

HALLIBURTON

MICROLOG

COMPANY **HERMAN L. LOEB, LLC.**
 WELL **ROSENBERGER #2-29**
 FIELD/BLOCK **EINSEL**
 COUNTY **KIOWA**
 STATE **KANSAS**

COMPANY **HERMAN L. LOEB, LLC.**
 WELL **ROSENBERGER #2-29**
 FIELD/BLOCK **EINSEL**
 COUNTY **KIOWA**
 STATE **KANSAS**

API No. 15-097-21788-00-00
 Location (SHL) 1625' FSL & 805' FEL
 SE-SW-NE-SE

Sect. 27 Twp. 27S Rge. 18W
 Other Services:
 DSN/SDL
 MICROLOG
 ACRT
 MRIL

Permanent Datum Log measured from **GL** Elev.: K.B. 2217.0 ft
 Drilling measured from **KB** D.F. 2216.0 ft
KB 13.0 ft above perm. Datum
KB G.L. 2204.0 ft

Date	27-Mar-14	Run No.	ONE
Depth - Driller	4832.00 ft	Depth - Logger	4828.0 ft
Bottom - Logged Interval	4825	Top - Logged Interval	2400
Casing - Driller	8.625 in	Casing - Logger	637.0 ft
Bit Size	7.875 in	Type Fluid in Hole	Water Based Mud
Density	9.2 ppg	Viscosity	60.00 s/qt
PH	10.00 pH	Fluid Loss	10.4 cpm
Source of Sample	MUD PIT	Rm @ Meas. Temperature	0.580 ohmm @ 71.00 degF
Rmf @ Meas. Temperature	0.49 ohmm @ 71.00 degF	Rmc @ Meas. Temperature	0.660 ohmm @ 71.00 degF
Source Rmf	CALCULATED	Rmc	CALCULATED
Rm @ BHT	0.37 ohmm @ 115.0 degF	Time Since Circulation	7.2500 hr
Time on Bottom	27-Mar-14 08:10	Max. Rec. Temperature	115.0 degF @ 4828.0 ft
Equipment	11230668 LIBERAL	Recorded By	SHELDON INGERSOLL
Witnessed By	J. CHRISTENSEN		

Fold here

Service Ticket No.: 901221026 API Serial No.: 15-097-21788-00-00 PGM Version: WL INSITE R4.2.0 (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.	@		@					
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.	10673790	Serial No.	10735145
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	5.3"	Diameter	3.625"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS-137	Source Type	AM-241BE
Length	8"	LSA [Y/N]		Serial No.	5073GW	Serial No.	DSN-436
Distance to Source	N/A	FWDA [Y/N]		Strength	1.5 CI	Strength	15 CI

LOGGING DATA

GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix			
No.	From	To	ft/min	L	R	L	R		L	R		Matrix		
ONE	4828	2400	REC	0	150				30	-10	2.71 gm/cc	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.

CHLORIDES REPORTED AT 7400 ppm.

