COMPOSITE LOG

Tucker ENERGY SERVICES

File No : TUL-57644
Company : MG OIL INC.
Well : POPP #4
Field : NUSS SOUTH
County : BARTON
State : KANSAS
Country : USA
API No : 15-00925785

Location :
2285' FNL & 1870' FWL
NE SW SE NW

LSD : **Sect :** 15 **Twp :** 16S **Rge :** 14W

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB**	1911.00 Ft	CNT	PIT
Log Measured From:	KB	**DF**	1910.00 Ft	LDT	
Above Permanent Datum:	7.00 Ft	**GL**	1904.00 Ft	MLT	

Date	2012-12-05						
Run Number	1						
Depth--Driller	3440.0	Ft					
Depth--Logger	3439.0	Ft					
First Reading	3438.0	Ft					
Last Reading	890.0	Ft					
Casing--Driller	890.0	Ft					
Casing--Logger	890.0	Ft					
Bit Size	7.875	In					
Casing Size	8.625	In					
Hole Fluid Type	WBM						
Density	9.3	LBS/GAL					
Fluid Loss	10.4	CC					
PH/Viscosity	8.5	58.0 SEC					
Sample Source	MEASURED						
RM@Measured Temp.	0.900	@ 70 F					
RMF@Measured Temp	0.770	@ 70 F					
RMC@Measured Temp.	1.040	@ 70 F					
Source RMF/RMC	CALCULATED	CALCULATED					
RM@BHT	0.630	@ 104 F					
Time Circulation Stopped							
Max Recorded Temp.	104	F					
Equipment/Base	TRK 119	TULSA					
Recorded By	S. DAVIS						
Witnessed By	C. COUNTS						

Company MG OIL INC.
Well POPP #4
Field NUSS SOUTH
County BARTON
State KANSAS
Country USA
API No. 15-00925785

Bitsize Intervals

Size (In)	Bottom (Ft)
7.875	3439.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)
8.625	20.00	890.00

Run Number 1

Run Number	1
Date	2012-12-05
Date/Time On Bottom	2012-12-05 19:45
Depth to Fluid	0.0 Ft
Salinity	5500.000 PPM
RMF@BHT	0.530 @ 104 F
RMC@BHT	0.720 @ 104 F

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST

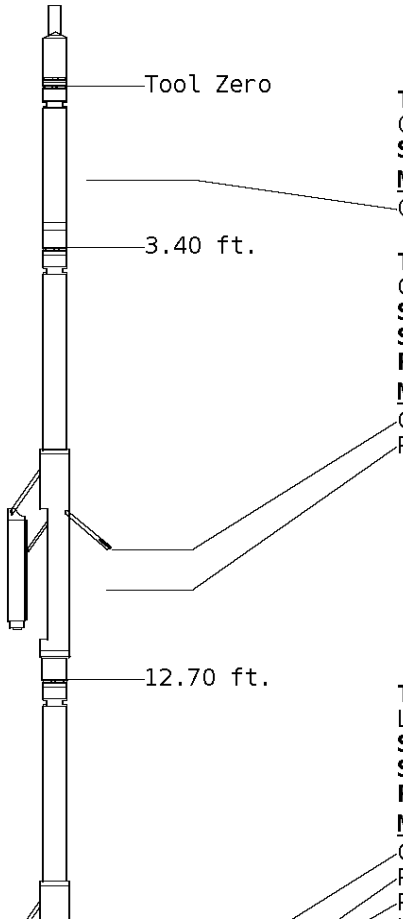
ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
GRT, CNT, LDT, MLT, AND PIT RUN IN COMBINATION.
CALIPERS ORIENTED ON X-Y AXIS.
2.71 G/CC USED TO CALCULATED POROSITY.
ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING.
DETAIL PRESENTED TO 2550'

GRT: GRP.
CNT: PHIN, CLCNIN.
LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.
MLT: NOR_RF, INV_RF, MSCLPIN.
PIT: ILD, ILM, SPU, SFLAEC.

OPERATORS:
B. COLWILL
J. KLINE

Tool String Schematic

Total Tool Length - 53.57 **ft.**
Maximum Outside diameter - 6.00 **in.**
Net Weight in Air - 943.00 **lbs.**



Tool: GRT-B **Length:** 3.40 **ft.** **O.D.** 3.60 **in.**
Gamma Ray Controller
Sonde ID :GRT-BA-14

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.57

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-BB-129
Source ID :N-1045
Pad ID :CNP-AA-112

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	44.17
PHIN	6.80	10.20	43.37

Tool: LDT-DF **Length:** 9.72 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-F
Sonde ID :PDT-GA-464
Source ID :2991GW
Pad ID :LDP-DA-065

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.42	19.12	34.45
PEL	7.42	20.12	33.45
PES	7.82	20.52	33.05

LDEN	7.62	20.32	33.25
LCOR	7.62	20.32	33.25

22.42 ft.

Tool: MST-DA **Length:** 9.66 **ft.** **O.D.** 6.00 **in.**
Micro Spherically Focused (IC)
Sonde ID :MST-DA-36

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55

32.08 ft.

Tool: PIT-CA **Length:** 21.49 **ft.** **O.D.** 3.62 **in.**
Phased Dual Induction w/ RM & D
Sonde ID :PIT-AC-22

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

LWT 53.57 ft.

