

# HALLIBURTON

## ARRAY COMPENSATED TRUE RESISTIVITY

COMPANY	BRIDGE/PARAMAX		
WELL	TRACY TRUST #3-2		
FIELD	HAMILTON		
COUNTY	PAYETTE		
STATE	ID		
Permanent Datum	GL	Sect. 2	Twp. 7 N
Log measured from	KB		Rge. 4 W
Drilling measured from	KB		Elev. 2246.0 ft
Date	14-Aug-10		17.0 ft above perm. Datum
Run No	ONE		Elev. KB 2263.0 ft
Depth - Driller	2810.00 ft		D.F 2262.0 ft
Depth - Logger	2817.0 ft		GL 2246.0 ft
Bottom - Logged Interval	2808.0 ft		
Top - Logged Interval	733.0 ft		
Casing - Driller	9.625 in @ 833.0 ft		
Casing - Logger	7.910 in @		
Bit Size	8.750 in		
Type Fluid in Hole	OBM		
Density	9.8 ppg	36.00	sg/cc
Alkalinity	0.20 pct		
HTHP @ Meas. Temperature	5.4 cpm	@ 200.00	degF
Solids	Wgt. Material 13.5 %	BARITE	
Oil	Water Ratio 89	11	
Water Phase Salinity	6000.00 ppm Cl		
Oil Type	DIESEL	SALTWATER	
Electrical Stability	1920 V		
Time Since Circulation	6.0 hr		
Time on Bottom	14-Aug-10 16:34		
Max. Rec. Temperature	131.0 degF @ 2817.0 ft		
Equipment	Location 11014853	G. J. CO	
Recorded By	W. MATSON		
Witnessed By	JEFF KORN		

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Service Ticket No.: 7564785		API Serial No.: 011075200110000		PGM Version: WL INSITE R3.0.5 (Build 3)										
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES										
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down Hole									
Depth-Driller														
Type Fluid in Hole														
Density	F. Viscosity													
Alkalinity	P. Viscosity													
HTHP @ Meas. Temp.	@	@												
				RESISTIVITY EQUIPMENT DATA										
Solids	Wgt. Mat.	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other								
Oil	Water Ratio	ONE	ACRT E486	N/A	1.5" S.O	N/A								
Water Phase Salinity														
Oil Type	Water Type													
Electrical Stability														
EQUIPMENT DATA														
GAMMA		ACOUSTIC		DENSITY		NEUTRON								
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE							
Serial No.	11005602	Serial No.	11105782	Serial No.	10951314	Serial No.	10993888							
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT							
Diameter	3.625"	No. of Cent.	TWO	Diameter	4.5"	Diameter	3.625"							
Detector Model No.	102A	Spacing	N/A	Log Type	GAMMA/GAMMA	Log Type	THERM/THERM							
Type	SCINT			Source Type	Cs-137	Source Type	Am241Be							
Length	8"	LSA [Y/N]	YES	Serial No.	5253 GW	Serial No.	DSN-388							
Distance to Source	11'	FWDA [Y/N]	NO	Strength	1.5 Ci	Strength	15 Ci							
LOGGING DATA														
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth	Speed	Scale		Scale		Scale		Scale					
No.	From	To	L	R	L	R	L	R	L	R				
ONE	TD	CSG	REC	0	200	40%	0%	55.5 us/ft	40%	0%	2.65 g/cc	40%	0%	SAND

DIRECTIONAL INFORMATION



Maximum Deviation	@	KOP	@
Remarks:			
RUN ONE: GTET/DSN/SDL/FLEX/BSAT/ACRT			
RUN TWO: D4TGX/DCGS			
RUN THREE: D4TGX/XRMI			
TENSION PULLS MAY AFFECT LOG RESPONSE			
YOUR CREW TODAY: W. HALL, J. WIKERSON, T. VANALSTYNE.		RIG: RAZORBACK	
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - GRAND JUNCTION, CO - (970) 523-3600.			
<p>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.</p>			
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**PARAMETERS REPORT**

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP	SHARED	BS	Bit Size	8.750	in
	SHARED	UBS	Use Bit Size instead of Calliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	10.100	ppg
	SHARED	OBM	Oil Based Mud System?	Yes	
	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	2810.00	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	POTA	Potassium	0.00	%
	GTET	MDTP	Mud Type	Natural	
	GTET	TPOS	Tool Position	Standoff	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Sandstone	
	DSNT	DNSO	DSN Standoff - 0.25 In (6.35 mm) Recommended	0.000	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	AD	Is Hole Air Drilled?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	MDTP	Weighted Mud Correction Type?	Barite	
SDLT	DMA	Formation Density Matrix	2.650	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Semblance Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Semblance Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	Sandstone 55.5	
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wyllie	
ACRI	RTOK	Process ACR1?	Yes	
ACRI	MNSO	Minimum Tool Standoff	1.50	in
ACRI	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRI	TPOS	Tool Position	Free Hanging	
ACRI	RMOP	Rmud Source	Mud Cell	
ACRI	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRI	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRI	THQY	Threshold Quality	0.50	

BOTTOM

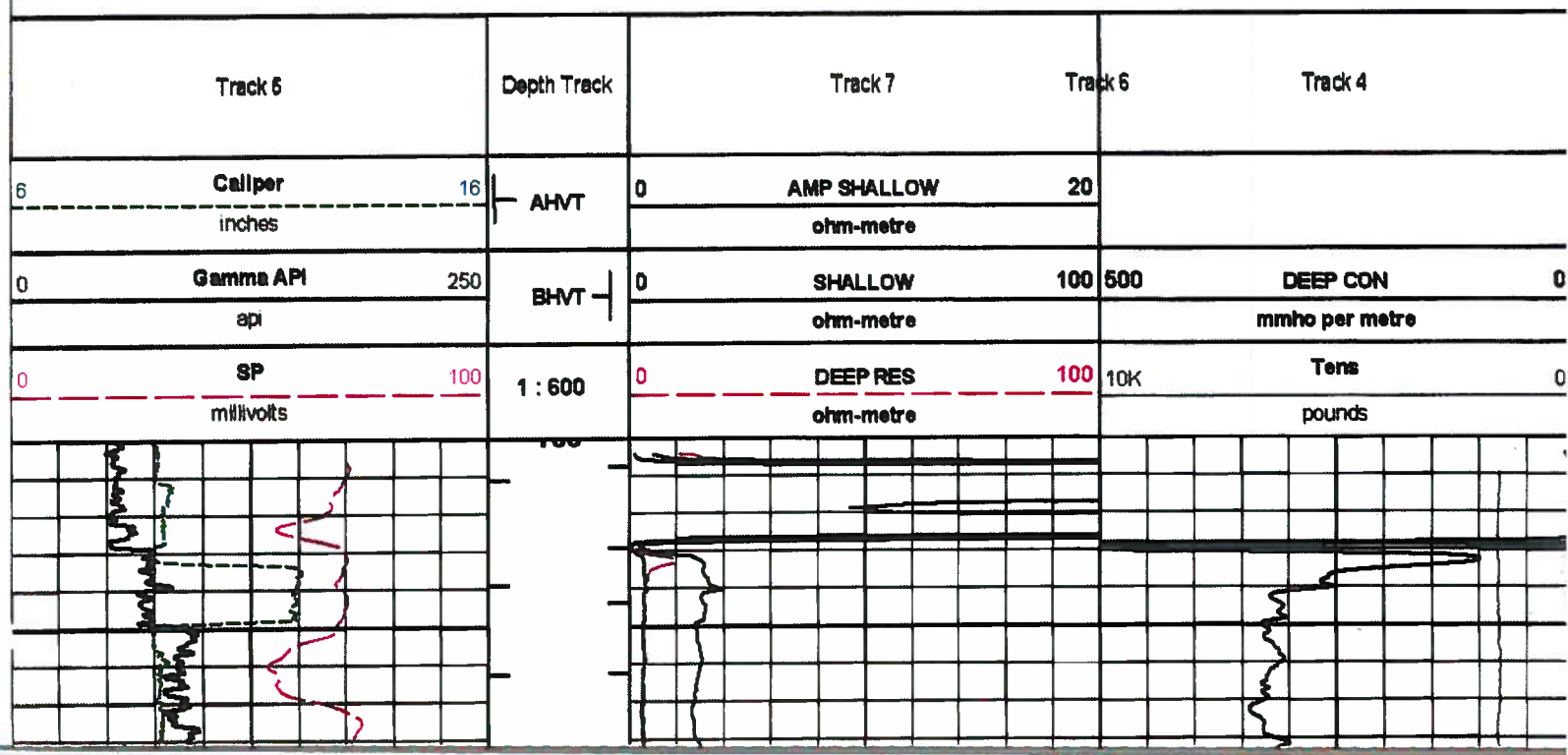
Data: BIRDO\_TRACY\_3\_210001 QUAD-BSAT005 14-Aug-10 09:06 Up @2820.5f

