

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

Deepening  Re-perf.  Conv. to EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to [kcc-well-logs@kcc.ks.gov](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Mike Kelso Oil, Inc.
Well Name	WONDER-MUD 14-1
Doc ID	1313407

All Electric Logs Run

Dual Comp Porosity Log
Dual Induction Log
Microresistivity Log
Bong Log

Form	ACO1 - Well Completion
Operator	Mike Kelso Oil, Inc.
Well Name	WONDER-MUD 14-1
Doc ID	1313407

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4160-4170		
4	4146-4150		





# DUAL COMP POROSITY LOG

Company MIKE KELSO OIL, INC.  
 Well WONDER-MUD NO. 14-1  
 Field THISTLE GROVE  
 County NESS  
 State KANSAS

Company MIKE KELSO OIL, INC.  
 Well WONDER-MUD NO. 14-1  
 Field THISTLE GROVE  
 County NESS  
 State KANSAS

Location: API #: 15-135-25910-00-00  
 330' FSL & 1,155' FWL  
 SEC 14 TWP 17S RGE 21W  
 Permanent Datum GROUND LEVEL Elevation 2176'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING  
 Other Services  
 DIL  
 MEL  
 Elevation  
 K.B. 2183'  
 D.F. N/A  
 G.L. 2176'

Date	5/29/2016	
Run Number	ONE	
Type Log	CNL/CDL	
Depth Driller	4234'	
Depth Logger	4232'	
Bottom Logged Interval	4211'	
Top Logged Interval	3200'	
Type Fluid In Hole	CHEMICAL	
Salinity, PPM CL	8500	
Density	9.0	
Level	FULL	
Max. Rec. Temp. F	118 DEG F.	
Operating Rig Time	2 1/2 HOURS	
Equipment -- Location	108 COLBY	
Recorded By	J. LONG	
Witnessed By	SEAN DEENIHAN	

Borehole Record		Casing Record					
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	00'	340'	8.625"	23#	00'	340'
TWO	7.875"	340'	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.  
 MCCRACKEN, 2 WEST ON ELM STREET (SOUTH SIDE OF TOWN), 1 SOUTH, 7/8 WEST, NORTH INTO

Log Measured From: KELLY BUSHING 7 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
[www.pioneerenergy.com](http://www.pioneerenergy.com) 785-625-3858

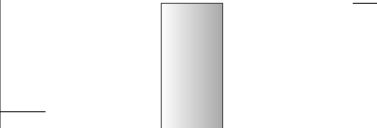
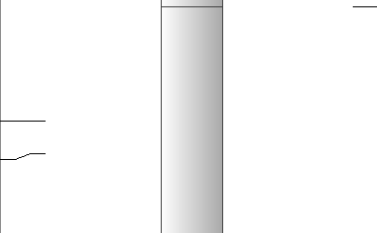
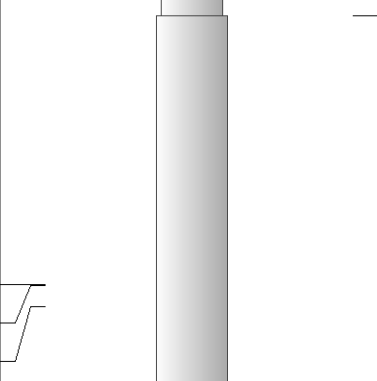
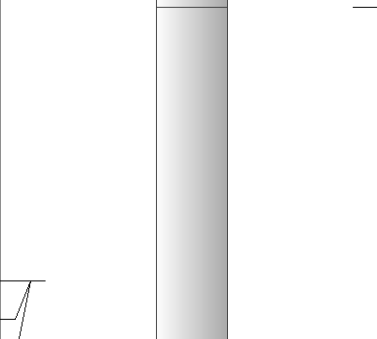
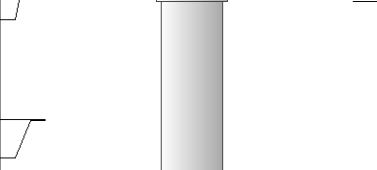
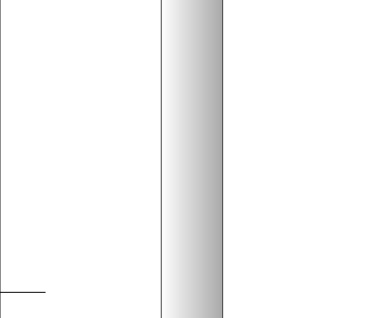
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. LONG	Primary Witness: SEAN DEENIHAN
Operator: D. WALKER	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\mikekelsooil\_wonder-mud\_14-1.db  
Dataset field/well/stackmel/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-280	59	Off	4232

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: mikekelsooil\_wonder-mud\_14-1.db: field/well/stackmel/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in



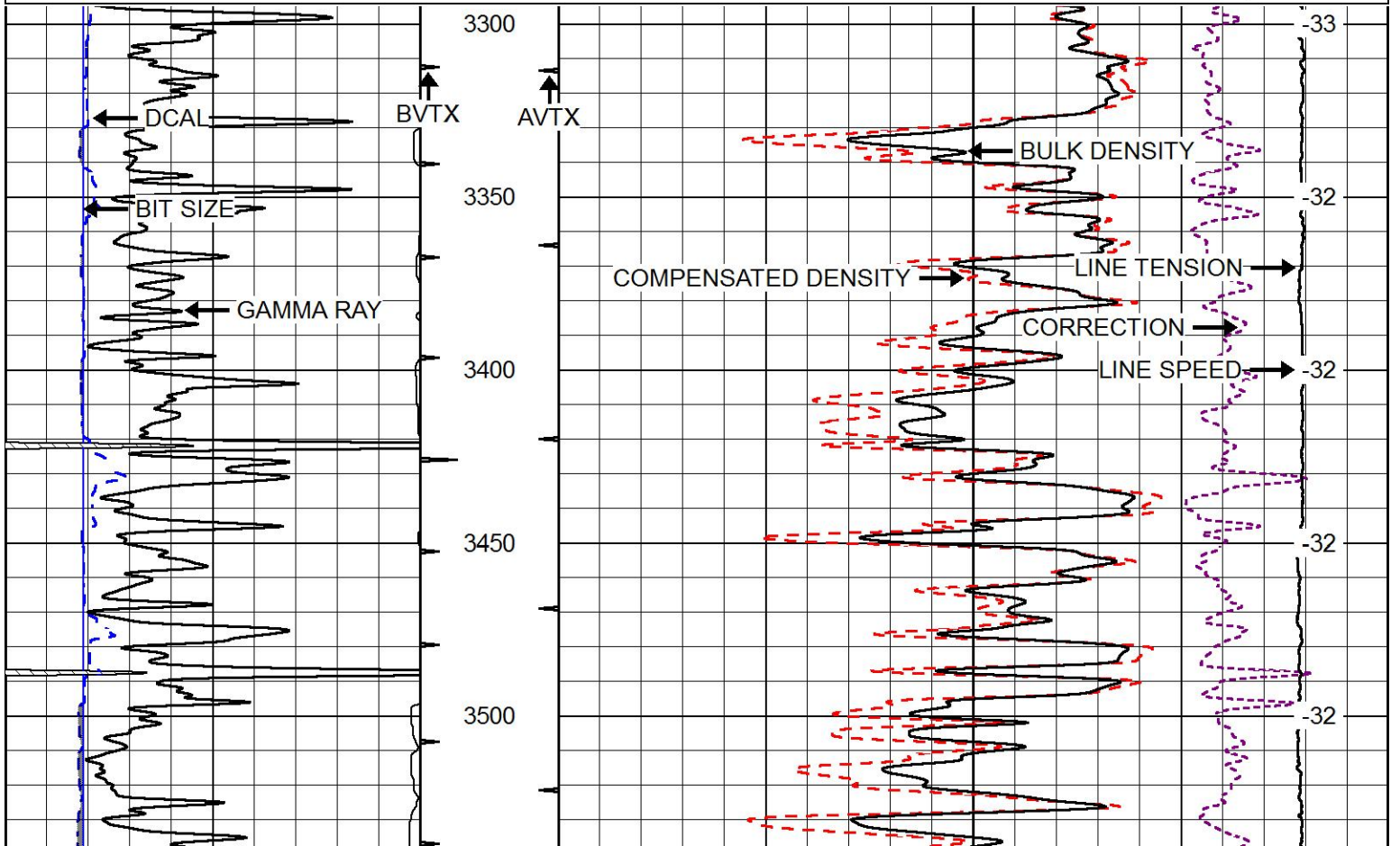
# MAIN PASS

## 2" SCALE BULK DENSITY

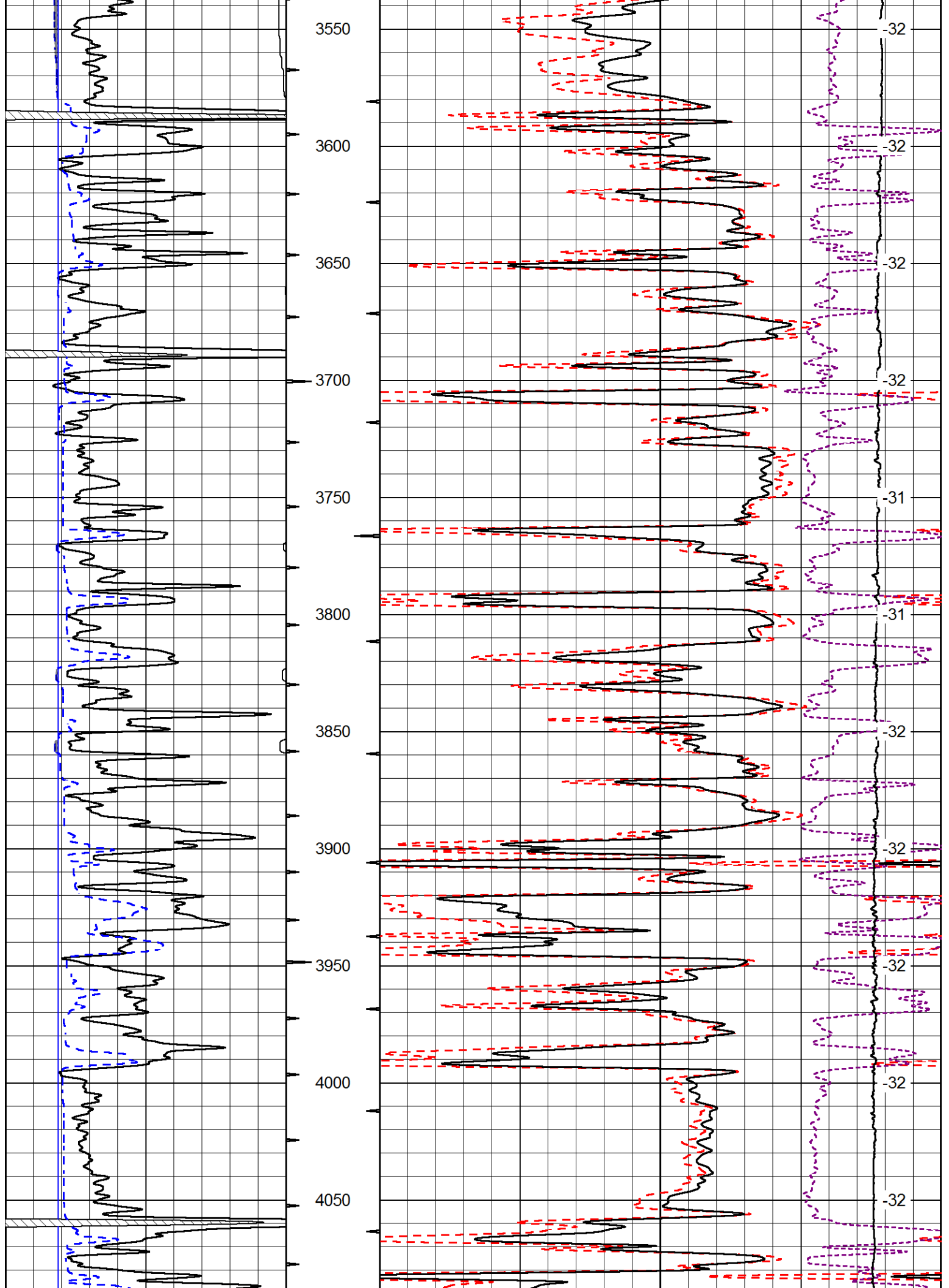
Database File: mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname: stackmel/pass3.3  
 Presentation Format: cdl  
 Dataset Creation: Sun May 29 03:09:34 2016  
 Charted by: Depth in Feet scaled 1:600

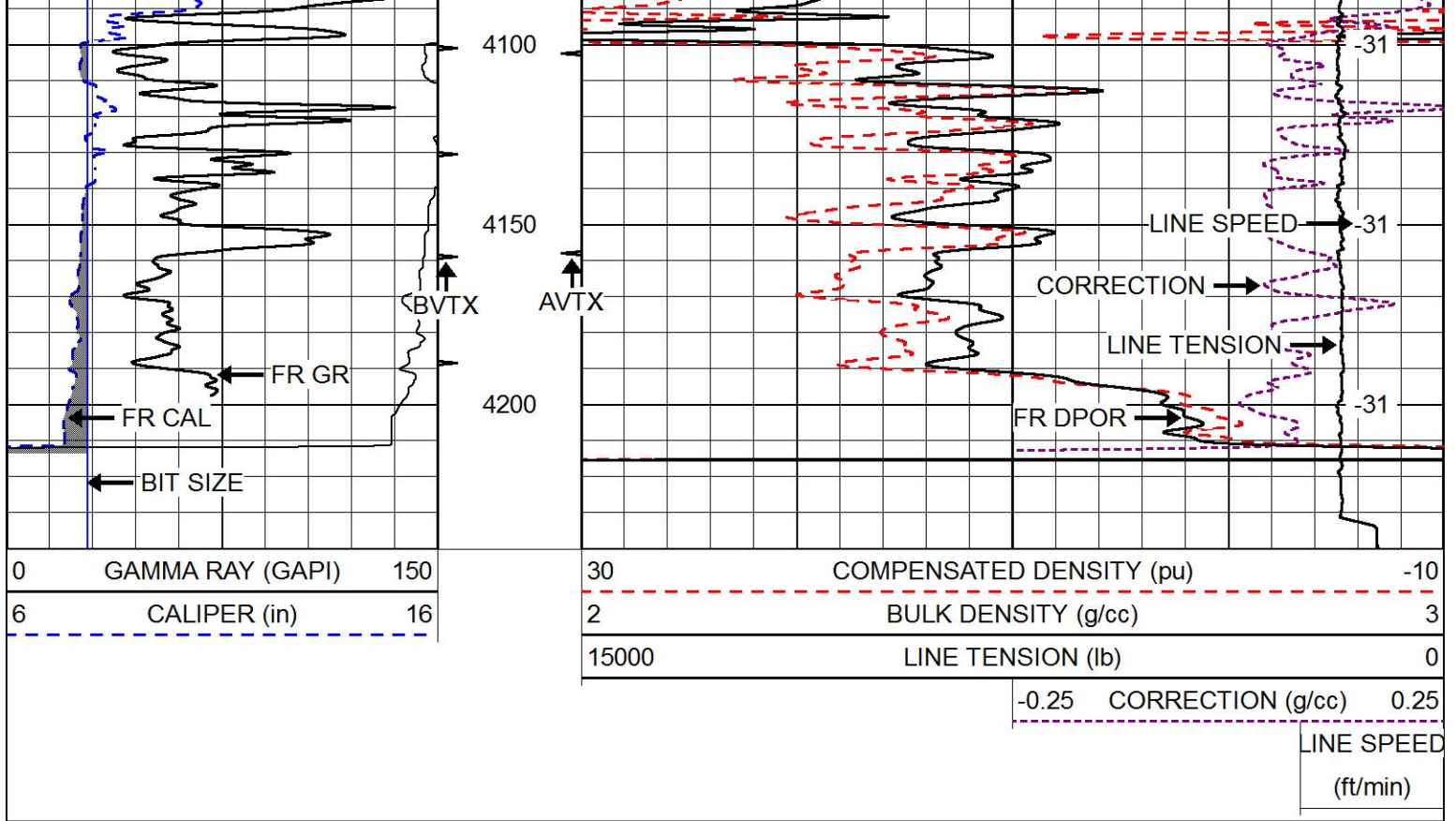
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25
	LINE SPEED (ft/min)	



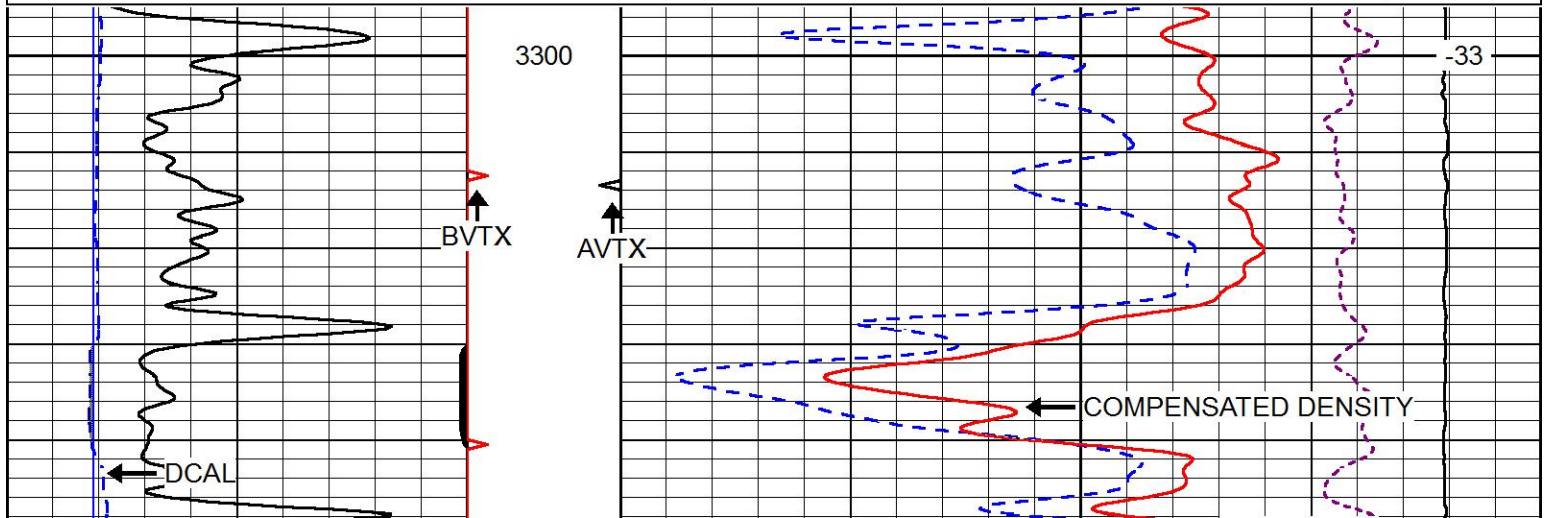
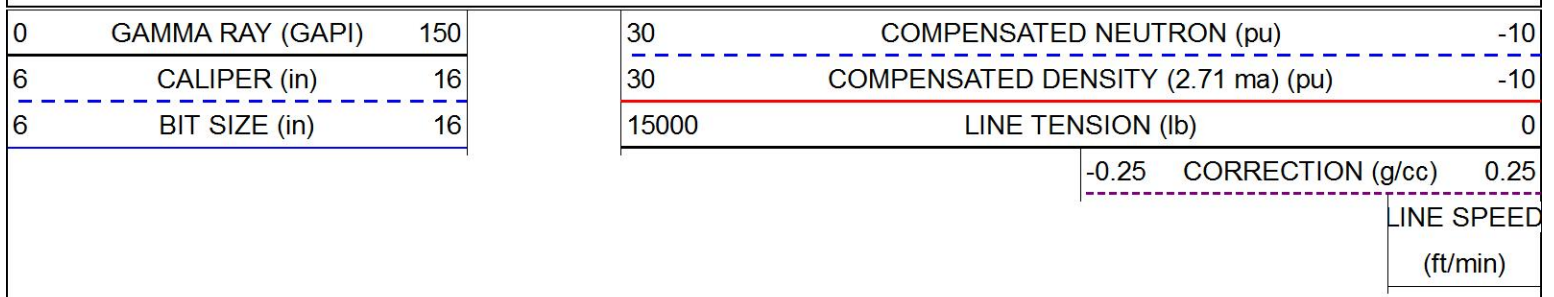


