



MIDWEST WIRELINE

DUAL COMP POROSITY LOG

Company The Bill Bowman Oil Company

Well PL Hilgers #1

Field Baumgarten

County Rooks

State Kansas

Location: API #: 15-163-24458-00-00

Other Services

1650 FNL & 1650 FWL

DIL/MEL

SEC 30 TWP 9S RGE 18W

Permanent Datum Ground Level Elevation 2188

Log Measured From Kelly Bushing

Drilling Measured From Kelly Bushing

K.B. 2193

D.F. 2188

G.L. 2188

Date	9/11/2022						
Run Number	One						
Type Log	CNL/CDL						
Depth Driller	3698						
Depth Logger	3698						
Bottom Logged Interval	3669						
Top Logged Interval	3000						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	2300						
Density	9.1						
Level	Full						
Max. Rec. Temp. F	113						
Operating Rig Time	2 Hours						
Equipment -- Location	P-24 Hays						
Recorded By	D. Schmidt						
Witnessed By	Roger Moses						
Borehole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	227	8.625	23	0	227
Two	7.875	227	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest 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.

Plainville,
4 East, 3/4 North,
East into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC

785-625-3858

Your Midwest Wireline Crew				This Log Record Was Witnessed By			
Engineer: D. Schmidt				Primary Witness: Roger Moses			
Operator:				Secondary Witness:			
Operator:				Secondary Witness:			
Operator:				Secondary Witness:			

Operator	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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Log Variables

DatabaseC:\ProgramData\Warrior\Data\bowman_hilger 1.db
Dataset field/well/stkml/pass3.12/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	113	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	85	60		3698

Variable Description

A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth



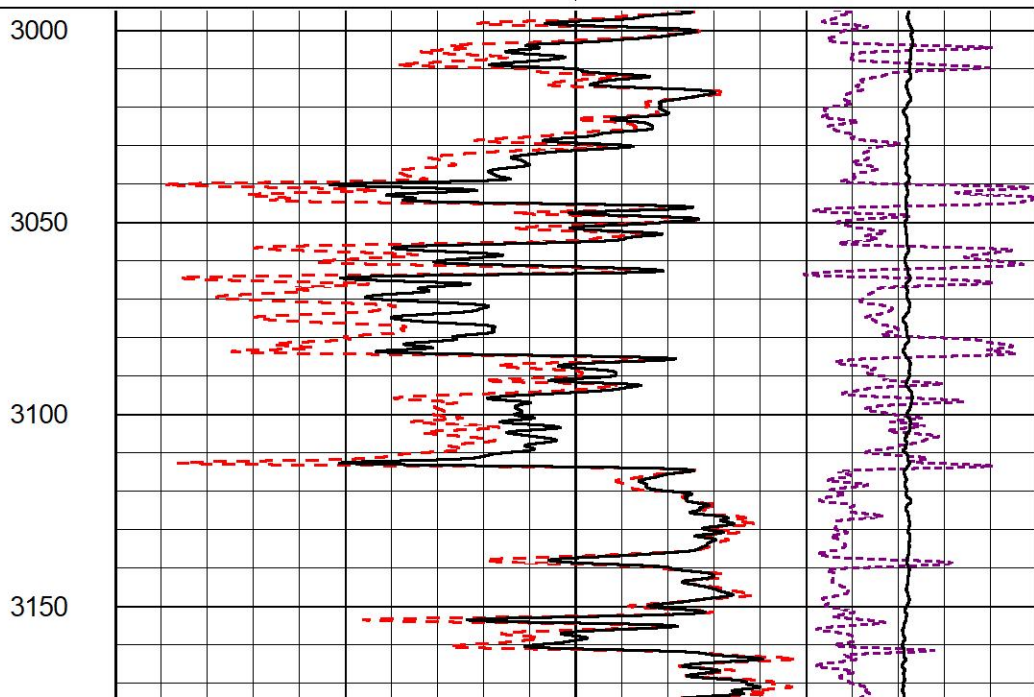
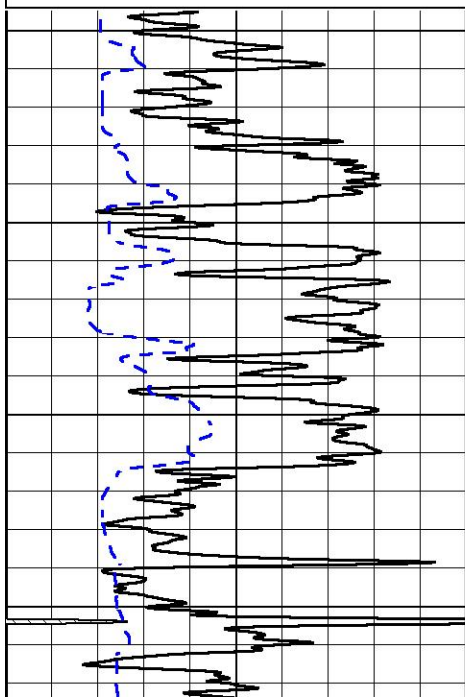
2" SCALE BULK DENSITY

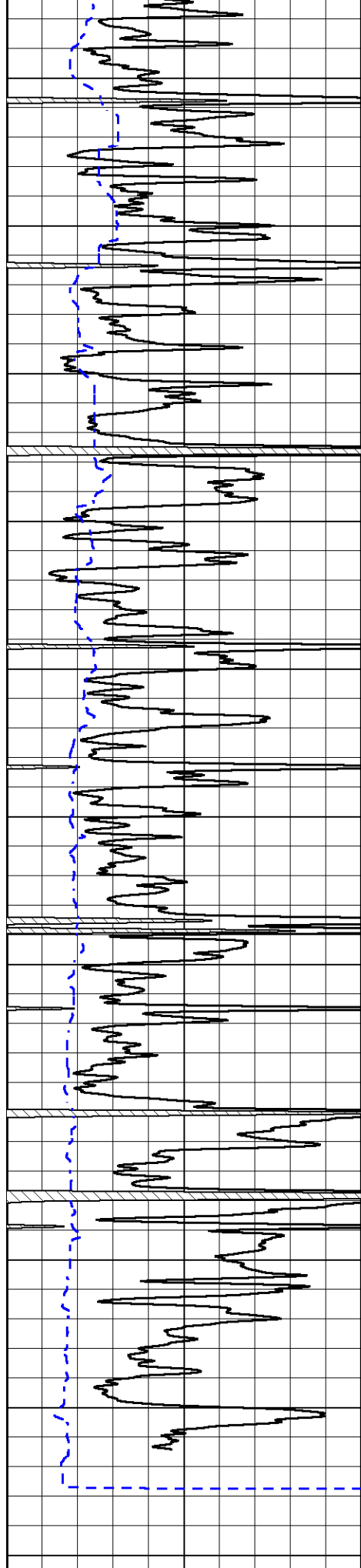
MAIN PASS

Database File bowman_hilger 1.db
Dataset Pathname stkml/pass3.2
Presentation Format _cdl
Dataset Creation Sun Sep 11 05:27:34 2022
Charted by Depth in Feet scaled 1:600

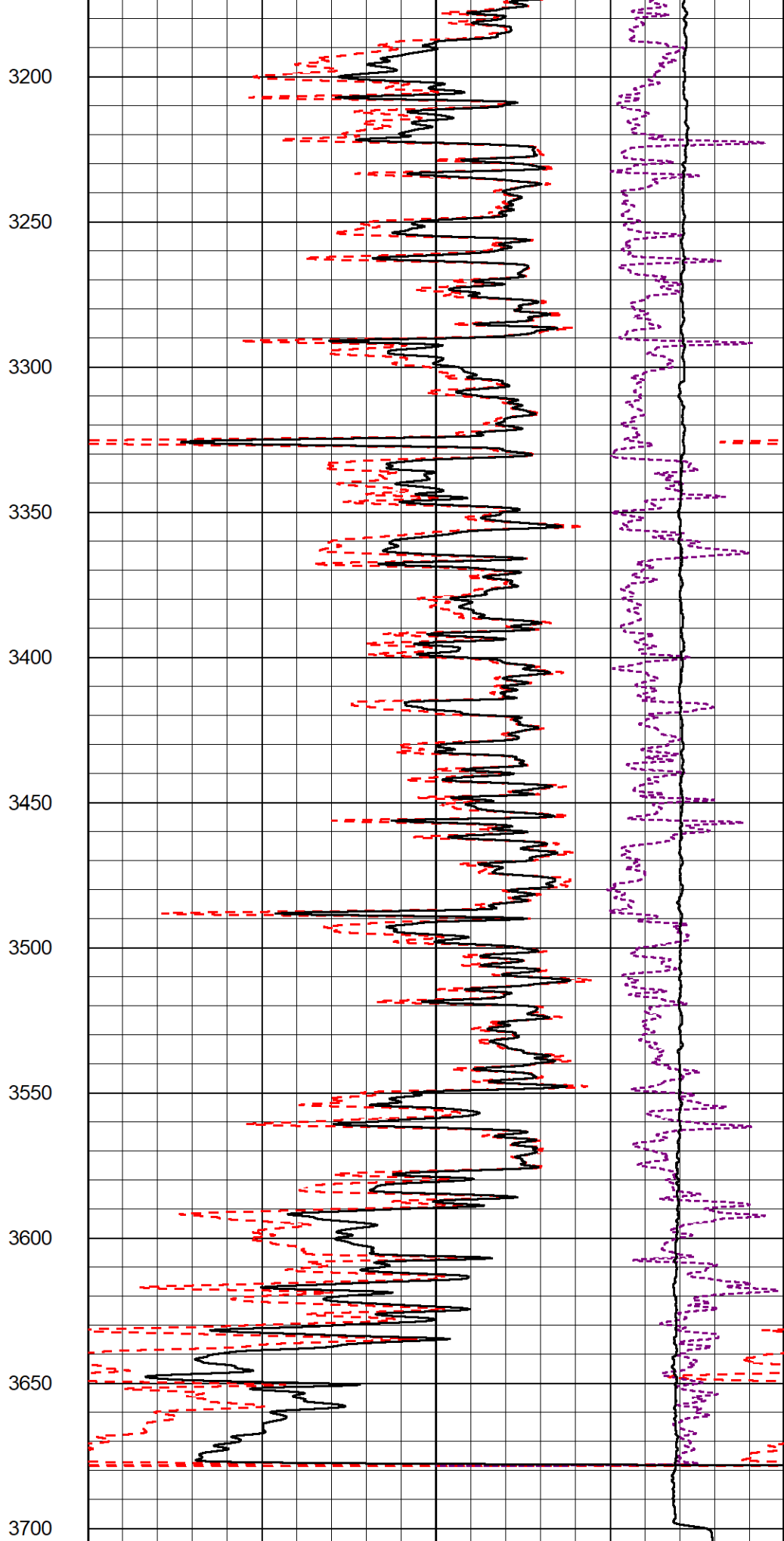
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

30	Compensated Density (pu)	-10
2	Bulk Density (g/cc)	3
10000	Line Tension (lb)	0
-0.25	Correction (g/cc)	0.25





0 Gamma Ray (GAPI) 150
6 Caliner (in) 16



30 Compensated Density (pu) -10
2 Bulk Density (g/cc) 3

0	Caliper (in)	10	2	Bulk Density (g/cc)	5	
			10000	Line Tension (lb)	0	
				-0.25	Correction (g/cc)	0.25



MIDWEST WIRELINE

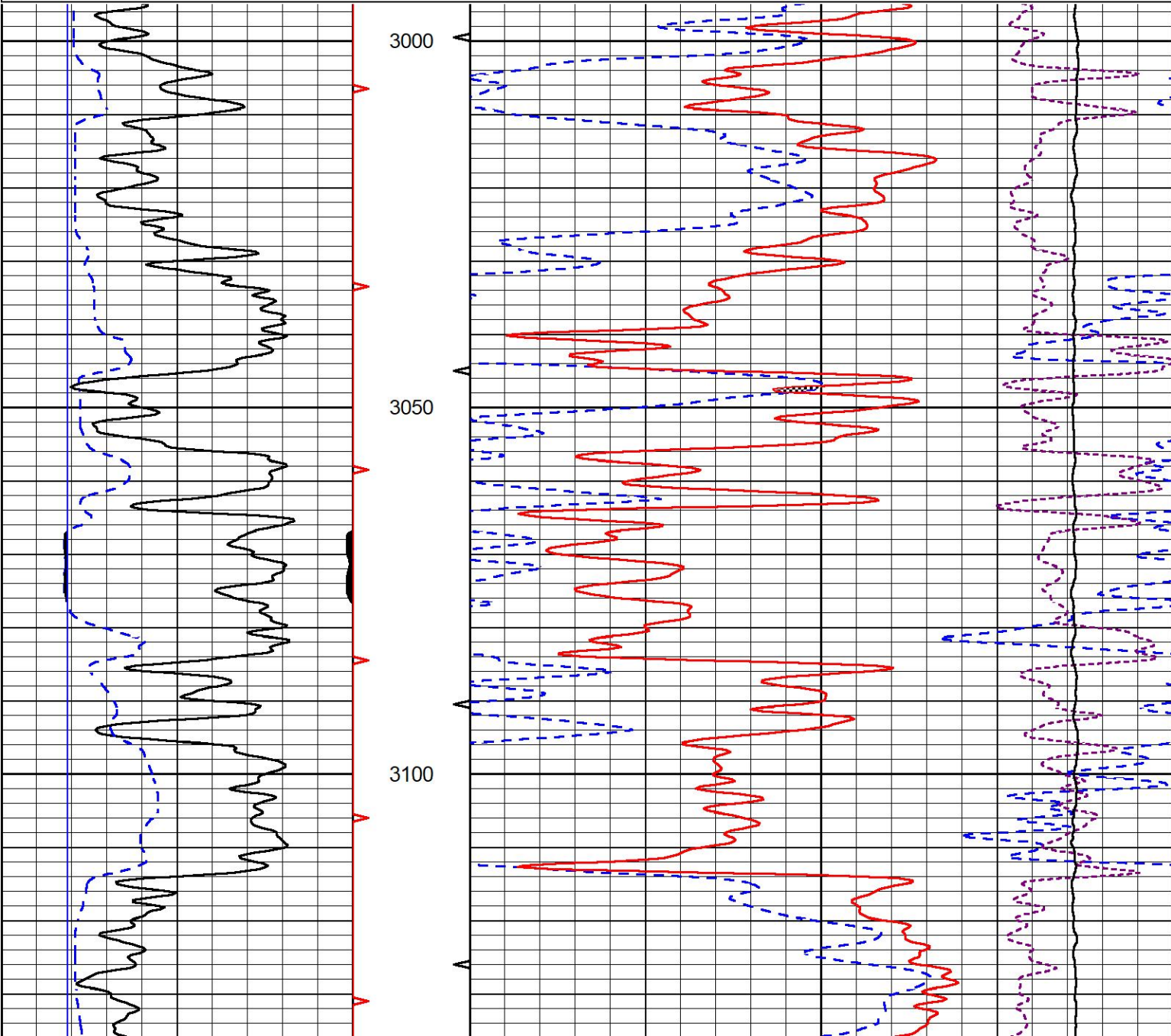
DETAIL SECTION

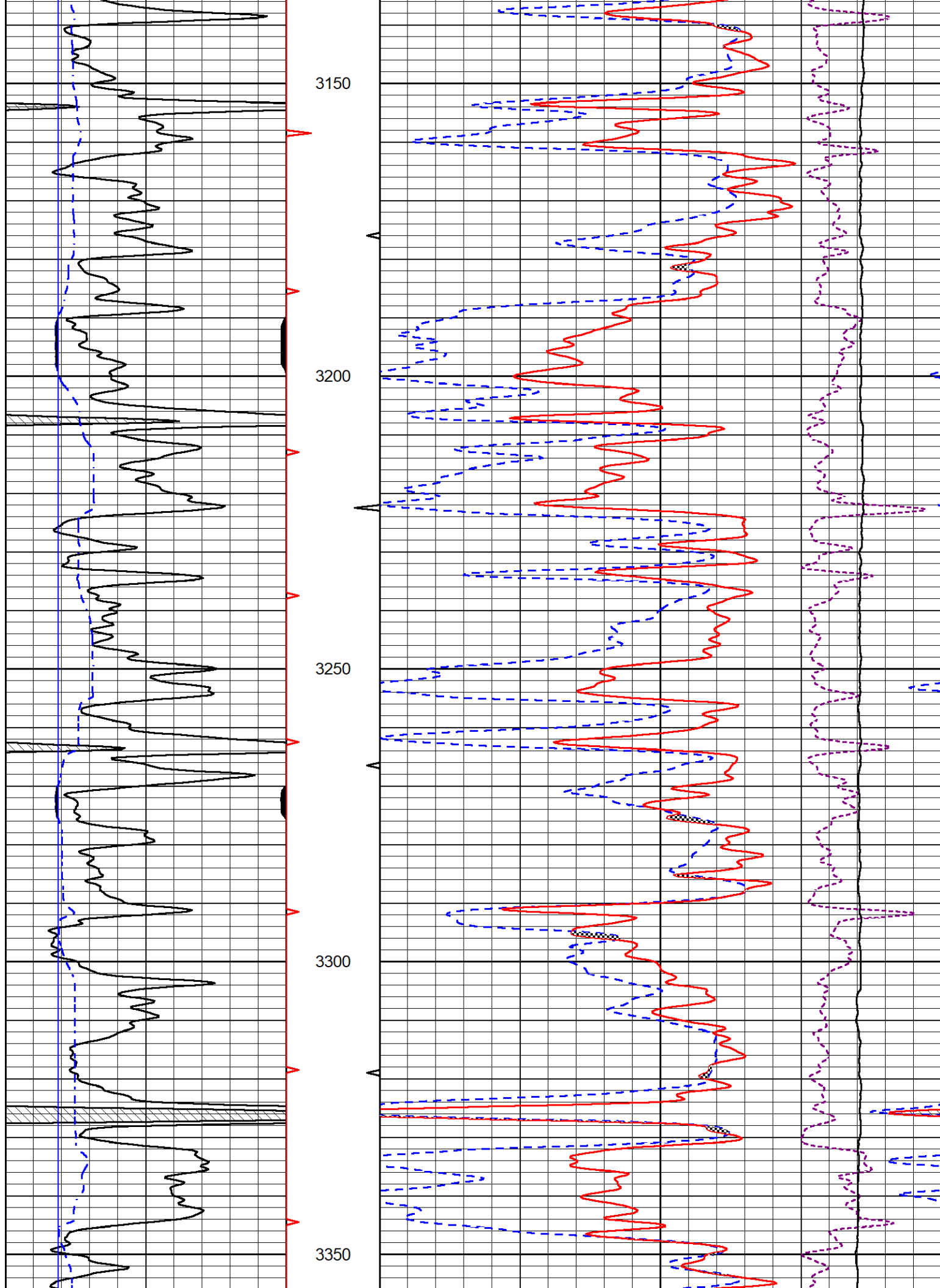
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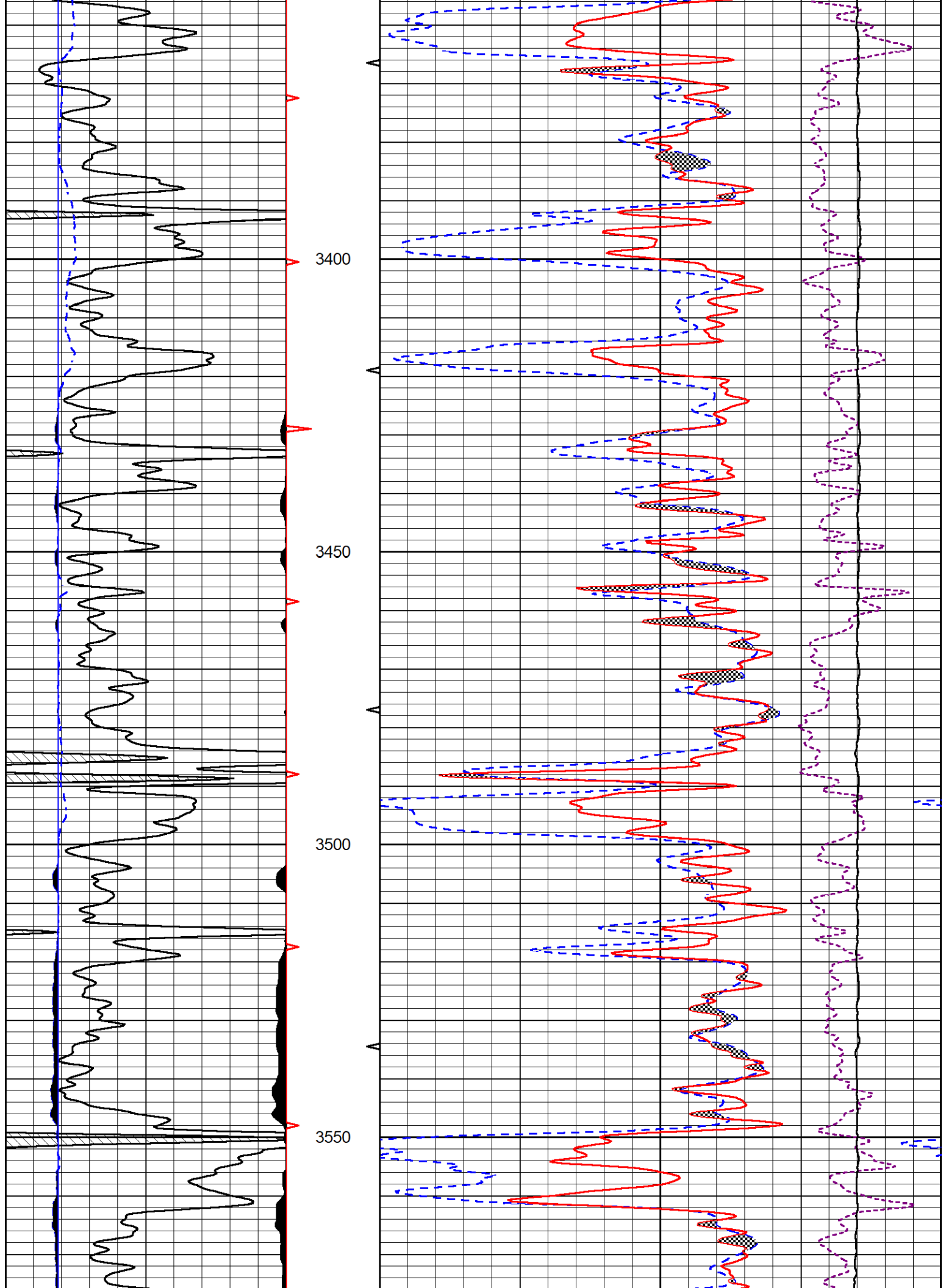
Database File
Dataset Pathname
Presentation Format
Dataset Creation
Charted by

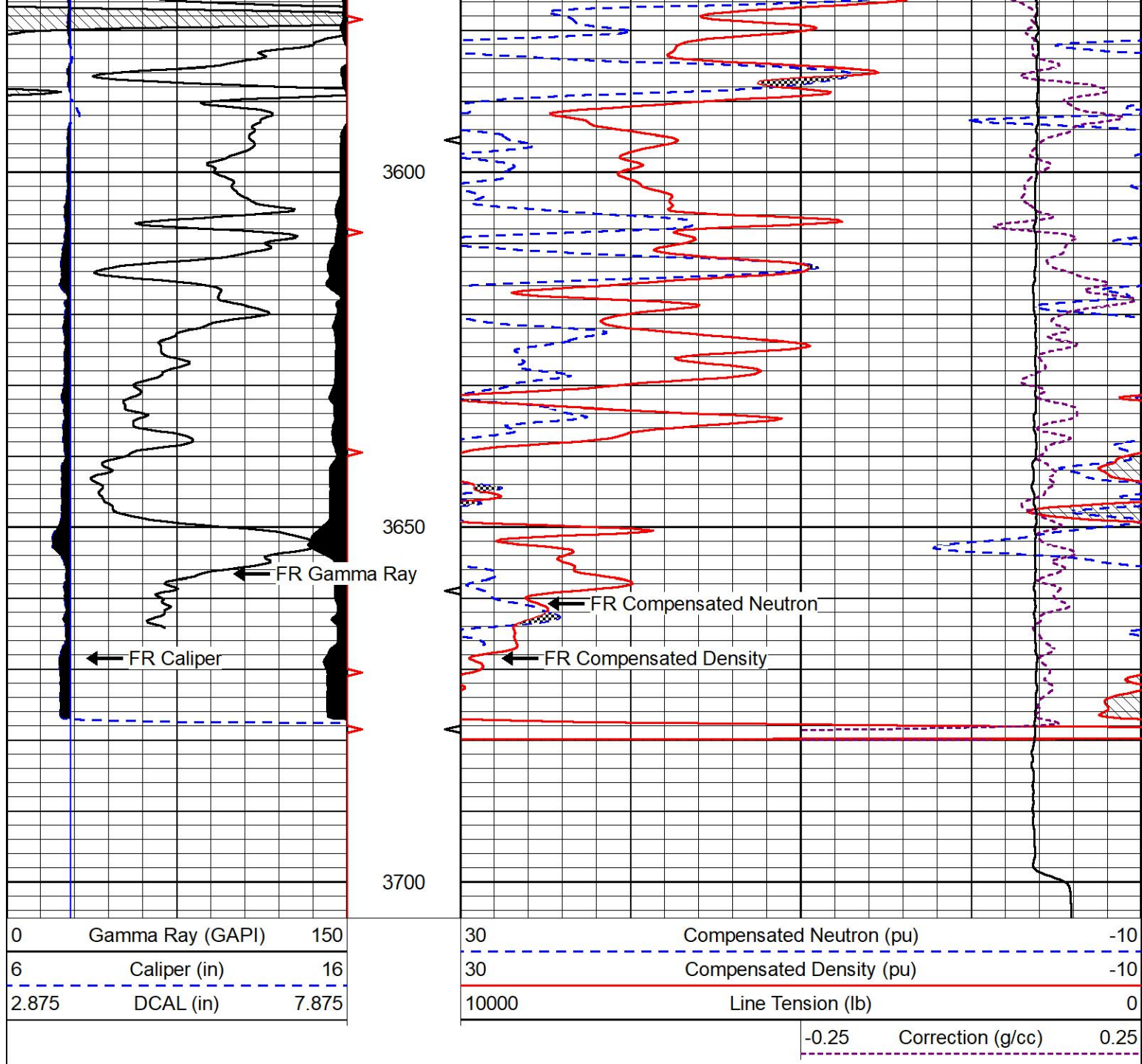
bowman_hilger 1.db
stkml/pass3.1
_CNDLS~1
Sun Sep 11 05:23:21 2022
Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	30	Compensated Neutron (pu)	-10	
6	Caliper (in)	16	30	Compensated Density (pu)	-10	
2.875	DCAL (in)	7.875	10000	Line Tension (lb)	0	
				-0.25	Correction (g/cc)	0.25









MIDWEST WIRELINE

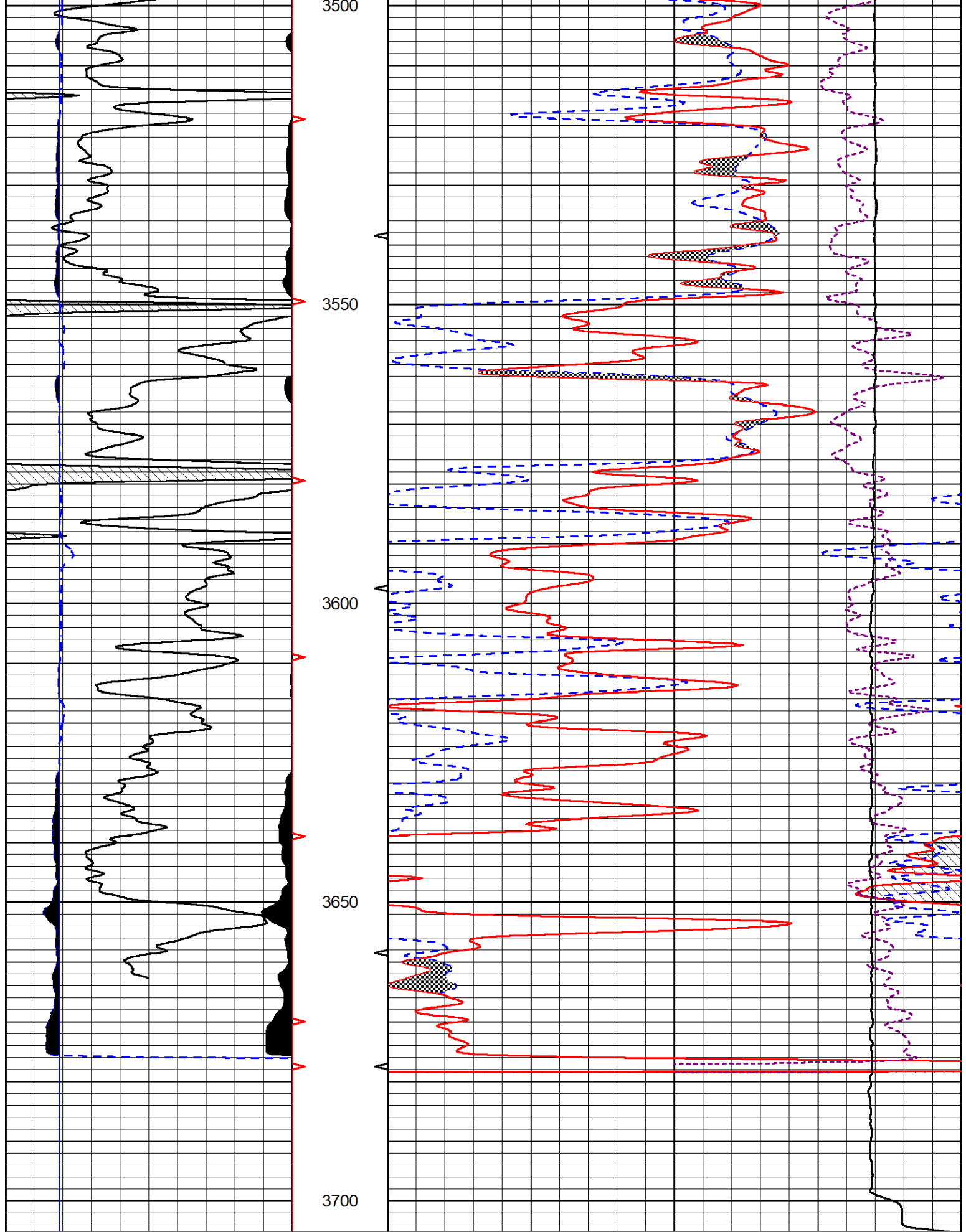
REPEAT SECTION

REPEAT PASS

Database File bowman_hilger 1.db
 Dataset Pathname stkml/pass2.1
 Presentation Format _CNDLS~1
 Dataset Creation Sun Sep 11 05:04:16 2022
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	DCAL (in)	7.875

30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
10000	Line Tension (lb)	0
-0.25	Correction (g/cc)	0.25



0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	DCAL (in)	7.875

30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
10000	Line Tension (lb)	0

Calibration Report	
Database File	bowman_hilger 1.db
Dataset Pathname	stkml/pass3.12
Dataset Creation	Sun Sep 11 04:51:03 2022

Dual Induction Calibration Report

Serial-Model:	501 HT-M&W
Surface Cal Performed:	Sat Aug 27 21:37:29 2022

		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-41.000
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-35.000

Microlog Calibration Report

Serial-Model:	402-PSIML
Performed:	Fri Sep 9 11:18:26 2022

		Readings		References		Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	14000.0000	-1.2000
Caliper	1.0052	1.0858	5.0000	16.5000	in	80.0000	-74.7000

Compensated Density Calibration Report

Serial-Model:	307-11-M&W
Source #:	20762B
Master Calibration Performed:	Sat Aug 27 10:20:16 2022

Master Calibration					
Density			Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps
Spine Angle = 75.41			Density/Spine Ratio = 0.538		
Size			Reading		
Small Ring	6.00	in	1.16		
Large Ring	18.00	in	1.01		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W

CALIBRATION			
Detector	Readings	Target	Normalization

	Short Space	6240.00	cps	1000.00	cps	1.6025
	Long Space	460.00	cps	1000.00	cps	1.9500
PRE-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps		pu	pu
2)	Short Space		cps			
	Long Space		cps		pu	
3)	Short Space		cps			
	Long Space		cps		pu	
POST-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps		pu	pu
2)	Short Space		cps			
	Long Space		cps		pu	pu
3)	Short Space		cps			
	Long Space		cps		pu	pu
Gamma Ray Calibration Report						
Serial Number:		106				
Tool Model:		M&W				
Performed:		Fri Dec 3 15:10:46 2021				
Calibrator Value:		500.0		GAPI		
Background Reading:		24.0		cps		
Calibrator Reading:		637.0		cps		
Sensitivity:		0.5500		GAPI/cps		

 MIDWEST WIRELINE	Company	The Bill Bowman Oil Company
	Well	PL Hilgers #1
	Field	Baumgarten
	County	Rooks
	State	Kansas