Date: 14-Aug-10 09:42:52

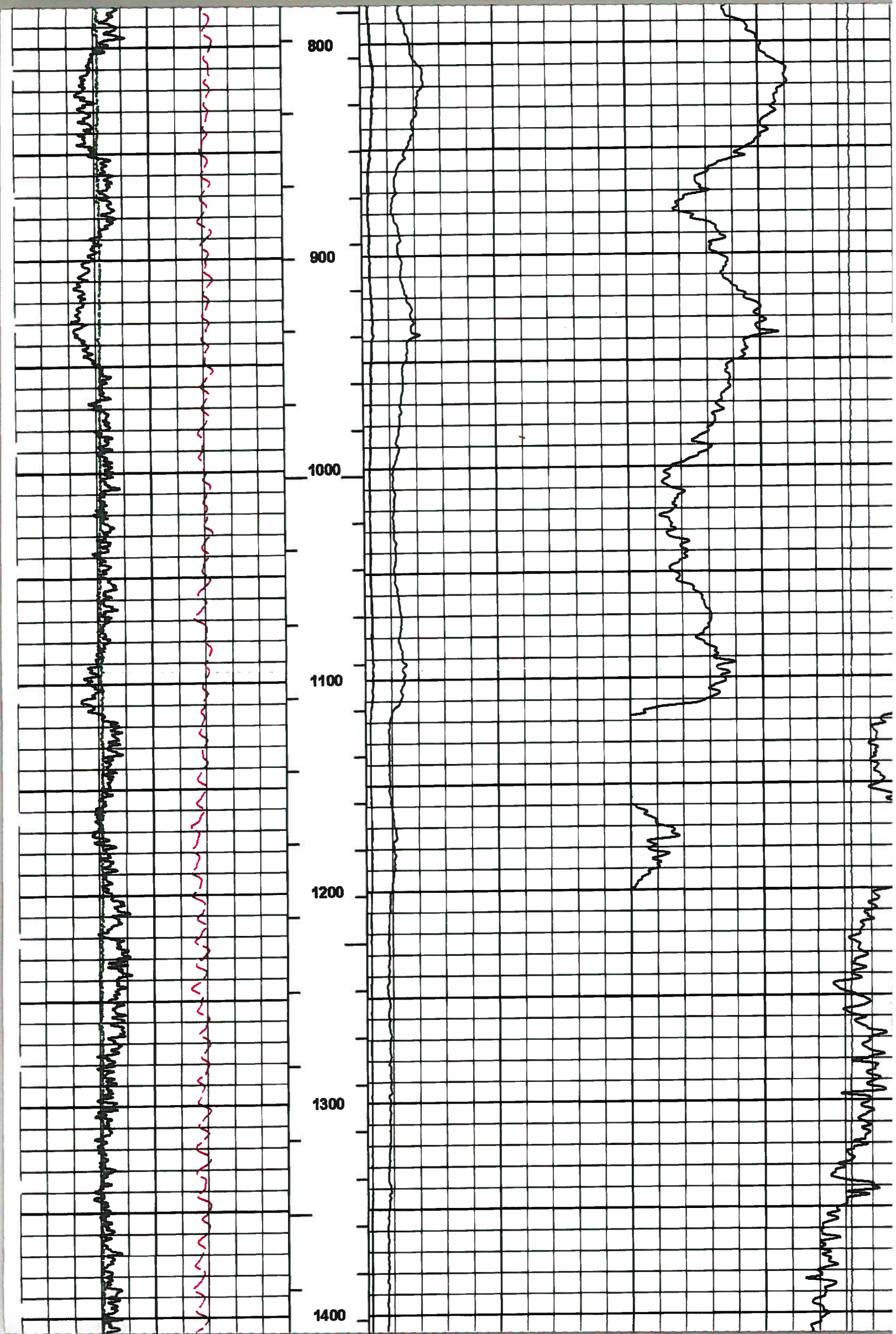
**HALLIBURTON**

Plot Time: 14-Aug-10 17:20:24  
 Plot Range: 700 ft to 2822.33 ft  
 Data: BIRDO\_TRACY\_3\_21Well Based\MAIN\*  
 Plot File: \ACRT\IQ\_ACR\_21N\_RM

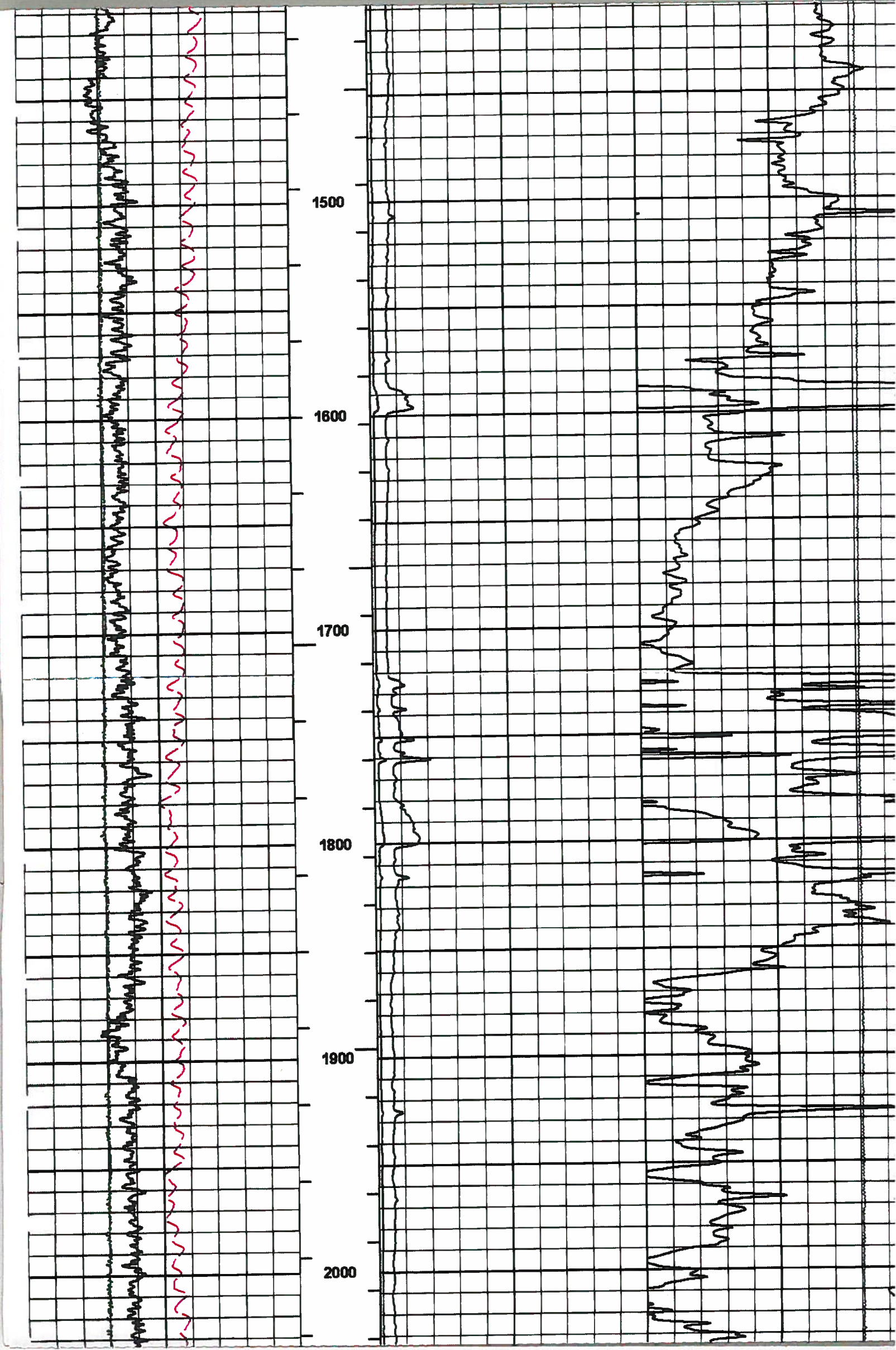
MAIN PASS 2" = 100'



