

STEP

energy services

COMPOSITE LOG

Company BEREXCO, LLC Well CHRISLER #2 Field CHRISLER County ELLIS State KANSAS Country USA API No. 15-051-26982-00-00		File No : HAYS-70400 Company : BEREXCO, LLC Well : CHRISLER #2 Field : CHRISLER County : ELLIS State : KANSAS Country : USA API No : 15-051-26982-00-00	
Location : 1240' FSL & 930' FWL NW NE SW SW		LSD : Sect : 22 Twp : 11S Rge : 16W	
Permanent Datum: Drilling Measured From: GL Log Measured From: KB Above Permanent Datum: 0.00 Ft		Elevations: KB 1826.00 Ft DF 1825.00 Ft GL 1819.00 Ft	
Services: GRT NDT PIT CNT			
Date	2020-02-13		
Run Number	1		
Depth--Driller	3500.0 Ft		
Depth--Logger	3500.0 Ft		
First Reading	3499.0 Ft		
Last Reading	982.0 Ft		
Casing--Driller	982.0 Ft		
Casing--Logger	982.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	CHEMICAL		
Density	9.1		
Fluid Loss	9.2		
PH/Viscosity	10.0	60.0	
Sample Source	MEASURED		
RM@Measured Temp.	0.600 @ 69 F		
RMF@Measured Temp	0.510 @ 69 F		
RM@Measured Temp.	0.690 @ 69 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.340 @ 95 F		
Time Circulation Stopped	2020-02-13 00:00		
Max Recorded Temp.	95 F		
Equipment/Base	TRK137	HAYS	
Recorded By	B.BAILEY		
Witnessed By	J.SMITH		

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Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	3500.00	8.625	17.00	982.00	0.00

Run Number	1	
Date	2020-02-13	
Date/Time On Bottom	2020-02-13 02:59	
Depth to Fluid	0.0 Ft	
Salinity	5000.000	
RMF@BHT	0.290 @ 95 F	
RMC@BHT	0.390 @ 95 F	

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

GRT, CNT, LDT, MLT, AND PIT RUN IN COMBINATION.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

5.5" PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUME.

CALIPERS ORIENTED ON X-Y AXIS.

PHIN IS CALIPER CORRECTED

DETAIL TO 2500 FT AS PER CLIENT REQUESTED

GRT: GRP

CNT: PHIN, PHINDOL, CLCNIN

LDT: PORL, PORLDOL, LCORN, LDENN, PECLN, CLLDIN

MLT: MSFI, MSFN, CLMRIN.

PIT: ILD, ILM, SFLAEC, SPU, CIRD

OPERATORS:

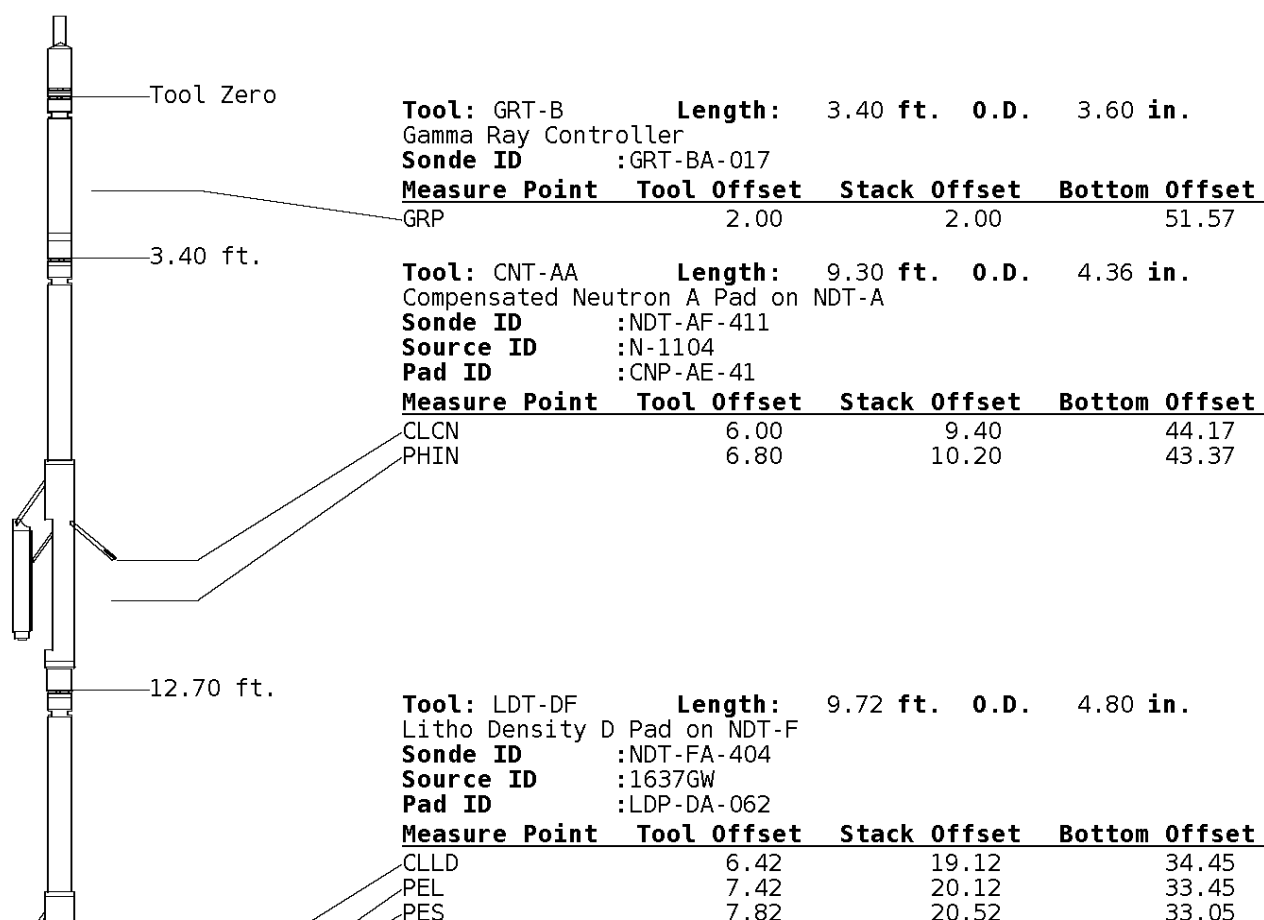
D.LEGLEGITER

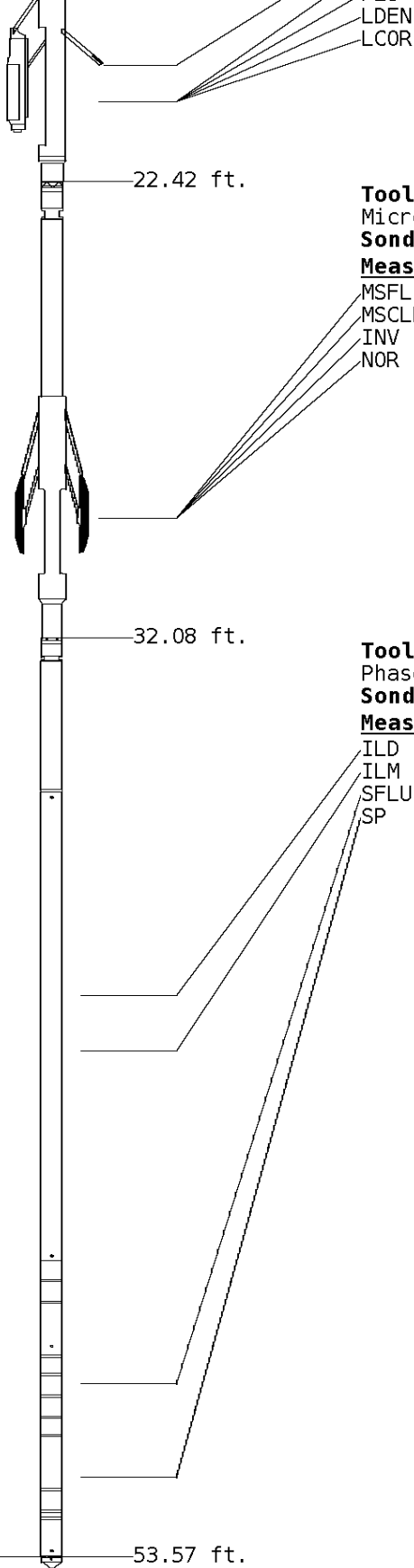
D.RAGSDALE

J.VAUGHN

Tool String Schematic

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





LDEN 7.62 20.32 33.25
 LCOR 7.62 20.32 33.25

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MST-DA-13

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

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-AC-043

