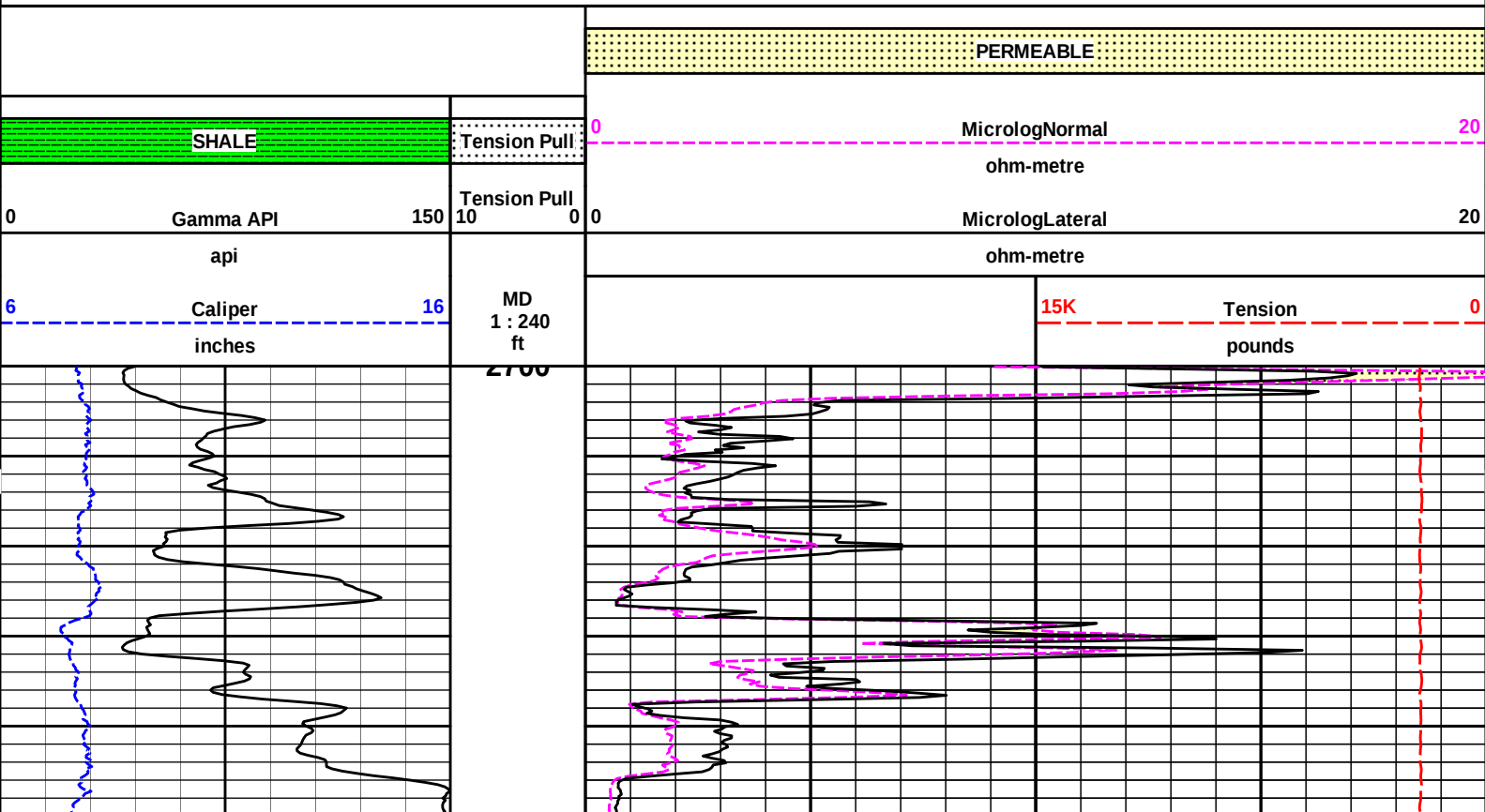


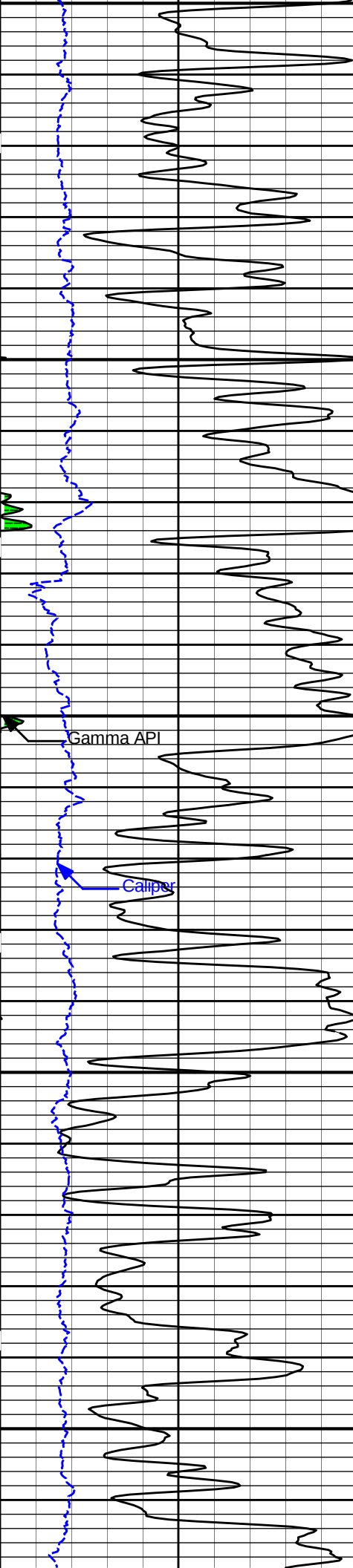
MICRO LOG

Fold here

LOGGING DATA

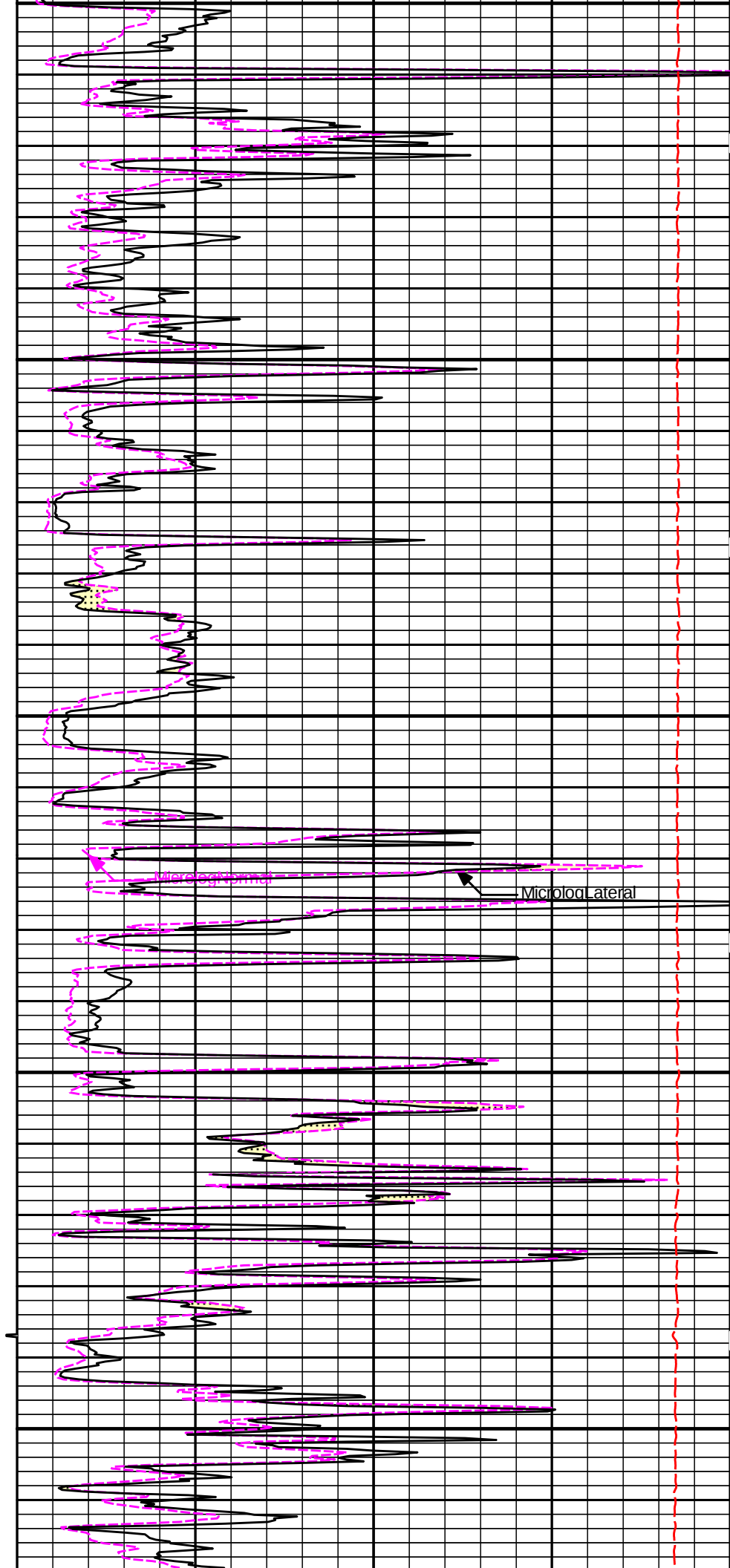
GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON			
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	3610	2800	REC	0	150									
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING														
CHLORIDES REPORTED AT 2000 MG/L														
LCM REPORTED AT 4 PPB														
TODAY'S CREW M. GRAHAM B. TERRELL														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 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														