Well File: mg-oil-popp-4-mstk-dec-05 **Scale:** 1:240
Segment: V1.D1.S6 MN **Acquired:** 2012-12-05 19:58 3.2.0-11401
Reference: 0 **Processed:** 2012-12-05 21:01 3.2.0-11401

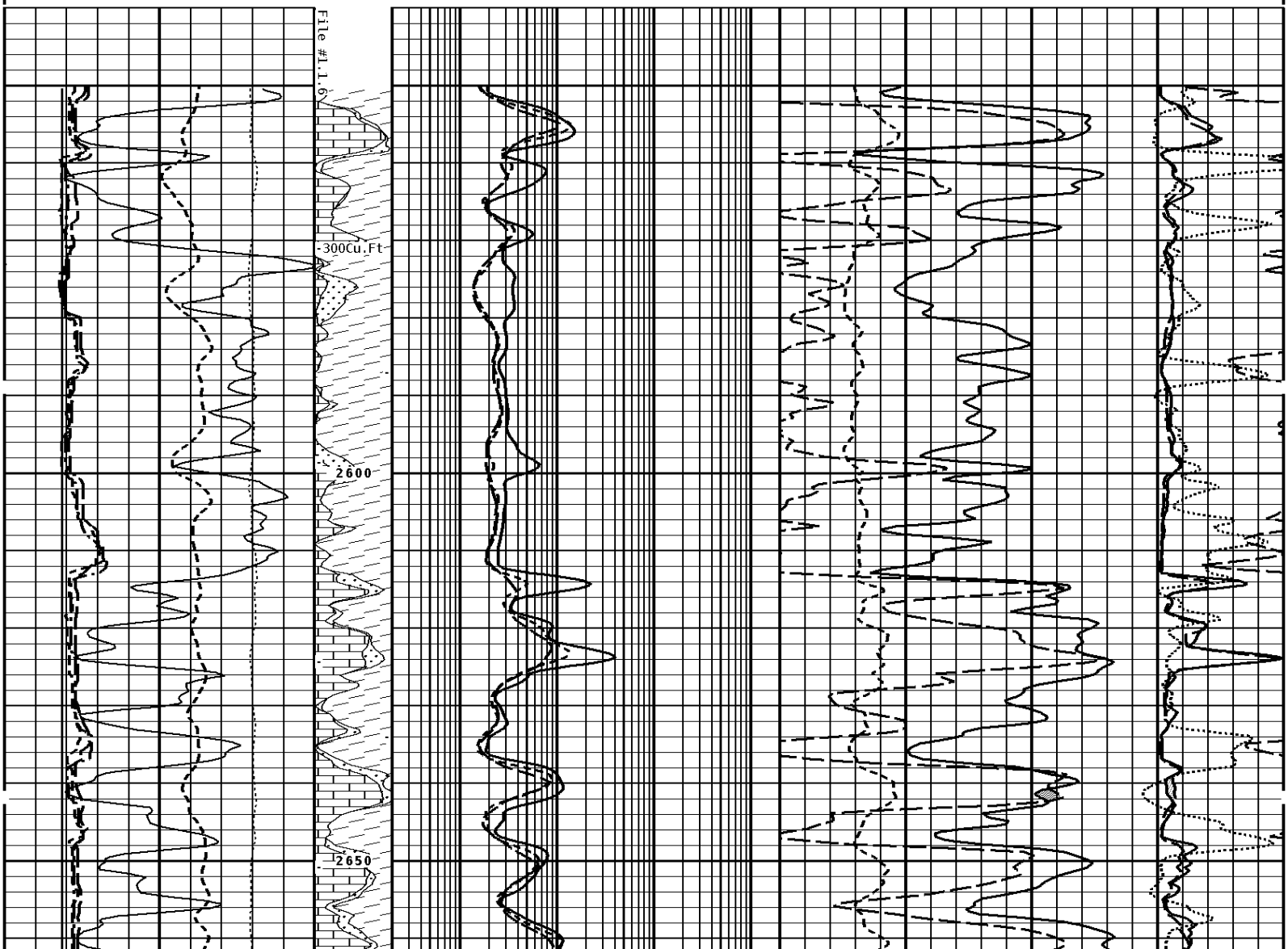
CALIPER MICRO
INCHES (IN)
16 26
6 16

BIT SIZE
INCHES (IN)