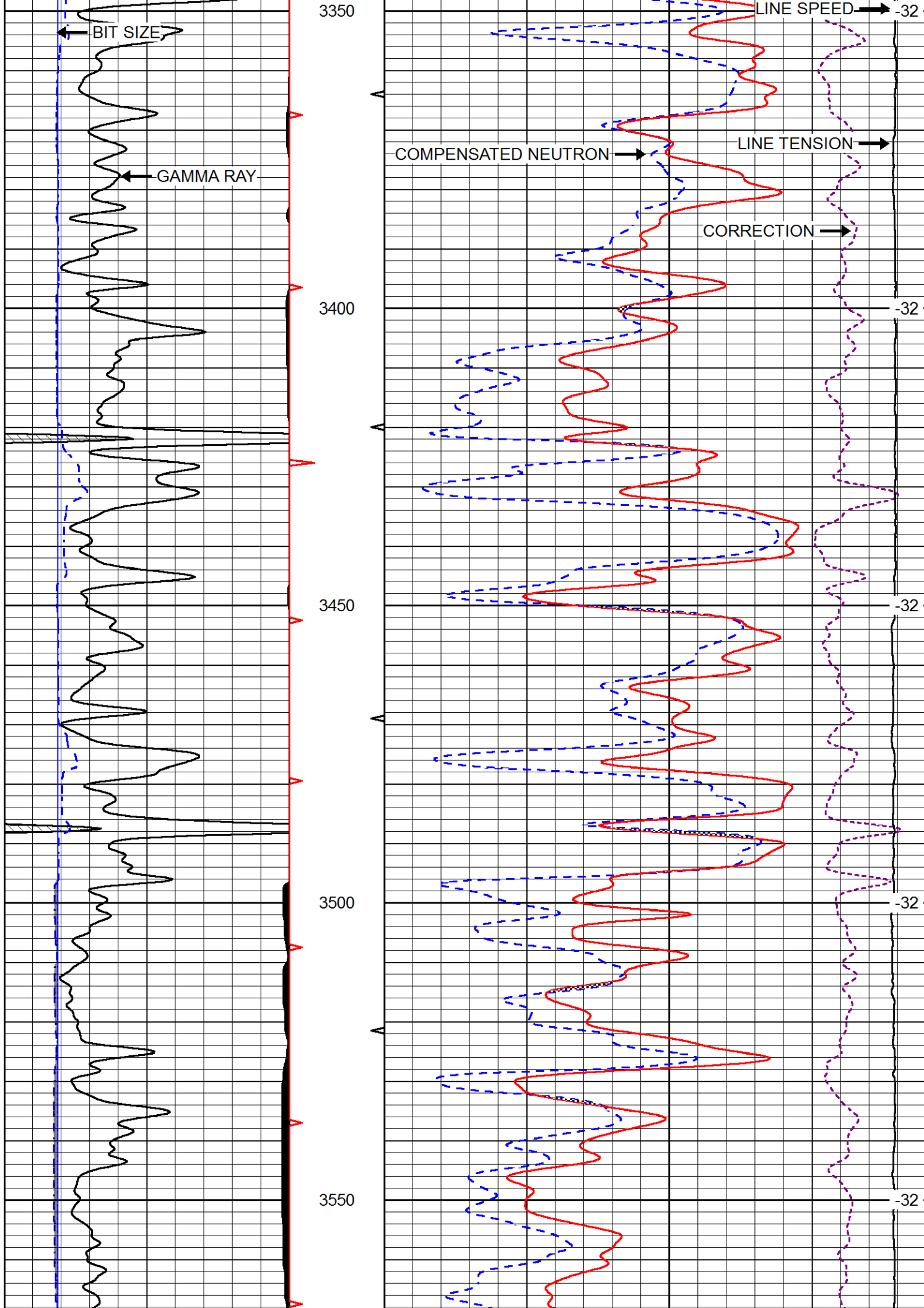


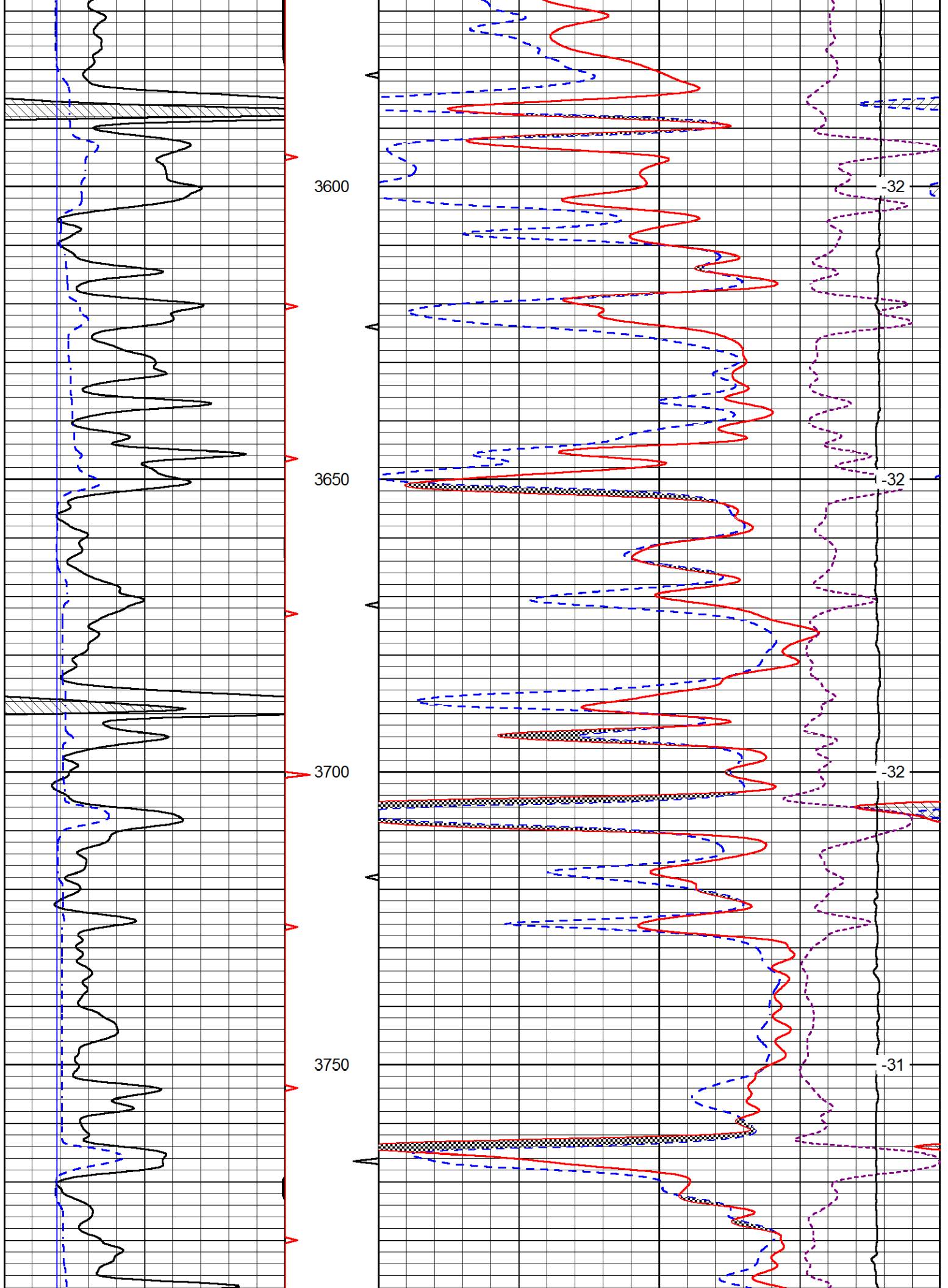


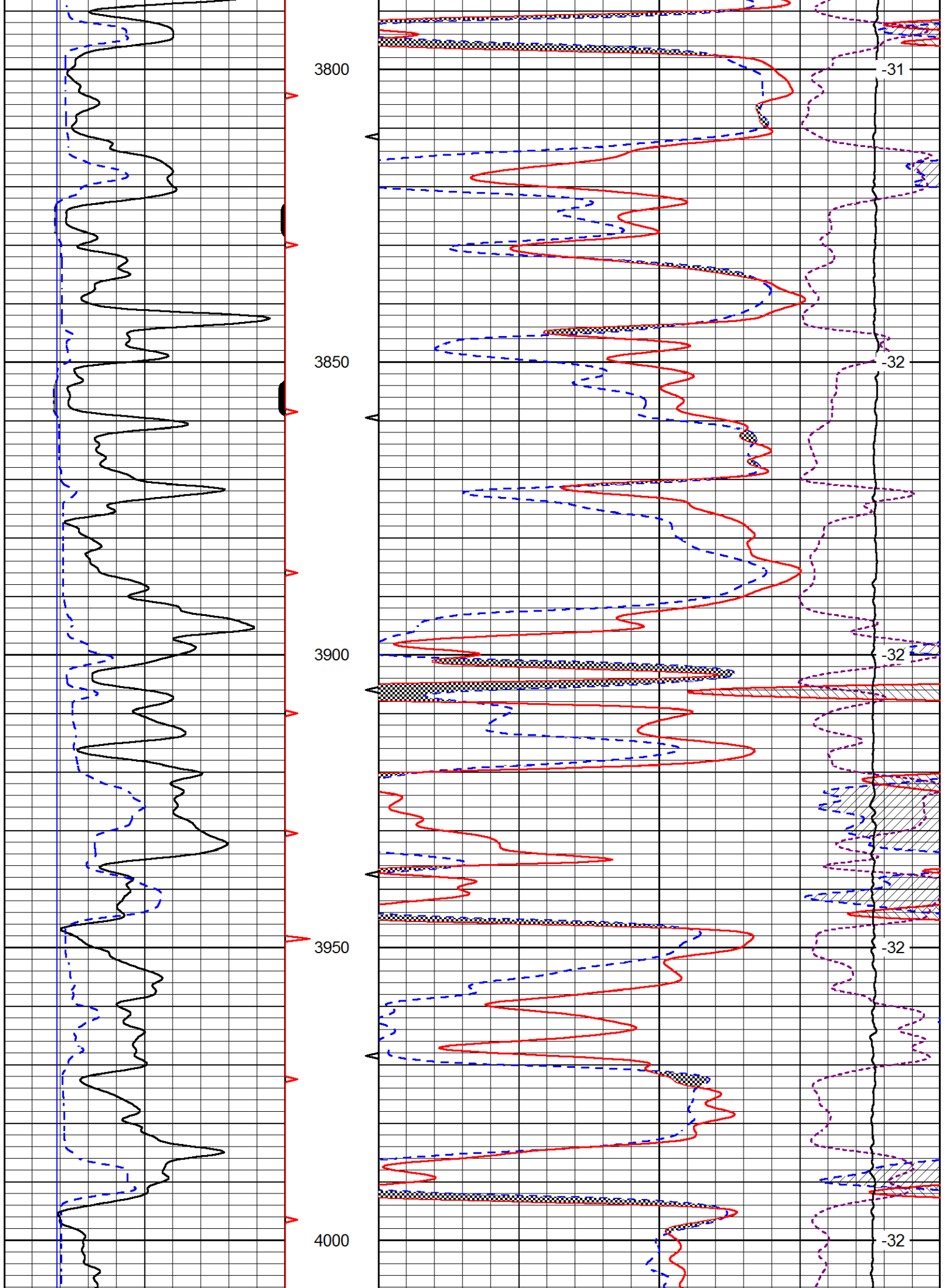
# MAIN PASS

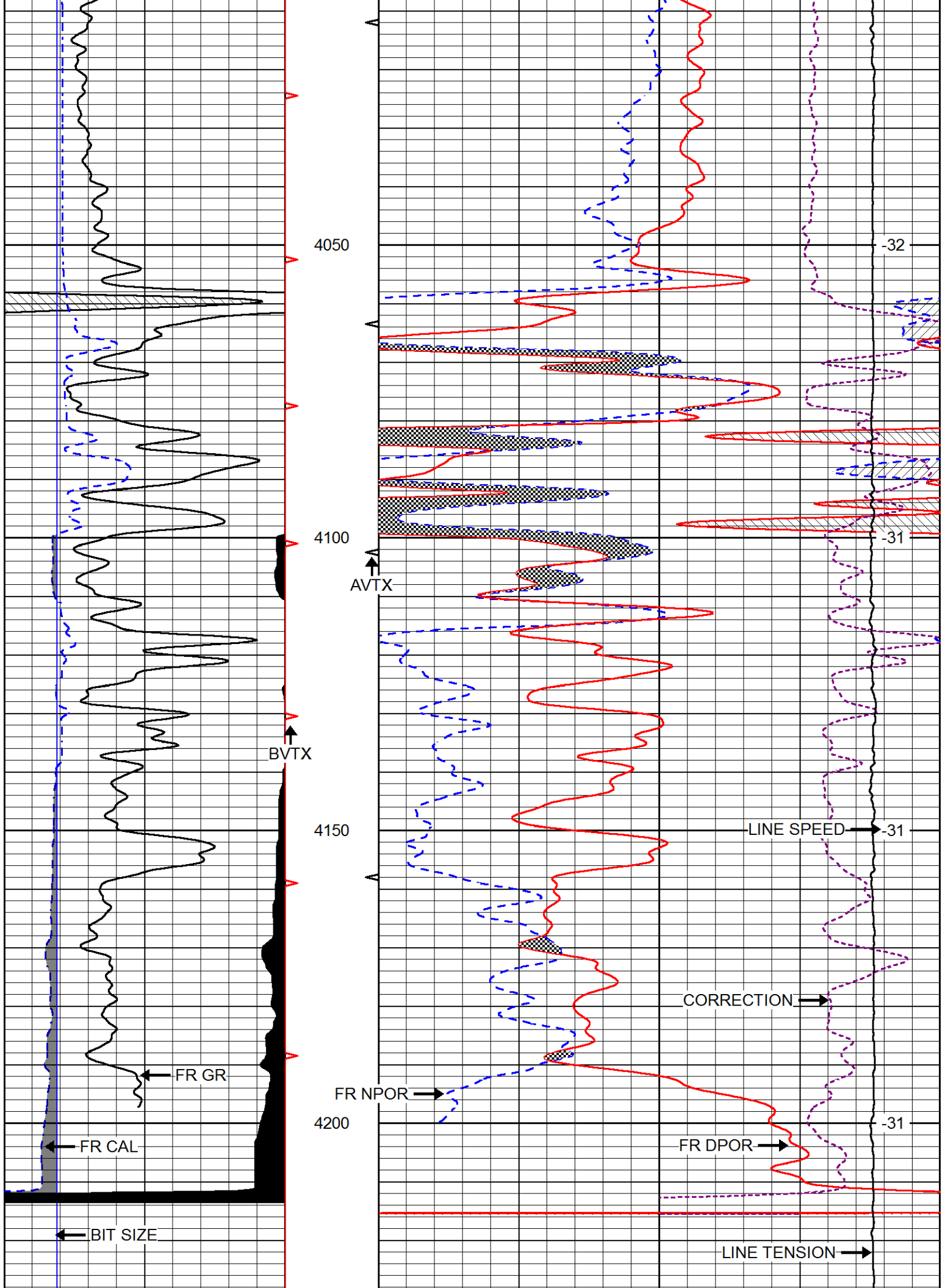
Database File      mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass3.1  
 Presentation Format    cndlspec  
 Dataset Creation      Sun May 29 03:09:03 2016  
 Charted by            Depth in Feet scaled 1:240











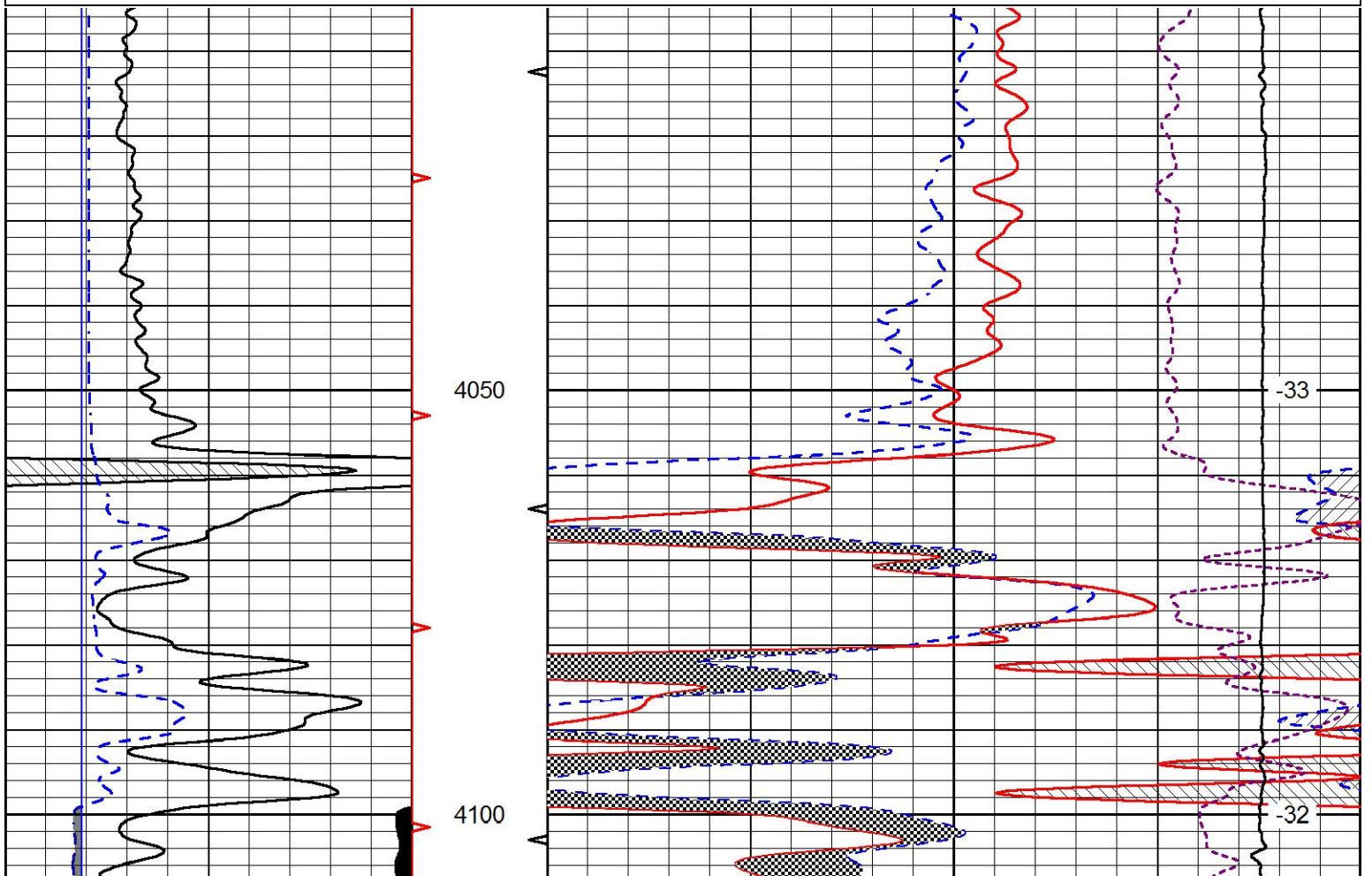
0	GAMMA RAY (GAPI)	150	30	COMPENSATED NEUTRON (pu)	-10
6	CALIPER (in)	16	30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
6	BIT SIZE (in)	16	15000	LINE TENSION (lb)	0
				-0.25 CORRECTION (g/cc)	0.25
				LINE SPEED	(ft/min)

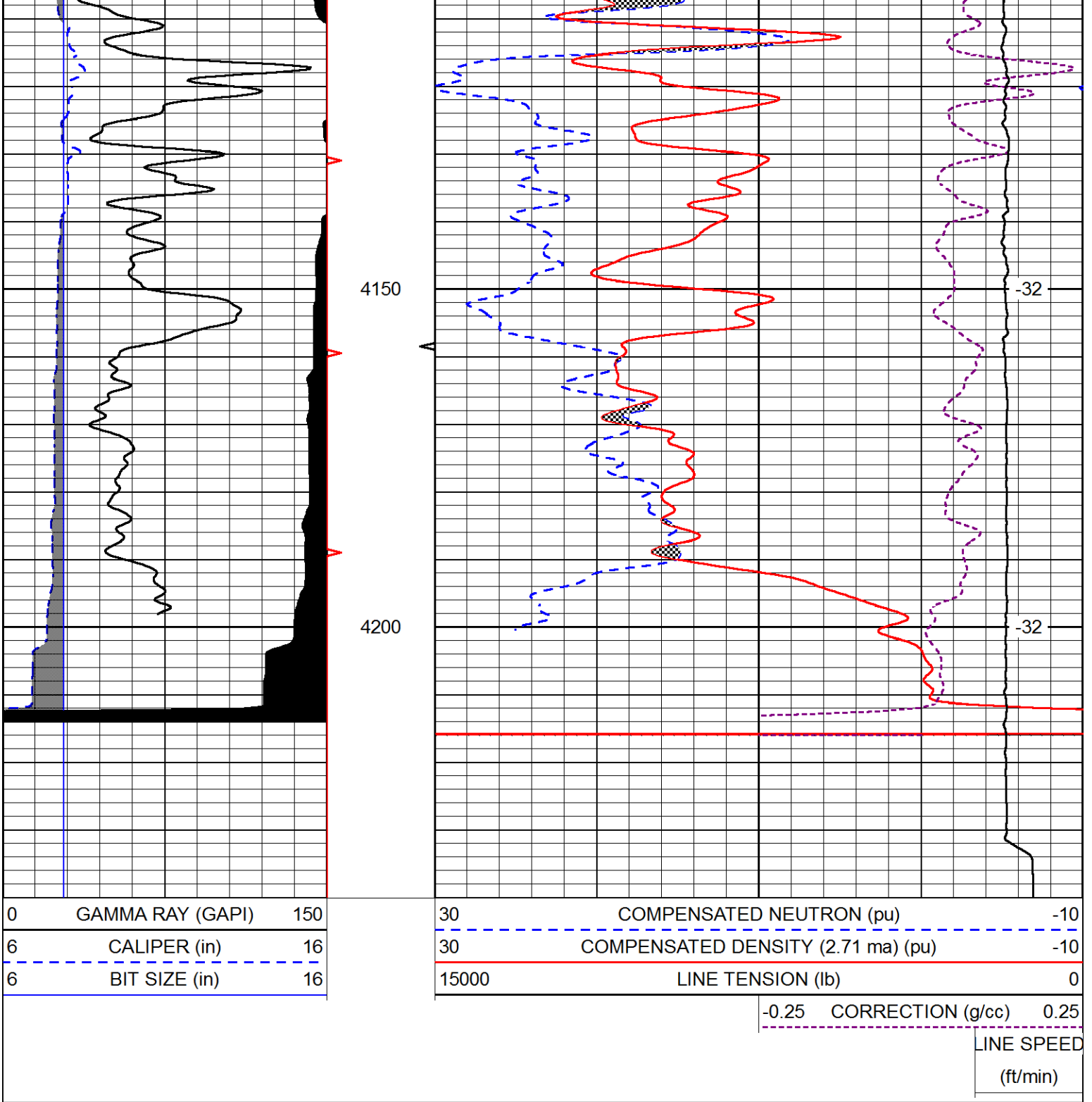


# REPEAT SECTION

Database File	mikelsooil_wonder-mud_14-1.db
Dataset Pathname	stackmel/pass2.1
Presentation Format	cnclspec
Dataset Creation	Sun May 29 03:28:13 2016
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	30	COMPENSATED NEUTRON (pu)	-10
6	CALIPER (in)	16	30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
6	BIT SIZE (in)	16	15000	LINE TENSION (lb)	0
				-0.25 CORRECTION (g/cc)	0.25
				LINE SPEED	(ft/min)





### Calibration Report

Database File     mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname     stackmel/pass3.1  
 Dataset Creation     Sun May 29 03:09:03 2016

### Dual Induction Calibration Report

Serial-Model:                     1987-M&W  
 Calibration Performed:             Thu May 05 13:07:05 2016

Loop:	Readings		References		Results	
	Air	Loop	Air	Loop	Gain	Offset
Deep	178.615	710.235	0.000	255.800	0.530	37.500



Deep	178.815	710.235	0.000	255.800	mmho/m	0.330	-37.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-108.500

**Microlog Calibration Report**

Serial-Model: PSI-02-PSI STKBL ML  
 Performed: Sun May 22 04:14:29 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	15808.9000	-1.3000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	11967.3000	-0.3096
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2700

**Compensated Density Calibration Report**

Serial-Model: 71-914-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Thu Mar 31 16:30:19 2016

**Master Calibration**

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.670	g/cc	822.19	3456.36	cps
Spine Angle = 75.49		Density/Spine Ratio = 0.534			
	Size		Reading		
Small Ring	4.00	in	1.16		
Large Ring	14.00	in	1.57		

**Compensated Neutron Calibration Report**

Serial Number: tk10-MW  
 Tool Model: M&W  
 Calibration Performed: Wed May 4 11:04:05 2016

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

**Gamma Ray Calibration Report**

Serial Number: 89-M&W  
 Tool Model: M&W  
 Calibration Performed: Sun May 22 04:14:23 2016

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps





**PIONEER**

Pioneer Energy Services

Company MIKE REESE OIL, INC.  
Well WONDER-MUD NO. 14-1  
Field THISTLE GROVE  
County NESS  
State KANSAS



# DUAL INDUCTION LOG

**Company** MIKE KELSO OIL, INC.  
**Well** WONDER-MUD NO. 14-1  
**Field** THISTLE GROVE  
**County** NESS **State** KANSAS

**Company** MIKE KELSO OIL, INC.  
**Well** WONDER-MUD NO. 14-1  
**Field** THISTLE GROVE  
**County** NESS  
**State** KANSAS

**Location:** API #: 15-135-25910-00-00  
 330' FSL & 1,155' FWL  
 SEC 14 TWP 17S RGE 21W  
 Permanent Datum GROUND LEVEL Elevation 2176'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING

Other Services  
 CNL/CDL  
 MEL

Date	5/29/2016
Run Number	ONE
Depth Driller	4234'
Depth Logger	4232'
Bottom Logged Interval	4231'
Top Log Interval	300'
Casing Driller	8.625" @ 340'
Casing Logger	343'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	8500
Density / Viscosity	9.0 38
pH / Fluid Loss	9.0 9.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.55 @ 64
Rmt @ Meas. Temp	.41 @ 64
Rmc @ Meas. Temp	.74 @ 64
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.30 @ 118
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	118 DEG F.
Equipment Number	108
Location	COLBY
Recorded By	J. LONG
Witnessed By	SEAN DEENIHAN

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

**Comments**

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.  
 MCCRACKEN, 2 WEST ON ELM STREET (SOUTH SIDE OF TOWN), 1 SOUTH, 7/8 WEST, NORTH INTO

Log Measured From: KELLY BUSHING 7 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
[www.pioneerenergy.com](http://www.pioneerenergy.com) 785-625-3858

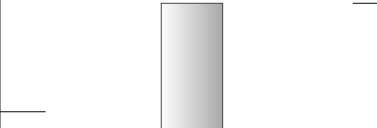
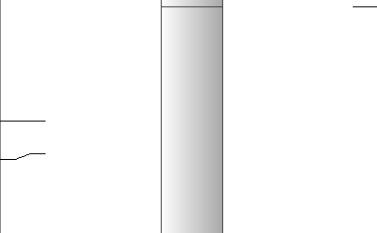
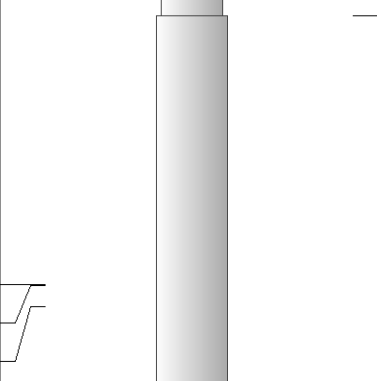
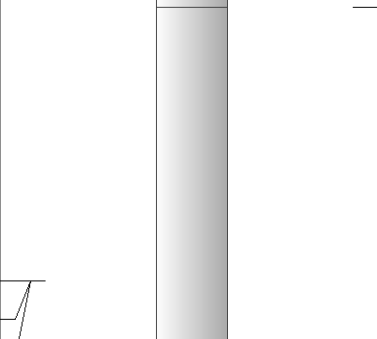
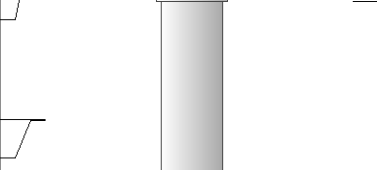
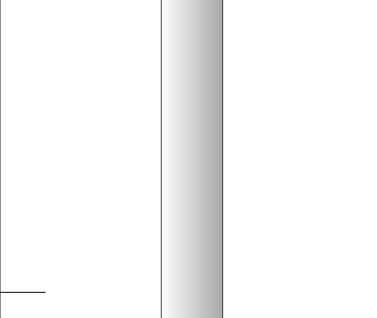
<b>Your Pioneer Energy Services Crew</b> Engineer: J. LONG Operator: D. WALKER Operator: Operator:	<b>This Log Record Was Witnessed By</b> Primary Witness: SEAN DEENIHAN Secondary Witness: Secondary Witness: Secondary Witness:
--	---

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\mikekelsooil\_wonder-mud\_14-1.db  
Dataset field/well/stackmel/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-280	59	Off	4232

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: mikekelsooil\_wonder-mud\_14-1.db: field/well/stackmel/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

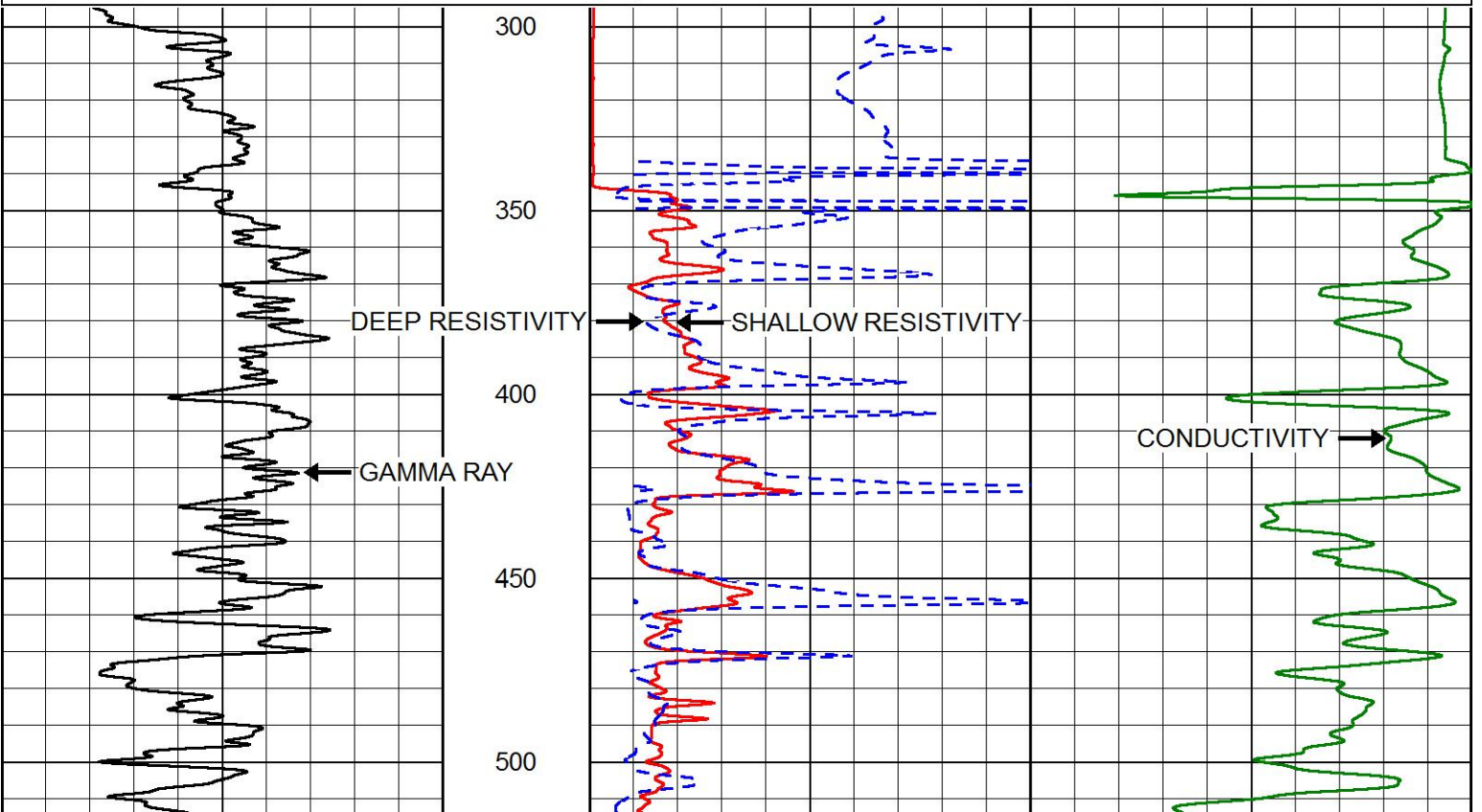


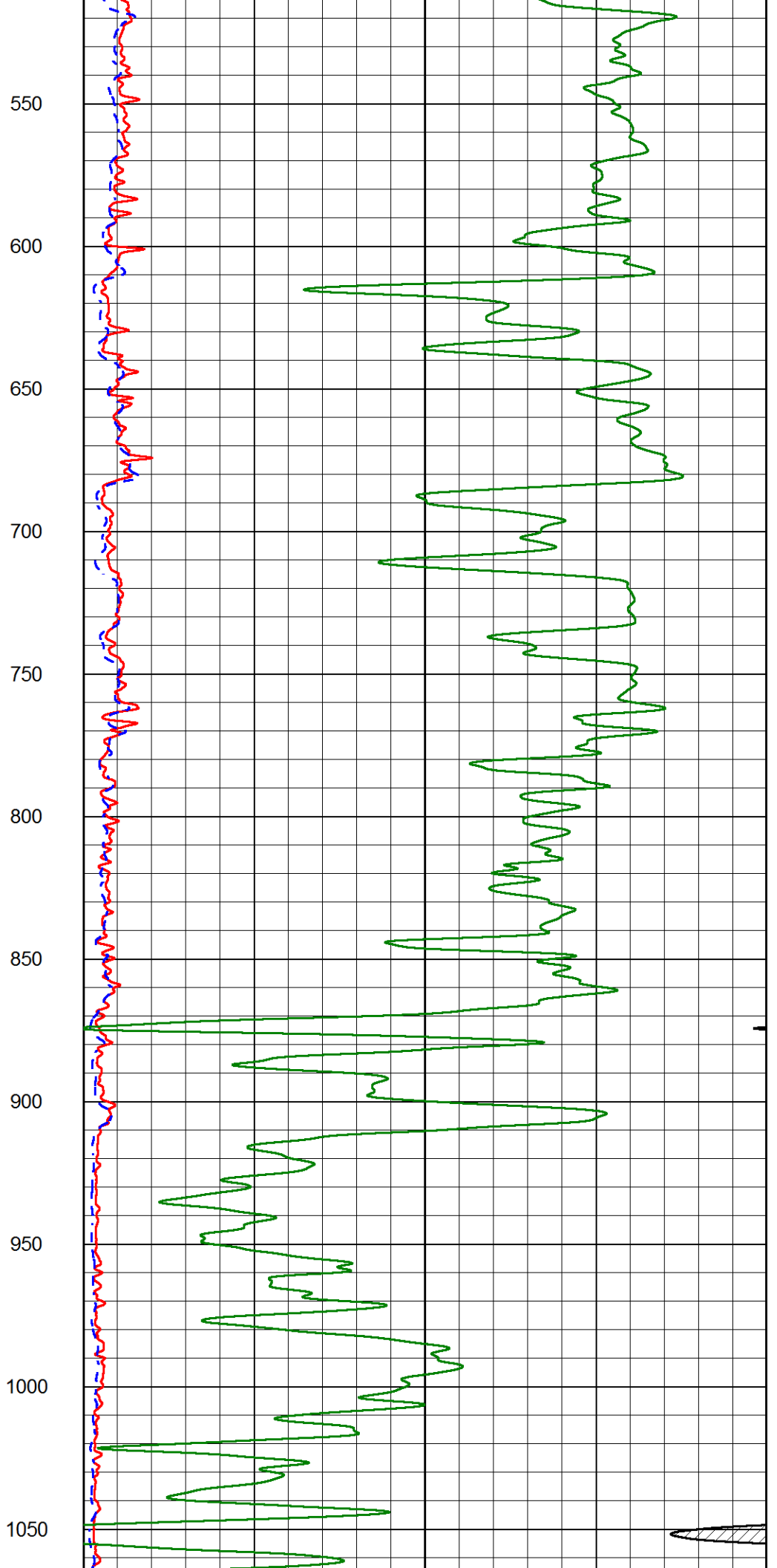
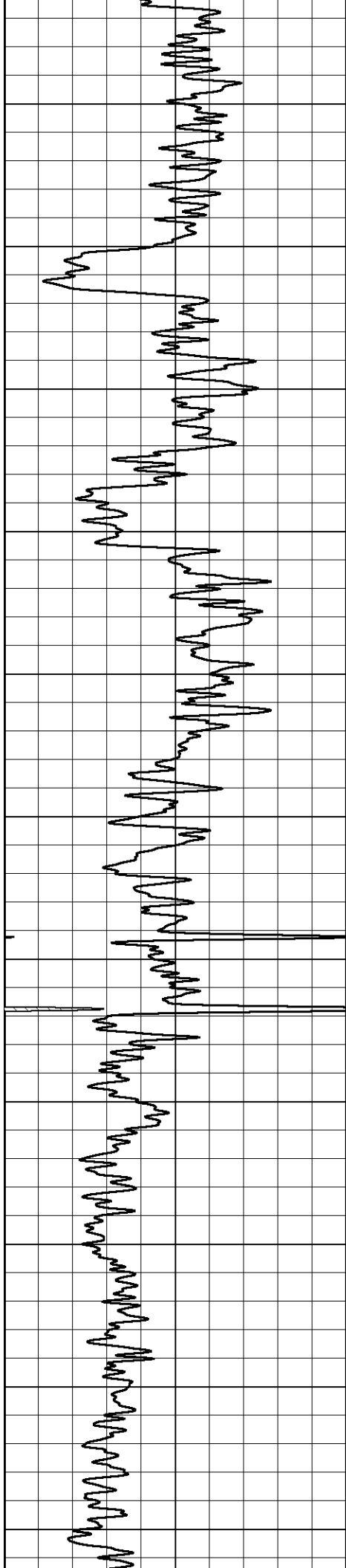
# MAIN PASS