RUN 1 = GAMMA-ACRT

RUN 2 = GAMMA-DSN-SDL

RUN 3 = MRIL

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-Mar-14 09:04:26

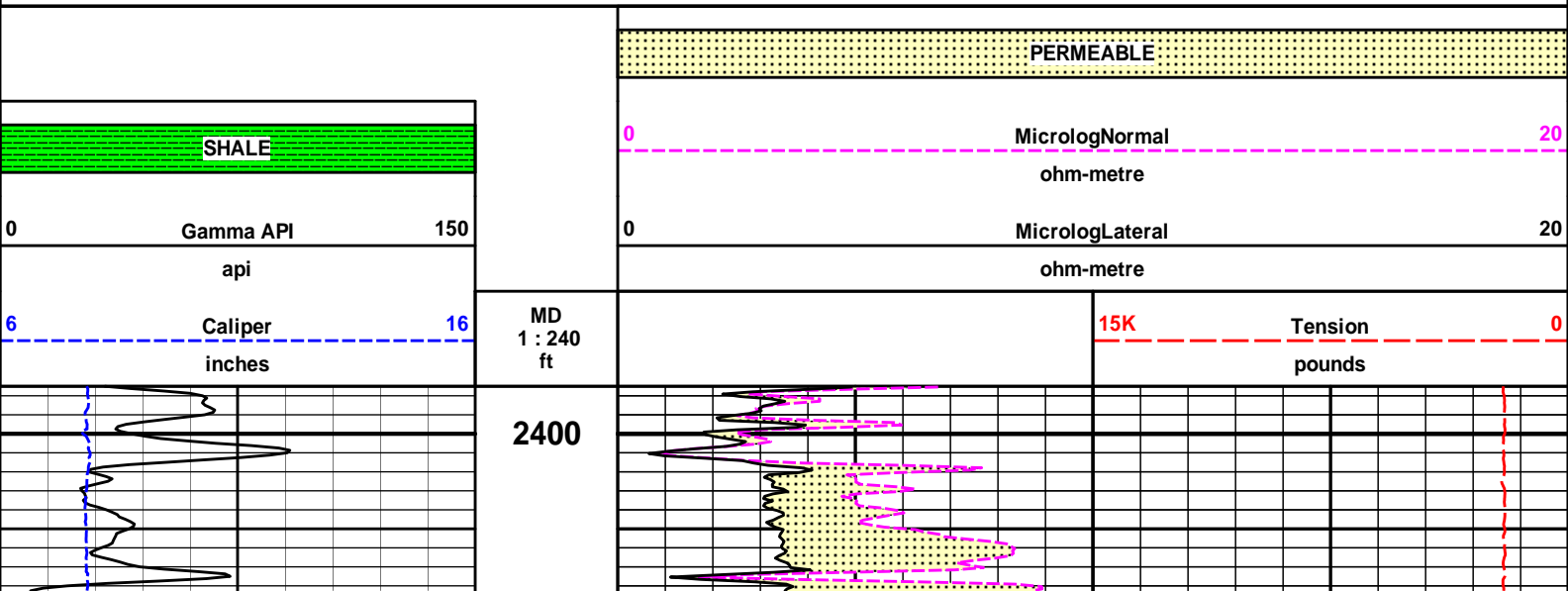
Plot Range: 2395 ft to 2605 ft

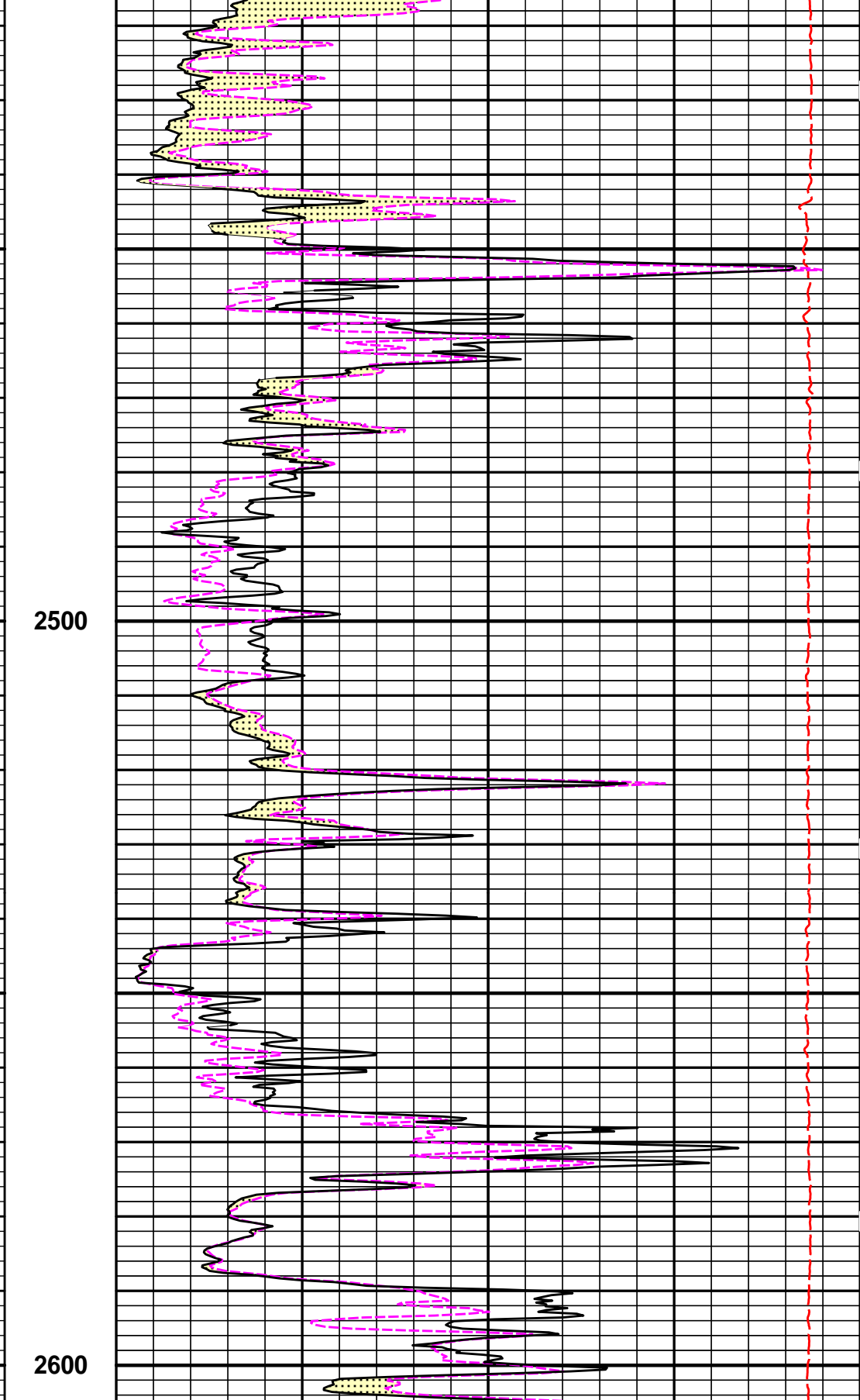
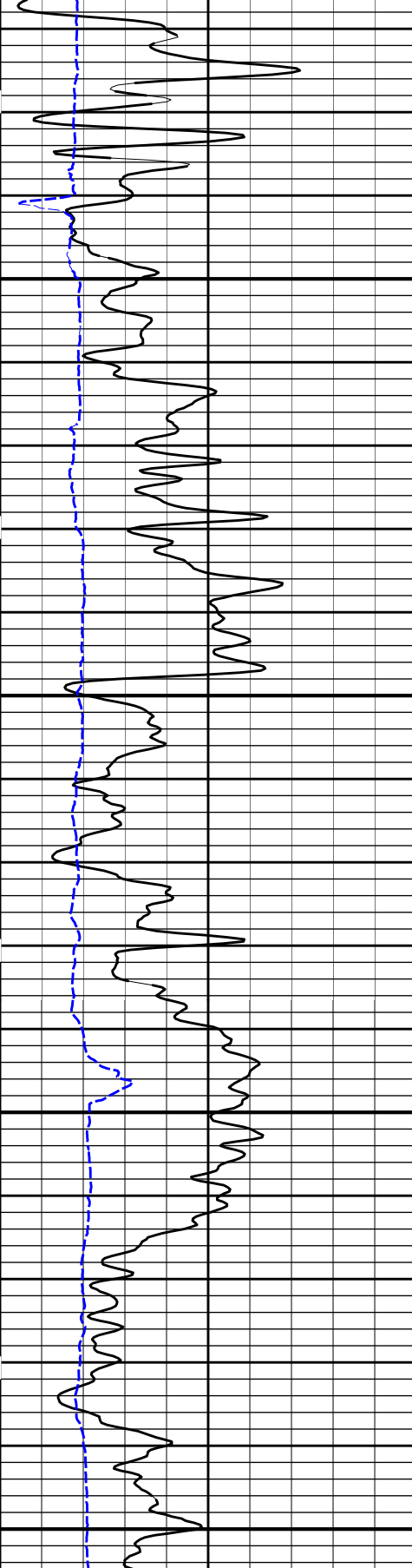
Data: ROSENBERGER2-29\Well Based\R1 DSN SDL UPPER DETAIL\

Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_main_lib

5 INCH MAIN LOG

UPPER DETAIL





6	Caliper	16
	inches	
0	Gamma API	150
	api	
SHALE		

MD	1 : 240	ft
	15K	Tension
		pounds
0	MicrologLateral	20
	ohm-metre	
0	MicrologNormal	20
	ohm-metre	

PERMEABLE

HALLIBURTON

Plot Time: 27-Mar-14 09:04:27
Plot Range: 2395 ft to 2605 ft
Data: ROSENBERGER2-29\Well Based\R1 DSN SDL UPPER DETAIL\
Plot File: \\-LOCAL-ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_main_lib

5 INCH MAIN LOG

UPPER DETAIL

HALLIBURTON

Plot Time: 27-Mar-14 09:04:27
Plot Range: 3495 ft to 4844 ft
Data: ROSENBERGER2-29\Well Based\R1 DSN SDL LOWER DETAIL\
Plot File: \\-LOCAL-ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_main_lib

5 INCH MAIN LOG

LOWER DETAIL

PERMEABLE

SHALE

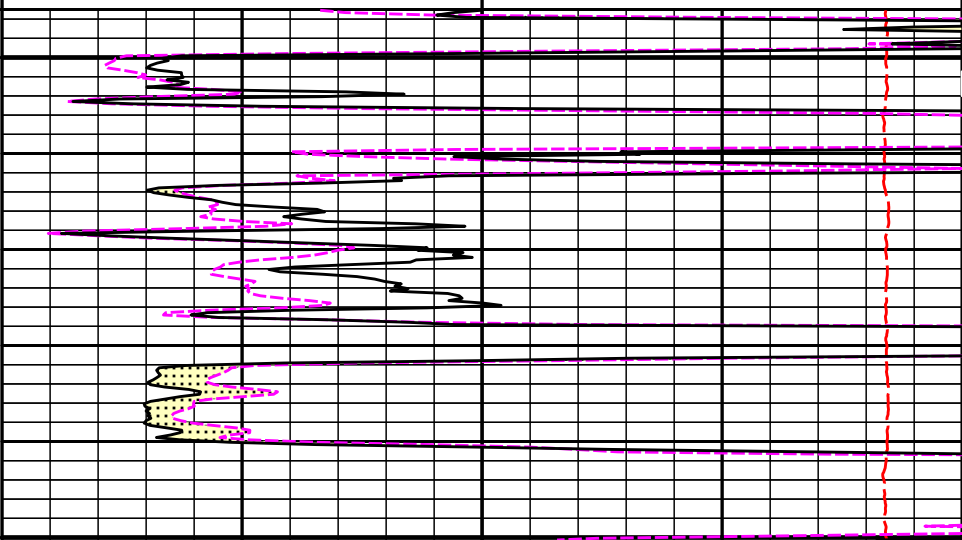
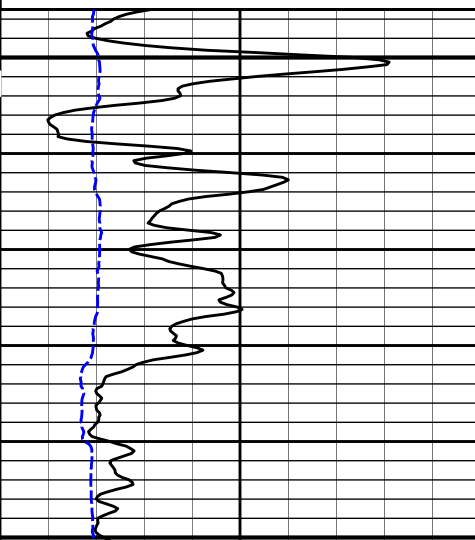
0 MicrologNormal 20
ohm-metre

