

HALLIBURTON

COMPENSATED SPECTRAL NATURAL GAMMA RAY LOG

COMPANY SANDRIDGE ENERGY
WELL MURPHY SWD 3404 1-18
FIELD/BLOCK BLUFF
COUNTY SUMNER
STATE KANSAS

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COUNTY SUMNER
STATE KANSAS

API No. 15-191-22733-00-00
 Location (SHL) 350' FNL & 1559' FEL
 SE-NE-NW-NE
 Sect. 18 Twp. 34S Rge. 4W
 Elev. 1240.0 ft
 12.0 ft above perm. Datum
 Other Services:
 MICROLOG
 DSNT, SDLT
 WAVESONIC
 MRIL
 ACRT
 IDT, ICT

Permanent Datum GL
Log measured from KB
Drilling measured from KB

Date	07-May-14	
Run No.	ONE	
Depth - Driller	5182.00 ft	
Depth - Logger	5172.0 ft	
Bottom - Logged Interval	5014.0 ft	
Top - Logged Interval	2500.0 ft	
Casing - Driller	8.625 in @ 543.0 ft	
Casing - Logger	540.0 ft	
Bit Size	7.875 in	
Type Fluid in Hole	Water Based Mud	
Density	9.5 ppq	48.00 s/qt
PH	10.50 pH	4.0 cphm
Source of Sample	MUD PIT	
Rm @ Meas. Temperature	0.730 ohmm	@ 75.00 degF
Rmf @ Meas. Temperature	0.66 ohmm	@ 75.00 degF
Rmc @ Meas. Temperature	0.890 ohmm	@ 75.00 degF
Source Rmf	MEASURED	MEASURED
Rm @ BHT	0.40 ohmm	@ 143.0 degF
Time Since Circulation	5.0000 hr	
Time on Bottom	07-May-14 11:16	
Max. Rec. Temperature	143.0 degF	@ 5172.0 ft
Equipment	11072142	LIBERAL
Recorded By	J. BOLLOW	
Witnessed By	D. BARLOW	

Fold here

Service Ticket No.: 901329713 API Serial No.: 15-191-22733-00-00 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.		Run No.	
Serial No.	11830417	Serial No.		Serial No.		Serial No.	
Model No.	CSNG	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	Scale		Scale		Matrix	Scale		Matrix
	From	To	ft/min	L	R	L	R		L	R	
ONE	5172	2500	REC	0	150						

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING

CHLORIDES REPORTED AT 3,000 MG/L

GTET-DSNT-SDLT-ACRT RUN IN COMBINATION

GTET-CSNG-IDT-ICT-WAVE RUN IN COMBINATION

TODAY'S CREW: F. VILLA & M. GRAHAM

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

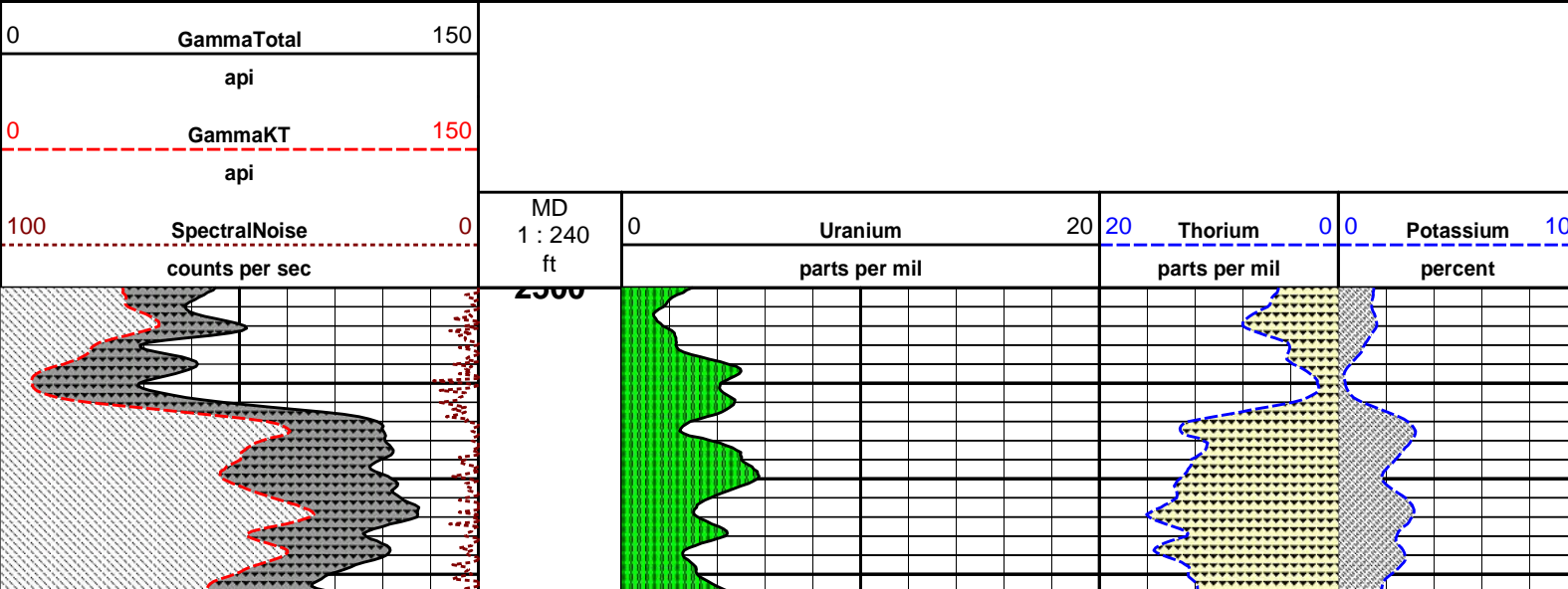
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR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

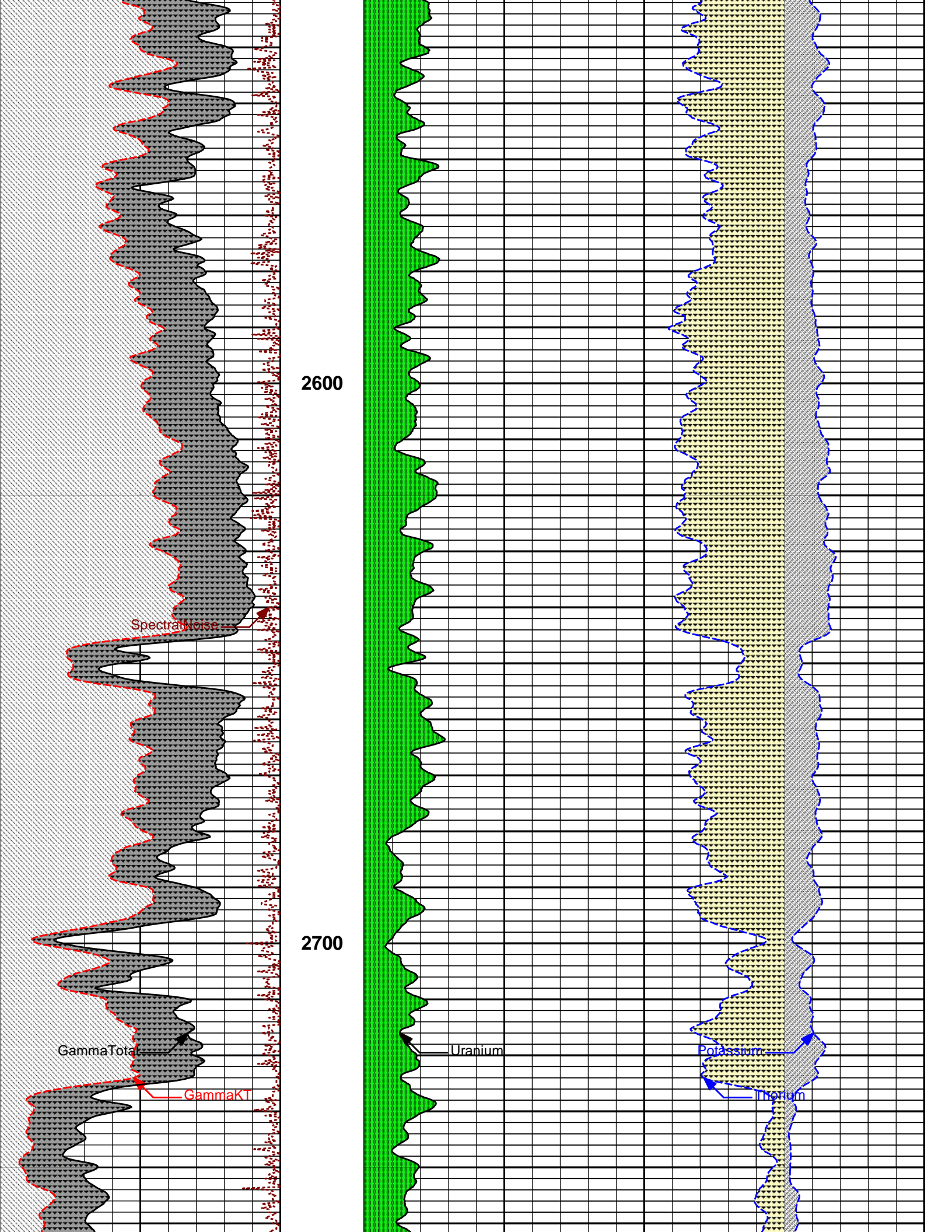
HALLIBURTON

HALLIBURTON Plot Time: 07-May-14 16:14:27
 Plot Range: 2500 ft to 5116 ft
 Data: MURPHY_SWD_3404\Well Based\DETAIL2\
 Plot File: \\CSNG\CSNG-FS-5_INCH_MAIN