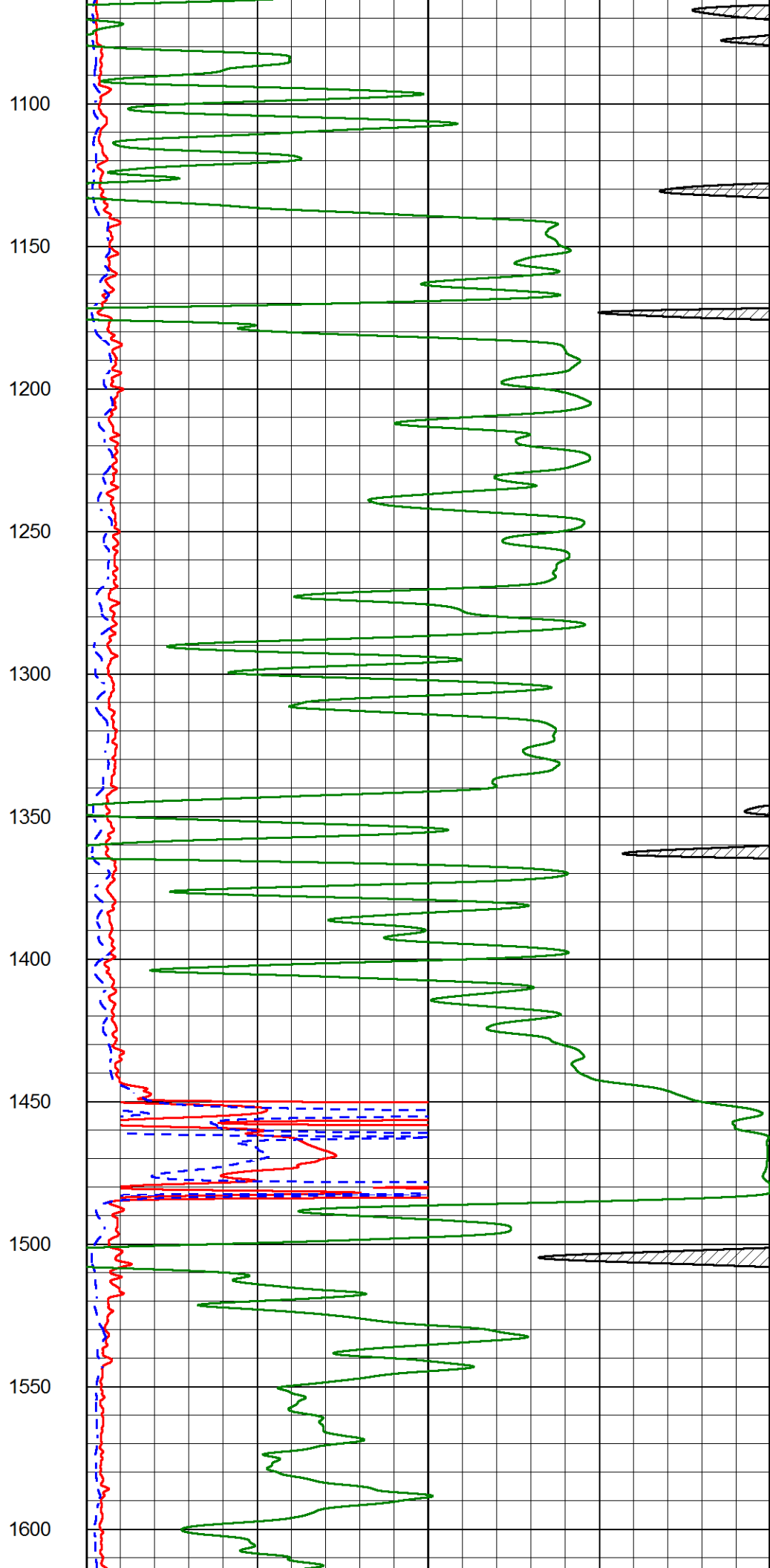
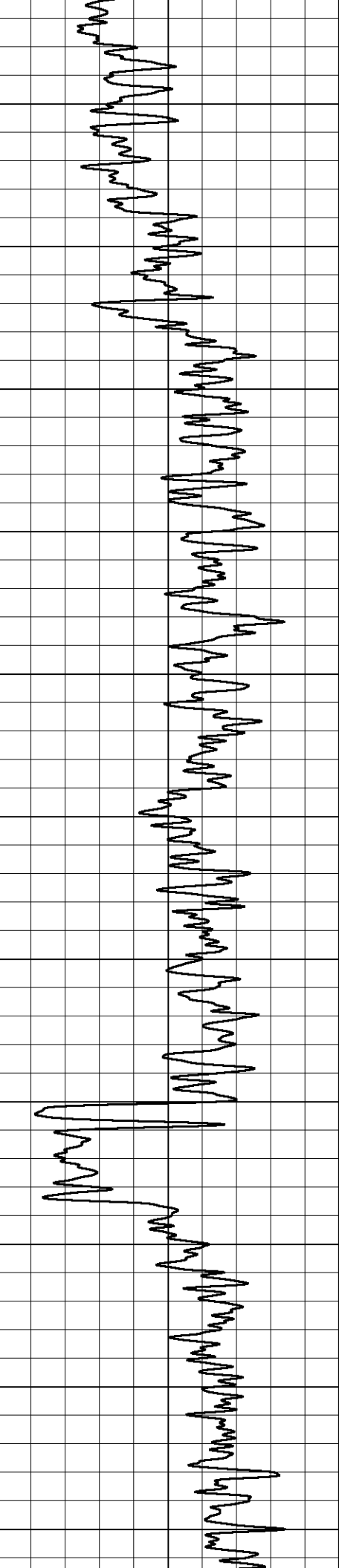
## 2" SCALE RESISTIVITY

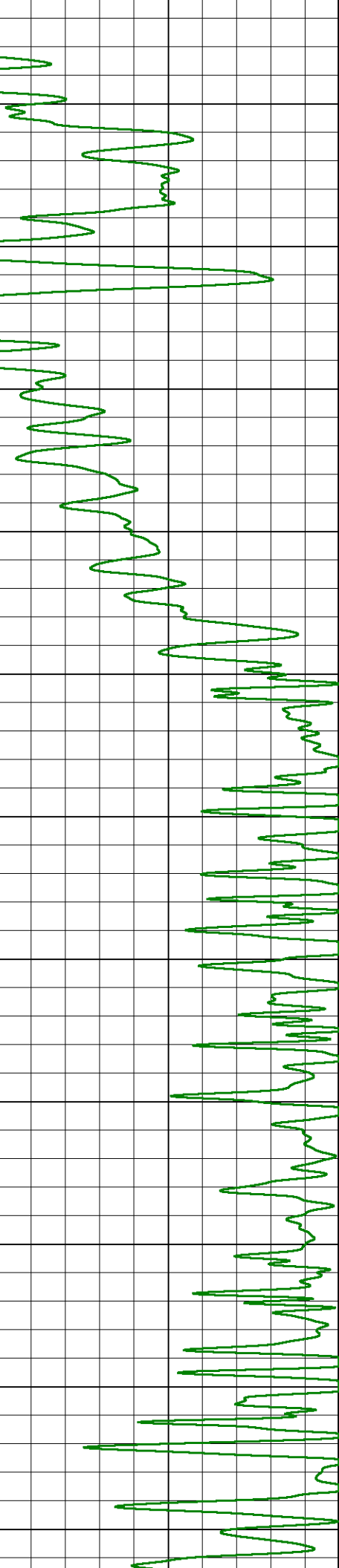
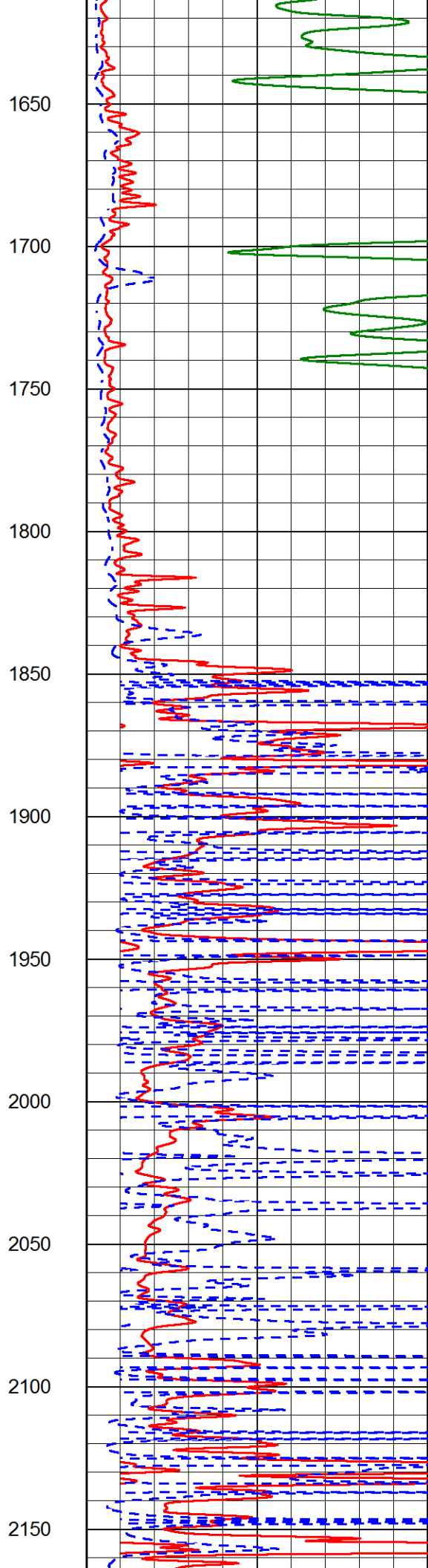
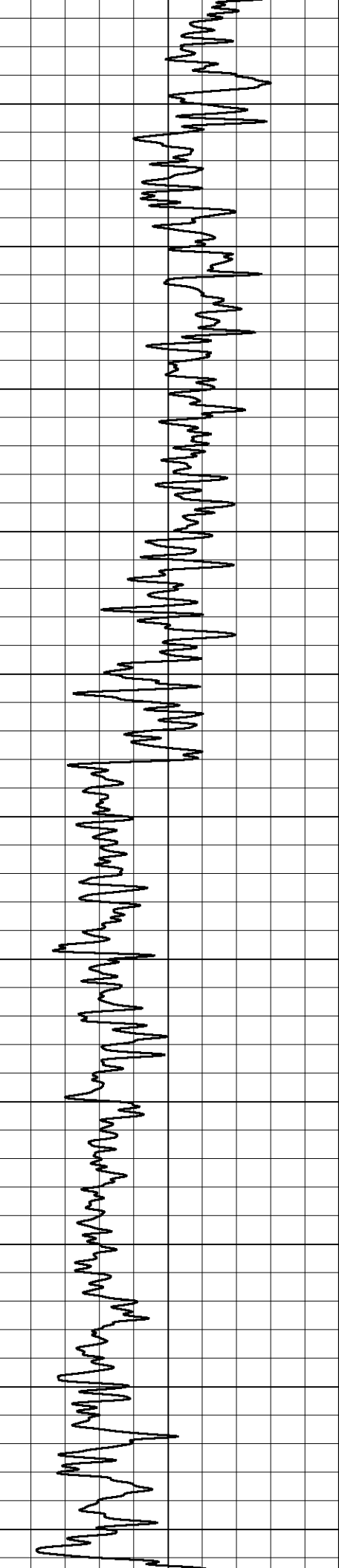
Database File: mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname: stackmel/pass3.2  
 Presentation Format: dil2in  
 Dataset Creation: Sun May 29 03:38:28 2016  
 Charted by: Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150	1000	CONDUCTIVITY (mmho/m)	0
			SHALLOW RESISTIVITY		
			0	(Ohm-m)	50
			DEEP RESISTIVITY (Ohm-m) 50		
			SHALLOW RESISTIVITY		
			50	(Ohm-m)	500
			DEEP RESISTIVITY		
			50	(Ohm-m)	500

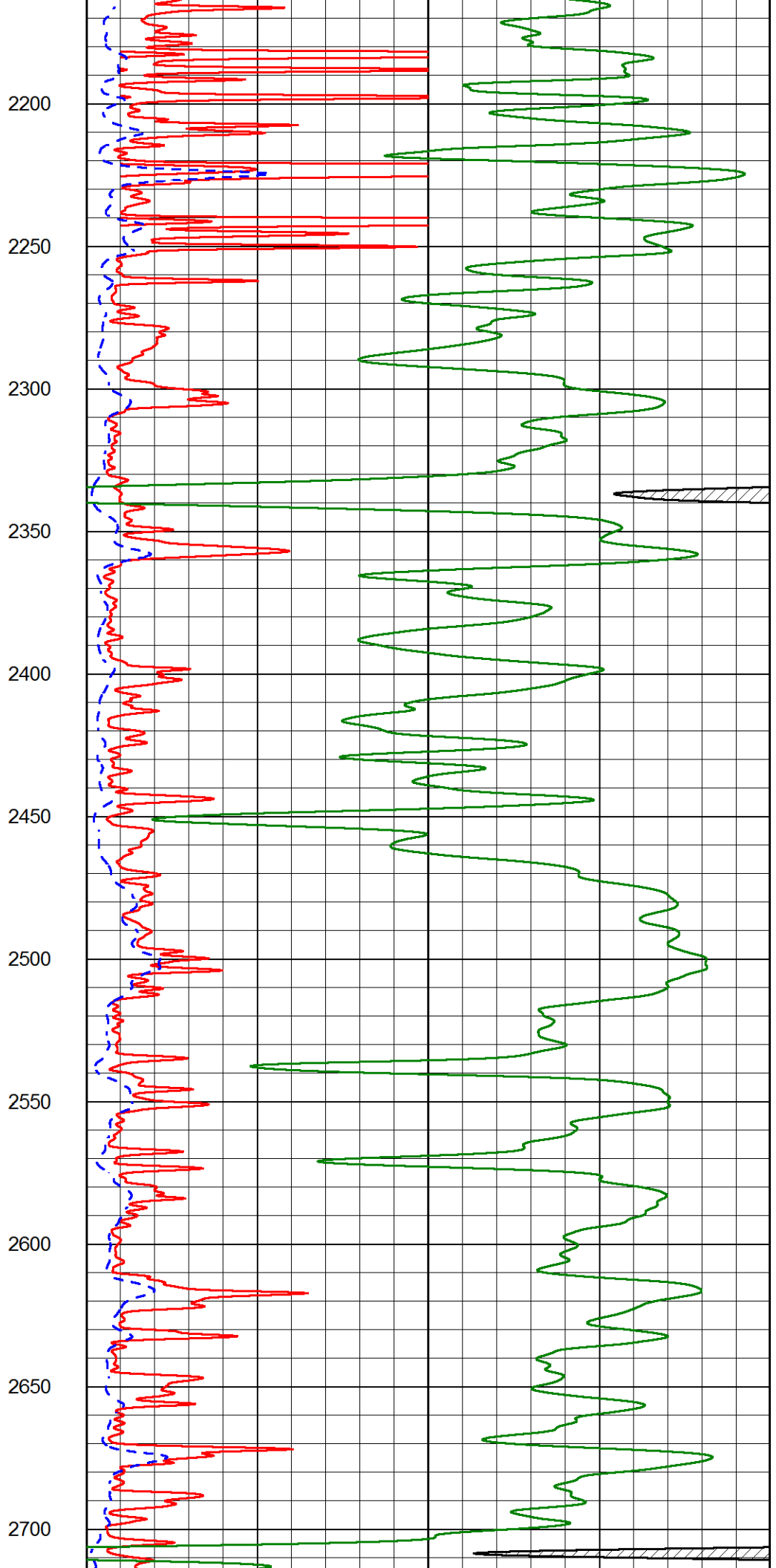
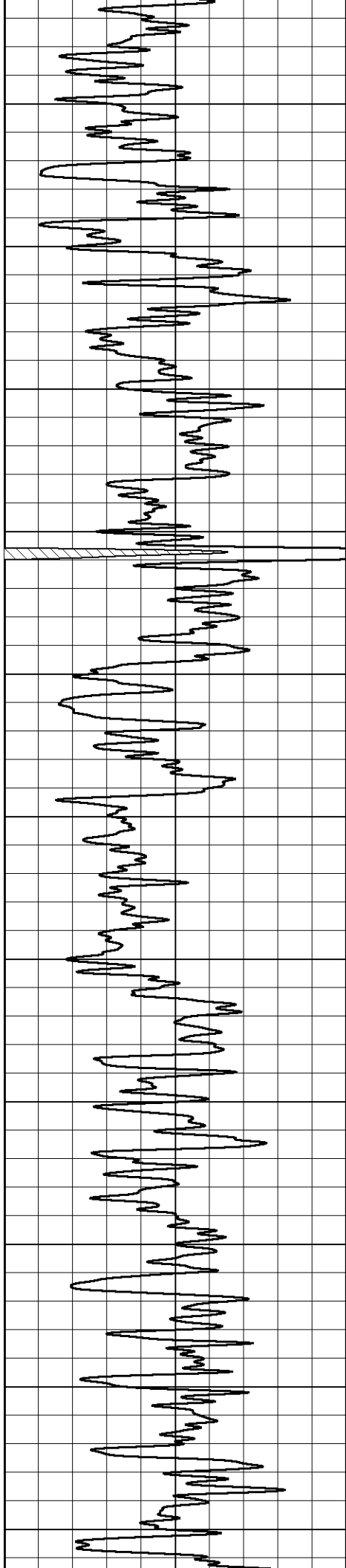


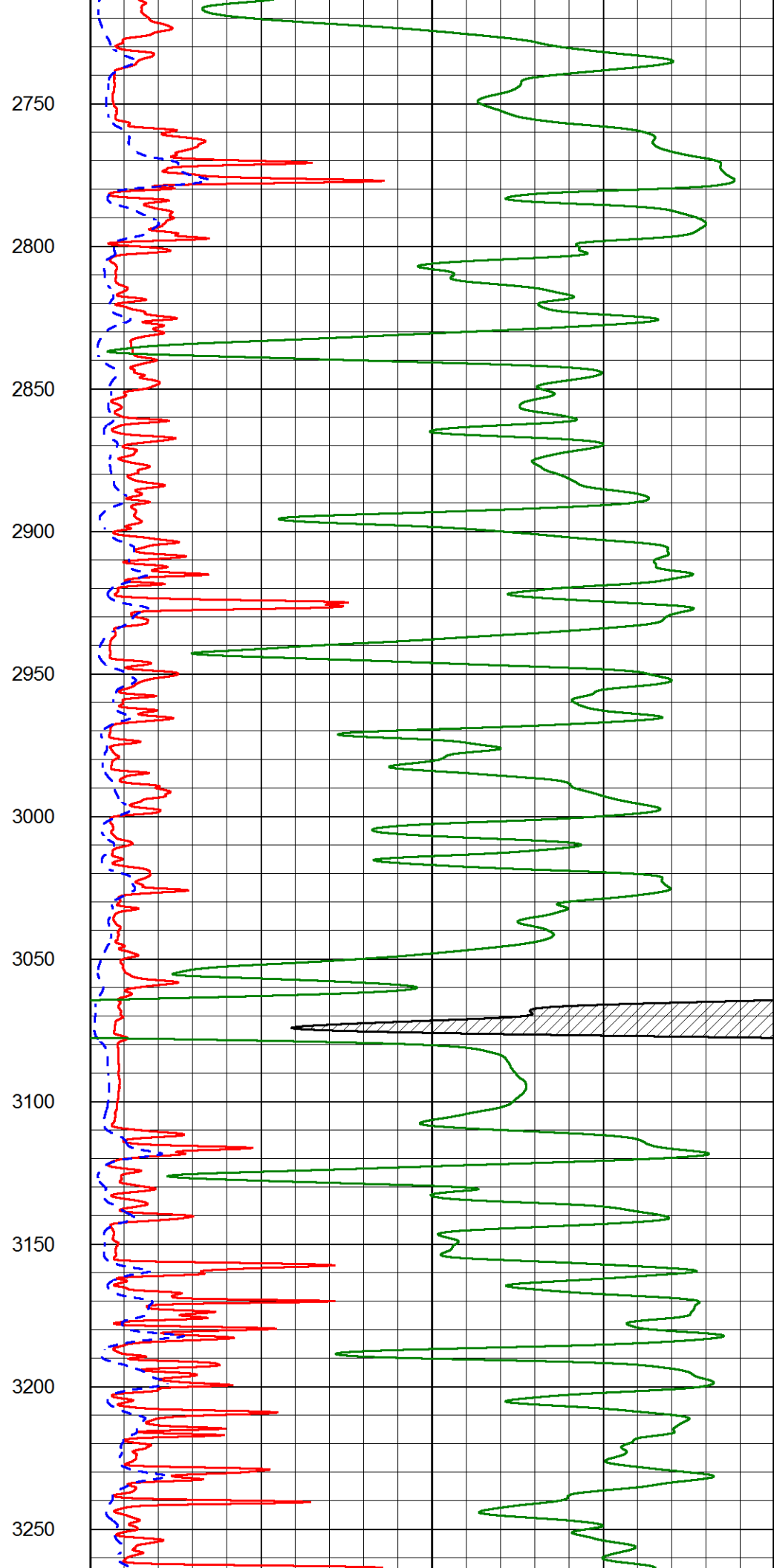
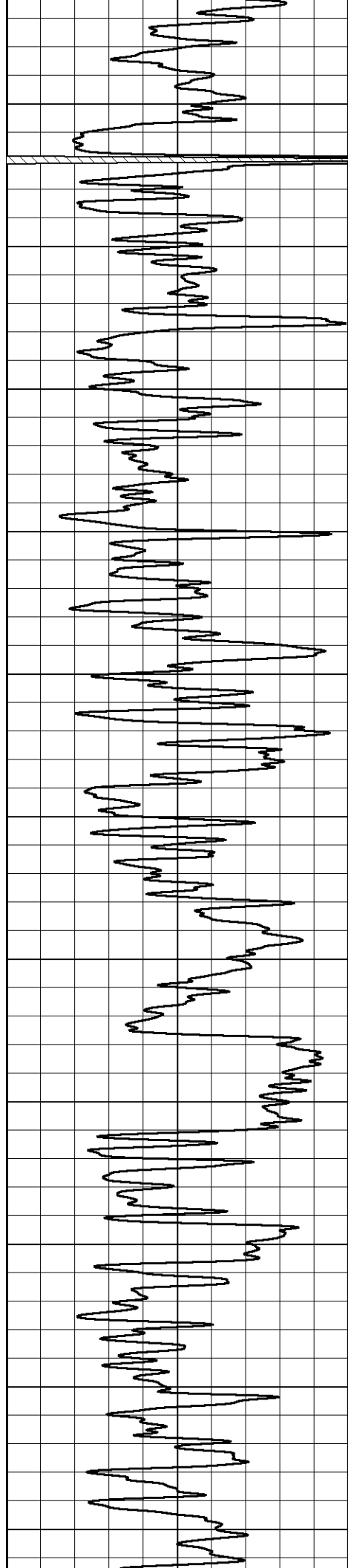


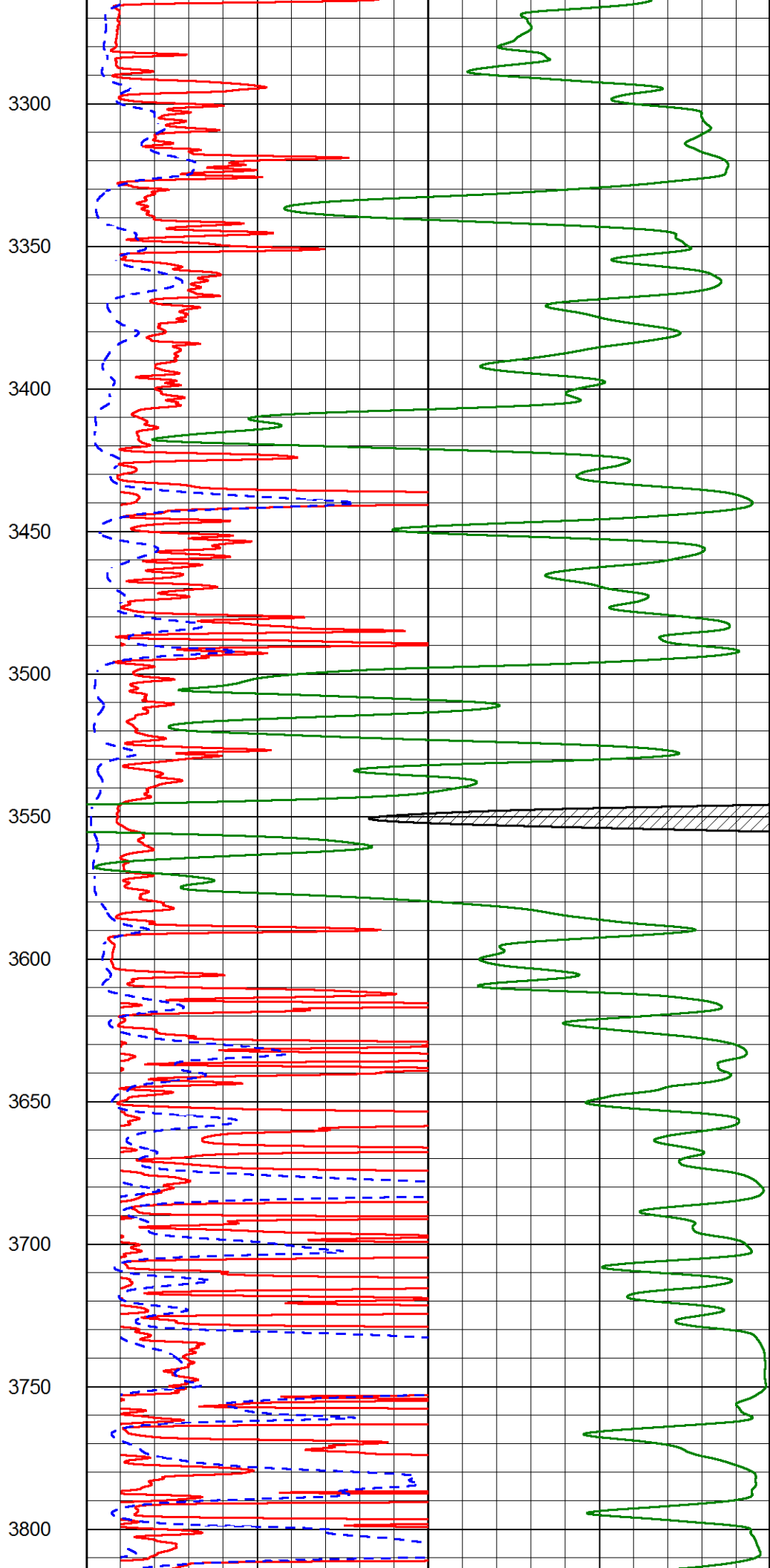
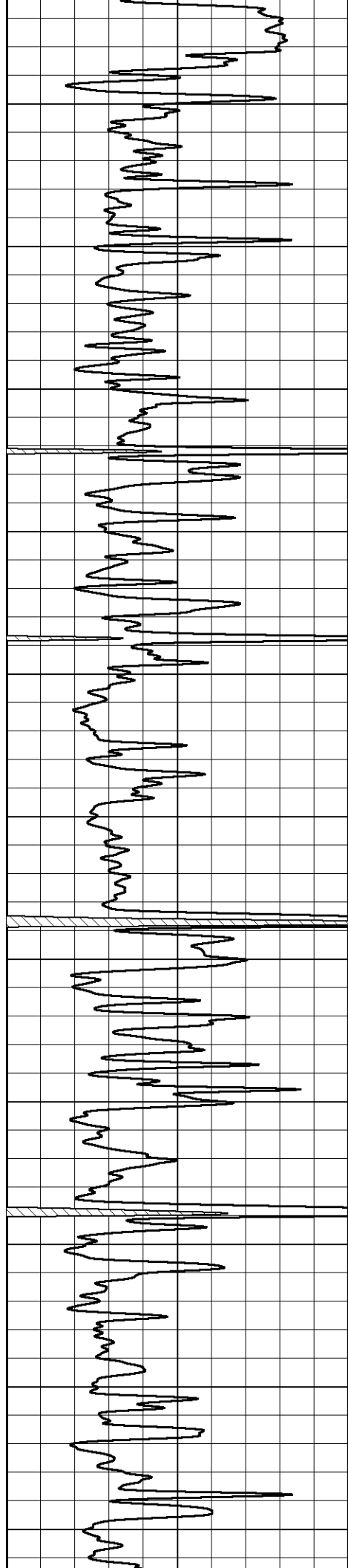


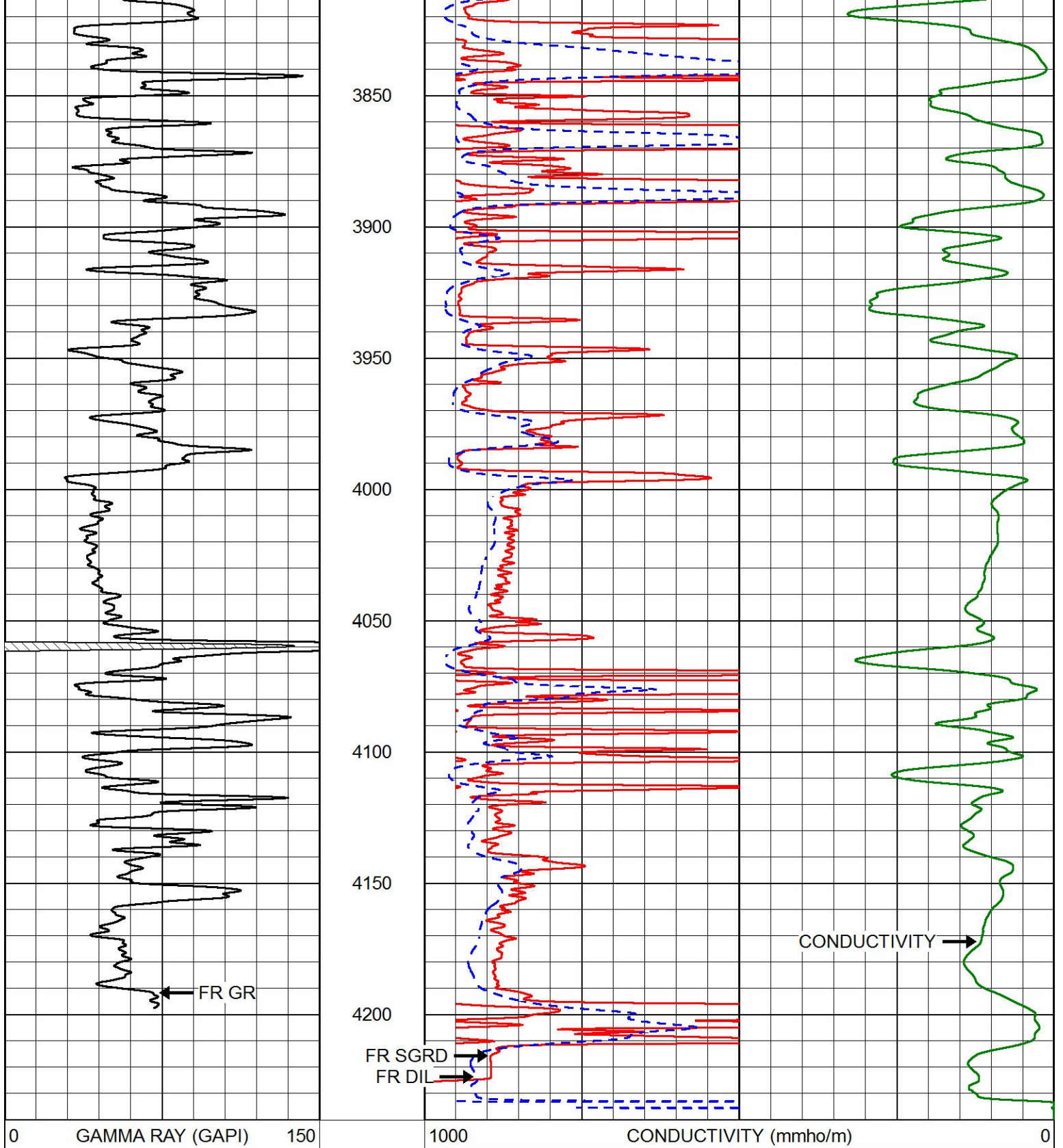








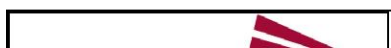




0 GAMMA RAY (GAPI) 150

1000 CONDUCTIVITY (mmho/m) 0

SHALLOW RESISTIVITY		
0	(Ohm-m)	50
DEEP RESISTIVITY (Ohm-m) 50		
SHALLOW RESISTIVITY		
50	(Ohm-m)	500
DEEP RESISTIVITY		
50	(Ohm-m)	500