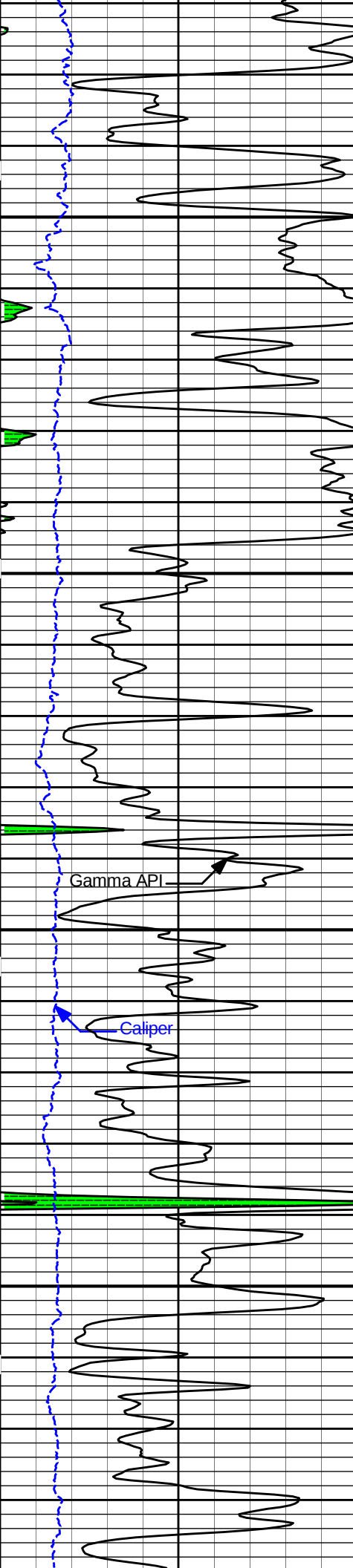




2800

2900



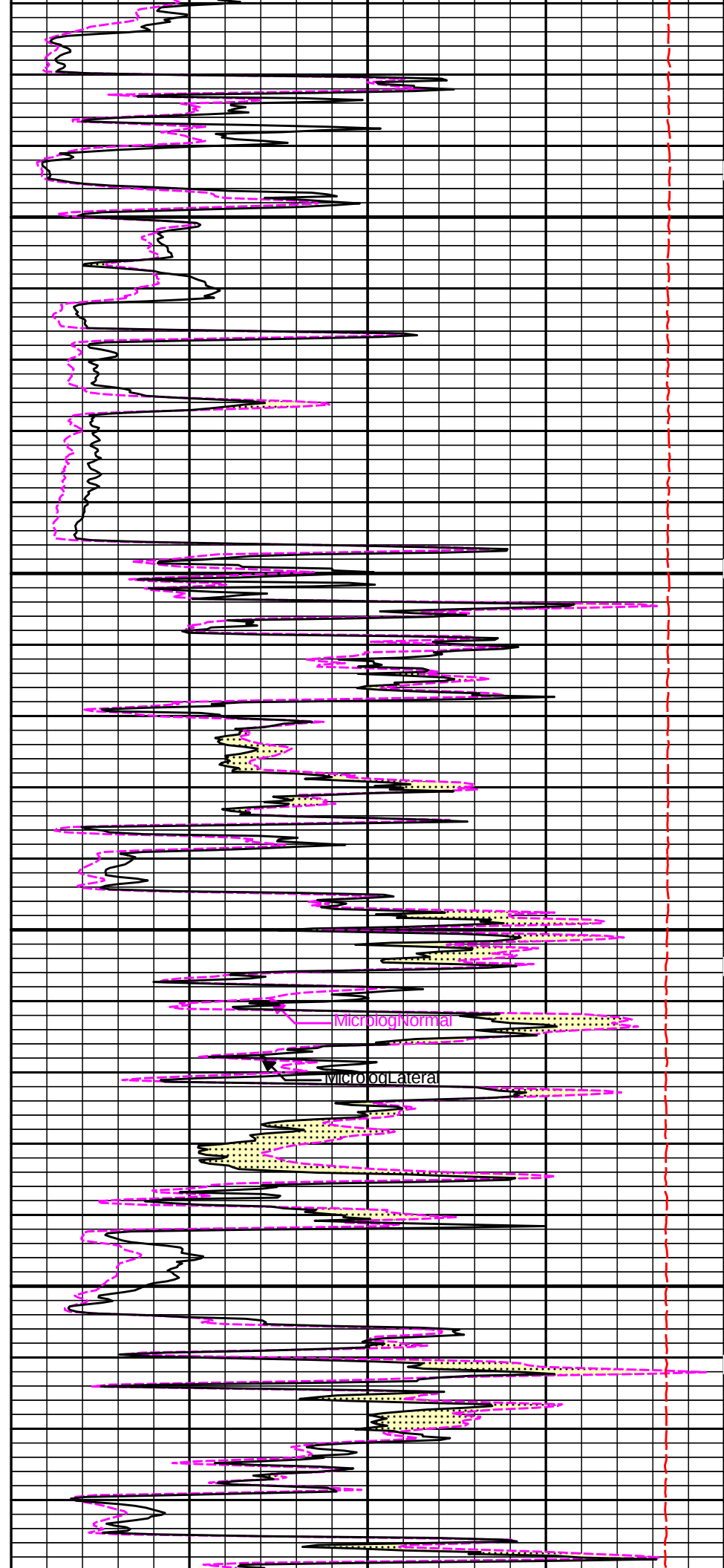


3000

3100

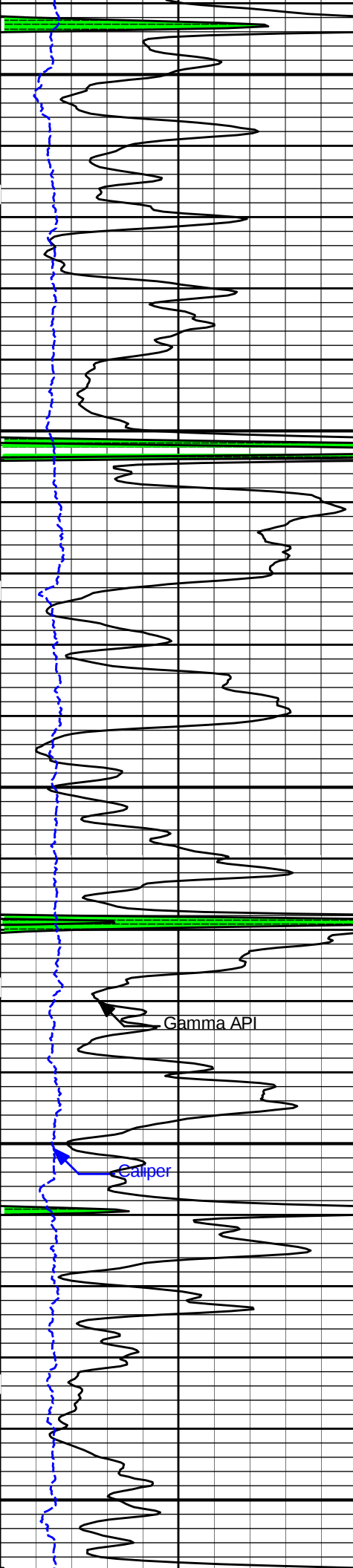
Gamma API

Caliper



Microbiog

