Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1081973

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34574
Name: Shell Gulf of Mexico Inc.
Address 1: 150 N DAIRY-ASHFORD (77079)
Address 2: PO BOX 576 (77001-0576)
City: HOUSTON State: TX Zip: 77001 + 0576
Contact Person: Damonica Pierson
Phone: (832) 337-2172
CONTRACTOR: License # 34718
Name: Nabors Drilling USA, LP
Wellsite Geologist: Earl Manning
Purchaser:

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☑ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ 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 ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

02/21/2012 — Spud Date or Recompletion Date
05/10/2012 — Date Reached TD
05/13/2012 — Completion Date or Recompletion Date

API No. 15 - 15-077-21768-00-00
Spot Description:
E2 - SW - SW - SW Sec. 15 Twp. 34 S. R. 7 ☐ East ☑ West
330 Feet from ☐ North / ☑ South Line of Section
460 Feet from ☐ East / ☑ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☐ SE ☑ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Harper
Lease Name: ALBRIGHT CROFT 3407 Well #: 15-1
Field Name: Wildcat
Producing Formation: SWD
Elevation: Ground: 1398 Kelly Bushing: 1422
Total Vertical Depth: 6536 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 801 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: 0 ppm Fluid volume: 0 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Plumb Thicket Landfill
Lease Name: n/a License #: 99999
Quarter SW Sec. 4 Twp. 31 S. R. 6 ☐ East ☑ West
County: Harper Permit #: KDHE Permit No. 0842

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: 05/22/2012
☑ **Confidential Release Date:** 05/22/2014
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☑ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 05/23/2012

[redacted] 1081973

Operator Name: Shell Gulf of Mexico Inc. Lease Name: ALBRIGHT CROFT 3407 Well #: 15-1

Sec. 15 Twp. 34 S. R. 7 ☐ East ☑ West County: Harper

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. 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 ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Triple Combo
Dielcectric
ECS

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Mississippi	4738	
Compton	5093	
Kinderhook	5099	
Woodford	5161	
Viola	5191	
Arbuckle	5436	
Reagan Sandstone	6500	

CASING RECORD ☑ New ☐ 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
Conductor	24	18	47.4	80	1/2 Portland Cement	45	Prev. submitted
Surface	12.25	9.625	36	830	Class C	500	2% CaCl + 25pps Celloflake
Intermediate	8.75	7	23	5450	POZ,C GEL	950	See attached

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☑ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	0-1600	Class C Poz (Fly Ash)	210	
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth

TUBING RECORD: Size: 3.5 Set At: 5393 Packer At: 5379 Liner Run: ☑ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR.

Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☑ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Schlumberger

Company: **SEPCO**

Well: **Albright Croft Farms 3407 15−1**
Field: **Arrowhead**
County: **Harper** State: **Kansas**

County: Harper
Field: Arrowhead
Location: 350' FSL & 460' FWL
Well: Albright Croft Farms 3407 15−1
Company: SEPCO

R1D1
TRIPLE COMBO

LOCATION

350' FSL & 460' FWL
of Sec 15, Twp 34S, Rng 7W

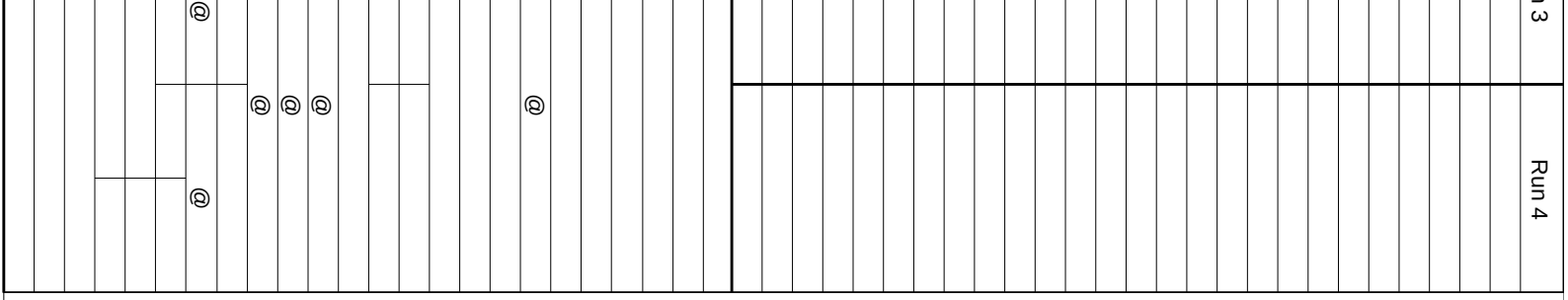
Elev.: K.B. 1415.40 ft
G.L. 1393.72 ft
D.F. 1415.40 ft

Permanent Datum: Ground Level Elev.: 1393.72 ft
Log Measured From: Drill Floor 21.68 ft above Perm. Datum
Drilling Measured From: Drill Floor

API Serial No.	Section:	Township:	Range:
15−077−21768−00−00	15	34S	7W

Logging Date			7−Mar−2012						Logging Date		
Run Number			R1D1						Run Number		
Depth Driller			5460 ft						Depth Driller		
Schlumberger Depth			5406 ft						Schlumberger Depth		
Bottom Log Interval			5396.9 ft						Bottom Log Interval		
Top Log Interval			832 ft						Top Log Interval		
Casing Driller Size @ Depth			9.625 in	@	828 ft		@		Casing Driller Size @ Depth	@	
Casing Schlumberger			832 ft						Casing Schlumberger		
Bit Size			8.750 in						Bit Size		
Type Fluid In Hole			Fresh Water Based Mud						Type Fluid In Hole		
MUD	Density	Viscosity	8.7 lbm/gal	72 s					MUD Density	Viscosity	
	Fluid Loss	PH	10 cm3	10.5					Fluid Loss	PH	
	Source Of Sample		Active Tank						Source Of Sample		
RM @ Measured Temperature			0.553 ohm.m	@	52 degF		@		RM @ Measured Temperature	@	
RMF @ Measured Temperature			0.527 ohm.m	@	52 degF		@		RMF @ Measured Temperature	@	
RMC @ Measured Temperature			0.730 ohm.m	@	52 degF		@		RMC @ Measured Temperature	@	
Source RMF	RMC		Mud Press	Mud Press					Source RMF	RMC	
RM @ MRT	RMF @ MRT		0.231 @ 135	0.220 @ 135		@		@	RM @ MRT	RMF @ MRT	@ @
Maximum Recorded Temperatures			134 degF	135	135				Maximum Recorded Temperatures		
Circulation Stopped		Time	7−Mar−2012		23:00				Circulation Stopped	Time	
Logger On Bottom		Time	7−Mar−2012		06:03				Logger On Bottom	Time	
Unit Number	Location		2367	Elk City, OK					Unit Number	Location	
Recorded By			Matt Reiter / Abhinav Jain						Recorded By		
Witnessed By			Ahmad Latifzai / Tyrone Russell						Witnessed By		

	Run 1	Run 2	Run



DEPTH SUMMARY LISTING

Date Created: 7−MAR−2012 11:56:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46A XS
Serial Number:	4954	Serial Number:	2576	Serial Number:	711103
Calibration Date:	5−Oct−2011	Calibration Date:	13−FEB−2012	Length:	29000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	1018		
Calibration Cable Type:	7−46A XS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−6	Calibration RMS:	8	Rig Type:	LAND
Wheel Correction 2:	−6	Calibration Peak Error:	18		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	195.00 FT
Rig Up Length At Bottom:	195.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	1.50 FT
Tool Zero Check At Surface:	0.10 FT

Depth Control Remarks

1. First Run in hole. All Schlumberger depth control procedures applied
2. Depth tied into R1D1 Down log dated 7−Mar−2012 from 5406 ft to 4600 ft.
3. Logs zeroed at drill floor
4. Rig is equiped with a top drive, thus; no kelly bushing. Logs/drilling measured from drill floor
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: VSP	OS1:
OS2: FMI−DSI−PPC	OS2:
OS3: XPT−CMR	OS3:
OS4: MSCT	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Tools ran as per tool sketch with 0.5" Standoffs used on the AIT and without the eccentralizing bow spring on the HGNS	
Bridged on First two attempts at logging: 1142ft (removed Bowspring, reduced to 0.5" standoff), bridged again at 1449ft	
Knuckle joints were used between the ECS and AIT to ensure decoupling, and upper / lower pins removed from the TLD	
Location latitude: 37.08N −− longitude: 98.07W Sec 15, Twp 34S, R 7W	
AIT log uses the compute standoff model. Two foot resolution is presented. Hole finder bottom nose requested and ran	
Caliper Check in Casing: Expected: 8.92, HCAL: 8.84 Correction: 0.08; ADT: 9.05, Correction: −0.13	
Cl = 7800 mg/l NaCl Eq = 10713 ppm (NaCl eq = Cl * 1.6488 * 0.833) Barite = 0 lb/bbl No mineral oil present in mud	

Logs are computed on a limestone matrix, MDEN = 2.71 g/cc; All HGNS corrections used (no CCCO in Open hole)

Mud sample taken from circulation tank, filtrate and mud cake measured using mud press

Cement and hole volume computed using TLD HCAL with a future casing of 7.0"

Maximum recorded temperatures recorde from 3 head thermometers: 134.67 degF

ADT logged in 900 ft/hr resolution for repeat pass, 3000 ft/hr for main pass once above mississippi formation

First readings: AIT− 5396.9 ft ECS− 5379.4 ft TLD− 5372.7 ft HGNS− 5360.1 ft GR− 5353 ft ADT− 5350 ft

Nuclear readings, ADT, and ECS readings all affected in washed out borehole

Main Pass recorded from 5406 ft to 832 ft, Repeat pass recorded from 5406 ft to 4585 ft

Both HCAL and ADT caliper closed at about 2230 ft, due to sticky hole conditions, as requested by the client.

RUN 1		RUN 2	
SERVICE ORDER #:	BC12−00133	SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

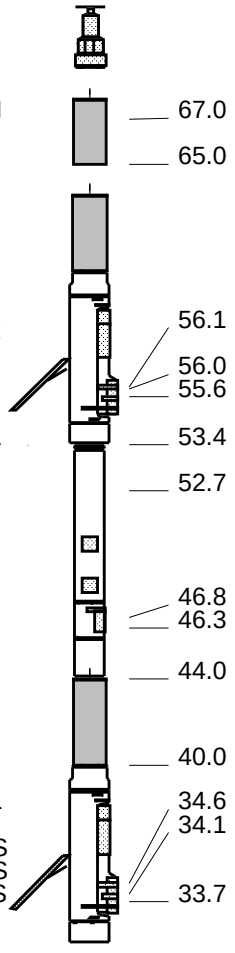
EQUIPMENT DESCRIPTION

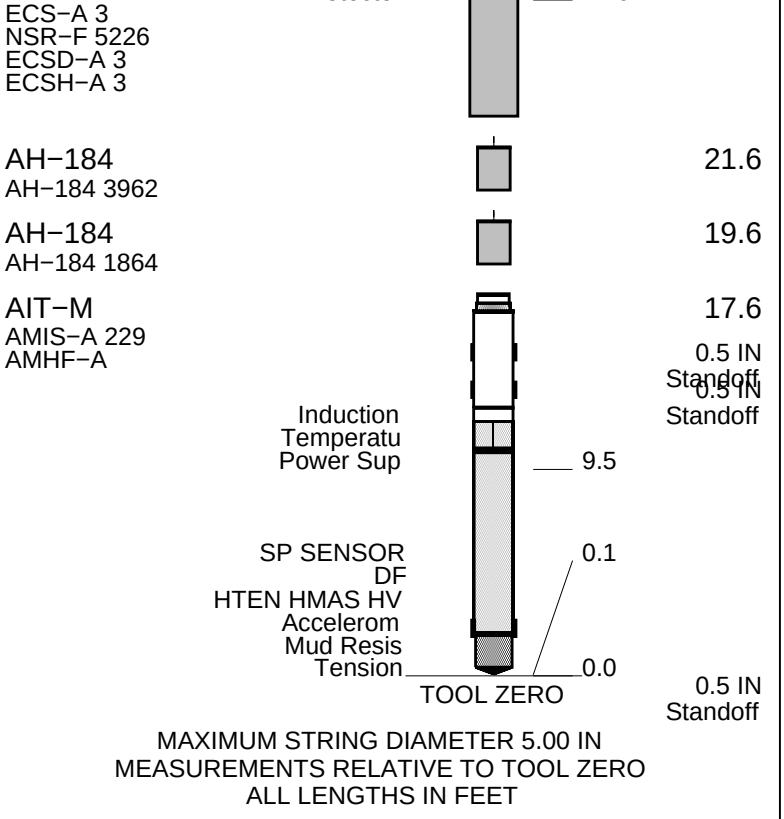
RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U 409
NCT−B
CNB−AB
NCS−VB
WITM (DTS)−A

DOWNHOLE EQUIPMENT





Client: SEPCO

Well: Albright Croft Farms 3407 15−1

Field: Arrowhead

State: Kansas

Country: USA

Drawing Date: 3/7/2012

API #: 15−077−21768−00−00

Rig Name: Nabors 774

Reference Datum: Derrick Floor

Elevation: 1393.7 ft

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	9.625		Casing String
					828.0	9.625		Casing Shoe
					828.0	8.750		Borehole Segment

						5460.0	8.750	Borehole Segment Bottom

All Depths are Driller's Depths

Schlumberger

Time Line

MAXIS Field Log

R1D1

```
3/5/2012 06:00 ------------------ Arrived at wellsite
3/5/2012 06:00 -- 08:30 --------- Crew and equipment in standby
3/5/2012 08:30 -- 09:45 --------- Rig up safety meeting
3/5/2012 09:45 -- 10:15 --------- Spotting truck behind catwalk
3/5/2012 10:15 -- 11:30 --------- Rig up R1D1
3/5/2012 11:30 -- 12:10 --------- Begin ECS casing calibration pass
3/5/2012 12:10 -- 12:20 --------- RIH, recording downlog
3/5/2012 12:20 -- 13:00 --------- Bridged at 1142 ft.
3/5/2012 13:00 -- 13:25 --------- POOH,removed bowspring/stand-off
3/5/2012 13:25 -- 13:45 --------- Running in hole.
3/5/2012 13:45 -- 14:15 --------- Bridged at 1449 ft.
3/5/2012 14:15 -- 14:45 --------- POOH to rig down for wiper trip
```

```
3/5/2012 14:45 -- 3/7/2012 03:30- Wiper trip, SLB on Standby
3/7/2012 03:30 -- 03:45 --------- Rig up safety meeting
3/7/2012 03:45 -- 04:45 --------- Rig up R1D1
3/7/2012 04:45 -- 06:03 --------- Running in hole, downlog
3/7/2012 06:03 -- 06:03 --------- Logger on bottom
3/7/2012 06:03 -- 07:15 --------- Repeat Pass
3/7/2012 07:15 -- 09:45 --------- Main Pass
3/7/2012 09:45 -- 10:45 --------- Rigging down
```

Schlumberger

Main Pass
5" = 100'

