



Weatherford

**COMPENSATED NEUTRON
SONIC POROSITY
OVERLAY**

COMPANY		O'BRIEN RESOURCES LLC	
WELL		PECK 1 #1	
FIELD		WILDCAT	
PROVINCE/COUNTY LANE		U.S.A. / KANSAS	
COUNTRY/STATE		1170' FNL & 790' FWL	
LOCATION		SW SE NW NW	
SEC	TWP	RGE	Other Services
1	18S	29W	
API Number		15-101-22482	
Permit Number			
Permanent Datum GL, Elevation 2714 feet			Elevations:
Log Measured From KB			KB 2724.00
Drilling Measured From KB AT 10 FEET			DF 2722.00
			GL 2714.00
Date	14-JAN-2014		
Run Number	ONE		
Service Order	7036-76935286		
Depth Driller	4625.00		feet
Depth Logger	4622.00		feet
First Reading	4609.04		feet
Last Reading	3600.00		feet
Casing Driller	273.00		feet
Casing Logger	273.00		feet
Bit Size	7.875		inches
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.40 lb/USg	44.00 CP	
PH / Fluid Loss	10.00	7.20 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.88 @ 77.8	ohm-m	
Rmf @ Measured Temp	0.70 @ 77.8	ohm-m	
Rmc @ Measured Temp	1.06 @ 77.8	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.62 @ 112.0	ohm-m	
Time Since Circulation	2.5 HOURS		
Max Recorded Temp	112.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	DEREK CARTER		
Witnessed By	KURT TALBOTT		
IOB #	LB14-004		

BOREHOLE RECORD				Last Edited: 14-JAN-2014 23:45
Bit Size inches		Depth From feet		Depth To feet
7.875		273.00		4625.00
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	273.00	24.00

REMARKS
- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION
- HARDWARE: - MDN: DUAL BOWSPRING ECCENTRALIZER - MFE: 1 X 0.5 INCH STANDOFF - MSS: 2 X 0.5 INCH STANDOFF - MAI: 2 X 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE PIPE: 1820 CU. FT

