



Weatherford®

**ARRAY INDUCTION
LOG**

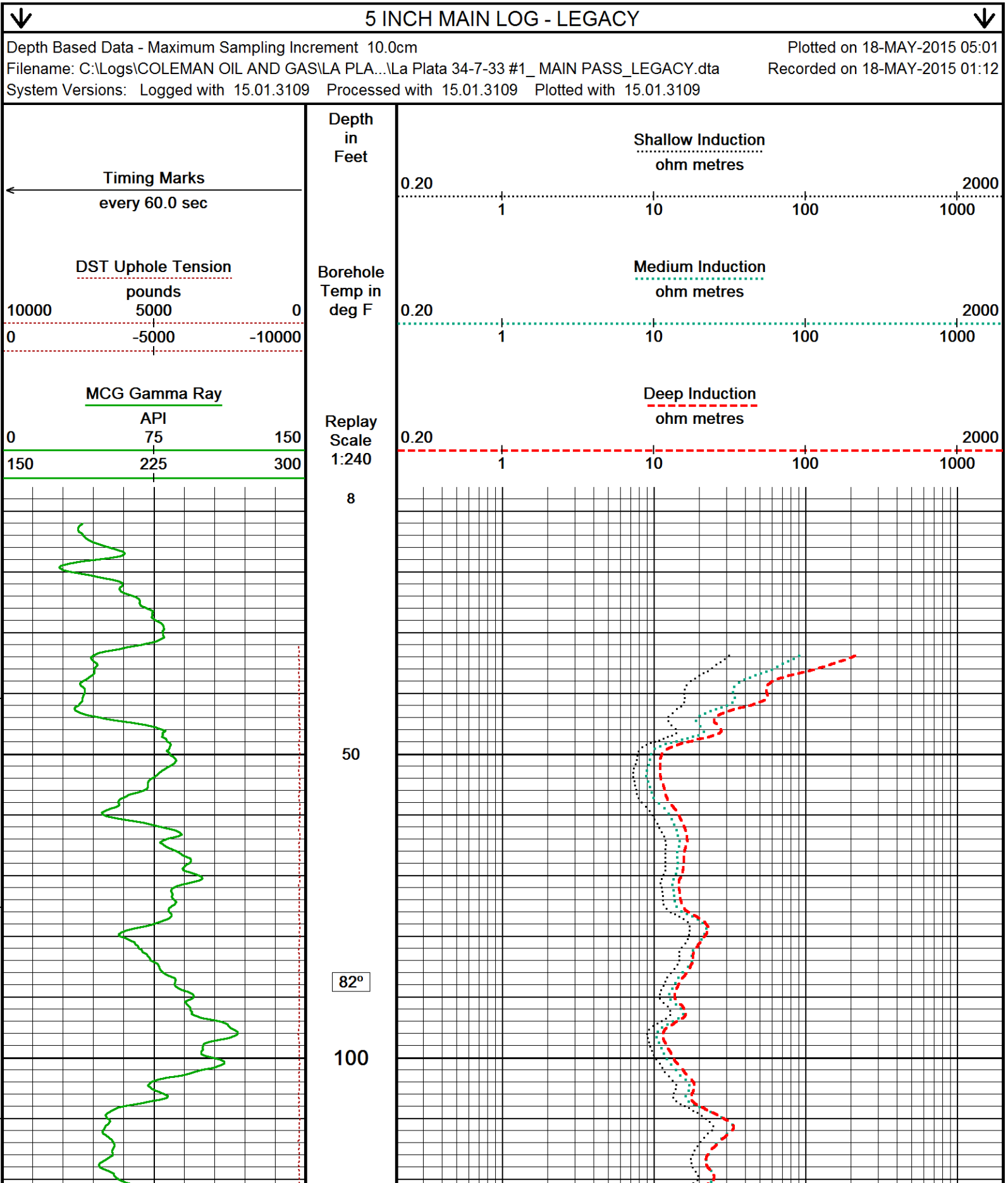
COMPANY			COLEMAN OIL AND GAS		
WELL			LA PLATA 34-7-33 #1		
FIELD			IGNACIO BLANCO		
PROVINCE/COUNTY			LA PLATA		
COUNTRY/STATE			USA / COLORADO		
LOCATION			SHL: 232' FSL & 749' FEL		
SEC 33	TWP 34N	RGE 7W	Other Services		
Latitude		37.14081			
Longitude		107.60764			
API Number		05-067-09916-00			
Permanent Datum GL, Elevation 6726 feet				Elevations:	
Log Measured From KB				KB 6742.00	
Drilling Measured From KB @16 FT				DF 6742.00	
				GL 6726.00	
Date	17-MAY-2015				
Run Number	1				
Service Order	8367-119094122				
Depth Driller	535.00			feet	
Depth Logger	534.70			feet	
First Reading	531.30			feet	
Last Reading	10.00			feet	
Casing Driller	---				
Casing Logger	---				
Bit Size	12.250			inches	
Hole Fluid Type	WBM				
Density / Viscosity	9.20	lb/USg	98.00	SEC/QT	
PH / Fluid Loss	9.20		6.70	ml/30Min	
Sample Source	FLOW LINE				
Rm @ Measured Temp	5.42 @ 74.3			ohm-m	
Rmf @ Measured Temp	4.34 @ 74.3			ohm-m	
Rmc @ Measured Temp	6.50 @ 74.3			ohm-m	
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	5.05 @ 80.0			ohm-m	
Time Since Circulation	1 HOUR				
Max Recorded Temp	80.00			deg F	
Equipment / Base	13173		CASPER		
Recorded By	A. A. EASTAUGHFFE			D. E. BEANS	
Witnessed By	DALE ARNOLD				

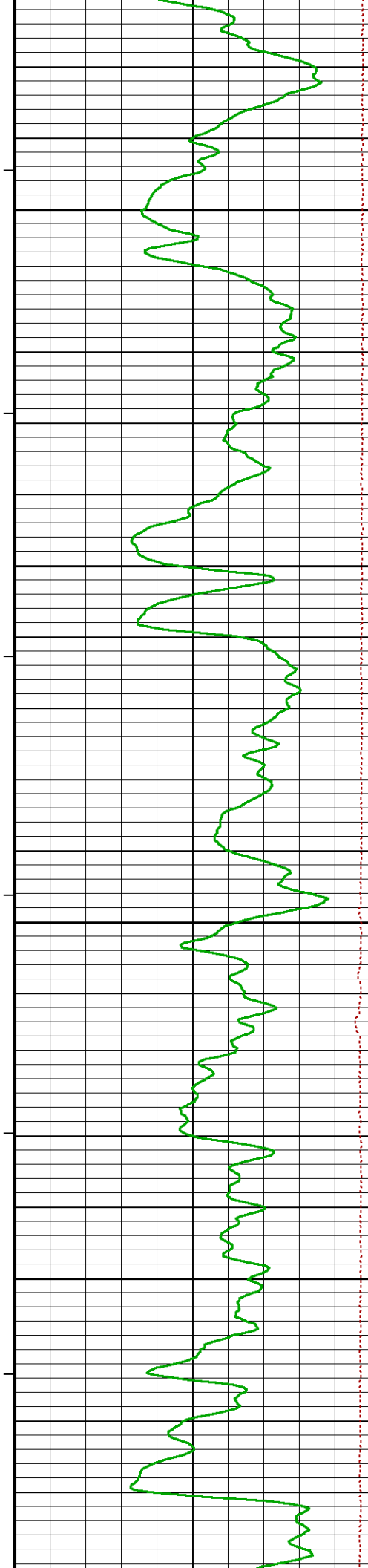
BOREHOLE RECORD			Last Edited: 17-MAY-2015 20:03
Bit Size inches	Depth From feet	Depth To feet	
12.250	0.00	535.00	

REMARKS
SOFTWARE: 15.01.3109
DEPTH CONTROL: CALIBRATED MEASURE WHEEL METHOD.
TOOLS: MAI, MFE, MCG, SHA RUN IN COMBINATION.
HARDWARE: MFE: 1 X 0.5" STANDOFF MAI: 2 x 0.5" STANDOFFS
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
MAXIMUM DEVIATION ADVISED: APPROX 1.5 DEG.
RIG: D_J #1

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY AND

THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.