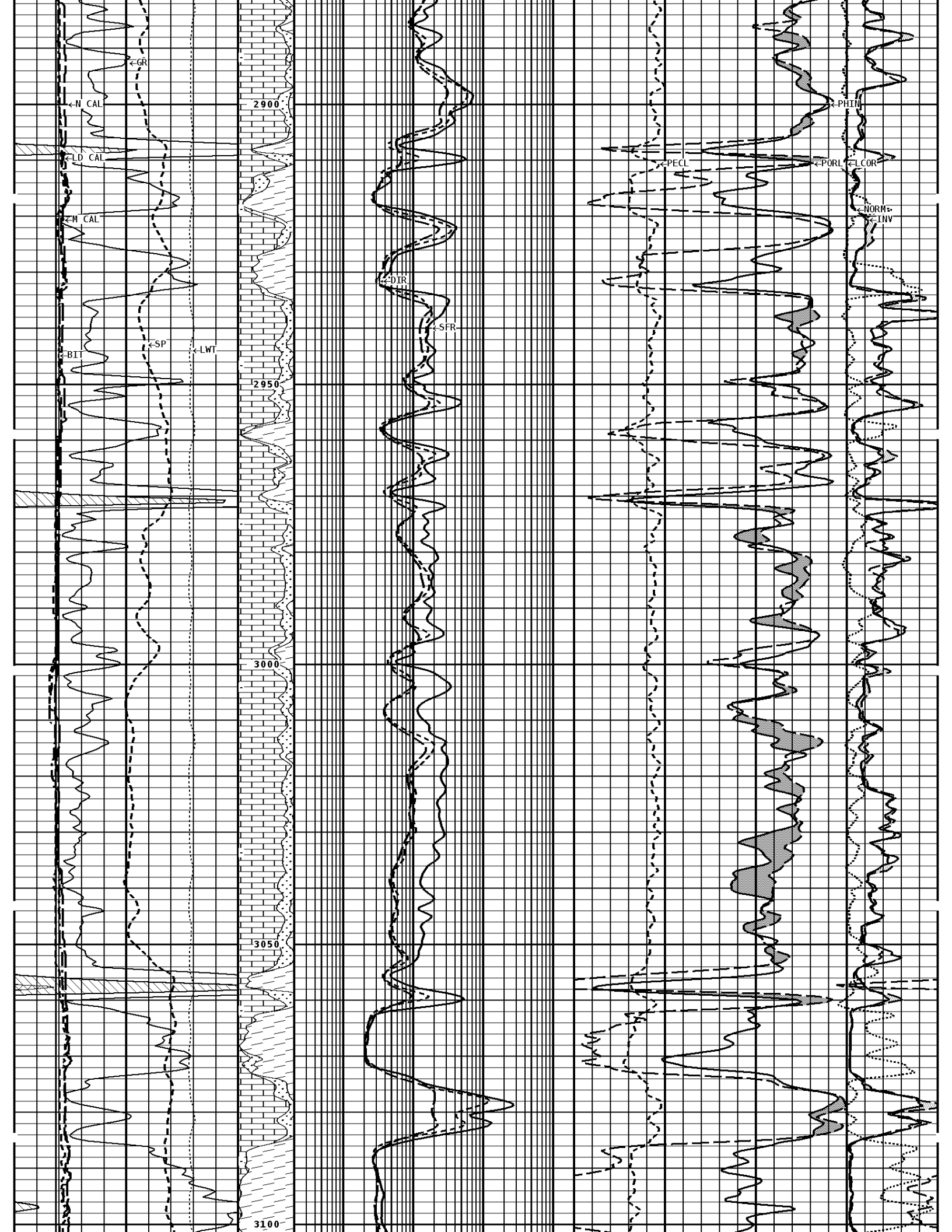
NORMAL
OHMM

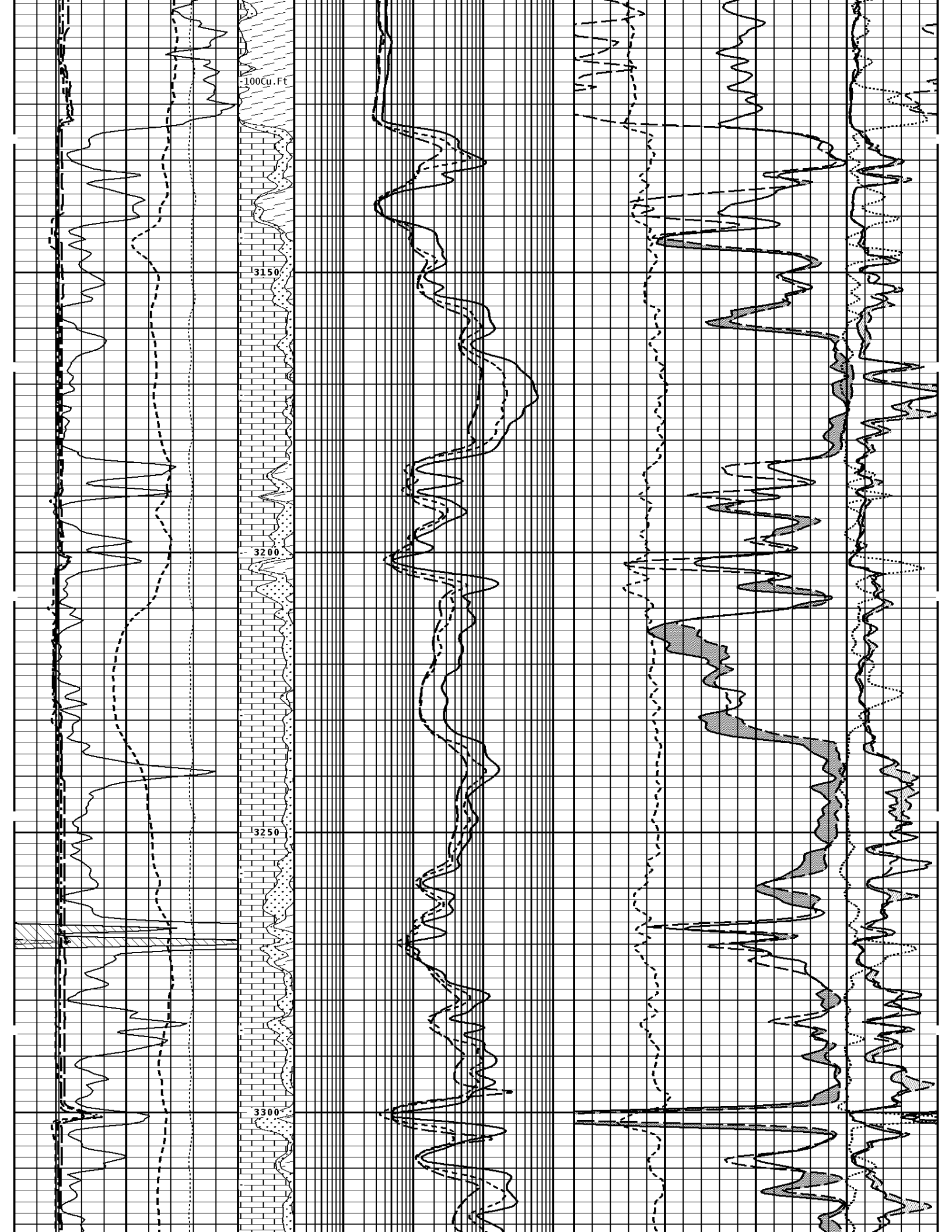
6 16				0 40
NEUTRON (Y) CALIPER INCHES (IN) 16 26 / 6 16				INVERSE OHMM 0 40
DENSITY (X) CALIPER INCHES (IN) 16 26 / 6 16	Volume Quartz		DENSITY CORRECTION G/CC -0.75 0.25	
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 / 30 -10 / -10 -50	
SPONTANEOUS POTENTIAL mV →| |←20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 70 30 / 30 -10 / -10 -50	
GAMMA RAY API UNITS 150 300 / 0 150	-BHV AHV- CU.FT	MEDIUM INDUCTION OHMM 0.2 2000.0	PE CROSS-SECTION BARNS/ELECTRON 0 20	

