

AFFIDAVIT OF SERVICE

ACO-18 for York 31-31-17 1H
Section 31-31S-17W,
Comanche County, Kansas

I, Aletha M. Dewbre, employee of Chesapeake Operating, Inc., do hereby state that a true and correct copy of ACO-18 for the York 31-31-17 1H Well, in Comanche County, Kansas, was mailed to the following on September 28, 2011:

Michael W. & Deborah York
2127 Road 20
Wilmore, KS 67155

H&B Petroleum Corp.
130 E. Ross, Suite 103
Clearwater, KS 67036

Redlands Resources, Inc.
6001 NW 23rd Street
Oklahoma City, OK 73127

Reeder Energy Partners, LP
4925 Greenville Ave., Suite 1400
Dallas, TX 75206

The above list represents all applicable owners entitled to notification of this application for flaring gas.

By: *Aletha M Dewbre*
Aletha M. Dewbre
Regulatory Compliance Specialist
Chesapeake Operating, Inc.

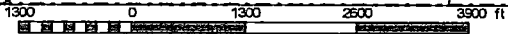
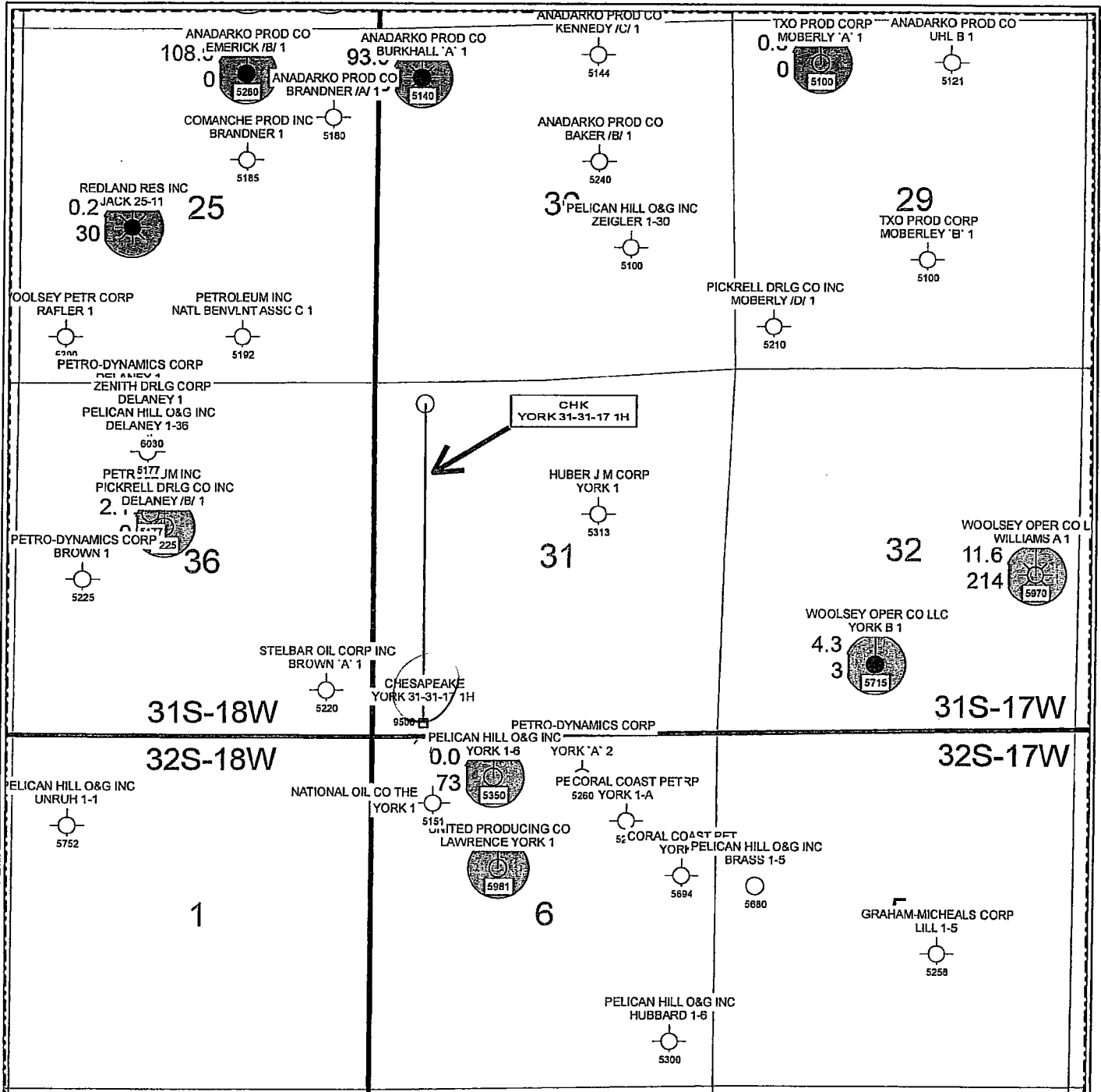
STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

Subscribed and sworn to before me this 28th day of September, 2011.

Christy Semmes
Notary Public

My Commission Expires:
8/28/12





- Legend**
- Tonkawa
 - Cottage Grove
 - Oswego
 - Red Fork
 - Inola
 - Morrow
 - Chester
 - Meramec
 - Hunton
 - Pre-Hunton (Viola/Simp/Arbk)

OPERATOR
WELL NAME & NUMBER
 Cum Oil (Mbo)
 Cum Gas (MMcfg)
TOTAL DEPTH



 Chesapeake <small>ENERGY</small>	CHESAPEAKE OPERATING, INC.
YORK 31-31-17 1H PRODUCTION MAP Sec 31-31S-17W, Comanche County, KS	
Date: June 27, 2011	Geologist:

York 31-31-17 1H.gmp

York Flaring Permit

- A. Formation – Mississippi, 5398’-8919’, Est. BTU – 1190
- B. Formation – Mississippi, BOPD 100, 1.5 MMCFD, 3000 BWPD
- C. Distance to pipeline - ~1 mile
- 1. Attached logs to ACO-1 in Kolar
- 2. ACO-1 Submitted
- 3. Flow through a test separator with gas metering capabilities.
- 4. The York 31-31-17 1H requires flaring for production test and field appraisal. Procurement of gas pipeline Right of Way and construction of pipeline is currently in progress, but will not be completed in a timeline suitable for field appraisal and development planning. Chesapeake will discontinue flaring operations once gas pipeline is available.

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

NOTICE OF FILING APPLICATION

In the Matter of Chesapeake Operating, Inc.'s Application for Venting Authority Under Regulation K.A.R. 82-3-314(b) (2) Applicable to the York 31-31-17 1H Well located in Comanche County, KS.

TO: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomever concerned.

You, and each of you, are hereby notified that Chesapeake Operating, Inc. has filed an application seeking permission to continuously vent produced natural gas for longer than 7 days in order to gauge available reserves, perform production tests and field appraisal prior to start-up of production from this well and completion of gas pipeline. The well we are seeking permission to vent is the York 31-31-17 1H, located in the SW/4 SW/4 of Section 31, T31S-R17W, Comanche County, Kansas.

Any persons who object to or protest this application shall be required to file their written objections or protest with the Conservation Division of the State Corporation Commission of the State of Kansas within fifteen (15) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why granting of the application may cause waste, violate correlative rights or pollute the natural resources of the State of Kansas.

All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly. All persons and/or companies wishing to protest this application are required to file a written protest with the Conservation Division of the Kansas Oil and Gas Commission.

Upon receipt of any protest, the Commission will convene a hearing and protestants will be expected to enter an appearance either through proper legal counsel or as individuals, appearing on their own behalf.

Chesapeake Operating, Inc.
P.O. Box 18496
Oklahoma City, OK 73154-0496
(405) 935-8000

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

June 2009

Form Must Be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re.perf. Conv. to ENHR Conv. to SWD
- Conv. to GSW

Plug Back: _____ Plug Back Total Depth _____

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

ENHR Permit #: _____

GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: _____

Title: _____ Date: _____

KCC Office Use ONLY

Letter of Confidentiality Received

Date: _____

Confidential Release Date: _____

Wireline Log Received

Geologist Report Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Submitted Electronically <i>(If no, Submit Copy)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No			

List All E. Logs Run:

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method:				
	<input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Chesapeake Operating, Inc.
Well Name	York 31-31-17 1H
Doc ID	1064005

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Tyep and Percent Additives
Conductor	24	20	75	125		167	
Surface	12.25	9.6250	36	925	Class A	525	
Intermedia te	8.750	7	26	5730	Class H	205	
Production Liner	6.1250	4.50	13.5	8862	Class H	550	

DRAFT



COMPANY CHESAPEAKE OPERATING		FACILITY CLINTON		API Number AFE# 156642		DATE August 17, 2011		
CONTRACTOR NOMAC #115			TOWN COLDWATER	STATE KS	LEGAL DESCRIPTION SEC. 31-31S-17W			
LEASE / WELL NUMBER YORK 31-31-17 1H			Ticket Number 41-000000	COUNTY COMMANCHE	MILEAGE ONE WAY 200			
DIRECTIONS COLDWATER, KS JCT 183 & HWY 150 - GO 6 MILES EAST ON HWY 160 TO WILMORE BLACKTOP - GO 1.5 MILES NORTH ON WILMORE BLACKTOP - EAST INTO LOCATION								
Pumping Services	<input checked="" type="checkbox"/> Surface		<input type="checkbox"/> Intermediate		<input type="checkbox"/> Longstring		<input type="checkbox"/> Plug Base Conductor	
	<input type="checkbox"/> Squeeze		<input type="checkbox"/> Acid		<input type="checkbox"/> PTA		<input type="checkbox"/> Other	
	<input type="checkbox"/> Liner		<input type="checkbox"/> H2S					
	Casing Size/Weight	Thread	Tbng/DP Size	Thread	Plug. Cont	Swage	Top Plug	Bottom Plug
9 5/8 / 36#	8RD			X	X	X		
Number and Type Units 1 - PUMP TRUCK, 2 - BULK TRUCKS						BHST 95	BHC 85	Hole Size 12 1/4
Remarks HAVE A SAFE JOB!						Depth-TMD 925950	Depth-TVD 925950	Mud Weight/Type 9.0 WBM
Cementing Materials	CEMENT	Weight PPG	Yield Ft ³ /Sk	Water Gal/Sk	Additives			
		350	35:65 POZ CLASS A		5% GYPSUM - 60 + 6% BENTONITE + 2% CALCIUM CHLORIDE + 0.25 LB/SK SUPER FLAKE			
	# of Sacks	Type	Additives					
	175	CLASS A	2% CALCIUM CHLORIDE + 0.25 LB/SK SUPER FLAKE					
	Weight PPG	Yield Ft ³ /Sk	Water Gal/Sk	Additives				
	15.6	1.19	5.2	208.25 gal 37.37 80 APD notes				
	# of Sacks	Type	Additives					
	200	CLASS A	(NEAT) WITH 2% CALCIUM CHLORIDE ON THE SIDE					
	Weight PPG	Yield Ft ³ /Sk	Water Gal/Sk	Additives				
	15.6	1.18	5.20					
Spacer or Flush	Quantity	Type	REMARKS					
	10 BBL	FRESH WATER	SPACER					
Spacer or Flush	Quantity	Type	Additives					
Other	Quantity	Type	Additives					
68	70 BBL	FRESH WATER	DISPLACEMENT (ALWAYS REFIGURE ON LOCATION)					
Remarks/HSE	TAKE 9 5/8 PLUG CONTAINER + MANIFOLD + 8 RD BOWEL + TAKE TOP WOODEN PLUG + TAKE 10 GAL OF NO FOAM + TAKE 1" SWADGE + TAKE 1" HANDLING TOOLS + TAKE 200 FT OF 1" PIPE + CIRCULATING IRON AND SWADGE ALREADY ON LOCATION(C.ROBERSHAW) + TALK WITH CUSTOMER ABOUT PROCEDURES							
Sales Items	Casing Size	Casing Weight	Thread					
	Guide Shoe	Float Shoe	Float Collar	Insert Float Valve				
	Centralizers - Number	Size	Type					
	Well Cleaners - Number	Type	MSC (DV Tool)	MSC Plug Set				
	Limit Clamps	Weid-A	Other					
	Remarks							
Customer Rep BILL CANNON			Phone Number 580-374-2354		Fax		Time of Call W/C	
Call Taken By BOB BITTEL						Time Ready W/C		

COPY



BREAK THROUGH

COMPANY CHESAPEAKE OPERATING	FACILITY CLINTON	API Number AFE #158642	DATE August 31, 2011
CONTRACTOR NOMAC #115	TOWN COLDWATER	STATE KS	LEGAL DESCRIPTION SEC. 31-31S-17W
LEASE / WELL NUMBER YORK #31-31-17 1H	Ticket Number 41-000000	COUNTY COMMANCHE	MILEAGE ONE WAY 200
DIRECTIONS COLDWATER, KS JCT 183 & HWY 160 - GO 6 MILES EAST ON HWY 160 TO WILMORE BLACKTOP - GO 1.5 MILES NORTH ON WILMORE BLACKTOP - EAST INTO LOCATION			

COPY

Pumping Services	<input type="checkbox"/> Surface	<input checked="" type="checkbox"/> Intermediate	<input type="checkbox"/> Longstring	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Conductor	<input type="checkbox"/> Liner			
	<input type="checkbox"/> Squeeze	<input type="checkbox"/> Acid	<input type="checkbox"/> PTA	<input type="checkbox"/> Other		<input type="checkbox"/> H2S			
	Casing Size/Weight 7" / 26#	Thread 8RD	Tong/DP Size	Thread	Plug. Cont X	Swage X	Top Plug X	Bottom Plug	% Excess 30
	Number and Type Units 1 - PUMP TRUCK, 1 - BULK TRUCK					BHST 131	BHCT 109	Hole Size 8 3/4	
Remarks HAVE A SAFE JOB!					Depth-TMD 5,552	Depth-TVD 5130	Mud Weight/Type 9.0# WBM		

Cementing Materials	CEMENT	# of Sacks 110	Type 35:65 POZ CLASS H	Additives 6% BENTONITE + 0.5% CALCIUM CHLORIDE + 0.25 LB/SK SUPER FLAKE
		Weight PPG 13.0	Yield Ft ³ /Sk 1.73	Water Gal/Sk 9.04
		# of Sacks 95	Type CLASS H	Additives 0.2% CD-20 + 0.25 LB/SK SUPER FLAKE
		Weight PPG 15.6	Yield Ft ³ /Sk 1.18	Water Gal/Sk 5.20
		# of Sacks	Type	Additives
		Weight PPG	Yield Ft ³ /Sk	Water Gal/Sk
		# of Sacks	Type	Additives
		Weight PPG	Yield Ft ³ /Sk	Water Gal/Sk
		Spacer or Flush 20 BBL	Type DUST FLUSH	REMARKS SPACER
		Spacer or Flush	Type	Additives
Other 212 BBL	Type FRESH WATER	Additives DISPLACEMENT (ALWAYS REFIGURE ON LOCATION)		

Remarks/USE	TAKE 7" PLUG CONTAINER + MANIFOLD + 8 RD BOWEL + TAKE TOP RUBBER PLUG + TAKE 10 GALS OF NO FOAM + CIRCULATING IRON AND SWADGE ALREADY ON LOCATION(D.CARTER) + TAKE 4 SKS OF DUST FLUSH + TAKE 5 GAL OF SUPER OW-3 + TALK TO CUSTOMER ABOUT PROCEDURES
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45,129.05

Sales Items	Casing Size	Casing Weight	Thread	
	Guide Shoe	Float Shoe	Float Collar	Insert Float Valve
	Centralizers - Number	Size	Type	
	Well Cleaners - Number	Type	MSC (DV Tool)	MSC Plug Set
	Liner Clamps	Weld-A	Other	
Remarks				

Customer Rep. ERIC DOLPH / CURTIS TURNER	Phone Number 405-368-5936	Fax	Time of Call W/C
Call Taken By JOEY BITTEL			Time Ready W/C



COMPANY CHESAPEAKE OPERATING		FACILITY CLINTON		API Number GET FROM CUST.		DATE September 16, 2011			
CONTRACTOR NOMAC #115			TOWN COLDWATER		STATE KS	LEGAL DESCRIPTION SEC. 31-31S-17W			
LEASE / WELL NUMBER YORK #31-31-17 1H			Ticket Number 41-000000		COUNTY COMMANCHE		MILEAGE ONE WAY 200		
DIRECTIONS COLDWATER, KS JCT 183 & HWY 160 - GO 6 MILES EAST ON HWY 160 TO WILMORE BLACKTOP - GO 1.5 MILES NORTH ON WILMORE BLACKTOP - EAST INTO LOCATION									
Pumping Services	<input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Longstring <input type="checkbox"/> Plug Back <input type="checkbox"/> Conductor <input checked="" type="checkbox"/> Liner <input type="checkbox"/> Squeeze <input type="checkbox"/> Add <input type="checkbox"/> PTA <input type="checkbox"/> Other <input type="checkbox"/> H2S								
	Casing Size/Weight	Thread	Tbng/DP Size	Thread	Plug. Cont.	Swage	Top Plug	Bottom Plug	% Excess
	4 1/2" / 11.6#	8RD	4" / 14#	IF		X			30
	Number and Type Units 2 - PUMP TRUCKS, 2 - BULK TRUCKS						BHST 126	BHCT 106	Hole Size 6 1/8
Remarks HAVE A SAFE JOB!						Depth-TMD 8,890	Depth-TVD 5121	Mud Weight/Type 9.0# WBM	
Cementing Materials	CEMENT	# of Sacks	Type	Additives					
		550	50:50 POZ CLASS H	5% SALT (NaCl)(BWOW) + 0.6% SUPER FL-200 + 0.1% SUPER CR-1 + 2.5 LB/SK PHENO SEAL					
		Weight PPG	Yield Ft3/Sk	Water Gal/Sk					
		14.2	1.30	5.59					
		# of Sacks	Type	Additives					
		Weight PPG	Yield Ft3/Sk	Water Gal/Sk					
		# of Sacks	Type	Additives					
		Weight PPG	Yield Ft3/Sk	Water Gal/Sk					
		# of Sacks	Type	Additives					
		Weight PPG	Yield Ft3/Sk	Water Gal/Sk					
Spacer or Flush	Quantity	Type	REMARKS						
Flush	20 BBL	DUST FLUSH	SPACER						
Spacer or Flush	Quantity	Type	Additives						
Other	Quantity	Type	Additives						
Other	96 BBL	FRESH WATER	DISPLACEMENT (ALWAYS REFIGURE ON LOCATION)						
Remarks/HSE	TAKE 10 GALS OF NO FOAM + TAKE 4 SKS OF DUST FLUSH + TAKE 5 GALS OF SUPER OW-3 + CIRCULATING IRON & 4.5 SWADGE ALREADY ON LOCATION(J.BITTEL) + TOOL HAND WILL BE ON LOCATION + LINER HANGER +/- 4870 FT + TALK WITH CUSTOMER ABOUT PROCEDURES								
Sales Items	Casing Size	Casing Weight	Thread						
	Guide Shoe	Float Shoe	Float Collar		Insert Float Valve				
	Centralizers - Number	Size	Type						
	Well Cleaners - Number	Type	MSC (DV Tool)		MSC Plug Set				
	Limit Clamps	Weld-A	Other						
	Remarks								
Customer Rep. BILL CANNON / CURTIS TURNER			Phone Number 832-531-7284		Fax 580-374-2354		Time of Call W/C		
Call Taken By JOEY BITTEL						Time Ready W/C			

COPY

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Ward Loyd, Commissioner
Thomas E. Wright, Commissioner

Sam Brownback, Governor

September 26, 2011

Aletha Dewbre
Chesapeake Operating, Inc.
6100 N WESTERN AVE
PO BOX 18496
OKLAHOMA CITY, OK 73118-0496

Re: ACO1
API 15-033-21591-01-00
York 31-31-17 1H
SW/4 Sec.31-31S-17W
Comanche County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Aletha Dewbre

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY **CHESAPEAKE OPERATING INC**
WELL **YORK 31-31-17-1H**
FIELD **ALFORD**
COUNTY **COMANCHE**
STATE **KANSAS**

COMPANY **CHESAPEAKE OPERATING INC**
WELL **YORK 31-31-17-1H**
FIELD **ALFORD**
COUNTY **COMANCHE**
STATE **KANSAS**

API No. 15-033-21591
Location 200' FSL & 760' FWL

Other Services:
SDLT / DSNT / ML
WSTT
XRMI
MRIL

Sect. 31 Twp. 31S Rge. 17W

Permanent Datum **GROUND LEVEL** Elev. 2128.0 ft
Log measured from **KELLY BUSHING** D.F. 2143.0 ft
Drilling measured from **KELLY BUSHING** G.L. 2128.0 ft

Date 27-Aug-11

Run No. ONE

Depth - Driller 5650.00 ft

Depth - Logger 5646.0 ft

Bottom - Logged Interval 5635.0 ft

Top - Logged Interval 929.0 ft

Casing - Driller 9.625 in @ 925.0 ft

Casing - Logger 929.0 ft

Bit Size 8.750 in @

Type Fluid in Hole **WATER BASED MUD** @

Density 9.2 ppq 43.00 s/qt

PH 10.36 pH 6.8 cptrn

Source of Sample **FLOWLINE**

Rm @ Meas. Temperature 0.318 ohmm @ 104.00 degF @

Rmf @ Meas. Temperature 0.34 ohmm @ 86.00 degF @

Rmc @ Meas. Temperature 0.420 ohmm @ 86.00 degF @

Source Rmf **MEASURED** **MEASURED**

Rm @ BHT 0.26 ohmm @ 131.0 degF @

Time Since Circulation 5.1 hr

Time on Bottom 27-Aug-11 10:04

Max. Rec. Temperature 131.0 degF @ 5646.0 ft @

Equipment 10782954 LIBERAL

Recorded By C. HAYERKAMP

Witnessed By B. JOHNSON

Fold here

Service Ticket No.: 8420365		API Serial No.: 15-033-21591		PGM Version: WL INSITE R3.2.5 (Build 2)					
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.	N/A	
Rmc @ Meas. Temp.	@	@			1776_S775				
Source Rmf	Rmc								
Rm @ BHT	@	@							
Rmf @ BHT	@	@							
Rmc @ BHT	@	@							
EQUIPMENT DATA									
GAMMA		ACOUSTIC		DENSITY		NEUTRON			
Run No.	ONE	Run No.		Run No.		Run No.			
Serial No.	10748374	Serial No.		Serial No.		Serial No.			
Model No.	GTET	Model No.		Model No.		Model No.			
Diameter	3.625"	No. of Cent.		Diameter		Diameter			
Detector Model No.	T-102	Spacing		Log Type		Log Type			
Type	SCINT			Source Type		Source Type			
Length	8"	LSA [Y/N]		Serial No.		Serial No.			
Distance to Source	10'	FWDA [Y/N]		Strength		Strength			
LOGGING DATA									
GENERAL		GAMMA		ACOUSTIC		DENSITY		NEUTRON	

Run No.	Depth		Speed ft/min	Scale		Matrix	Scale		Matrix	Scale		Matrix
	From	To		L	R		L	R		L	R	
ONE	5646'	929'	REC	0	150							

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: SP-GTET-DSNT-SDLT-WSTT-XRMI-ACRT RAN IN COMBINATION.

ANNULAR HOLE VOLUME CALCULATED FOR 7 INCH CASING.

CHLORIDES REPORTED AT 7500 MG/L.

LCM REPORTED AT 4 LB/BBL.

YOUR CREW: P. COBLE, F. VILLA

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 620-624-8123

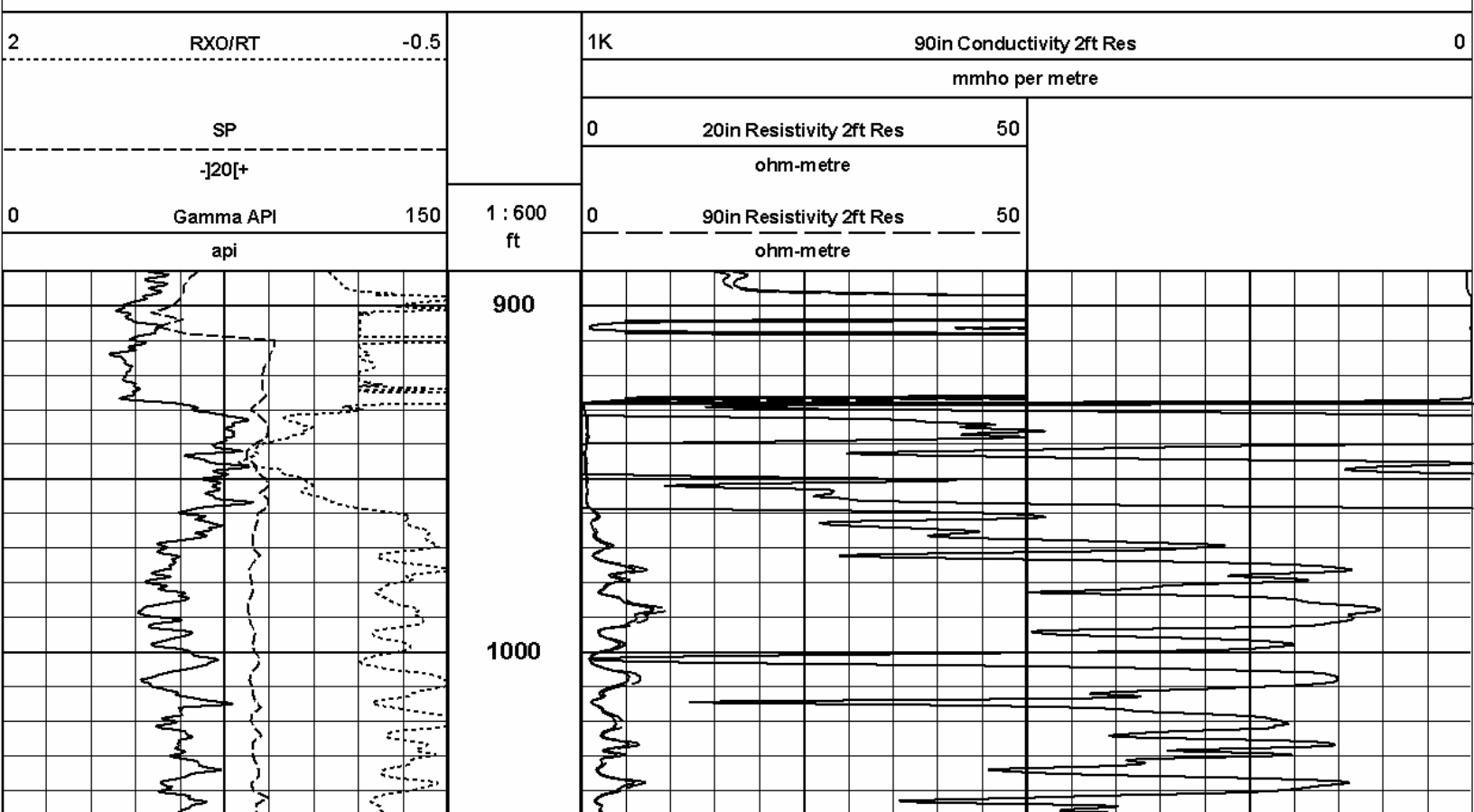
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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.

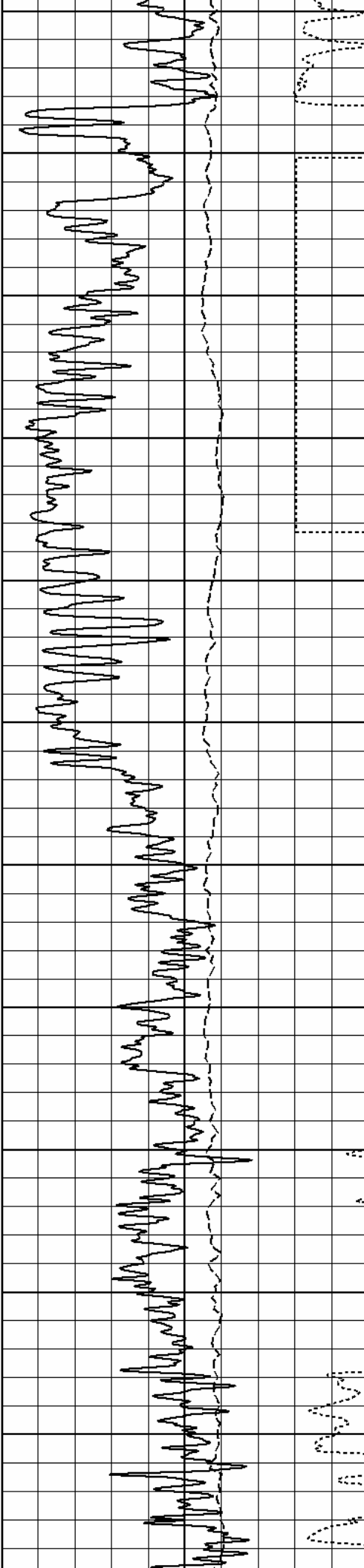
HALLIBURTON



Plot Time: 27-Aug-11 15:04:12
 Plot Range: 890 ft to 5636.25 ft
 Data: YORK_31_31_17\Well Based\RUN1_MAIN
 Plot File: \\LOCAL-1\ACRT\CHK_ACRT_2in