83°

150

83°

200

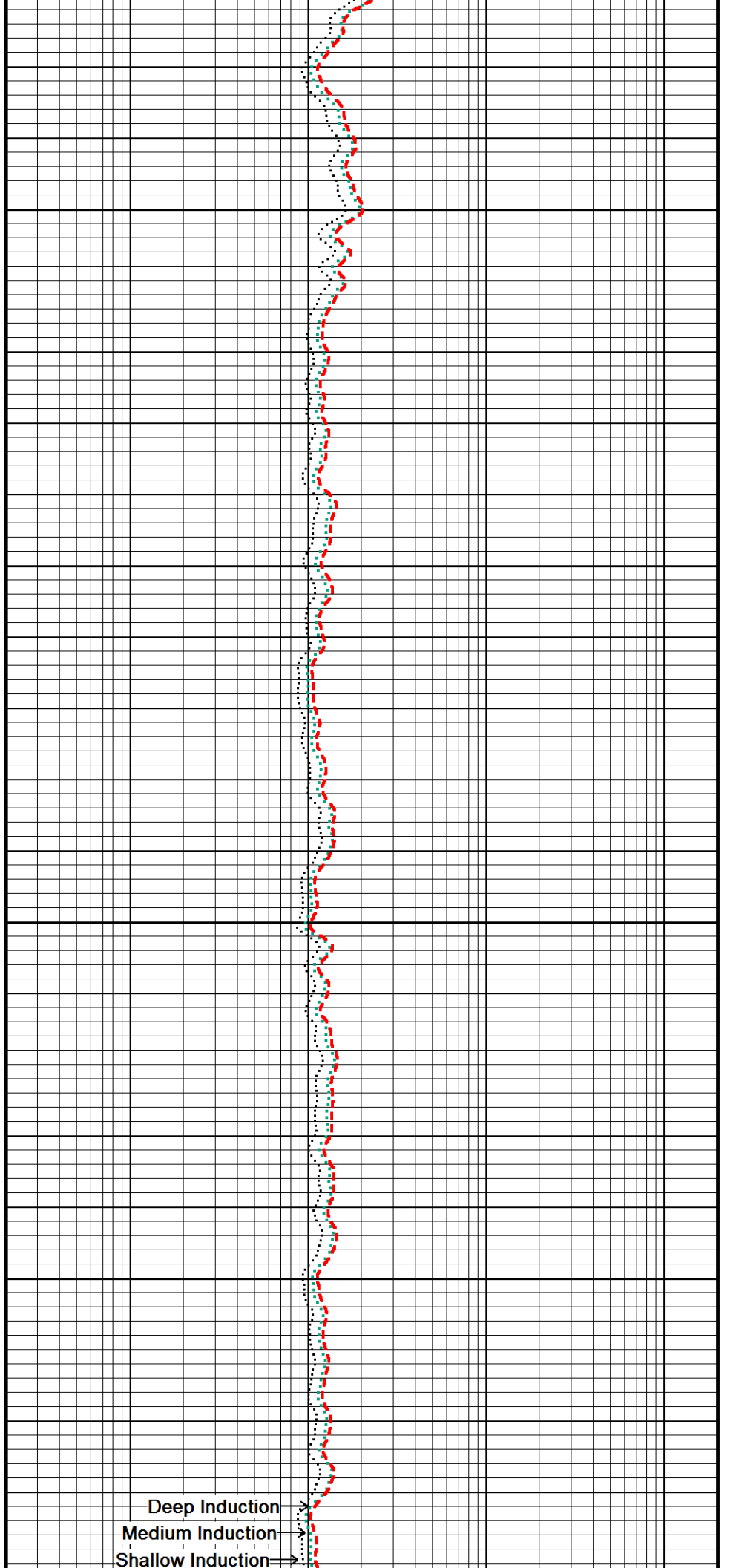
83°

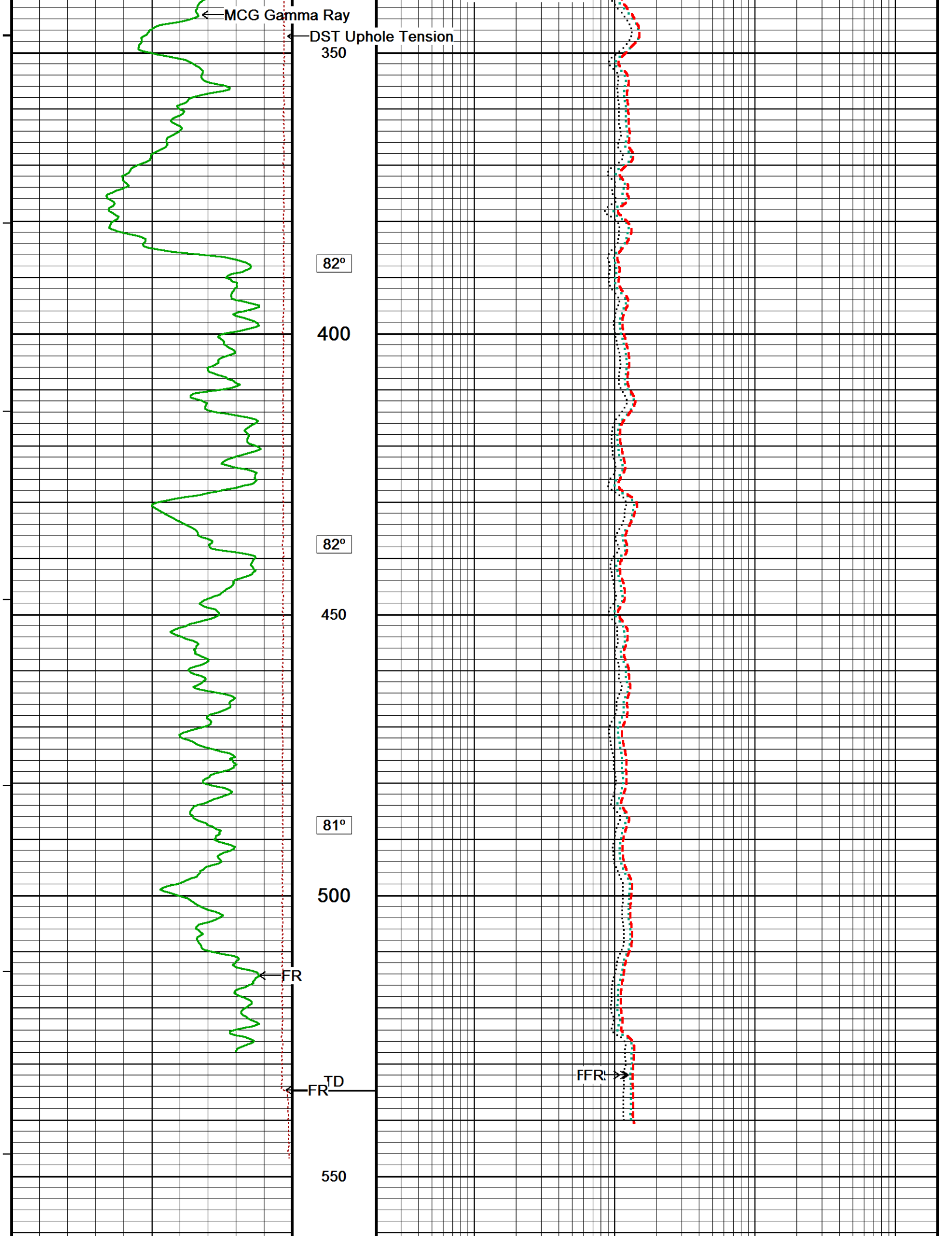
250

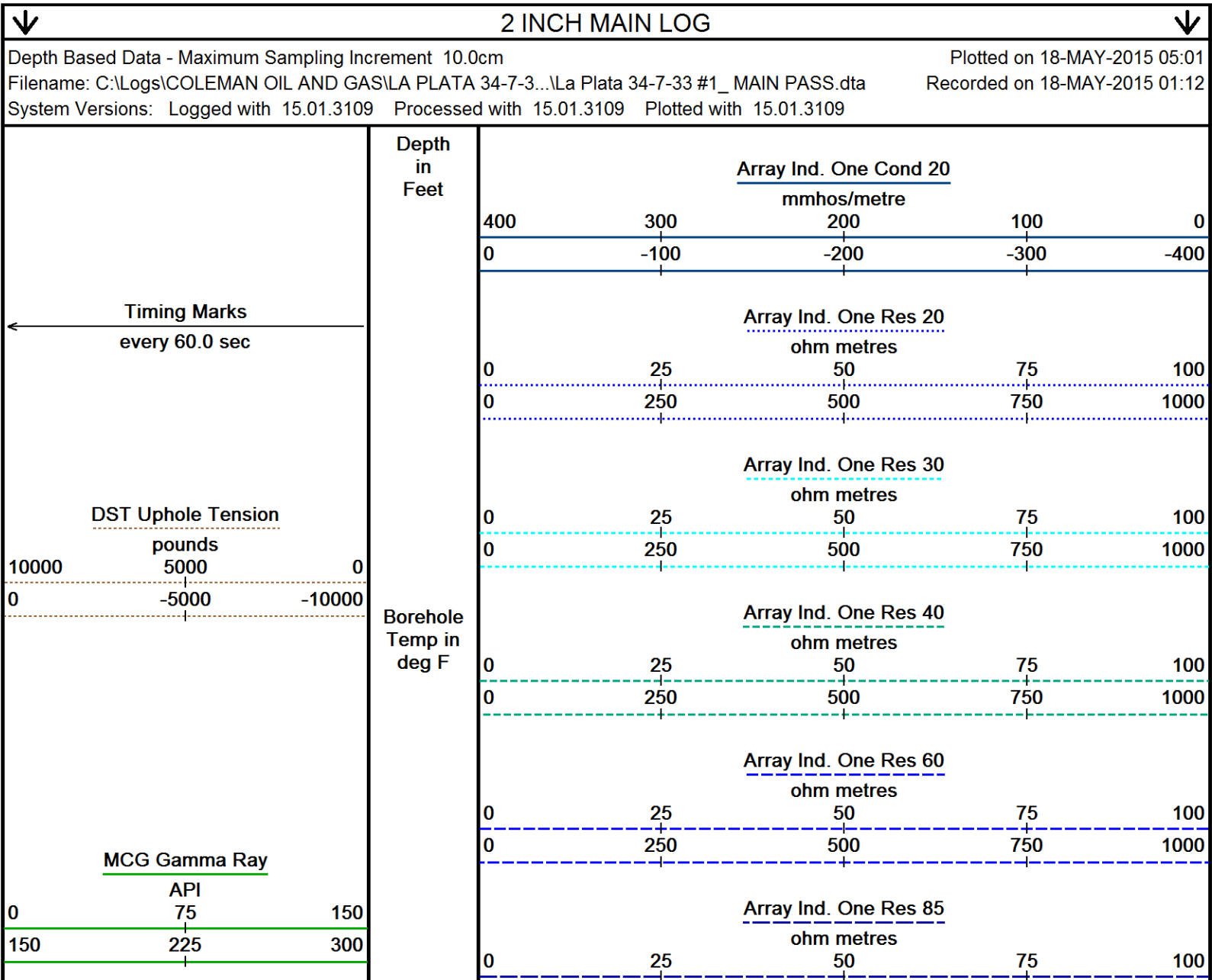
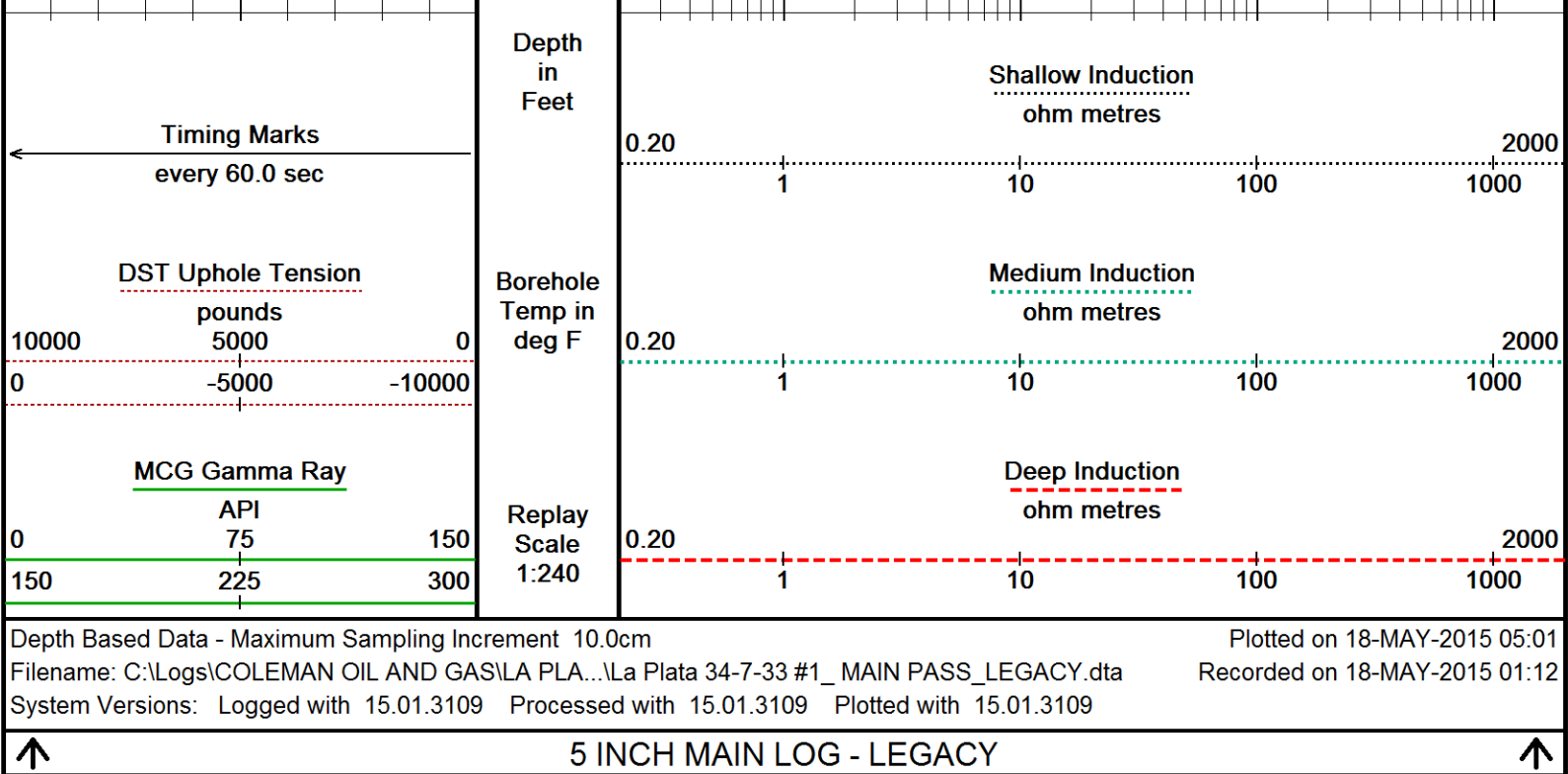
82°