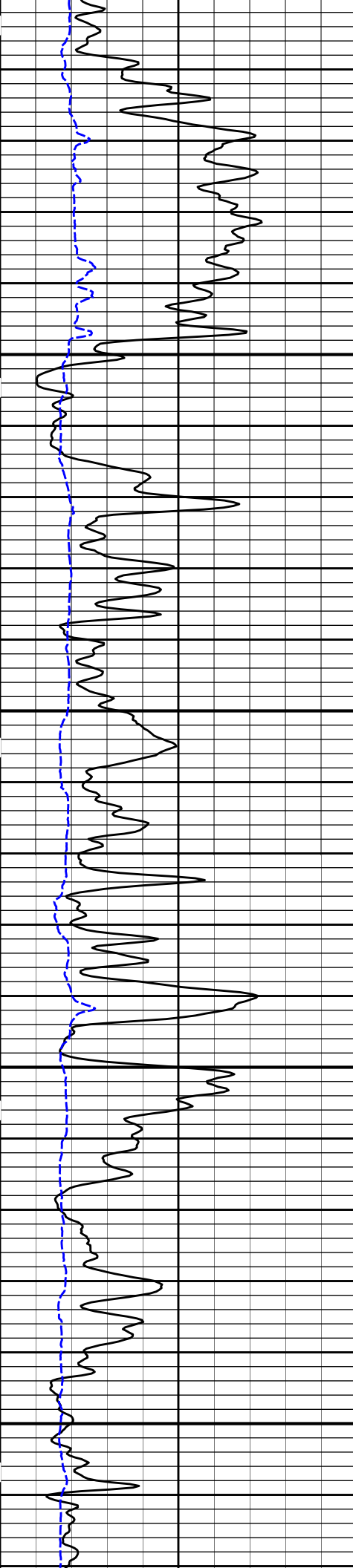
0 MicrologLateral 20
ohm-metre

MD 15K Tension 0
1 : 240 ft pounds

0 Gamma API 150
api
6 Caliper 16
inches

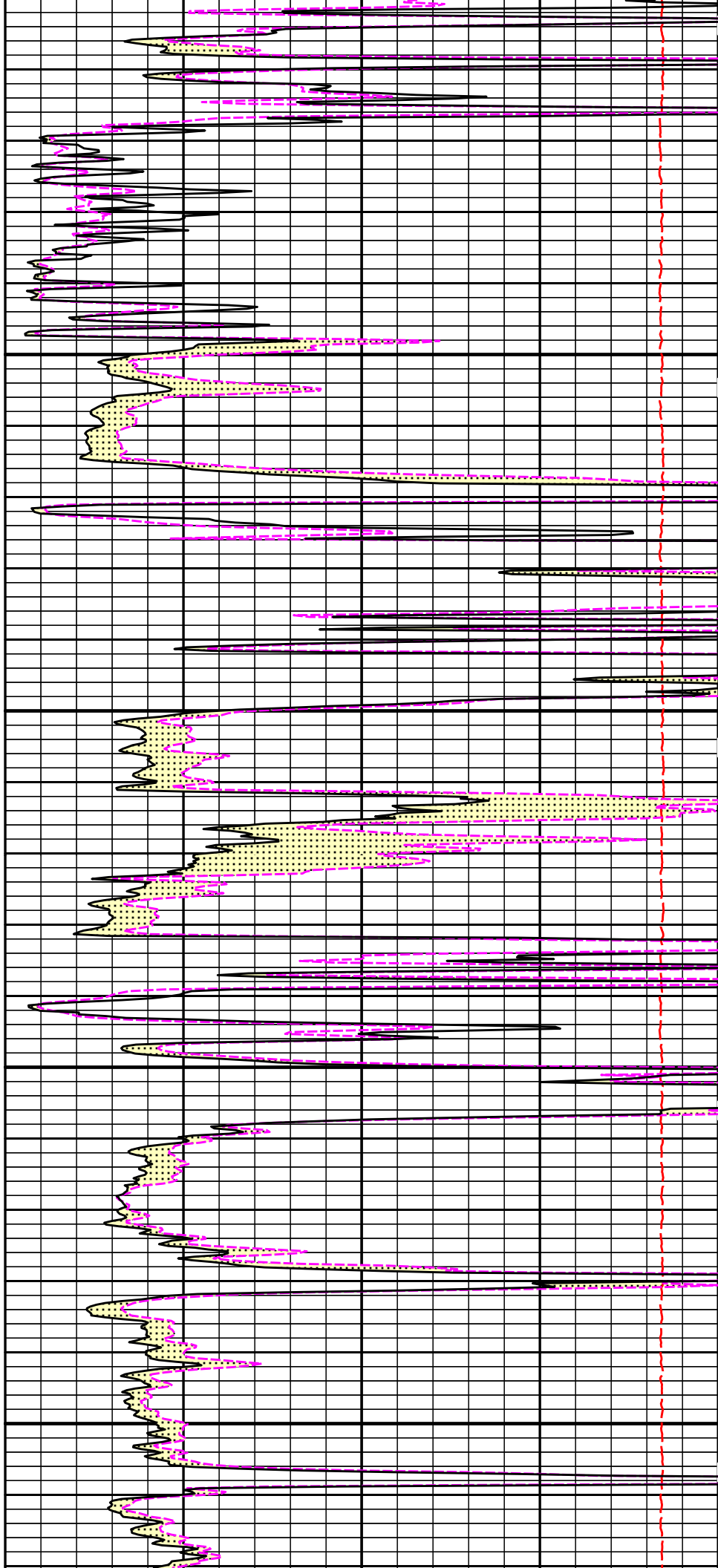
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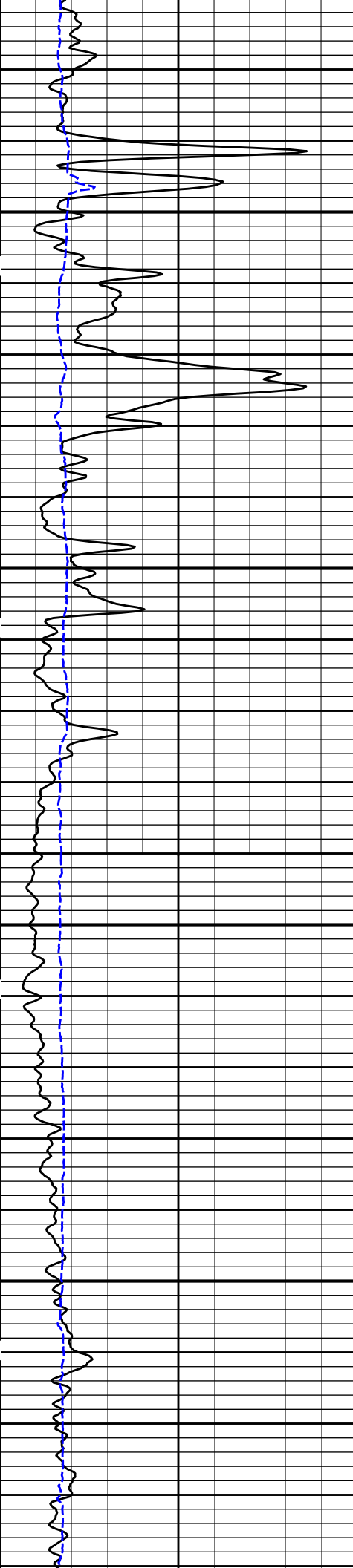




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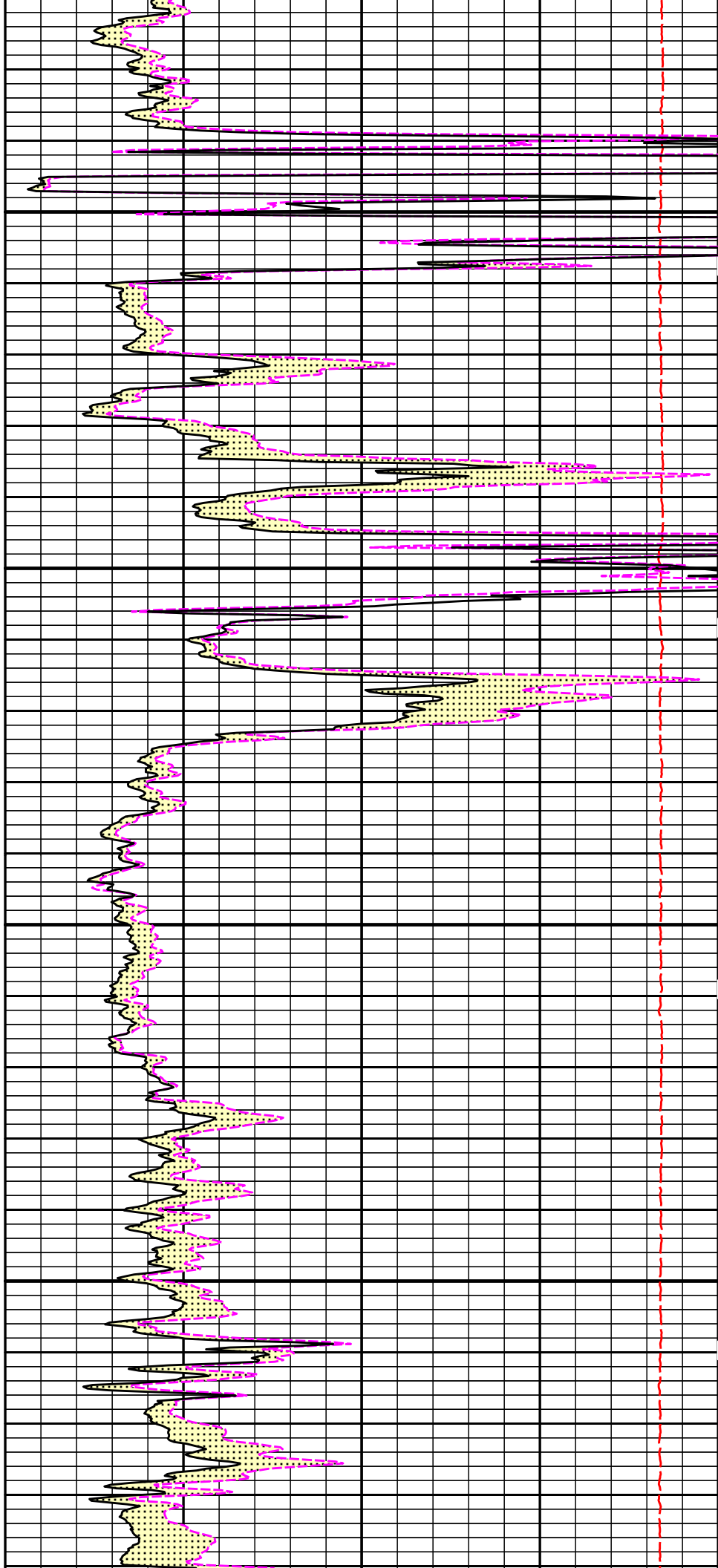
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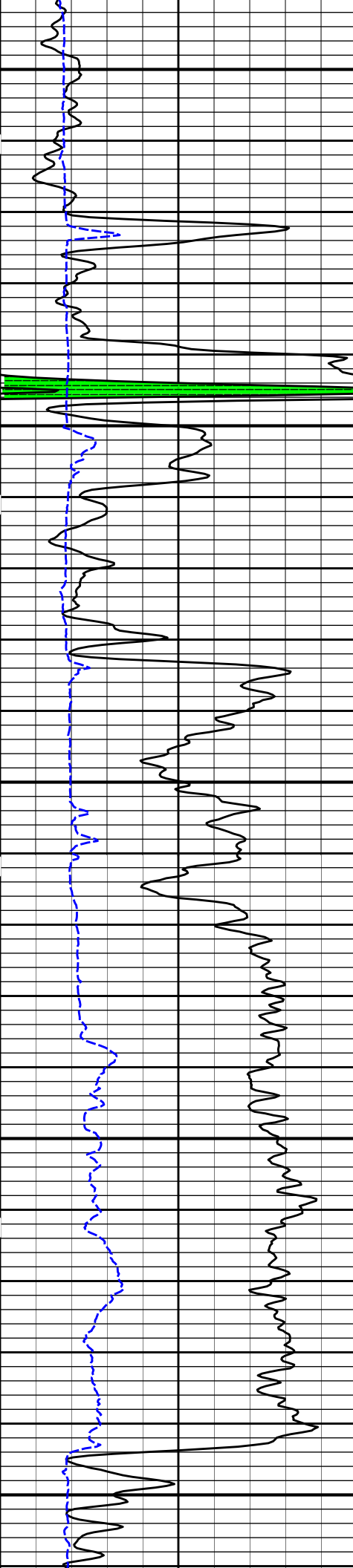