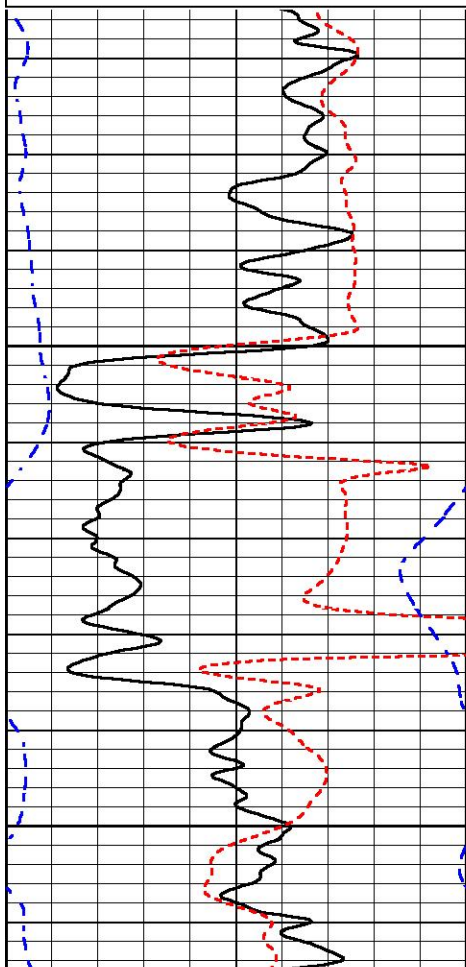


Database File      mikelkelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass3.4  
 Presentation Format    dil  
 Dataset Creation      Sun May 29 03:28:43 2016  
 Charted by            Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-160	RX / ORT	40
-200	SP (mV)	0

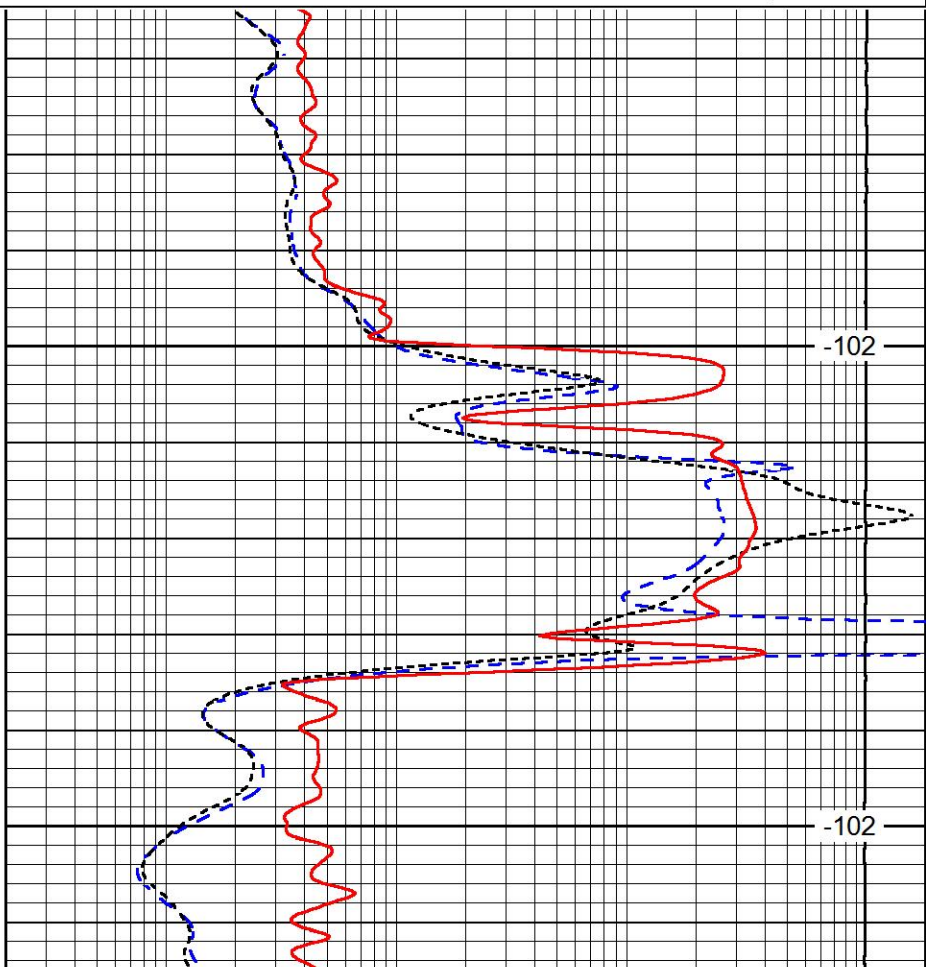
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

LINE SPEED  
(ft/min)



1450

1500



-102

-102

0	GAMMA RAY (GAPI)	150
-160	RX / ORT	40
-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

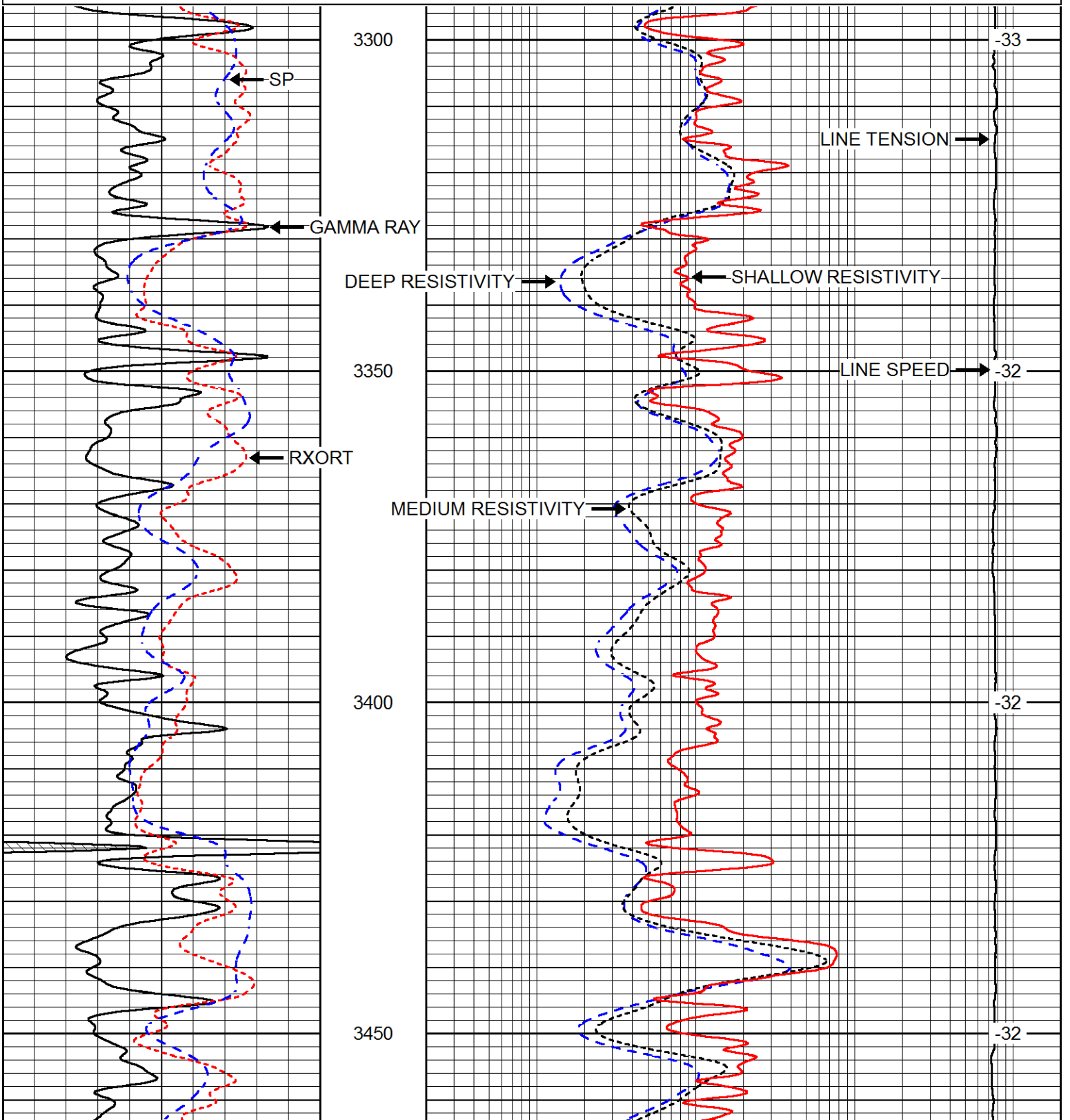
LINE SPEED  
(ft/min)

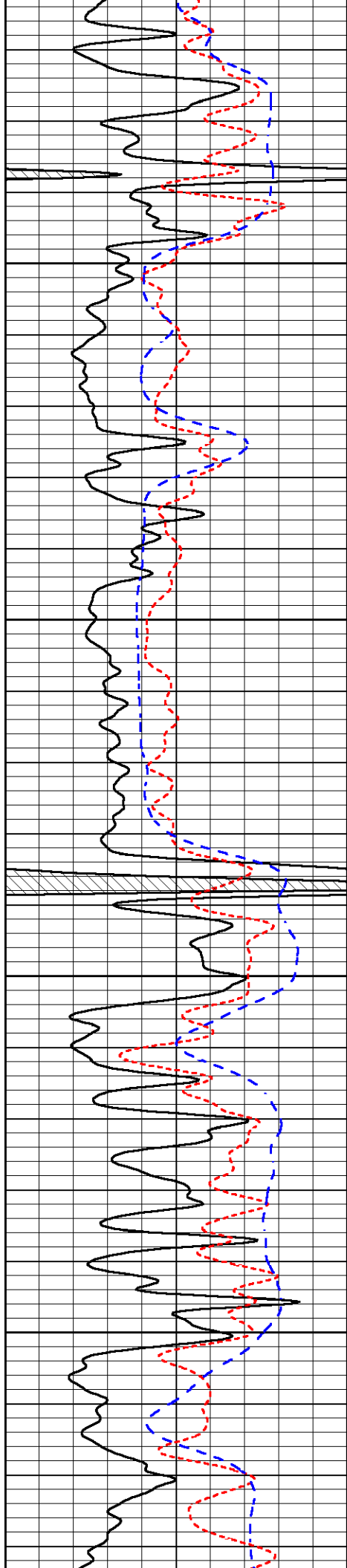
Database File      mikelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass3.1  
 Presentation Format    dil  
 Dataset Creation      Sun May 29 03:09:03 2016  
 Charted by            Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-160	RX / ORT	40
-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

LINE SPEED  
 (ft/min)



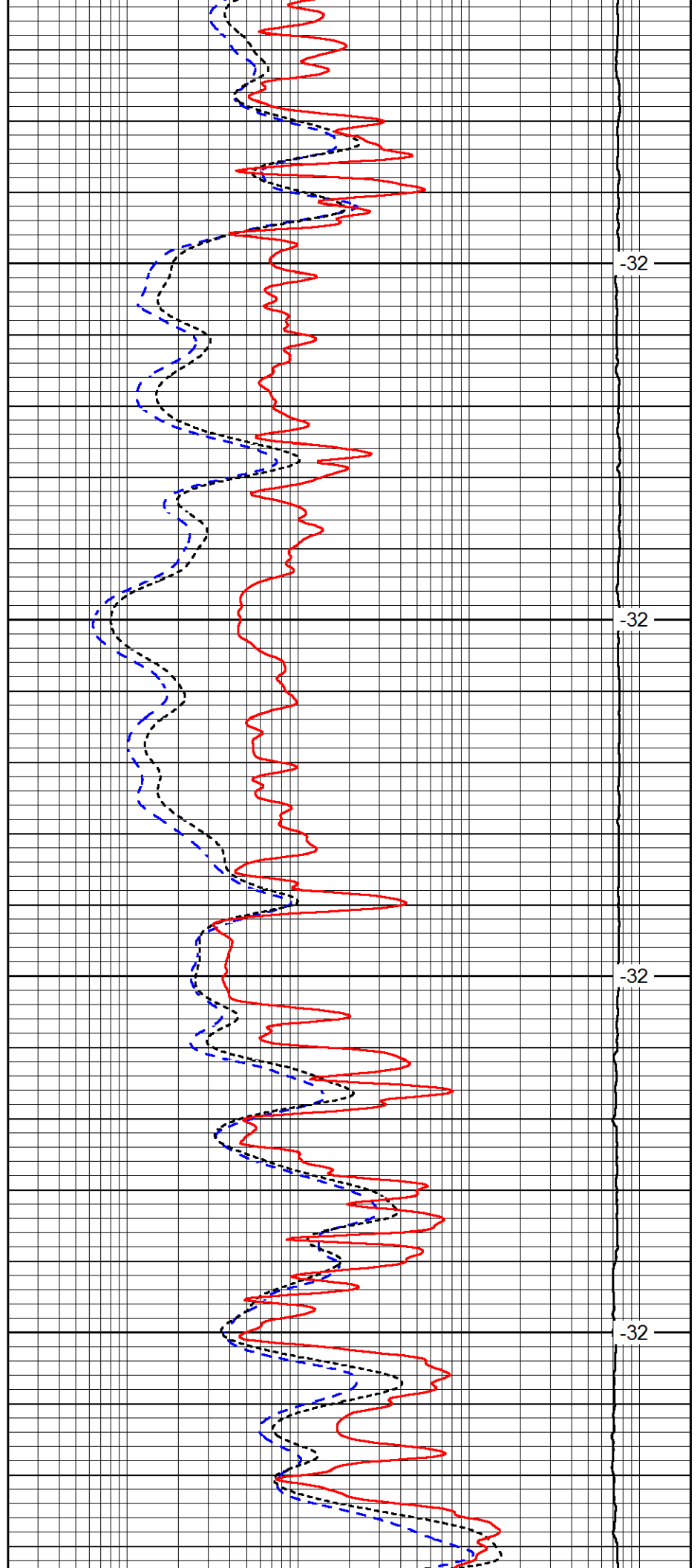


3500

3550

3600

3650

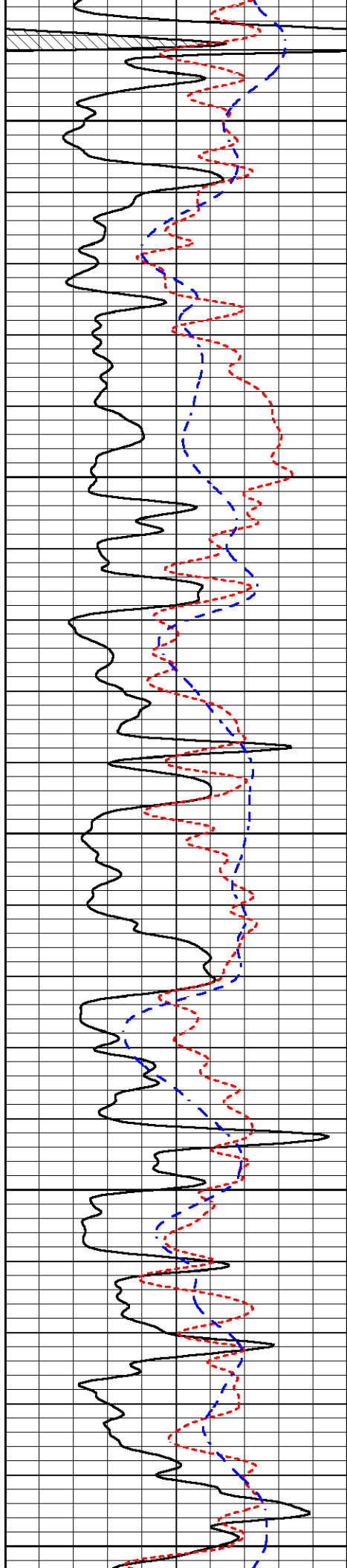


32

32

32

32



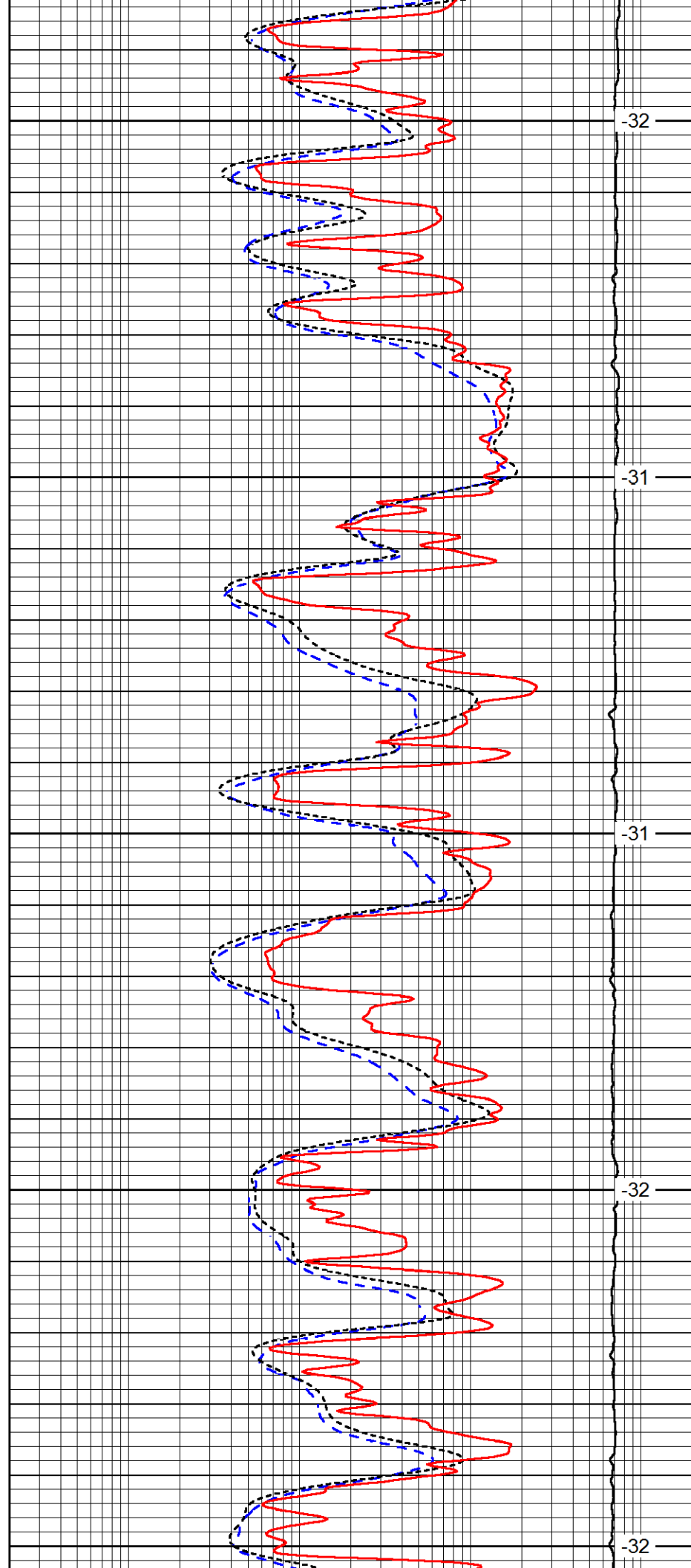
3700

3750

3800

3850

3900



-32

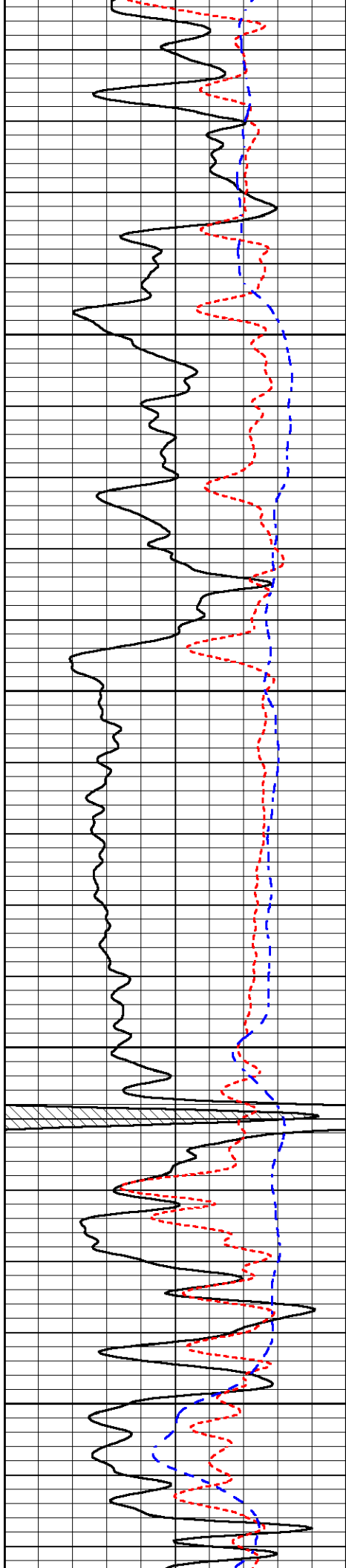
-31

-31

-32

-32



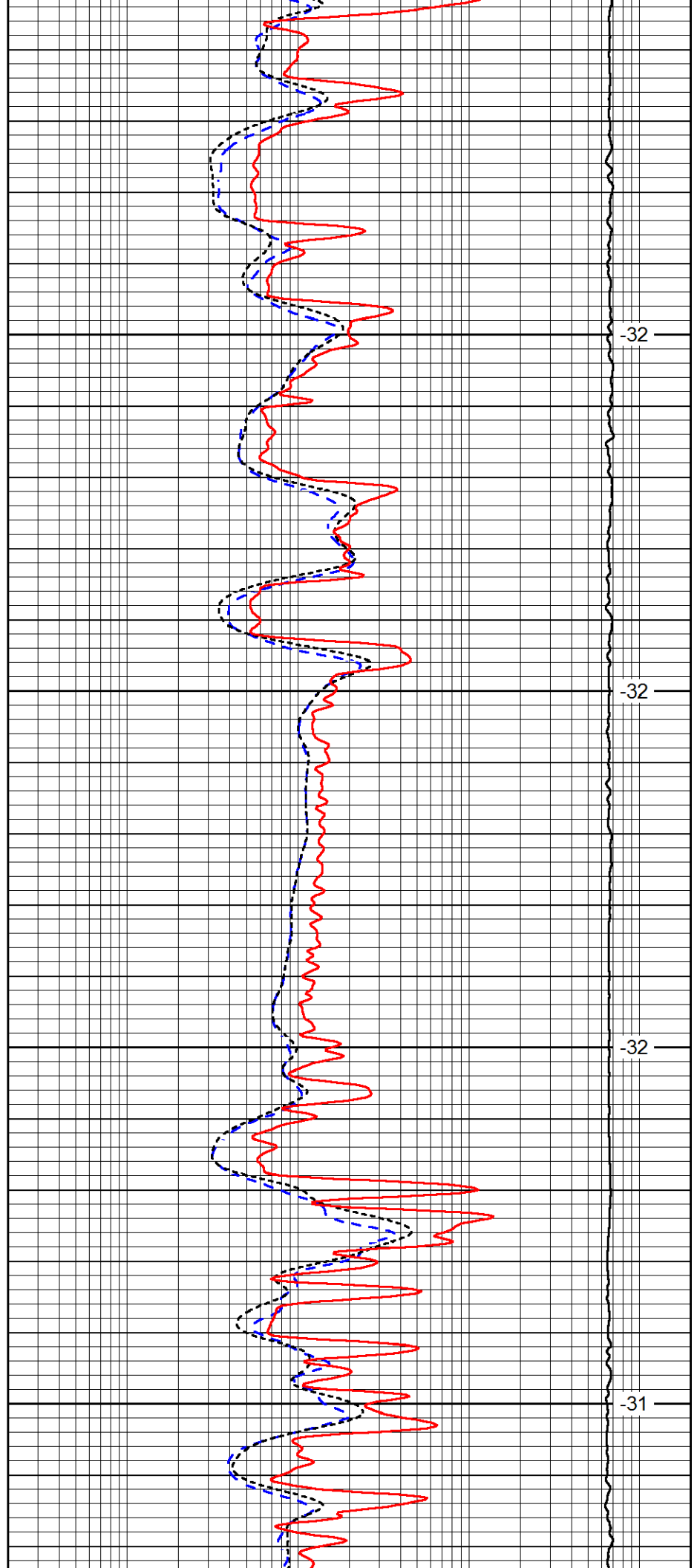


3950

4000

4050

4100

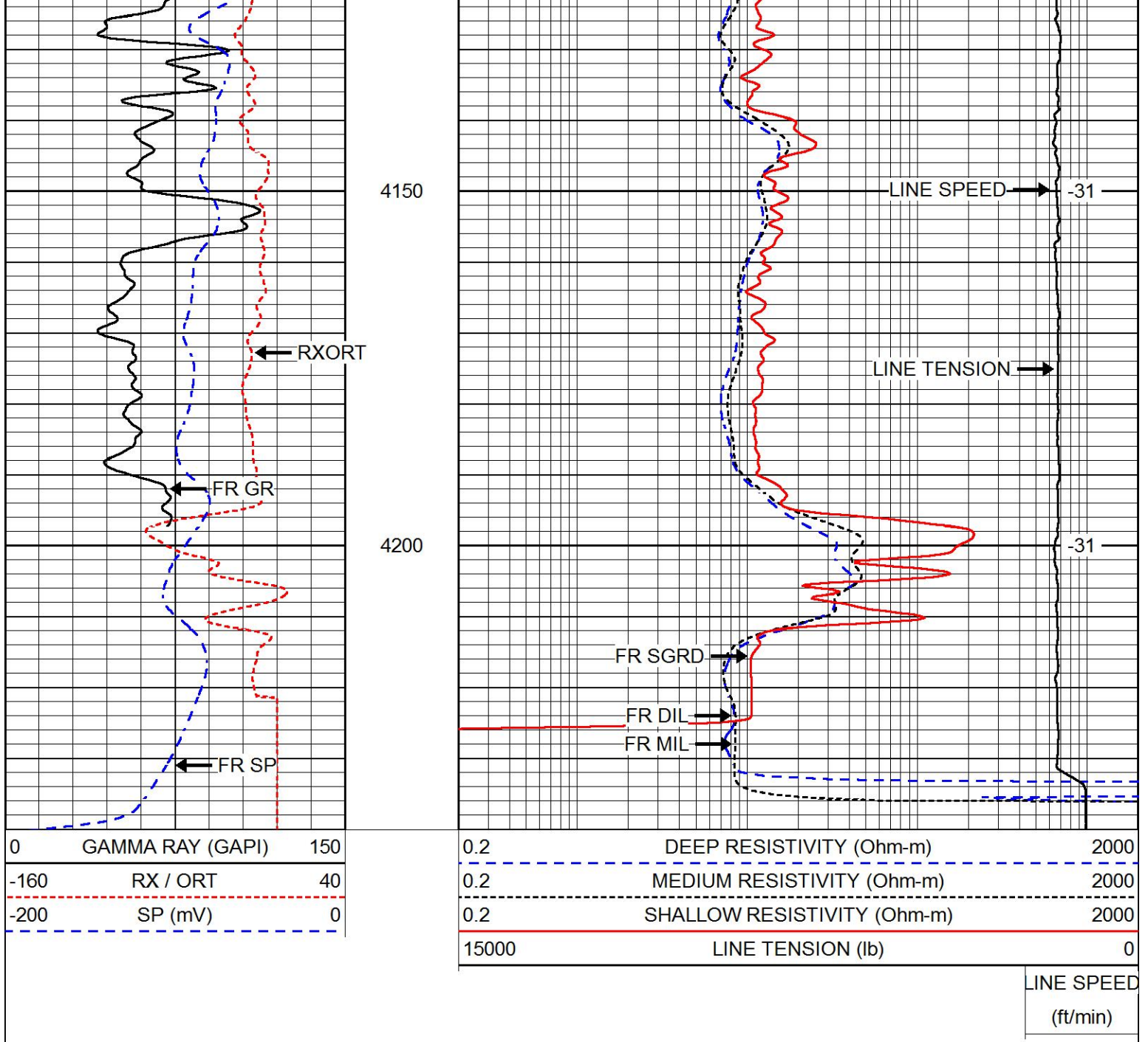


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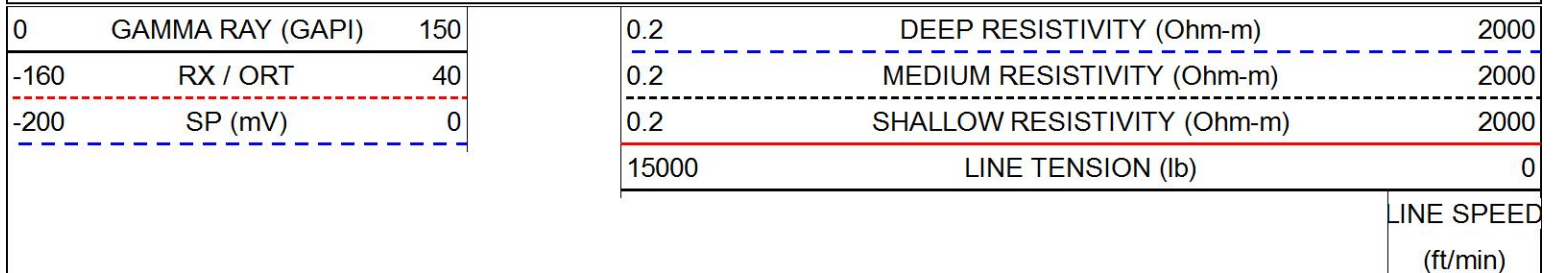
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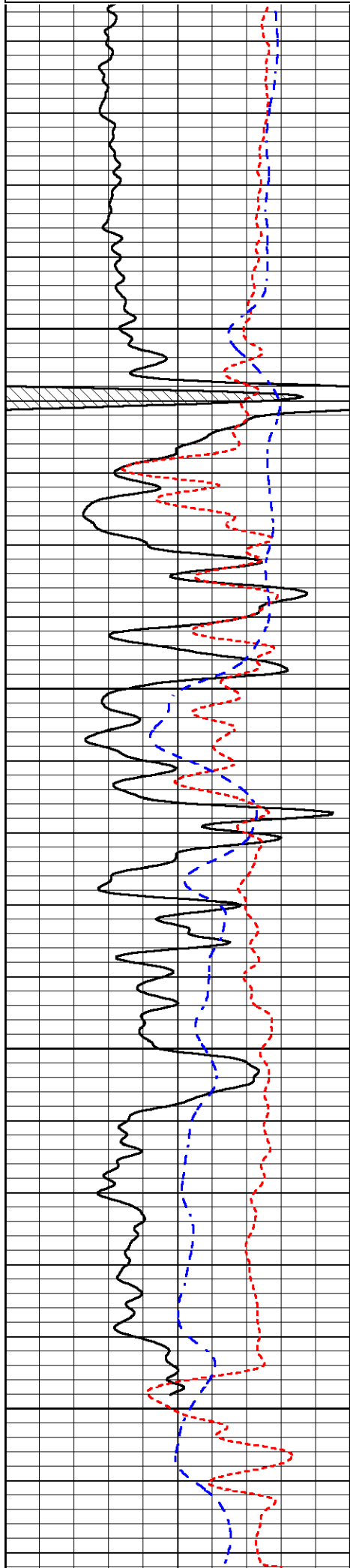
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# REPEAT SECTION

