

HALIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY

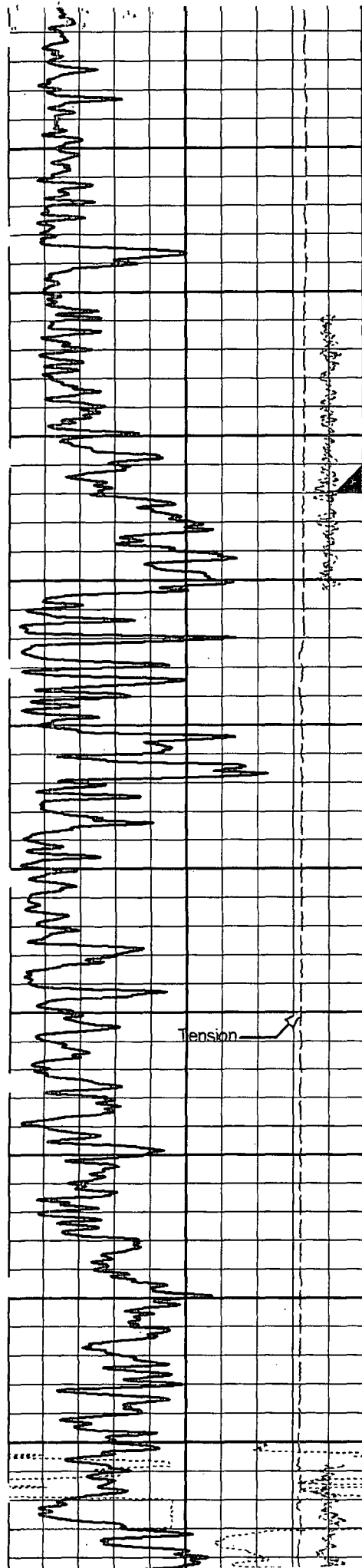
COMPANY		KC RESOURCES, INC.	
WELL		JONES "D" No. 6	
FIELD		ATOKA; SA	
COUNTY		EDDY	
STATE		NEW MEXICO	
Permanent Datum		GL	Elev. 3292.0 ft
Log measured from		KB	Elev. K.B. 3298.0 ft
Drilling measured from		KB	D.F. 3292.0 ft
Date		09-Apr-12	
Run No.		ONE	
Depth - Driller		1901.00 ft	
Depth - Logger		1877.0 ft	
Bottom - Logged Interval		1840 ft	
Top - Logged Interval		180 ft	
Casing - Driller		8.625 in @ 425.0 ft	@
Casing - Logger		420.0 ft	@
Bit Size		7.875 in	@
Type Fluid in Hole		BRINE	
Density		9.5 ppg	28.00 s/g
PH		14.00 pH	
Source of Sample		FLOWLINE	
Rm @ Meas. Temperature		0.080 dhmm @ 75.00 degF	@
Rmf @ Meas. Temperature		0.06 dhmm @ 75.00 degF	@
Rmc @ Meas. Temperature		0.097 dhmm @ 75.00 degF	@
Source Rmf		MEAS	MEAS
Rm @ BHT		0.07 dhmm @ 92.0 degF	@
Time Since Circulation		4.0 hr	
Time on Bottom		09-Apr-12 11:21	
Max. Rec. Temperature		92.0 degF @ 1877.0 ft	@
Equipment Location		798	HOBS, NM
Recorded By		ALEXANDER PRICE	
Witnessed By		PHILLIPS WHITE	

RECEIVED
APR 21 2014
STATE NEW MEXICO
Other Services: DLMGRD

MAOOD ARTESIA

Fold here

Service Ticket No.: 9419835		API Serial No.: 30-015-40091		PGM Version: WL INSITE R3.4.0 (Build 4)	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE			RESISTIVITY SCALE CHANGES		
Date	Sample No.		Type Log	Depth	Scale Up Hole
Depth-Driller					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
Rmf @ Meas. Temp.	@	@			Tool Pos.
Rmc @ Meas. Temp.	@	@			Other
Source Rmf	Rmc				
Rm @ BHT	@	@			
Rmf @ BHT	@	@			
Rmc @ BHT	@	@			
EQUIPMENT DATA					
GAMMA		ACOUSTIC		DENSITY	
Run No.	ONE	Run No.		Run No.	ONE
Serial No.	11071198RD	Serial No.		Serial No.	10965405RD-BK
Model No.	GTET	Model No.		Model No.	SDLT-I
Diameter	3.625 in	No. of Cent.		Diameter	4.5 in
Detector Model No.	T-102A	Spacing		Log Type	GAM-GAM
Type	SCINT			Source Type	Cs - 137
Length	8 in	LSA [Y/N]		Serial No.	5115GW
Distance to Source	14 ft	FWDA [Y/N]		Strength	1.5 Ci
				NEUTRON	
				Run No.	ONE
				Serial No.	10965405RD-BK
				Model No.	DSNT-I
				Diameter	3.625in
				Log Type	NEU-NEU
				Source Type	Am241Be
				Serial No.	DSN - 314
				Strength	15 Ci



300

400

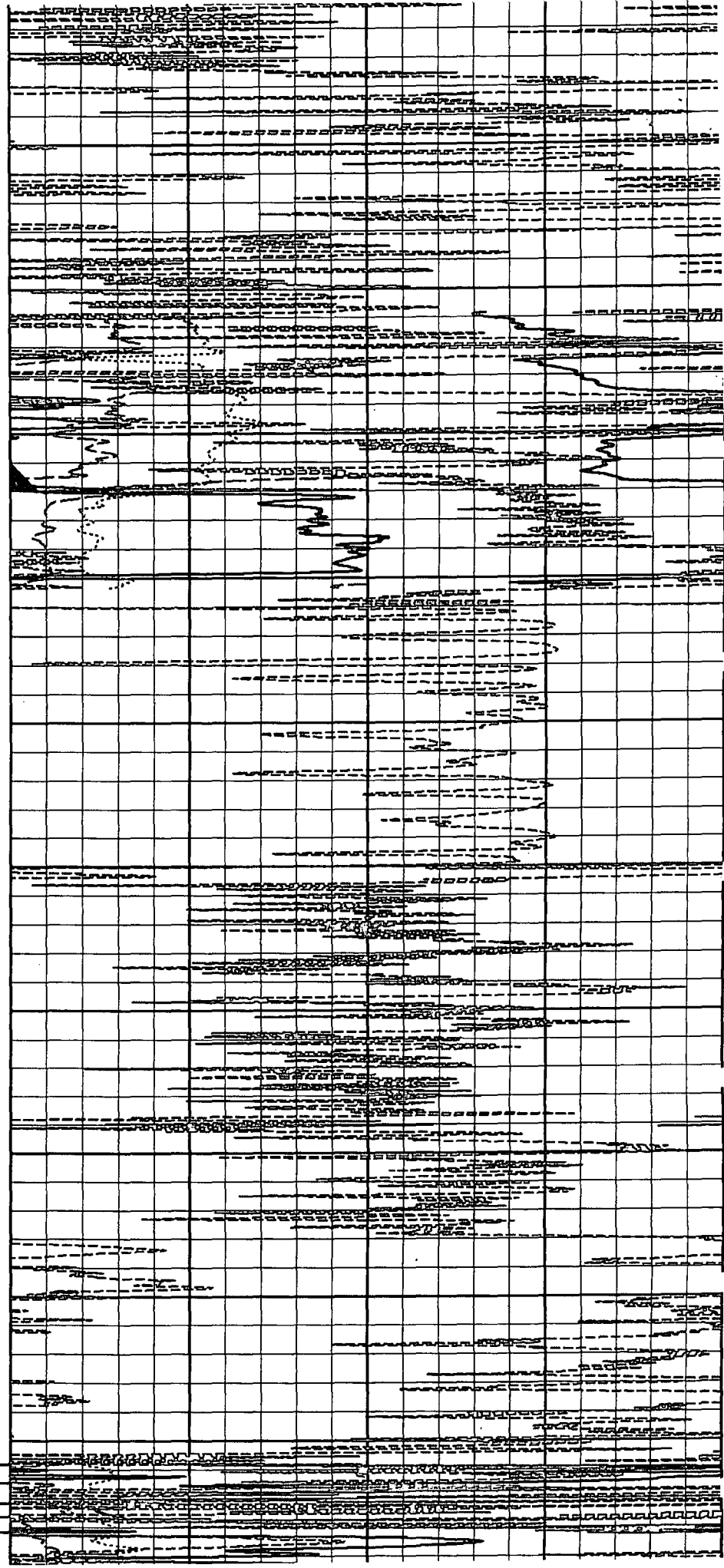
CSG

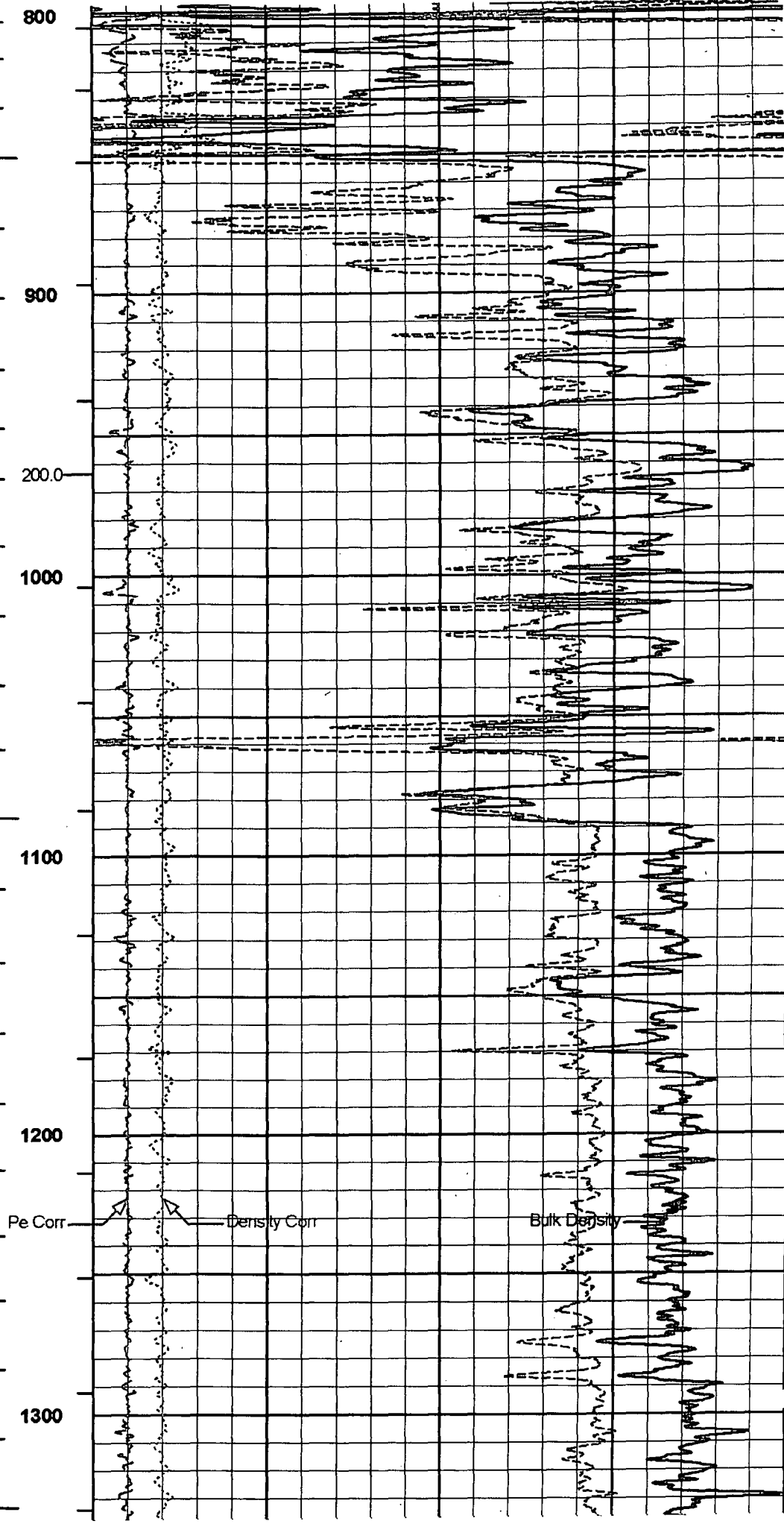
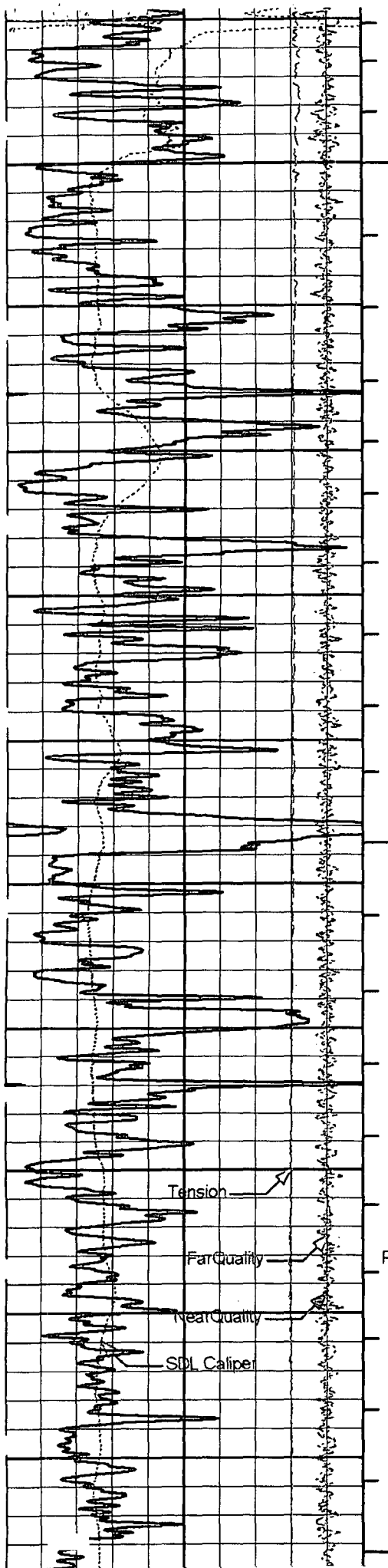
500

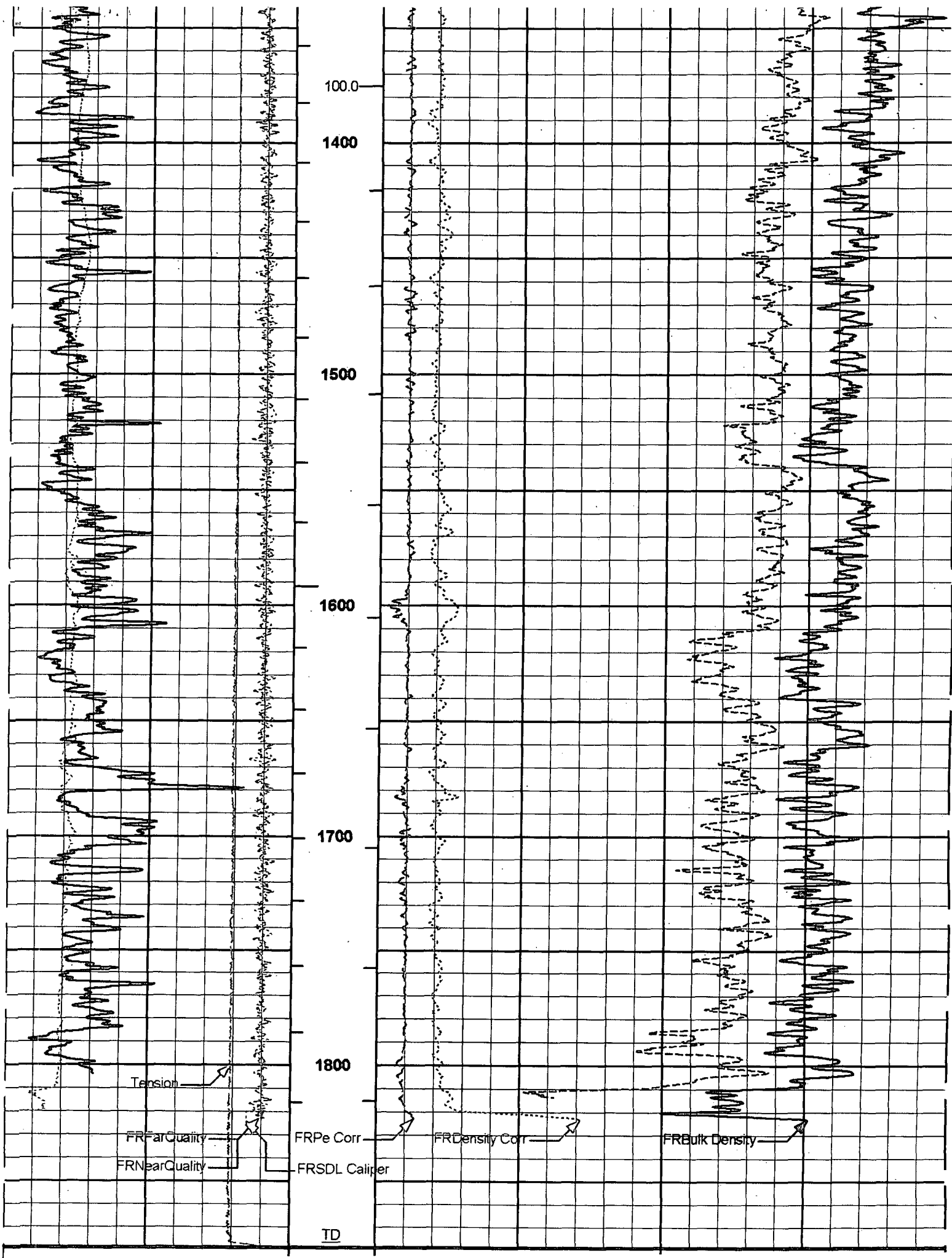
600

700

300.0







100.0

1400

1500

1600

1700

1800

TD

Tension

FRFarQuality

FRNearQuality

FRPe Corr

FRSDL Caliper

FRDensity Corr

FRBulk Density

0	Gamma API	100	1:600	-0.2	Density Corr	0.8
	API				g/cc	
6	SDL Caliper	16	AHVT	-0.5	Pe Corr	4.5
	in					
10K	Tension	0	BHVT	30	Neutron Porosity	-10
	lb-f				% Matrix: Limestone	
18	NearQuality	-2		2	Bulk Density	3
					g/cc	
-18	FarQuality	2				

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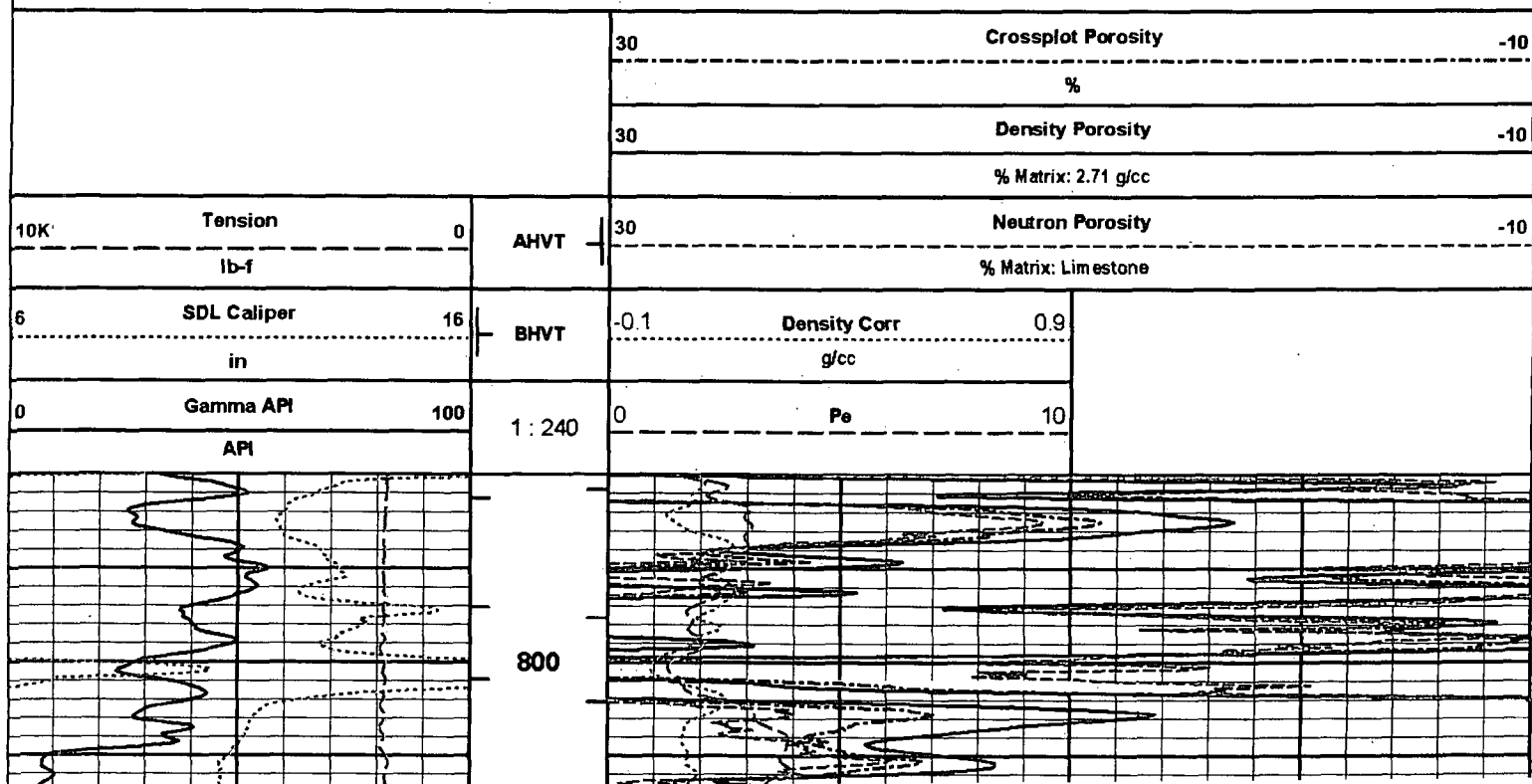
Plot Time: 09-Apr-12 12:56:27
Plot Range: 190 ft to 1879 ft
Data: 0408_CRYSTALRIVWell Based\DAQ-0003-003\
Plot File: \DSN_SDL\DSNT-SDLT 2in

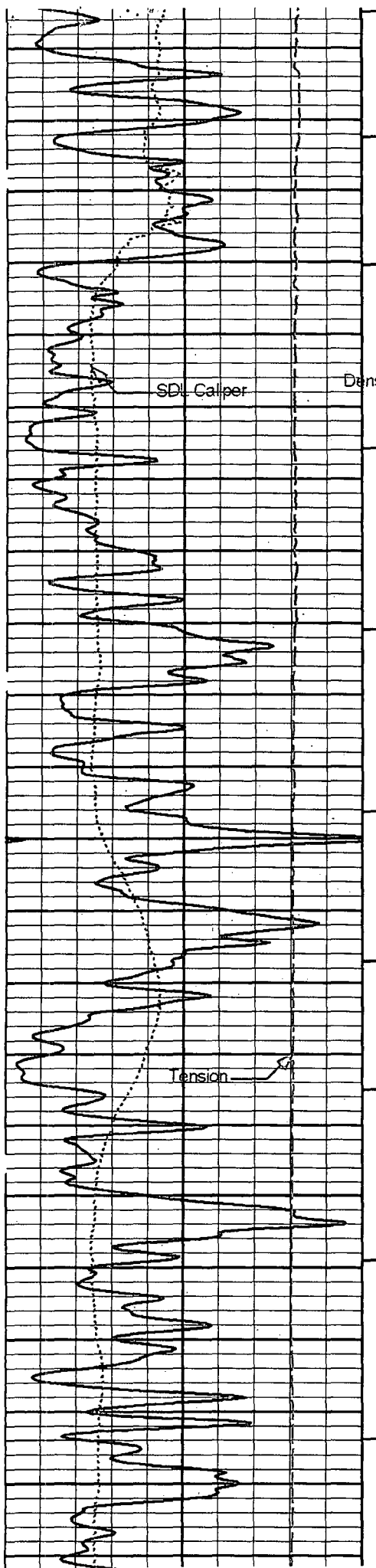
MAIN PASS 2" = 100' (LIMESTONE MATRIX)

HALLIBURTON

Plot Time: 09-Apr-12 12:56:28
Plot Range: 780 ft to 1879 ft
Data: 0408_CRYSTALRIVWell Based\DAQ-0003-003\
Plot File: \DSN_SDL\DSNT-SDLT 5in

MAIN PASS 5" = 100' (LIMESTONE MATRIX)