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE PIPE: 1340 CU. FT

- RIG: MAVERICK DRILLING #108

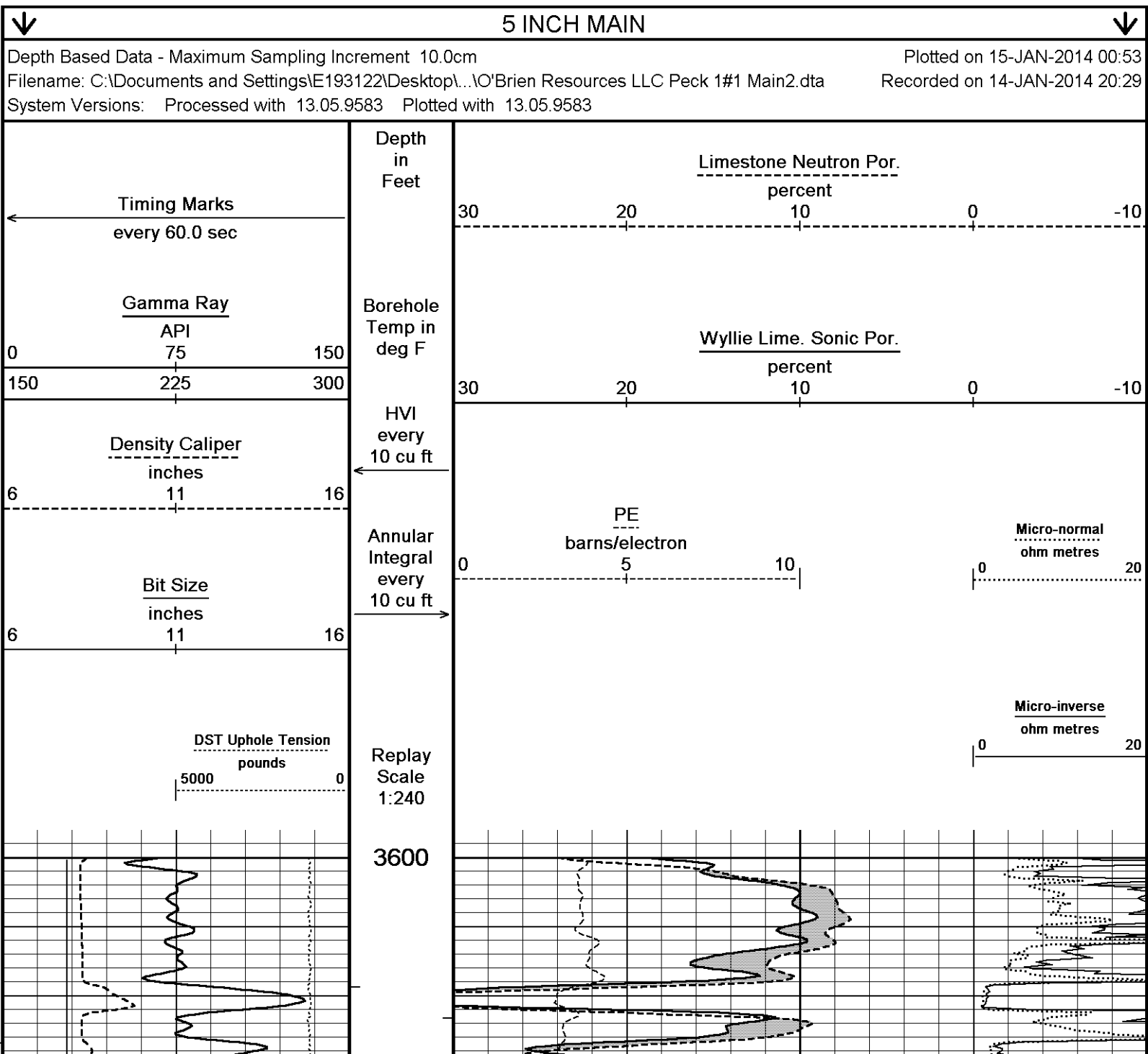
- ENGINEER: DEREK CARTER

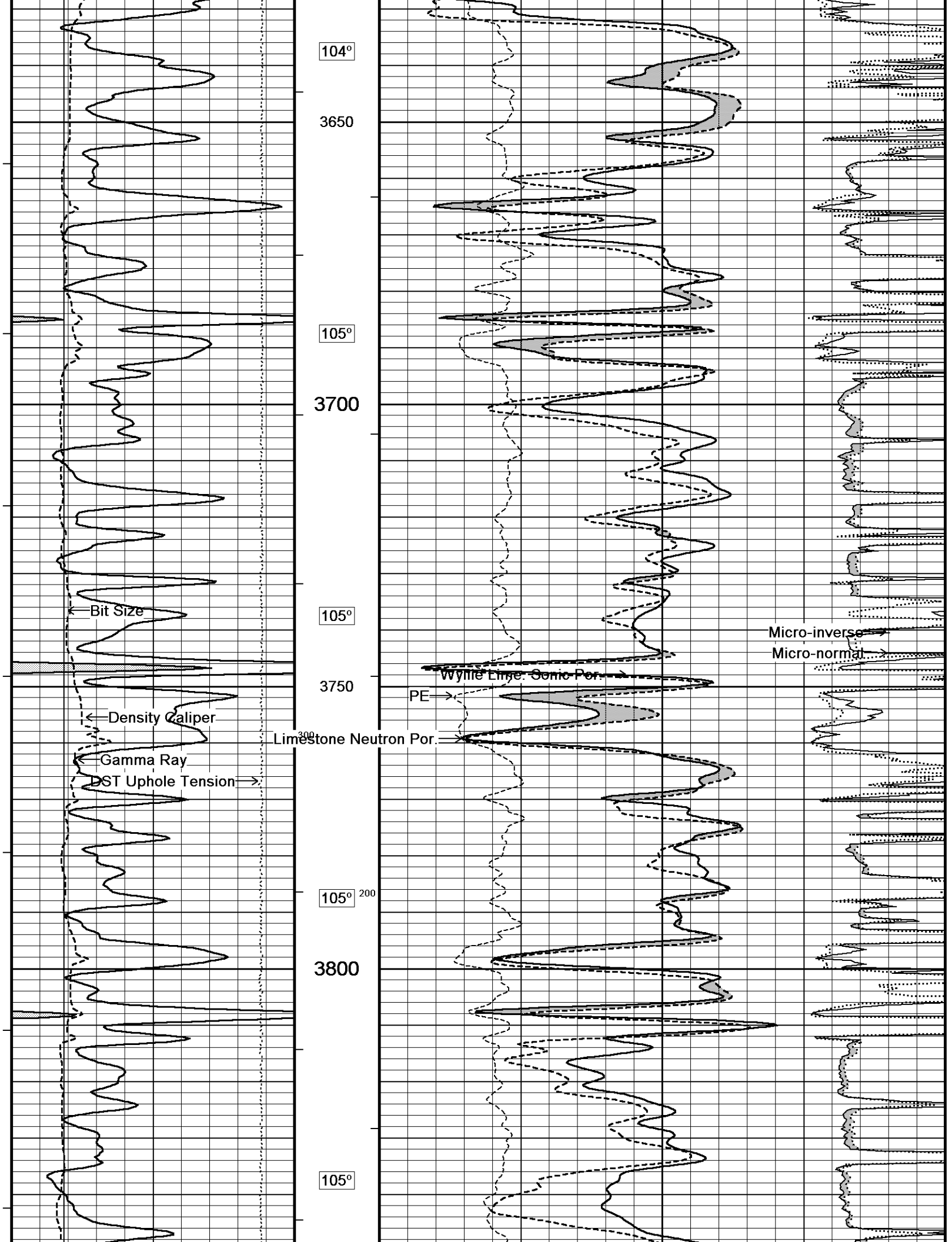