2 INCH MAIN





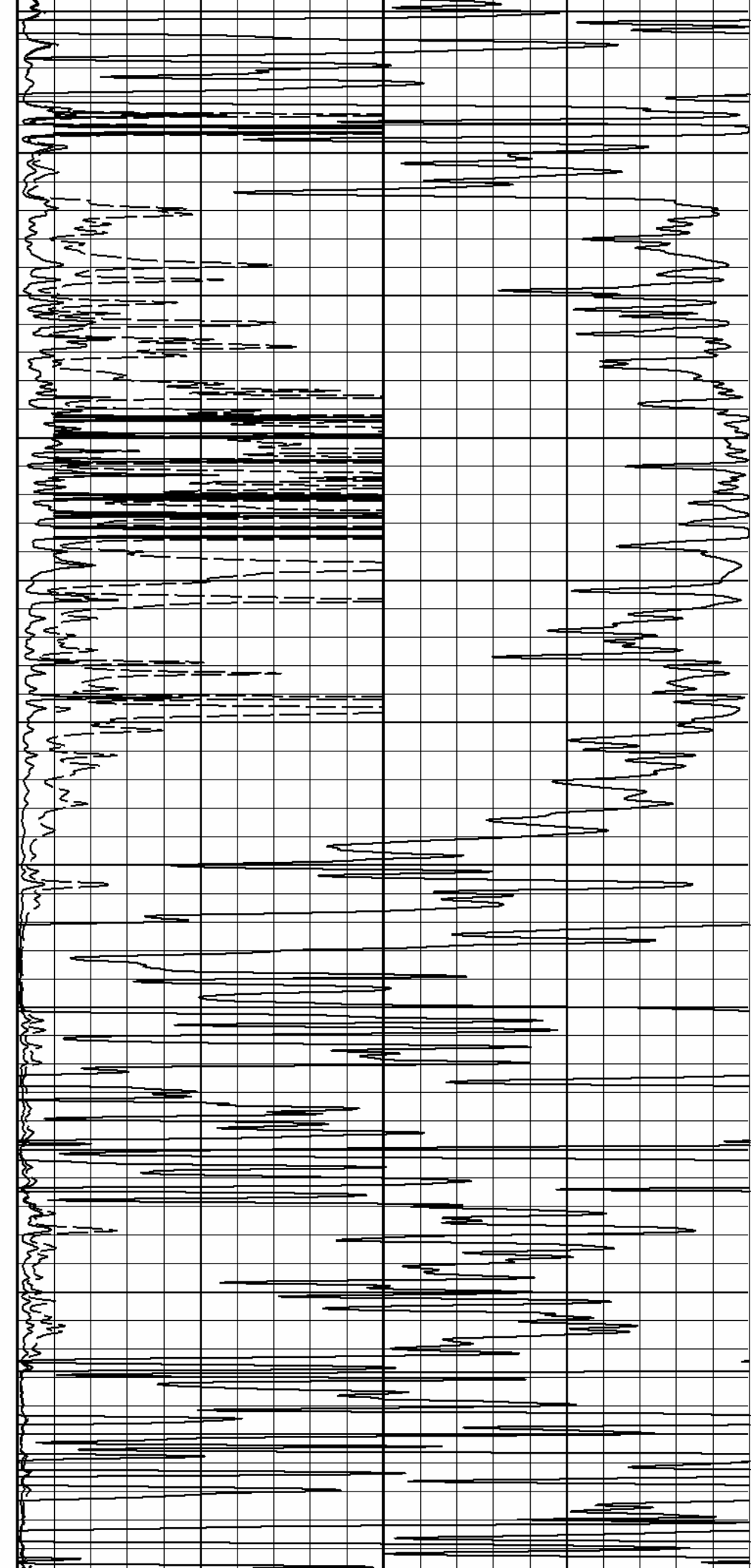
1100

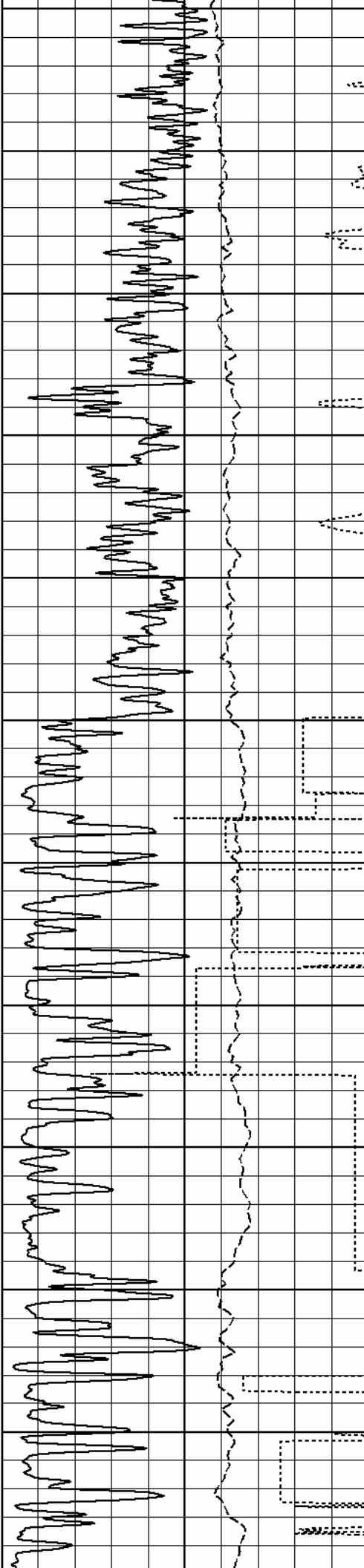
1200

1300

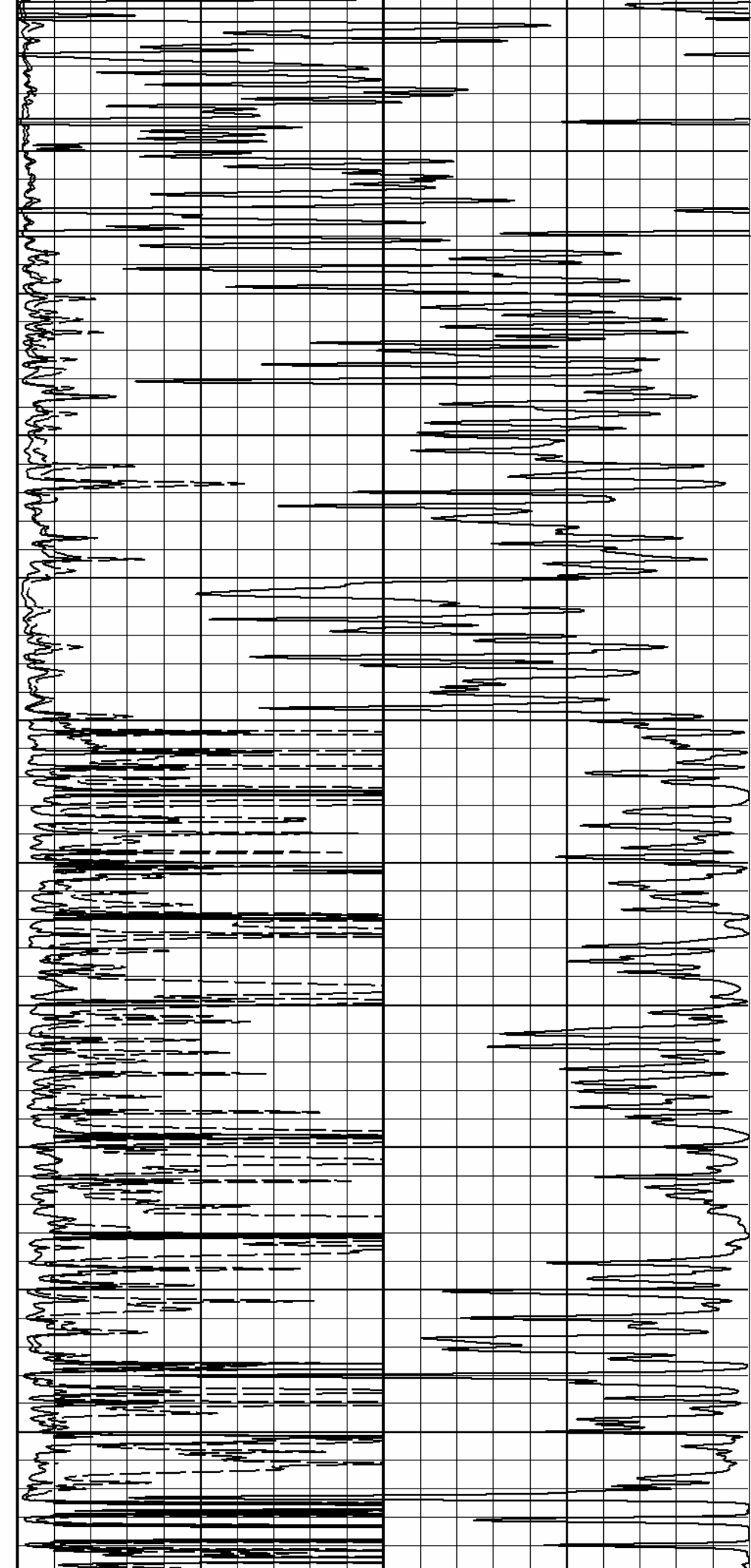
1400

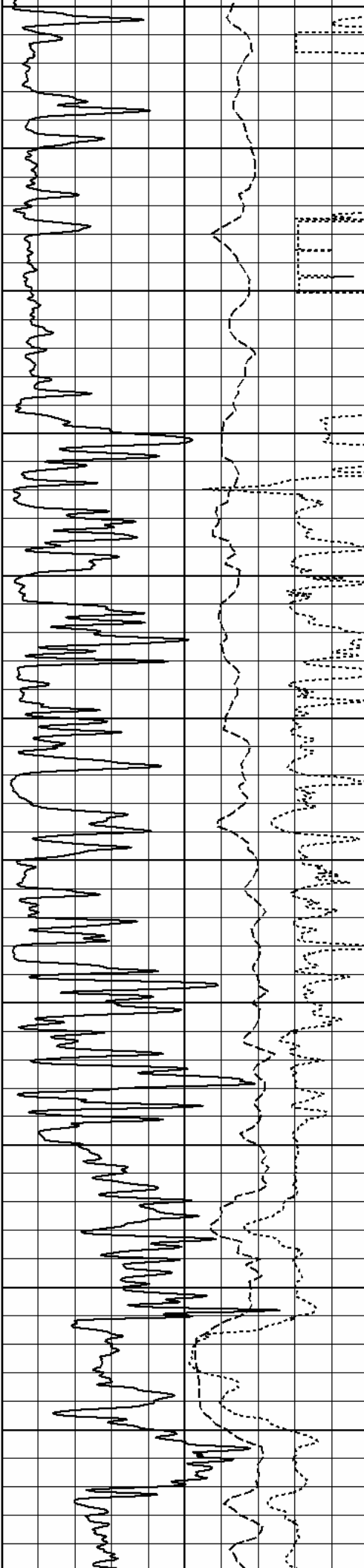
1500





1600
1700
1800
1900
2000
2100





2200

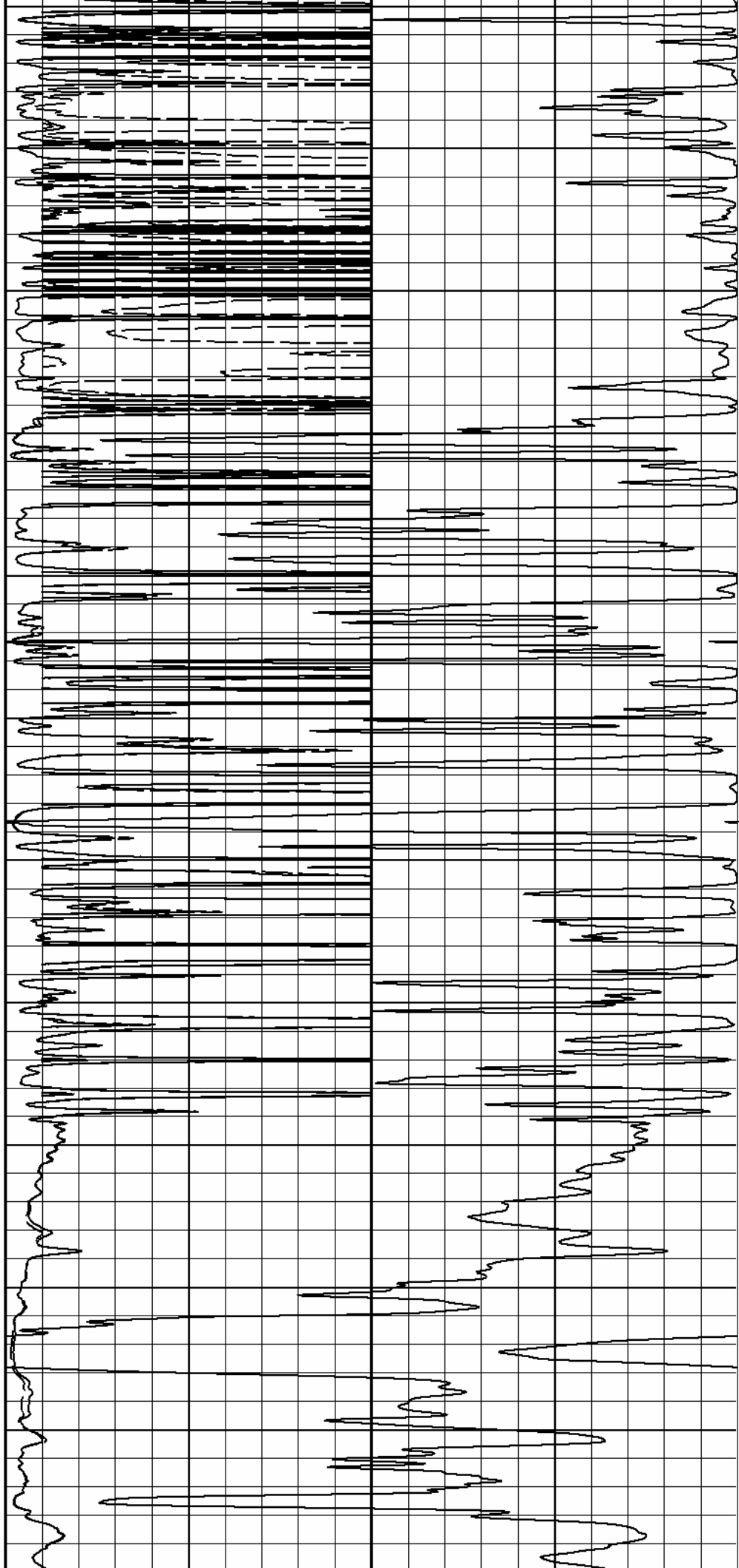
2300

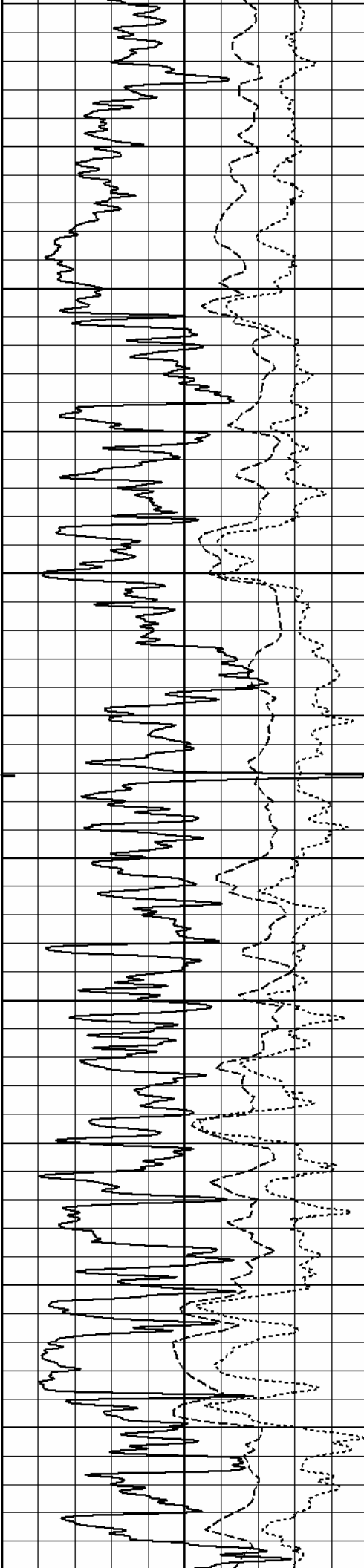
2400

2500

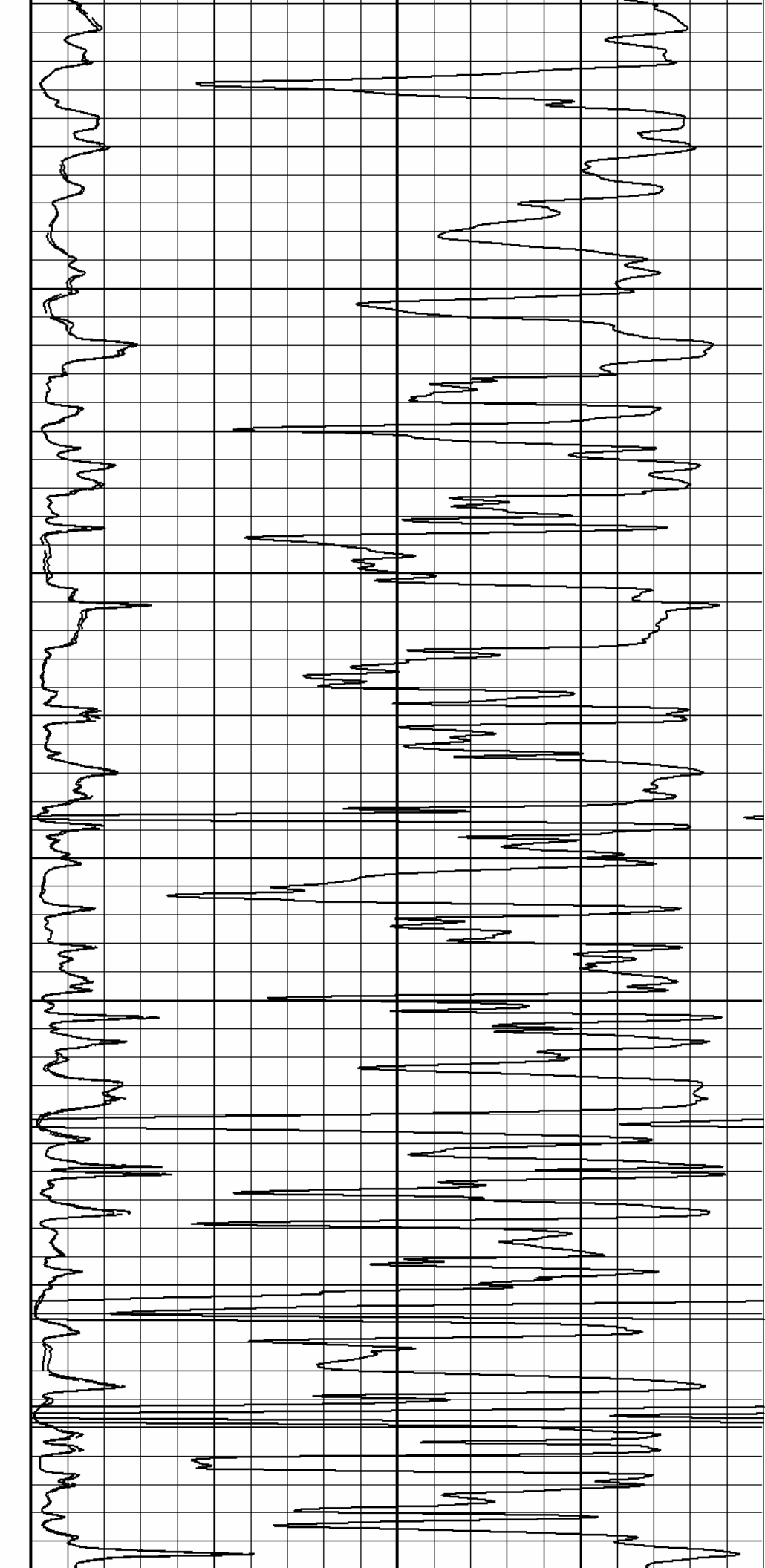
2600

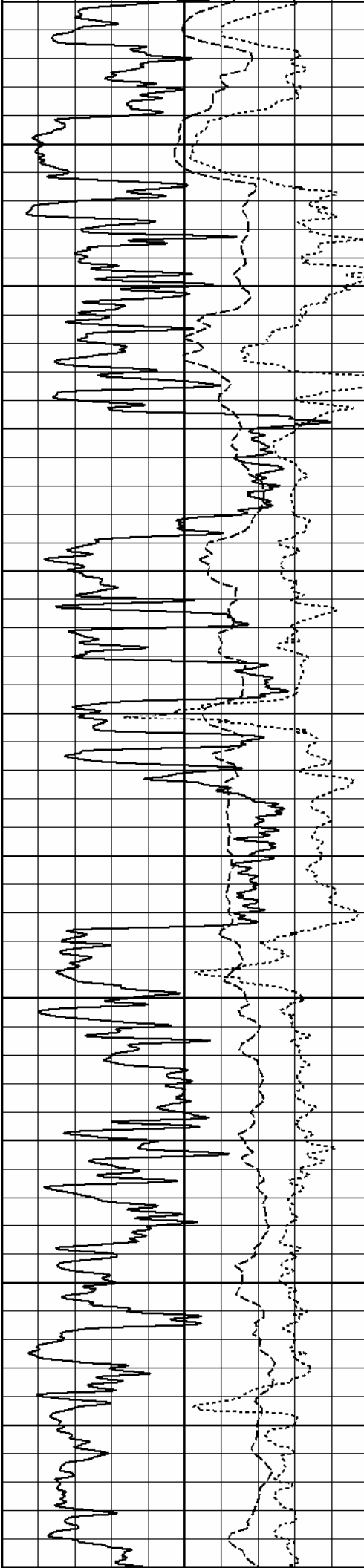
2700





2700
2800
2900
3000
3100
3200





3300

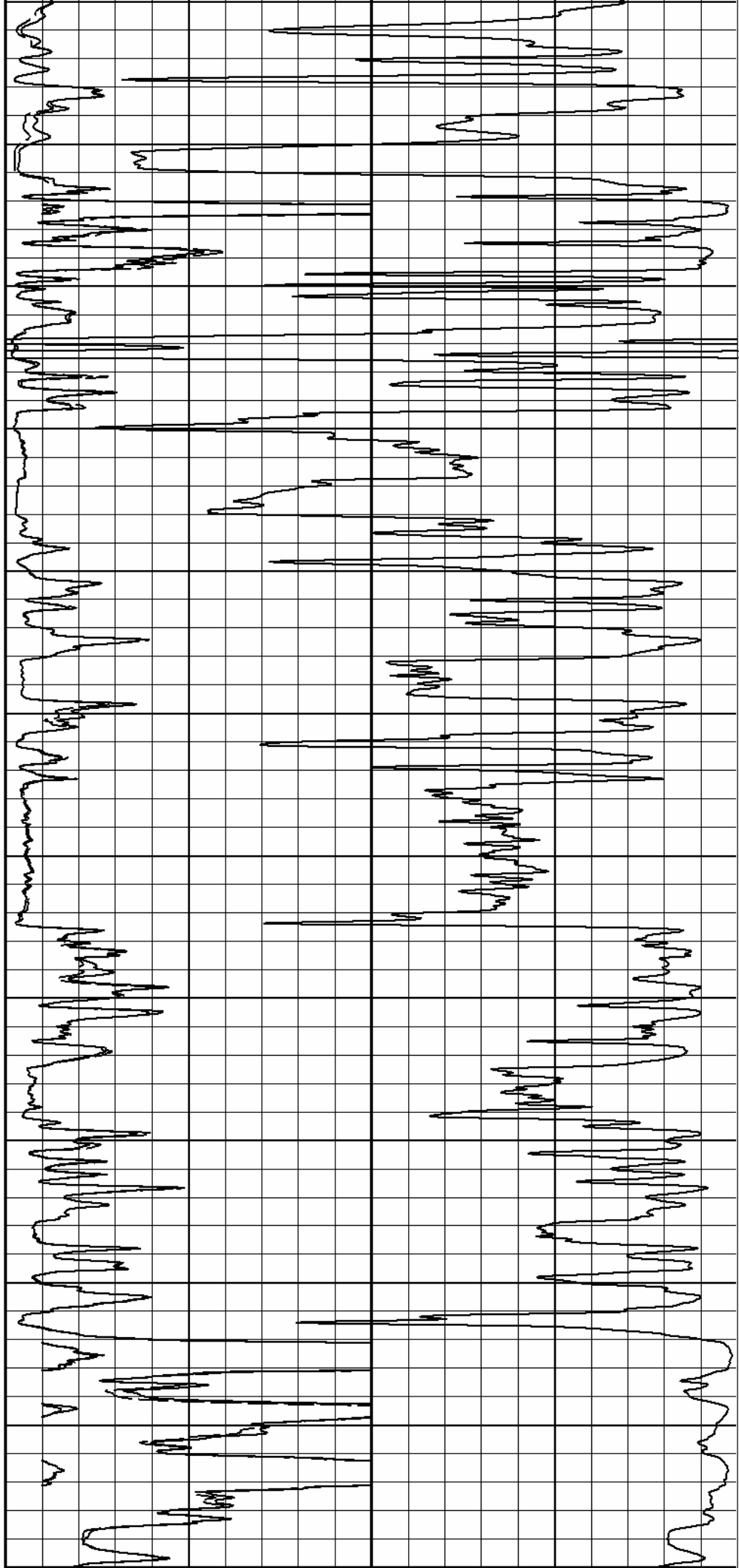
3400

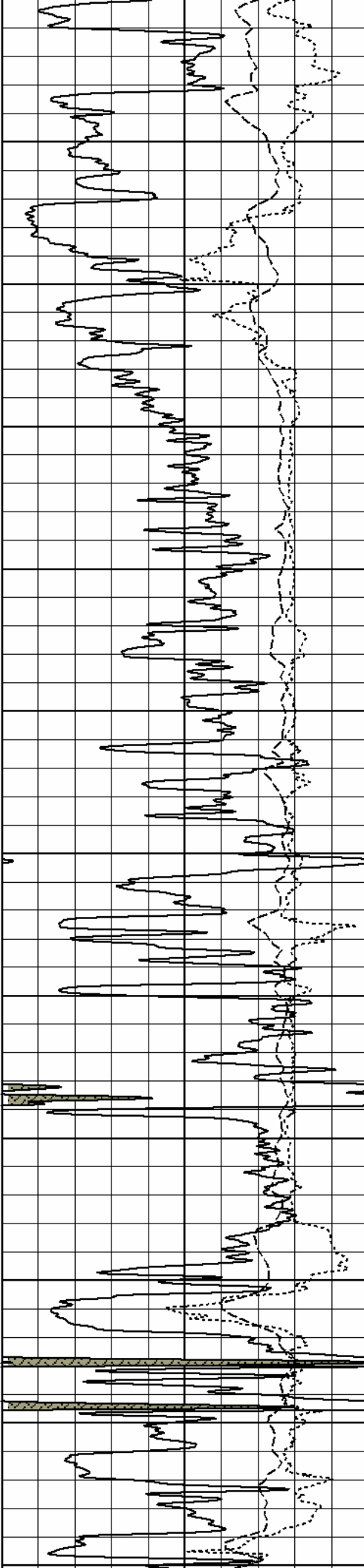
3500

3600

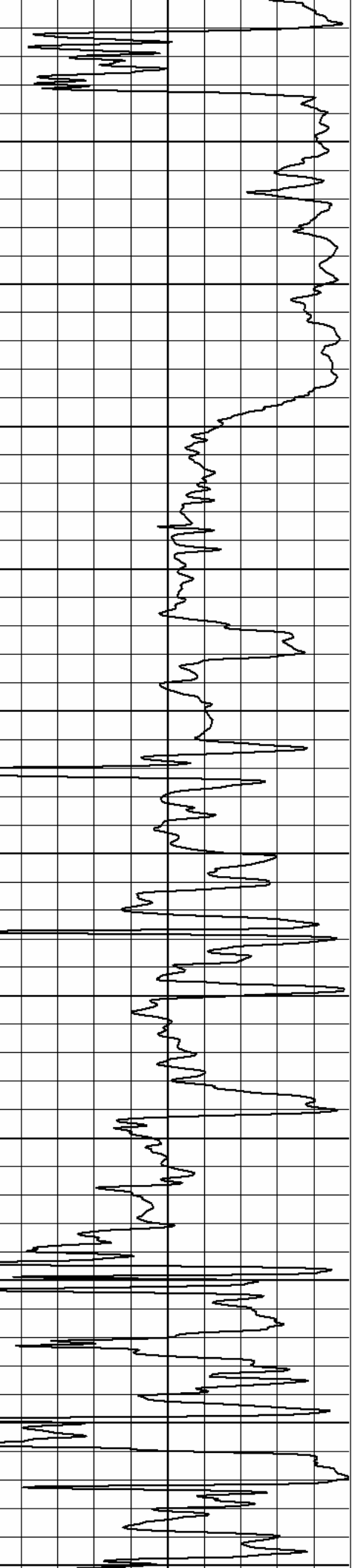
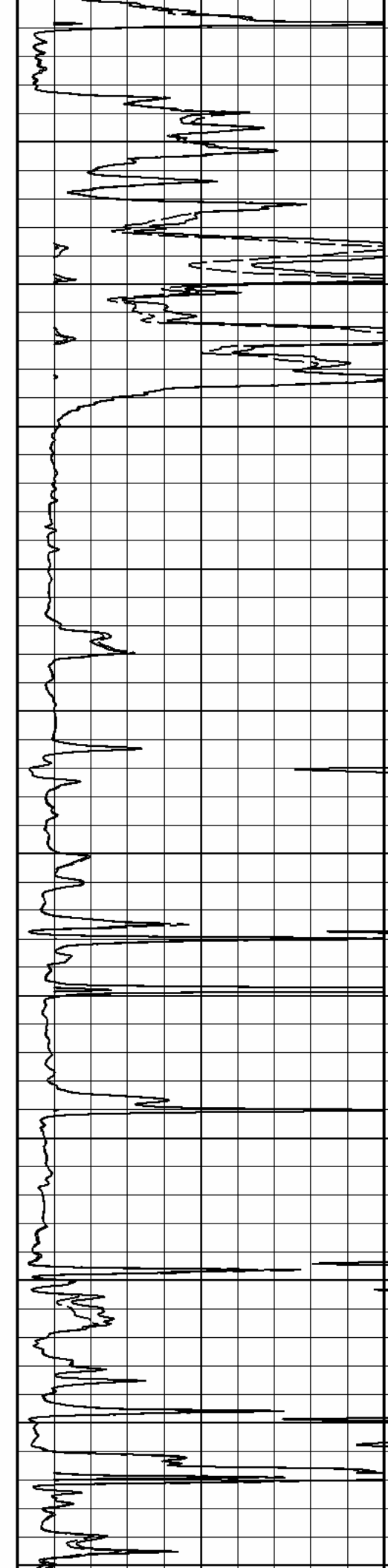
3700

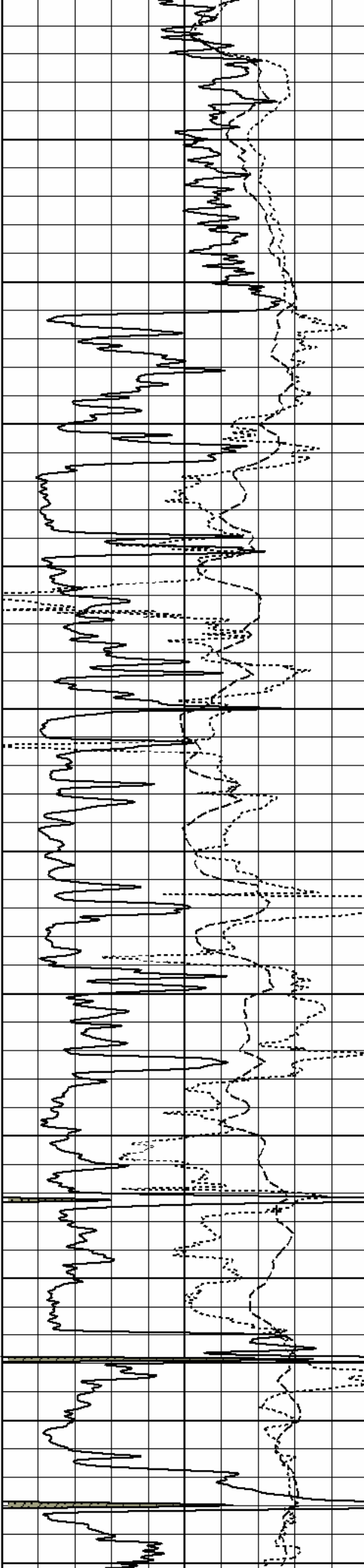
3800



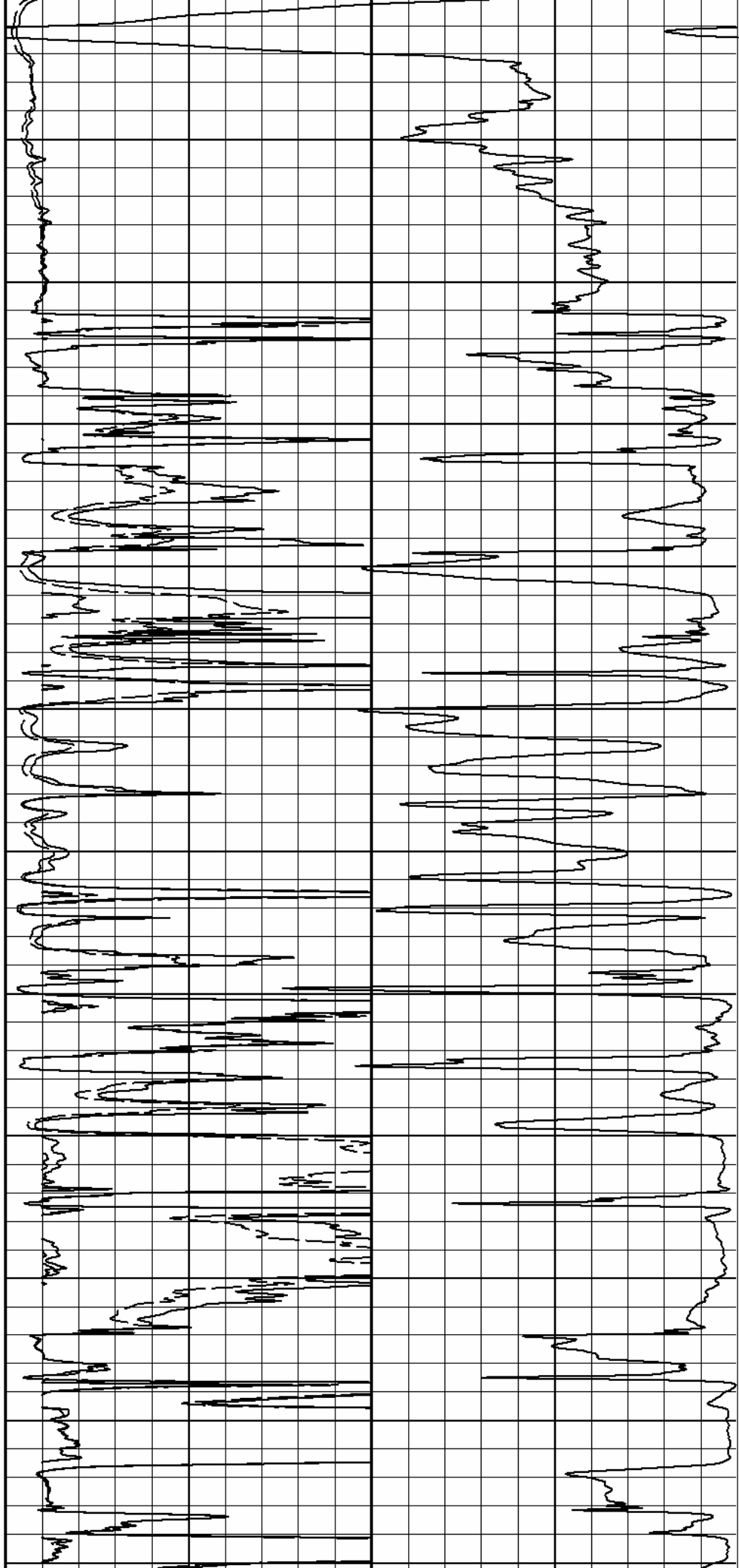


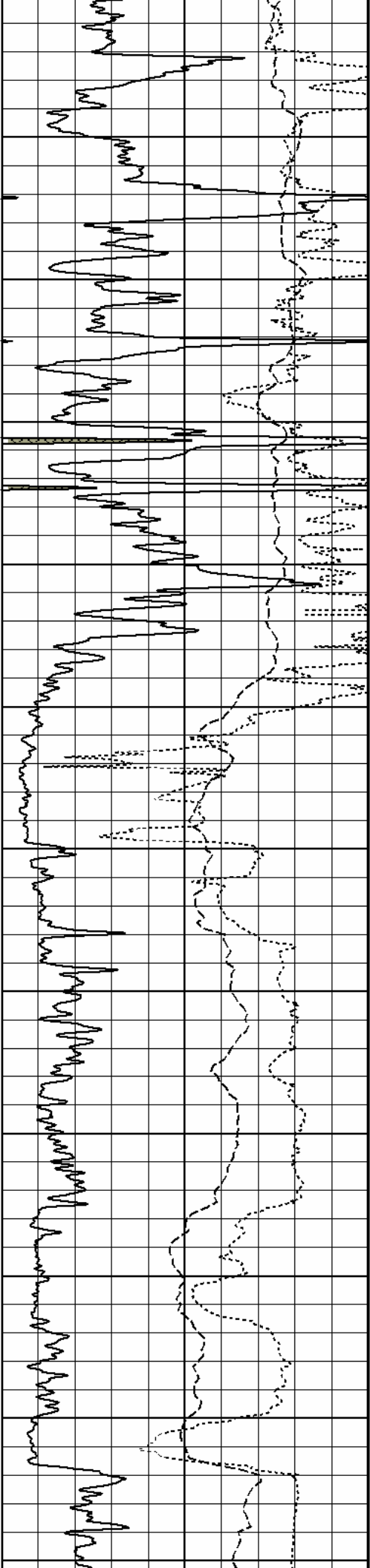
3850
3900
4000
4100
4200
4300





4400
4500
4600
4700
4800
4900





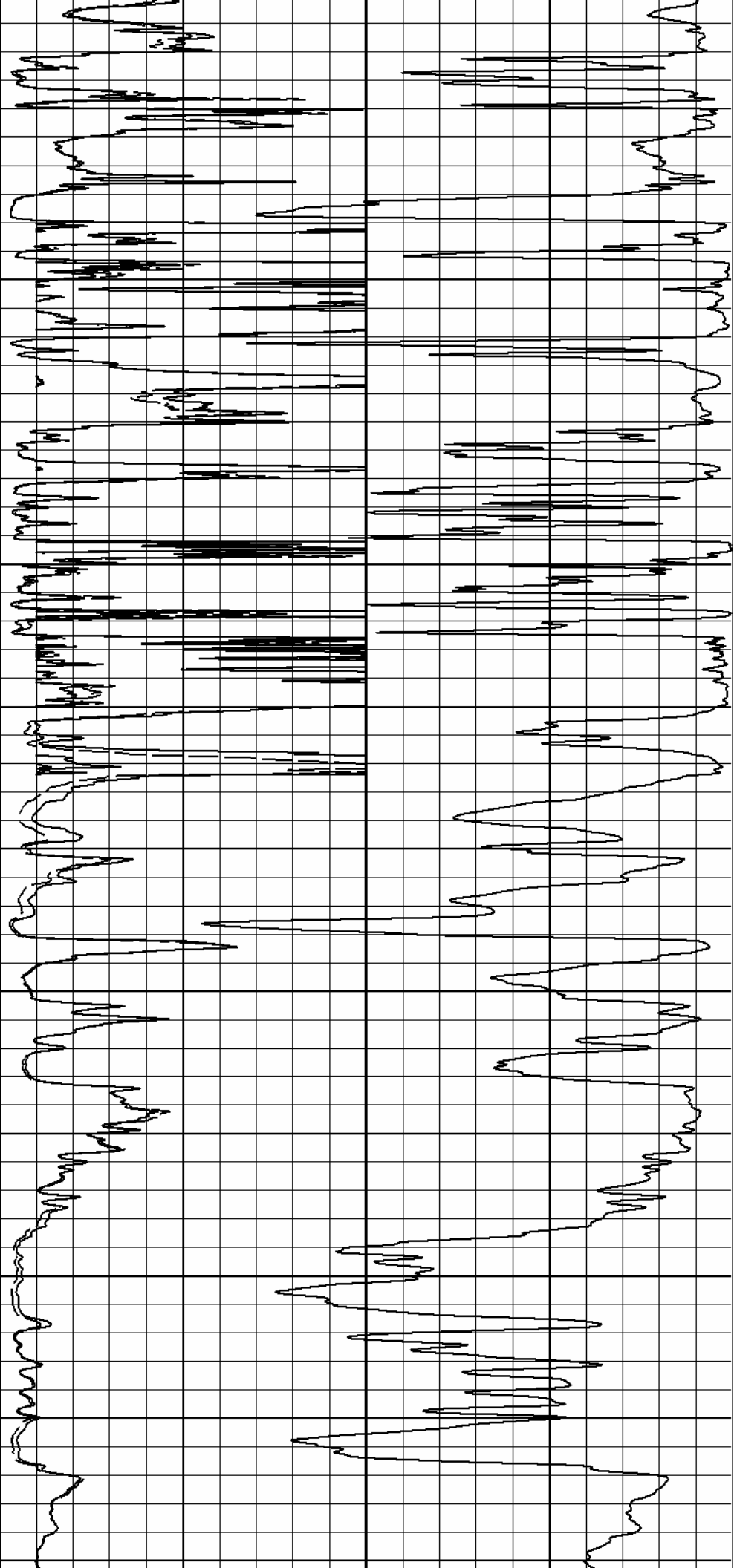
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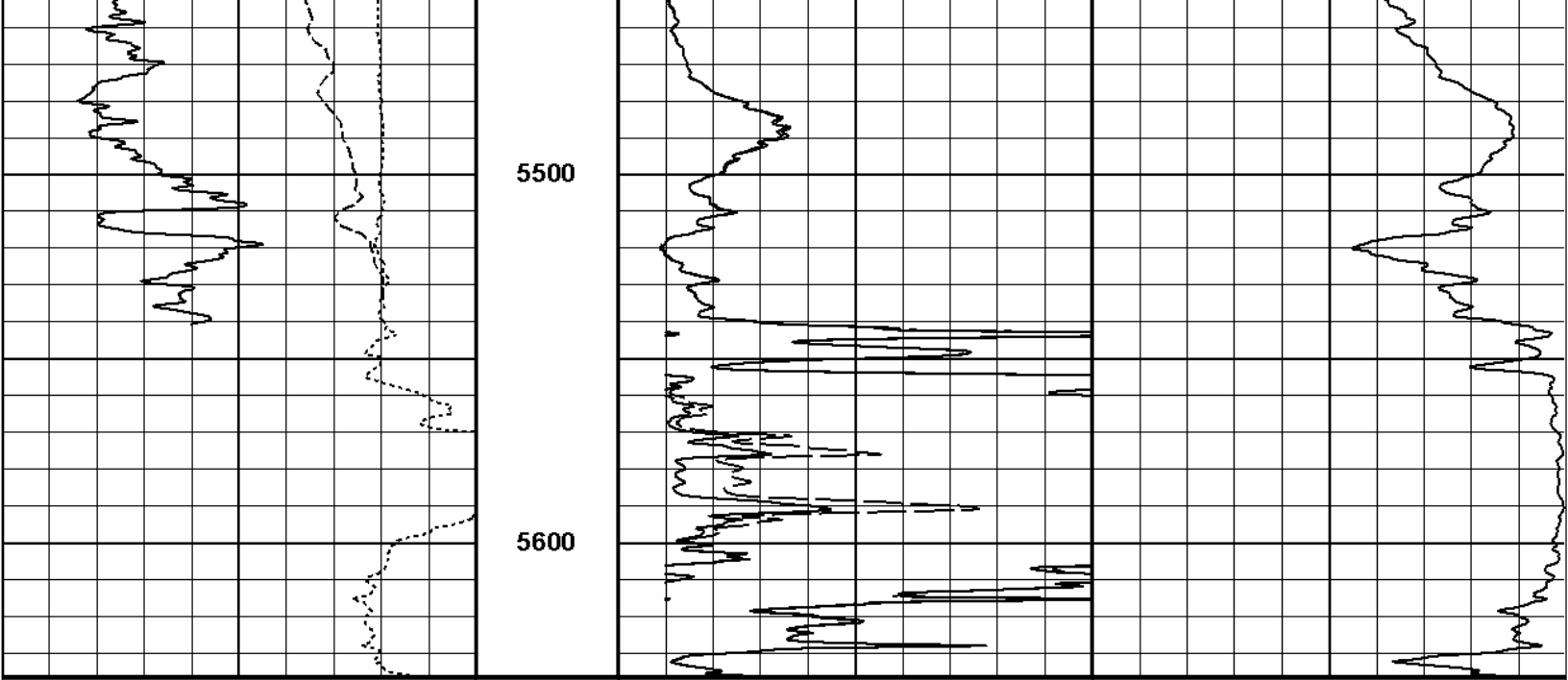
5100

5200

5300

5400





0	Gamma API	150	1 : 600 ft	0	90in Resistivity 2ft Res	50
	api			0	20in Resistivity 2ft Res	50
	SP			ohm-metre		
	-]20[+			ohm-metre		
2	RXO/RT	-0.5		1K	90in Conductivity 2ft Res	0
				mmho per metre		

HALLIBURTON

Plot Time: 27-Aug-11 15:04:14
 Plot Range: 890 ft to 5636.25 ft
 Data: YORK_31_31_17\Well Based\RUN1_MAIN
 Plot File: \\LOCAL-1\ACRT\CHK_ACRT_2in

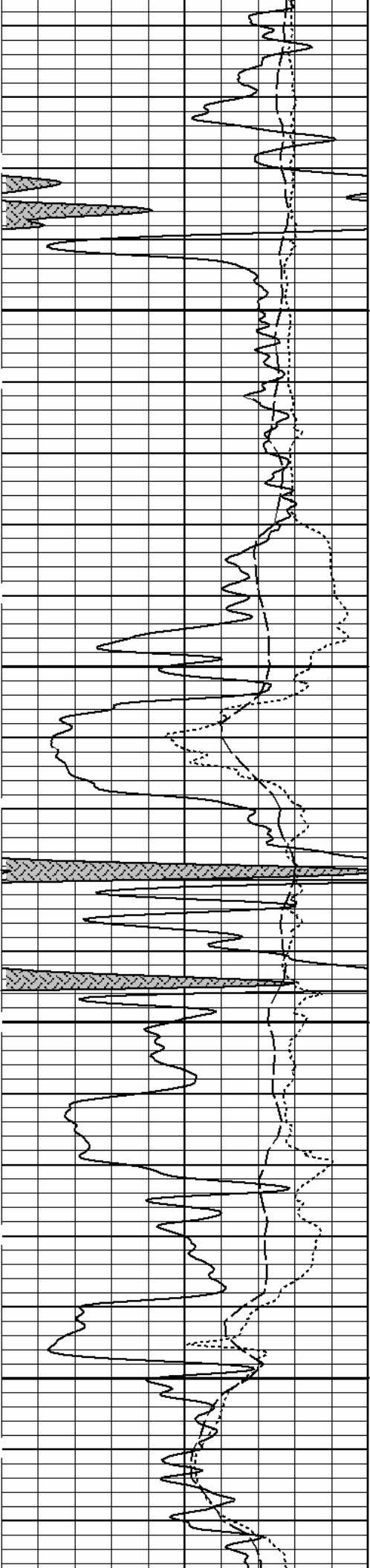
2 INCH MAIN

HALLIBURTON

Plot Time: 27-Aug-11 15:04:14
 Plot Range: 4150 ft to 5651.5 ft
 Data: YORK_31_31_17\Well Based\DETAIL1
 Plot File: \\LOCAL-1\ACRT\CHK_ACRT_5_main