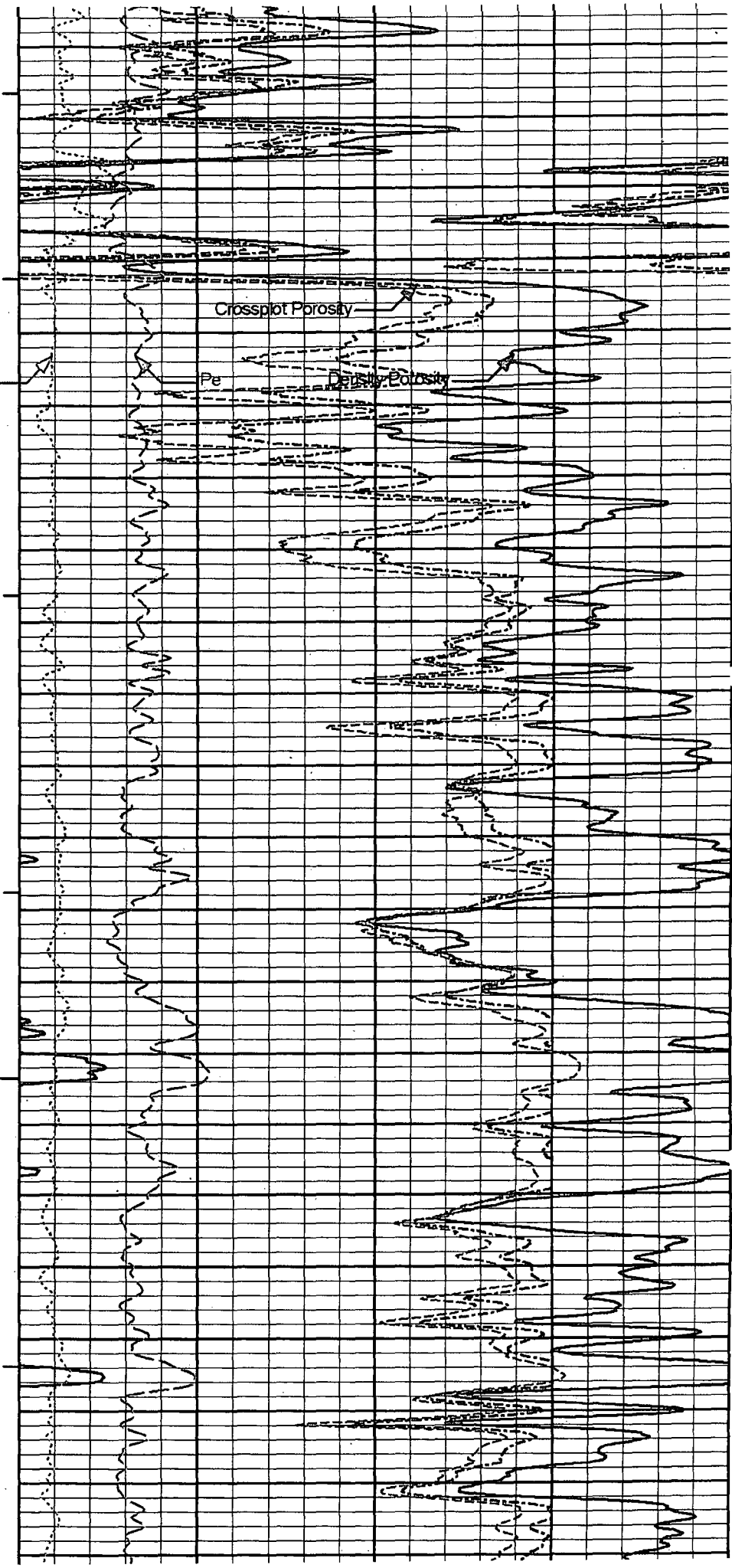
850

900

950

200.0

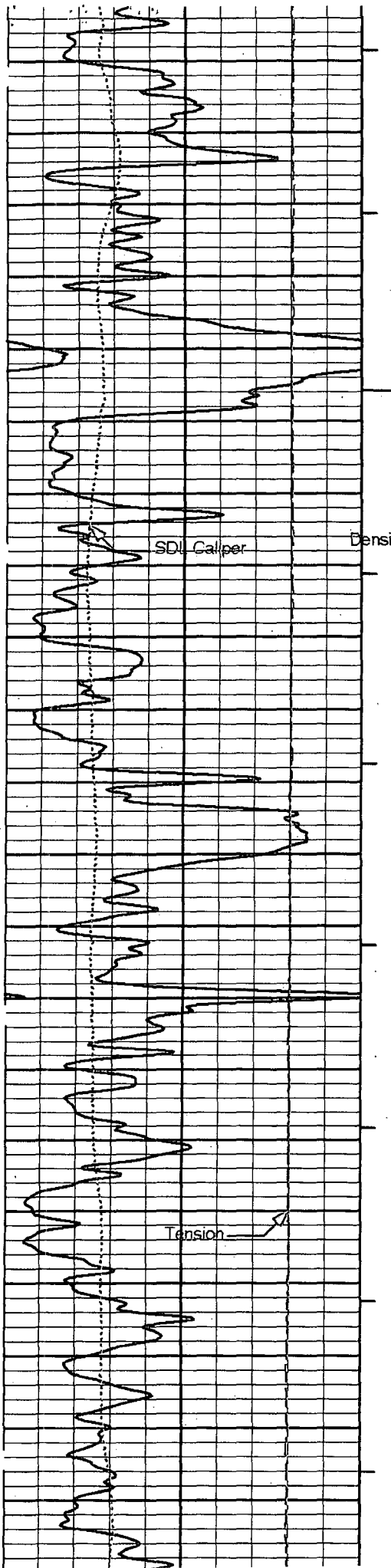
1000



Crossplot Porosity

Pe

Density Porosity



1050

1100

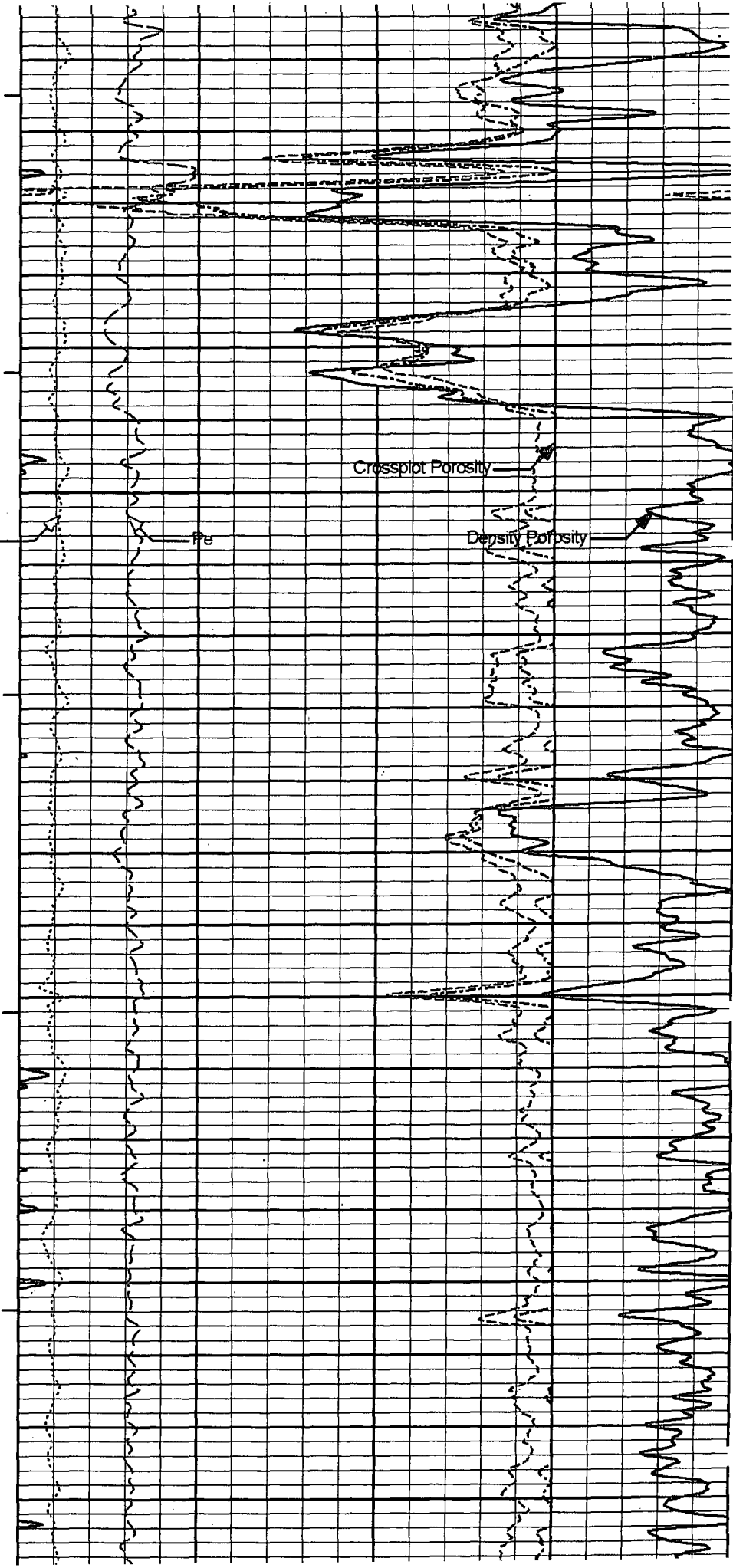
1150

1200

SDL Caliper

Tension

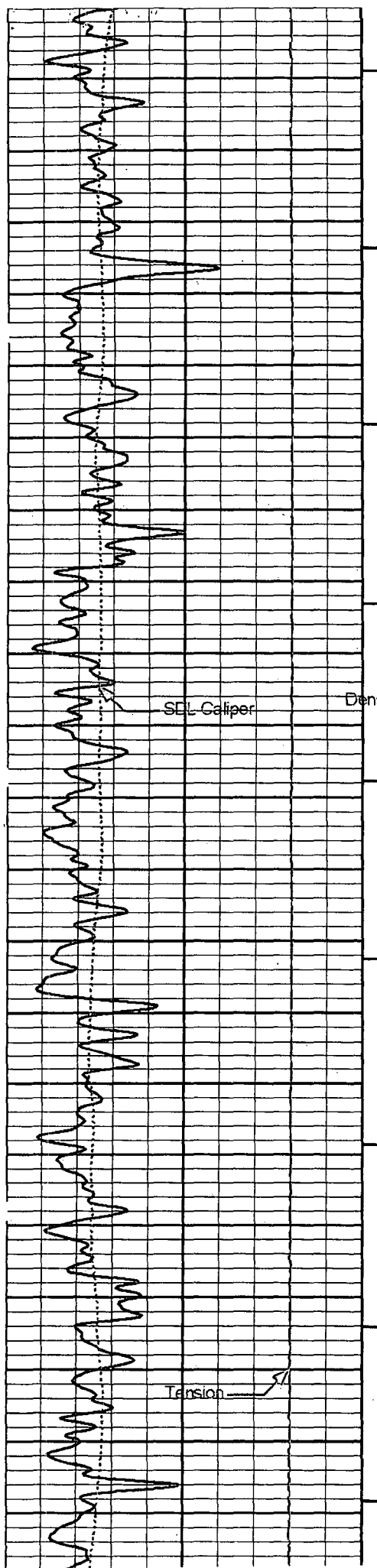
Density Corr



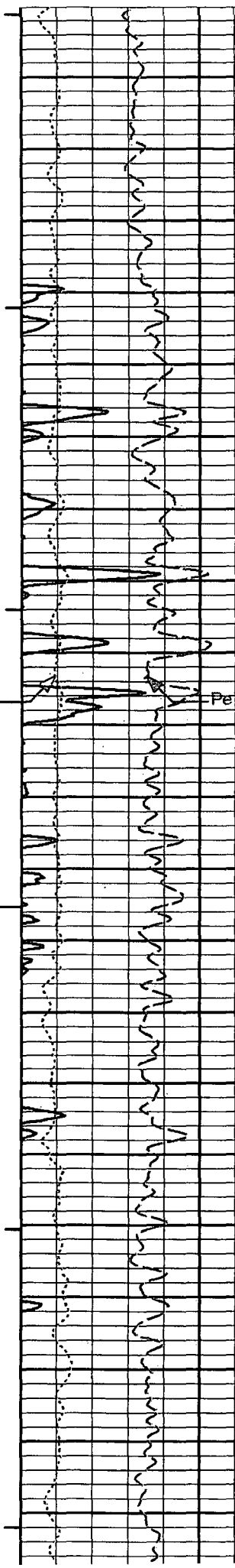
Crossplot Porosity

Density Porosity

Pe

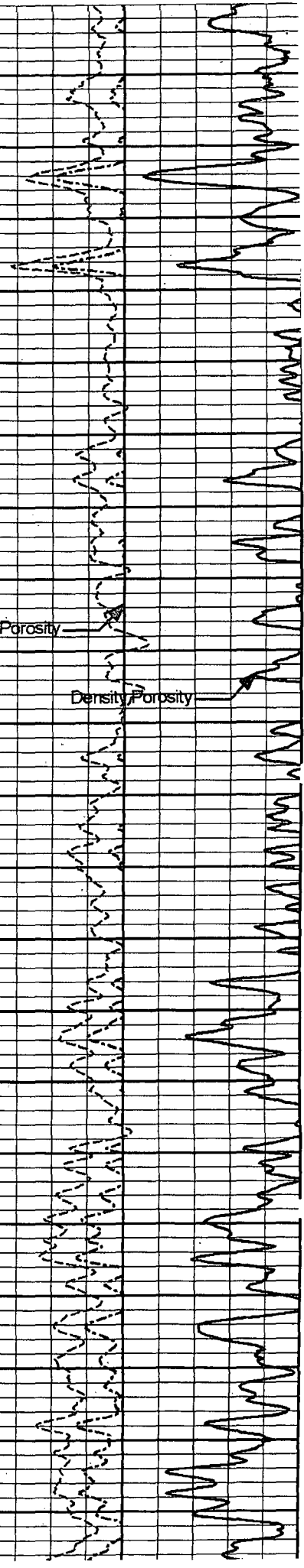


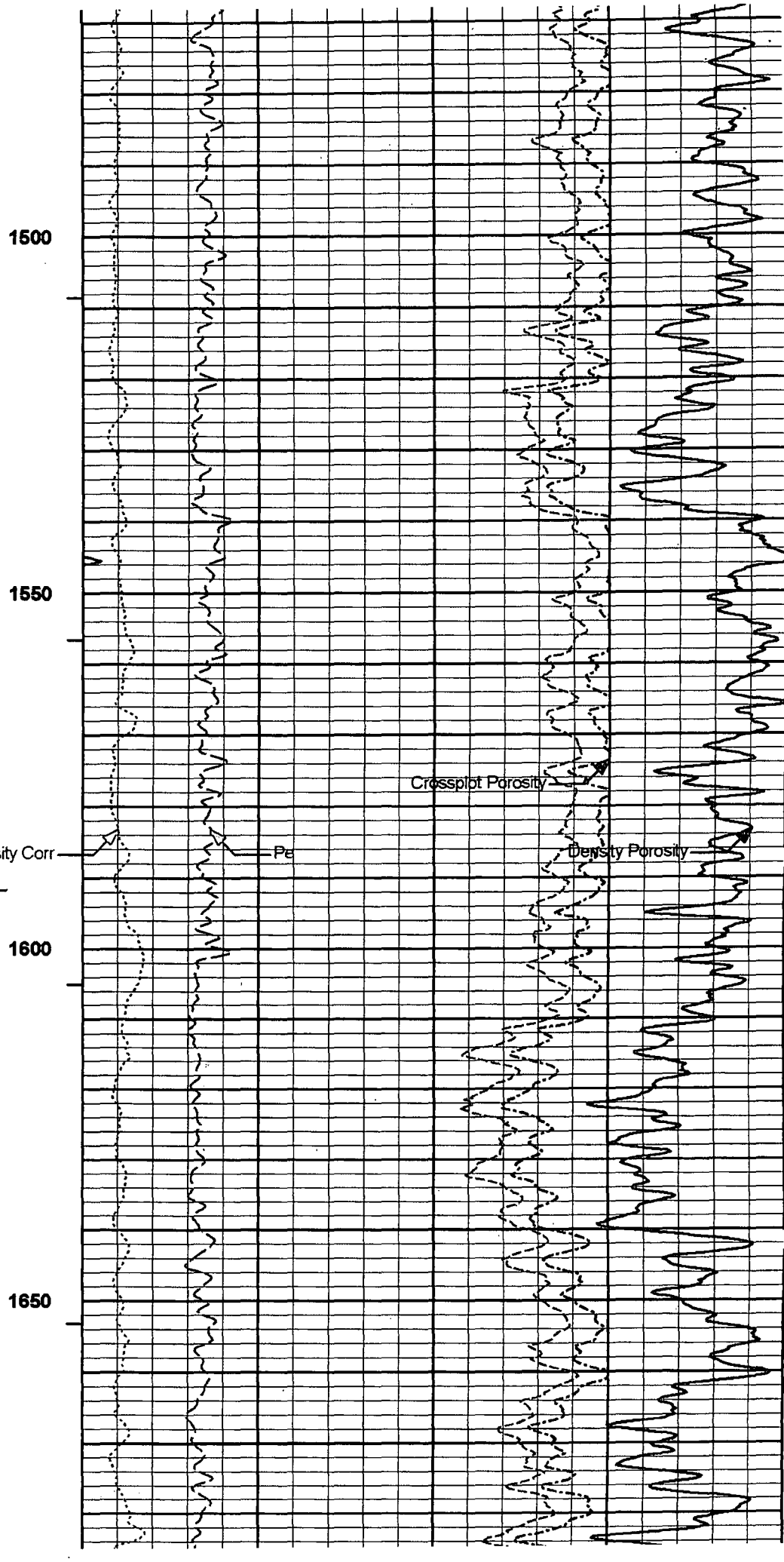
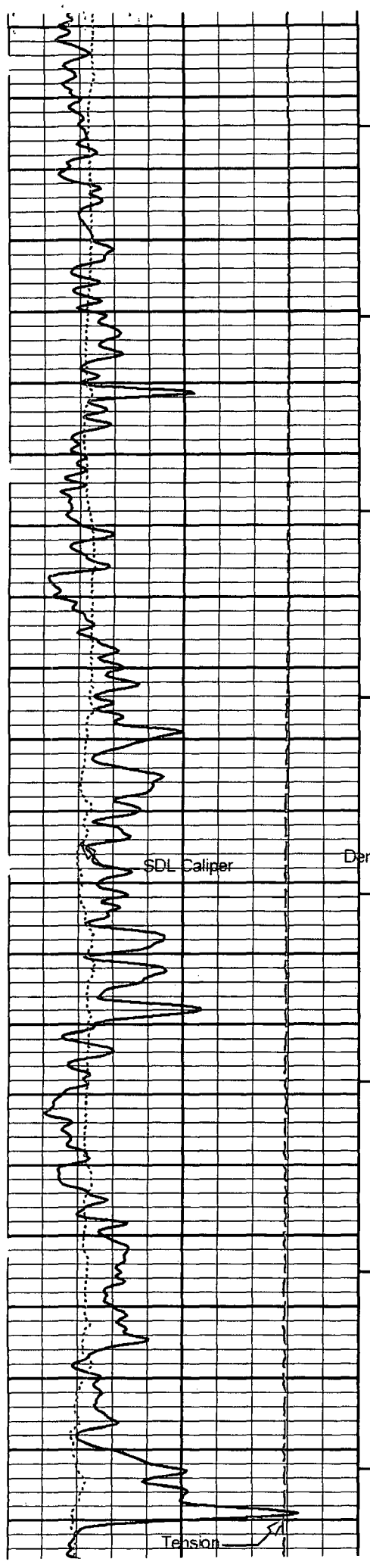
1250
1300
1350
1400
1450

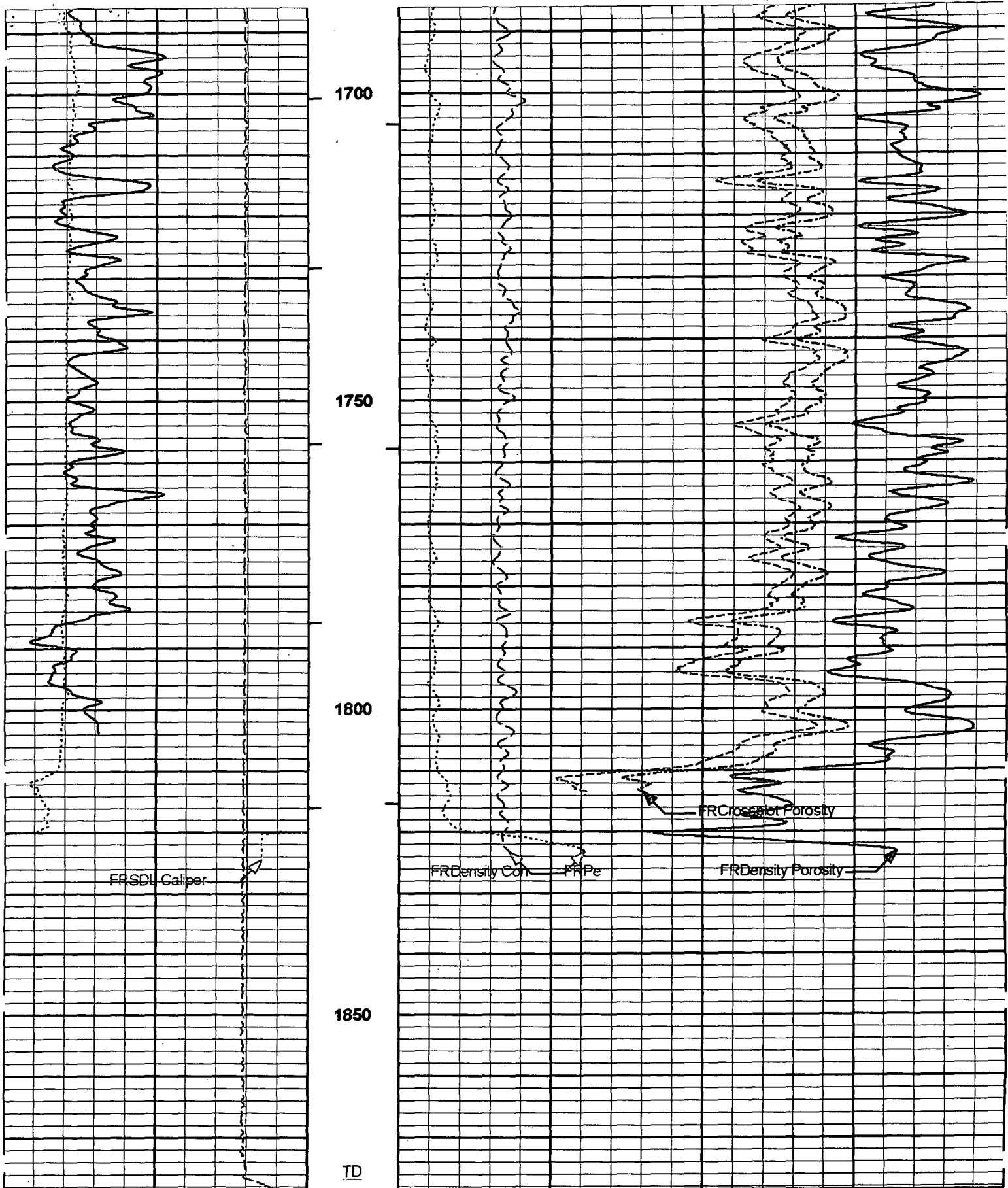


Crossplot Porosity

Density Porosity







0	Gamma API	100	1 : 240	0	Pe	10
	API					
6	SDL Caliper	16	BHVT	-0.1	Density Corr	0.9
	in				g/cc	
10K	Tension	n	1130		Neutron Porosity	.40

lb-f		% Matrix: Limestone
	30	Density Porosity -10
		% Matrix: 2.71 g/cc
	30	Crossplot Porosity -10
		%

HALLIBURTON

Plot Time: 09-Apr-12 12:56:32

Plot Range: 780 ft to 1879 ft

Data: 0408_CRYSTALRIV\Well Based\DAQ-0003-003\

Plot File: \DSN_SDL\DSNT-SDLT 5in

MAIN PASS 5" = 100' (LIMESTONE MATRIX)

