



PHOTO DENSITY
DUAL SPACED NEUTRON

COMPANY
WELL
FIELD
PROVINCE
COUNTRY
LOCATION
LSD SEC TWP RGE Other Services

PARAMOUNT RESOURCES LTD
PARA ET AL CAMERON L-73
CAMERON HILLS
NORTHWEST TERRITORIES
CANADA
300L-73-60-10-117-15

FINAL PRINT

API Number 1159 MICROLOG
Permit Number 1159 ARRAY INDUCTION
Permanent Datum OUND LEVEL Elevation 770.8 metres
Log Measured From 4.0 Mabove Permanent Datum
Drilling Measured From KELLY BUSHING
Date 27-FEB-2007
Run Number 1
Depth Driller 1450.00 metres
Depth Logger 1448.60 metres
First Reading 1440.40 metre
Last Reading 0.00 metre
Casing Driller 436.00 metres
Casing Logger 436.00 metres
Bit Size 200.00 mm
Hole Fluid Type GELCHEM
Density / Viscosity 1180.0 kg/m³ 85.00 sec/L
PH / Fluid Loss 10.00 8.00 ml/30Min
Sample Source FLOWLINE
Rm @ Measured Temp 0.54 @ 25.0 ohm-m
Rmf @ Measured Temp 0.41 @ 25.0 ohm-m
Rmc @ Measured Temp 0.63 @ 25.0 ohm-m
Source Rmf / Rmc PRESS FILTER
Rm @ BHT 0.36 @ 47.0 ohm-m
Time Since Circulation 8.5 HRS
Max Recorded Temp 47.00 deg C
Equipment Name 13132
Equipment / Base QUINT GPR
Recorded By L. SUTHERLAND
Witnessed By A. AHMED
CIRC STOP 05.30 FEB 27

BOREHOLE RECORD

Last Edited: 28-FEB-2007 03:49

Bit Size millimetres	Depth From metres	Depth To metres
311.000	0.00	436.00
200.000	436.00	1450.00

CASING RECORD

Type	Size millimetres	Depth From metres	Shoe Depth metres	Weight pounds/ft
SURFACE	219.100	0.00	436.00	35.70

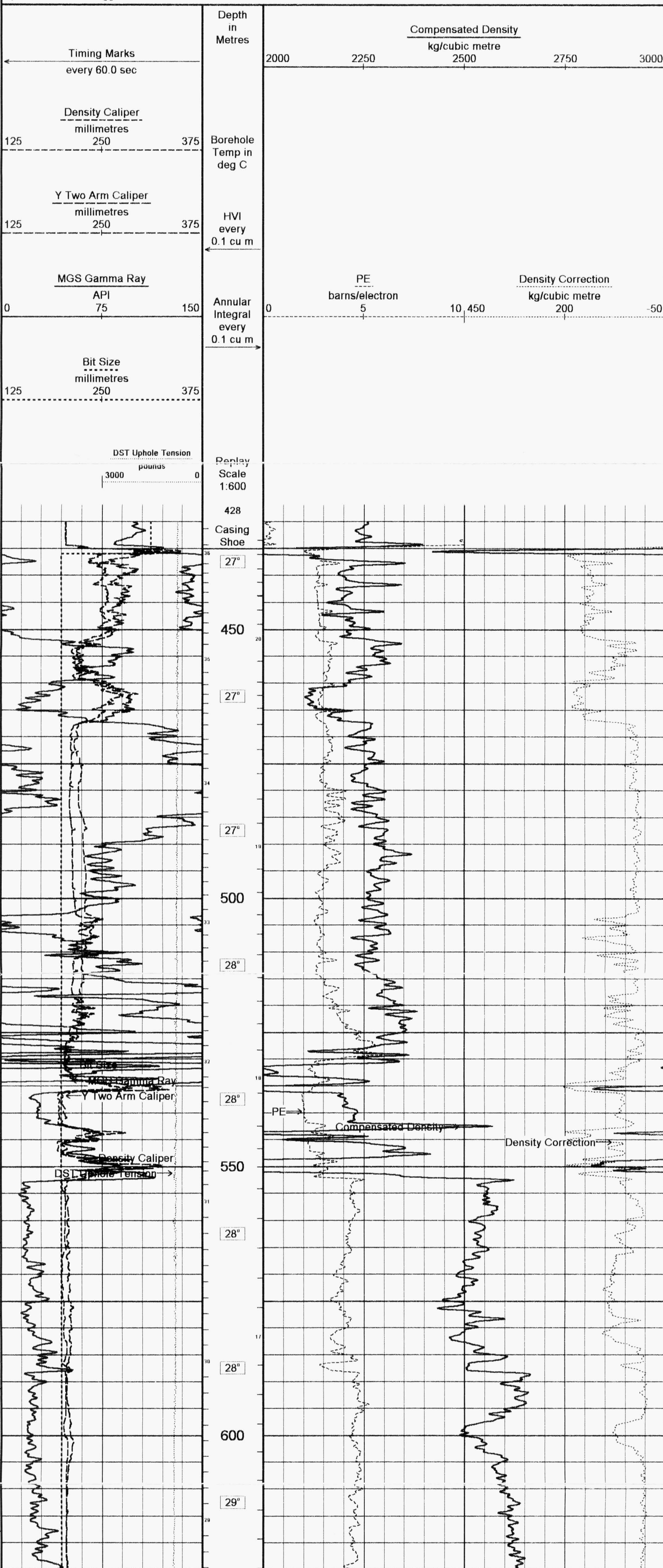
REMARKS

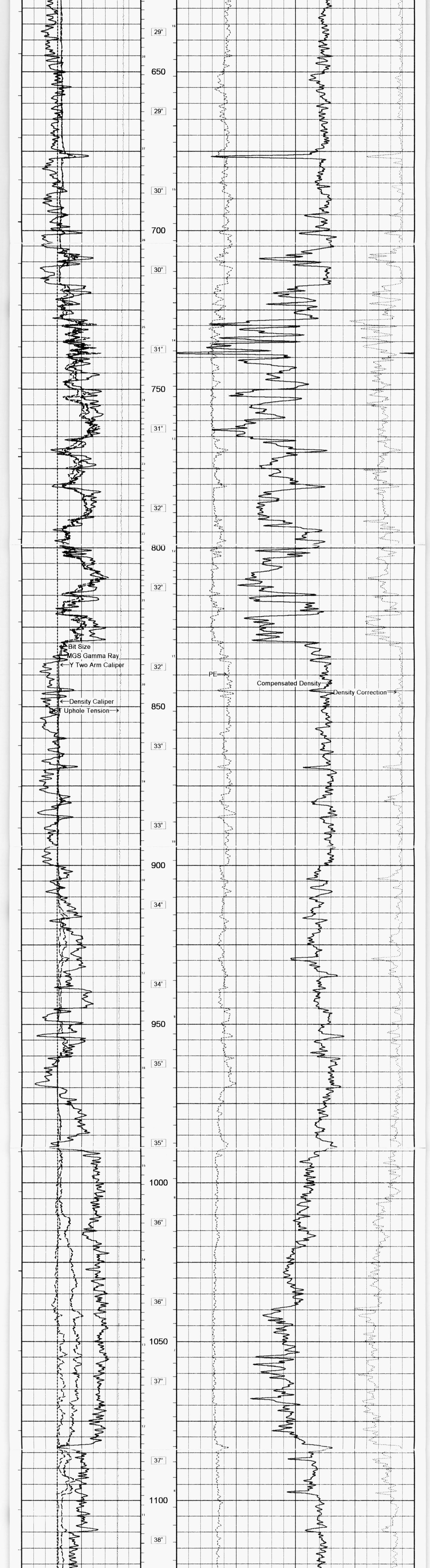
- 1) SOFTWARE ISSUE: WLS 7.01.0195
- 2) CUSTOMER SCALES AND INTERVALS LOGGED.
- 3) MAI, MSS, MPD, MDN, MML, ISC, MGS, MTC, MFE, MCG RAN IN COMBINATION.
- 4) HARDWARE: MAI: TWO 25.4 MM STANDOFFS
MSS: THREE 25.4 MM STANDOFFS
MDN: DUAL NEUTRON BOWSPRING
MTC: ONE SIX-LEAF CENTRALIZER
- 5) SAP# 4147855 FIELD TICKET # 30074798
- 6) # FIELD PRINTS = 3 # FINAL PRINTS = UNKNOWN
- 7) RIG: PD # 129
- 8) HOLE CEMENT VOLUMES CALCULATED USING DENSITY CALIPER AND TWO ARM CALIPER IN COMBINATION:
HOLE VOLUME = 36.05 CU M
ANNULAR VOLUME USING 139.7 MM PRODUCTION CASING = 20.65 CU M
- 9) AREAS OF BOREHOLE RUGOSITY MAY CAUSE POOR DENSITY PAD CONTACT RESULTING IN HIGH DENSITY CORRECTION AND THUS INVALID DENSITY POROSITY DATA AT THOSE INTERVALS.
- 10) SONIC FREE PIPE: 378M

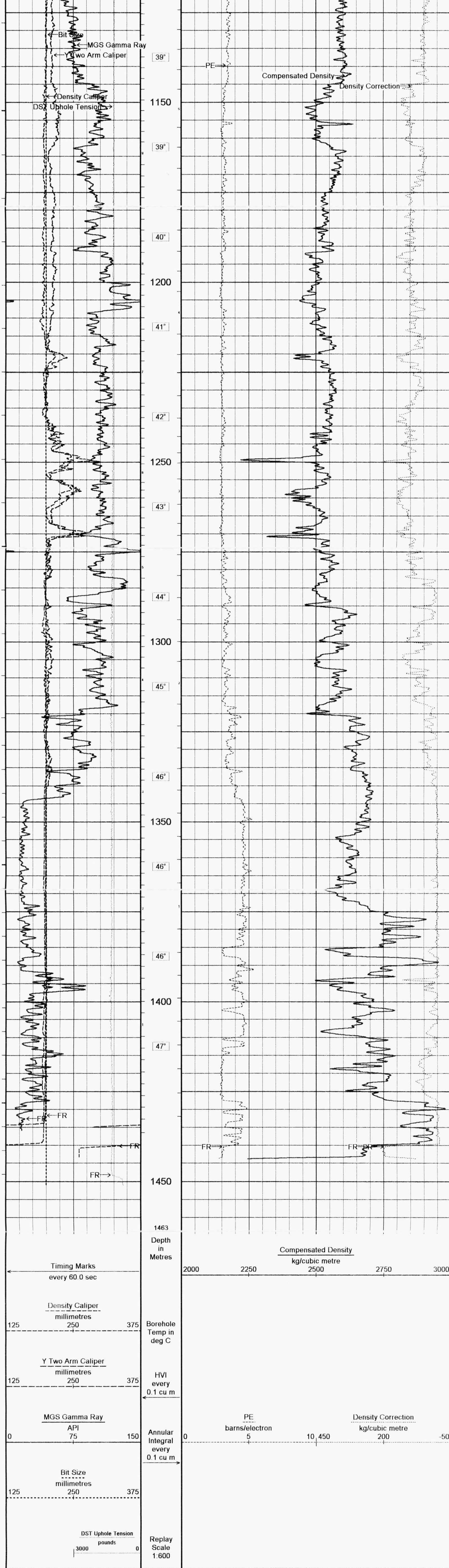
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