MAXIS Field Log

Company: SEPCO **Well: Albright Croft Farms 3407 15−1**

Input DLIS Files

	AIT_ECS_TLD_MCFL_073PUP	FN:111		07−Mar−2012 09:25	5416.5 FT	737.0 FT

Output DLIS Files

DEFAULT	AIT_ECS_TLD_MCFL_013PUP	FN:12	PRODUCER	07−Mar−2012 12:49	5416.5 FT	799.5 FT

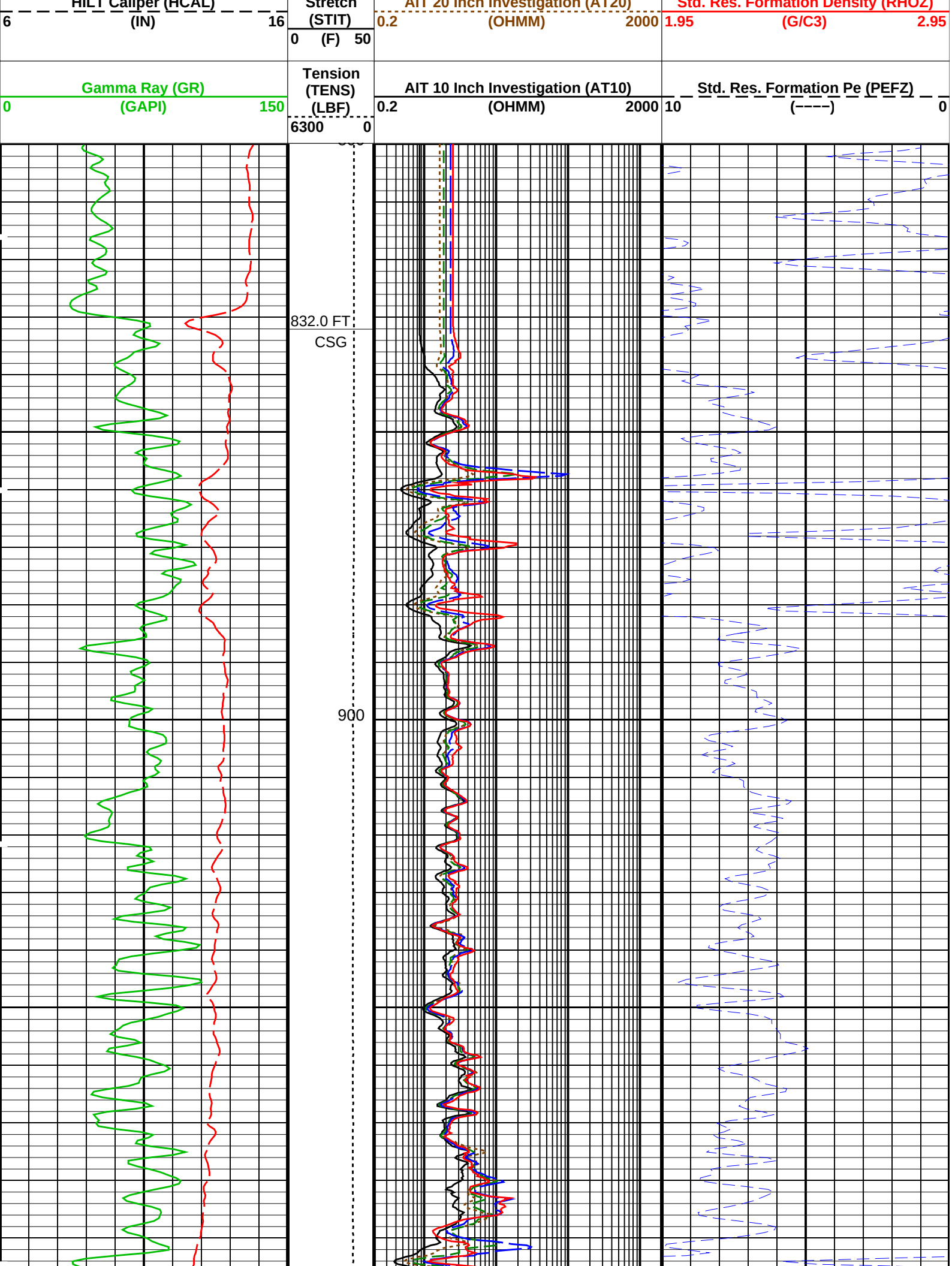
OP System Version: 19C0−187

AIT−M	19C0−187	ECS−A	HFE−5160−OP19−NUCL
ECC−A	19C0−187	HILTH−FTB	SRPC−5047−H1−2011−OP19
ADT−C	SRPC−5035−ADT−C	DTC−H	19C0−187