HALLIBURTON

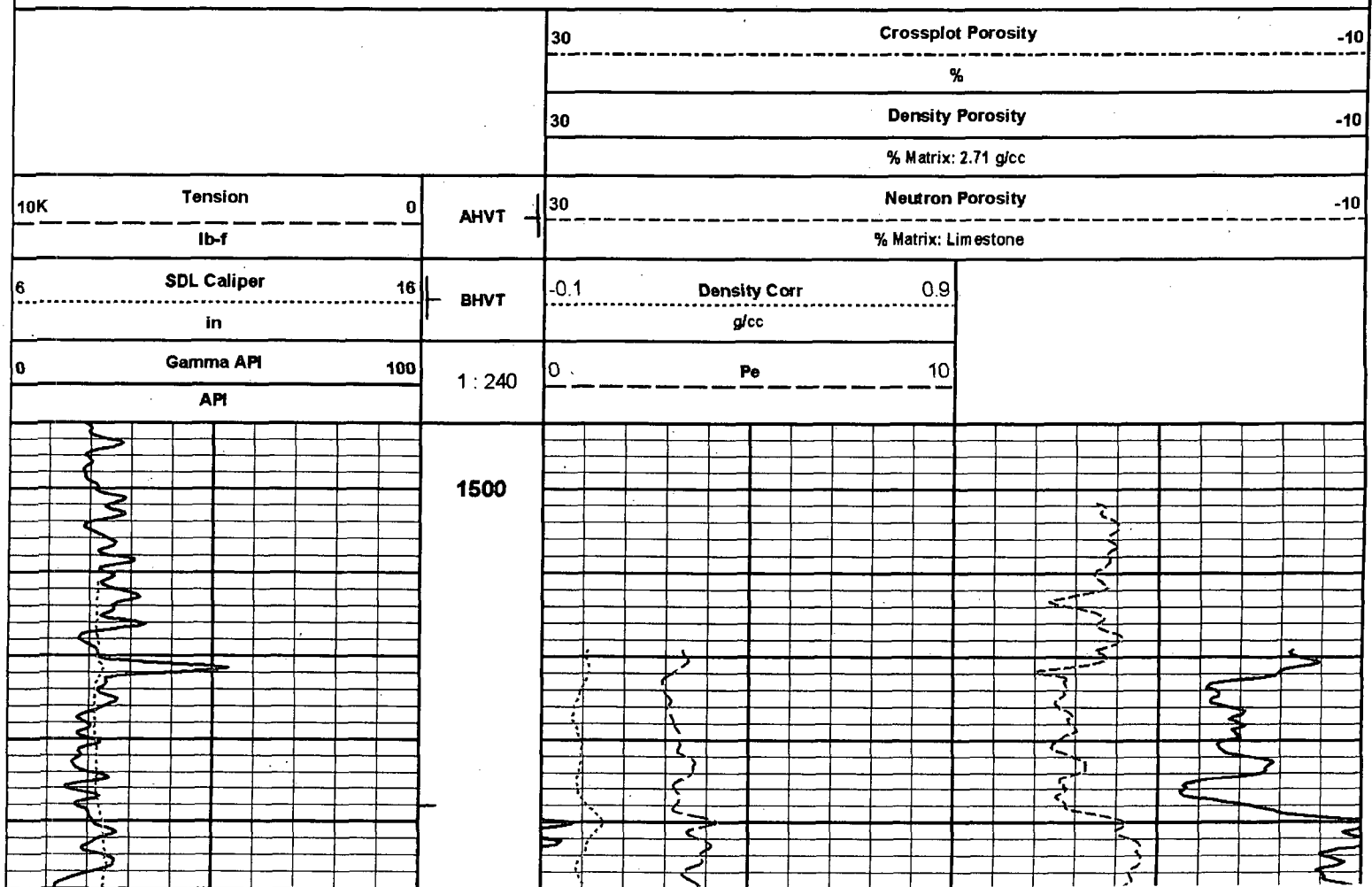
Plot Time: 09-Apr-12 12:56:32

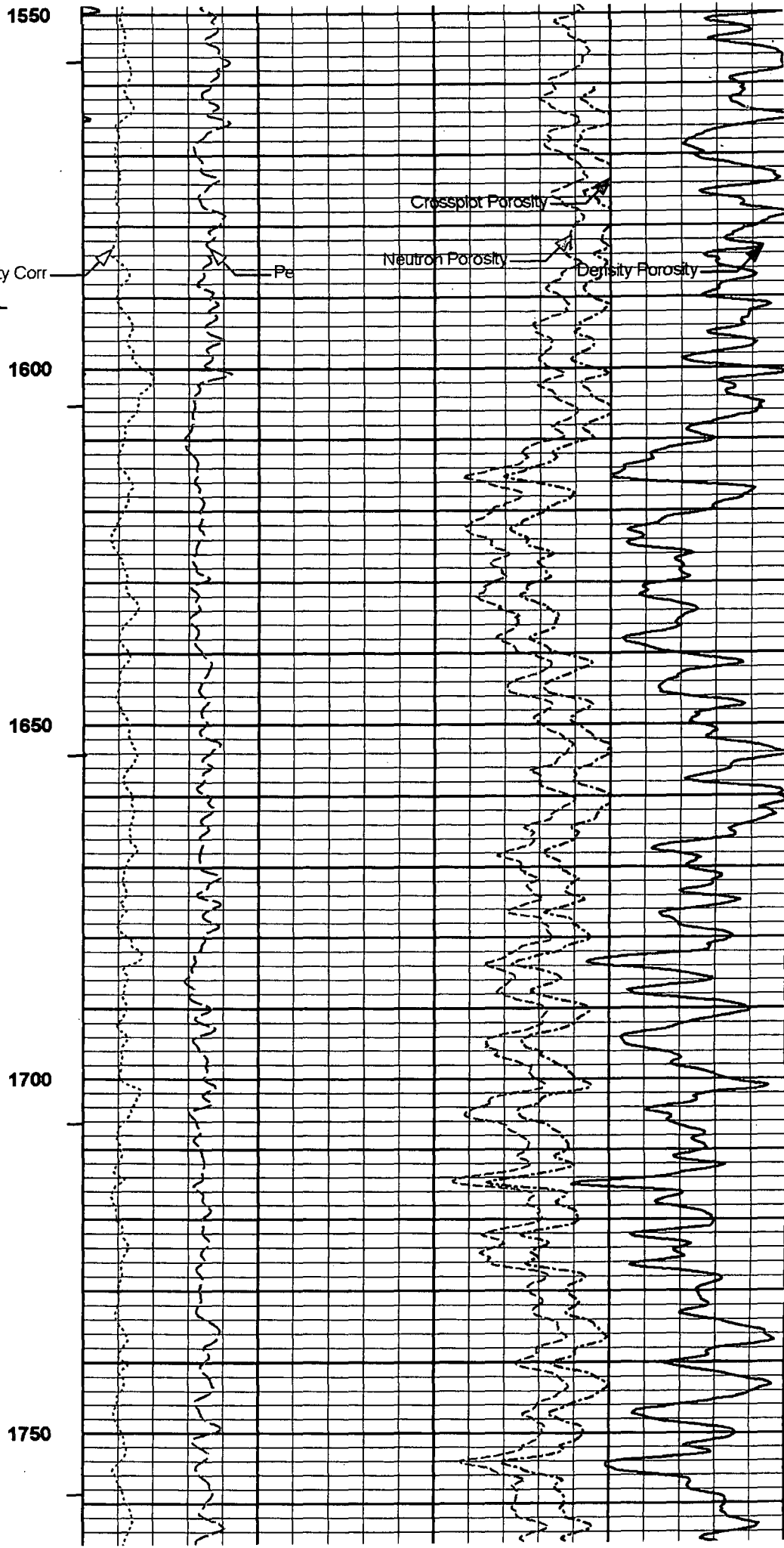
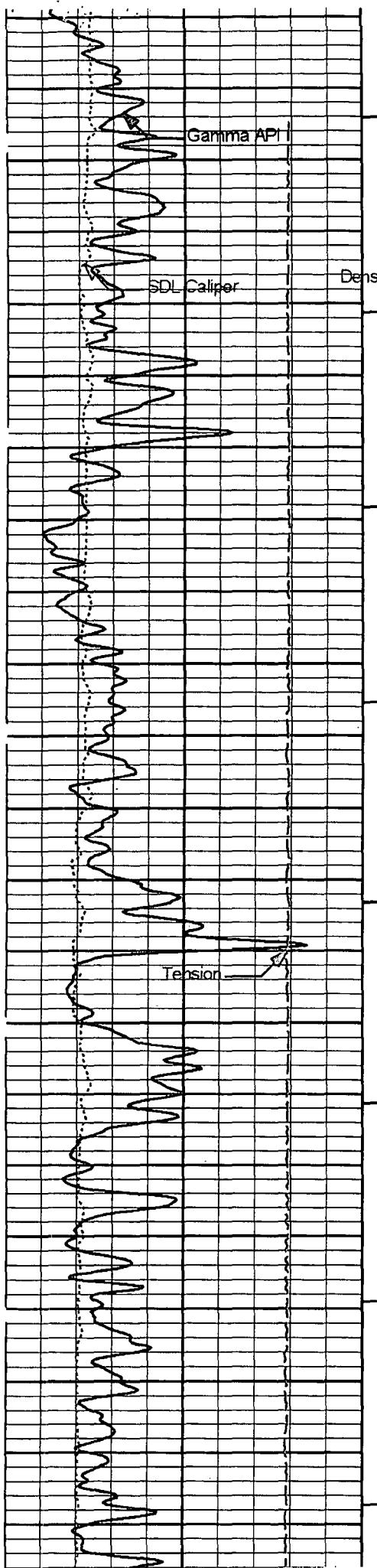
Plot Range: 1491.95 ft to 1878.53 ft

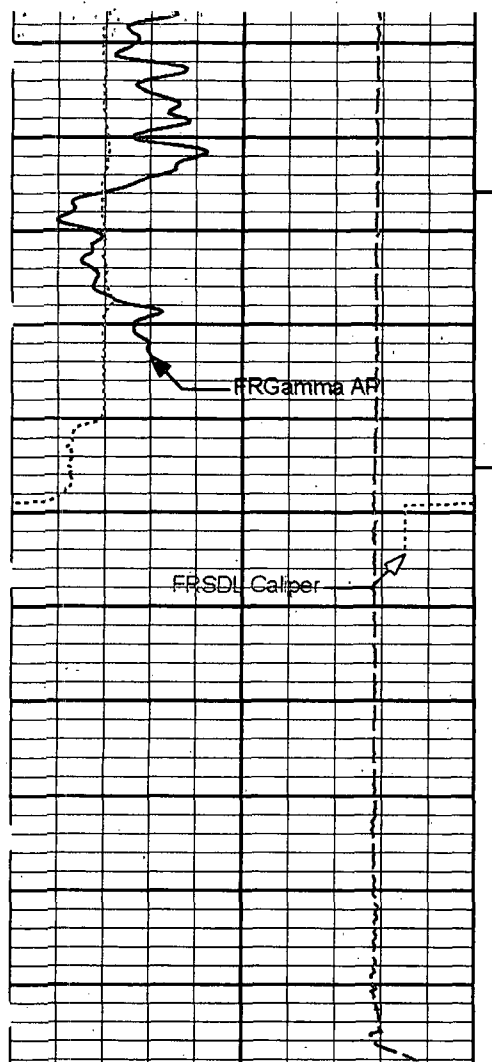
Data: 0408_CRYSTALRIV\Well Based\DAQ-0003-002\

Plot File: \DSN_SDL\REPEAT

REPEAT SECTION 5"=100' (LIMESTONE MATRIX)







1800

1850

0	Gamma API	100	1 : 240	0	Pe	10
	API					
6	SDL Caliper	16	BHVT	-0.1	Density Corr	0.9
	in				g/cc	
10K	Tension	0	AHVT	30	Neutron Porosity	-10
	lb-f				% Matrix: Limestone	
				30	Density Porosity	-10
					% Matrix: 2.71 g/cc	
				30	Crossplot Porosity	-10
					%	

HALLIBURTON

Plot Time: 09-Apr-12 12:56:37
 Plot Range: 1491.95 ft to 1878.53 ft
 Data: 0408_CRYSTALRIV\Well Based\DAQ-0003-002\
 Plot File: \DSN_SDL\REPEAT

REPEAT SECTION 5"=100' (LIMESTONE MATRIX)

HALLIBURTON

CALIBRATION REPORT

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11071198RD

Reference Calibration Date: 01-Feb-12 10:03:27

Engineer: ALEXANDER PRICE

Calibration Date: 19-Mar-12 08:47:58

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Calibrator Source S/N: TH-547

Calibrator API Reference: 261.00 api

Equivalent Calibrator API Reference: 265.6 api

Measurement	Measured	Calibrated	Units
Background	19.1	19.0	api
Background + Calibrator	287.0	284.5	api
Calibrator	267.8	265.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11071198RD

Reference Calibration Date: 19-Mar-12 08:47:58

Engineer: ALEXANDER PRICE

Calibration Date: 06-Apr-12 09:33:35

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Calibrator Source S/N: TH-547

Calibrator API Reference: 261.00 api

Equivalent Calibrator API Reference: 265.6 api

Field Verification	Shop	Field	Units
Background	19.0	25.9	api
Background + Calibrator	284.5	292.3	api
Calibrator	265.6	266.5	api

Shop	Field	Difference	Tolerance
265.6	266.5	-0.9	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10965405RD-BK

Reference Calibration Date: 01-Feb-12 10:52:53

Engineer: ALEXANDER PRICE

Calibration Date: 19-Mar-12 09:42:42

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Logging Source S/N: DSN-314

Tank Serial Number: Hobbs water tank

Reference value assigned to Tank: 55.340

Snow Block S/N: truck-798

Calibration Tank Water Temperature: 40 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.023	1.019	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decip):	0.2325	0.2315	0.0011	+/- 0.0020
Calibrated Ratio:	10.45	10.42	0.035	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decg):	0.0859	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 - 10965405RD-BK

Reference Calibration Date: 19-Mar-12 09:42:42

Engineer: ALEXANDER PRICE

Calibration Date: 06-Apr-12 09:55:57

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Logging Source S/N: DSN-314

Snow Block S/N: truck-798

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decg):	0.0859	0.0775	-0.0085	+/- 0.0150

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10965405RD-BK

Reference Calibration Date: 01-Feb-12 12:24:58

Engineer: ALEXANDER PRICE

Calibration Date: 19-Mar-12 18:42:16

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1179.52	-1974.95	-7000.00 - -1000.00
Pad Gain	0.0003378	0.0003669	0.000200 - 0.000600
Arm Offset	-365.89	-1414.63	-5000.00 - 3000.00
Arm Gain	0.0004409	0.0006068	0.000300 - 0.000700
Arm Power	-0.000000693	-0.000009617	-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)	2.11	2.00	-0.11	+/- 0.20
Medium Ring (in)	3.84	3.88	0.04	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.69	6.50	-0.19	+/- 0.20
Medium Ring (in)	8.21	8.38	0.17	+/- 0.20
Large Ring (in)	14.82	15.00	0.18	+/- 0.20

PASS/FAIL SUMMARY		
Calibration-Coefficients Range Check:		Passed
Ring-Measurement Check:		Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10965405RD-BK Reference Calibration Date: 19-Mar-12 18:42:16
 Engineer: ALEXANDER PRICE Calibration Date: 06-Apr-12 09:43:28
 Software Version: WL INSITE R3.4.0 (Build 4) Calibration Version: 1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.88	3.81	-0.07	+/- 0.10
Ring Diameter	8.38	8.41	0.03	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10965405RD-BK Reference Calibration Date: 19-Mar-12 18:11:10
 Engineer: ALEXANDER PRICE Calibration Date: 19-Mar-12 18:29:46
 Software Version: WL INSITE R3.4.0 (Build 4) Calibration Version: 1

Logging Source S/N: 5115GW

Aluminum Block S/N: HOBBS

Density: 2.602g/cc

Pe: 3.200

Magnesium Block S/N: HOBBS

Density: 1.677g/cc

Pe: 2.540

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0971	1.0951	0.90 - 1.10
Near Dens Gain	1.0455	1.0538	0.90 - 1.10
Near Peak Gain	1.0522	1.0962	0.90 - 1.10
Near Lith Gain	1.0503	1.0722	0.90 - 1.10
Far Bar Gain	1.0224	1.0238	0.90 - 1.10
Far Dens Gain	1.0128	1.0129	0.90 - 1.10
Far Peak Gain	1.0083	1.0082	0.90 - 1.10
Far Lith Gain	0.9901	0.9934	0.90 - 1.10
Near Bar Offset	-0.7622	-0.7432	NONE
Near Dens Offset	-0.2762	-0.3474	NONE
Near Peak Offset	-0.3184	-0.6847	NONE
Near Lith Offset	-0.3190	-0.5006	NONE
Far Bar Offset	-0.1595	-0.1708	NONE
Far Dens Offset	-0.0772	-0.0764	NONE
Far Peak Offset	-0.0518	-0.0477	NONE
Far Lith Offset	0.0512	0.0241	NONE
Near Bar Background	870.51	865.91	700 - 1450
Near Dens Background	285.28	287.09	230 - 480
Near Peak Background	125.63	125.57	100 - 210
Near Lith Background	154.41	153.11	125 - 260
Far Bar Background	571.93	570.00	450 - 900
Far Dens Background	225.23	223.84	175 - 345
Far Peak Background	88.27	87.99	70 - 140
Far Lith Background	93.78	93.21	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.676	1.677	0.001	+/- 0.015
Pe	2.536	2.503	-0.033	+/- 0.150
ALUMINUM				
Density (g/cc)	2.603	2.602	-0.001	+/- 0.01500
Pe	3.141	3.149	0.008	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0022	+/- 0.0110	0.0006	+/- 0.0140
Magnesium Block	0.0002	+/- 0.0110	-0.0006	+/- 0.0140
Aluminum Block	-0.0004	+/- 0.0110	-0.0014	+/- 0.0140
Resolution	9.09	6.00 - 11.50	8.91	6.00 - 11.50
Internal Verifier(B+D+P+L)	1432	1200 - 2700	975	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 Pad - 10965405RD-BK

Reference Calibration Date: 19-Mar-12 18:29:46

Engineer: ALEXANDER PRICE

Calibration Date: 06-Apr-12 09:34:07

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Pad Temperature: 57.6 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1431.682	1428.072	-3.610	15.269
Far (B+D+P+L) cps	975.042	977.092	2.050	16.776
Near Resolution	9.09	9.01	-0.080	0.50
Far Resolution	8.91	8.88	-0.030	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
--------	------	-------	------	------------	-----------	-------

GTET-11071198RD						
Gamma Ray Calibrator	265.6	266.5	-----	-0.9	+/- 9.00	api
DSNT-10965405RD-BK						
Snow-Block Porosity	0.0859	0.0775	-----	0.0084	+/- 0.0150	decP
SDLT-10965405RD-BK						
Pad Extension	3.88	3.81	-----	0.07	+/-0.10	in
Ring Diameter	8.38	8.41	-----	-0.030	+/-0.15	in
SDLT Pad-10965405RD-BK						
Near(B+D+P+L)	1431.682	1428.072	-----	3.610	+/-15.269	cps
Far(B+D+P+L)	975.042	977.092	-----	-2.050	+/-16.776	cps
Data: 0408_CRYSTALRIV0003 LCCH-GTET-DSN-SDL-FLEX-DLL-MGRD-CENT003 09-Apr-12 11:11 Up @1879.0f					Date: 09-Apr-12 11:49:24	

HALLIBURTON

CUSTOMER EVENT LOG

Event Type	Time & Date	Depth (ft)	Event Description
	09-Apr-12 10:52:31	1009.00	Logging 001 09-Apr-12 10:52 Dn @1009.0f
	09-Apr-12 10:57:18	1879.29	Halting 001 09-Apr-12 10:52 Dn @1009.0f
	09-Apr-12 10:57:24	1879.25	Logging 002 09-Apr-12 10:57 Up @1879.3f
	09-Apr-12 11:07:28	1564.89	Halting 002 09-Apr-12 10:57 Up @1879.3f
	09-Apr-12 11:11:41	1879.00	Logging 003 09-Apr-12 11:11 Up @1879.0f
	09-Apr-12 11:40:46	194.85	Halting 003 09-Apr-12 11:11 Up @1879.0f
	09-Apr-12 11:46:08	1878.50	Relogging 003.01 09-Apr-12 11:45 Up
	09-Apr-12 11:46:40	194.85	Halting 003.01 09-Apr-12 11:45 Up
Data: 0408_CRYSTALRIV0003 LCCH-GTET-DSN-SDL-FLEX-DLL-MGRD-CENTHALLIBUR-BE7628			Date: 09-Apr-12 11:49:40

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	9.500	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	0.080	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	1901.00	ft
	SHARED	BHT	Bottom Hole Temperature	92.0	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	
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	1.100	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
DLLT	DLOK	Process Dual Laterolog?	Yes	
DLLT	DBOK	Process Dual Laterolog Borehole Corrections?	No	
DLLT	DLOK	Calculate Dual Laterolog DI?	Yes	
MSFL	DLOK	Process MSFL?	Yes	
MSFL	SLPD	Use MSFL Slim Hole Pad?	No	
MSFL	CLOK	Process Caliper Outputs?	Yes	

BOTTOM

Data: 0408_CRYSTALRIV0003 LCCH-GTET-DSN-SDL-FLEX-DLL-MGRD-CENT002 09-Apr-12 10:57 Up @1879.3f

Date: 09-Apr-12 11:48:49

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head Tension-798 30.00 lbs		Ø 3.625 in →		← Load Cell @ 114.56 ft	2.00 ft	115.56 ft
						113.56 ft

Isolator Assy.-
BRID_3
274.00 lbs

Ø 3.625 in →

15.00 ft

Return Electrode-
CR
57.00 lbs

Ø 3.625 in →

2.50 ft

98.56 ft

96.06 ft

Isolator Assy.-
BRID_1
274.00 lbs

Ø 3.625 in →

15.00 ft

Barrier Sub-B5
38.00 lbs

Ø 3.625 in →

1.00 ft

81.06 ft

80.06 ft

GTET-11071198RD
165.00 lbs

Ø 3.625 in →

8.52 ft

← GammaRay @ 74.00 ft

DSN Decentralizer-
10965405RD-BK
DSNT-10965405RD- 6.60 lbs
BK
174.00 lbs

Ø 5.000 in* →

Ø 3.625 in →

9.69 ft

71.54 ft

← DSN Far @ 64.60 ft
← DSN Near @ 63.85 ft

61.85 ft

SDLT-10965405RD-BK
360.00 lbs

SDLT Pad-10965405RD-BK
65.00 lbs
Microlog Pad-
10965405RD-BK
8.00 lbs

Ø 4.500 in →

Ø 4.750 in² →
Ø 4.750 in² →

Microlog @ 54.04 ft
SDL Calliper @ 53.86 ft
SDL @ 53.85 ft

10.81 ft

51.04 ft

Flex Joint-Flex1
140.00 lbs

Ø 3.625 in →

5.67 ft

45.37 ft

Centralizer 25-one
8.00 lbs

Ø 4.000 in² →

DLLT-10935691GR
390.00 lbs

Ø 3.625 in →

32.04 ft

← DLLT Sonde @ 22.08 ft

13.33 ft

MSFL-
5691GR_6747BLK
214.00 lbs

Ø 4.000 in →

10.33 ft

← MSFL Pad @ 5.42 ft

CENT-798
35.00 lbs

Ø 3.625 In →



3.00 ft

3.00 ft

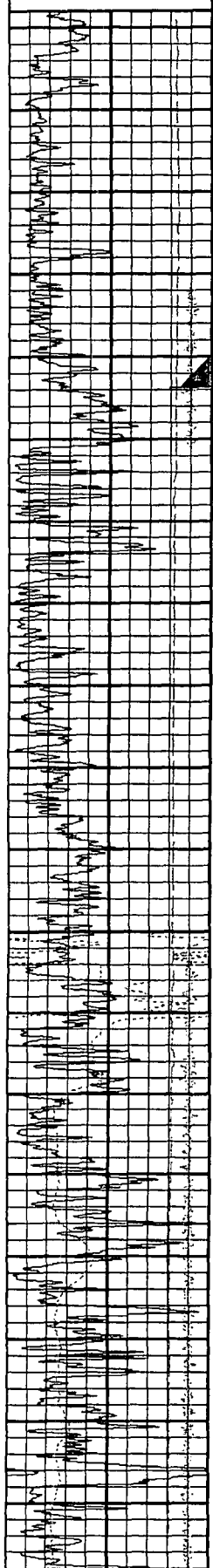
0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max Log. Speed (fpm)
CHT	Cable Head with Load Cell	798	30.00	2.00	113.56	300.00
ISA	Isolator Assembly - Rigid Bridle	BRID_3	274.00	15.00	98.56	300.00
RE	Return Electrode - Rigid Bridle	CR	57.00	2.50	96.06	300.00
ISA	Isolator Assembly - Rigid Bridle	BRID_1	274.00	15.00	81.06	300.00
BSUB	Barrier Sub - Rigid Bridle	BS	38.00	1.00	80.06	300.00
GTET	Gamma Telemetry Tool	11071198RD	165.00	8.52	71.54	60.00
DSNT	Dual Spaced Neutron	10965405RD-BK	174.00	9.69	61.85	60.00
DCNT	DSN Decentralizer	10965405RD-BK	6.60	5.13 *	65.18	300.00
SDLT	Spectral Density Tool	10965405RD-BK	360.00	10.81	51.04	60.00
MICP	Microlog Pad	10965405RD-BK	8.00	1.00 *	53.54	60.00
SDLP	Density Inside Pad	10965405RD-BK	65.00	2.55 *	53.25	60.00
FLEX	Flex Joint	Flex1	140.00	5.67	45.37	300.00
DLLT	Dual Laterolog	10935691GR	390.00	32.04	13.33	100.00
OBCEN	Centralizer - 25 in. Overbody	one	8.00	2.08 *	40.67	300.00
MSFL	Micro Spherically Focussed Log	5691GR_6747BLK	214.00	10.33	3.00	60.00
CENT	Bottom Centralizer	798	35.00	3.00	0.00	300.00
Total			2,238.60	115.56		
						* Not included in Total Length and Length Accumulation.
Data: 0408_CRYSTALRIV0003 LCCH-GTET-DSN-SDL-FLEX-DLL-MGRD-CENTIDLE						Date: 09-Apr-12 11:42:26

COMPANY	KC RESOURCES, INC.		
WELL	JONES "D" No. 6		
FIELD	ATOKA; SA		
COUNTY	EDDY	STATE	NEW MEXICO
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY	

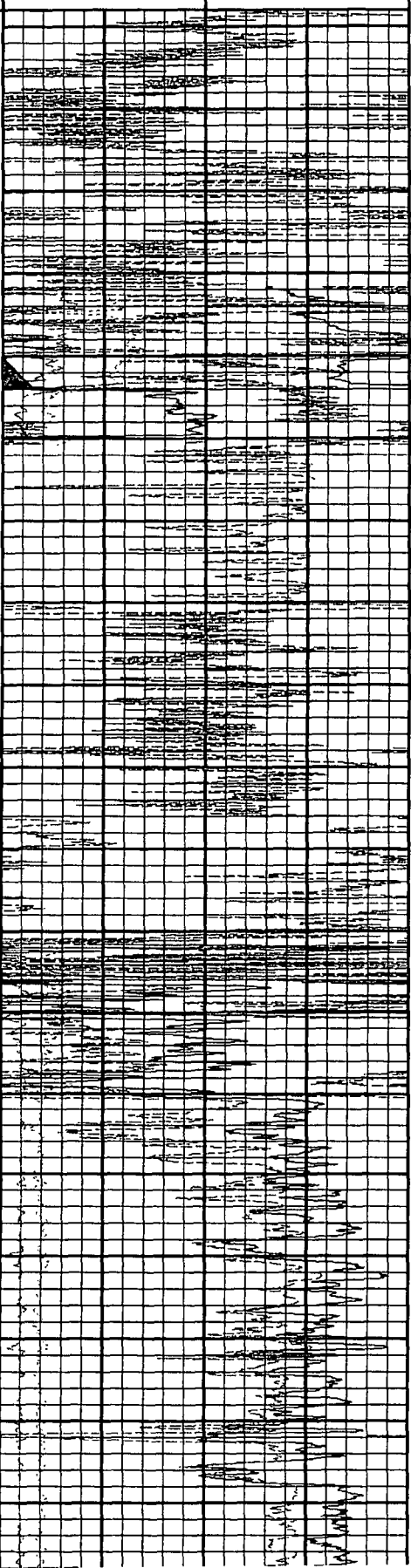
HALLIBURTON		Plot Time: 09-Apr-12 12:56:37 Plot Range: 190 ft to 1879 ft 0408_CRYSTALRIVWell Based... Plot File: \\DSN_SDL\DSNT-SDLT 1in	
MAIN PASS 1" = 100' (LIMESTONE MATRIX)			
-18	FarQuality	2	
18	NearQuality	-2	
2	Bulk Density		3
g/cc			

10K	0
lb-f	
6	16
in	
0	100
Gamma API	
API	

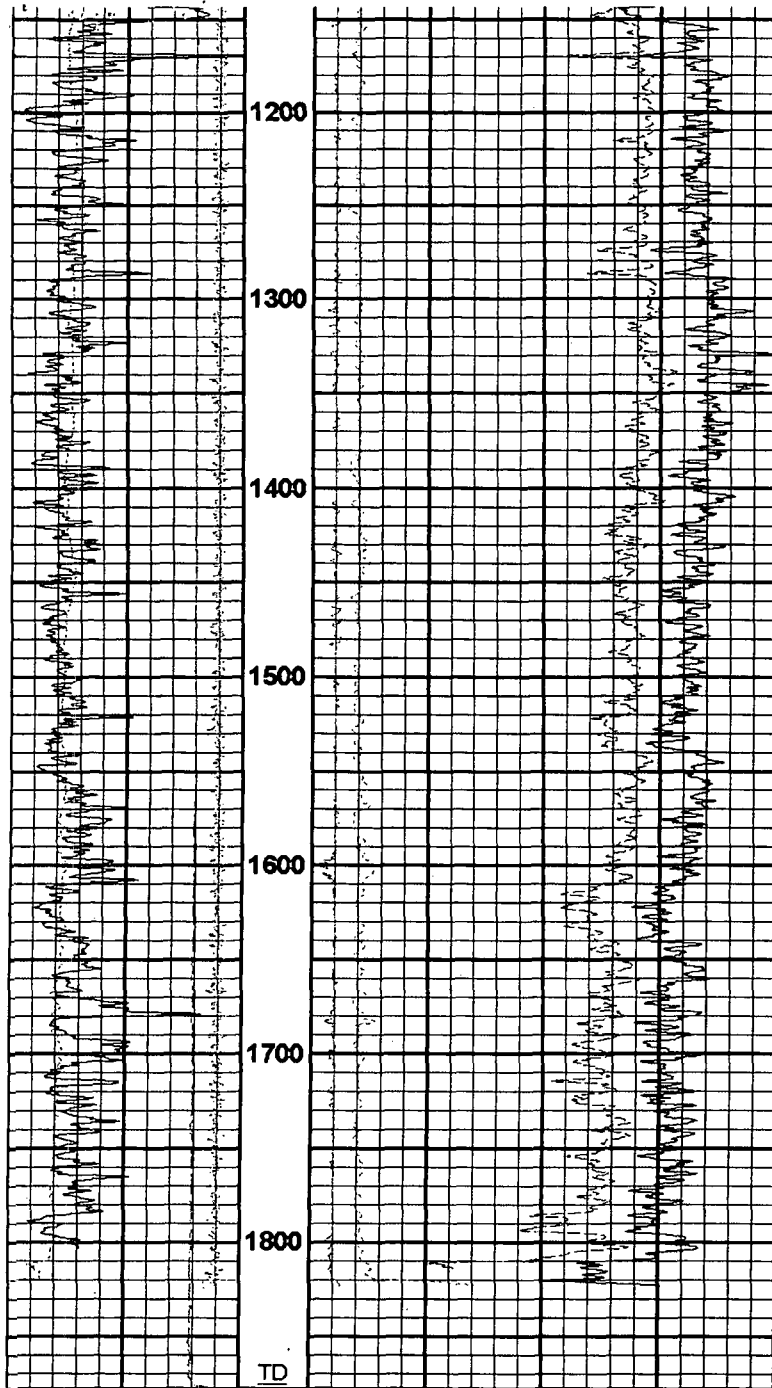


200
300
400
500
600
700
800
900
1000
1100

30	-10
% Matrix: Limestone	
-0.5	4.5
Pe Corr	
-0.2	0.8
Density Corr	
g/cc	



CSG

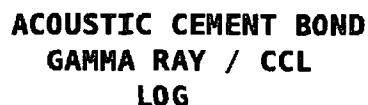


0	Gamma API	100	-0.2	Density Corr	0.8
	API			g/cc	
6	SDL Caliper	16	-0.5	Pe Corr	4.5
	in				
10K	Tension	0	30	Neutron Porosity	-10
	lb-ft			% Matrix: Limestone	
18	NearQuality	-2	2	Bulk Density	3
				g/cc	
-18	FarQuality	2			

HALLIBURTON

Plot Time: 09-Apr-12 12:56:39
 Plot Range: 190 ft to 1879 ft
 0408_CRYSTALRIVWell Based...
 Plot File: \\DSN_SDLIDSNT-SDLT 1in

MAIN PASS. 1" = 100'
(LIMESTONE MATRIX)



CASING RECORD	SIZE	WT/FT	GRADE	TYPE JOINT	TOP	BOTTOM
SURFACE STRING	8.625				SURF.	425'
PROD. STRING						
PROD. STRING	4.5				SURF.	T.D.
LINER						

ALL interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretation or recommendation and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation or recommendation made by any of our employees or agents.