5 INCH MAIN PASS

MEASURED DEPTH
5 INCH MAIN





2600

Spectral Noise

2700

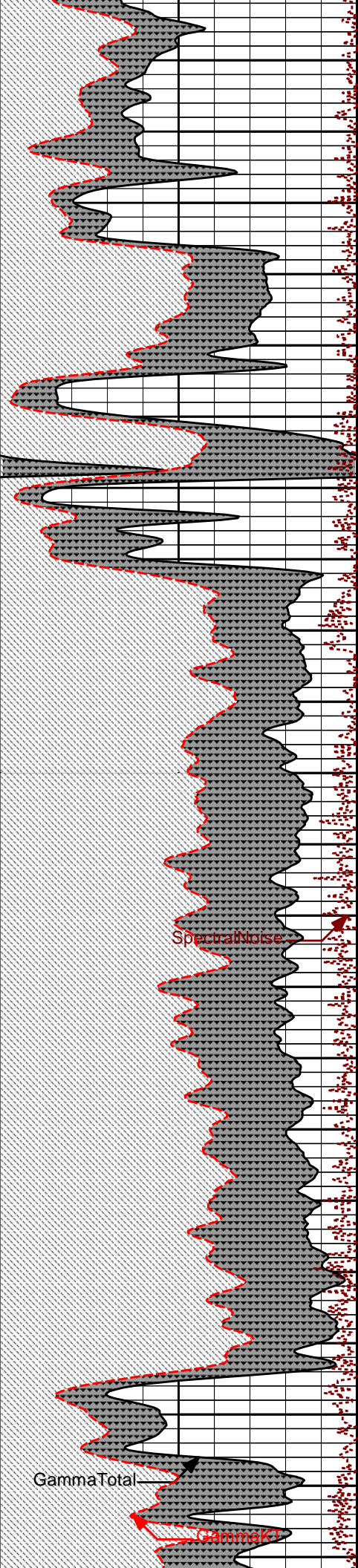
GammaTotal

GammaKT

Uranium

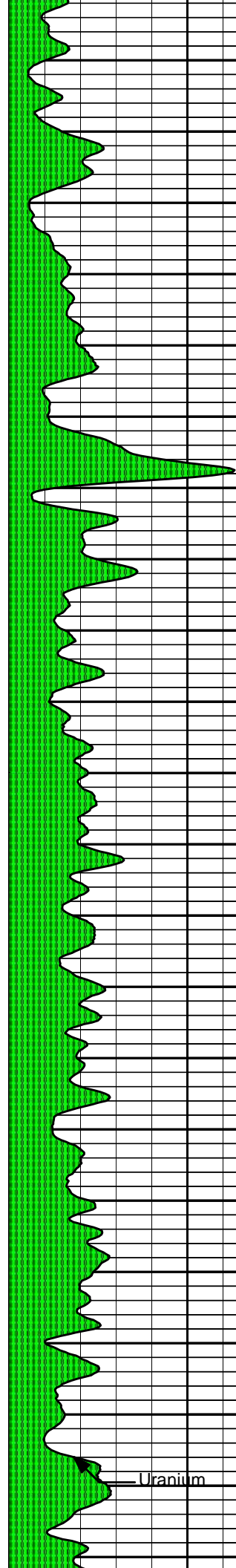
Potassium

Thorium

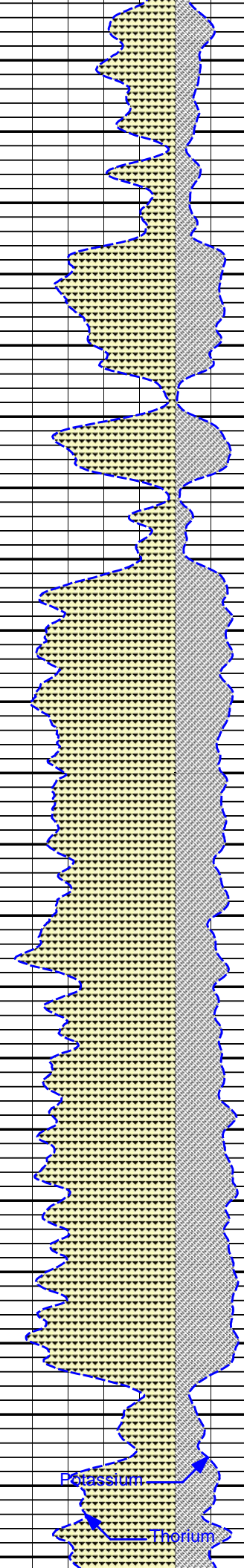


2800

2900

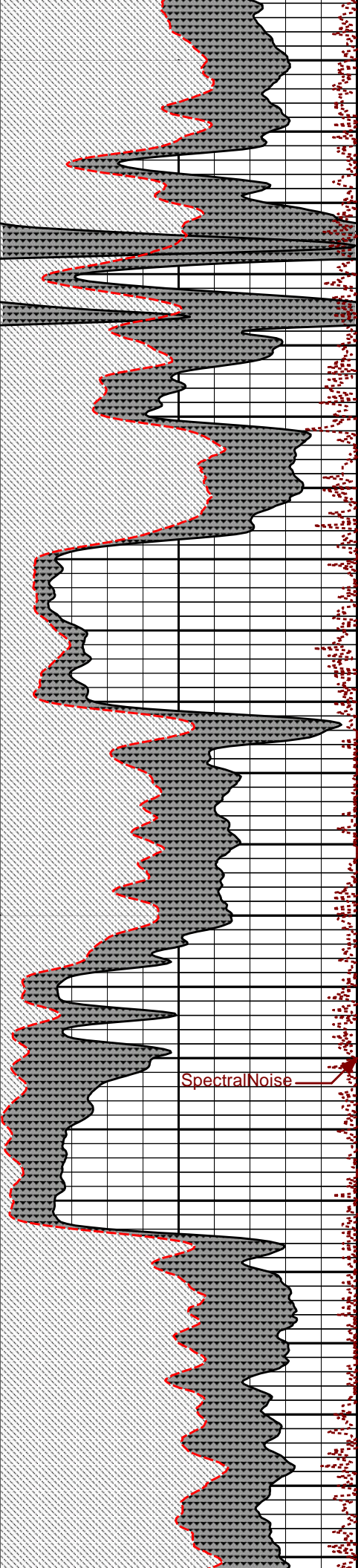


Uranium



Potassium

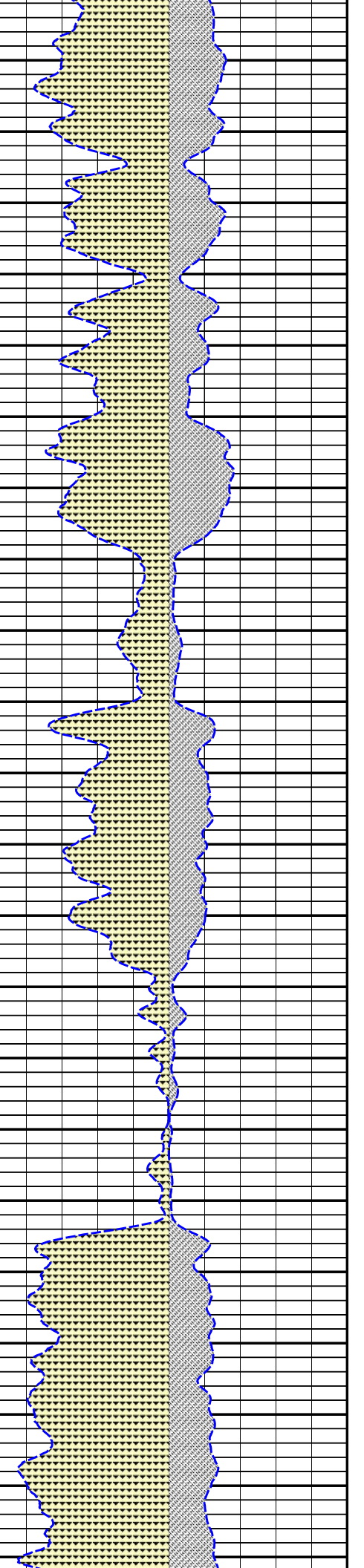
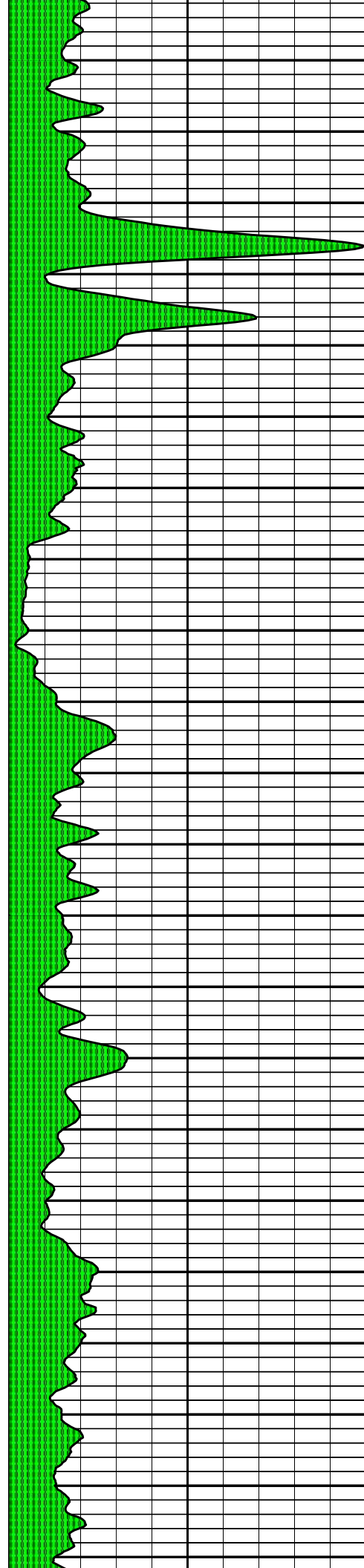
Thorium