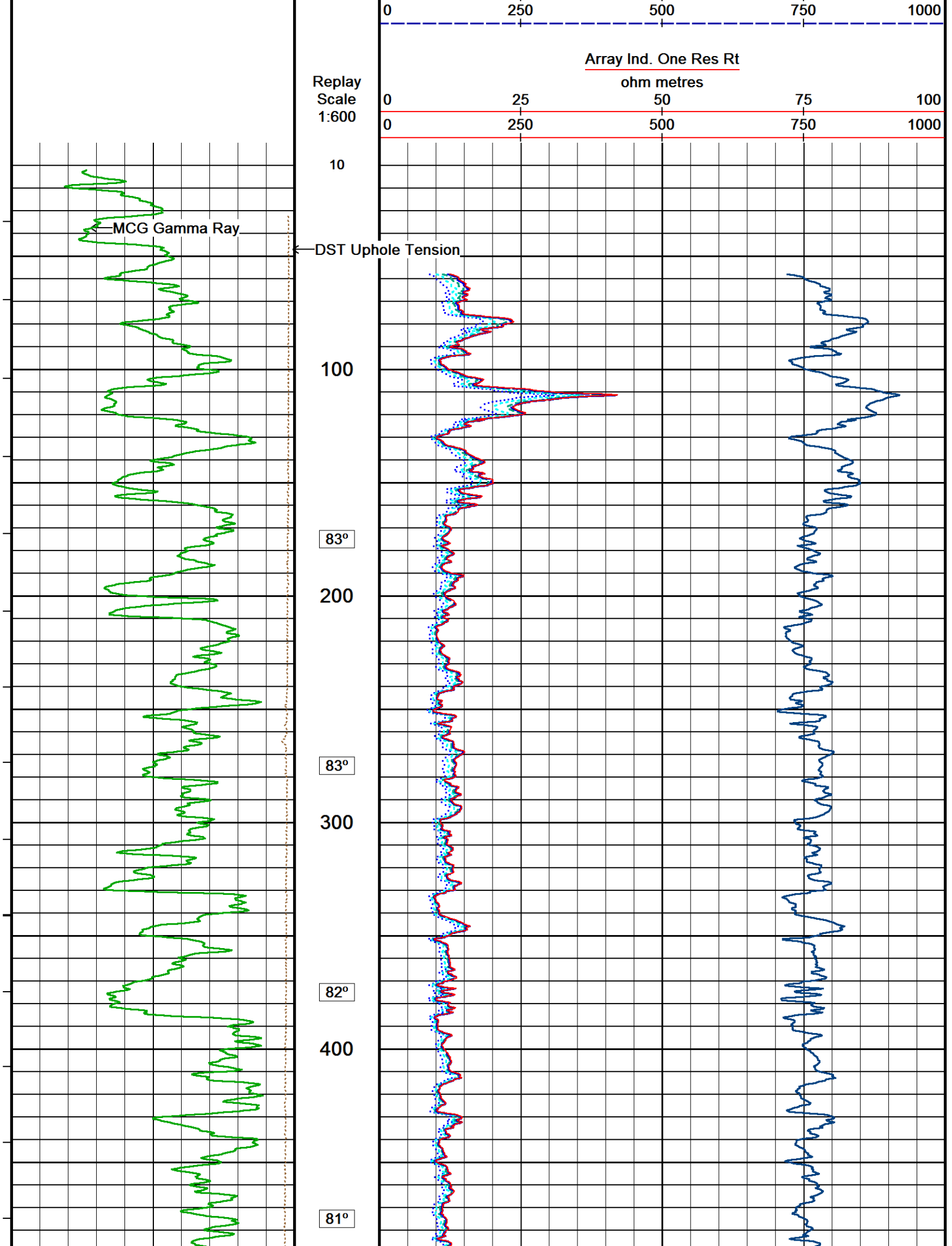
300

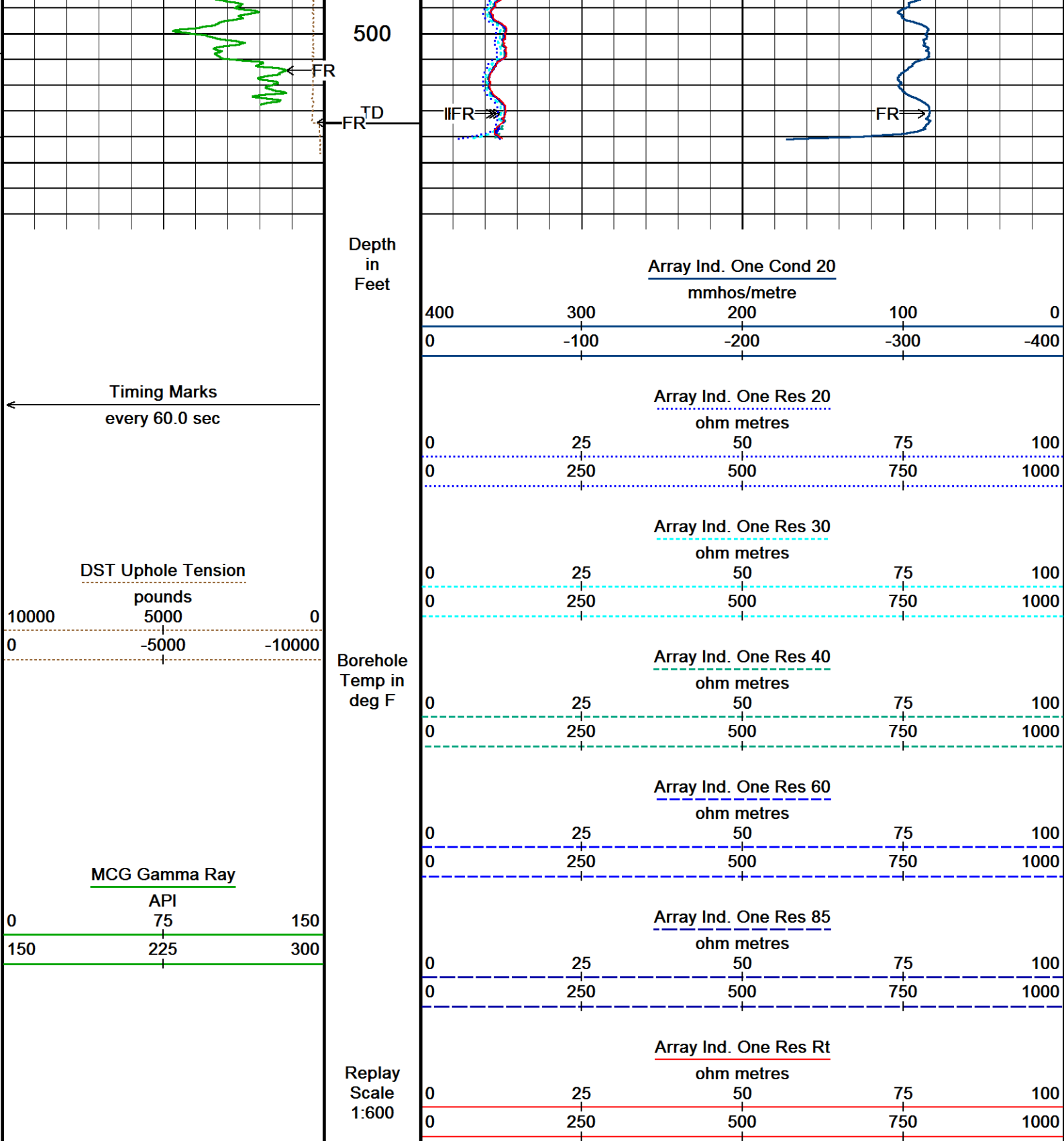
82°









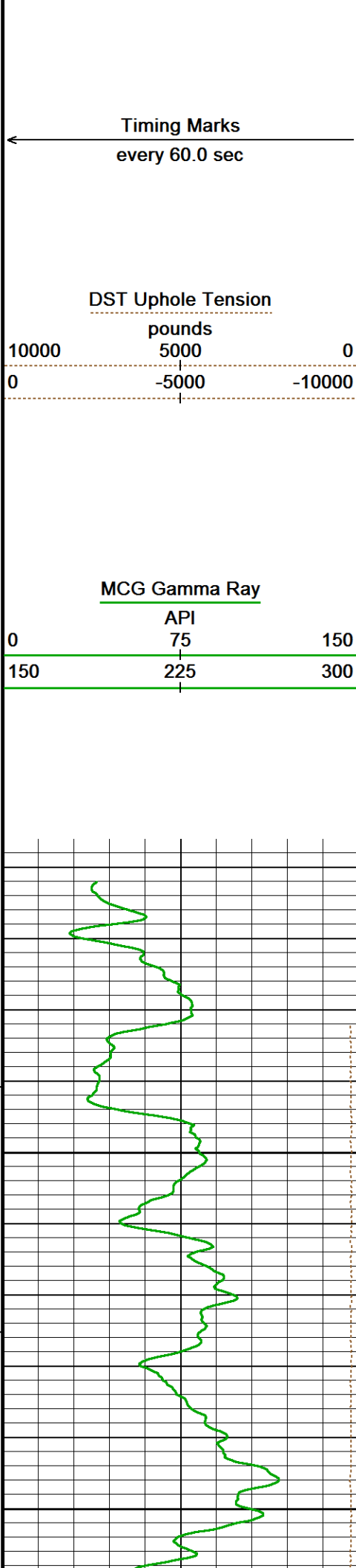


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-MAY-2015 05:01
Filename: C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-7-3...\La Plata 34-7-33 #1_ MAIN PASS.dta Recorded on 18-MAY-2015 01:12
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

2 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-MAY-2015 05:01
Filename: C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-7-3...\La Plata 34-7-33 #1_ MAIN PASS.dta Recorded on 18-MAY-2015 01:12
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