Microbiolateral



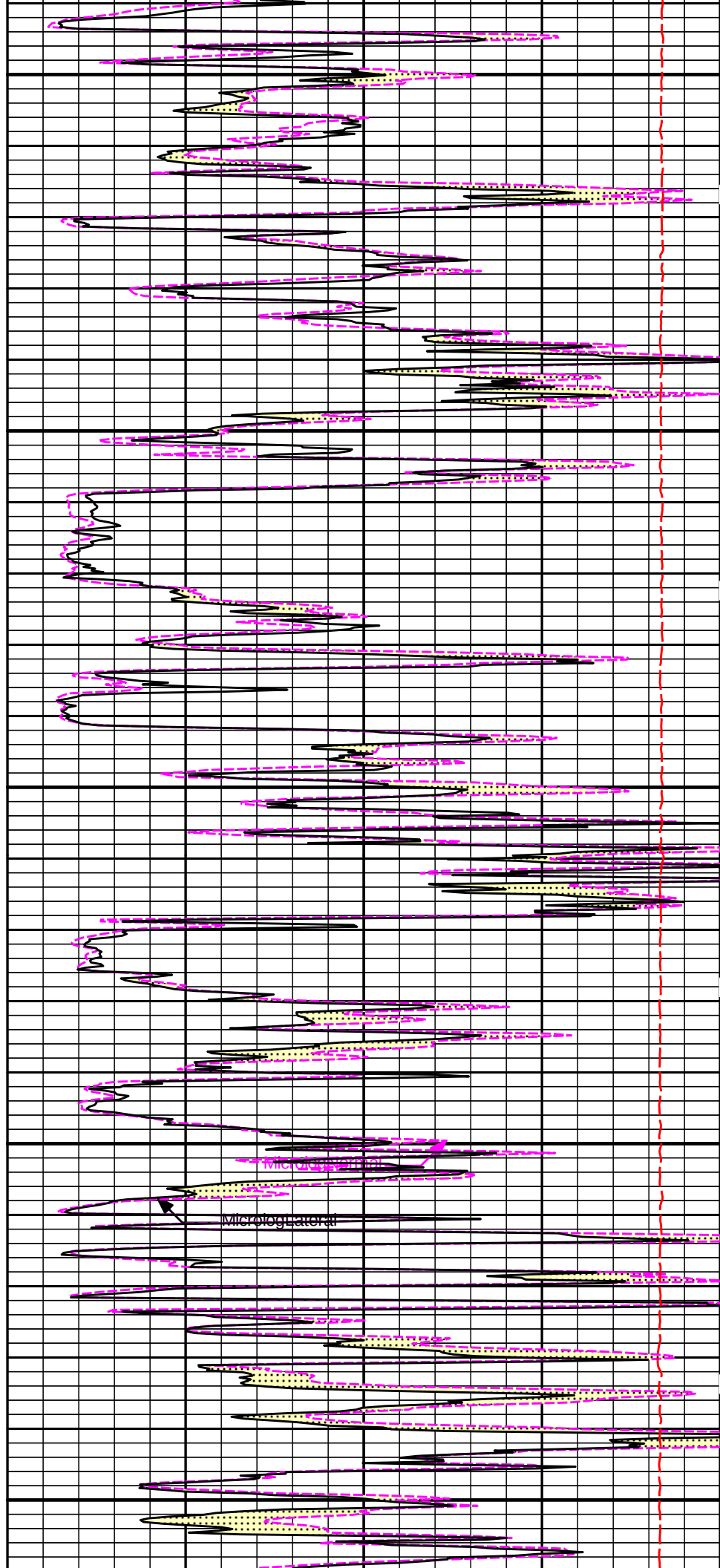
3200

3300

3400

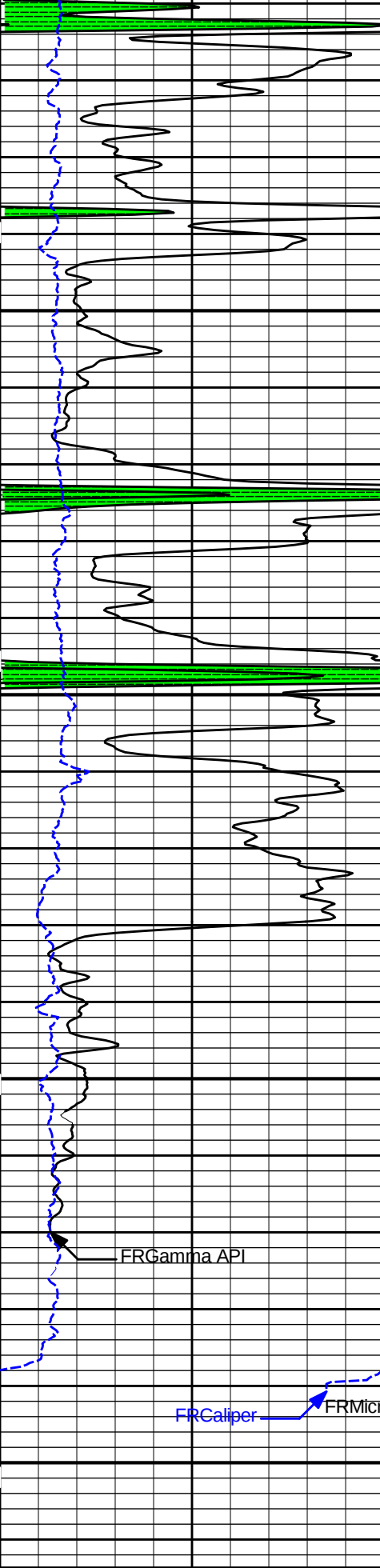
Gamma API

Caliper



Microlog

Microlog lateral