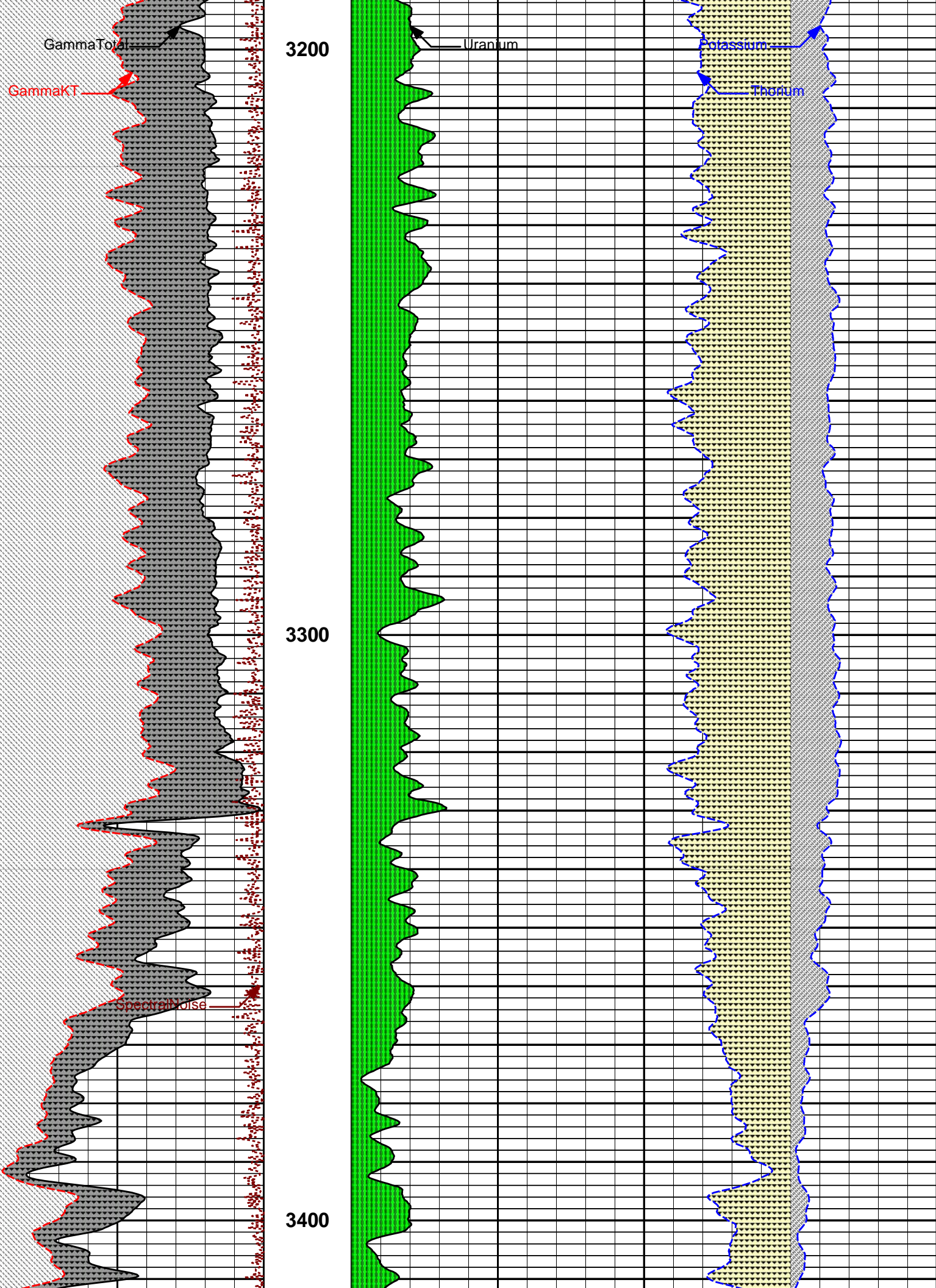


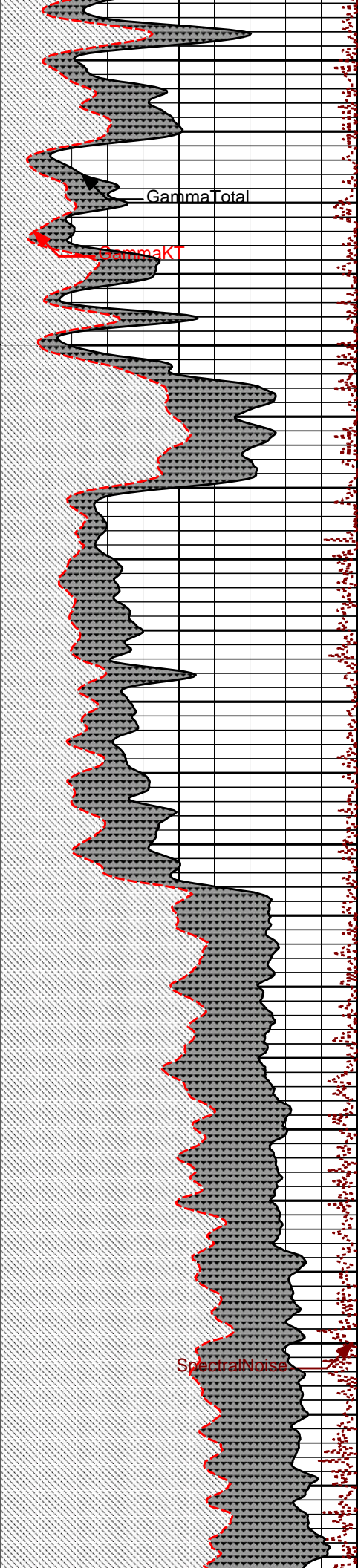
3000

3100

SpectralNoise







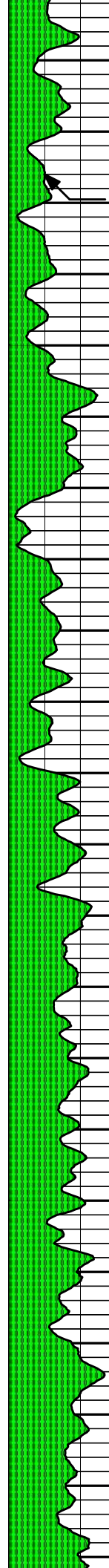
Gamma Total

GammaK1

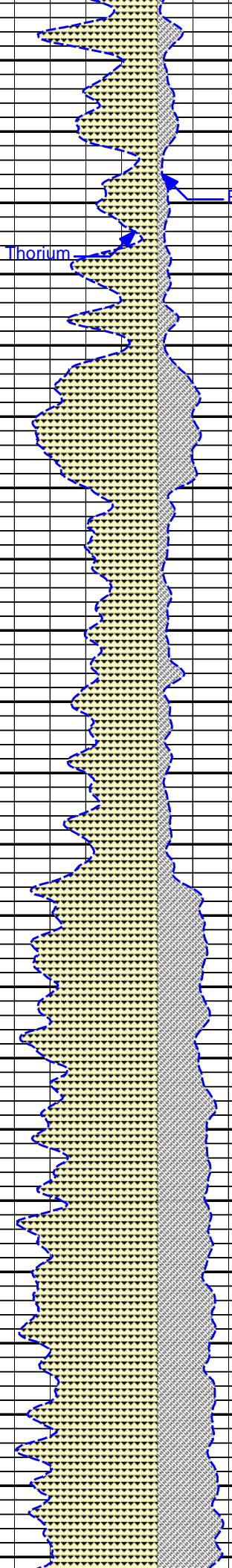
Spectral Noise

3500

3600

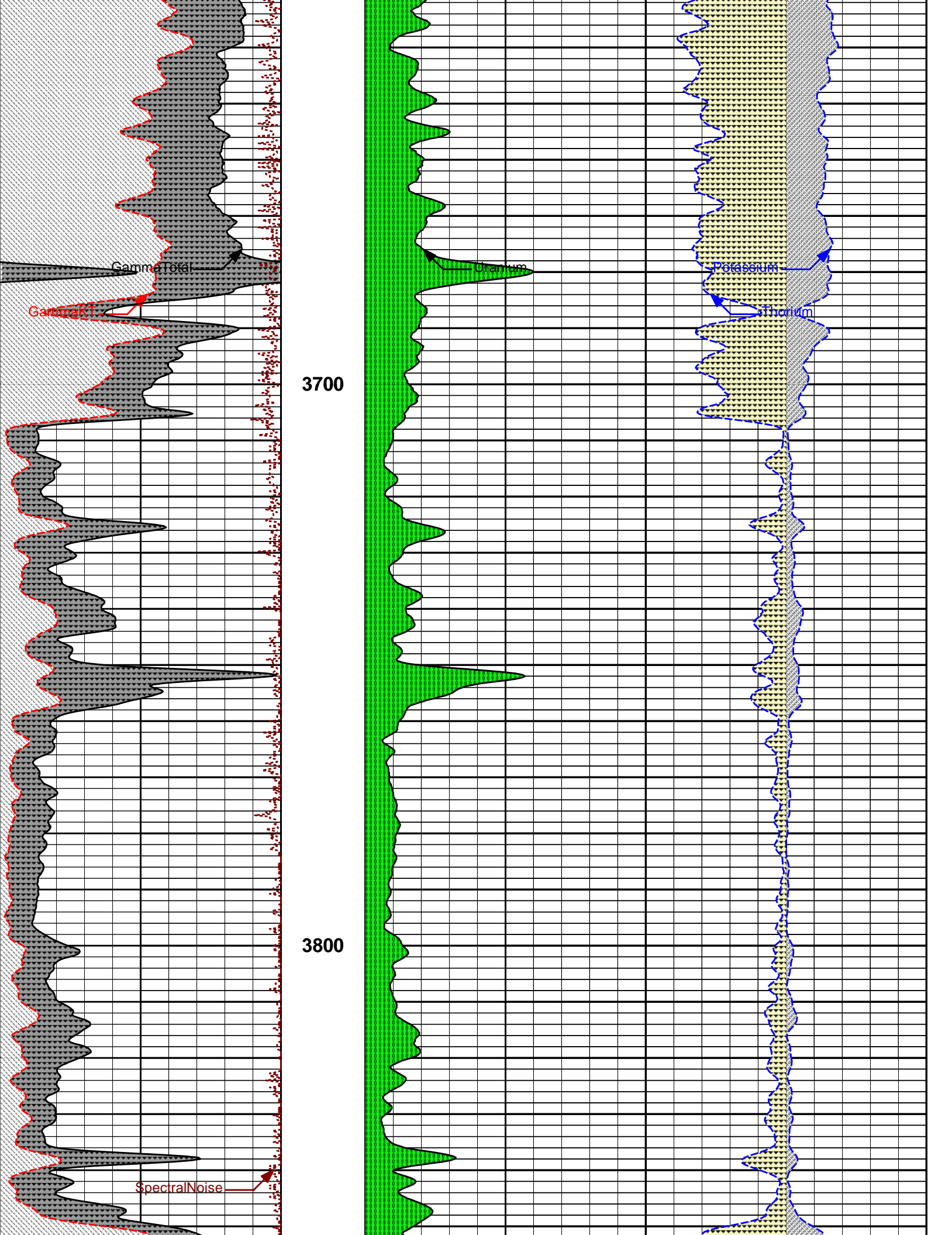