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

Well File: BEREXCO CHRISLER 2 FEB-13_MSTK

Scale: 1:240

Format: COMSAT

Segment: V1.D1.S7 Reprocess MAIN

Acquired: 2020-02/13 02:58 3.4.1-13972

Reference: 0

Processed: 2020-02/13 04:20 3.4.1-13972

**CALIPER MICRO
INCHES (IN)**

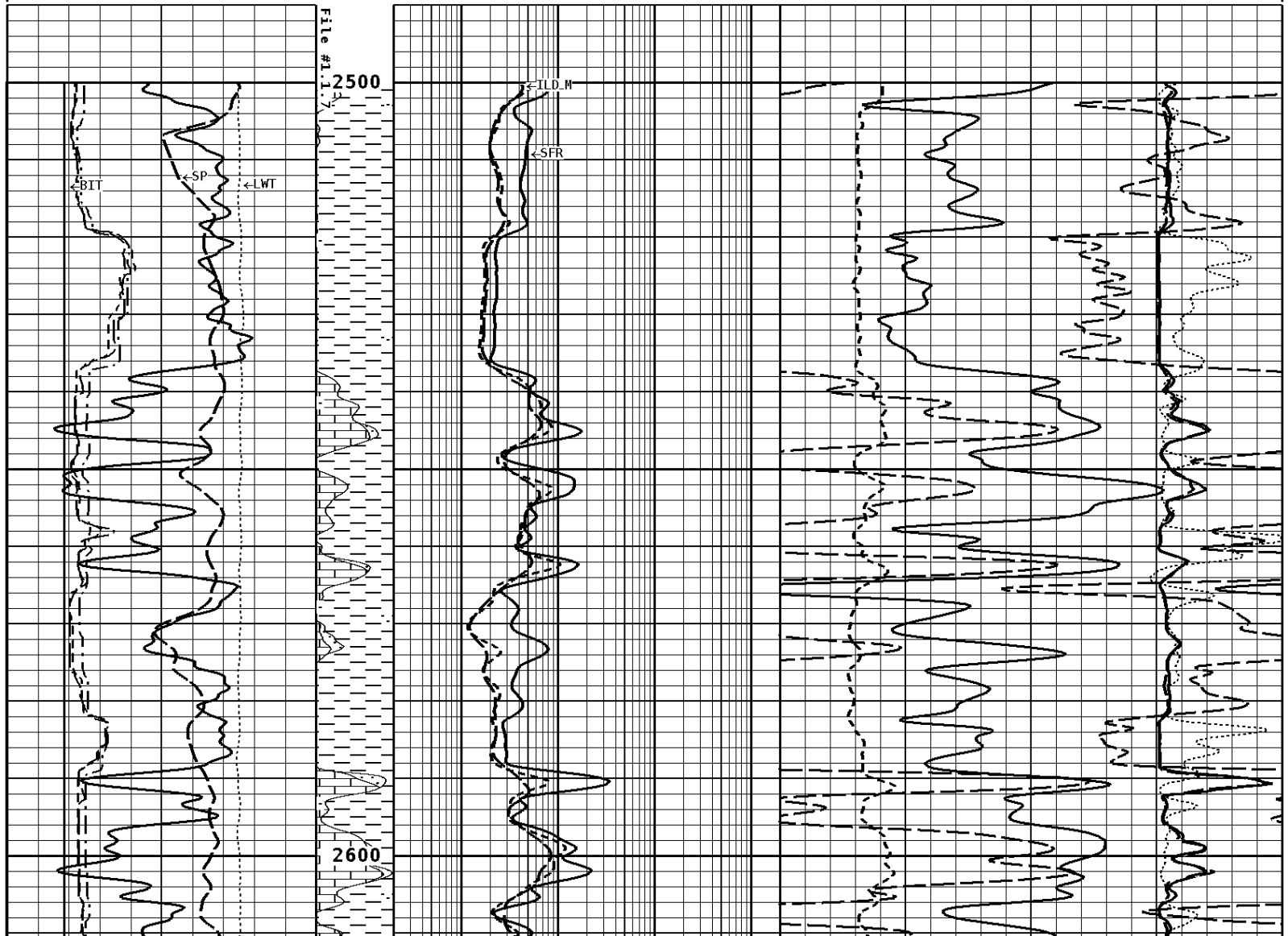
16 26
6 16

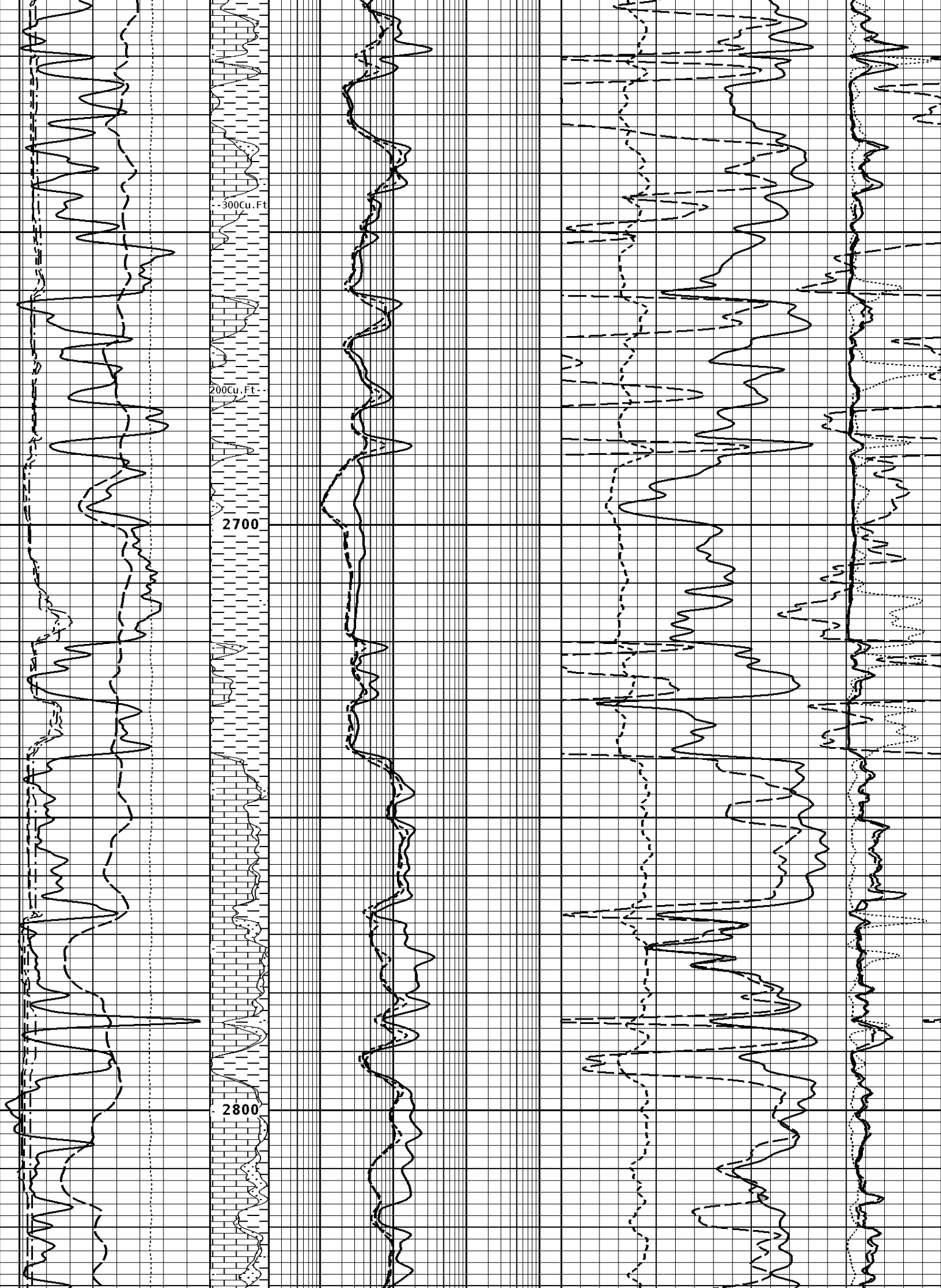
**BIT SIZE
INCHES (IN)**