3800

3900

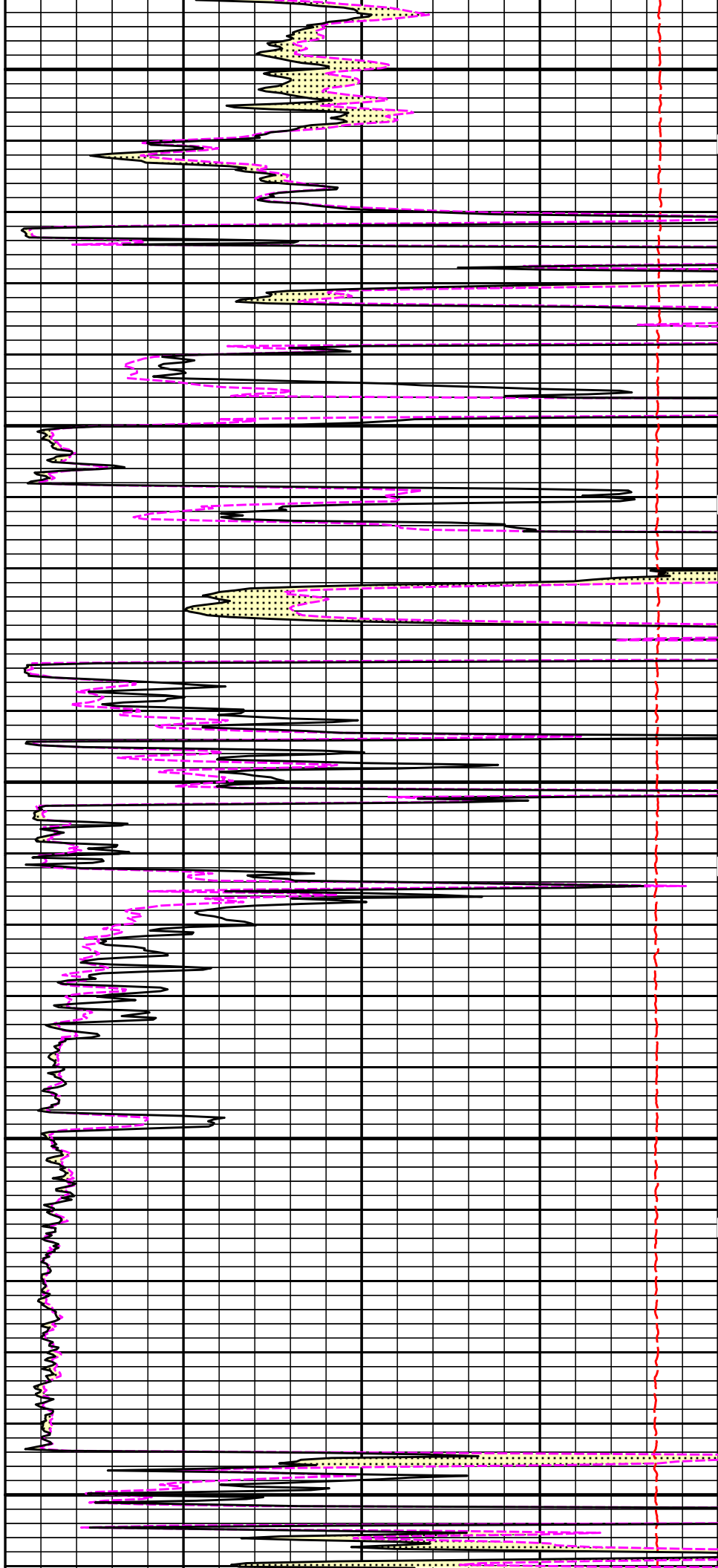


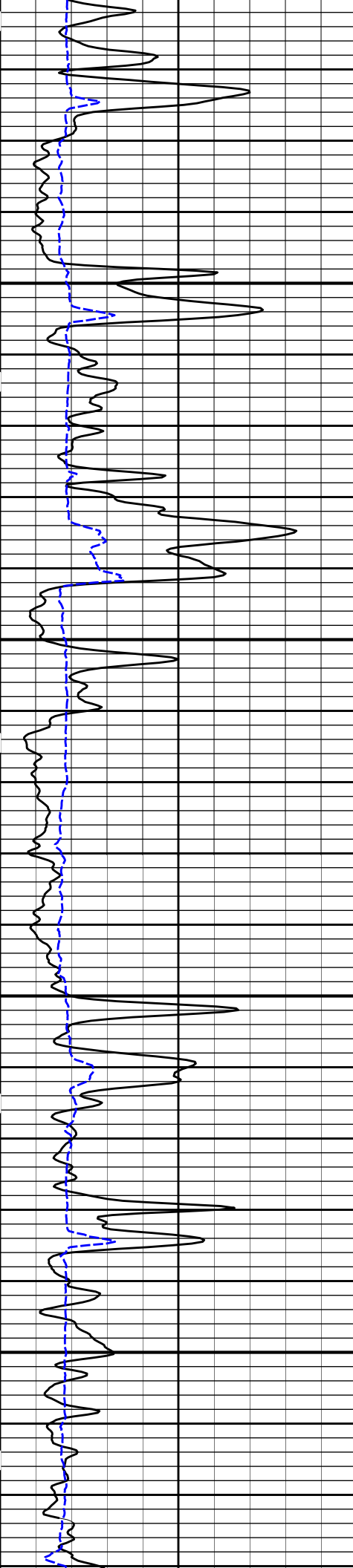


4000

4100

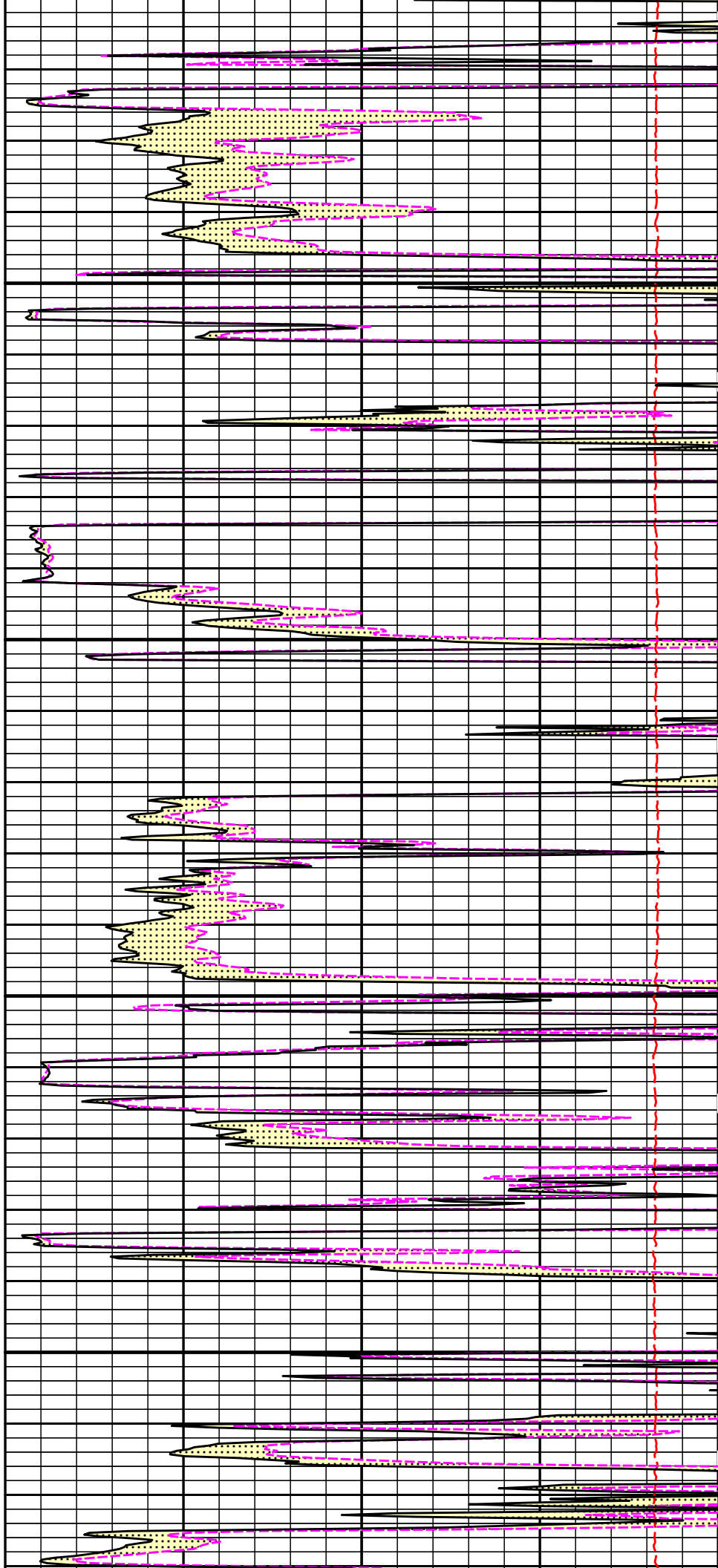
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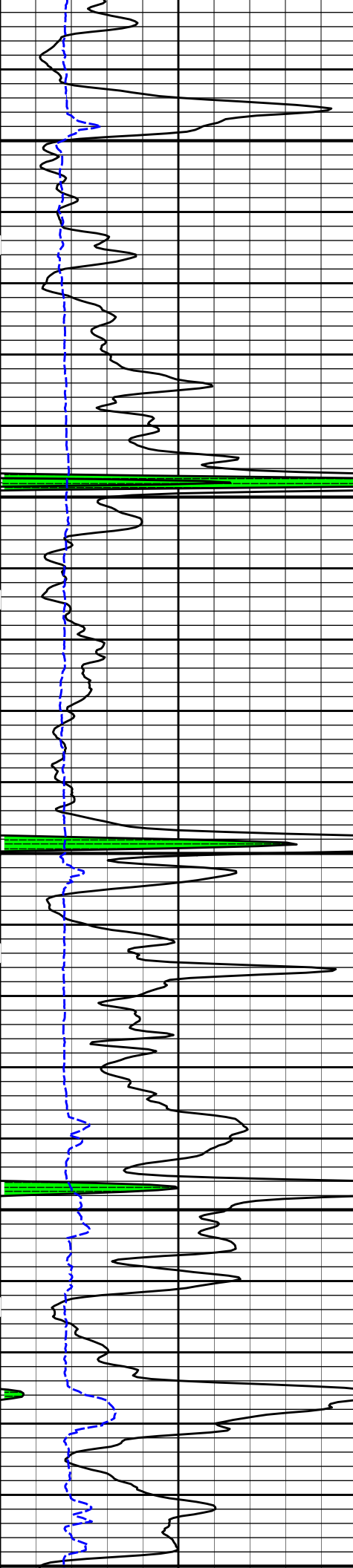