REMARKS	Rtg: STANDARD
1. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 83	

Service Order # 191111

CORRECTED -8' TO HALLIBURTON DUAL SPACED NEUTRON SPECTRAL DENSITY

BHT °F

LOG DATED 09-APR-2012

Prints:

[illegible]

DEPTH SCALE: 5":100'

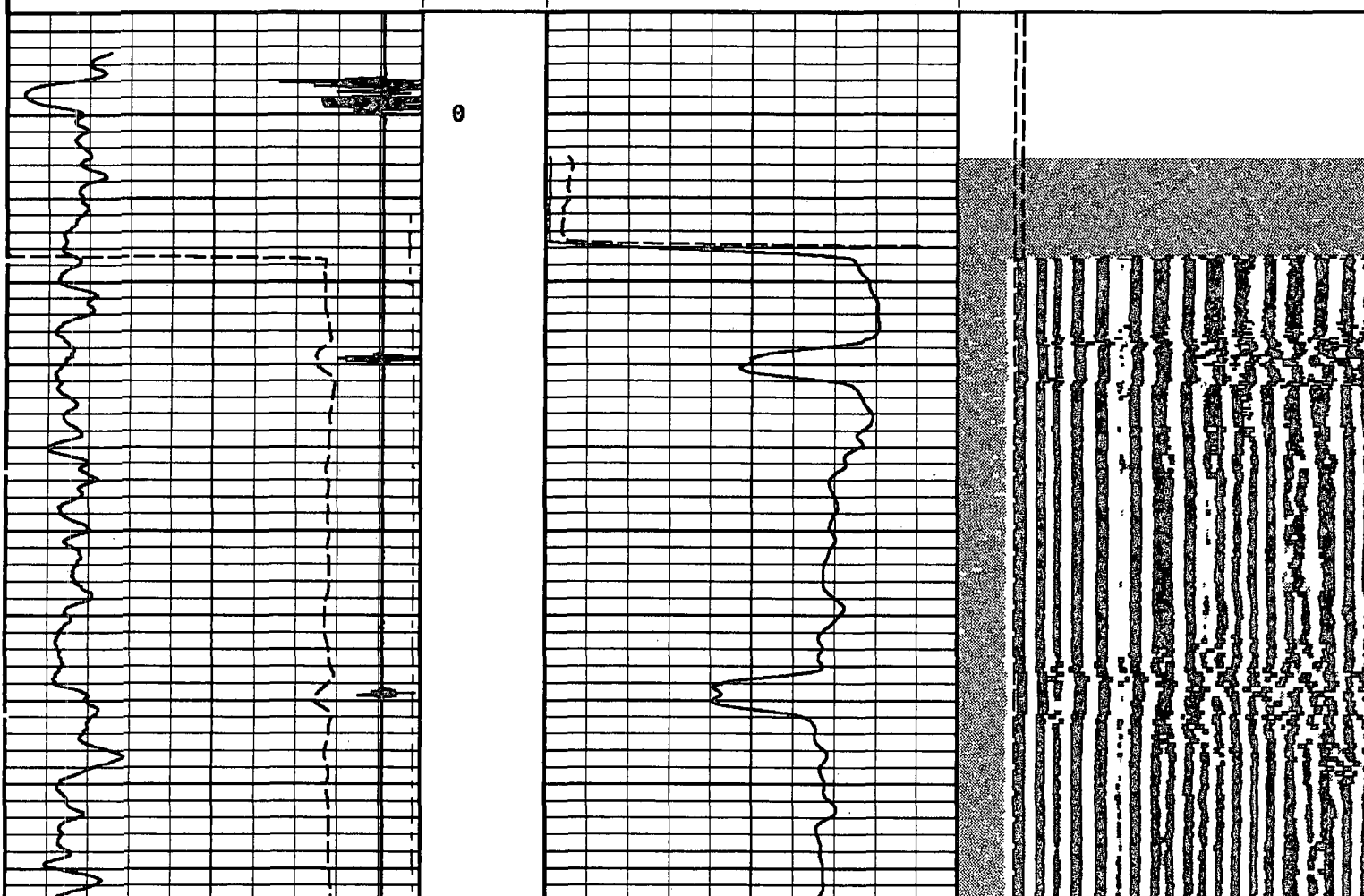
VERSION: 80214133R"

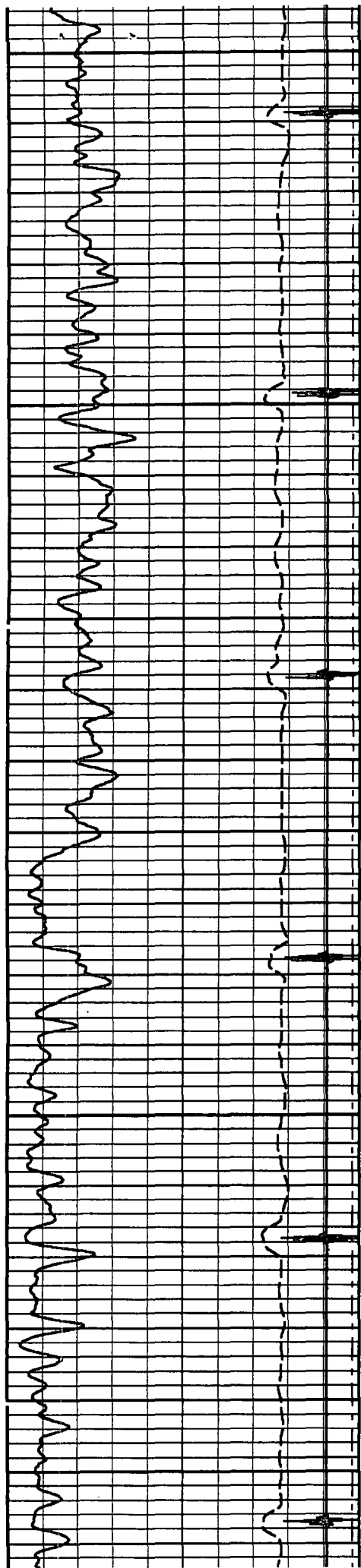
MAIN PASS

191111 CBLM

FINISH DEPTH: 11.5 Feet DIRECTION: UP DATE: 04/12/2012 TIME: 03:22 MODE: RECOMPUTE
RECOMPUTED DATE: 04/12/2012 TIME: 03:22

Tension								
10000	Pounds	0						
CCL								
-5000	Millivolts	500						
Gamma Ray			AMPX5			FREE PIPE GATE		
0	API	100	0	Millivolts	20	200.0	Mev	1200.0
3FT TT			3FT AMP			VARIABLE DENSITY 5FT		
305	Microseconds	205	0	Millivolts	100	200	Microseconds	1200

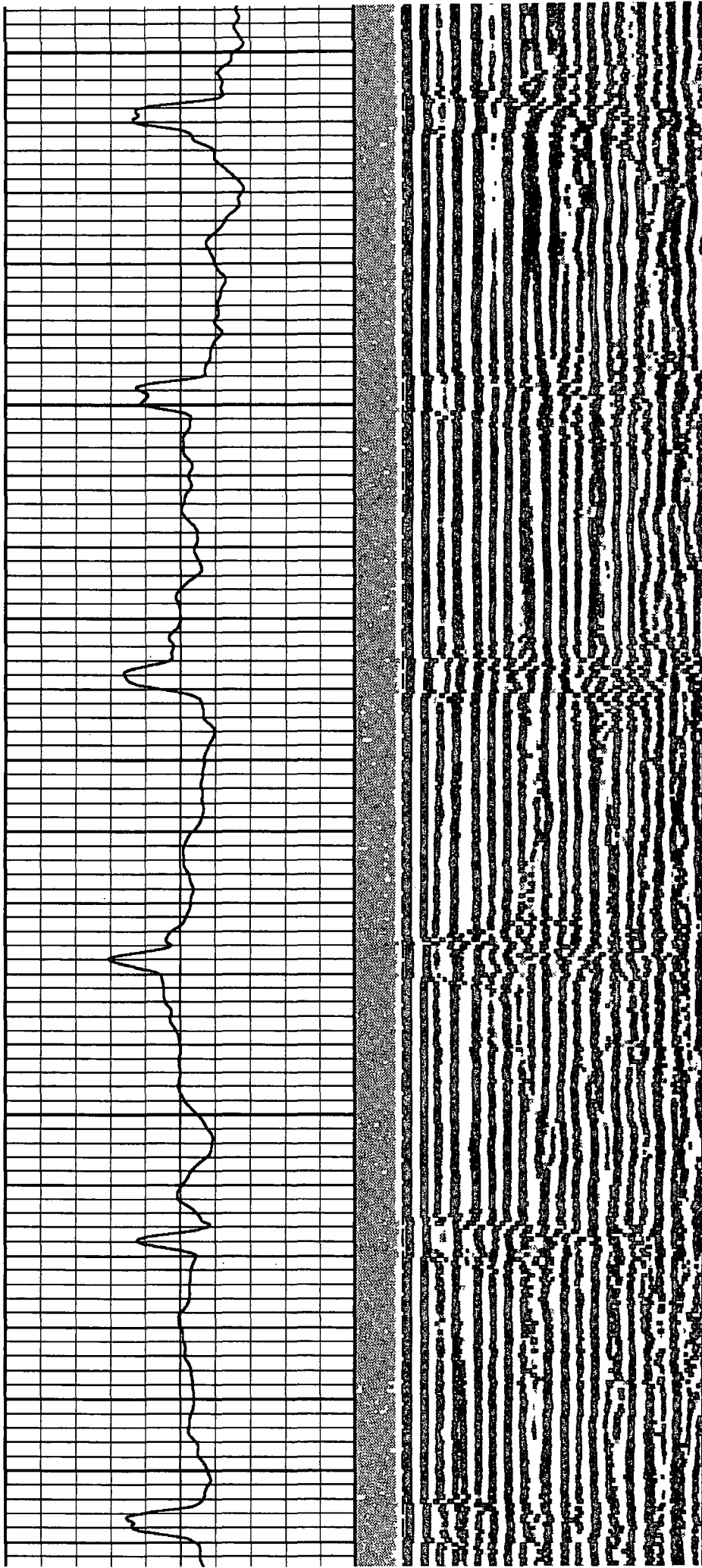


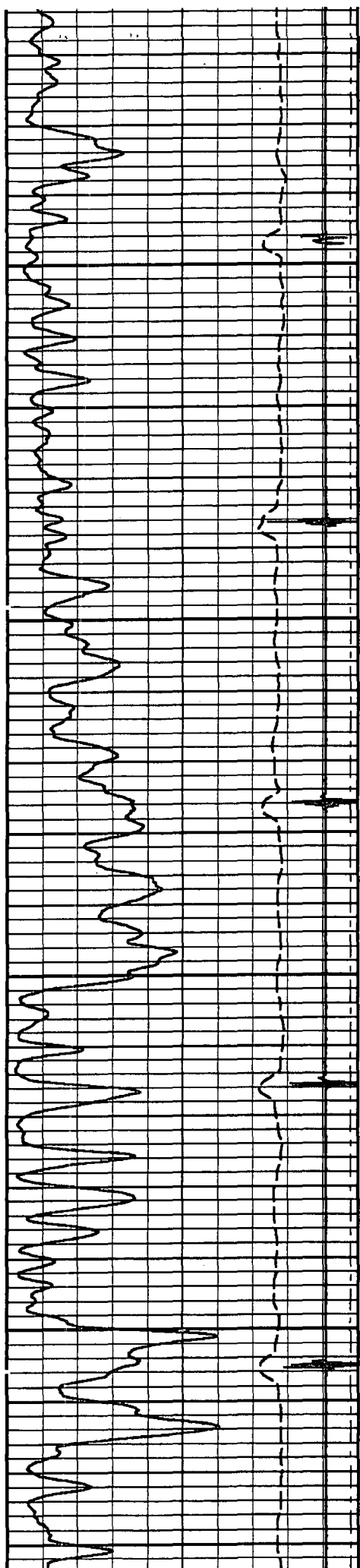


100

200

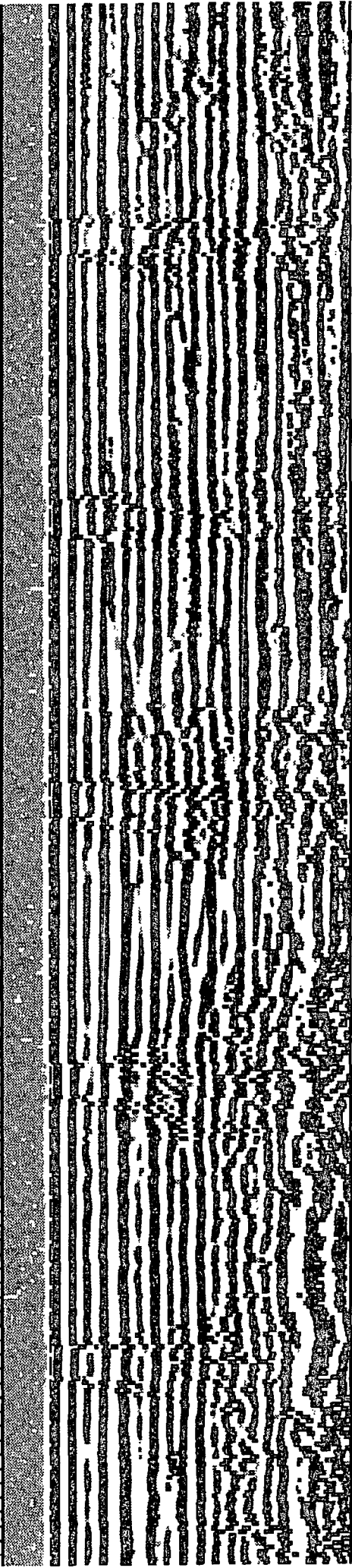
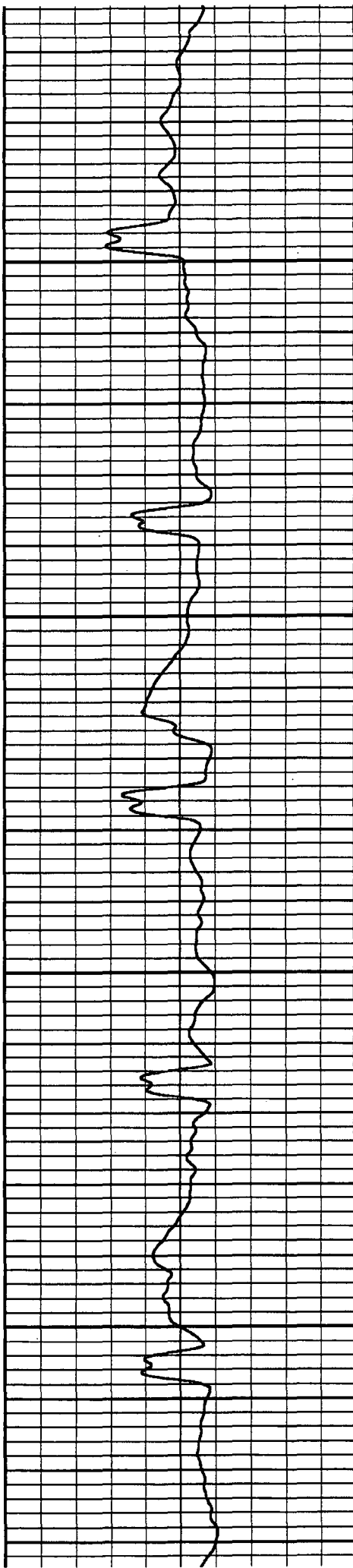
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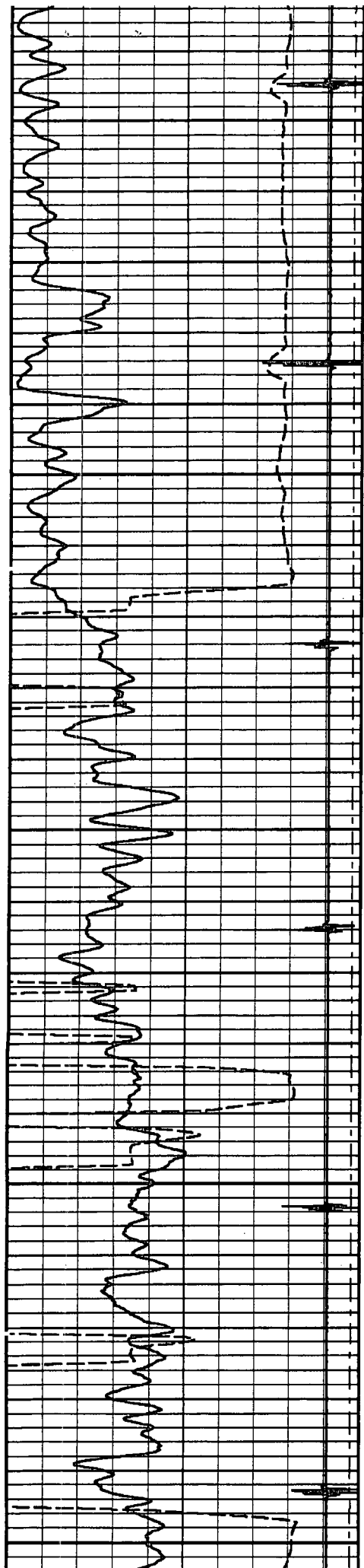




400

500

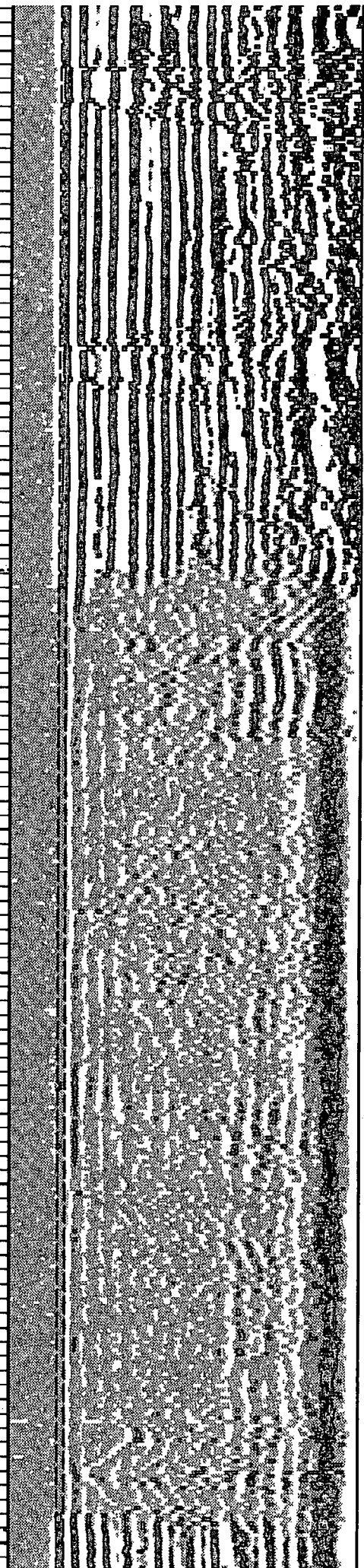
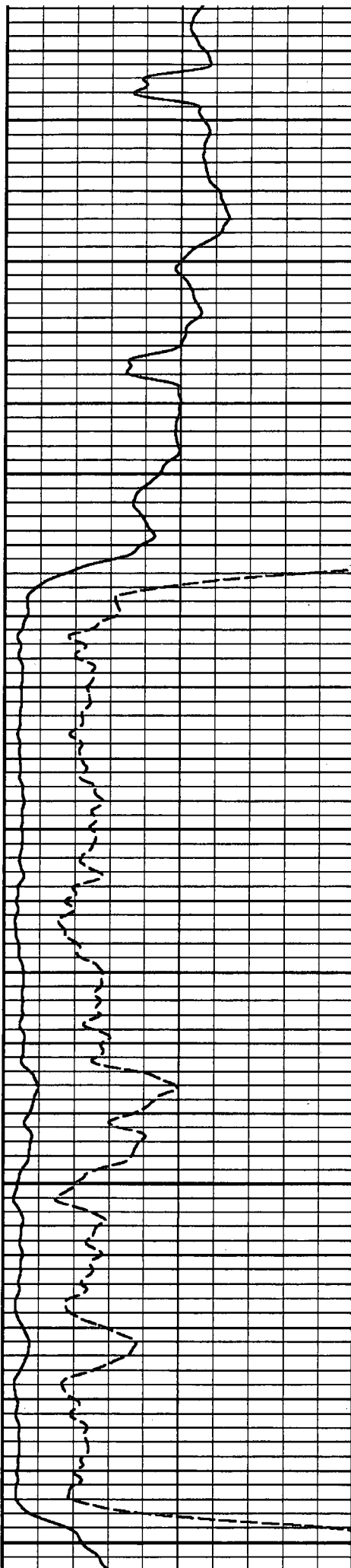


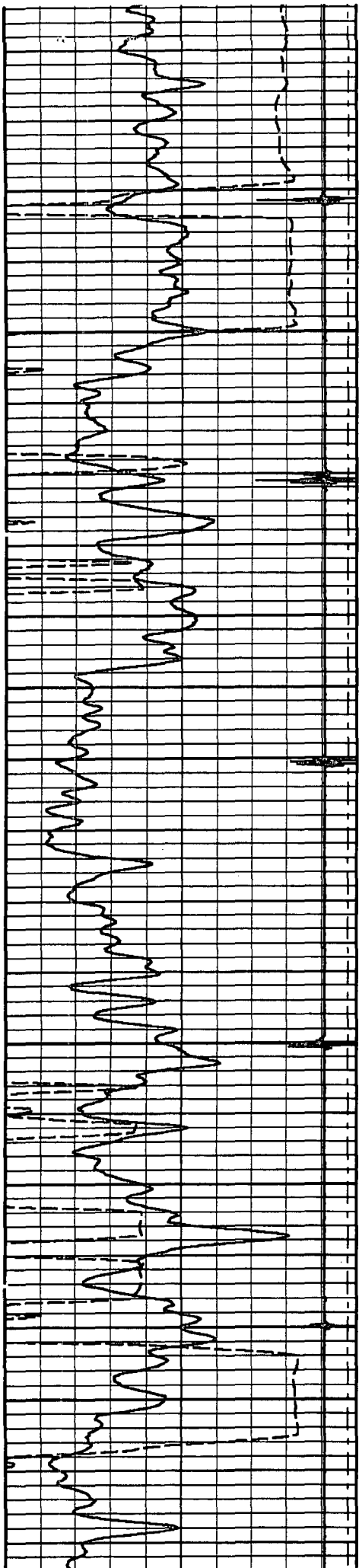


600

EST
CEMENT
TOP

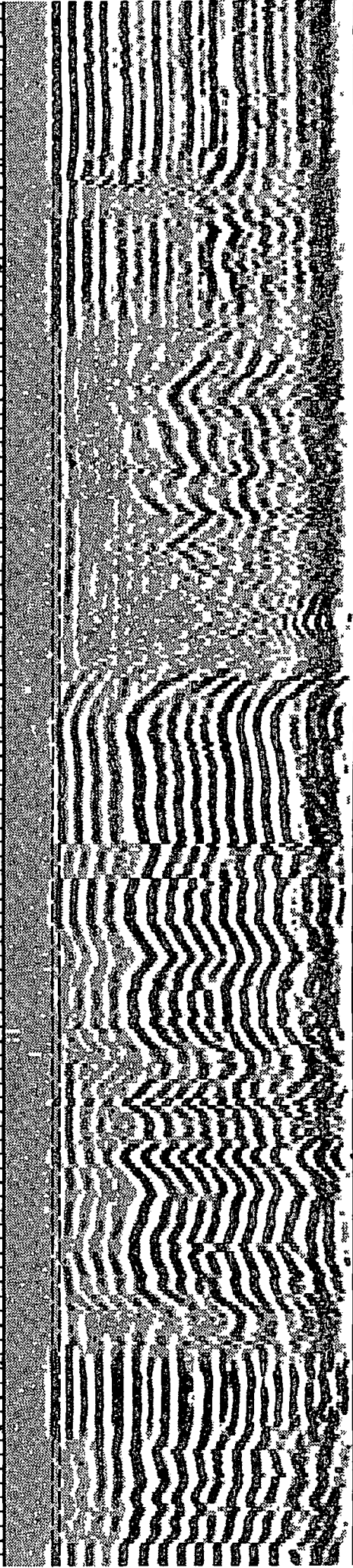
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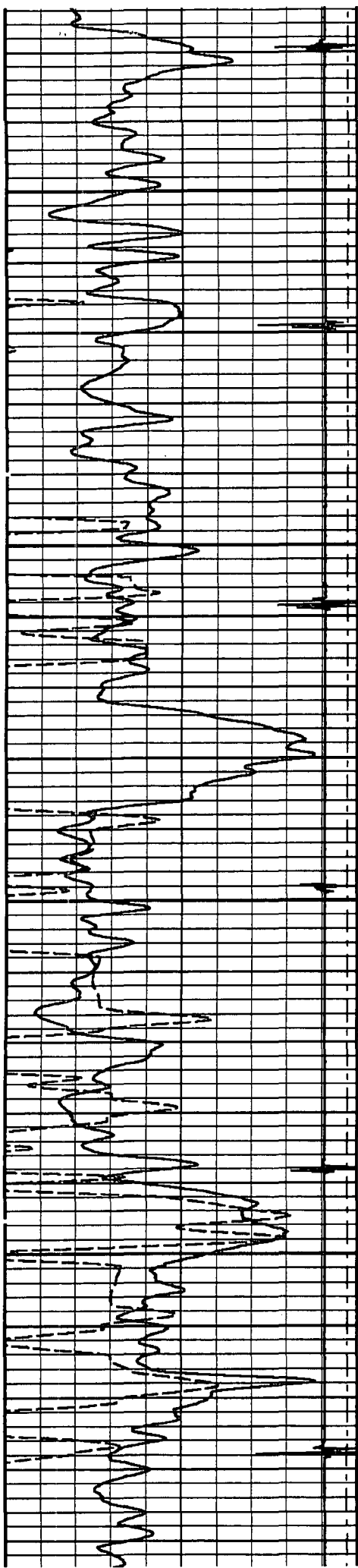