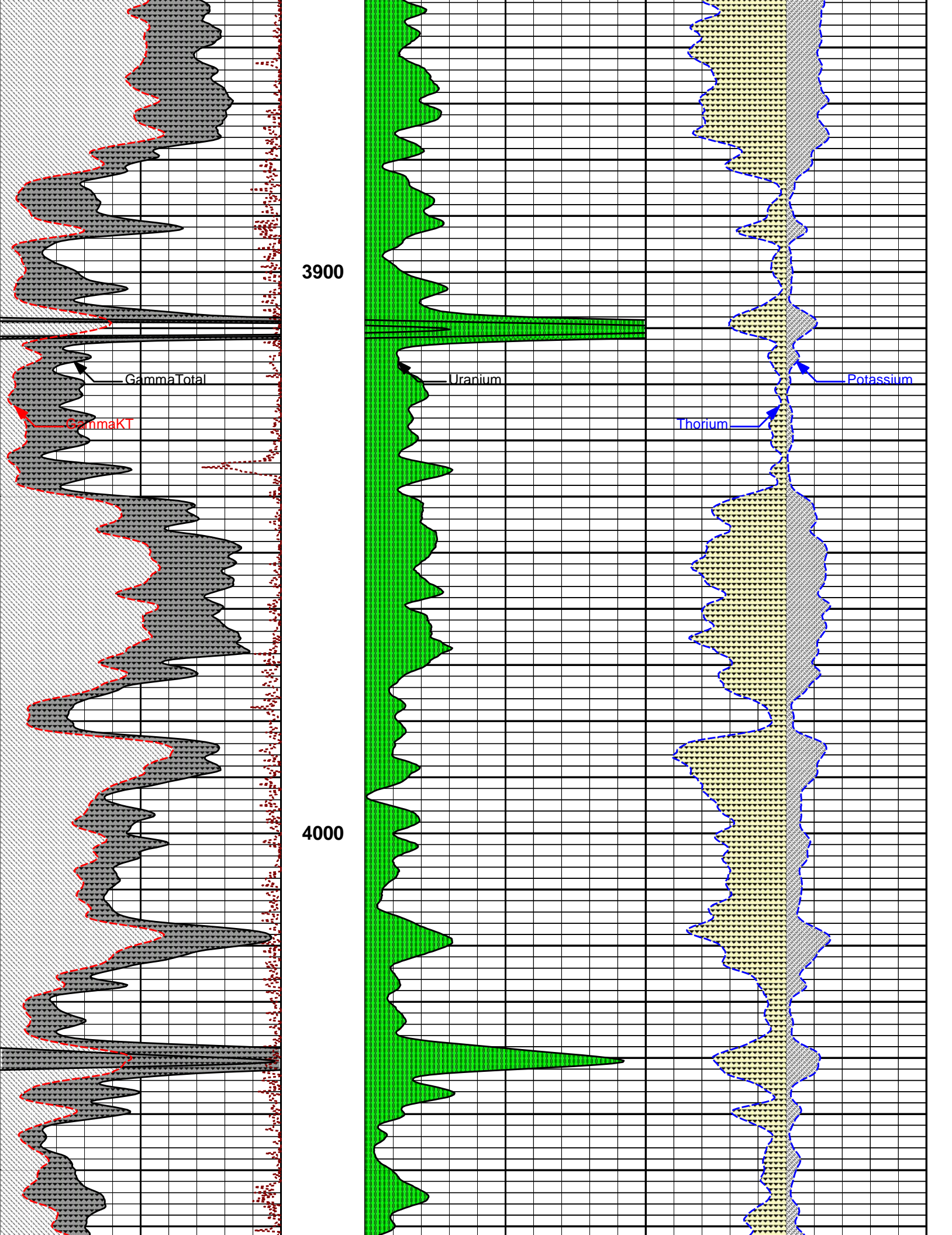
Uranium

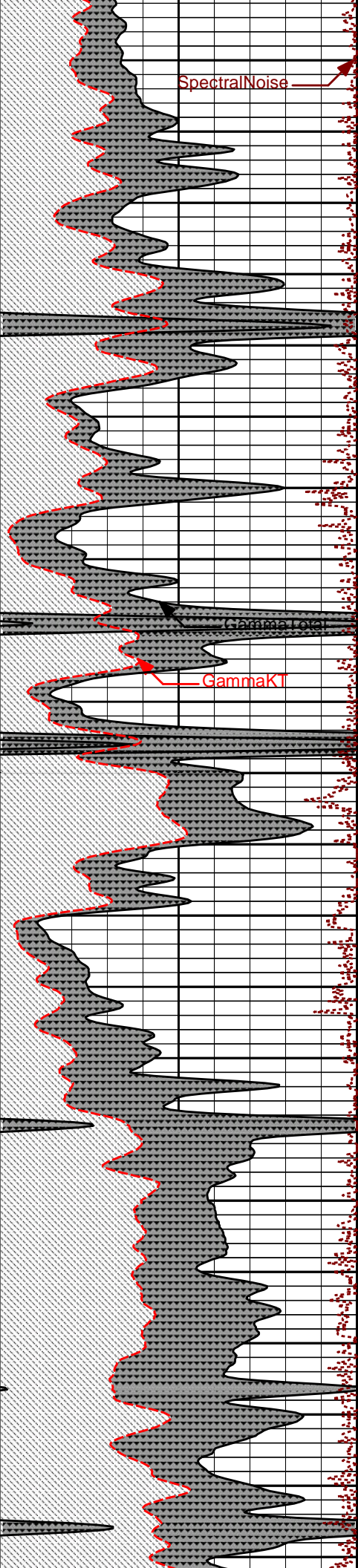


Thorium

Potassium

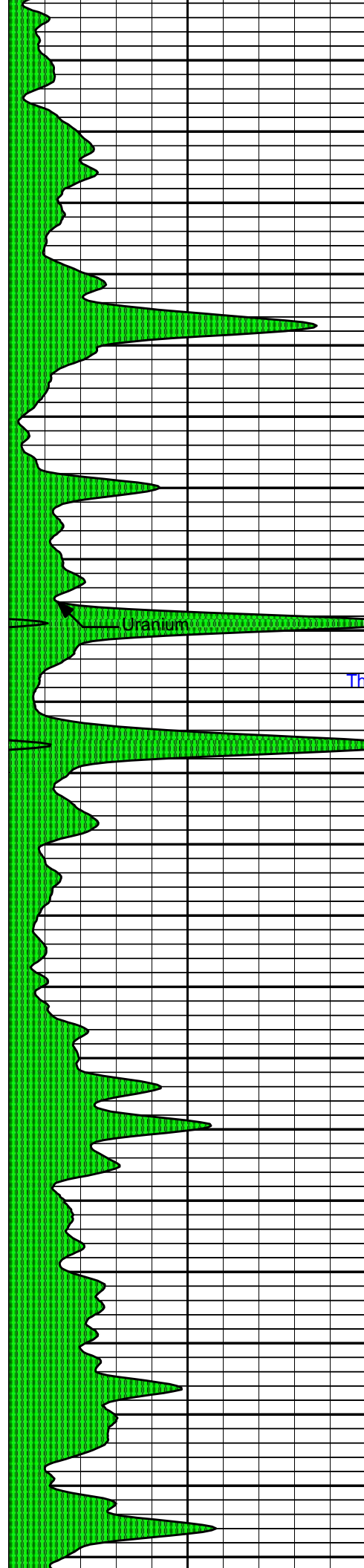




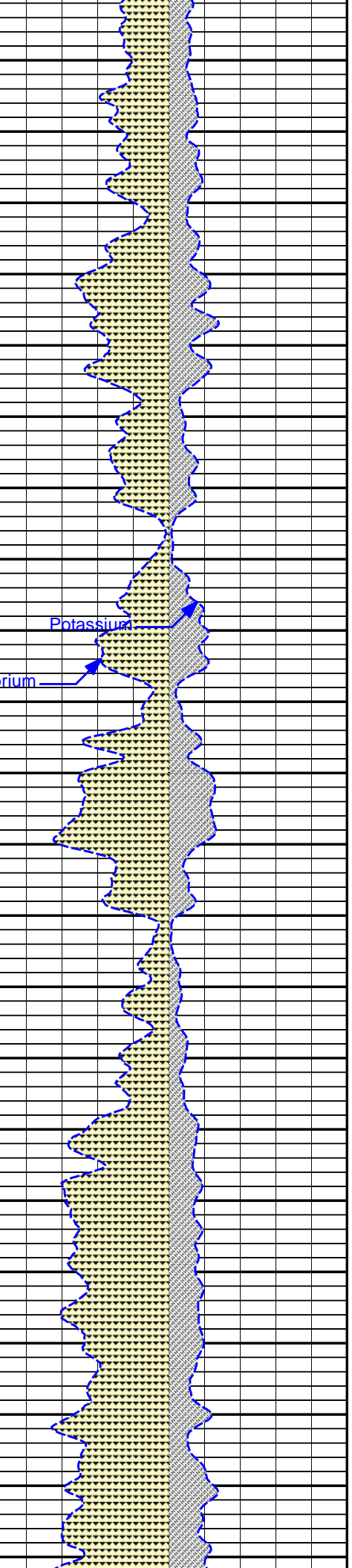


4100

4200

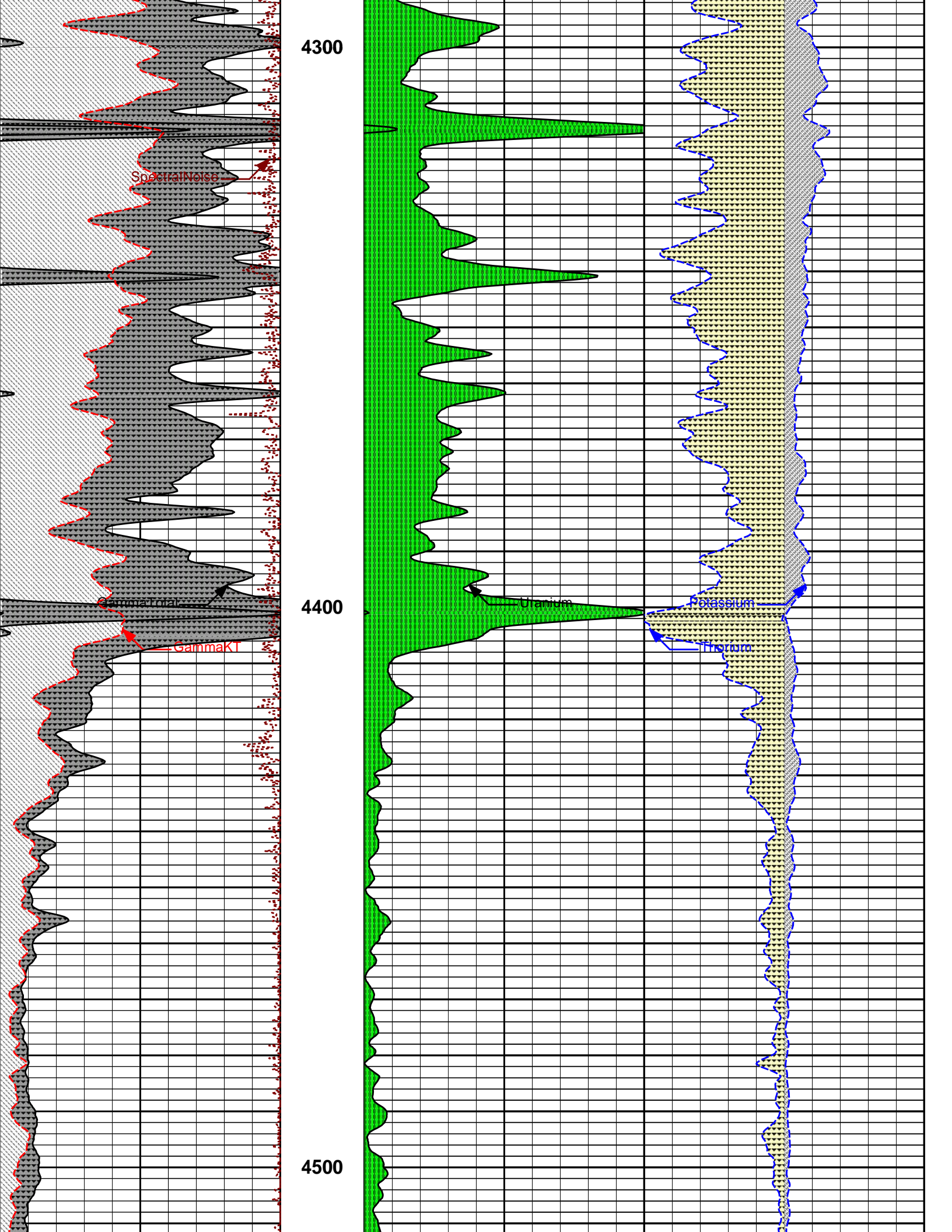


