

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY		OXY USA INC	
WELL		HENTSCHEL C-3	
FIELD		MUSTANG EAST	
COUNTY		MORTON	
STATE		KANSAS	
Permanent Datum		GL	
Log measured from		KB	
Drilling measured from		KB	
Date		22-Aug-12	
Run No.		ONE	
Depth - Driller		3935.00 ft	
Depth - Logger		3918.0 ft	
Bottom - Logged Interval		3916	
Top - Logged Interval		1417	
Casing - Driller		8.625 in @ 1419.0 ft	
Casing - Logger		1417.0 ft	
Bit Size		7.875 in @	
Type Fluid in Hole		WATER BASED	
Density		8.9 ppq	
Viscosity		42.00 s/qt	
PH		10.10 pH	
Fluid Loss		13.0 cpm	
Source of Sample		FLOWLINE	
Rm @ Meas. Temperature		1.870 ohmm @ 82.00 degF	
Rmf @ Meas. Temperature		1.78 ohmm @ 78.00 degF	
Rmc @ Meas. Temperature		2.200 ohmm @ 78.00 degF	
Source Rmf		MEASURED	
Rmc		MEASURED	
Rm @ BHT		1.30 ohmm @ 121.0 degF	
Time Since Circulation		12.0 hr	
Time on Bottom		22-Aug-12 16:23	
Max. Rec. Temperature		121.0 degF @ 3914.0 ft	
Equipment		10782954 LIBERAL	
Recorded By		SHELDON INGERSOLL	
Witnessed By		A. GARNER	

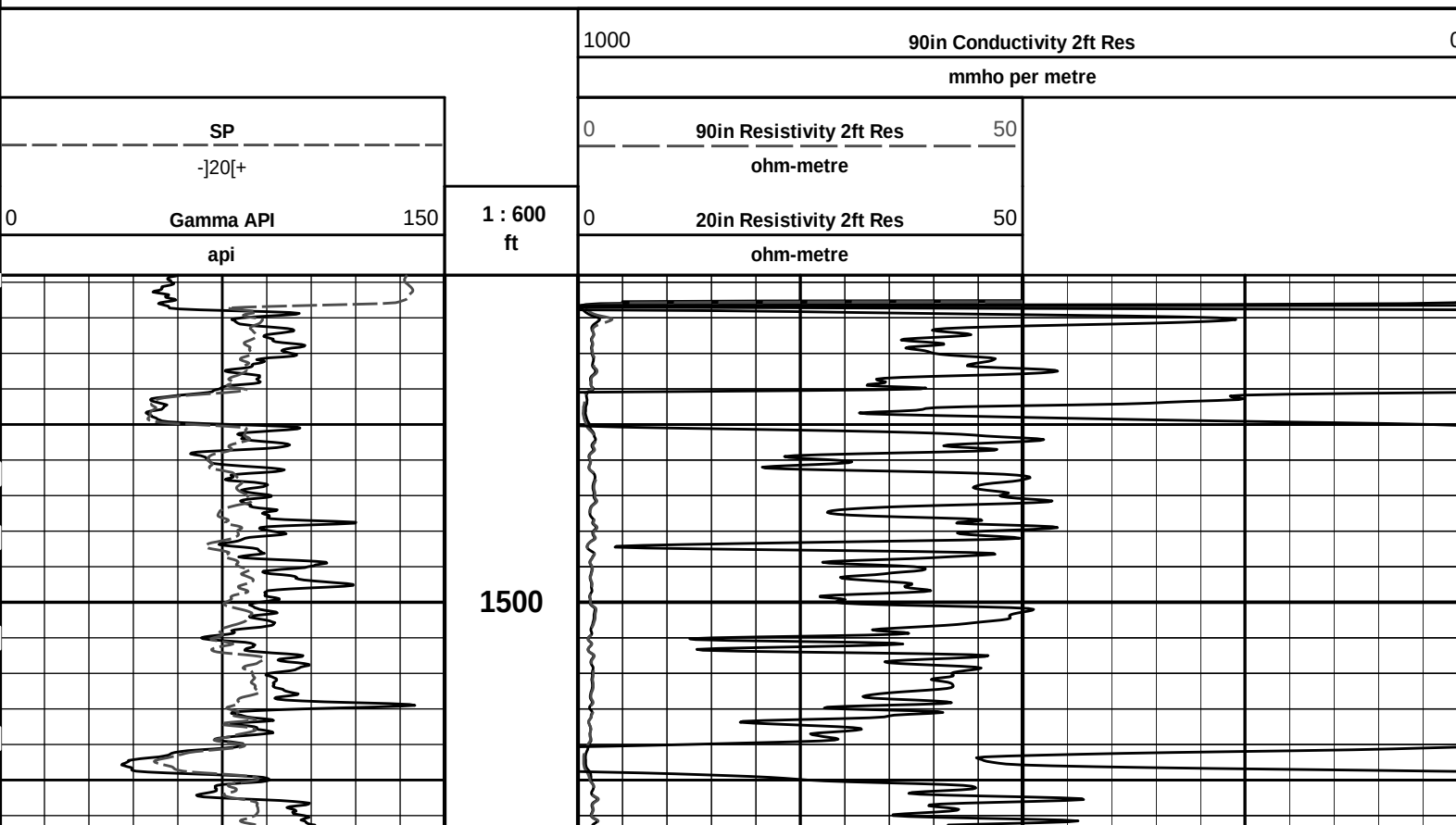
Service Ticket No.: 9756667				API Serial No.: 15-129-21942				PGM Version: WL INSITE R3.6.0 (Build 3)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES															
Date		Sample No.						Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																			
Type Fluid in Hole																			
Density		Viscosity																	
Ph		Fluid Loss																	
Source of Sample										RESISTIVITY EQUIPMENT DATA									
Rm @ Meas. Temp		@		@		Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other					
Rmf @ Meas. Temp.		@		@		ONE		ACRT		N/A		1.5" S.O.							
Rmc @ Meas. Temp.		@		@				I1256_S0784											
Source Rmf		Rmc																	
Rm @ BHT		@		@															
Rmf @ BHT		@		@															
Rmc @ BHT		@		@															
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.		ONE		Run No.		ONE		Run No.		ONE		Run No.		ONE					
Serial No.		10811258		Serial No.		10747683		Serial No.		I066_M85803_P45		Serial No.		10755066					
Model No.		GTET		Model No.		BSAT		Model No.		SDLT		Model No.		DSNT					
Diameter		3.625"		No. of Cent.		2		Diameter		4.5"		Diameter		3.625"					
Detector Model No.		GTET		Spacing		.5		Log Type		GAM-GAM		Log Type		NEU-NEU					
Type		SCINT						Source Type		CS-137		Source Type		AM-241BE					
Length		8"		LSA [Y/N]				Serial No.		5073GW		Serial No.		DSN-436					
Distance to Source		N/A		FWDA [Y/N]				Strength		1.5 CI		Strength		15 CI					
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			

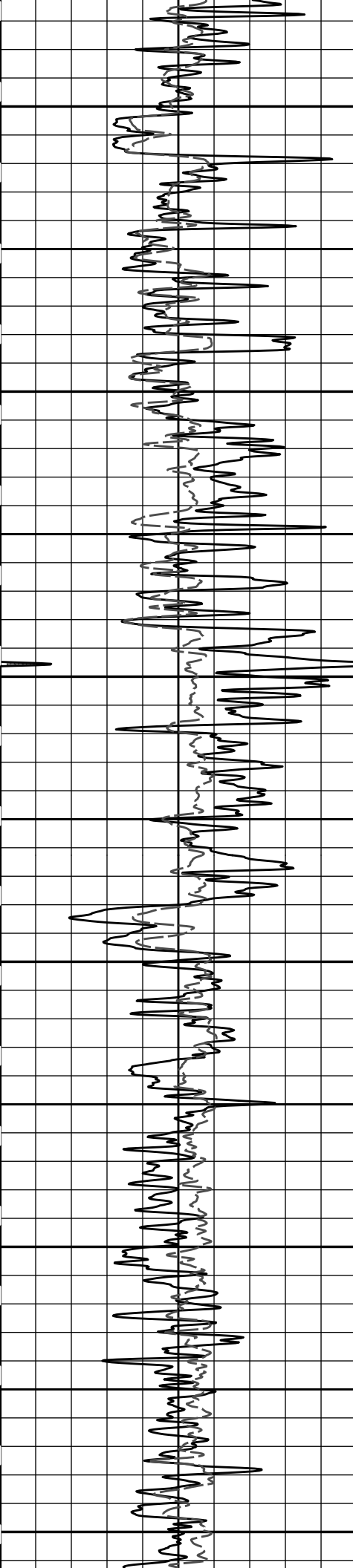
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	3914	1419	REC	0	150	30	-10	47.6	30	-10	2.71 gm/cc	30	-10	LIME
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.														
SP, GTET, DSNT, SDLT, BSAT, ACRT RAN IN COMBINATION.														
CHLORIDES REPORTED AT 2000 mg/L.														
LCM REPORTED AT 6 lb/bbl.														
POST CALS NOT DONE AT CUSTOMER REQUEST.														
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.														
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Plot Time: 22-Aug-12 19:28:57
Plot Range: 1408 ft to 3920.17 ft
Data: HENTSCHEL_C-3\Well Based\DAQ-0001-003\
Plot File: \\LOCAL-I\HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIACRT\ACRT_2_lib

2 INCH MAIN LOG





1600

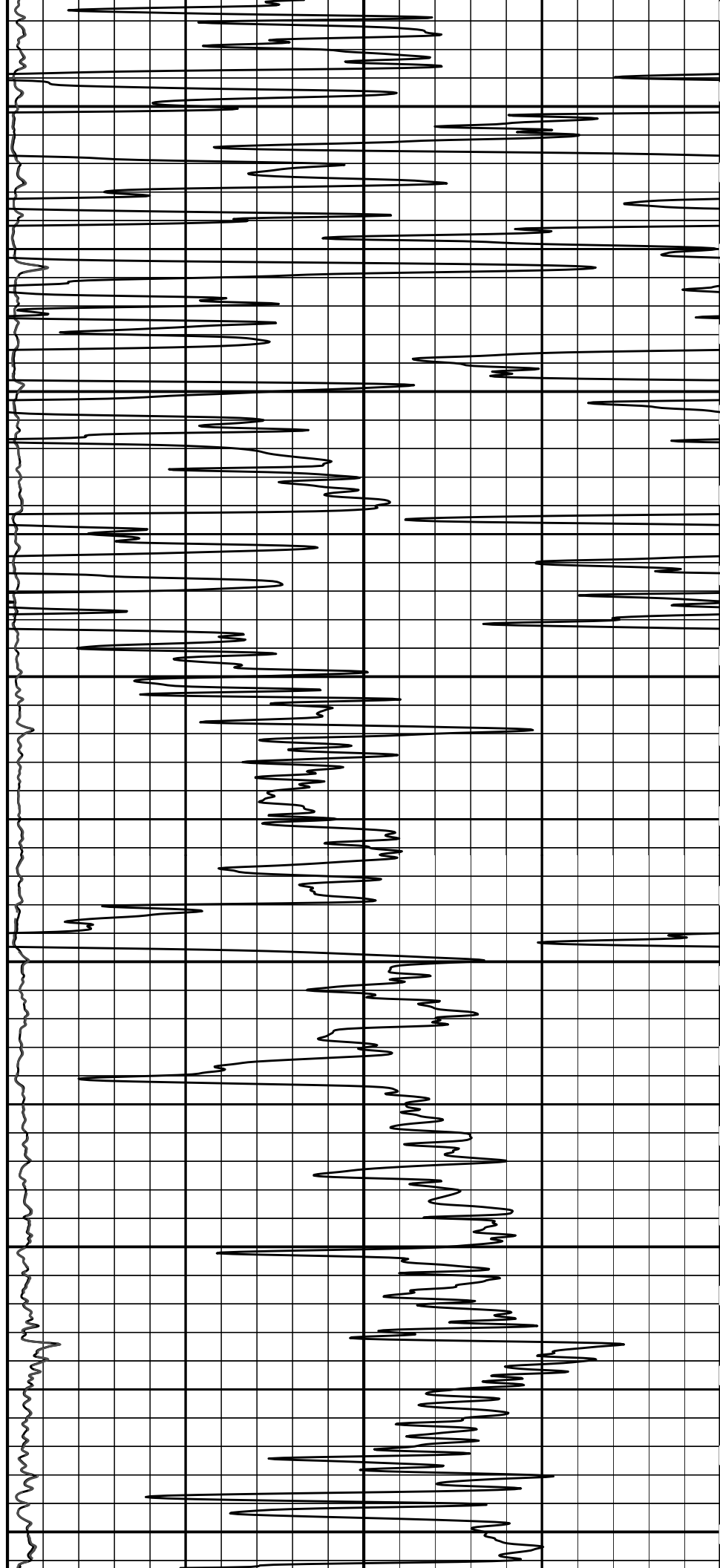
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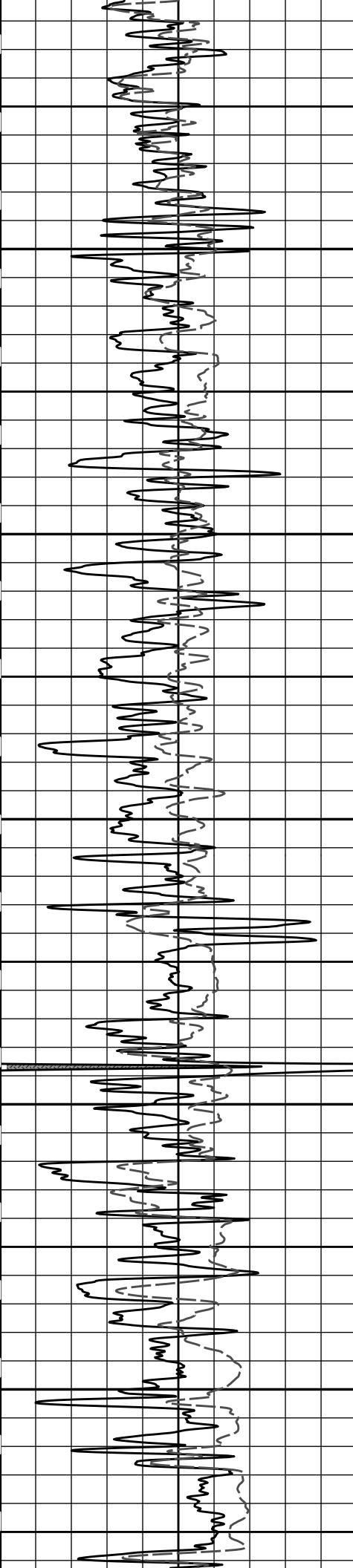
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2100





