



MICRO-RESISTIVITY LOG

COMPANY SOUTHERN STAR CENTRAL GAS PIPELINE, INC.
WELL ALDEN #0-5
FIELD ALDEN
PROVINCE/COUNTY RICE
COUNTRY/STATE U.S.A. / KANSAS
LOCATION 2822' FNL & 95' FWL
 NW NW NW SW

SEC	TWP	RGE	Other Services	MAI/MFE
22	21S	9W	MPD/MDN	
API Number			MSS	
Permit Number				
Permanent Datum G.L., Elevation 1672 feet Log Measured From K.B. @ 13 FEET above Permanent Datum Drilling Measured From K.B.				

Date	Elevations:
07-NOV-2010	KB 1685.00
	DF 1684.00
	GL 1672.00

Run Number	ONE
Depth Driller	3530.00 feet
Depth Logger	3329.00 feet
First Reading	3508.00 feet
Last Reading	3320.00 feet
Casing Driller	3321.00 feet
Casing Logger	3320.00 feet
Bit Size	6.250 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.00 lb/USg 43.00 CP
PH / Fluid Loss	11.00 10.00 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	1.71 @ 81.0 ohm-m
Rmf @ Measured Temp	1.37 @ 81.0 ohm-m
Rmc @ Measured Temp	2.05 @ 81.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.29 @107.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	107.00 deg F
Equipment Name	COMPACT
Equipment / Base	13096 LIB
Recorded By	LYNN SCOTT
Witnessed By	MARK ROUSE
S.O.# / JOB#	3524593 LB10-280