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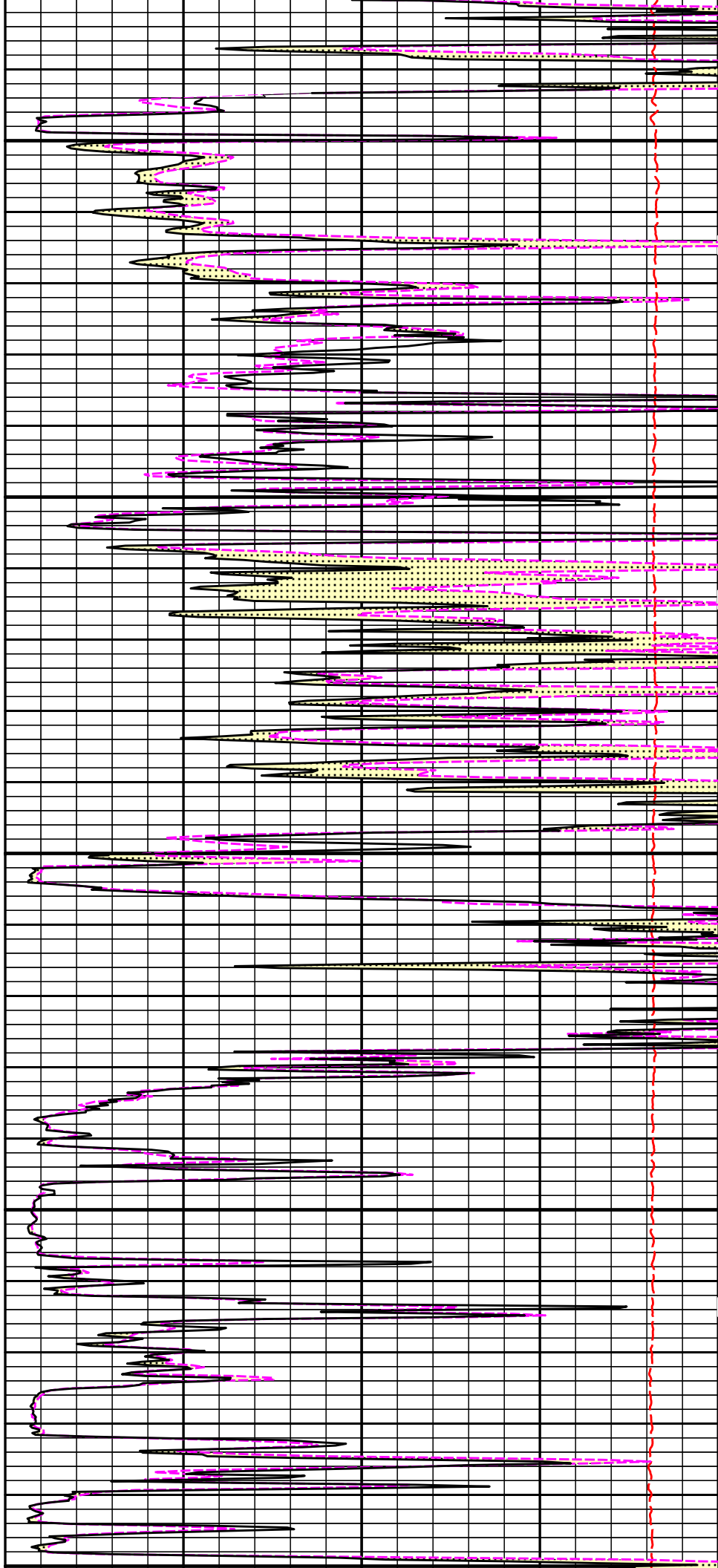
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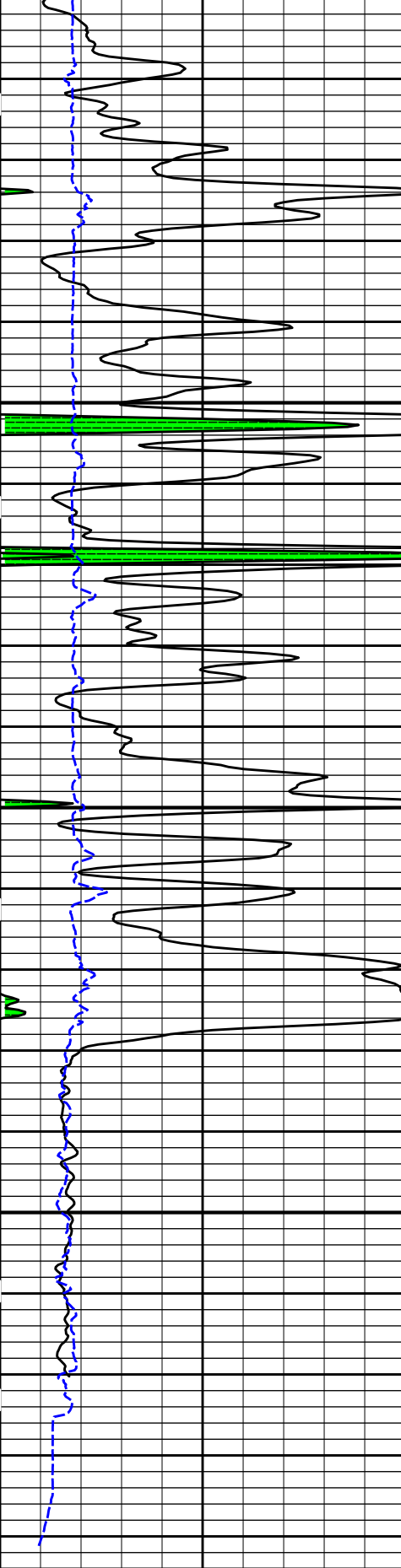