- OPERATORS: KEN RINEHART, TROWDY DICKENS

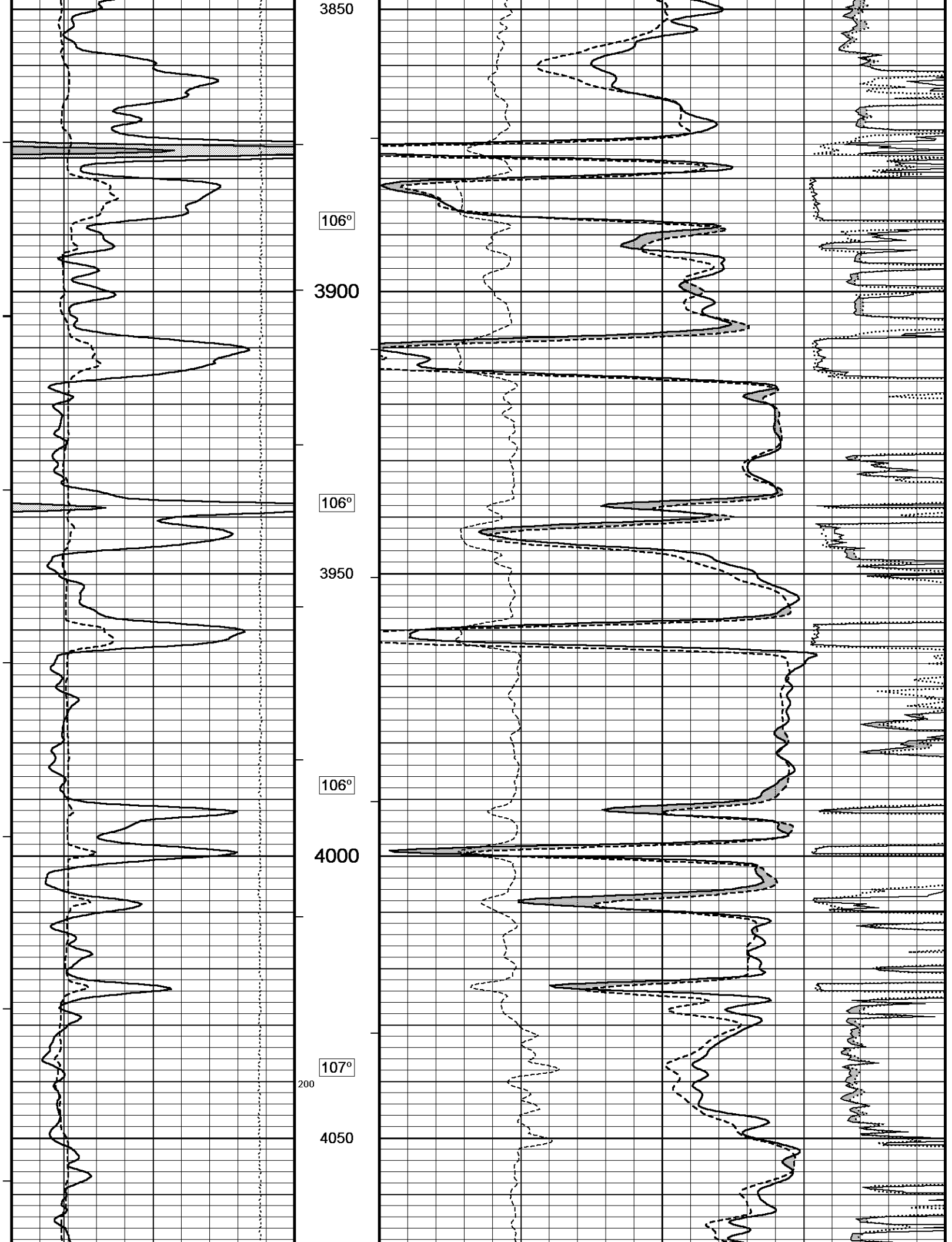
- PER CUSTOMER REQUEST A COMPOSITE (E-LOG ONLY, NO FIELD PRINT) IS BEING INCLUDED WITH THE STANDARD TRIPLECOMBO E-LOGS (DEN-NEU-MIC, INDUCTION, MICROLOG)