BOREHOLE RECORD

Last Edited: 07-NOV-2010 04:46

Bit Size inches	Depth From feet	Depth To feet
6.250	3320.00	3529.00

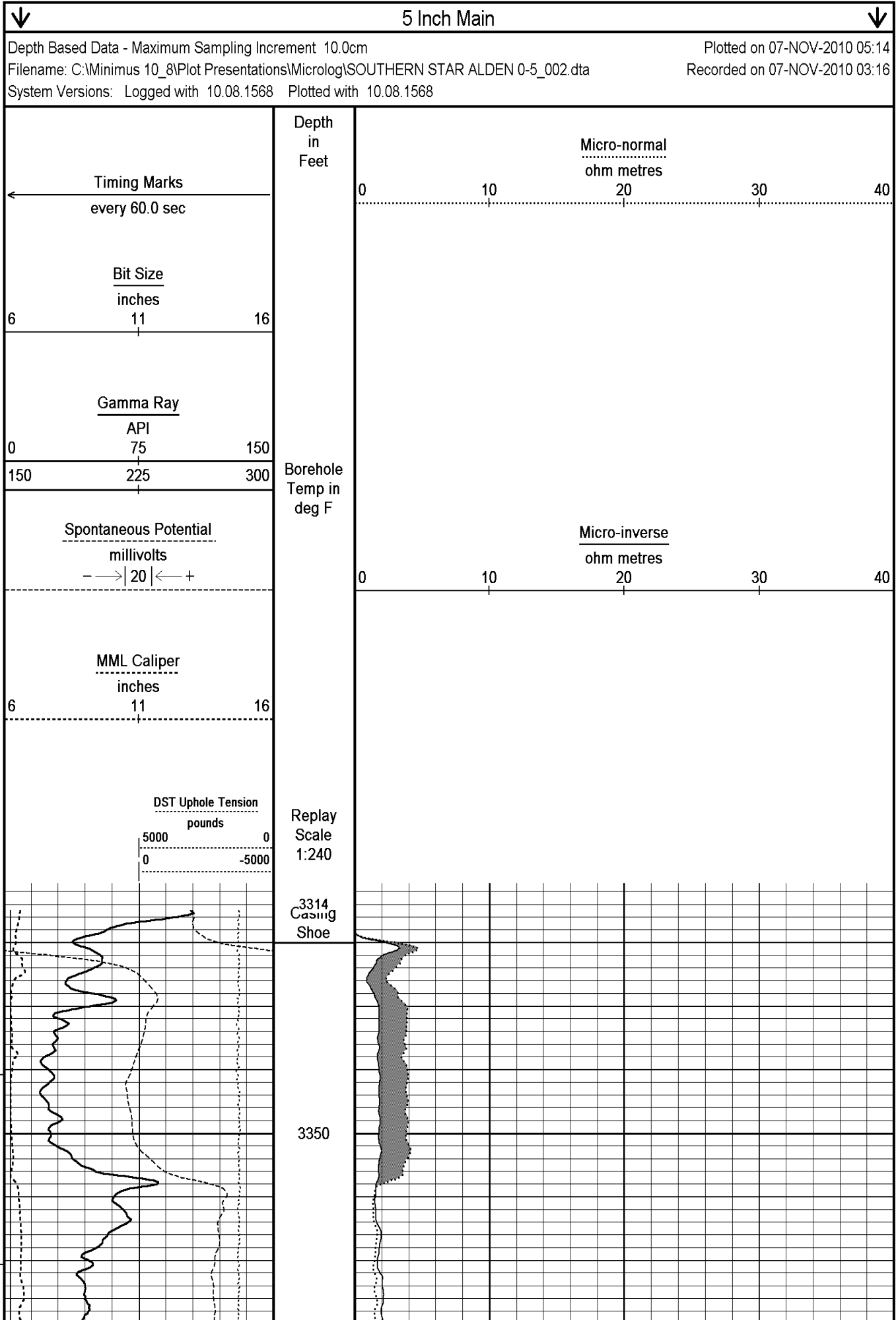