BULK DENSITY 1:600

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\bentle\LOCALS~1\Temp\Precision PreView\L-73 main.dta
System Versions: Logged with 7.01.0195 Processed with 7.01.0195 Plotted with 7.02.0256
Plotted on 01-MAR-2007 10:33
Recorded on 28-FEB-2007 02:28





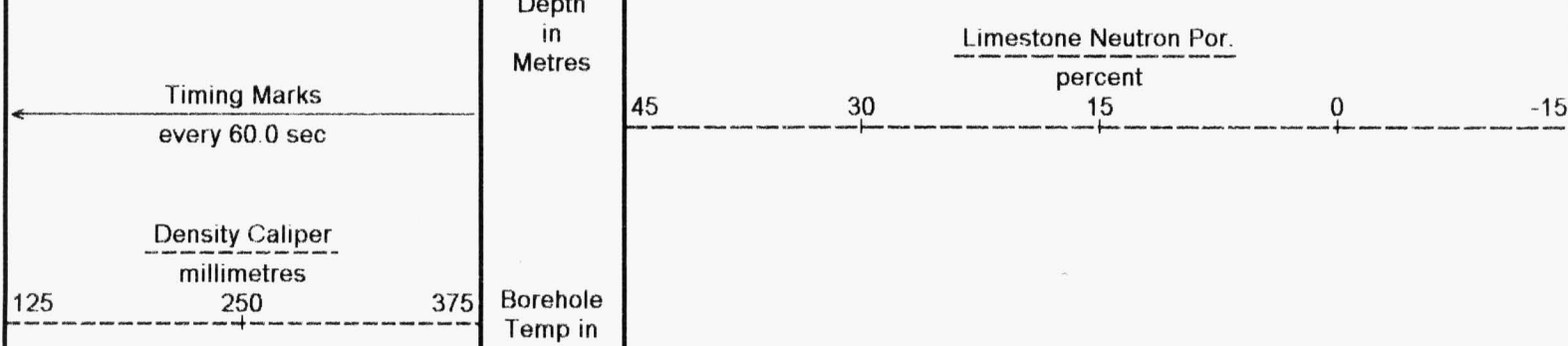


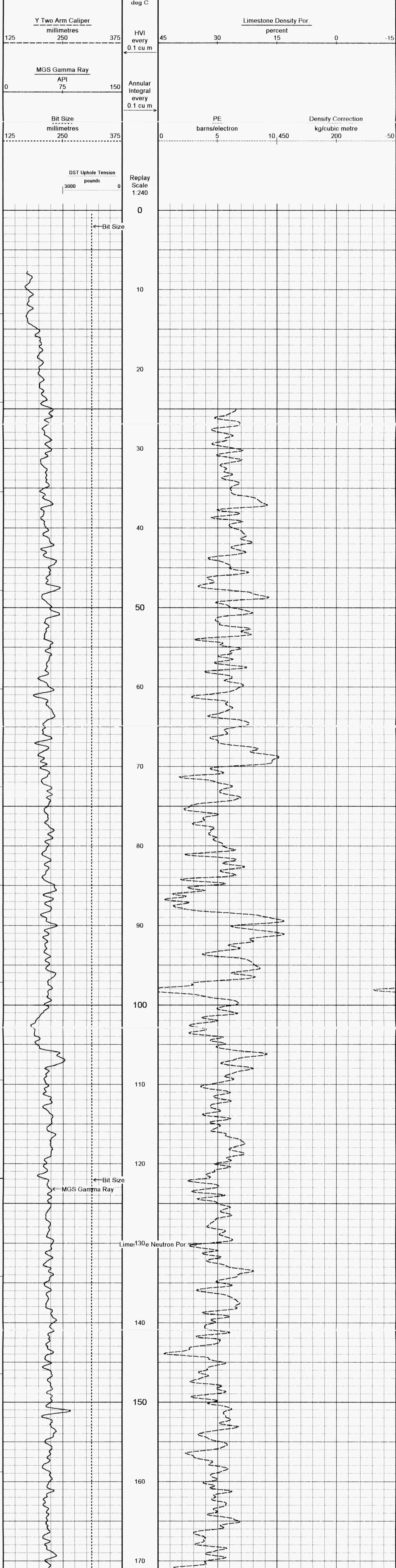
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System Versions: Logged with 7.01.0195 Processed with 7.01.0195 Plotted with 7.02.0256
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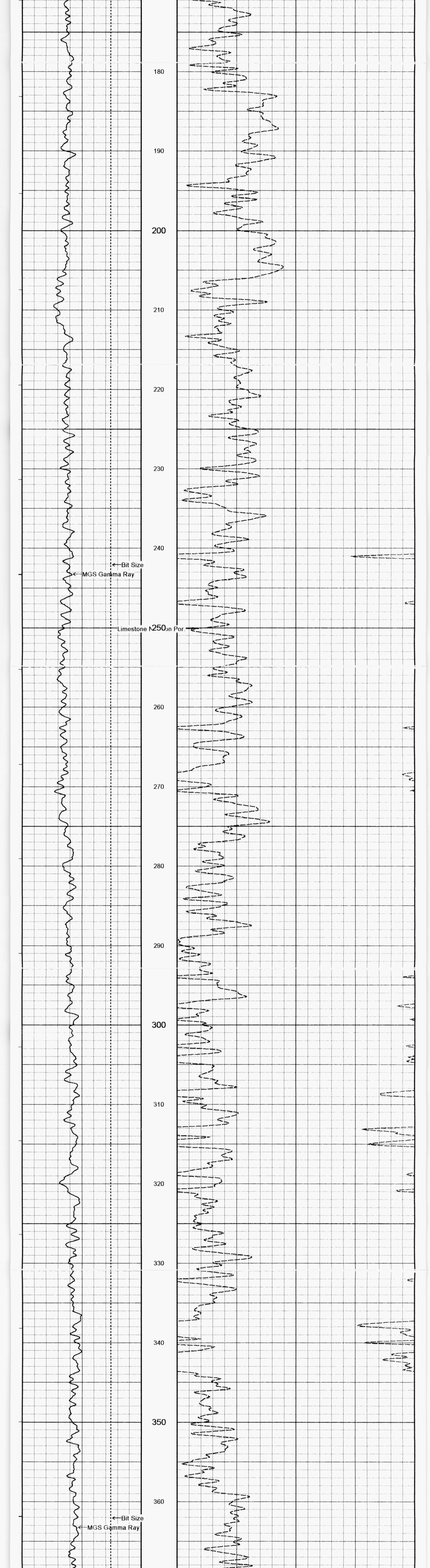
BULK DENSITY 1:600

LIMESTONE MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\bentlet\LOCALS~1\Temp\Precision PreViewL-73 main.dta
System Versions: Logged with 7.01.0195 Processed with 7.01.0195 Plotted with 7.02.0256
Plotted on 01-MAR-2007 10:33
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Lim370_{ne} Neutron Por