5 INCH MAIN LOG



in
Feet

Borehole
Temp in
deg F

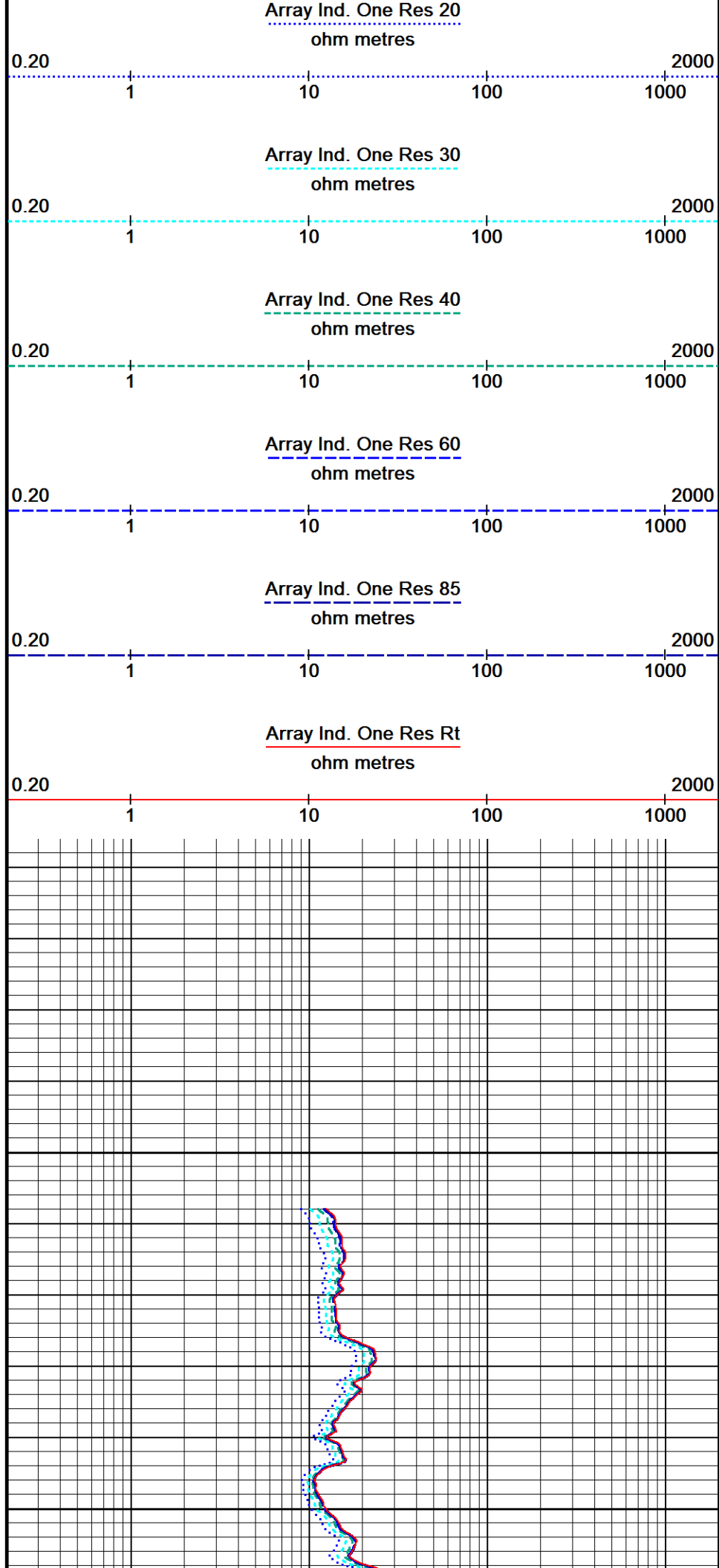
Replay
Scale
1:240

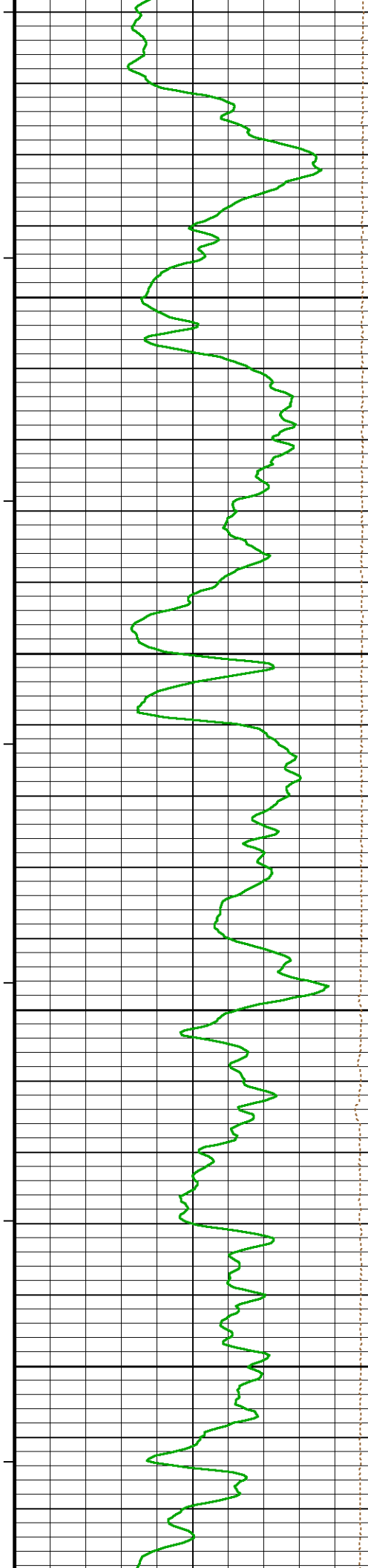
8

50

82°

100





83°

150

83°

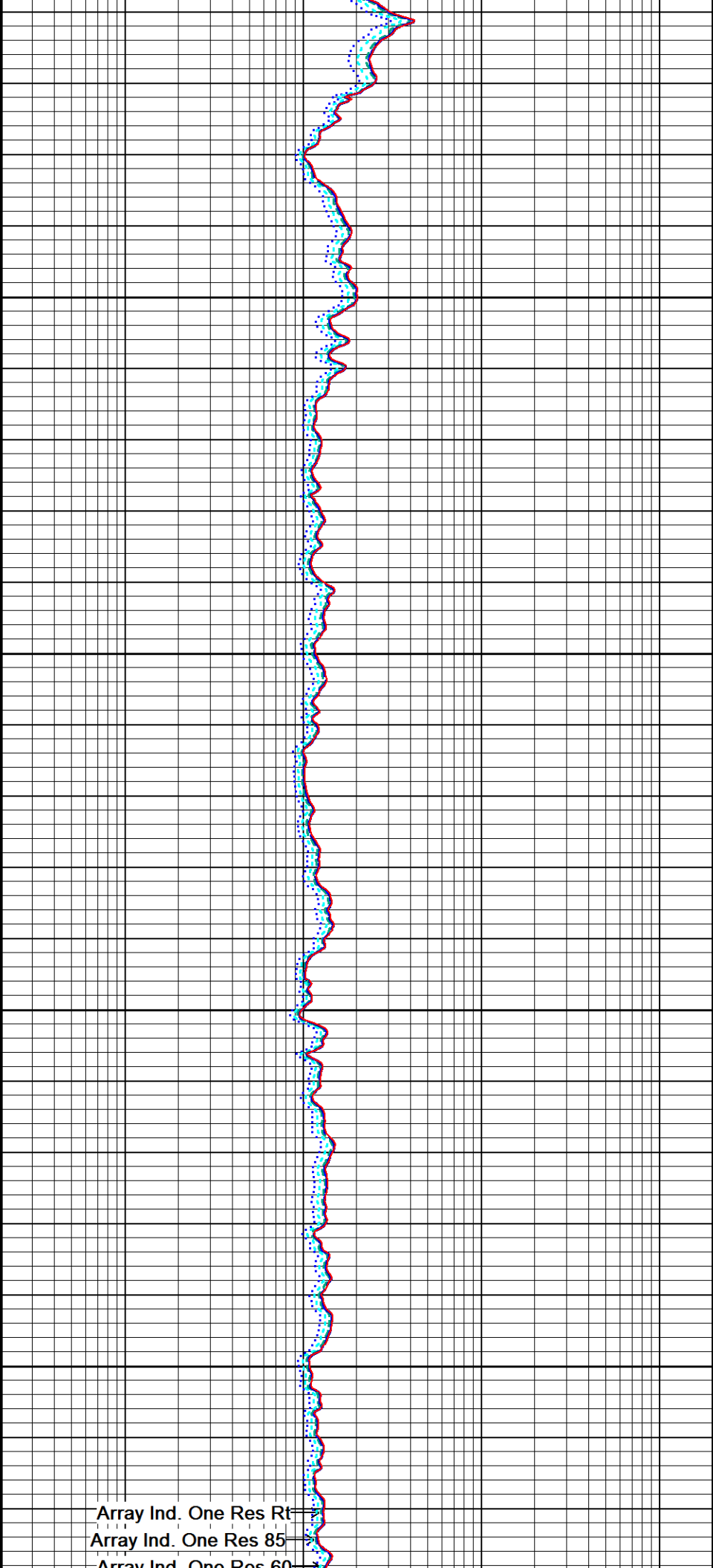
200

83°

250

82°

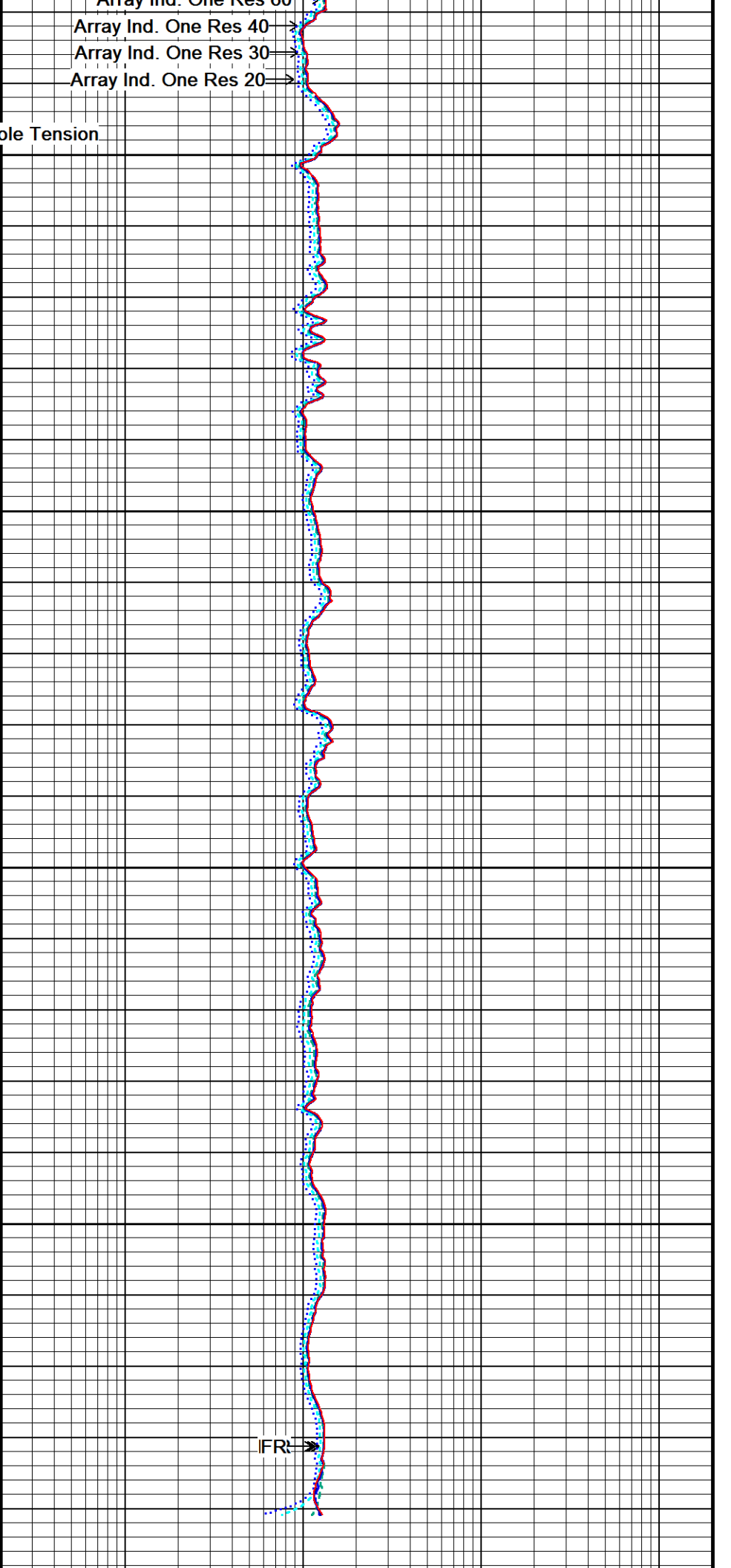
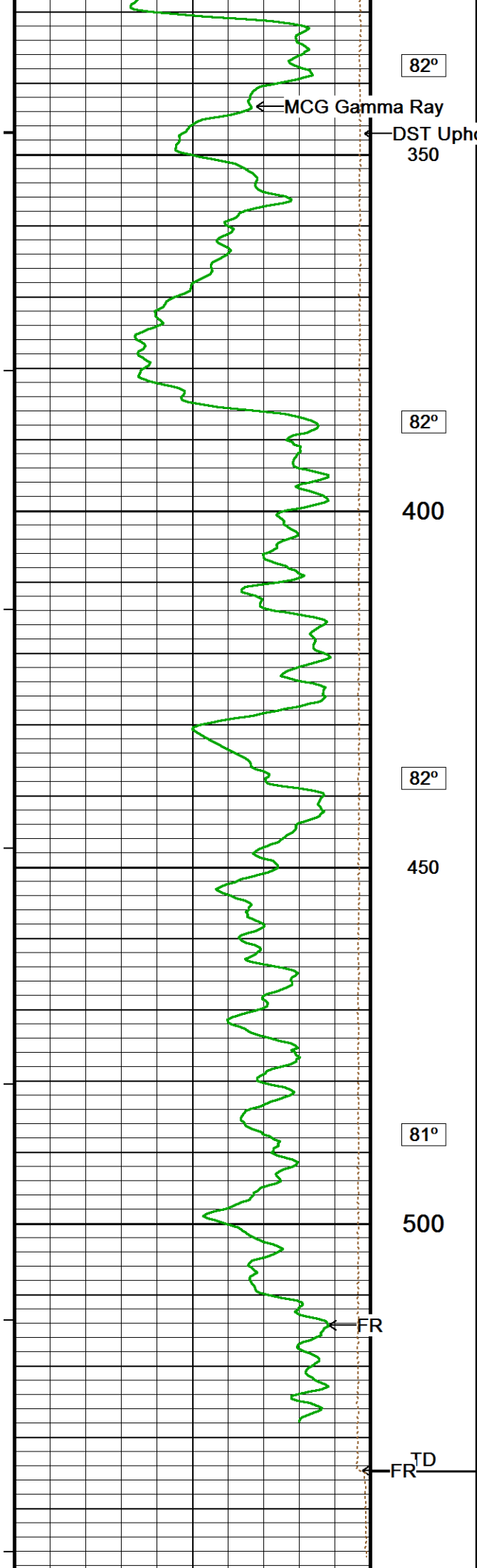
300