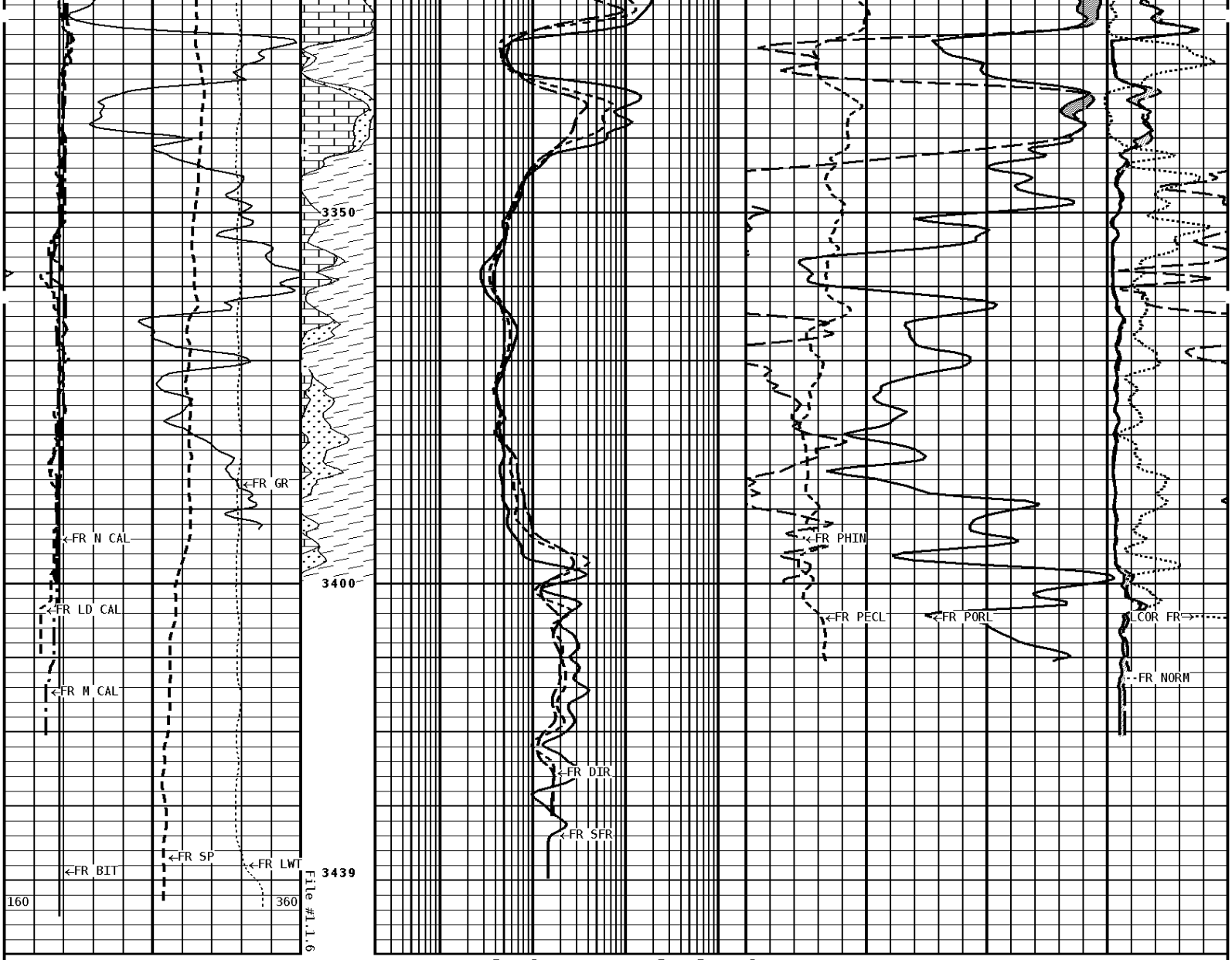
1:240 MAIN SECTION




2700
2750
2800
200Cu.Ft
2850
100Cu.Ft


GR
N CAL
LD CAL
M CAL
BIT
SP
LWT
DIR
SFR
PHIN
PECL
PORL
LCOR
NORM
INV
2900
2950
3000
3050
3100


100Cu.Ft
3150
3200
3250
3300



1:240 MAIN SECTION

GAMMA RAY **API UNITS** 150 — 300 0 — 150	-BHV AHV- CU.FT	**MEDIUM INDUCTION** **OHMM** 0.2 — 2000.0	**PE CROSS-SECTION** **BARNS/ELECTRON** 0 — 20
SPONTANEOUS POTENTIAL **mV** →| |←20	Volume Dolo/Shale	**DEEP INDUCTION** **OHMM** 0.2 — 2000.0	**NEUTRON POROSITY (LIMESTONE)** **PERCENT** 70 — 30 30 — -10 -10 — -50
TENSION **LBS** 10000 — 0	Volume Calcite	**SHALLOW FOCUSED RESISTIVITY** **OHMM** 0.2 — 2000.0	**DENSITY POROSITY (2.71g/cc)** **PERCENT** 70 — 30 30 — -10 -10 — -50
DENSITY (X) CALIPER **INCHES (IN)** 16 — 26 6 — 16	Volume Quartz		**DENSITY CORRECTION** **G/CC** -0.75 — 0.25
NEUTRON (Y) CALIPER **INCHES (IN)** 16 — 26 6 — 16			**INVERSE** **OHMM** 0 — 40

BIT SIZE
INCHES (IN)
6 16

CALIPER MICRO
INCHES (IN)
16 26
6 16

NORMAL
OHMM
0 40

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	3439.000	ft
Borehole Temperature	104.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.900	ohm/m
Resistivity Of Mud Temperature	70.00	degF

Well File: mg-oil-popp-4-mstk-dec-05 **Scale:** 1:240
Segment: V1.D1.S6 MN **Acquired:** 2012-12-05 19:58 3.2.0-11401
Reference: 0 **Processed:** 2012-12-05 21:01 3.2.0-11401