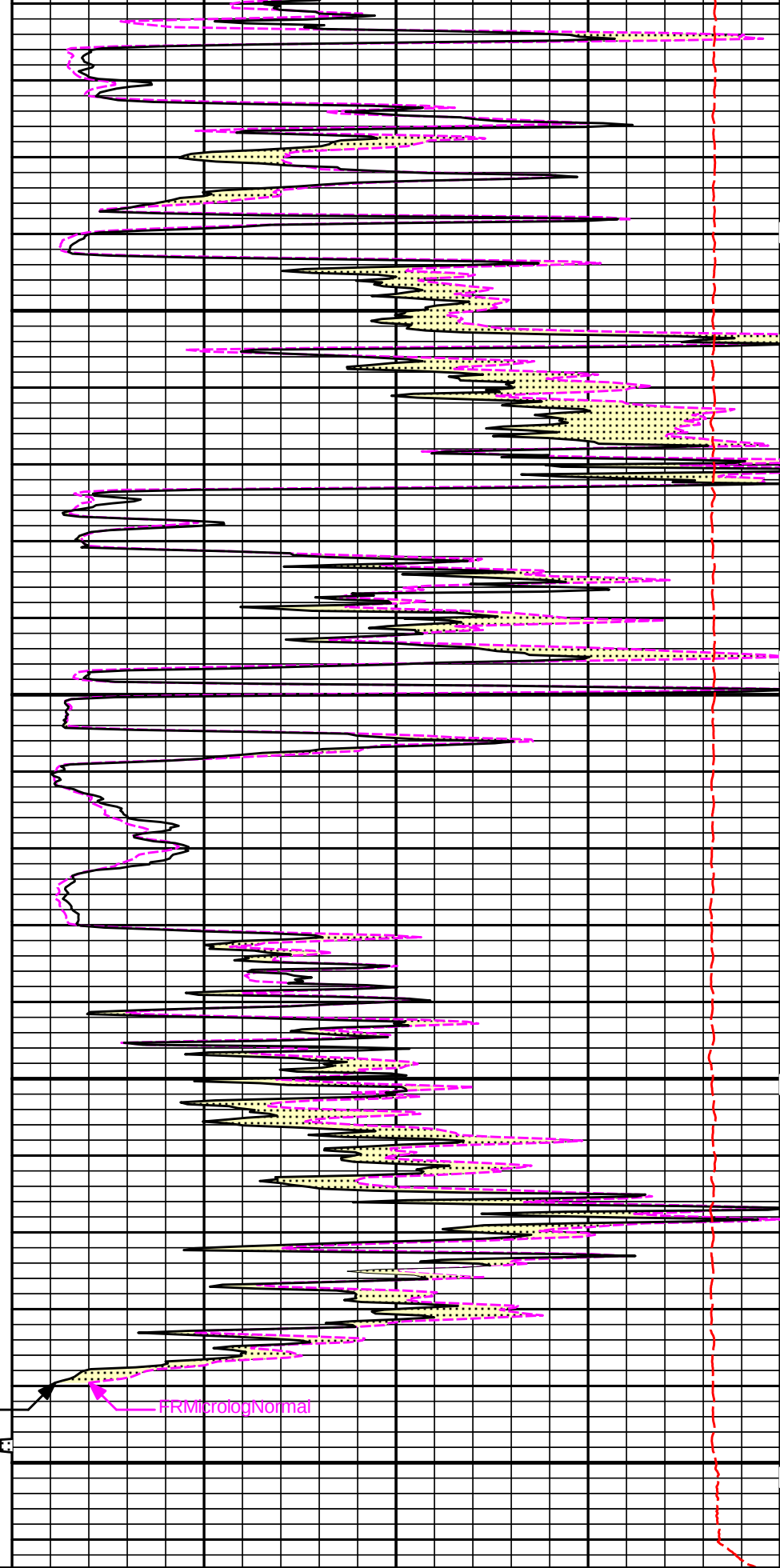
3500

3600

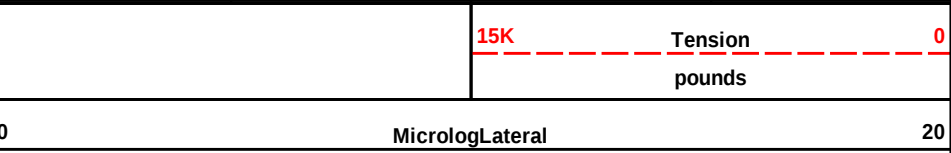
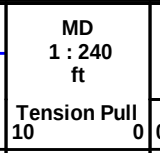
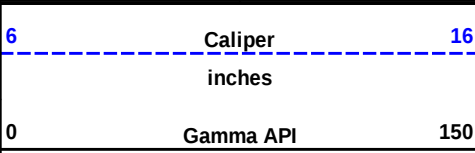
FRGamma API