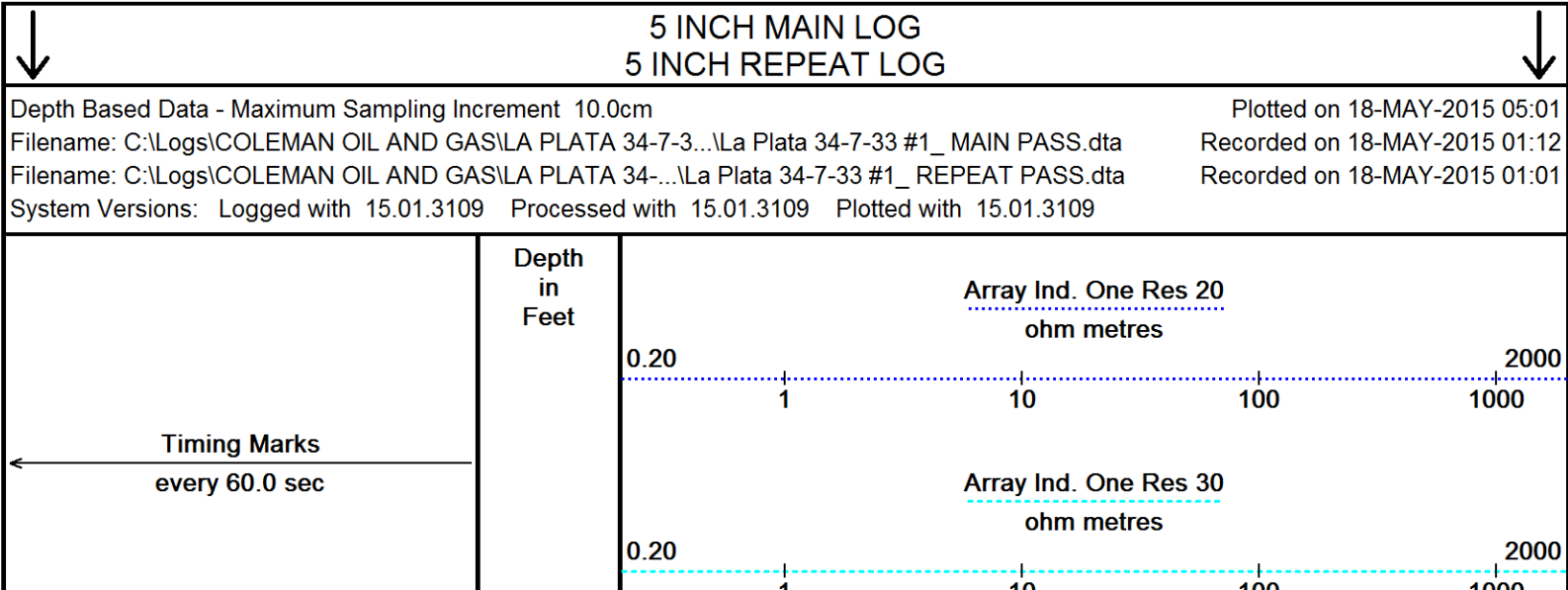
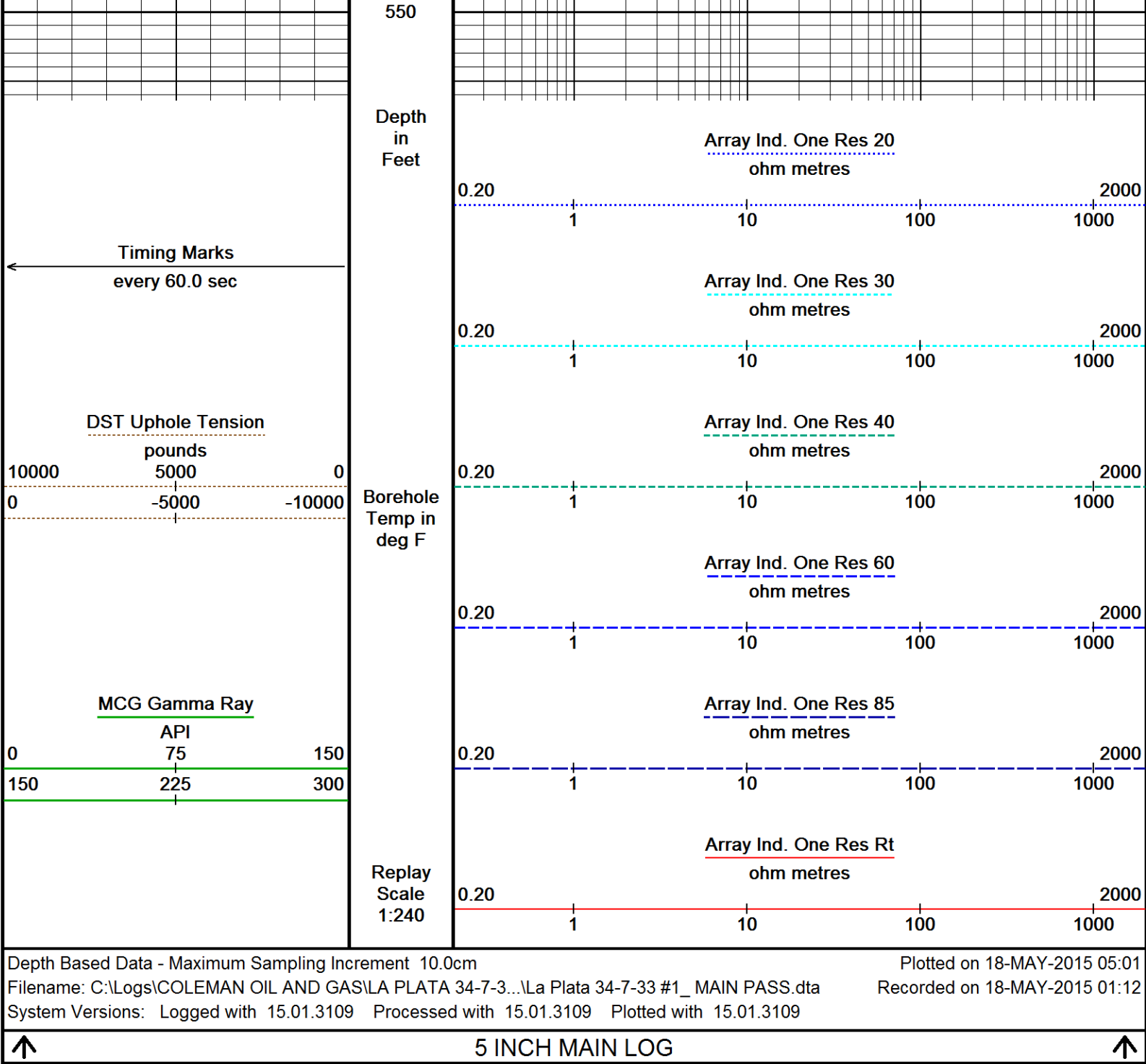


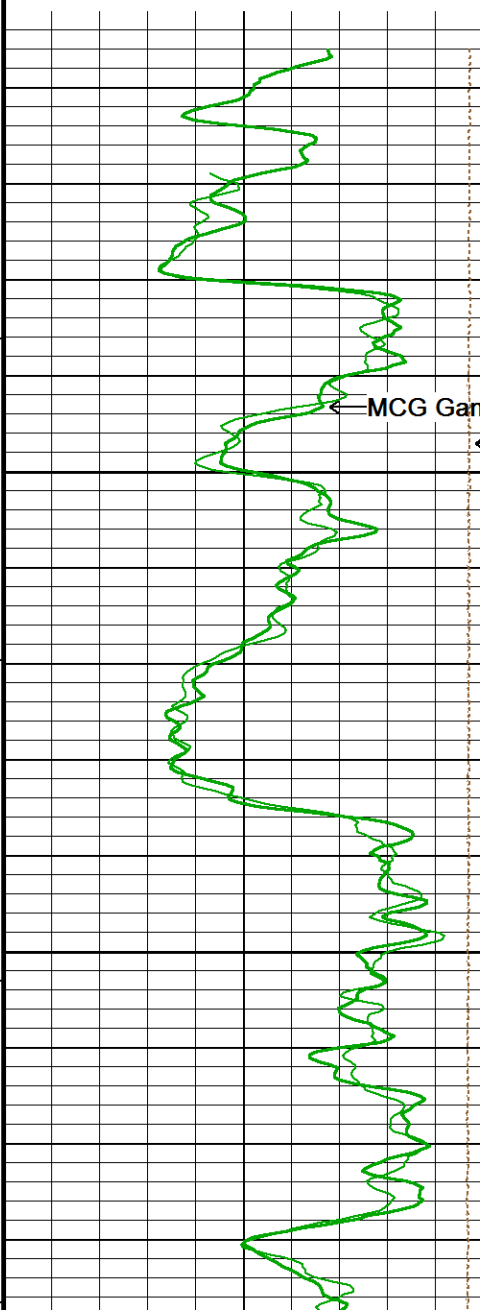
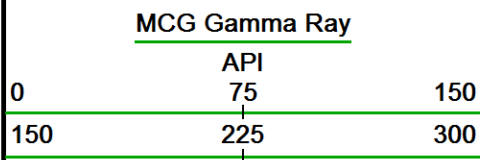
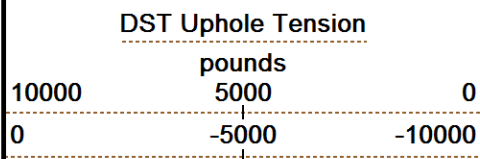
Array Ind. One Res Rt