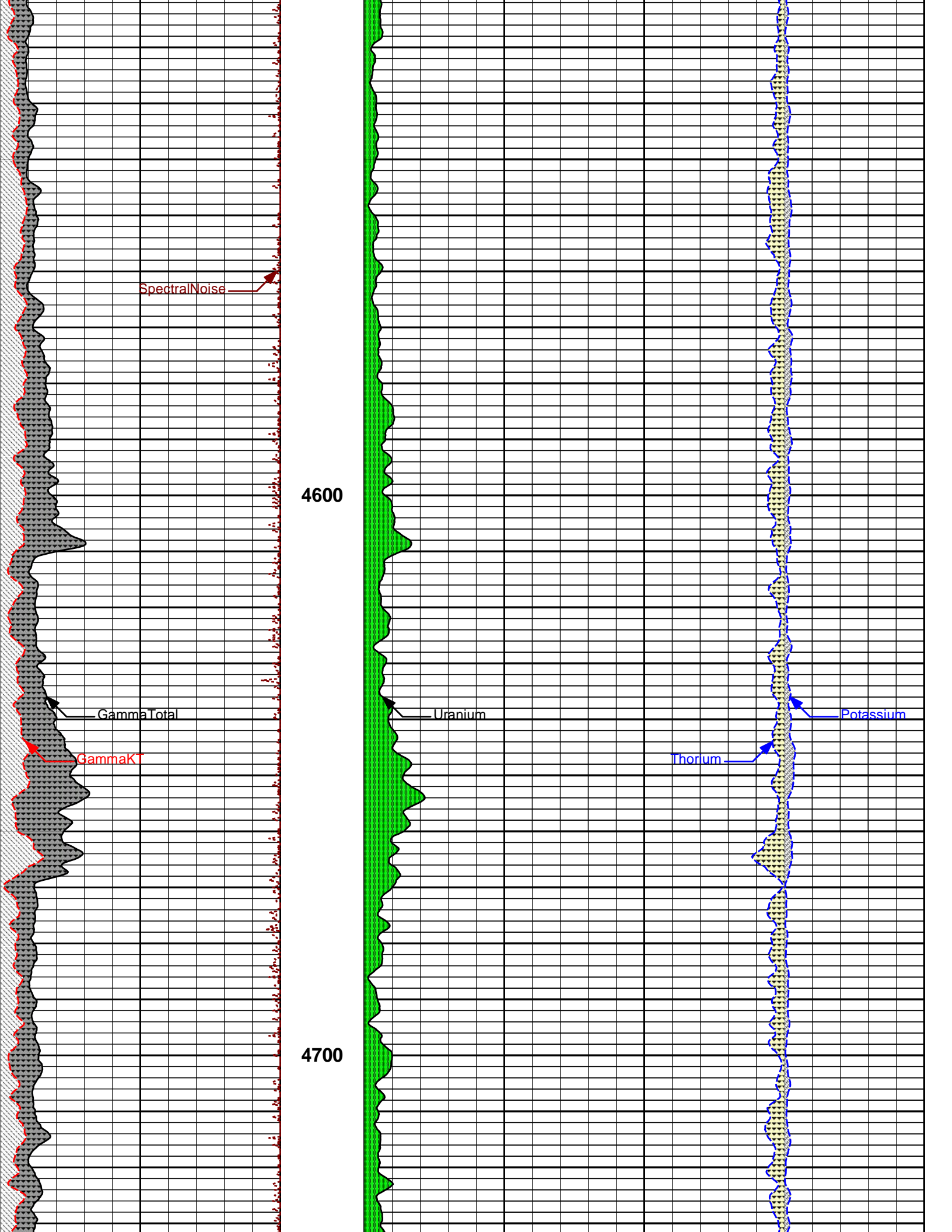
Uranium

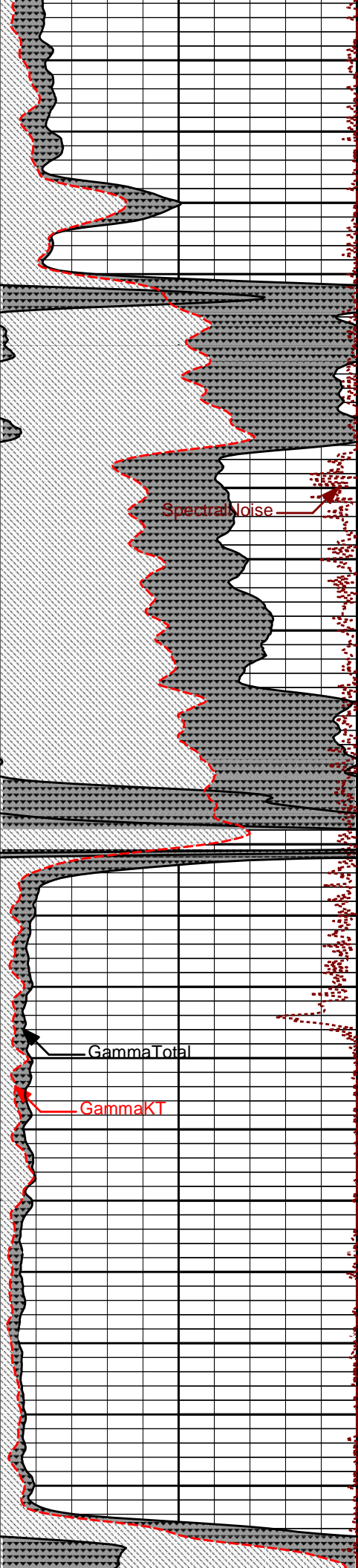


Potassium

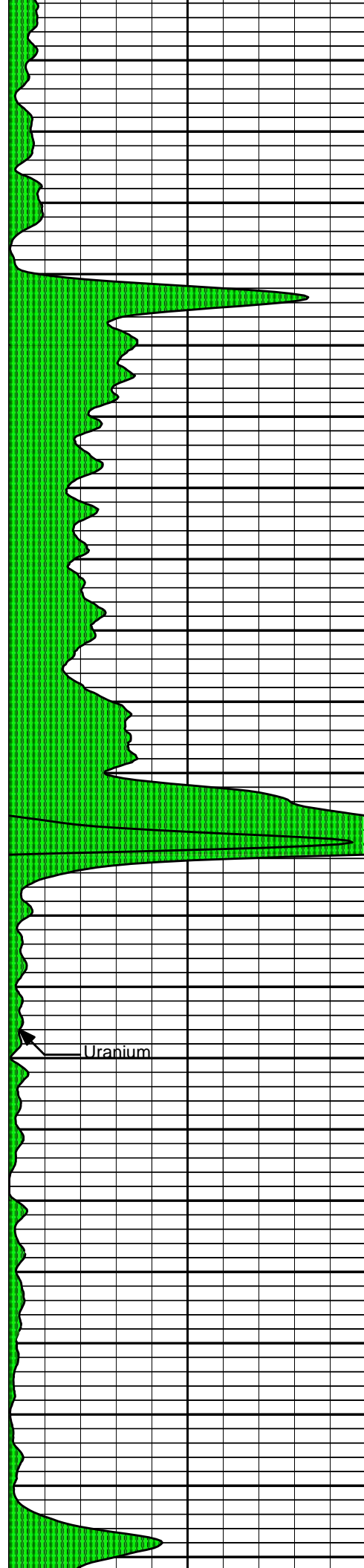
Thorium





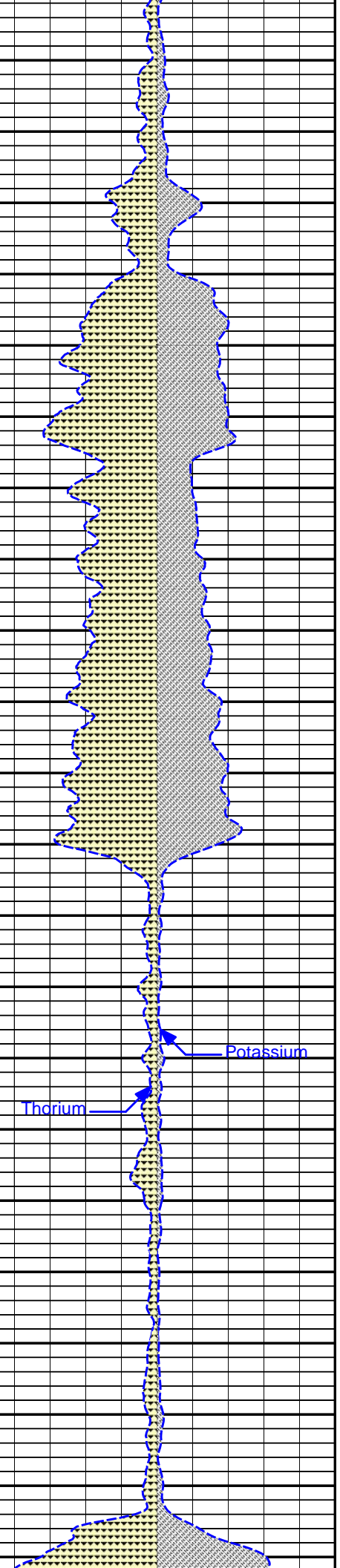


4800



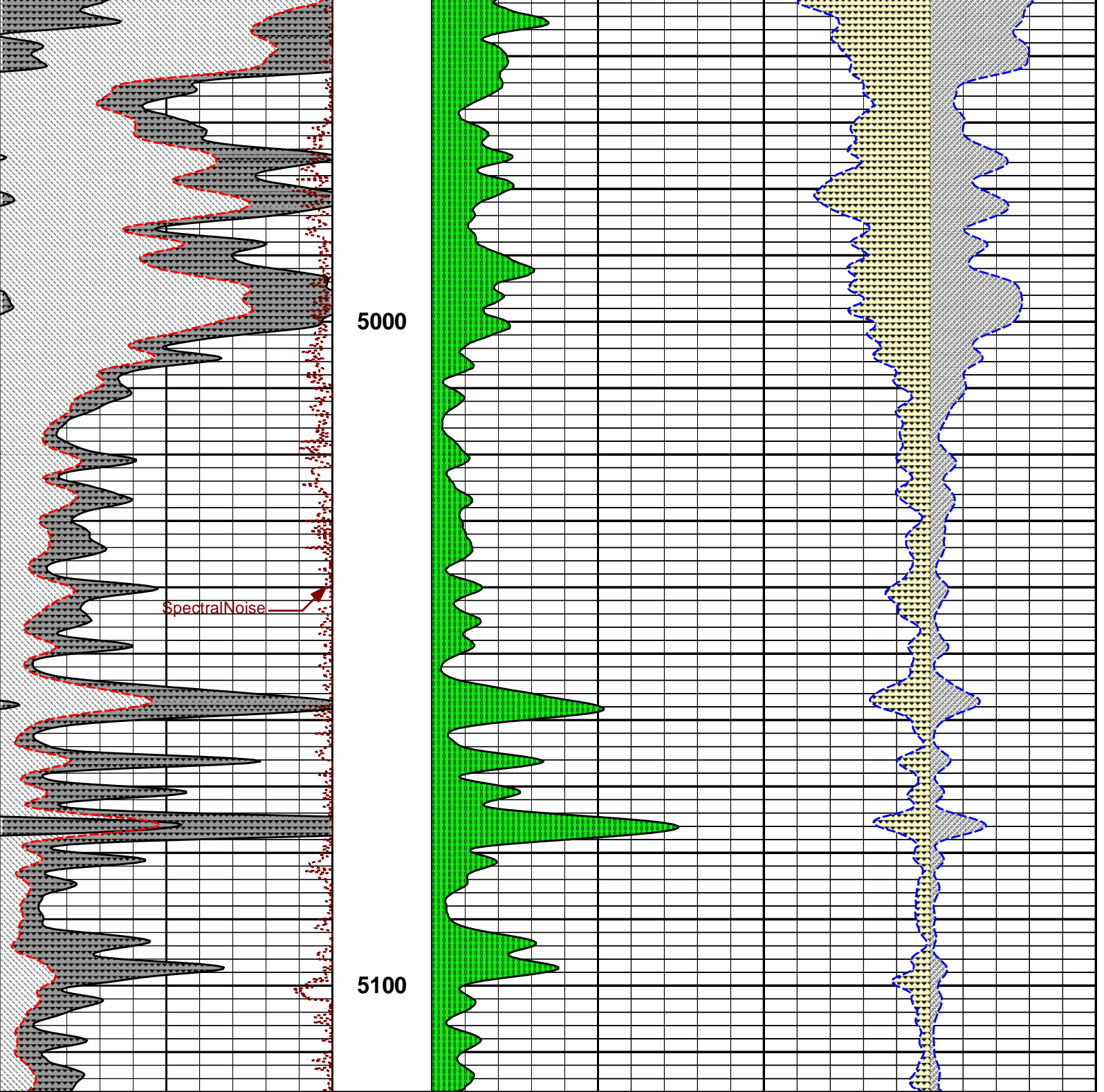
Uranium

4900