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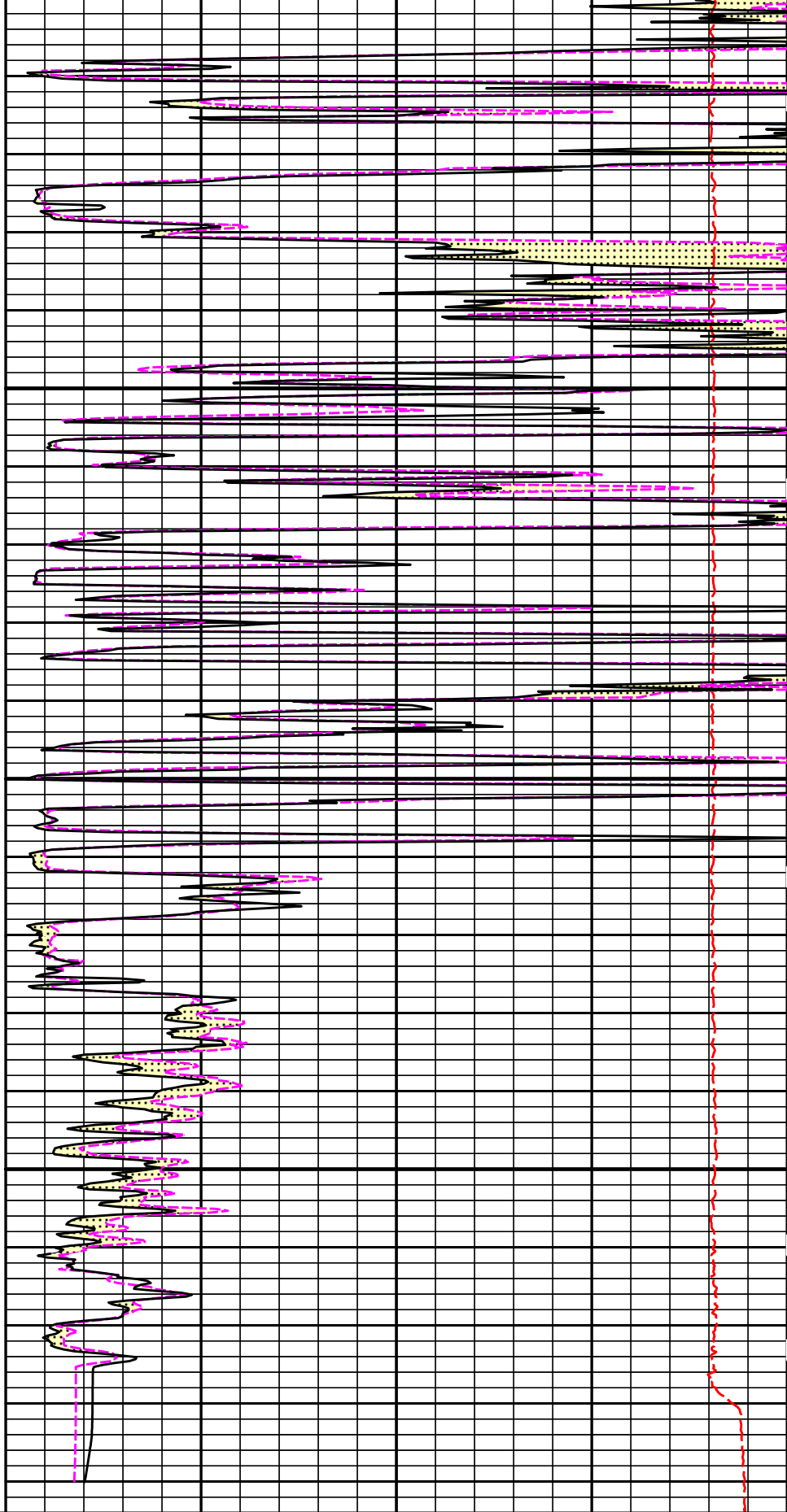
4600





4700

4800



6	Caliper inches	16
0	Gamma API api	150
SHALE		

MD
1 : 240
ft

15K	Tension pounds	0
0	MicrologLateral ohm-metre	20
0	MicrologNormal ohm-metre	20

ohm-metre

PERMEABLE

HALLIBURTON

Plot Time: 27-Mar-14 09:04:28

Plot Range: 3495 ft to 4844 ft

Data: ROSENBERGER2-29\Well Based\R1 DSN SDL LOWER DETAIL\

Plot File: \\-LOCAL-ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_main_lib

5 INCH MAIN LOG

LOWER DETAIL

HALLIBURTON

Plot Time: 27-Mar-14 09:04:28

Plot Range: 4495 ft to 4831.83 ft

Data: ROSENBERGER2-29\Well Based\R1 DSN SDL REPEAT\

Plot File: \\-LOCAL-ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_rep_lib

REPEAT SECTION

PERMEABLE

0 MicrologNormal ohm-metre 20

0 MicrologLateral ohm-metre 20

MD 1 : 240 ft 15K Tension pounds 0

SHALE

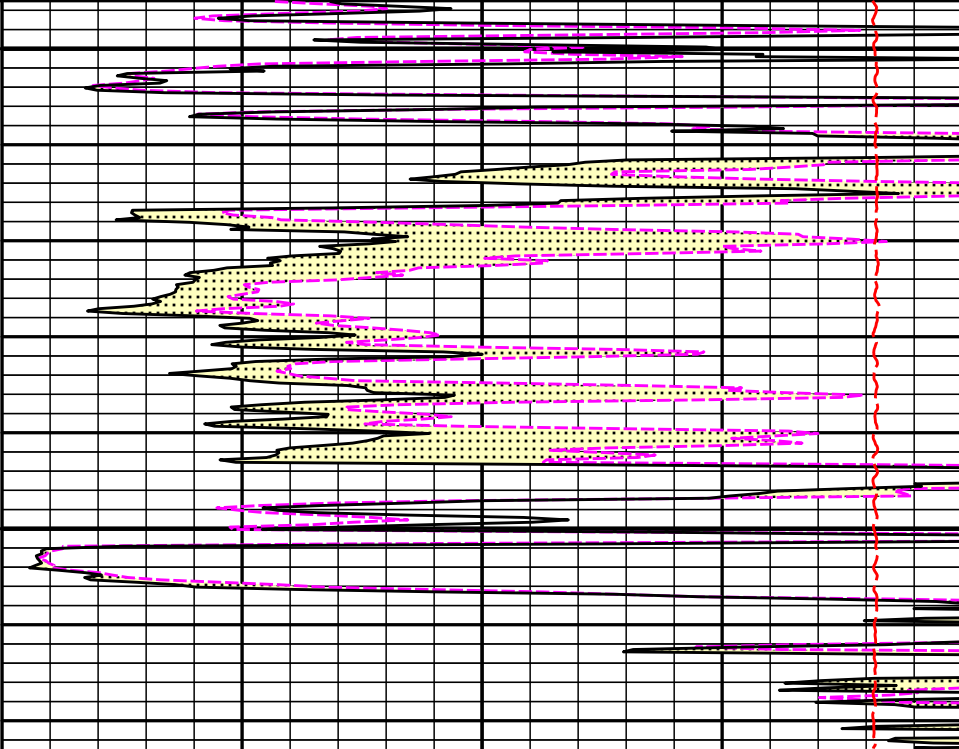
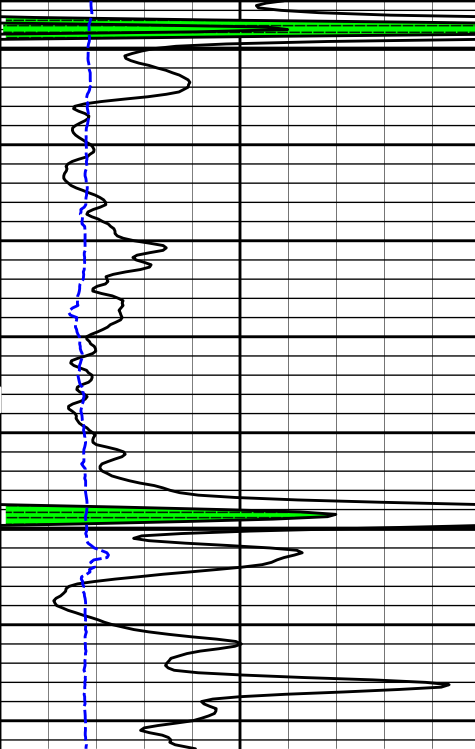
Gamma API 0 150