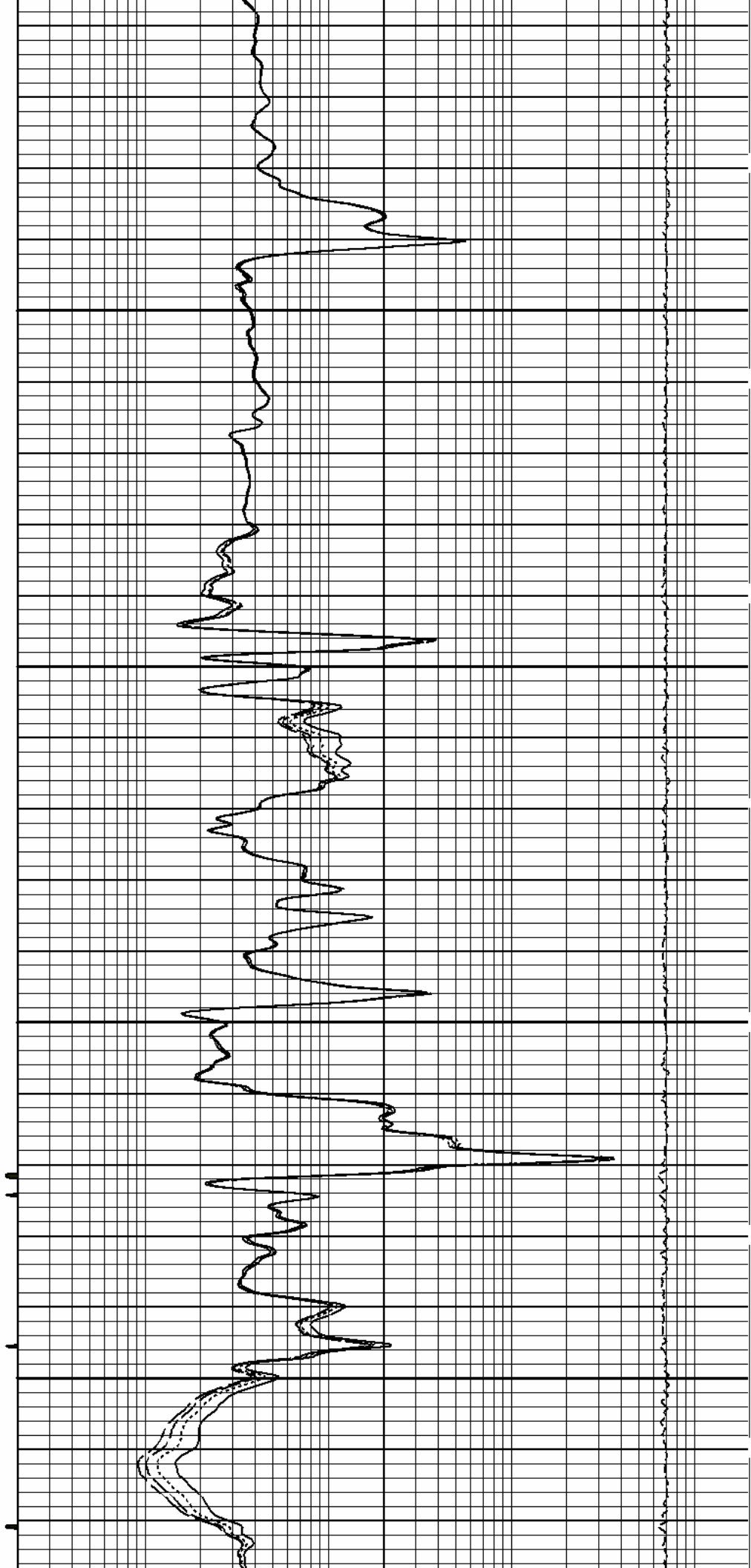
5 INCH MAIN LOG

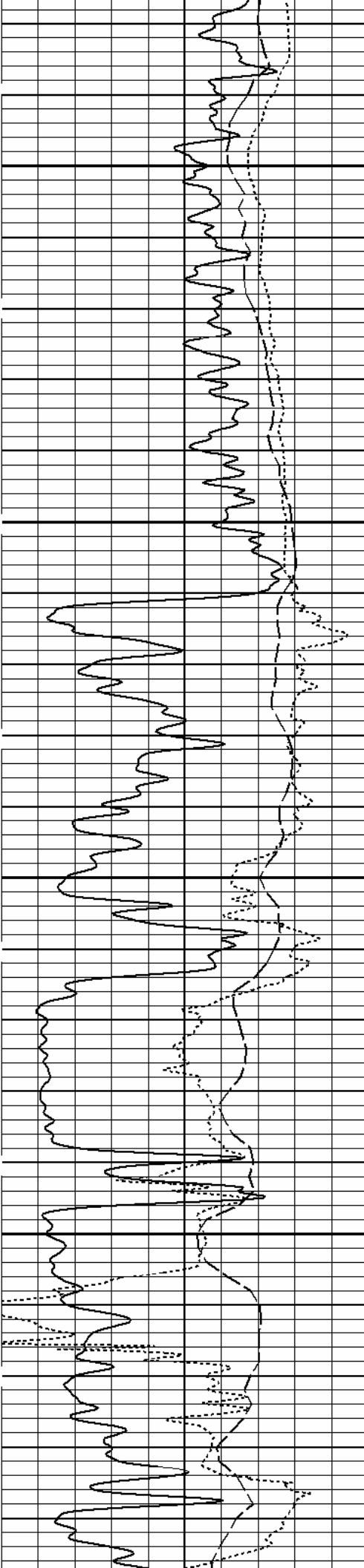
				0.2	90in Resistivity 2ft Res	2000
				ohmm		
				0.2	60in Resistivity 2ft Res	2000
				ohmm		
2	RXO/RT	-0.5		0.2	20in Resistivity 2ft Res	2000
				ohmm		
0	Gamma API	150	Tension Pull 10	0.2	30in Resistivity 2ft Res	2K
	api			ohmm		
	SP		1 : 240 ft	10K	Tension	0
	-]20[+			pounds		



4200

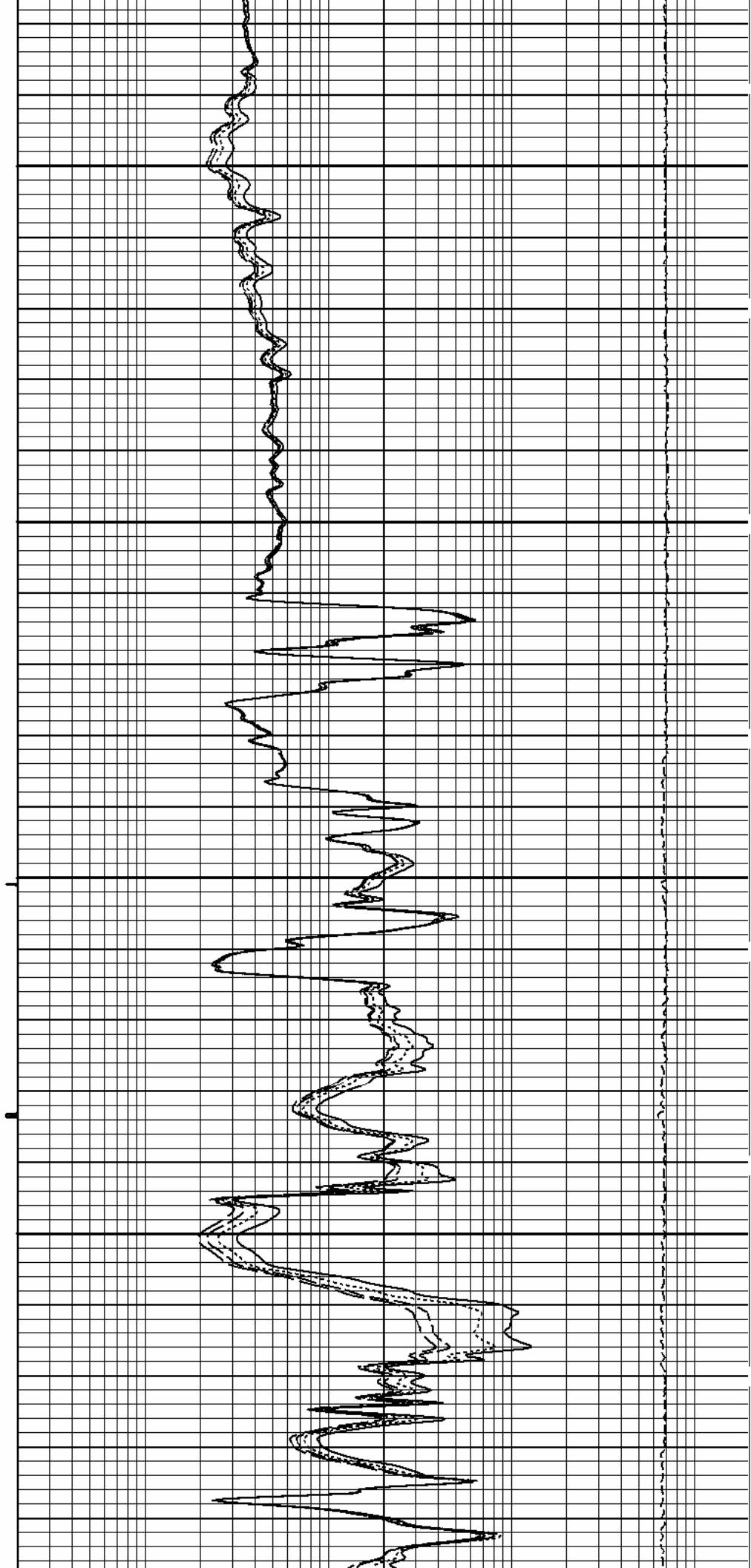
4300

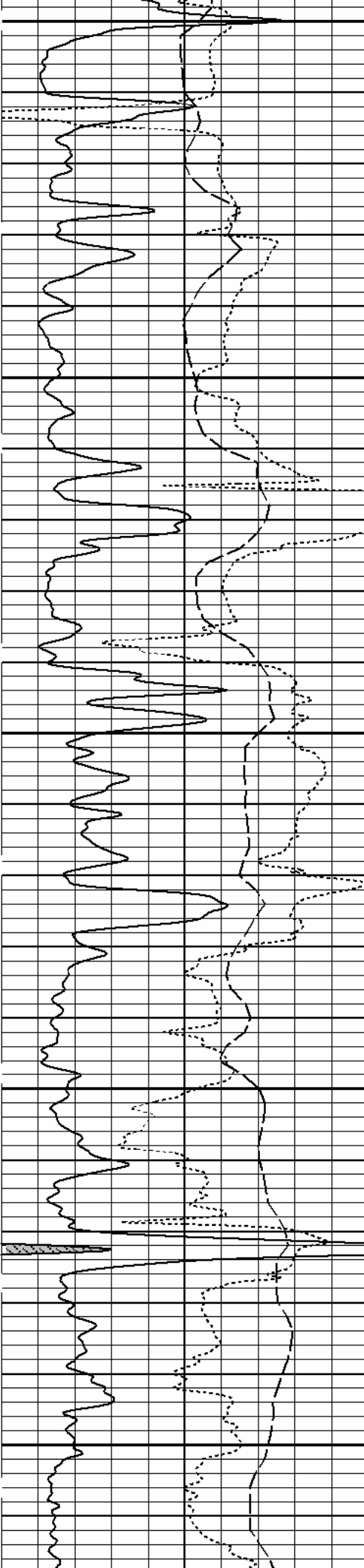




4400

4500

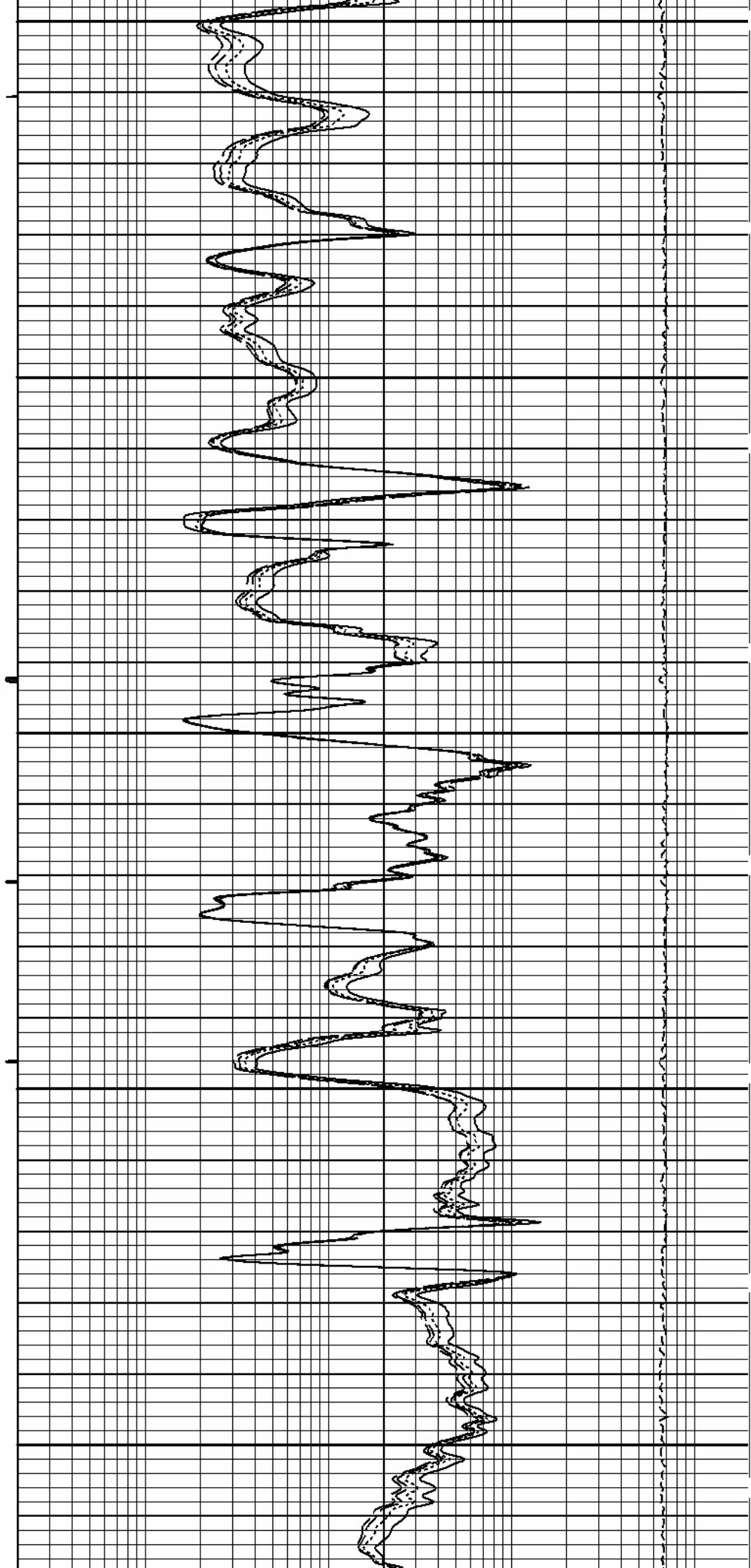


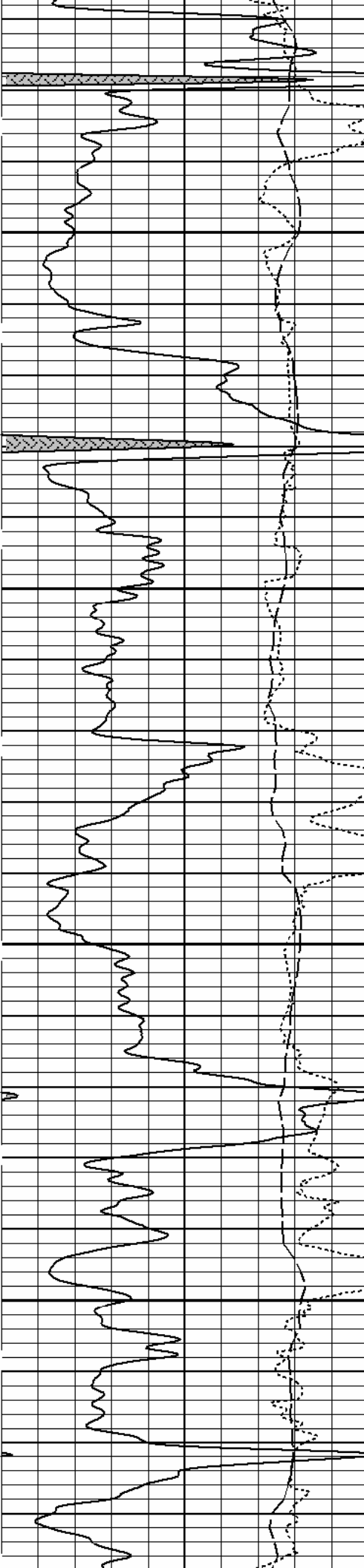


4600

4700

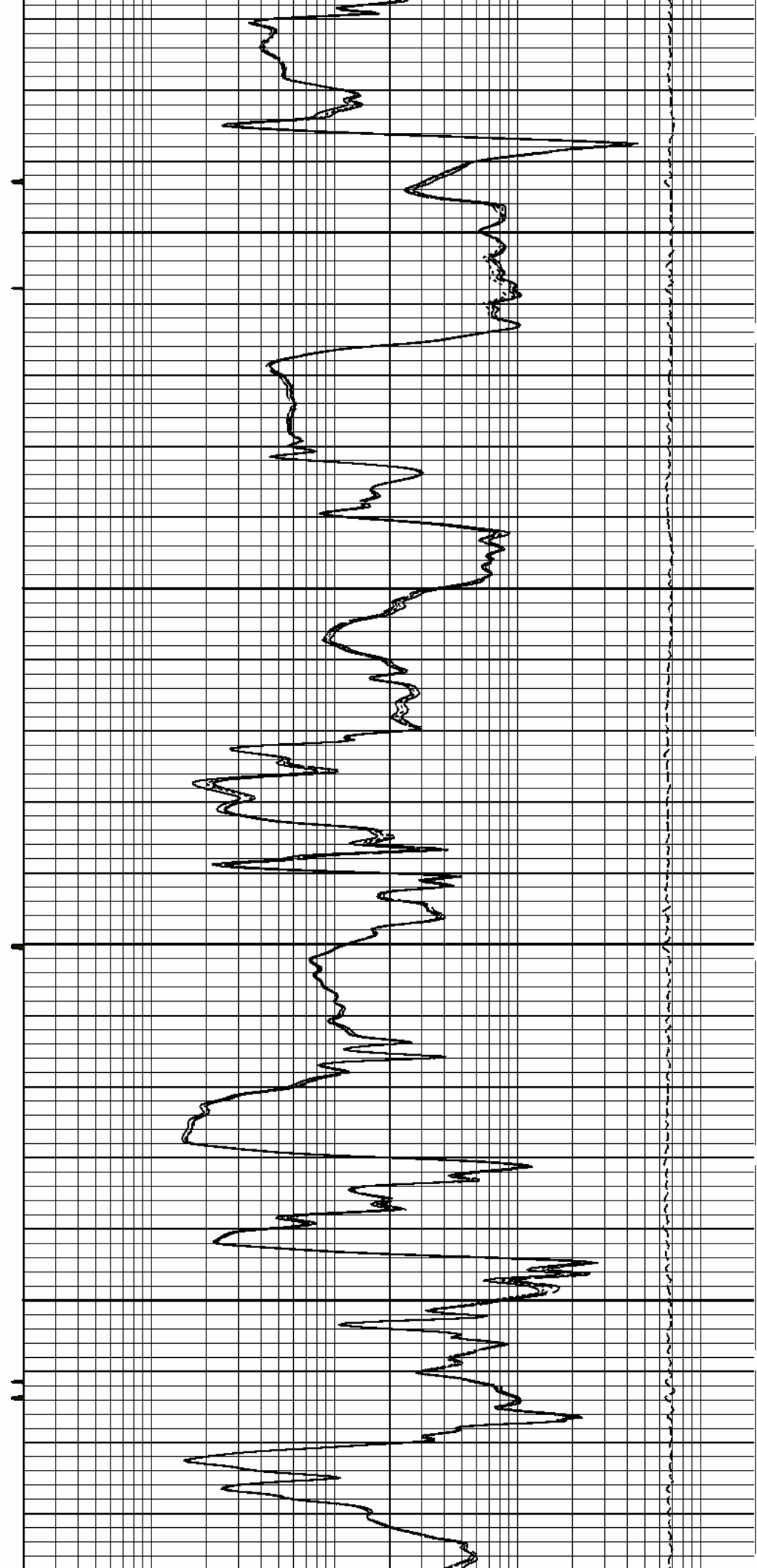
4800





4900

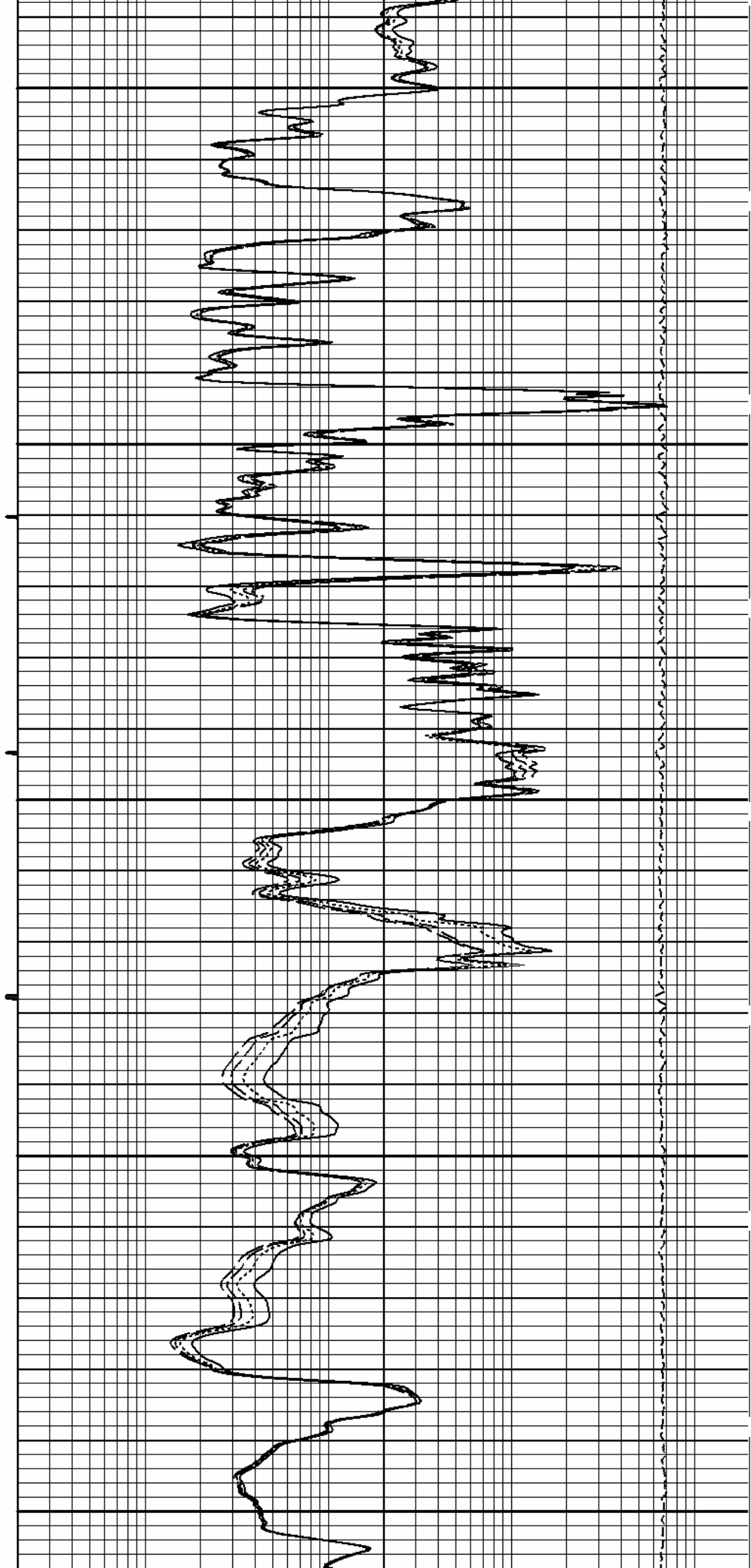
5000





5100

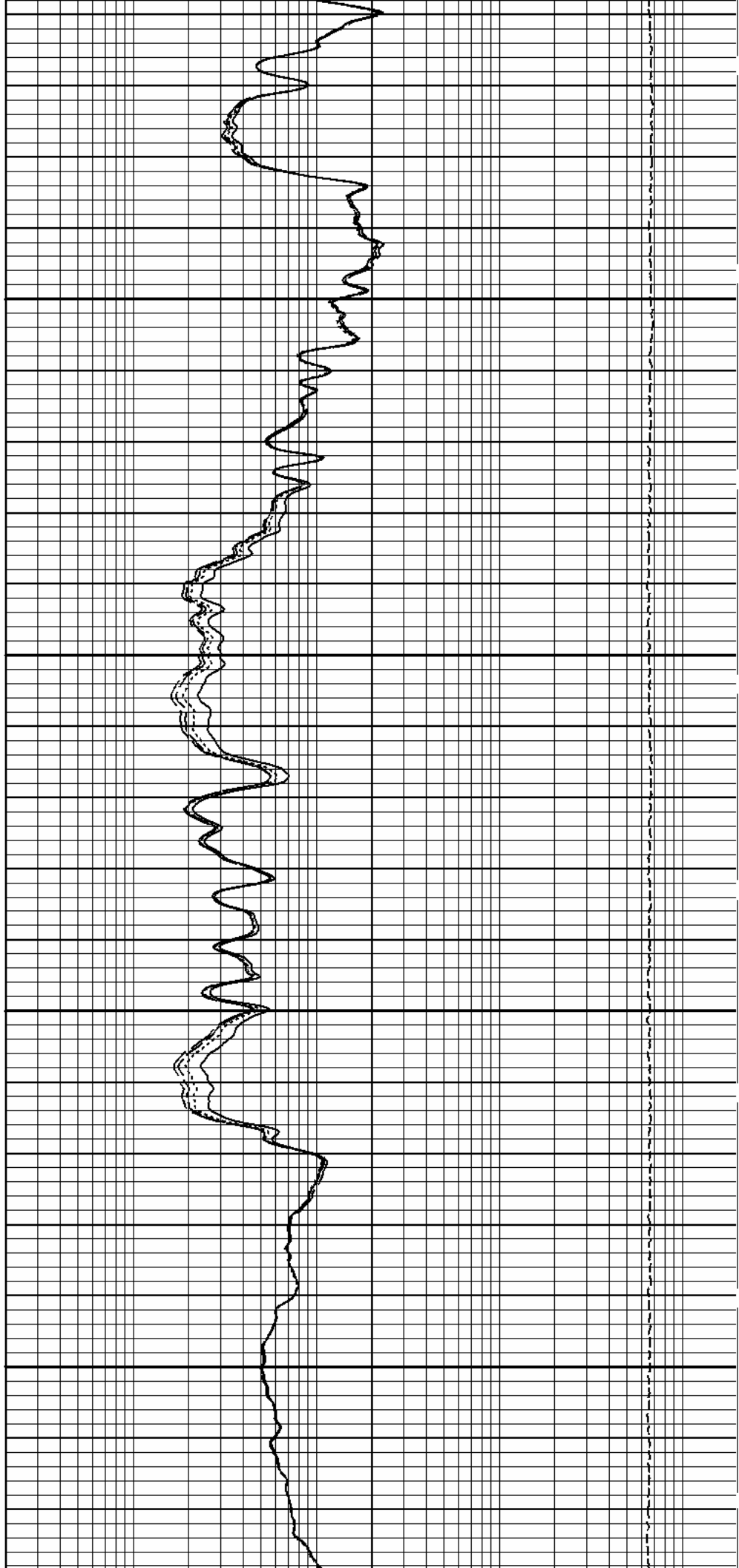
5200

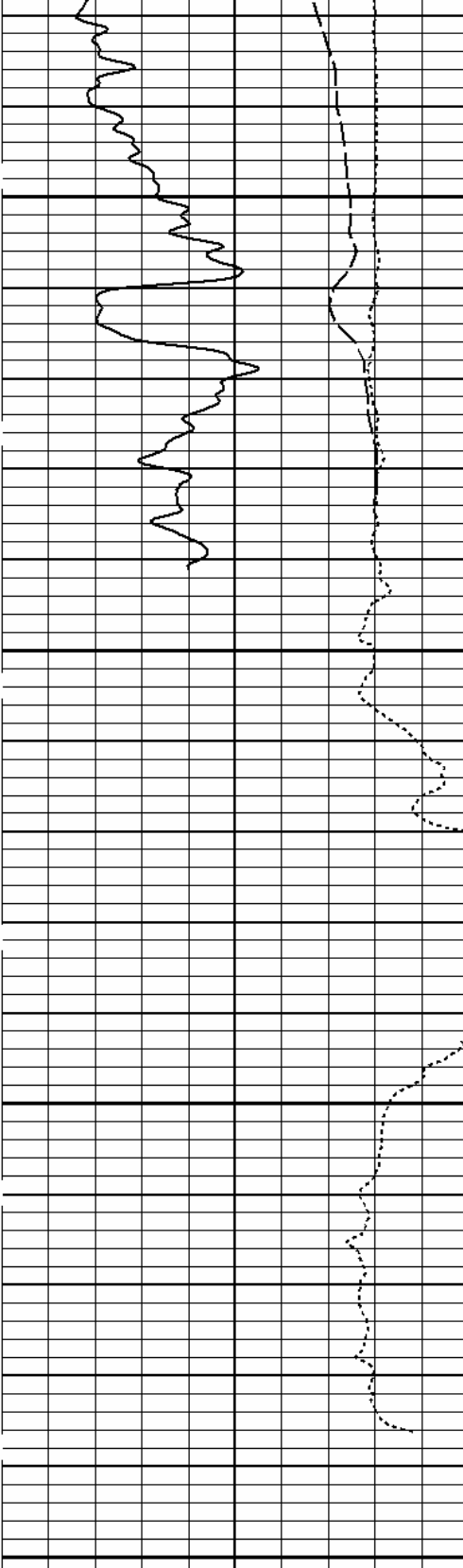




5300

5400

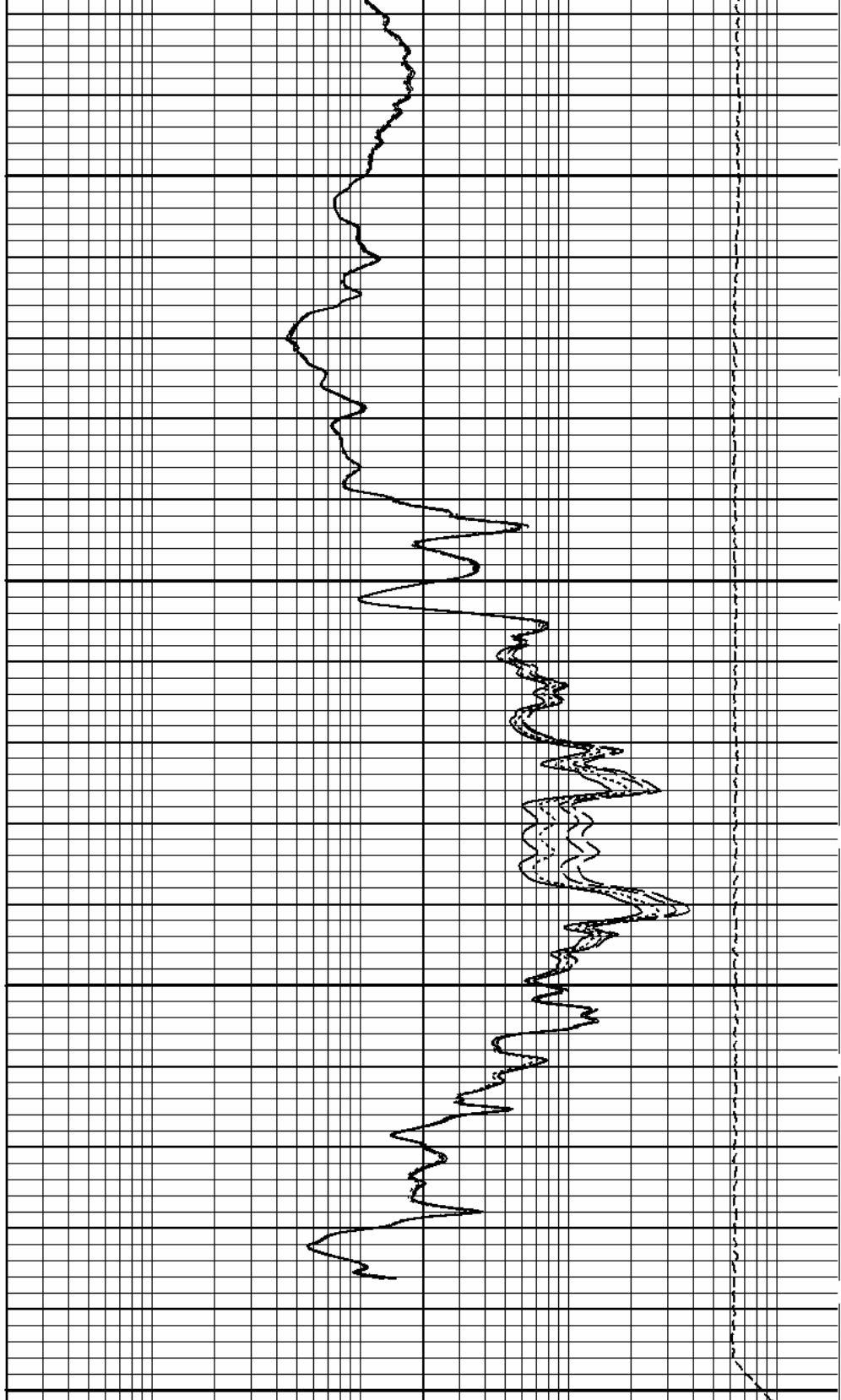




5500

5600

TD



SP -]20[+		1 : 240 ft	10K Tension pounds		0		
0	Gamma API api		150	Tension Pull 10	0	0.2	30in Resistivity 2ft Res ohmm
2	RXO/RT	-0.5			0.2	20in Resistivity 2ft Res ohmm	2000
					0.2	60in Resistivity 2ft Res ohmm	2000
					0.2	90in Resistivity 2ft Res	2000

HALLIBURTON

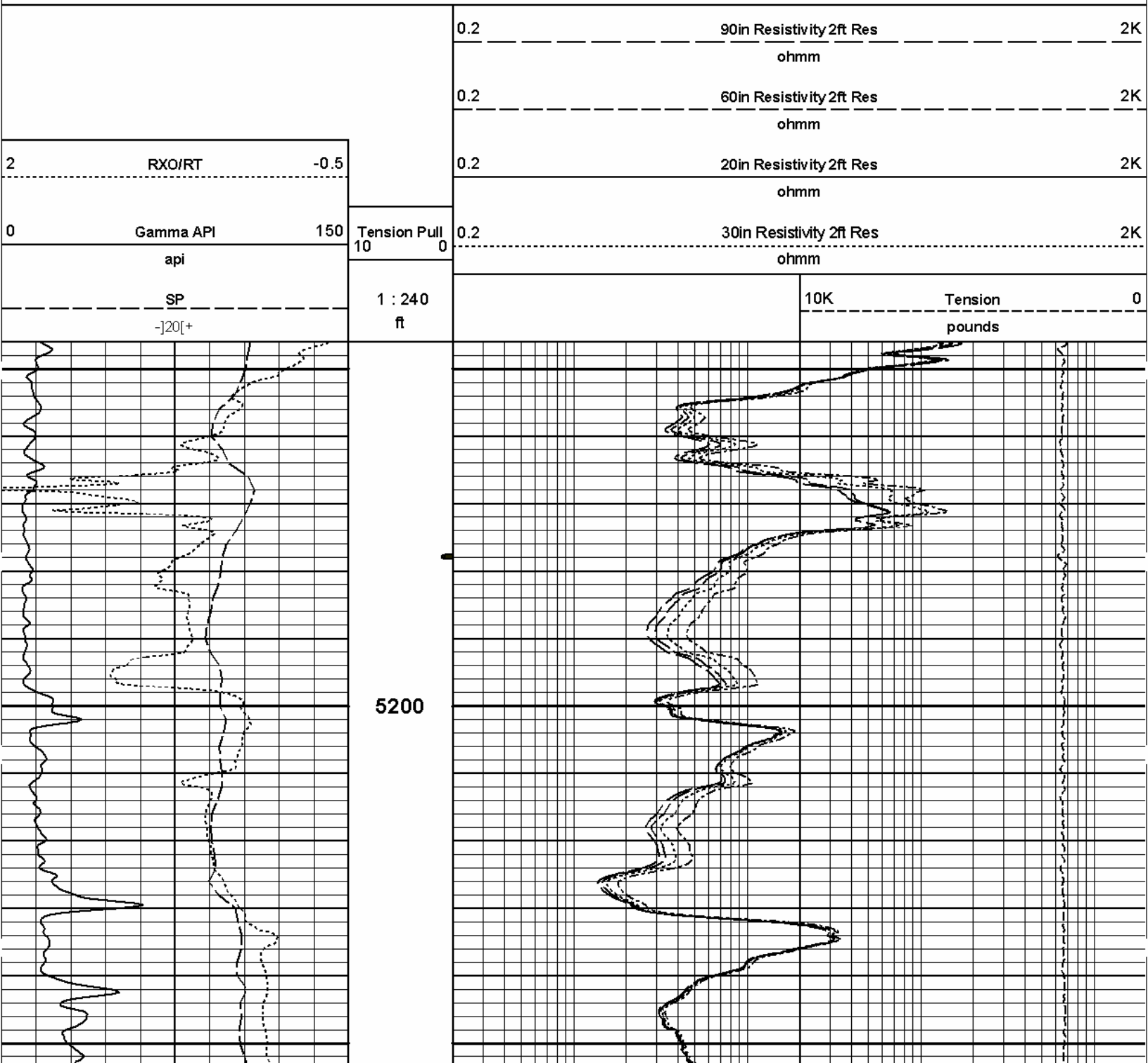
Plot Time: 27-Aug-11 15:04:18
Plot Range: 4150 ft to 5651.5 ft
Data: YORK_31_31_17\Well Based\DETAIL1
Plot File: \\LOCAL-1\ACRT\CHK_ACRT_5_main

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 27-Aug-11 15:04:18
Plot Range: 5146 ft to 5648.58 ft
Data: YORK_31_31_17\Well Based\RUN1_REPEAT1
Plot File: \\LOCAL-1\ACRT\CHK_ACRT_5_rpt