Thorium

Potassium



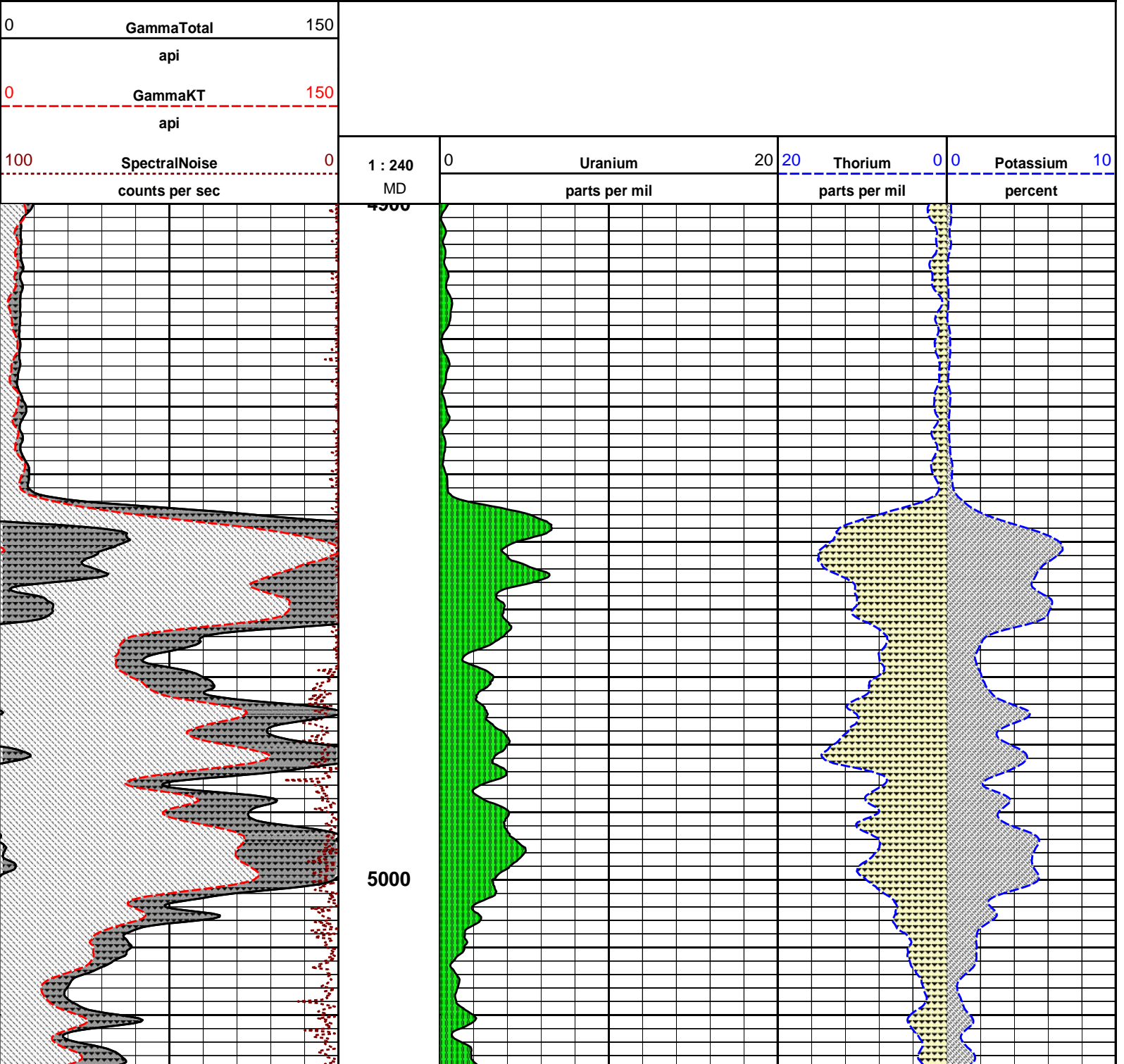
100	SpectralNoise	0	MD	0	20	20	0	0	Potassium	10
	counts per sec		1 : 240		Uranium		Thorium		percent	
0	GammaKT	150	ft		parts per mil		parts per mil			
	api									
0	GammaTotal	150								
	api									