CALIPER MICRO
INCHES (IN)
16 26
6 16

BIT SIZE
INCHES (IN)
6 16

NORMAL
OHMM
0 40

NEUTRON (Y) CALIPER
INCHES (IN)
16 26
6 16

INVERSE
OHMM
0 40

DENSITY (X) CALIPER
INCHES (IN)
16 26
6 16

Volume
Quartz

DENSITY CORRECTION
G/CC
-0.75 0.25

TENSION
LBS
10000 0

Volume
Calcite

SHALLOW FOCUSED RESISTIVITY
OHMM
0.2 2000.0

DENSITY POROSITY (2.71g/cc)
PERCENT
70 30
30 -10
-10 -50

SPONTANEOUS POTENTIAL
mV
→| |←20

Volume
Dolo/Shale

DEEP INDUCTION
OHMM
0.2 2000.0

NEUTRON POROSITY (LIMESTONE)
PERCENT
70 30
30 -10
-10 -50

GAMMA RAY
API UNITS
150 300
0 150

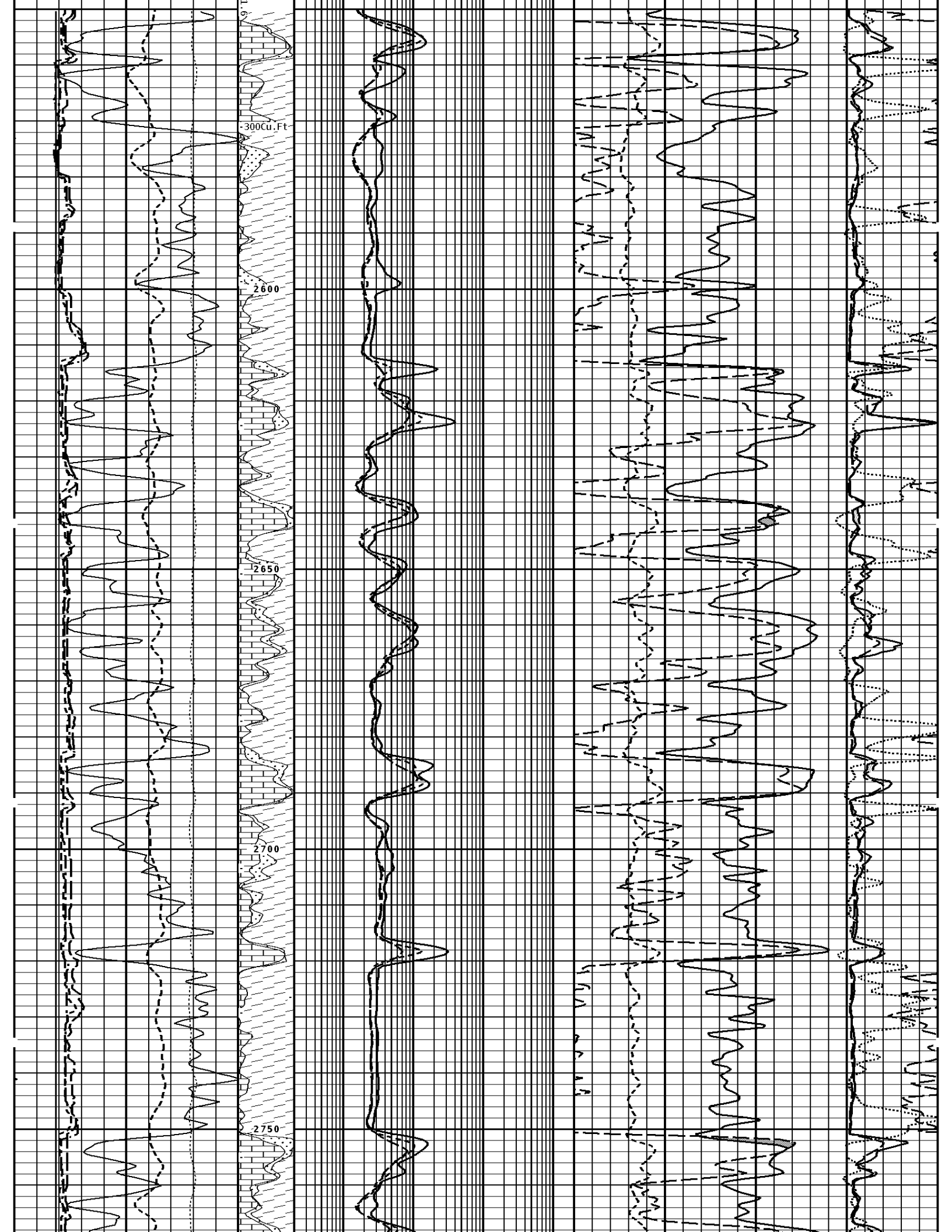
-BHV AHV-