Array Ind. One Res 85

Array Ind. One Res 60







Borehole
Temp in
deg F

Replay
Scale
1:240

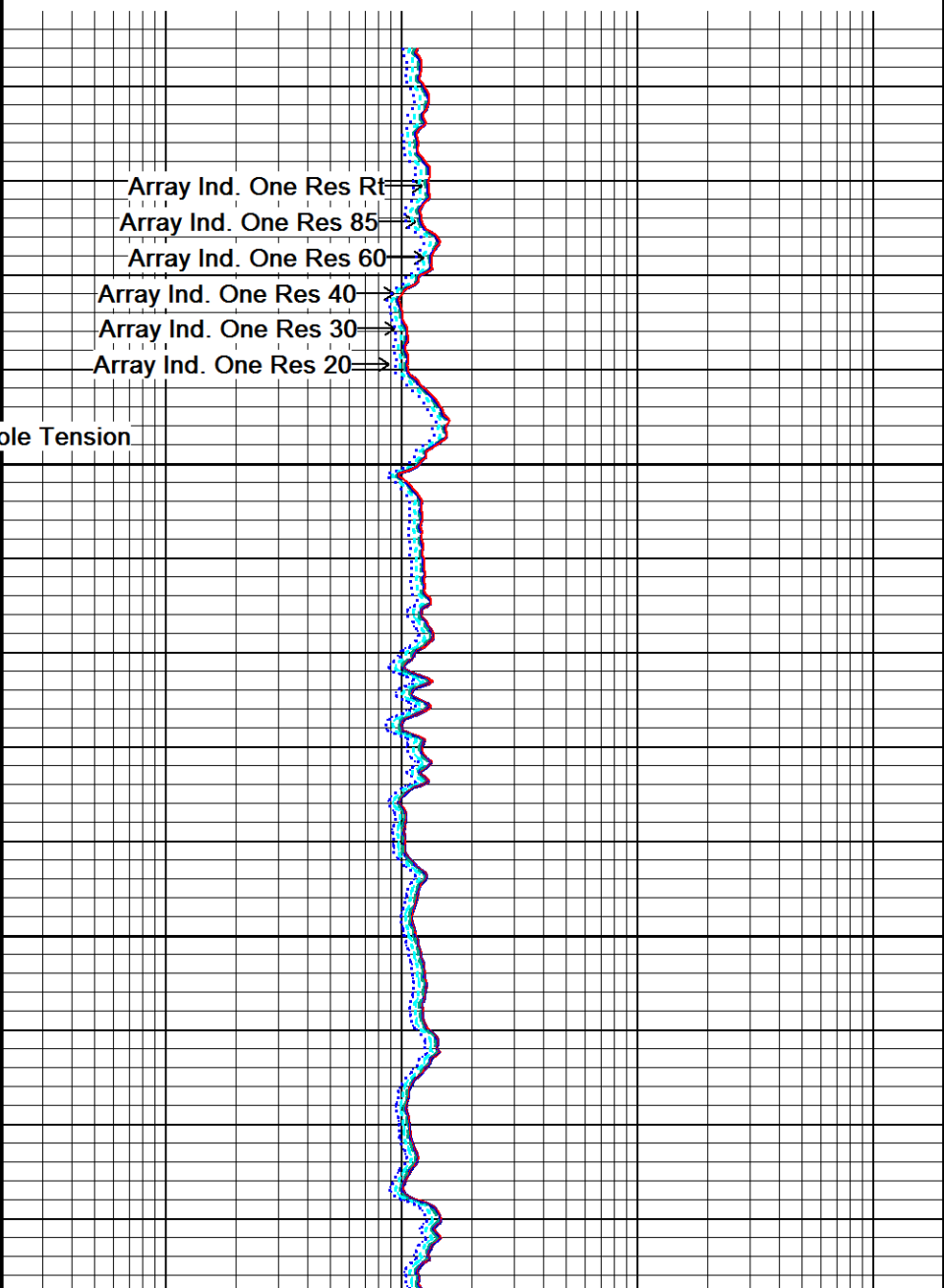
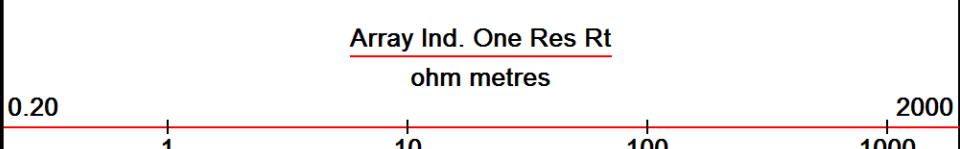
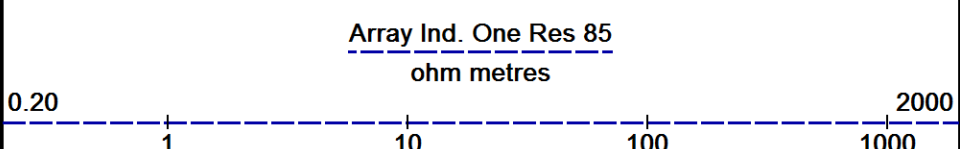
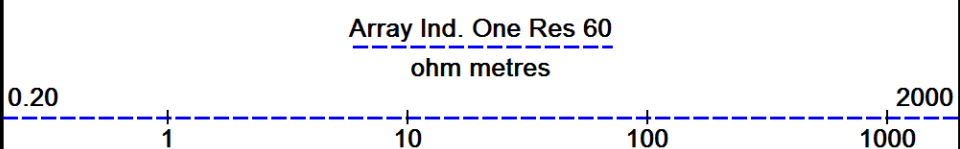
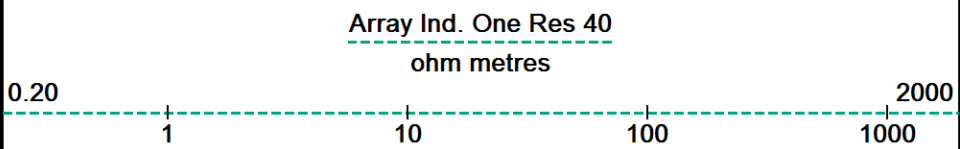
304