380

390

400

410

420

430

Casing
Shoe

27°

440

450

460

470

480

490

500

510

520

530

540

550

560

28°

Bit Size

MGS Gamma Ray

Y Two Arm Caliper

Density Caliper

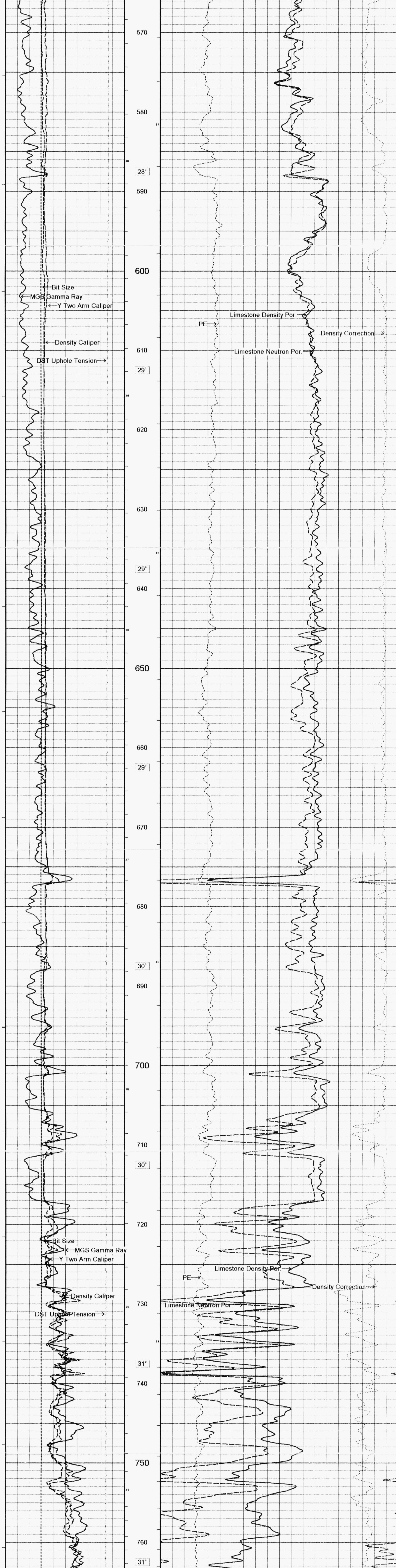
DSI Uphole Tension

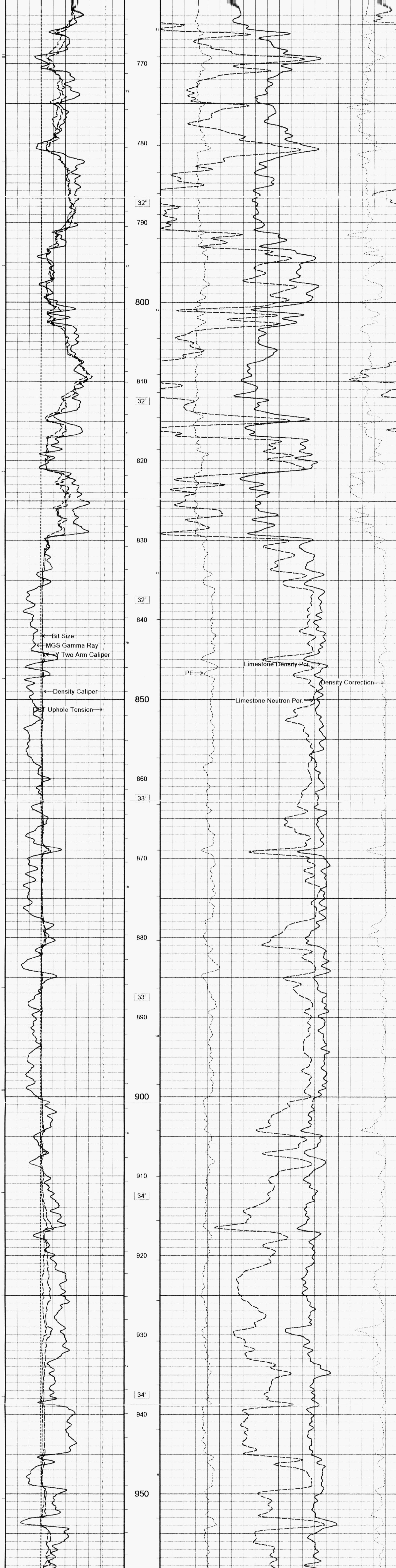
Limestone Neut490Por_o

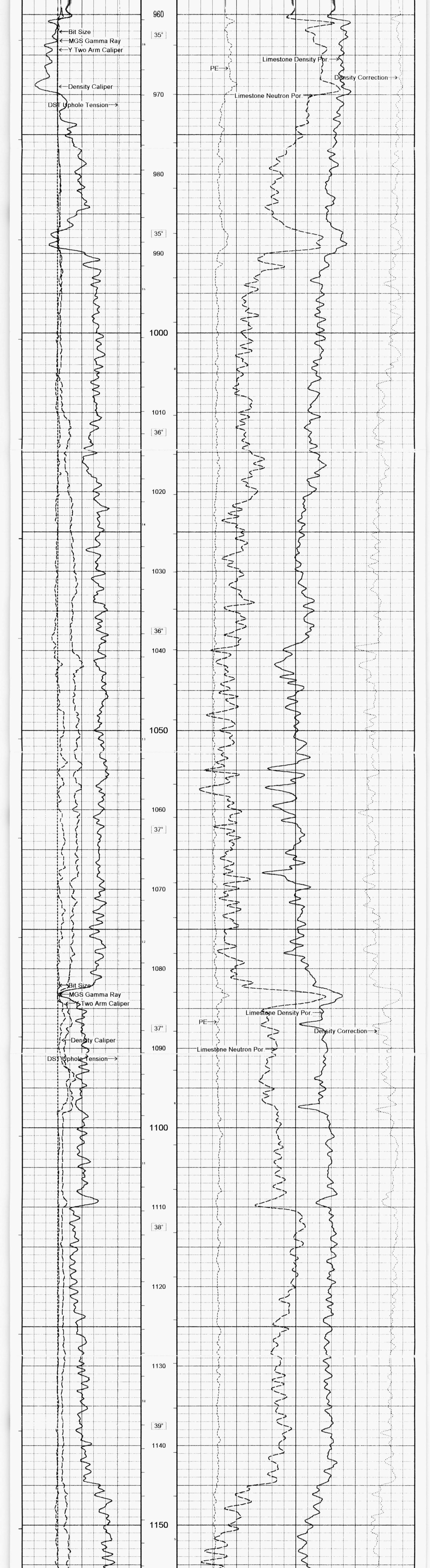
Limestone Density Por

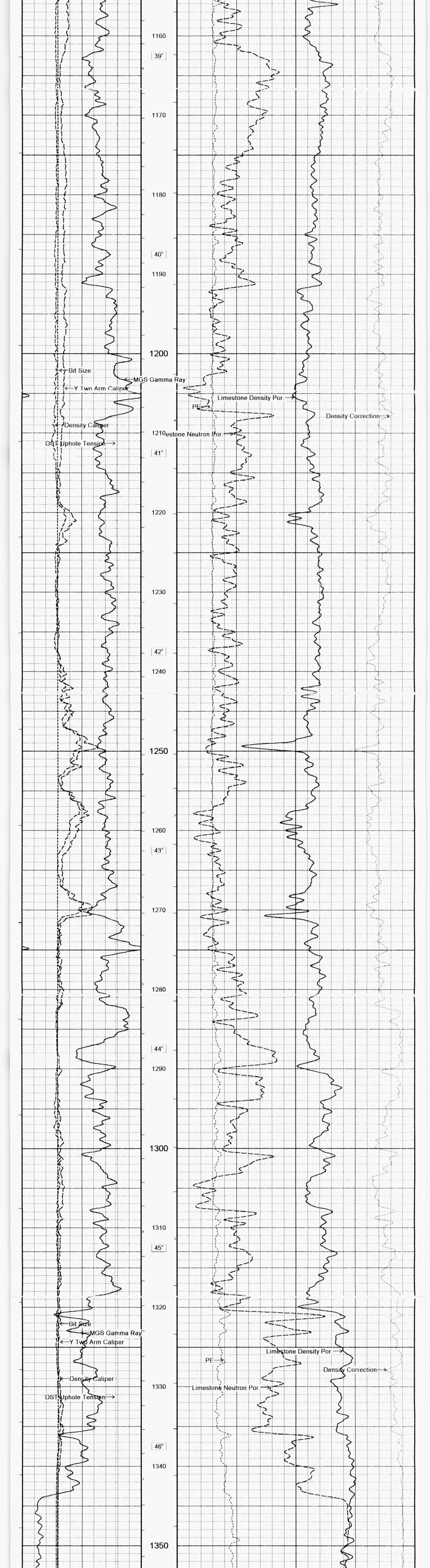
PE

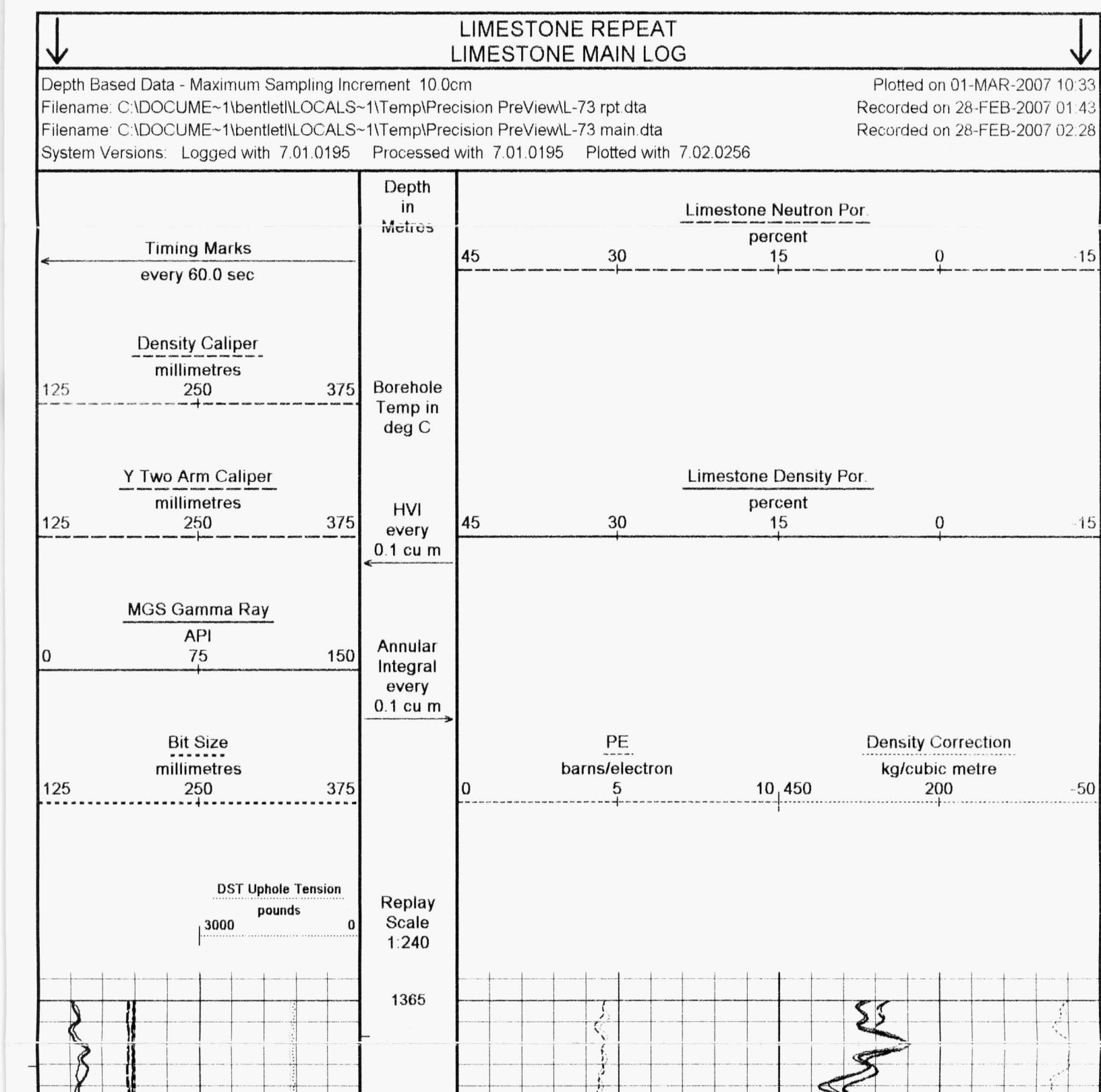
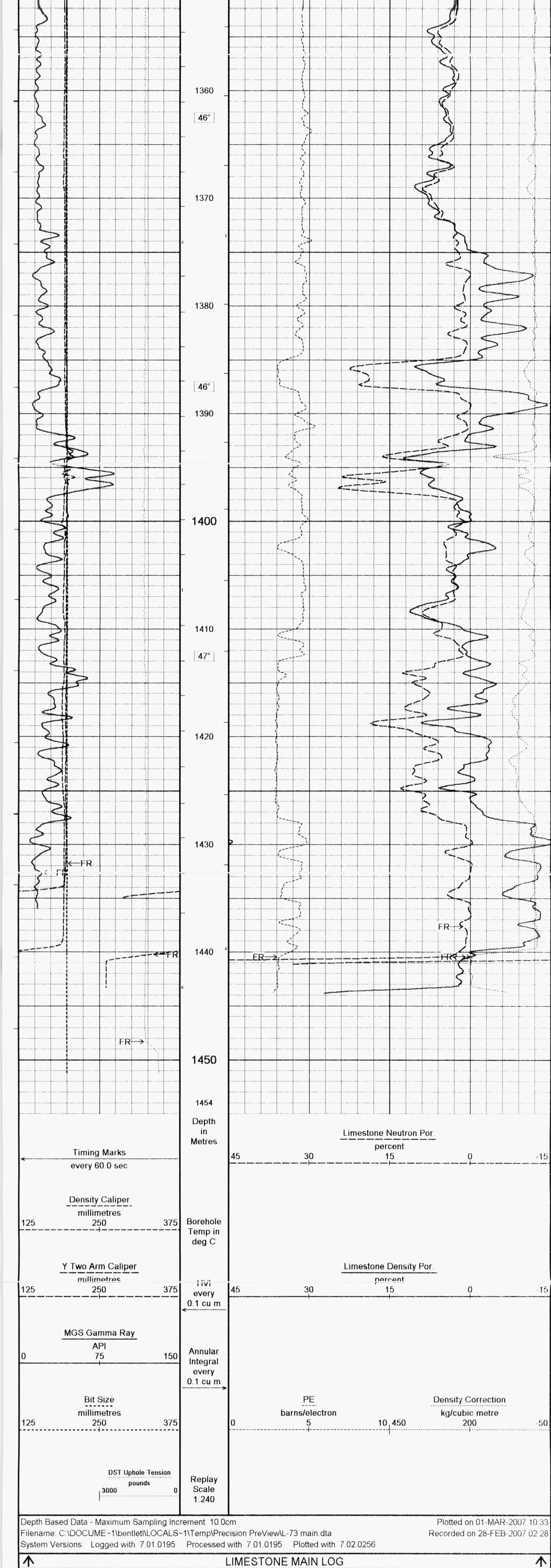
Density Correction