CU.FT

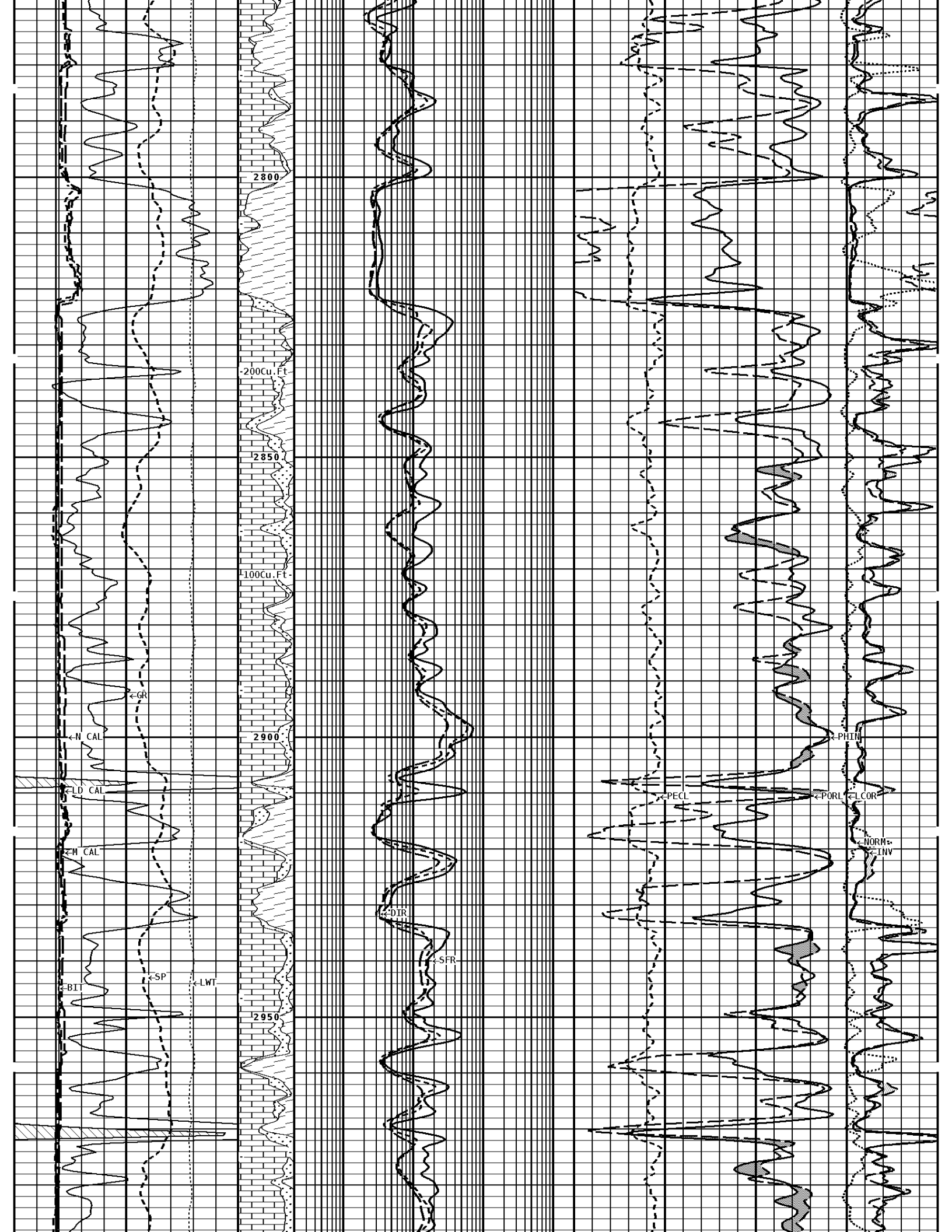
MEDIUM INDUCTION
OHMM
0.2 2000.0

PE CROSS-SECTION
BARNS/ELECTRON
0 20

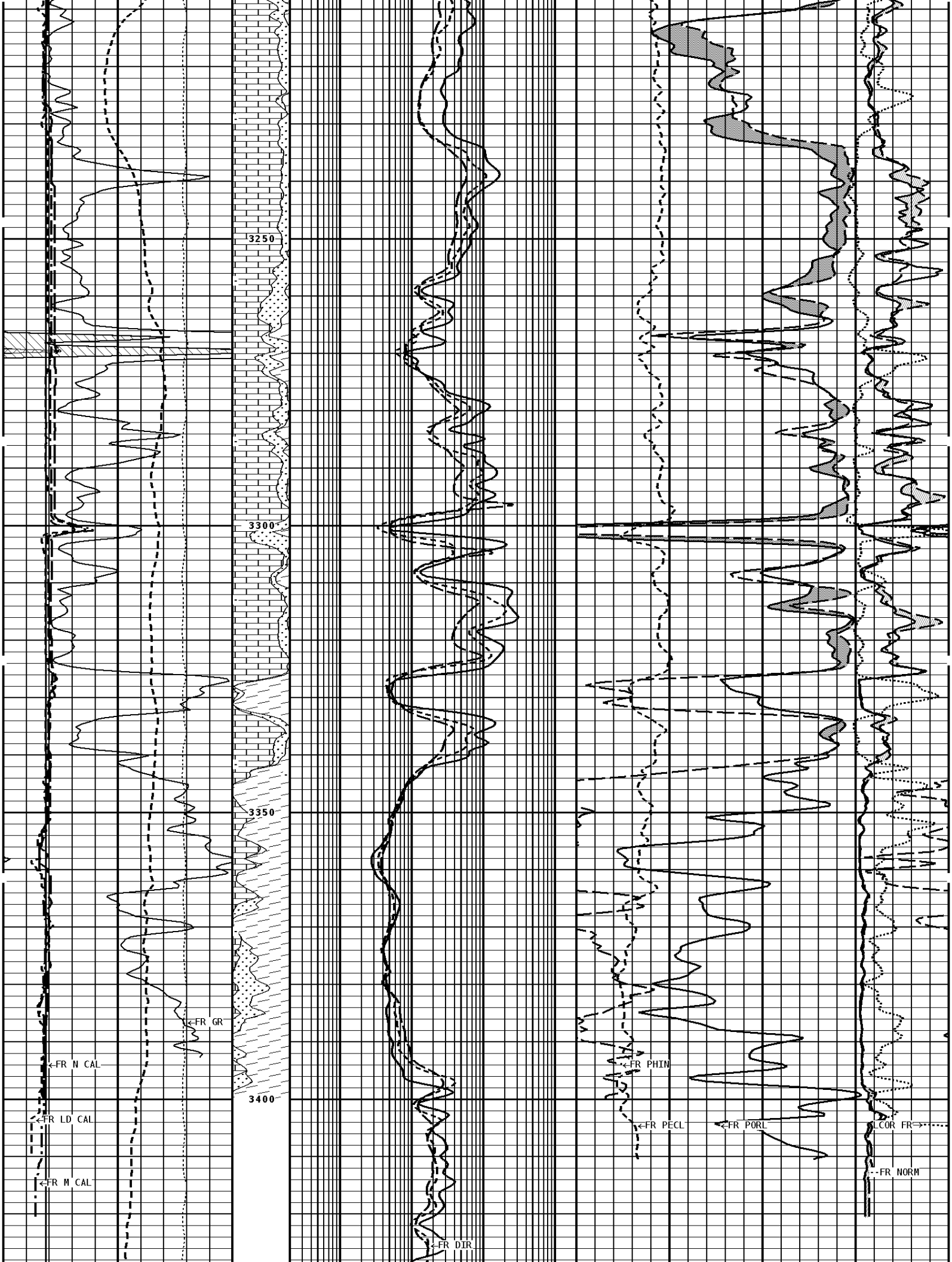
1:240 REPEAT SECTION

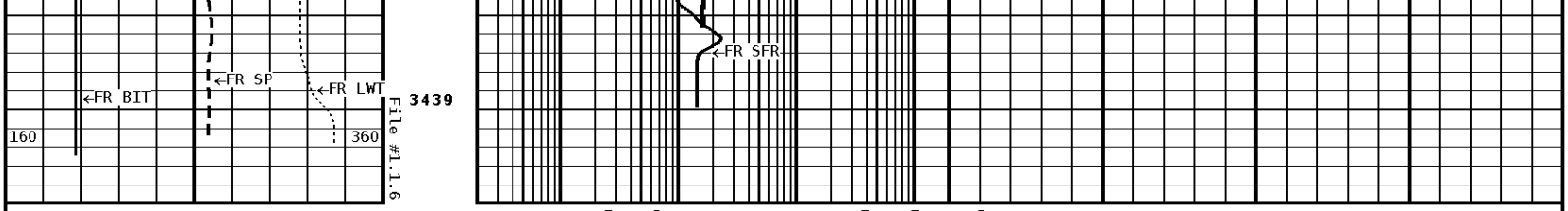
File #1


300Cu.Ft
2600
2650
2700
2750


2800
200Cu.Ft
2850
100Cu.Ft
GR
N CAL
2900
LD CAL
M CAL
DIR
SFR
BIT
SP
LWT
2950
PHIN
PECL
PORL
LCOR
NORM
INV


3000
3050
3100
100Cu.Ft
3150
3200


3250
3300
3350
3400
←FR GR
←FR N CAL
←FR LD CAL
←FR M CAL
←FR DIR
←FR PHIN
←FR PECL
←FR PORL
COR FR→
FR NORM



1:240 REPEAT SECTION

GAMMA RAY API UNITS	-BHV AHV- CU.FT	MEDIUM INDUCTION OHMM	PE CROSS-SECTION BARNS/ELECTRON
150 300 0 150		0.2 2000.0	0 20
SPONTANEOUS POTENTIAL mV	Volume Dolo/Shale	**DEEP INDUCTION OHMM**	**NEUTRON POROSITY (LIMESTONE) PERCENT**
→| |←20		0.2 2000.0	70 30 30 -10 -10 -50
TENSION LBS	Volume Calcite	**SHALLOW FOCUSED RESISTIVITY OHMM**	**DENSITY POROSITY (2.71g/cc) PERCENT**
10000 0		0.2 2000.0	70 30 30 -10 -10 -50
DENSITY (X) CALIPER INCHES (IN)	Volume Quartz		**DENSITY CORRECTION G/CC**
16 26 6 16			-0.75 0.25
NEUTRON (Y) CALIPER INCHES (IN)			**INVERSE OHMM**
16 26 6 16			0 40
BIT SIZE INCHES (IN)			**NORMAL OHMM**
6 16			0 40
CALIPER MICRO INCHES (IN)			
16 26 6 16			