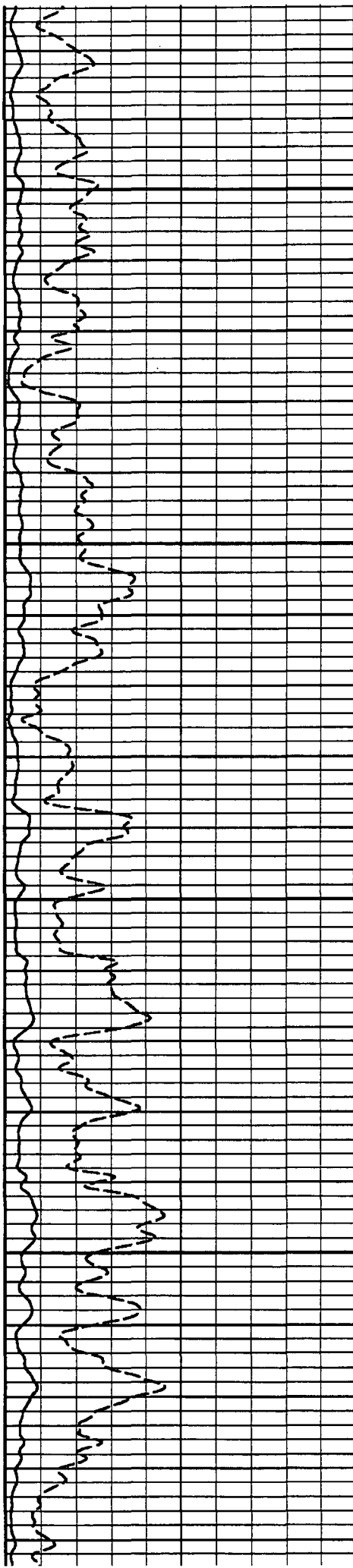
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900

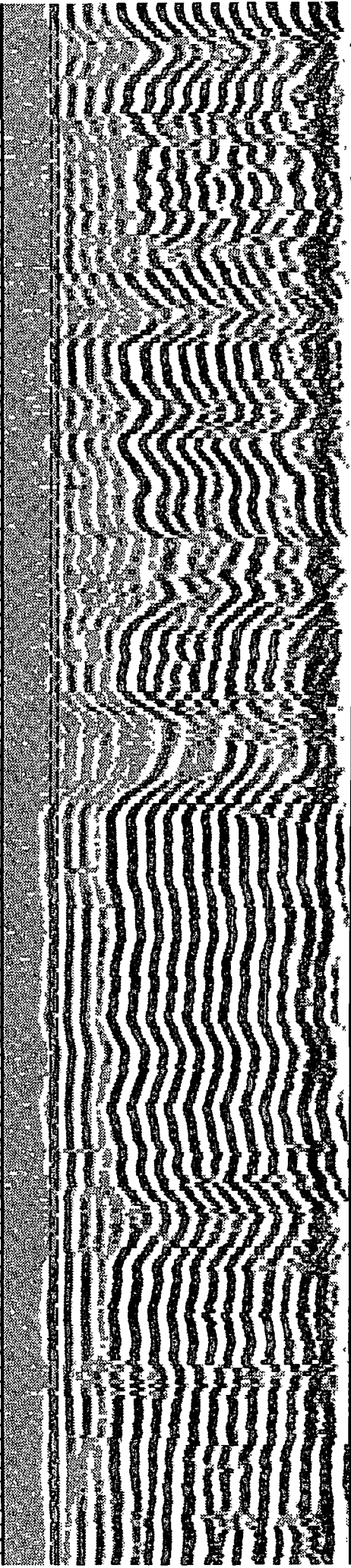


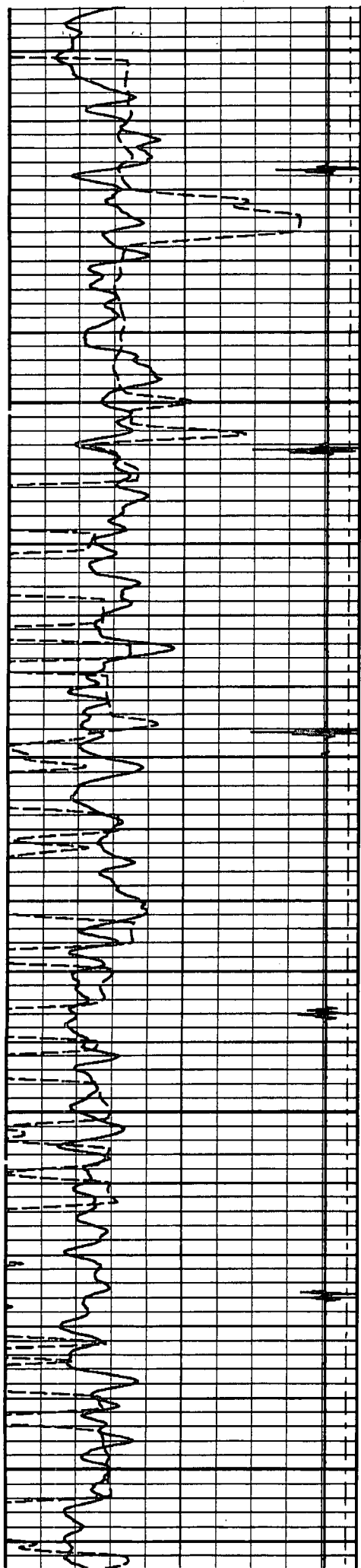


1000



1100

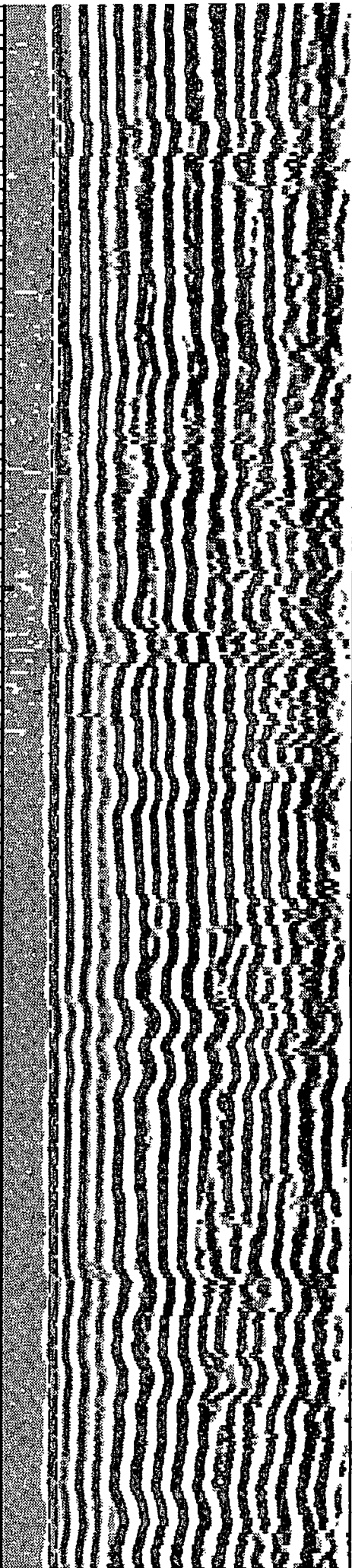
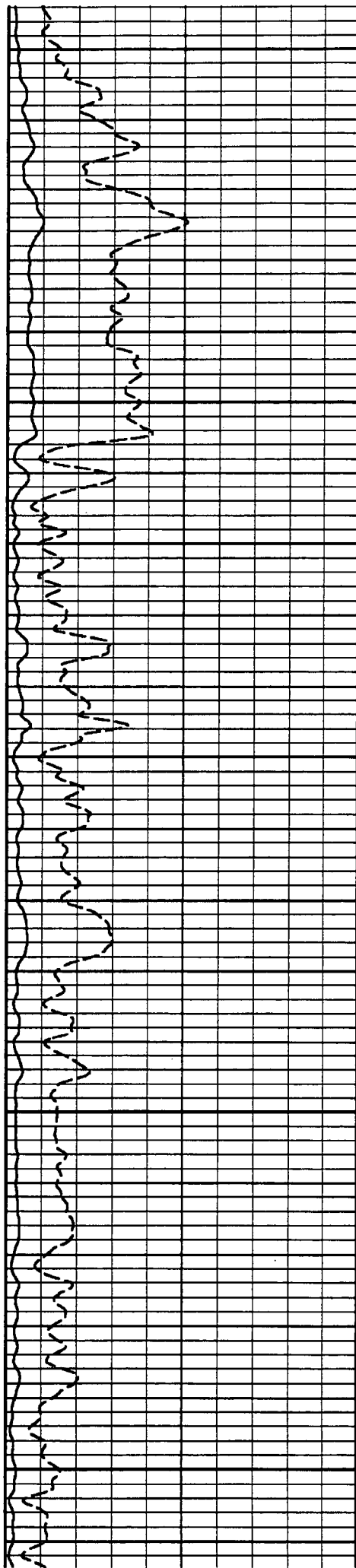


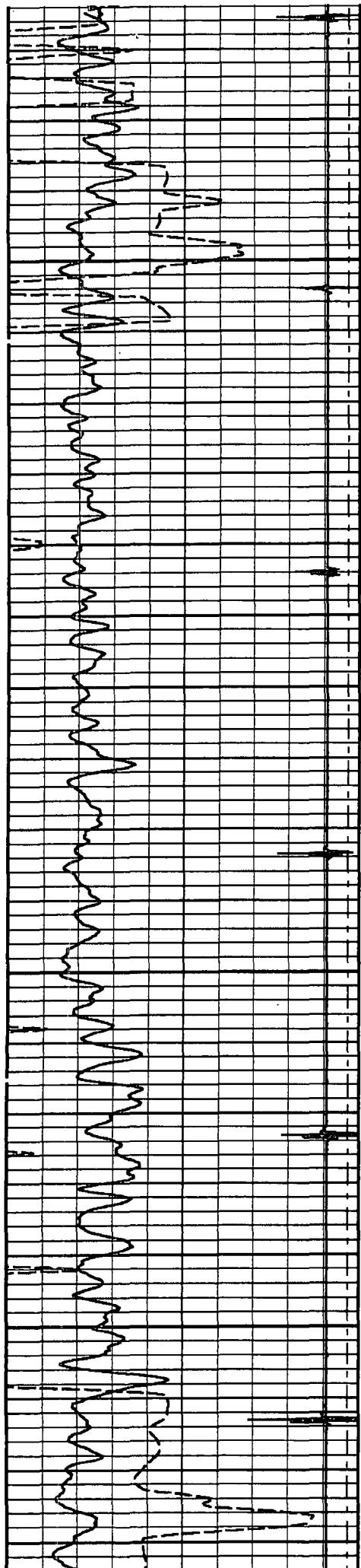


1200

1300

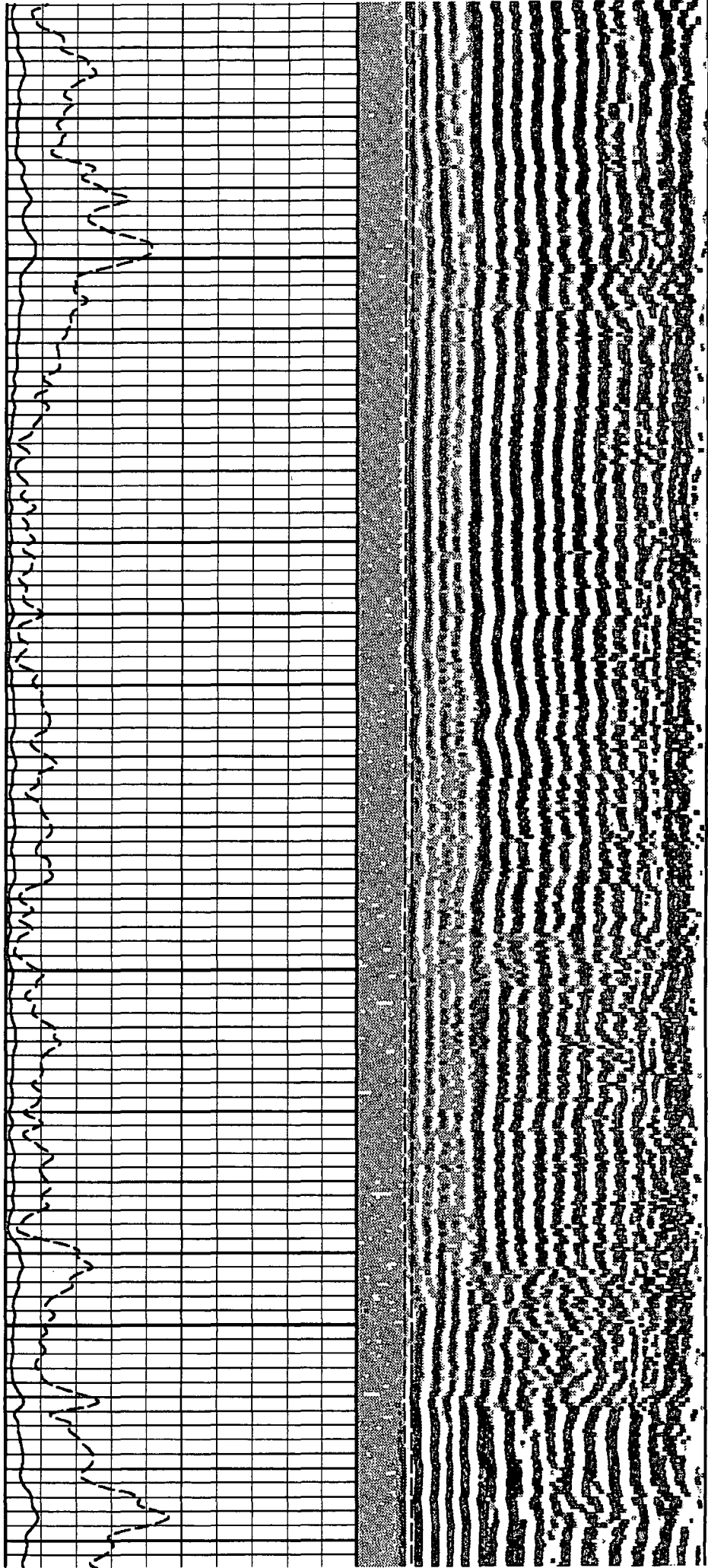
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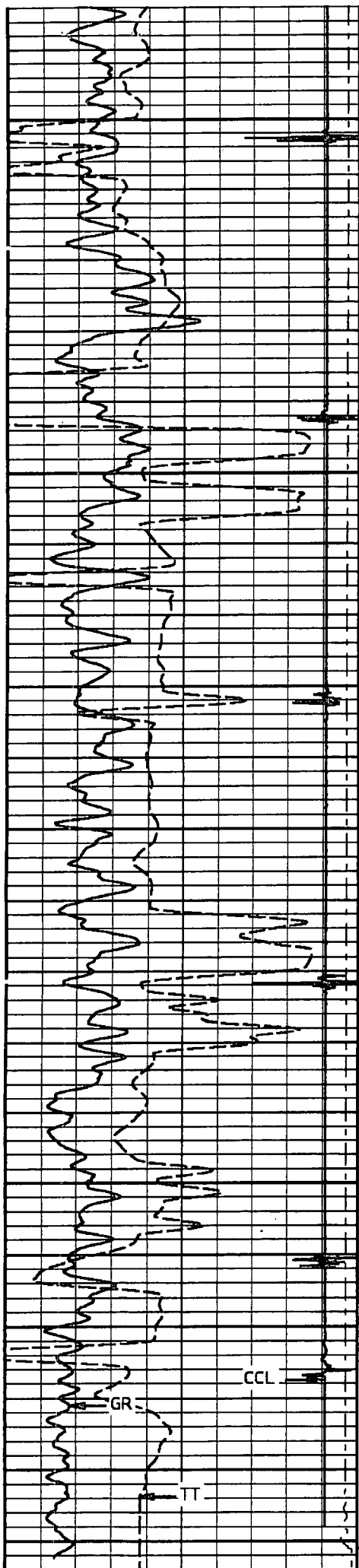




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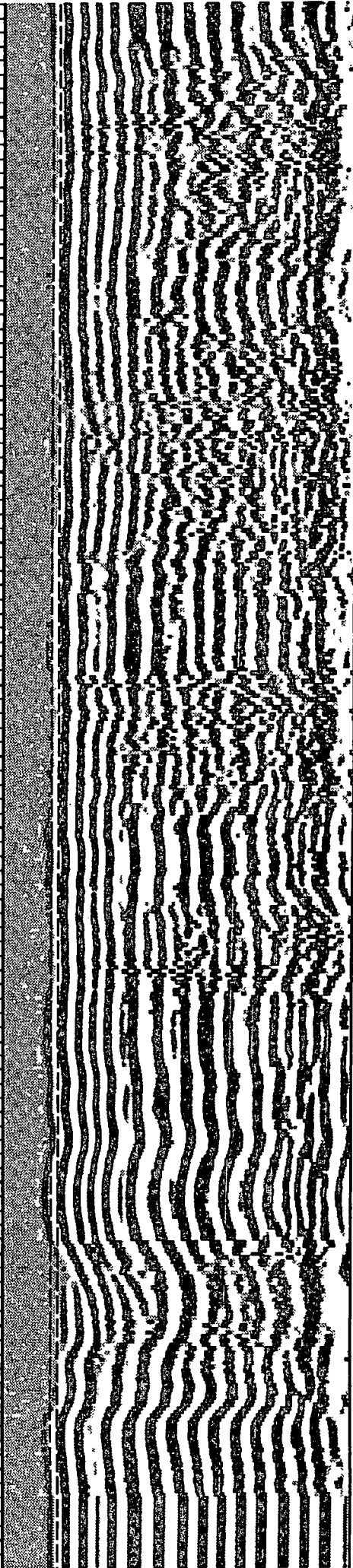
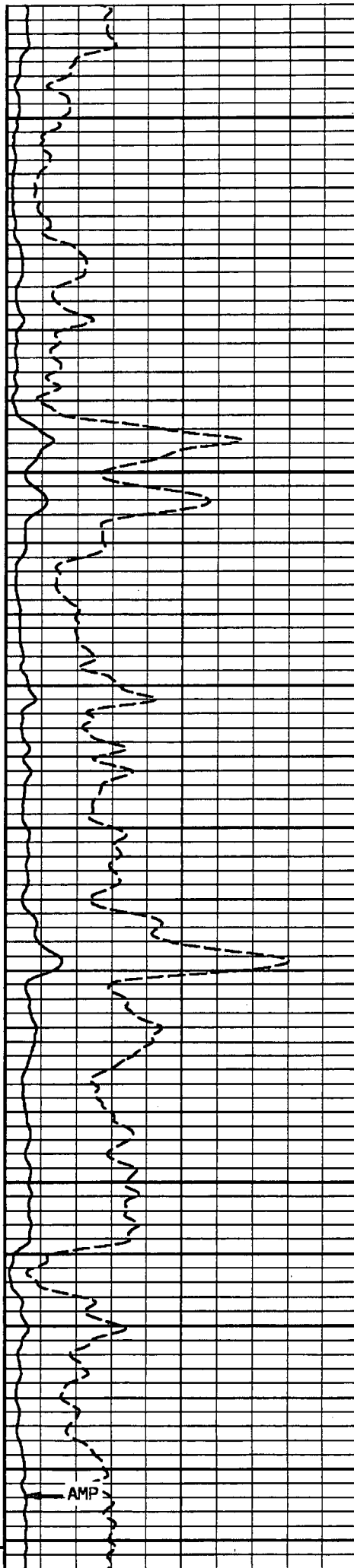
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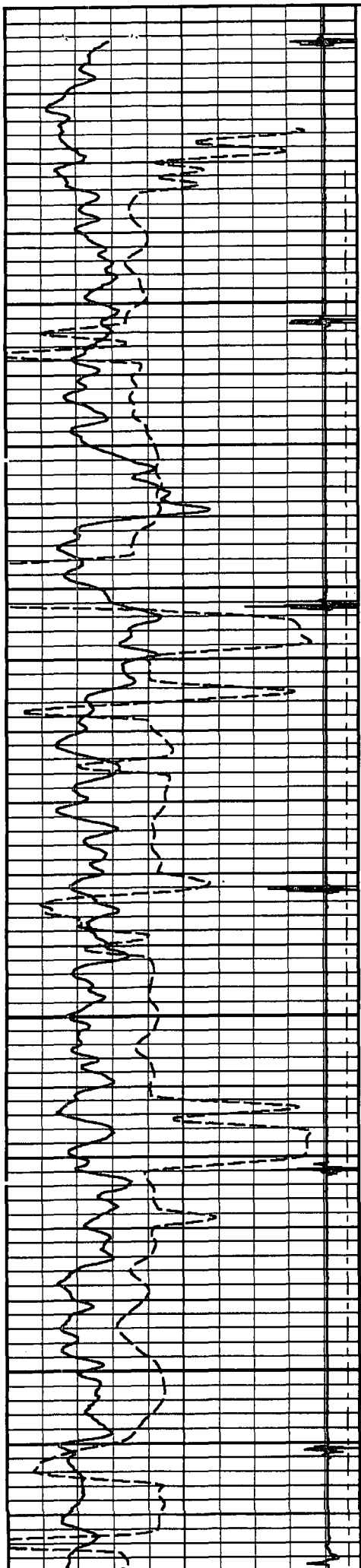


1700

1800

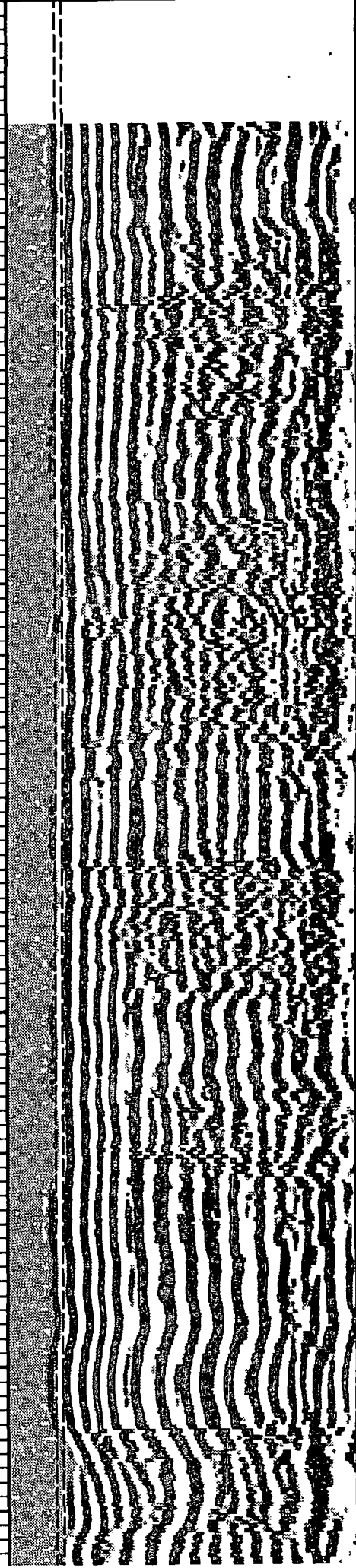
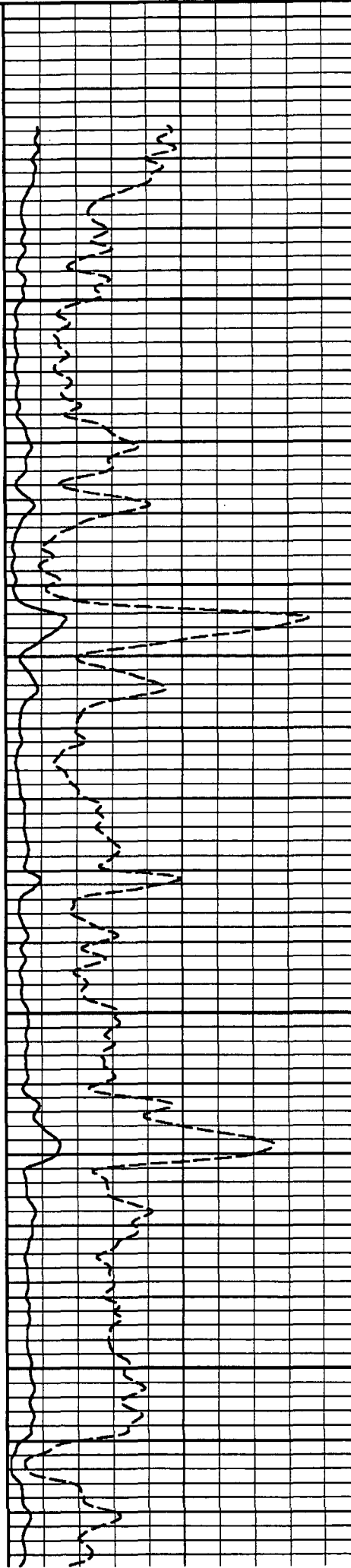