PIP SUMMARY

Time Mark Every 60 S

	AIT 90 Inch Investigation (AT90) 0.2 (OHMM) 2000	
Tool/Tot. Drag From D3T to STIA	AIT 60 Inch Investigation (AT60) 0.2 (OHMM) 2000	Gas From RHOZ to TNPH
SP (SP) −160 (MV) 40	AIT 30 Inch Investigation (AT30) 0.2 (OHMM) 2000	Env.Corr.Thermal Neutron Porosity (TNPH) 0.45 (V/V) −0.15
Cable Drag From STIA to STIT		
Stuck Stretch	AIT 20 Inch Investigation (AT20)	Std. Res. Formation Density (RHOZ)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6
(IN)
16
Stretch
(STIT)
0
(F)
50
AIT 20 Inch Investigation (AT20)
0.2
(OHMM)
2000
Std. Res. Formation Density (RHOZ)
1.95
(G/C3)
2.95
Gamma Ray (GR)
0
(GAPI)
150
Tension
(TENS)
(LBF)
6300
0
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(OHMM)
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(----)
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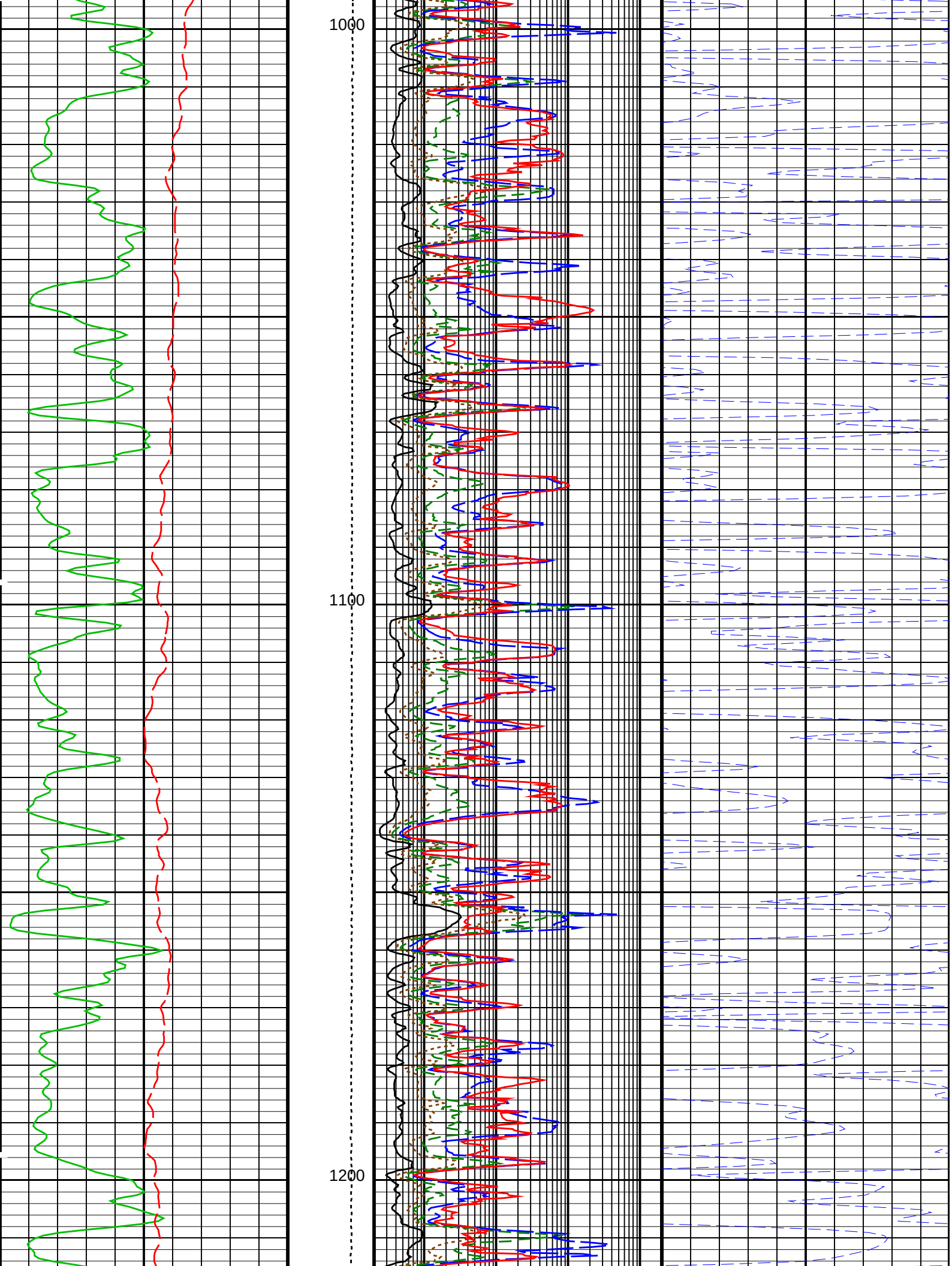
CSG
900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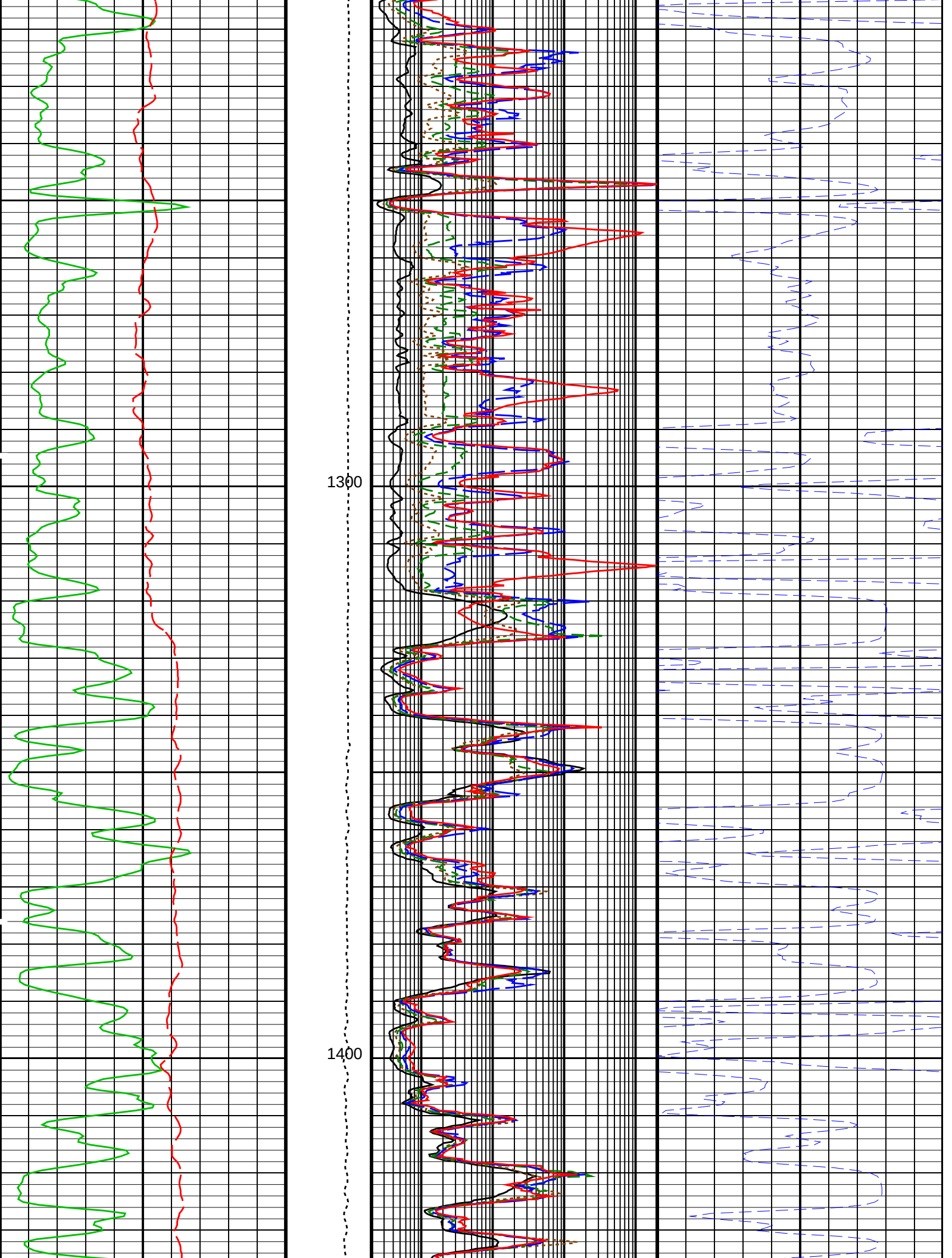