Database File      mikelkelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass2.1  
 Presentation Format    dil  
 Dataset Creation     Sun May 29 03:28:13 2016  
 Charted by            Depth in Feet scaled 1:240



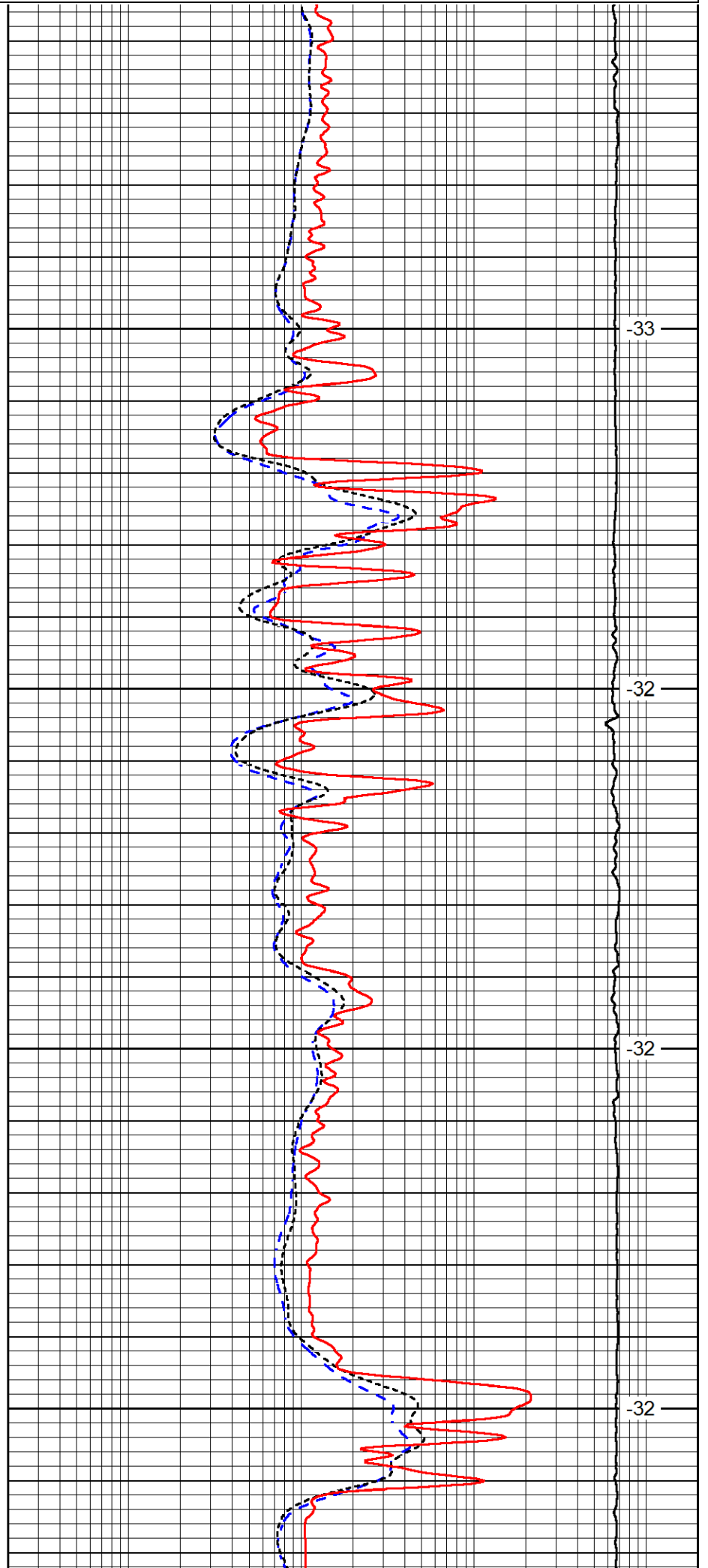


4050

4100

4150

4200

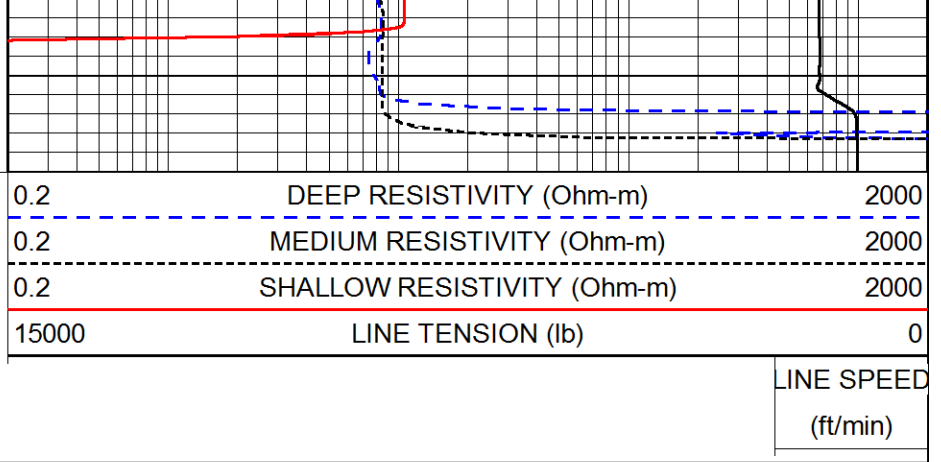
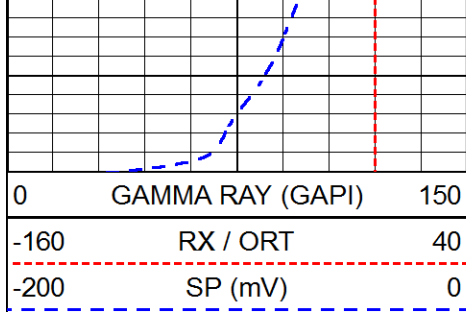


-33

-32

-32

-32



Calibration Report

Database File      mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass3.1  
 Dataset Creation    Sun May 29 03:09:03 2016

Dual Induction Calibration Report

Serial-Model:                      1987-M&W  
 Calibration Performed:            Thu May 05 13:07:05 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-37.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-108.500

Microlog Calibration Report

Serial-Model:                      PSI-02-PSI STKBL ML  
 Performed:                         Sun May 22 04:14:29 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	15808.9000	-1.3000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	11967.3000	-0.3096
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2700

Compensated Density Calibration Report

Serial-Model:                      71-914-M&W  
 Source / Verifier:                 /  
 Master Calibration Performed:    Thu Mar 31 16:30:19 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.670	g/cc	822.19	3456.36	cps

Spine Angle = 75.49

Density/Spine Ratio = 0.534

Size

Reading

Small Ring	4.00	in	1.16
Large Ring	14.00	in	1.57

Compensated Neutron Calibration Report

Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed May 4 11:04:05 2016

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number:	89-M&W	
Tool Model:	M&W	
Calibration Performed:	Sun May 22 04:14:23 2016	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

 <p><b>PIONEER</b> Pioneer Energy Services</p>	Company	MIKE KELSO OIL, INC.
	Well	WONDER-MUD NO. 14-1
	Field	THISTLE GROVE
	County	NESS
	State	KANSAS



# MICRORESISTIVITY LOG

**Company** MIKE KELSO OIL, INC.  
**Well** WONDER-MUD NO. 14-1  
**Field** THISTLE GROVE  
**County** NESS **State** KANSAS

**Company** MIKE KELSO OIL, INC.  
**Well** WONDER-MUD NO. 14-1  
**Field** THISTLE GROVE  
**County** NESS  
**State** KANSAS

**Location:** API #: 15-135-25910-00-00  
 330' FSL & 1,155' FWL  
 SEC 14 TWP 17S RGE 21W  
**Permanent Datum** GROUND LEVEL Elevation 2176'  
**Log Measured From** KELLY BUSHING  
**Drilling Measured From** KELLY BUSHING  
**Other Services** CNL/CDL DIL  
**Elevation** K.B. 2183'  
**D.F.** N/A  
**G.L.** 2176'

Date	5/29/2016
Run Number	ONE
Depth Driller	4234'
Depth Logger	4232'
Bottom Logged Interval	4231'
Top Log Interval	3200'
Casing Driller	8.625" @ 340'
Casing Logger	343'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	8500
Density / Viscosity	9.0 38
pH / Fluid Loss	9.0 9.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.55 @ 64
Rmt @ Meas. Temp	.41 @ 64
Rmc @ Meas. Temp	.74 @ 64
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.30 @ 118
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	118 DEG F.
Equipment Number	108
Location	COLBY
Recorded By	J. LONG
Witnessed By	SEAN DEENIHAN

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

### Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

MCCRACKEN, 2 WEST ON ELM STREET (SOUTH SIDE OF TOWN), 1 SOUTH, 7/8 WEST, NORTH INTO

Log Measured From: KELLY BUSHING 7 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
[www.pioneerenergy.com](http://www.pioneerenergy.com) 785-625-3858

### Your Pioneer Energy Services Crew

Engineer: J. LONG  
 Operator: D. WALKER  
 Operator:  
 Operator:

### This Log Record Was Witnessed By

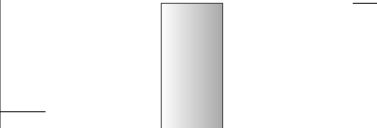
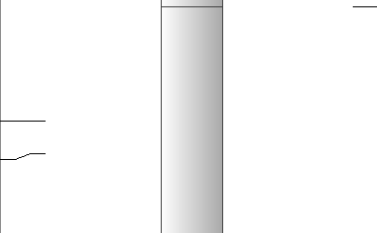
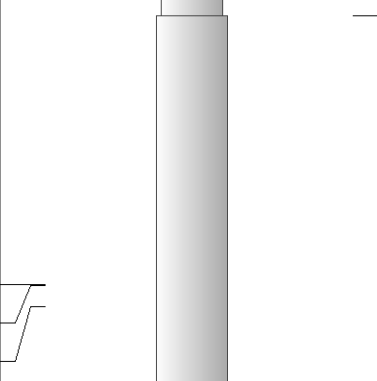
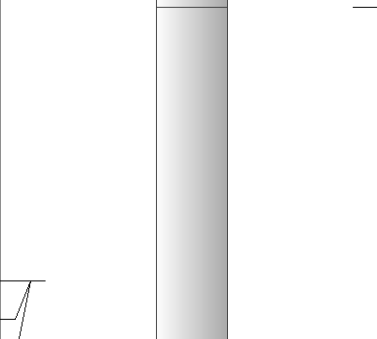
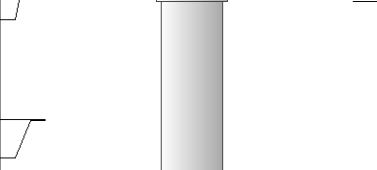
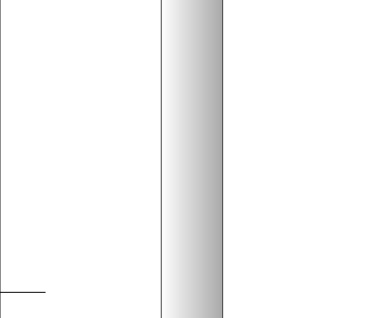
Primary Witness: SEAN DEENIHAN  
 Secondary Witness:  
 Secondary Witness:  
 Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\mikekelsooil\_wonder-mud\_14-1.db  
Dataset field/well/stackmel/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-280	59	Off	4232

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: mikelsooil\_wonder-mud\_14-1.db: field/well/stackmel/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

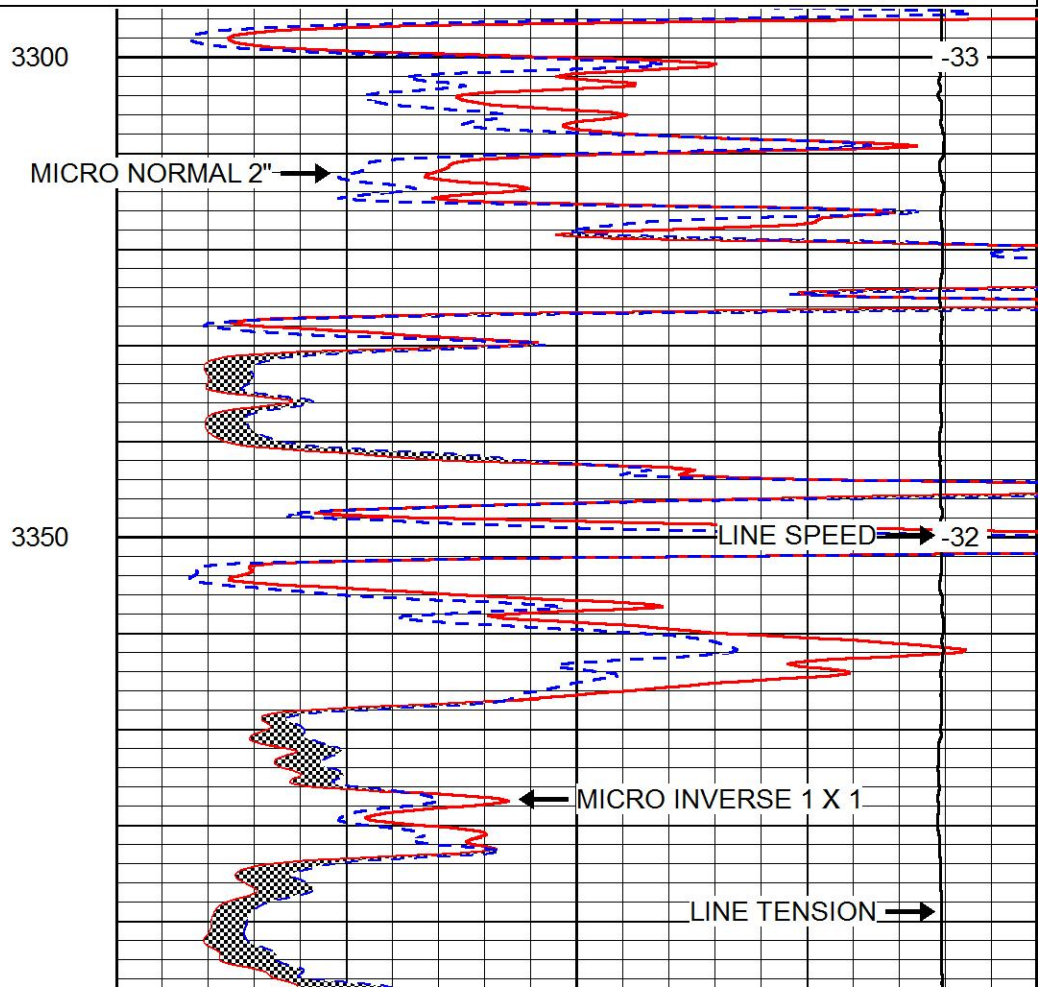
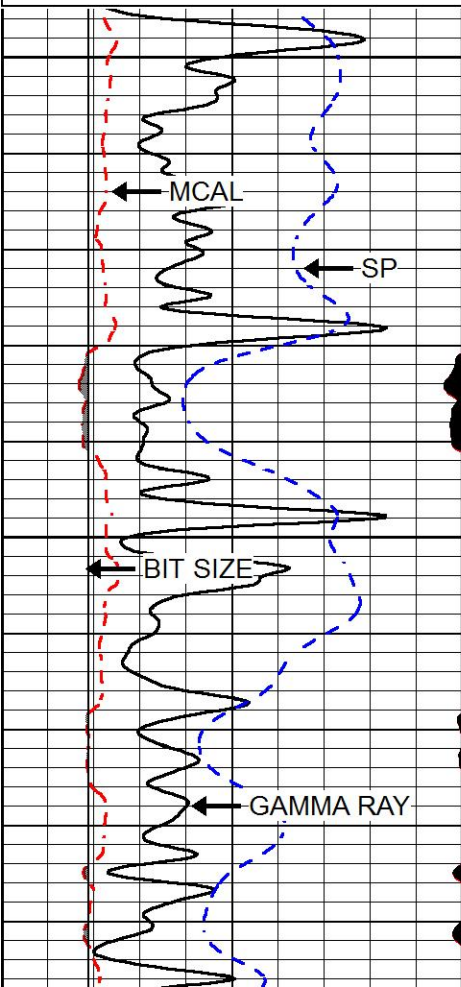


# MAIN PASS

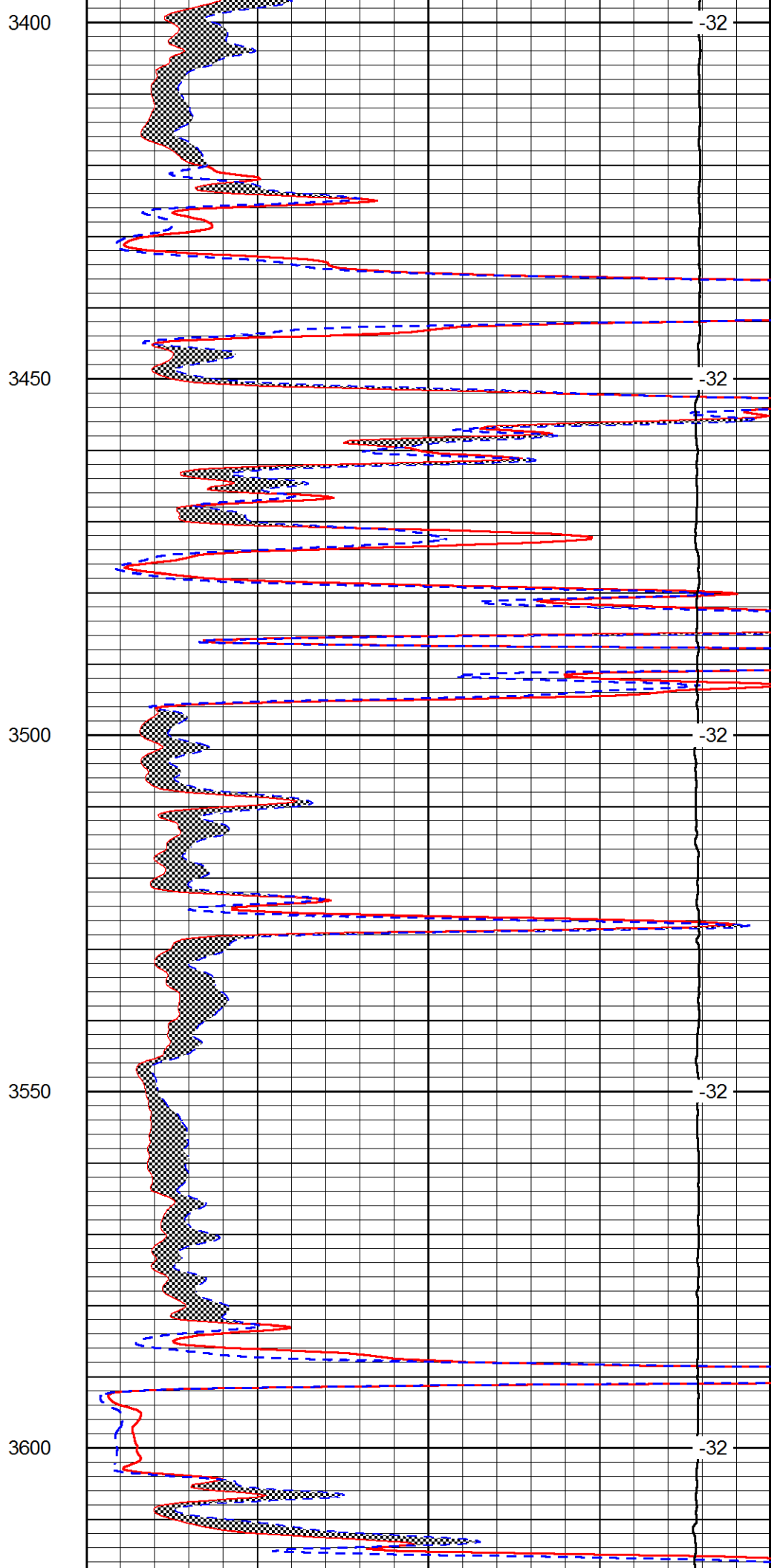
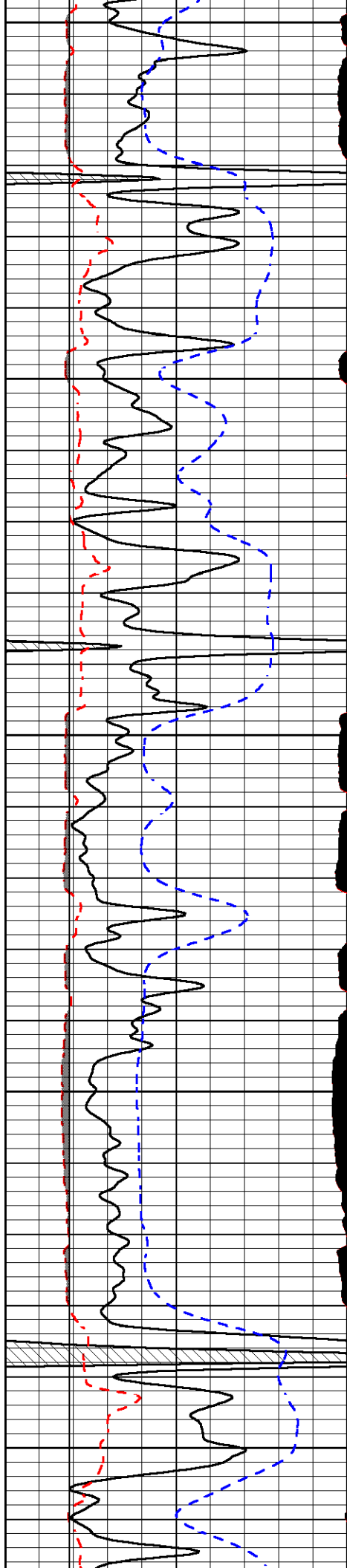
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 Presentation Format micro  
 Dataset Creation Sun May 29 03:09:03 2016  
 Charted by Depth in Feet scaled 1:240

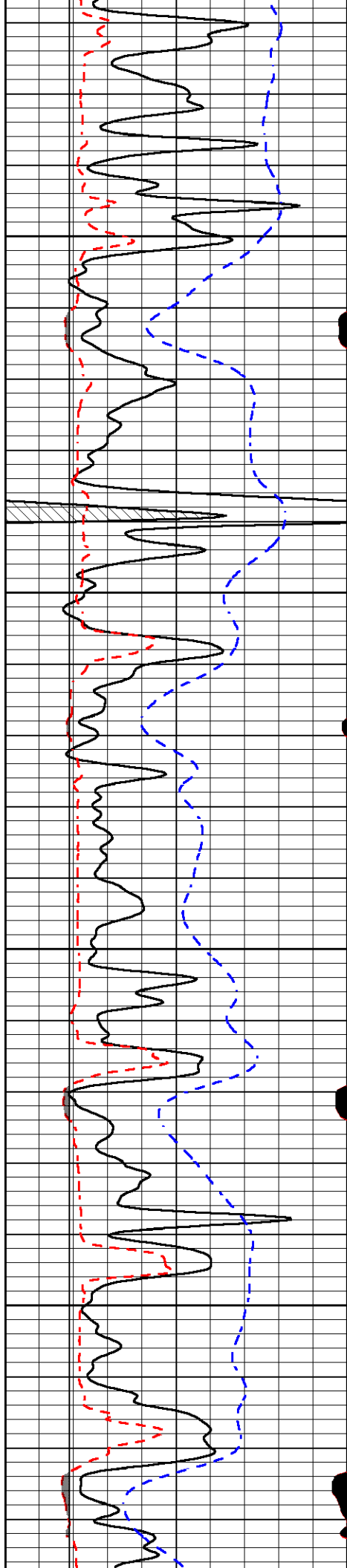
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0
	LINE SPEED (ft/min)	