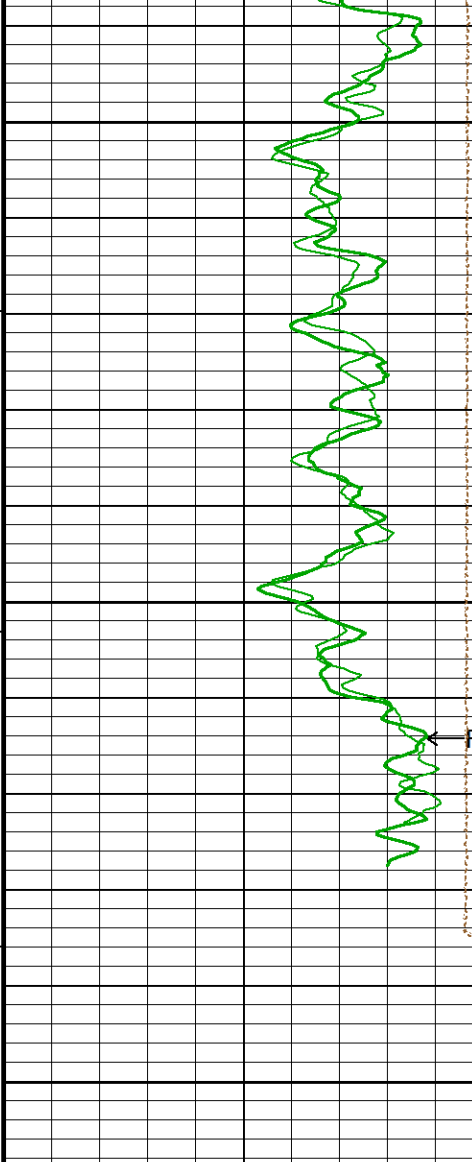
350

82°

400

82°





82°

450

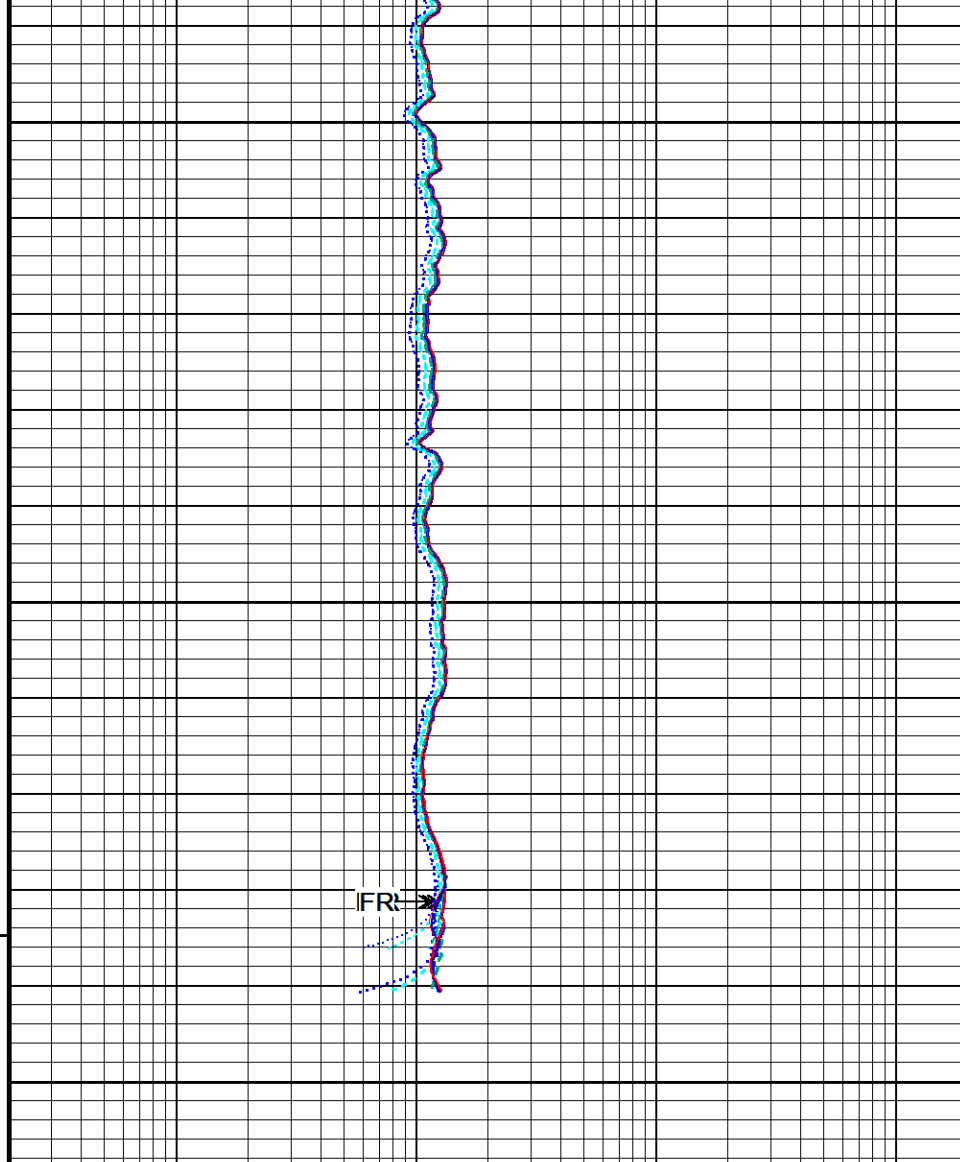
81°

500

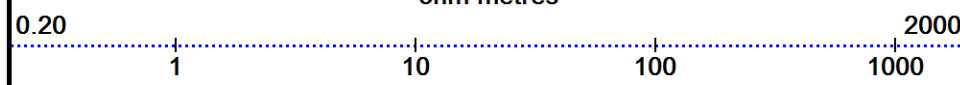
FR

TD

550



Array Ind. One Res 20
ohm metres



Array Ind. One Res 30
ohm metres



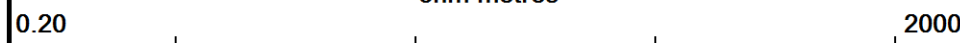
Array Ind. One Res 40
ohm metres



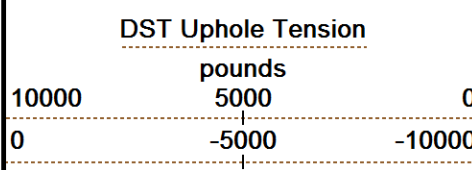
Array Ind. One Res 60
ohm metres



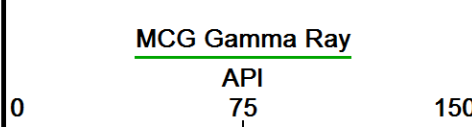
Array Ind. One Res 85
ohm metres

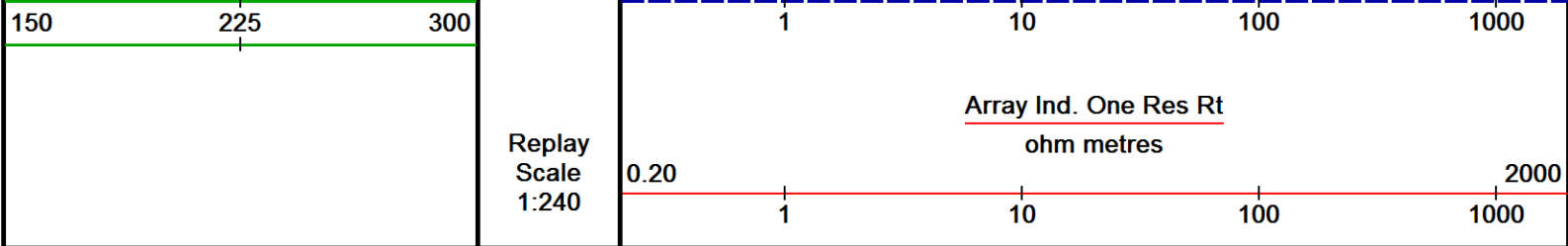


Timing Marks
every 60.0 sec



Borehole
Temp in
deg F





Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 18-MAY-2015 05:01
Filename: C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-7-3...\La Plata 34-7-33 #1_ MAIN PASS.dta	Recorded on 18-MAY-2015 01:12
Filename: C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-...\La Plata 34-7-33 #1_ REPEAT PASS.dta	Recorded on 18-MAY-2015 01:01
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109	

↑	5 INCH MAIN LOG 5 INCH REPEAT LOG	↑
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BEFORE SURVEY CALIBRATION	
C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-7-33 #1\run_1\8367-119094122\La Plata 34-7-33 #1_ MAIN PASS.dta	

General Constants All 000			Last Edited on 18-MAY-2015,00:52
General Parameters			
Mud Resistivity	5.420	ohm-metres	
Mud Resistivity Temperature	74.300	degrees F	
Water Level	0.000	feet	
Borehole Fluid Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Method	Single Caliper		
HVOL Caliper 1	None		
HVOL Caliper 2	N/A		
Annular Volume Diameter	9.625	inches	
Caliper for Differential Caliper	None		
Rwa Parameters			
Porosity used	N/A		
Resistivity used	N/A		
RWA Constant A	N/A		
RWA Constant M	N/A		
SW/APOR Tool Source	0.000		

High Resolution Temperature Calibration MCG-D.K 482			Field Calibration on 03-APR-2014,07:59
	Measured	Calibrated(Deg F)	
Lower	10.00	10.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.K 482			Last Edited on 03-APR-2014,07:59
Pre-filter Length	11		

Gamma Calibration MCG-D.K 482			Field Calibration on 17-MAY-2015 19:46
	Measured	Calibrated (API)	
Background	168	115	
Calibrator (Gross)	1497	1027	
Calibrator (Net)	1330	912	

Gamma Calibration Tolerances MCG-D.K 482		
Ratio	1.458	Counts/API
	<div><div>1.40</div><div>1.475</div><div>1.55</div></div>	

Gamma Constants MCG-D.K 482			Last Edited on 17-MAY-2015,19:33
Gamma Calibrator Number GRC.C.072			
GRC-M Calibrator Jig in Use?	NO		
Inactive Background Jig in Use?	NO		
Mud Density	1.10	gm/cc	
Caliper Source for Processing	Bit Size		
Tool Position	Eccentred		

Potassium Equivalence
K Mud Concentration

Chloride
0.00 %

Induction Calibration MAI-B.J 374

Base Calibration on 11-MAR-2013,14:44
Field Check on 17-MAY-2015 19:12

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.0	476.0	9.3	966.2
2	5.4	382.2	7.6	821.4
3	3.7	260.5	5.2	566.0
4	1.8	133.4	2.6	279.2

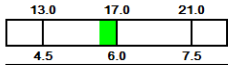
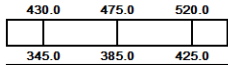