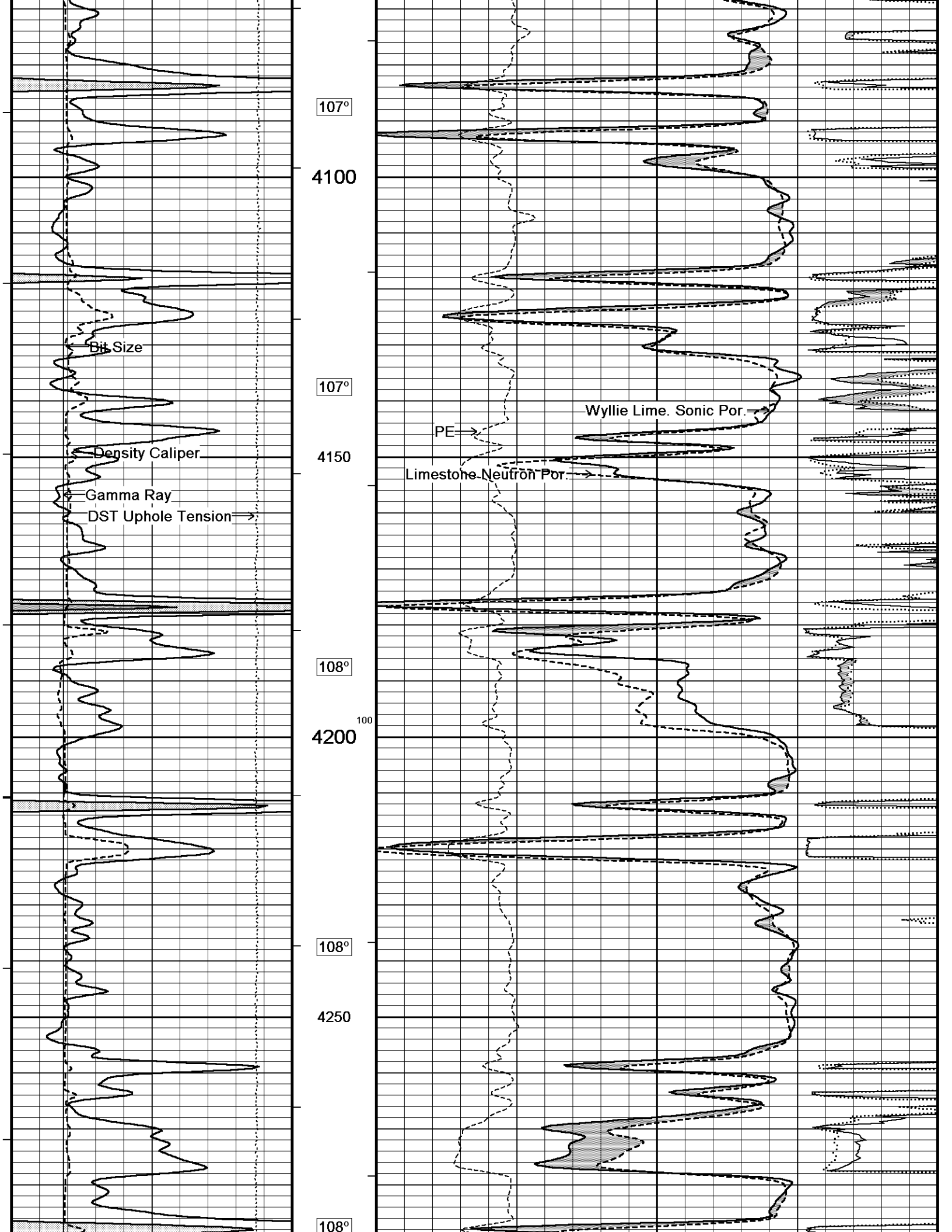
- SP CURVE HAS A NUMBER OF DISCONTINUITIES AND ERRATIC SPOTS (557-560 FT., 596-599 FT., 710-728 FT., 854-859 FT., 1292-1294 FT., 2236-2254 FT., 3454-3456 FT.). THE RIG CREW HAD A TRASH PUMP THAT PERIODICALLY OPERATED IN ORDER TO PUMP EXCESS MUD. IT IS BELIEVED THAT THIS MAY HAVE CAUSED THE DISCONTINUITIES AND ERRATIC INTERVALS.

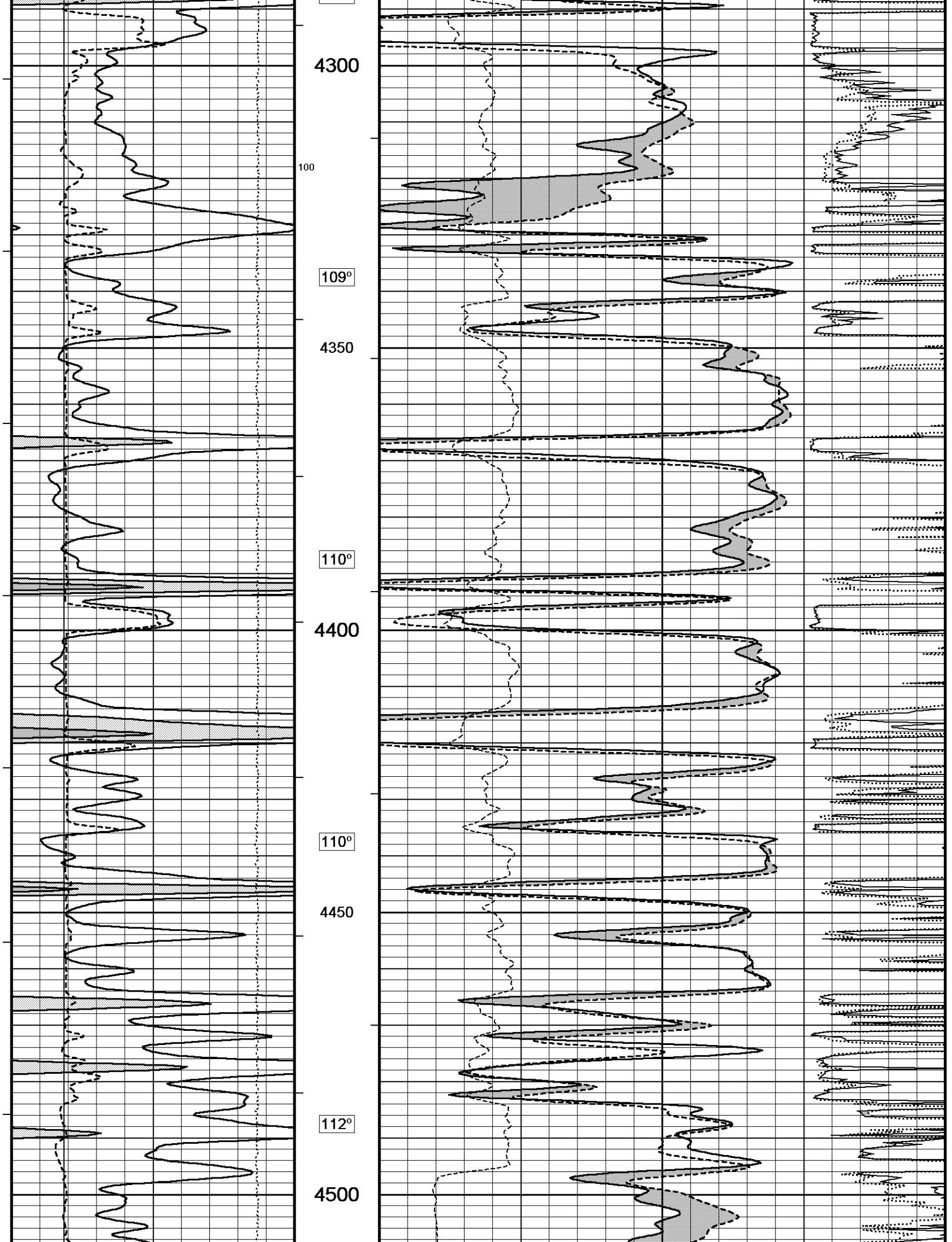
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