CASING RECORD

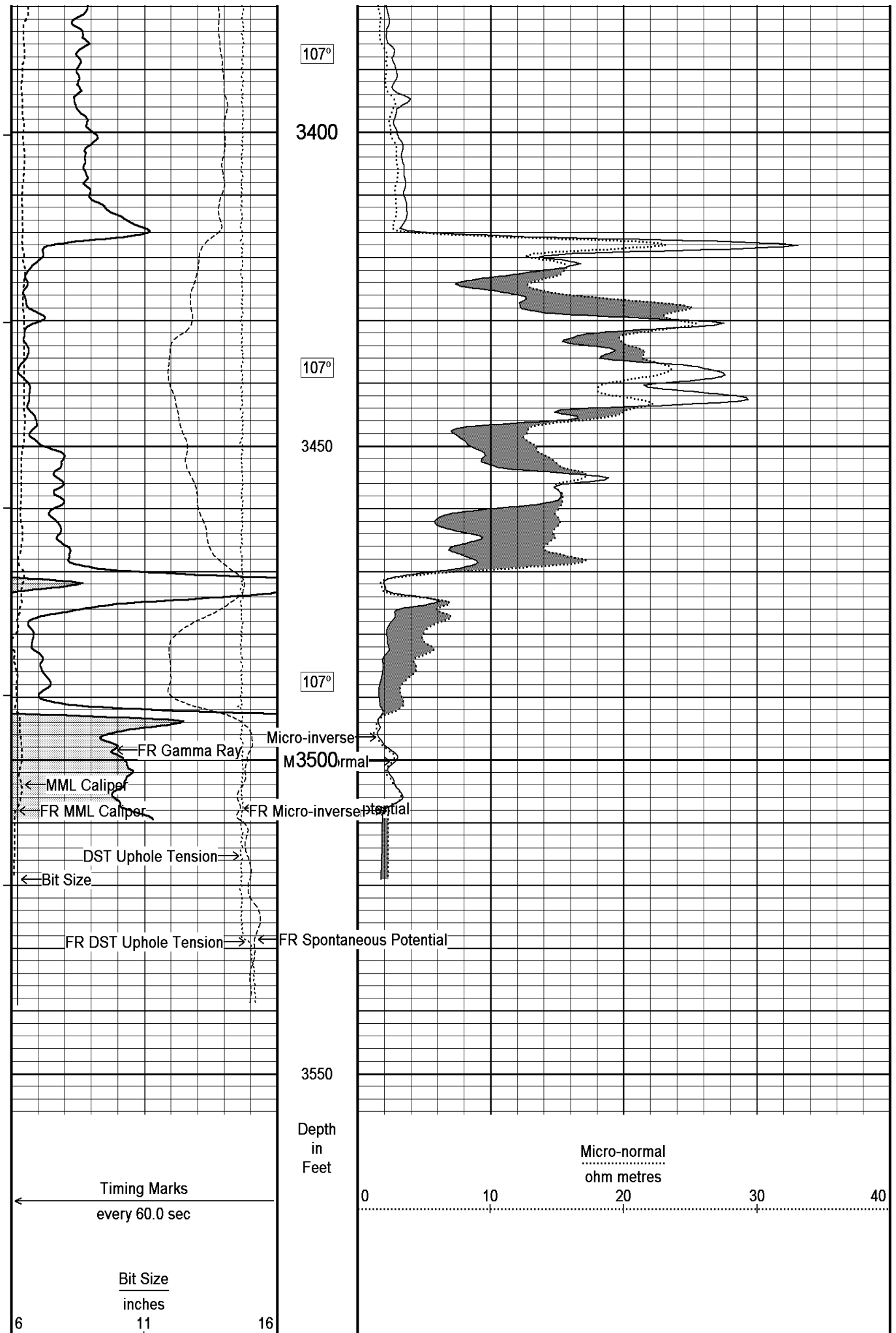
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	7.000	0.00	3320.00	17.00