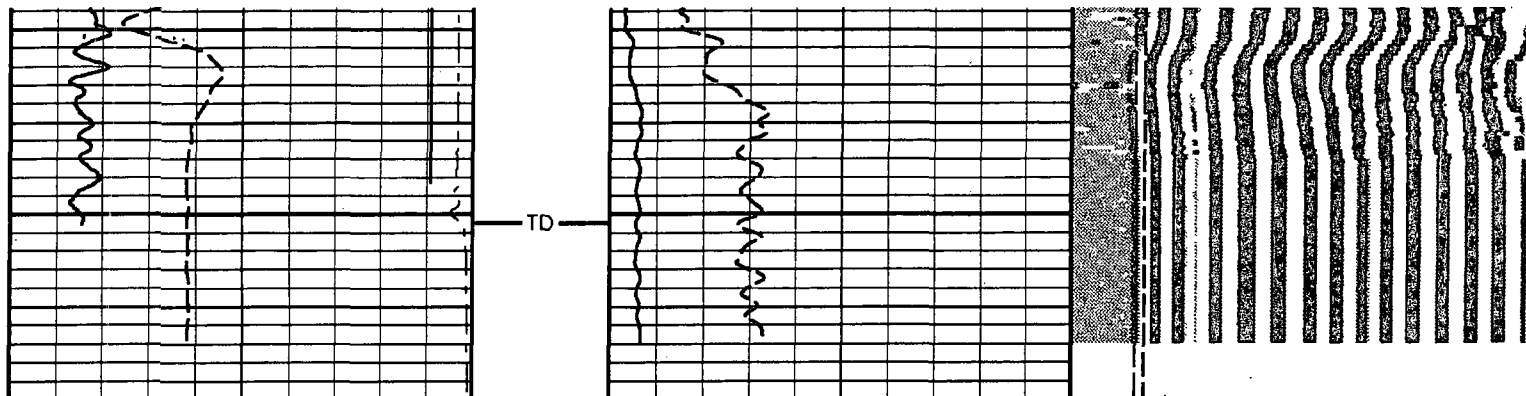
DEPTH SCALE: 5":100'			VERSION: 80214133R"		
REPEAT PASS					
191111 sbt1					
FINISH DEPTH: 1639.6 Feet DIRECTION: UP DATE: 04/12/2012 TIME: 02:47 MODE: RECOMPUTE					
RECOMPUTED DATE: 04/12/2012 TIME: 03:17					
Tension					
10000	Pounds	0			
CCL					
-5000	Millivolts	500			
Gamma Ray					
0	API	100			
3FT TT					
305	Microseconds	205			
			AMPX5		FREE PIPE GATE
			0	Millivolts	20
			200.0	Mev	1200.0
			3FT AMP		VARIABLE DENSITY 5FT
			0	Millivolts	100
			200	Microseconds	1200



1700

1800





3FT TT			3FT AMP			VARIABLE DENSITY 5FT		
305	Microseconds	205	0	Millivolts	100	200	Microseconds	1200
Gamma Ray			AMPX5			FREE PIPE GATE		
0	API	100	0	Millivolts	20	200.0	Mev	1200.0
CCL								
-5000	Millivolts	500						
Tension								
10000	Pounds	0						

START DEPTH: 1878.1 DIRECTION: UP DATE: 04/12/2012 TIME: 02:44 MODE: RECOMPUTE
 RECOMPUTED DATE: 04/12/2012 TIME: 03:17

191111 sbt1

REPEAT PASS

DEPTH SCALE: 5":100'

VERSION: 80214133R"

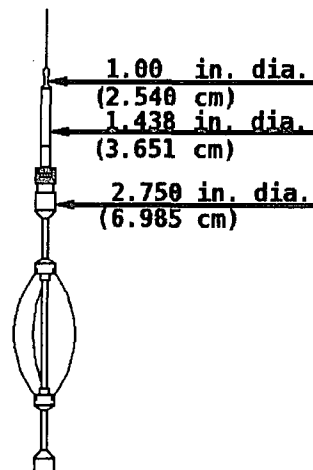
1 7/16 Adapter Head

Weight 1 lb
 Length 12 in
 Max. Diameter 1.438 in

Total Stack Weight 217 lb in air
 Total Stack Length 27.15 ft

Slim Hole Centralizer

Weight 11.9 lb
 Length 2.82 ft
 Max. Diameter 2.750 in



Collar Locator

Weight 39.8 lb
Length 3.40 ft
Max. Diameter 2.750 in

Slim Hole Gamma Ray

Weight 39.8 lb
Length 4.71 ft
Max. Diameter 2.750 in

Slim Hole Centralizer

Weight 23.8 lb
Length 3.08 ft
Max. Diameter 2.750 in

Sector Bond

Weight 89.8 lb
Length 10.32 ft
Max. Diameter 2.750 in

Slim Hole Centralizer

CCL 23.57 ft

2.750 in. dia.
(6.985 cm)

2.750 in. dia.
(6.985 cm)

GR 19.97 ft

2.750 in. dia.
(6.985 cm)

2.750 in. dia.
(6.985 cm)

SBT/CBL Tx

SBT Rx 7.77 ft

3' Rx 7.28 ft

5' Rx 6.28 ft

2.750 in. dia.
(6.985 cm)



weight 11.5 lb
Length 2.82 ft
Max. Diameter 2.750 in

Tool Zero



COMPANY KC RESOURCES, INC.

WELL JONES "D" NO.6

FIELD ATOKA; SA

COUNTY EDDY

STATE NEW MEXICO



Weatherford

HALLIBURTON

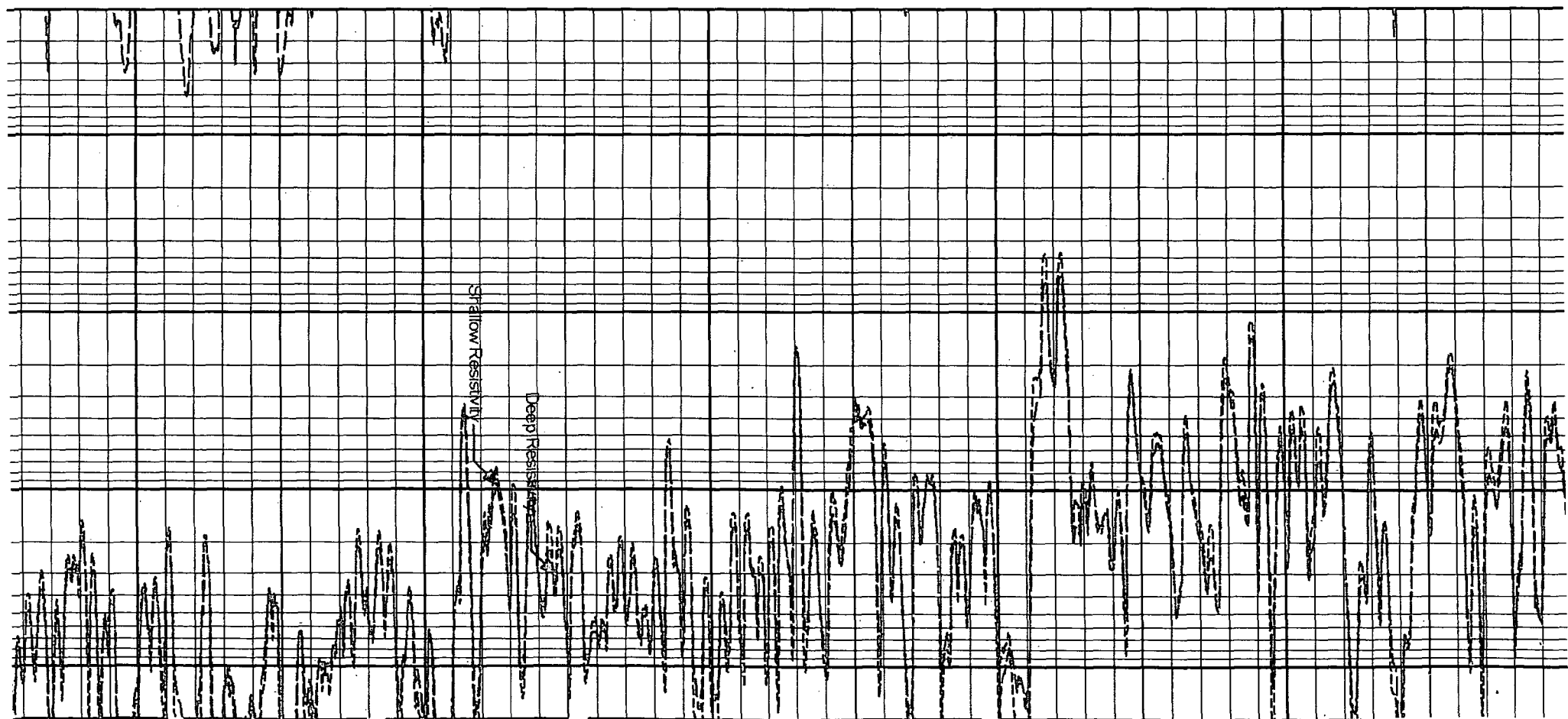
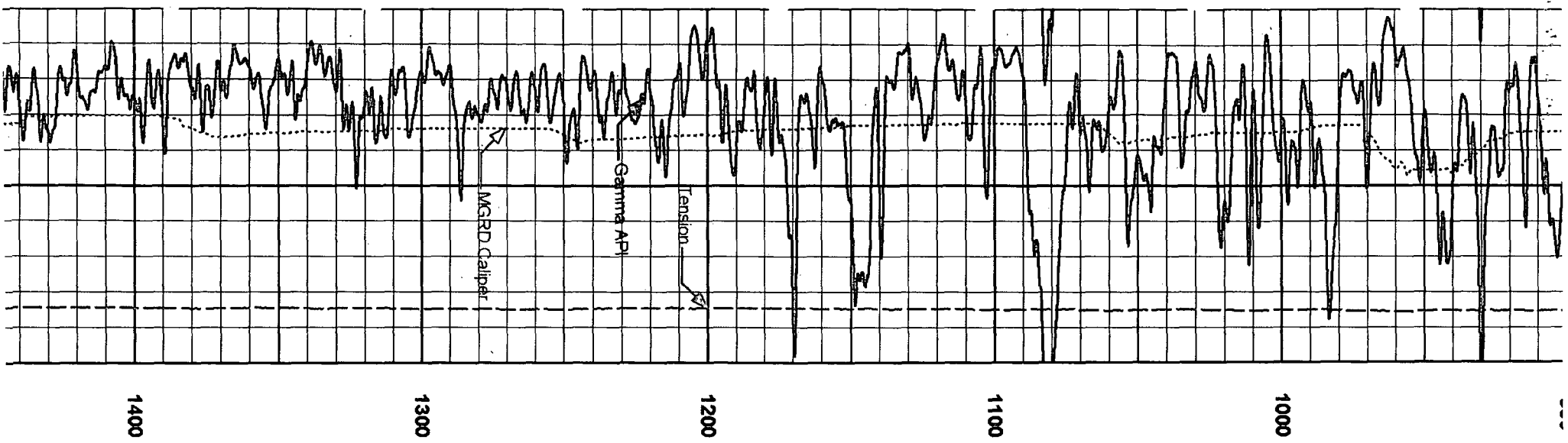
DUAL LATEROLOG MICRO - GUARD

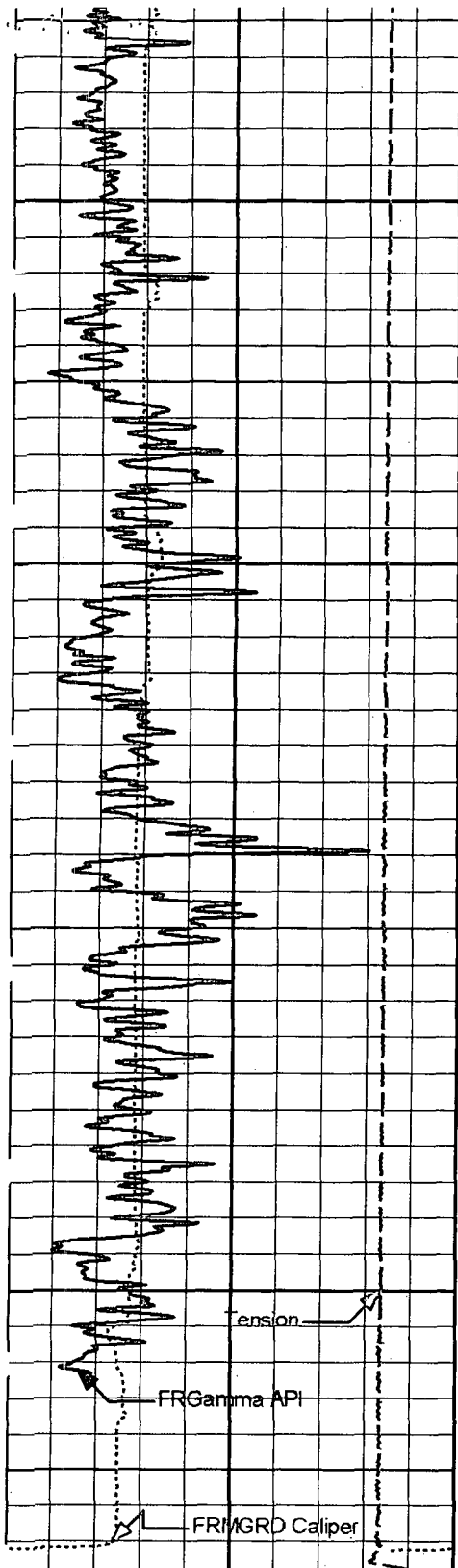
COMPANY		KC RESOURCES, INC.		COMPANY		KC RESOURCES, INC.	
WELL		JONES "D" No. 6		WELL		JONES "D" No. 6	
FIELD		ATOKA; SA		FIELD		ATOKA; SA	
COUNTY		EDDY		COUNTY		EDDY	
STATE		NEW MEXICO		STATE		NEW MEXICO	
Permanent Datum		GL		Sect. 13		Twp. 18S	
Log measured from		KB		Rge. 26E		Elev. 3292.0 ft	
Drilling measured from		KB				Elev. 3298.0 ft	
						D.F. 3292.0 ft	
Date		09-Apr-12				Other Services:	
Run No.		ONE				DSN/SDL	
Depth - Driller		1901.00 ft					
Depth - Logger		1877.0 ft					
Bottom - Logged Interval		1840 ft					
Top - Logged Interval		800 ft					
Casing - Driller		8.625 in @ 425.0 ft					
Casing - Logger		420.0 ft					
Bit Size		7.875 in					
Type Fluid in Hole		BRINE					
Density		9.5 ppg					
Viscosity		20.00 cp					
PH		14.00 pH					
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		0.080 ohmm @ 75.00 degF					
Rmf @ Meas. Temperature		0.06 ohmm @ 75.00 degF					
Rmc @ Meas. Temperature		0.097 ohmm @ 75.00 degF					
Source Rmf		MEAS					
Rm @ BHT		0.07 ohmm @ 92.0 degF					
Time Since Circulation		4.0 hr					
Time on Bottom		09-Apr-12 11:21					
Max Rec. Temperature		92.0 degF @ 1877.0 ft					
Equipment Location		788 HOBBS, NM					
Recorded By		ALEXANDER PRICE					
Witnessed By		PHILLIPS WHITE					

Fold here

Service Ticket No.: 9419835		API Serial No.: 30-015-40091		PGM Version: WL INSITE R3.4.0 (Build 4)	
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.
Rmf @ Meas. Temp.	@	ONE	DLL	N/A	CENT
Rmc @ Meas. Temp.	@		10917125YL		
Source Rmf	Rmc	ONE	MGRD	HARD	ADJ
Rm @ BHT	@		7125YL_6747BI		
Rmf @ BHT	@				
Rmc @ BHT	@				
EQUIPMENT DATA					
GAMMA		ACOUSTIC		DENSITY	
Run No.	ONE	Run No.		Run No.	
Serial No.	11071198RD	Serial No.		Serial No.	
Model No.	GTET	Model No.		Model No.	
Diameter	3.625 in	No. of Cent.		Diameter	
Detector Model No.	T-102A	Spacing		Log Type	
Type	SCINT			Source Type	
Length	8 in	LSA [Y/N]		Serial No.	
Distance to Source	14 ft	FWDA [Y/N]		Strength	

LOGGING DATA





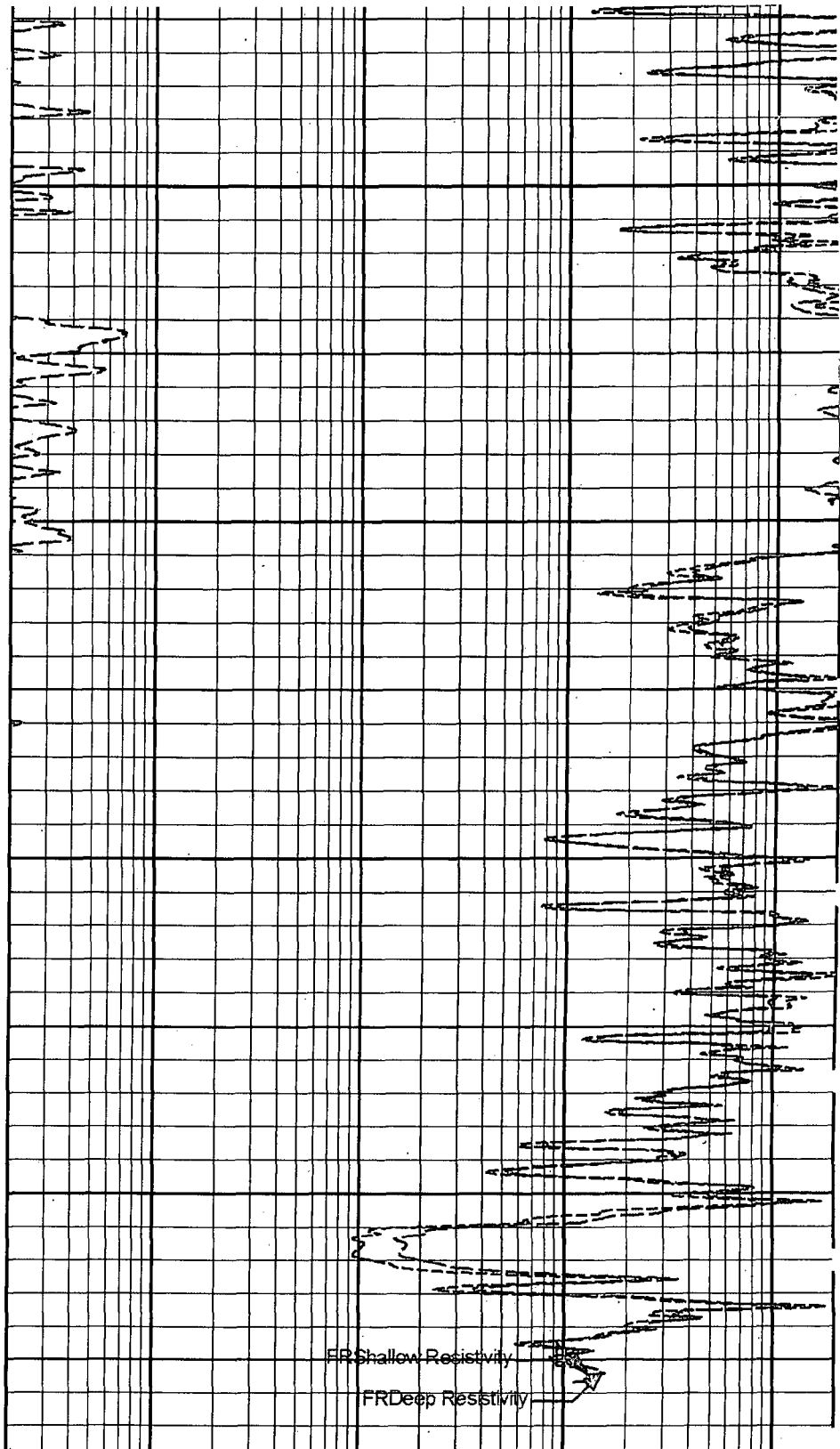
1500

1600

1700

1800

TD



0	Gamma API	100
	api	
6	MGRD Caliper	16
	in	
10K	Tension	0
	lb-f	

1 : 600

0.2	Deep Resistivity	2K
	ohm-m	
0.2	Shallow Resistivity	2K
	ohm-m	

HALLIBURTON

Plot Time: 09-Apr-12 13:02:07
 Plot Range: 790 ft to 1878 ft
 Data: 0408_CRYSTALRM\Well Based\DAQ-0004-003\
 Plot File: \DLL\DLLT-MGRD 2IN

MAIN PASS 2" = 100'

HALLIBURTON

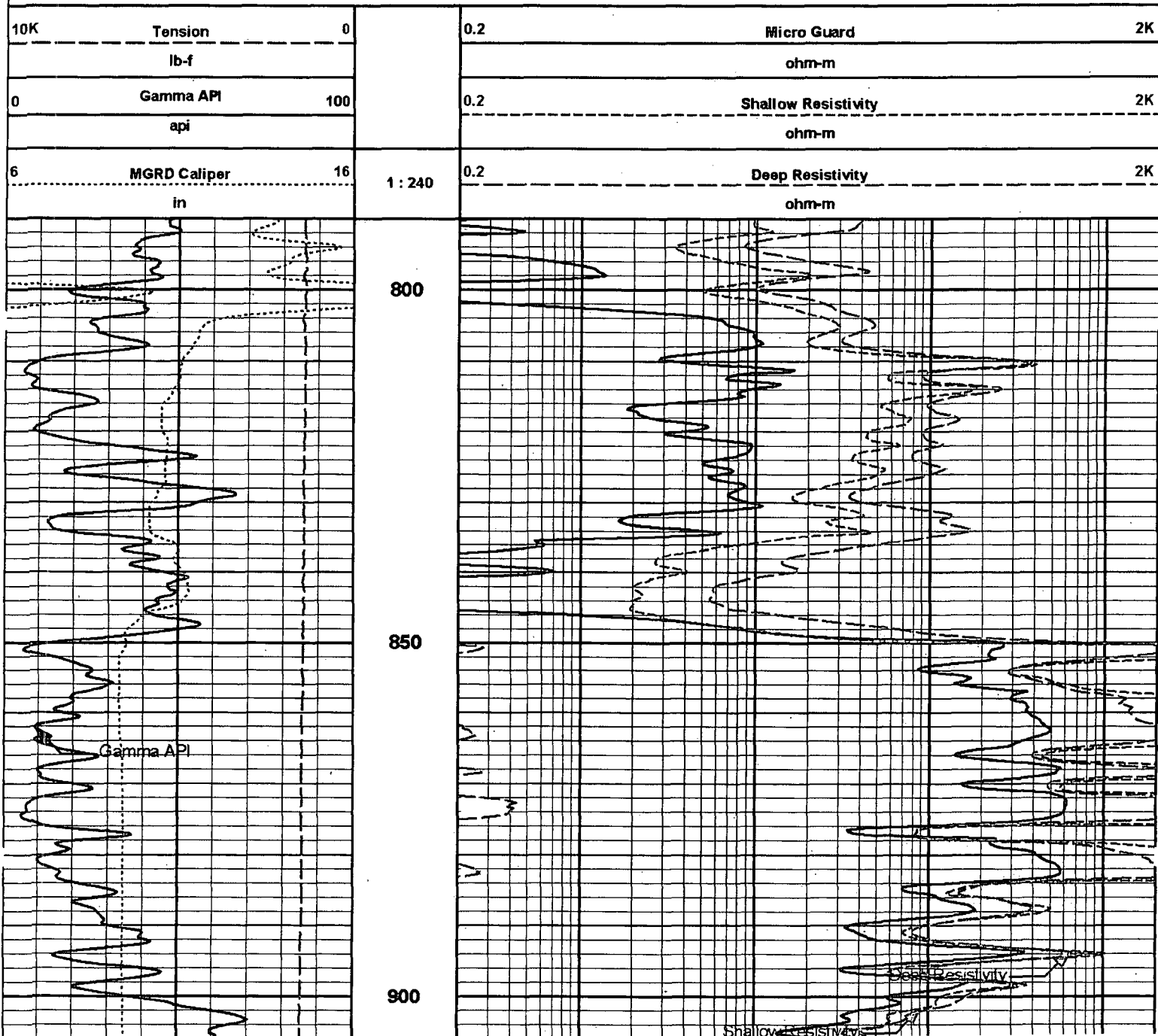
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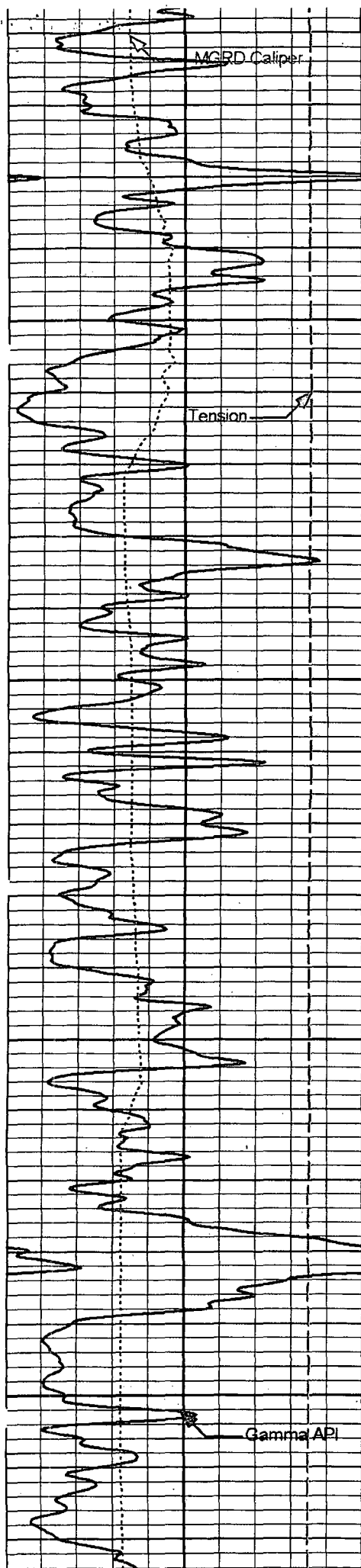
Plot Range: 790 ft to 1878 ft