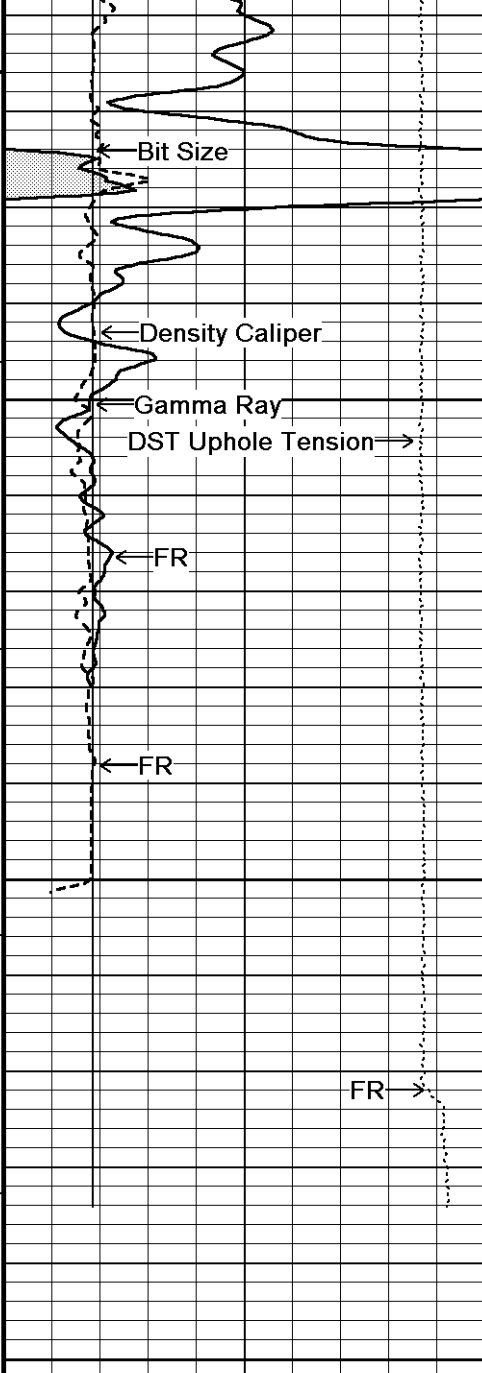










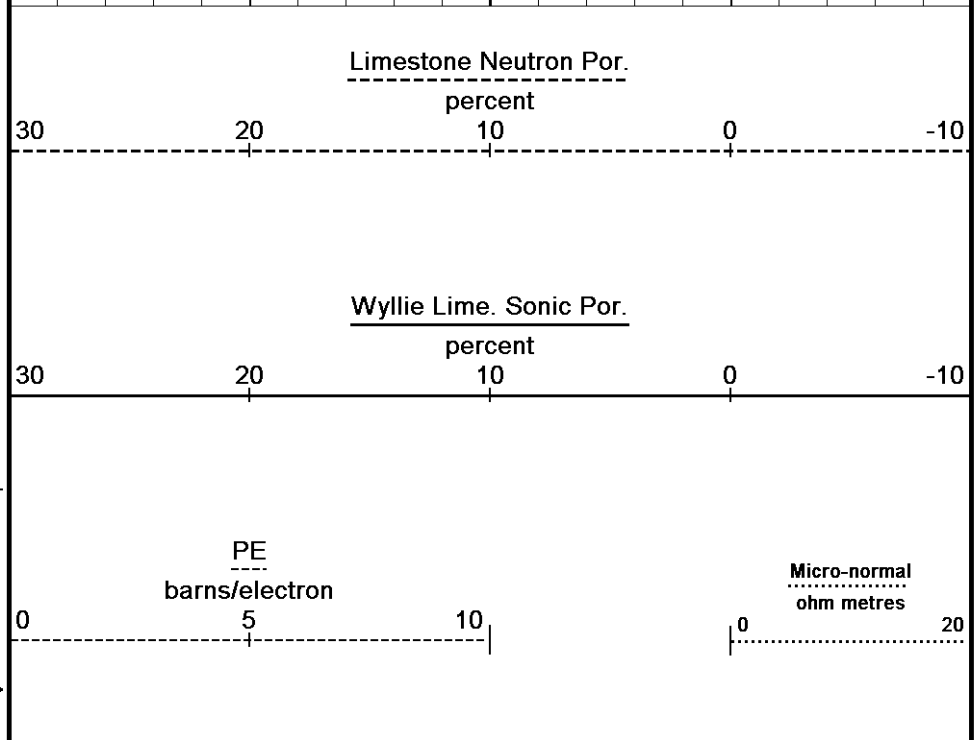