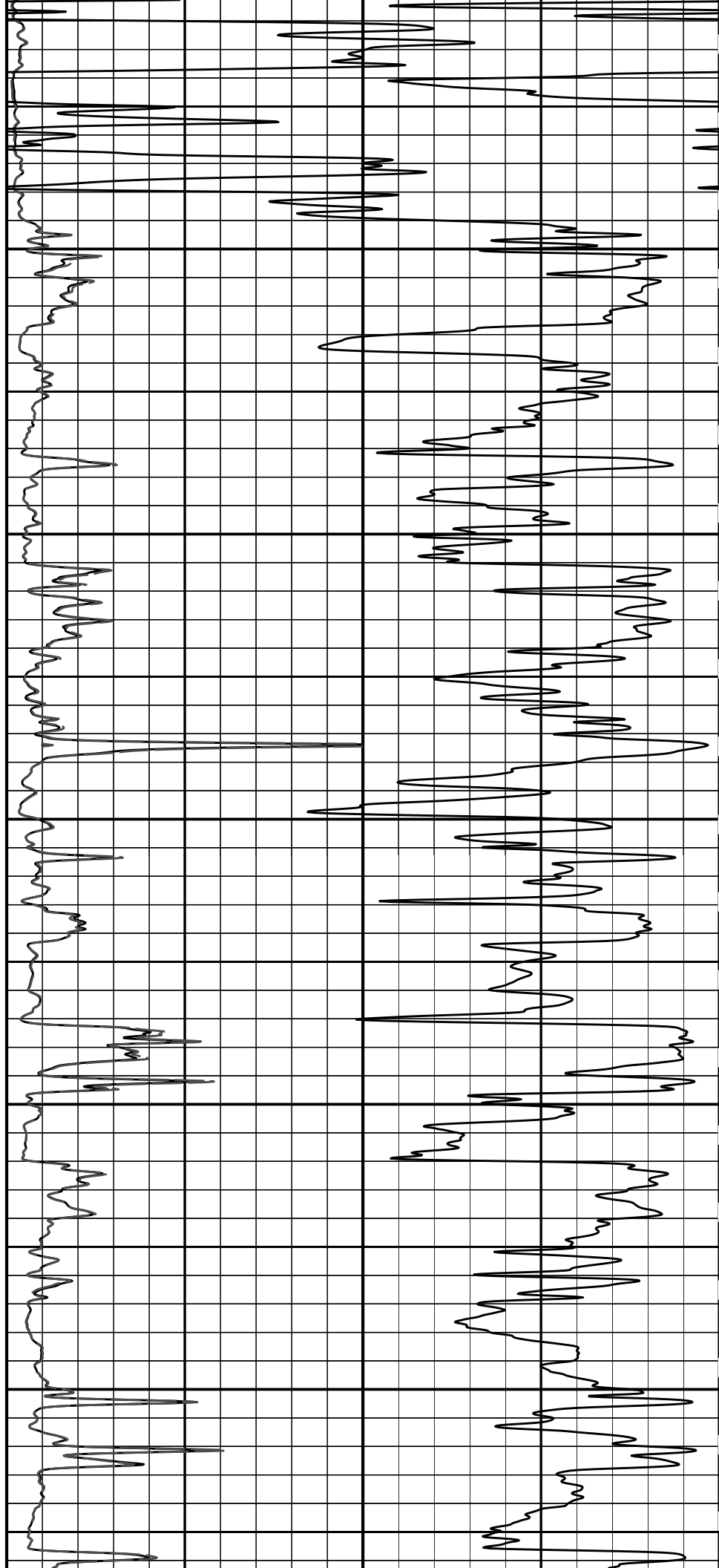
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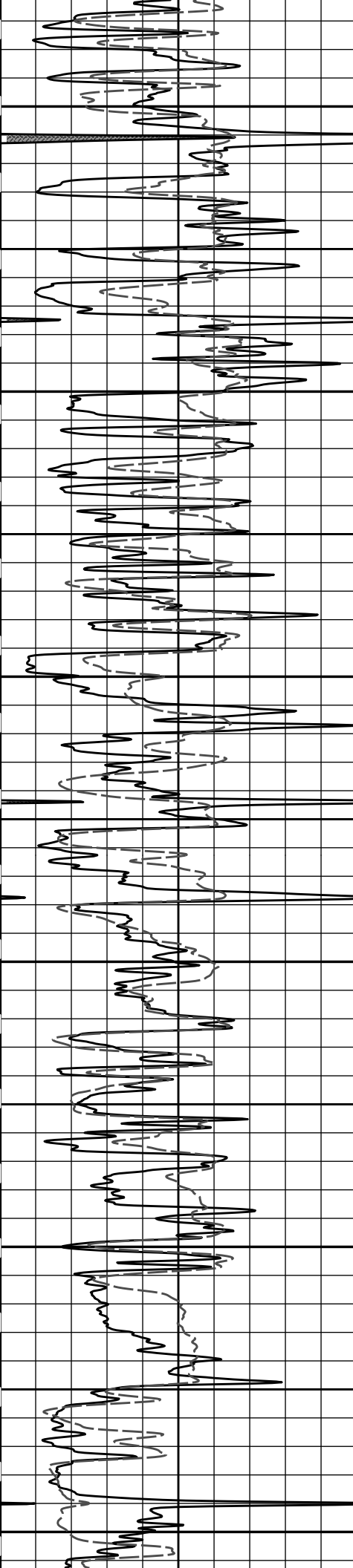
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2400

2500

2600





2700

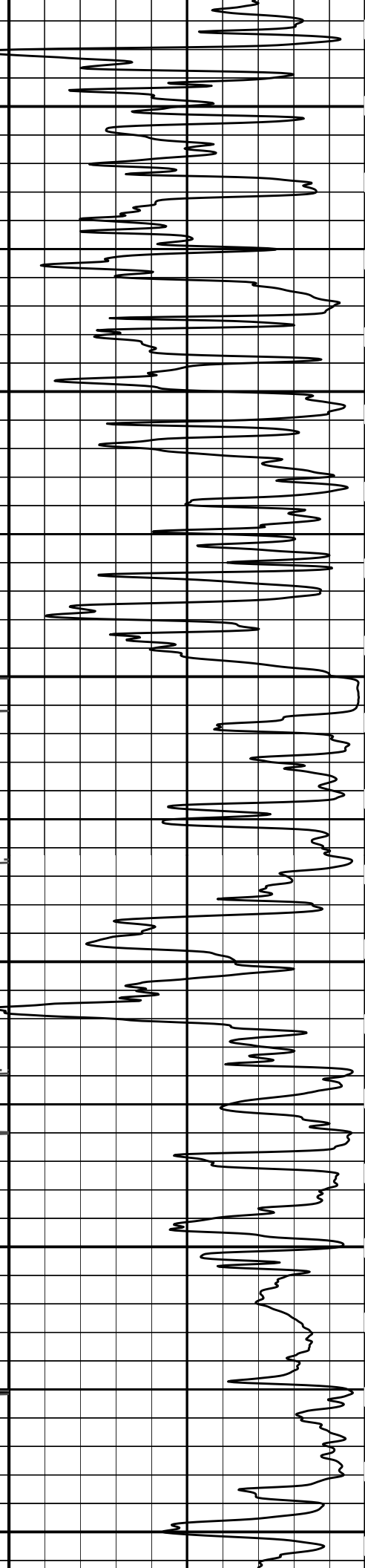
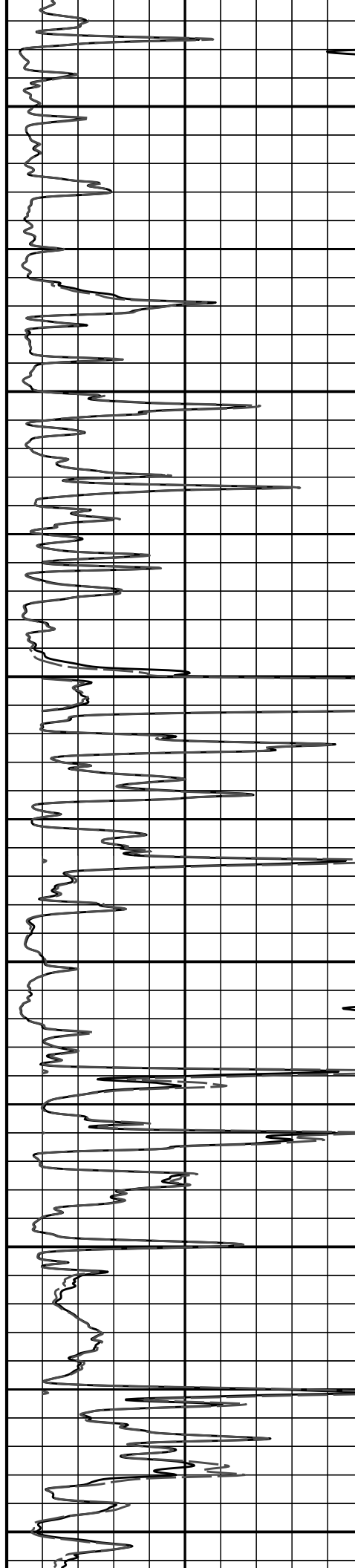
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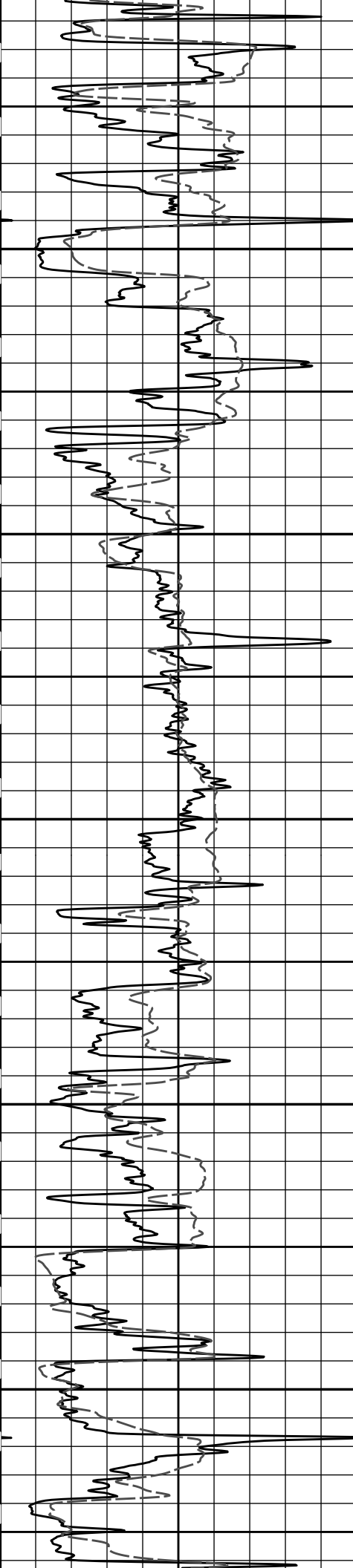
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3000

