Calibrator	318.6				cps
		0.9728			GAPI/cps

PRIMARY VERIFICATION

Tue Dec 01 00:52:39 2009

	Counts/Sec.	Gain	Offset	Jig	Units
Background	79.1				cps
Calibrator	312.2				cps
Difference				233.0	GAPI

BEFORE SURVEY VERIFICATION

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

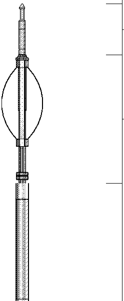
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

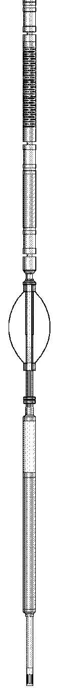
Cement Bond Log Calibration Report

Serial Number: 070571
Tool Model: Probe
Performed: Tue Dec 01 09:02:21 2009

Depth: 106.903 ft
Casing Diameter: 4.5 in

	3' Spacing	5' Spacing	
Signal Zero:	2	2	mV
Calibrated Amplitude:	82	82	mV
Reading at Signal Zero:	-0.00012207	0.000488281	V
Reading in Free Pipe:	1.49036	1.27739	V
Gain:	53.674	62.6515	
Offset:	2.00655	1.96941	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			STNDRD Standard Cable Head - F.N. 1 3/8"	1.15	1.44	1.10
			CENT-Probe (PT_MONO2)	2.88	2.75	35.00



WVF3	13.32
WVF5	12.32
CCL	5.46
GR	4.08
TEMP	0.08
LLMTEN	0.00

CBL-Probe (070571) Probe 2.75" Dual Receiver Bond	8.92	2.75	108.00
CENT-Probe (PT_MONO2)	2.88	2.75	35.00
GR-Probe (081008) Probe 2.75" 4 Channel Pulse	4.71	2.75	60.00
TEMP-1.375TEMP (081013) Temperature Tool	1.54	1.38	30.00

Dataset:	shell_697_34_08B_cbl.db: G_VALLEY/SHELL_697/run1/LD_TEMP3
Total Length:	22.08 ft
Total Weight:	269.10 lb
O.D.	2.75 in

Company	OXY USA WTP LP		
Well	SHELL 697-34-08B		
Field	GRAND VALLEY		
County	GARFIELD	State	CO

HALLIBURTON

ACOUSTIC CEMENT BOND/
TEMPERATURE LOG