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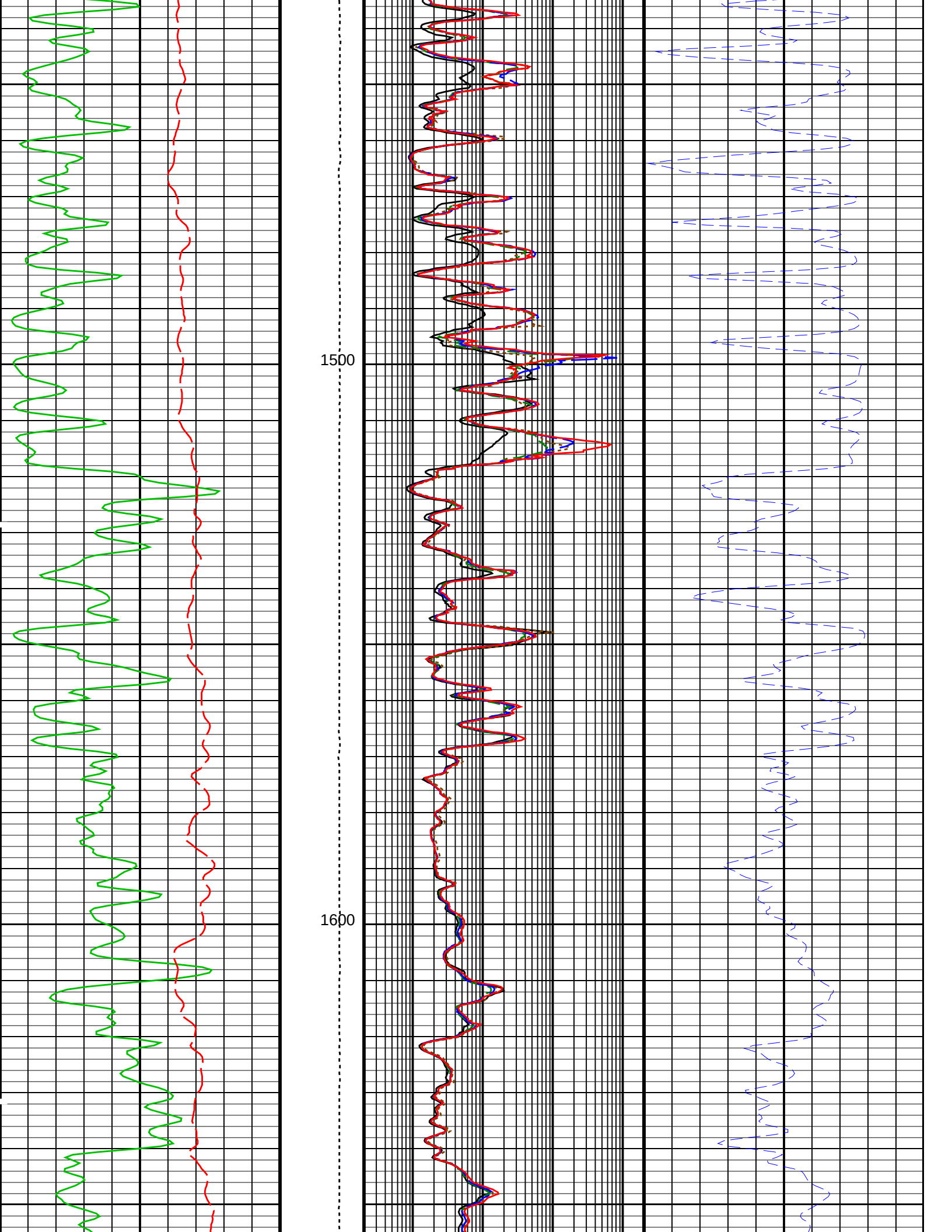
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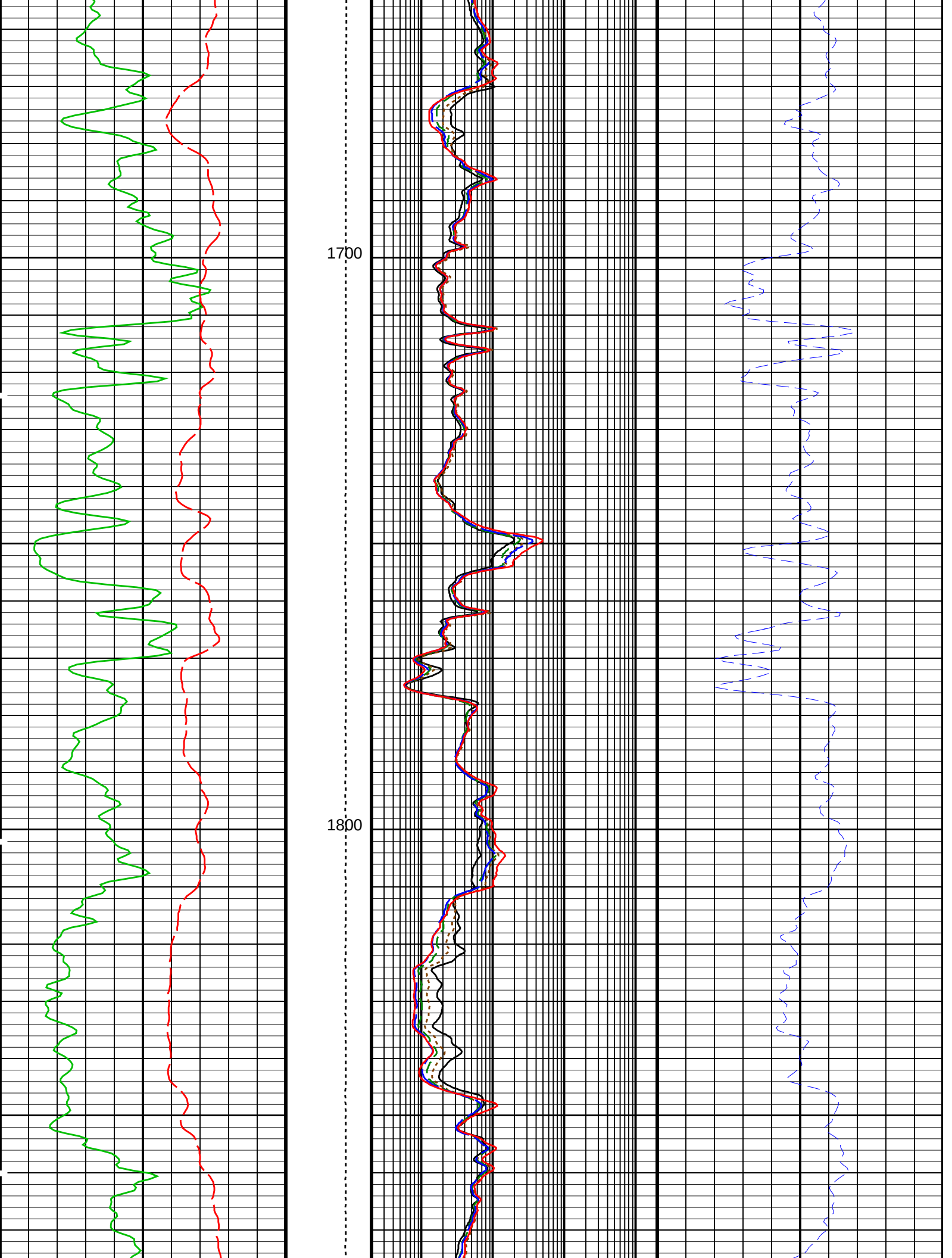
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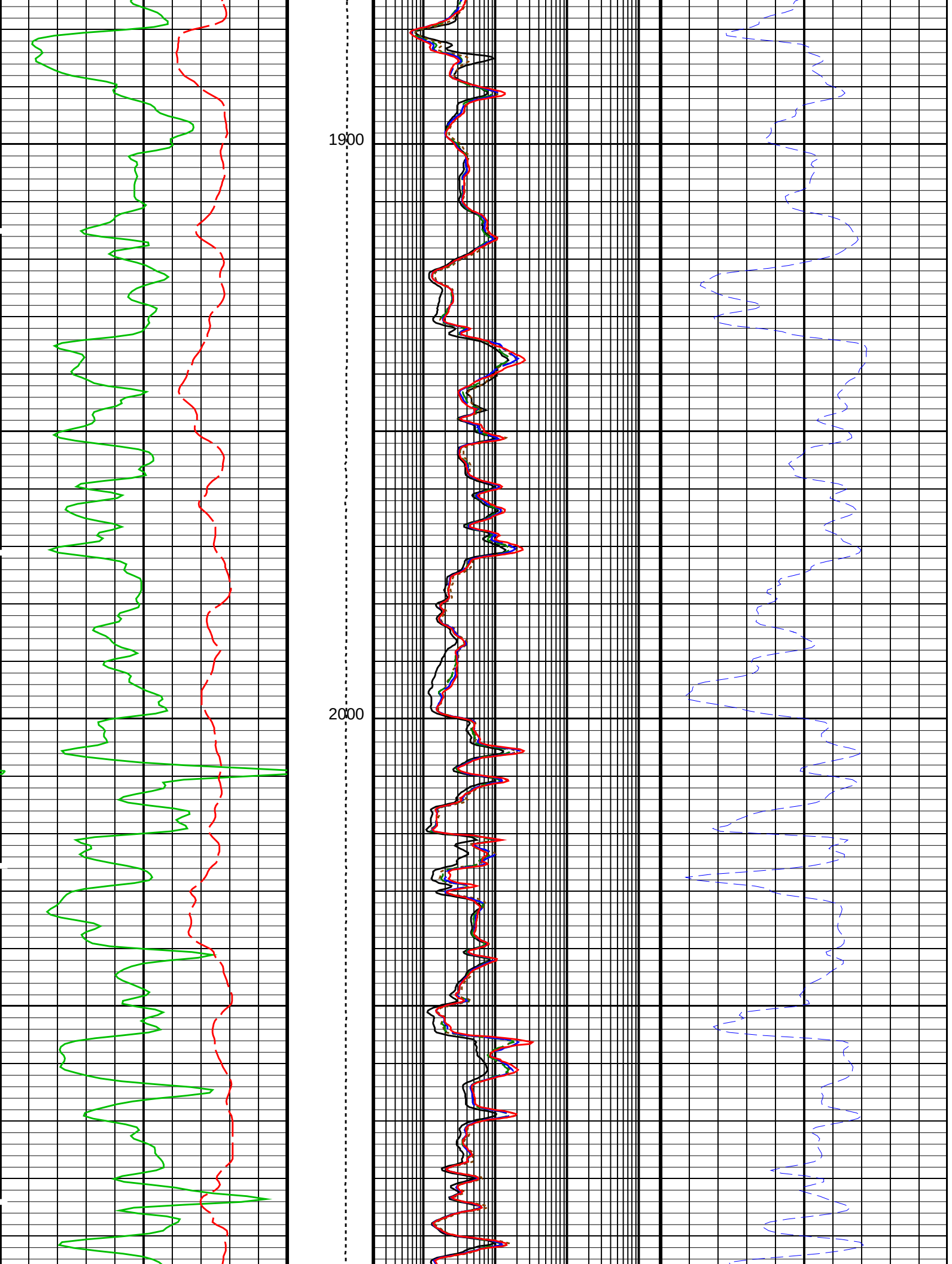
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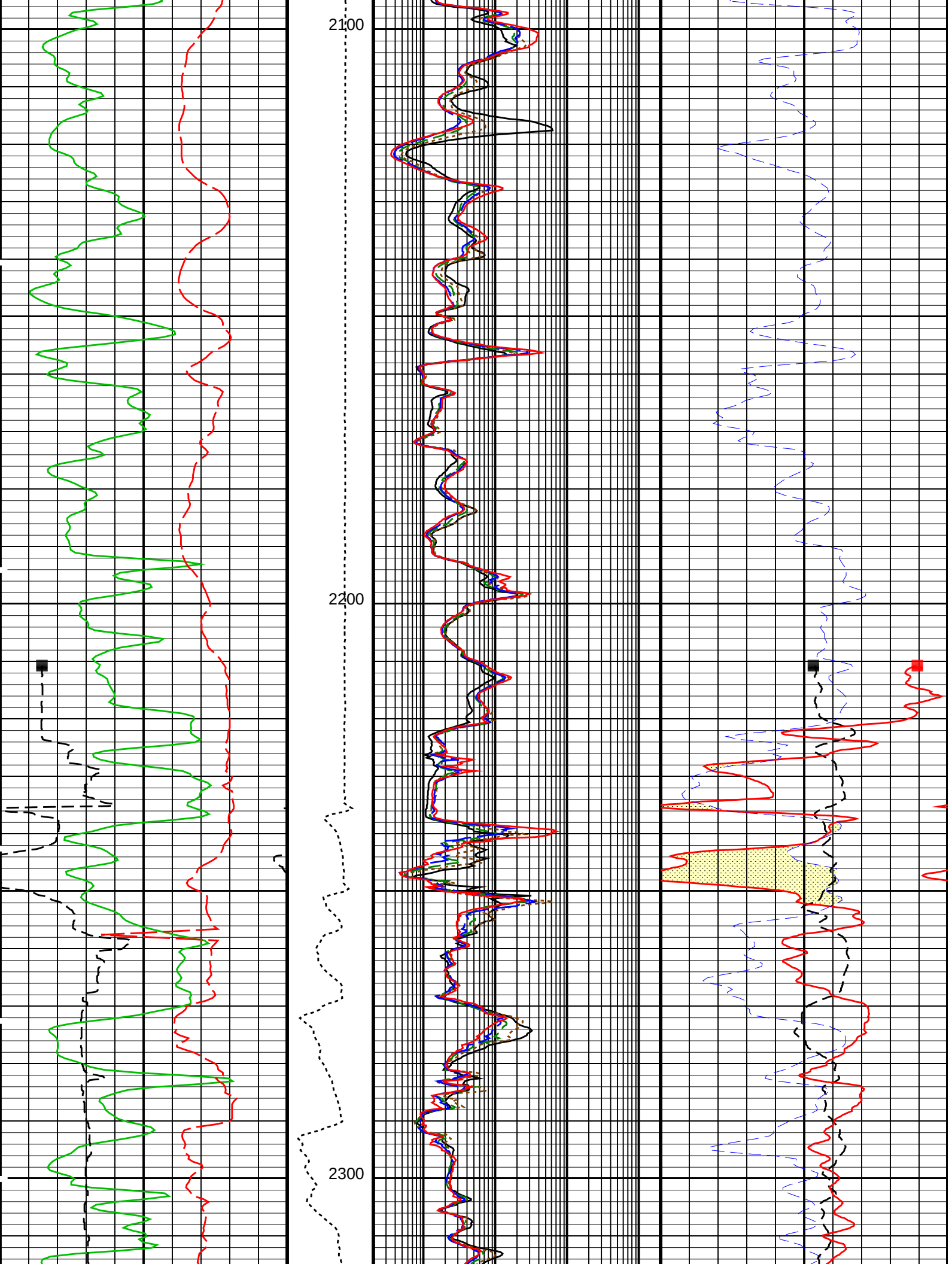
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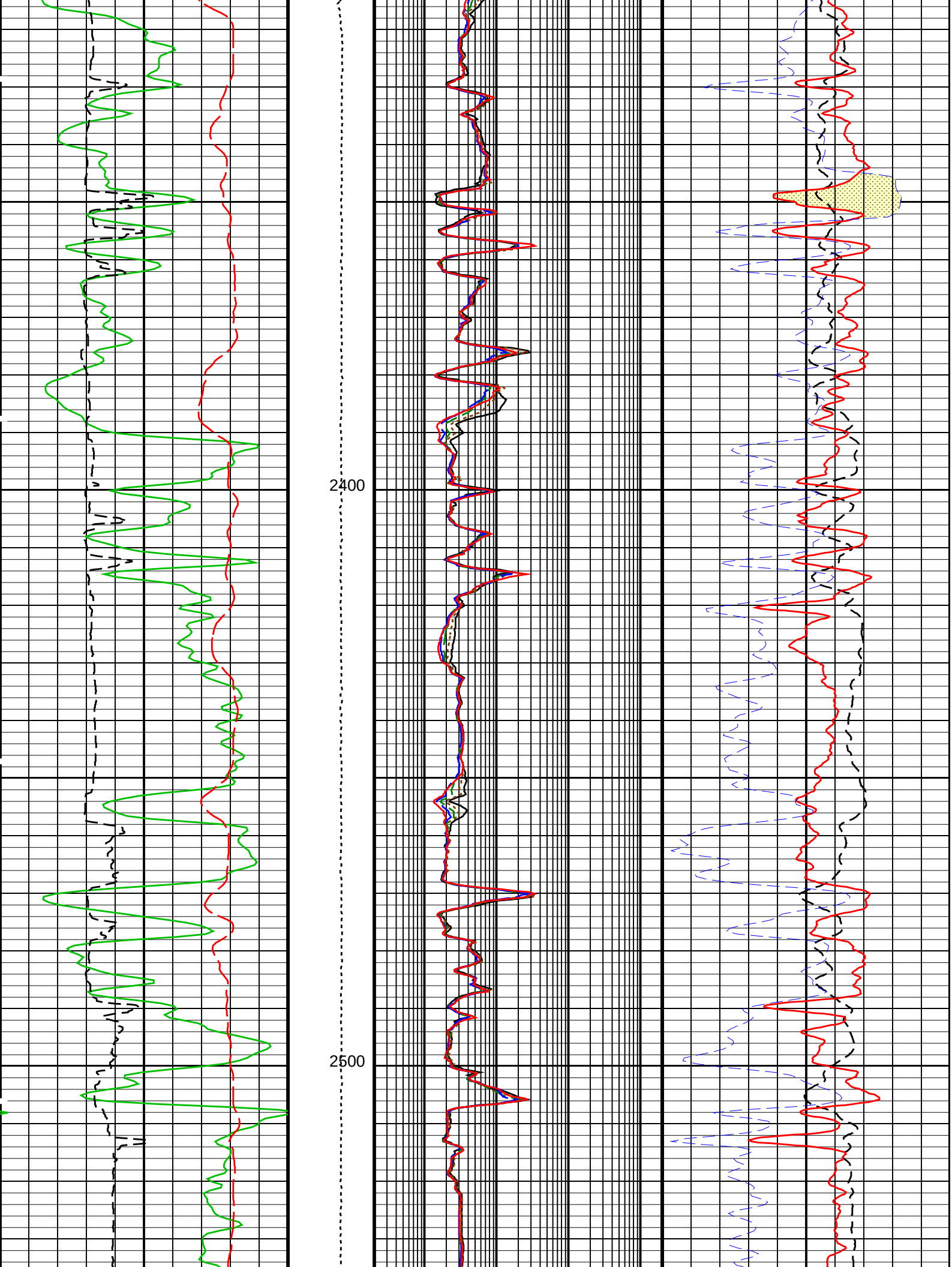
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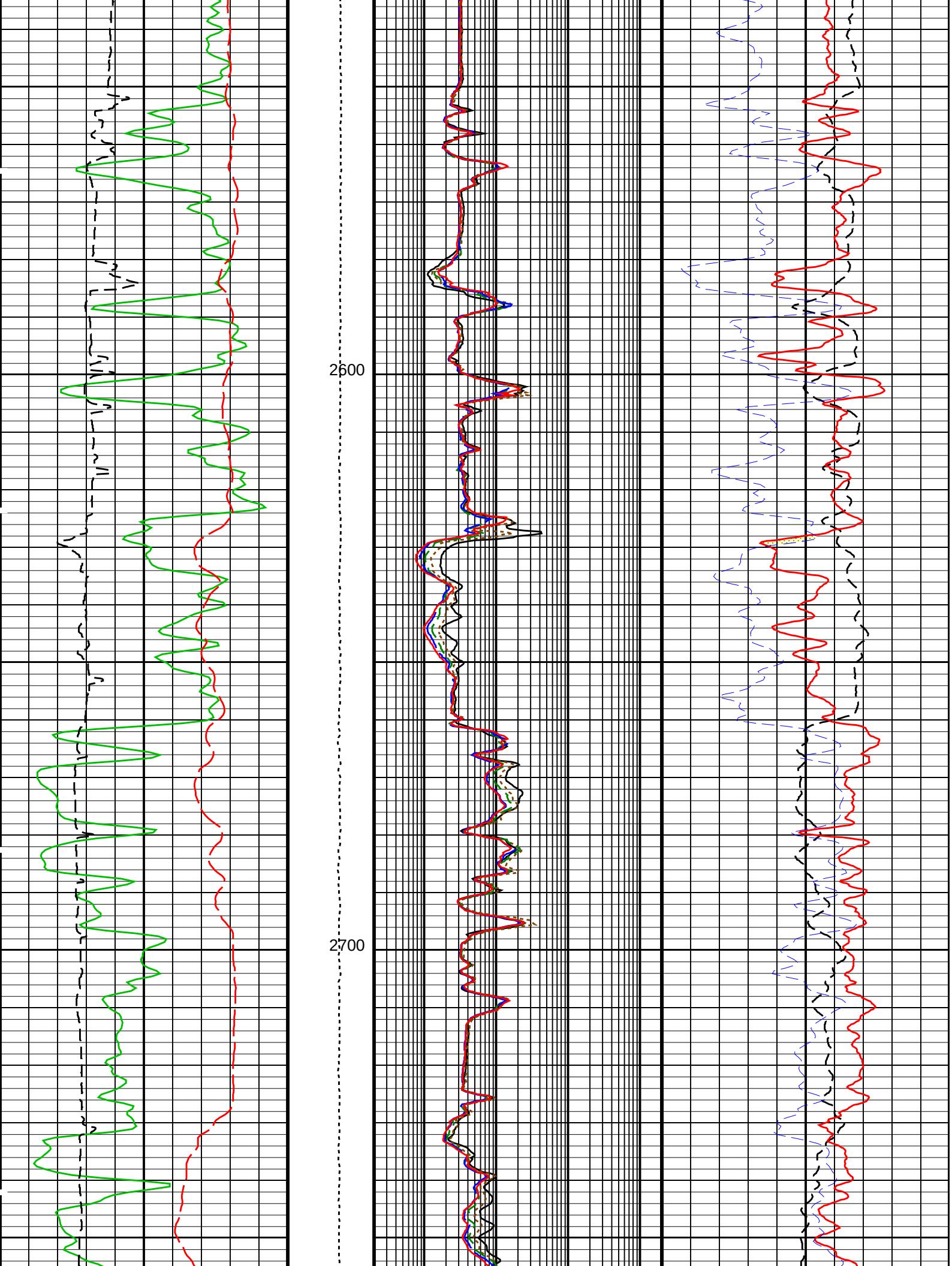
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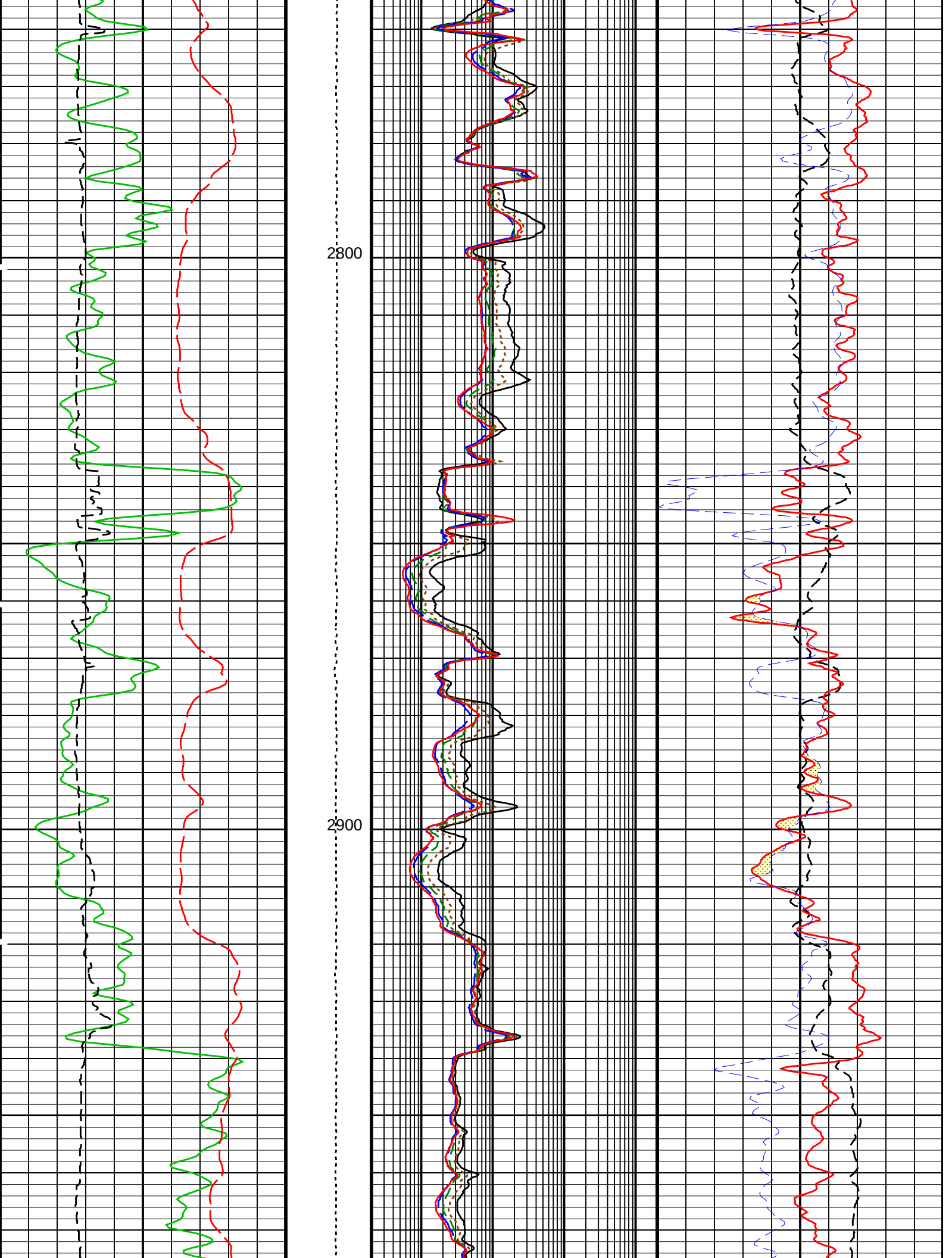
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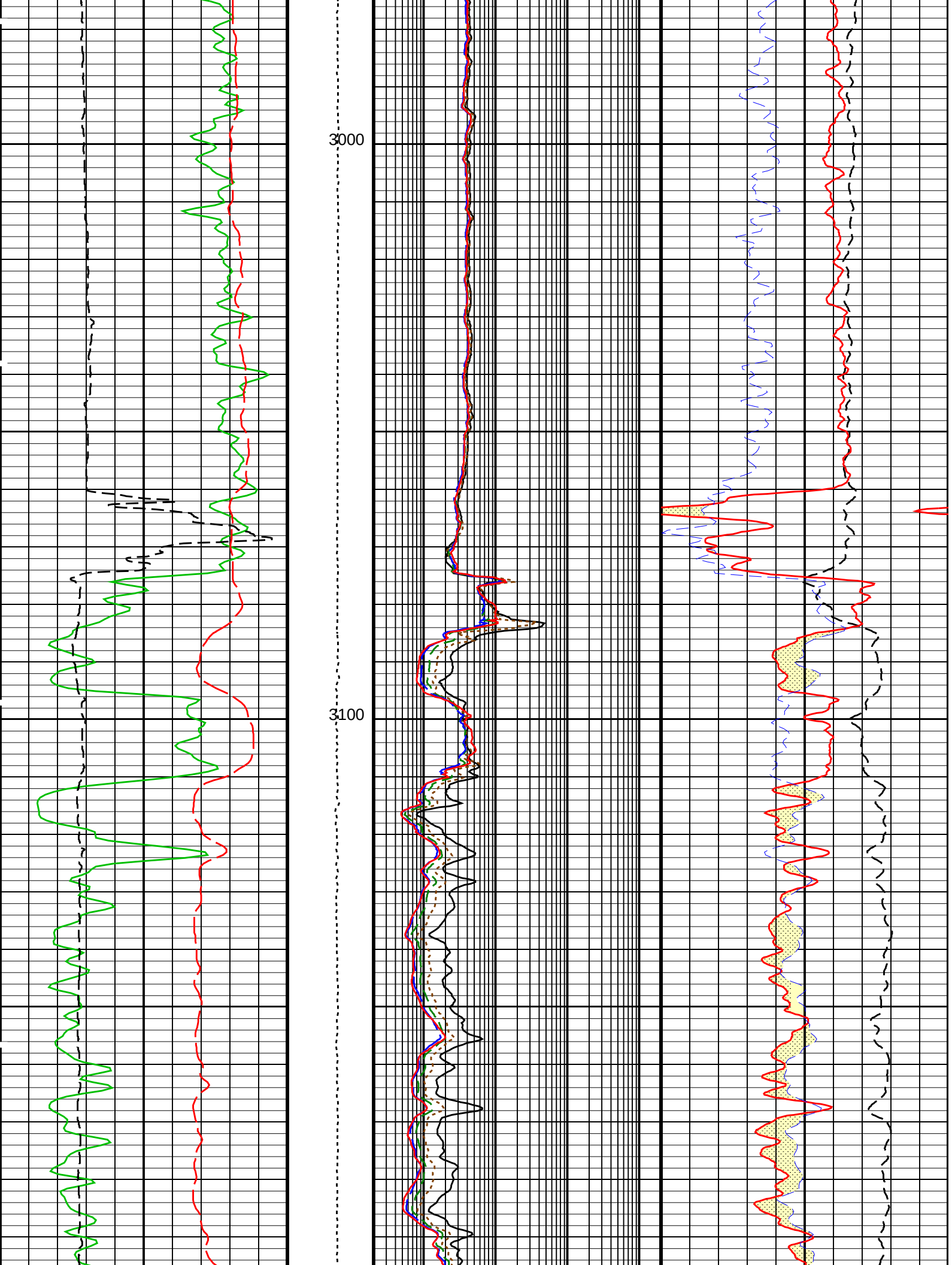
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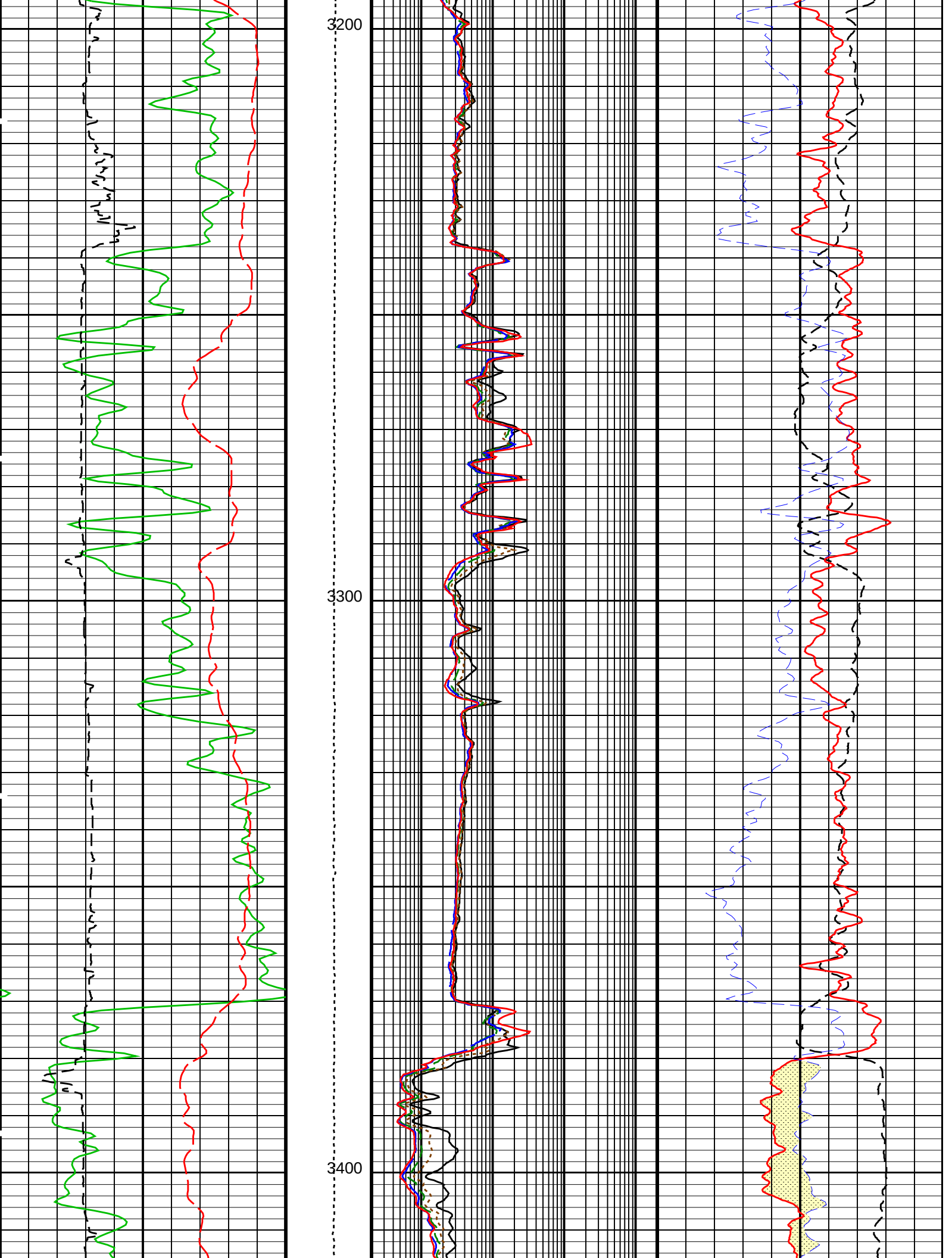
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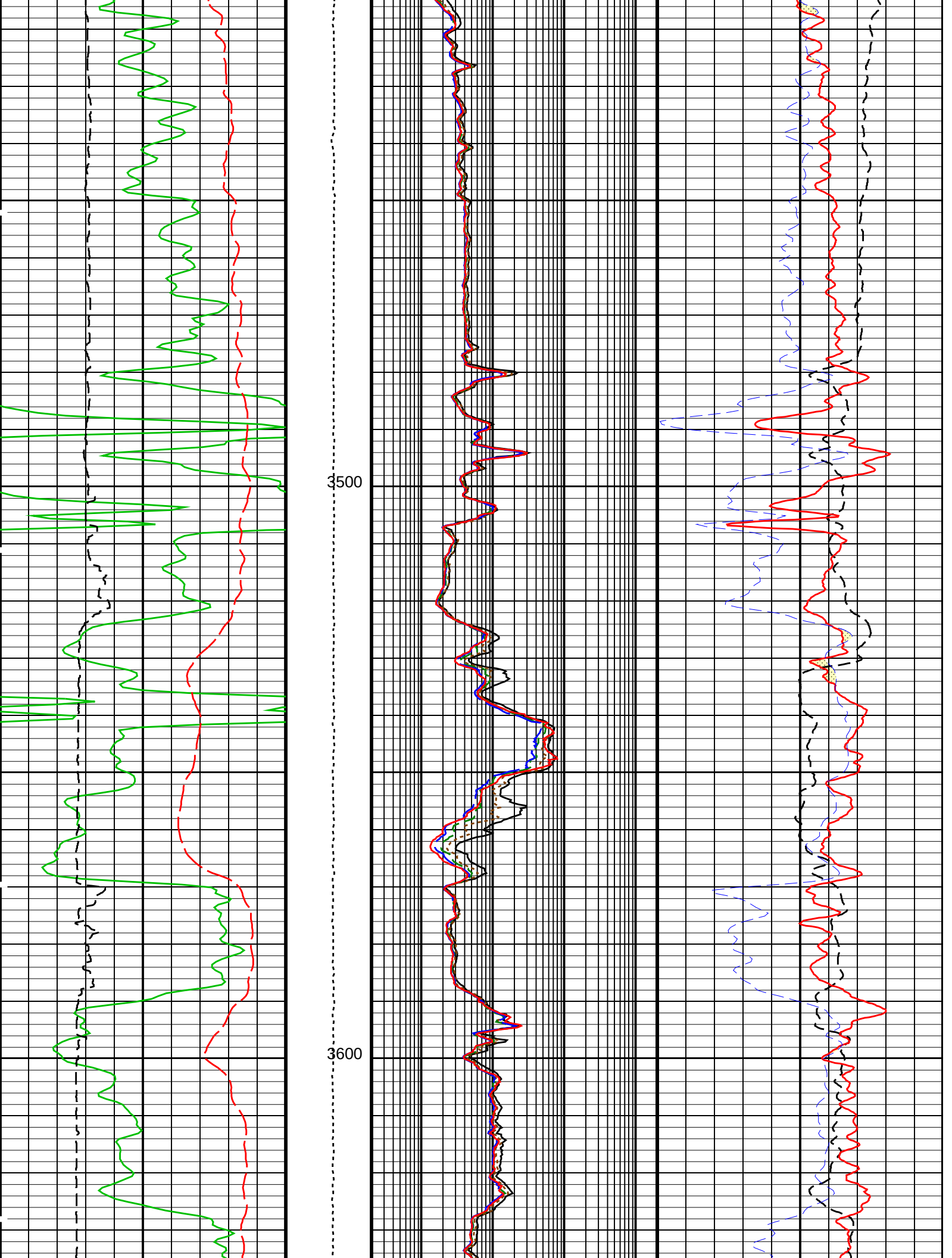