3100

3200





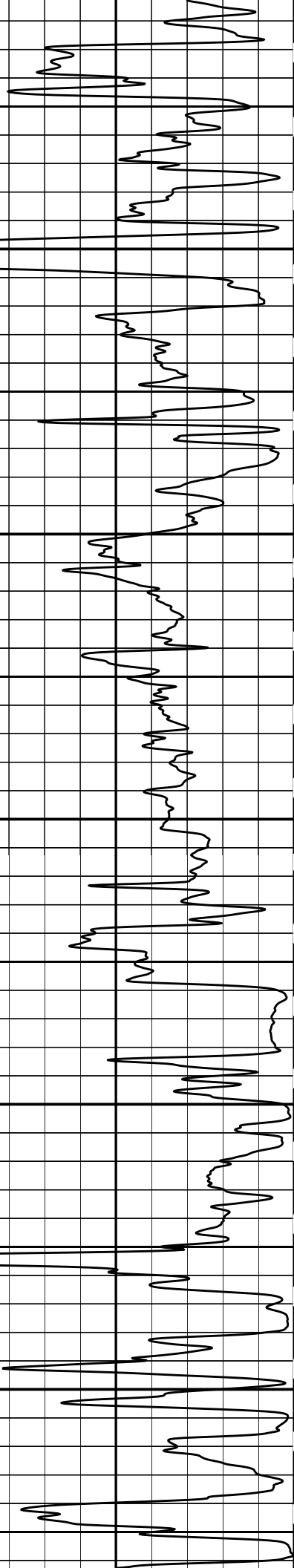
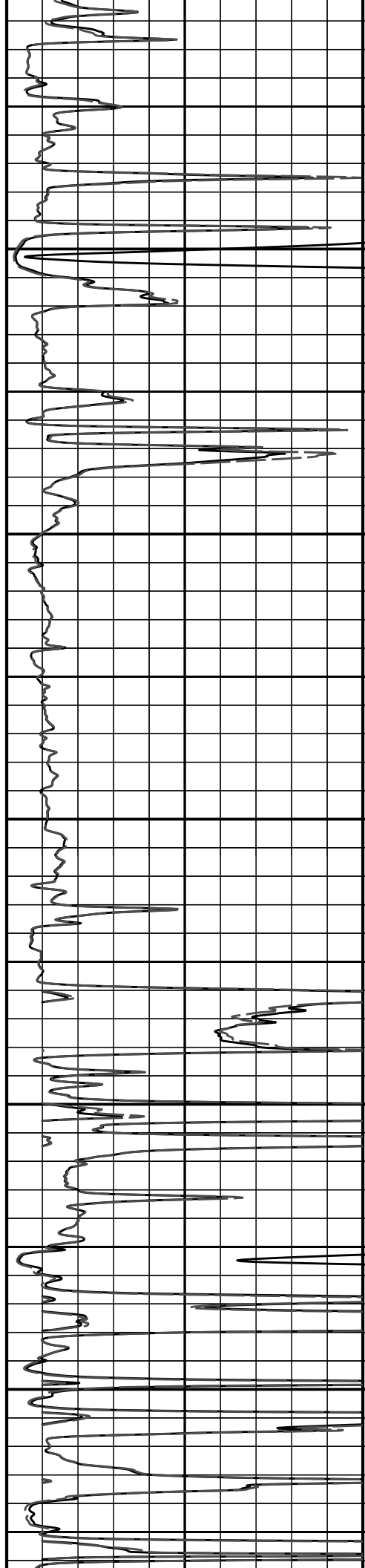
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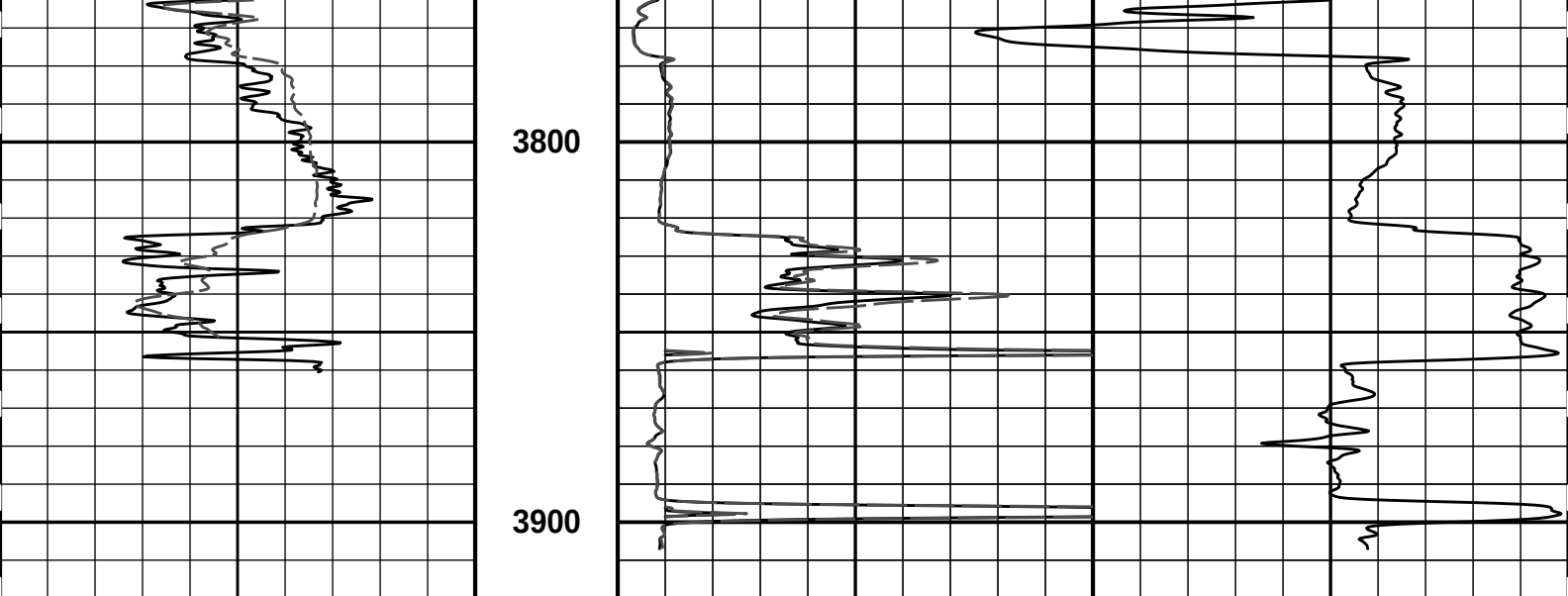
3400

3500

3600

3700





0	Gamma API	150	1 : 600 ft	0	20in Resistivity 2ft Res	50	
	api				ohm-metre		
	SP			0	90in Resistivity 2ft Res	50	
	-]20[+				ohm-metre		
				1000	90in Conductivity 2ft Res		0
					mmho per metre		

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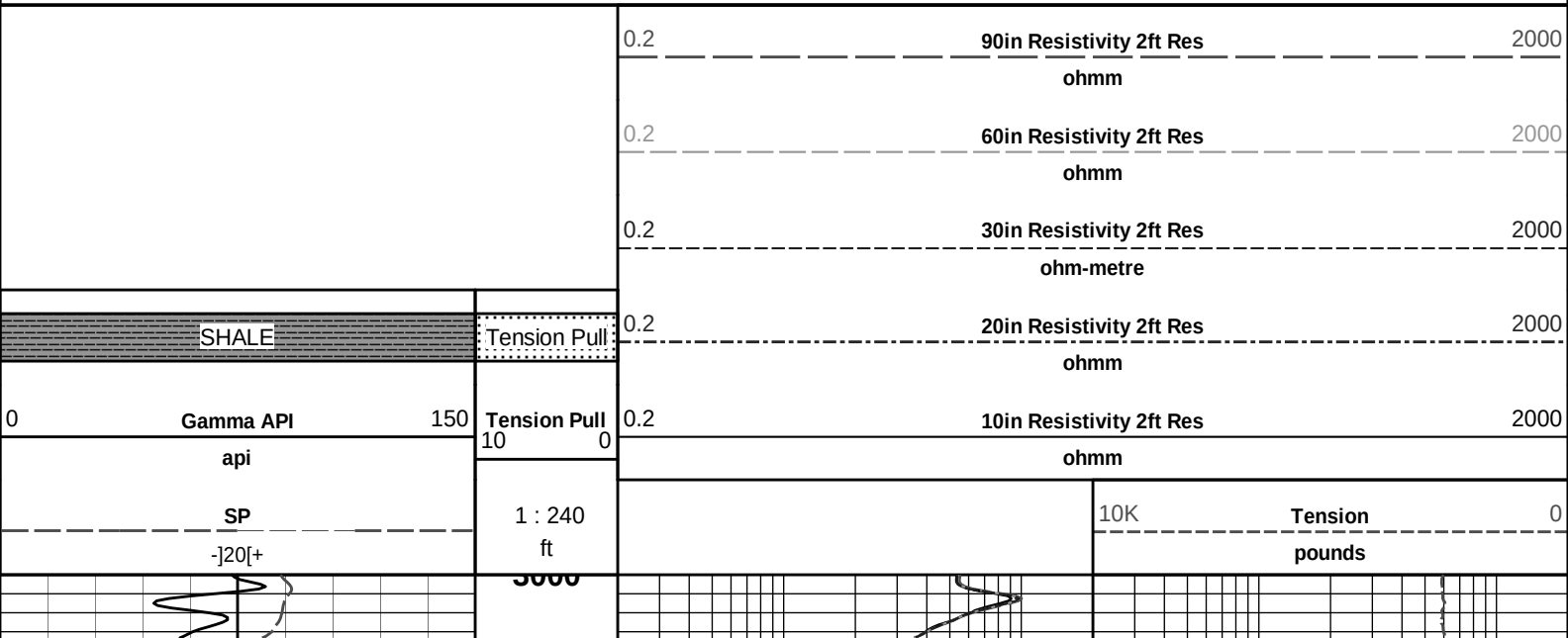
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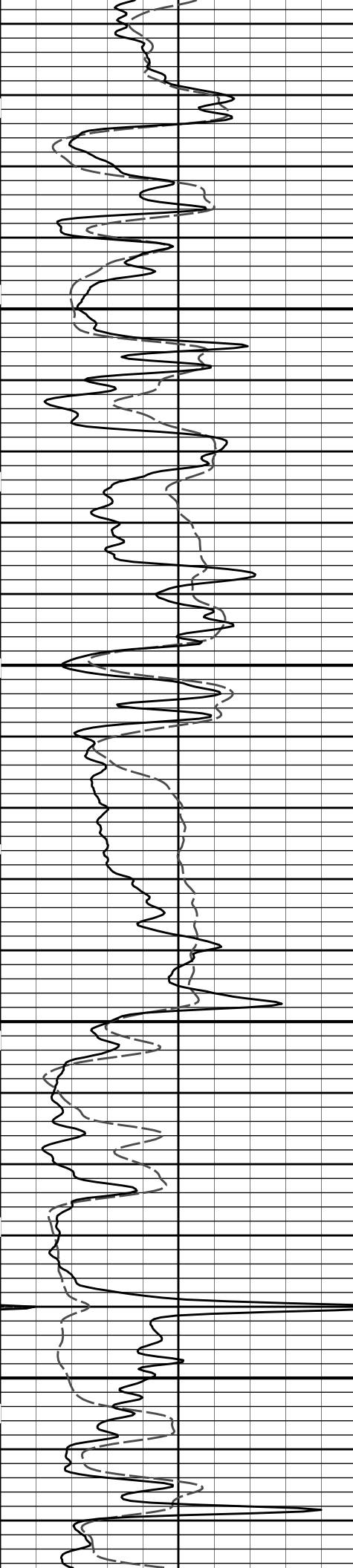
2 INCH MAIN LOG

HALLIBURTON

Plot Time: 22-Aug-12 19:29:25
Plot Range: 3000 ft to 3920.17 ft
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Plot File: \\-LOCAL-\HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIACRT\ACRT_5_main_lib