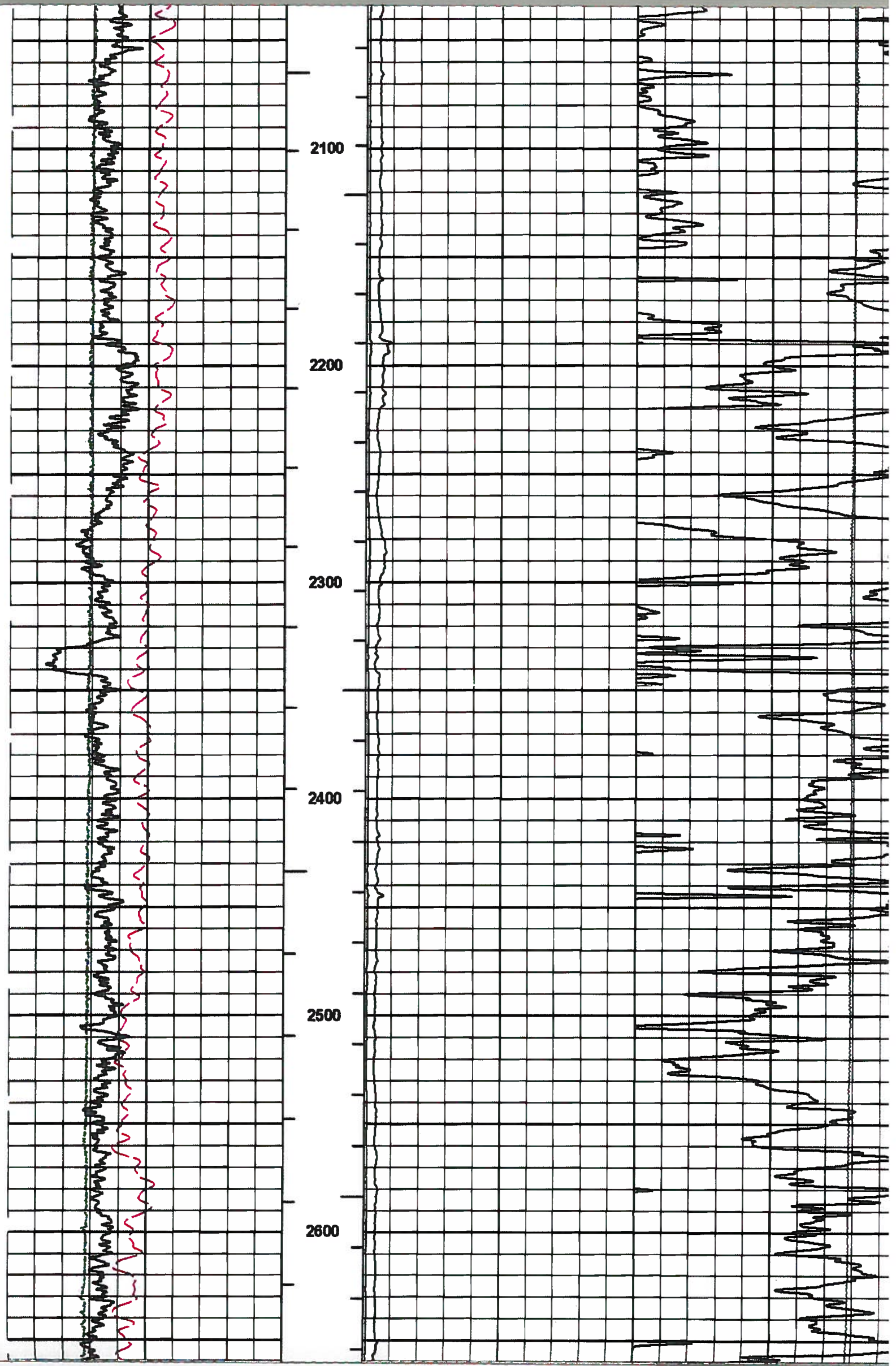




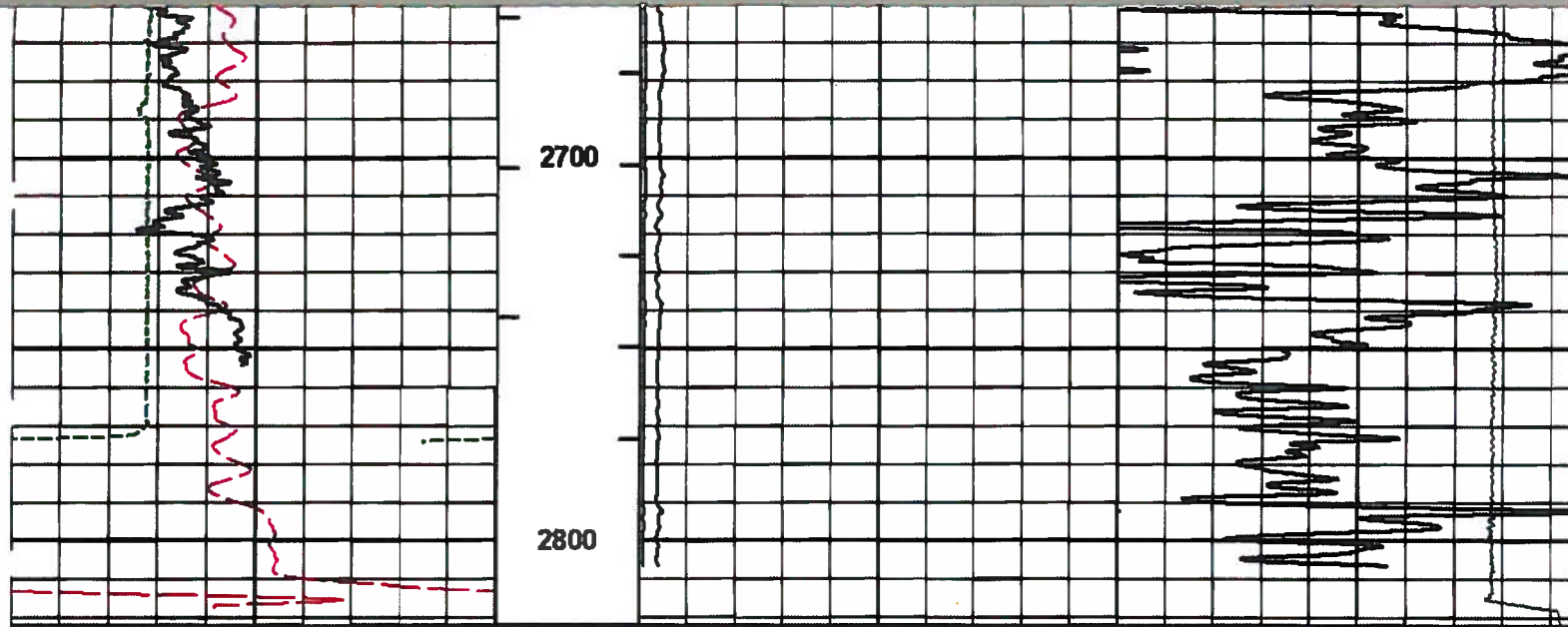












0	<b>SP</b>	100	1 : 600	0	<b>DEEP RES</b>	100	10K	<b>Tens</b>
	millivolts				ohm-metre			pounds
0	<b>Gamma API</b>	250	<b>BHVT</b>	0	<b>SHALLOW</b>	100	500	<b>DEEP CON</b>
	api				ohm-metre			mmho per metre
6	<b>Calliper</b>	16	<b>AHVT</b>	0	<b>AMP SHALLOW</b>	20		
	inches				ohm-metre			

**HALLIBURTON**

Plot Time: 14-Aug-10 17:20:26  
 Plot Range: 700 ft to 2822.33 ft  
 Data: BIRDG\_TRACY\_3\_2Well BasedMAIN  
 Plot File: \ACRTIQ\_ACR\_2IN\_RM

MAIN PASS 2" = 100'

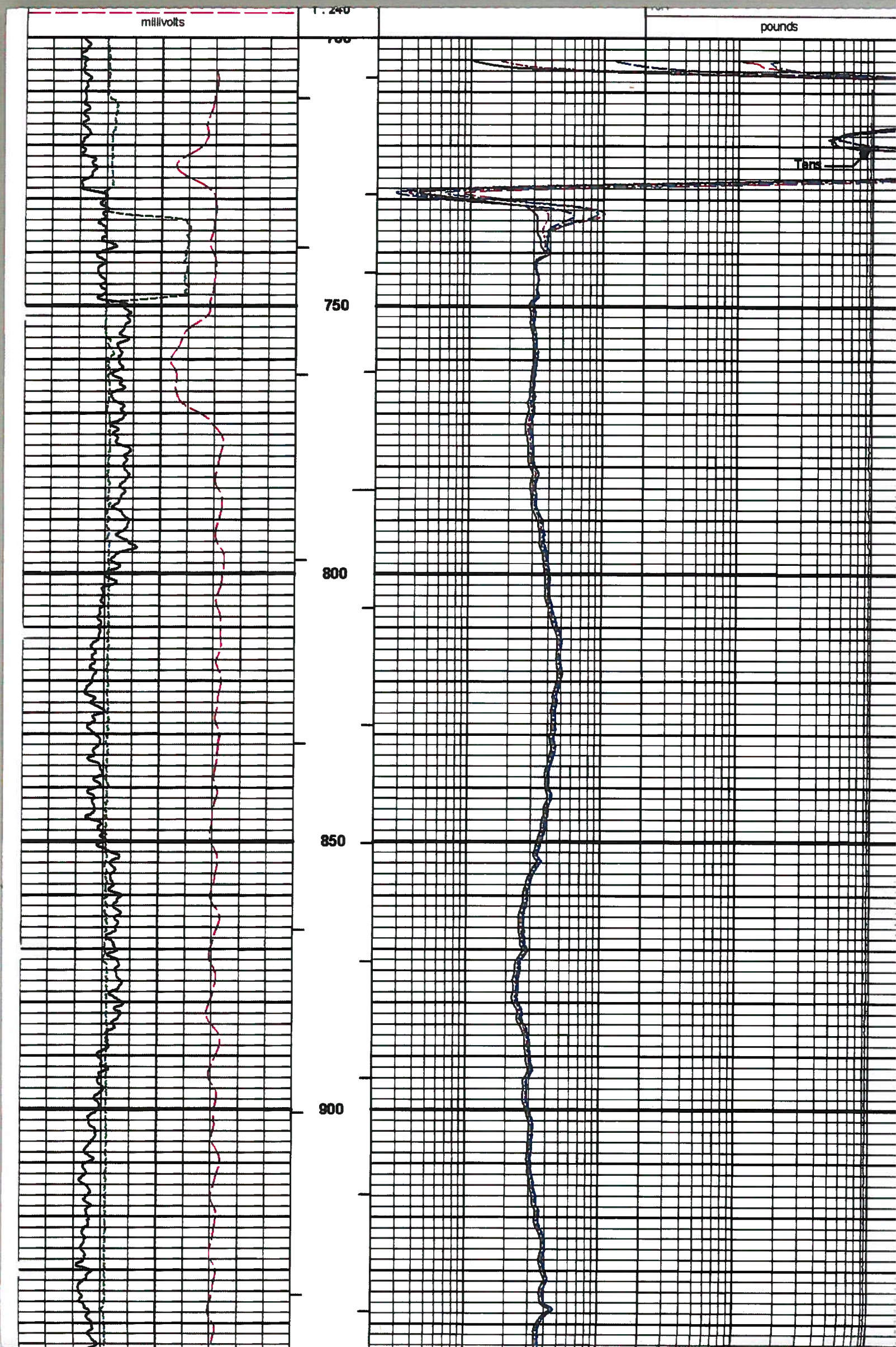
**HALLIBURTON**

Plot Time: 14-Aug-10 17:20:26  
 Plot Range: 700 ft to 2822.33 ft  
 Data: BIRDG\_TRACY\_3\_2Well BasedMAIN  
 Plot File: \ACRTIQ\_ACR\_5IN\_RM

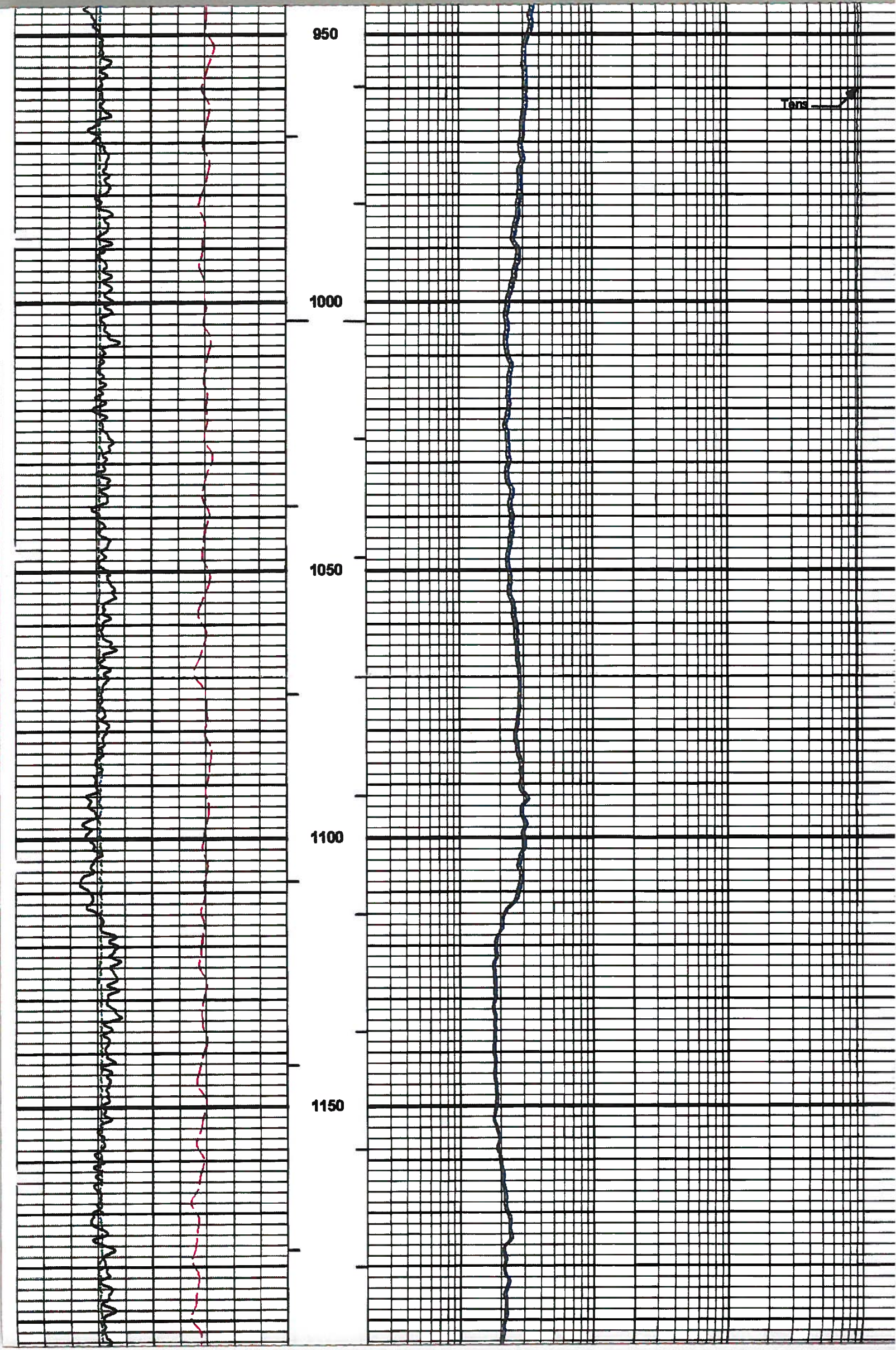
MAIN PASS 5" = 100'

Track 5	Depth Track	Track 6	Track 4
		0.2	<b>RT10</b> 2
			Ohm-m
		0.2	<b>RT20</b> 2
			Ohm-m
		0.2	<b>RT30</b> 2
			Ohm-m
6	<b>Calliper</b> 16   <b>AHVT</b>	0.2	<b>RT60</b> 2
	inches		Ohm-m
0	<b>Gamma API</b> 250   <b>BHVT</b>	0.2	<b>RT90</b> 2
	api		Ohm-m
0	<b>SP</b> 100   1 : 600		10K <b>Tens</b>
	millivolts		