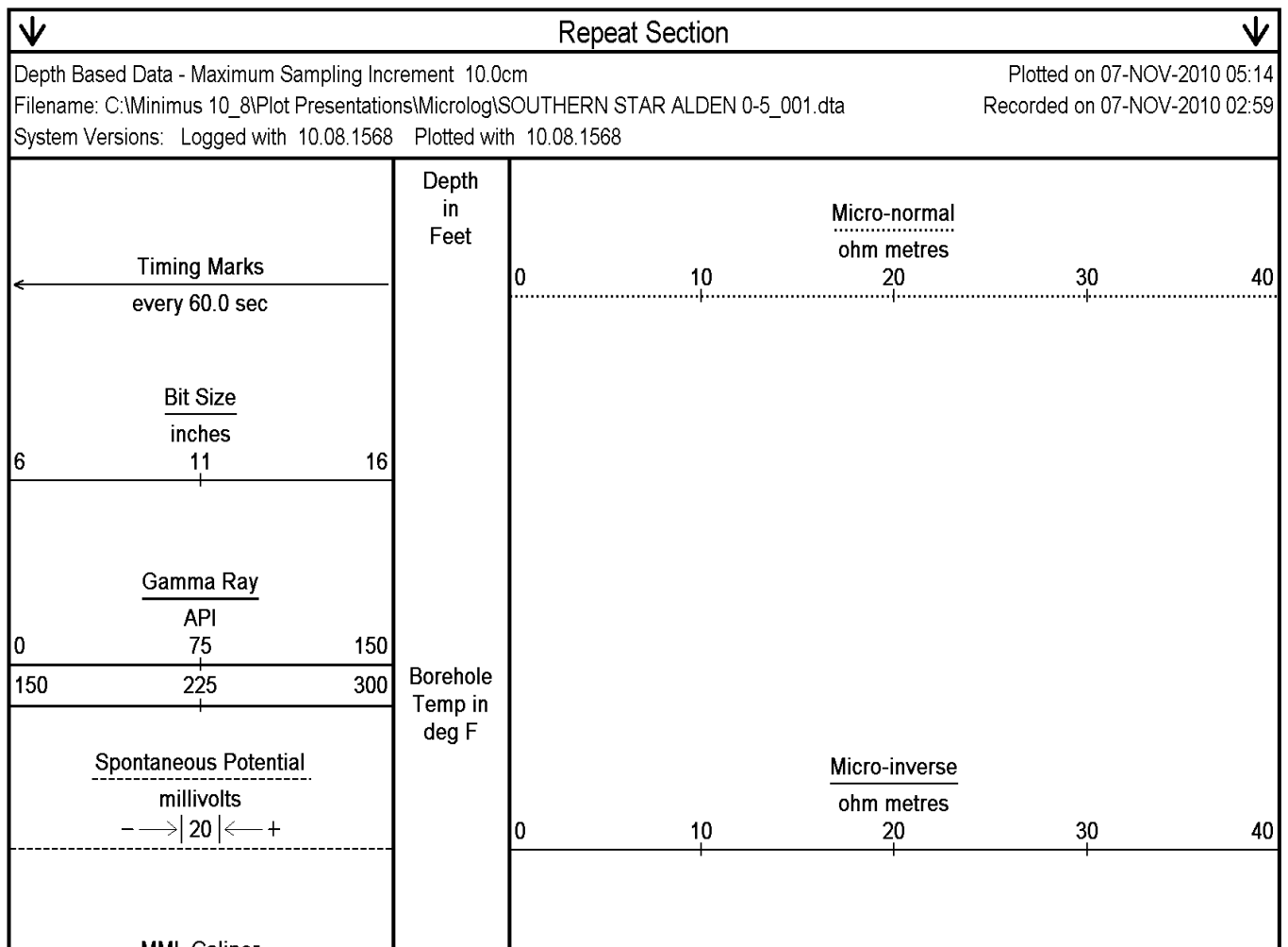
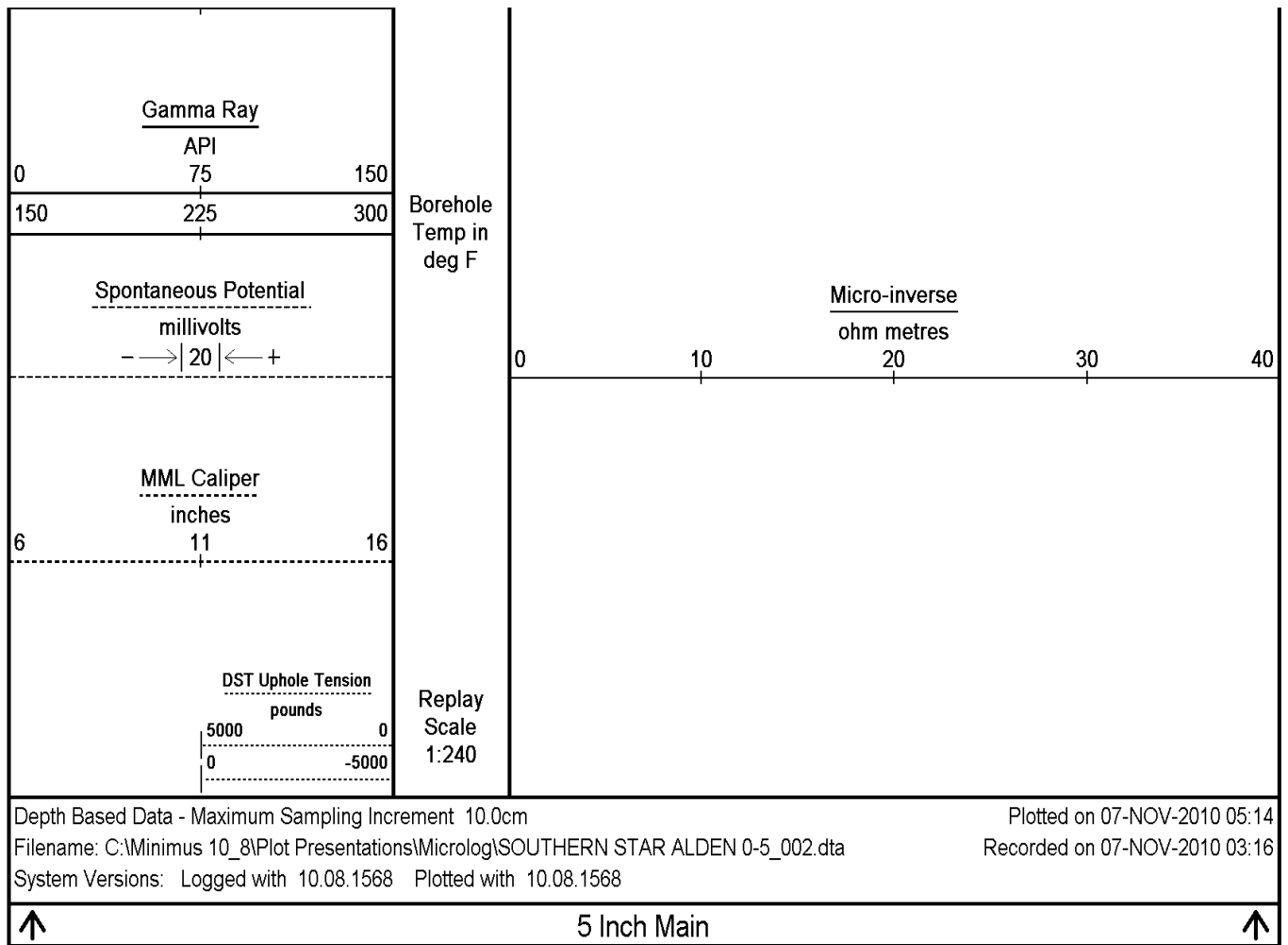
REMARKS