**NORHAL
OHMM**

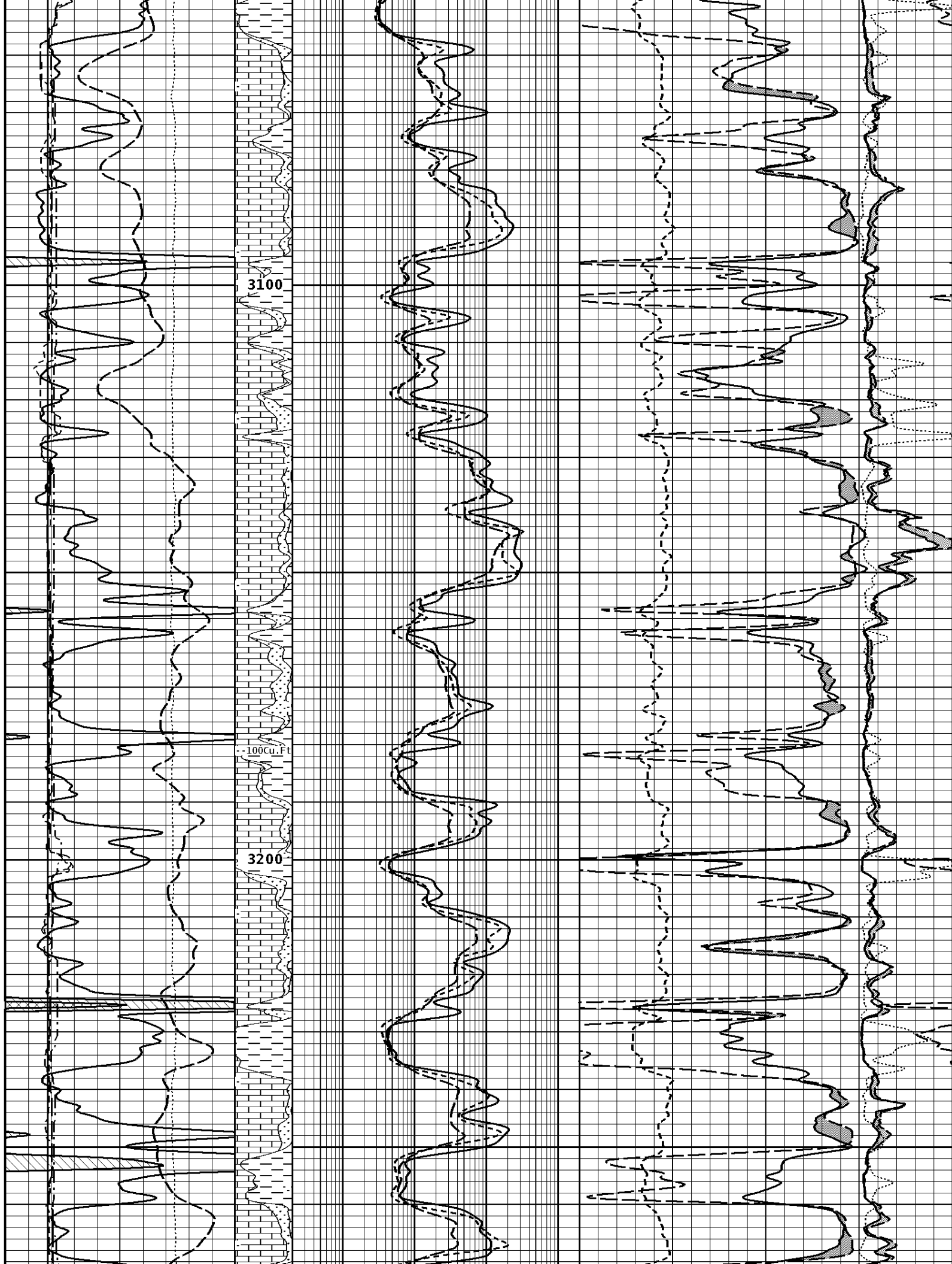
6	16				0	40
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHMM	
16	26				0	40
6	16					
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz		DENSITY CORRECTION G/CC		
16	26					
6	16			-0.75		0.25
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNs/ELECTRON		
10000	0		0.2	2000.0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