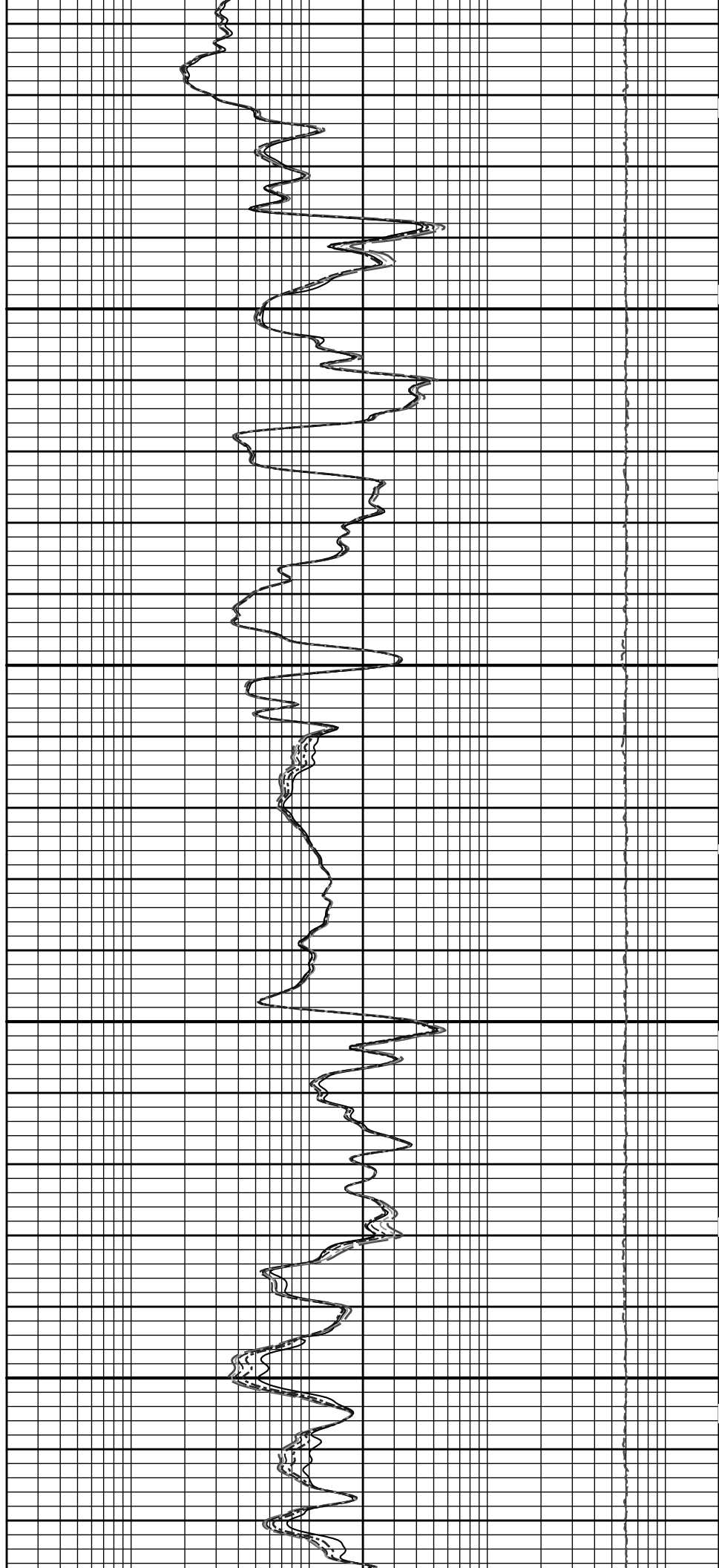
5 INCH MAIN LOG

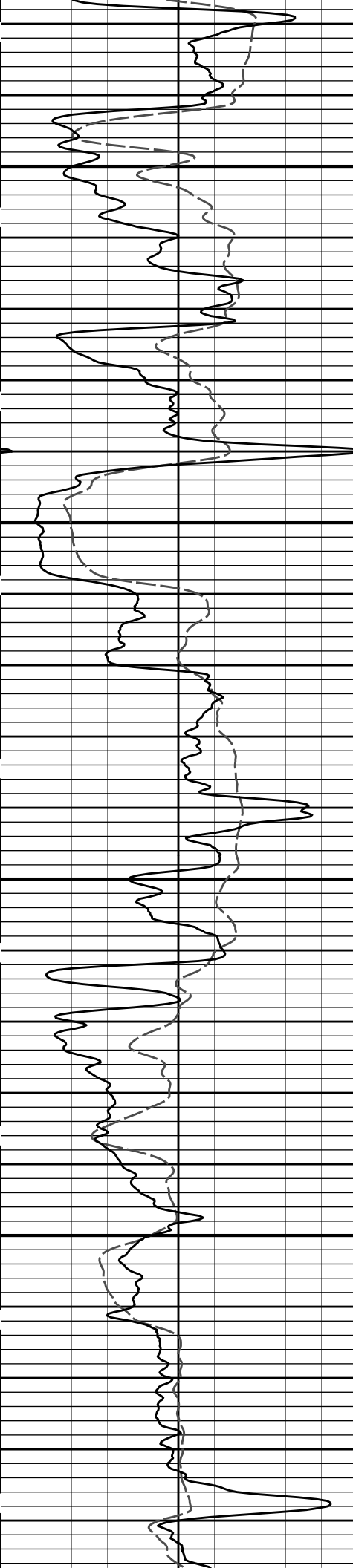




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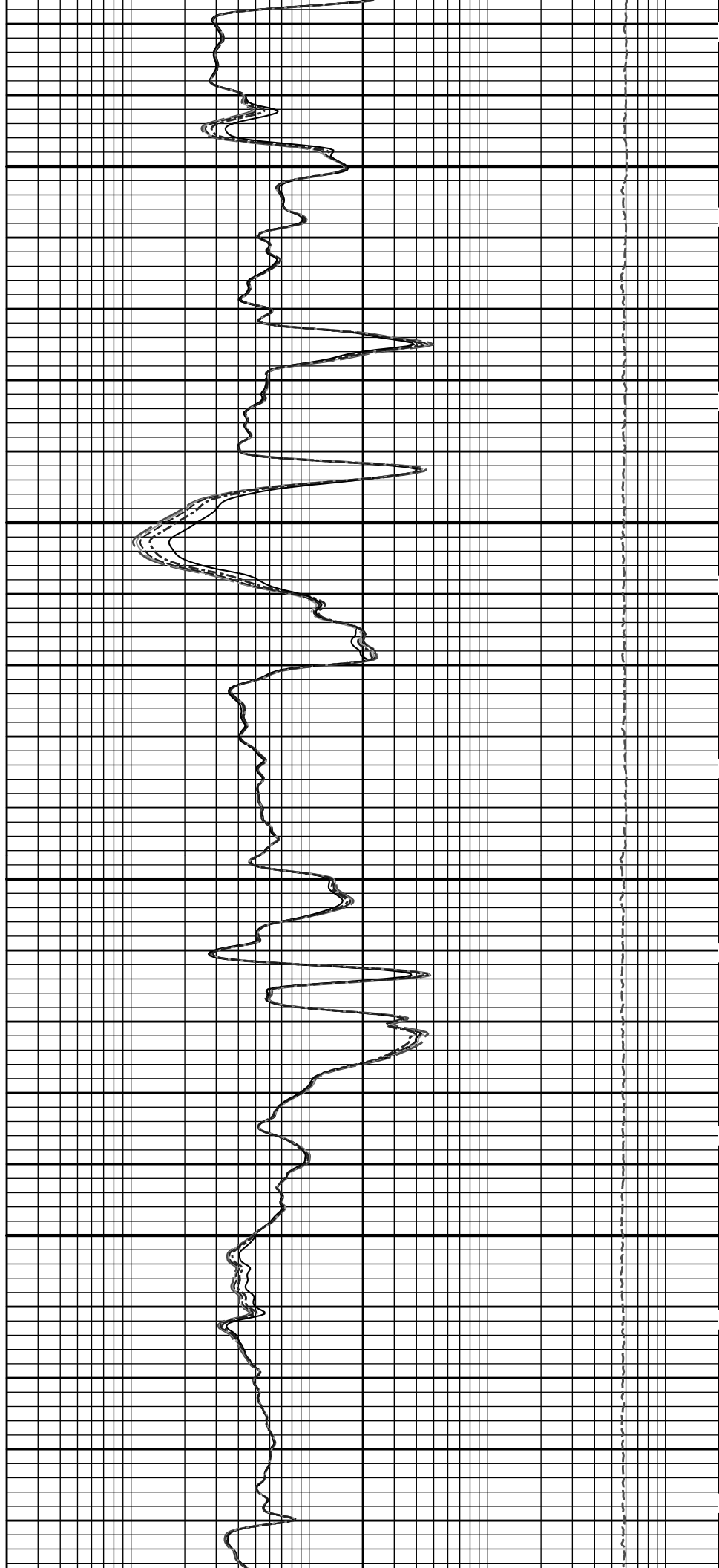
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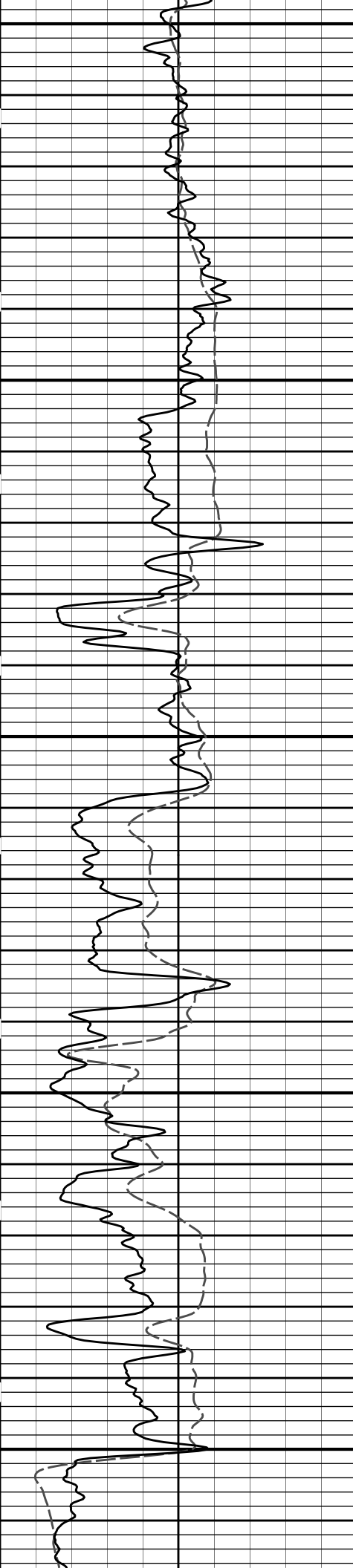