Tools Run: MAI, MPD, MCG, MDN, MML, MFE, SKJ, MSS
 Hardware: MPD: 8 inch profile plate used. MAI MSS and MFE: 0.5 Inch standoffs used. MDN: Dual Eccentraliser used.
 2.71 G/CC Limestone density matrix used to calculate porosity.
 Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
 Borhole rugosity, tight pulls, and washouts will affect data quality.
 All intervals logged and scaled per customer's request.
 Annular volume with 4.5 inch production casing
 Service order #3524593
 Rig: Sterling #4
 Engineer: L. Scott
 Operator(s): J. LaPoint

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.







WHL Carper

inches

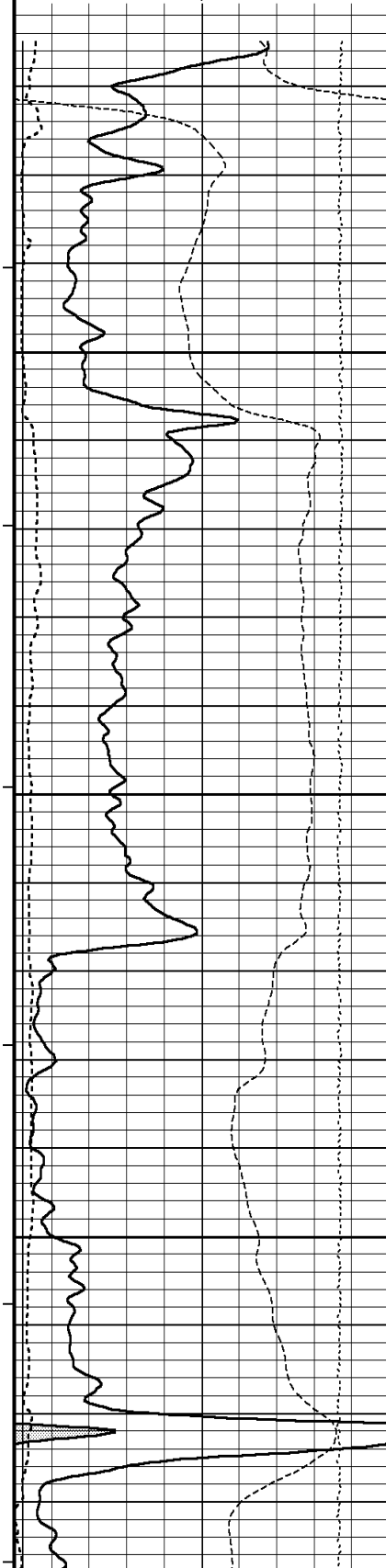
6 11 16

DST Uphole Tension
pounds

5000 0
0 -5000

Replay
Scale
1:240

3314
Casing
Shoe



3350

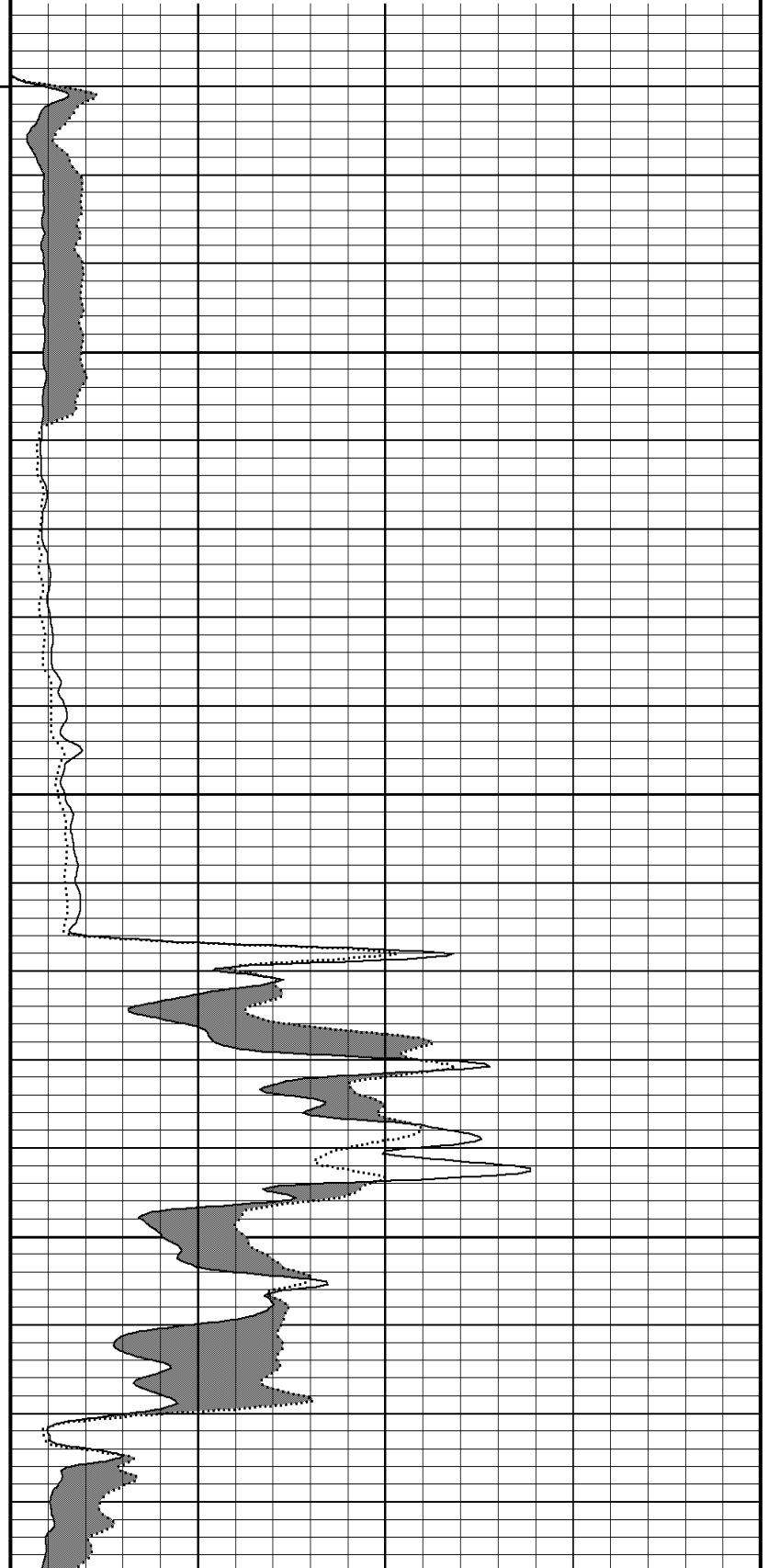
106°

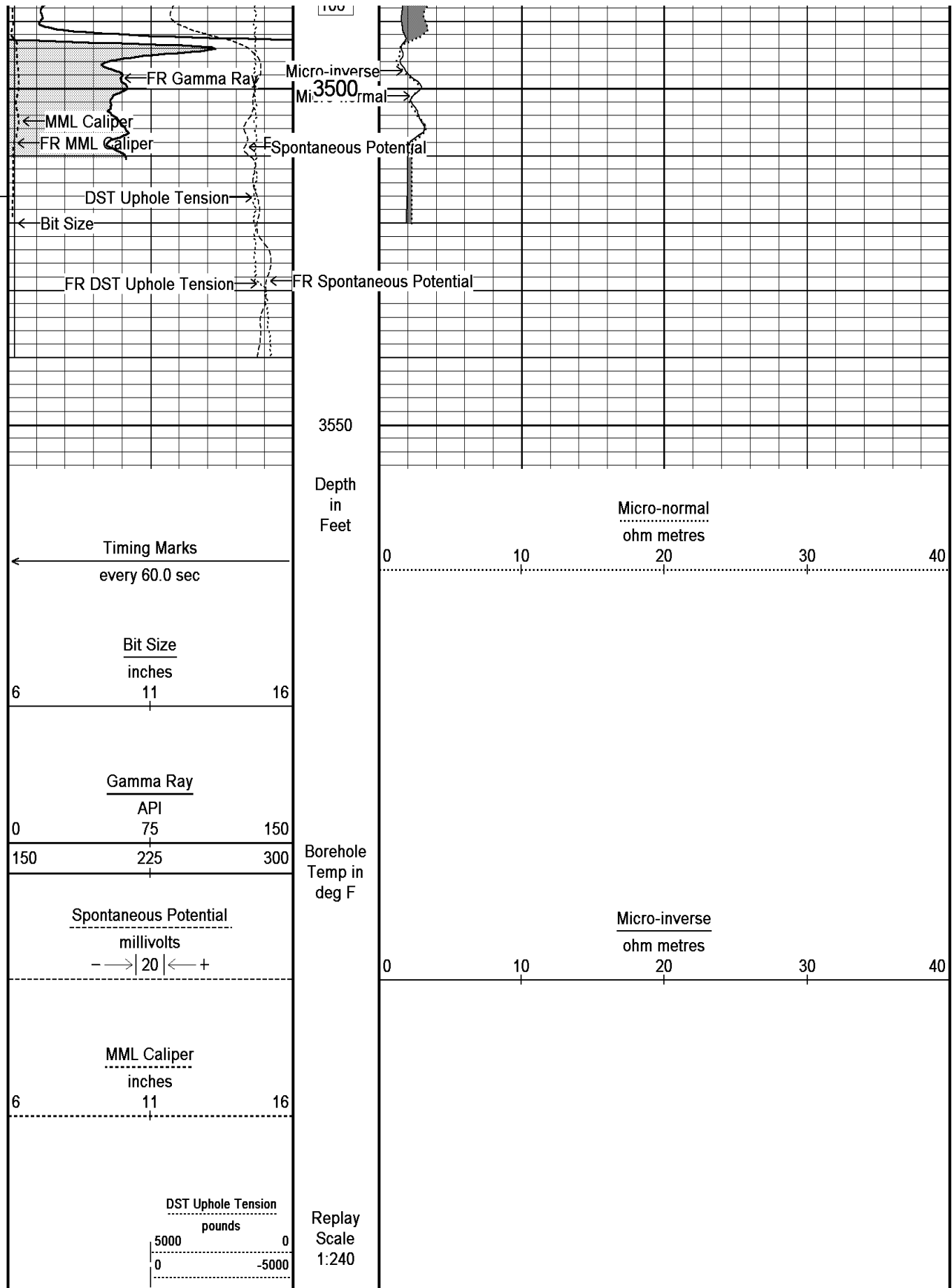
3400

107°

3450

106°





Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 07-NOV-2010 05:15

Filename: C:\Minimus 10_8\Plot Presentations\Microlog\SOUTHERN STAR ALDEN 0-5_001.dta

Recorded on 07-NOV-2010 02:59

System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

BEFORE SURVEY CALIBRATION

C:\Minimus 10_8\Plot Presentations\Microlog\SOUTHERN STAR ALDEN 0-5_001.dta

General Constants All 000

Last Edited on 07-NOV-2010,02:12

General Parameters

Mud Resistivity	1.710	ohm-metres
Mud Resistivity Temperature	81.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method	Single Caliper	
HVOL Caliper 1	Bit Size	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	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

High Resolution Temperature Calibration MCG 067

Field Calibration on 06-AUG-2010,10:40

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG 067

Last Edited on 06-AUG-2010,10:39

Pre-filter Length	11
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SP Calibration MCG 067

Field Calibration on 09-SEP-2010 13:54

	Measured	Calibrated (mV)
Reference 1	104.1	100.0
Reference 2	-95.6	-100.0

Gamma Calibration MCG 067

Field Calibration on 06-NOV-2010 10:07

	Measured	Calibrated (API)
Background	66	45
Calibrator (Gross)	730	501
Calibrator (Net)	664	456

Gamma Constants MCG 067

Last Edited on 07-NOV-2010,02:40

Gamma Calibrator Number	grcc141	
Mud Density	1.00	gm/cc
Caliper Source for Processing	MML Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML 004

Base Calibration on 13-OCT-2010 10:02

Field Check on 06-NOV-2010 09:54

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.1	2.6	12.8
Micro Inverse	15.6	78.3	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.2	32.2
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML 004