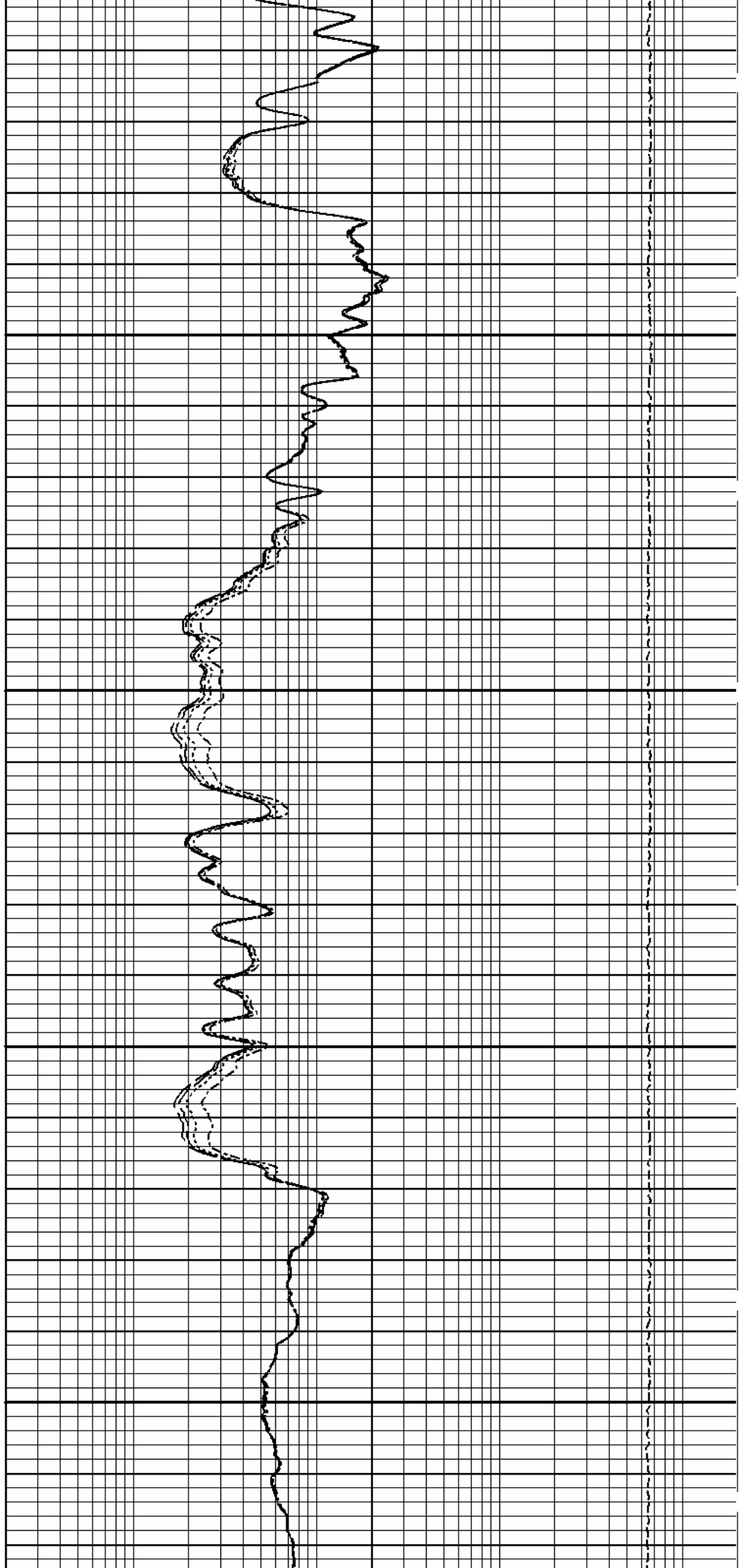
REPEAT SECTION

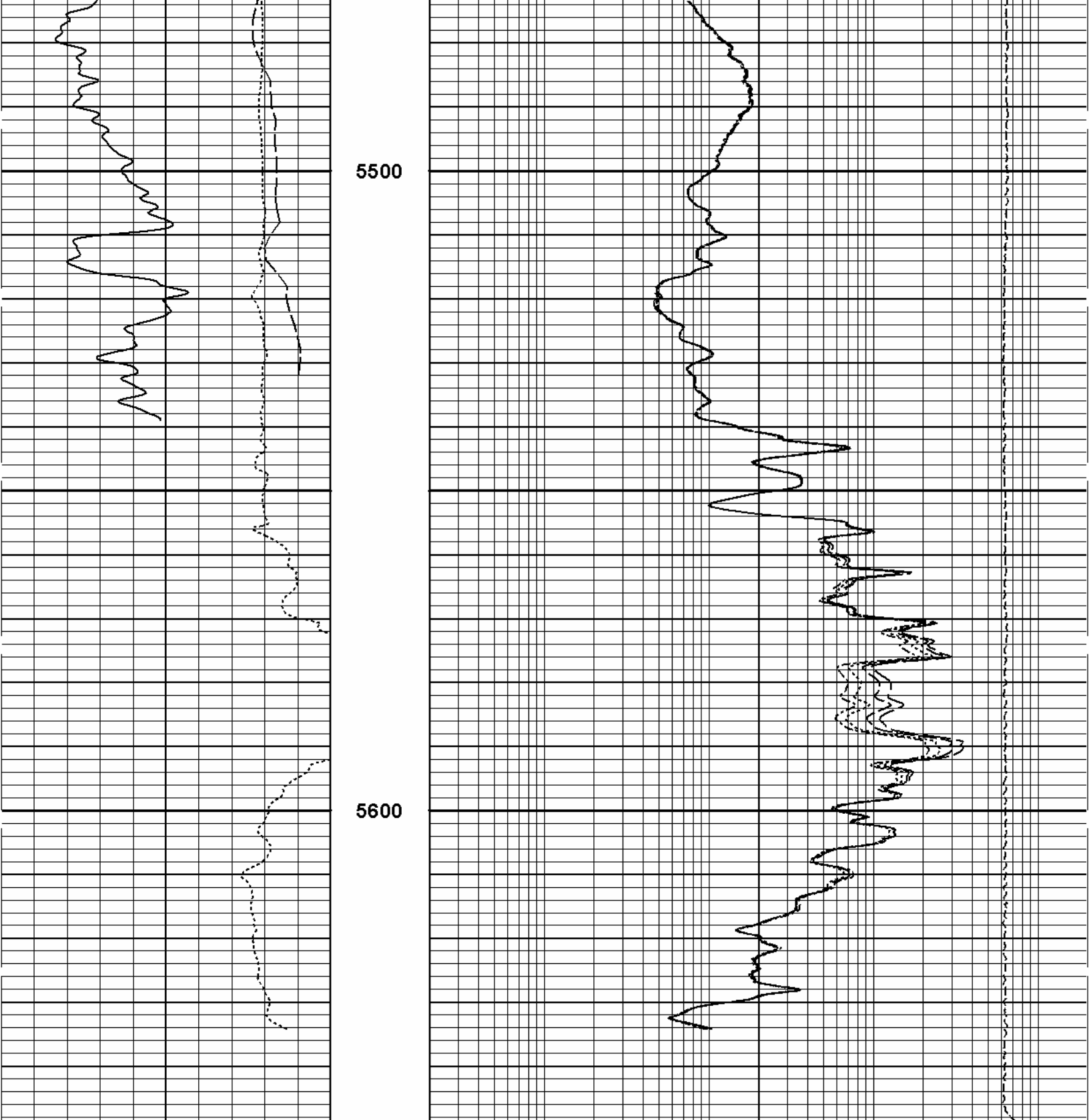




5300

5400





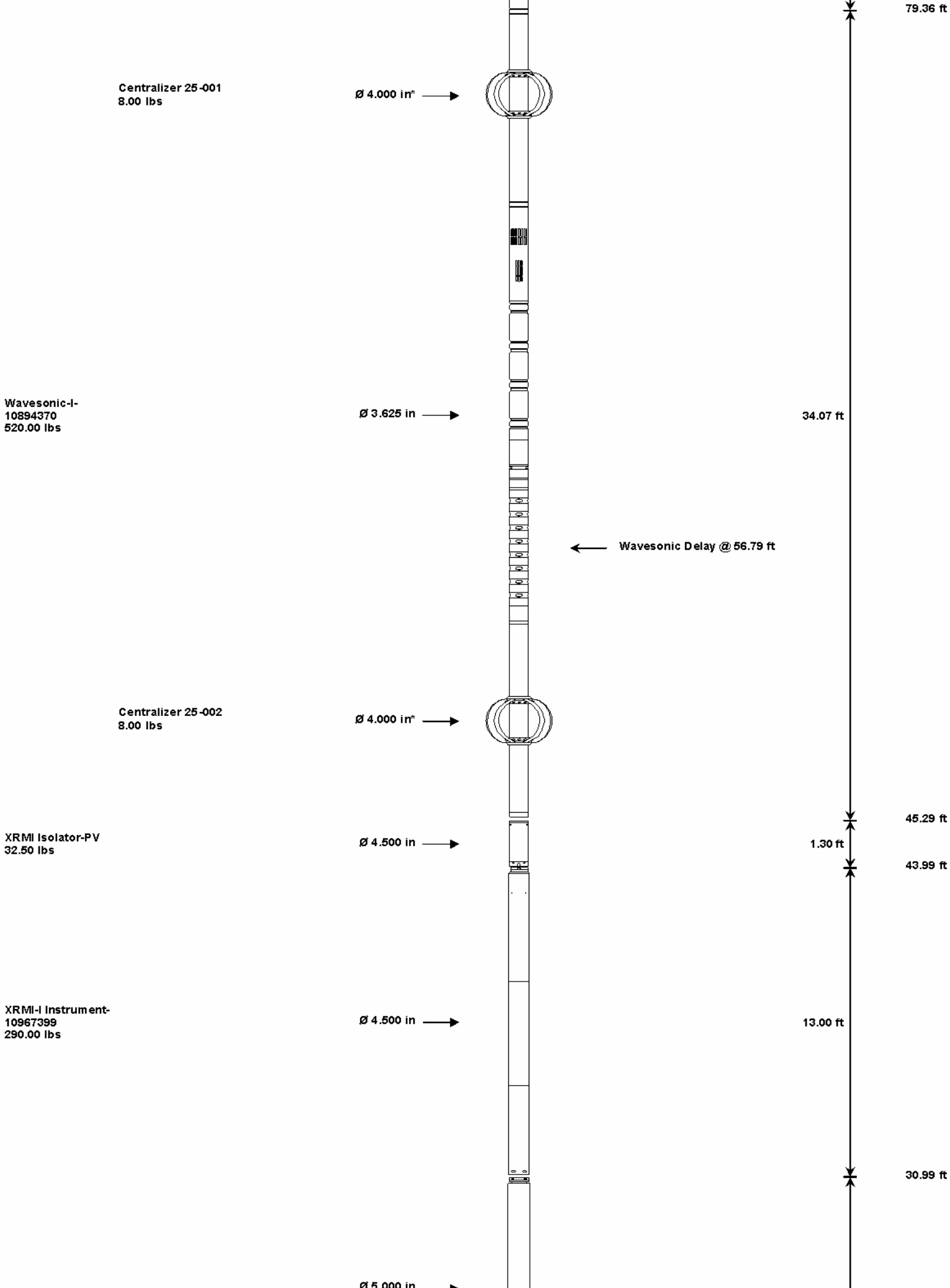
SP		1 : 240 ft	10K		Tension	0
-]20[+					pounds	
0	Gamma API	150	Tension Pull	0.2	30in Resistivity 2ft Res	2K
	api		10		ohmm	
2	RXO/RT	-0.5		0.2	20in Resistivity 2ft Res	2K
					ohmm	
				0.2	60in Resistivity 2ft Res	2K
					ohmm	
				0.2	90in Resistivity 2ft Res	2K

HALLIBURTON

Plot Time: 27-Aug-11 15:04:20
 Plot Range: 5146 ft to 5648.58 ft
 Data: YORK_31_31_17\Well Based\RUN_REPEAT\
 Plot File: \\LOCAL\ACRT\CHK_ACRT_5_rpt

REPEAT SECTION**HALLIBURTON****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	119.71 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 116.01 ft	3.74 ft	117.79 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 107.99 ft	8.52 ft	114.05 ft
DSN Decentralizer- 11005605 6.60 lbs		Ø 3.625 in →				105.53 ft
DSNT-10755066 174.00 lbs		Ø 3.625 in →		← DSN Far @ 98.60 ft ← DSN Near @ 97.85 ft	9.69 ft	95.85 ft
SDLT- 1066_MB5803_P45 360.00 lbs		Ø 4.500 in → Ø 4.750 in →		← SDL Microlog @ 88.03 ft ← SDL Caliper @ 87.85 ft ← SDL @ 87.84 ft	10.81 ft	85.03 ft
Flex Joint- 10989947 140.00 lbs		Ø 3.625 in →			5.67 ft	



Centralizer 25-001
8.00 lbs

Ø 4.000 in →

79.36 ft

Wavesonic-I-
10894370
520.00 lbs

Ø 3.625 in →

34.07 ft

← Wavesonic Delay @ 56.79 ft

Centralizer 25-002
8.00 lbs

Ø 4.000 in →

45.29 ft

XRMi Isolator-PV
32.50 lbs

Ø 4.500 in →

1.30 ft

43.99 ft

XRMi-I Instrument-
10967399
290.00 lbs

Ø 4.500 in →

13.00 ft

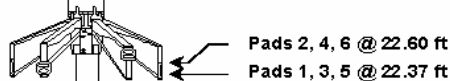
30.99 ft

Ø 5.000 in →

XRMI-I Mandrel-
10967400
206.00 lbs

Ø 4.500 in →

11.16 ft



Pads 2, 4, 6 @ 22.60 ft
Pads 1, 3, 5 @ 22.37 ft

19.83 ft

ACRt-I776_S775
250.00 lbs

Ø 3.625 in →

← Mud Resistivity @ 13.44 ft

← ACRt @ 9.46 ft

19.25 ft

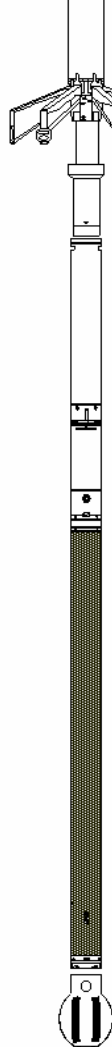
Cabbage Head-
TRK954
10.00 lbs

Ø 3.625 in →
Ø 6.000 in →

0.58 ft

0.58 ft

0.00 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	117.79	300.00
SP	SP Sub	TRK954	60.00	3.74	114.05	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	105.53	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	95.85	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13 *	99.18	300.00
SDLT	Spectral Density Tool	I066_M85803_P45	360.00	10.81	85.03	60.00
FLEX	Flex Joint	10989947	140.00	5.67	79.36	300.00
WSTT	WaveSonic Insite	10894370	520.00	34.07	45.29	30.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08 *	48.45	300.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08 *	74.73	300.00
	Isolator for the XRMI tool	PV	32.50	1.30	43.99	300.00
XRMI	XRMI Navigation - Insite	10967399	290.00	13.00	30.99	30.00
XRMI-I	XRMI Imager - Insite	10967400	206.00	11.16	19.83	30.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25	0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00

Total **2,260.10** **119.71**

* Not included in Total Length and Length Accumulation.

Data: YORK_31_31_1710001 QUAD_WSTT_XRMIIDLE

Date: 26-Aug-11 18:40:09

HALLIBURTON

CALIBRATION REPORT

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: **ACRt - I776_S775**

Reference Calibration Date: **11-Jul-11 14:07:44**

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0088	1.05	0.95	1.0137	1.05	0.95	1.0131	1.05
A2 (50")	0.95	1.0172	1.05	0.95	1.0229	1.05	0.95	1.0236	1.05
A3 (29")	0.95	1.0136	1.05	0.95	1.0185	1.05	0.95	1.0173	1.05
A4 (17")	0.95	1.0077	1.05	0.95	1.0111	1.05	0.95	1.0133	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0089	1.05	0.95	1.0111	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9911	1.05	0.95	0.9932	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-1.649	2	-6	-4.155	-2	-8	-4.271	-2
A2 (50")	-7	-2.761	-1	-6	-4.059	-2	-7	-4.189	-2
A3 (29")	-27	-14.359	-9	-9	-4.302	-3	-7	-2.570	-1
A4 (17")	-180	-102.168	-60	-45	-31.270	-15	-39	-24.333	-13
A5 (10")	N/A	N/A	N/A	-150	-117.420	-50	-80	-54.016	-10
A6 (6")	N/A	N/A	N/A	175	275.242	525	90	136.222	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8720	1.3
36K	1.0	1.1911	2.0
72K	1.0	1.4649	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.991	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
ACRt-I776_S775						
Mud Cell	0.991	-----	-----	0.000	-----	ohm-m

Data: YORK_31_31_17\0001 QUAD_WSTT_XRMIINDLE

Date: 26-Aug-11 18:49:53

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	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	7500.00	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	CCD	Logging Interval in Cased?	No	

SHARED	CSD	Logging Intervals Cased?	No	
SHARED	ICOD	AHV Casing OD	7.000	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5650.00	ft
SHARED	BHT	Bottom Hole Temperature	140.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	XRMI-I Instrument	
SHARED	AZTM	High Res Z Accelerometer Master Tool	XRMI-I Instrument	
SHARED	TEMM	Temperature Master Tool	NONE	
SHARED	BHSM	Borehole Size Master Tool	NONE	
Rwa / CrossPlot	XPOK	Process Crossplot?	No	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / 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	Centered	
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	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	MSWN	Monopole Sliding Window Length	-1.00	us
Wavesonic-I	DSWN	Dipole Sliding Window Length	-1.00	us
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	SMTH	Semblance Smoothing	-2.00	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	User define	
Wavesonic-I	DTMA	Delta -T Matrix	47.60	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	STOL	Slow Tolerance	40.00	
Wavesonic-I	SMTL	Semblance Tolerance	0.25	
Wavesonic-I	SMTL	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	SHAO	Show Advanced Options?	Yes	
Wavesonic-I	WRNM	Wavesonic Receiver Normalization Method	None	
Wavesonic-I	DTRM	Transmitter to First Receiver Distance - Monopole	10.24	ft
Wavesonic-I	DTRX	Transmitter to First Receiver Distance - Dipole X	0.24	ft

Wavesonic-I	DTRX	Transmitter to First Receiver Distance Dipole X	9.24	ft
Wavesonic-I	DTRY	Transmitter to First Receiver Distance Dipole Y	9.24	ft
Wavesonic-I	DIRM	Receiver Spacing	0.50	ft
Wavesonic-I	NRAM	Number of Receivers in Array	8	
Wavesonic-I	DWCM	Digitizer Word Count Monopole	400	
Wavesonic-I	DSIM	Digital Sample Interval - Monopole	20.3174	us
Wavesonic-I	WDDM	Waveform Recording Delay Monopole	-304.761	us
Wavesonic-I	DWCX	Digitizer Word Count Dipole X	400	
Wavesonic-I	DSIX	Digital Sample Interval Dipole X	40.635	us
Wavesonic-I	WDDX	Waveform Digitization Delay Dipole X	-304.761	us
Wavesonic-I	DWCY	Digitizer Word Count Dipole Y	400	
Wavesonic-I	DSIY	Digital Sample Interval Dipole Y	40.635	us
Wavesonic-I	WDDY	Waveform Digitization Delay Dipole Y	-304.761	us
Wavesonic-I	NAVS	Navigation Source Tool		XRMI-I Instrument
XRMI-I Instrument	WRTI	Survey Writing Interval	30	ft
XRMI-I Instrument	SOPT	Smoothing Option	None	
XRMI-I Mandrel	DIMG	Process XRMI?	Yes	
XRMI-I Mandrel	ROTI	Rotate Image (N-E-S-W-N)?	Yes	
XRMI-I Mandrel	AGN	Use Button Auto Gain?	Yes	
XRMI-I Mandrel	BCLR	Button Auto Gain Color	127	
XRMI-I Mandrel	BFIL	Button Auto Gain Filter	0.020	
XRMI-I Mandrel	BGAN	Button Gain Value	0.001	
XRMI-I Mandrel	BOFF	Button Offset	0	
XRMI-I Mandrel	DIPE	Process Dipmeter Calculations?	Yes	
XRMI-I Mandrel	BHCS	Process Borehole Corrections?	Yes	
XRMI-I Mandrel	CLOK	Process Caliper Outputs?	Yes	
XRMI-I Mandrel	CMAX	Caliper Maximum Limit	100.0	in
XRMI-I Mandrel	CMIN	Caliper Mimimum Limit	3.5	in
XRMI-I Mandrel	NAVS	Navigation Source Tool		XRMI-I Instrument
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source		FP Lwr & FP Upr
ACRt	TPOS	Tool Position		Free Hanging
ACRt	RMOP	Rmud Source		Mud Cell
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

Data: YORK_31_31_1710001 QUAD_WSTT_XRMIIDLE

Date: 26-Aug-11 18:55:31

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	116.01	NO	
SP	Spontaneous Potential	116.01	BLK	1.250
SPR	Raw Spontaneous Potential	116.01	NO	
SPO	Spontaneous Potential Offset	116.01	NO	
GTET				
TPUL	Tension Pull	107.99	NO	
GR	Natural Gamma Ray API	107.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	107.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	107.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	97.75	NO	
RNDS	Near Detector Telemetry Counts	97.85	BLK	1.417
RFDS	Far Detector Telemetry Counts	98.60	TRI	0.583
DNTT	DSN Tool Temperature	97.85	NO	
DSNS	DSN Tool Status	97.75	NO	
ERND	Near Detector Telemetry Counts EVR	97.85	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	98.60	BLK	0.000
ENTM	DSN Tool Temperature EVR	97.85	NO	
SDLT				
TPUL	Tension Pull	87.84	NO	
NAB	Near Above	87.66	BLK	0.920
NHI	Near Cesium High	87.66	BLK	0.920
NLO	Near Cesium Low	87.66	BLK	0.920
NVA	Near Valley	87.66	BLK	0.920
NBA	Near Barite	87.66	BLK	0.920
NDE	Near Density	87.66	BLK	0.920
NPK	Near Peak	87.66	BLK	0.920
NLI	Near Lithology	87.66	BLK	0.920
NBAU	Near Barite Unfiltered	87.66	BLK	0.250
NLIU	Near Lithology Unfiltered	87.66	BLK	0.250
FAB	Far Above	88.01	BLK	0.250
FHI	Far Cesium High	88.01	BLK	0.250
FLO	Far Cesium Low	88.01	BLK	0.250
FVA	Far Valley	88.01	BLK	0.250
FBA	Far Barite	88.01	BLK	0.250
FDE	Far Density	88.01	BLK	0.250
FPK	Far Peak	88.01	BLK	0.250
FLI	Far Lithology	88.01	BLK	0.250
PTMP	Pad Temperature	87.85	BLK	0.920
NHV	Near Detector High Voltage	85.03	NO	
FHV	Far Detector High Voltage	85.03	NO	
ITMP	Instrument Temperature	85.03	NO	
DDHV	Detector High Voltage	85.03	NO	
TPUL	Tension Pull	87.85	NO	
PCAL	Pad Caliper	87.85	TRI	0.250
ACAL	Arm Caliper	87.85	TRI	0.250
TPUL	Tension Pull	88.03	NO	
MINV	Microlog Lateral	88.03	BLK	0.750
MNOR	Microlog Normal	88.03	BLK	0.750

TPUL	Tension Pull	56.79	NO
DPSX	Dipole Source X Structurel	45.29	NO
DPSY	Dipole Source Y Structurel	45.29	NO
DPSM	Monopole Source Structure	45.29	NO
WVST	Wavesonic Compressed Data	56.79	NO
TPUL	Tension Pull	56.79	NO
XMS1	Wave Sonic Status Word 1	45.29	NO
XMS2	Wave Sonic Status Word 2	45.29	NO
XMS1	Wave Sonic XMITStatus Word 1	45.29	NO
XMS1	Wave Sonic XMITStatus Word 2	45.29	NO
F1HA	Dipole 1 HV After	45.29	NO
F1HB	Dipole 1 HV Before	45.29	NO
F2HA	Dipole 2 HV After	45.29	NO
F2HB	Dipole 2 HV Before	45.29	NO
F3HA	Monopole HV After	45.29	NO
F3HB	Monopole HV Before	45.29	NO
INVT	Input Voltage	45.29	NO
5VOL	5 Volts	45.29	NO
MI5A	Minus 5 Volts Analog	45.29	NO
ITMP	Instrument Temperature	45.29	NO
PL5A	Plus 5 Volts Analog	45.29	NO
5VD	Plus 5 Volts Digital	45.29	NO
TCUR	Tool Current	45.29	NO
SUPV	Supply Voltage	45.29	NO
PRVT	Preregulated voltage	45.29	NO
PRVT	Pre-regulated voltage Xmter	45.29	NO
TEMP	Temperature	45.29	NO
ACQN	Acquisition Number	45.29	NO
XDP	Delay Reference	56.79	NO
MITM	MIT Mode	56.79	NO
VERS	Version	45.29	NO
D1CT	Dipole 1 Compressed Word Count	56.79	NO
D2CT	Dipole 2 Compressed Word Count	56.79	NO
MCNT	Monopole Compressed Word Count	56.79	NO
SEQN	Sequence Number	45.29	NO
FREV	Firmware Revision	45.29	NO
MSMP	Monopole Sample Rate	45.29	NO
MSMP	Dipole Sample Rate	45.29	NO
MFWF	Monopole Firing Waveform	45.29	NO
MFRQ	Monopole Frequency	45.29	NO
MDLY	Monopole Delay	45.29	NO
DXWF	Dipole X Firing Waveform	45.29	NO
XFRQ	Dipole X Frequency	45.29	NO
XDLY	Dipole X Delay	45.29	NO
DYWF	Dipole Y Firing Waveform	45.29	NO
YFRQ	Dipole Y Frequency	45.29	NO
YDLY	Dipole Y Delay	45.29	NO
DPSX	Dipole Source X Structurel	45.29	NO
DPSY	Dipole Source Y Structurel	45.29	NO
DPSM	Monopole Source Structure	45.29	NO
WVST	Wavesonic Compressed Data	56.79	NO
AUTM	Auto Mode	45.29	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	45.29	NO
MSL	Monopole Lower Travel Time	56.79	NO
MSH	Monopole Upper Travel Time	56.79	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	45.29	NO

MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	45.29	NO
DLTT	Dipole Lower Travel Time	45.29	NO
DUTT	Dipole Upper Travel Time	45.29	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	45.29	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	45.29	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	45.29	NO
MUTS	Mute/Enable Sides	45.29	NO
WSRB	Relative Bearing	56.79	NO
WSAZ	WSX Azimuth Pad 1	56.79	NO
TPUL	Tension Pull	56.79	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	56.79	NO
WXX	Dipole X for SIDES - A-C	56.79	NO
WYY	Dipole Y for SIDES - B-D	56.79	NO
WXY	Dipole X for SIDES - B-D	56.79	NO
WYX	Dipole Y for SIDES - A-C	56.79	NO
TPUL	Tension Pull	56.79	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO

XRMI-I Mandrel

TPUL	Tension Pull	22.59	NO
PAD1	XRMI Pad 1 values	22.36	NO
PAD2	XRMI Pad 2 values	22.36	NO
PAD3	XRMI Pad 3 values	22.36	NO
PAD4	XRMI Pad 4 values	22.36	NO
PAD5	XRMI Pad 5 values	22.36	NO
PAD6	XRMI Pad 6 values	22.36	NO
OD1	EMI Odd Button Values Pad 1	22.36	NO
OD2	EMI Odd Button Values Pad 2	22.59	NO
OD3	EMI Odd Button Values Pad 3	22.36	NO
OD4	EMI Odd Button Values Pad 4	22.59	NO
OD5	EMI Odd Button Values Pad 5	22.36	NO
OD6	EMI Odd Button Values Pad 6	22.59	NO
EV1	EMI Even Button Values Pad 1	22.39	NO
EV2	EMI Even Button Values Pad 2	22.57	NO
EV3	EMI Even Button Values Pad 3	22.39	NO
EV4	EMI Even Button Values Pad 4	22.57	NO
EV5	EMI Even Button Values Pad 5	22.39	NO
EV6	EMI Even Button Values Pad 6	22.57	NO
LTMP	Instrument Temperature	19.93	NO

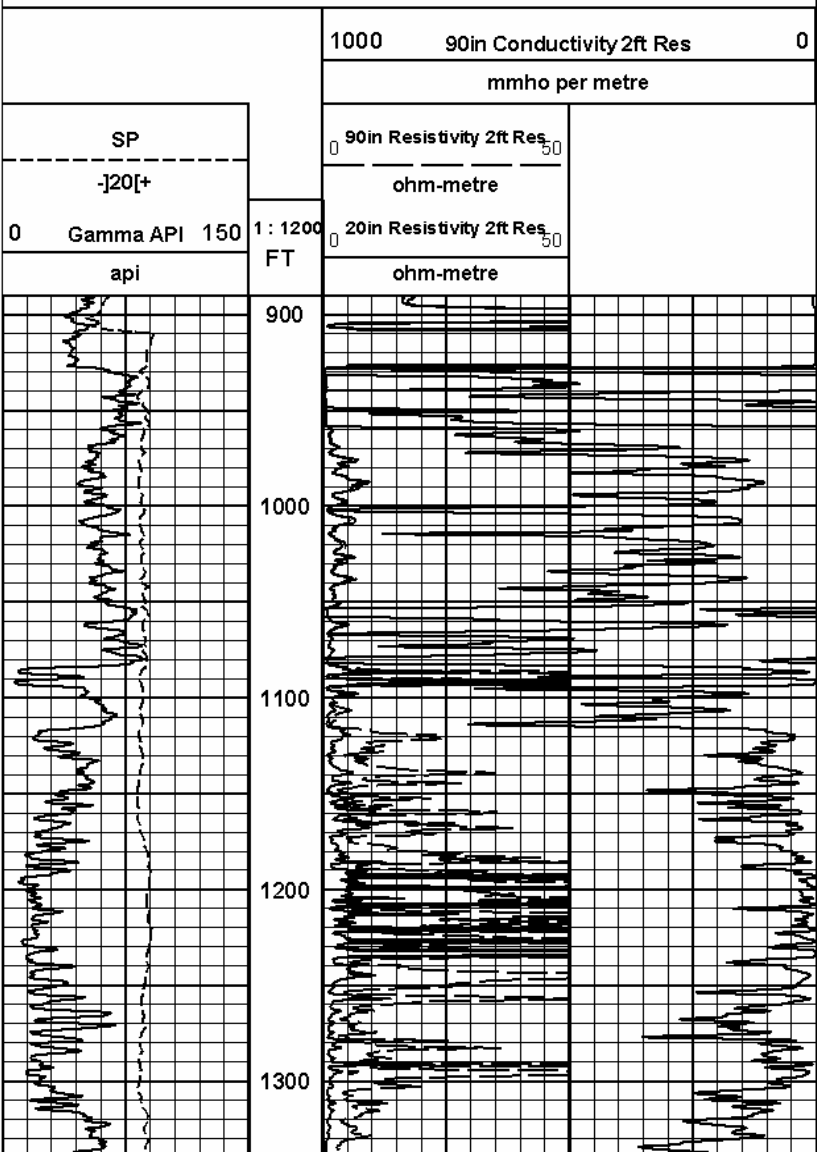
ITMP	Instrument Temperature	19.83	NO	
EMIM	Tool Mode	19.83	NO	
HAZI	Hole Azimuth	22.11	NO	
HAZI	Hole Azimuth - Down Delay	22.61	NO	
ZACC	Accelerometer Z	22.36	NO	
TPUL	Tension Pull	22.59	NO	
FIR1	Current Button R - Pad 1	22.36	NO	
FIR2	Current Button R - Pad 2	22.59	NO	
FIR3	Current Button R - Pad 3	22.36	NO	
FIR4	Current Button R - Pad 4	22.59	NO	
FIR5	Current Button R - Pad 5	22.36	NO	
FIR6	Current Button R - Pad 6	22.59	NO	
FIX1	Current Button X - Pad 1	22.36	NO	
FIX2	Current Button X - Pad 2	22.59	NO	
FIX3	Current Button X - Pad 3	22.36	NO	
FIX4	Current Button X - Pad 4	22.59	NO	
FIX5	Current Button X - Pad 5	22.36	NO	
FIX6	Current Button X - Pad 6	22.59	NO	
SIR1	Current Slow Button R - Pad 1	22.36	BLK	3.000
SIR2	Current Slow Button R - Pad 2	22.59	BLK	3.000
SIR3	Current Slow Button R - Pad 3	22.36	BLK	3.000
SIR4	Current Slow Button R - Pad 4	22.59	BLK	3.000
SIR5	Current Slow Button R - Pad 5	22.36	BLK	3.000
SIR6	Current Slow Button R - Pad 6	22.59	BLK	3.000
SIX1	Current Slow Button X - Pad 1	22.36	BLK	3.000
SIX2	Current Slow Button X - Pad 2	22.59	BLK	3.000
SIX3	Current Slow Button X - Pad 3	22.36	BLK	3.000
SIX4	Current Slow Button X - Pad 4	22.59	BLK	3.000
SIX5	Current Slow Button X - Pad 5	22.36	BLK	3.000
SIX6	Current Slow Button X - Pad 6	22.59	BLK	3.000
EMMR	Phasor Voltage - Real Part	22.36	NO	
EMMX	Phasor Voltage - Imaginary Part	22.36	NO	
PADV	Pad Voltage	19.83	BLK	0.250
ITMP	Instrument Temperature	19.83	BLK	0.000
CON1	Conductivity Pad 1	22.36	BLK	3.000
CON2	Conductivity Pad 2	22.59	BLK	3.000
CON3	Conductivity Pad 3	22.36	BLK	3.000
CON4	Conductivity Pad 4	22.59	BLK	3.000
CON5	Conductivity Pad 5	22.36	BLK	3.000
CON6	Conductivity Pad 6	22.59	BLK	3.000
UIR2	Current Button R No Delay - Pad 2	22.36	NO	
UIR4	Current Button R No Delay - Pad 4	22.36	NO	
UIR6	Current Button R No Delay - Pad 6	22.36	NO	
UIX2	Current Button X No Delay - Pad 2	22.36	NO	
UIX4	Current Button X No Delay - Pad 4	22.36	NO	
UIX6	Current Button X No Delay - Pad 6	22.36	NO	
TPUL	Tension Pull	22.59	NO	
ARM1	Caliper 1 measurement	22.36	BLK	0.000
ARM2	Caliper 2 measurement	22.36	BLK	0.000
ARM3	Caliper 3 measurement	22.36	BLK	0.000
ARM4	Caliper 4 measurement	22.36	BLK	0.000
ARM5	Caliper 5 measurement	22.36	BLK	0.000
ARM6	Caliper 6 measurement	22.36	BLK	0.000
MOTV	Motor Voltage Monitor 1	22.36	BLK	0.000
PRES	Caliper percentage of total compression of the spring	19.83	BLK	0.000
HAZI	Hole Azimuth	22.36	NO	

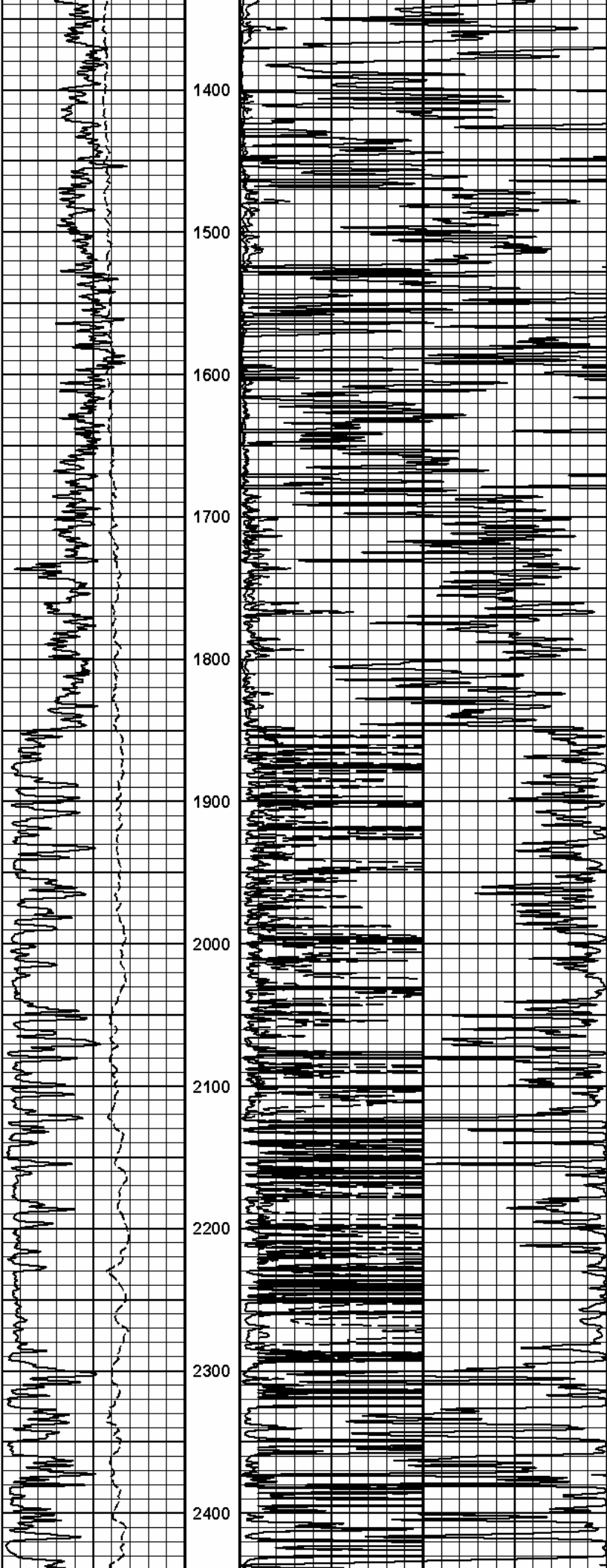
RB	Relative Bearing	22.36	NO	
AZI1	PAD1 Azimuth	22.36	NO	
DEVI	Inclination	22.36	NO	
ACRT				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
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	

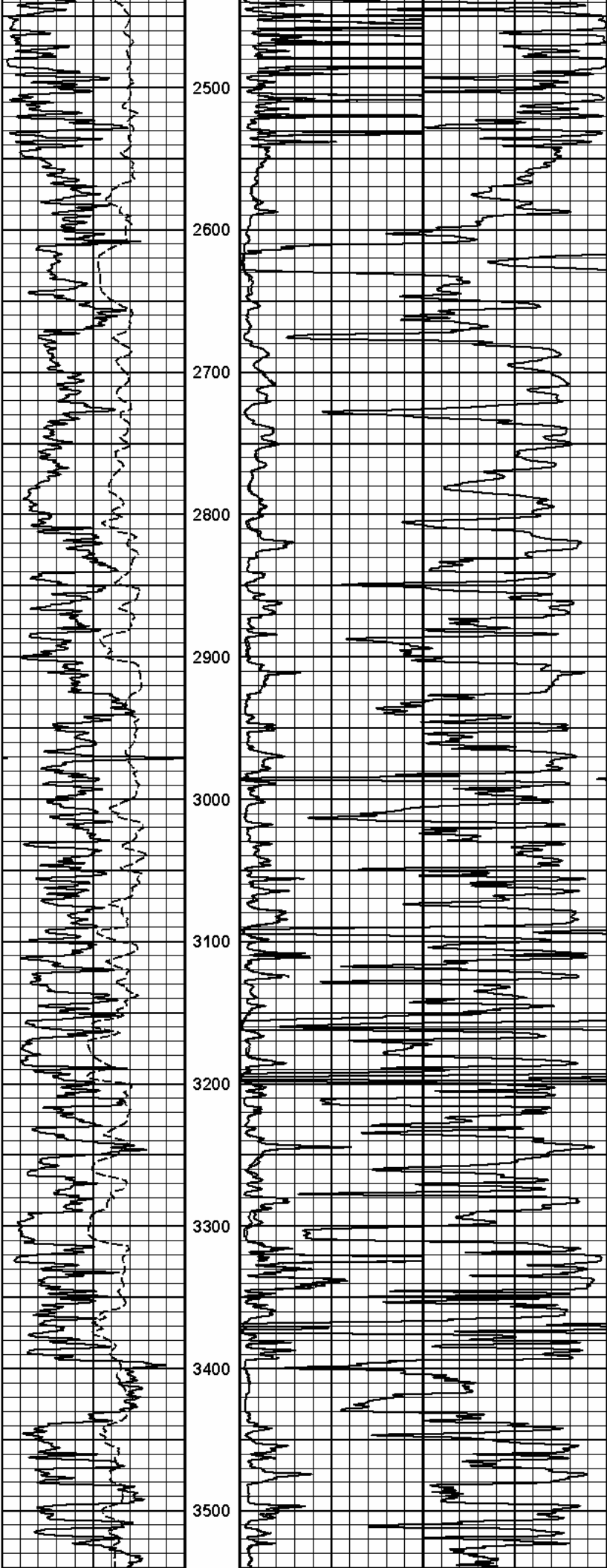
COMPANY	CHESAPEAKE OPERATING INC		
WELL	YORK 31-31-17-1H		
FIELD	ALFORD		
COUNTY	COMANCHE	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG	