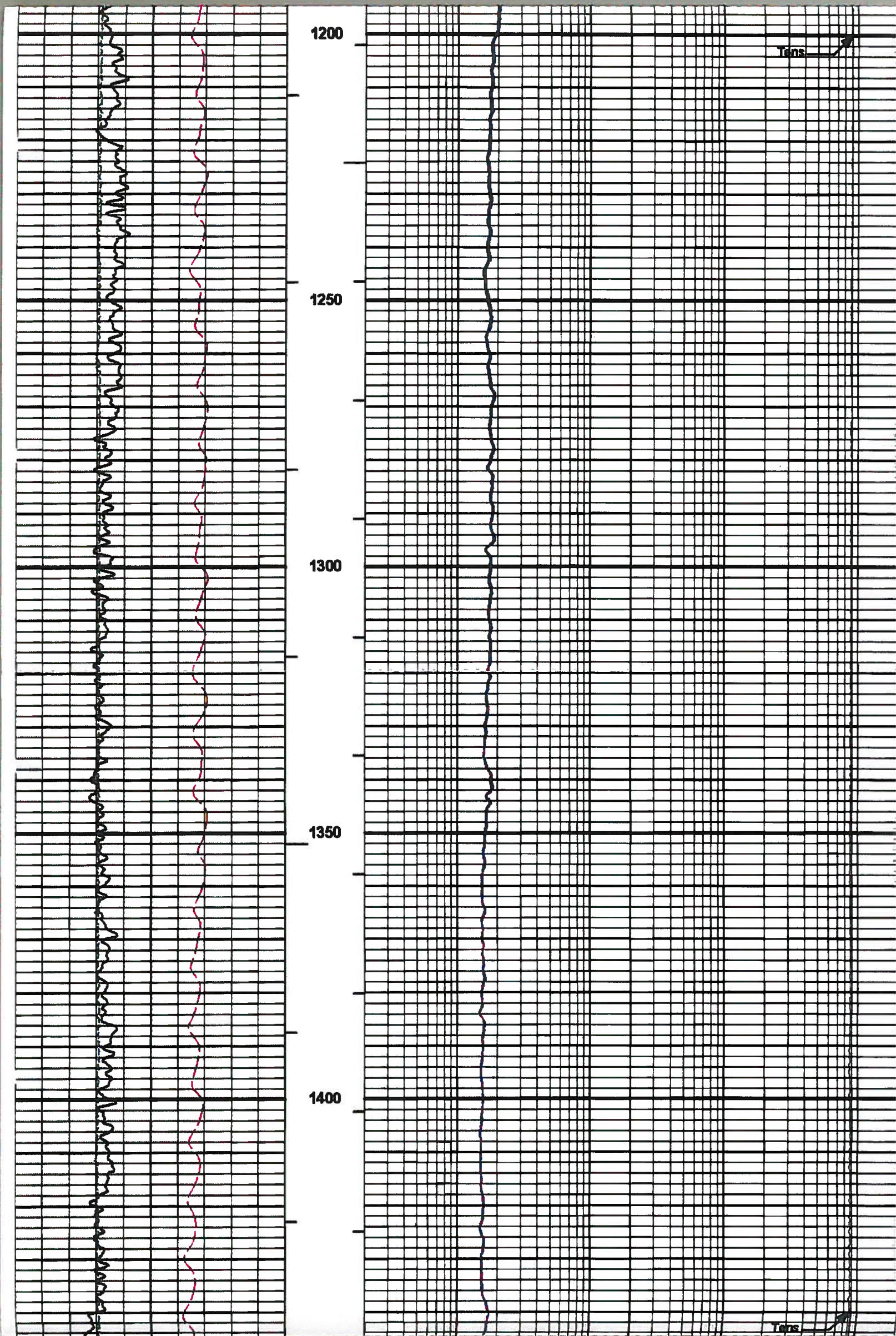




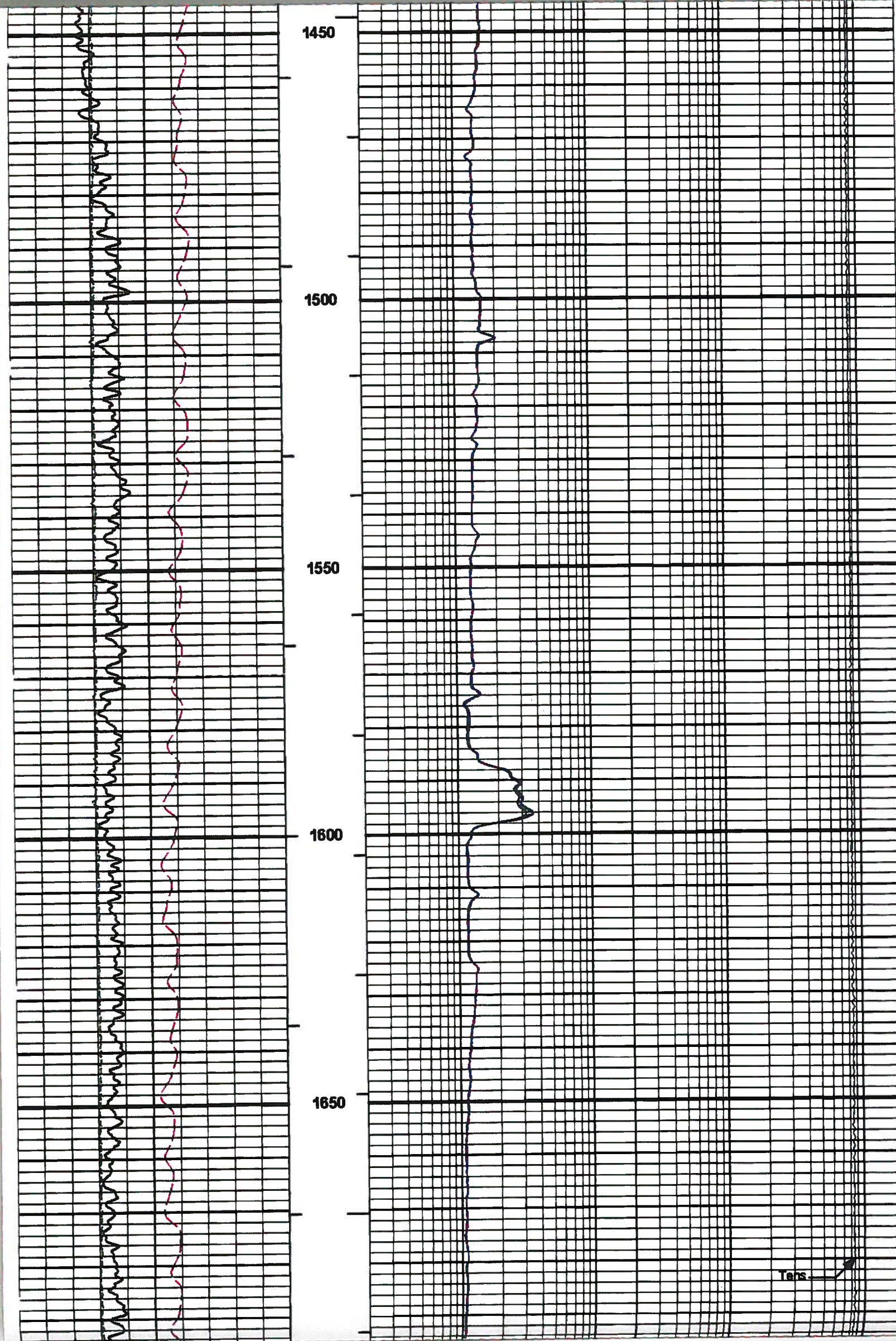




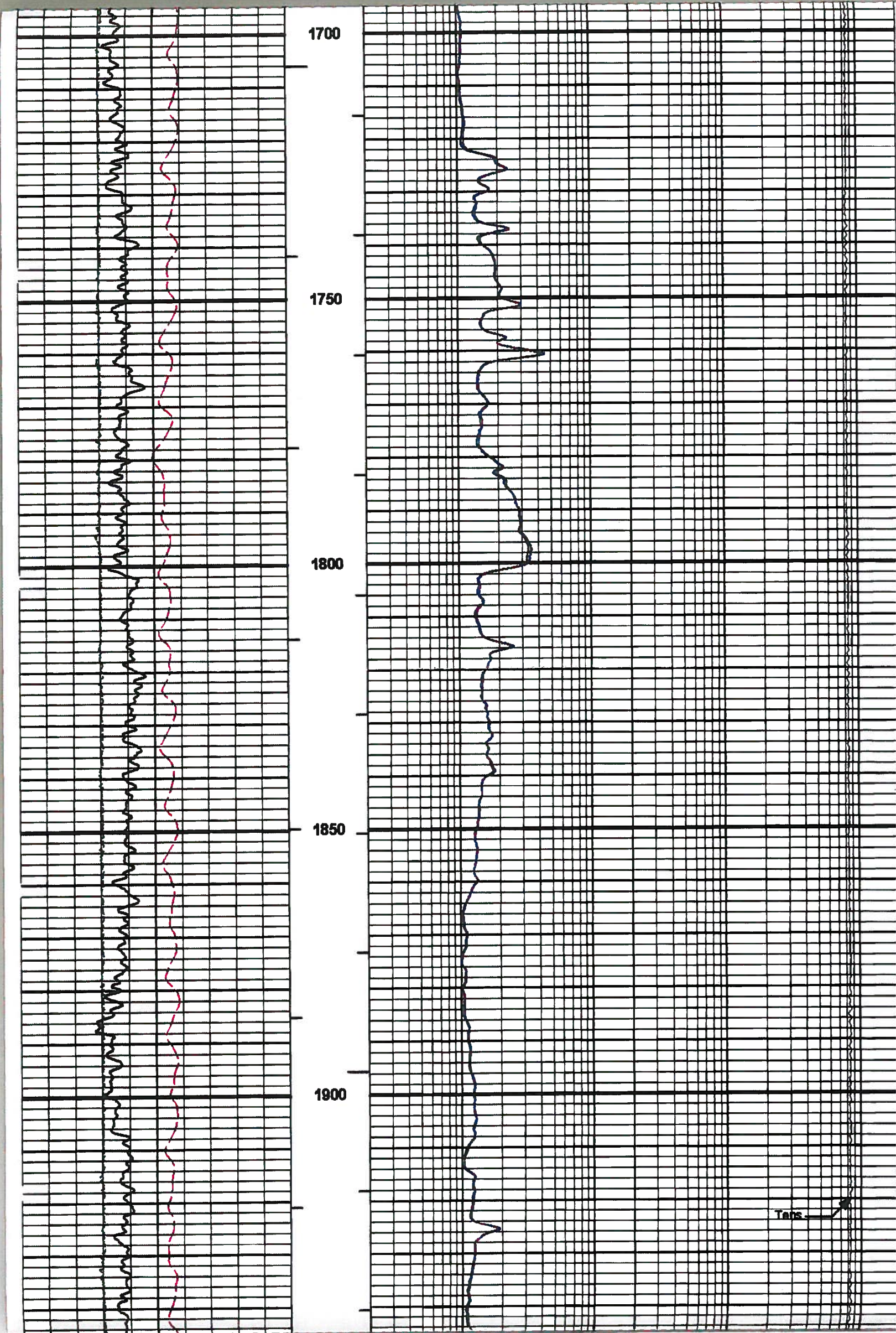




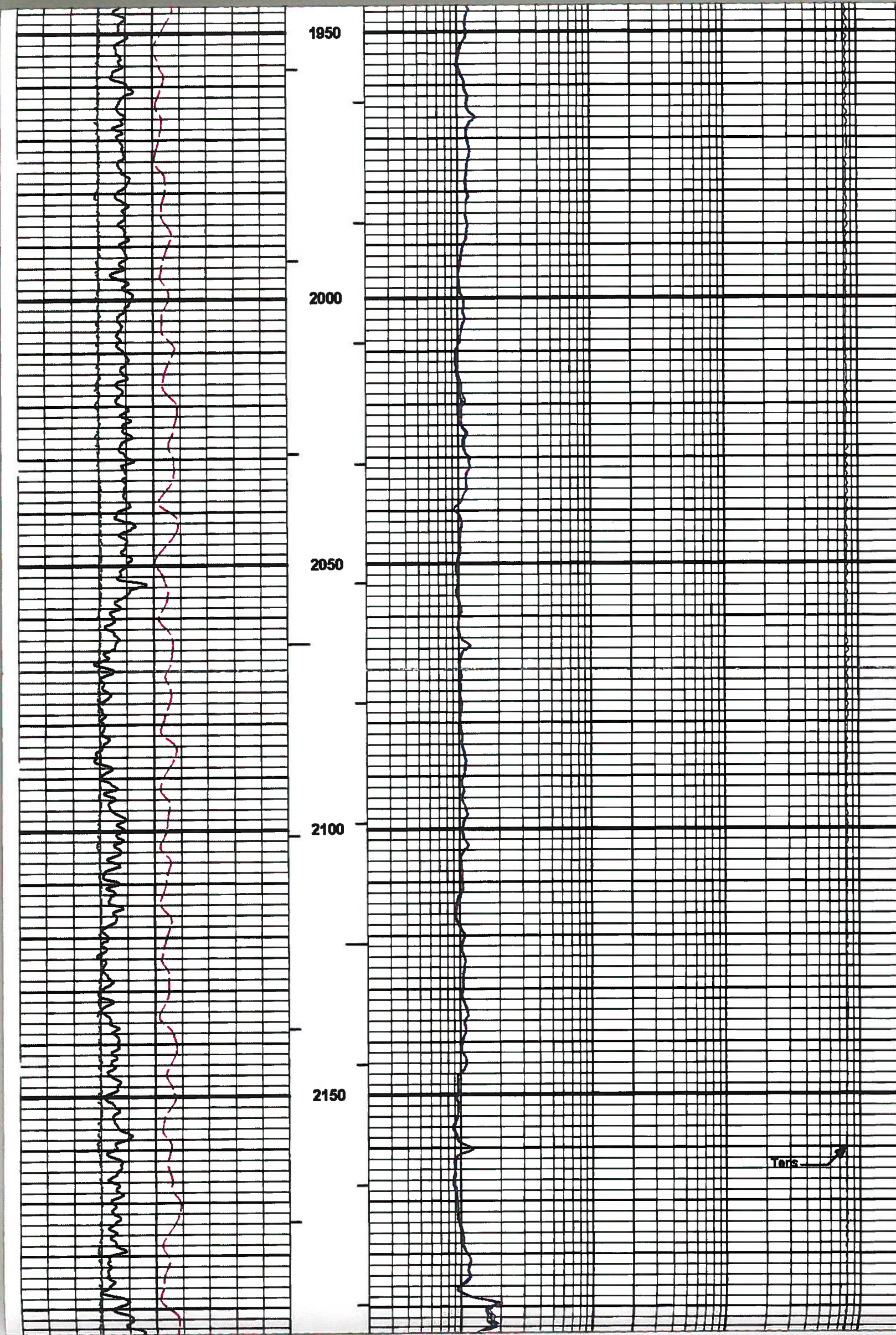




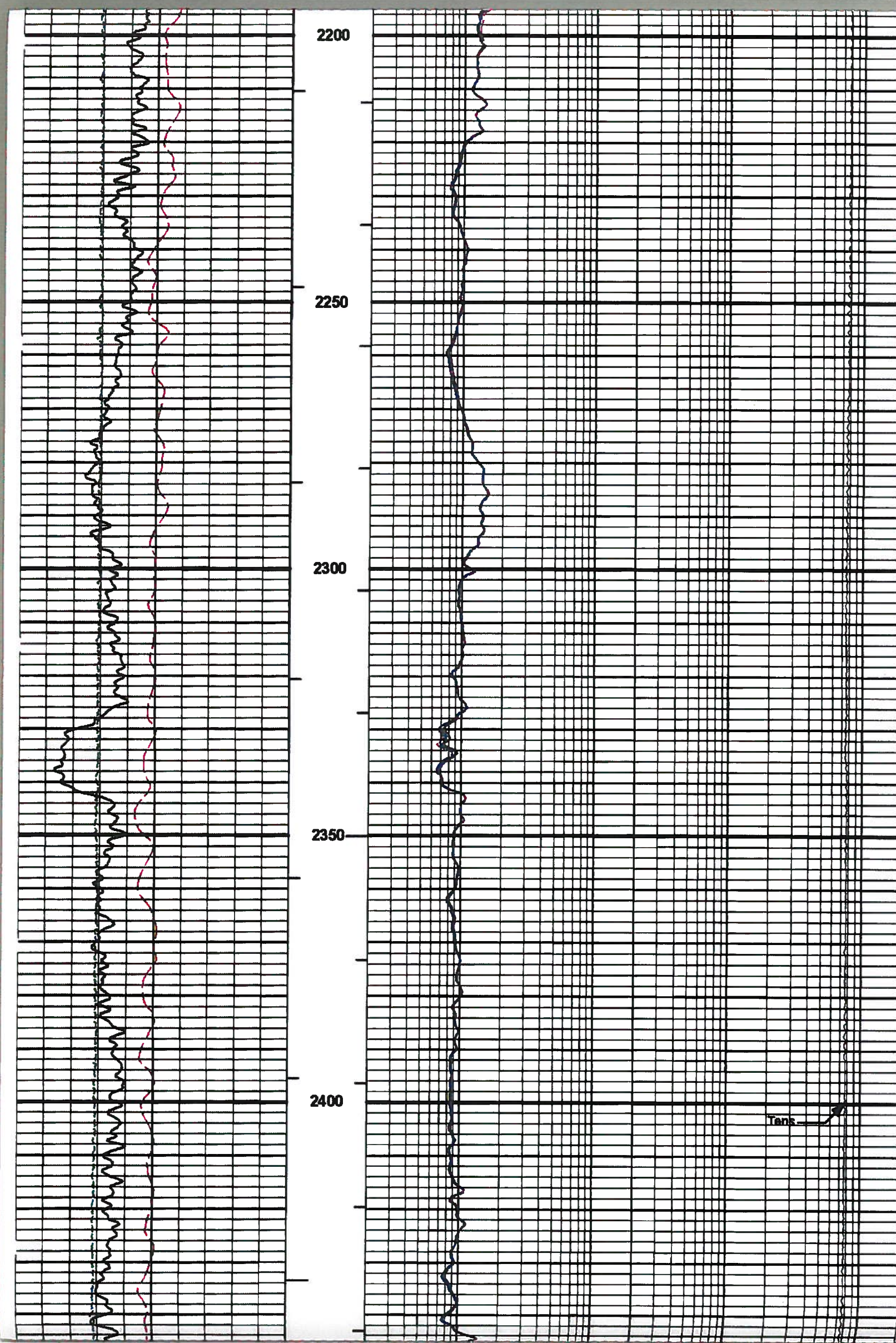




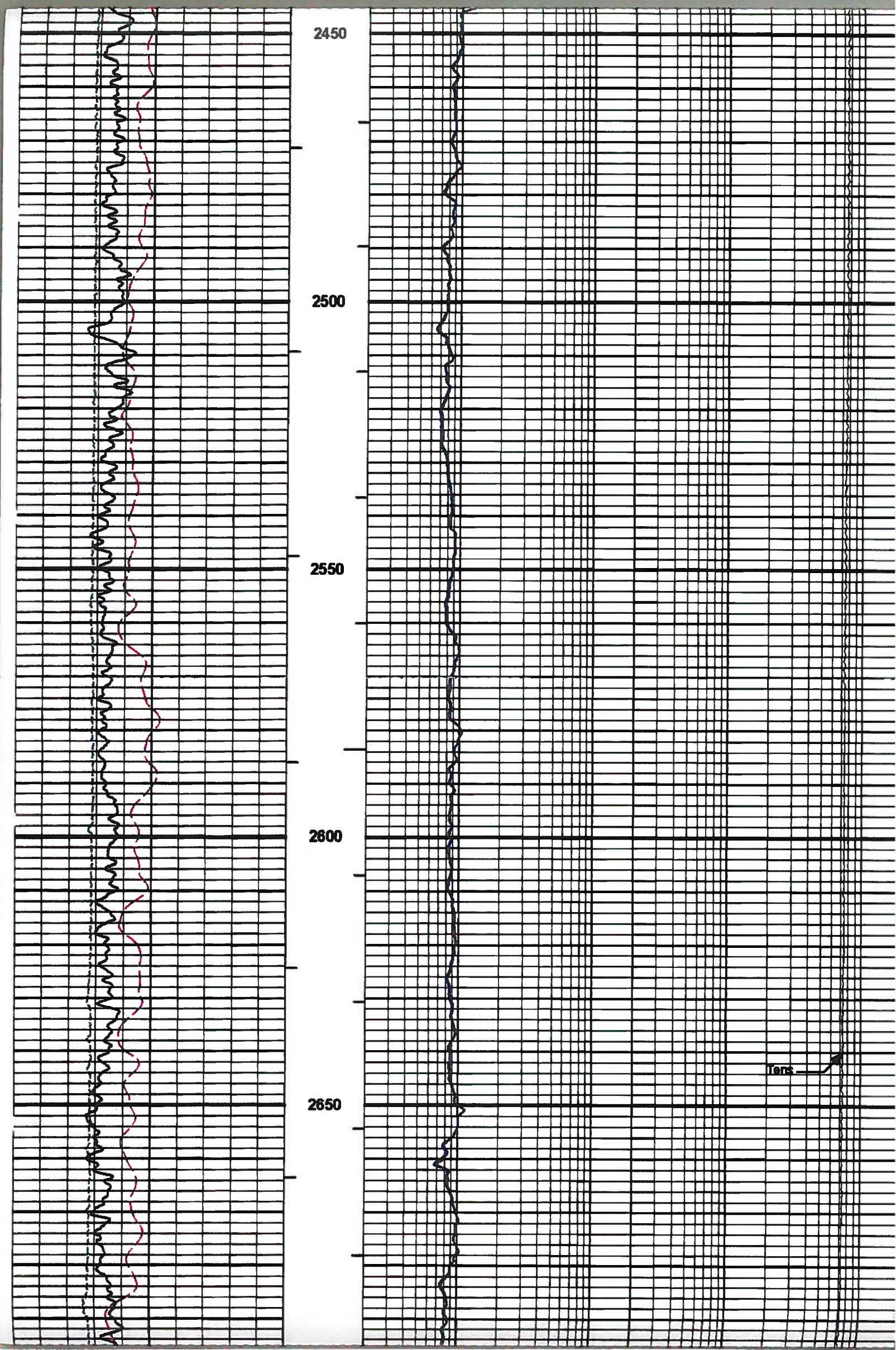




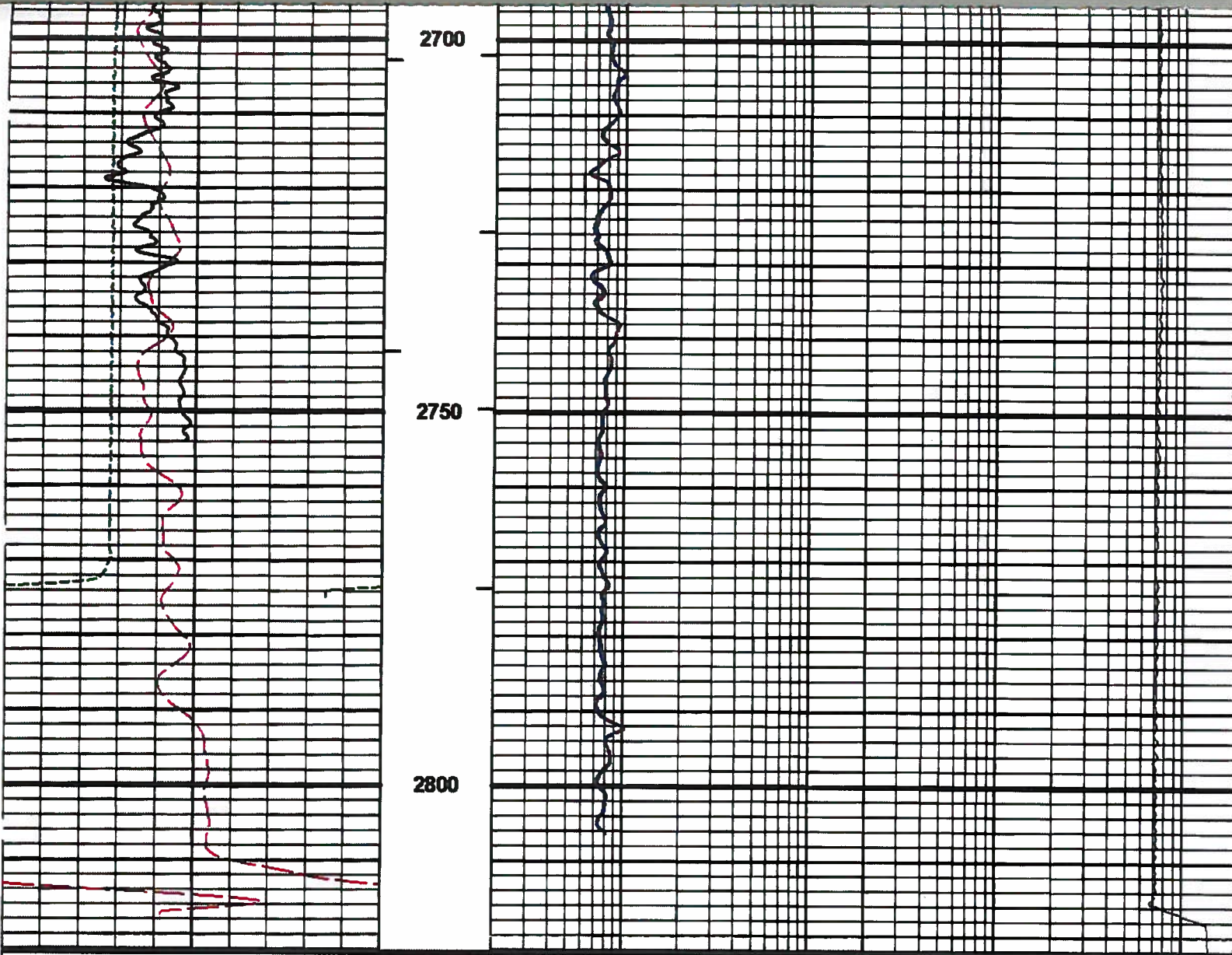