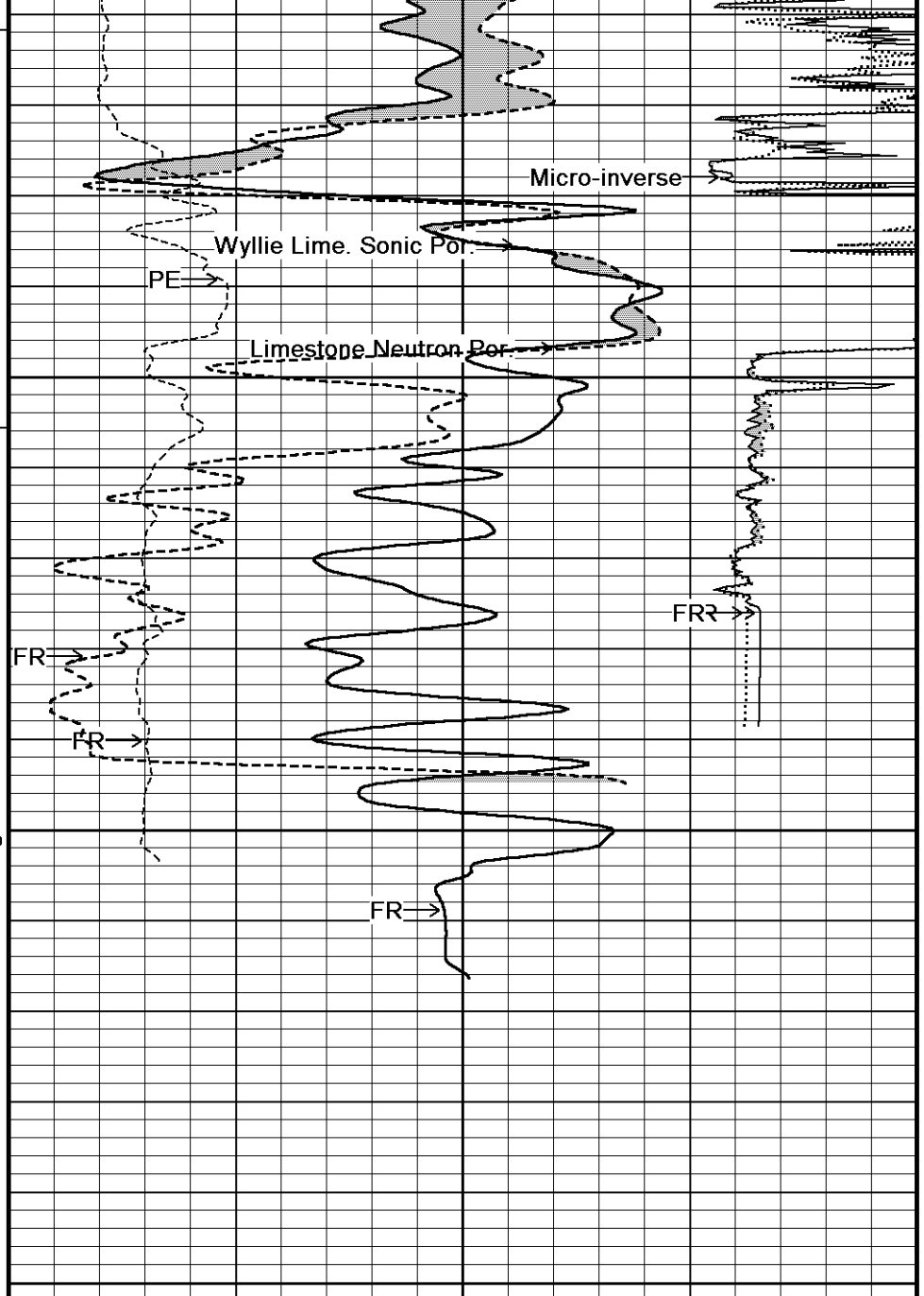
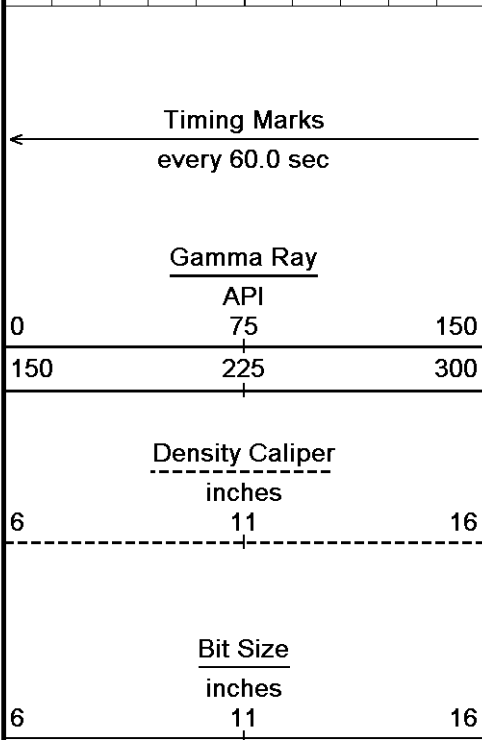