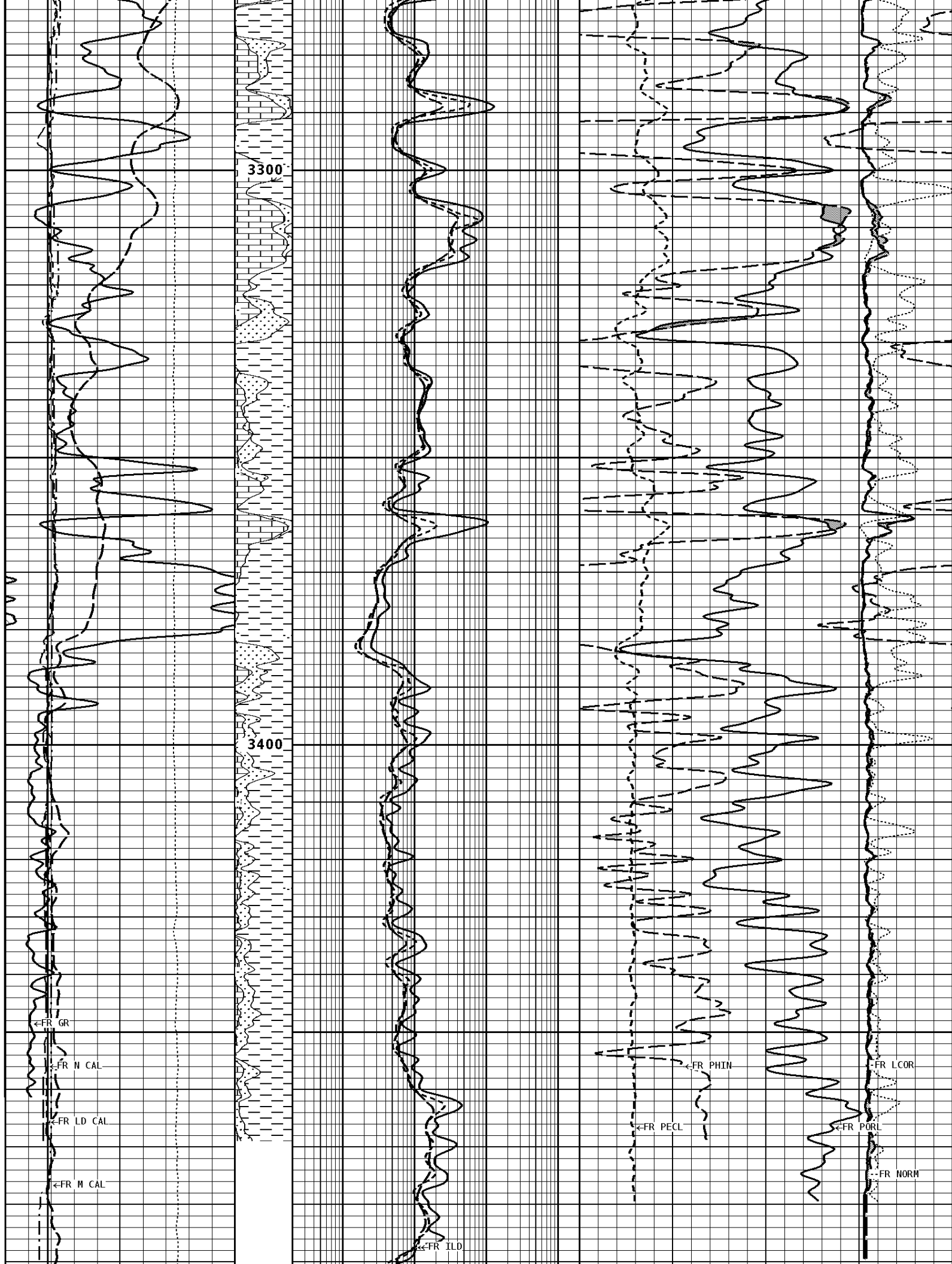
1:240 MAIN SECTION

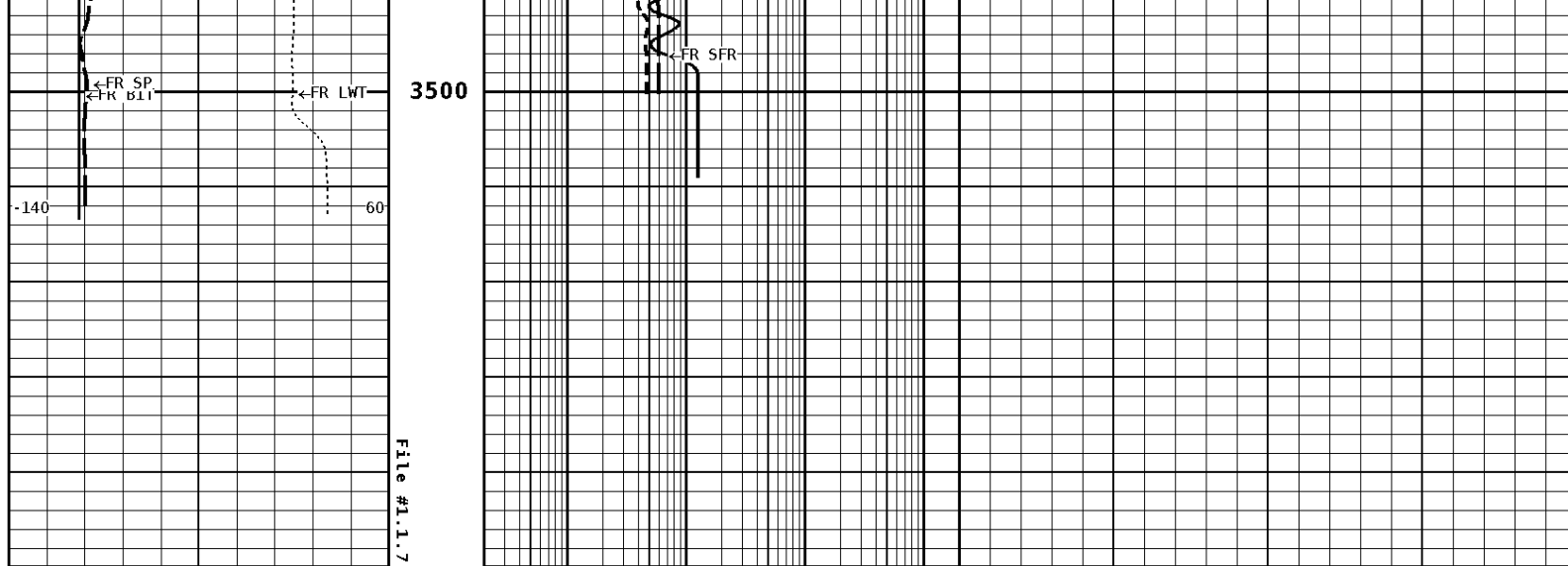












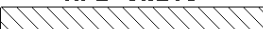
GAMMA RAY API UNITS 150 0 300 150		BHV AHV- CU. FT	MEDIUM INDUCTION OHMM 0.2 2000.0		NEUTRON POROSITY (LIMESTONE) PERCENT 70 30 -10	
SPONTANEOUS POTENTIAL mV → ← 20		Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0		DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 -50	