0	SP millivolts	100	1 : 240	10K	Tens pounds	0
0	Gamma API api	250	BHVT	0.2	RT90 Ohm-m	2K
6	Calliper inches	16	AHVT	0.2	RT60 Ohm-m	2K
				0.2	RT30 Ohm-m	2K
				0.2	RT20 Ohm-m	2K
				0.2	RT10 Ohm-m	2K

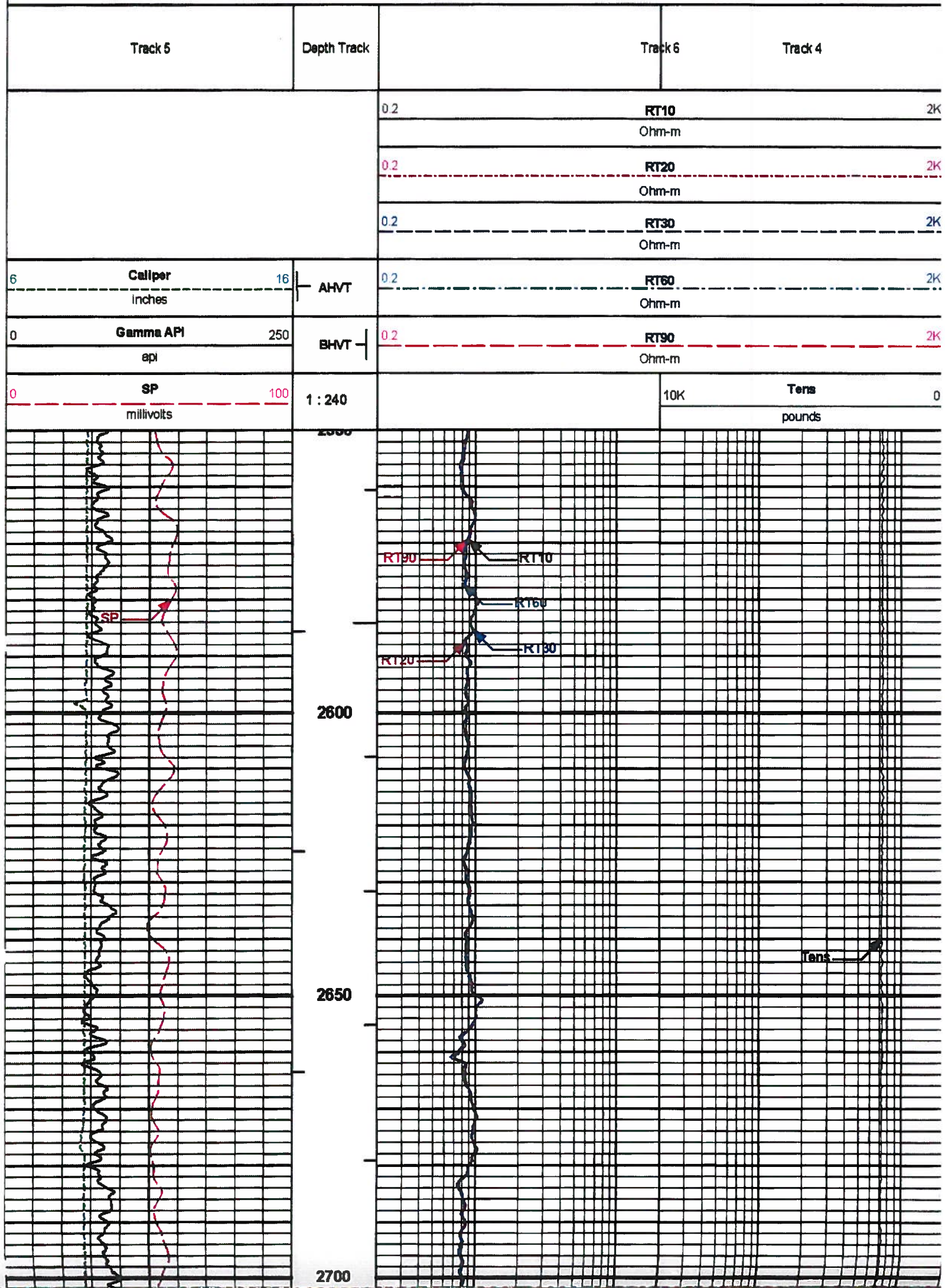
**HALLIBURTON** Plot Time: 14-Aug-10 17:20:28  
 Plot Range: 700 ft to 2822.33 ft  