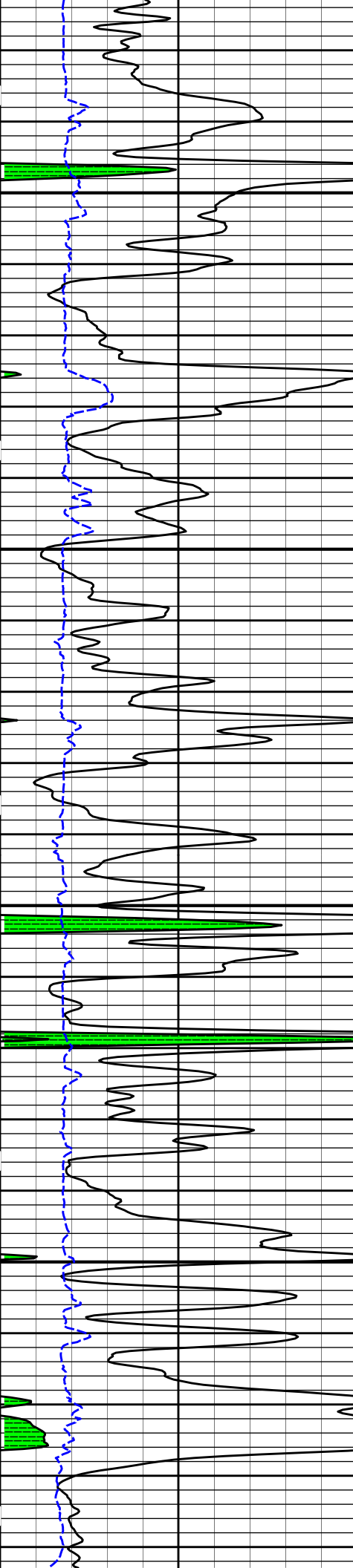
api

Caliper 6 16

inches

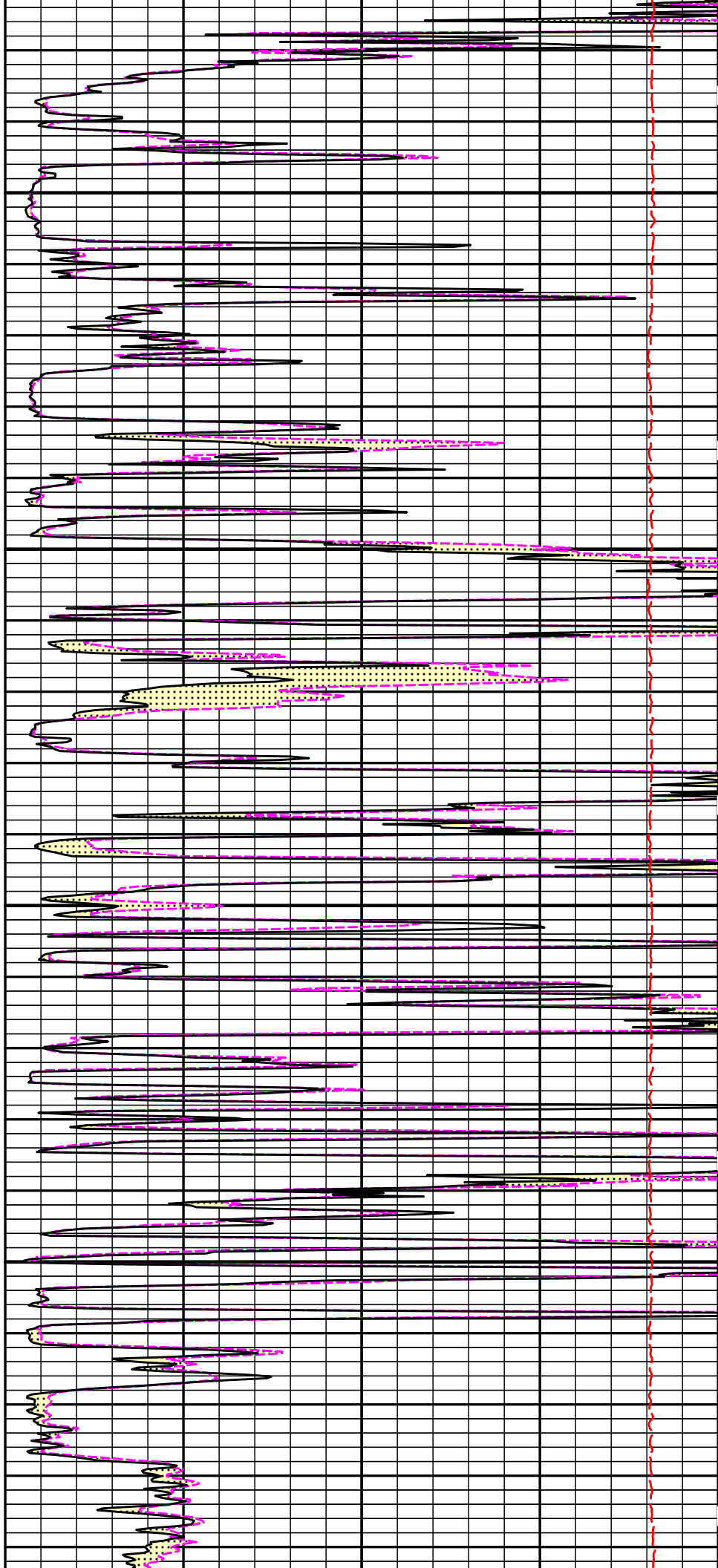
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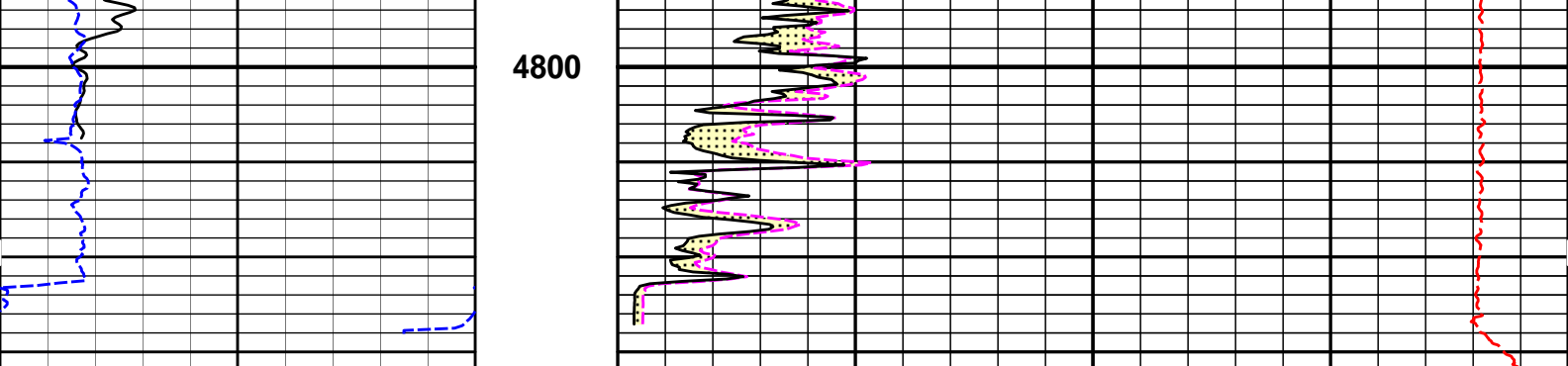




4600

4700





6	Caliper	16	MD		15K	Tension	0
	inches		1 : 240			pounds	
0	Gamma API	150		0	MicrologLateral		20
	api				ohm-metre		
	SHALE			0	MicrologNormal		20
					ohm-metre		
					PERMEABLE		

HALLIBURTON

Plot Time: 27-Mar-14 09:04:29
 Plot Range: 4495 ft to 4831.83 ft
 Data: ROSENBERGER2-29\Well Based\R1 DSN SDL REPEAT\
 Plot File: \\-LOCAL-ROSENBERGER2-29\Well Based\MICROLOG\Microlog_IQ_5_rep_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-CH_696 37.50 lbs		Ø 2.750 in →		← Temperature @ 35.12 ft	3.03 ft	36.15 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 31.34 ft	3.74 ft	33.12 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 23.32 ft	8.52 ft	29.38 ft
DSN Decentralizer- 10735145 6.60 lbs		Ø 5.000 in* →				20.86 ft
DSNT-10735145 174.00 lbs		Ø 3.625 in →				9.69 ft

SDLT-10673803
360.00 lbs

SDLT Pad-10673790
65.00 lbs

Microlog Pad-10673803
8.00 lbs

RBP-25K-00000001
16.00 lbs

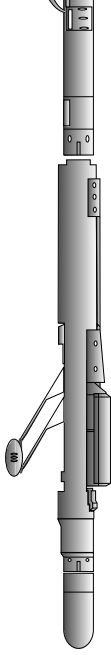
Ø 4.500 in →

Ø 4.750 in* →

Ø 4.750 in* →

Ø 4.750 in →

Ø 3.370 in →



← DSN Far @ 13.92 ft

← DSN Near @ 13.17 ft

Microlog @ 3.36 ft

SDL Caliper @ 3.18 ft

SDL @ 3.17 ft

11.17 ft

10.81 ft

0.36 ft

0.36 ft

0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max. Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	CH_696	37.50	3.03	33.12	300.00
SP	SP Sub	12345678	60.00	3.74	29.38	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	20.86	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69	11.17	60.00
DCNT	DSN Decentralizer	10735145	6.60	5.13 *	14.50	300.00
SDLT	Spectral Density Tool	10673803	360.00	10.81	0.36	60.00
SDLP	Density Insite Pad	10673790	65.00	2.55 *	2.57	60.00
MICP	Microlog Pad	10673803	8.00	1.00 *	2.86	60.00
BLNS	Bull Plug	00000001	16.00	0.36	0.00	300.00
Total			892.10	36.15		

* Not included in Total Length and Length Accumulation.