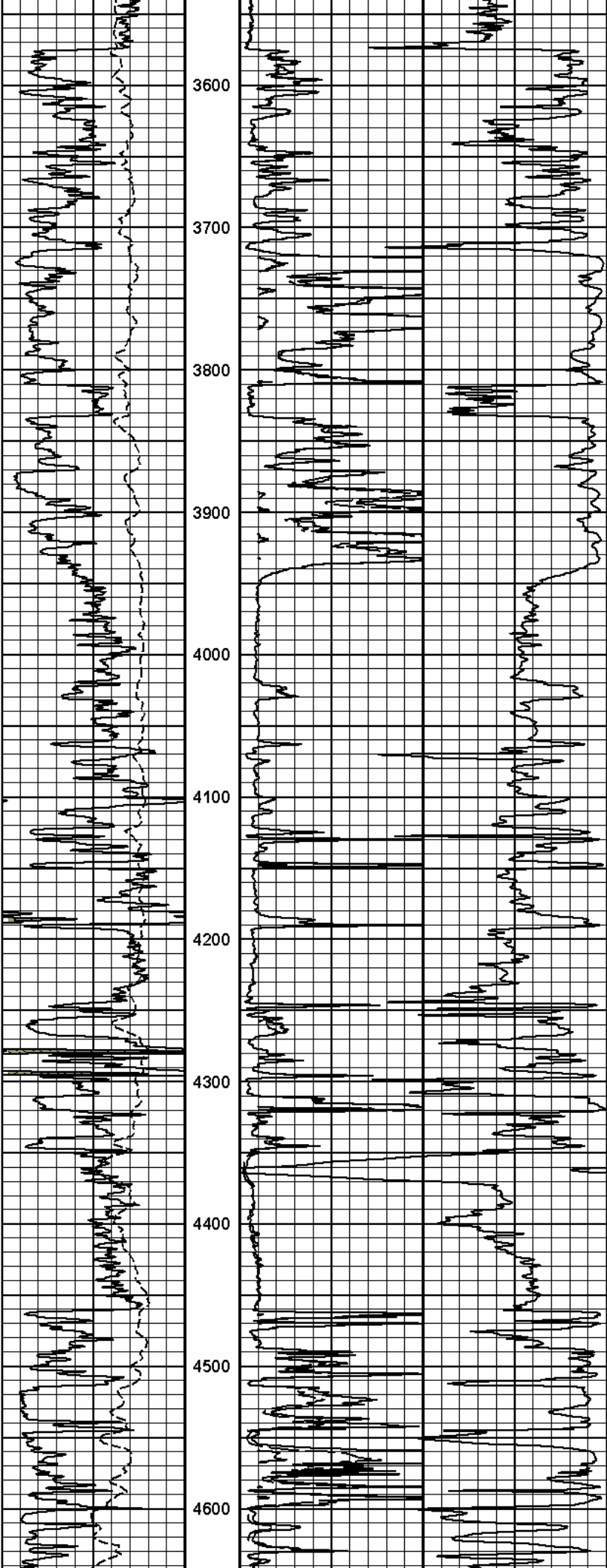
HALLIBURTON
 Plot Time: 27-Aug-11 15:04:21
 Plot Range: 890 ft to 5636.25 ft
 Data: YORK_31_31_17Well Based\RUN1_MAIN
 Plot File: \\-LOCAL-ACRT\ACRT_1.lib

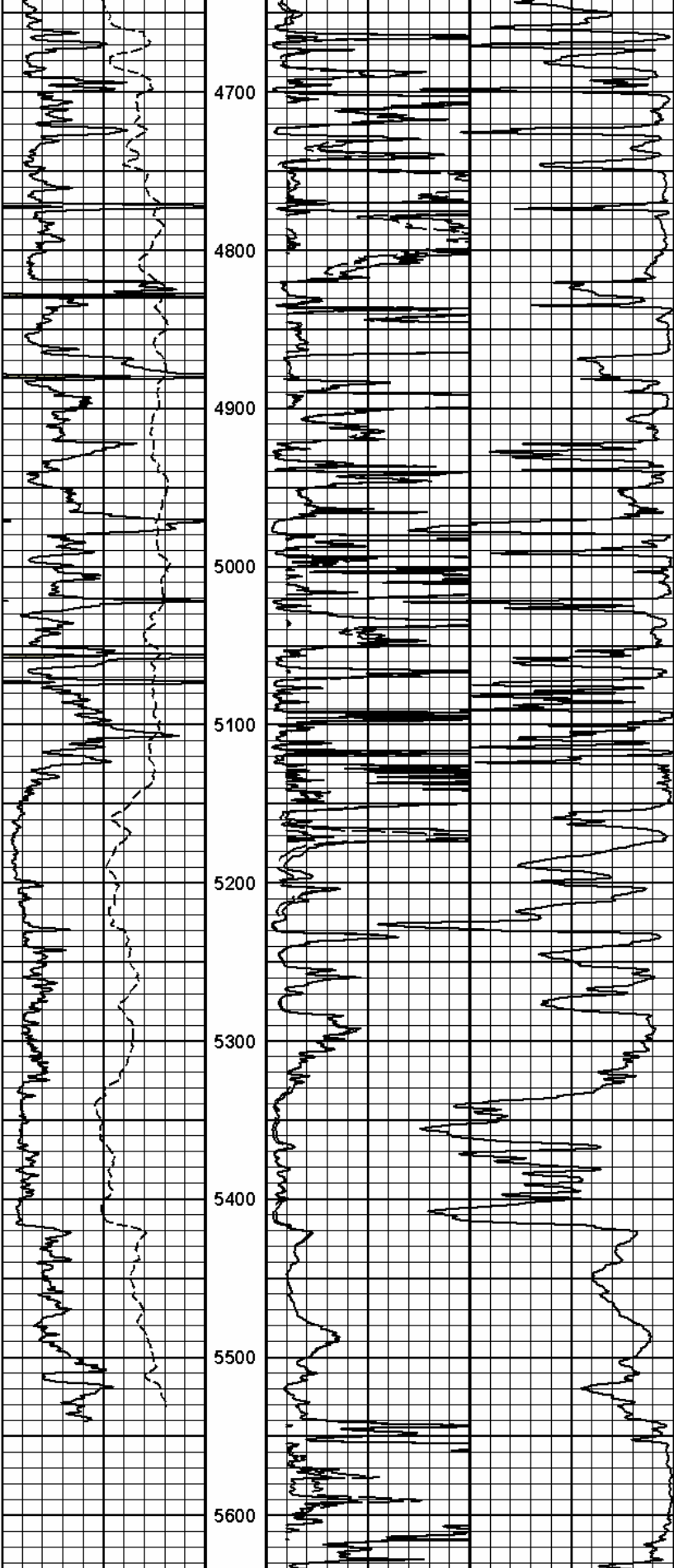
1 INCH MAIN LOG











0	Gamma API	150	1 : 1200	20in Resistivity 2ft Res	50
	api		FT	ohm-metre	
	SP			90in Resistivity 2ft Res	50
	-]20[+			ohm-metre	

1000	90in Conductivity 2ft Res	0
mmho per metre		

HALLIBURTON

Plot Time: 27-Aug-11 15:04:23
Plot Range: 890 ft to 5636.25 ft
Data: YORK_31_31_17Well Based IRUN1_MAIN
Plot File: \\-LOCAL-ACRT\ACRT_1_lib

1 INCH MAIN LOG

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON MICROLOG

COMPANY	CHESAPEAKE OPERATING INC		
WELL	YORK 31-31-17-1H		
FIELD	ALFORD		
COUNTY	COMANCHE		
STATE	KANSAS		
COMPANY	CHESAPEAKE OPERATING INC	WELL	YORK 31-31-17-1H
FIELD	ALFORD	COUNTY	COMANCHE
STATE	KANSAS		
API No.	15-033-21591	Location	200' FSL & 760' FWL
GROUND LEVEL	SECT. 31	TWP. 31S	RGE. 17W
KELLY BUSHING	Elev. 2128.0 ft		
KELLY BUSHING	16.0 ft above perm. Datum		
Elev.: K.B.	2144.0 ft		
D.F.	2143.0 ft		
G.L.	2128.0 ft		
Other Services:	WSTT XRMI ACRT MRIL		

Date	27-Aug-11
Run No.	ONE
Depth - Driller	5650.00 ft
Depth - Logger	5646.0 ft
Bottom - Logged Interval	5557.0 ft
Top - Logged Interval	4150.0 ft
Casing - Driller	9.625 in @ 925.0 ft
Casing - Logger	929.0 ft
Bit Size	8.750 in @
Type Fluid in Hole	WATER BASED MUD
Density	9.2 ppq @ 43.00 s/qt
PH	10.36 pH @ 6.8 cp/m
Source of Sample	FLOWLINE
Rm @ Meas. Temperature	0.318 ohmm @ 104.00 degF @
Rmf @ Meas. Temperature	0.34 ohmm @ 86.00 degF @
Rmc @ Meas. Temperature	0.420 ohmm @ 86.00 degF @
Source Rmf	MEASURED
Rmc	MEASURED
Rm @ BHT	0.26 ohmm @ 131.0 degF @
Time Since Circulation	5.1 hr
Time on Bottom	27-Aug-11 10:04
Max. Rec. Temperature	131.0 degF @ 5646.0 ft @
Equipment	10782954 LIBERAL
Recorded By	C. HAVERKAMP
Witnessed By	B. JOHNSON

Fold here

Service Ticket No.: 8420365 API Serial No.: 15-033-21591 PGM Version: WL INSITE R3.2.5 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
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.
Rmf @ Meas. Temp.	@	@		ONE	MICROLOG	RUBBER	ADJ.
Rmc @ Meas. Temp.	@	@					
Source Rmf	Rmc						
Rm @ BHT	@	@					
Rmf @ BHT	@	@					
Rmc @ BHT	@	@					
EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	10748374	Serial No.		Serial No.	1066_M85803_P45	Serial No.	10755066
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	8"	LSA [Y/N]		Serial No.	5073GW	Serial No.	DSN-436
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 CI	Strength	15 CI
LOGGING DATA							
GENERAL		GAMMA		ACOUSTIC		DENSITY	

Run No.	GENERAL		Speed ft/min	GAMMA		ACOUSTIC		Matrix	DENSITY		Matrix	NEUTRON		Matrix
	Depth			Scale		Scale			Scale					
	From	To		L	R	L	R		L	R		L	R	
ONE	5646'	4150'	REC	0	150				30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: SP-GTET-DSNT-SDLT-WSTT-XRMI-ACRT RAN IN COMBINATION.
 ANNULAR HOLE VOLUME CALCULATED FOR 7 INCH CASING.
 CHLORIDES REPORTED AT 7500 MG/L.
 LCM REPORTED AT 4 LB/BBL.

YOUR CREW: P. COBLE, F. VILLA

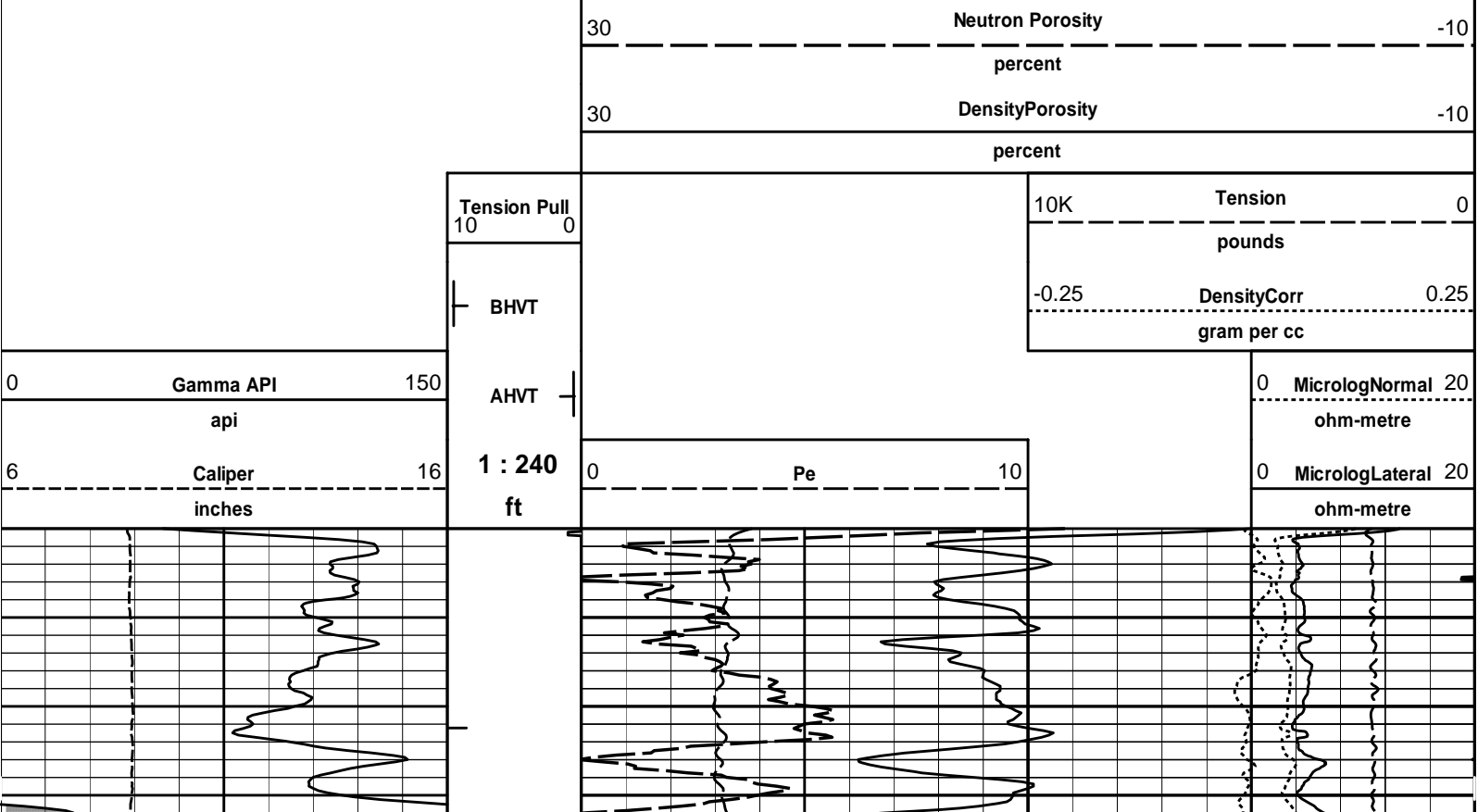
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 620-624-8123

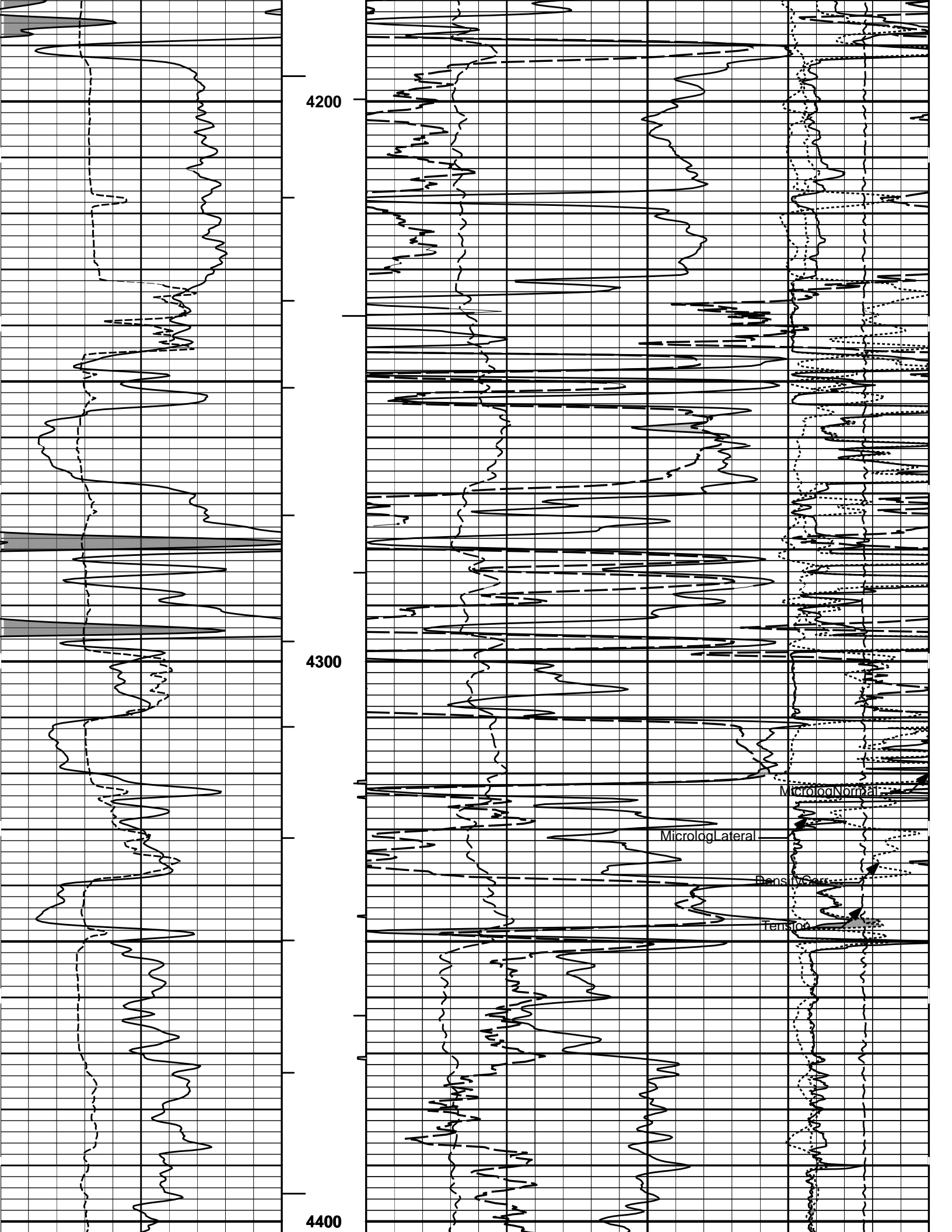
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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.

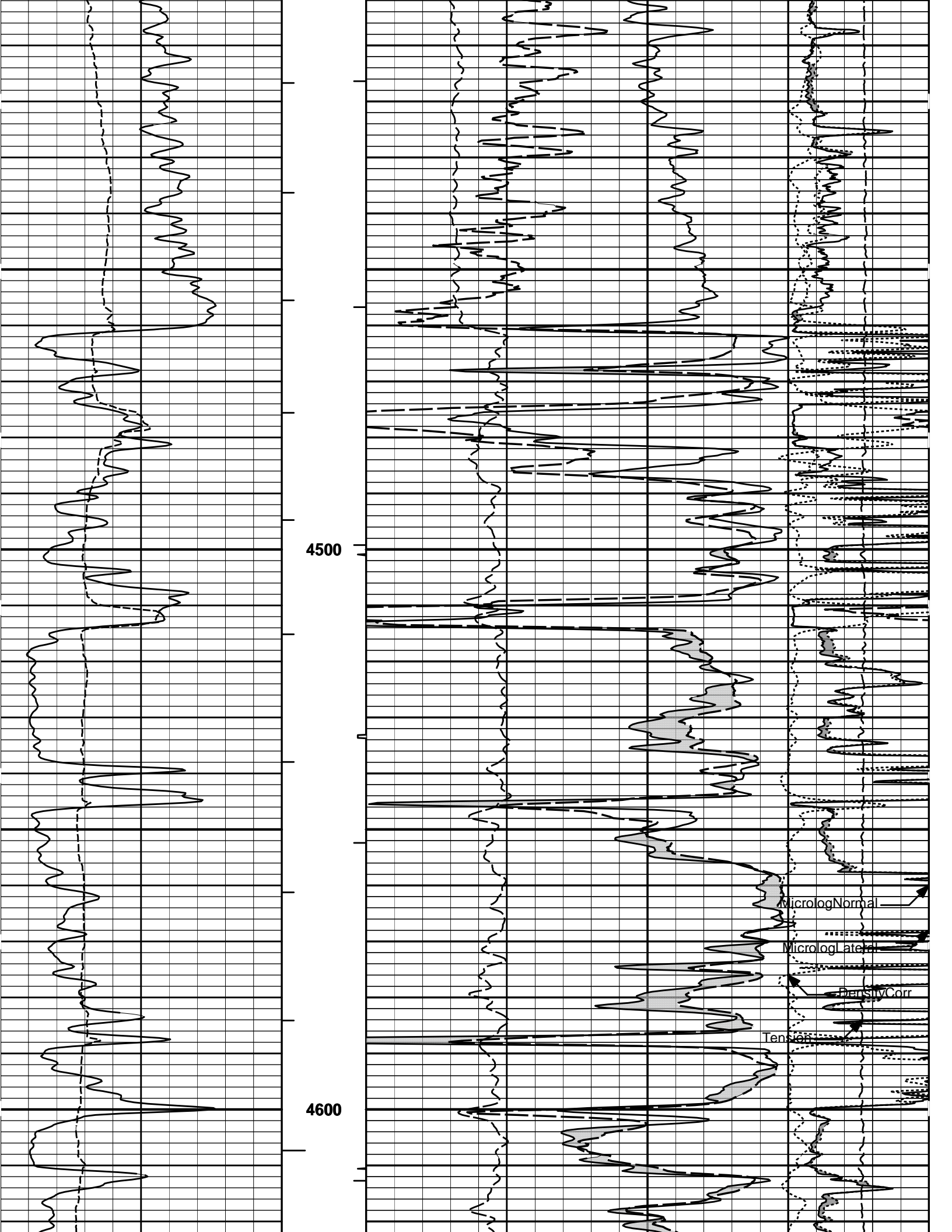
HALLIBURTON

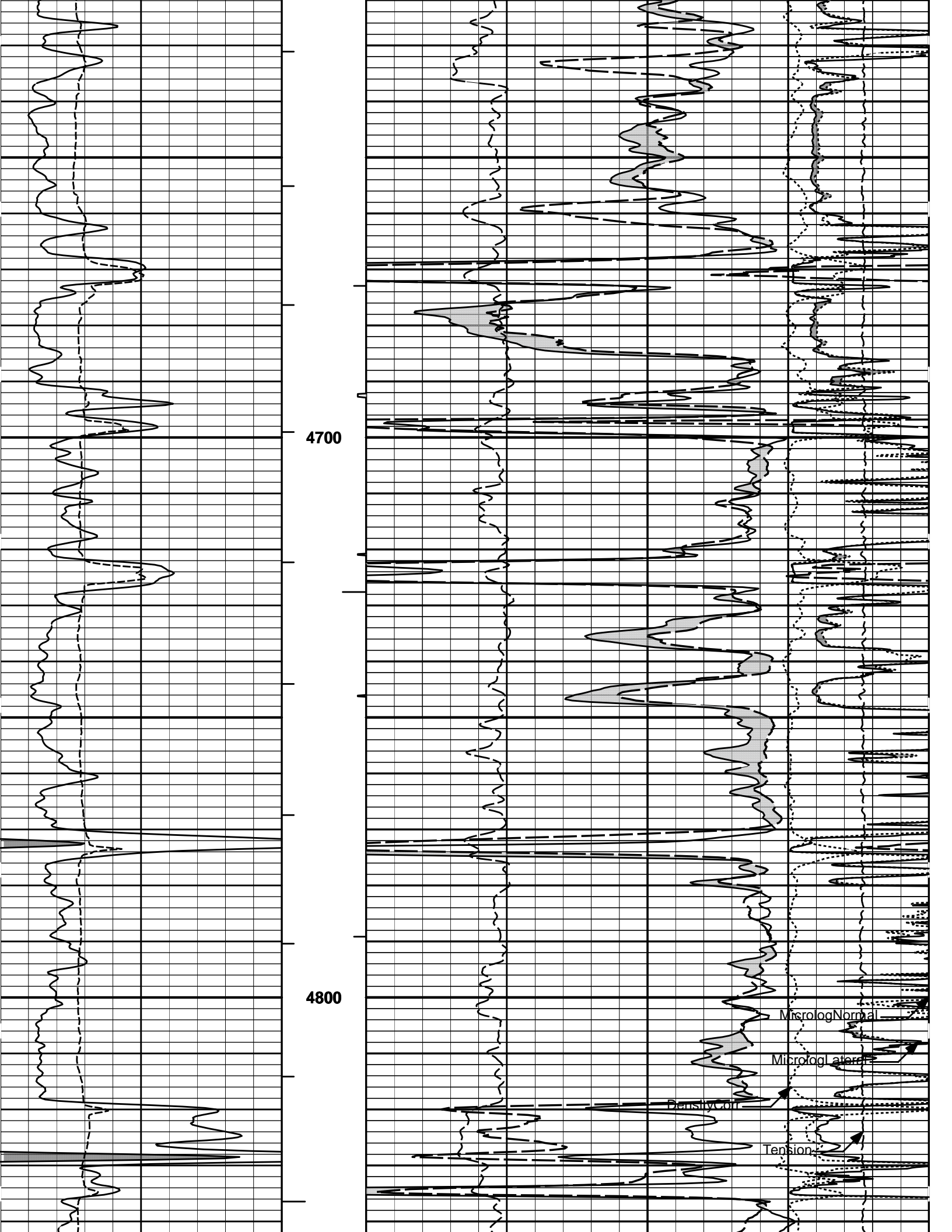
HALLIBURTON Plot Time: 27-Aug-11 15:08:58
 Plot Range: 4150 ft to 5651.5 ft
 Data: YORK_31_31_17\Well Based\DETAIL\
 Plot File: \\POROML\CHK_Poro_IQ_5_MAIN