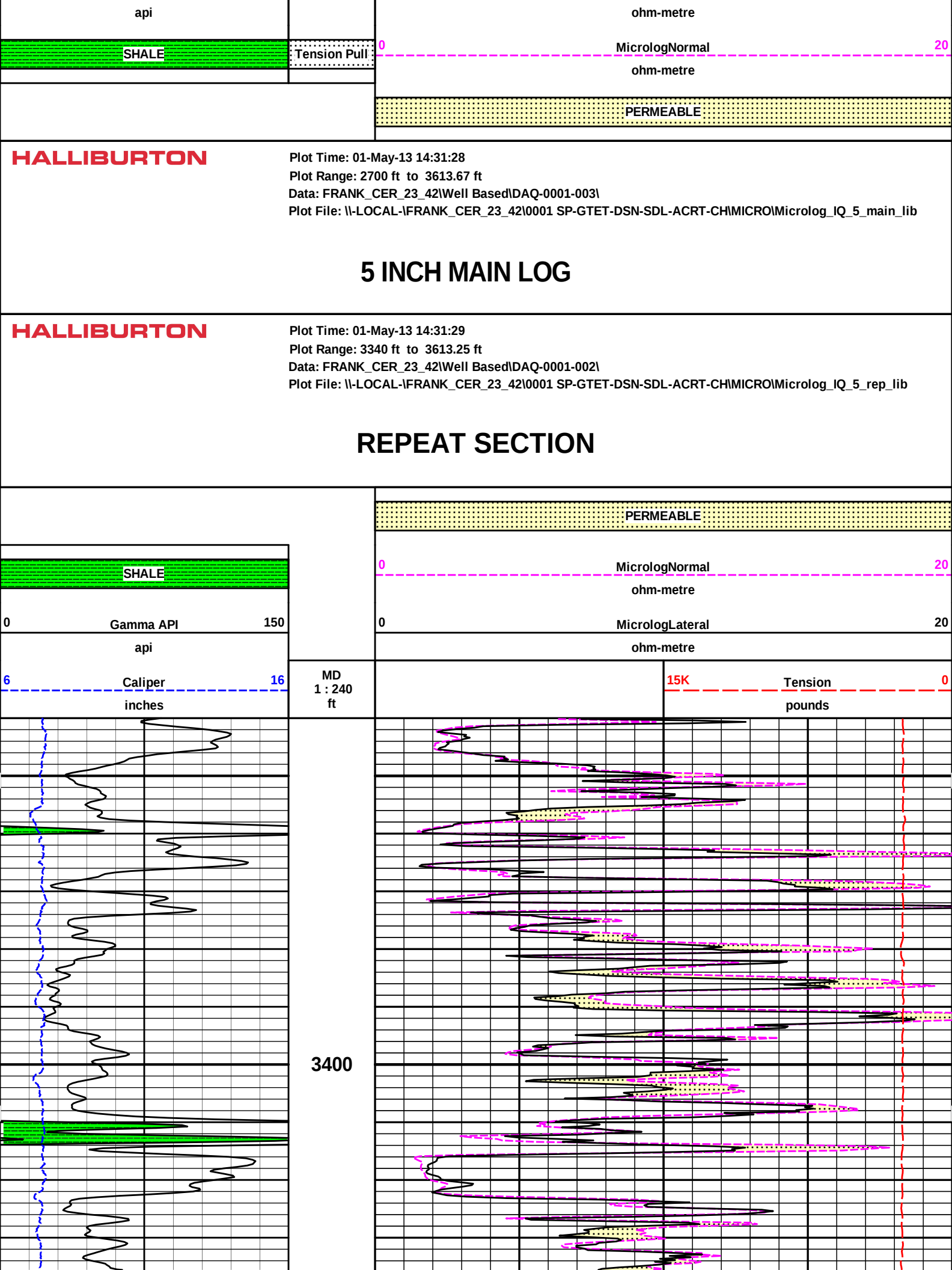
FRCaliper

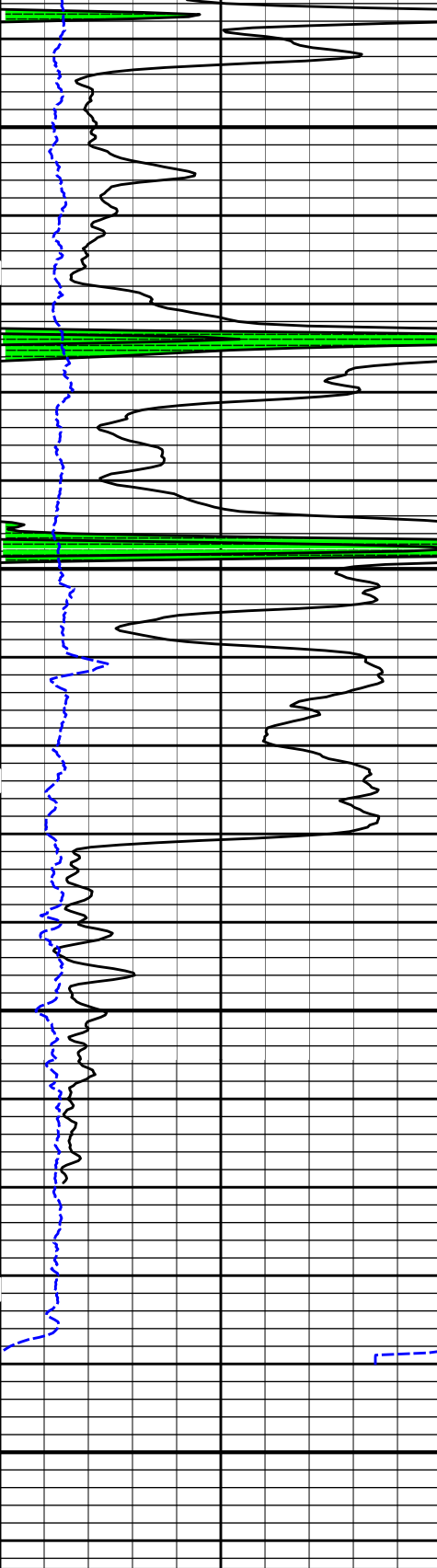
FRMicrologLateral



FRMicrologNormal





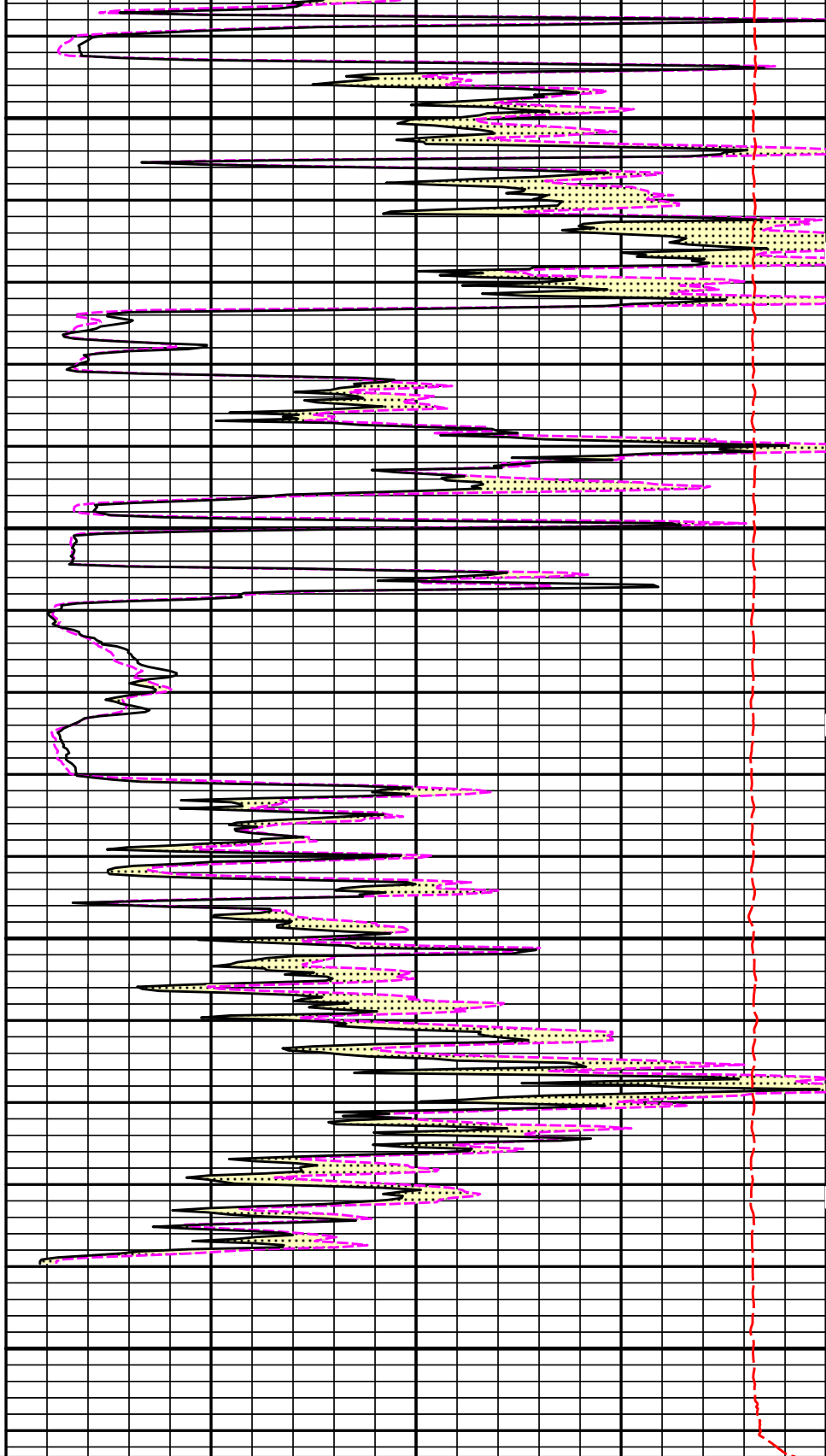


3500

3600

6	Caliper	16
inches		
0	Gamma API	150
api		
SHALE		

MD
1 : 240
ft

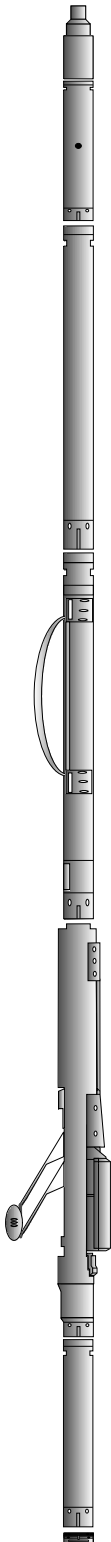


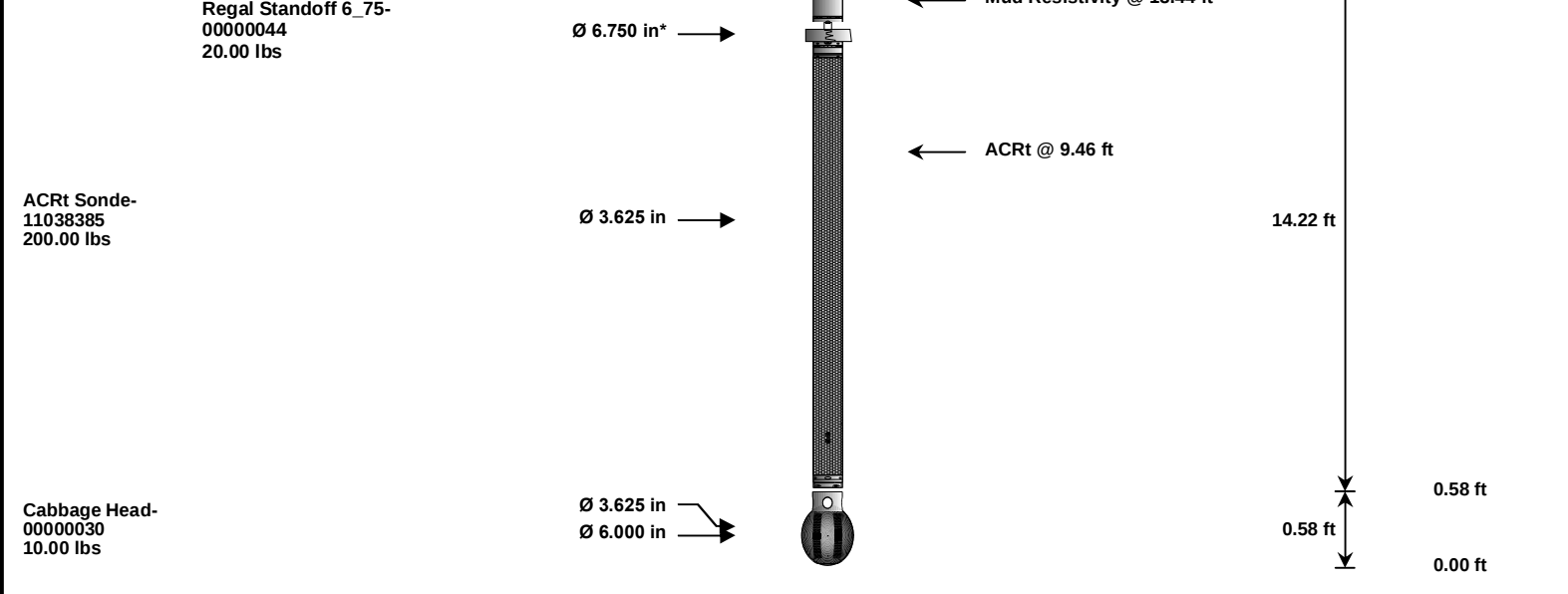
15K	Tension	0
pounds		
0	MicrologLateral	20
ohm-metre		
0	MicrologNormal	20
ohm-metre		
PERMEABLE		

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- 00000021 30.00 lbs		Ø 3.625 in →			1.92 ft	54.51 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in →		← SP @ 50.81 ft	3.74 ft	52.59 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.79 ft	8.52 ft	48.85 ft
DSNT-11019643 174.00 lbs	DSN Decentralizer- 11005605 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 33.39 ft ← DSN Near @ 32.64 ft	9.69 ft	40.33 ft
SDLT-10950489 360.00 lbs	SDLT Pad-10844781 65.00 lbs Microlog Pad-10950489 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 22.83 ft SDL Caliper @ 22.65 ft SDL @ 22.64 ft	10.81 ft	30.64 ft