 Data: BIRDG\_TRACY\_3\_2Well BasedMAIN  
 Plot File: \ACRT1Q\_ACRt\_5IN\_RM

MAIN PASS 5" = 100'

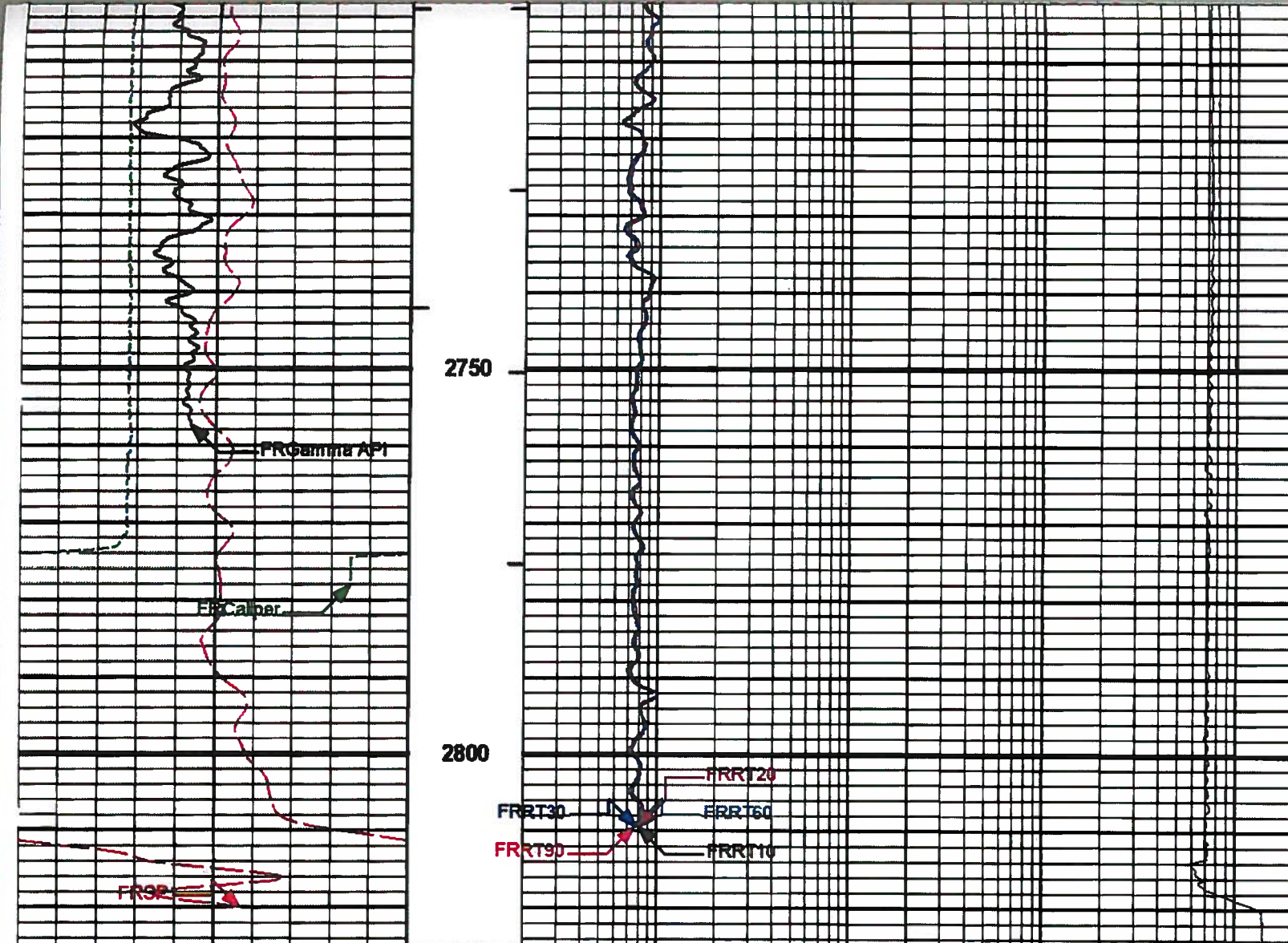
**HALLIBURTON** Plot Time: 14-Aug-10 17:20:28  
 Plot Range: 2550 ft to 2826.26 ft  
 Data: BIRDG\_TRACY\_3\_2Well BasedREPEAT  
 Plot File: \ACRT1Q\_ACRt\_5IN\_RM