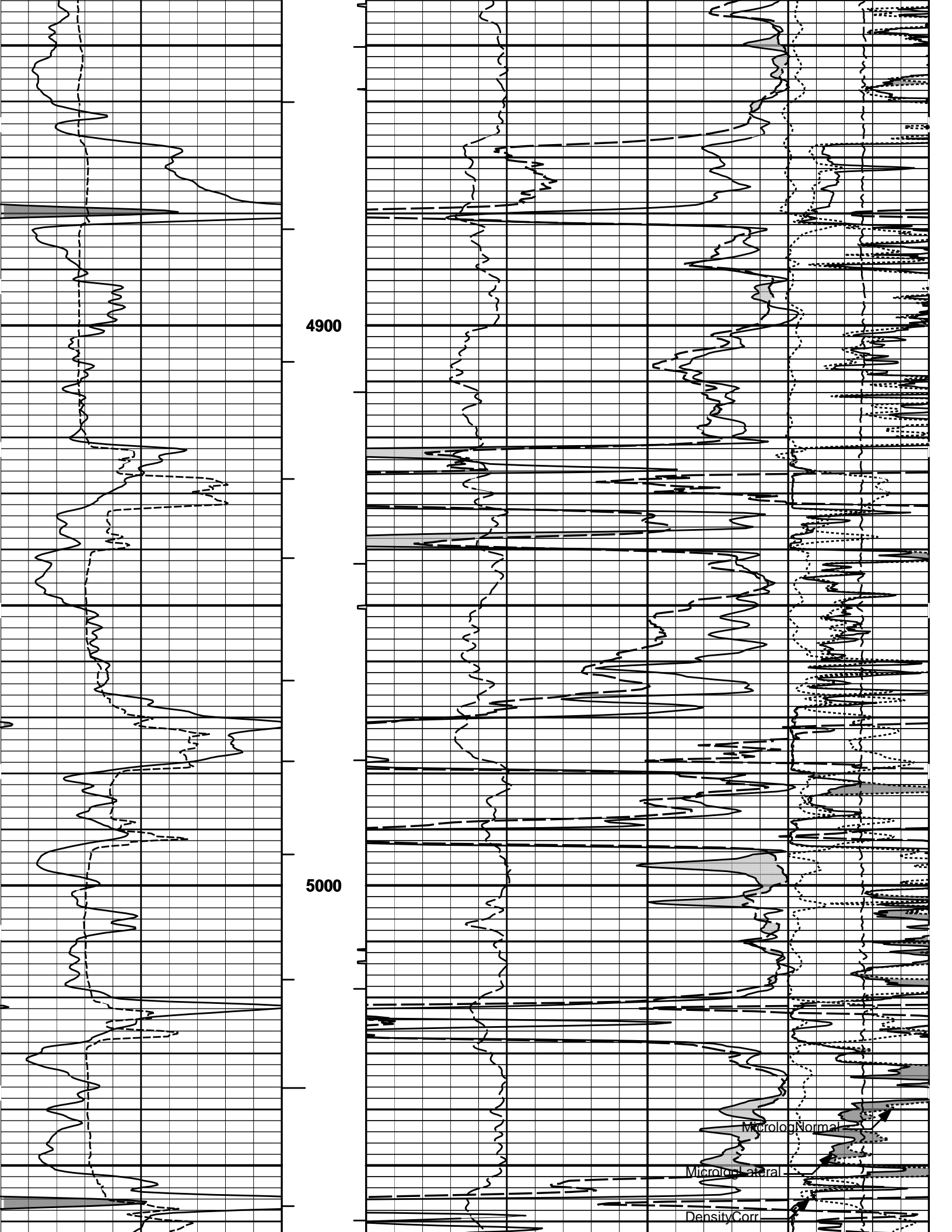
5 INCH MAIN LOG

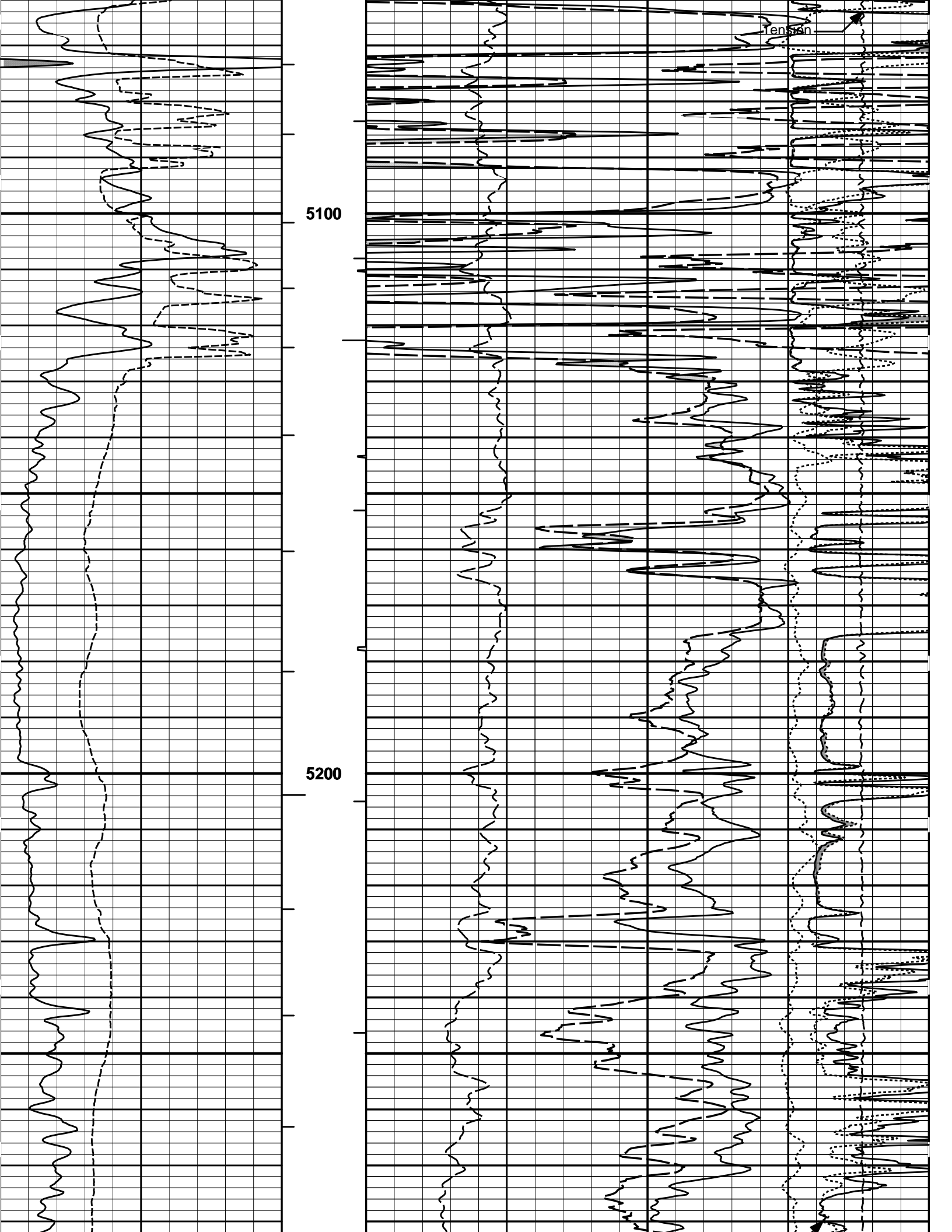


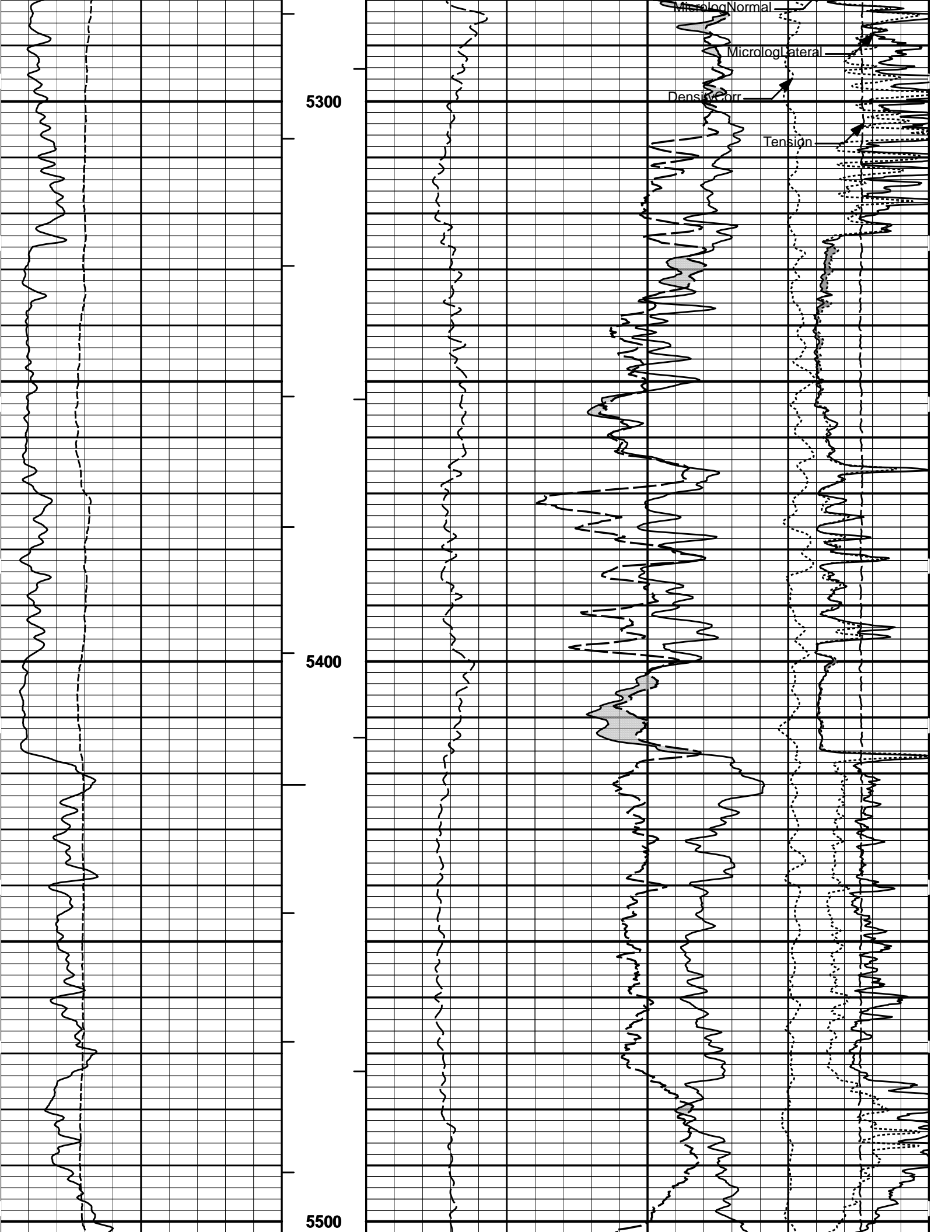


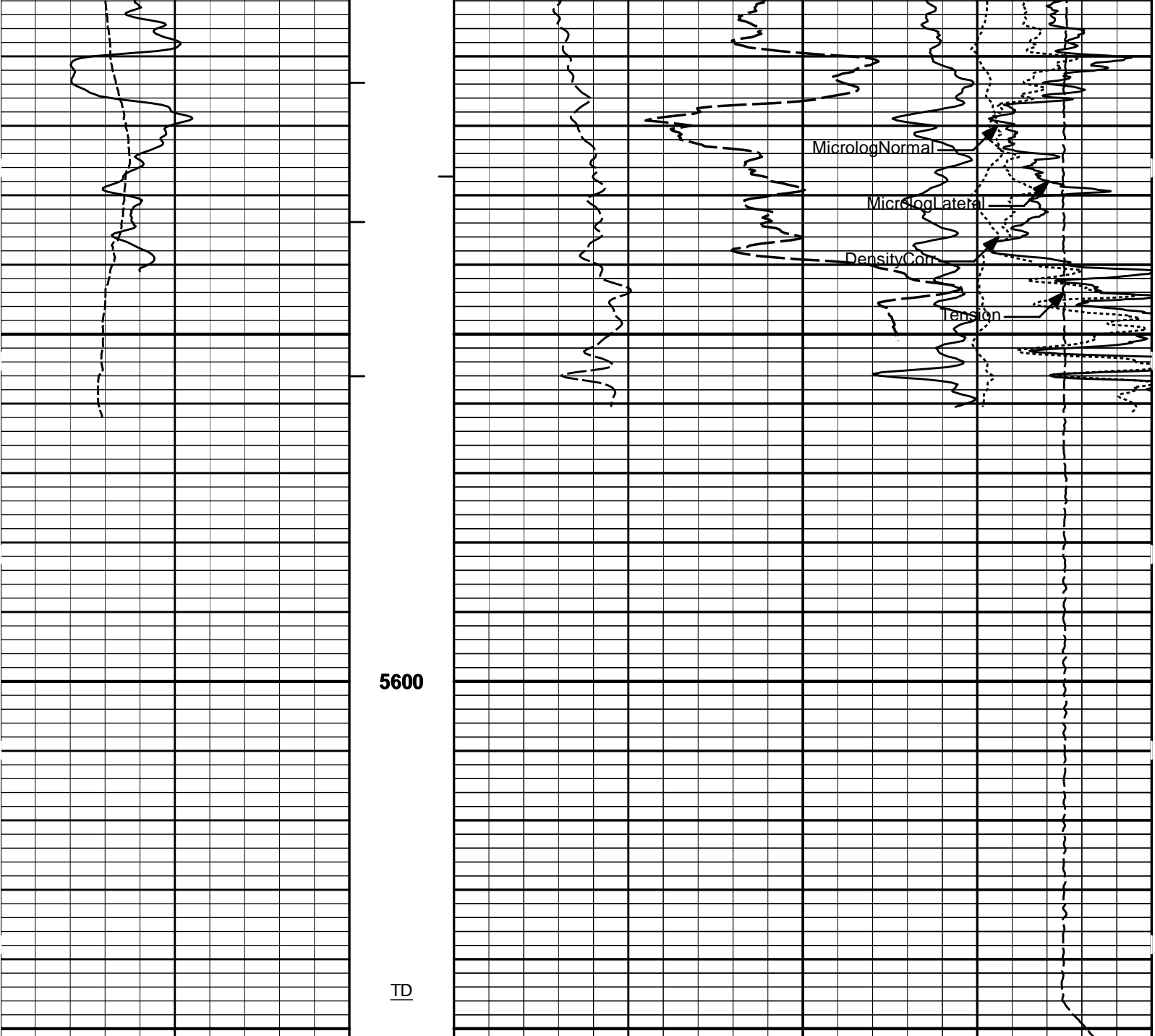












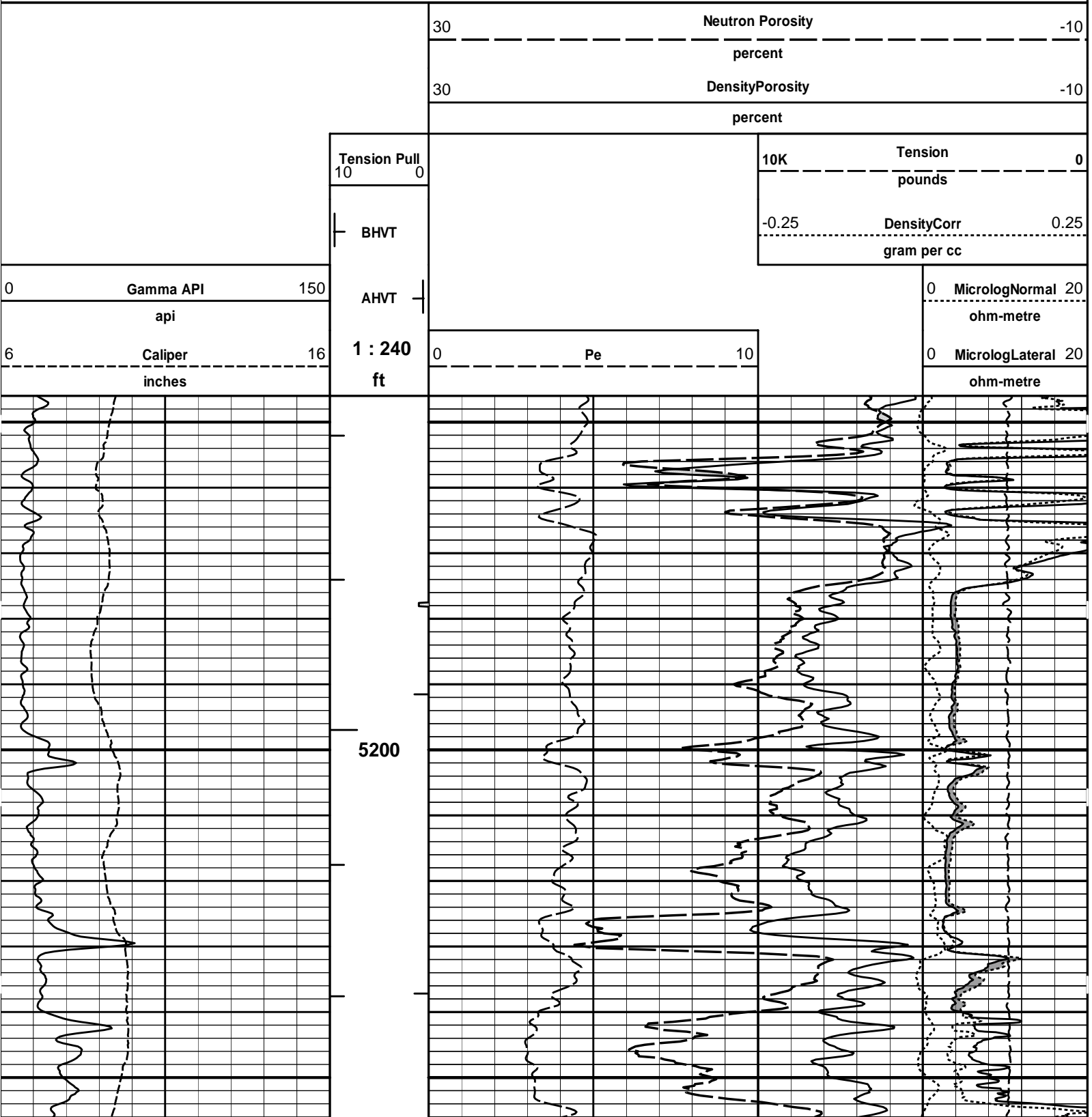
6	Caliper	16	1 : 240 ft	0	Pe	10	0	MicrologLateral	20
	inches								ohm-metre
0	Gamma API	150	AHVT				0	MicrologNormal	20
	api							ohm-metre	
			BHVT				-0.25	DensityCorr	0.25
								gram per cc	
			Tension Pull				10K	Tension	0
			10					pounds	
				30	DensityPorosity				-10
					percent				
				30	Neutron Porosity				-10
					percent				

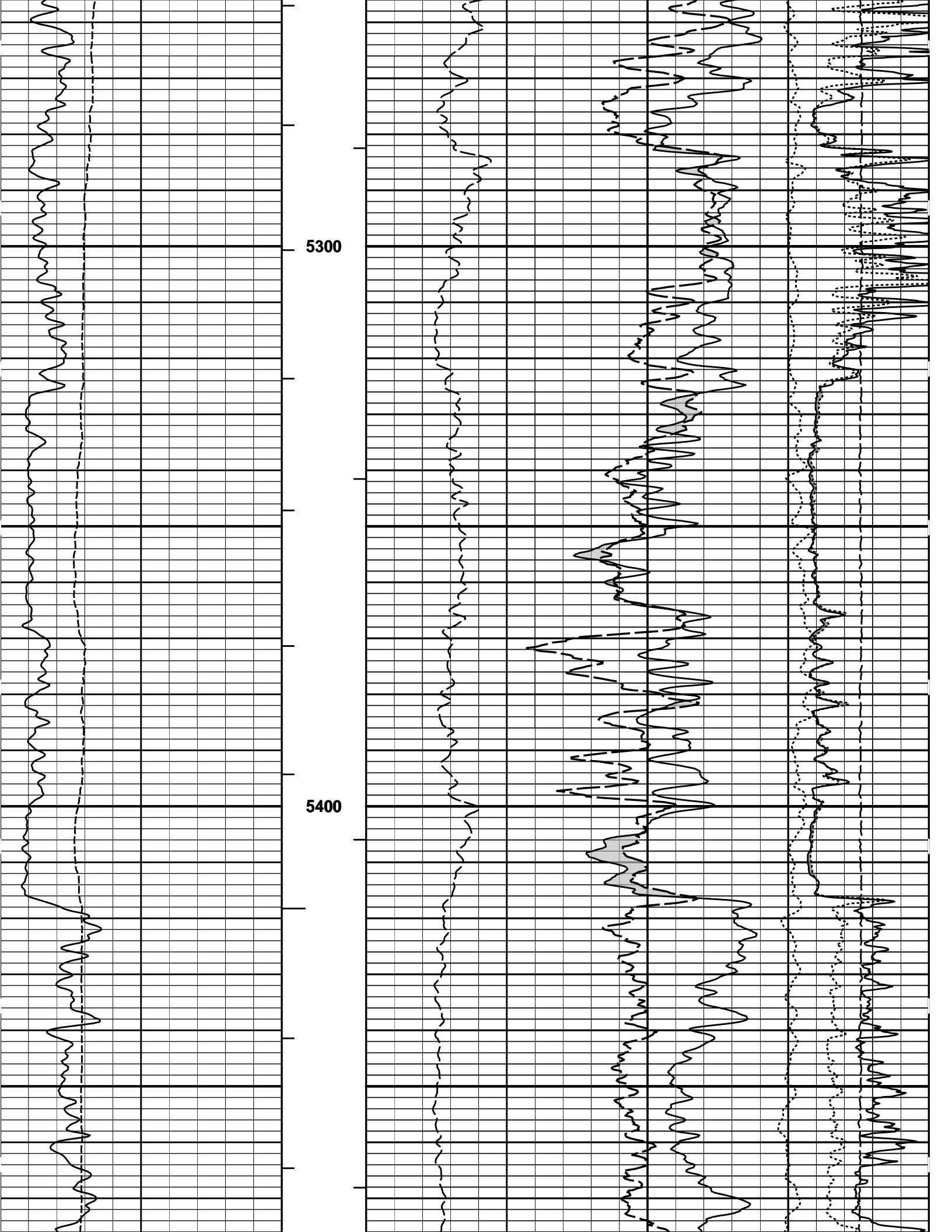
5 INCH MAIN LOG

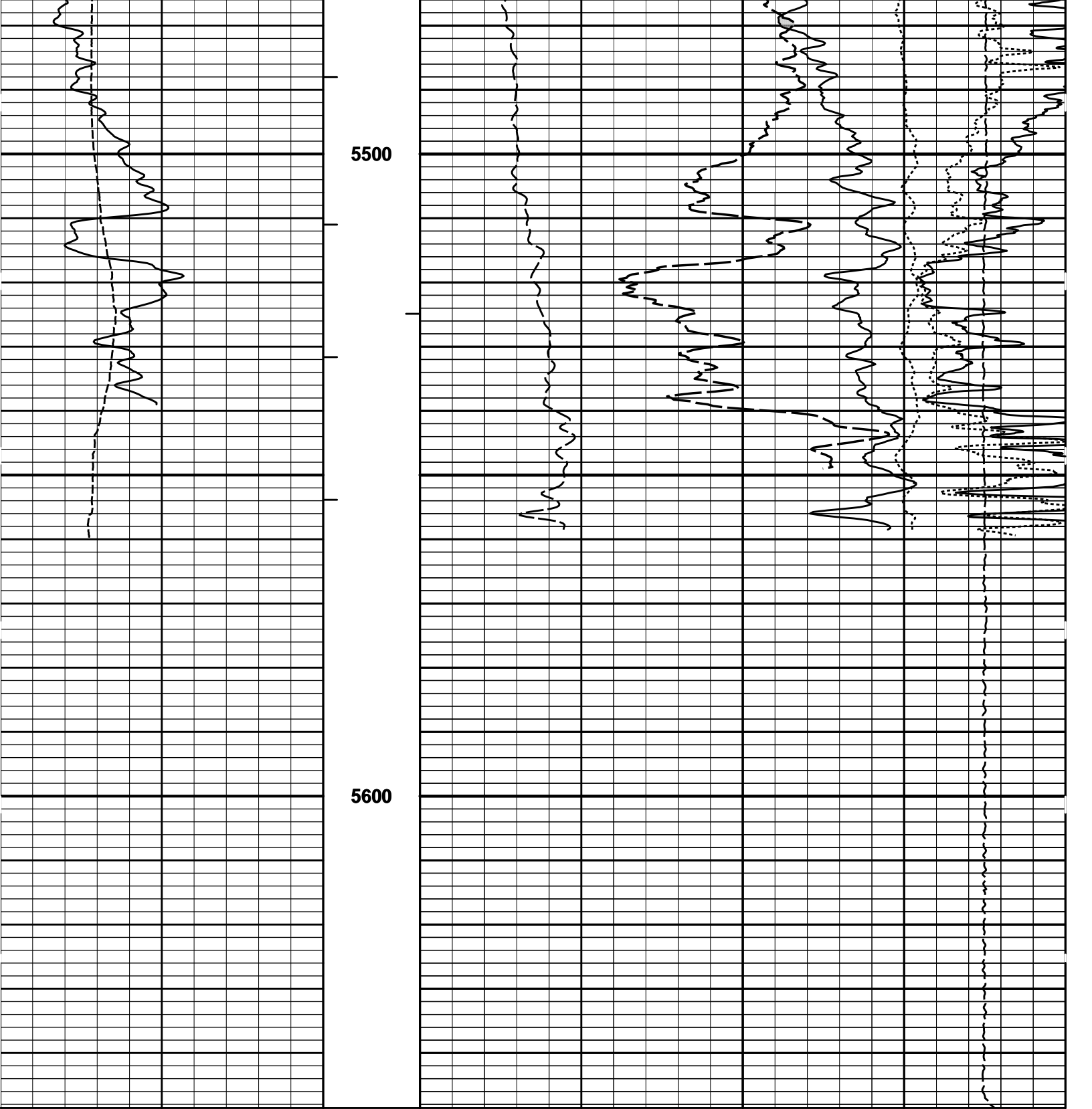
HALLIBURTON

Plot Time: 27-Aug-11 15:09:08
 Plot Range: 5146 ft to 5648.58 ft
 Data: YORK_31_31_17\Well Based\RUN1_REPEAT\
 Plot File: \\POROML\CHK_Poro_IQ_5_RPT

5 INCH REPEAT LOG







6	Caliper	16	1 : 240 ft	0	Pe	10	0	MicrologLateral	20	
	inches			AHVT					ohm-metre	
0	Gamma API	150	BHVT					0	MicrologNormal	20
	api		Tension Pull						ohm-metre	
			10					-0.25	DensityCorr	0.25
			0						gram per cc	
								10K	Tension	0
									pounds	
									DensityPorosity	-10

30

Neutron Porosity

-10

percent

HALLIBURTON

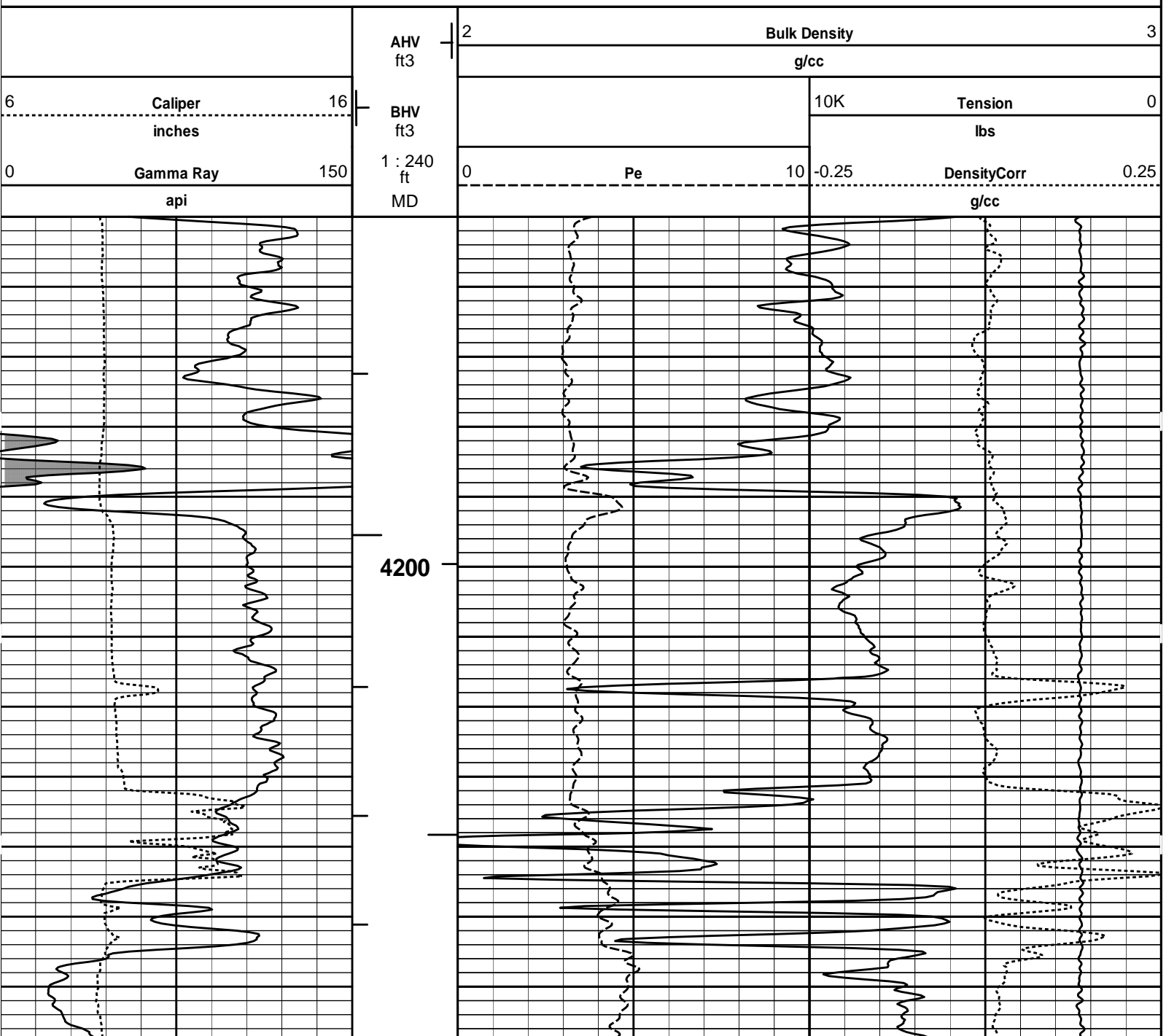
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Data: YORK_31_31_17\Well Based\RUN1_REPEAT\
Plot File: \\POROML\CHK_Poro_IQ_5_RPT

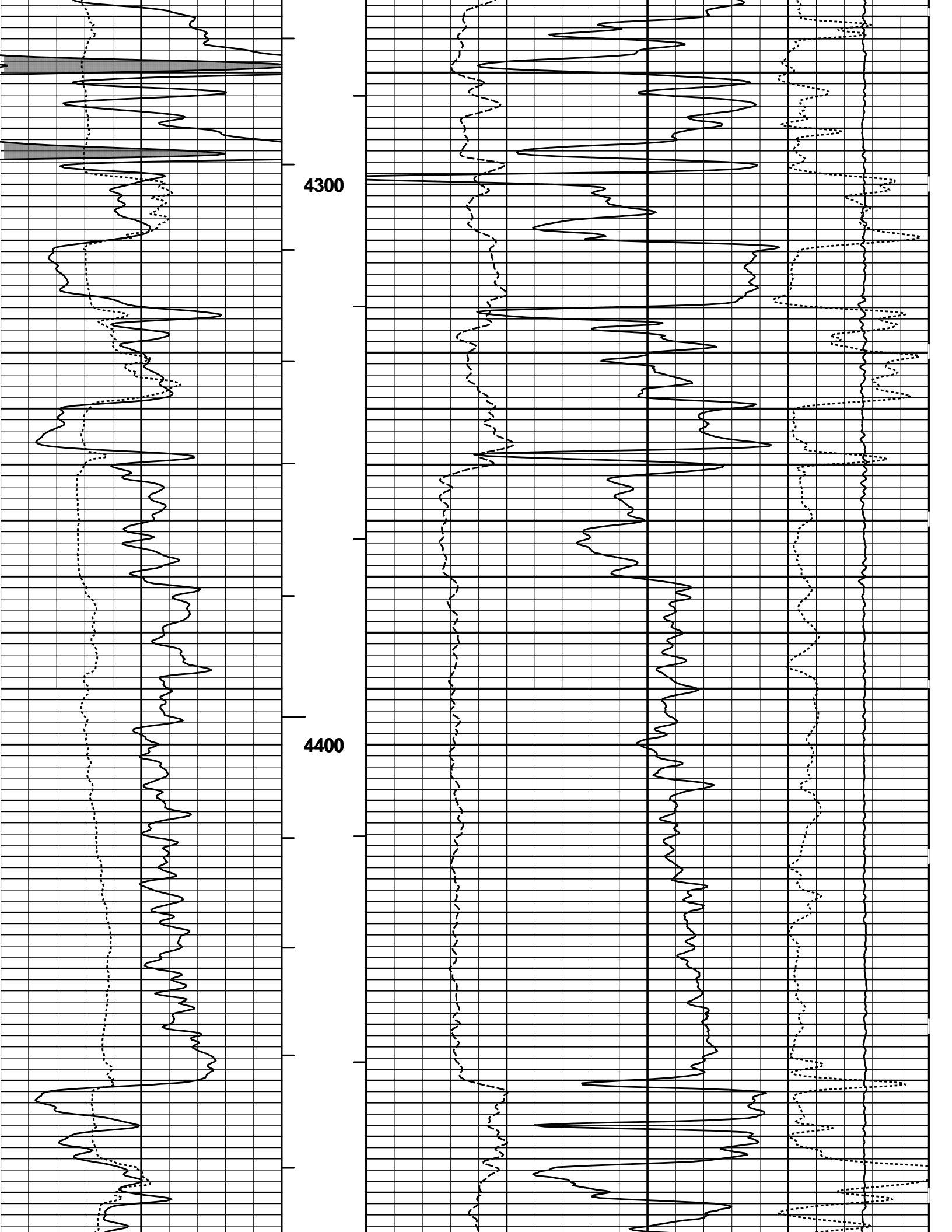
5 INCH REPEAT LOG

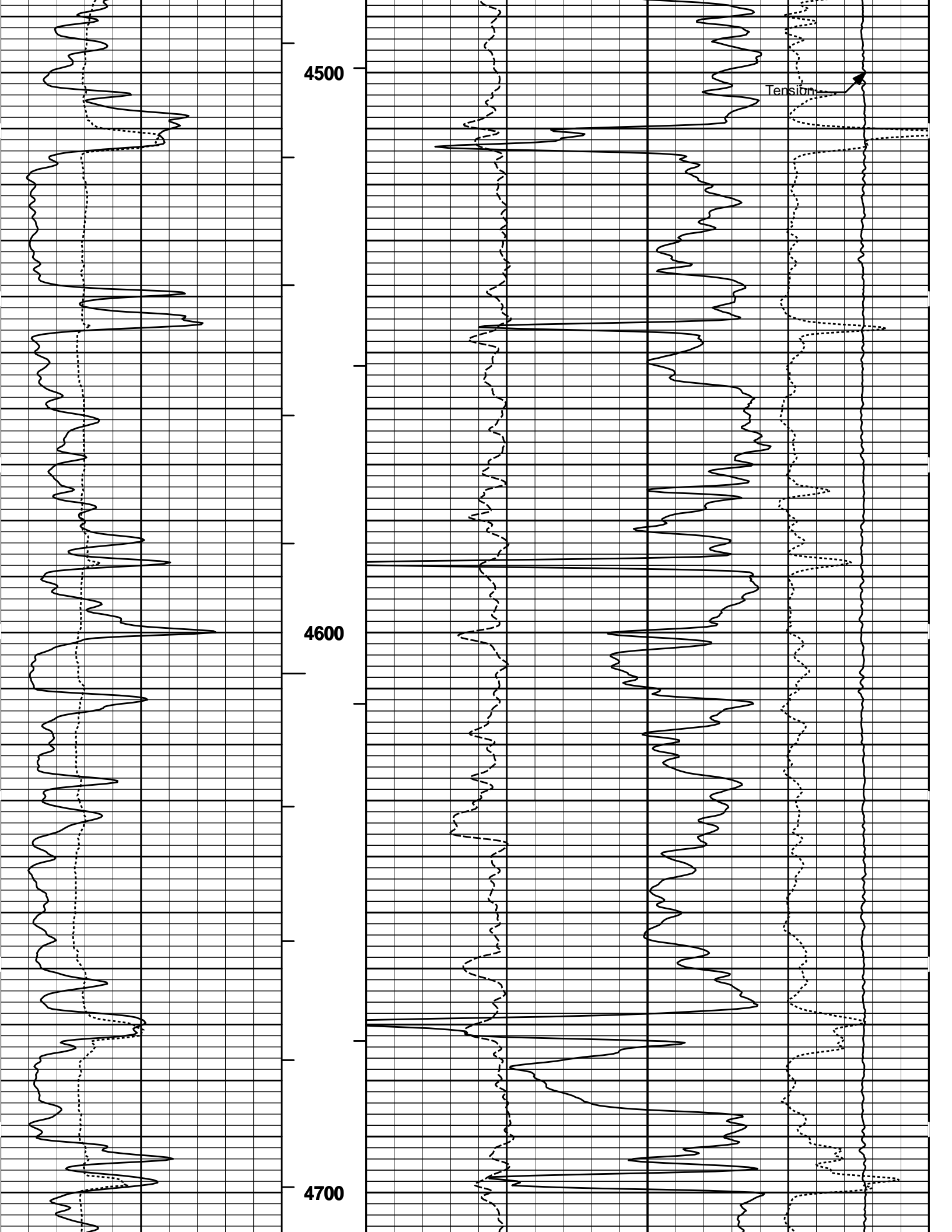
HALLIBURTON

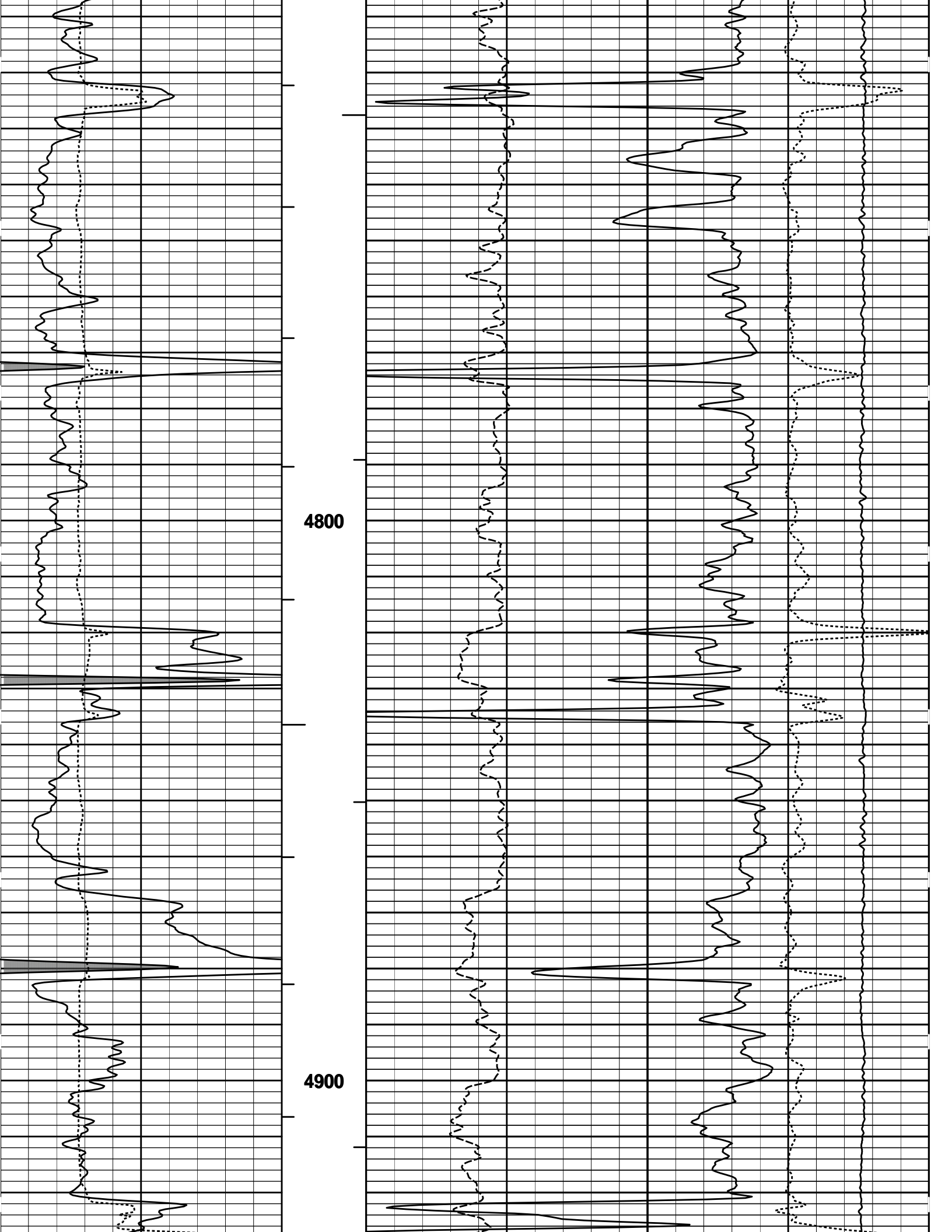
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Plot Range: 4150 ft to 5651.5 ft
Data: YORK_31_31_17\Well Based\DETAIL\
Plot File: \\LOCAL\YORK_31_31_17\0001 QUAD_WSTT_XRMIPOROMLCHK_RHOB_5IN_

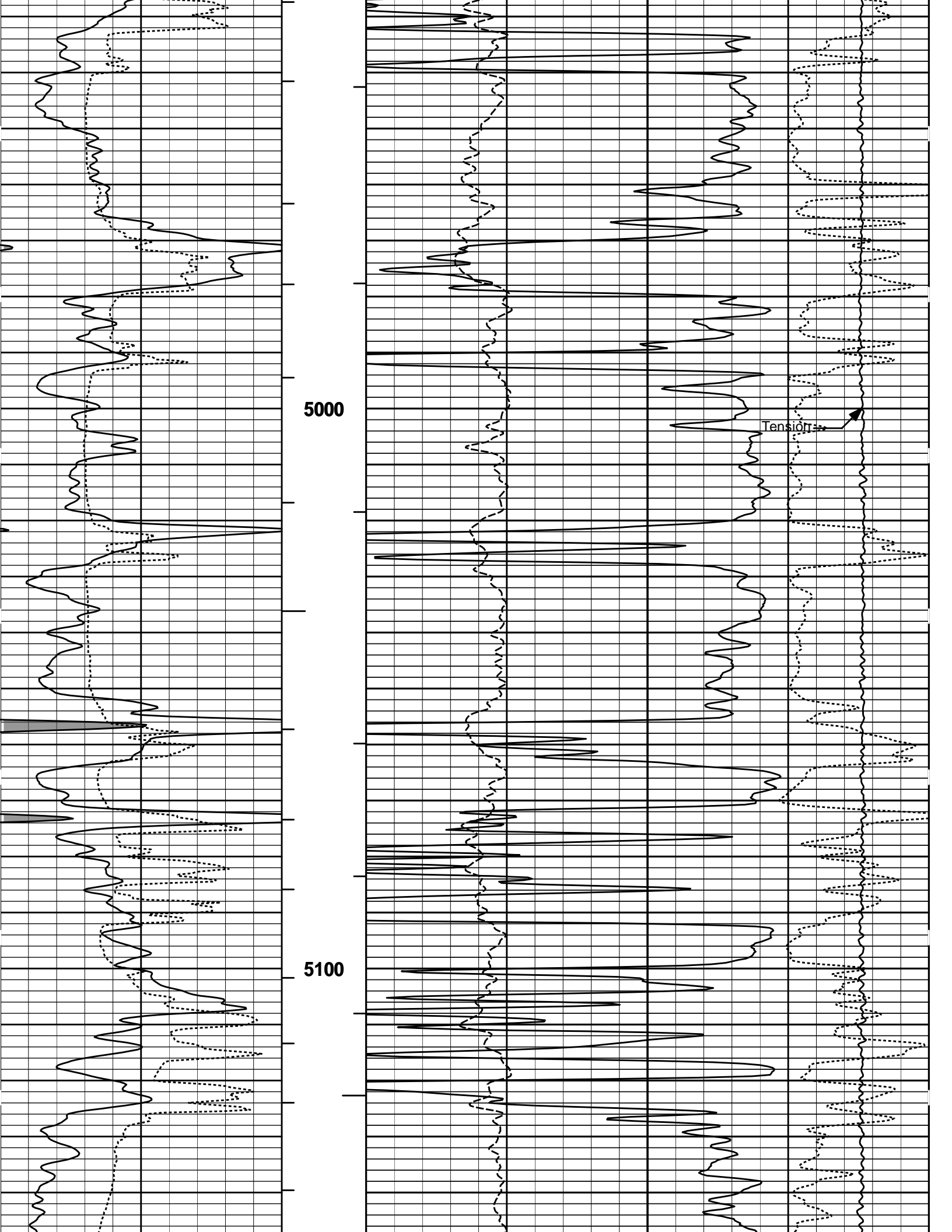
5 INCH MAIN LOG

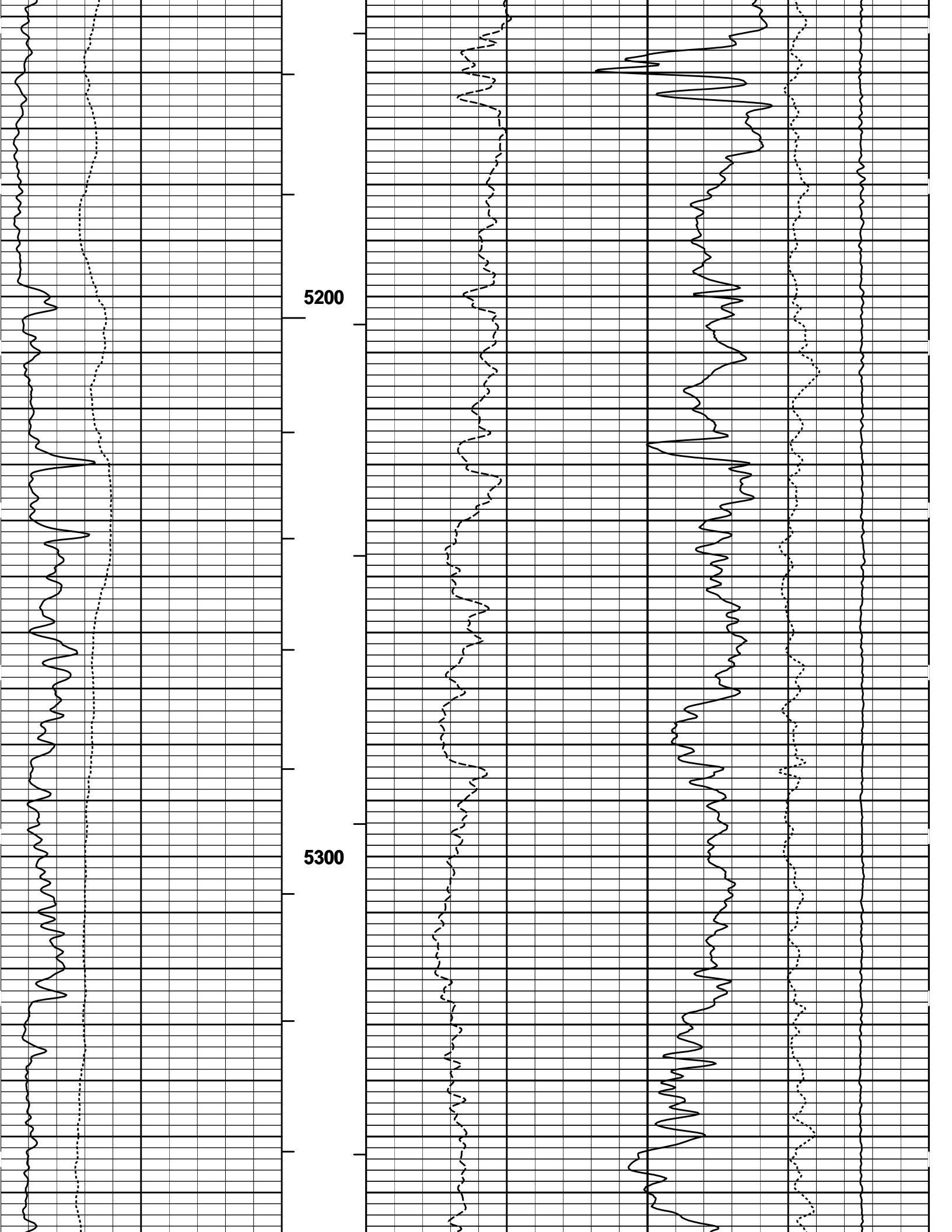


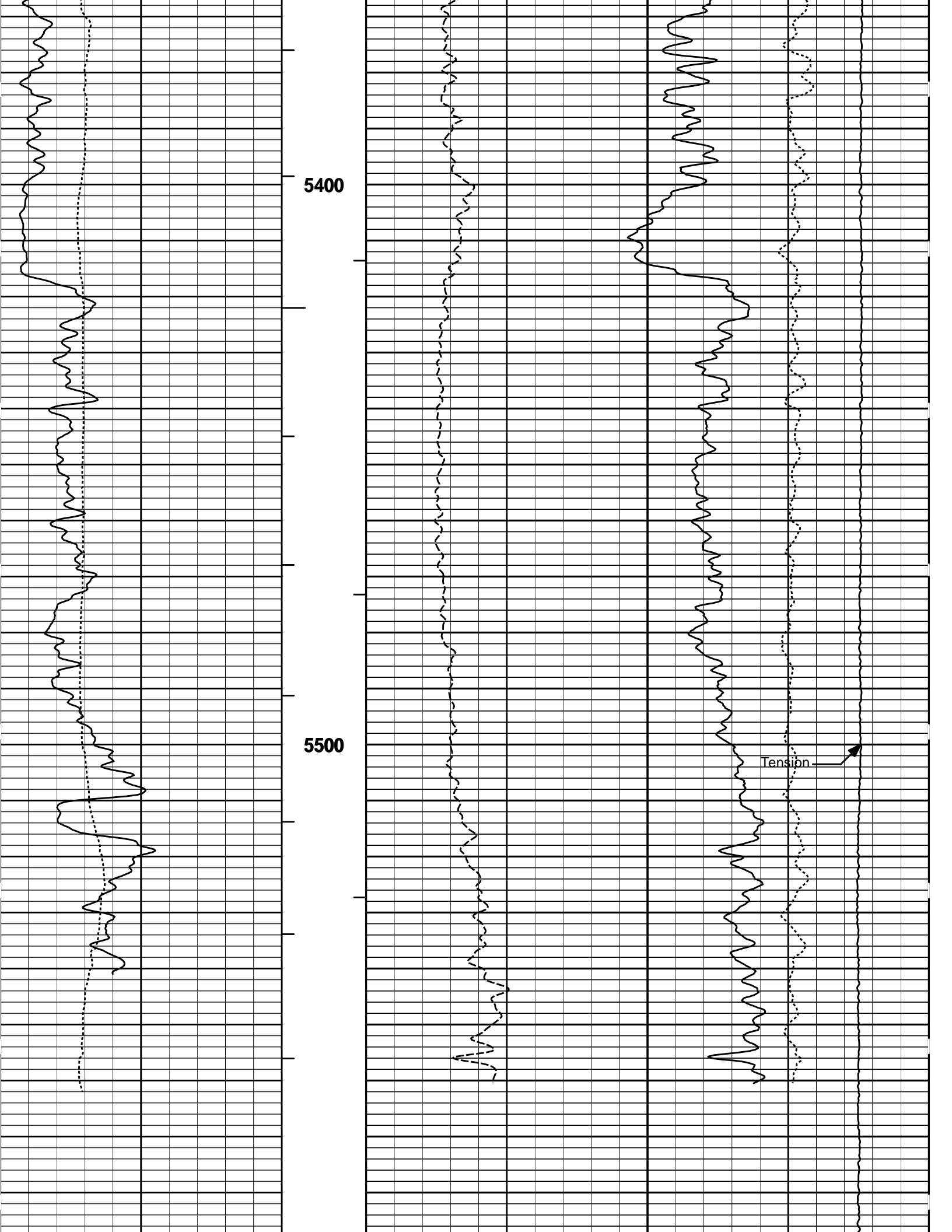












5600

TD

0	Gamma Ray	150	1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	api		MD					g/cc	
6	Caliper	16	BHV ft3				10K	Tension	0
	inches		AHV ft3	2				lbs	
								Bulk Density	3
								g/cc	