ACRT Instrument- I5059_S8385 50.00 lbs		Ø 3.625 in →		← Mud Resistivity @ 13.44 ft	5.03 ft	19.83 ft
						14.80 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head		00000021	30.00	1.92	52.59	300.00
SP	SP Sub		11441455	60.00	3.74	48.85	300.00
GTET	Gamma Telemetry Tool		11048627	165.00	8.52	40.33	60.00
DSNT	Dual Spaced Neutron		11019643	174.00	9.69	30.64	60.00
DCNT	DSN Decentralizer		11005605	6.60	5.13	*	33.97
SDLT	Spectral Density Tool		10950489	360.00	10.81	19.83	60.00
SDLP	Density Insite Pad		10844781	65.00	2.55	*	22.04
MICP	Microlog Pad		10950489	8.00	1.00	*	22.33
ACRt	Array Compensated True Resistivity Instrument Section		I5059_S8385	50.00	5.03	14.80	300.00
ACRt	Array Compensated True Resistivity Sonde Section		11038385	200.00	14.22	0.58	300.00
RSOF	Regal Standoff 6.75in		00000044	20.00	0.52	*	12.30
CBHD	Cabbage Head		00000030	10.00	0.58	0.00	300.00
Total				1,148.60	54.51		
* Not included in Total Length and Length Accumulation.							
Data: FRANK_CER_23_42I0001 SP-GTET-DSN-SDL-ACRT-CHIDLE						Date: 01-May-13 00:37:03	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	26-Apr-13 09:25:40
Engineer:	THOMAS HYDE	Calibration Date:	26-Apr-13 09:28:26
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Calibrator Source S/N: TB146			
Calibrator API Reference:265.00 api			
Equivalent Calibrator API Reference:269.6 api			
Measurement	Measured	Calibrated	Units
Background	55.7	57.0	api
Background + Calibrator	319.4	326.6	api
Calibrator	263.7	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	26-Apr-13 09:28:26
Engineer:	THOMAS HYDE	Calibration Date:	01-May-13 00:34:36
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Calibrator Source S/N: TB146
Calibrator API Reference:265.00 api
Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	57.0	56.1	api
Background + Calibrator	326.6	323.5	api
Calibrator	269.6	267.4	api