MEASURED DEPTH
5 INCH MAIN

HALLIBURTON

Plot Time: 07-May-14 16:14:30
Plot Range: 4900 ft to 5116 ft
Data: MURPHY_SW_D_3404Well Based\REPEAT2\
Plot File: \\CSNG\CSNG-FS-5_INCH_RPT

REPEAT SECTION



GTET-11039640
165.00 lbs

Ø 3.625 in →

8.52 ft

← GammaRay @ 65.69 ft

63.23 ft

CSNG-11830417
114.00 lbs

Ø 3.625 in →

8.17 ft

← CSNG @ 57.60 ft

55.06 ft

IDT-10967514
150.00 lbs

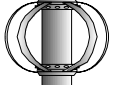
Ø 3.625 in →

7.58 ft

47.48 ft

Centralizer 25-00000003
8.00 lbs

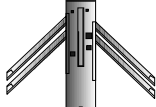
Ø 4.000 in* →



ICT-11204020
330.00 lbs

Ø 3.625 in →

12.83 ft



← ICT Caliper @ 37.44 ft

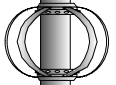
34.65 ft

WSTT-I Upper
Electronics-
00000370
115.00 lbs

Centralizer 25-00000001
8.00 lbs

Ø 3.625 in →

Ø 4.000 in* →



8.31 ft

26.34 ft

WSTT-I Trans-
Isolator - Std-
00000125
185.00 lbs

Ø 3.625 in →

10.86 ft

15.48 ft



WSTT-I Receivers-
00000373
100.00 lbs

Ø 3.625 in →

← Wavesonic Delay @ 12.08 ft 6.65 ft

8.83 ft

WSTT-I Lower
Electronics-
00000372
120.00 lbs

Centralizer 25-00000002
8.00 lbs

Ø 3.625 in →
Ø 4.000 in* →

8.25 ft

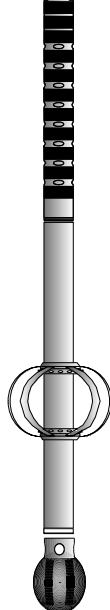
Cabbage Head-
00000142
10.00 lbs

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_HOS	Hostile Cable Head with Load Cell	CH_696	37.50	3.03	76.44	300.00
XOHD	Hostile to Dits Cross Over	00000001	20.00	0.95	75.49	300.00
SP	SP Sub	12345678	60.00	3.74	71.75	300.00
GTET	Gamma Telemetry Tool	11039640	165.00	8.52	63.23	60.00
CSNG	Compensated Spectral Natural Gamma	11830417	114.00	8.17	55.06	15.00
IDT	Insite Directional Tool	10967514	150.00	7.58	47.48	30.00
ICT	Six Independent Arm Caliper	11204020	330.00	12.83	34.65	60.00
OBCEN	Centralizer - 25 in. Overbody	00000003	8.00	2.08 *	43.73	300.00
WSTT	WaveSonic Insite - Upper Electronics	00000370	115.00	8.31	26.34	100.00
OBCEN	Centralizer - 25 in. Overbody	00000001	8.00	2.08 *	28.70	300.00
WSTT	WaveSonic Insite - Trans-Isolator - Std	00000125	185.00	10.86	15.48	100.00
WSTT	WaveSonic Insite - Receivers	00000373	100.00	6.65	8.83	30.00
WSTT	WaveSonic Insite - Lower Electronics	00000372	120.00	8.25	0.58	100.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08 *	3.12	300.00
CBHD	Cabbage Head	00000142	10.00	0.58	0.00	300.00

Total **1,430.50** **79.47**

* Not included in Total Length and Length Accumulation.

Data: MURPHY_SWD_3404\0002 SP-GTET-CSNG-IDT-ICT-WAVE-CHIDLE Date: 07-May-14 12:51:11

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CALIBRATION REPORT

CSNG-FS SHOP CALIBRATION

Tool Name:	CSNG - 11830417	Reference Calibration Date:	06-Mar-14 11:09:05
Engineer:	THOMAS K HYDE	Calibration Date:	28-Apr-14 11:46:06
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1
Source SN:	TB-185		

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.8	23.8	Channel #
583 KEV Peak Channel #	53.4	53.2	Channel #
2614 KEV Peak Channel #	219.4	218.9	Channel #
Calibrate Temperature	74.8	87.0	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 228.00 API

Calibrator Value: 258.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1540.0	CPS	298.5	295.2	API
Background	189.1	CPS	39.6	36.2	API

Gamma Ray Gain: 0.96

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

CSNG-FS FIELD CALIBRATION

Tool Name:	CSNG - 11830417	Reference Calibration Date:	28-Apr-14 11:46:06
Engineer:	J. BOLLLOM	Calibration Date:	01-May-14 09:38:55
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1
Source SN:			

TITANIUM CASE	Shop	Field	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.8	23.8	Channel #
583 KEV Peak Channel #	53.2	53.5	Channel #
2614 KEV Peak Channel #	218.9	219.9	Channel #
Calibrate Temperature	87.0	73.6	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 228.00 API

Calibrator Value: 258.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1523.7	CPS	295.2	296.7	API
Background	194.0	CPS	36.2	37.8	API

Gamma Ray Gain: 0.98

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
CSNG-11830417						
60 KEV Peak Channel #	48.0	48.0	-----	0.0	-----	Channel #
239 KEV Peak Channel #	23.8	23.8	-----	0.0	-----	Channel #
583 KEV Peak Channel #	53.2	53.5	-----	-0.3	-----	Channel #

2614 KEV Peak Channel #	218.9	219.9	-----	-1.0	-----	Channel #
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Data: MURPHY_SWD_3404\0002 SP-GTET-CSNG-IDT-ICT-WAVE-CH\IDLE Date: 07-May-14 12:53:07

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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	9.500	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	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5172.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	IDT	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT	
	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	ICT	
	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	ICT	
	CSNG	CGOK	Process CSNG Data?	Yes	
	CSNG	CENT	Is Tool Centralized?	No	
	CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
	CSNG	BARF	Barite Correction Factor	1.00	
	CSNG	ORDG	Use Fixed Gain	No	
	CSNG	ORDO	Use Fixed Offset	No	
	CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
	CSNG	BHSM	Borehole Size Source Tool	ICT	

ICT	WRTI	Survey Writing Interval	30	ft
ICT	SOPT	Smoothing Option	None	
ICT	CLOK	Process Caliper Outputs?	Yes	
ICT	DARM	Disable Caliper Arm	No	
ICT	ATDS	Arm To Disable	0	
ICT	REPM	Method to replace arm?	Caliper Average	
ICT	ARMV	Diameter to use for disabled arm	0.00	in
ICT	DARM	Disable Second Caliper Arm	No	
ICT	ATDS	Second Arm To Disable	0	
ICT	REPM	Method to replace second arm?	Caliper Average	
ICT	ARMV	Diameter to use for second disabled arm	0.00	in
ICT	NAVS	Navigation Source Tool	IDT	
ICT	CL1O	Radius 1 Offset	0.0	in
ICT	CL2O	Radius 2 Offset	0.0	in
ICT	CL3O	Radius 3 Offset	0.0	in
ICT	CL4O	Radius 4 Offset	0.0	in
ICT	CL5O	Radius 5 Offset	0.0	in
ICT	CL6O	Radius 6 Offset	0.0	in
ICT	BHVC	Radius type for borehole volume calculations	Elliptical	
WSTT-I Receivers	WSOK	Process WSTT?	Yes	
WSTT-I Receivers	AFIL	Adaptive Filtering?	No	
WSTT-I Receivers	PINT	Process 1 Sample and Skip	0	
WSTT-I Receivers	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
WSTT-I Receivers	DTSH	Delta -T Shale	100.00	uspf
WSTT-I Receivers	DTMT	Delta -T Matrix Type	User define	
WSTT-I Receivers	DTMA	Delta -T Matrix	47.60	uspf
WSTT-I Receivers	DTFL	Delta -T Fluid	189.00	uspf
WSTT-I Receivers	RHOM	Matrix Density	2.7100	g/cc
WSTT-I Receivers	RHOF	Fluid Density	1.0000	g/cc
WSTT-I Receivers	SMTH	Semblance Threshold	0.25	
WSTT-I Receivers	VPVS	VPVS Ratio for Porosity	1.40	
WSTT-I Receivers	APEQ	Acoustic Porosity Equation	Wylie	
WSTT-I Receivers	NAVS	Navigation Source Tool	IDT	
BOTTOM				
Data: MURPHY_SW_D_3404\0002 SP-GTET-CSNG-IDT-ICT-WAVE-CH\IDLE				Date: 07-May-14 12:52:43