TENSION LBS 10000 0		Volume Calcite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

* Borehole Zone Factors *

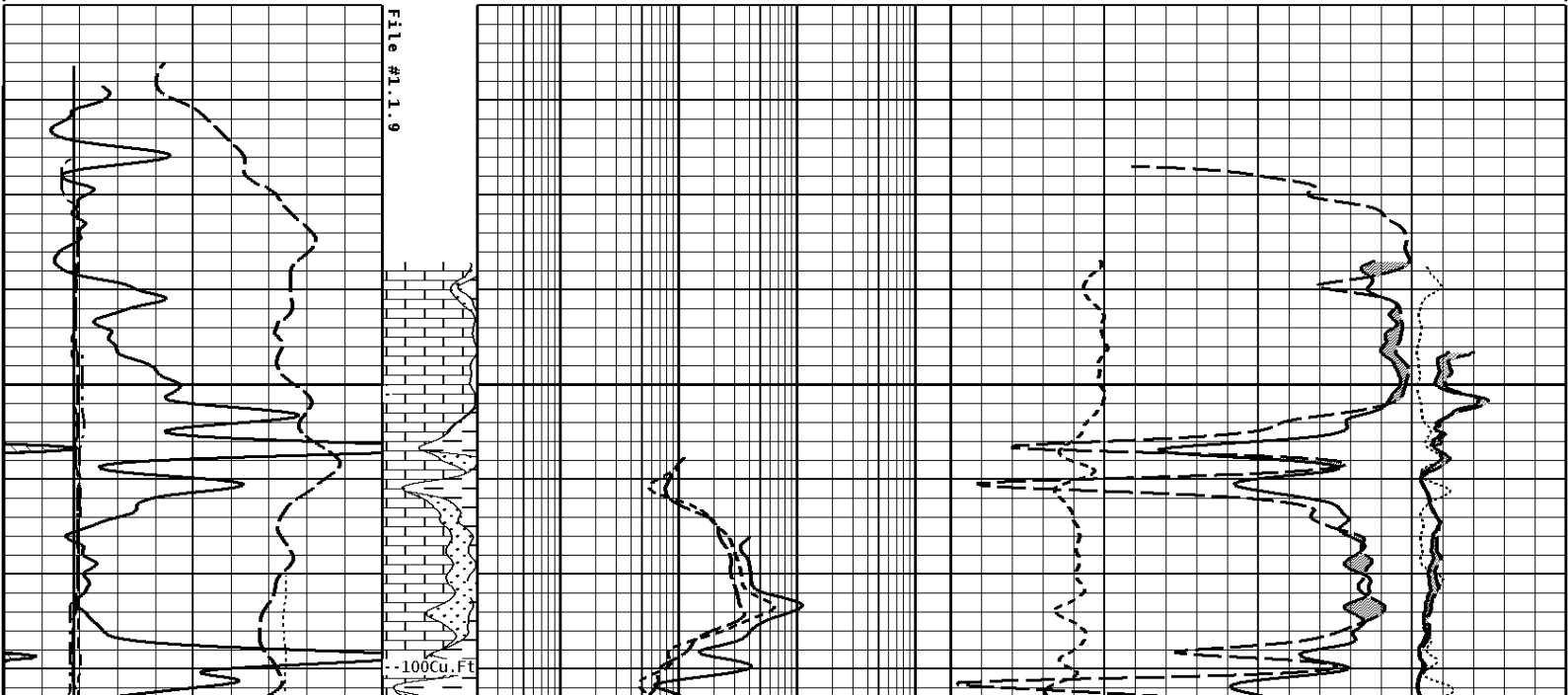
Zone 1 99999.0 to 0.0 Feet			
Matrix Density	2.71	g/cc	
Fluid Density	1.00	g/cc	
Formation Matrix	Limestone		
Drill Bit Size	7.875	in	
Casing Diameter	4.500	in	
Casing Thickness	0.250	in	
Casing Correction (PHI N)	Disable		
Hole Substance	Fluid		
BHT Depth	3500.000	ft	
Borehole Temperature	95.0	degF	