Data: 0408_CRYSTALRIVWell Based\DAQ-0004-003\

Plot File: \\DLL\DLLT-MGRD 5IN

MAIN PASS 5" = 100'



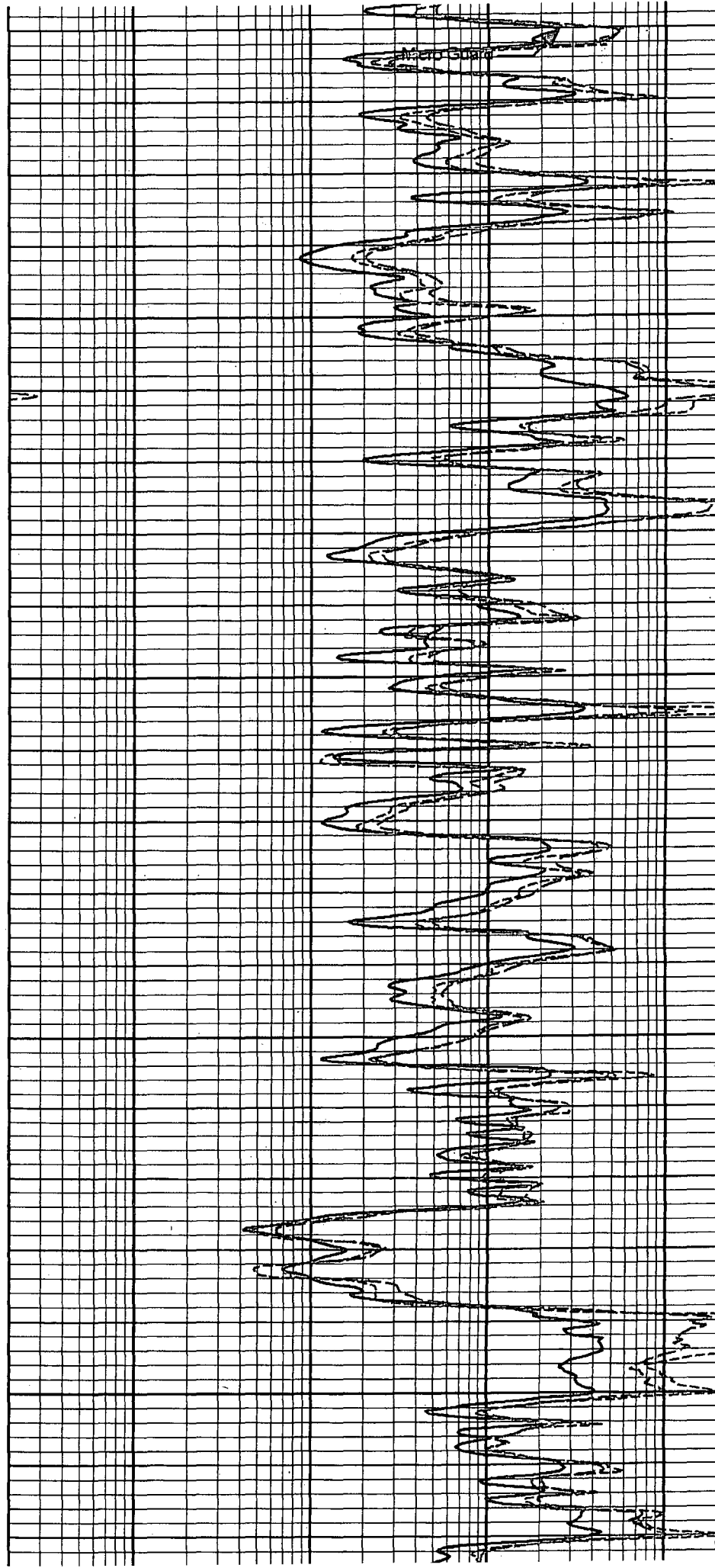


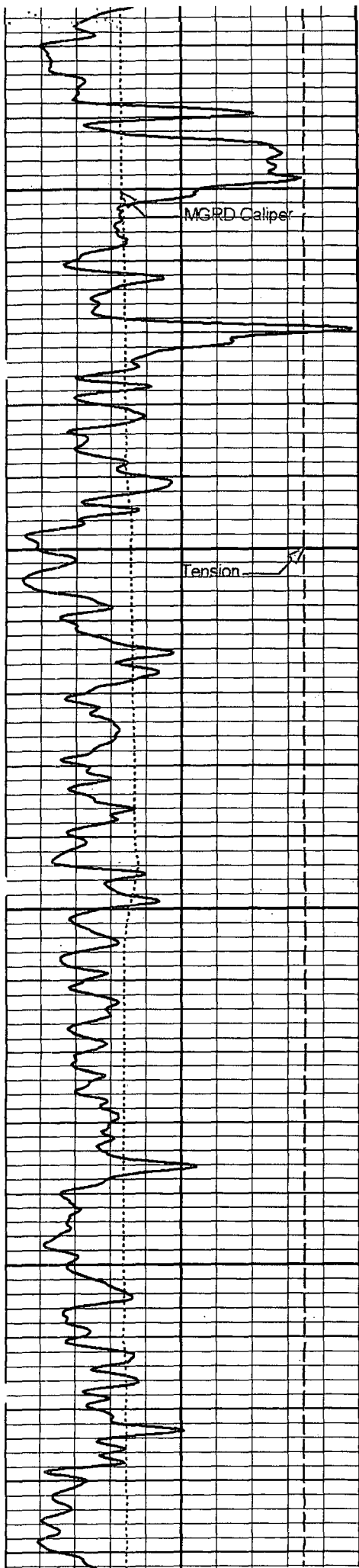
950

1000

1050

1100



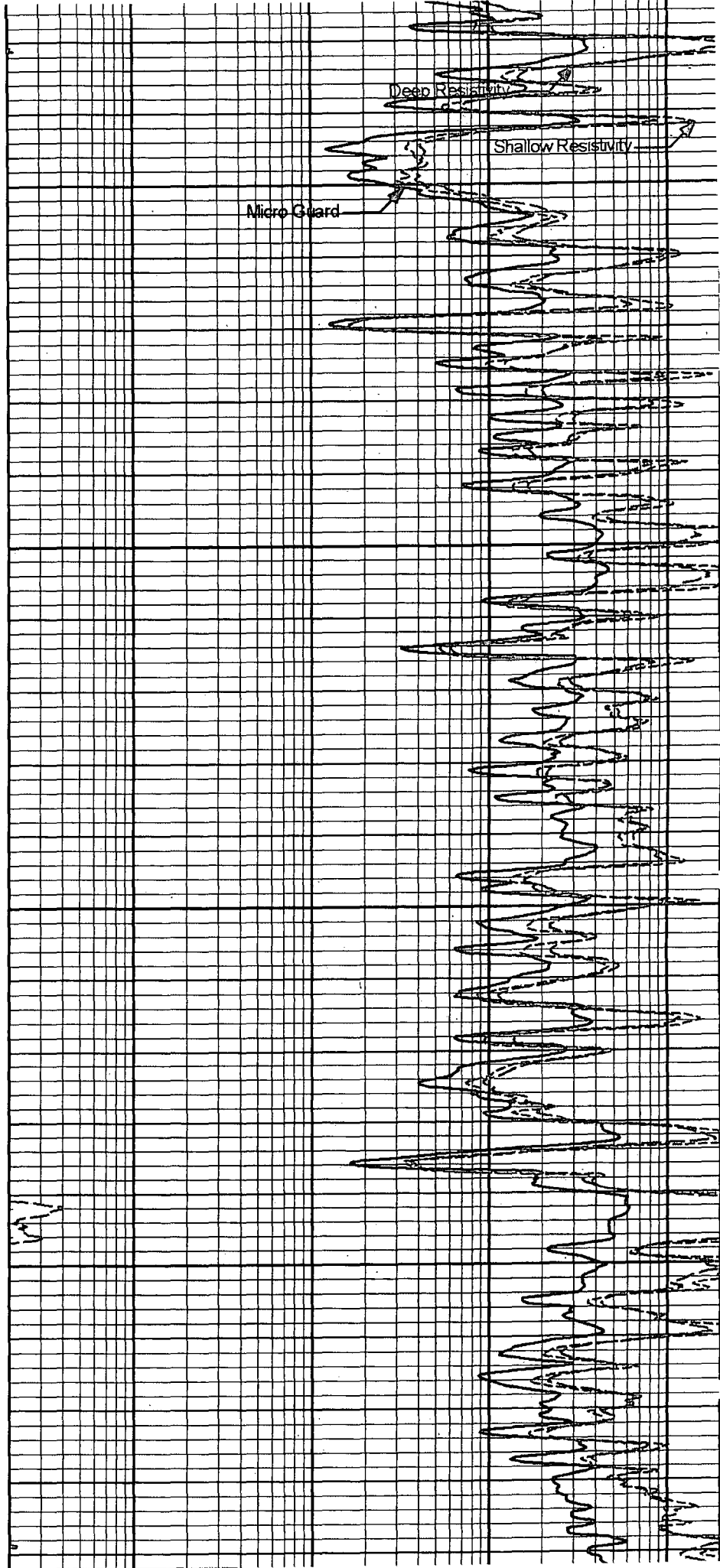


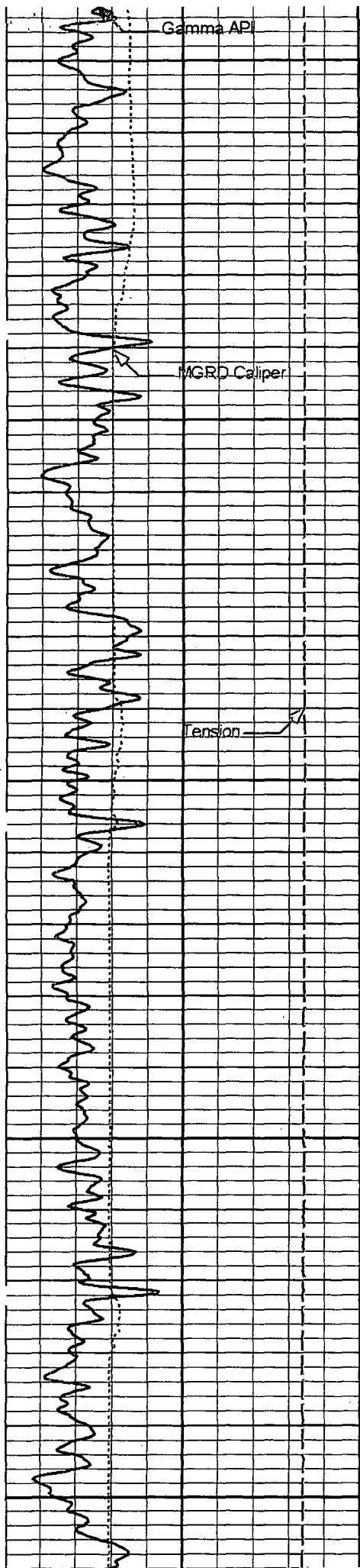
1150

1200

1250

1300





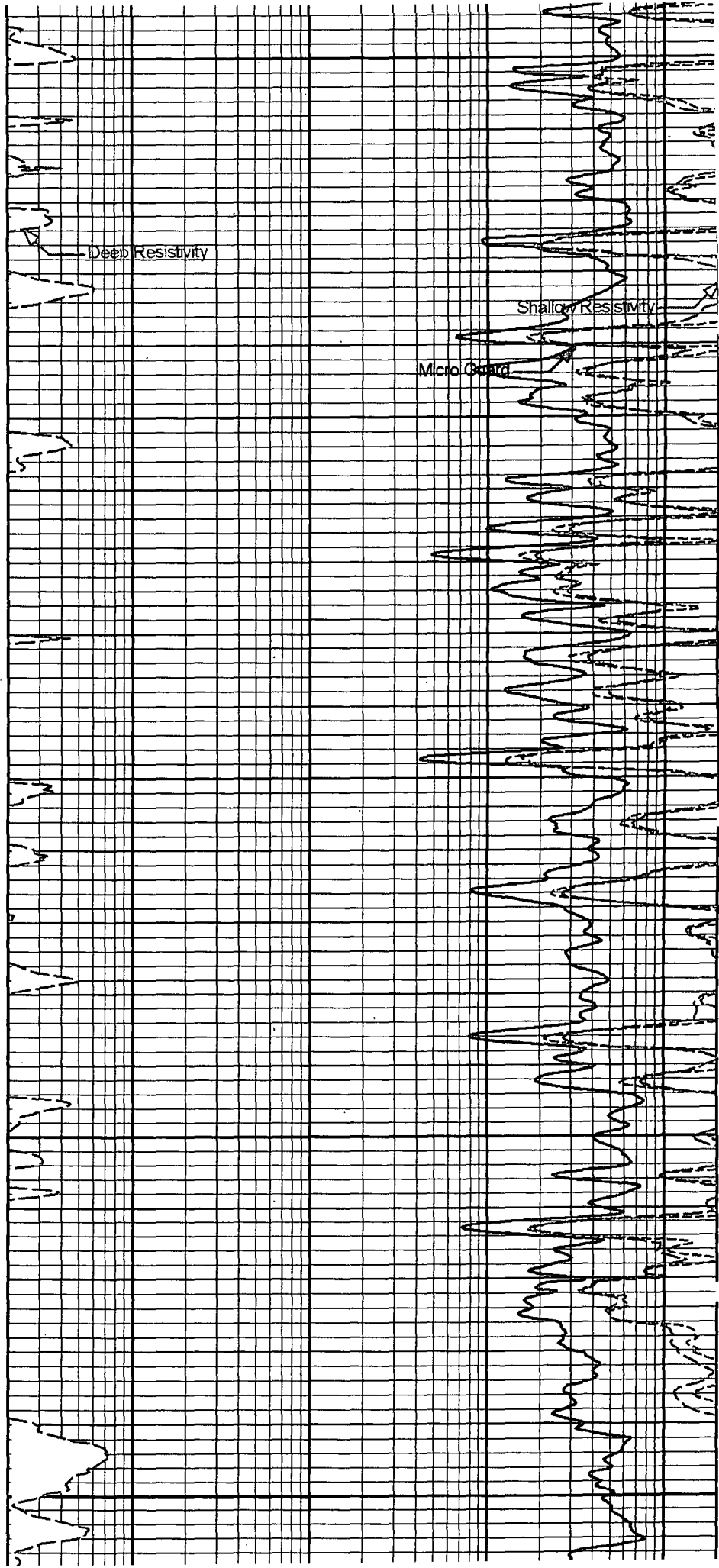
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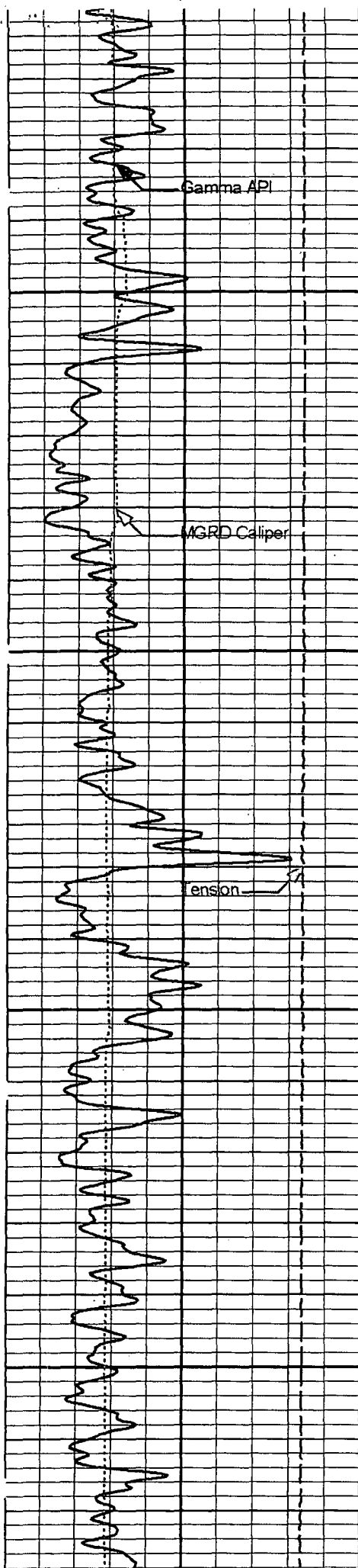
1400

1450

1500

1550



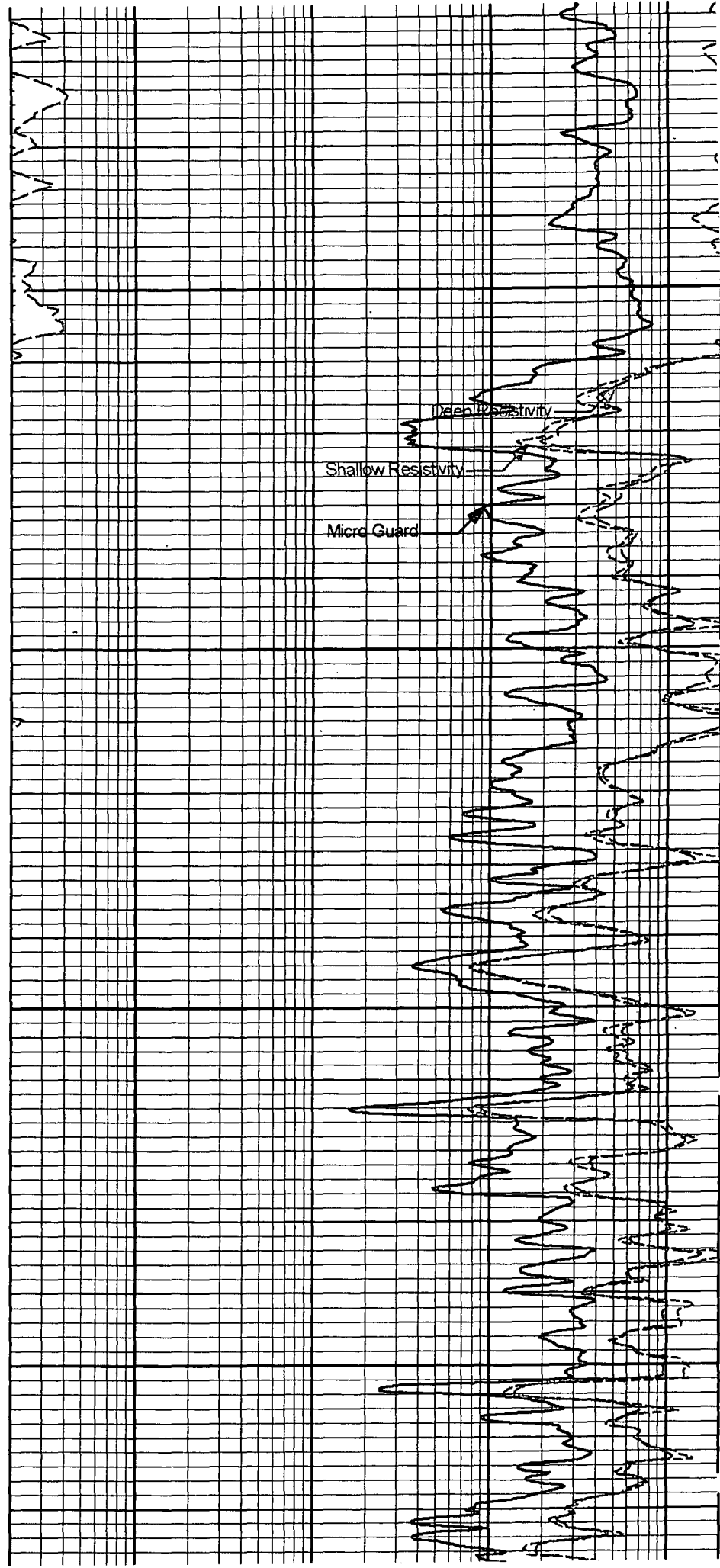


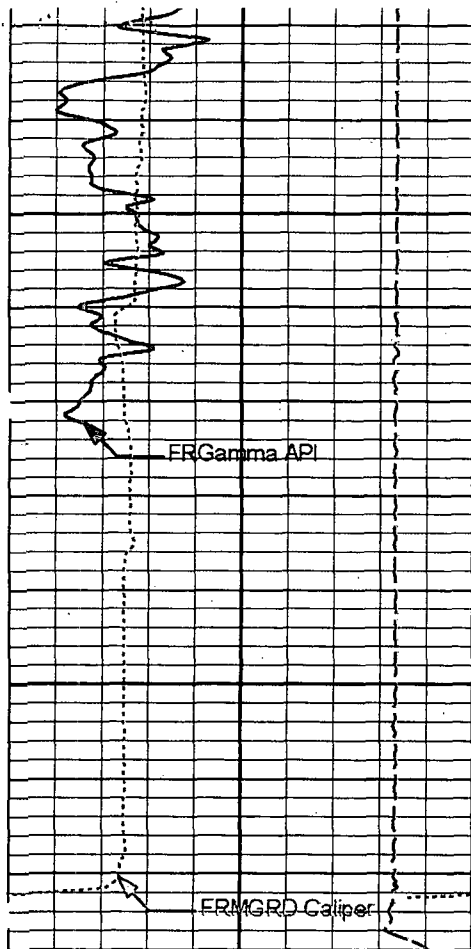
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1650

1700

1750

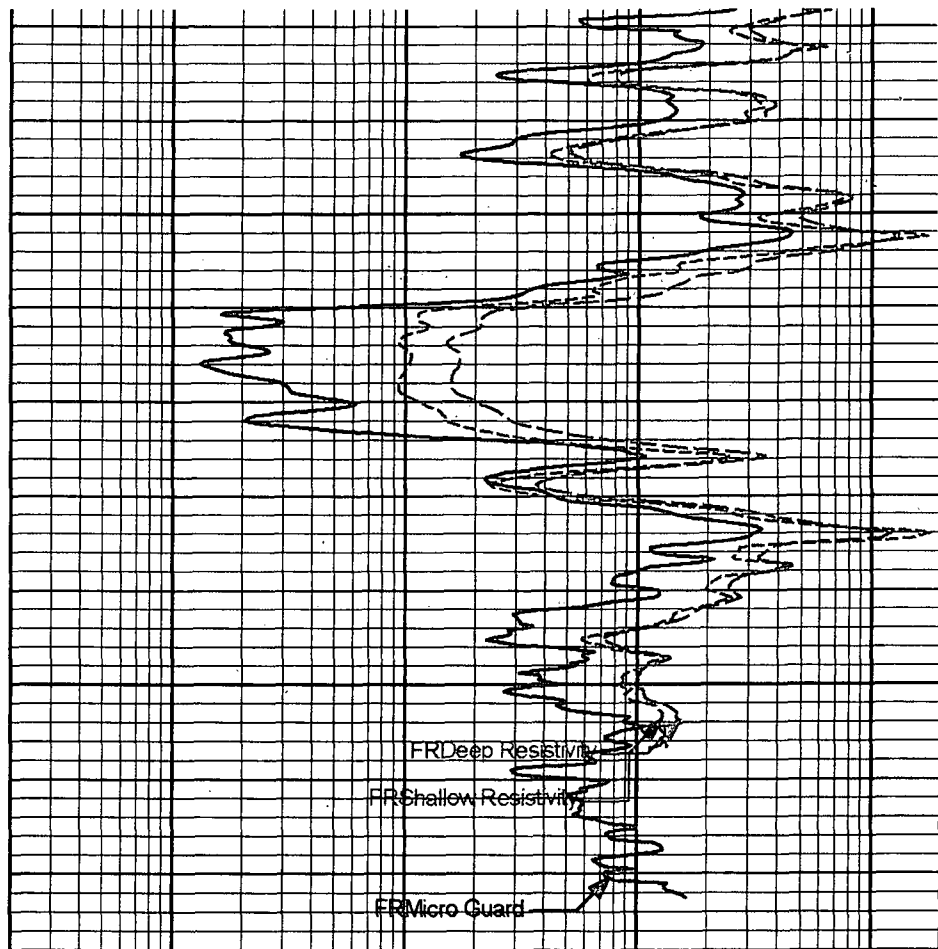




1800

1850

TD



6	MGRD Caliper	16	1 : 240	0.2	Deep Resistivity	2K
	in				ohm-m	
0	Gamma API	100		0.2	Shallow Resistivity	2K
	api				ohm-m	
10K	Tension	0		0.2	Micro Guard	2K
	lb-f				ohm-m	

HALLIBURTON

Plot Time: 09-Apr-12 13:02:10
 Plot Range: 790 ft to 1878 ft
 Data: 0408_CRYSTALRIV\Well Based\DAQ-0004-003\
 Plot File: \DLL\DLLT-MGRD 5IN

MAIN PASS 5" = 100'

HALLIBURTON

Plot Time: 09-Apr-12 13:02:10
 Plot Range: 1495.5 ft to 1878.33 ft
 Data: 0408_CRYSTALRIV\Well Based\DAQ-0004-002\
 Plot File: \DLL\REPEAT

REPEAT SECTION 5" = 100'