HALLIBURTON

Plot Time: 27-Aug-11 15:09:34
 Plot Range: 4150 ft to 5651.5 ft
 Data: YORK_31_31_17\Well Based\DETAIL\
 Plot File: \\LOCAL-YORK_31_31_17\0001 QUAD_WSTT_XRMIPOROMLCHK_RHOB_5IN_

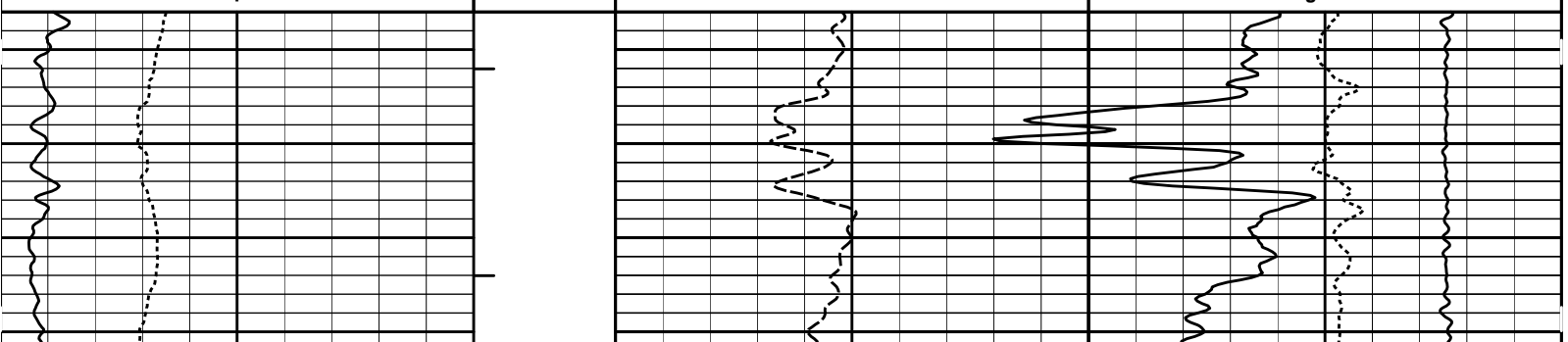
5 INCH MAIN LOG

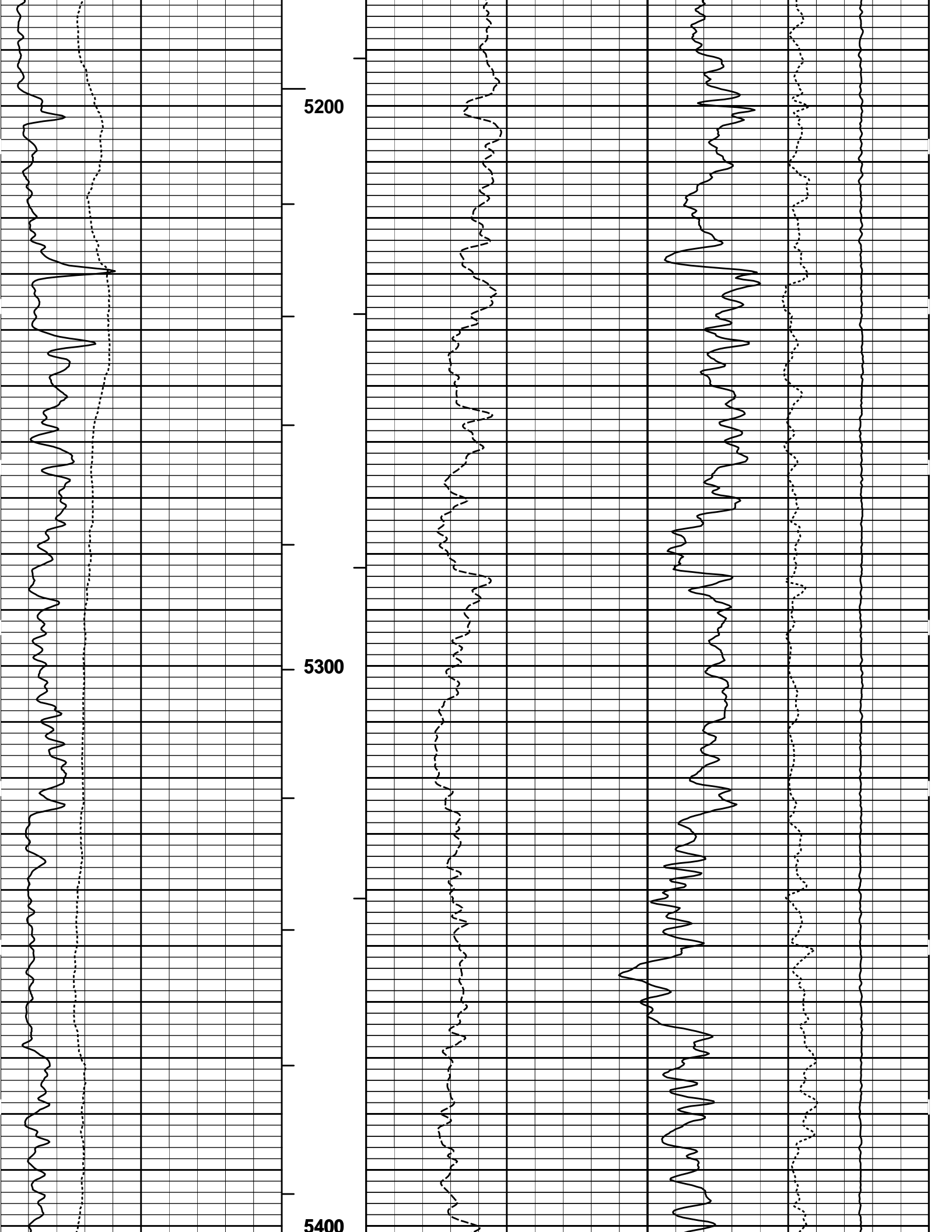
HALLIBURTON

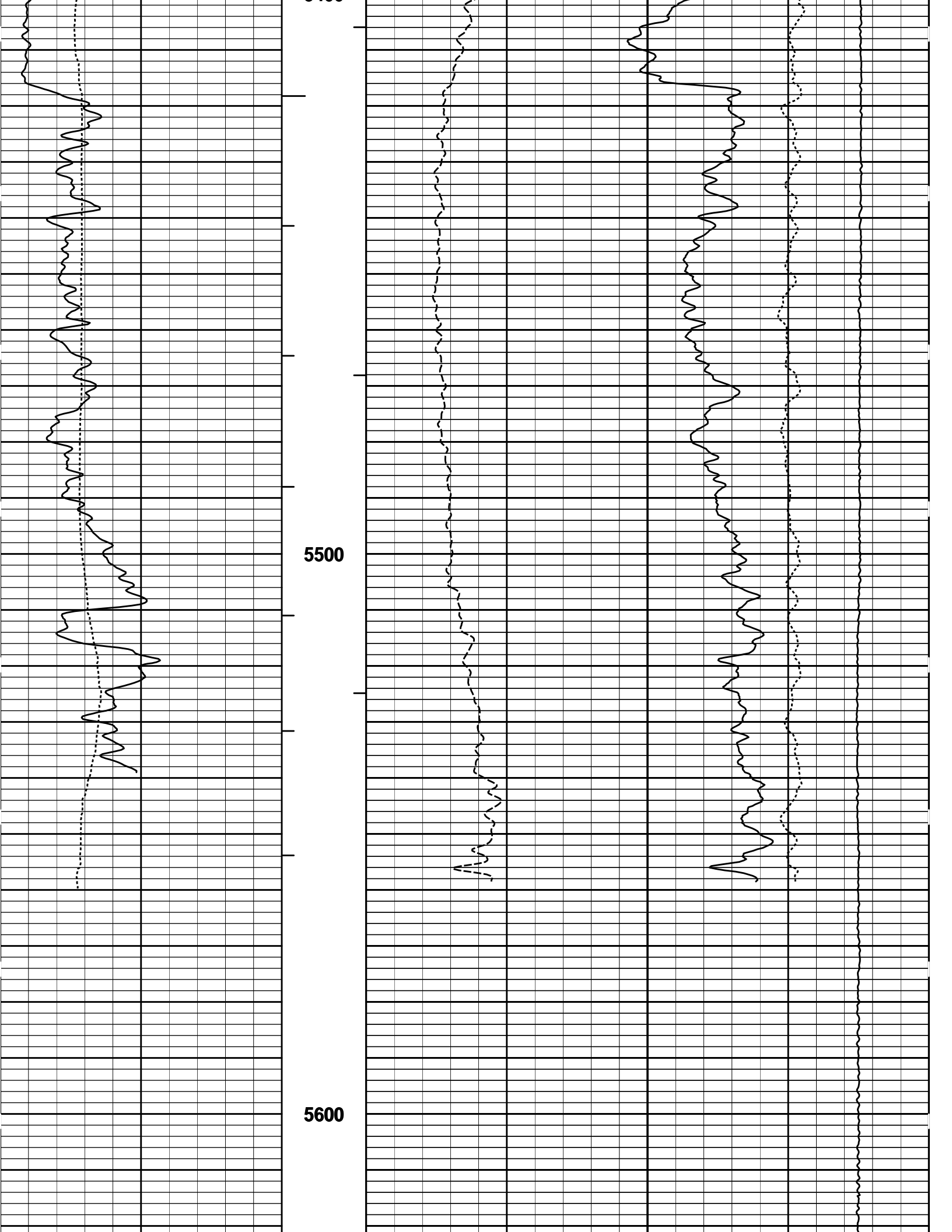
Plot Time: 27-Aug-11 15:09:34
 Plot Range: 5146 ft to 5648.58 ft
 Data: YORK_31_31_17\Well Based\RUN1_REPEAT\
 Plot File: \\LOCAL-YORK_31_31_17\0001 QUAD_WSTT_XRMIPOROMLCHK_RHOB_5IN_RPT

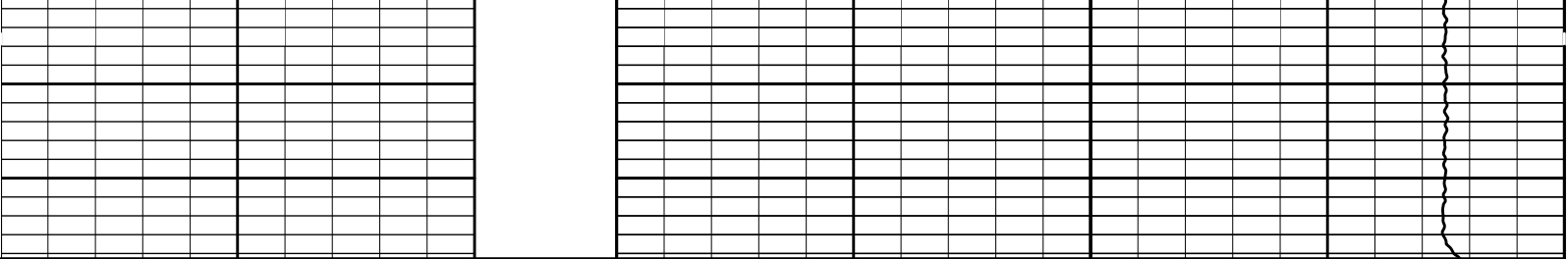
5 INCH REPEAT SECTION

			AHV ft3	2				Bulk Density	3
								g/cc	
6	Caliper	16	BHV ft3				10K	Tension	0
	inches							lbs	
0	Gamma Ray	150	1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	api		MD					g/cc	









0	Gamma Ray	150	1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	api		MD					g/cc	
6	Caliper	16	BHV ft3				10K	Tension	0
	inches		AHV ft3					lbs	
				2	Bulk Density				3
					g/cc				

HALLIBURTON

Plot Time: 27-Aug-11 15:09:43
 Plot Range: 5146 ft to 5648.58 ft
 Data: YORK_31_31_17\Well Based\RUN1_REPEAT\
 Plot File: \\LOCAL\YORK_31_31_17\0001 QUAD_WSTT_XRM\POROMLCHK_RHOB_5IN_RPT

5 INCH REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

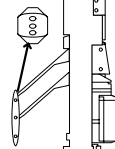
Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	119.71 ft	
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 116.01 ft	3.74 ft	117.79 ft	
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 107.99 ft	8.52 ft	114.05 ft	
DSN Decentralizer- 11005605 6.60 lbs		Ø 3.625 in* →					105.53 ft
DSNT-10755066 174.00 lbs		Ø 3.625 in →			← DSN Far @ 98.60 ft ← DSN Near @ 97.85 ft	9.69 ft	95.85 ft

SDLT-
I066_M85803_P45
360.00 lbs

Ø 4.500 in →

10.81 ft

Ø 4.750 in →



SDL Microlog @ 88.03 ft
SDL Caliper @ 87.85 ft
SDL @ 87.84 ft

85.03 ft

Flex Joint-
10989947
140.00 lbs

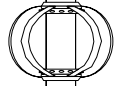
Ø 3.625 in →

5.67 ft

79.36 ft

Centralizer 25-001
8.00 lbs

Ø 4.000 in* →



Wavesonic-I-
10894370
520.00 lbs

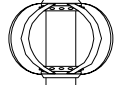
Ø 3.625 in →

34.07 ft

← Wavesonic Delay @ 56.79 ft

Centralizer 25-002
8.00 lbs

Ø 4.000 in* →



XRMI Isolator-PV
32.50 lbs

Ø 4.500 in →

1.30 ft

45.29 ft

43.99 ft



XRMI-I Instrument-
10967399
290.00 lbs

Ø 4.500 in →

13.00 ft

30.99 ft

XRMI-I Mandrel-
10967400
206.00 lbs

Ø 5.000 in →

Ø 4.500 in →

11.16 ft

← Pads 2, 4, 6 @ 22.60 ft
← Pads 1, 3, 5 @ 22.37 ft

19.83 ft

ACRt-I776_S775
250.00 lbs

Ø 3.625 in →

← Mud Resistivity @ 13.44 ft

← ACRt @ 9.46 ft

19.25 ft

Cabbage Head-
TRK954
10.00 lbs

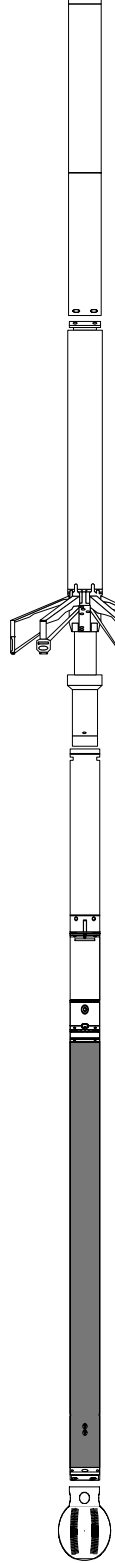
Ø 3.625 in →

Ø 6.000 in →

0.58 ft

0.58 ft

0.00 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	117.79	300.00
SP	SP Sub	TRK954	60.00	3.74	114.05	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	105.53	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	95.85	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	99.18	300.00
SDLT	Spectral Density Tool	I066_M85803_P45	360.00	10.81	85.03	60.00
FLEX	Flex Joint	10989947	140.00	5.67	79.36	300.00
WSTT	WaveSonic Insite	10894370	520.00	34.07	45.29	30.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	48.45	300.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	74.73	300.00
	Isolator for the XRMI tool	PV	32.50	1.30	43.99	300.00
XRMI	XRMI Navigation - Insite	10967399	290.00	13.00	30.99	30.00
XRMI-I	XRMI Imager - Insite	10967400	206.00	11.16	19.83	30.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25	0.58	300.00

Total **2,260.10** **119.71**

* Not included in Total Length and Length Accumulation.

Data: YORK_31_31_1710001 QUAD_WSTT_XRMINDLE **Date: 26-Aug-11 18:40:09**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 10748374	Reference Calibration Date:	25-Apr-11 10:04:04
Engineer:	C. MARLOWE	Calibration Date:	09-Aug-11 05:40:36
Software Version:	WL INSITE R3.2.5 (Build 2)	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	Units
Background	34.4	35.2	api
Background + Calibrator	261.1	267.2	api
Calibrator	232.8	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 10748374	Reference Calibration Date:	09-Aug-11 05:40:36
Engineer:	C. HAVERKAMP	Calibration Date:	26-Aug-11 17:40:43
Software Version:	WL INSITE R3.2.5 (Build 2)	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	35.2	24.3	api
Background + Calibrator	267.2	258.6	api
Calibrator	232.0	234.3	api

Shop	Field	Difference	Tolerance
232.0	234.3	-2.3	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10755066	Reference Calibration Date:	18-Jun-11 10:14:15
Engineer:	S. JUNG	Calibration Date:	28-Jul-11 14:45:23
Software Version:	WL INSITE R3.2.5 (Build 2)	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: 89 degF
 Min. Tool Housing Outside Diameter: 3.615 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.952	0.952	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):	0.2103	0.2103	0.0000	+/- 0.0020
Calibrated Ratio:	9.70	9.70	0.001	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0612	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: 28-Jul-11 14:45:23
Engineer: C. HAVERKAMP	Calibration Date: 26-Aug-11 17:44:17
Software Version: WL INSITE R3.2.5 (Build 2)	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):	0.0612	0.0756	0.0144	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 15-Jun-11 13:49:07
Engineer: S. JUNG	Calibration Date: 28-Jul-11 17:09:21
Software Version: WL INSITE R3.2.5 (Build 2)	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	0.9833	0.9683	0.90 - 1.10
Near Dens Gain	0.9718	0.9689	0.90 - 1.10
Near Peak Gain	0.9666	0.9709	0.90 - 1.10
Near Lith Gain	0.9589	0.9479	0.90 - 1.10
Far Bar Gain	0.9891	0.9872	0.90 - 1.10
Far Dens Gain	0.9804	0.9802	0.90 - 1.10
Far Peak Gain	0.9761	0.9761	0.90 - 1.10
Far Lith Gain	0.9511	0.9458	0.90 - 1.10

Near Bar Offset	0.3728	0.5164	NONE
Near Dens Offset	0.4485	0.4788	NONE

Near Dens Offset	0.4435	0.4782	NONE
Near Peak Offset	0.4554	0.4313	NONE
Near Lith Offset	0.4791	0.5856	NONE
Far Bar Offset	0.2144	0.2328	NONE
Far Dens Offset	0.2716	0.2747	NONE
Far Peak Offset	0.2759	0.2737	NONE
Far Lith Offset	0.4034	0.4411	NONE

Near Bar Background	1017.14	1015.67	700 - 1450
Near Dens Background	336.72	338.63	230 - 480
Near Peak Background	147.16	147.35	100 - 210
Near Lith Background	180.00	177.87	125 - 260
Far Bar Background	524.89	518.02	450 - 900
Far Dens Background	201.71	200.61	175 - 345
Far Peak Background	79.21	77.97	70 - 140
Far Lith Background	83.74	83.63	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.681	1.690	0.009	+/- 0.015
Pe	2.622	2.563	-0.059	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.590	0.011	+/- 0.01500
Pe	3.179	3.138	-0.041	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0012	+/- 0.0110	-0.0004	+/- 0.0140
Magnesium Block	-0.0008	+/- 0.0110	-0.0022	+/- 0.0140
Aluminum Block	-0.0004	+/- 0.0110	0.0005	+/- 0.0140
Resolution	9.73	6.00 - 11.50	9.17	6.00 - 11.50
Internal Verifier(B+D+P+L)	1680	1200 - 2700	880	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 - I066_M85803_P45	Reference Calibration Date: 28-Jul-11 17:09:21
Engineer: C. HAVERKAMP	Calibration Date: 26-Aug-11 17:41:01
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Pad Temperature: 113.5 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1679.525	1677.646	-1.879	16.455
Far (B+D+P+L) cps	880.233	896.300	16.067	16.189
Near Resolution	9.73	10.14	0.410	0.50
Far Resolution	9.17	9.90	0.730	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

MICRO LOG SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 12-Jul-11 04:25:12
Engineer: S. JUNG	Calibration Date: 28-Jul-11 18:06:25
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.07	-0.08	-0.00	0.00	ohmm
Calibration Point #1	0.01	0.00	-0.01	0.00	ohmm
Calibration Point #2	19.56	20.00	19.59	20.00	ohmm
Internal Reference	19.93	20.38	20.01	20.43	ohmm

Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero		-0.95		1.95	V
Calibration Point #1		19.80		1.61	V
Calibration Point #2		5207.27		6760.33	V
Internal Reference		5305.74		6907.01	V

MICRO LOG FIELD CHECK

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 28-Jul-11 18:06:25
Engineer: C. HAVERKAMP	Calibration Date: 26-Aug-11 17:41:56
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.08	-0.08	0.00	-0.00	ohmm
Internal Reference	20.38	20.40	20.43	20.46	ohmm

Summary

Signal	Shop	Field	Difference	Tolerance
Microlog Normal	20.38	20.40	-0.02	+/- 0.80
Microlog Lateral	20.43	20.46	-0.03	+/- 0.80

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 12-Jul-11 04:19:15
Engineer: S. JUNG	Calibration Date: 28-Jul-11 18:03:47
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
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	Current Value	Previous Value	Row Value
Pad Offset	-5270.37	-4918.14	-7000.00 - -1000.00
Pad Gain	0.0003721	0.0003691	0.000200 - 0.000600
Arm Offset	-579.04	-1490.50	-5000.00 - 3000.00
Arm Gain	0.0004414	0.0005216	0.000300 - 0.000700
Arm Power	-0.000000209	-0.000005938	-0.000010 - 0.000010

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)	1.89	2.00	0.11	+/- 0.20
Medium Ring (in)	3.65	3.75	0.10	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.51	6.50	-0.01	+/- 0.20
Medium Ring (in)	8.09	8.25	0.16	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed
 Ring-Measurement Check: Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 28-Jul-11 18:03:47
Engineer: C. HAVERKAMP	Calibration Date: 26-Aug-11 17:47:25
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.73	-0.02	+/- 0.10
Ring Diameter	8.25	8.22	-0.03	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: Passed
 Diameter Check: Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	234.3	-----	-2.3	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0612	0.0756	-----	-0.0144	+/- 0.0150	decp
SDLT-I066_M85803_P45						
Near(B+D+P+L)	1679.525	1677.646	-----	1.879	+/-16.455	cps
Far(B+D+P+L)	880.233	896.300	-----	-16.067	+/-16.189	cps
MicroLog Normal	20.38	20.40	-----	-0.02	+/-0.80	ohmm
MicroLog Lateral	20.43	20.46	-----	-0.03	+/-0.80	ohmm
Pad Extension	3.75	3.73	-----	0.02	+/-0.10	in
Ring Diameter	8.25	8.22	-----	0.030	+/-0.15	in

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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	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	7500.00	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	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5650.00	ft
	SHARED	BHT	Bottom Hole Temperature	140.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	XRMI-I Instrument	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	XRMI-I Instrument	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	No	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / 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	Centered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNNO	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	DNOK	Process Density?	Yes	
	SDLT	DNNO	Process Density EVR?	No	
	SDLT	CB	Logging Calibration Blocks?	No	
	SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT	DTWN	Disable temperature warning	No	
	SDLT	DMA	Formation Density Matrix	2.710	g/cc
	SDLT	DFL	Formation Density Fluid	1.000	g/cc
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT	MLOK	Process MicroLog Outputs?	Yes	
	Wavesonic-I	WSOK	Process WSTT?	Yes	
	Wavesonic-I	WSNO	Process WSTT EVR?	No	

Wavesonic-I	MSWN	Monopole Sliding Window Length	-1.00	us
Wavesonic-I	DSWN	Dipole Sliding Window Length	-1.00	us
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	SMTH	Semblance Smoothing	-2.00	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	User define	
Wavesonic-I	DTMA	Delta -T Matrix	47.60	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	STOL	Slow Tolerance	40.00	
Wavesonic-I	SMTL	Semblance Tolerance	0.25	
Wavesonic-I	SMTL	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	SHAO	Show Advanced Options?	Yes	
Wavesonic-I	WRNM	Wavesonic Receiver Normalization Method	None	
Wavesonic-I	DTRM	Transmitter to First Receiver Distance - Monopole	10.24	ft
Wavesonic-I	DTRX	Transmitter to First Receiver Distance Dipole X	9.24	ft
Wavesonic-I	DTRY	Transmitter to First Receiver Distance Dipole Y	9.24	ft
Wavesonic-I	DIRM	Receiver Spacing	0.50	ft
Wavesonic-I	NRAM	Number of Receivers in Array	8	
Wavesonic-I	DWCM	Digitizer Word Count Monopole	400	
Wavesonic-I	DSIM	Digital Sample Interval - Monopole	20.3174	us
Wavesonic-I	WDDM	Waveform Recording Delay Monopole	-304.761	us
Wavesonic-I	DWCX	Digitizer Word Count Dipole X	400	
Wavesonic-I	DSIX	Digital Sample Interval Dipole X	40.635	us
Wavesonic-I	WDDX	Waveform Digitization Delay Dipole X	-304.761	us
Wavesonic-I	DWCY	Digitizer Word Count Dipole Y	400	
Wavesonic-I	DSIY	Digital Sample Interval Dipole Y	40.635	us
Wavesonic-I	WDDY	Waveform Digitization Delay Dipole Y	-304.761	us
Wavesonic-I	NAVS	Navigation Source Tool	XRMI-I Instrument	
XRMI-I Instrument	WRTI	Survey Writing Interval	30	ft
XRMI-I Instrument	SOPT	Smoothing Option	None	
XRMI-I Mandrel	DIMG	Process XRMI?	Yes	
XRMI-I Mandrel	ROTI	Rotate Image (N-E-S-W-N)?	Yes	
XRMI-I Mandrel	AGN	Use Button Auto Gain?	Yes	
XRMI-I Mandrel	BCLR	Button Auto Gain Color	127	
XRMI-I Mandrel	BFIL	Button Auto Gain Filter	0.020	
XRMI-I Mandrel	BGAN	Button Gain Value	0.001	
XRMI-I Mandrel	BOFF	Button Offset	0	
XRMI-I Mandrel	DIPE	Process Dipmeter Calculations?	Yes	
XRMI-I Mandrel	BHCS	Process Borehole Corrections?	Yes	
XRMI-I Mandrel	CLOK	Process Caliper Outputs?	Yes	
XRMI-I Mandrel	CMAX	Caliper Maximum Limit	100.0	in
XRMI-I Mandrel	CMIN	Caliper Mimimum Limit	3.5	in
XRMI-I Mandrel	NAVS	Navigation Source Tool	XRMI-I Instrument	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	

ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

Data: YORK_31_31_17\0001 QUAD_WSTT_XRMIDDLE

Date: 26-Aug-11 18:55:31

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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	116.01	NO	
SP	Spontaneous Potential	116.01	BLK	1.250
SPR	Raw Spontaneous Potential	116.01	NO	
SPO	Spontaneous Potential Offset	116.01	NO	
GTET				
TPUL	Tension Pull	107.99	NO	
GR	Natural Gamma Ray API	107.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	107.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	107.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	97.75	NO	
RNDS	Near Detector Telemetry Counts	97.85	BLK	1.417
RFDS	Far Detector Telemetry Counts	98.60	TRI	0.583
DNTT	DSN Tool Temperature	97.85	NO	
DSNS	DSN Tool Status	97.75	NO	
ERND	Near Detector Telemetry Counts EVR	97.85	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	98.60	BLK	0.000
ENTM	DSN Tool Temperature EVR	97.85	NO	
SDLT				
TPUL	Tension Pull	87.84	NO	
NAB	Near Above	87.66	BLK	0.920
NHI	Near Cesium High	87.66	BLK	0.920
NLO	Near Cesium Low	87.66	BLK	0.920
NVA	Near Valley	87.66	BLK	0.920
NBA	Near Barite	87.66	BLK	0.920
NDE	Near Density	87.66	BLK	0.920
NPK	Near Peak	87.66	BLK	0.920
NLI	Near Lithology	87.66	BLK	0.920
NBAU	Near Barite Unfiltered	87.66	BLK	0.250
NLIU	Near Lithology Unfiltered	87.66	BLK	0.250
FAB	Far Above	88.01	BLK	0.250
FHI	Far Cesium High	88.01	BLK	0.250
FLO	Far Cesium Low	88.01	BLK	0.250

FVA	Far Valley	88.01	BLK	0.250
FBA	Far Barite	88.01	BLK	0.250
FDE	Far Density	88.01	BLK	0.250
FPK	Far Peak	88.01	BLK	0.250
FLI	Far Lithology	88.01	BLK	0.250
PTMP	Pad Temperature	87.85	BLK	0.920
NHV	Near Detector High Voltage	85.03	NO	
FHV	Far Detector High Voltage	85.03	NO	
ITMP	Instrument Temperature	85.03	NO	
DDHV	Detector High Voltage	85.03	NO	
TPUL	Tension Pull	87.85	NO	
PCAL	Pad Caliper	87.85	TRI	0.250
ACAL	Arm Caliper	87.85	TRI	0.250
TPUL	Tension Pull	88.03	NO	
MINV	Microlog Lateral	88.03	BLK	0.750
MNOR	Microlog Normal	88.03	BLK	0.750

Wavesonic-I

TPUL	Tension Pull	56.79	NO	
DPSX	Dipole Source X Structure1	45.29	NO	
DPSY	Dipole Source Y Structure1	45.29	NO	
DPSM	Monopole Source Structure	45.29	NO	
WVST	Wavesonic Compressed Data	56.79	NO	
TPUL	Tension Pull	56.79	NO	
XMS1	Wave Sonic Status Word 1	45.29	NO	
XMS2	Wave Sonic Status Word 2	45.29	NO	
XMS1	Wave Sonic XMITStatus Word 1	45.29	NO	
XMS1	Wave Sonic XMITStatus Word 2	45.29	NO	
F1HA	Dipole 1 HV After	45.29	NO	
F1HB	Dipole 1 HV Before	45.29	NO	
F2HA	Dipole 2 HV After	45.29	NO	
F2HB	Dipole 2 HV Before	45.29	NO	
F3HA	Monopole HV After	45.29	NO	
F3HB	Monopole HV Before	45.29	NO	
INVT	Input Voltage	45.29	NO	
5VOL	5 Volts	45.29	NO	
MI5A	Minus 5 Volts Analog	45.29	NO	
ITMP	Instrument Temperature	45.29	NO	
PL5A	Plus 5 Volts Analog	45.29	NO	
5VD	Plus 5 Volts Digital	45.29	NO	
TCUR	Tool Current	45.29	NO	
SUPV	Supply Voltage	45.29	NO	
PRVT	Preregulated voltage	45.29	NO	
PRVT	Pre-regulated voltage Xmter	45.29	NO	
TEMP	Temperature	45.29	NO	
ACQN	Acquisition Number	45.29	NO	
XDP	Delay Reference	56.79	NO	
MITM	MIT Mode	56.79	NO	
VERS	Version	45.29	NO	
D1CT	Dipole 1 Compressed Word Count	56.79	NO	
D2CT	Dipole 2 Compressed Word Count	56.79	NO	
MCNT	Monopole Compressed Word Count	56.79	NO	
SEQN	Sequence Number	45.29	NO	
FREV	Firmware Revision	45.29	NO	
MSMP	Monopole Sample Rate	45.29	NO	
MSMP	Dipole Sample Rate	45.29	NO	

M5MFP	Dipole Sample Rate	45.29	NO
MFWF	Monopole Firing Waveform	45.29	NO
MFRQ	Monopole Frequency	45.29	NO
MDLY	Monopole Delay	45.29	NO
DXWF	Dipole X Firing Waveform	45.29	NO
XFRQ	Dipole X Frequency	45.29	NO
XDLY	Dipole X Delay	45.29	NO
DYWF	Dipole Y Firing Waveform	45.29	NO
YFRQ	Dipole Y Frequency	45.29	NO
YDLY	Dipole Y Delay	45.29	NO
DPSX	Dipole Source X Structurel	45.29	NO
DPSY	Dipole Source Y Structurel	45.29	NO
DPSM	Monopole Source Structure	45.29	NO
WVST	Wavesonic Compressed Data	56.79	NO
AUTM	Auto Mode	45.29	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	45.29	NO
MSL	Monopole Lower Travel Time	56.79	NO
MSH	Monopole Upper Travel Time	56.79	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	45.29	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	45.29	NO
DLTT	Dipole Lower Travel Time	45.29	NO
DUTT	Dipole Upper Travel Time	45.29	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	45.29	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	45.29	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	45.29	NO
MUTS	Mute/Enable Sides	45.29	NO
WSRB	Relative Bearing	56.79	NO
WSAZ	WSX Azimuth Pad 1	56.79	NO
TPUL	Tension Pull	56.79	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	56.79	NO
WXX	Dipole X for SIDES - A-C	56.79	NO
WYY	Dipole Y for SIDES - B-D	56.79	NO
WXY	Dipole X for SIDES - B-D	56.79	NO
WYX	Dipole Y for SIDES - A-C	56.79	NO
TPUL	Tension Pull	56.79	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO

XRMI-I Mandrel

TPUL	Tension Pull	22.59	NO
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PAD1	XRMI Pad 1 values	22.36	NO	
PAD2	XRMI Pad 2 values	22.36	NO	
PAD3	XRMI Pad 3 values	22.36	NO	
PAD4	XRMI Pad 4 values	22.36	NO	
PAD5	XRMI Pad 5 values	22.36	NO	
PAD6	XRMI Pad 6 values	22.36	NO	
OD1	EMI Odd Button Values Pad 1	22.36	NO	
OD2	EMI Odd Button Values Pad 2	22.59	NO	
OD3	EMI Odd Button Values Pad 3	22.36	NO	
OD4	EMI Odd Button Values Pad 4	22.59	NO	
OD5	EMI Odd Button Values Pad 5	22.36	NO	
OD6	EMI Odd Button Values Pad 6	22.59	NO	
EV1	EMI Even Button Values Pad 1	22.39	NO	
EV2	EMI Even Button Values Pad 2	22.57	NO	
EV3	EMI Even Button Values Pad 3	22.39	NO	
EV4	EMI Even Button Values Pad 4	22.57	NO	
EV5	EMI Even Button Values Pad 5	22.39	NO	
EV6	EMI Even Button Values Pad 6	22.57	NO	
ITMP	Instrument Temperature	19.83	NO	
EMIM	Tool Mode	19.83	NO	
HAZI	Hole Azimuth	22.11	NO	
HAZI	Hole Azimuth - Down Delay	22.61	NO	
ZACC	Accelerometer Z	22.36	NO	
TPUL	Tension Pull	22.59	NO	
FIR1	Current Button R - Pad 1	22.36	NO	
FIR2	Current Button R - Pad 2	22.59	NO	
FIR3	Current Button R - Pad 3	22.36	NO	
FIR4	Current Button R - Pad 4	22.59	NO	
FIR5	Current Button R - Pad 5	22.36	NO	
FIR6	Current Button R - Pad 6	22.59	NO	
FIX1	Current Button X - Pad 1	22.36	NO	
FIX2	Current Button X - Pad 2	22.59	NO	
FIX3	Current Button X - Pad 3	22.36	NO	
FIX4	Current Button X - Pad 4	22.59	NO	
FIX5	Current Button X - Pad 5	22.36	NO	
FIX6	Current Button X - Pad 6	22.59	NO	
SIR1	Current Slow Button R - Pad 1	22.36	BLK	3.000
SIR2	Current Slow Button R - Pad 2	22.59	BLK	3.000
SIR3	Current Slow Button R - Pad 3	22.36	BLK	3.000
SIR4	Current Slow Button R - Pad 4	22.59	BLK	3.000
SIR5	Current Slow Button R - Pad 5	22.36	BLK	3.000
SIR6	Current Slow Button R - Pad 6	22.59	BLK	3.000
SIX1	Current Slow Button X - Pad 1	22.36	BLK	3.000
SIX2	Current Slow Button X - Pad 2	22.59	BLK	3.000
SIX3	Current Slow Button X - Pad 3	22.36	BLK	3.000
SIX4	Current Slow Button X - Pad 4	22.59	BLK	3.000
SIX5	Current Slow Button X - Pad 5	22.36	BLK	3.000
SIX6	Current Slow Button X - Pad 6	22.59	BLK	3.000
EMMR	Phasor Voltage - Real Part	22.36	NO	
EMMX	Phasor Voltage - Imaginary Part	22.36	NO	
PADV	Pad Voltage	19.83	BLK	0.250
ITMP	Instrument Temperature	19.83	BLK	0.000
CON1	Conductivity Pad 1	22.36	BLK	3.000
CON2	Conductivity Pad 2	22.59	BLK	3.000
CON3	Conductivity Pad 3	22.36	BLK	3.000
CON4	Conductivity Pad 4	22.59	BLK	3.000

CON1	Conductivity Pad 1	22.36	BLK	3.000
CON5	Conductivity Pad 5	22.36	BLK	3.000
CON6	Conductivity Pad 6	22.59	BLK	3.000
UIR2	Current Button R No Delay - Pad 2	22.36	NO	
UIR4	Current Button R No Delay - Pad 4	22.36	NO	
UIR6	Current Button R No Delay - Pad 6	22.36	NO	
UIX2	Current Button X No Delay - Pad 2	22.36	NO	
UIX4	Current Button X No Delay - Pad 4	22.36	NO	
UIX6	Current Button X No Delay - Pad 6	22.36	NO	
TPUL	Tension Pull	22.59	NO	
ARM1	Caliper 1 measurement	22.36	BLK	0.000
ARM2	Caliper 2 measurement	22.36	BLK	0.000
ARM3	Caliper 3 measurement	22.36	BLK	0.000
ARM4	Caliper 4 measurement	22.36	BLK	0.000
ARM5	Caliper 5 measurement	22.36	BLK	0.000
ARM6	Caliper 6 measurement	22.36	BLK	0.000
MOTV	Motor Voltage Monitor 1	22.36	BLK	0.000
PRES	Caliper percentage of total compression of the spring	19.83	BLK	0.000
HAZI	Hole Azimuth	22.36	NO	
RB	Relative Bearing	22.36	NO	
AZI1	PAD1 Azimuth	22.36	NO	
DEVI	Inclination	22.36	NO	