REPEAT SECTION 5" = 100'







0	SP	100	1 : 240		10K	Tens	0
	millivolts					pounds	
0	Gamma API	250	BHVT	0.2	RT90		2K
	api				Ohm-m		
6	Caliper	16	AHVT	0.2	RT60		2K
	inches				Ohm-m		
				0.2	RT30		2K
					Ohm-m		
				0.2	RT20		2K
					Ohm-m		
				0.2	RT10		2K
					Ohm-m		

**HALLIBURTON** Plot Time: 14-Aug-10 17:20:30  
 Plot Range: 2650 ft to 2825.25 ft  
 Data: BIRDG\_TRACY\_3\_2(Well Based)REPEAT1  
 Plot File: \\ACRTIQU\_ACR\_5IN\_RM

REPEAT SECTION 5" = 100'

**HALLIBURTON**

**CALIBRATION REPORT**

NATURAL GAMMA RAY TOOL SHOP CALIBRATION



**Tool Name:** GTET - 11005602 **Reference Calibration Date:** 30-May-10 03:58:22  
**Engineer:** W. MATSON **Calibration Date:** 02-Jul-10 18:13:20  
**Software Version:** WL INSITE R3.0.5 (Build 3) **Calibration Version:** 1

Calibrator Source S/N: 110  
 Calibrator API Reference: 239.00 apl

Measurement	Measured	Calibrated	Units
Background	30.9	31.0	apl
Background + Calibrator	273.1	274.2	apl
Calibrator	243.3	243.2	apl

**NATURAL GAMMA RAY TOOL FIELD CALIBRATION**

**Tool Name:** GTET - 11005602 **Reference Calibration Date:** 02-Jul-10 18:13:20  
**Engineer:** W. MATSON **Calibration Date:** 14-Aug-10 00:53:05  
**Software Version:** WL INSITE R3.0.5 (Build 3) **Calibration Version:** 1

Calibrator Source S/N: 110  
 Calibrator API Reference: 239.00 apl

Field Verification	Shop	Field	Units
Background	31.0	110.4	apl
Background + Calibrator	274.2	361.1	apl
Calibrator	243.2	250.8	apl

Shop	Field	Difference	Tolerance
243.2	250.8	-7.6	+/- 9.00

**NATURAL GAMMA RAY TOOL POST CALIBRATION**

**Tool Name:** GTET - 11005602 **Reference Calibration Date:** 14-Aug-10 00:53:05  
**Engineer:** W. MATSON **Calibration Date:** 14-Aug-10 10:33:42  
**Software Version:** WL INSITE R3.0.5 (Build 3) **Calibration Version:** 1

Calibrator Source S/N: 110  
 Calibrator API Reference: 239.00 apl

Post Verification	Field	Post	Units
Background	110.4	72.2	apl
Background + Calibrator	361.1	314.9	apl
Calibrator	250.8	242.8	apl

Shop	Field	Post	Difference	Tolerance
243.2	250.8	242.8	8.0	+/- 9.00

**DUAL SPACED NEUTRON SHOP CALIBRATION**

**Tool Name:** DSNT - 10993888 **Reference Calibration Date:** 01-Jan-70 00:00:00  
**Engineer:** W. MATSON **Calibration Date:** 07-Aug-10 19:25:56  
**Software Version:** WL INSITE R3.0.5 (Build 3) **Calibration Version:** 1

Logging Source S/N: DSN-388  
 Tank Serial Number: GJ WATER TANK  
 Reference value assigned to Tank: 52.750  
 Snow Block S/N: GJ-110  
 Calibration Tank Water Temperature: 68 degF  
 Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.968	0.968	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):	0.2169	0.2169	0.0000	+/- 0.0020
Calibrated Ratio:	9.93	9.93	0.000	+/- 0.050



VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0604	0.02000 - 0.09000

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

DUAL SPACED NEUTRON FIELD CALIBRATION			
<b>Tool Name:</b>	<b>DSNT - 10993888</b>	<b>Reference Calibration Date:</b>	<b>07-Aug-10 19:25:56</b>
<b>Engineer:</b>	<b>W. MATSON</b>	<b>Calibration Date:</b>	<b>07-Aug-10 19:27:11</b>
<b>Software Version:</b>	<b>WL INSITE R3.0.5 (Build 3)</b>	<b>Calibration Version:</b>	<b>1</b>

Logging Source S/N: DSN-388  
Snow Block S/N: GJ-110

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0604	0.0604	0.0000	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DUAL SPACED NEUTRON POST CALIBRATION			
<b>Tool Name:</b>	<b>DSNT - 10993888</b>	<b>Reference Calibration Date:</b>	<b>07-Aug-10 19:27:11</b>
<b>Engineer:</b>	<b>W. MATSON</b>	<b>Calibration Date:</b>	<b>14-Aug-10 10:44:14</b>
<b>Software Version:</b>	<b>WL INSITE R3.0.5 (Build 3)</b>	<b>Calibration Version:</b>	<b>1</b>

Logging Source S/N: DSN-388  
Snow Block S/N: GJ-110

NEUTRON POST-CHECK SUMMARY				
	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0604	0.0720	0.0116	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION			
<b>Tool Name:</b>	<b>SDLT - 10951314</b>	<b>Reference Calibration Date:</b>	<b>01-Jul-10 12:28:54</b>
<b>Engineer:</b>	<b>W. MATSON</b>	<b>Calibration Date:</b>	<b>07-Aug-10 20:39:33</b>
<b>Software Version:</b>	<b>WL INSITE R3.0.5 (Build 3)</b>	<b>Calibration Version:</b>	<b>1</b>

Logging Source S/N: 5163GW  
Aluminum Block S/N: 63094      Density: 2.610g/cc      Pe: 3.100  
Magnesium Block S/N: 63387      Density: 1.685g/cc      Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0757	1.0537	0.90 - 1.10
Near Dens Gain	1.0386	1.0102	0.90 - 1.10
Near Peak Gain	1.0208	0.9795	0.90 - 1.10
Near Lith Gain	0.9989	0.9287	0.90 - 1.10
Far Bar Gain	1.0159	1.0122	0.90 - 1.10
Far Dens Gain	1.0044	0.9994	0.90 - 1.10
Far Peak Gain	0.9997	0.9880	0.90 - 1.10
Far Lith Gain	0.9804	0.9648	0.90 - 1.10



Near Bar Offset	-0.6212	-0.4116	NONE
Near Dens Offset	-0.2734	-0.0148	NONE
Near Peak Offset	-0.1103	0.2475	NONE
Near Lith Offset	0.0429	0.6532	NONE
Far Bar Offset	-0.1071	-0.0711	NONE
Far Dens Offset	-0.0125	0.0357	NONE
Far Peak Offset	0.0184	0.1216	NONE
Far Lith Offset	0.1428	0.2756	NONE

Near Bar Background	964.19	960.60	700 - 1450
Near Dens Background	319.44	318.13	230 - 480
Near Peak Background	139.14	139.09	100 - 210
Near Lith Background	171.67	170.29	125 - 260
Far Bar Background	582.10	583.97	450 - 900
Far Dens Background	226.62	225.91	175 - 345
Far Peak Background	89.13	88.65	70 - 140
Far Lith Background	94.77	92.86	75 - 145

**CALIBRATION BLOCK SUMMARY**

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
<b>MAGNESIUM</b>				
Density (g/cc)	1.683	1.685	0.002	+/- 0.015
Pe	2.645	2.593	-0.052	+/- 0.150
<b>ALUMINUM</b>				
Density (g/cc)	2.607	2.610	0.003	+/- 0.01500
Pe	3.242	3.098	-0.144	+/- 0.150

**TOOL SUMMARY**

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
<b>QUALITY</b>				
Background	-0.0003	+/- 0.0110	-0.0007	+/- 0.0140
Magnesium Block	-0.0006	+/- 0.0110	-0.0014	+/- 0.0140
Aluminum Block	-0.0015	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.19	6.00 - 11.50	9.49	6.00 - 11.50
Internal Verifier(B+D+P+L)	1588	1200 - 2700	991	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**

<b>Tool Name:</b> SDLT - 10951314	<b>Reference Calibration Date:</b> 07-Aug-10 20:39:33
<b>Engineer:</b> W. MATSON	<b>Calibration Date:</b> 14-Aug-10 00:52:46
<b>Software Version:</b> WL INSITE R3.0.5 (Build 3)	<b>Calibration Version:</b> 1

Pad Temperature: 75.2 degF

**DENSITY FIELD CALIBRATION SUMMARY**

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1588.114	1596.243	8.129	16.029
Far (B+D+P+L) cps	991.393	1000.381	8.988	16.874
Near Resolution	9.19	9.48	0.290	0.50



Far Resolution 9.49 10.36 0.870 1.00

**PASS/FAIL SUMMARY**

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

**SPECTRAL DENSITY POST CHECK**

Tool Name: SDLT - 10951314 Reference Calibration Date: 14-Aug-10 00:52:46  
 Engineer: W. MATSON Calibration Date: 14-Aug-10 10:35:41  
 Software Version: WL INSITE R3.0.5 (Build 3) Calibration Version: 1

Pad Temperature: 98.1 degF

**DENSITY POST CALIBRATION SUMMARY**

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1596.243	1592.654	-3.589	16.029
Far (B+D+P+L) cps	1000.381	987.257	-13.124	16.874
Near Resolution	9.48	9.26	-0.220	0.50
Far Resolution	10.36	9.58	-0.780	1.00

**PASS/FAIL SUMMARY**

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

**DENSITY CALIPER SHOP CALIBRATION**

Tool Name: SDLT - 10951314 Reference Calibration Date: 28-May-10 01:35:27  
 Engineer: K. WOOD Calibration Date: 04-Jul-10 17:21:04  
 Software Version: WL INSITE R3.0.5 (Build 3) Calibration Version: 1