Bottom Hole Temperature	99.8	Deg
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.600	ohmm
MSTNG Normal Correction	0.00	ohmm
MSTNG Inverse Correction	0.00	ohmm

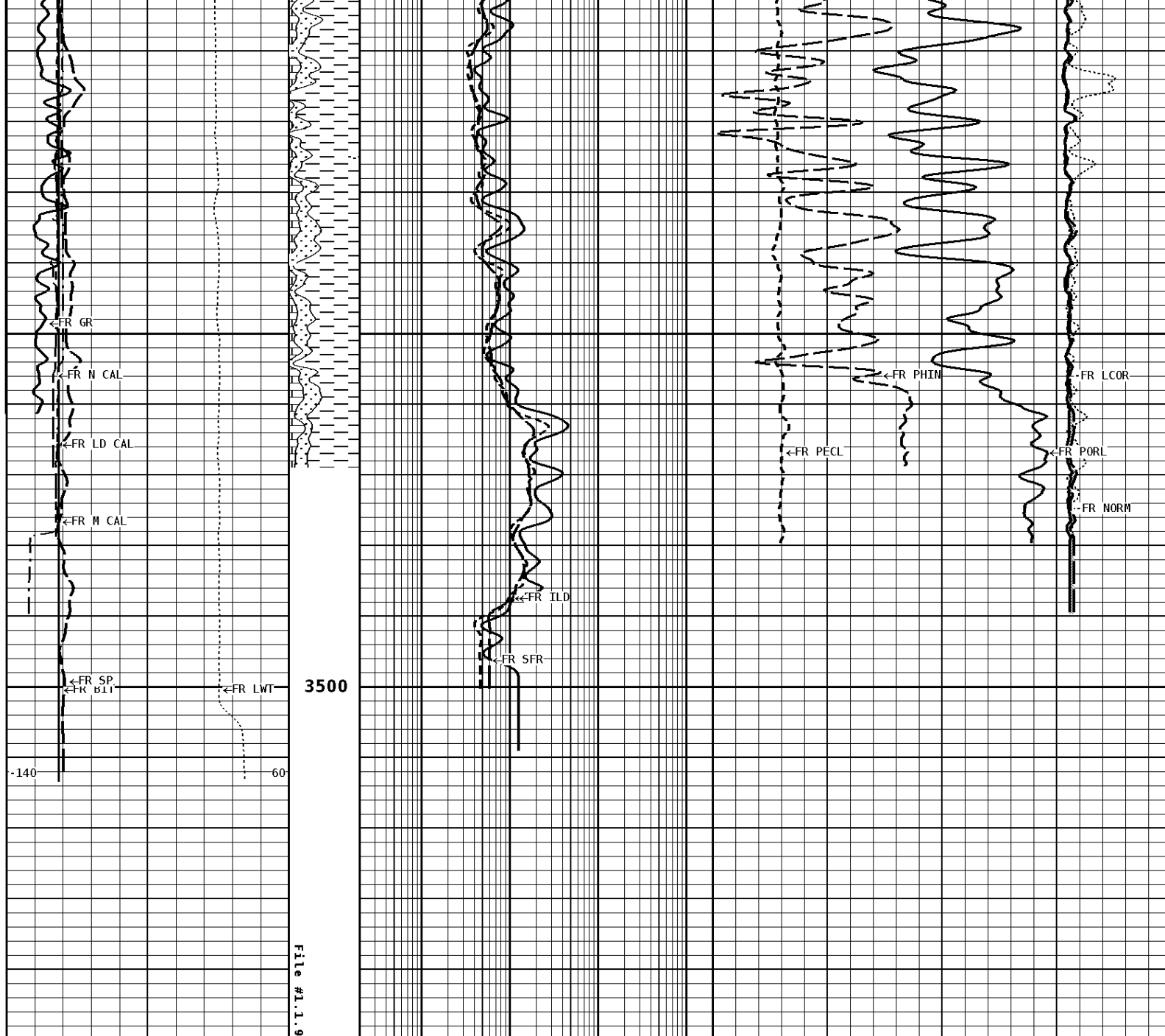
Well File: BEREXCO CHRISLER_2 FEB-13_MSTK	Scale: 1:240	Format: COMSAT
Segment: V1.D1.S9 REPEAT	Acquired: Not Available	
Reference: 0	Processed: Not Available	