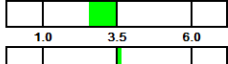
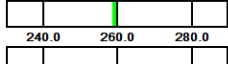
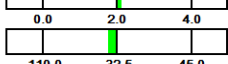
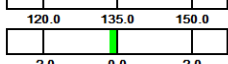
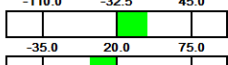
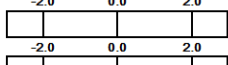
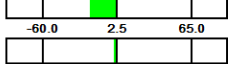
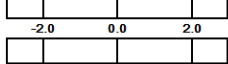
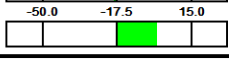
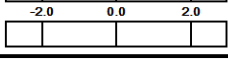

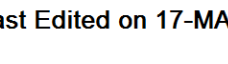


Array Temperature 71.2 Deg F

Test Loop Calibration Verified 12-MAY-2015 09:40

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	14.4	3784.2	14.4	3784.7
2	31.4	3500.4	31.3	3500.6
3	27.8	3021.4	27.8	3021.8
4	19.8	2056.6	19.7	2057.2
Deep	16.1	1969.8	16.0	1970.6
Medium	40.6	3986.7	40.6	3986.8
Shallow	48.5	5174.8	48.5	5174.4

Array Temperature 57.4 57.8 Deg F

Induction Calibration Tolerances MAI-B.J 374

Low Conductivity 1	16.0		mmho/m	High Conductivity 1	476.0		mmho/m
Low Conductivity 2	5.4		mmho/m	High Conductivity 2	382.2		mmho/m
Low Conductivity 3	3.7		mmho/m	High Conductivity 3	260.5		mmho/m
Low Conductivity 4	1.8		mmho/m	High Conductivity 4	133.4		mmho/m
Background Vx 1	0.0		mmho/m	Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m	Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m	Phase Check Loop 3	0.0		%
Background Vx 4	0.0		mmho/m	Phase Check Loop 4	0.0		%

Induction Constants MAI-B.J 374

Last Edited on 17-MAY-2015,20:02

Induction Model

RtAP-WBM

Borehole Correction Constants

Tool Centred	No
Hole Size Source	Bit Size
Hole Size Constant Value	N/A inches
Stand-off Type	Fins
Stand-off	0.50 inches
Number of Fins on Stand-off	6.0000
Stand-off Fin Angle	60.00 degrees
Stand-off Fin Width	0.7500 inches
Rm Source	Global Value: Temperature Corrected
Temp. for Rm Corr.	MCG External Temperature

Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	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

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
Source for Rt	0.00	
Source for Rxo	0.00	

DOWNHOLE EQUIPMENT

C:\Logs\COLEMAN OIL AND GAS\LA PLATA 34-7-33 #1\run_1\8367-119094122\La Plata 34-7-33 #1_ MAIN PASS.dta

CBH-C, Cablehead, 11 pin

CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 316 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Comms Gamma

MCG-D.K 482 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

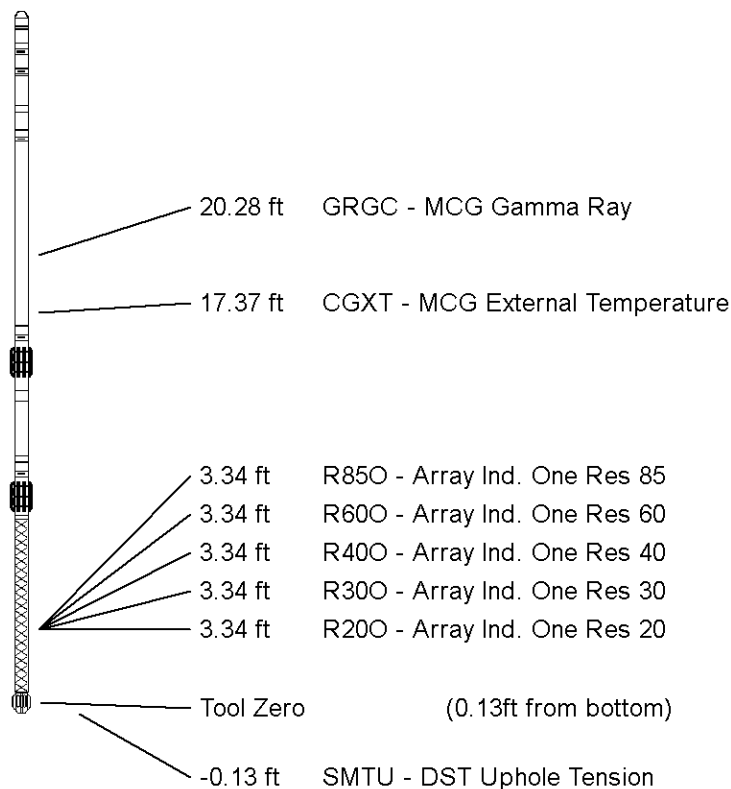
Compact Focussed Electric

MFE-C.A 417 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction

MAI-B.J 374 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in

Total Length: 30.26 ft Weight: 207.2 lb



All measurements relative to tool zero.

COMPANY	COLEMAN OIL AND GAS
WELL	LA PLATA 34-7-33 #1
FIELD	IGNACIO BLANCO
PROVINCE/COUNTY	LA PLATA
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	6742.00	feet	First Reading	531.30	feet
Elevation Drill Floor	6742.00	feet	Depth Driller	535.00	feet
Elevation Ground Level	6726.00	feet	Depth Logger	534.70	feet



ARRAY INDUCTION

LOG

Weatherford®