HALLIBURTON

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	79.47	NO	
BS	Bit Size	79.47	NO	
HDIA	Measured Hole Diameter	0.00	NO	
CH_HOS				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	73.71	NO	
SP	Spontaneous Potential	73.71	BLK	1.250
SPR	Raw Spontaneous Potential	73.71	NO	
SPO	Spontaneous Potential Offset	73.71	NO	
GTET				
TPUL	Tension Pull	65.69	NO	
GR	Natural Gamma Ray API	65.69	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	65.69	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	65.69	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	
CSNG				
TPUL	Tension Pull	57.60	NO	
STAT	Status	57.60	NO	
FRMC	Tool Frame Count	57.60	BLK	0.250
TFRM	Total Frames	57.60	NO	
LSPD	Line Speed	57.60	BLK	0.250
CTIM	Accumulation time for sample	57.60	BLK	0.250
NOIS	Spectral Noise	57.60	BLK	0.250
STAB	Stabilizer Voltage in mv	57.60	BLK	0.250
STBP	Stabilizer 60 KEV Peak	57.60	BLK	0.250
AMER	Americium	57.60	BLK	0.250
FTMP	Flask PCB Temperature	57.60	BLK	0.250
SPEL	Low Energy Spectrum	57.60	BLK	0.250
SPEH	High Energy Spectrum	57.60	BLK	0.250
SSP	Stabilization Energy Spectrum	57.60	BLK	0.250
HDIA	Measured Hole Diameter	0.00	NO	
CSPC	CSNG Lo Hi Spectrum Data	57.60	NO	
IDT				
TPUL	Tension Pull	48.48	NO	
ACCX	Accelerometer X	48.48	NO	
ACCY	Accelerometer Y	48.48	NO	
ACCZ	Accelerometer Z	48.48	NO	
MAGX	magnetometer x with unit	48.48	NO	
MAGY	Magnetometer Y with unit	48.48	NO	
MAGZ	magnetometer z with unit	48.48	NO	
IAMP	Accelerometer Temperature	48.48	NO	
MTMP	Magnetometer Temperature	48.48	NO	
ICT				
TPUL	Tension Pull	37.44	NO	
	Arm Potentiometer excitation V	34.65	NO	
	Celiner 1 measurement	37.44	BLK	1.250

	Caliper 1 measurement	37.44	BLK	1.250
	Caliper 2 measurement	37.44	BLK	1.250
	Caliper 3 measurement	37.44	BLK	1.250
	Caliper 4 measurement	37.44	BLK	1.250
	Caliper 5 measurement	37.44	BLK	1.250
	Caliper 6 measurement	37.44	BLK	1.250
	Caliper Global measurement	37.44	BLK	1.250
MOTI	Motor Current	34.65	NO	
MOT1	Motor Voltage Monitor 1	34.65	NO	
STA1	Status word #1	34.65	NO	
STA2	Status word #2	34.65	NO	
PRES	Caliper percentage of total compression of the spring	34.65	NO	
HAZI	Hole Azimuth	37.44	NO	
RB	Relative Bearing	37.44	NO	
AZI1	PAD1 Azimuth	37.44	NO	
DEVI	Inclination	37.44	NO	

WSTT-I Receivers

TPUL	Tension Pull	12.08	NO	
DPSX	Dipole Source X Structurel	8.83	NO	
DPSY	Dipole Source Y Structurel	8.83	NO	
DPMS	Monopole Source Structure	8.83	NO	
WVST	Wavesonic Compressed Data	12.08	NO	
TPUL	Tension Pull	12.08	NO	
XMS1	Wave Sonic Status Word 1	8.83	NO	
XMS2	Wave Sonic Status Word 2	8.83	NO	
XMS1	Wave Sonic XMITStatus Word 1	8.83	NO	
XMS1	Wave Sonic XMITStatus Word 2	8.83	NO	
F1HA	Dipole 1 HV After	8.83	NO	
F1HB	Dipole 1 HV Before	8.83	NO	
F2HA	Dipole 2 HV After	8.83	NO	
F2HB	Dipole 2 HV Before	8.83	NO	
F3HA	Monopole HV After	8.83	NO	
F3HB	Monopole HV Before	8.83	NO	
INVT	Input Voltage	8.83	NO	
5VOL	5 Volts	8.83	NO	
MI5A	Minus 5 Volts Analog	8.83	NO	
ITMP	Instrument Temperature	8.83	NO	
PL5A	Plus 5 Volts Analog	8.83	NO	
5VD	Plus 5 Volts Digital	8.83	NO	
TCUR	Tool Current	8.83	NO	
SUPV	Supply Voltage	8.83	NO	
PRVT	Preregulated voltage	8.83	NO	
PRVT	Pre-regulated voltage Xmter	8.83	NO	
TEMP	Temperature	8.83	NO	
ACQN	Acquisition Number	8.83	NO	
XDP	Delay Reference	12.08	NO	
MITM	MIT Mode	12.08	NO	
VERS	Version	8.83	NO	
D1CT	Dipole 1 Compressed Word Count	12.08	NO	
D2CT	Dipole 2 Compressed Word Count	12.08	NO	
MCNT	Monopole Compressed Word Count	12.08	NO	
SEQN	Sequence Number	8.83	NO	
FREV	Firmware Revision	8.83	NO	
MSMP	Monopole Sample Rate	8.83	NO	
MSMP	Dipole Sample Rate	8.83	NO	

MFWF	Monopole Firing Waveform	8.83	NO
MFRQ	Monopole Frequency	8.83	NO
MDLY	Monopole Delay	8.83	NO
DXWF	Dipole X Firing Waveform	8.83	NO
XFRQ	Dipole X Frequency	8.83	NO
XDLY	Dipole X Delay	8.83	NO
DYWF	Dipole Y Firing Waveform	8.83	NO
YFRQ	Dipole Y Frequency	8.83	NO
YDLY	Dipole Y Delay	8.83	NO
DPSX	Dipole Source X Structurel	8.83	NO
DPSY	Dipole Source Y Structurel	8.83	NO
DPSM	Monopole Source Structure	8.83	NO
WVST	Wavesonic Compressed Data	12.08	NO
AUTM	Auto Mode	8.83	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	8.83	NO
MSL	Monopole Lower Travel Time	12.08	NO
MSH	Monopole Upper Travel Time	12.08	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	8.83	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	8.83	NO
DLTT	Dipole Lower Travel Time	8.83	NO
DUTT	Dipole Upper Travel Time	8.83	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	8.83	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	8.83	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	8.83	NO
MUTS	Mute/Enable Sides	8.83	NO
WSRB	Relative Bearing	12.08	NO
WSAZ	WSX Azimuth Pad 1	12.08	NO
TPUL	Tension Pull	12.08	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	12.08	NO
WXX	Dipole X for SIDES - A-C	12.08	NO
WYY	Dipole Y for SIDES - B-D	12.08	NO
WXY	Dipole X for SIDES - B-D	12.08	NO
WYX	Dipole Y for SIDES - A-C	12.08	NO
TPUL	Tension Pull	12.08	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	12.08	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	12.08	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	12.08	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	12.08	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	12.08	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	12.08	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	12.08	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	12.08	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	12.08	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	12.08	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	12.08	NO
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	12.08	NO
GAR1	Gain Side A Receiver 1	8.83	NO
GAR2	Gain Side A Receiver 2	8.83	NO
GAR3	Gain Side A Receiver 3	8.83	NO

GAR4	Gain Side A Receiver 4	8.83	NO
GAR5	Gain Side A Receiver 5	8.83	NO
GAR6	Gain Side A Receiver 6	8.83	NO
GAR7	Gain Side A Receiver 7	8.83	NO
GAR8	Gain Side A Receiver 8	8.83	NO
GBR1	Gain Side B Receiver 1	8.83	NO
GBR2	Gain Side B Receiver 2	8.83	NO
GBR3	Gain Side B Receiver 3	8.83	NO
GBR4	Gain Side B Receiver 4	8.83	NO
GBR5	Gain Side B Receiver 5	8.83	NO
GBR6	Gain Side B Receiver 6	8.83	NO
GBR7	Gain Side B Receiver 7	8.83	NO
GBR8	Gain Side B Receiver 8	8.83	NO
GCR1	Gain Side C Receiver 1	8.83	NO
GCR2	Gain Side C Receiver 2	8.83	NO
GCR3	Gain Side C Receiver 3	8.83	NO
GCR4	Gain Side C Receiver 4	8.83	NO
GCR5	Gain Side C Receiver 5	8.83	NO
GCR6	Gain Side C Receiver 6	8.83	NO
GCR7	Gain Side C Receiver 7	8.83	NO
GCR8	Gain Side C Receiver 8	8.83	NO
GDR1	Gain Side D Receiver 1	8.83	NO
GDR2	Gain Side D Receiver 2	8.83	NO
GDR3	Gain Side D Receiver 3	8.83	NO
GDR4	Gain Side D Receiver 4	8.83	NO
GDR5	Gain Side D Receiver 5	8.83	NO
GDR6	Gain Side D Receiver 6	8.83	NO
GDR7	Gain Side D Receiver 7	8.83	NO
GDR8	Gain Side D Receiver 8	8.83	NO

Data: MURPHY_SWD_3404\0002 SP-GTET-CSNG-IDT-ICT-WAVE-CHNDLE Date: 07-May-14 12:52:26

COMPANY	SANDRIDGE ENERGY		
WELL	MURPHY SWD 3404 1-18		
FIELD	BLUFF		
COUNTY	SUMNER	STATE	KANSAS
HALLIBURTON		COMPENSATED SPECTRAL NATURAL GAMMA RAY LOG	