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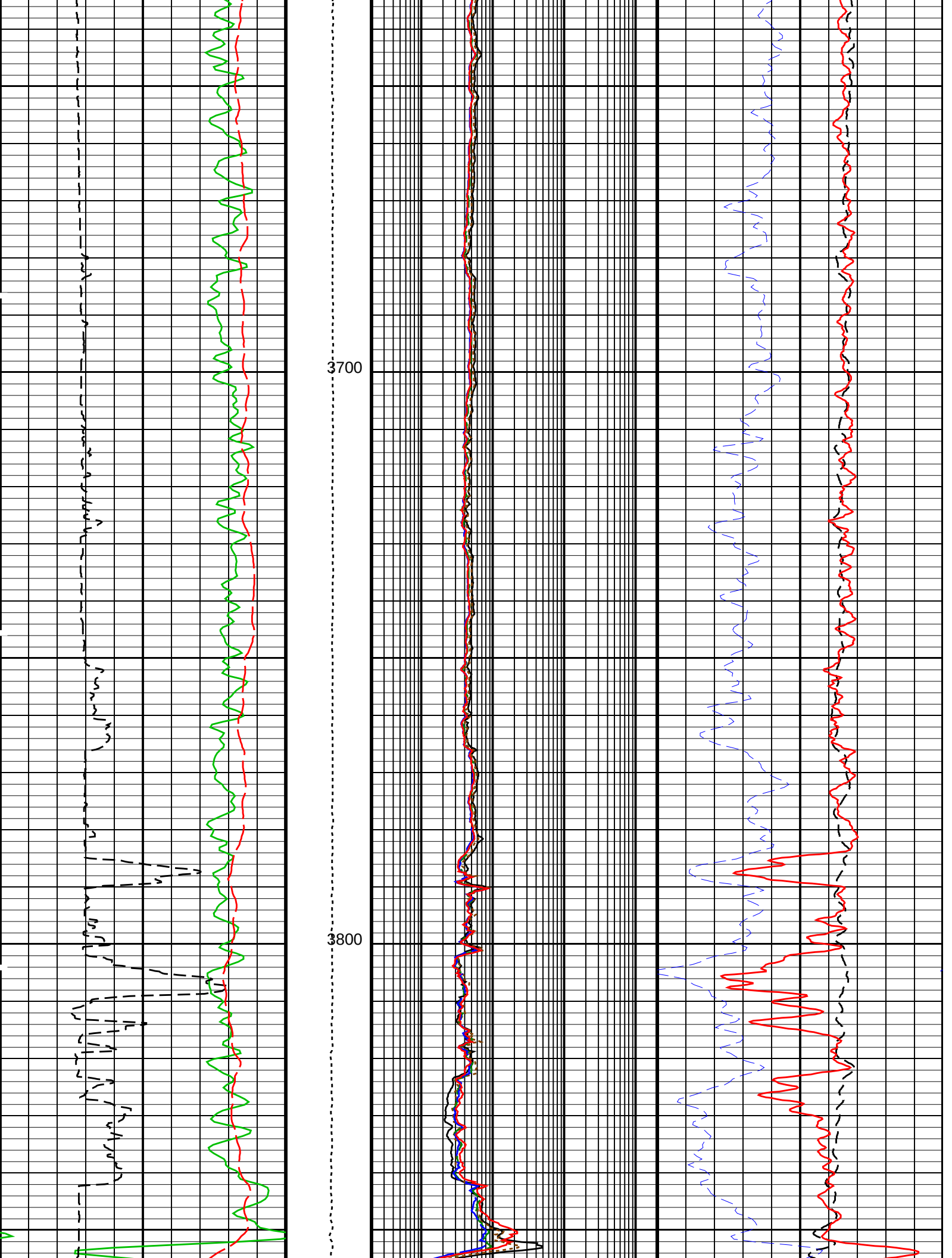
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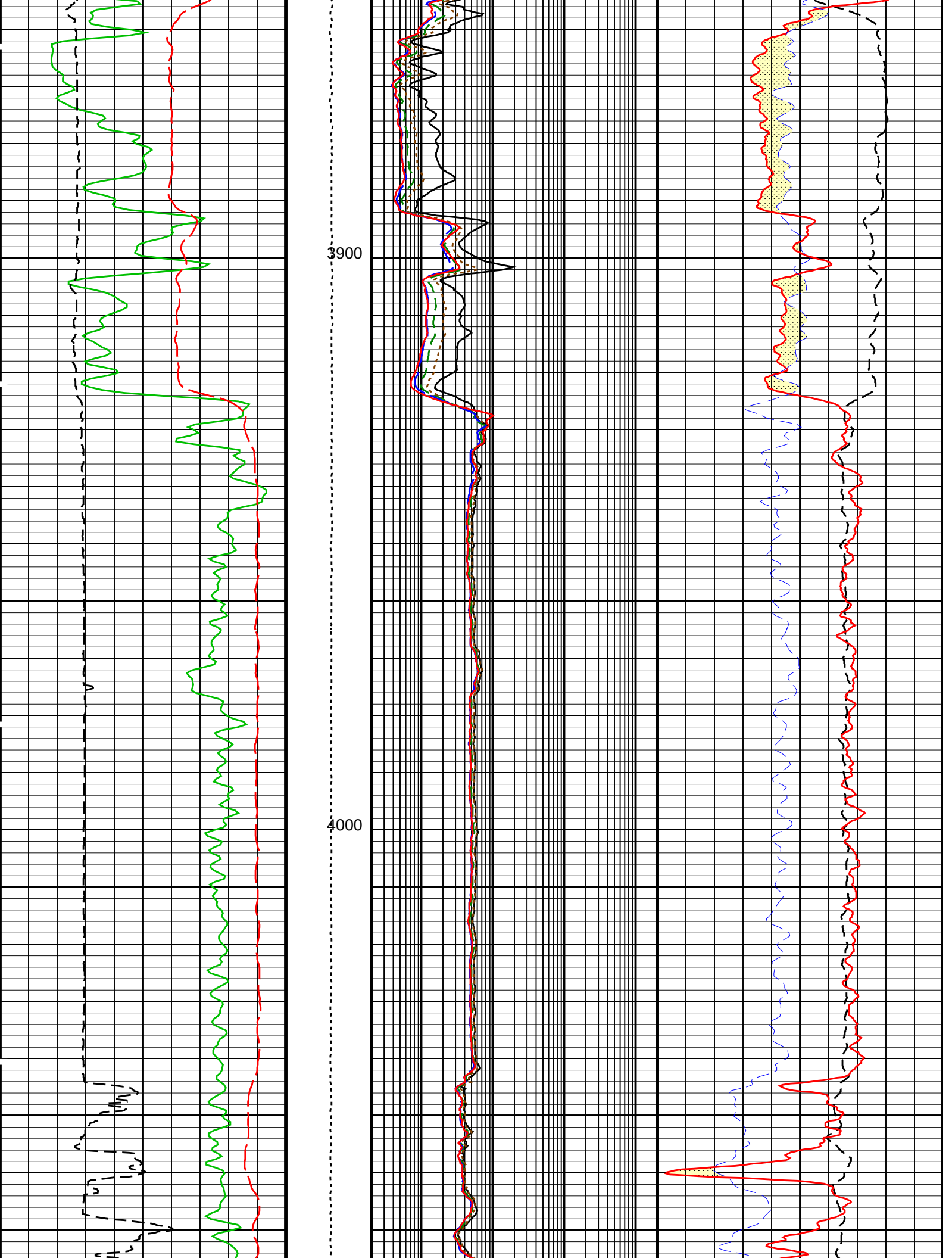
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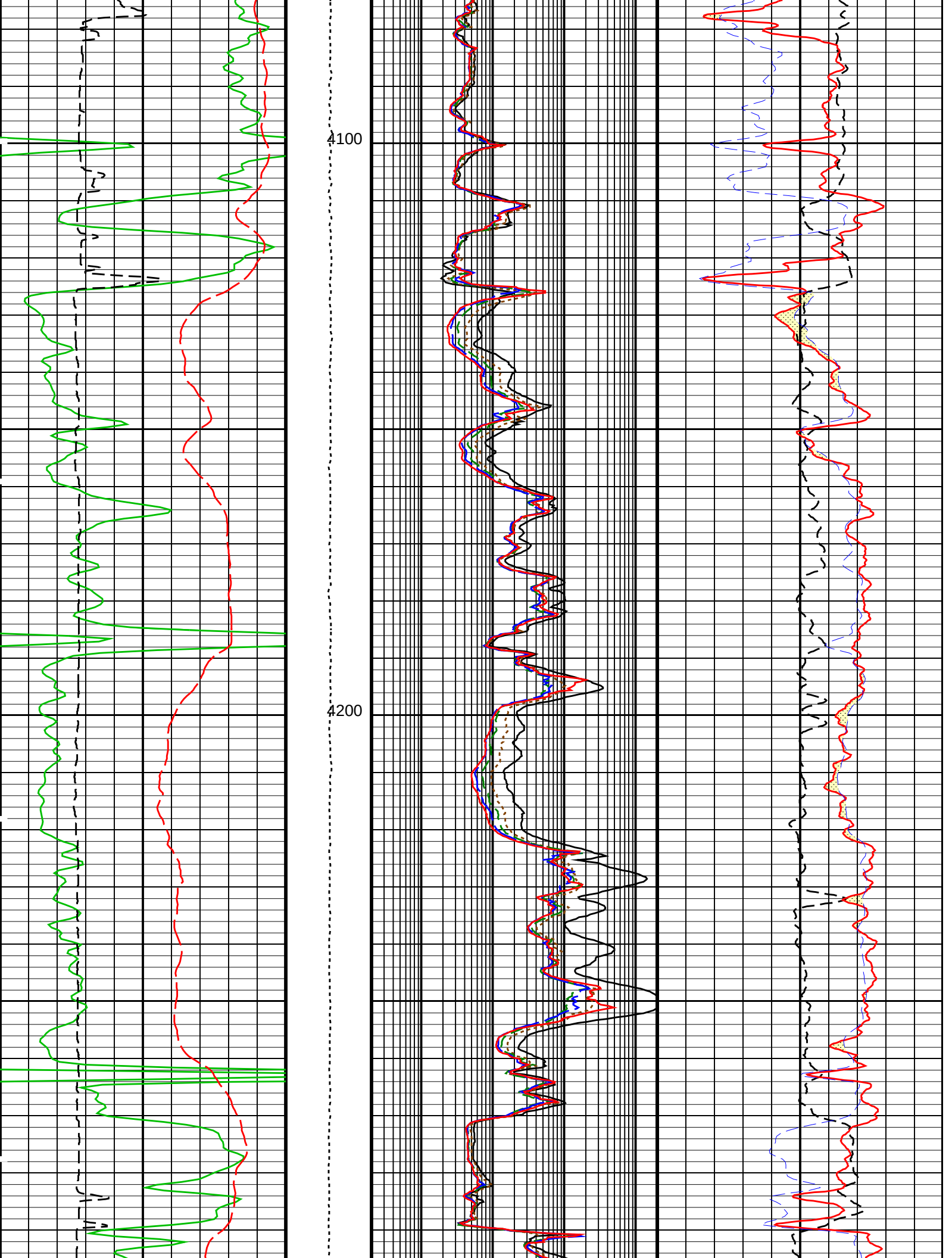
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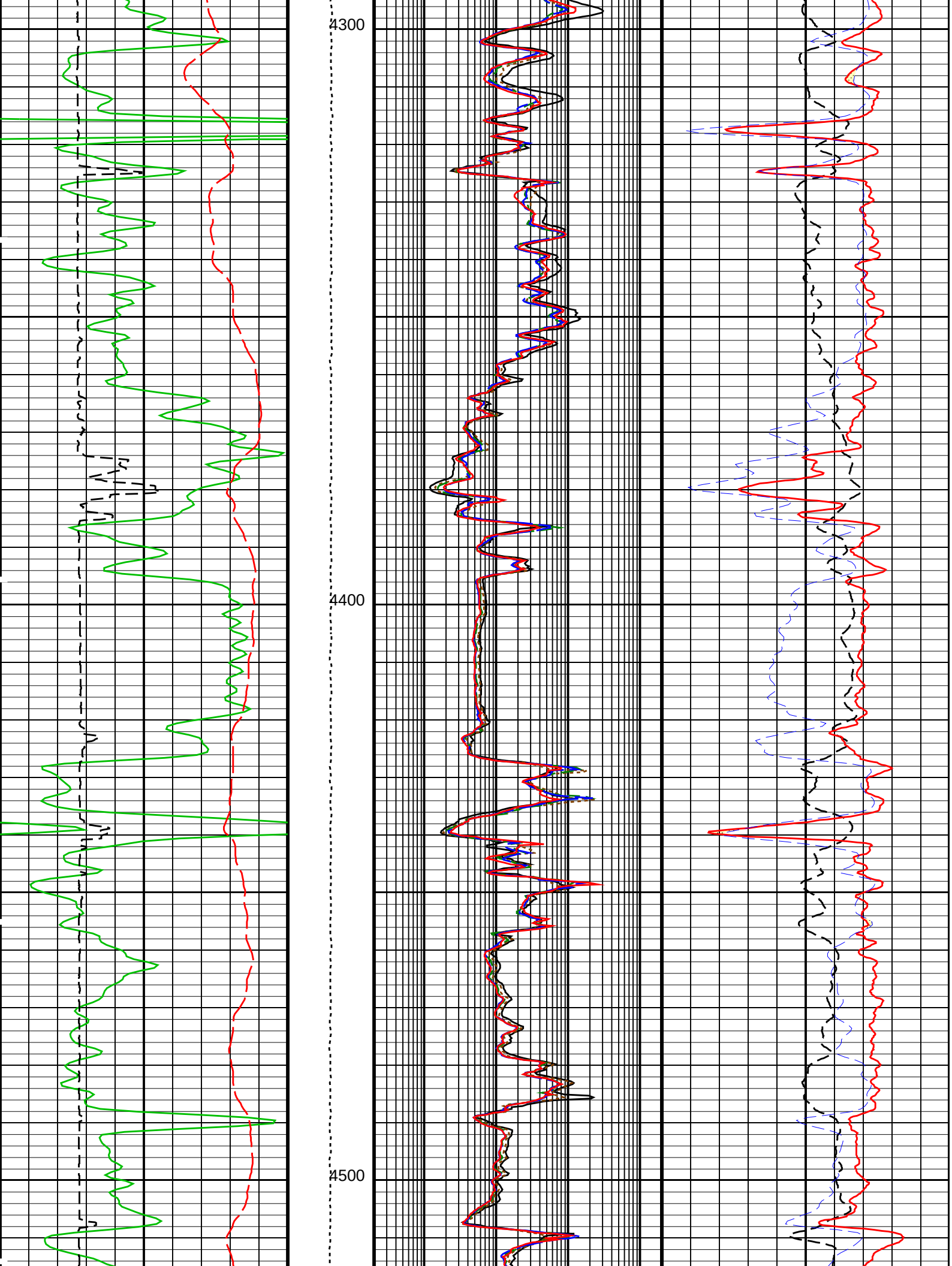
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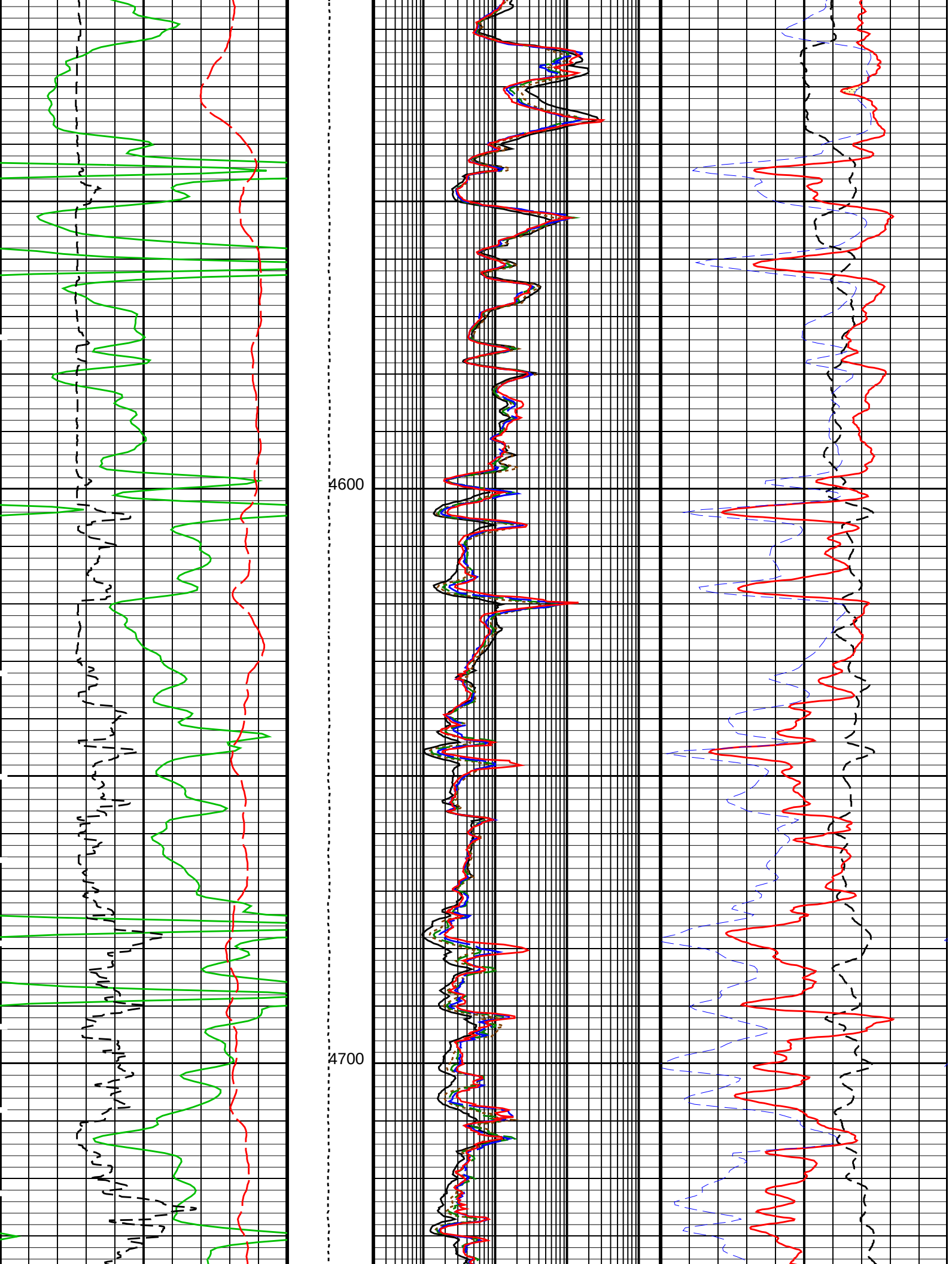
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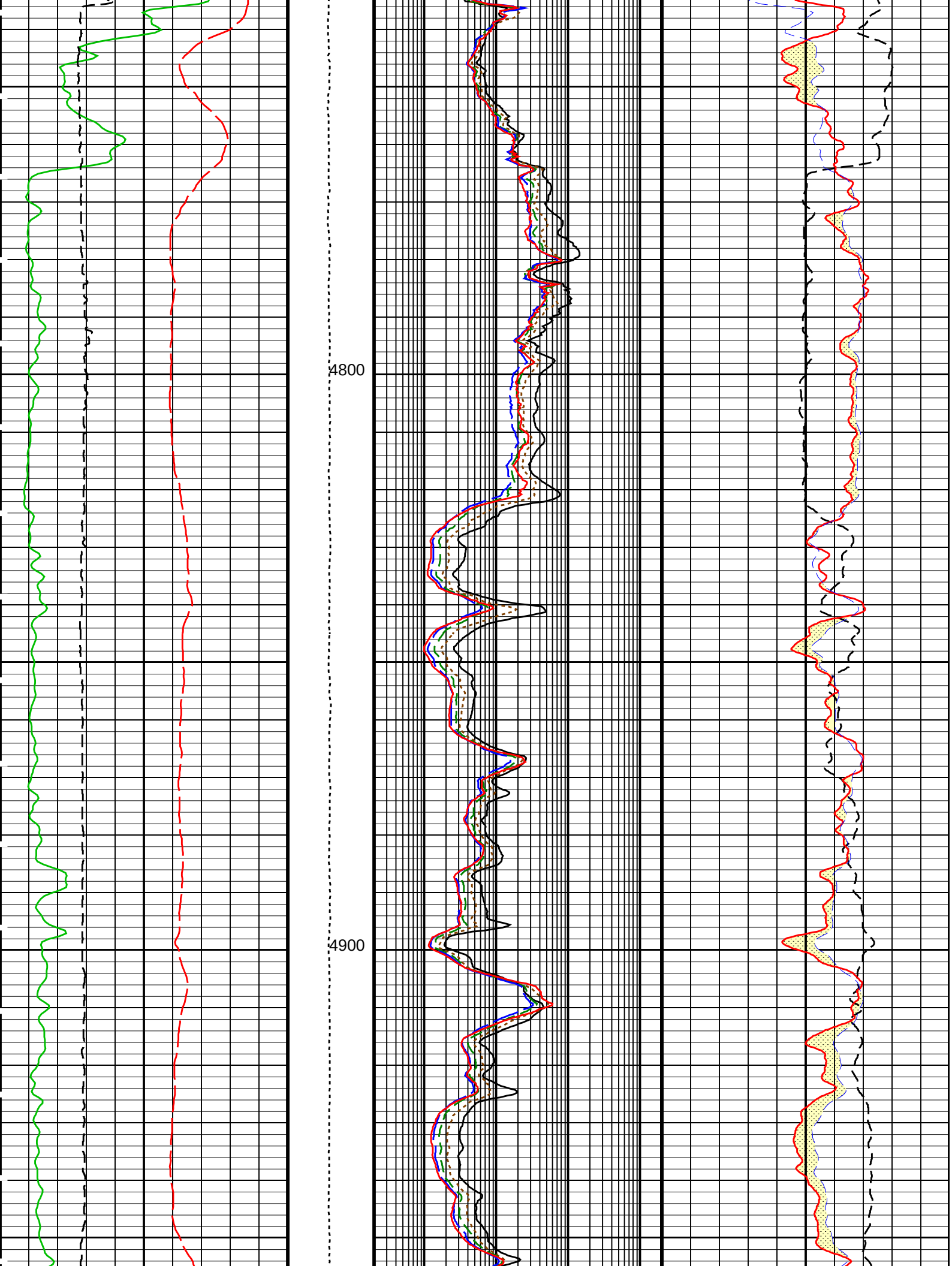
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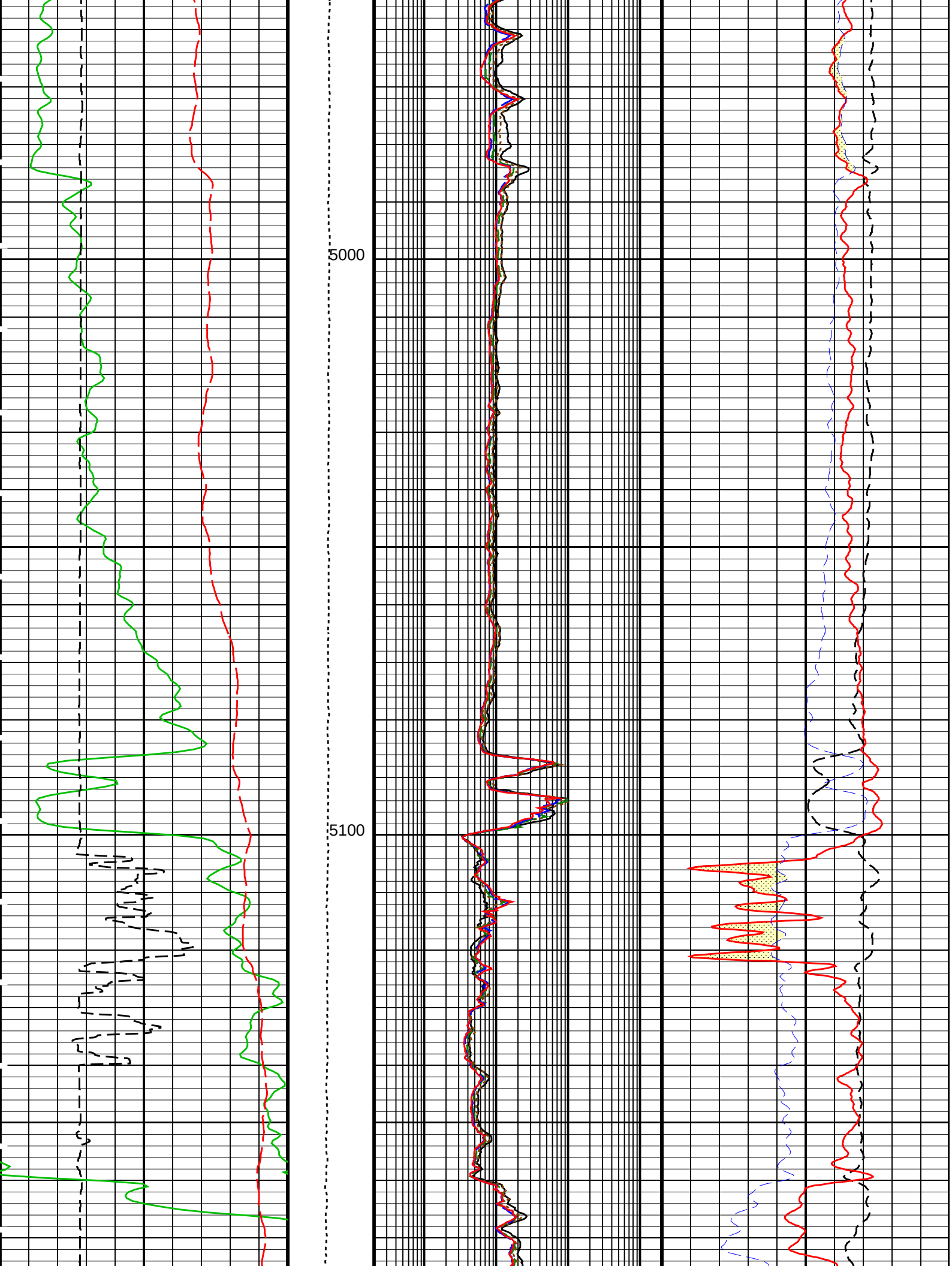
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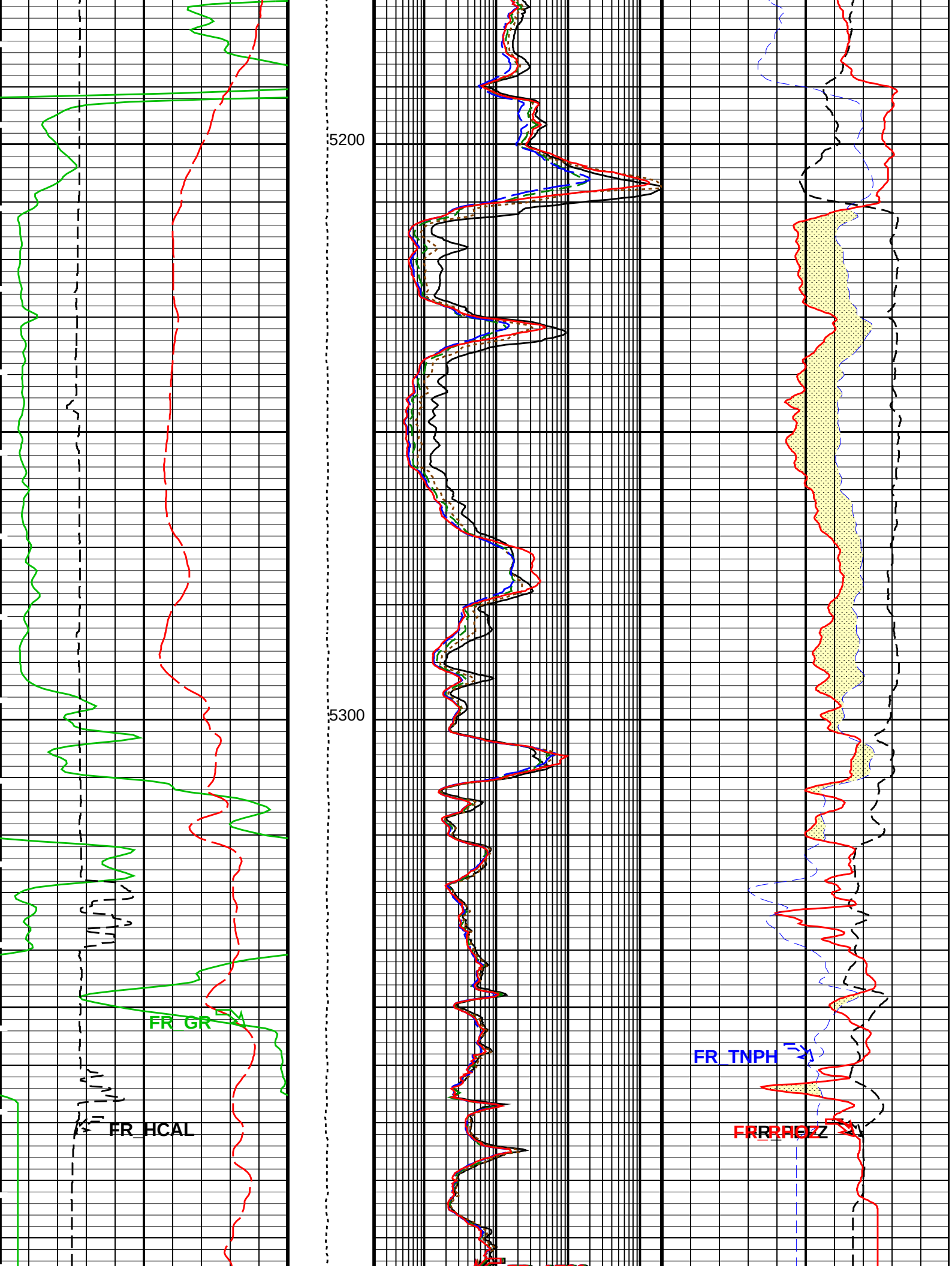
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FR_HCAL
FR_TNPH
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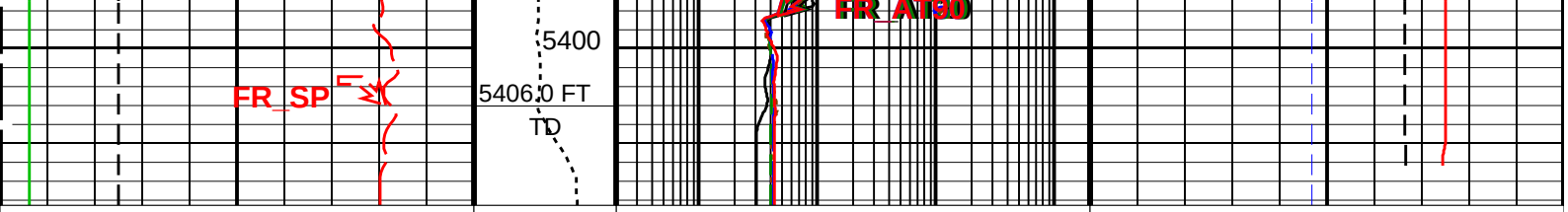