**CALIBRATION COEFFICIENTS**

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1494.47	-1002.44	-7000.00 - -1000.00
Pad Gain	0.0003846	0.0003840	0.000200 - 0.000600
Arm Offset	904.02	640.04	-5000.00 - 3000.00
Arm Gain	0.0005180	0.0005228	0.000300 - 0.000700
Arm Power	-0.000005476	-0.000006424	-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
<b>PAD EXTENSION:</b>				
Small Ring (in)	1.81	2.00	0.19	+/- 0.20
Medium Ring (in)	3.57	3.75	0.18	+/- 0.20
<b>RING DIAMETER:</b>				
Small Ring (in)	6.43	6.50	0.07	+/- 0.20
Medium Ring (in)	8.18	8.25	0.07	+/- 0.20
Large Ring (in)	15.09	15.00	-0.09	+/- 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 - 10951314 Reference Calibration Date: 04-Jul-10 17:21:04  
 Engineer: W. MATSON Calibration Date: 14-Aug-10 00:57:20  
 Software Version: WL INSITE R3.0.5 (Build 3) Calibration Version: 1



**MEASURED CALIPER VALUES**

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.76	0.01	+/- 0.10
Ring Diameter	8.25	8.34	0.09	+/- 0.15

**PASS/FAIL SUMMARY**

Pad Extension Check:	Passed
Diameter Check:	Passed

**ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION**

<b>Tool Name:</b> ACRT - 90194258-E7486-	<b>Reference Calibration Date:</b> 26-Feb-10 14:15:18
<b>Engineer:</b> W. MATSON	<b>Calibration Date:</b> 12-Aug-10 15:41:15
<b>Software Version:</b> WL INSITE R3.0.5 (Build 3)	<b>Calibration Version:</b> 1

**TYPICAL GAIN RANGE**

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	0.9940	1.05	0.95	0.9974	1.05	0.95	0.9973	1.05
A2 (50")	0.95	1.0021	1.05	0.95	1.0061	1.05	0.95	1.0064	1.05
A3 (29")	0.95	1.0057	1.05	0.95	1.0084	1.05	0.95	1.0064	1.05
A4 (17")	0.95	0.9969	1.05	0.95	0.9973	1.05	0.95	0.9968	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9994	1.05	0.95	0.9974	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9894	1.05	0.95	0.9868	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	-0.290	2	-6	-4.029	-2	-8	-5.036	-2
A2 (50")	-7	-2.370	-1	-6	-3.851	-2	-7	-4.602	-2
A3 (29")	-27	-11.382	-9	-9	-3.589	-3	-7	-2.965	-1
A4 (17")	-180	-101.271	-60	-45	-31.829	-15	-39	-25.778	-13
A5 (10")	N/A	N/A	N/A	-150	-65.345	-50	-80	-34.508	-10
A6 (6")	N/A	N/A	N/A	175	270.032	525	90	140.169	270

**TRANSMITTER CURRENT GAIN**

Signal	Lower	R	Upper
12K	0.6	0.9052	1.3
36K	1.0	1.7805	2.0
72K	1.0	1.1442	2.0

**R-MUD VERIFICATION**

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.004	1.05

**CALIBRATION SUMMARY**

Sensor	Shop	Field	Post	Difference	Tolerance	Units
<b>GTET-11005602</b>						
Gamma Ray Calibrator	243.2	250.8	242.8	8.0	+/- 9.00	api
<b>DSNT-10993888</b>						
Snow-Block Porosity	0.0604	0.0604	0.0720	-0.0116	+/- 0.0150	decp
<b>SDLT-10951314</b>						
Near(B+D+P+L)	1588.114	1596.243	1592.654	3.589	+/-16.029	cps
Far(B+D+P+L)	991.393	1000.381	987.257	13.124	+/-16.874	cps
Pad Extension	3.75	3.76	-----	-0.01	+/-0.10	in
Ring Diameter	8.25	8.34	-----	-0.090	+/-0.15	in
<b>ACRT-90194258-E7486-</b>						
Mud Cell	1.004	-----	-----	0.000	-----	ohm-m

Data: BIRDG\_TRACY\_3\_20001 QUAD-8SATIDLE

Date: 14-Aug-10 17:04:16

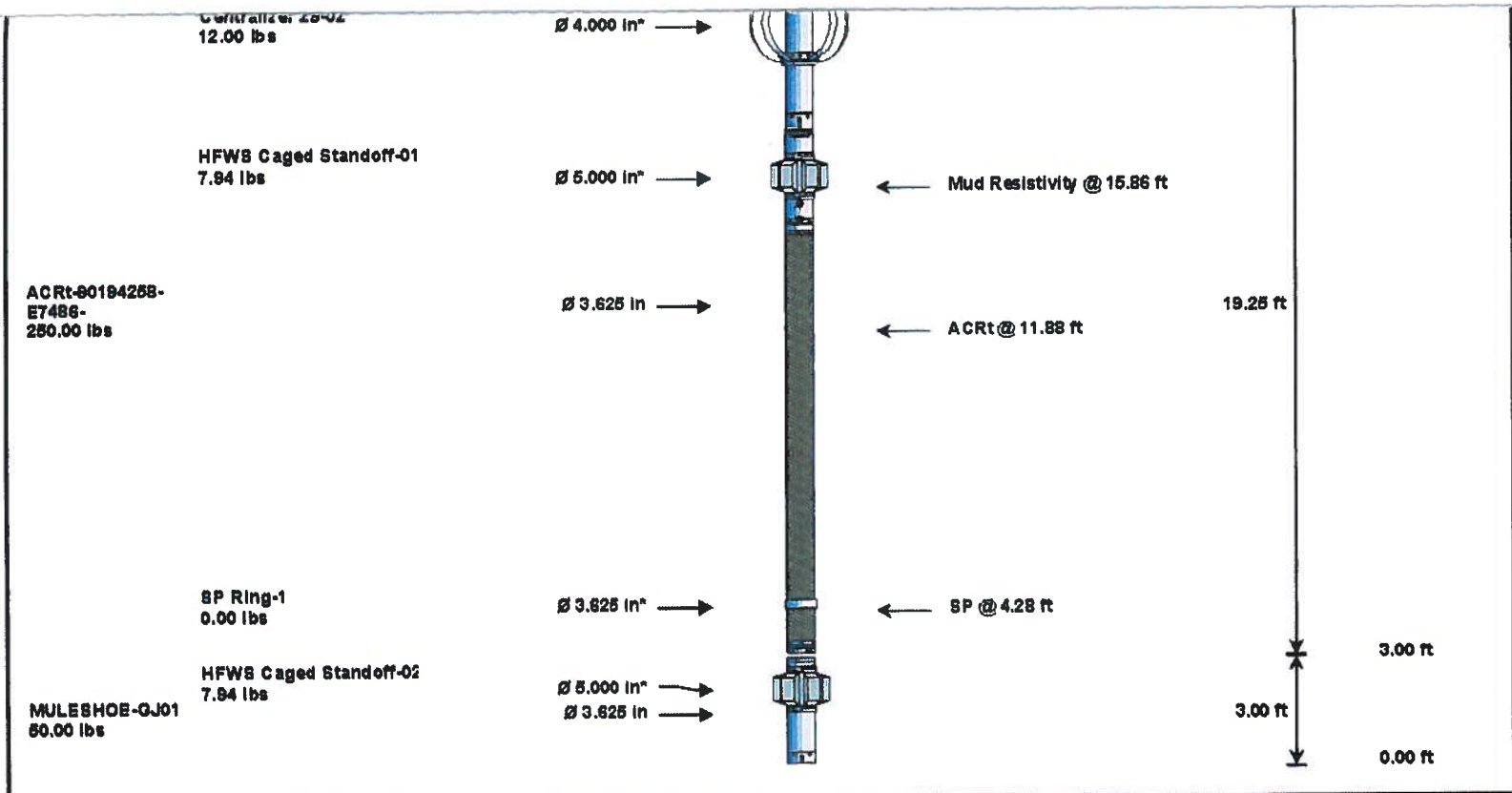
**HALLIBURTON**



## TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-C11013848 135.00 lbs		∅ 3.625 in →		← Lead Cell @ 75.58 ft ← BH Temperature @ 75.01 ft	6.25 ft	79.26 ft
GTET-11008602 165.00 lbs		∅ 3.625 in →		← GammaRay @ 66.95 ft	8.82 ft	73.01 ft
DBNT-10063888 174.00 lbs	DBN Decentralizer- 10839203 6.60 lbs	∅ 3.625 in* → ∅ 3.625 in →		← DBN Far @ 57.56 ft ← DBN Near @ 56.81 ft	9.89 ft	64.49 ft
SDLT-10061314 360.00 lbs		∅ 4.500 in → ∅ 4.750 in →		← SDL Microlog @ 46.99 ft ← SDL Caliper @ 46.81 ft ← SDL @ 46.80 ft	10.81 ft	54.81 ft
Flex Joint - Pressure Comp- GJ01 140.00 lbs		∅ 3.625 in →			6.97 ft	43.99 ft
	Centralizer 29-01 12.00 lbs	∅ 4.000 in* →			6.97 ft	38.02 ft
BBAT-11105782 300.00 lbs		∅ 3.625 in →		← Sonic Receivers @ 28.51 ft	15.77 ft	22.25 ft
					22.25 ft	22.25 ft





Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max. Log. Speed (rpm)
RWCH	Releasable Wireline Cable Head	C11013846	135.00	6.25	73.01	300.00
GTET	Gamma Telemetry Tool	11005602	165.00	8.52	64.49	60.00
DSNT	Dual Spaced Neutron	10993888	174.00	9.69	54.81	60.00
DCNT	DSN Decentralizer	10839203	6.60	5.13	58.14	300.00
SDLT	Spectral Density Tool	10951314	360.00	10.81	43.99	60.00
FLEX	Flex Joint - Pressure Compensated	GJ01	140.00	5.97	38.02	300.00
BCAS	Borehole Sonic Array Tool	11105782	300.00	15.77	22.25	60.00
OBCEN	Centralizer - 29 in. Overbody	01	12.00	2.42	35.38	300.00
ACRt	Array Compensated True Resistivity	90194258-E7486-	250.00	19.25	3.00	300.00
HFCS	Hostile Full Wave Sonic Caged Metal and Rubber Standoff	01	7.94	1.33	15.47	300.00
SP	SP Ring	1	0.00	0.25	4.28	300.00
OBCEN	Centralizer - 29 in. Overbody	02	12.00	2.42	19.08	300.00
MSHOE	MULESHOE	GJ01	50.00	3.00	0.00	100.00
HFCS	Hostile Full Wave Sonic Caged Metal and Rubber Standoff	02	7.94	1.33	1.44	300.00
<b>Total</b>			<b>1,620.48</b>	<b>79.26</b>		

\* Not included in Total Length and Length Accumulation.

Date: BIRGD\_TRACY\_3\_210001 QUAD-BSATIDLE Date: 14-Aug-10 17:05:04

COMPANY	BRIDGE/PARAMAX		
WELL	TRACY TRUST #3-2		
FIELD	HAMILTON		
COUNTY	PAYETTE	STATE	ID
<b>HALLIBURTON</b>		<b>ARRAY COMPENSATED TRUE RESISTIVITY</b>	