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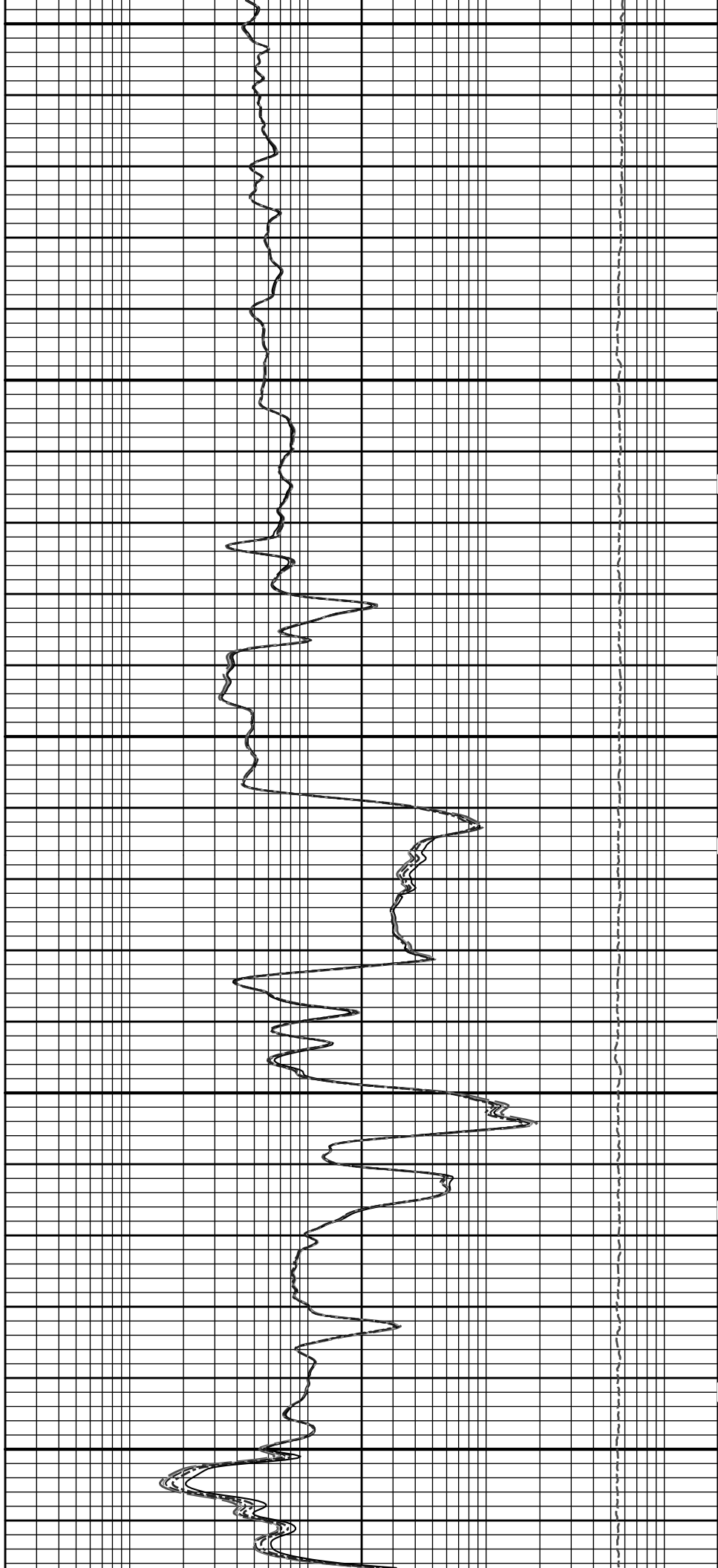
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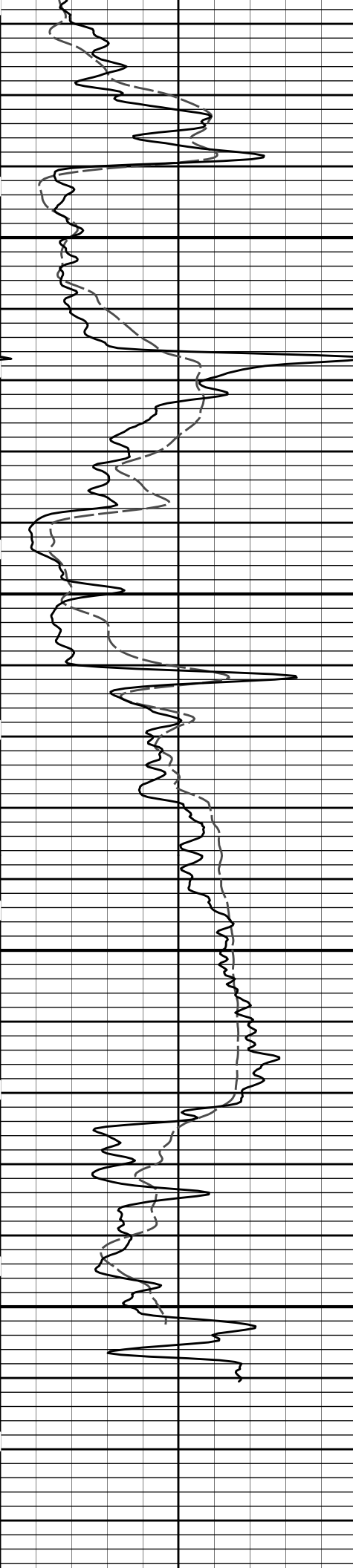




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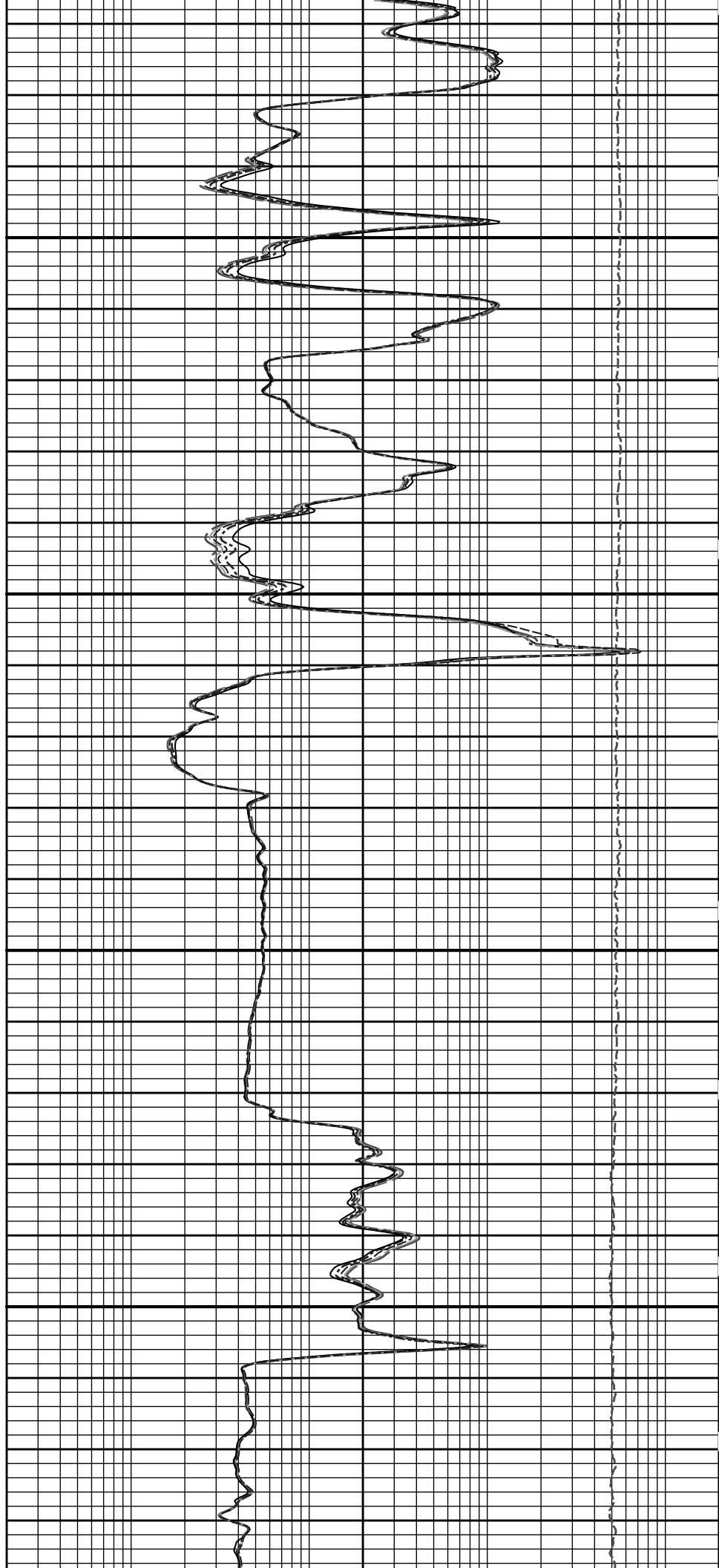
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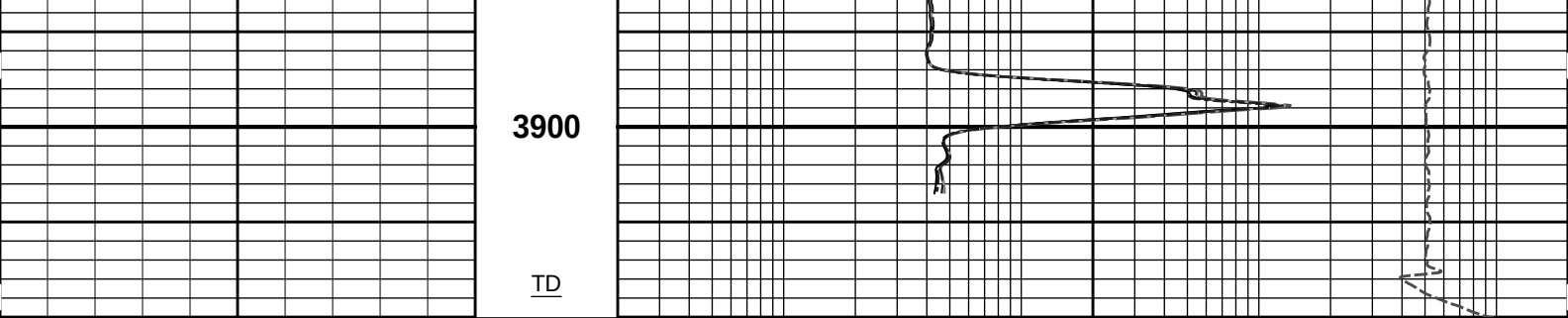




3700

3800





SP -]20[+		1 : 240 ft	10K Tension pounds		0
0	Gamma API 150 api				
SHAPE		Tension Pull 10	0.2	10in Resistivity 2ft Res	2000
			ohmm		
		Tension Pull 10	0.2	20in Resistivity 2ft Res	2000
			ohmm		
			0.2	30in Resistivity 2ft Res	2000
			ohm-metre		
			0.2	60in Resistivity 2ft Res	2000
			ohmm		
			0.2	90in Resistivity 2ft Res	2000
			ohmm		

HALLIBURTON

Plot Time: 22-Aug-12 19:29:28
Plot Range: 3000 ft to 3920.17 ft
Data: HENTSCHEL_C-3\Well Based\DAQ-0001-003\
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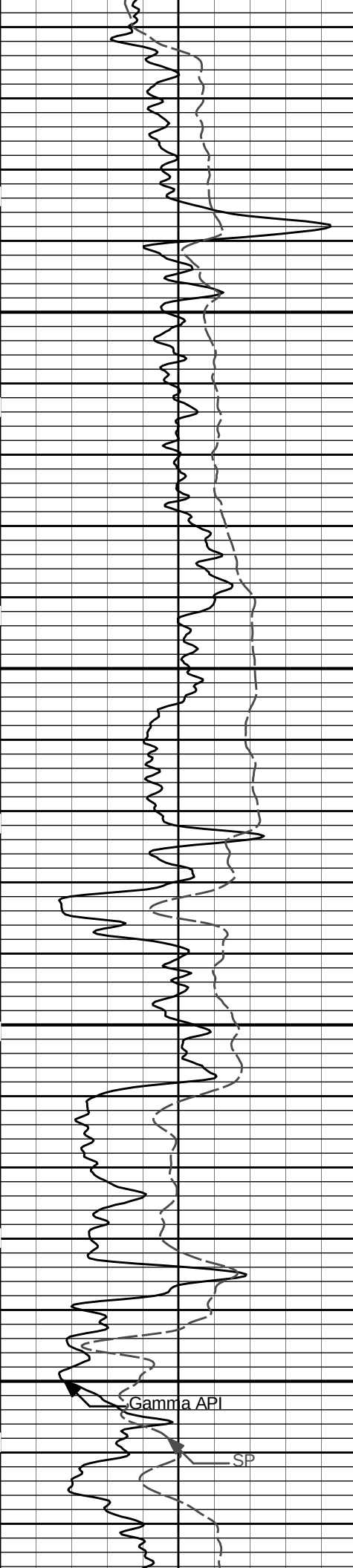
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 22-Aug-12 19:29:29
Plot Range: 3400 ft to 3922.92 ft
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Plot File: \\LOCAL-\\HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CH\ACRT\ACRT_5_repeat.lib

REPEAT SECTION

		1 : 240 ft	10K Tension pounds		0
0	Gamma API 150 api				
SHAPE			0.2	90in Resistivity 2ft Res	2000
			ohmm		
			0.2	60in Resistivity 2ft Res	2000
			ohmm		
			0.2	30in Resistivity 2ft Res	2000
			ohm-metre		
			0.2	20in Resistivity 2ft Res	2000
			ohmm		
			0.2	10in Resistivity 2ft Res	2000
			ohmm		