Last Edited on 07-NOV-2010,02:40

Pad Type	6-12 in Soft Rubber Immatable 000-5011-139
Micro Normal K Factor	0.5110
Micro Inverse K Factor	0.3380
Standoff Offset	N/A inches

Caliper Calibration MML 004

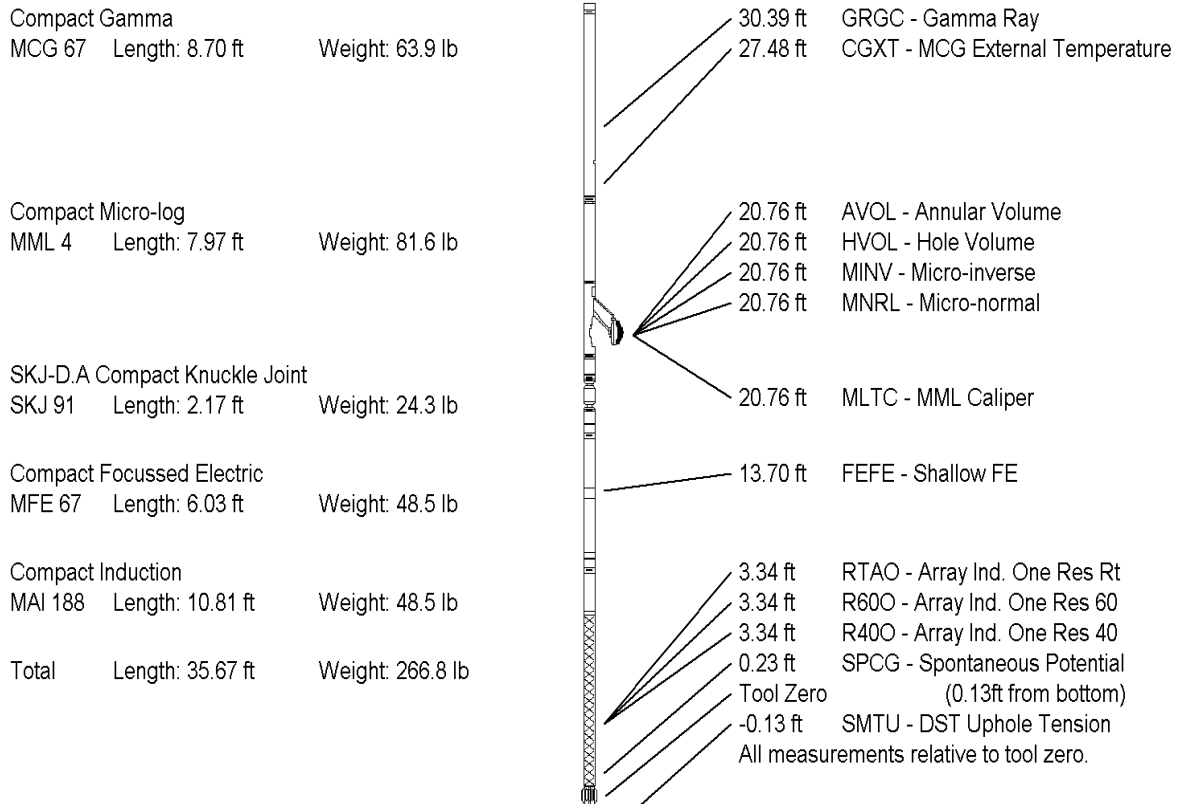
Base Calibration on 13-OCT-2010 09:56
Field Calibration on 06-NOV-2010 09:55

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14810	5.96
2	18235	7.98
3	21638	9.95
4	25413	11.91
5	0	0.00
6	N/A	N/A

Field Calibration		
Measured Caliper (in)	Actual Caliper (in)	
6.00	5.96	

DOWNHOLE EQUIPMENT

C:\Minimus 10_8\Plot Presentations\Microlog\SOUTHERN STAR ALDEN 0-5_001.dta



COMPANY	SOUTHERN STAR CENTRAL GAS PIPELINE, INC.
WELL	ALDEN #0-5
FIELD	ALDEN
PROVINCE/COUNTY	RICE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1685.00 feet	First Reading	3508.00 feet
Elevation Drill Floor	1684.00 feet	Depth Driller	3530.00 feet
Elevation Ground Level	1672.00 feet	Depth Logger	3329.00 feet





Weatherford[®]

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