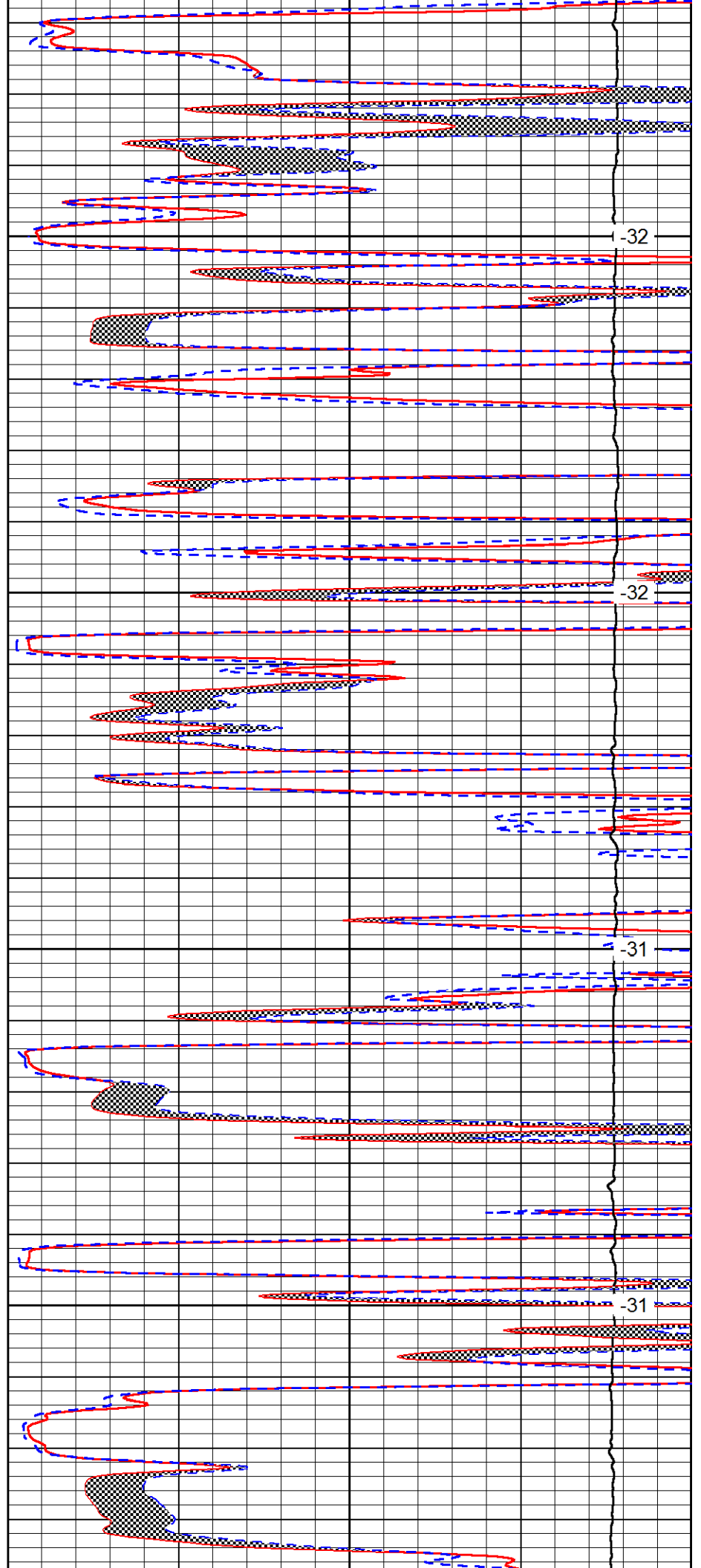


3650

3700

3750

3800

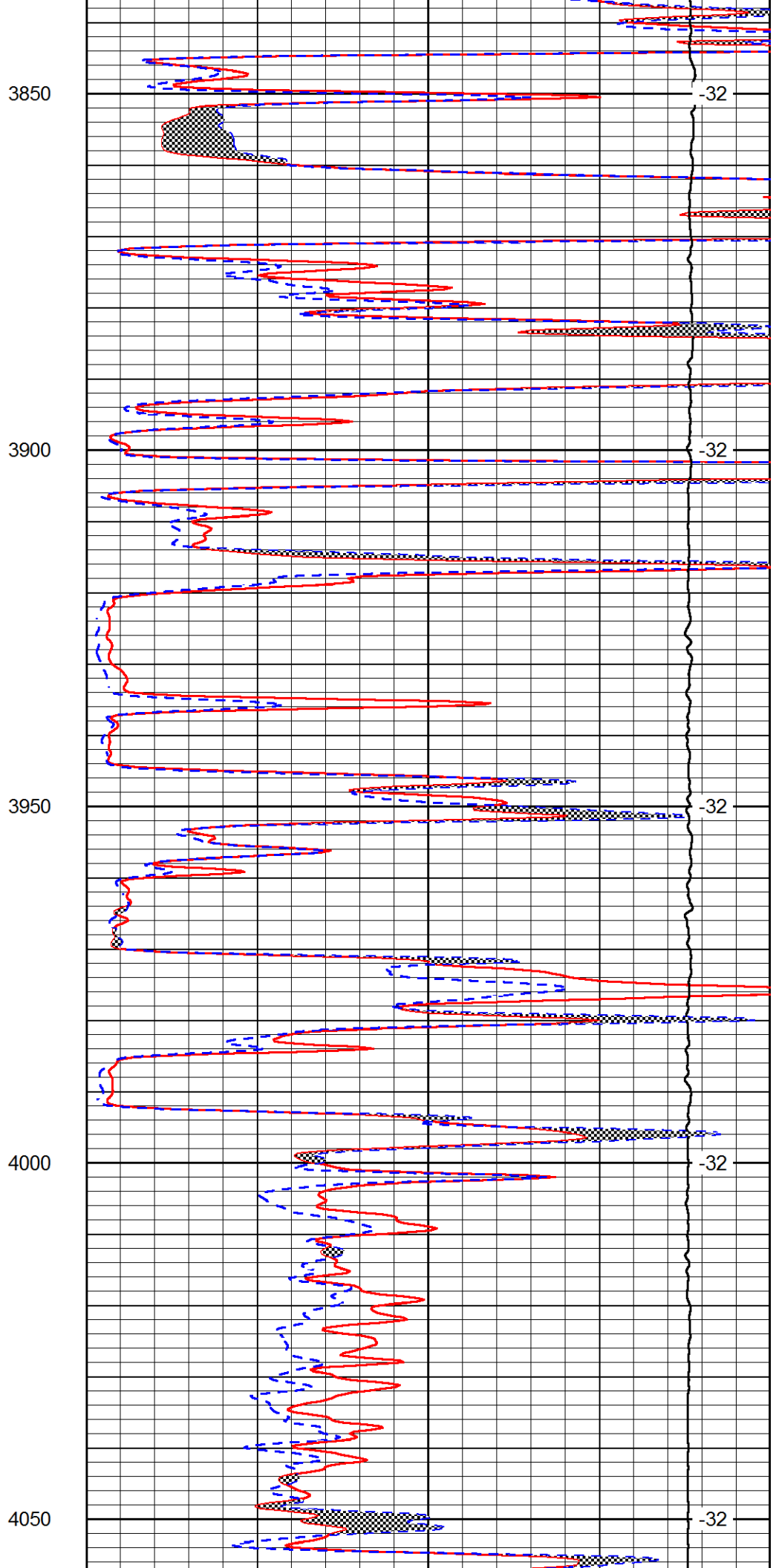
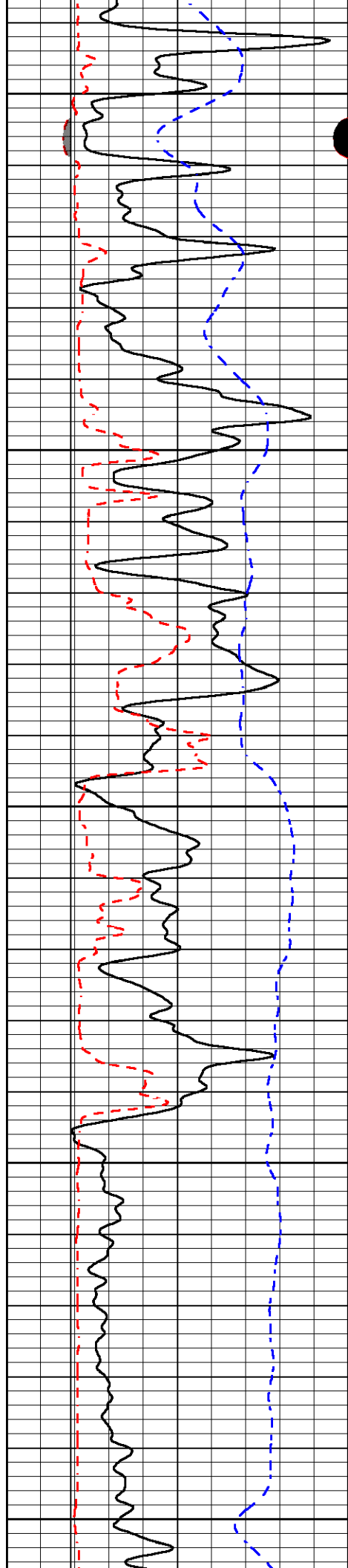


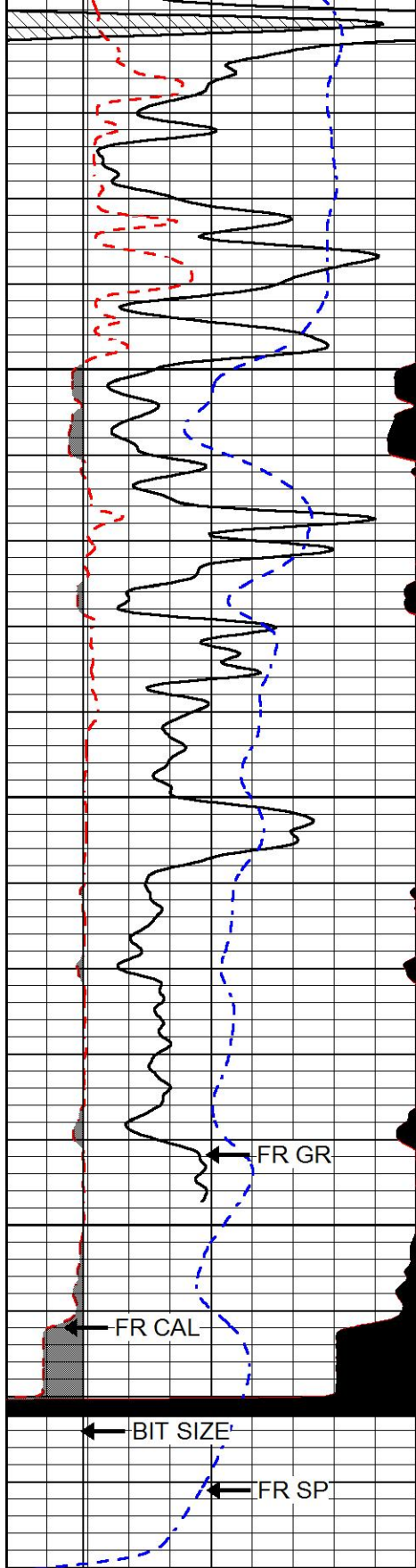
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32

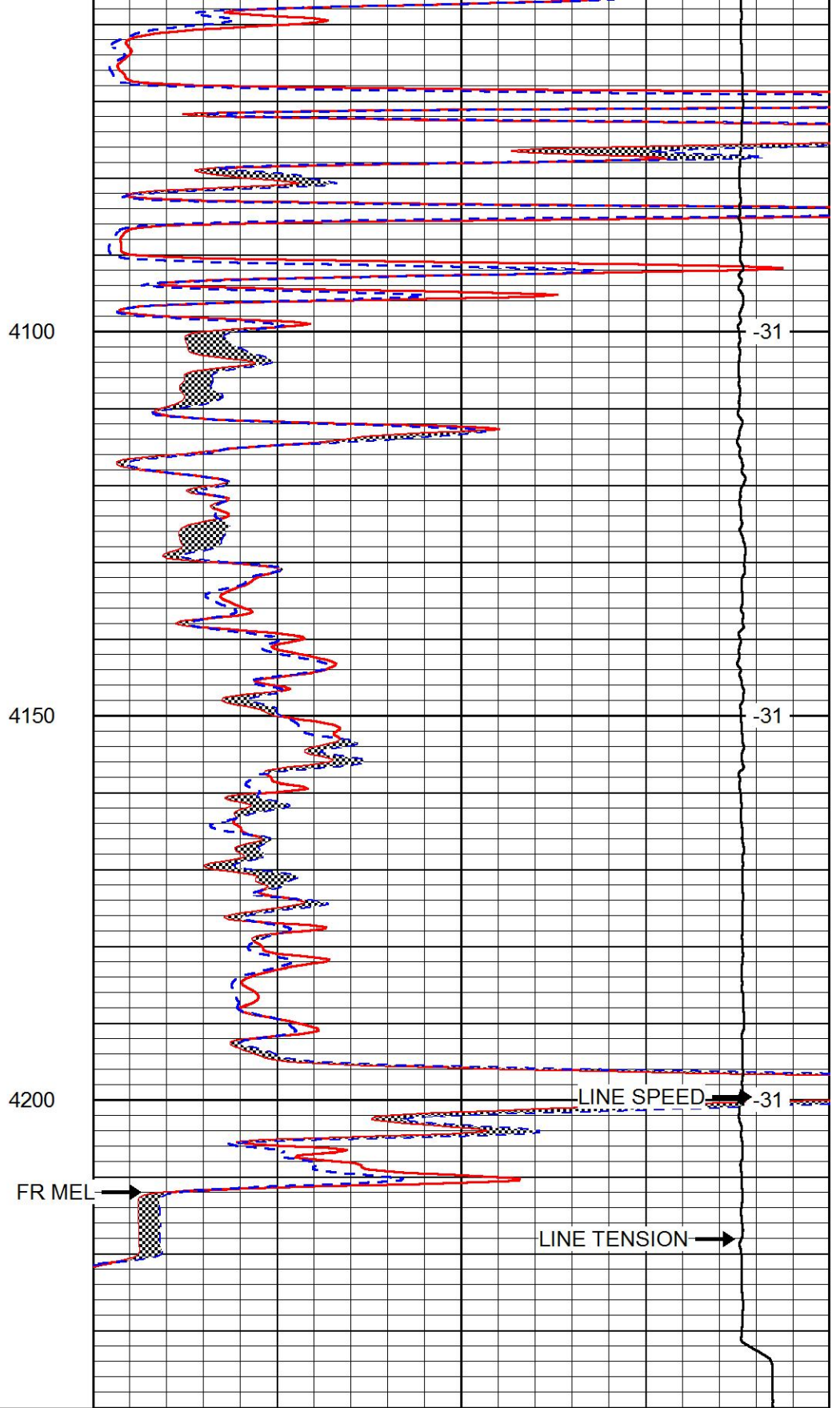
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31



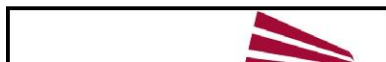


0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0



0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

LINE SPEED  
(ft/min)



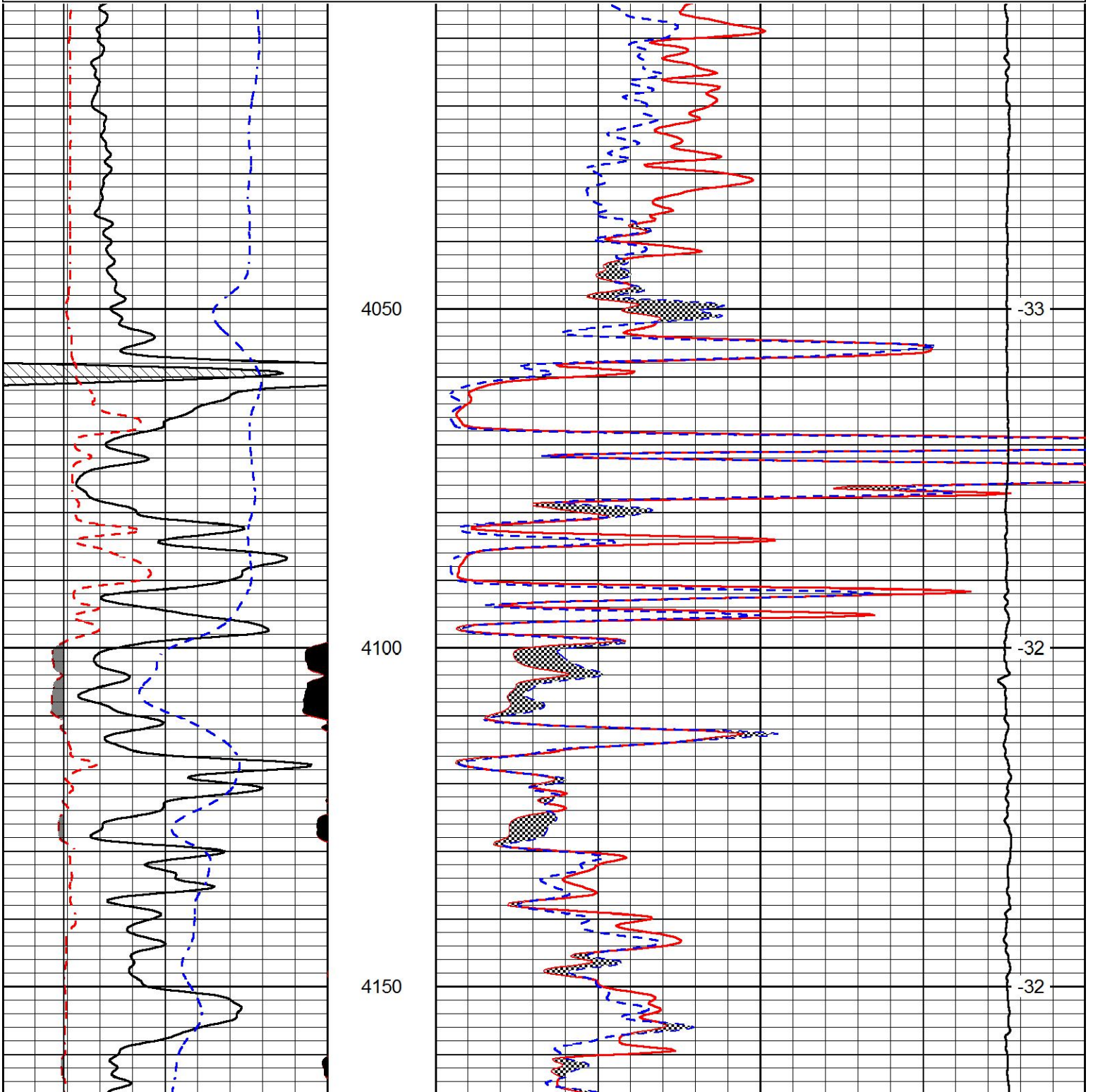
# REPEAT SECTION

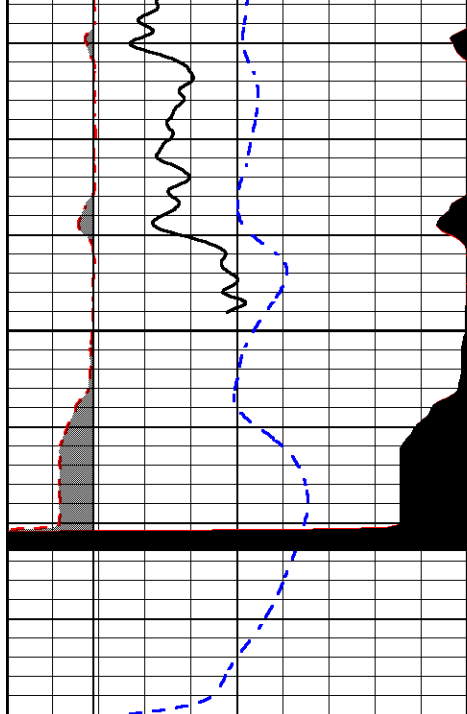
Database File      mikelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname    stackmel/pass2.1  
 Presentation Format    micro  
 Dataset Creation      Sun May 29 03:28:13 2016  
 Charted by            Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

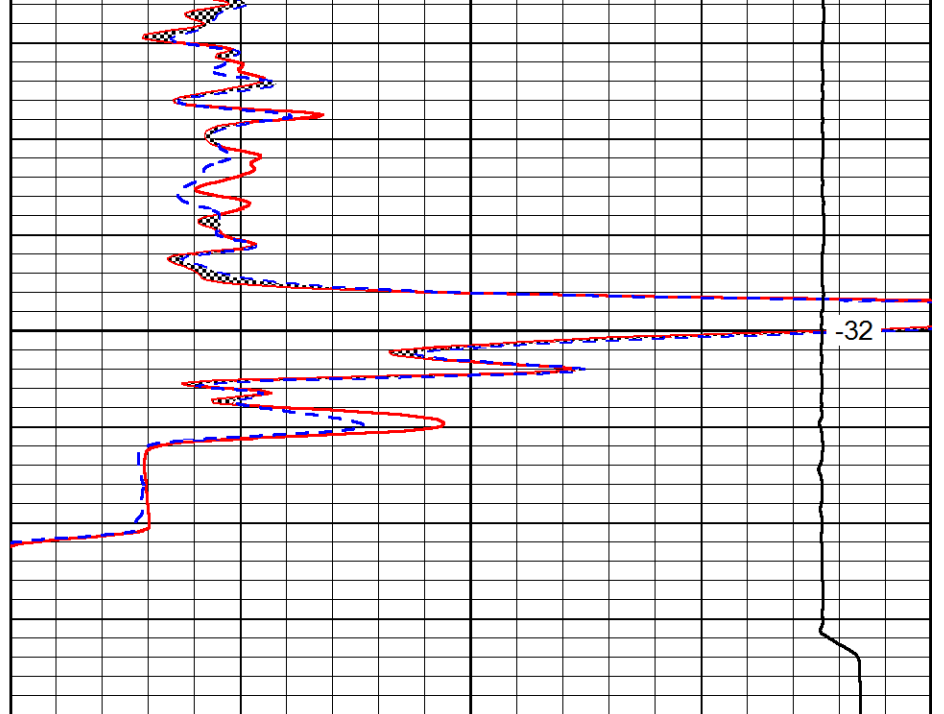
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

LINE SPEED  
(ft/min)





4200



-32

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

LINE SPEED  
(ft/min)

### Calibration Report

Database File     mikekelsooil\_wonder-mud\_14-1.db  
 Dataset Pathname     stackmel/pass3.1  
 Dataset Creation     Sun May 29 03:09:03 2016

### Dual Induction Calibration Report

Serial-Model:                     1987-M&W  
 Calibration Performed:             Thu May 05 13:07:05 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-37.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-108.500

### Microlog Calibration Report

Serial-Model:                     PSI-02-PSI STKBL ML  
 Performed:                         Sun May 22 04:14:29 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	15808.9000	-1.3000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	11967.3000	-0.3096
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2700

### Compensated Density Calibration Report

Serial-Model:  
Source / Verifier:  
Master Calibration Performed:

71-914-M&W  
/  
Thu Mar 31 16:30:19 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.670	g/cc	822.19	3456.36	cps
Spine Angle = 75.49			Density/Spine Ratio = 0.534		
	Size		Reading		
Small Ring	4.00	in	1.16		
Large Ring	14.00	in	1.57		

Compensated Neutron Calibration Report

Serial Number: tk10-MW  
Tool Model: M&W  
Calibration Performed: Wed May 4 11:04:05 2016

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 89-M&W  
Tool Model: M&W  
Calibration Performed: Sun May 22 04:14:23 2016

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



**PIONEER**  
Pioneer Energy Services

Company MIKE KELSO OIL, INC.  
Well WONDER-MUD NO. 14-1  
Field THISTLE GROVE  
County NESS  
State KANSAS

## CEMENT BOND LOG

Company MIKE KELSO OIL, INC.  
Well WONDER-MUD #14-1  
Field THISTLE GROVE  
County NESS  
State KANSAS

Company MIKE KELSO OIL, INC.  
Well WONDER-MUD #14-1  
Field THISTLE GROVE  
County NESS  
State KANSAS

Location 3330' FSL & 1155' FWL  
SEC. 14 TWP. 17S RGE. 21W  
Permanent Datum GROUND LEVEL Elevation 2176  
Log Measured From KELLY BUSHING 7' AGL  
Drilling Measured From KELLY BUSHING  
Other Services  
Elevation  
K.B. 2183  
D.F.  
G.L. 2176

Date	06-06-2016	06-06-2016	
Run Number	ONE	ONE	
Depth Driller	4234		
Depth Logger	4205	1565	
Bottom Logged Interval	4204	1465	
Top Log Interval	2892		
Open Hole Size			
Type Fluid	WATER		
Density / Viscosity			
Max. Recorded Temp.			
Estimated Cement Top	3092		
Time Well Ready			
Time Logger on Bottom			
Equipment Number	52		
Location	GREAT BEND		
Recorded By	LEE BRETZ		
Witnessed By	MR. MIKE KELSO		
Borehole Record		Tubing Record	
Run Number	Bit	From	To
		Size	Weight
		From	From
			To
Casing Record	Size	Wgt/Ft	Top
Surface String	8.625		0
Prot. String			
Production String	5.5		0
Liner			

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

### Comments

THANK YOU FOR USING LOG TECH OF KANSAS!  
(620)792-2167

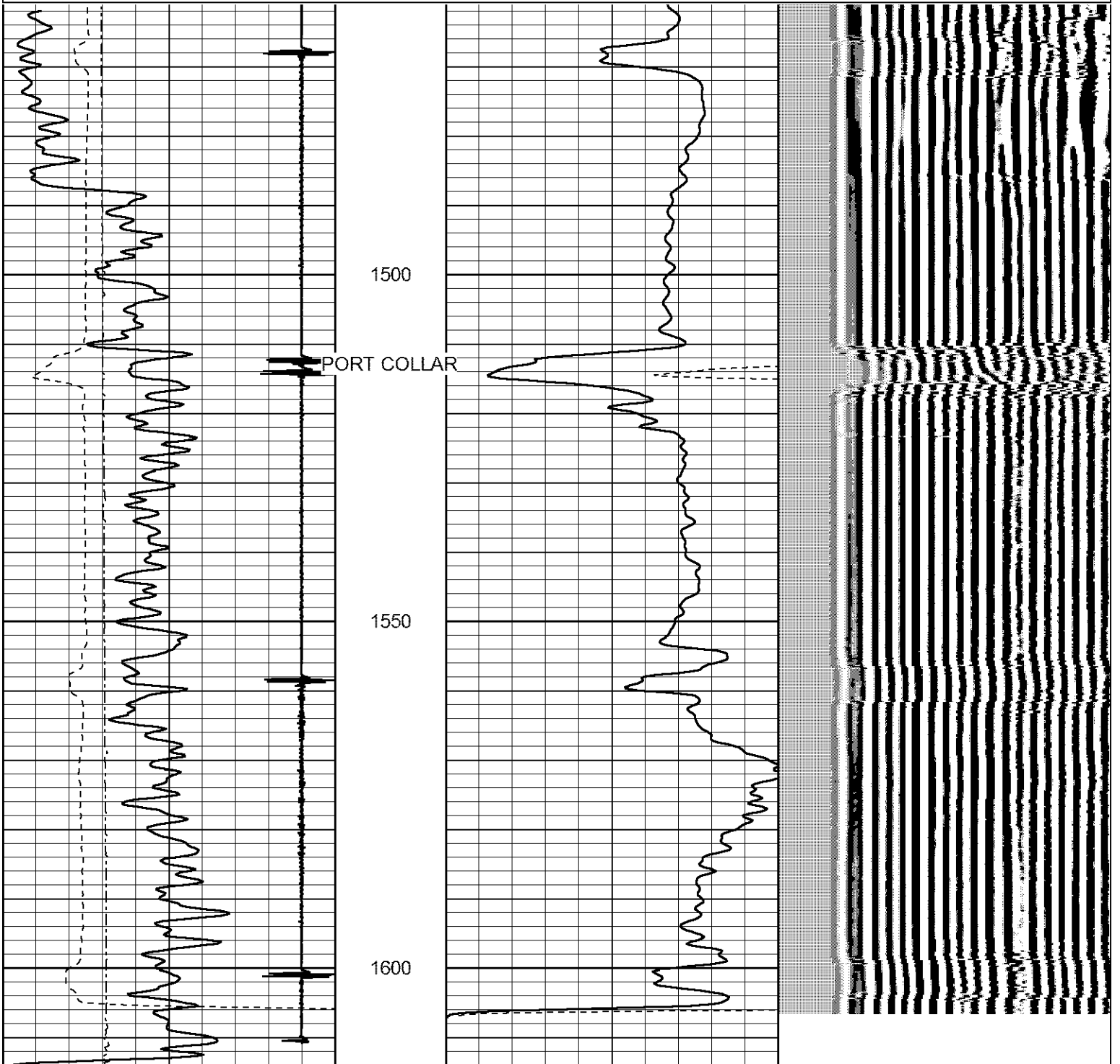
DIRECTIONS  
MCCRACKEN,KS  
SOUTH SIOE OF RR TRACKS 3 MILES WEST  
ON ELM STREET 1 SOUTH 1/8 EAST NORTH INTO

CORRECTED +5' TO OPENHOLE LOG



Database File: wondermud141.db  
 Dataset Pathname: pass5  
 Presentation Format: cbl02  
 Dataset Creation: Mon Jun 06 12:53:38 2016 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240

9	Collar Locator	-1	0	Amplitude (mV)	100	200	VARIABLE DENSITY	1200
0	Gamma Ray (GAPI)	150	0	X5 Amplitude (mV)	20			
320	TT3 (usec)	120	-----					
0	LTEN (lb)	2000	-----					



9	Collar Locator	-1	0	Amplitude (mV)	100	200	VARIABLE DENSITY	1200
0	Gamma Ray (GAPI)	150	0	X5 Amplitude (mV)	20			
320	TT3 (usec)	120	-----					
0	LTEN (lb)	2000	-----					