10K	Tension	0
	lb-f	
0	Gamma API	100
	api	
6	MGRD Caliper	16
	in	

1 : 240

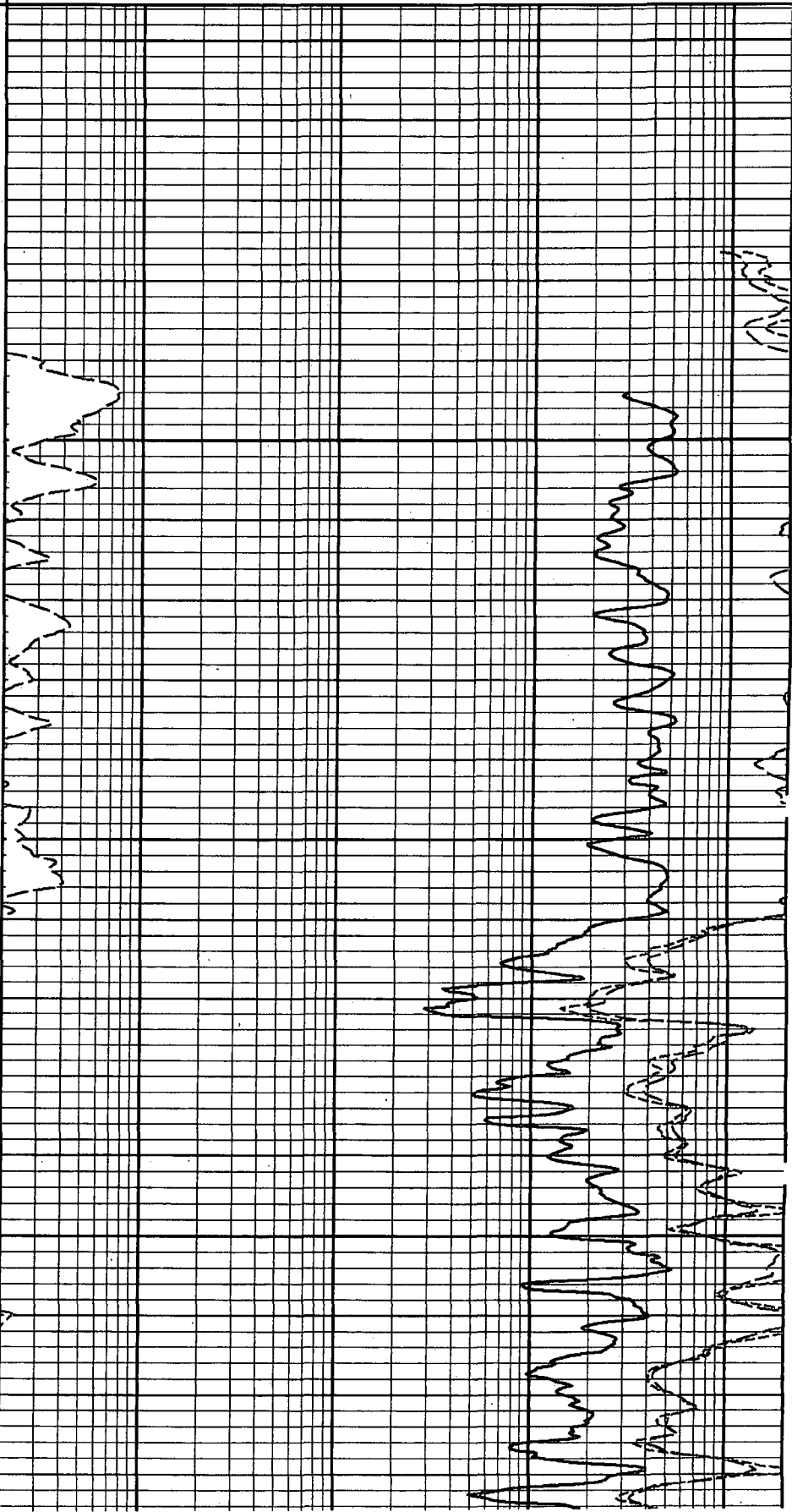
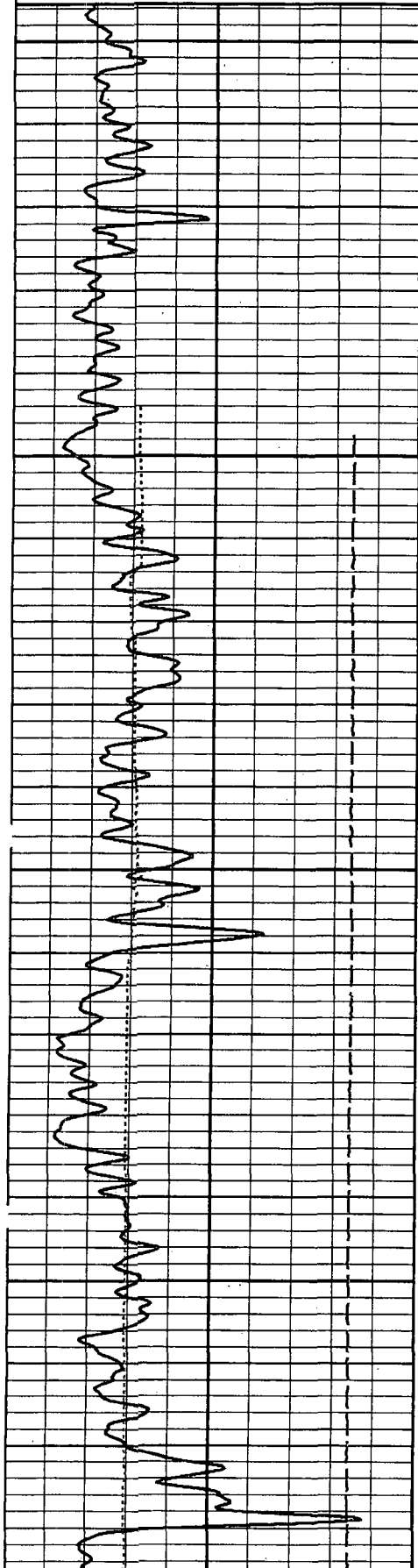
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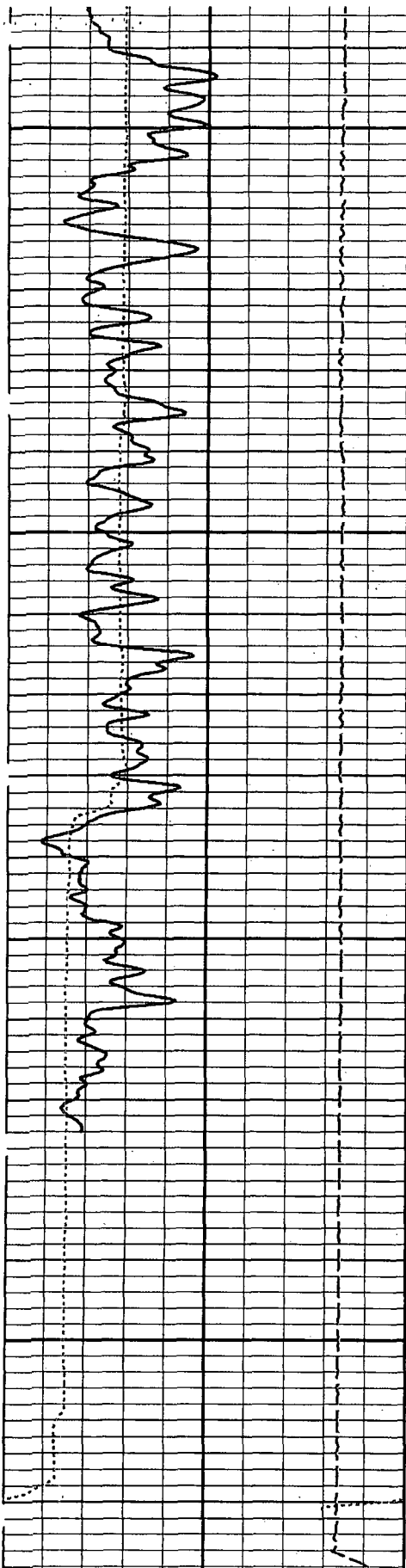
1550

1600

1650

0.2	Micro Guard	2K
	ohm-m	
0.2	Shallow Resistivity	2K
	ohm-m	
0.2	Deep Resistivity	2K
	ohm-m	





6	MGRD Caliper	16
	in	
0	Gamma API	100
	api	
10K	Tension	0

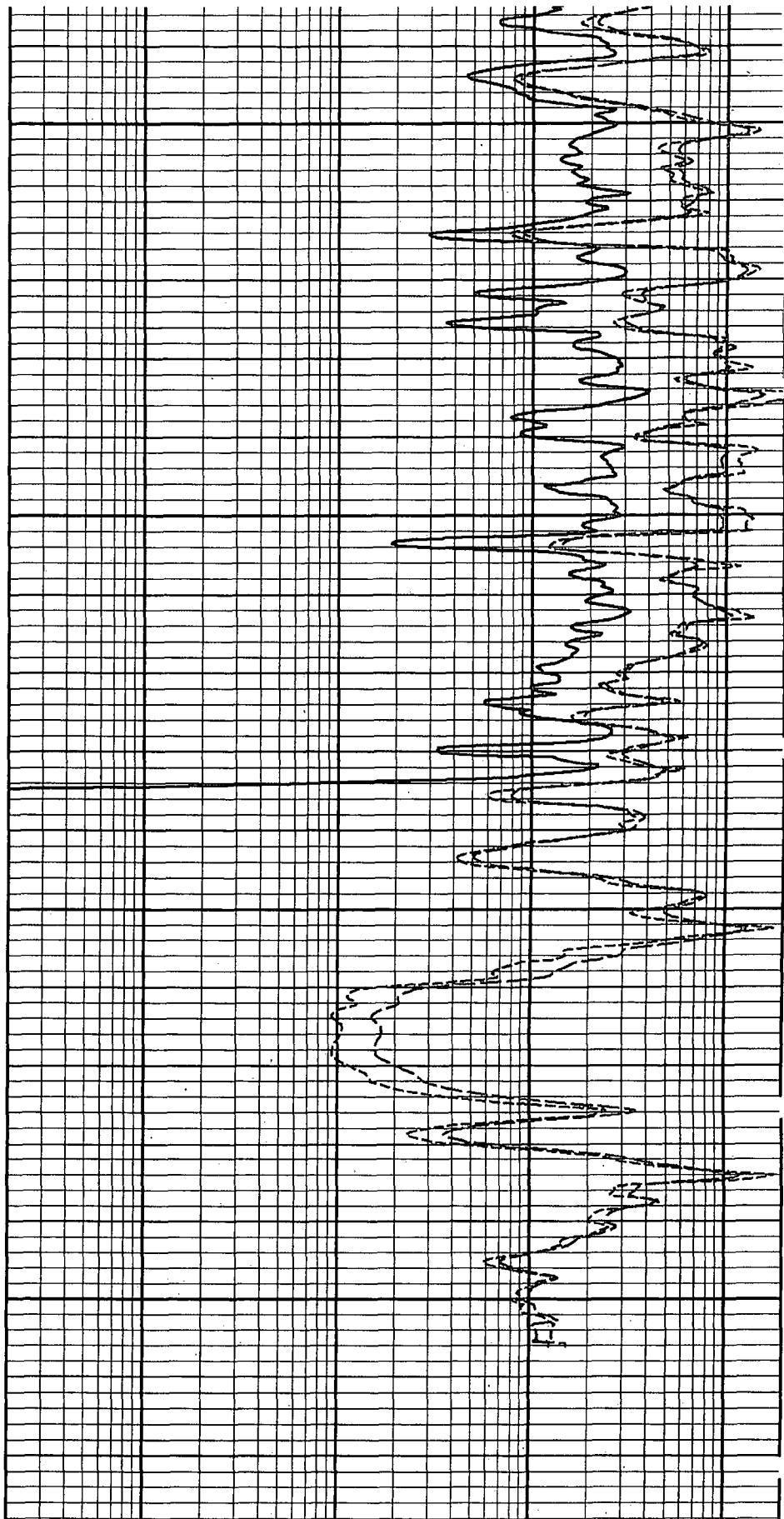
1700

1750

1800

1850

1 : 240



0.2	Deep Resistivity	2K
	ohm-m	
0.2	Shallow Resistivity	2K
	ohm-m	
0.2	Shallow Resistivity	2K

lb-f

ohm-m

HALLIBURTON

Plot Time: 09-Apr-12 13:02:12

Plot Range: 1495.5 ft to 1878.33 ft

Data: 0408_CRYSTALRM\Well Based\DAQ-0004-002\

Plot File: \DLL\REPEAT

REPEAT SECTION 5" = 100'

HALLIBURTON**CALIBRATION REPORT****NATURAL GAMMA RAY TOOL SHOP CALIBRATION**

Tool Name: GTET - 11071198RD

Reference Calibration Date: 01-Feb-12 10:03:27

Engineer: ALEXANDER PRICE

Calibration Date: 19-Mar-12 08:47:58

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Calibrator Source S/N: TH-547

Calibrator API Reference: 261.00 api

Equivalent Calibrator API Reference: 265.6 api

Measurement	Measured	Calibrated	Units
Background	19.1	19.0	api
Background + Calibrator	287.0	284.5	api
Calibrator	267.8	265.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11071198RD

Reference Calibration Date: 19-Mar-12 08:47:58

Engineer: ALEXANDER PRICE

Calibration Date: 06-Apr-12 09:33:35

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Calibrator Source S/N: TH-547

Calibrator API Reference: 261.00 api

Equivalent Calibrator API Reference: 265.6 api

Field Verification	Shop	Field	Units
Background	19.0	25.9	api
Background + Calibrator	284.5	292.3	api
Calibrator	265.6	266.5	api

Shop	Field	Difference	Tolerance
265.6	266.5	-0.9	+/- 9.00

DUAL LATEROLOG SHOP CALIBRATION

Tool Name: DLLT - 10917125YL

Reference Calibration Date: 24-Mar-12 11:46:37

Engineer: J. LUCAS

Calibration Date: 24-Mar-12 11:57:19

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

Measurement	Deep Measured	Deep Calibrated	Shallow Measured	Shallow Calibrated	Units
External Cal Point #1	1.04	1.04	1.00	1.00	ohmm
External Cal Point #2	119.47	119.47	99.58	99.63	ohmm
External Cal Point #3	1540.85	1541.79	1018.09	1019.06	ohmm

External Check Point	119.46	119.47	99.56	99.61	ohmm
Internal Reference	20.51	20.51	19.18	19.19	ohmm

DUAL LATEROLOG FIELD CALIBRATION

Tool Name: DLLT - 10917125YL
Engineer: ALEXANDER PRICE
Software Version: WL INSITE R3.4.0 (Build 4)

Reference Calibration Date: 24-Mar-12 11:57:19
Calibration Date: 09-Apr-12 12:15:13
Calibration Version: 1

Measurement	Deep Shop	Deep Field	Shallow Shop	Shallow Field	Units
Internal Reference	20.51	20.46	19.19	19.17	ohmm

PASS/FAIL SUMMARY

Measurement	Difference	Tolerance	Pass/Fail
Internal Deep	0.05	+/- 0.8	Passed
Internal Shallow	0.02	+/- 0.8	Passed

MICRO SPHERICALLY FOCUSED LOG SHOP CALIBRATION

Tool Name: MSFL - 7125YL_6747BLK
Engineer: J. LUCAS
Software Version: WL INSITE R3.4.0 (Build 4)

Reference Calibration Date: 24-Mar-12 15:11:42
Calibration Date: 24-Mar-12 15:18:09
Calibration Version: 1

Measurement	Measured	Calibrated	Units
External Cal Point #1	0.50	0.50	ohmm
External Cal Point #2	20.30	20.00	ohmm
External Cal Point #3	2381.53	2000.00	ohmm
Internal Reference	18.80	18.53	ohmm

MICRO SPHERICALLY FOCUSED LOG FIELD CALIBRATION

Tool Name: MSFL - 7125YL_6747BLK
Engineer: ALEXANDER PRICE
Software Version: WL INSITE R3.4.0 (Build 4)

Reference Calibration Date: 24-Mar-12 15:18:09
Calibration Date: 09-Apr-12 12:15:29
Calibration Version: 1

Measurement	Shop	Field	Change	Control Limit On	Units
Internal Reference	18.53	19.05	0.522	0.800	ohmm

PASS/FAIL SUMMARY

Internal Reference: Passed

CALIPER SHOP CALIBRATION

Tool Name: MSFL - 7125YL_6747BLK
Engineer: J. LUCAS
Software Version: WL INSITE R3.4.0 (Build 4)

Reference Calibration Date: 22-Apr-11 16:51:23
Calibration Date: 24-Mar-12 15:49:59
Calibration Version: 1

CALIBRATION RINGS AND INTERNAL

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change
RING DIAMETER:			
Ring #1 (in)	6.55	6.00	0.5500
Ring #2 (in)	15.90	16.00	-0.1000
Hi/Lo Internal:			
Lo Internal (in)	3.15	2.37	0.7800
Hi Internal (in)	18.37	18.65	-0.2800

CALIPER FIELD CALIBRATION

Tool Name: MSFL - 7125YL_6747BLK

Reference Calibration Date: 24-Mar-12 15:49:59

Engineer: ALEXANDER PRICE

Calibration Date: 09-Apr-12 12:16:03

Software Version: WL INSITE R3.4.0 (Build 4)

Calibration Version: 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Lo Internal (in)	2.37	2.49	-0.119	+/- 0.500
Hi Internal (in)	18.65	18.77	-0.125	+/- 0.500

PASS/FAIL SUMMARY

Lo Internal Check:	Passed
Hi Internal Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11071198RD						
Gamma Ray Calibrator	265.6	266.5	-----	-0.9	+/- 9.00	api
DLLT-10917125YL						
Deep Internal Ref.	20.51	20.46	-----	0.05	+/- 0.8	ohmm
Shallow Internal Ref.	19.19	19.17	-----	0.02	+/- 0.8	ohmm
MSFL-7125YL_6747BLK						
MSFL Internal Ref.	18.53	19.05	-----	-0.52	+/- 0.800	ohmm
Caliper Lo. Internal	2.37	2.49	-----	-0.12	+/- 0.500	in
Caliper Hi. Internal	18.65	18.77	-----	-0.12	+/- 0.500	in

Data: 0408_CRYSTALRIV0004 LCCH-GTET-FLEX-DLL-MGRD-CENTIDLE

Date: 09-Apr-12 12:45:08

HALLIBURTON**CUSTOMER EVENT LOG**

Event Type	Time & Date	Depth (ft)	Event Description
	09-Apr-12 12:18:23	498.25	Logging 001 09-Apr-12 12:18 Dn @498.3f
	09-Apr-12 12:24:26	1877.13	Halting 001 09-Apr-12 12:18 Dn @498.3f
	09-Apr-12 12:24:31	1878.75	Logging 002 09-Apr-12 12:24 Up @1878.8f
	09-Apr-12 12:32:18	1547.30	Halting 002 09-Apr-12 12:24 Up @1878.8f
	09-Apr-12 12:35:33	1878.25	Logging 003 09-Apr-12 12:35 Up @1878.3f

Data: 0408_CRYSTALRIV0004 LCCH-GTET-FLEX-DLL-MGRD-CENTHALLIBUR-BE7628

Date: 09-Apr-12 12:45:22

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	9.500	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	0.080	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	1901.00	ft
SHARED	BHT	Bottom Hole Temperature	92.0	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	
DLLT	DLOK	Process Dual Laterolog?	Yes	
DLLT	DBOK	Process Dual Laterolog Borehole Corrections?	No	
DLLT	DLOK	Calculate Dual Laterolog DI?	Yes	
MSFL	DLOK	Process MSFL?	Yes	
MSFL	SLPD	Use MSFL Slim Hole Pad?	No	
MSFL	CLOK	Process Caliper Outputs?	Yes	

BOTTOM

Data: 0408_CRYSTALRIM0004 LCCH-GTET-FLEX-DLL-MGRD-CENTVDLE

Date: 09-Apr-12 12:44:50

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head Tension-798 30.00 lbs		Ø 3.625 In →		← Load Cell @ 94.06 ft	2.00 ft	95.06 ft
						93.06 ft

Ø 4.000 in² →

DLT-10917125YL
390.00 lbs

Ø 3.625 in →

32.04 ft

← DLT Sonde @ 22.08 ft

13.33 ft

MSFL-
7125YL_6747BLK
214.00 lbs

Ø 4.000 in →

10.33 ft

← MSFL Pad @ 5.42 ft

3.00 ft

CENT-798
35.00 lbs

Ø 3.625 in →

3.00 ft

0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max Log. Speed (fpm)
CHT	Cable Head with Load Cell	798	30.00	2.00	93.06	300.00
ISA	Isolator Assembly - Rigid Bridle	BRID_3	274.00	15.00	78.06	300.00
RE	Return Electrode - Rigid Bridle	CR	57.00	2.50	75.56	300.00
ISA	Isolator Assembly - Rigid Bridle	BRID_1	274.00	15.00	60.56	300.00
BSUB	Barrier Sub - Rigid Bridle	BS	38.00	1.00	59.56	300.00
GTET	Gamma Telemetry Tool	11071198RD	165.00	8.52	51.04	60.00
FLEX	Flex Joint	Flex1	140.00	5.67	45.37	300.00
DLT	Dual Laterolog	10917125YL	390.00	32.04	13.33	100.00
OBCEN	Centralizer - 25 in. Overbody	one	8.00	2.08 *	40.67	300.00
MSFL	Micro Spherically Focussed Log	7125YL_6747BLK	214.00	10.33	3.00	60.00
CENT	Bottom Centralizer	798	35.00	3.00	0.00	300.00

Total 1,625.00 95.06

* Not included in Total Length and Length Accumulation.

Data: 0408_CRYSTALRIV0004 LCCH-GTET-FLEX-DLL-MGRD-CENTIDLE

Date: 09-Apr-12 12:07:16

COMPANY KC RESOURCES, INC.

WELL JONES "D" No 6

FIELD ATOKA; SA

COUNTY EDDY

STATE

NEW MEXICO

HALLIBURTON

DUAL LATEROLOG
MICRO - GUARD

HALLIBURTON

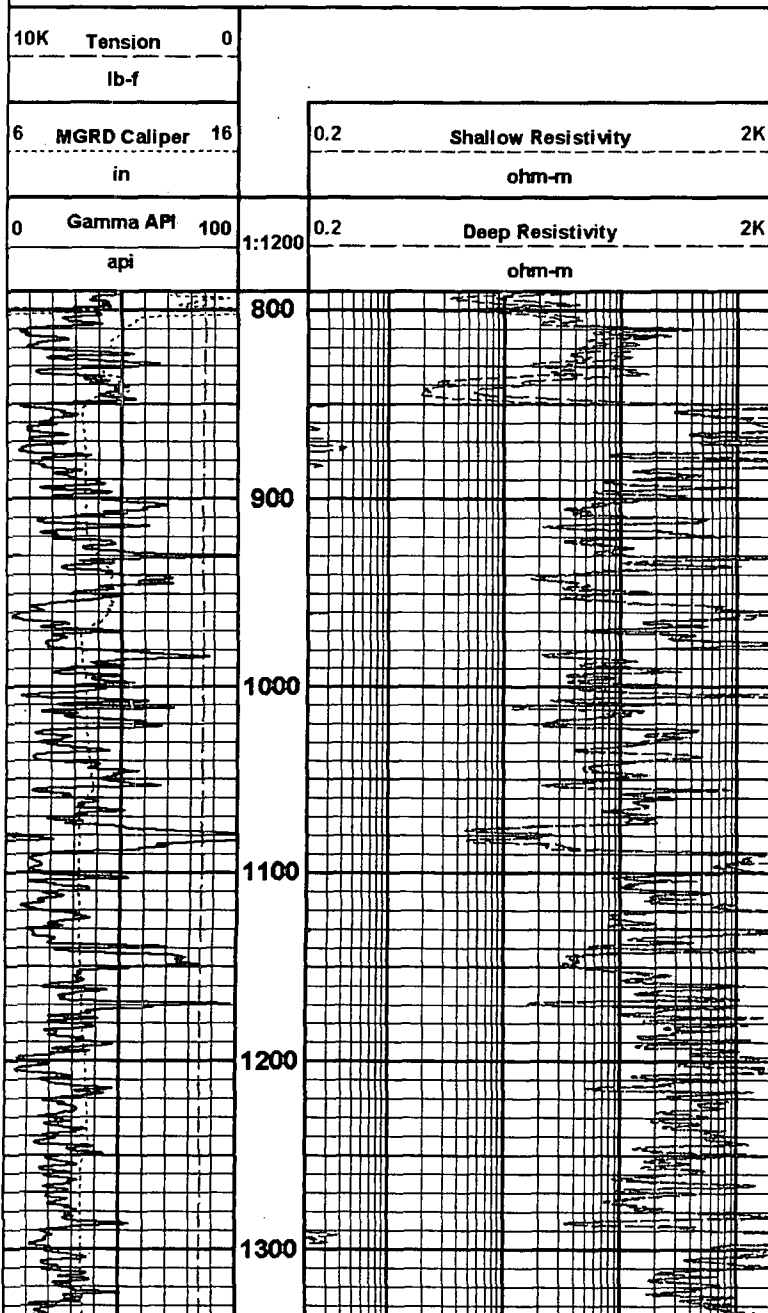
Plot Time: 09-Apr-12 13:02:13

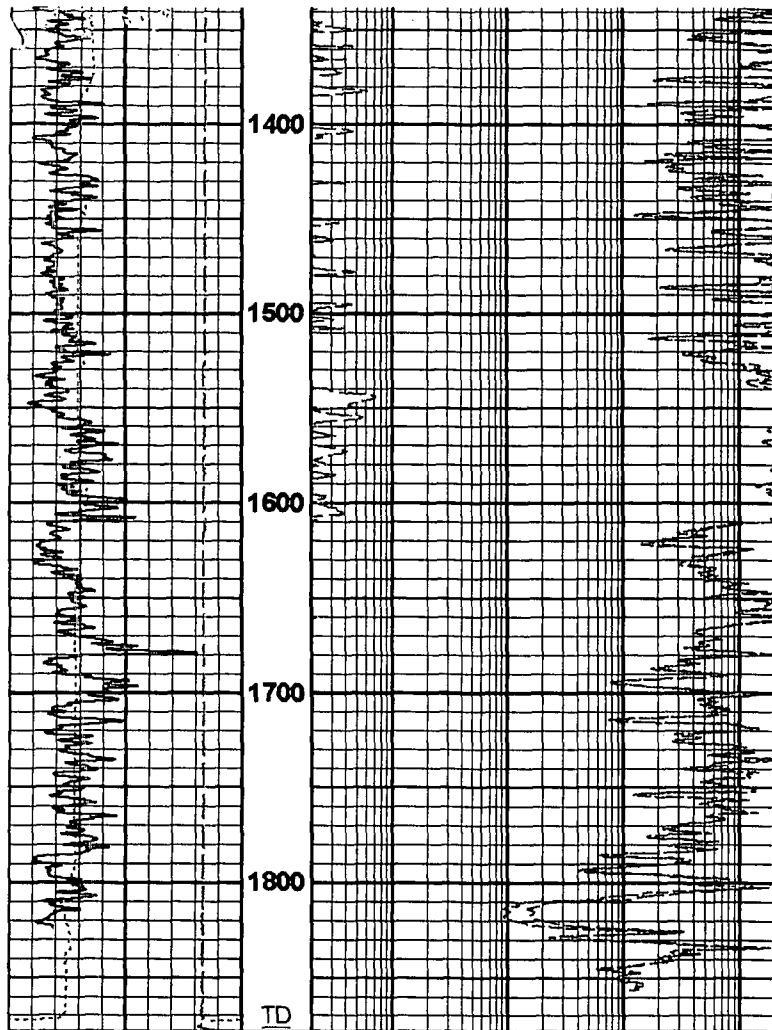
Plot Range: 790 ft to 1878.25 ft

0408_CRYSTALRIVWell Based...

Plot File: \\DLL\DLLT-MGRD 1IN

MAIN PASS 1" = 100'





0	Gamma API	100	1:1200	0.2	Deep Resistivity	2K
	api				ohm-m	
6	MGRD Caliper	16		0.2	Shallow Resistivity	2K
	in				ohm-m	
10K	Tension	0				
	lb-f					

HALLIBURTON

Plot Time: 09-Apr-12 13:02:14
Plot Range: 790 ft to 1878.25 ft
0408_CRYSTAL RIV Well Based...
Plot File: \\DLL\DLLT-MGRD 1IN

MAIN PASS 1" = 100'