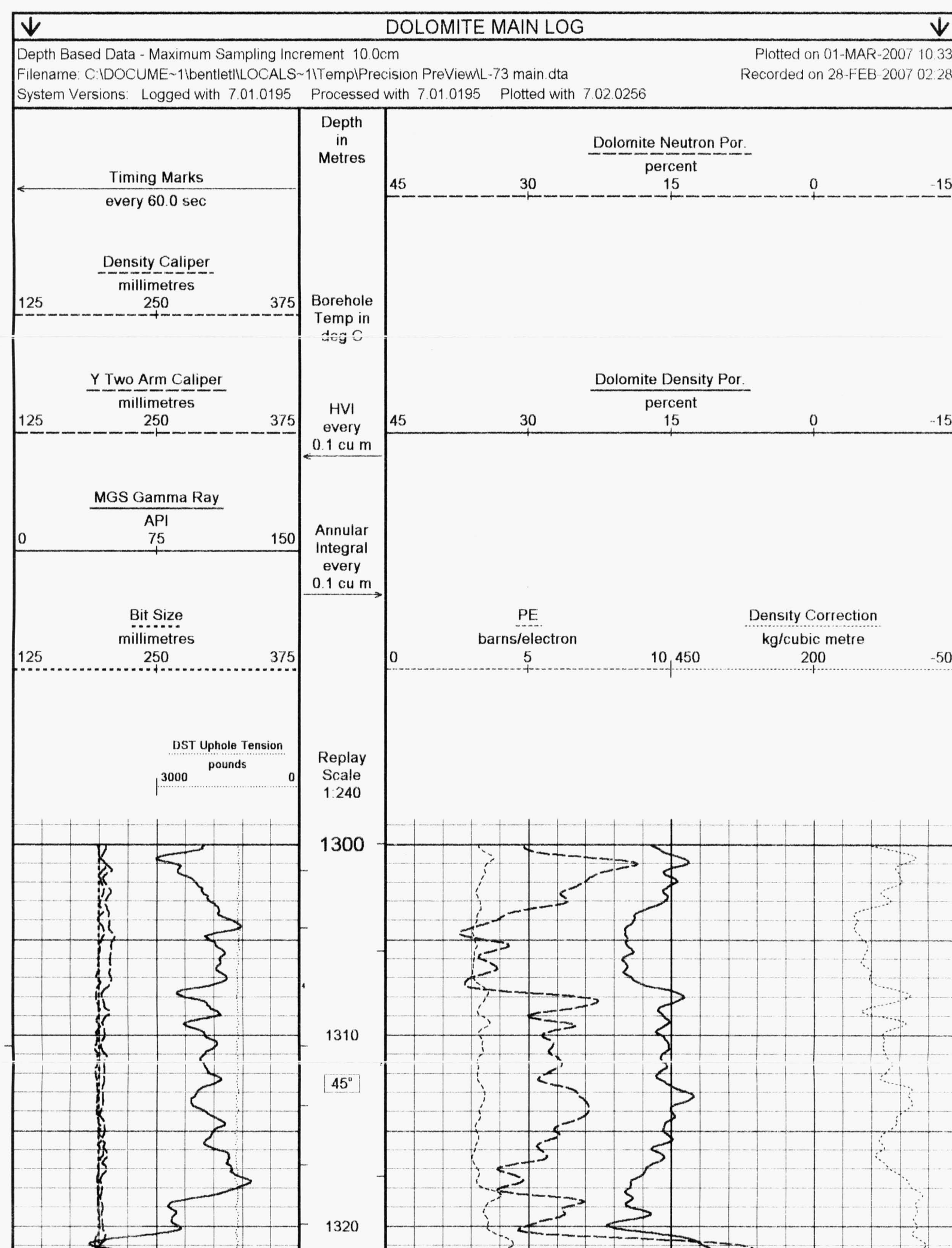
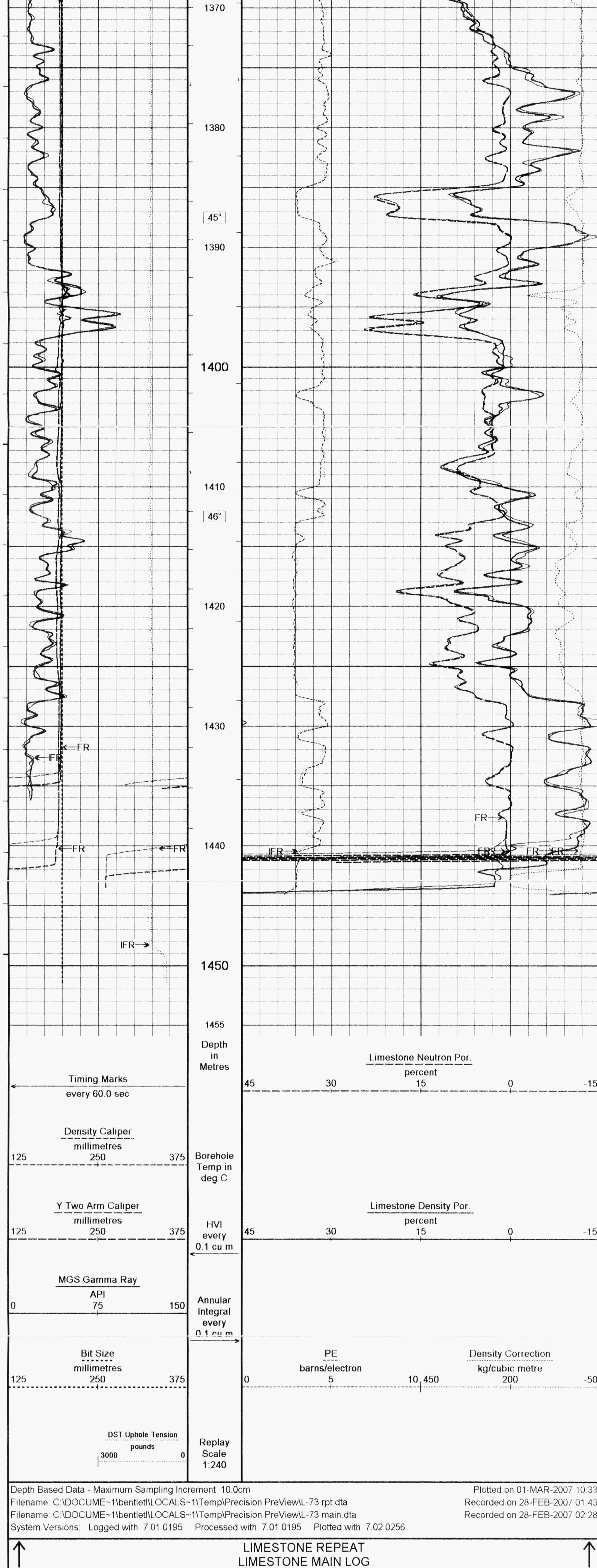