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

1:240 REPEAT SECTION







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

NEUTRON (Y) CALIPER INCHES (IN)		INVERSE OHMM	
16	26	0	40
6	16		
BIT SIZE INCHES (IN)		NORMAL OHMM	
6	16	0	40
CALIPER MICRO INCHES (IN)			
16	26		
6	16		

*** Calibration Summary ***

Shop Calibration GRT-B					
Performed : 26-Nov-2018			Time : 11:34		
Sensor Suite : GR-GR5			ID : GRT-BA-017		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	45	321	160	GRAPI	
Shop Calibration CNT-AA					
Performed : 03-Jun-2019			Time : 11:01		
Sensor Suite : CALI-BCN			ID : NDT-AF-411		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.5	12.5	6.0	12.0	IN.
Performed : 12-FEB-2020			Time : 10:01		
Sensor Suite : BHC NEUT			ID : CNP-AE-41		
Source ID : N-1104					
	Tank		Verification	Units	
	Measured	Calibrated	Jig		
N/F	3.5474	3.6893	3.6873		
Porosity	18.4	20.5	20.5		%
Shop Calibration LDT-DF					
Performed : 21-DEC-2019			Time : 21:43		
Sensor Suite : CALI-LTH			ID : NDT-FA-404		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.3	13.2	6.0	12.0	IN.
Performed : 29-Jan-2020			Time : 14:42		
Sensor Suite : BHCPELNG			ID : LDP-DA-062		
Source ID : 1637GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	59	960	1557	625	CPS
LSW2	61	1121	1778	816	CPS
LSW3	228	2554	4127	2191	CPS
LSW4	286	2191	3138	1951	CPS
LSW5	25	44	49	41	CPS
LSW6	79	82	79	83	CPS
LSW7	50	54	53	53	CPS
LSW8	1	3	4	3	CPS
QS	0.227	0.208	0.194	0.217	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	84	1100	4544	670	CPS
LLW2	94	1944	7684	1420	CPS
LLW3	352	3530	13460	3067	CPS
LLW4	463	1657	5105	1519	CPS
LLW5	52	64	102	63	CPS
LLW6	146	154	134	154	CPS

LLW6	148	154	154	154	CPS
LLW7	95	101	92	101	CPS
LLW8	3	6	14	6	CPS
QL	0.213	0.209	0.187	0.205	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration MST-DA

Performed : 22-OCT-2014 Time : 09:27
Sensor Suite : CALI-MSN ID : MST-DA-13

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	6.6	11.6	6.0	12.0	IN.

Performed : 07-FEB-2020 Time : 09:52
Sensor Suite : MSTDA-NI ID : MST-DA-13

Internal						
	Measured			Calibrated		Units
	Zero	Reference	Units	Zero	Reference	
INV-V	0.0	29663.4		0.00	1276.00	MV
NOR-V	5.5	29968.6		0.00	1020.00	MV
IN-C	0.0	60262.5		0.00	15.46	UA
INV-R					26.70	OHMM
NOR-R					36.36	OHMM

Shop Calibration PIT-CA

Performed : 21-DEC-2019 Time : 21:46
Sensor Suite : P-IND-T ID : PIT-AC-043

Medium						
	Measured			Calibrated		Units
	R	X		R	X	
Air	131492	129685		0.0	0.0	MMHOS
Zero	131066	131062		-18.1	59.6	MMHOS
Reference	244915	244454		4981.9	5059.6	MMHOS
Loop	130404	210498		3515.7	3611.2	MMHOS
Sonde Error				-0.5	-1.7	MMHOS
Cond				4981.9	5059.6	MMHOS

Deep						
	Measured			Calibrated		Units
	R	X		R	X	
Air	131939	129230		0.0	-0.0	MMHOS
Zero	131079	131067		-15.6	35.3	MMHOS
Reference	220620	224092		1984.4	2035.3	MMHOS
Loop	129308	206166		1595.4	1712.8	MMHOS
Sonde Error				-0.6	-7.8	MMHOS
Cond				1984.4	2035.3	MMHOS

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

Performed : 21-DEC-2019 Time : 21:46
Sensor Suite : SFL ID : PIT-AC-043

Internal						
	Measured			Calibrated		Units
	Zero	Reference		Zero	Reference	
Im	32732.6	48929.1		0.0	7028.0	uA
Ib	32768.6	49680.1		0.0	1750.0	mA
MOM1	32722.0	56290.6		0.0	175.0	mV
Equivalent SFL					43.97	OHMM

Performed : 21-DEC-2019 Time : 21:47
Sensor Suite : P-SP ID : PIT-AC-043

Internal						
	Measured			Calibrated		Units
	Zero	Reference		Zero	Reference	
	32774.5	58935.9		0.0	1000.0	mV

STEP

Company: BEREXCO, LLC
Well: CHRISLER #2
Location: 1240' FSL & 930' FWL
Logged: 2020-02-13