112°

4550

4600

4650
Depth
in
Feet



DST Uphole Tension pounds 50000		Replay Scale 1:240	Micro-inverse ohm metres 020
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Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 15-JAN-2014 00:53

Filename: C:\Documents and Settings\E193122\Desktop\...O'Brien Resources LLC Peck 1#1 Main2.dta

Recorded on 14-JAN-2014 20:29

System Versions: Processed with 13.05.9583

Plotted with 13.05.9583

↑

5 INCH MAIN

↑

BEFORE SURVEY CALIBRATION

C:\Documents and Settings\E193122\Desktop\Archive\Logs\13 O'Brien Resources LL...O'Brien Resources LLC Peck 1#1 Main2.dta

General Constants All 000			Last Edited on 14-JAN-2014,19:13	
General Parameters				
Mud Resistivity	0.880	ohm-metres		
Mud Resistivity Temperature	77.800	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	Density Caliper			
HVOL Caliper 2	N/A			
Annular Volume Diameter	4.500	inches		
Caliper for Differential Caliper	None			
Rwa Parameters				
Porosity used	Crossplot Porosity			
Resistivity used	Array Ind. One Res Rt			
RWA Constant A	1.000			
RWA Constant M	2.000			
SW/APOR Tool Source	0.000			

Gamma Calibration MCG-D.K 469		Field Calibration on 13-JAN-2014 14:21	
	Measured	Calibrated (API)	
Background	65	43	
Calibrator (Gross)	1158	768	
Calibrator (Net)	1093	725	

Gamma Constants MCG-D.K 469		Last Edited on 14-JAN-2014,19:13	
Gamma Calibrator Number	GRC38		
Mud Density	1.13	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl		kppm	
K Mud Type	Chloride		
K Mud Concentration	0.00	%	

High Resolution Temperature Calibration MCG-D.K 469		Field Calibration on 11-JAN-2014,16:37	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.K 469		Last Edited on 11-JAN-2014,16:37	
Pre-filter Length	11		

Micro Normal and Micro Inverse Calibration MML-A 3		Base Calibration on 30-DEC-2013 12:09	
Base Calibration		Field Check on 13-JAN-2014 14:13	
	Measured	Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1
			Resistor 2

Channel	Micro Normal	12.1	60.2	5.0	25.0
	Micro Inverse	15.7	78.4	5.0	25.0
Channel	Base Check (ohm-m)		Field Check (ohm-m)		
	Micro Normal		62.9		62.9
	Micro Inverse		48.2		48.2
Micro Normal and Micro Inverse Constants MML-A 3					Last Edited on 14-JAN-2014,19:12
Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159				
Micro Normal K Factor	1.0000				
Micro Inverse K Factor	1.0000				
Standoff Offset	N/A inches				
Neutron Calibration MDN-A.B 66					Base Calibration on 19-NOV-2013 15:33 Field Check on 13-JAN-2014 14:25
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far	Near	Far	
	3066	94	3714	110	
Ratio	32.484		33.764		
Field Calibrator at Base			Calibrated (cps)		
			1680	2433	
Ratio	0.691				
Field Check			Calibrated (cps)		
			1658	2414	
Ratio	0.693				
Neutron Constants MDN-A.B 66					Last Edited on 14-JAN-2014,19:12
Neutron Source Id	P0204NN				
Neutron Jig Number	5824NE				
Epithermal Neutron	No				
Caliper Source for Processing	Density Caliper				
Stand-off	0.00		inches		
Mud Density	1.00		gm/cc		
Limestone Sigma	7.10		cu		
Sandstone Sigma	4.26		cu		
Dolomite Sigma	4.70		cu		
Formation Pressure Source	None				
Formation Pressure	N/A		kpsi		
Temperature Source	Constant Value				
Temperature	68.00		degrees F		
Mud Salinity	0.00		kppm		
Salinity Correction	Not Applied				
Formation Fluid Salinity Source	None				
Formation Fluid Salinity	N/A		kppm		
Barite Mud Correction	Not Applied				
Sonic Constants MSS-C.K 330					Last Edited on 14-JAN-2014,19:12
Maximum Boundary Contrast	100.00		micro-sec/ft		
Fluid Transit Time	189.00		micro-sec/ft		
Limestone Transit Time	47.60		micro-sec/ft		
Sandstone Transit Time	55.50		micro-sec/ft		
Dolomite Transit Time	43.50		micro-sec/ft		
Sonic used for Porosities	3-5' Compensated Sonic				
Correction for Sonde Skew	Applied				
Cycle Stretch Algorithm	Applied				
MN3FT	N/A		micro-sec		
MX3FT	N/A		micro-sec		
Hunt-Raymer Constant	83.13		micro-sec/ft		
Sonde Mode	Compensated				
Hole Type	Open Hole				
Sonde Parameters					
		Measured		Calibrated	
Offset		N/A		0.0000	

Free Pipe	N/A	N/A	N/A	N/A	N/A
Peak Amplitude Source	N/A				
Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
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	

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
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