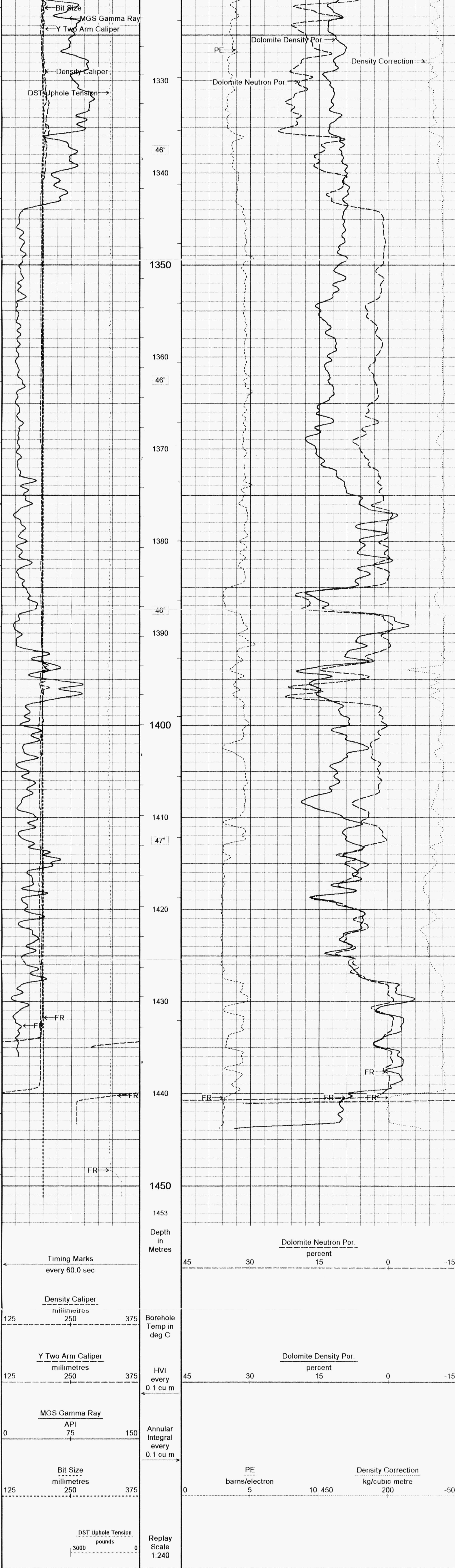






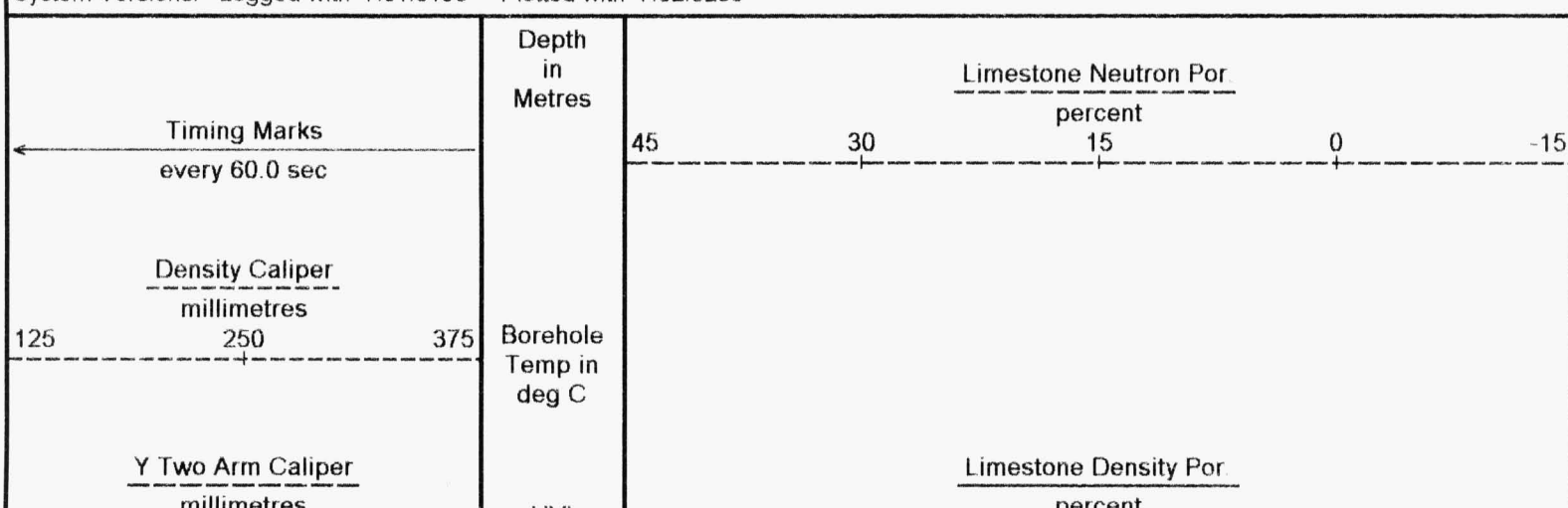


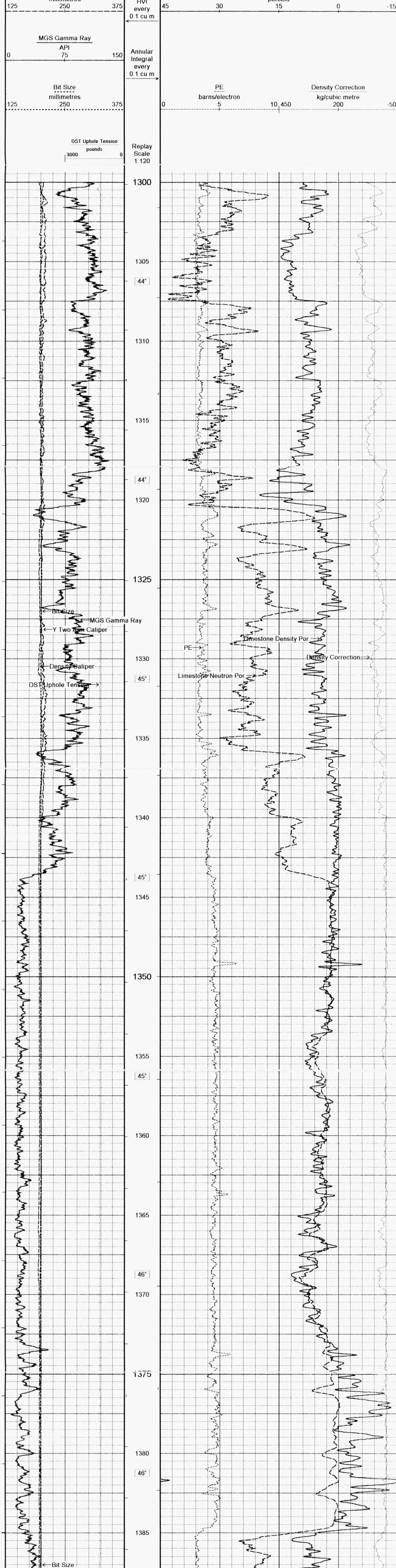


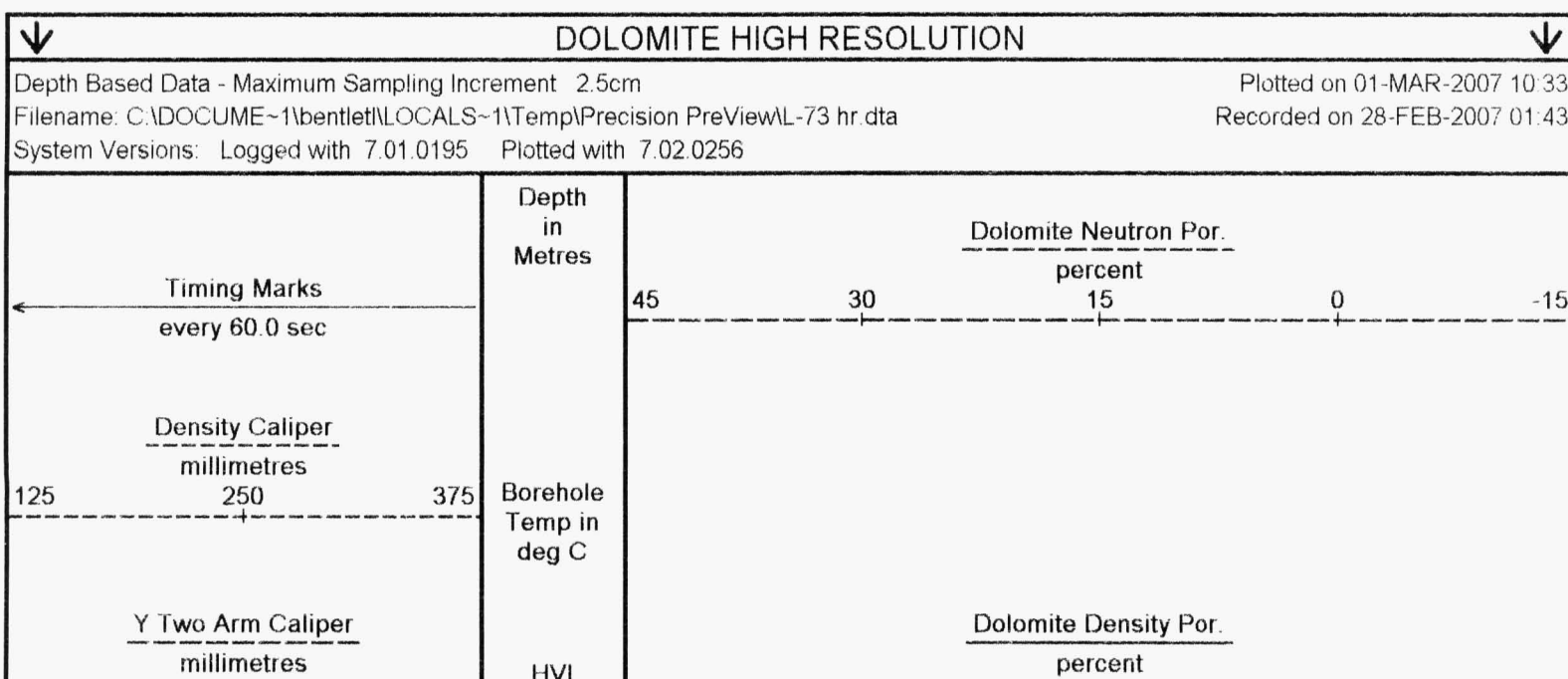
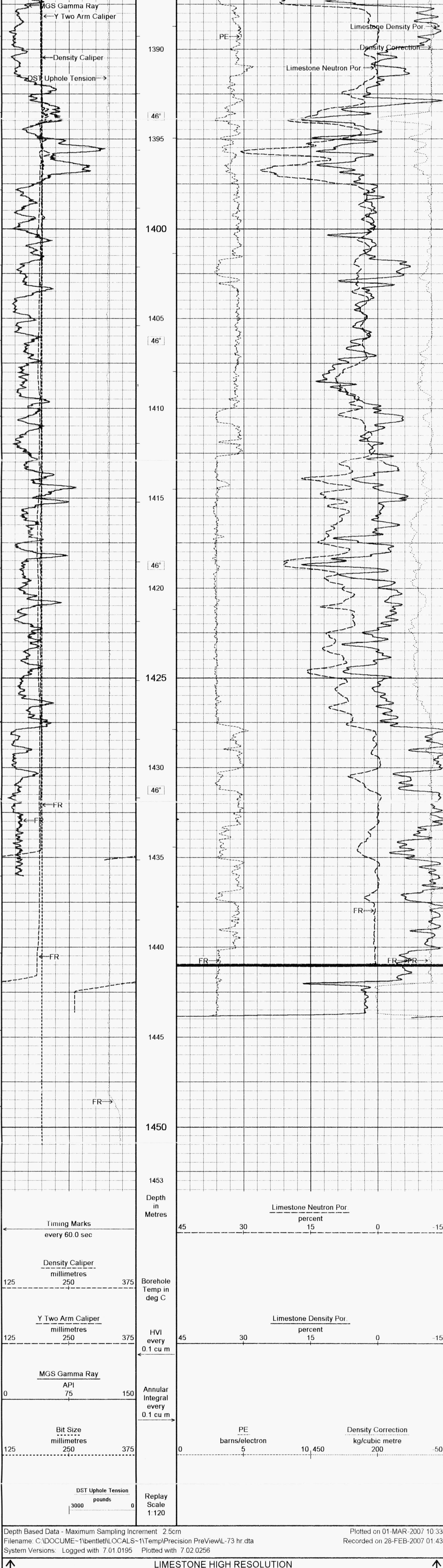