Shop	Field	Difference	Tolerance
269.6	267.4	2.2	+/- 9.00

MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad - 10950489

Reference Calibration Date: 26-Apr-13 08:49:44

Engineer: J. BOLLUM

Calibration Date: 30-Apr-13 08:03:22

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Host Tool Name: DSNT - 11019643

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.08	-0.09	-0.01	0.08	ohmm
Calibration Point #1	0.00	0.00	-0.09	0.00	ohmm
Calibration Point #2	20.00	20.00	20.00	20.00	ohmm
Internal Reference	19.92	19.92	19.98	19.98	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.48	-0.74	V
Calibration Point #1	23.27	-28.13	V
Calibration Point #2	5362.55	7018.23	V
Internal Reference	5342.42	7012.88	V

MICRO LOG FIELD CHECK

Tool Name: Microlog Pad - 10950489

Reference Calibration Date: 30-Apr-13 08:03:22

Engineer: THOMAS HYDE

Calibration Date: 01-May-13 00:36:41

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.09	-0.08	0.08	0.07	ohmm
Internal Reference	19.92	19.93	19.98	19.99	ohmm

Summary				
Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.92	19.93	-0.01	+/- 0.80
Microlog Lateral	19.98	19.99	-0.01	+/- 0.80

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11048627						
Gamma Ray Calibrator	269.6	267.4	-----	2.2	+/- 9.00	api
Microlog Pad-10950489						
MicroLog Normal	19.92	19.93	-----	-0.01	+/-0.80	ohmm

MicroLog Lateral	19.98	19.99	-----	-0.01	+/-0.80	ohmm
Data: FRANK_CER_23_42\0001 SP-GTET-DSN-SDL-ACRT-CHIIDLE				Date: 01-May-13 11:00:21		
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	9.000	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	3609.00	ft	
	SHARED	BHT	Bottom Hole Temperature	200.0	degF	
	SHARED	SVTM	Navigation and Survey Master Tool	NONE		
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET		
	SHARED	TEMM	Temperature Master Tool	NONE		
	SHARED	BHSM	Borehole Size Master Tool	NONE		
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes		
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic		
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200		
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500		
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm	
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF	
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm	
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No		
	GTET	GROK	Process Gamma Ray?	Yes		
	GTET	GRSO	Gamma Tool Standoff	0.000	in	
	GTET	GEOK	Process Gamma Ray EVR?	No		
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered		
	DSNT	DNOK	Process DSN?	Yes		
	DSNT	DEOK	Process DSN EVR?	No		
	DSNT	NLIT	Neutron Lithology	Limestone		
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in	
	DSNT	DNTP	Temperature Correction Type	None		
	DSNT	DPRS	DSN Pressure Correction Type	None		
	DSNT	SHCO	View More Correction Options	No		
	DSNT	UTVD	Use TVD for Gradient Corrections?	No		
	DSNT	LHWT	Logging Horizontal Water Tank?	No		
	SDL T	CLOK	Process Caliper Outputs?	Yes		

SDLT	CLOCK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog 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
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM_____				
Data: FRANK_CER_23_42\0001 SP-GTET-DSN-SDL-ACRT-CHIDLE			Date: 01-May-13 11:01:07	

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	50.81	NO	
SP	Spontaneous Potential	50.81	BLK	1.250
SPR	Raw Spontaneous Potential	50.81	NO	
SPO	Spontaneous Potential Offset	50.81	NO	
GTET				
TPUL	Tension Pull	42.79	NO	
GR	Natural Gamma Ray API	42.79	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.79	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.79	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	32.54	NO	
RNDS	Near Detector Telemetry Counts	32.64	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.39	TRI	0.583
DNTT	DSN Tool Temperature	32.64	NO	
DSNS	DSN Tool Status	32.54	NO	
ERND	Near Detector Telemetry Counts EVR	32.64	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.39	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.64	NO	
SDLT				

TPUL	Tension Pull	22.65	NO	
PCAL	Pad Caliper	22.65	TRI	0.250
ACAL	Arm Caliper	22.65	TRI	0.250
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Current Raw 12K X Receiver	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	
LDV	Lower Temperature Derivative	2.97	NO	

LDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
Microlog Pad				
TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750
SDLT Pad				
TPUL	Tension Pull	22.64	NO	
NAB	Near Above	22.46	BLK	0.920
NHI	Near Cesium High	22.46	BLK	0.920
NLO	Near Cesium Low	22.46	BLK	0.920
NVA	Near Valley	22.46	BLK	0.920
NBA	Near Barite	22.46	BLK	0.920
NDE	Near Density	22.46	BLK	0.920
NPK	Near Peak	22.46	BLK	0.920
NLI	Near Lithology	22.46	BLK	0.920
NBAU	Near Barite Unfiltered	22.46	BLK	0.250
NLIU	Near Lithology Unfiltered	22.46	BLK	0.250
FAB	Far Above	22.81	BLK	0.250
FHI	Far Cesium High	22.81	BLK	0.250
FLO	Far Cesium Low	22.81	BLK	0.250
FVA	Far Valley	22.81	BLK	0.250
FBA	Far Barite	22.81	BLK	0.250
FDE	Far Density	22.81	BLK	0.250
FPK	Far Peak	22.81	BLK	0.250
FLI	Far Lithology	22.81	BLK	0.250
PTMP	Pad Temperature	22.65	BLK	0.920
NHV	Near Detector High Voltage	22.04	NO	
FHV	Far Detector High Voltage	22.04	NO	
ITMP	Instrument Temperature	22.04	NO	
DDHV	Detector High Voltage	22.04	NO	
Data: FRANK_CER_23_42I0001 SP-GTET-DSN-SDL-ACRT-CHIDLE			Date: 01-May-13 11:01:24	
COMPANY	CAERUS OIL & GAS			
WELL	FRANK CERROW 23-42A			
FIELD	JELENIK			
COUNTY	ROOKS	STATE	KANSAS	
HALLIBURTON		MICRO LOG		