**LOG-TECH**

*of Kansas  
Inc.*

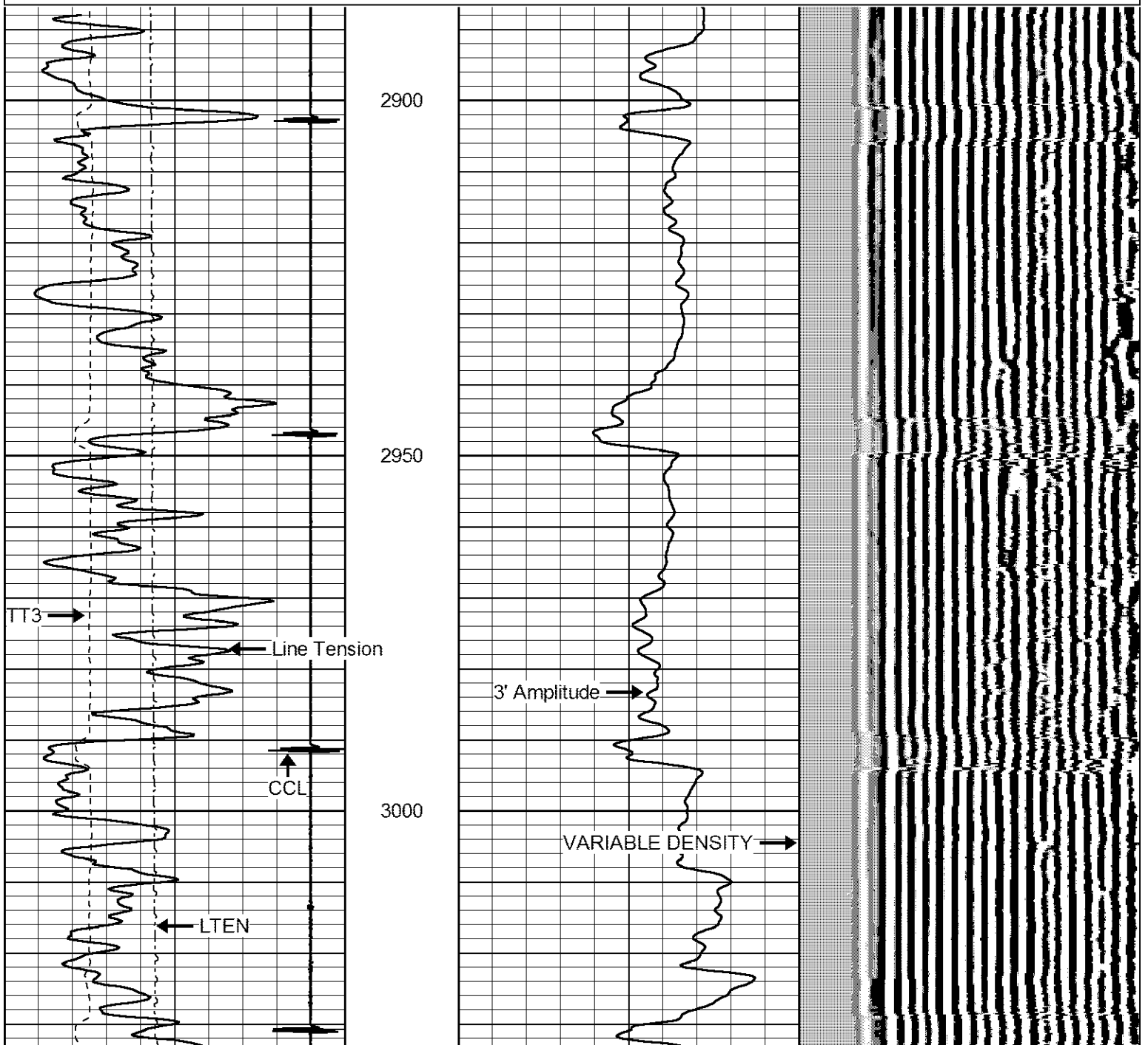
GREAT BEND, KANSAS

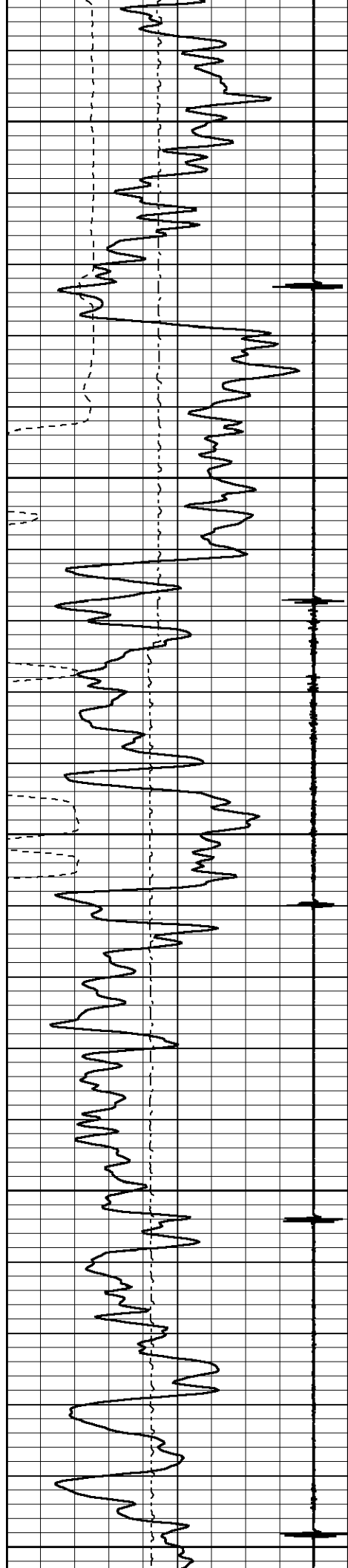
# MAIN PASS

Database File: wondermud141.db  
Dataset Pathname: pass4  
Presentation Format: cbl02  
Dataset Creation: Mon Jun 06 12:15:39 2016 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

9	Collar Locator	-1
0	Gamma Ray (GAPI)	150
320	TT3 (usec)	120
0	LTEN (lb)	2000

0	Amplitude (mV)	100	200	VARIABLE DENSITY	1200
0	X5 Amplitude (mV)	20			





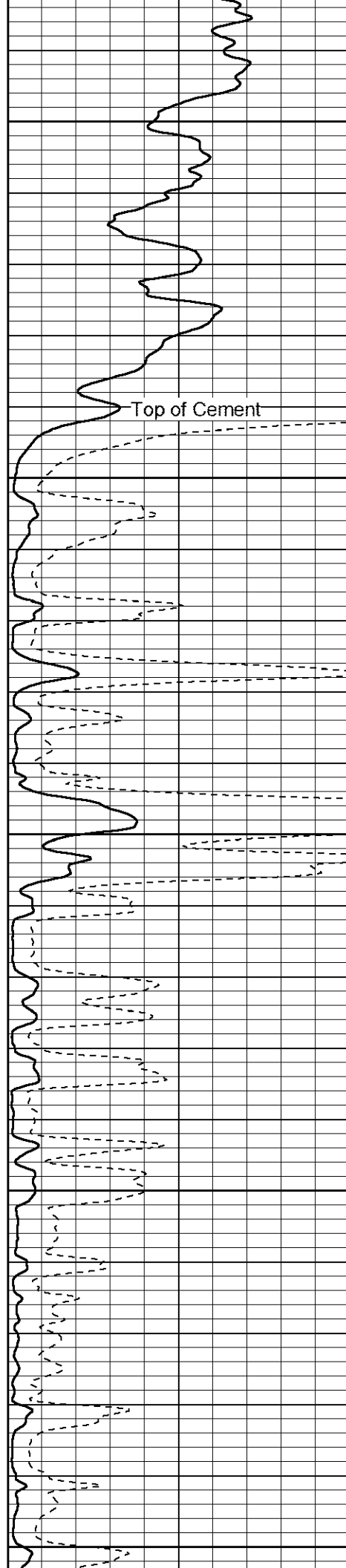
3050

3100

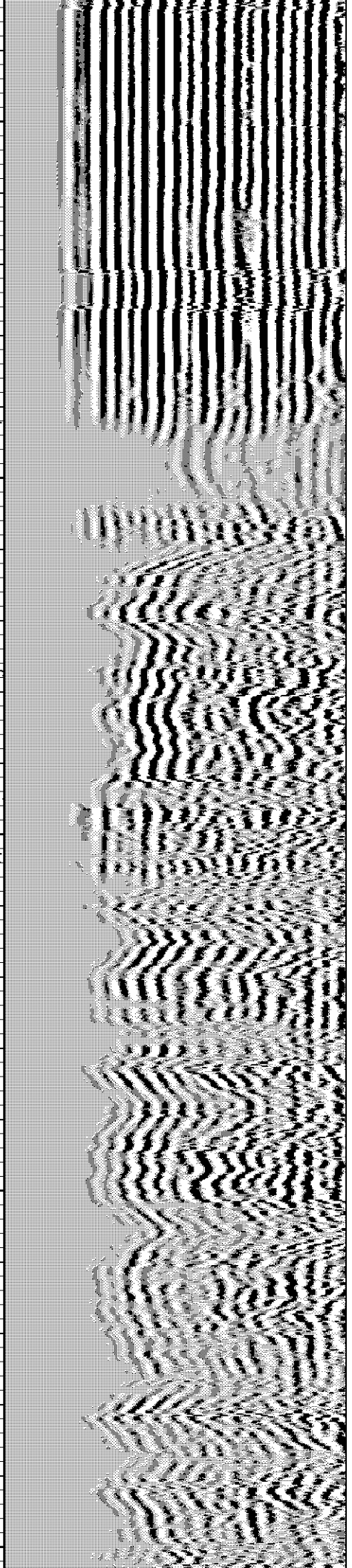
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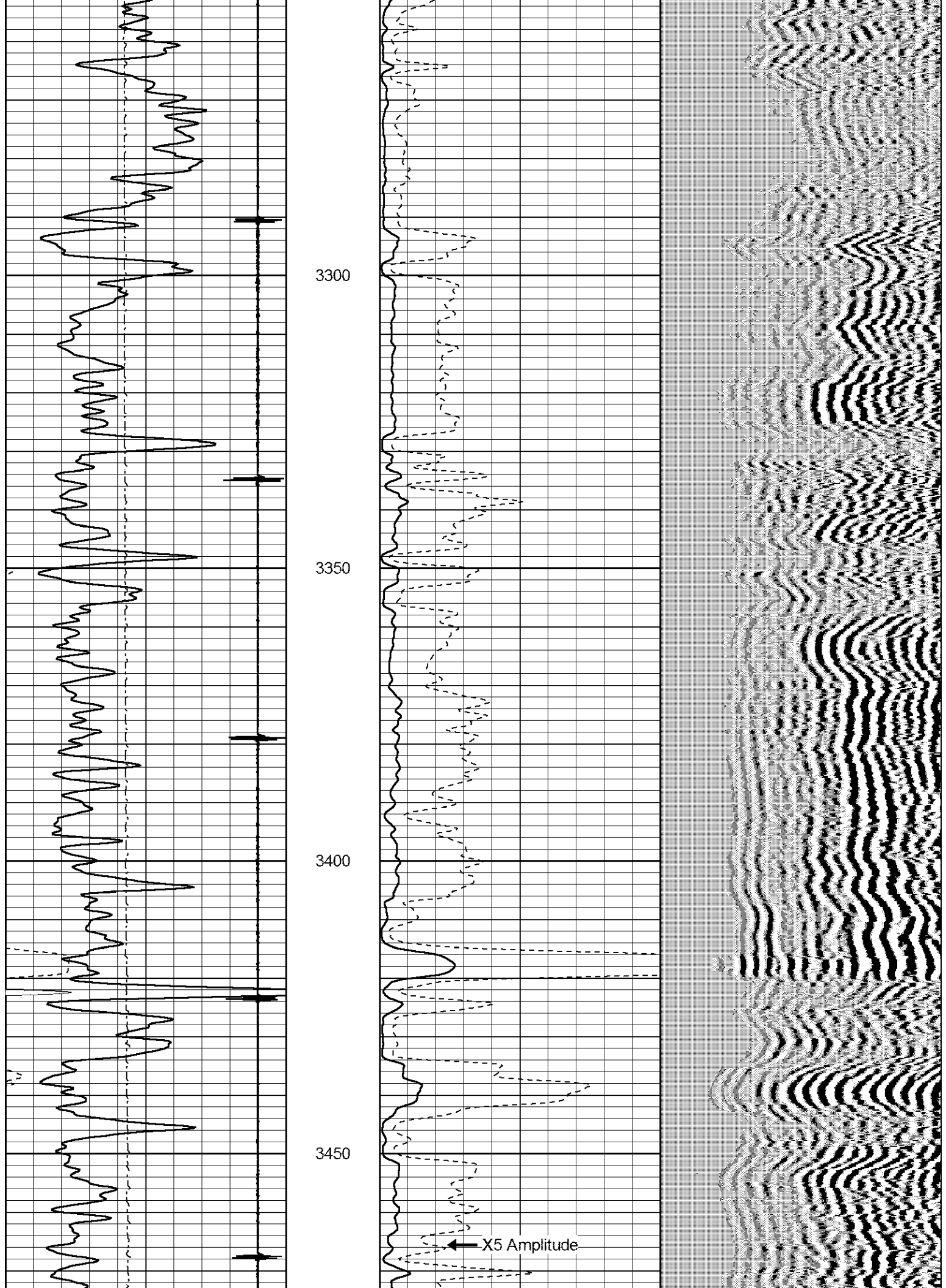
3200

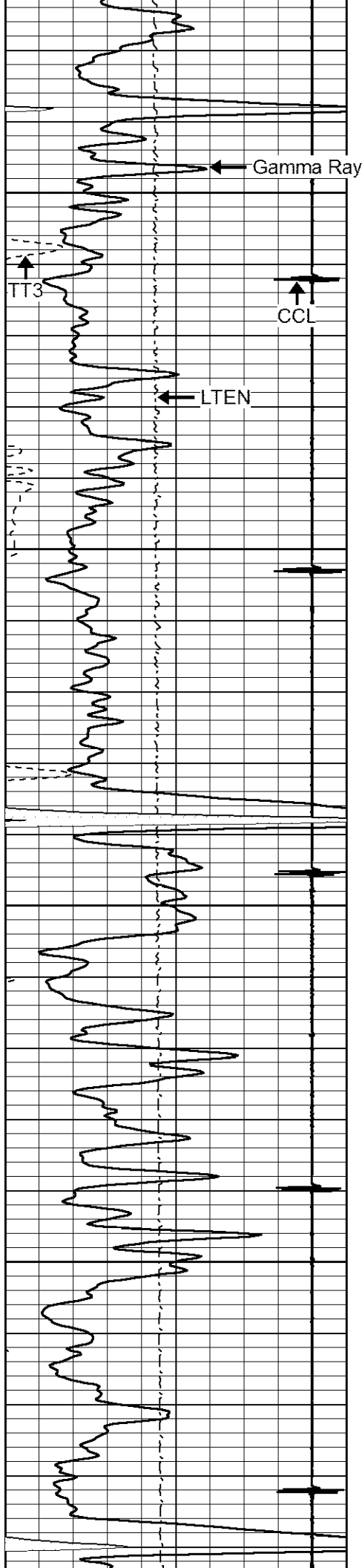
3250



Top of Cement





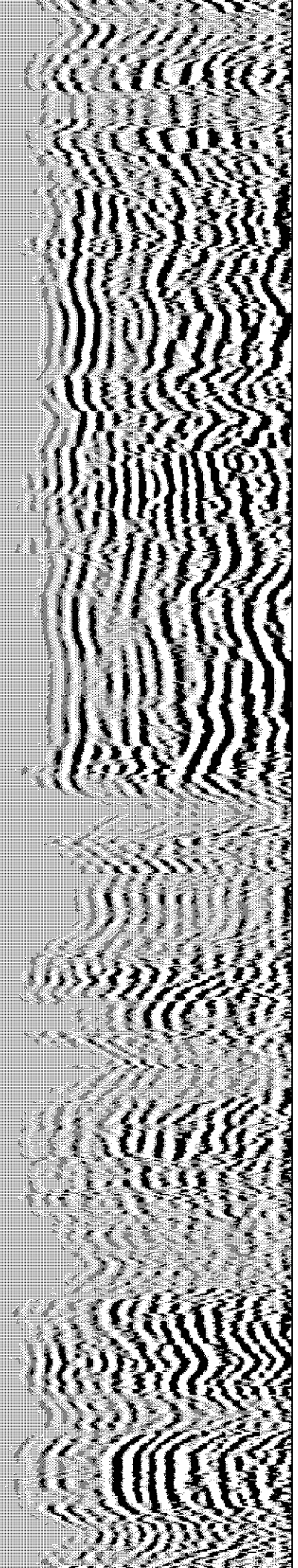
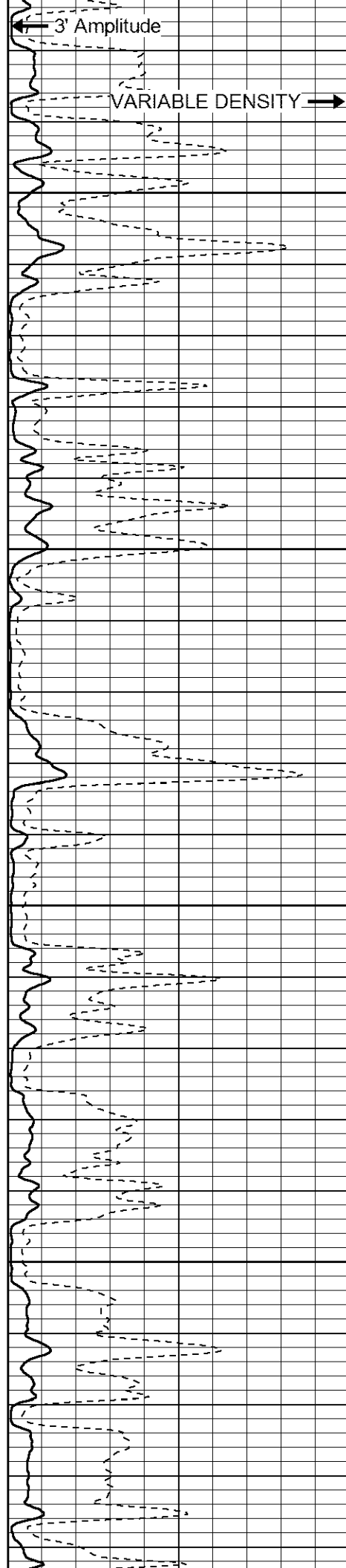


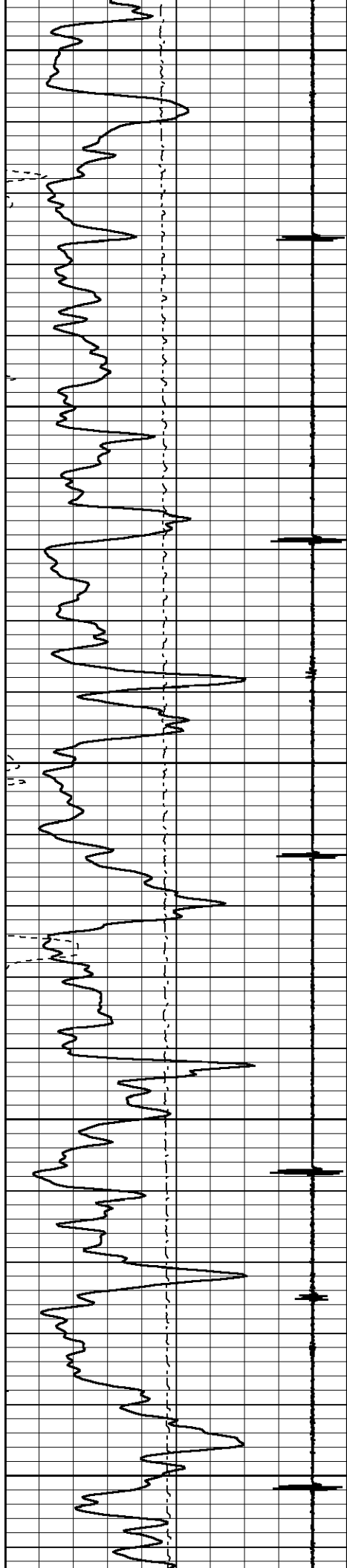
3500

3550

3600

3650





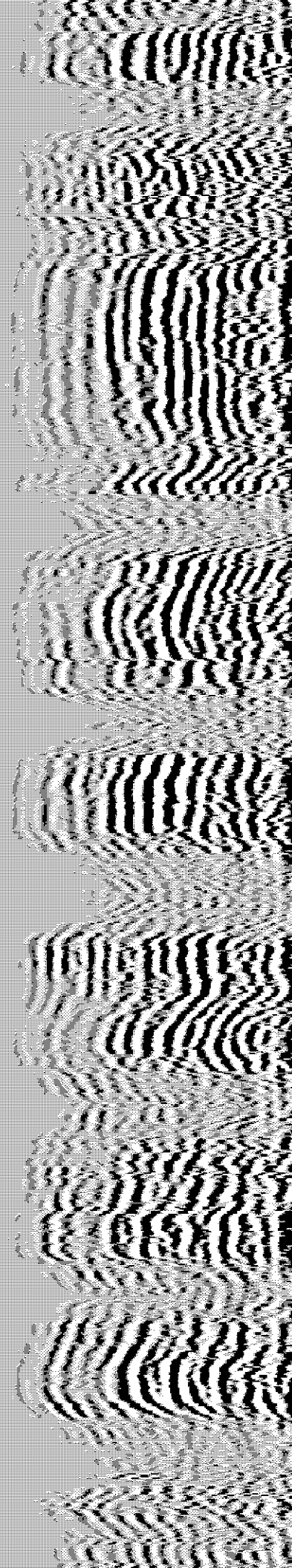
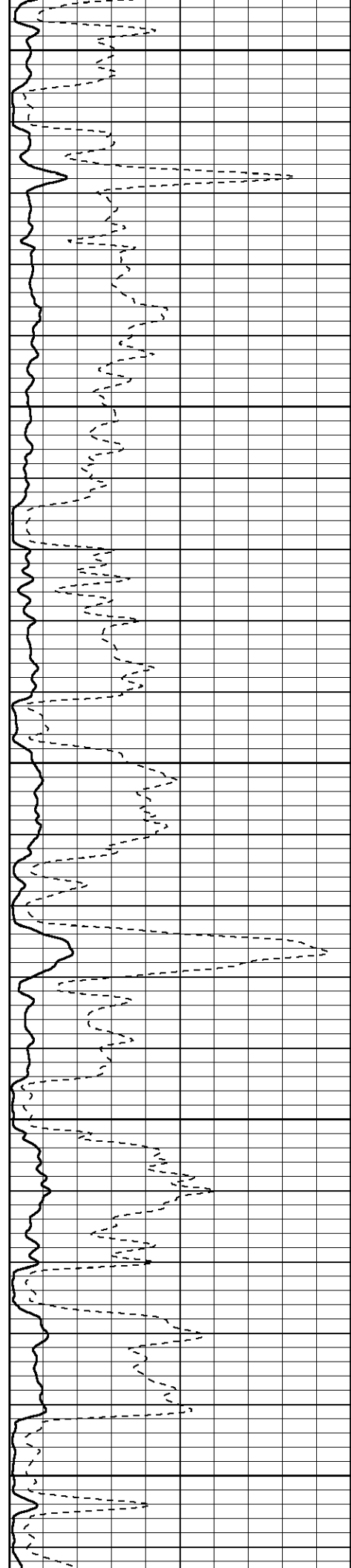
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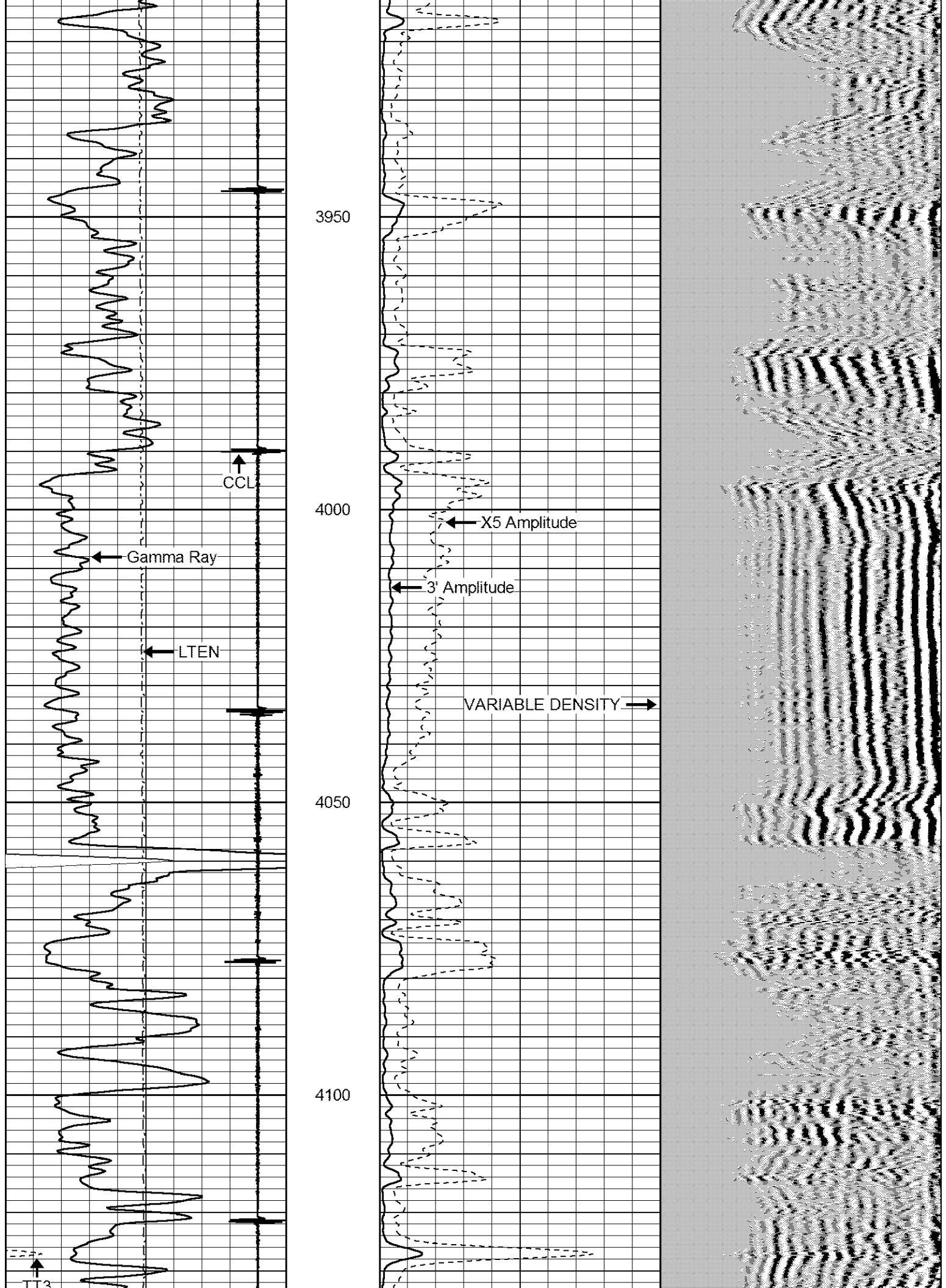
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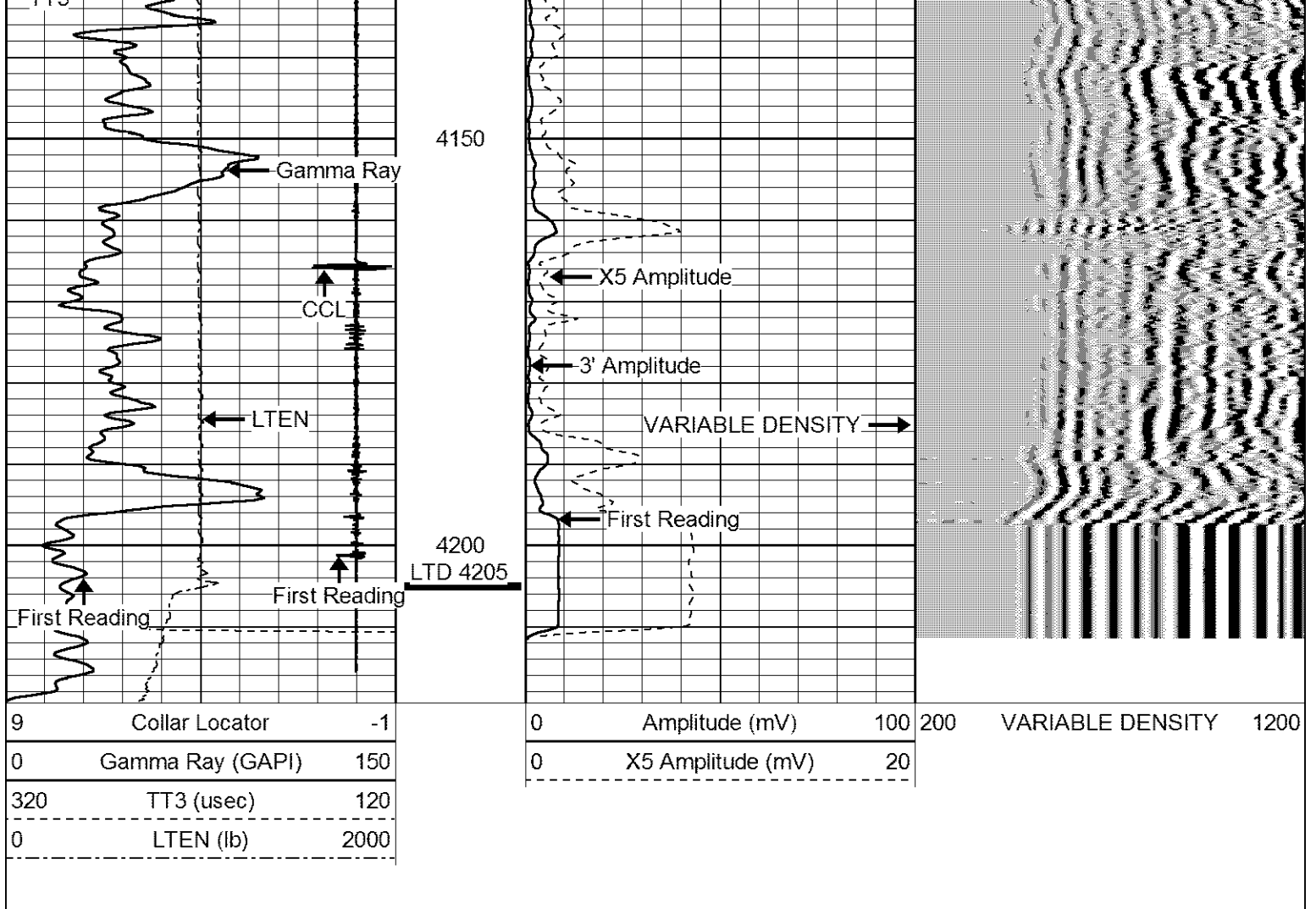
3800