Photo Density Calibration MPD-C.A 216

Base Calibration on 30-DEC-2013 16:39
Field Check on 13-JAN-2014 14:12

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60912	31239	59556	30836
Reference 2	25458	2782	24941	2541
Field Check at Base	1112.0	1316.2		
Field Check	1111.2	1311.3		

PE Calibration				
Base Calibration		Measured	Calibrated	
	WS	WH	Ratio	Ratio
Background	202	993		
Reference 1	25023	60709	0.416	0.371
Reference 2	7244	25325	0.289	0.272
Field Check at Base	202.1	992.6		
Field Check	201.2	991.0		

Density Constants MPD-C.A 216

Last Edited on 14-JAN-2014,19:12

Density Source Id	18235B
Nylon Calibrator Number	DNCE528
Aluminium Calibrator Number	DACD528
Density Shoe Profile	8 inch

Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.13	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix density (gm/cc)	Depth (m)
2.71	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-C.A 216

Base Calibration on 30-DEC-2013 16:06

Field Calibration on 13-JAN-2014 14:07

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16063	3.99
2	26074	5.98
3	36080	7.97
4	45856	9.86
5	57120	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

DOWNHOLE EQUIPMENT

C:\Documents and Settings\E193122\Desktop\Archive\Logs\13 O'Brien Resources LL...\O'Brien Resources LLC Peck 1#1 Main2.dta

3/8" Triple Cone Cable Head (MCB C A)

MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma

MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log

MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron

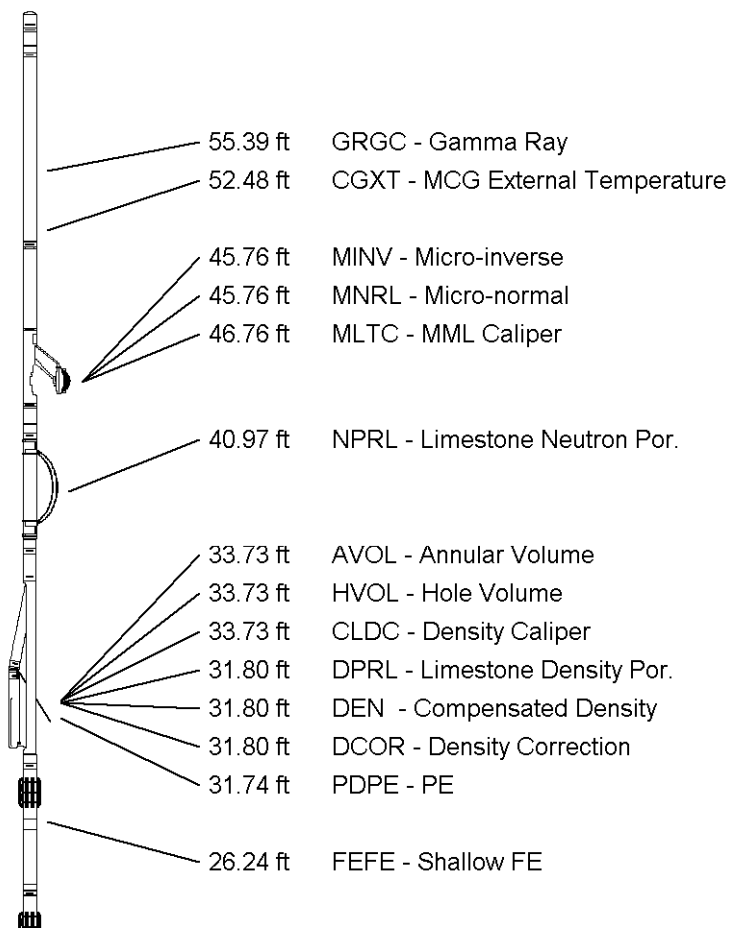
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric

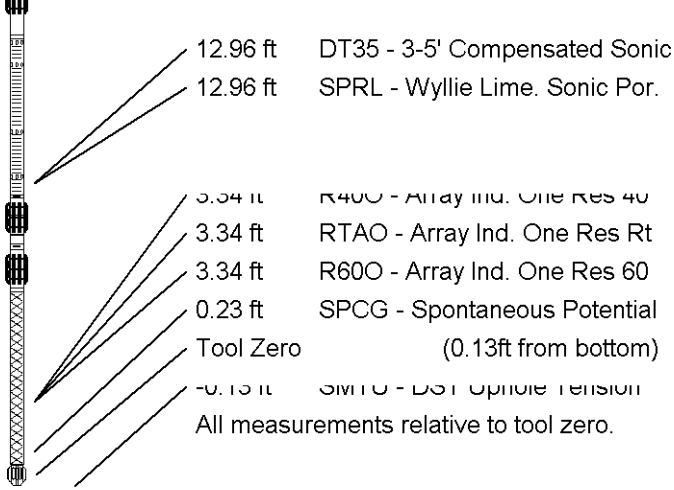
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in



Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.25 ft Weight: 471.8 lb



COMPANY	O'BRIEN RESOURCES LLC
WELL	PECK 1 #1
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2724.00	feet	First Reading	4609.04	feet
Elevation Drill Floor	2722.00	feet	Depth Driller	4625.00	feet
Elevation Ground Level	2714.00	feet	Depth Logger	4622.00	feet



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SONIC POROSITY
OVERLAY