Data: ROSENBERGER2-29\0002 GTET-DSN-SDL-BP\IDLE Date: 27-Mar-14 06:16:57

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	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.580	ohmm
	SHARED	TRM	Temperature of Mud	71.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4828.00	ft
	SHARED	BHT	Bottom Hole Temperature	115.0	degF

SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	Temperature Master Tool	NONE	
Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
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	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	

BOTTOM

Data: ROSENBERGER2-29\0002 GTET-DSN-SDL-BP\005 27-Mar-14 07:59 Up @4845.0f

Date: 27-Mar-14 08:17:08

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10748374

Reference Calibration Date: 05-Mar-14 16:34:57

Engineer: thomas hyde

Calibration Date: 18-Mar-14 09:50:24

Software Version: WL INSITE R4.2.0 (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	34.3	33.1	api
Background + Calibrator	274.5	265.1	api
Calibrator	240.2	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10748374 **Reference Calibration Date:** 18-Mar-14 09:50:24
Engineer: SHELDON INGERSOLL **Calibration Date:** 26-Mar-14 23:24:02
Software Version: WL INSITE R4.2.0 (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	33.1	43.2	api
Background + Calibrator	265.1	266.5	api
Calibrator	232.0	223.3	api

Shop	Field	Difference	Tolerance
232.0	223.3	8.7	+/- 9.00

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10673803 **Reference Calibration Date:** 19-Feb-14 11:36:45
Engineer: thomas hyde **Calibration Date:** 18-Mar-14 10:01:07
Software Version: WL INSITE R4.2.0 (Build 2) **Calibration Version:** 1
Host Tool Name: DSNT - 10735145

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4075.69	-4085.93	-7000.00 - -1000.00
Pad Gain	0.0003810	0.0003931	0.000200 - 0.000600
Arm Offset	-4794.44	-4798.17	-5000.00 - 3000.00
Arm Gain	0.0005107	0.0004777	0.000300 - 0.000700
Arm Power	-0.000005244	-0.000002983	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	1.94	2.00	0.06	+/- 0.20
Medium Ring (in)	3.64	3.75	0.11	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.63	6.50	-0.13	+/- 0.20
Medium Ring (in)	8.45	8.25	-0.20	+/- 0.20
Large Ring (in)	15.08	15.00	-0.08	+/- 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 - 10673803**

Reference Calibration Date: **18-Mar-14 10:01:07**

Engineer: **SHELDON INGERSOLL**

Calibration Date: **26-Mar-14 23:24:49**

Software Version: **WL INSITE R4.2.0 (Build 2)**

Calibration Version: **1**

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.79	0.04	+/- 0.10
Ring Diameter	8.25	8.36	0.11	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: **Passed**

Diameter Check: **Passed**

MICRO LOG SHOP CALIBRATION

Tool Name: **Microlog Pad - 10673803**

Reference Calibration Date: **13-Feb-14 11:25:59**

Engineer: **THOMAS K HYDE**

Calibration Date: **18-Mar-14 11:11:30**

Software Version: **WL INSITE R4.2.0 (Build 2)**

Calibration Version: **1**

Host Tool Name: **DSNT - 10735145**

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.06	-0.07	-0.01	0.00	ohmm
Calibration Point #1	0.00	0.00	-0.01	0.00	ohmm
Calibration Point #2	19.90	20.00	19.99	20.00	ohmm
Internal Reference	19.96	20.06	20.12	20.12	ohmm

Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
	Tool Zero		0.44	0.29	
Calibration Point #1		18.57	0.06	V	
Calibration Point #2		5375.33	6975.69	V	
Internal Reference		5390.12	7019.08	V	

MICRO LOG FIELD CHECK

Tool Name: **Microlog Pad - 10673803**

Reference Calibration Date: **18-Mar-14 11:11:30**

Engineer: **THOMAS K HYDE**

Calibration Date: **26-Mar-14 23:19:24**

Software Version: **WL INSITE R4.2.0 (Build 2)**

Calibration Version: **1**

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.07	-0.08	0.00	0.00	ohmm
Internal Reference	20.06	20.03	20.12	20.10	ohmm

Summary

Signal	Shop	Field	Difference	Tolerance
Microlog Normal	20.06	20.03	0.03	+/- 0.80
Microlog Lateral	20.12	20.10	0.02	+/- 0.80

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	223.3	-----	8.7	+/- 9.00	api
SDLT-10673803						
Pad Extension	3.75	3.79	-----	-0.04	+/-0.10	in
Ring Diameter	8.25	8.36	-----	-0.11	+/-0.15	in
Microlog Pad-10673803						
MicroLog Normal	20.06	20.03	-----	0.03	+/-0.80	ohmm
MicroLog Lateral	20.12	20.10	-----	0.02	+/-0.80	ohmm

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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	
Rwa / CrossPlot				
TPUL	Tension Pull	36.15	NO	
BS	Bit Size	36.15	NO	
HDIA	Measured Hole Diameter	0.00	NO	
CH_HOS				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	31.34	NO	
SP	Spontaneous Potential	31.34	BLK	1.250
SPR	Raw Spontaneous Potential	31.34	NO	
SPO	Spontaneous Potential Offset	31.34	NO	
GTET				
TPUL	Tension Pull	23.32	NO	
GR	Natural Gamma Ray API	23.32	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	23.32	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	23.32	W	1.416 , 0.750
HDIA	Measured Hole Diameter	0.00	NO	
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	13.07	NO	
RNDS	Near Detector Telemetry Counts	13.17	BLK	1.417
RFDS	Far Detector Telemetry Counts	13.92	TRI	0.583
DNTT	DSN Tool Temperature	13.17	NO	
DSNS	DSN Tool Status	13.07	NO	
ERND	Near Detector Telemetry Counts EVR	13.17	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	13.92	BLK	0.000
ENTM	DSN Tool Temperature EVR	13.17	NO	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				

TPUL	Tension Pull	3.17	NO	
PCAL	Pad Caliper	3.17	TRI	0.250
ACAL	Arm Caliper	3.17	TRI	0.250

SDLT Pad

TPUL	Tension Pull	3.16	NO	
NAB	Near Above	2.99	BLK	0.920
NHI	Near Cesium High	2.99	BLK	0.920
NLO	Near Cesium Low	2.99	BLK	0.920
NVA	Near Valley	2.99	BLK	0.920
NBA	Near Barite	2.99	BLK	0.920
NDE	Near Density	2.99	BLK	0.920
NPK	Near Peak	2.99	BLK	0.920
NLI	Near Lithology	2.99	BLK	0.920
NBAU	Near Barite Unfiltered	2.99	BLK	0.250
NLIU	Near Lithology Unfiltered	2.99	BLK	0.250
FAB	Far Above	3.34	BLK	0.250
FHI	Far Cesium High	3.34	BLK	0.250
FLO	Far Cesium Low	3.34	BLK	0.250
FVA	Far Valley	3.34	BLK	0.250
FBA	Far Barite	3.34	BLK	0.250
FDE	Far Density	3.34	BLK	0.250
FPK	Far Peak	3.34	BLK	0.250
FLI	Far Lithology	3.34	BLK	0.250
PTMP	Pad Temperature	3.17	BLK	0.920
NHV	Near Detector High Voltage	2.57	NO	
FHV	Far Detector High Voltage	2.57	NO	
ITMP	Instrument Temperature	2.57	NO	
DDHV	Detector High Voltage	2.57	NO	
HDIA	Measured Hole Diameter	0.00	NO	

Microlog Pad

TPUL	Tension Pull	3.36	NO	
MINV	Microlog Lateral	3.36	BLK	0.750
MNOR	Microlog Normal	3.36	BLK	0.750

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COMPANY	HERMAN L. LOEB, LLC.		
WELL	ROSENBERGER #2-29		
FIELD	EINSEL		
COUNTY	KIOWA	STATE	KANSAS

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