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	3439.000	ft
Borehole Temperature	104.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.900	ohm/m
Resistivity Of Mud Temperature	70.00	degF

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 16-NOV-2012 Time : 13:00
Sensor Suite : GR-GR5 ID : GRT-BA-14

	Measured	Units	Calibrated	Units

	Background	Jig			Jig	
GR	52	368	CPS		175	GRAPI

Shop Calibration
CNT-AA

Performed : 01-AUG-2012 Time : 10:49
Sensor Suite : CALI-BCN ID : NDT-BB-129

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.9	13.6	6.0	12.0	IN.

Performed : 16-Nov-2012 Time : 10:42
Sensor Suite : BHC NEUT ID : CNP-AA-112
Source ID : N-1045

	Tank		Verification	Units
	Measured	Calibrated	Jig	
N/F	4.0468	3.6893	3.6967	
Porosity	26.3	20.5	20.6	%

Shop Calibration
LDT-DF

Performed : 01-AUG-2012 Time : 11:07
Sensor Suite : CALI-LTH ID : PDT-GA-464

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.7	11.0	6.0	12.0	IN.

Performed : 16-Nov-2012 Time : 12:04
Sensor Suite : BHCPELNG ID : LDP-DA-065
Source ID : 2991GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	69	1130	1826	730	CPS
LSW2	72	1384	2205	977	CPS
LSW3	271	3164	5106	2659	CPS
LSW4	336	2818	4101	2452	CPS
LSW5	30	57	65	52	CPS
LSW6	91	95	95	96	CPS
LSW7	57	60	62	61	CPS
LSW8	2	4	6	4	CPS
QS	0.228	0.223	0.207	0.226	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	99	1278	5213	769	CPS
LLW2	106	2260	8832	1622	CPS
LLW3	412	4130	15623	3531	CPS
LLW4	529	1998	6444	1802	CPS
LLW5	62	73	138	73	CPS
LLW6	163	161	152	159	CPS
LLW7	107	104	101	108	CPS
LLW8	4	8	21	8	CPS
QL	0.206	0.216	0.200	0.193	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration
MST-DA

Performed : 01-OCT-2012 Time : 10:58
Sensor Suite : CALI-MSN ID : MST-DA-36

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.4	12.2	6.0	12.0	IN.

Performed : 01-OCT-2012 Time : 09:18
Sensor Suite : MSTDA-NI ID : MST-DA-36

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
INV-V	221.0	21282.7		0.00	1946.00	MV
NOR-V	164.0	21140.6		0.00	1546.00	MV
IN-C	157.3	21367.2		0.00	15.46	UA
INV-R					40.71	OHMM
NOR-R					55.11	OHMM

Performed : 01-OCT-2012 Time : 14:53

Sensor Suite : MSTDAMSF ID : MST-DA-36

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
MSFC	150.0	58600.0		0.00	1522.00	UA
MSFB	32800.0	62500.0		0.00	1522.00	MA
MOM1	150.0	5950.0		0.00	1522.00	MV
MSFRA					43.30	OHMM

Shop Calibration
PIT-CA

Performed : 21-Nov-2012 Time : 13:55
Sensor Suite : P-IND-T ID : PIT-AC-22

Medium

	Measured		Calibrated		
	R	X	R	X	Units
Air	129444	131195	-8.0	-8.0	MMHOS
Zero	131066	131070	64.6	-18.0	MMHOS
Reference	248638	249306	5064.6	4982.0	MMHOS
Loop	123826	215209	3305.9	3783.8	MMHOS
Sonde Error			-1.1	-8.4	MMHOS
Cond			5064.6	4982.0	MMHOS

Deep

	Measured		Calibrated		
	R	X	R	X	Units
Air	130063	130305	0.0	-0.0	MMHOS
Zero	131075	131077	31.8	6.9	MMHOS
Reference	239237	239416	2031.8	2006.9	MMHOS
Loop	124065	221600	1574.5	1796.3	MMHOS
Sonde Error			5.6	-20.4	MMHOS
Cond			2031.8	2006.9	MMHOS

Temperature

	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF

Performed : 21-Nov-2012 Time : 13:58
Sensor Suite : SFL ID : PIT-AC-22

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32763.4	50510.7	0.0	7028.0	uA
Ib	32769.0	50215.4	0.0	1750.0	mA
MOM1	32799.2	60218.0	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

Performed : 21-NOV-2012 Time : 13:59
Sensor Suite : P-SP ID : PIT-AC-22

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32785.7	58911.1	0.0	1000.0	mV

Performed : 21-NOV-2012 Time : 13:59
Sensor Suite : P-RMUD ID : PIT-AC-22

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Rmi	5.0	54416.8	0.0	290.6	mA
Rmv	4.7	54228.6	0.0	290.6	mV
Equivalent Rm				0.9037	OHMM