3850

3900





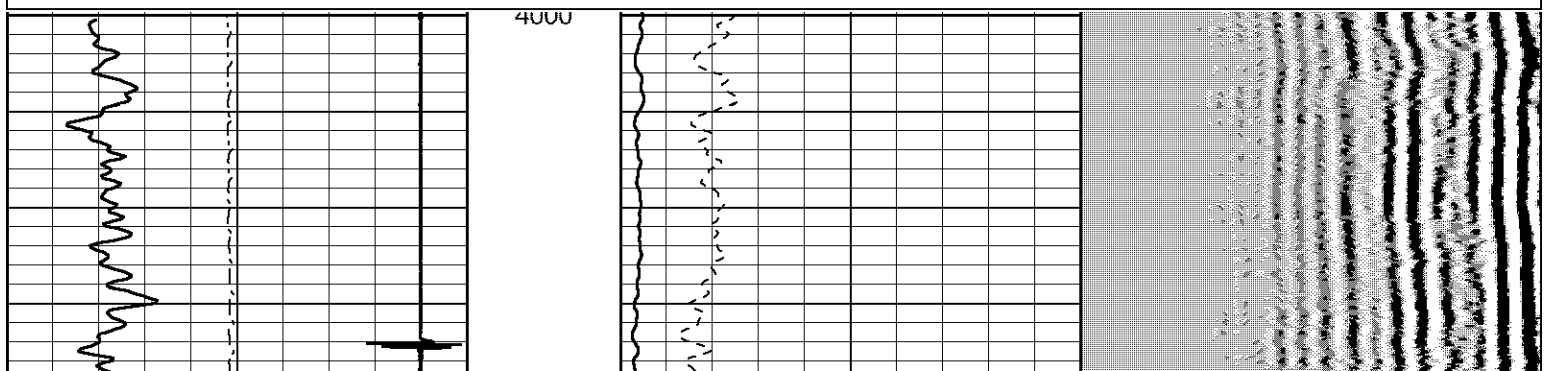


**LOG-TECH**  
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Inc.  
GREAT BEND, KANSAS

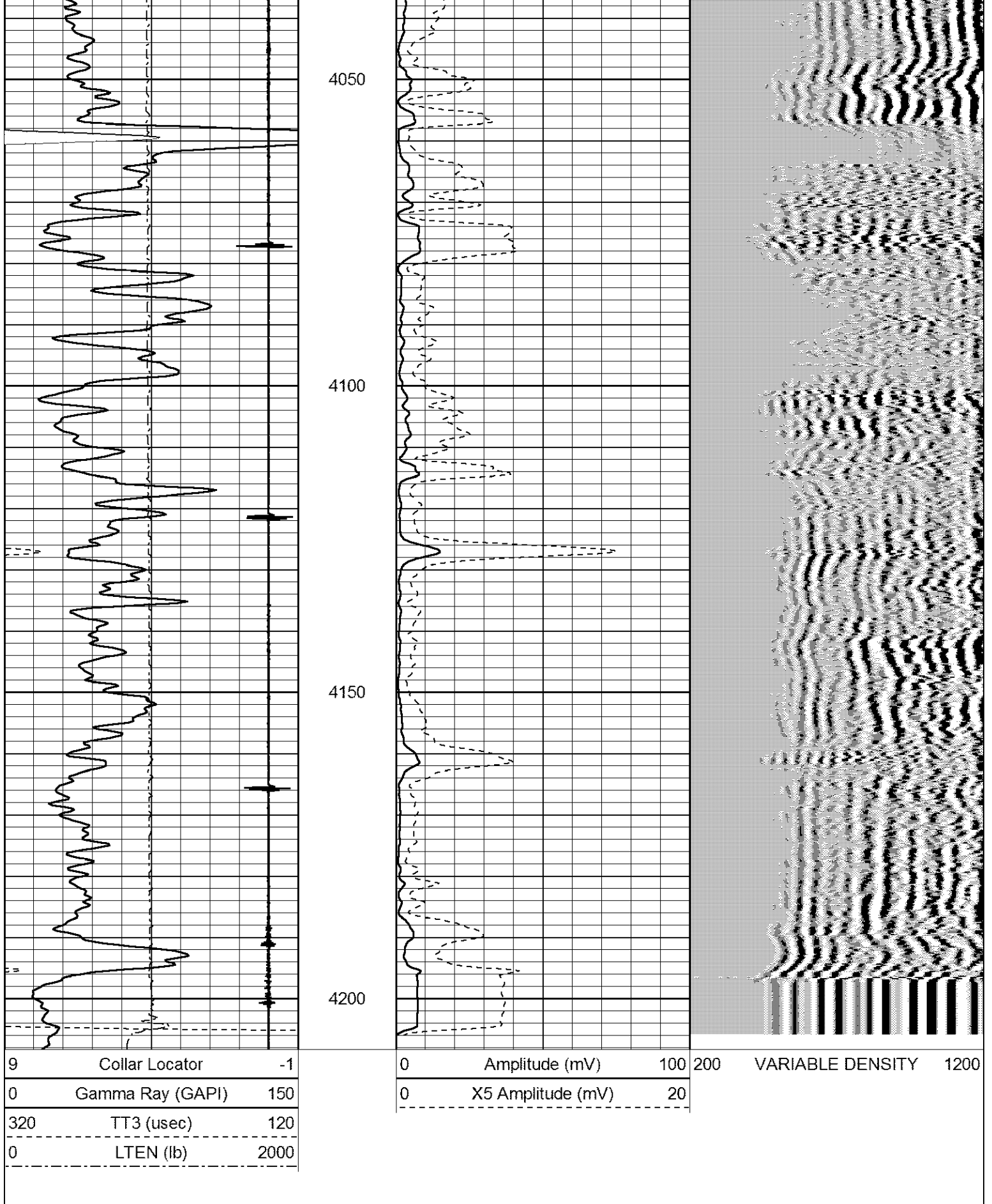
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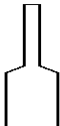
Database File: wondermud141.db  
 Dataset Pathname: pass3  
 Presentation Format: cbl02  
 Dataset Creation: Mon Jun 06 12:07:42 2016 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240

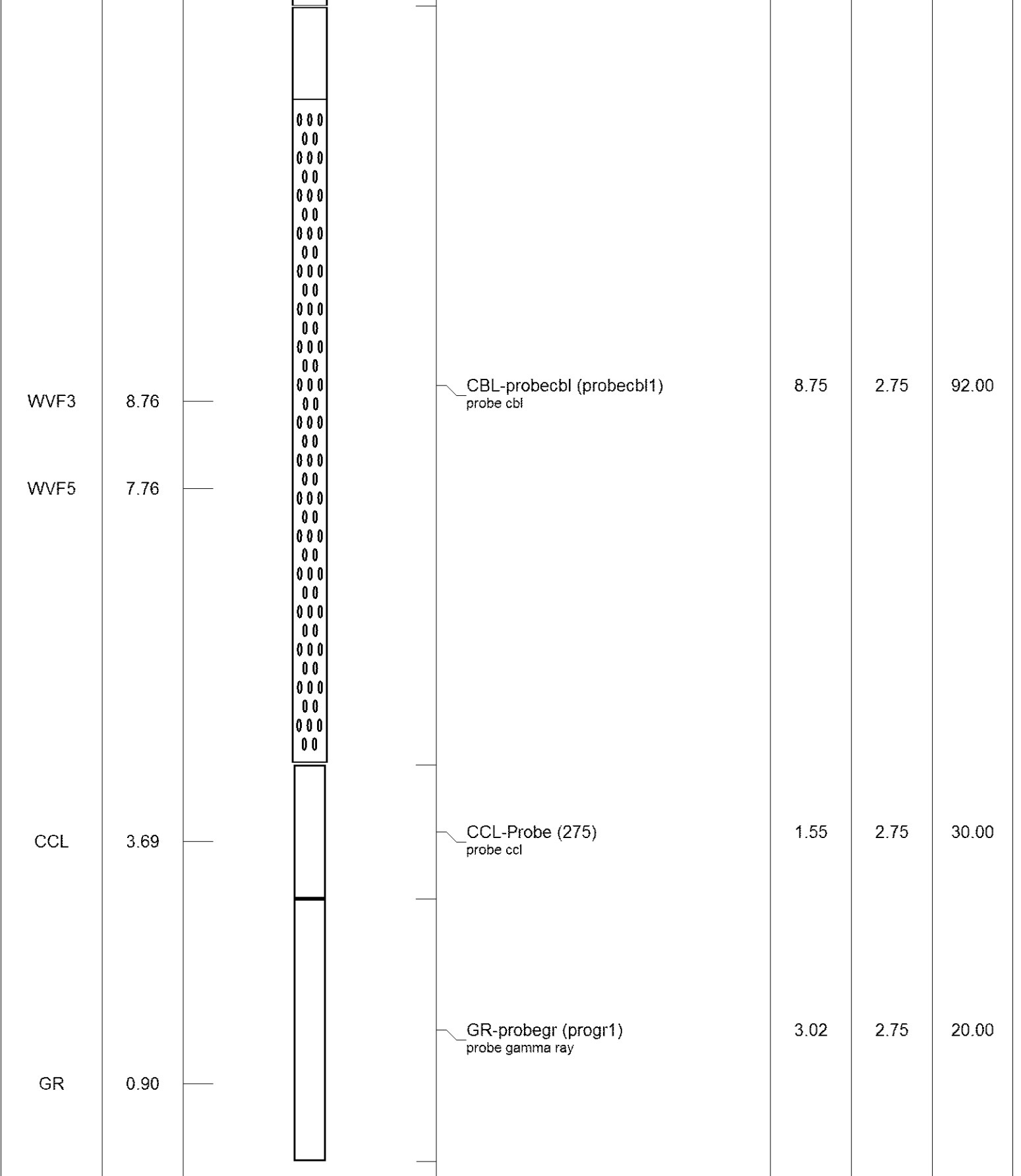
9	Collar Locator	-1	0	Amplitude (mV)	100	200	VARIABLE DENSITY	1200
0	Gamma Ray (GAPI)	150	0	X5 Amplitude (mV)	20			
320	TT3 (usec)	120						
0	LTEN (lb)	2000						







Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			STNDRD Standard Cable Head	1.00	1.69	10.00



Dataset: wondermud141.db: field/well/run1/pass5  
 Total Length: 14.32 ft  
 Total Weight: 152.00 lb  
 O.D.: 2.75 in





**TREATMENT REPORT**

Acid Stage No. \_\_\_\_\_

Date 5/29/2016 District G.B. F.O. No. C43748  
 Company Mike Kelso Oil  
 Well Name & No. Wonder Mud 14-1  
 Location \_\_\_\_\_ Field \_\_\_\_\_  
 County Ness State KS  
 Casing: Size 5.5" Type & Wt. Used-Tested Set at \_\_\_\_\_ ft.  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Liner: Size \_\_\_\_\_ Type & Wt. \_\_\_\_\_ Top at \_\_\_\_\_ ft. Bottom at \_\_\_\_\_ ft.  
 Cemented:  Yes  No Perforated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Tubing: Size & Wt. \_\_\_\_\_ Swung at \_\_\_\_\_ ft.  
 Perforated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Open Hole Size 7 7/8" T.D. 4234' ft. P.B. to \_\_\_\_\_ ft.

Type Treatment: \_\_\_\_\_ Amt. \_\_\_\_\_ Type Fluid \_\_\_\_\_ Sand Size \_\_\_\_\_ Pounds of Sand \_\_\_\_\_  
 Bkdwn \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 Flush \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 Treated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0  
 from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0  
 from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0  
 Actual Volume of Oil / Water to Load Hole: \_\_\_\_\_ Bbl./Gal.  
 Pump Trucks. No. Used: Std. 365 Sp. \_\_\_\_\_ Twin \_\_\_\_\_  
 Auxiliary Equipment 327  
 Personnel Nathan  
 Auxiliary Tools \_\_\_\_\_  
 Plugging or Sealing Materials: Type \_\_\_\_\_ Gals. \_\_\_\_\_ lb.

Company Representative Mike K. Treater Nathan W.

TIME a.m./p.m.	PRESSURES		Total Fluid Pumped	REMARKS
	Tubing	Casing		
9:00		5.5"		On Location. Rig laying down pipe.
				Hole-4234' Centralizers-2-4-6-8-12
				Pipe-4231' Baskets-5-8-62
				Baffle-4210'
				Port Collar-1513'
				Run casing and float equipment. Tag bottom and pick up.
				Break circulation with mud pump. Circulate for 30 minutes.
				Pump 500gal of mud flush.
				Plug rat hole with 30sks.
				Mix 45sks 60/40poz.
				Mix 150sks 60/40poz 2%gel 12%salt .75% C-41p .25% C-12 .5% C-37
				5#/sk Gilsonite at 15.0#/gal.
				Wash out pump and lines.
				Displace with 102bbls at 6.5bpm-1000# Plug landed at 1200#
				Released pressure. Flaot held.
				Thank You!
				Nathan W.



# Section 37, LLC

## GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY **Mike Kelso Oil, Inc.**

LEASE **Wonder Mud #14-1**

FIELD **Thistle Grove**

LOCATION **330° FSL & 1155° FWL**

SEC **14** TWP **17S** RGE **21W**

COUNTY **Ness** STATE **Kansas**

CONTRACTOR **Sky Top Rig #1**

SPUD **5/20/16** COMP **5/29/16**

RTD **4234'** LTD **4232'**

MUD UP **TYPE MUD** Chemical

SAMPLES SAVED FROM **3300'** TO **RTD**

DRILLING TIME KEPT FROM **3300'** TO **RTD**

SAMPLES EXAMINED FROM **3300'** TO **RTD**

GEOLOGICAL SUPERVISION FROM **3300'**

ELEVATIONS  
KB **2183'**

DF \_\_\_\_\_

GL **2176'**

Measurements Are All From **Kelly Bushing**

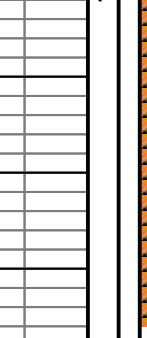
CASING

CONDUCTOR SURFACE **8.5-8" at 340'**

PRODUCTION **5.5" at 4233'**

ELECTRICAL SURVEYS  
Pioneer Wireline  
DILL, CND, MIC

Formation	Sample Tops	E-Log Tops	Strat Pos.
B/ Anhy	1451 (+732)	1451 (+732)	
Hebner Sh.	3588 (-1405)	3586 (-1403)	
Lansing	3630 (-1447)	3624 (-1441)	
Martinton	3936 (-1753)	3936 (-1753)	
Pawnee	3996 (-1813)	3992 (-1809)	
Cherokee Sh.	4082 (-1899)	4082 (-1899)	
Mississippi	4162 (-1979)	4158 (-1975)	

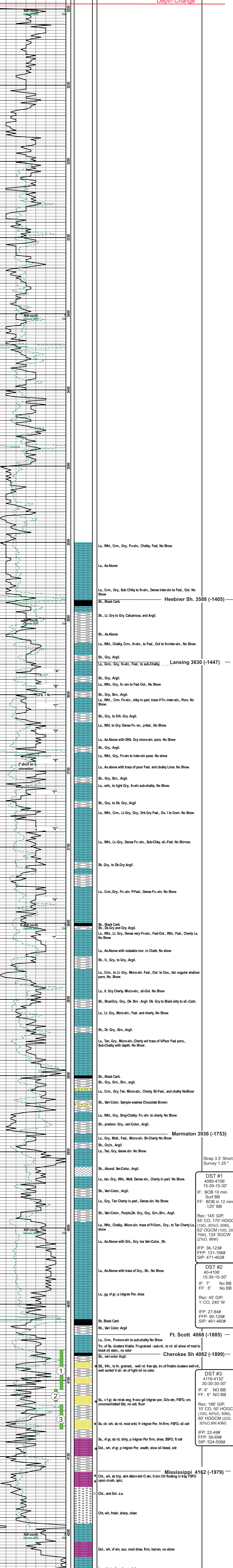


REMARKS **Based on sample, DST, and Log Analysis, The Wonder Mud #14-1 will be further evaluated through 5.5' production casing.**

Respectfully Submitted,

Sean P. Deenihan

API #15-135-25910



DST #1  
4080-4106'  
15-30-15-30"  
IF: BOB 10 min  
Surf BB  
FF: BOB in 12 min  
.125" BB

Rec: 145' GIP,  
55' CO, 170' HOGCM  
(10G, 30%O, 60M),  
62' OGCM (10G, 20%O  
70M), 124' SOCW  
(2%O, 98W)

IFP: 36-123#  
FFP: 131-196#  
SIP: 471-462#

DST #2  
40-4106'  
15-30-15-30"  
IF: 7" No BB  
FF: 5" No BB

Rec: 45' GIP,  
1' CO, 240' W

IFP: 27-84#  
FFP: 90-129#  
SIP: 461-460#

DST #3  
4116-4132'  
30-30-30-30"  
IF: 6" NO BB  
FF: 5" NO BB

Rec: 186' GIP,  
10' CO, 50' HOGCM  
(10G, 40%O, 50M),  
60' HOGCM (22G,  
30%O, 8W, 40M)

IFP: 22-49#  
FFP: 56-69#  
SIP: 524-506#

Mississippi 4162 (-1979)

Chert, wh, sb trip, strk dkbrn-blk O str, lt brn Oil floating in tray, FSFO upon crush, spic

Chert, and Dol. a.a

Chert, wh, fresh, sharp, clean

Dol., wh, vf xln, suc, mod dnse, firm, barren, no show

Ls., wh, tn, fos, dnse, v hd



**TRIBOLITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Mike Kelso Oil

14-17s-21w Ness,KS

PO Box 467  
Chase, KS 67524-0467

Wonder-Mud #14-1

Job Ticket: 65462

DST#: 1

ATTN: Mike Kelso, Sean De

Test Start: 2016.05.26 @ 22:56:01

### GENERAL INFORMATION:

Formation: Cherokee Sand "A"

Deviated: No Whipstock ft (KB)

Time Tool Opened: 02:56:11

Time Test Ended: 06:51:40

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 77

Interval: 4080.00 ft (KB) To 4106.00 ft (KB) (TVD)

Total Depth: 4106.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2183.00 ft (KB)

2176.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8018 Inside

Press@RunDepth: 195.61 psig @ 4081.00 ft (KB)

Start Date: 2016.05.26

End Date:

2016.05.27

Start Time: 22:56:01

End Time:

06:51:40

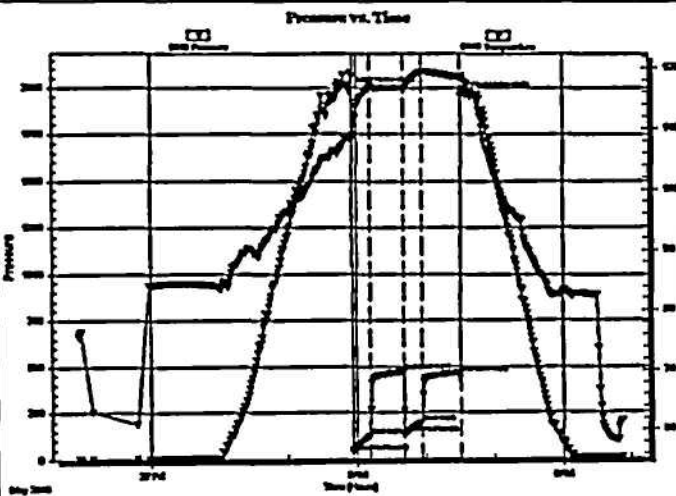
Capacity: 8000.00 psig

Last Calib.: 2016.05.27

Time On Blmt: 2016.05.27 @ 02:54:11

Time Off Blmt: 2016.05.27 @ 04:35:10

TEST COMMENT: 15-FP-wk to strg in 10 min  
30-ISF-surface blk  
15-FFP-wk to strg in 12 min  
30-FSIF-1/8" blk



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1982.16	108.33	Initial Hydro-static
2	35.70	108.30	Open To Flow (1)
17	123.38	117.21	Shut-in(1)
47	471.01	116.78	End Shut-in(1)
47	131.37	116.68	Open To Flow (2)
63	195.61	119.38	Shut-in(2)
96	462.85	118.51	End Shut-in(2)
101	1957.92	117.57	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
124.00	SOCW 2%O98%W	0.88
62.00	O&GCM 10%G20%O70%M	0.44
170.00	HO&GCM 10%G30%O60%M	1.20
55.00	CO	0.39
0.00	145' GP	0.00

### Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)







**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Mike Kelso Oil  
PO Box 467  
Chase, KS 67524-0467  
ATTN: Mike Kelso ,Sean De

**14-17s-21w Ness,KS**  
**Wonder-Mud #14-1**  
Job Ticket: 65462      **DST#: 1**  
Test Start: 2016.05.26 @ 22:56:01

**Tool Information**

Drill Pipe:	Length: 3601.00 ft	Diameter: 3.80 inches	Volume: 50.51 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 455.00 ft	Diameter: 2.70 inches	Volume: 3.22 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 53.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	4080.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4052.00	
Shut In Tool	5.00			4057.00	
Hydraulic tool	5.00			4062.00	
Jars	5.00			4067.00	
Safety Joint	3.00			4070.00	
Packer	5.00			4075.00	29.00      Bottom Of Top Packer
Packer	5.00			4080.00	
Stubb	1.00			4081.00	
Recorder	0.00	8018	Inside	4081.00	
Recorder	0.00	8700	Outside	4081.00	
Perforations	22.00			4103.00	
Bullnose	3.00			4106.00	26.00      Bottom Packers & Anchor

**Total Tool Length: 55.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Mke Kelso Oil

14-17s-21w Ness,KS

PO Box 467  
Chase, KS 67524-0467

Wonder-Mud #14-1

Job Ticket: 65462      DST#:1

ATTN: Mke Kelso, Sean De

Test Start: 2016.05.26 @ 22:56:01

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 41 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 43000 ppm
Viscosity: 46.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.72 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 6000.00 ppm		
Filter Cake: 1.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	SOCW 2% O98%W	0.878
62.00	O&GCM 10%G20%O70%M	0.439
170.00	HO&GCM 10%G30%O60%M	1.204
55.00	CO	0.389
0.00	145' GP	0.000

Total Length: 411.00 ft      Total Volume: 2.910 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial#:

Laboratory Name:      Laboratory Location:

Recovery Comments: RW.17@68F



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Mike Kelso OI  
PO Box 467  
Chase, KS 67524-0467  
ATTN: Mike Kelso, Sean Do

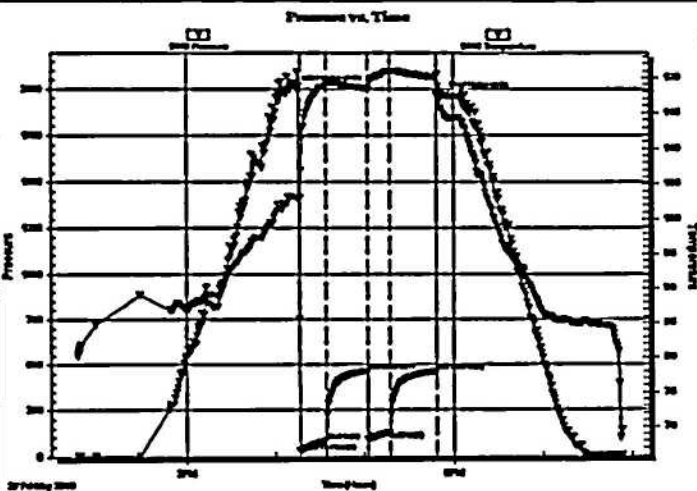
14-17s-21w Ness, KS  
Wonder-Mud #14-1  
Job Ticket: 65463 DST#:2  
Test Start: 2016.05.27 @ 13:45:53

### GENERAL INFORMATION:

Formation: Cherokee Sand  
Deviated: No Whipstock ft (KB)  
Time Tool Opened: 16:16:48  
Time Test Ended: 19:53:32  
Interval: 4106.00 ft (KB) To 4114.00 ft (KB) (TVD)  
Total Depth: 4114.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches  
Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Ray Schwager  
Unit No: 77  
Reference Elevations: 2183.00 ft (KB)  
2176.00 ft (CF)  
KB to GR/CF: 7.00 ft

Serial #: 8018 Inside  
Press@RunDepth: 128.94 psig @ 4107.00 ft (KB)  
Start Date: 2016.05.27 End Date: 2016.05.27  
Start Time: 13:45:53 End Time: 19:53:32  
Capacity: 8000.00 psig  
Last Calib.: 2016.05.27  
Time On Blmt: 2016.05.27 @ 16:14:18  
Time Off Blmt: 2016.05.27 @ 17:53:33

TEST COMMENT: 15-FFP-wk to a gd bl 3/4" to 7" bl  
30-ISP-no bl  
15-FFP-wk to a fr bl 1/2" to 5" bl  
30-FSP-no bl



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1998.83	103.08	Initial Hydro-static
3	27.32	103.02	Open To Flow (1)
21	83.93	119.18	Shut-in (1)
48	460.98	118.44	End Shut-in (1)
49	90.15	118.22	Open To Flow (2)
64	128.94	120.85	Shut-in (2)
94	460.45	120.05	End Shut-in (2)
100	1964.15	114.65	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
240.00	water	1.70
1.00	OI	0.01
0.00	45' GP	0.00

### Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Mike Kelso Oil

14-17s-21w Ness,KS

PO Box 467  
Chase, KS 67524-0467

Wonder-Mud #14-1

Job Ticket: 65463

DST#: 2

ATTN: Mike Kelso ,Sean De

Test Start: 2016.05.27 @ 13:45:53

### Tool Information

Drill Pipe:	Length: 3634.00 ft	Diameter: 3.80 inches	Volume: 50.98 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 455.00 ft	Diameter: 2.70 inches	Volume: 3.22 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 54.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	4106.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4078.00	
Shut In Tool	5.00			4083.00	
Hydraulic tool	5.00			4088.00	
Jars	5.00			4093.00	
Safety Joint	3.00			4096.00	
Packer	5.00			4101.00	29.00 Bottom Of Top Packer
Packer	5.00			4106.00	
Stubb	1.00			4107.00	
Recorder	0.00	8018	Inside	4107.00	
Recorder	0.00	8700	Outside	4107.00	
Perforations	4.00			4111.00	
Bullnose	3.00			4114.00	8.00 Bottom Packers & Anchor

**Total Tool Length: 37.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Mike Kelso Oil

14-17s-21w Ness,KS

PO Box 467  
Chase, KS 67524-0467

Wonder-Mud #14-1

Job Ticket: 65463      DST#:2

ATTN: Mike Kelso, Sean De

Test Start: 2016.05.27 @ 13:45:53

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

43000 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.69 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	water	1.700
1.00	Oil	0.007
0.00	45' GP	0.000

Total Length: 241.00 ft      Total Volume: 1.707 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW.16@70F



**TRIOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Mike Kelso Oil  
 PO Box 467  
 Chase, KS 67524-0467  
 ATTN: Mike Kelso, Sean De

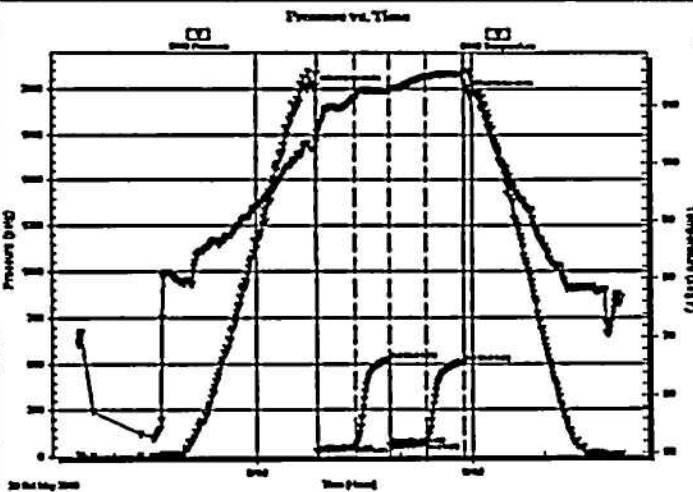
14-17s-21w Ness, KS  
 Wonder-Mud #14-1  
 Job Ticket: 65464      DST#:3  
 Test Start: 2016.05.28 @ 03:30:39

## GENERAL INFORMATION:

Formation: Cheokeer Sand "C"  
 Deviated: No Whipstock      ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 06:50:34      Tester: Ray Schwager  
 Time Test Ended: 11:04:18      Unit No: 77  
 Interval: 4116.00 ft (KB) To 4132.00 ft (KB) (TVD)      Reference Elevations: 2183.00 ft (KB)  
 Total Depth: 4132.00 ft (KB) (TVD)      2176.00 ft (CF)  
 Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 7.00 ft

Serial #: 8018      Inside  
 Press@RunDepth: 69.04 psig @ 4117.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2016.05.28      End Date: 2016.05.28      Last Calb.: 2016.05.28  
 Start Time: 03:30:39      End Time: 11:04:18      Time On Bltrc: 2016.05.28 @ 06:48:49  
 Time Off Bltrc: 2016.05.28 @ 08:57:48

TEST COMMENT: 30-FFP-wk to a fr bl 1/4" to 6" bl  
 30-ISF-no bl  
 30-FFP-wk to a fr bl 1/4" to 5" bl  
 30-FSP-no bl



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1999.65	102.51	Initial Hydro-static
2	22.00	103.78	Open To Flow (1)
33	48.97	111.24	Shut-in(1)
62	524.33	112.44	End Shut-in(1)
63	55.85	112.40	Open To Flow (2)
93	69.04	114.92	Shut-in(2)
124	505.93	115.45	End Shut-in(2)
129	1967.82	115.79	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	HO&GCM 22%G30%O8%W40%M	0.42
50.00	HO&GCM 10%G40%O50%M	0.35
10.00	CO	0.07
0.00	186' GP	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)







**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Mike Kelso Oil  
 PO Box 467  
 Chase, KS 67524-0467  
 ATTN: Mike Kelso, Sean Da

14-17s-21w Ness, KS  
 Wonder-Mud #14-1  
 Job Ticket: 65464 DST#:3  
 Test Start: 2016.05.28 @ 03:30:39

**Tool Information**

Drill Pipe:	Length: 3663.00 ft	Diameter: 3.80 inches	Volume: 51.38 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 455.00 ft	Diameter: 2.70 inches	Volume: 3.22 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 54.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4116.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	45.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4088.00	
Shut In Tool	5.00			4093.00	
Hydraulic tool	5.00			4098.00	
Jars	5.00			4103.00	
Safety Joint	3.00			4106.00	
Packer	5.00			4111.00	29.00 Bottom Of Top Packer
Packer	5.00			4116.00	
Stubb	1.00			4117.00	
Recorder	0.00	8018	Inside	4117.00	
Recorder	0.00	8700	Outside	4117.00	
Perforations	12.00			4129.00	
Bullnose	3.00			4132.00	16.00 Bottom Packers & Anchor

**Total Tool Length: 45.00**



**TRIBOLITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Mke Kelso Oil

14-17s-21w Ness,KS

PO Box 467  
Chase, KS 67524-0467

Wonder-Mud #14-1

Job Ticket: 65464      DST#:3

ATTN: Mke Kelso ,Sean Da

Test Start: 2016.05.28 @ 03:30:39

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

41 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.71 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbf
60.00	HO&GCM 22%G30%O8%W40%M	0.425
50.00	HO&GCM 10%G40%O50%M	0.354
10.00	CO	0.071
0.00	186° GP	0.000

Total Length: 120.00 ft

Total Volume: 0.850 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: