



DUAL COMPENSATED
POROSITY w/PE

MIDWEST WIRELINE

Company LB Exploration Inc.
Well Sandy 31-1
Field Unknown
County Ellsworth
State Kansas

Company LB Exploration Inc.
Well Sandy 31-1
Field Unknown
County Ellsworth State Kansas

Location: API #: 15-053-21395-00-00

1440 FSL & 1885 FWL

SEC 31 TWP 16S RGE 8W

Permanent Datum Ground Level Elevation 1784
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Other Services
DIL
MEL/BHCS

K.B. 1792
D.F.
G.L. 1784

Date 6/1/2024

Run Number One

Type Log CNL/CDL

Depth Driller 2490

Depth Logger 2490

Bottom Logged Interval 2461

Top Logged Interval 1000

Type Fluid In Hole Chemical

Salinity, PPM CL 5000

Density 9.2

Level Full

Max. Rec. Temp. F 101

Operating Rig Time Full

Equipment -- Location P-108 Hays

Recorded By J. Henrickson

Witnessed By Jim Musgrove

Borehole Record

Casing Record

Run No. Bit From To Size Wgt. From To

One 12.25 0 250 8.625 23 0 250

Two 7.875 250 TD 250

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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.

Hollywood KS
8.4 East, North Into

Log Measured From: Kelly Bushing 8 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: J. Henrickson
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Jim Musgrove
Secondary Witness:
Secondary Witness:
Secondary Witness:



MIDWEST WIRELINE

Company LB Exploration Inc.

Well
Sandy 31-1

Field Unknown

County Ellsworth State Kansas

Location: API #: 15-053-21395-00-00

Other Services

SEC 31 TWP 16S RGE 8W

	Permanent Datum	Ground Level
1	87.0	96.0
2	87.0	96.0
3	87.0	96.0
4	87.0	96.0
5	87.0	96.0
6	87.0	96.0
7	87.0	96.0
8	87.0	96.0
9	87.0	96.0
10	87.0	96.0
11	87.0	96.0
12	87.0	96.0
13	87.0	96.0
14	87.0	96.0
15	87.0	96.0
16	87.0	96.0
17	87.0	96.0
18	87.0	96.0
19	87.0	96.0
20	87.0	96.0
21	87.0	96.0
22	87.0	96.0
23	87.0	96.0
24	87.0	96.0
25	87.0	96.0
26	87.0	96.0
27	87.0	96.0
28	87.0	96.0
29	87.0	96.0
30	87.0	96.0
31	87.0	96.0
32	87.0	96.0
33	87.0	96.0
34	87.0	96.0
35	87.0	96.0
36	87.0	96.0
37	87.0	96.0
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39	87.0	96.0
40	87.0	96.0
41	87.0	96.0
42	87.0	96.0
43	87.0	96.0
44	87.0	96.0
45	87.0	96.0
46	87.0	96.0
47	87.0	96.0
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50	87.0	96.0
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53	87.0	96.0
54	87.0	96.0
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56	87.0	96.0
57	87.0	96.0
58	87.0	96.0
59	87.0	96.0
60	87.0	96.0
61	87.0	96.0
62	87.0	96.0
63	87.0	96.0
64	87.0	96.0
65	87.0	96.0
66	87.0	96.0
67	87.0	96.0
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69	87.0	96.0
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80	87.0	96.0
81	87.0	96.0
82	87.0	96.0
83	87.0	96.0
84	87.0	96.0
85	87.0	96.0
86	87.0	96.0
87	87.0	96.0
88	87.0	96.0
89	87.0	96.0
90	87.0	96.0
91	87.0	96.0
92	87.0	96.0
93	87.0	96.0
94	87.0	96.0
95	87.0	96.0
96	87.0	96.0
97	87.0	96.0
98	87.0	96.0
99	87.0	96.0
100	87.0	96.0

Drilling Measured From Kelly Bushing

Elevat	
K.B.	1792
D.F.	
G.L.	1784

Date	6/1/2024
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Run Number	One
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Type Log	CNL/CDL
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Depth Logger	2490
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Bottom Logged Interval	2461
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100p Logged Interval	1000
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Type Fluid in Hole	Chemical
Casing: PDM CI	5000

Density, 11 m CL	0.2
Density	0.2

Energy	0.11
ave	0.11

Max. Rec. Temp. F	101
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Operating Rig Time	Full
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Equipment -- Location	P-108	H
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Recorded By	J. Henricks
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Witnessed By	Jim Musgro
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Run No.	Bit	From	To
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One	12.25	0	250
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Two	7.875	250	TD
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Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Hollyrood KS
8.4 East, North Into

Log Measured From: Kelly Bushing 8 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: J. Henrickson
Operator:
Operator:
Operator:

Primary Witness: Jim Musgrove
Secondary Witness:
Secondary Witness:
Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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GR	40.75		GR-M&W (102)	3.00	3.50	50.00
CNLSC	37.65		CNT-M&W (207)	5.00	3.50	100.00
CNSSC	36.90					
			MWLith-STEP LITHO (704-10) Long Litho Mandrel	8.92	5.00	250.00
LCAL	28.21		ML-PSIML (401)	7.58	4.00	65.00
LLW8N	28.21					
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21					
LLW1N	28.21					
LSLOCK	27.96					
LLLOCK	27.96					
PELTMPR	27.96					
LSHVNG	27.96					
LLHVNG	27.96					
LSW8N	27.71					
LSW7N	27.71					
LSW6N	27.71					
LSW5N	27.71					
LSW4N	27.71					
LSW3N	27.71					
LSW2N	27.71					
LSW1N	27.71					
MCAL	19.58		DIL-M&W (507)	18.25	3.50	220.00
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: lb_sandy_31_1.db: field/well/StackmlPE/pass3.1

Total length: 42.75 ft

Total weight: 685.00 lb

O.D.: 5.00 in

Log Variables

Database C:\ProgramData\Warrior\Data\lb_sandy_31_1.db
Dataset field/well/StackmlPE/pass3.1/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 101	CASEOD in 5.5	CASETHCK in 0	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	NPORSEL Limestone	PERFS No
SNDERR mmho/m 0	SNDERRM mmho/m 0	SPSHIFT mV 490	SRFTEMP degF 68	SZCOR Off	TDEPTH ft 2490		

Variable Description

BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
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



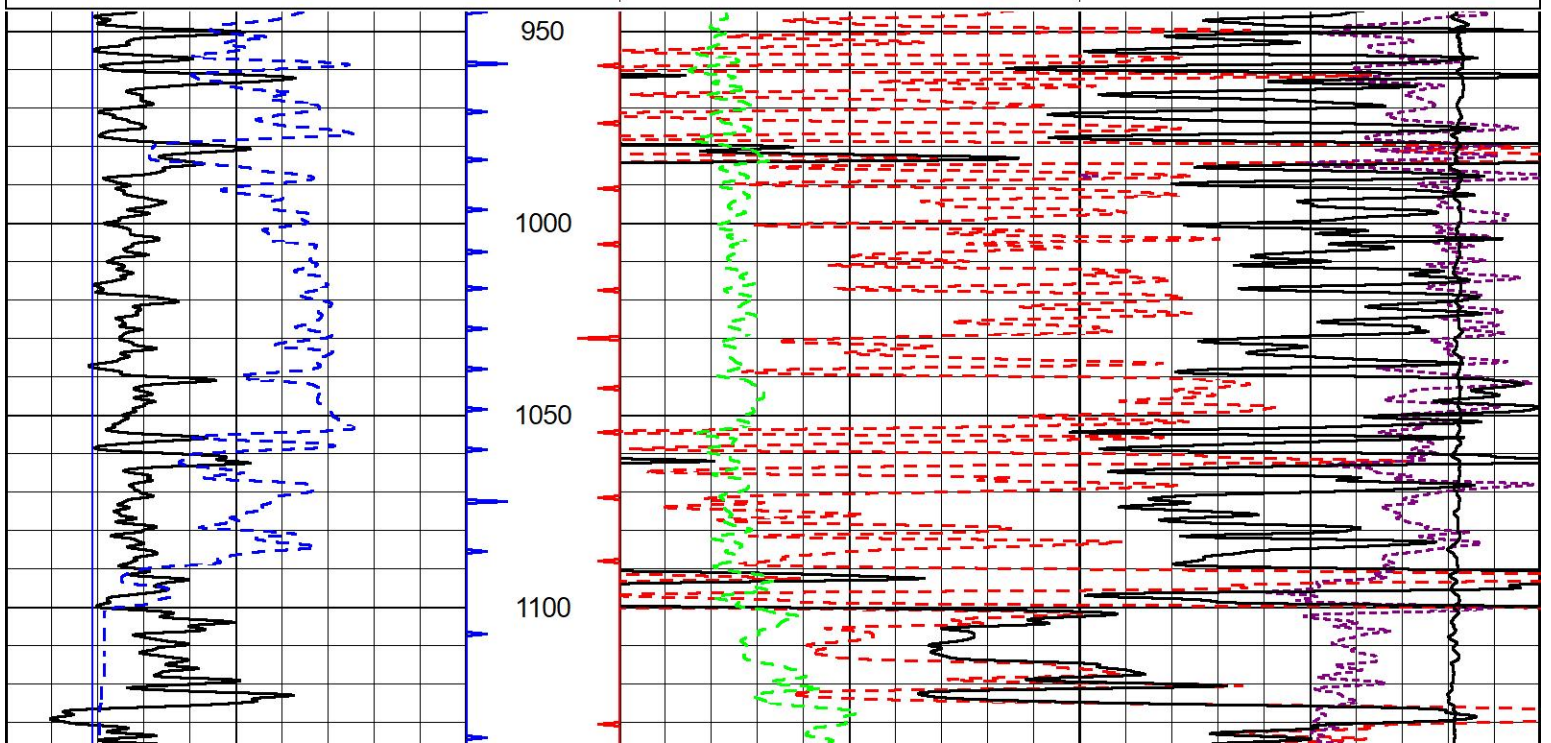
MIDWEST WIRELINE

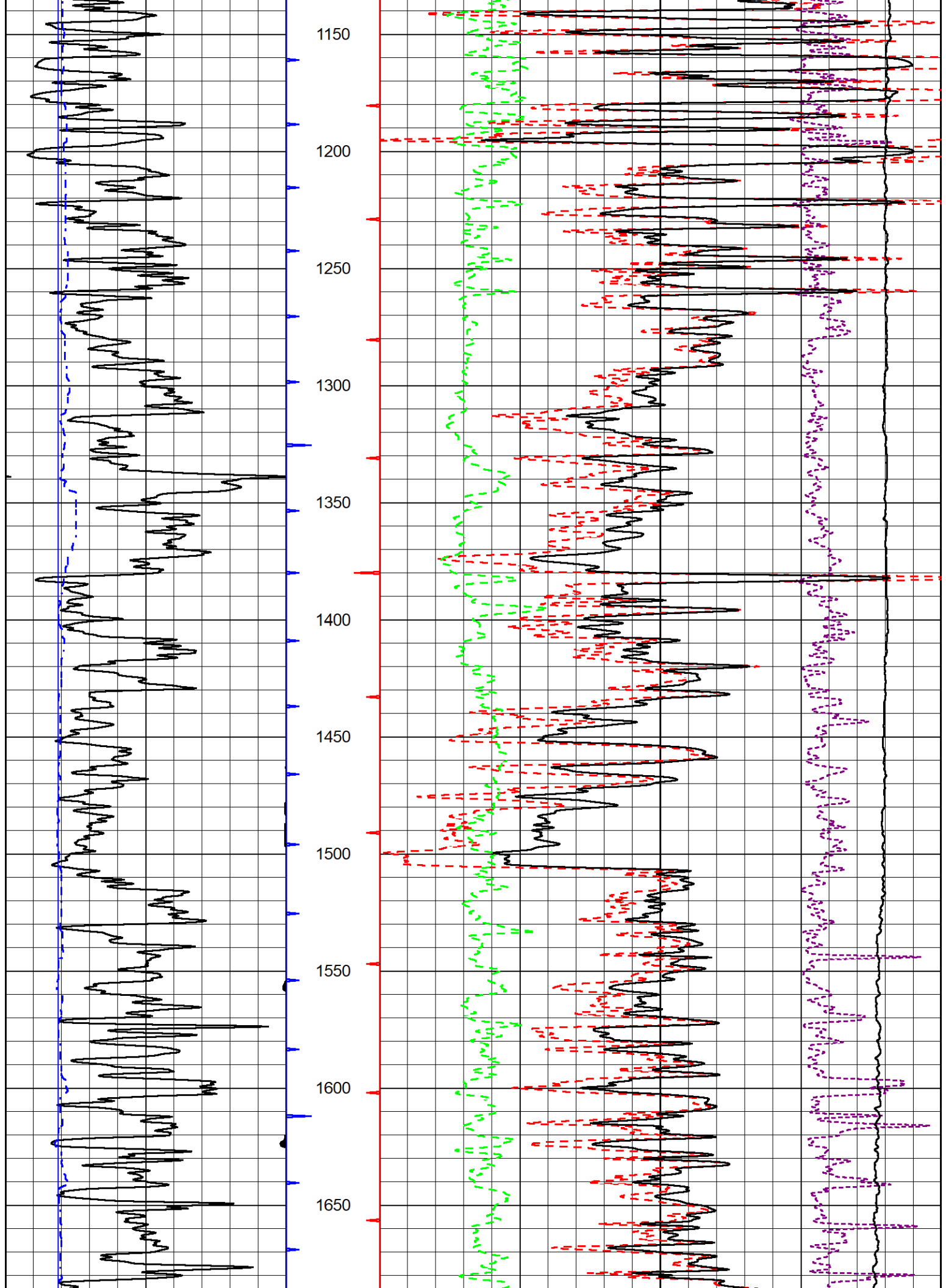
2" SCALE BULK DENSITY

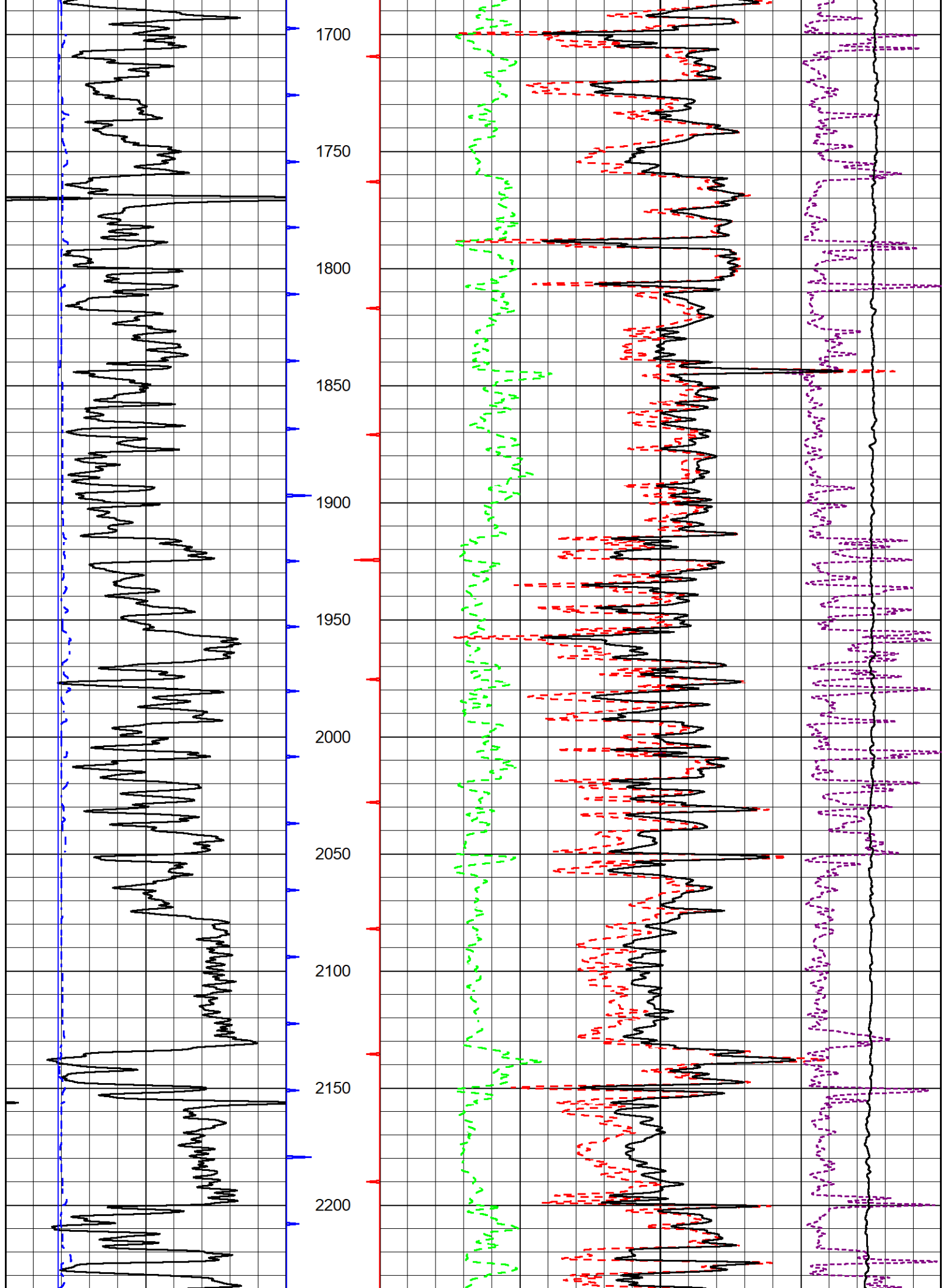
MAIN PASS

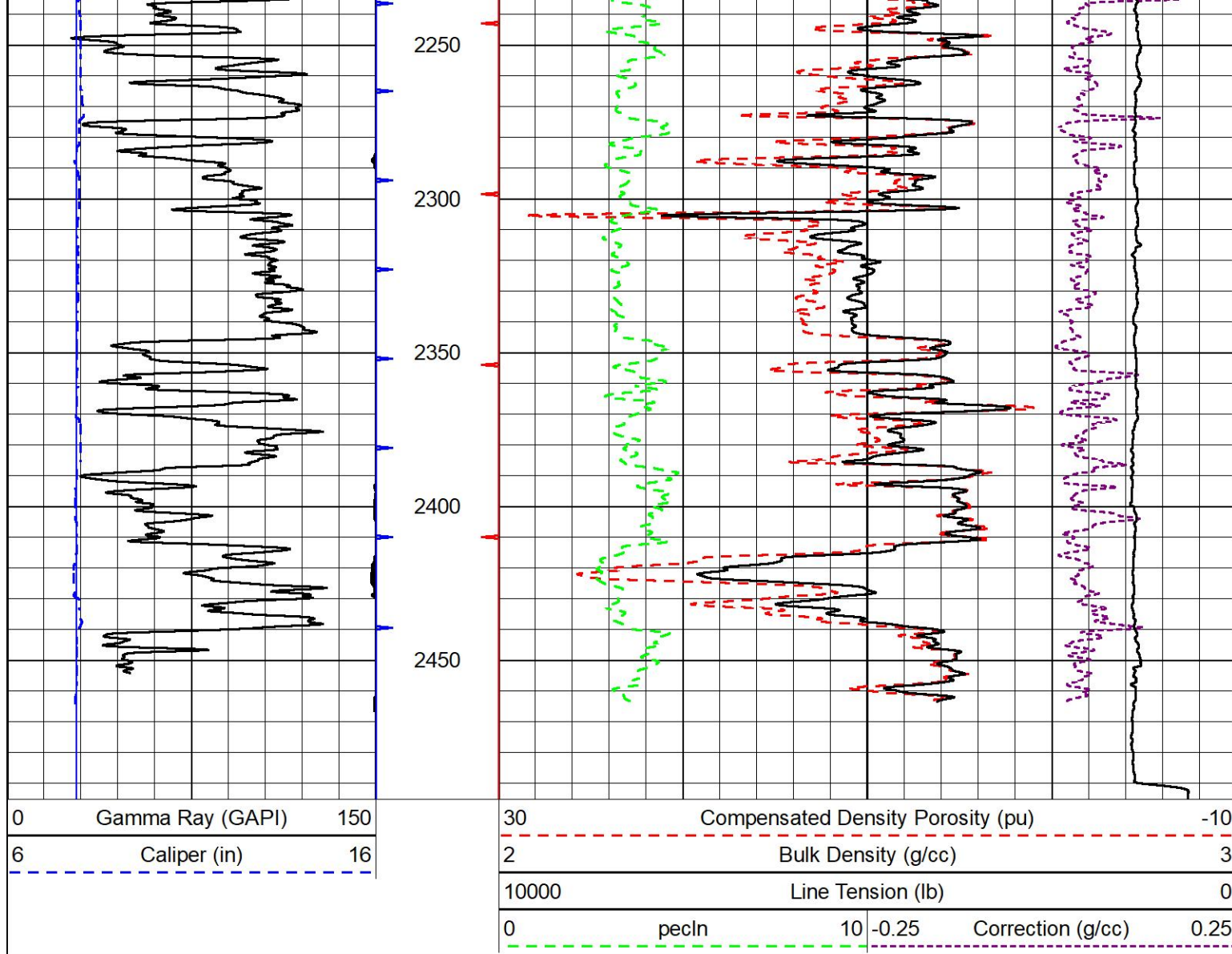
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Dataset Pathname StackmlPE/pass3.3
Presentation Format _cdlpe
Dataset Creation Sat Jun 01 20:26:00 2024
Charted by Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	30	Compensated Density Porosity (pu)	-10
6	Caliper (in)	16	2	Bulk Density (g/cc)	3
			10000	Line Tension (lb)	0
			0	pecln	10
			-0.25	Correction (g/cc)	0.25









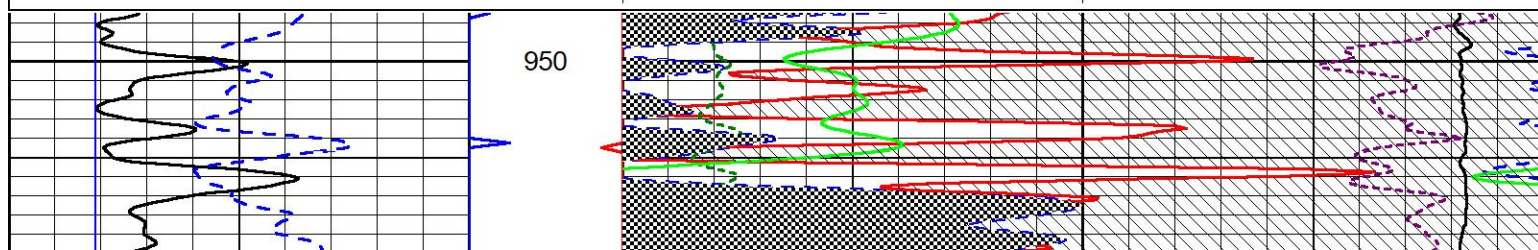
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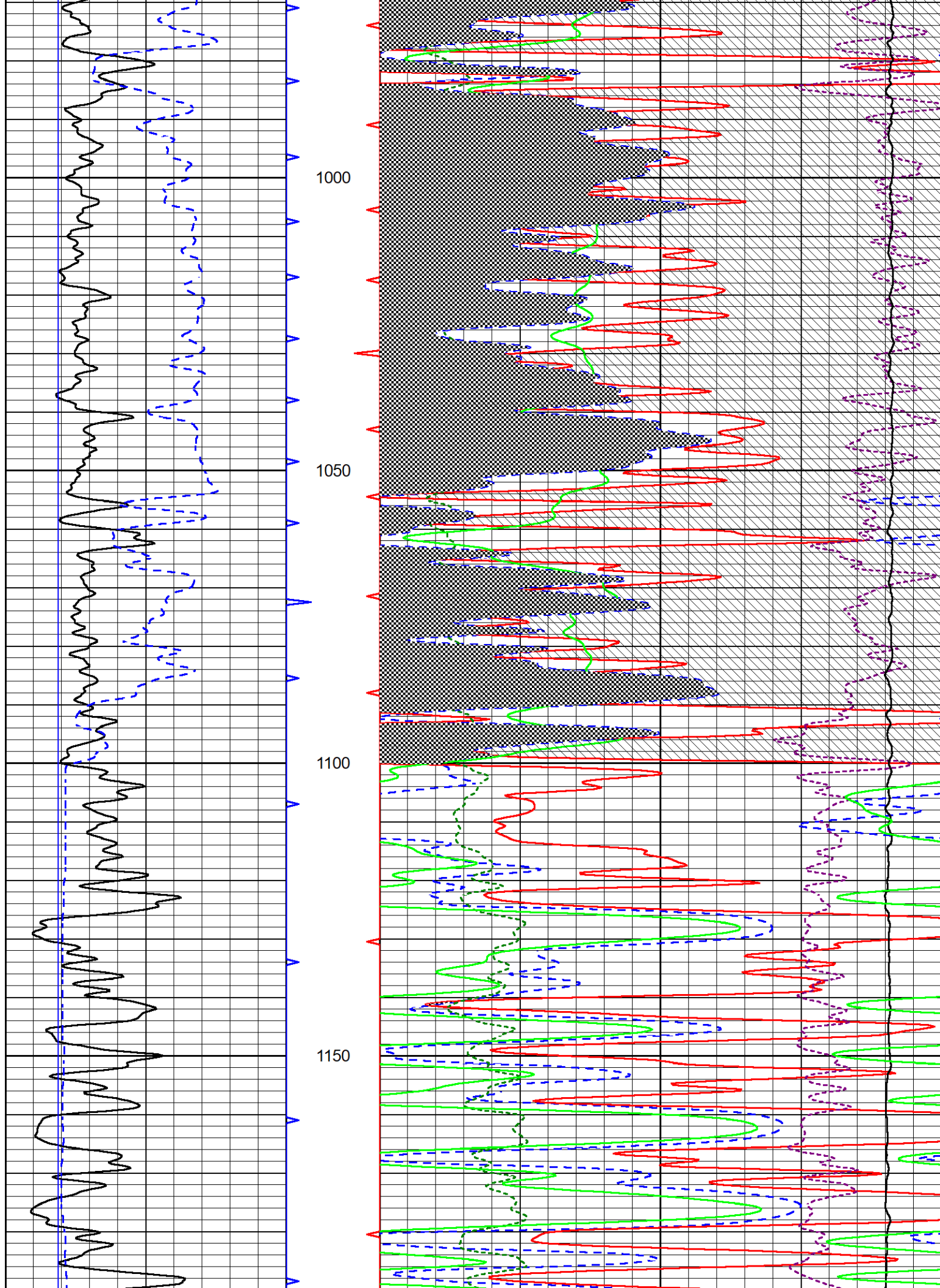
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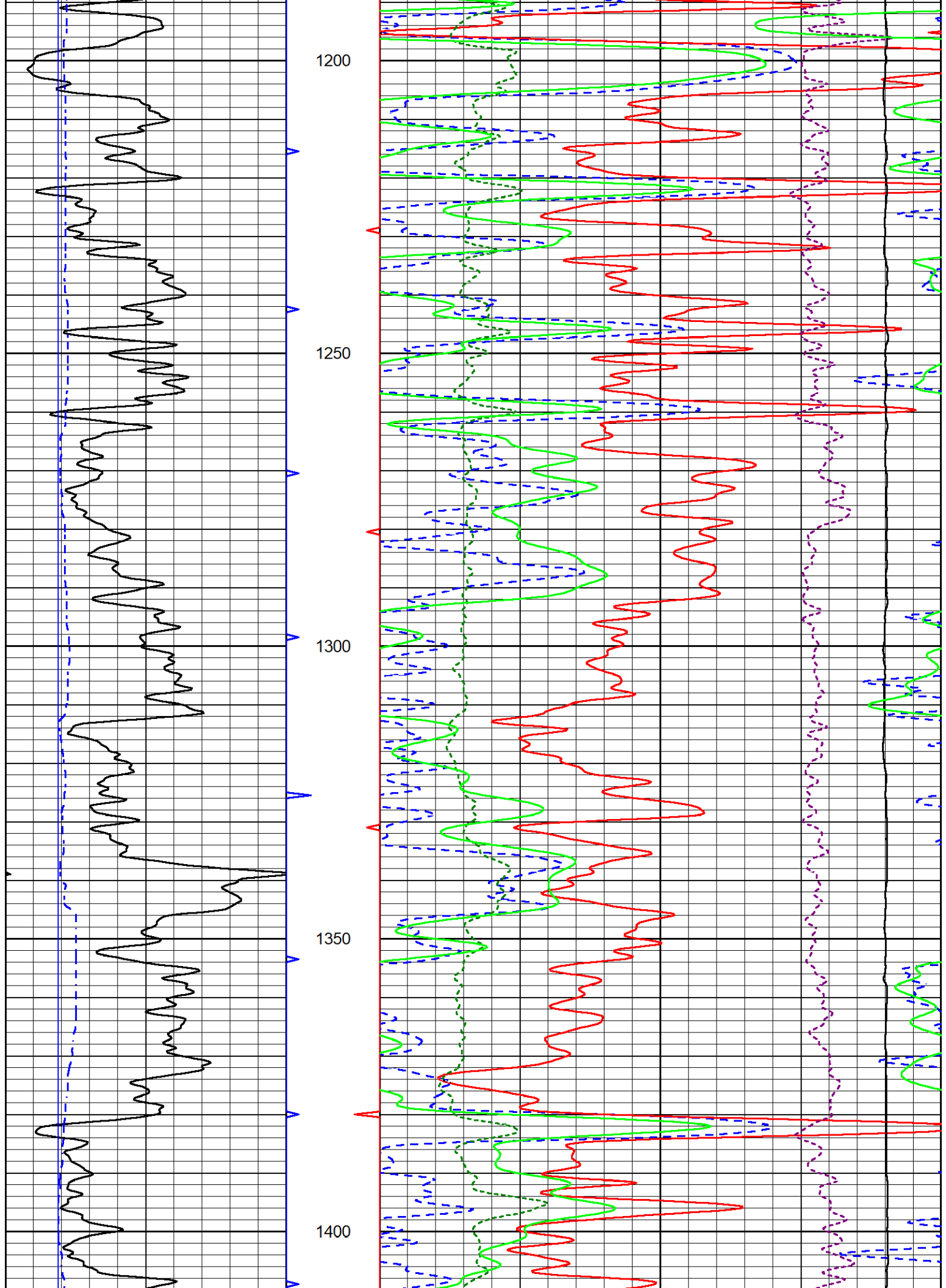
MAIN PASS

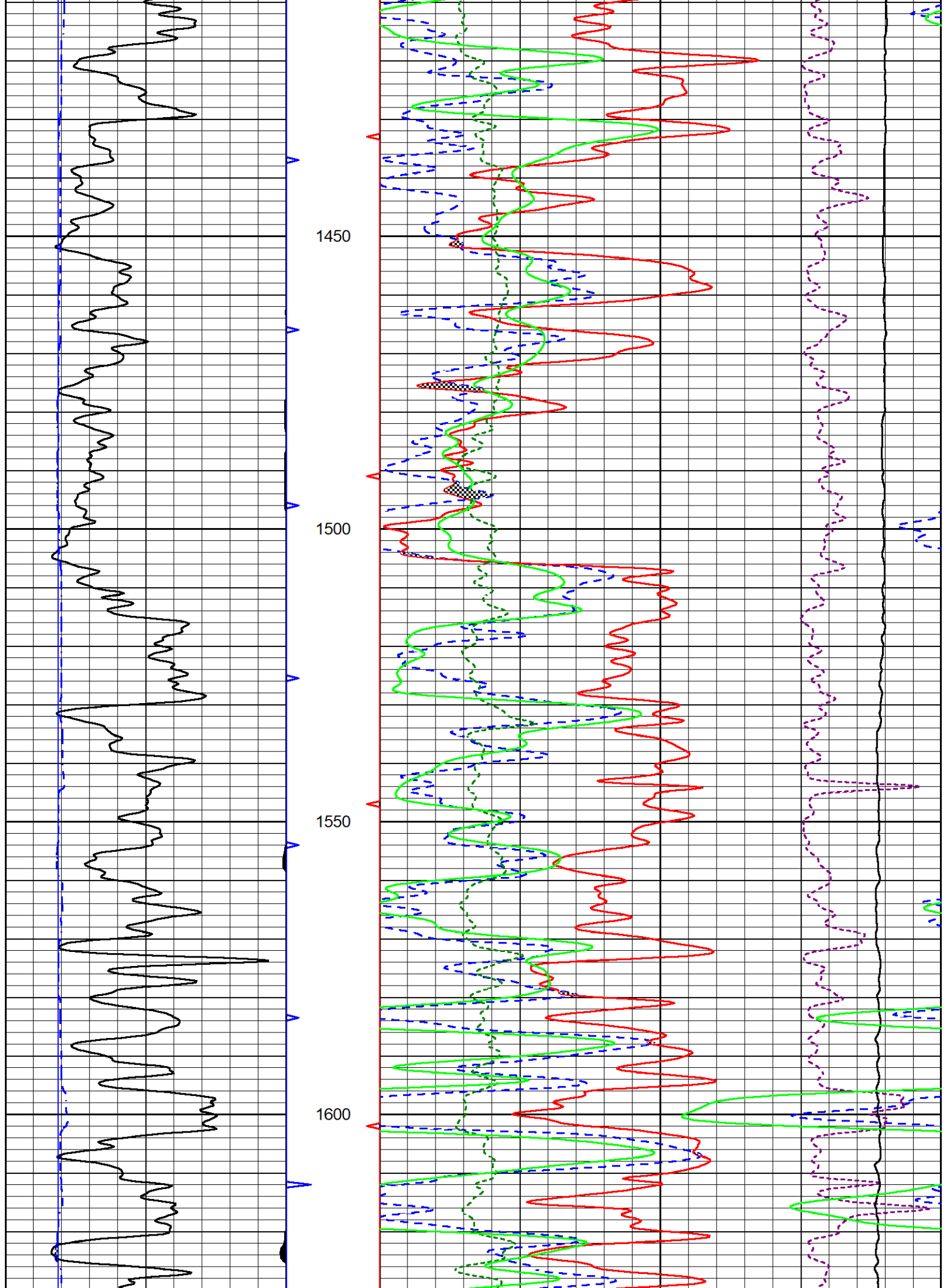
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 Dataset Pathname StackmlPE/pass3.1
 Presentation Format _CNDLS~4
 Dataset Creation Sat Jun 01 20:41:46 2024
 Charted by Depth in Feet scaled 1:240

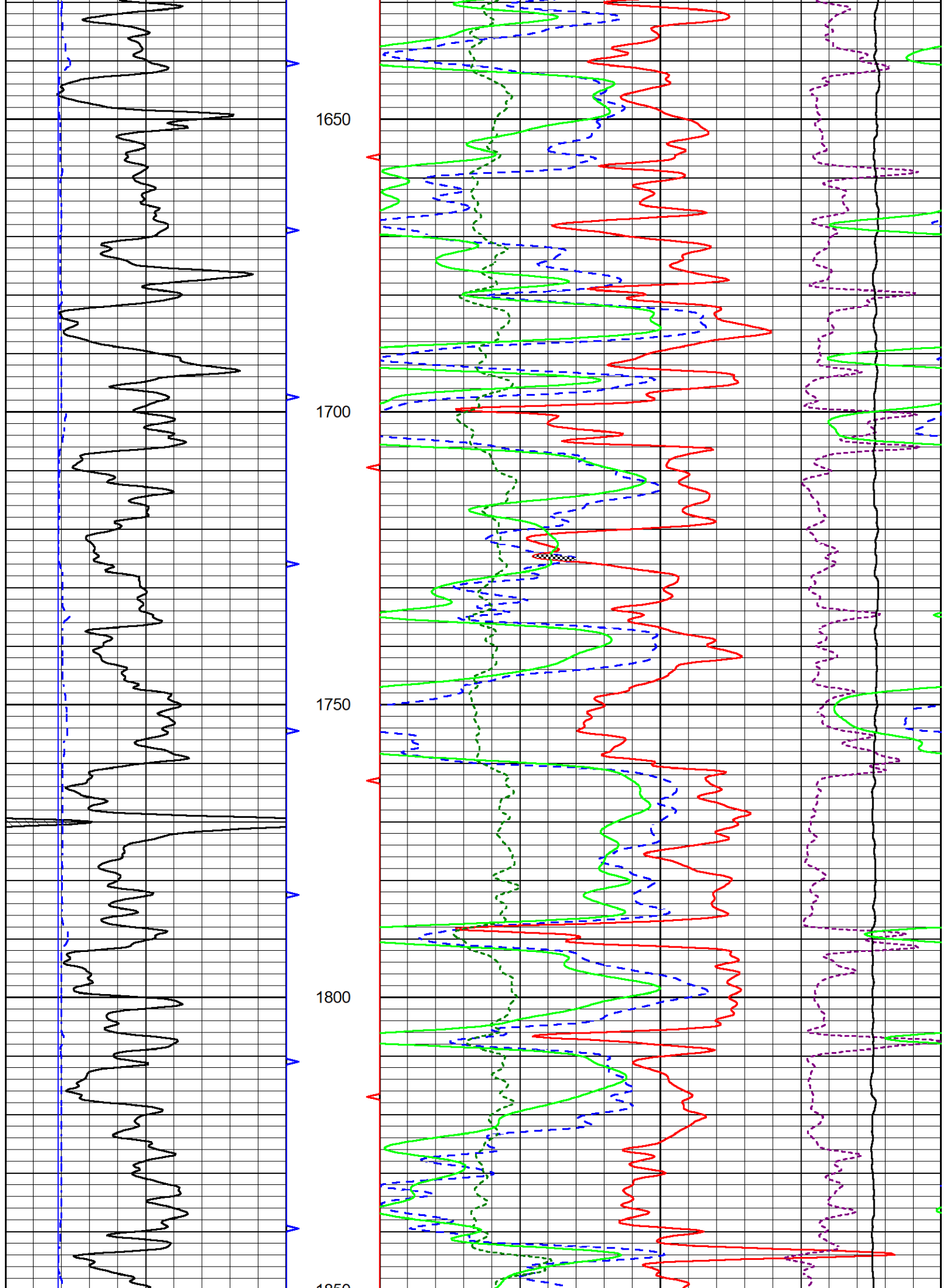
0	Gamma Ray (GAPI)	150	30	CNPOR (pu)	-10
6	Caliper (in)	16	30	Compensated Density Porosity (pu)	-10
			10000	Line Tension (lb)	0
			30	spor (pu)	-10
			0	PE	10
				-0.25	Corection (g/cc)
					0.25

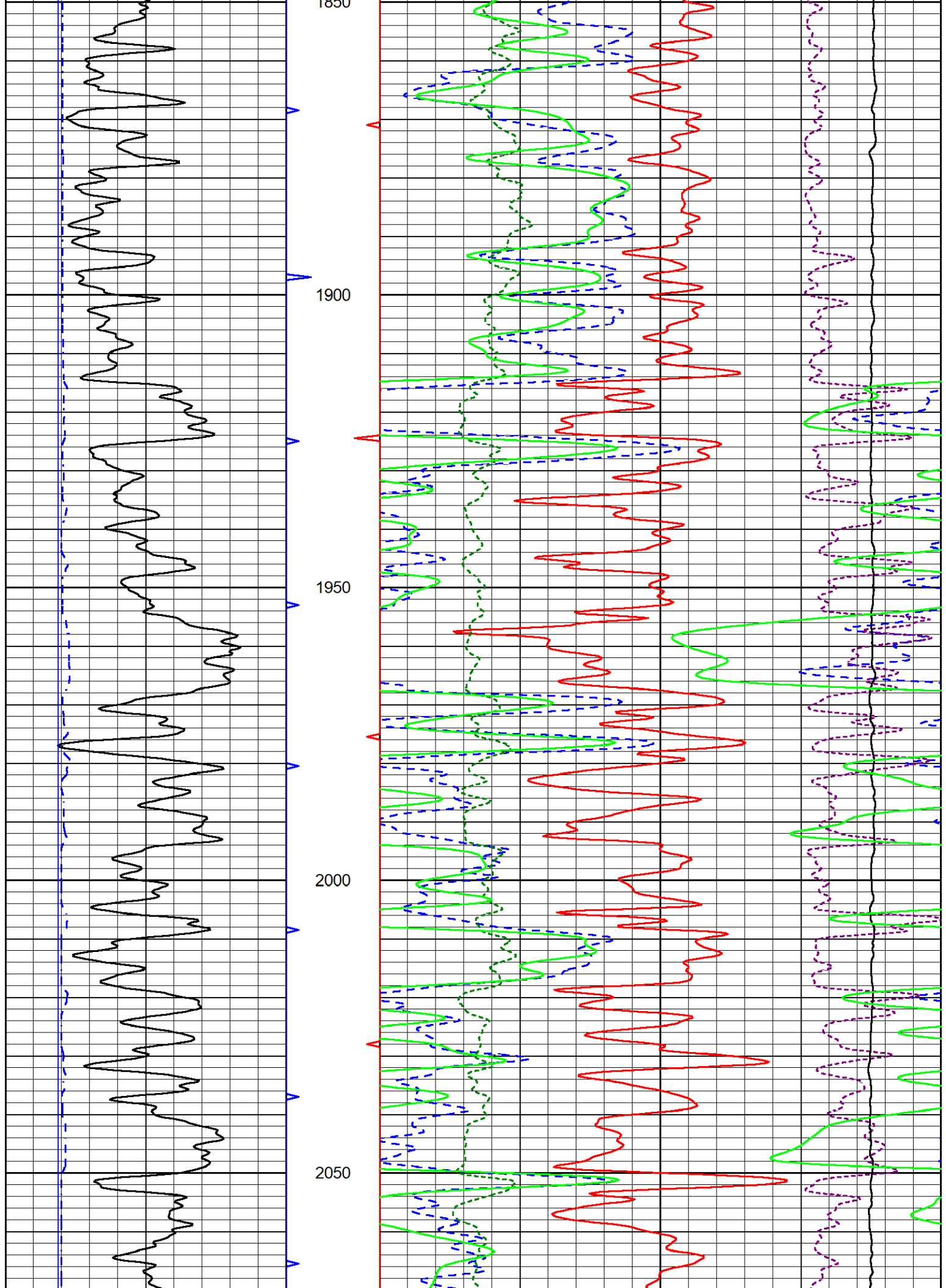


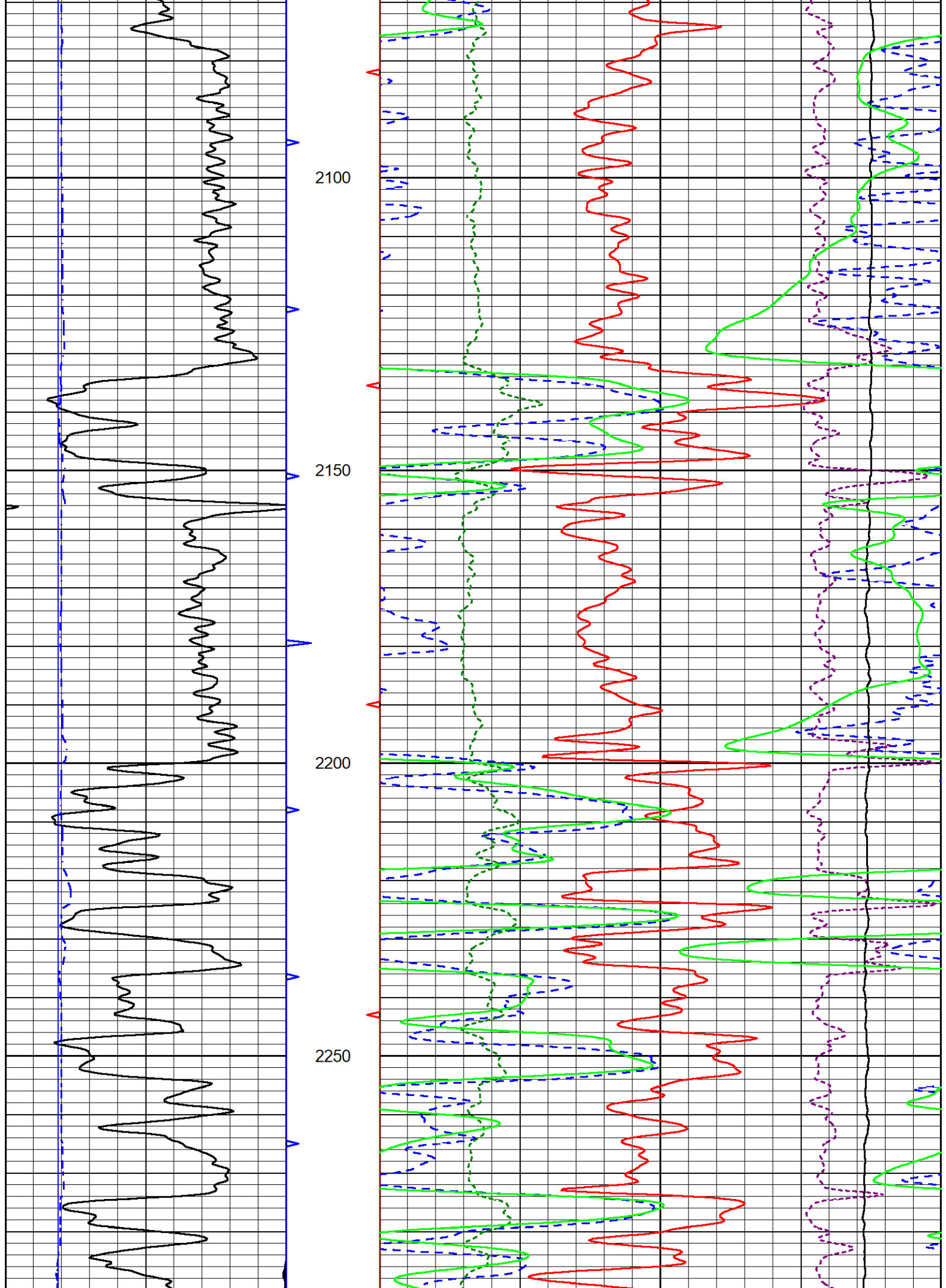


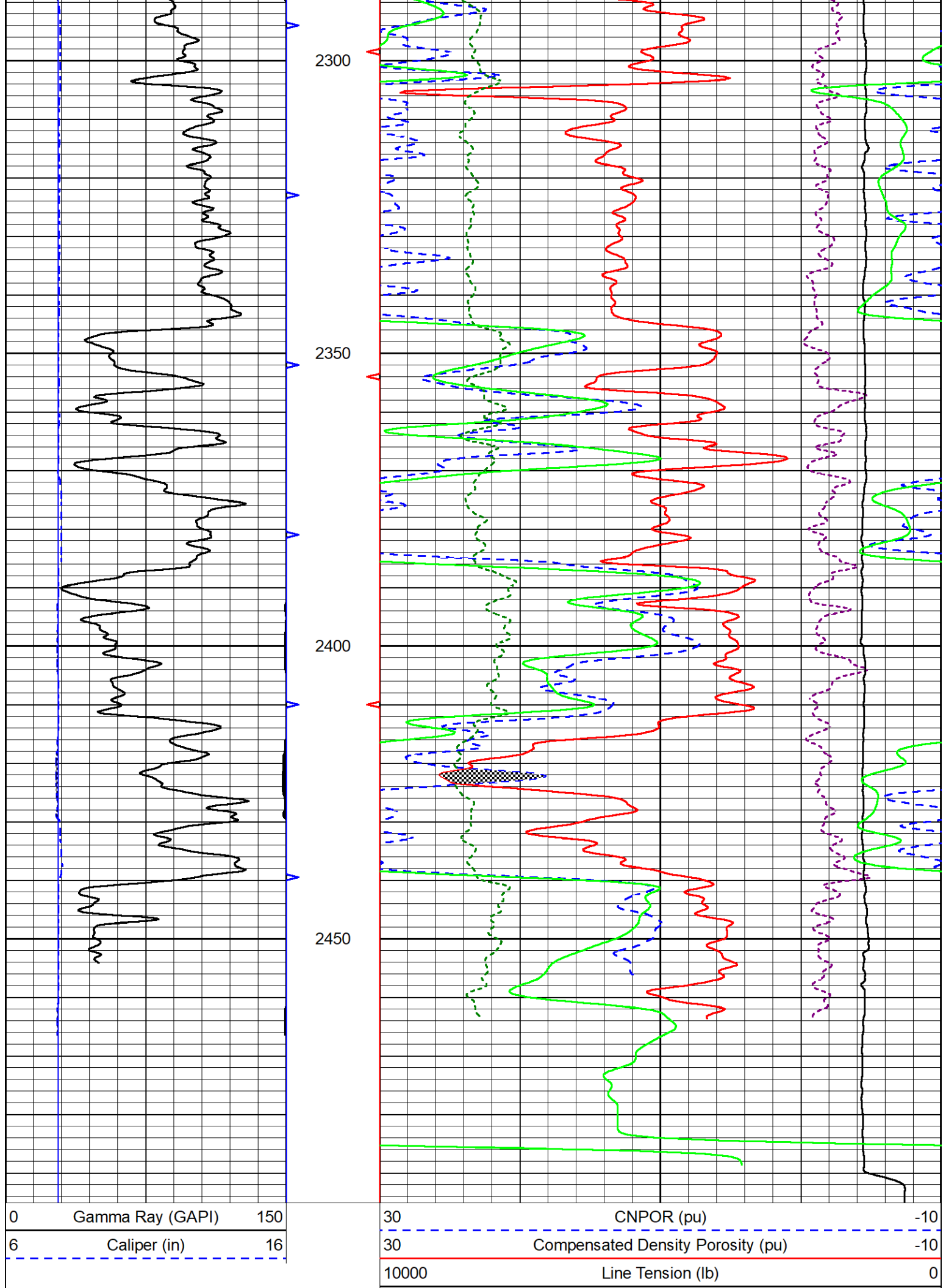












30	spor (pu)		-10
0	PE	10 -0.25	Corection (g/cc) 0.25



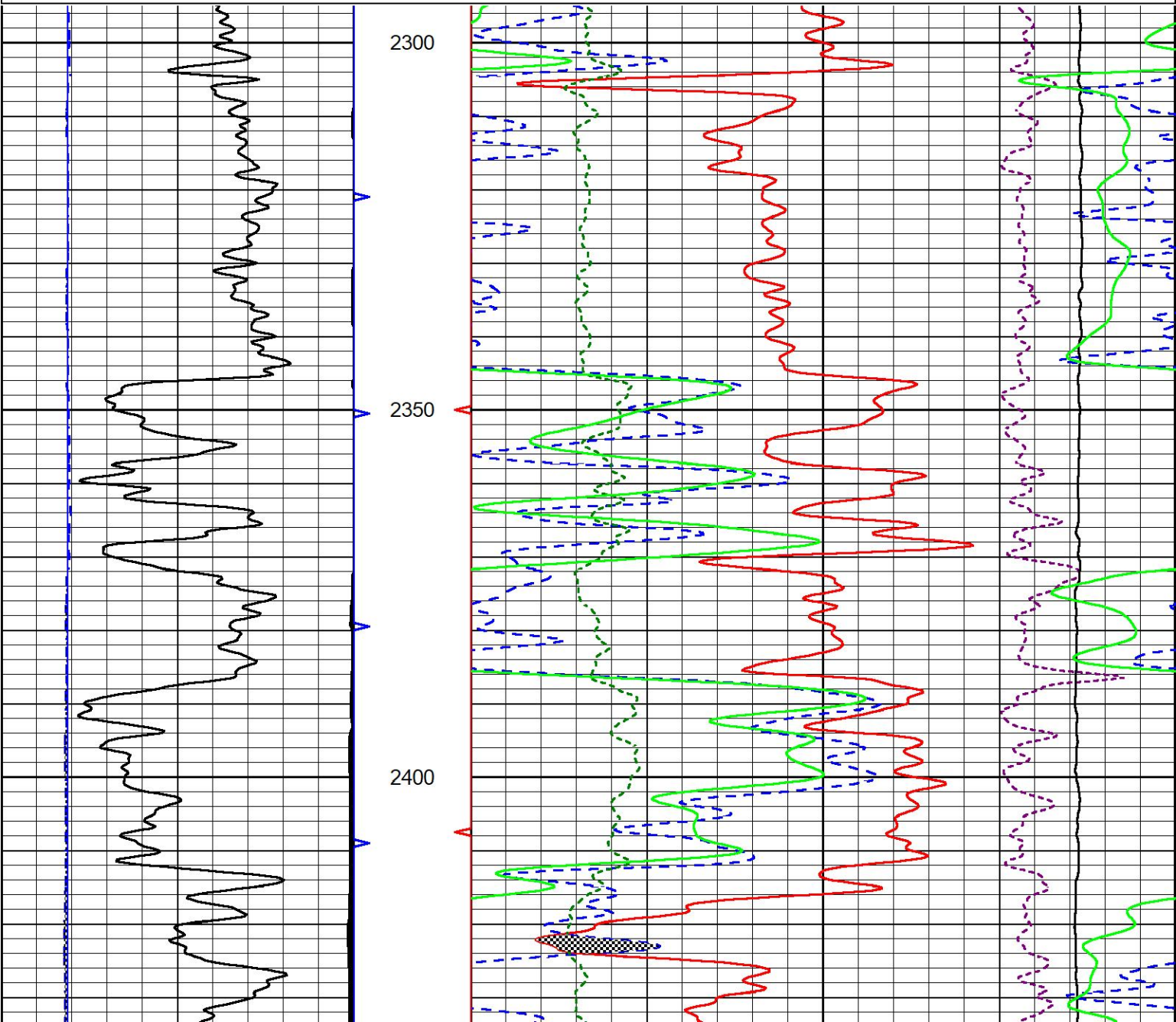
REPEAT SECTION

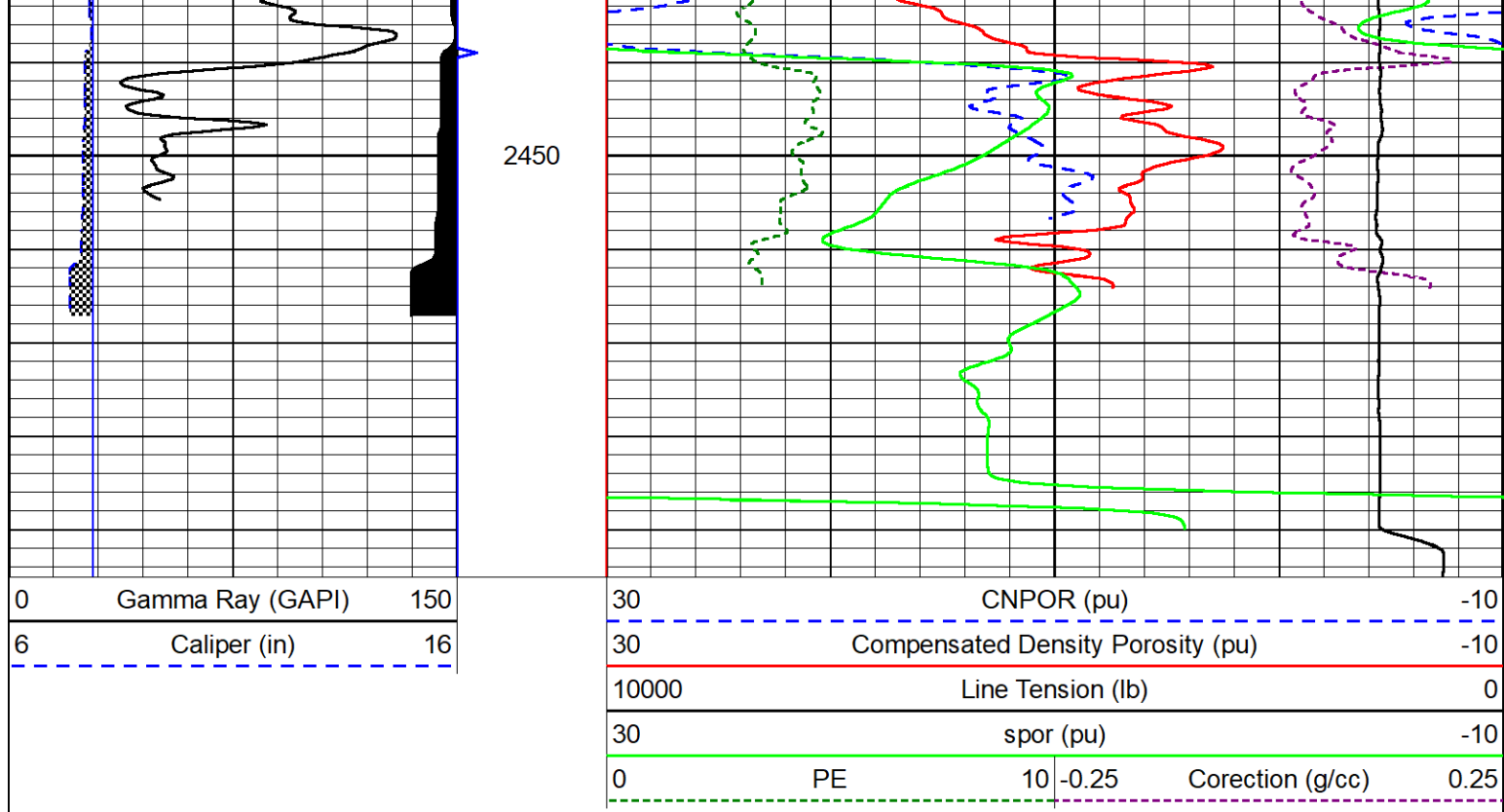
REPEAT PASS

MIDWEST WIRELINE

Database File	lb_sandy_31_1.db
Dataset Pathname	StackmlPE/pass2.1
Presentation Format	_CNDLS~4
Dataset Creation	Sat Jun 01 20:26:49 2024
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	30	CNPOR (pu)	-10
6	Caliper (in)	16	30	Compensated Density Porosity (pu)	-10
			10000	Line Tension (lb)	0
			30	spor (pu)	-10
			0	PE	10 -0.25
			Corection (g/cc)		0.25





Calibration Report

Database File	lb_sandy_31_1.db
Dataset Pathname	StackmlPE/pass3.1
Dataset Creation	Sat Jun 01 20:41:46 2024

Dual Induction Calibration Report

Serial-Model: 507-M&W
Surface Cal Performed: Fri Jul 14 14:17:56 2023

		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	68.570	638.100	0.000	255.800	mmho/m	0.500	-37.000
Medium	184.288	716.191	0.000	255.800	mmho/m	0.450	-79.000

Microlog Calibration Report

Serial-Model: 401-PSIML
Performed: Wed Apr 24 15:49:52 2024

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	10000.0000	-0.4000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	8500.0000	-0.7000
Caliper	1.0052	1.0858	5.0000	16.5000	in	142.7190	-139.1200

LITHODENSITY Calibration Report

Serial Number: 704-10
Tool Model: STEP LITHO
Performed: Wed May 15 12:34:43 2024

Source:

	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	51	55	197	245	22	70	40	1	cps
LS:	86	96	359	462	54	146	91	3	cps
Aluminum:									
SS:	853	1002	2288	1979	39	72	43	2	cps
LS:	1052	1836	3294	1549	61	144	96	5	cps
Magnesium:									
SS:	1445	1656	3774	2905	41	71	43	3	cps
LS:	4605	7622	13008	4914	101	132	89	12	cps
Aluminum+Iron:									
SS:	527	693	1862	1689	37	70	45	1	cps
LS:	603	1287	2745	1370	58	143	93	5	cps
		Density			PE				
		Actual	Calibrated		Actual	Calibrated	Quality		
Background:									
SS:							0.274		
LS:							0.231		
Aluminum:									
SS:		2.6000	2.6000	g/cc			0.247		
LS:		2.6000	2.6000	g/cc			0.200		
Magnesium:									
SS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.241		
LS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.195		
Aluminum+Iron:									
SS:						6.1800	0.211		
LS:						6.1800	0.212		
Caliper:			Reference:		Reading:				
Small Ring:			6.0	in	0.2				
Large Ring:			16.0	in	0.8				
Gain:			16.161						
Offset:			1.050						
Compensated Neutron Calibration Report									
			Serial Number:		207				
			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		
Gamma Ray Calibration Report									
	Serial Number:		102						
	Tool Model:		M&W						
	Performed:		Fri May 17 01:58:13 2024						
	Calibrator Value:		1.0		GAPI				
	Background Reading:		0.0		cps				
	Calibrator Reading:		1.0		cps				
	Sensitivity:		0.5300		GAPI/cps				



MIDWEST WIRELINE

Company	LB Exploration Inc.
Well	Sandy 31-1
Field	Unknown
County	Ellsworth
State	Kansas