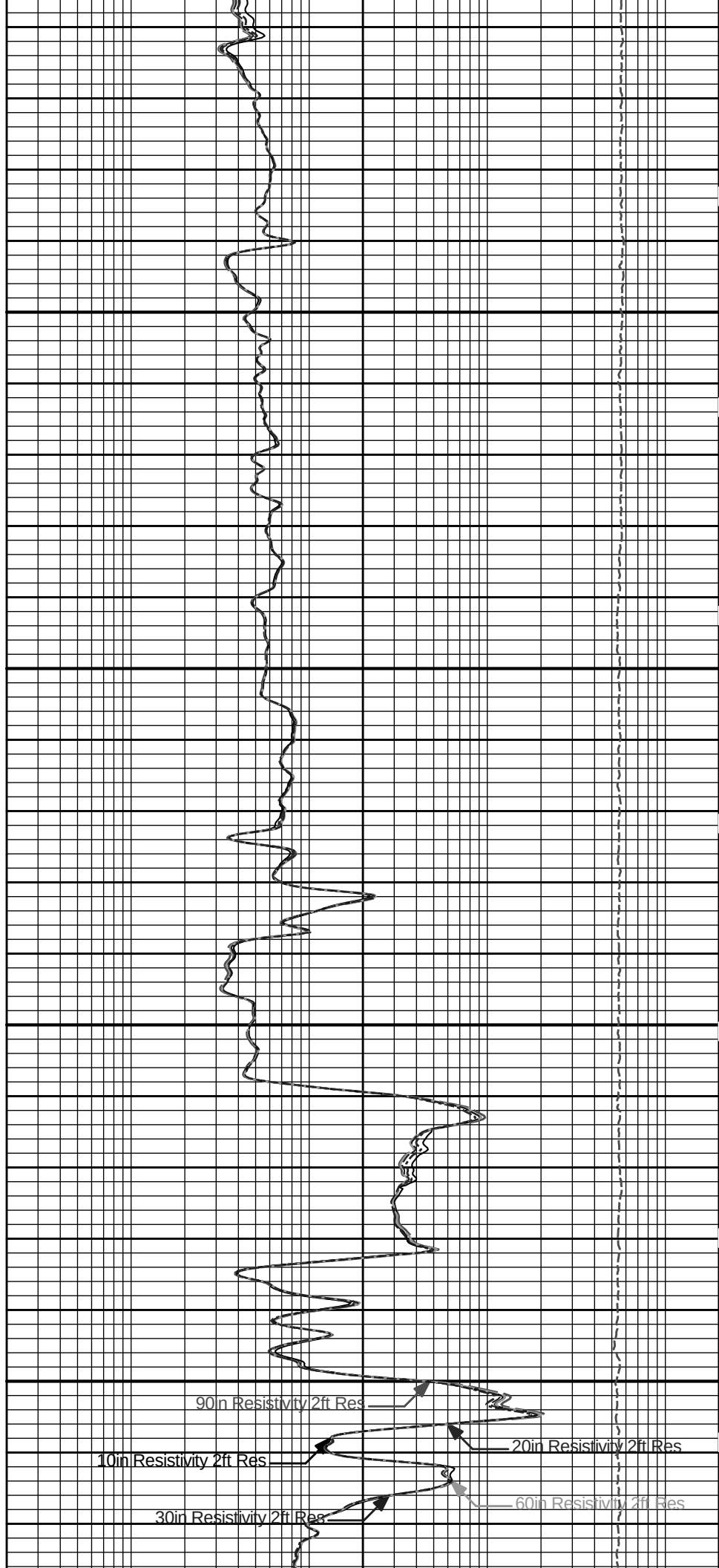


3500

3600

Gamma API

SP



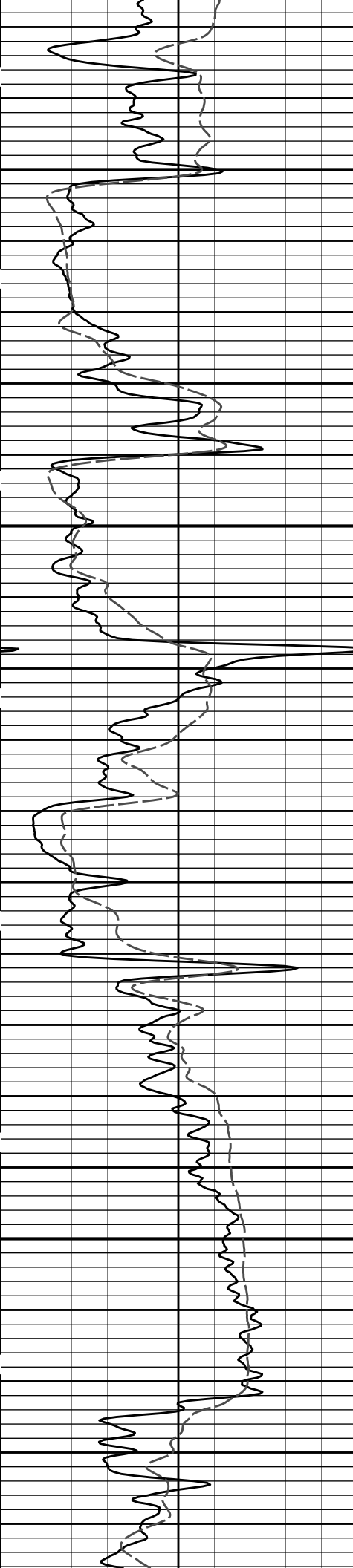
90in Resistivity 2ft Res

10in Resistivity 2ft Res

30in Resistivity 2ft Res

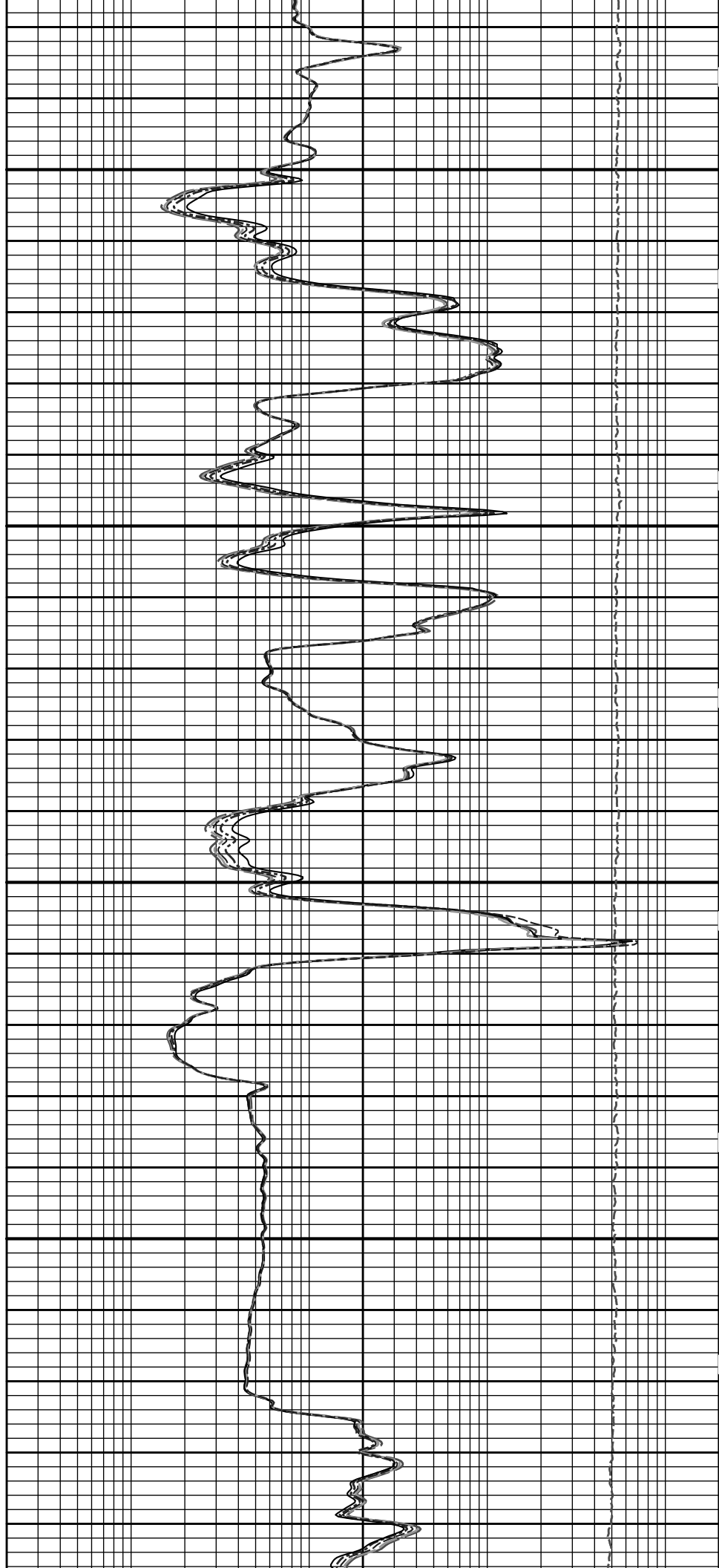
20in Resistivity 2ft Res

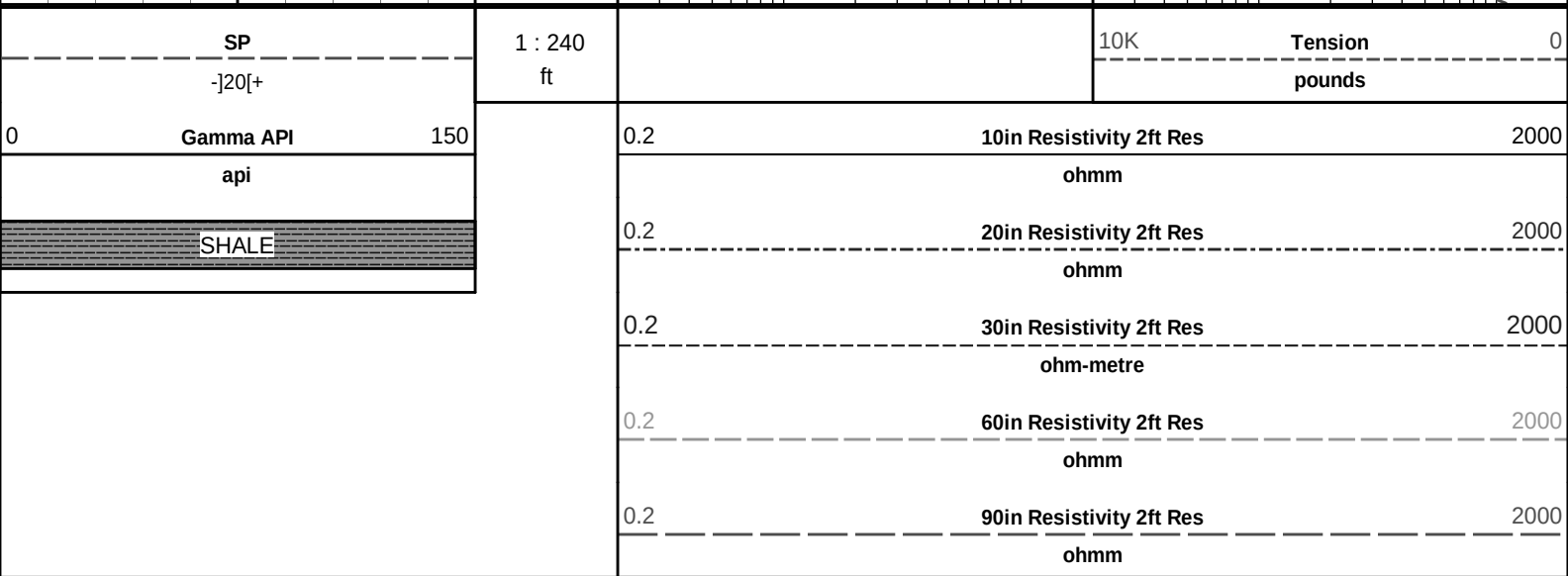
60in Resistivity 2ft Res



3700

3800





HALLIBURTON

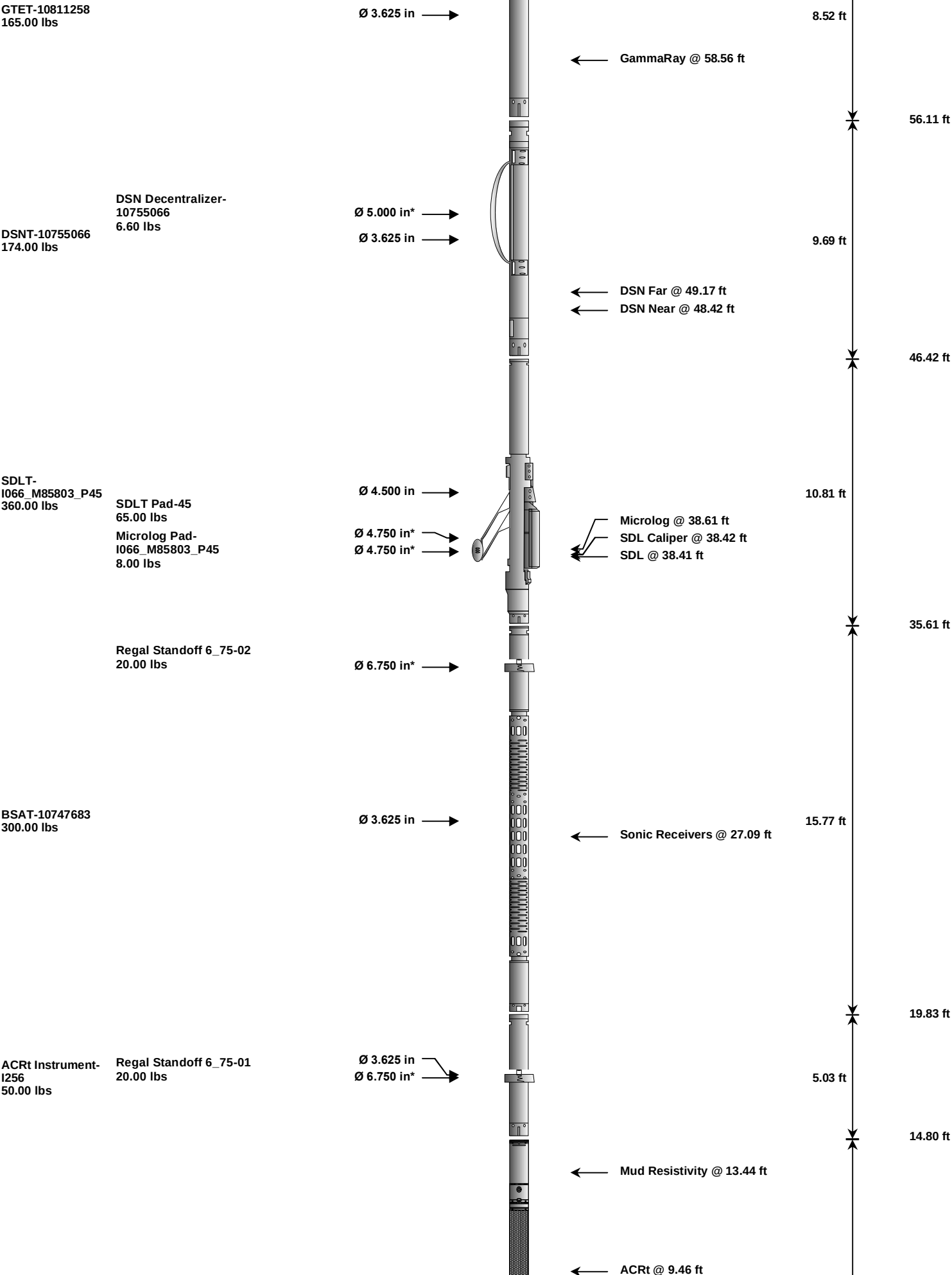
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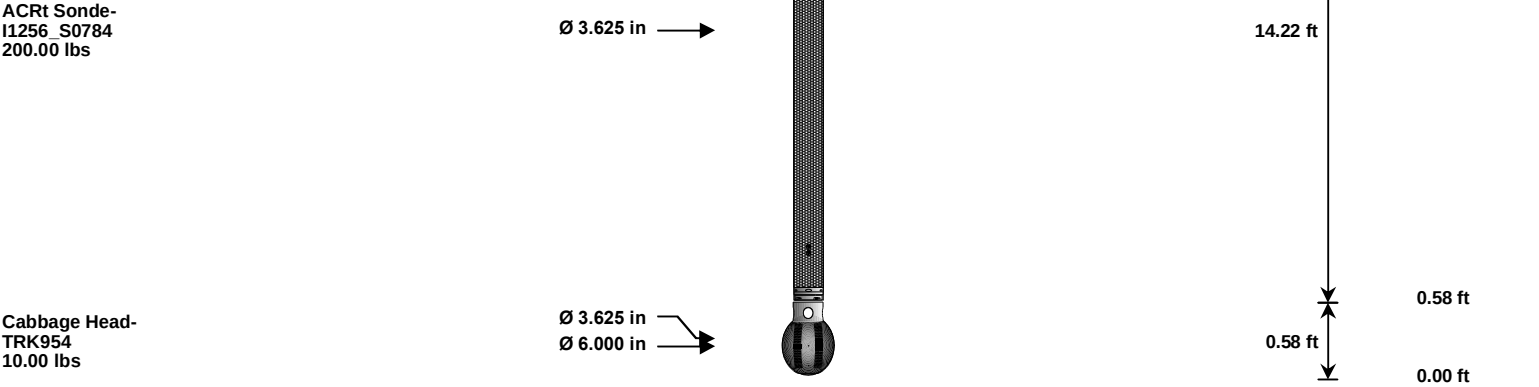
REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	70.28 ft
						68.36 ft
SP Sub-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	64.63 ft





Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head		PROT01	30.00	1.92	68.36	300.00
SP	SP Sub		11441709	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool		10811258	165.00	8.52	56.11	60.00
DSNT	Dual Spaced Neutron		10755066	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer		10755066	6.60	5.13	*	49.75
SDLT	Spectral Density Tool		I066_M85803_P45	360.00	10.81	35.61	60.00
MICP	Microlog Pad		I066_M85803_P45	8.00	1.00	*	38.11
SDLP	Density Insite Pad		45	65.00	2.55	*	37.82
BSAT	Borehole Sonic Array Tool		10747683	300.00	15.77	19.83	60.00
RSOF	Regal Standoff 6.75in		02	20.00	0.52	*	33.69
ACRt	Array Compensated True Resistivity Instrument Section		I256	50.00	5.03	14.80	300.00
RSOF	Regal Standoff 6.75in		01	20.00	0.52	*	17.02
ACRt	Array Compensated True Resistivity Sonde Section		I1256_S0784	200.00	14.22	0.58	300.00
CBHD	Cabbage Head		TRK954	10.00	0.58	0.00	300.00
Total				1,468.60	70.28		
* Not included in Total Length and Length Accumulation.							
Data: HENTSCHEL_C-3I0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE							
Date: 22-Aug-12 15:33:54							

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10811258	Reference Calibration Date:	29-Jun-12 10:47:38
Engineer:	C. HAVERKAMP	Calibration Date:	11-Aug-12 06:02:48
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB-185 Calibrator API Reference:228.00 api Equivalent Calibrator API Reference:232.0 api			
	Measurement	Measured	Calibrated
	Background	33.3	33.0
	Background + Calibrator	267.7	265.0
	Calibrator	234.4	232.0
NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 10811258	Reference Calibration Date:	11-Aug-12 06:02:48
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:07:15
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: TB-185
Calibrator API Reference:228.00 api
Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	33.0	25.8	api
Background + Calibrator	265.0	258.3	api
Calibrator	232.0	232.5	api

Shop	Field	Difference	Tolerance
232.0	232.5	-0.5	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10755066	Reference Calibration Date:	25-Jul-12 12:25:59
Engineer:	THOMAS HYDE	Calibration Date:	25-Jul-12 12:41:38
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: DSN-436
Tank Serial Number: 105060
Reference value assigned to Tank: 51.680
Snow Block S/N: TRK_10782954
Calibration Tank Water Temperature: 85 degF
Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.938	0.943	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2092	0.2107	0.0015	+/- 0.0020
Calibrated Ratio:	9.67	9.72	0.050	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0645	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	DSNT - 10755066	Reference Calibration Date:	25-Jul-12 12:41:38
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:15:00
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: DSN-436
Snow Block S/N: TRK_10782954

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0645	0.0663	0.0018	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed

Snow Block Stat Check:		Passed	
Temperature Check:		Passed	
DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	28-Jul-12 20:05:58
Engineer:	C. HAVERKAMP	Calibration Date:	28-Jul-12 20:22:18
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10755066		
CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-5255.25	-5222.66	-7000.00 - -1000.00
Pad Gain	0.0003793	0.0003763	0.000200 - 0.000600
Arm Offset	-1825.48	-2303.24	-5000.00 - 3000.00
Arm Gain	0.0005413	0.0005791	0.000300 - 0.000700
Arm Power	-0.000006383	-0.000008766	-0.000010000 - 0.000010000
The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER			
Tool Diameter: 4.50 in			
CALIBRATION RINGS			
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change Control Limit On New Value
PAD EXTENSION:			
Small Ring (in)	2.00	2.00	0.00 +/- 0.20
Medium Ring (in)	3.77	3.75	-0.02 +/- 0.20
RING DIAMETER:			
Small Ring (in)	6.62	6.50	-0.12 +/- 0.20
Medium Ring (in)	8.29	8.25	-0.04 +/- 0.20
Large Ring (in)	15.14	15.00	-0.14 +/- 0.20
PASS/FAIL SUMMARY			
Calibration-Coefficients Range Check:		Passed	
Ring-Measurement Check:		Passed	
PASS/FAIL SUMMARY			
Calibration-Coefficients Range Check:		Passed	
SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT Pad - 45	Reference Calibration Date:	29-Jun-12 11:17:55
Engineer:	C. HAVERKAMP	Calibration Date:	05-Aug-12 09:06:17
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Logging Source S/N: 5073GW			
Aluminum Block S/N: 63061		Density: 2.591g/cc	Pe: 3.170
Magnesium Block S/N: 63393		Density: 1.690g/cc	Pe: 2.594
DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9811	0.9522	0.90 - 1.10
Near Dens Gain	0.9831	0.9524	0.90 - 1.10
Near Peak Gain	0.9806	0.9418	0.90 - 1.10
Near Lith Gain	0.9781	0.9284	0.90 - 1.10
Far Bar Gain	0.9863	0.9872	0.90 - 1.10
Far Dens Gain	0.9793	0.9793	0.90 - 1.10
Far Peak Gain	0.9722	0.9732	0.90 - 1.10
Far Lith Gain	0.9481	0.9473	0.90 - 1.10

Near Bar Offset	0.4083	0.6663	NONE
Near Dens Offset	0.3635	0.6290	NONE
Near Peak Offset	0.3620	0.6787	NONE
Near Lith Offset	0.3425	0.7501	NONE
Far Bar Offset	0.2498	0.2408	NONE
Far Dens Offset	0.2849	0.2903	NONE
Far Peak Offset	0.3024	0.3017	NONE
Far Lith Offset	0.4066	0.4262	NONE
Near Bar Background	994.27	991.23	700 - 1450
Near Dens Background	330.82	328.82	230 - 480
Near Peak Background	143.88	143.64	100 - 210
Near Lith Background	176.25	176.36	125 - 260
Far Bar Background	509.49	505.01	450 - 900
Far Dens Background	197.73	197.12	175 - 345
Far Peak Background	78.43	78.32	70 - 140
Far Lith Background	81.21	81.23	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.700	1.690	-0.010	+/- 0.015
Pe	2.511	2.558	0.047	+/- 0.150
ALUMINUM				
Density (g/cc)	2.592	2.591	-0.001	+/- 0.01500
Pe	3.148	3.133	-0.015	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	-0.0014	+/- 0.0140
Magnesium Block	-0.0006	+/- 0.0110	-0.0012	+/- 0.0140
Aluminum Block	0.0005	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.88	6.00 - 11.50	9.09	6.00 - 11.50
Internal Verifier(B+D+P+L)	1640	1200 - 2700	862	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 45

Reference Calibration Date: 05-Aug-12 09:06:17

Engineer: SHELDON INGERSOLL

Calibration Date: 22-Aug-12 15:06:31

Software Version: WL INSITE R3.6.0 (Build 3)			Calibration Version: 1		
Pad Temperature: 92.5 degF					
DENSITY FIELD CALIBRATION SUMMARY					
Measurement	Shop	Field	Change	Control Limit +/-	
Near (B+D+P+L) cps	1640.053	1637.685	-2.368	16.273	
Far (B+D+P+L) cps	861.681	871.111	9.430	16.070	
Near Resolution	9.88	10.02	0.140	0.50	
Far Resolution	9.09	9.88	0.790	1.00	
PASS/FAIL SUMMARY					
Bkg Quality Check:			Passed		
Bkg Resolution Check:			Passed		
Bkg Verification Check:			Passed		
MICRO LOG SHOP CALIBRATION					
Tool Name: Microlog Pad - I066_M85803_P45		Reference Calibration Date: 28-Jul-12 20:13:27			
Engineer: C. HAVERKAMP		Calibration Date: 06-Aug-12 16:56:57			
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1			
Host Tool Name: DSNT - 10755066					
CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.07	-0.10	-0.01	-0.00	ohmm
Calibration Point #1	0.03	0.00	-0.01	0.00	ohmm
Calibration Point #2	20.05	20.00	20.05	20.00	ohmm
Internal Reference	19.98	19.93	20.06	20.01	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	0.92		0.19		V
Calibration Point #1	28.11		0.63		V
Calibration Point #2	5348.31		6937.82		V
Internal Reference	5329.49		6940.80		V
MICRO LOG FIELD CHECK					
Tool Name: Microlog Pad - I066_M85803_P45		Reference Calibration Date: 06-Aug-12 16:56:57			
Engineer: SHELDON INGERSOLL		Calibration Date: 22-Aug-12 15:08:48			
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1			
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.10	-0.11	-0.00	0.01	ohmm
Internal Reference	19.93	19.83	20.01	19.90	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.93	19.83	0.10	+/- 0.80	
Microlog Lateral	20.01	19.90	0.11	+/- 0.80	
SDLT CALIPER FIELD CALIBRATION					
Tool Name: SDLT - I066_M85803_P45		Reference Calibration Date: 28-Jul-12 20:22:18			
Engineer: SHELDON INGERSOLL		Calibration Date: 22-Aug-12 15:19:10			

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	0.99	1.05
A2 (50")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.00	1.05
A3 (29")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	0.99	1.05
A4 (17")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.01	1.05	0.95	1.00	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.98	1.05

TRANSMITTER CURRENT GAIN			
Signal	Lower	R	Upper
12K	0.6	0.87	1.3
36K	1.0	1.20	2.0
72K	1.0	1.55	2.0

R-MUD VERIFICATION			
Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	232.5	-----	-0.5	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0645	0.0663	-----	-0.0018	+/- 0.0150	decp
SDLT-I066_M85803_P45						
Pad Extension	3.75	3.67	-----	0.08	+/-0.10	in
Ring Diameter	8.25	8.13	-----	0.12	+/-0.15	in
SDLT Pad-45						
Near(B+D+P+L)	1640.053	1637.685	-----	2.368	+/-16.273	cps
Far(B+D+P+L)	861.681	871.111	-----	-9.430	+/-16.070	cps
Microlog Pad-I066_M85803_P45						
MicroLog Normal	19.93	19.83	-----	0.10	+/-0.80	ohmm
MicroLog Lateral	20.01	19.90	-----	0.11	+/-0.80	ohmm
ACRt Sonde-I1256_S0784						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m
Data: HENTSCHEL_C-3I0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHI003 22-Aug-12 16:23 Up @3920.3f Date: 22-Aug-12 18:01:25						

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.900	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	2000.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	3935.00	ft
	SHARED	BHT	Bottom Hole Temperature	118.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa /	DWA	Resistivity of Formation Water	0.05	ohm-cm

CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM				
Data: HENTSCHEL_C-3I0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHI003 22-Aug-12 16:23 Up @3920.3f			Date: 22-Aug-12 18:02:45	

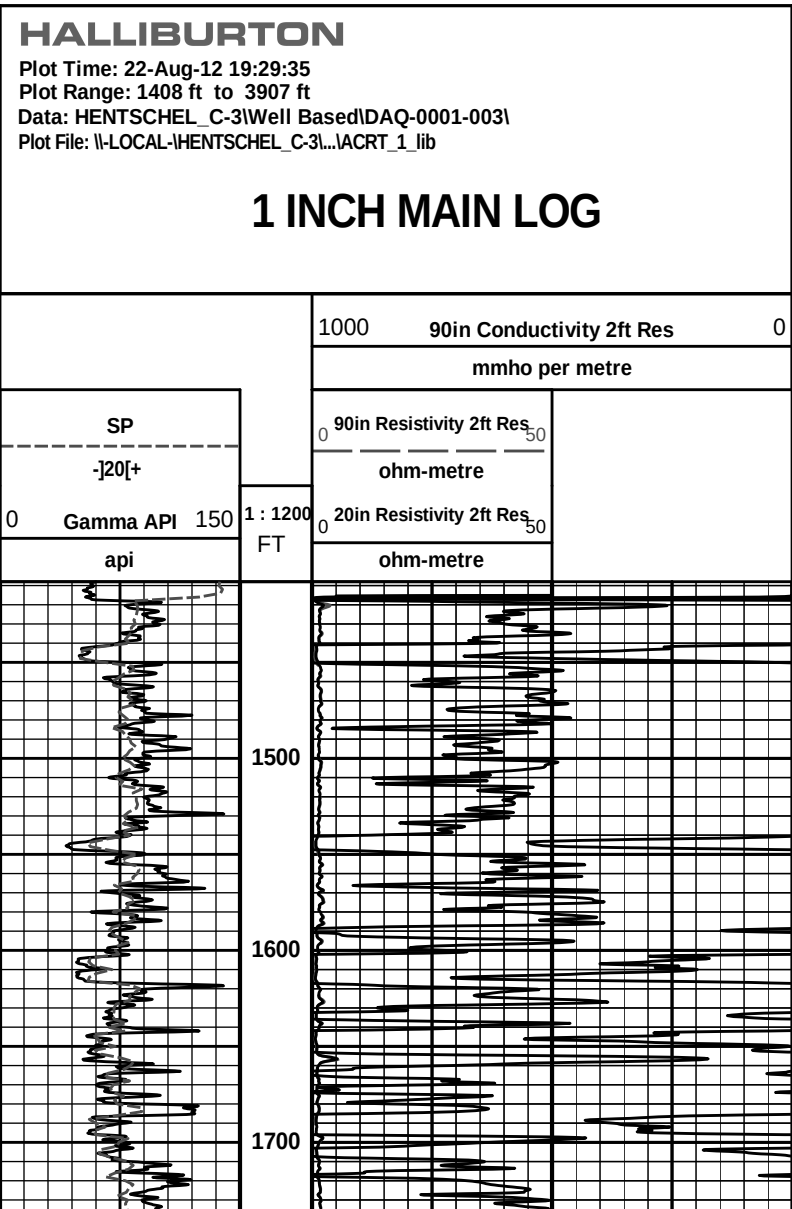
HALLIBURTON				
INPUTS, DELAYS AND FILTERS TABLE				
Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
SP Sub				

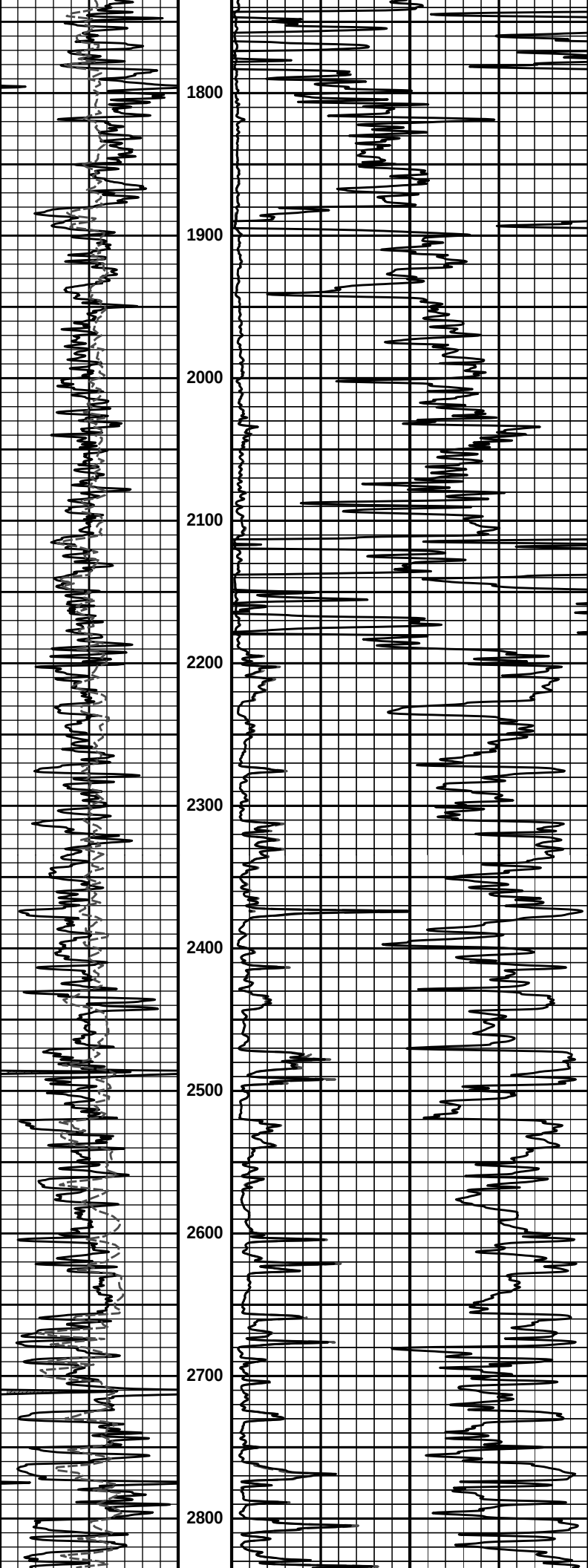
PLTC	Plot Control Mask	66.58	NO	
SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	
GTET				
TPUL	Tension Pull	58.56	NO	
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	
SDLT				
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000

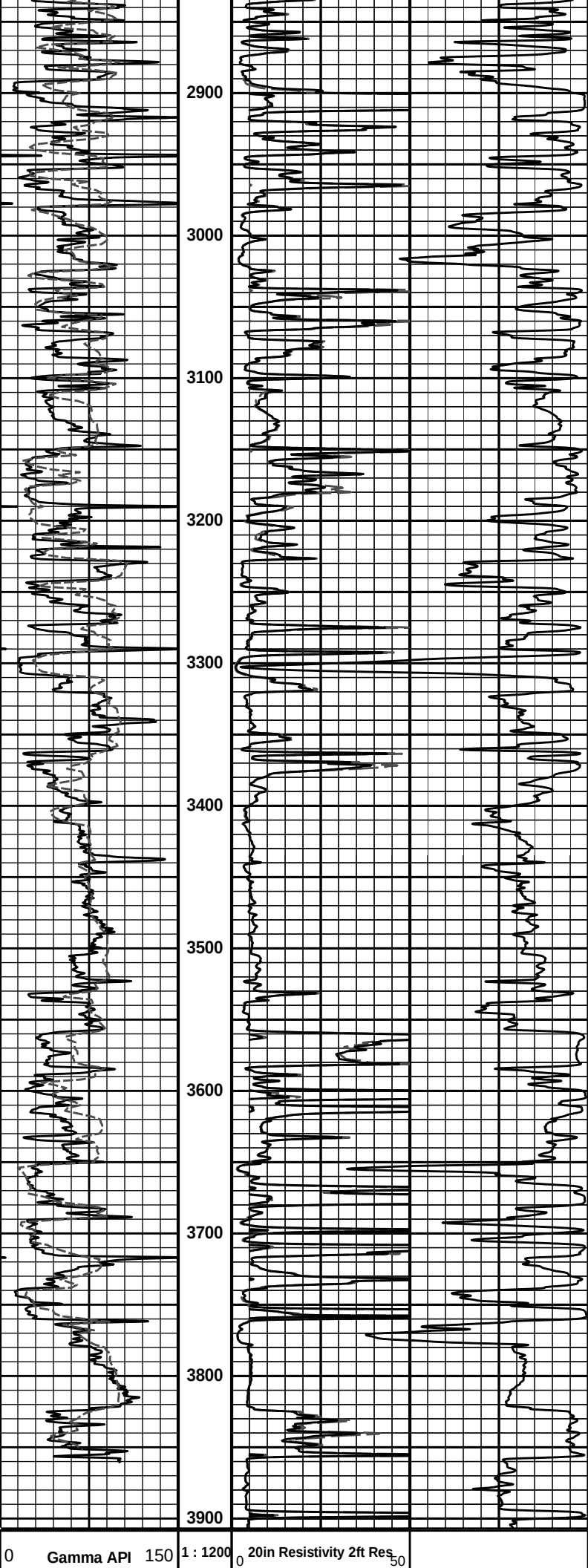
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
SDLT Pad				
TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920

NHV	Near Detector High Voltage	37.81	NO	
FHV	Far Detector High Voltage	37.81	NO	
ITMP	Instrument Temperature	37.81	NO	
DDHV	Detector High Voltage	37.81	NO	
Microlog Pad				
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750
Data: HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE			Date: 22-Aug-12 18:22:03	

COMPANY	OXY USA INC			
WELL	HENTSCHEL C-3			
FIELD	MUSTANG EAST			
COUNTY	MORTON	STATE	KANSAS	
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG		







api	FT	ohm-metre		
SP		90in Resistivity 2ft Res	050	
-]20[+		ohm-metre		
		1000	90in Conductivity 2ft Res	0
		mmho per metre		
HALLIBURTON Plot Time: 22-Aug-12 19:29:54 Plot Range: 1408 ft to 3907 ft Data: HENTSCHEL_C-3\Well Based\DAQ-0001-003\ Plot File: \\LOCAL-\\HENTSCHEL_C-3\\...\\ACRT_1.lib 1 INCH MAIN LOG				