ACRt

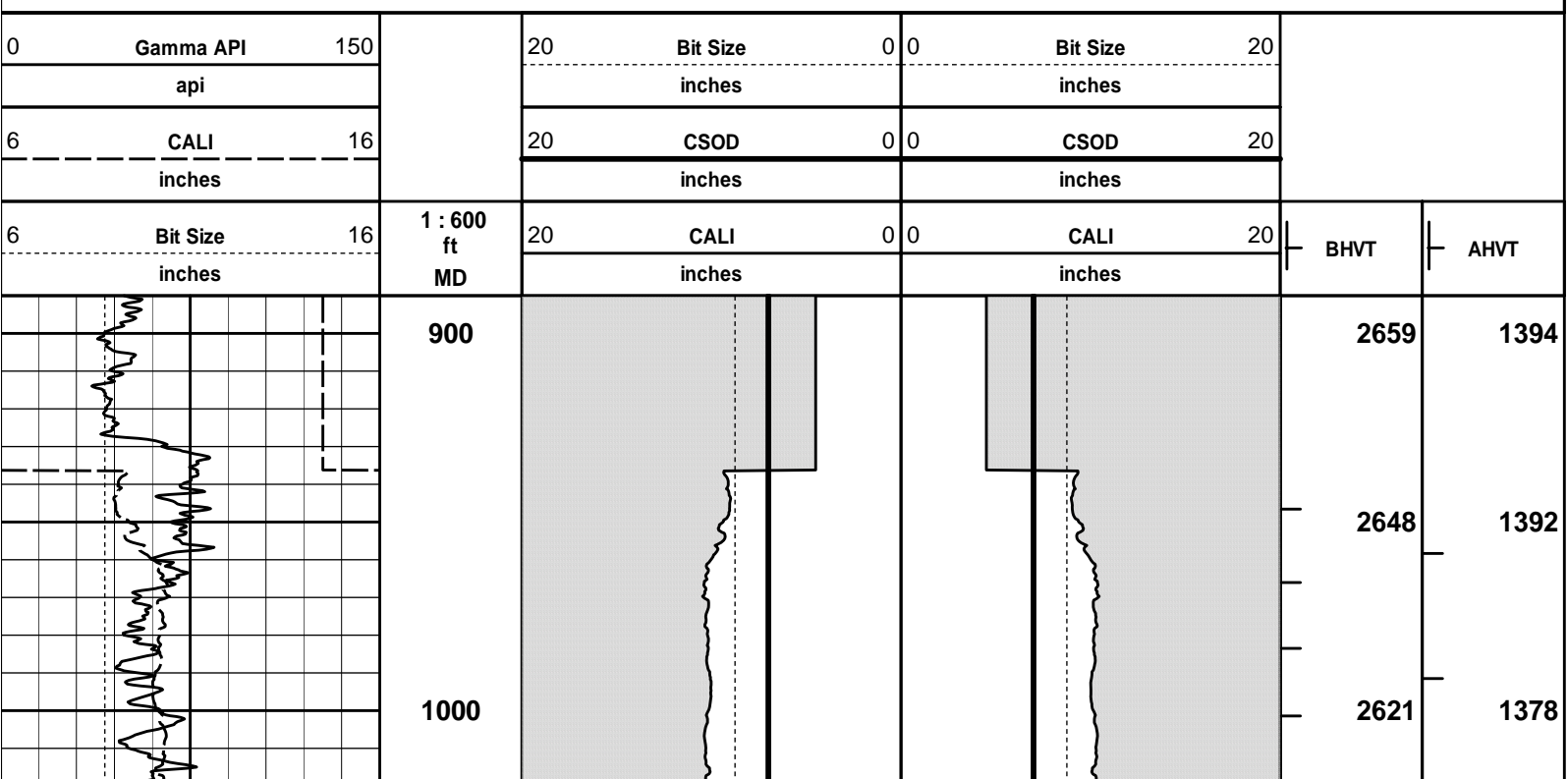
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
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

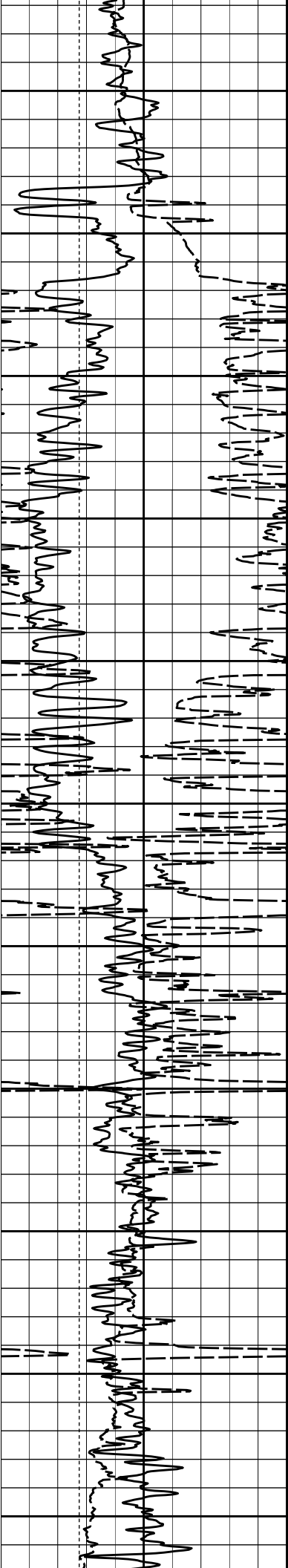
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real 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	

Data: YORK_31_31_17\0001 QUAD_WSTT_XRMNDLE Date: 26-Aug-11 18:55:04

HALLIBURTON	Plot Time: 27-Aug-11 15:09:43 Plot Range: 890 ft to 5651.5 ft Data: YORK_31_31_17\Well Based\RUN1_MAIN Plot File: \\-LOCAL-YORK_31_31_17\0001 QUAD_WSTT_XRM\POROMLCHK_2 IN Borehole Plot IQ
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ANNULAR HOLE VOLUME PRESENTATION





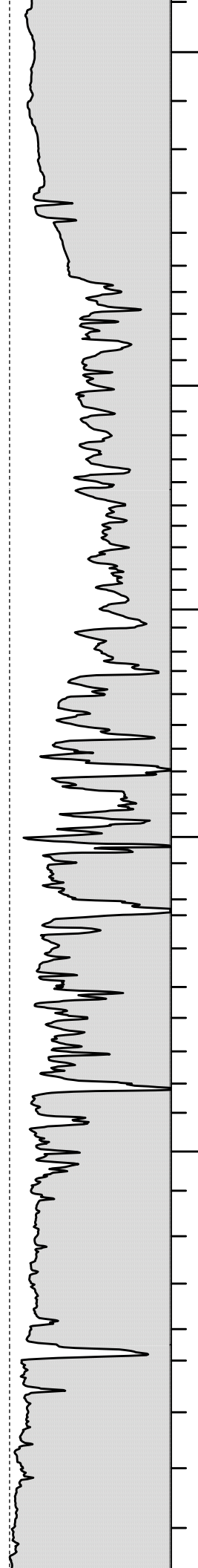
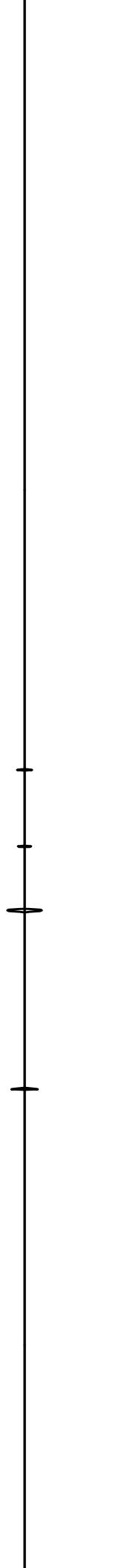
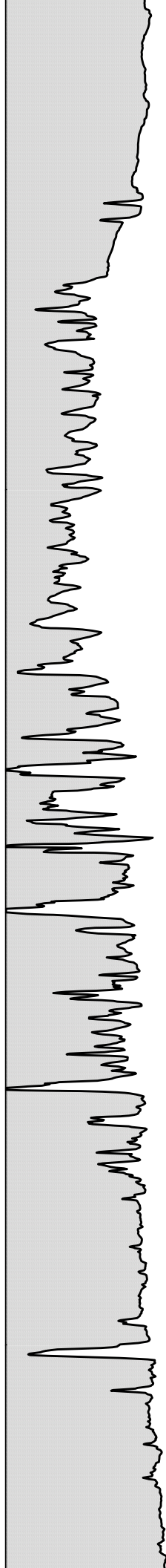
1100

1200

1300

1400

1500



2592

2560

2504

2444

2376

2315

2261

2217

2181

2148

2122

1362

1343

1301

1254

1199

1152

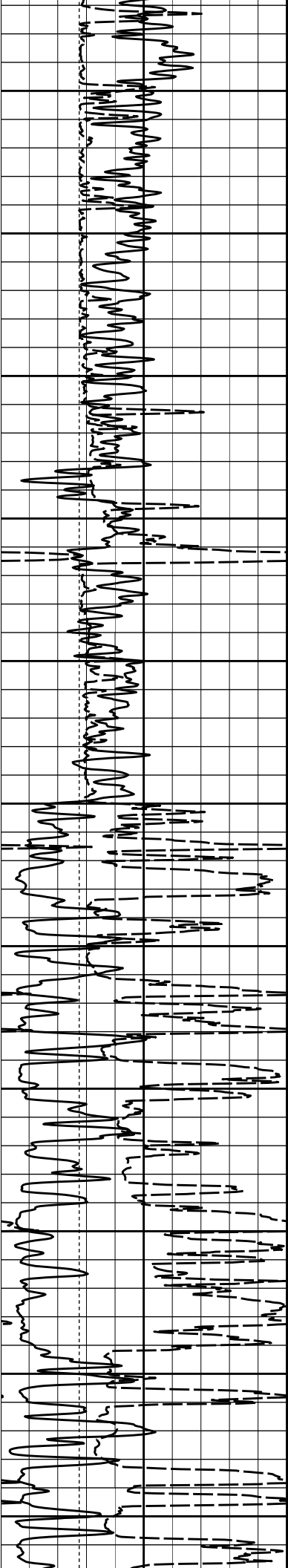
1111

1081

1058

1038

1026



1600

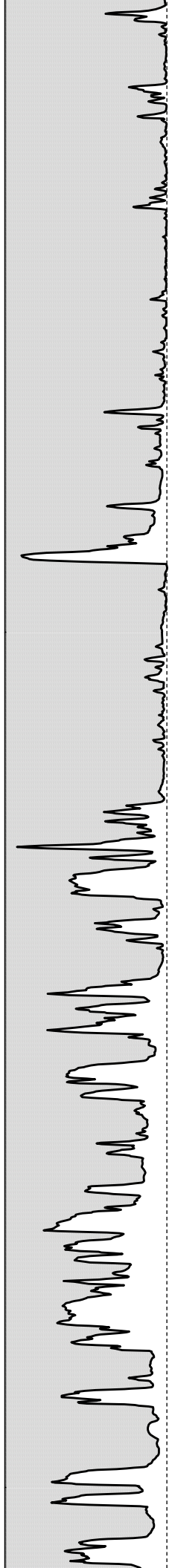
1700

1800

1900

2000

2100



2099

2076

2054

2030

2000

1977

1938

1898

1858

1809

1771

1016

1007

998

987

971

961

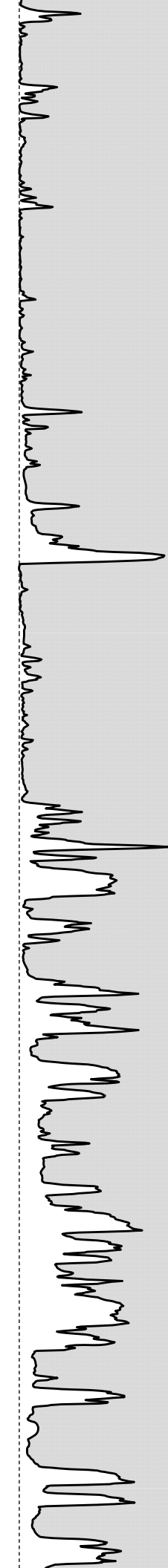
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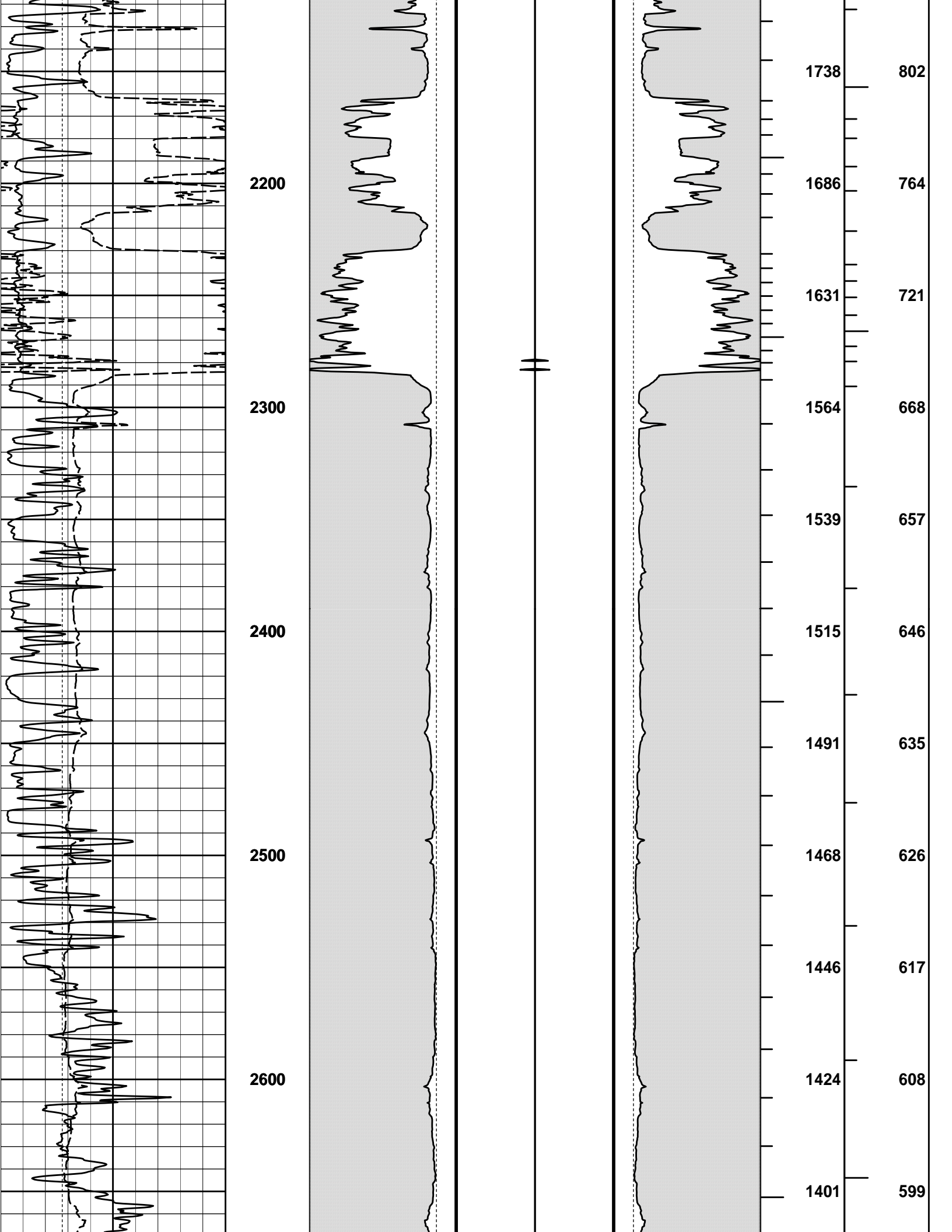
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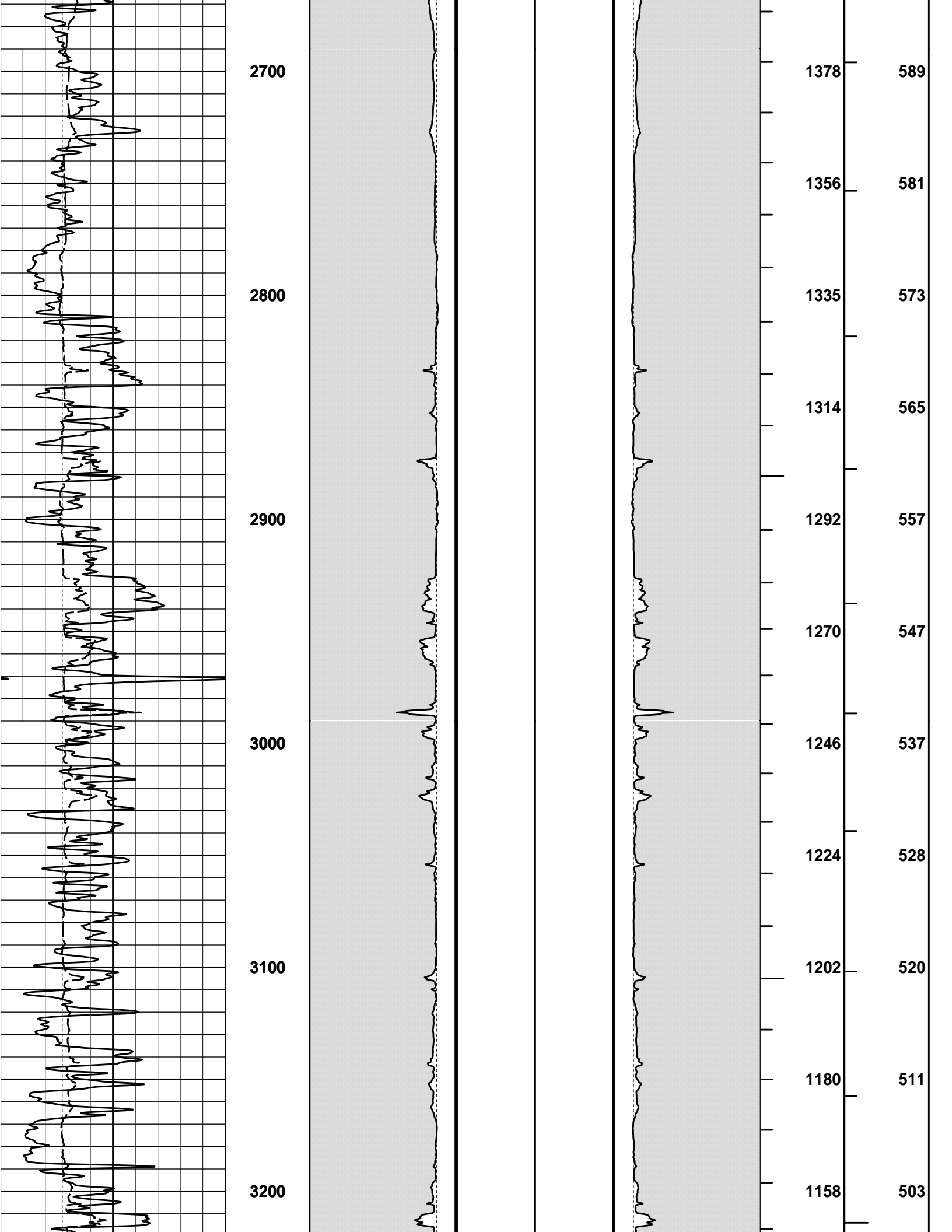
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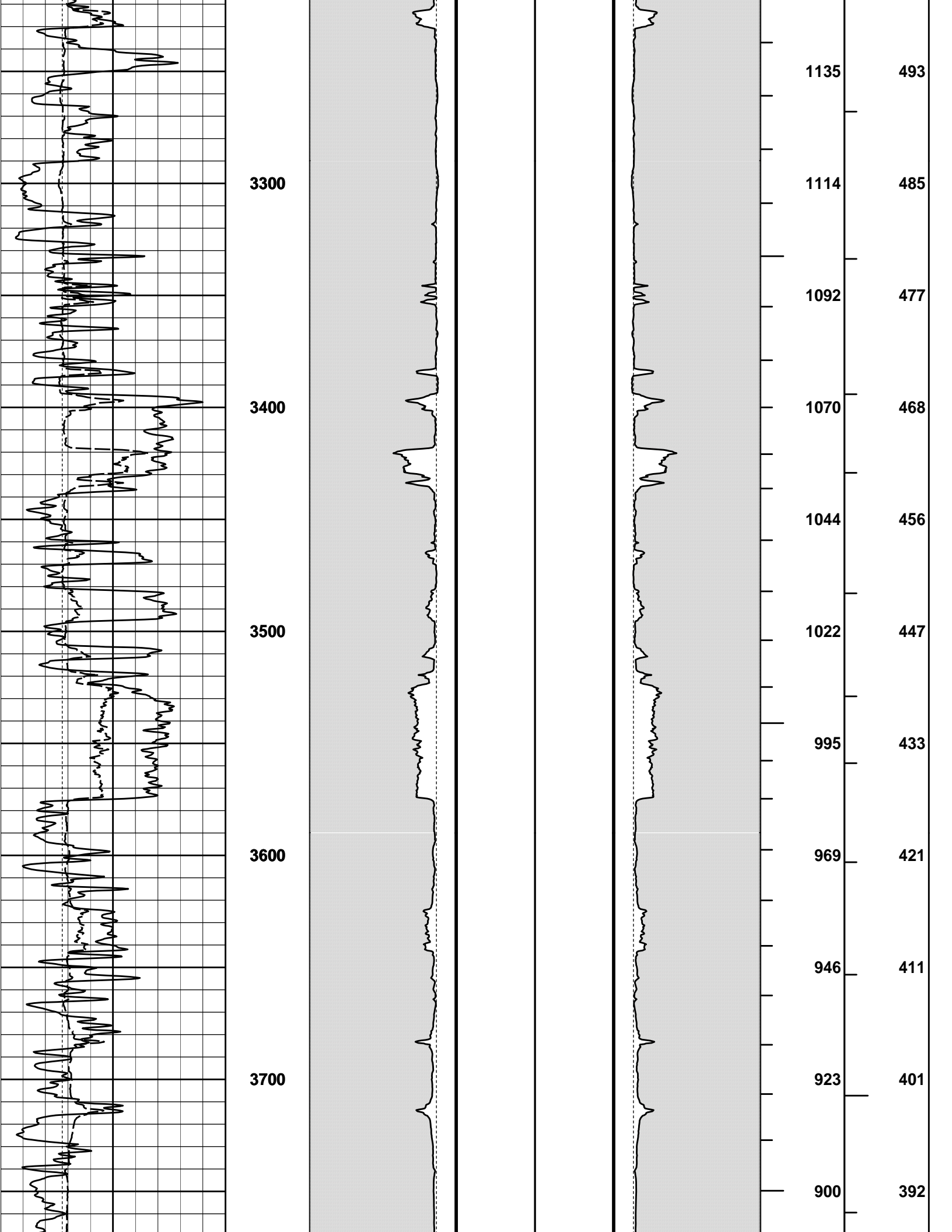
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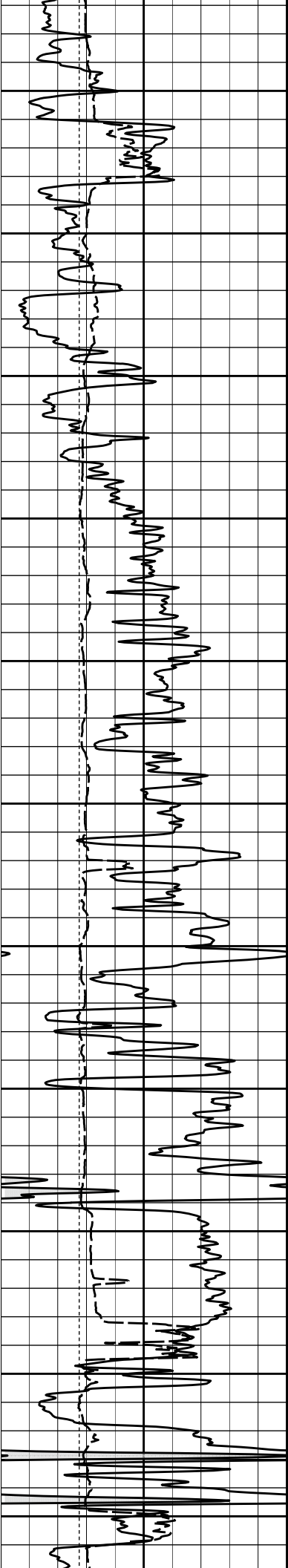
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3800

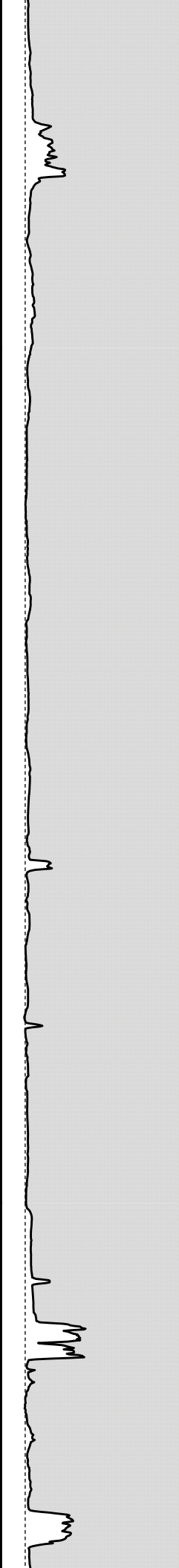
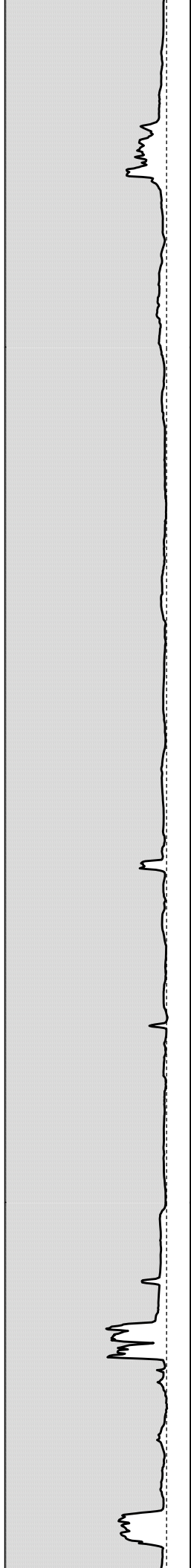
3900

4000

4100

4200

4300



878

852

829

807

786

764

741

720

698

671

648

383

370

361

353

344

336

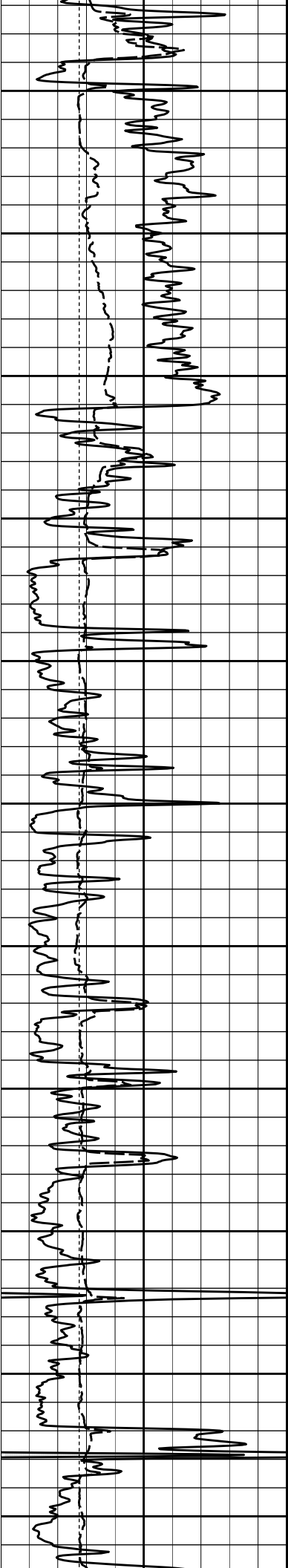
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318

310

296

287



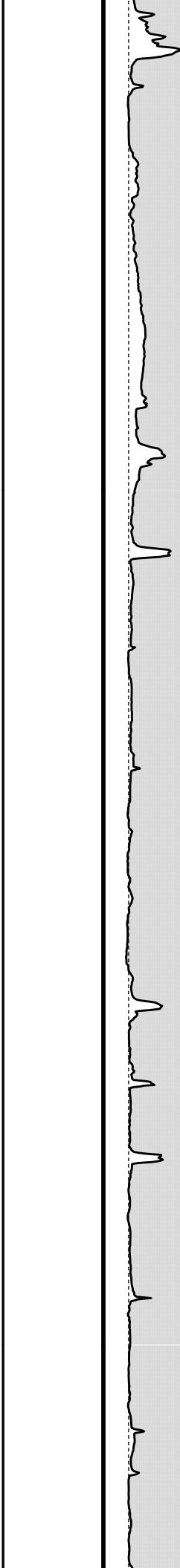
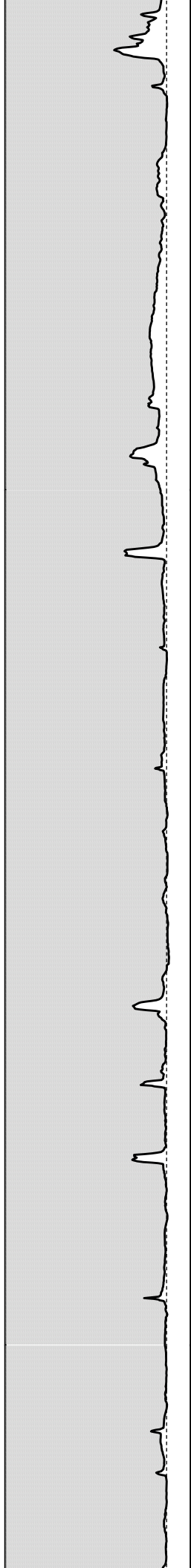
4400

4500

4600

4700

4800



620

598

573

548

525

503

482

460

437

416

394

272

263

252

240

230

222

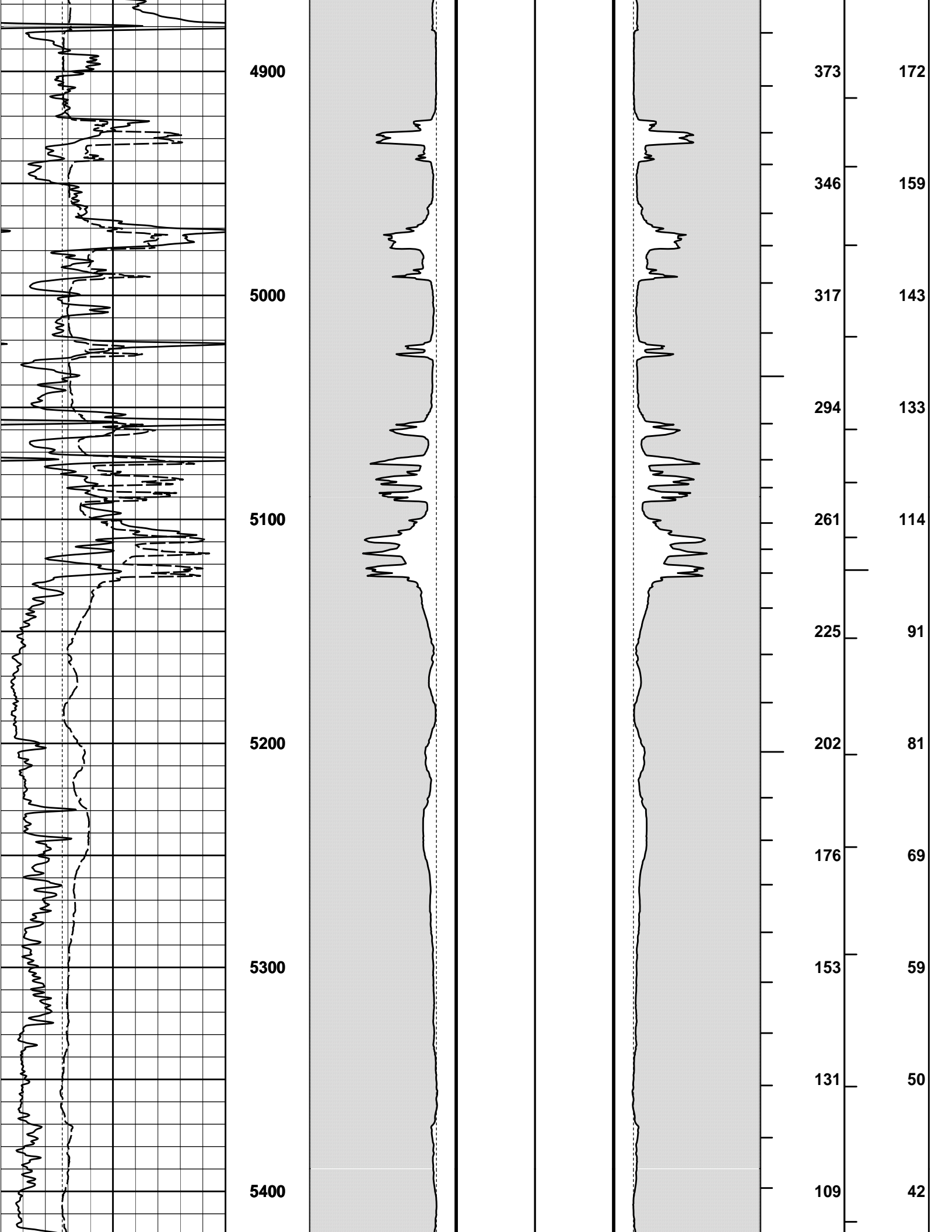
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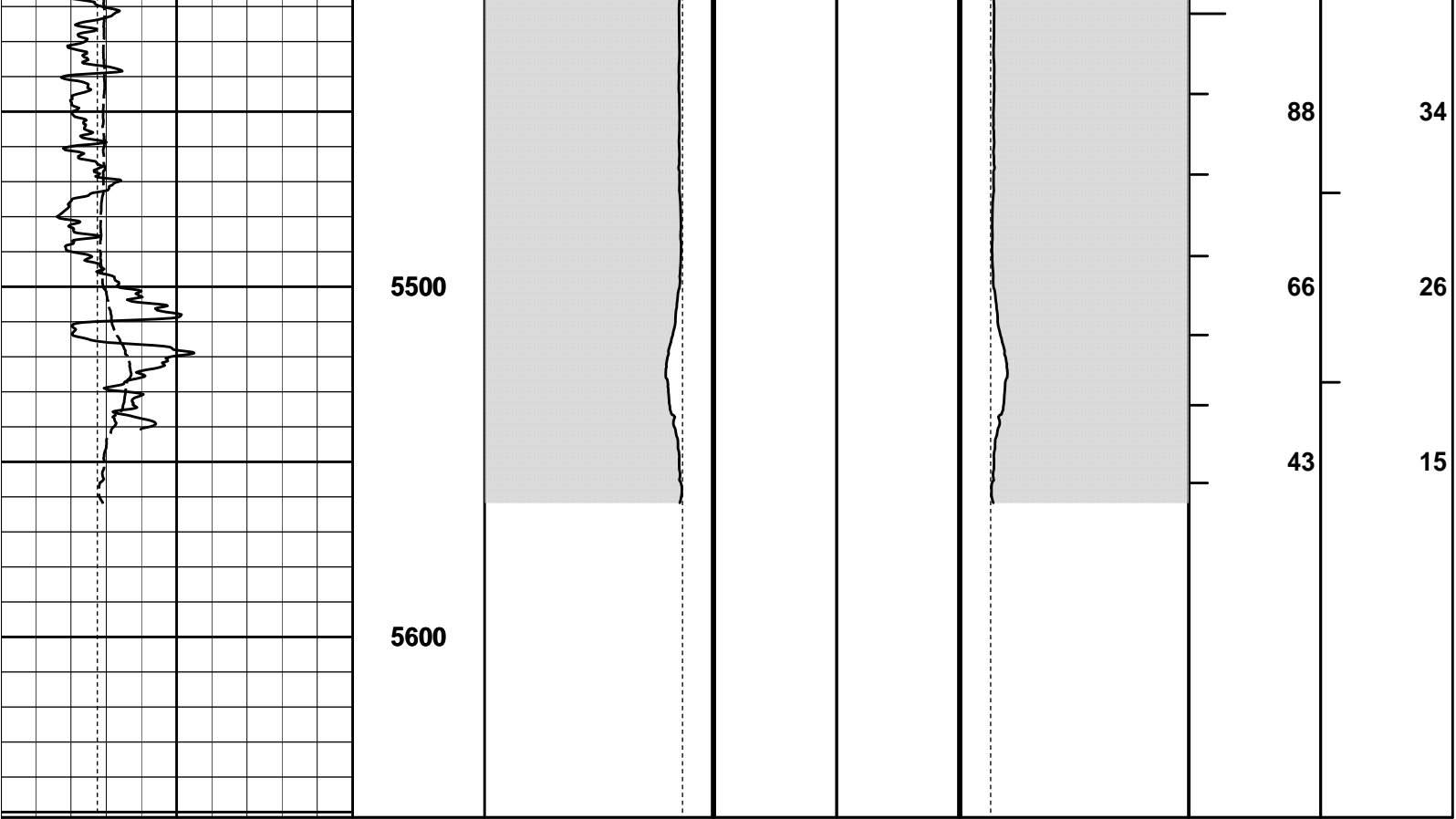
205

196

188

180





6	Bit Size	16	1 : 600 ft MD	20	CALI	0	0	CALI	20	BHVT	AHVT
	inches					inches			inches		
6	CALI	16		20	CSOD	0	0	CSOD	20		
	inches					inches			inches		
0	Gamma API	150		20	Bit Size	0	0	Bit Size	20		
	api				inches			inches			

HALLIBURTON Plot Time: 27-Aug-11 15:09:58
 Plot Range: 890 ft to 5651.5 ft
 Data: YORK_31_31_17\Well Based\RUN1_MAIN
 Plot File: \\-LOCAL-YORK_31_31_17\0001 QUAD_WSTT_XRM\POROML\CHK_2 IN Borehole Plot IQ

ANNULAR HOLE VOLUME PRESENTATION

COMPANY	CHESAPEAKE OPERATING INC		
WELL	YORK 31-31-17-1H		
FIELD	ALFORD		
COUNTY	COMANCHE	STATE	KANSAS

HALLIBURTON

SPECTRAL DENSITY
 DUAL SPACED NEUTRON
 MICROLOG