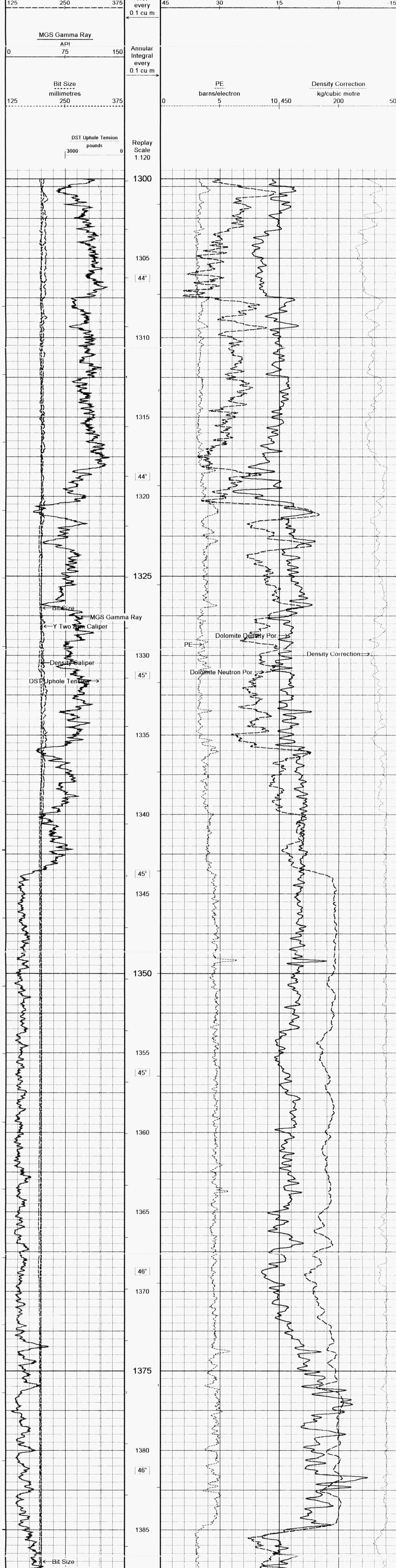
DOLOMITE MAIN LOG

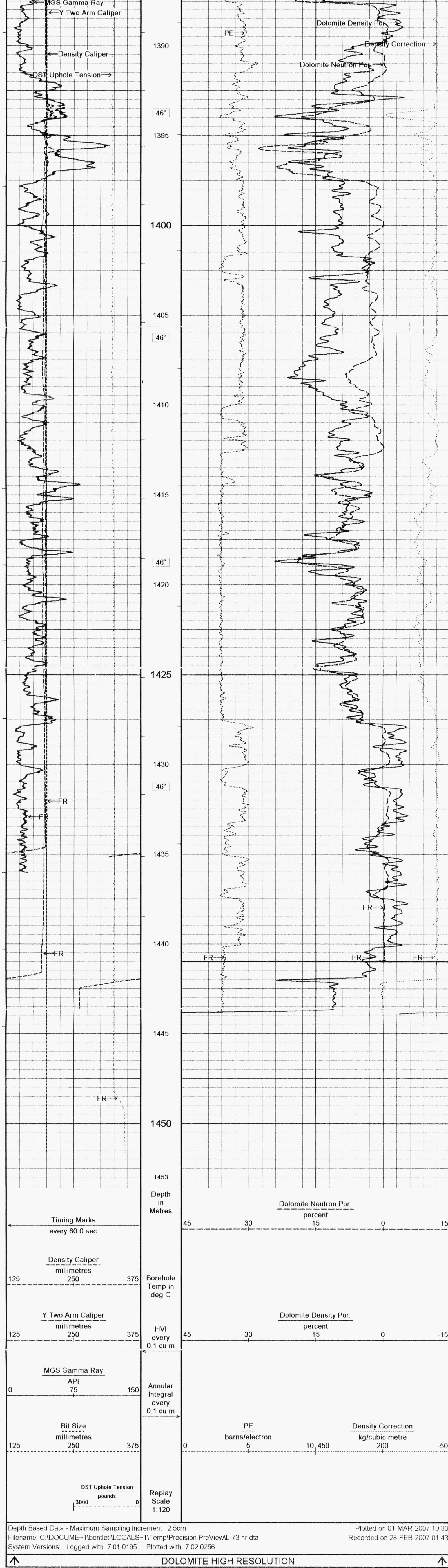
LIMESTONE HIGH RESOLUTION





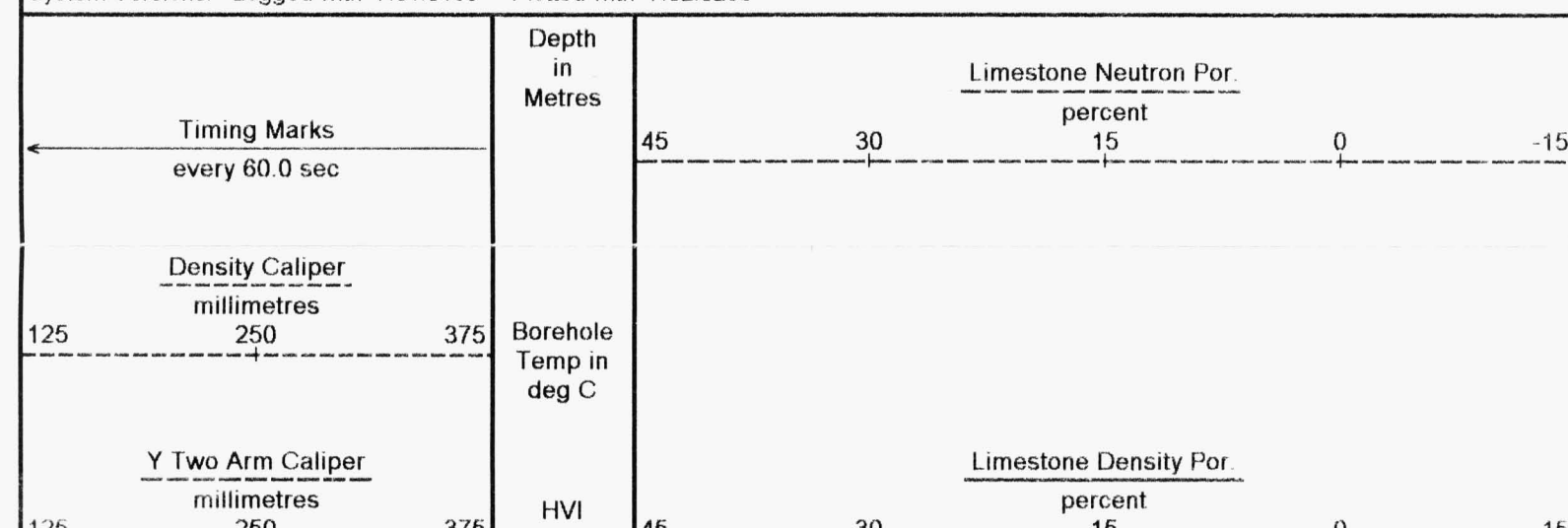


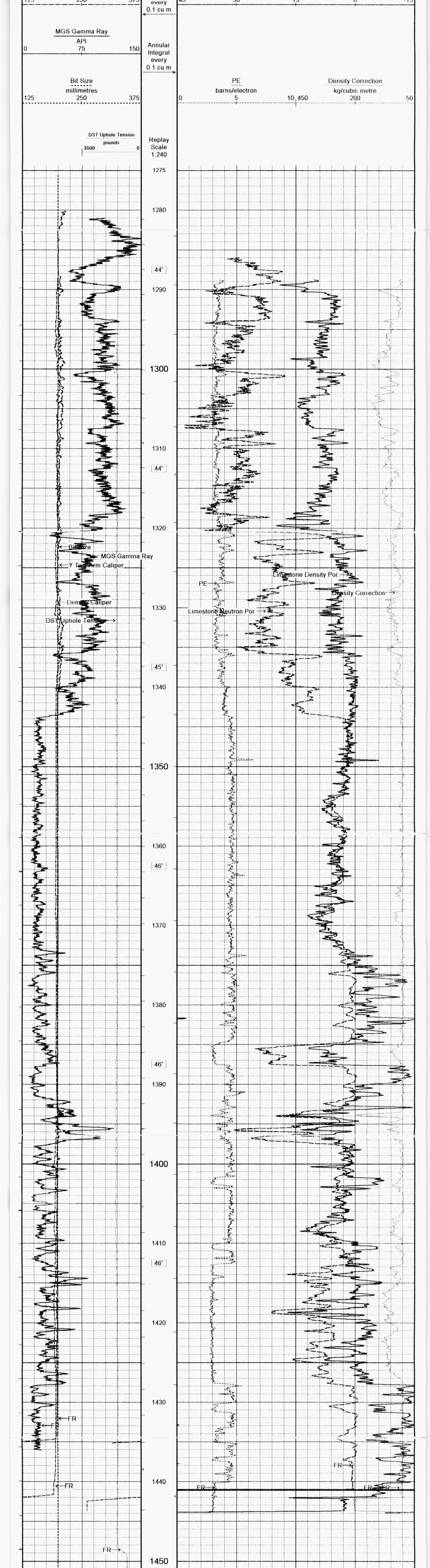


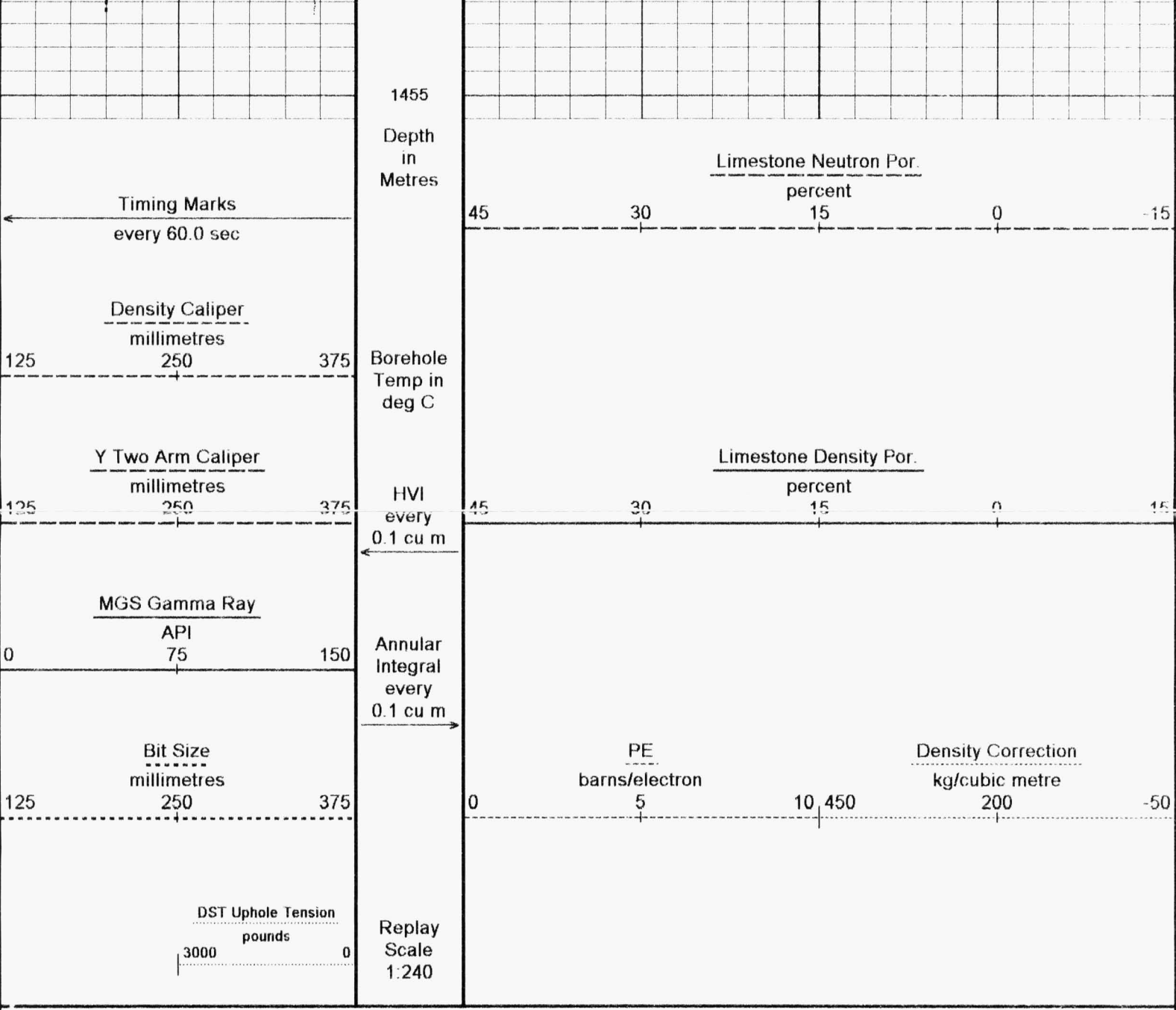


DOLOMITE HIGH RESOLUTION

Depth Based Data - Maximum Sampling Increment 2.5cm
Filename: C:\DOCUME~1\bentlet\LOCALS~1\Temp\Precision PreView\L-73 hr.dta
System Versions: Logged with 7.01.0195 Plotted with 7.02.0256







Depth Based Data - Maximum Sampling Increment 2.5cm

Plotted on 01-MAR-2007 10:33

Filename: C:\DOCUME~1\bentle\LOCALS~1\Temp\Precision PreView\L-73 hr.dta

Recorded on 28-FEB-2007 01:43

System Versions: Logged with 7.01.0195 Plotted with 7.02.0256

LIMESTONE HIGH RESOLUTION

DOLOMITE HIGH RESOLUTION

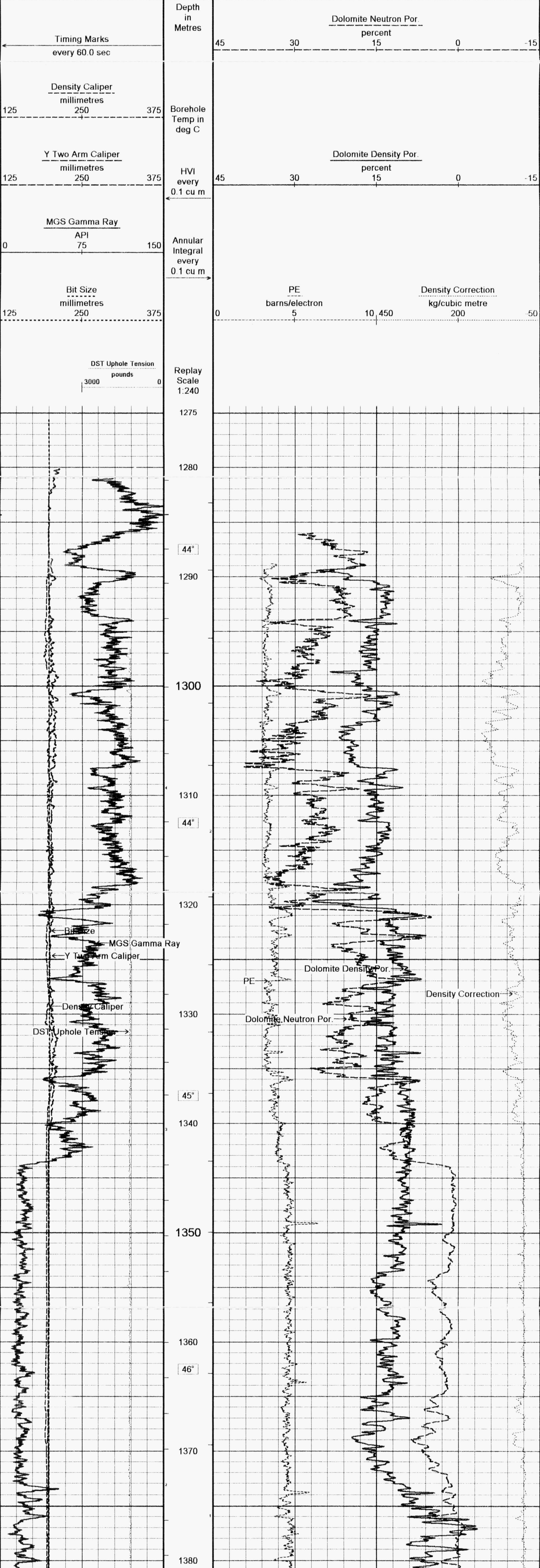
Depth Based Data - Maximum Sampling Increment 2.5cm

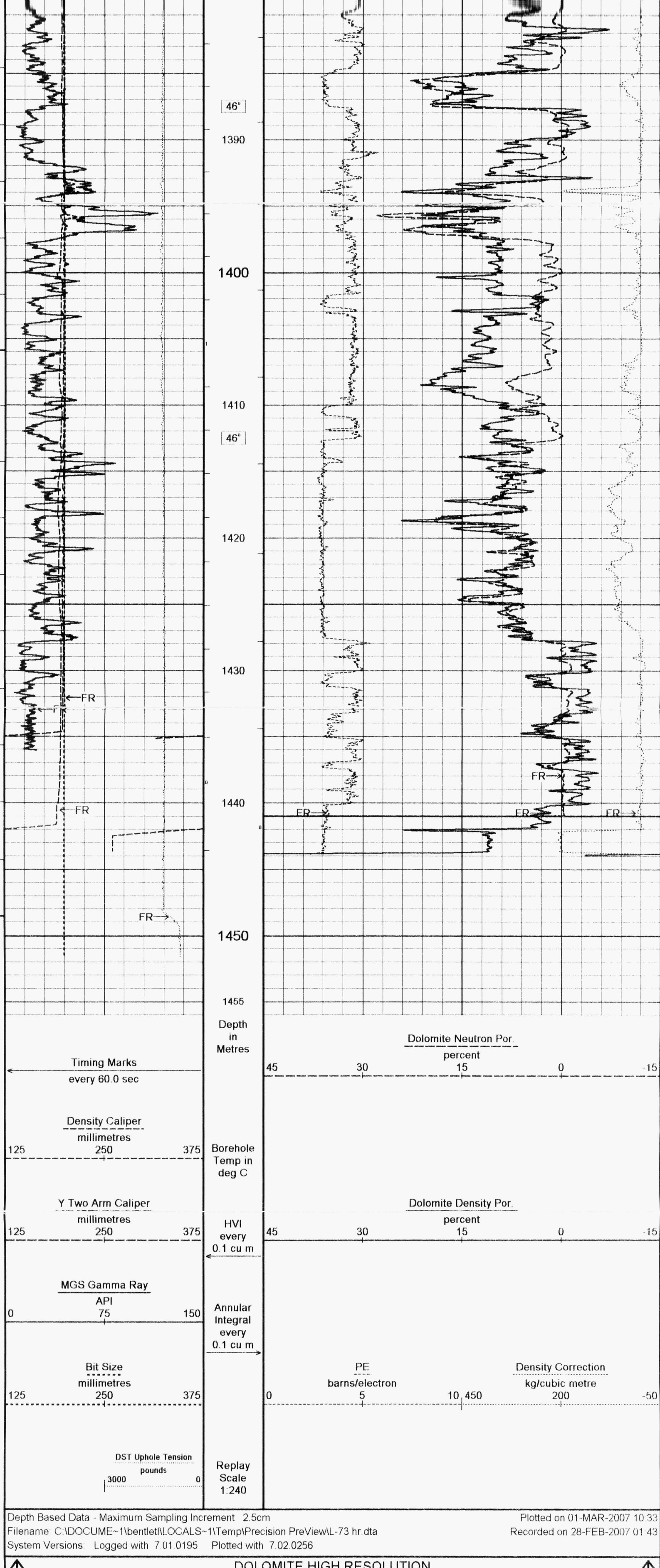
Plotted on 01-MAR-2007 10:33

Filename: C:\DOCUME~1\bentle\LOCALS~1\Temp\Precision PreView\L-73 hr.dta

Recorded on 28-FEB-2007 01:43

System Versions: Logged with 7.01.0195 Plotted with 7.02.0256





BEFORE SURVEY CALIBRATION			
C:\DOCUME~1\bentlet\LOCALS~1\Temp\Precision PreView\L-73 main.dta			
General Constants All 000		Last Edited on 28-FEB-2007,00:23	
General Parameters			
Mud Resistivity	0.540	ohm-metres	
Mud Resistivity Temperature	25.000	degrees C	
Water Level	0.000	metres	
Density/Neutron Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	Y Two Arm Caliper		
Annular Volume Diameter	139.700	mm	
Caliper for Differential Caliper	Density Caliper		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Deep Induction		
RWA Constant A	0.610		
RWA Constant M	2.150		
Gamma Calibration MCG 131		Field Calibration on 26-FEB-2007 10:56	
	Measured	Calibrated (API)	
Background	56	35	
Calibrator (Gross)	1332	829	
Calibrator (Net)	1277	794	
Gamma Constants MCG 131		Last Edited on 27-FEB-2007,23:06	
Gamma Calibrator Number	GRC 095		
Mud Density	1180.00	kg/m3	
Caliper Source for Processing	Density Caliper		
Tool Position	Centred		
Concentration of KCl	0.00	kppm	
SP Calibration MCG 131		Field Calibration on 24-FEB-2007 11:45	
	Measured	Calibrated (mV)	
Reference 1	101.0	100.0	
Reference 2	-99.3	-100.0	
High Resolution Temperature Calibration MCG 131		Field Calibration on 15-DEC-2006,15:05	
	Measured	Calibrated(Deg C)	
Lower	1.00	1.00	
Upper	10.00	10.00	
High Resolution Temperature Constants MCG 131			
Pre-filter Length	11		
FE Calibration MFE 111		Base Calibration on 15-FEB-2007 19:40 Field Check on 28-FEB-2007 00:16	
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	983.2	126.8	
Base Check		278.8	
Field Check		279.0	
FE Constants MFE 111		Last Edited on 25-FEB-2007,03:56	
Caliper Source for FE correction	Density Caliper		
Rm Source for FE correction	Temperature Corr		
Temp. for Rm Corr.	MCG External Temperature		
Stand-off	Centred	millimetres	
Caliper Calibration MTC 024		Base Calibration on 6-FEB-2007 10:21 Field Calibration on 28-FEB-2007,00:43	
Base Calibration			
Reading No	Measured	Calibrator Size (mm)	
1	15472	110.00	
2	18252	162.00	
3	21045	212.00	
4	23841	262.00	
5	26691	311.00	
6	N/A	N/A	

Field Calibration		Measured Caliper (mm)	Actual Caliper (mm)			
		210.30	205.70			
Gamma Calibration MGS 029						
		Measured	Calibrated (API)			
Background		58	38			
Calibrator (Gross)		1286	832			
Calibrator (Net)		1228	794			
Gamma Constants MGS 029						
		Last Edited on 27-FEB-2007,23:06				
Gamma Calibrator Number		GRCC095				
Mud Density		1180.00	kg/m3			
Caliper Source for Processing		Density Caliper				
Tool Position		Centred				
Concentration of KCl		0.00	kppm			
SP Calibration MGS 029						
		Measured	Calibrated (mV)			
Reference 1		100.0	100.0			
Reference 2		-100.0	-100.0			
High Resolution Temperature Calibration MGS 029						
		Measured	Calibrated(Deg C)			
Lower		1.00	1.00			
Upper		5.00	5.00			
High Resolution Temperature Constants MGS 029						
Pre-filter Length		11				
Micro Laterolog Constants MMR 031						
Micro Laterolog K Factor		0.0128				
Standoff Offset		0.0000	inches			
Borehole Correction Constants						
Mud Cake Source		Constant Value				
Mud Cake Thickness		0.4000	inches			
Mud Cake Thickness Caliper		0				
Mud Cake Resistivity		0.1500	ohm-m			
Caliper Calibration MMR 031						
		Base Calibration on 27-FEB-2007,13:43				
		Field Calibration on 28-FEB-2007,00:43				
Base Calibration						
Reading No		Measured	Calibrator Size (mm)			
1		14876	162.00			
2		17973	212.00			
3		21602	262.00			
4		24308	311.00			
5		0	0.00			
6		N/A	N/A			
Field Calibration						
		Measured Caliper (mm)	Actual Caliper (mm)			
		205.60	205.70			
Micro Normal and Micro Inverse Calibration MMR 031						
		Base Calibration on 27-FEB-2007,13:43				
		Field Check on 28-FEB-2007 00:34				
Base Calibration						
		Measured	Calibrated (ohm-m)			
Channel		Resistor 1 Resistor 2	Resistor 1 Resistor 2			
Micro Normal		9.8 49.9	5.1 25.6			
Micro Inverse		9.8 49.8	3.4 16.9			
Channel		Base Check (ohm-m)	Field Check (ohm-m)			
Micro Normal		94.7	92.9			
Micro Inverse		61.6	61.6			
Micro Normal and Micro Inverse Constants MMR 031						
		Last Edited on 25-NOV-2006,14:14				
Micro Normal K Factor		0.5110				
Micro Inverse K Factor		0.3380				
Standoff Offset		0.0000	millimetres			
Neutron Calibration MDN 016						
		Base Calibration on 11-JAN-2007 20:47				
		Field Check on 27-FEB-2007 23:30				
Base Calibration						
		Measured	Calibrated (cps)			
		Near Far	Near Far			
		3219 98	3714 110			
Ratio		32.703	33.764			
Field Calibrator at Base						
		Calibrated (cps)				
		2486 3648				
Ratio		0.681				
Field Check						
		Calibrated (cps)				
		2563 3757				
Ratio		0.682				
Neutron Constants MDN 016						
		Last Edited on 25-FEB-2007,03:55				
Neutron Source Id		277				
Neutron Jig Number		N636				
Epithermal Neutron		No				
Caliper Source for Processing		Density Caliper				
Stand-off		0.00	mm			
Mud Density		1000.00	kg/m3			
Limestone Sigma		7.10	cu			
Sandstone Sigma		4.26	cu			
Dolomite Sigma		4.70	cu			
Formation Pressure Source		Constant Value				
Formation Pressure		0.00	kPa			
Temperature Source		Constant Value				
Temperature		20.00	degrees C			
Mud Salinity		0.00	kppm			
Formation Fluid Salinity Source		Constant Value				
Formation Fluid Salinity		0.00	kppm			
Barite Mud Correction		Not Applied				
Photo Density Calibration MPD 093						
		Base Calibration on 21-FEB-2007 18:37				
		Field Check on 27-FEB-2007 23:24				
Density Calibration						
Base Calibration		Measured	Calibrated (sdu)			
		Near Far	Near Far			
Reference 1		66461 35432	60352 31615			
Reference 2		27582 2460	25043 2540			
Field Check at Base		738.4 855.4				
Field Check		743.9 865.6				
PE Calibration						
Base Calibration		Measured	Calibrated			
		WS WH Ratio	Ratio			
Background		135 656				
Reference 1		27020 66295	0.410 0.400			
Reference 2		7311 27477	0.268 0.272			
Field Check at Base		135.0 656.2				
Field Check		134.5 658.1				
Density Constants MPD 093						
		Last Edited on 27-FEB-2007,23:07				
Density Source Id		1615B				
Nylon Calibrator Number		608				
Aluminium/Fe Calibrator Number		608				
Density Shoe Profile		4 inch				
Caliper Source for Processing		Density Caliper				
PE Correction to Density		Not Applied				
Mud Density		1180.00	kg/m3			
Mud Density Z/A Correction		1.11				
Mud Filtrate Density		1000.00	kg/m3			
Dry Hole Mud Filtrate Density		1000.00	kg/m3			
DNCT		0.00	kg/m3			
CRCT		0.00	kg/m3			
Matrix Density (kg/m3)		Depth (m)				
2710.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
0.00		0.00				
Caliper Calibration MPD 093						
		Base Calibration on 11-JAN-2007 21:58				
		Field Calibration on 28-FEB-2007,00:44				
Base Calibration						
Reading No		Measured	Calibrator Size (mm)			
1		15040	110.00			
2		23085	162.00			
3		31440	212.00			
4		40233	262.00			
5		49152	311.00			
6		N/A	N/A			
Field Calibration						
		Measured Caliper (mm)	Actual Caliper (mm)			
		207.70	205.70			
Sonic Constants MSS 003						
		Last Edited on 27-FEB-2007,23:07				
Maximum Boundary Contrast		328.08	micro-sec/m			
Fluid Transit Time		620.08	micro-sec/m			
Limestone Transit Time		155.84	micro-sec/m			
Sandstone Transit Time		182.09	micro-sec/m			
Dolomite Transit Time		142.72	micro-sec/m			
Sonic used for Porosities		3-5' Compensated Sonic				
Correction for Sonde Skew		Applied				
Cycle Stretch Algorithm		Applied				
MN3FT		N/A				
MX3FT		N/A				
Fixed Gate Parameters						
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)		N/A		
N/A	N/A	N/A		N/A		
N/A	N/A	N/A		N/A		
N/A	N/A	N/A		N/A		
N/A	N/A	N/A		N/A		
N/A	N/A	N/A		N/A		
Down Hole Fixed Gate Parameters						
Gate Start		N/A	micro-sec			
Gate Width		N/A	micro-sec			
Initial Discriminator Level		0.0000	mVolts			
Full Waveform Parameters						
Use 3' Waveform to derive TR		N/A				
Use 4' Waveform to derive TR		N/A				
Use 5' Waveform to derive TR		N/A				
Use 6' Waveform to derive TR		N/A				
3' Waveform Discriminator Level		N/A	mV			

5' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Induction Calibration MAI 154				Base Calibration on 14-JAN-2007 01:38	
				Field Check on 28-FEB-2007 00:33	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High		Low	High
1	16.6	470.6		9.3	966.2
2	6.3	383.0		7.6	821.4
3	4.0	264.7		5.2	566.0
4	2.3	136.2		2.6	279.2
Array Temperature		22.3	Deg C		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	13.1	3867.2	15.3	3866.9	
2	29.6	3530.7	30.2	3528.9	
3	26.8	3001.8	27.1	2999.9	
4	18.4	2040.8	18.6	2039.5	
Deep	15.3	1926.8	15.7	1925.6	
Medium	39.6	3962.8	39.7	3960.1	
Shallow	45.8	5270.7	46.6	5268.1	
Array Temperature		12.1	28.0		Deg C

Induction Constants MAI 154				Last Edited on 27-FEB-2007,23:07	
Induction Model		VECTAR			
Caliper for Borehole Corr.		Density Caliper			
Hole Size for Borehole Correction		N/A			
Stand-off		25.40		millimetres	
Number of Fins on Stand-off		5.0000			
Stand-off Fin Width		25.4000		millimetres	
Borehole Corr. Rm Source		Temperature Corr			
Temp. for Rm Corr.		MCG External Temperature			
Squasher Start		0.0020		mhos/metre	
Borehole Normalisation					
DRM1	0.0000	DRC1	0.0000		
DRM2	0.0000	DRC2	0.0000		
MRM1	0.0000	MRC1	0.0000		
MRM2	0.0000	MRC2	0.0000		
SRM1	0.0000	SRC1	0.0000		
SRM2	0.0000	SRC2	0.0000		
Calibration Site Corrections					
Channel 1		0.00	mmhos/metre		
Channel 2		0.00	mmhos/metre		
Channel 3		0.00	mmhos/metre		
Channel 4		0.00	mmhos/metre		
Apparent Porosity and Water Saturation Constants					
Archie Constant (A)		1.00			
Cementation Exponent (M)		2.00			
Saturation Exponent (N)		2.00			
Saturation of Water for Apor		100.00	percent		
Resistivity of Water for Apor and Sw		0.05	ohm-m		
Resistivity of Mud Filtrate for Sw		0.00	ohm-m		

High Resolution Temperature Calibration MAI 154				Field Calibration on 16-DEC-2006,08:07	
		Measured		Calibrated(Deg C)	
Lower		1.00		1.00	
Upper		10.00		10.00	

High Resolution Temperature Constants MAI 154			
Pre-filter Length		11	

DOWNHOLE EQUIPMENT					
C:\DOCUME~1\bentle\LOCALS~1\Temp\Precision PreView\L-73 main.dta					
Compact Gamma MCG 131 Length: 2.65 m	Weight: 63.9 lb		20.98 m 20.10 m	GRGC - Gamma Ray CGXT - MCG External Temperature	
Compact Focussed Electric MFE 111 Length: 1.84 m	Weight: 48.5 lb		18.98 m	FEFE - Shallow FE	
Compact Two Arm Caliper MTC 24 Length: 2.17 m	Weight: 61.7 lb		16.53 m	CLYC - Y Two Arm Caliper	
Compact Short Gamma MGS 29 Length: 1.04 m	Weight: 24.3 lb		15.66 m	GRGM - MGS Gamma Ray	
Compact InterSonde Crank ISC 151 Length: 0.71 m	Weight: 24.3 lb				
Compact Micro-Resistivity MMR 31 Length: 2.62 m	Weight: 81.6 lb		12.10 m 12.10 m 12.10 m	MBTC - MMR Caliper MINV - MMR MicroLog Inverse MNRL - MMR MicroLog Normal	
Compact Neutron MDN 16 Length: 1.53 m	Weight: 50.7 lb		10.64 m	NPRS - Sandstone Neutron Por.	
Compact Density/Caliper MPD 93 Length: 2.92 m	Weight: 90.4 lb		8.06 m 8.06 m 8.06 m 7.85 m 7.85 m 7.83 m	AVOL - Annular Volume HVOL - Hole Volume CLDC - Density Caliper DCOR - Density Correction DPRS - Sandstone Density Por. PDPE - PE	
Compact Sonic MSS 3 Length: 3.82 m	Weight: 72.8 lb		3.95 m 3.95 m 3.95 m 3.95 m 3.95 m 3.95 m	TR21 - 3' Transit Time TR11 - 4' Transit Time DT35 - 3-5' Compensated Sonic TR12 - 6' Transit Time TR22 - 5' Transit Time DT34 - 3-4' Compensated Sonic	
Compact Induction MAI 154 Length: 3.29 m	Weight: 48.5 lb		0.79 m 0.79 m 0.07 m Tool Zero	RILM - Medium Induction RILD - Deep Induction SPCG - Spontaneous Potential (0.28m from bottom)	
Compact Hole Finder HFS 1 Length: 0.24 m	Weight: 2.2 lb				
Total	Length: 22.83 m	Weight: 568.8 lb		All measurements relative to tool zero.	

COMPANY	PARAMOUNT RESOURCES LTD				
WELL	PARA ET AL CAMERON L-73				
FIELD	CAMERON HILLS				
PROVINCE	NORTHWEST TERRITORIES				
COUNTRY	CANADA				
Elevation Kelly Bushing	774.80	metres	First Reading	1440.40	metre
Elevation Drill Floor		metres	Depth Driller	1450.00	metres
Elevation Ground Level	770.80	metres	Depth Logger	1448.60	metres



PHOTO DENSITY
 DUAL SPACED NEUTRON