Gamma Ray (GR)	Tension (TENS)	AIT 10 Inch Investigation (AT10)	Std. Res. Formation Pe (PEFZ)
0 (GAPI) 150	(LBF) 6300 0	0.2 (OHMM) 2000	10 (----) 0
HILT Caliper (HCAL)	**Stuck Stretch (STIT)**	**AIT 20 Inch Investigation (AT20)**	**Std. Res. Formation Density (RHOZ)**
6 (IN) 16	0 (F) 50	0.2 (OHMM) 2000	1.95 (G/C3) 2.95
SP (SP)	**Cable Drag From STIA to STIT**	**AIT 30 Inch Investigation (AT30)**	**Env.Corr.Thermal Neutron Porosity (TNPH)**
−160 (MV) 40		0.2 (OHMM) 2000	0.45 (V/V) −0.15
	Tool/Tot. Drag From D3T to STIA	**AIT 60 Inch Investigation (AT60)**	**Gas From RHOZ to TNPH**
		0.2 (OHMM) 2000	
		AIT 90 Inch Investigation (AT90)	
		0.2 (OHMM) 2000	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
AAPL	Array Induction Answer Product Level(Depth Log/View only)	3_BholeCorr_BasicLogs_RadialProcessing	
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	900	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	223	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	−50000	FT
ADITM	Array Induction Desired Tool Mode	0x00_Log_000	
AEBC	Array Induction Enable Borehole Correction	Yes	
AEBL	Array Induction Enable Basic Logs	Yes	
AERP	Array Induction Enable Radial Processing	Yes	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AFVN	Array Induction Firmware Code Version Number	0	
AIGS	Array Induction Select Akima Interpolation Gating	On	
ALNV	Array Induction Log Not Valid Flag	Log_Valid−No_Default_Parameters	
AMRD	Array Induction Mud Resistivity Calibration Depth	0	FT
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPM	Array Induction Radial Processing Mode	6_One_Two_and_Four	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
ASTA	Array Induction Tool Standoff	0.625	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
ATTY	Array Induction Tool Type (of acquired data)	AITM	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F

GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RTCO	RTCO − Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
ECS−A: Elemental Capture Spectroscopy Tool			
	ECS Marquardt Spectrum	** V **	
SPEC_BARITE_MUD_FLAG	Barite Mud Flag for Spectroscopy Processing	On	
SPEC_CSG_DEPTH	Casing Depth for Spectroscopy Processing	830.5	FT
SPEC_ELE_STD_SHFT_FAC	Calibration Factor for Elemental Spectral Standards	−0.272829	
SPL_CLAY_MODEL	SpectroLith Clay Model	Arenite	
SPL_SULFUR_MINERAL	SpectroLith Sulfur Mineral Option	Pyrite	
HILTH−FTB: High resolution Integrated Logging Tool−DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	140000	PPM
FSCO	Formation Salinity Correction Option	YES	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	77	DEGF
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSSO	HRDD Nuclear Source Strength Option	NORMAL	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e−005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e−005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PEA_FILTER	PEA Filter	NO_FILTER	
PEFC_FILTER	PEFC Filter	NO_FILTER	
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	

SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	5	FT
TDD	Total Depth − Driller	5460.00	FT
TDL	Total Depth − Logger	5406.00	FT
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	10713.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DFD	Drilling Fluid Density	8.70	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	0.00	FT
MST	Mud Sample Temperature	52.40	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.5270	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	5406	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: TCOM Vertical Scale: 5" per 100' Graphics File Created: 07−Mar−2012 12:47

OP System Version: 19C0−187

AIT−M	19C0−187	ECS−A	HFE−5160−OP19−NUCL
ECC−A	19C0−187	HILTH−FTB	SRPC−5047−H1−2011−OP19
ADT−C	SRPC−5035−ADT−C	DTC−H	19C0−187

Input DLIS Files

	AIT_ECS_TLD_MCFL_073PUP	FN:111	07−Mar−2012 09:25	5416.5 FT	737.0 FT

Output DLIS Files

DEFAULT	AIT_ECS_TLD_MCFL_013PUP	FN:12	PRODUCER	07−Mar−2012 12:49

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Repeat Analysis
5" = 100'

MAXIS Field Log

Company: SEPCO Well: Albright Croft Farms 3407 15−1

Input DLIS Files

	AIT_ECS_TLD_MCFL_073PUP	FN:111	07−Mar−2012 09:25	5416.5 FT	737.0 FT
	AIT_ECS_TLD_MCFL_076PUP	FN:114	07−Mar−2012 09:46	5422.0 FT	4586.0 FT

Output DLIS Files

DEFAULT	AIT_ECS_TLD_MCFL_013PUP	FN:12	PRODUCER	07−Mar−2012 12:49

OP System Version: 19C0−187

AIT−M	19C0−187	ECS−A	HFE−5160−OP19−NUCL
ECC−A	19C0−187	HILTH−FTB	SRPC−5047−H1−2011−OP19
ADT−C	SRPC−5035−ADT−C	DTC−H	19C0−187

PIP SUMMARY

Time Mark Every 60 S

AT90_REP Curve (AT90_REP)
0.2 (OHMM) 2000

AT60_REP Curve (AT60_REP)
0.2 (OHMM) 2000

Gas
From RHOZ to TNPH

SP_REP Curve (SP_REP)
−160 (MV) 40

AT30_REP Curve (AT30_REP)
0.2 (OHMM) 2000

TNPH_REP Curve (TNPH_REP)
0.45 (V/V) −0.15

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

AT20_REP Curve (AT20_REP)
0.2 (OHMM) 2000

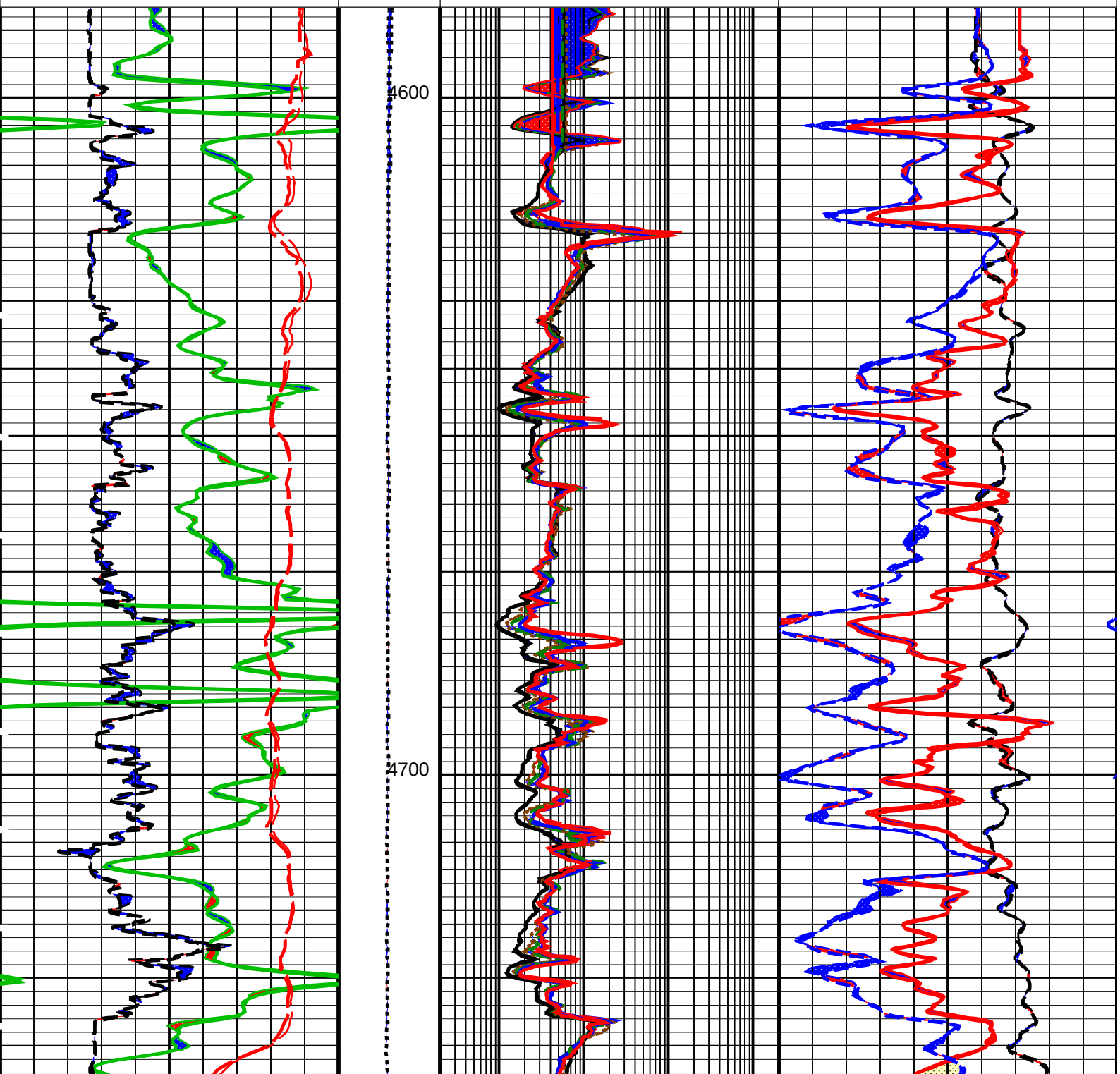
RHOZ_REP Curve (RHOZ_REP)
1.95 (G/C3) 2.95

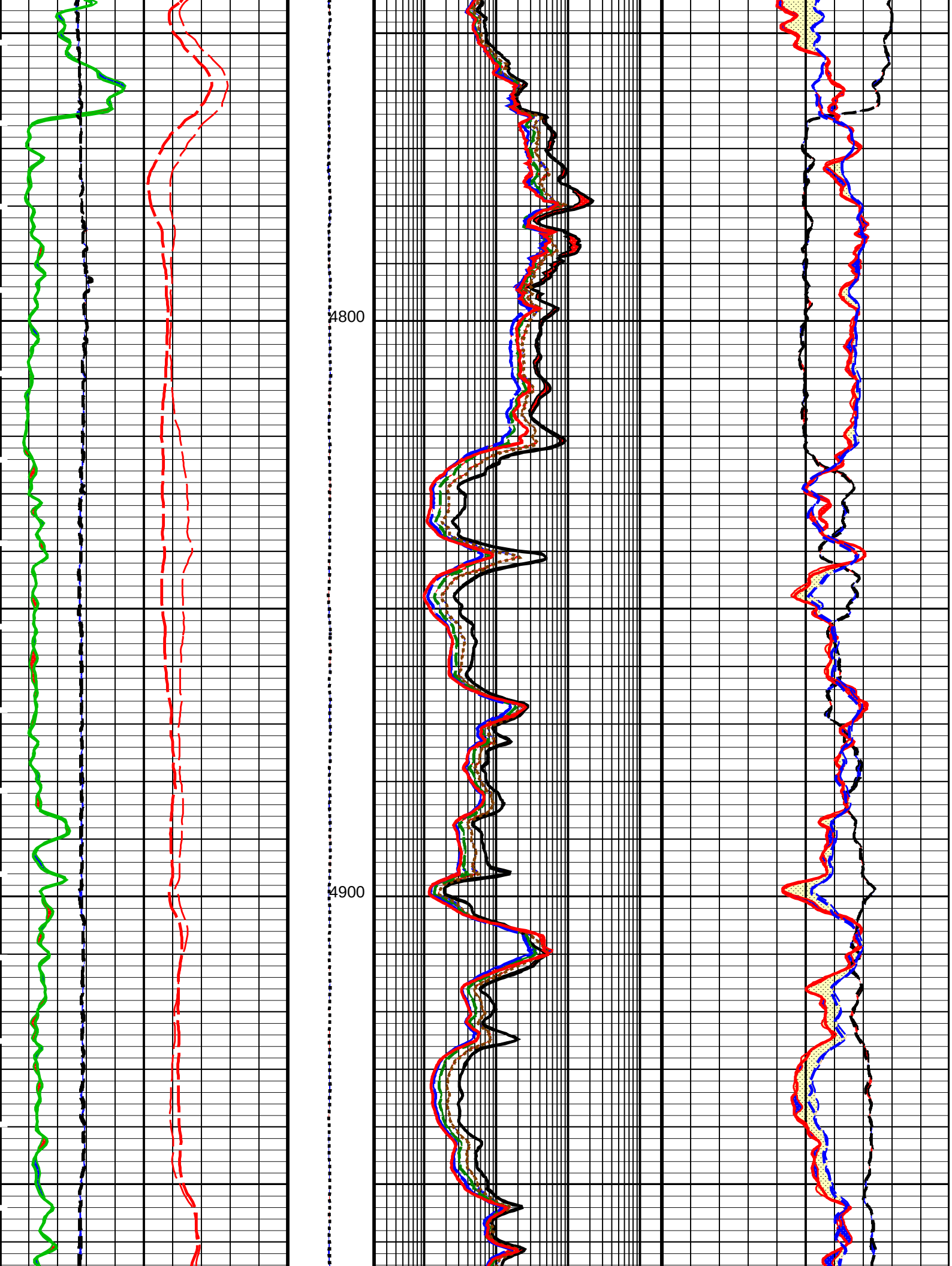
GR_REP Curve (GR_REP)
0 (GAPI) 150

TENS_REP Curve (TENS_REP) (LBF)
6300 0

AT10_REP Curve (AT10_REP)
0.2 (OHMM) 2000

PEFZ_REP Curve (PEFZ_REP)
10 (−−−−) 0

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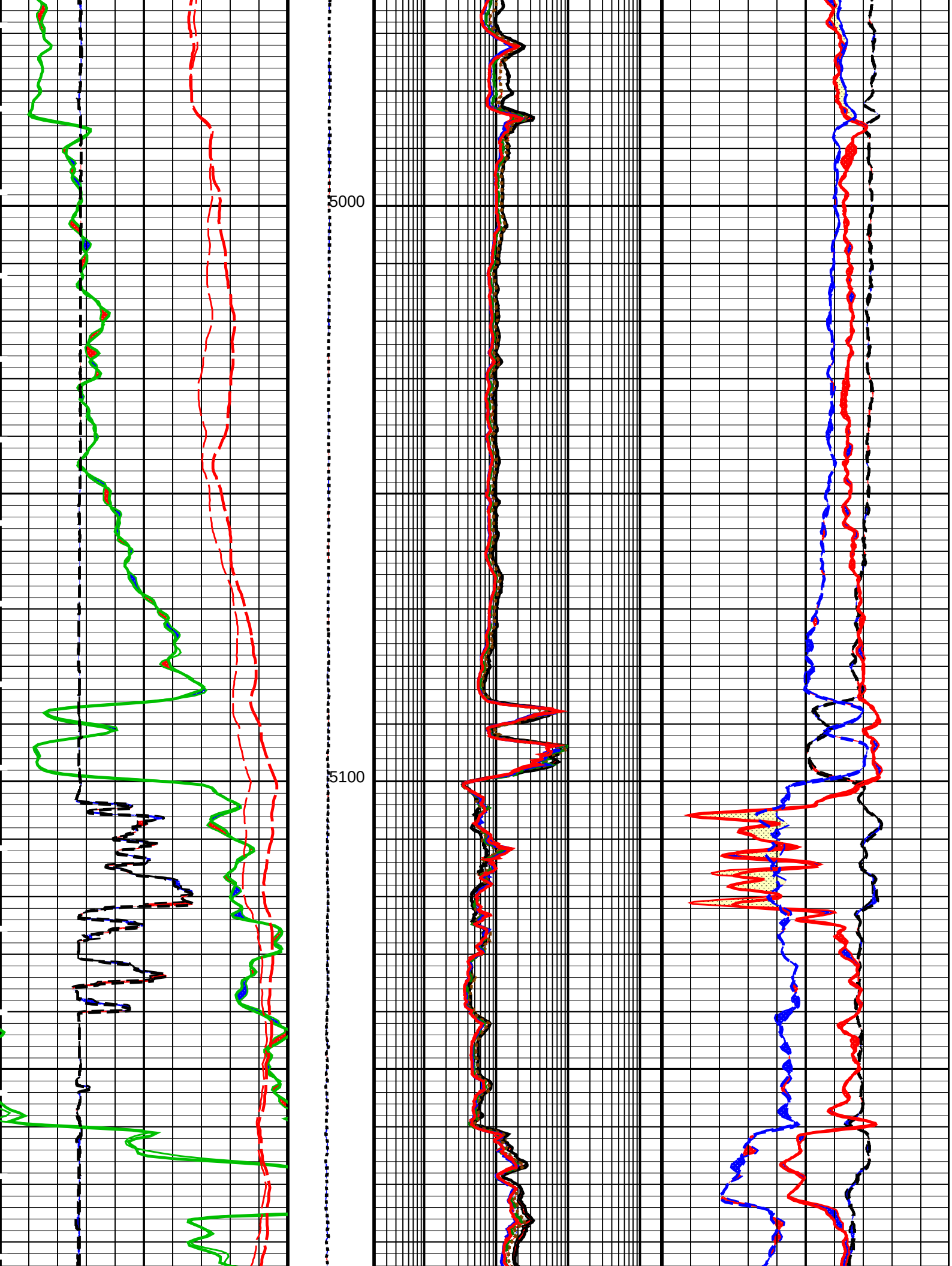
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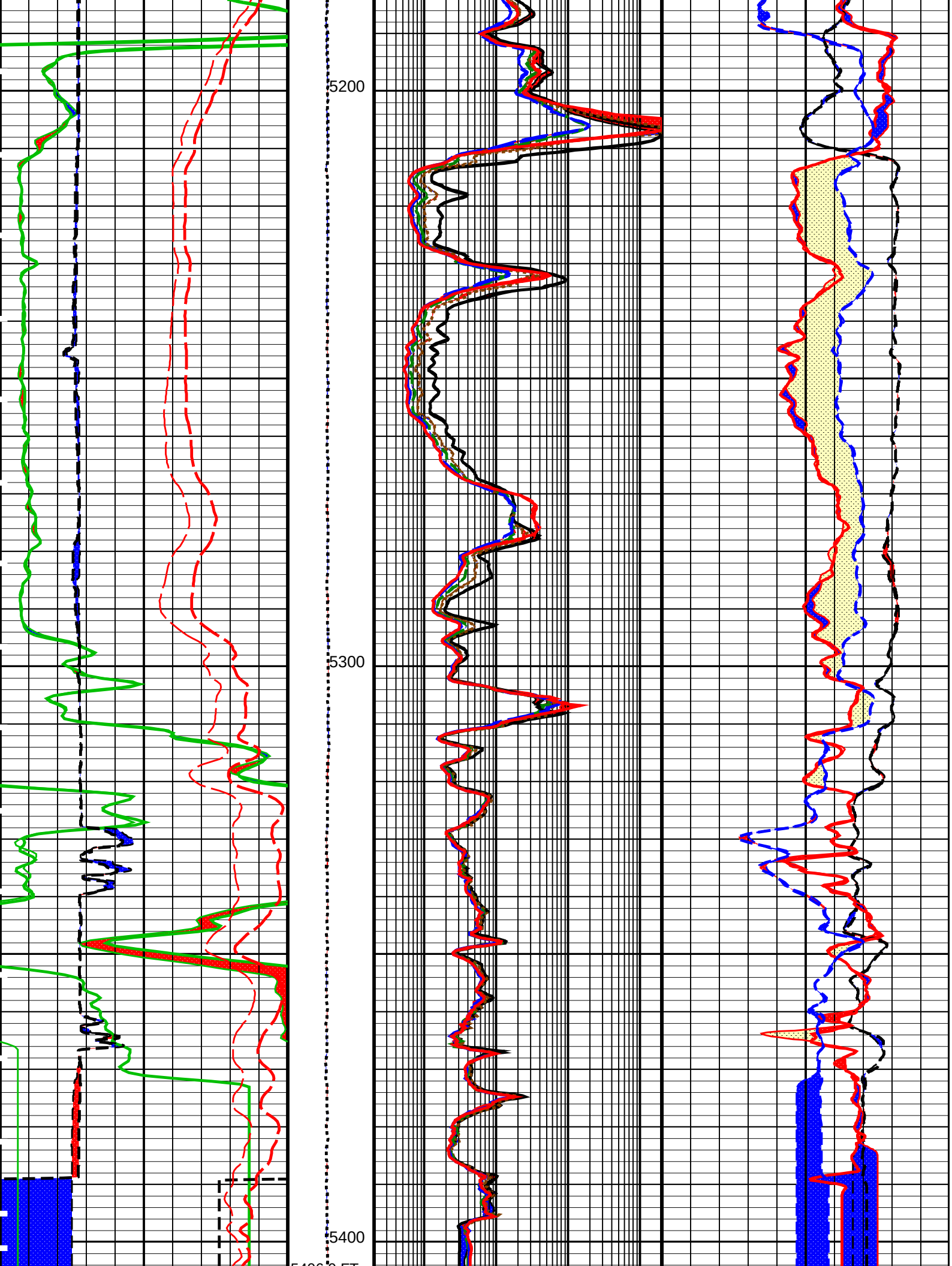
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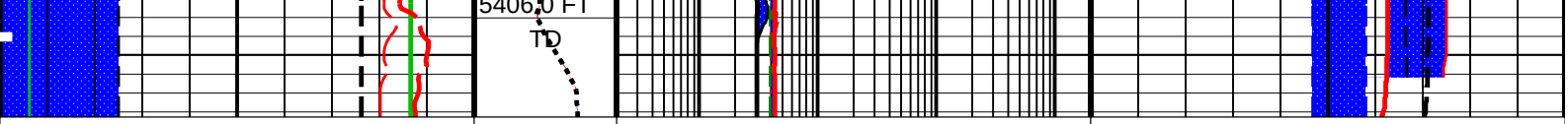

GR_REP Curve (GR_REP)	TENS_REP Curve (TENS_REP) (LBF)	AT10_REP Curve (AT10_REP)	PEFZ_REP Curve (PEFZ_REP)
0 (GAPI) 150	6300 0	0.2 (OHMM) 2000	10 (----) 0
HCAL_REP Curve (HCAL_REP)		**AT20_REP Curve (AT20_REP)**	**RHOZ_REP Curve (RHOZ_REP)**
6 (IN) 16		0.2 (OHMM) 2000	1.95 (G/C3) 2.95
SP_REP Curve (SP_REP)		**AT30_REP Curve (AT30_REP)**	**TNPH_REP Curve (TNPH_REP)**
−160 (MV) 40		0.2 (OHMM) 2000	0.45 (V/V) −0.15
		AT60_REP Curve (AT60_REP)	Gas From RHOZ to TNPH
		0.2 (OHMM) 2000	
		AT90_REP Curve (AT90_REP)	
		0.2 (OHMM) 2000	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	900	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	223	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	−50000	FT
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ASTA	Array Induction Tool Standoff	0.625	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	140000	PPM
FSCO	Formation Salinity Correction Option	YES	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F

GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134.67	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
TDL	Total Depth − Logger	5406.00	FT
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	10713.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DFD	Drilling Fluid Density	8.70	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	0.00	FT
MST	Mud Sample Temperature	52.40	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.5270	OHMM
TD	Total Depth	5406	FT

Format: TCOM_REP Vertical Scale: 5" per 100' Graphics File Created: 07−Mar−2012 12:49

OP System Version: 19C0−187

AIT−M	19C0−187	ECS−A	HFE−5160−OP19−NUCL
ECC−A	19C0−187	HILTH−FTB	SRPC−5047−H1−2011−OP19
ADT−C	SRPC−5035−ADT−C	DTC−H	19C0−187

Input DLIS Files

AIT_ECS_TLD_MCFL_073PUP	FN:111	07−Mar−2012 09:25	5416.5 FT	737.0 FT
AIT_ECS_TLD_MCFL_076PUP	FN:114	07−Mar−2012 09:46	5422.0 FT	4586.0 FT

Output DLIS Files

DEFAULT	AIT_ECS_TLD_MCFL_013PUP	FN:12	PRODUCER	07−Mar−2012 12:49

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Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool − M Wellsite Calibration − Electronics Calibration Check − Thru Cal Mag. & Phase							
Master: 16−Feb−2012 16:31 Before: 29−Feb−2012 15:23							
Thru Cal Magnitude − 0	0	0.6134	0.6132	N/A	N/A	N/A	V
Thru Cal Magnitude − 1	0	1.257	1.257	N/A	N/A	N/A	V
Thru Cal Magnitude − 2	0	0.6226	0.6225	N/A	N/A	N/A	V
Thru Cal Magnitude − 3	0	0.7035	0.7034	N/A	N/A	N/A	V
Thru Cal Magnitude − 4	0	1.315	1.315	N/A	N/A	N/A	V
Thru Cal Magnitude − 5	0	1.916	1.916	N/A	N/A	N/A	V
Thru Cal Magnitude − 6	0	1.913	1.913	N/A	N/A	N/A	V
Thru Cal Magnitude − 7	0	1.379	1.379	N/A	N/A	N/A	V
Thru Cal Phase − 0	0	183.5	181.6	N/A	N/A	N/A	DEG
Thru Cal Phase − 1	0	182.4	180.6	N/A	N/A	N/A	DEG
Thru Cal Phase − 2	0	178.9	177.0	N/A	N/A	N/A	DEG
Thru Cal Phase − 3	0	178.1	176.2	N/A	N/A	N/A	DEG
Thru Cal Phase − 4	0	172.0	170.1	N/A	N/A	N/A	DEG
Thru Cal Phase − 5	0	170.4	168.5	N/A	N/A	N/A	DEG
Thru Cal Phase − 6	0	170.4	168.5	N/A	N/A	N/A	DEG
Thru Cal Phase − 7	0	169.6	167.7	N/A	N/A	N/A	DEG
Array Induction Tool − M Wellsite Calibration − Electronics Calibration Check − Auxiliary							
Master: 16−Feb−2012 16:31 Before: 29−Feb−2012 15:23							
Array Induction SPA Plus	991.0	994.8	994.9	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	−0.07451	−0.07082	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9170	0.9217	0.9217	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	−0.00008005	−0.00007143	N/A	N/A	N/A	V
Array Induction Tool − M Wellsite Calibration − Test Loop Gain Correction							
Master: 16−Feb−2012 16:31							
Test Loop Gain Correctio − 0	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 1	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 2	0	1.014	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 3	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 4	0	0.9947	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 5	0	1.039	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 6	0	1.049	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 7	0	1.039	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 0	0	−0.1422	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 1	0	1.135	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 2	0	−0.2523	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 3	0	−0.2764	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 4	0	0.1785	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 5	0	0.5955	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 6	0	0.7746	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 7	0	−0.3681	N/A	N/A	N/A	N/A	DEG
Array Induction Tool − M Wellsite Calibration − Sonde Error Correction							
Master: 16−Feb−2012 16:31							
R Sonde Error Correction − 0	0	−109.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 1	0	159.1	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 2	0	107.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 3	0	49.04	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 4	0	27.08	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 5	0	14.09	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 6	0	10.02	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 7	0	−1.069	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 0	0	−985.2	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 1	0	185.4	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 2	0	−139.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 3	0	−21.16	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 4	0	2.701	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 5	0	−1.170	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 6	0	9.684	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 7	0	−2.389	N/A	N/A	N/A	N/A	MM/M
Array Induction Tool − M Wellsite Calibration − Mud Gain Correction							
Master: 29−Feb−2012 15:26							
Coarse − Mag, Real, Imag − 0	0	0.9760	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 1	0	0.9760	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 2	0	0.9760	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 0	0	0.9890	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 1	0	0.9890	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 2	0	0.9890	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary							
Before: 29−Feb−2012 15:32							
BS Window Ratio	0.7458	N/A	0.7457	N/A	N/A	N/A	
BS Window Sum	25220	N/A	25170	N/A	N/A	N/A	CPS
SS Window Ratio	0.4822	N/A	0.4808	N/A	N/A	N/A	

SS Window Sum	10890	N/A	10900	N/A	N/A	N/A	CPS
LS Window Ratio	0.2971	N/A	0.2988	N/A	N/A	N/A	
LS Window Sum	1359	N/A	1347	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations
Before: 29−Feb−2012 15:32

BS PM High Voltage (Command)	1249	N/A	1252	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1602	N/A	1618	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1529	N/A	1536	N/A	N/A	N/A	V

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration
Before: 29−Feb−2012 15:32

BS Crystal Resolution	10.36	N/A	10.40	N/A	N/A	N/A	%
SS Crystal Resolution	11.05	N/A	10.96	N/A	N/A	N/A	%
LS Crystal Resolution	9.608	N/A	9.458	N/A	N/A	N/A	%

High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration
Before: 29−Feb−2012 15:34

Raw B0 Resistivity	3875	N/A	3828	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3808	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3821	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration
Before: 29−Feb−2012 15:22

HILT Caliper Zero Measurement	8.000	N/A	8.008	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.25	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration
Before: 29−Feb−2012 15:22

Gamma Ray Background	30.00	N/A	34.23	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkgd)	165.0	N/A	175.6	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement
Master: 14−Jan−2012 14:01 Before: 29−Feb−2012 15:24

CNTC Background	27.48	27.48	27.55	N/A	N/A	4.122	CPS
CFTC Background	27.27	27.27	26.86	N/A	N/A	4.091	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Ratio Measurement
Master: 14−Jan−2012 14:01

Thermal Near Corr. (Tank)	5800	4704	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	1936	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.430	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration
Before: Calibration not done

Z−Axis Acceleration	32.19	N/A	32.19	N/A	N/A	N/A	F/S2

High resolution Integrated Logging Tool−DTS Master Calibration − Inversion results
Master: 6−Feb−2012 8:41

Rho Aluminum	2.596	2.600	−−	−−	−−	−−	G/C3
Rho Magnesium	1.686	1.686	−−	−−	−−	−−	G/C3
Pe Aluminum	2.570	2.541	−−	−−	−−	−−	
Pe Magnesium	2.650	2.652	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Deviation Summary
Master: 6−Feb−2012 8:41

BS Average Deviation	0	0.2350	−−	−−	−−	−−	%
BS Max Deviation	0	0.8171	−−	−−	−−	−−	%
SS Average Deviation	0	0.2482	−−	−−	−−	−−	%
SS Max Deviation	0	0.5605	−−	−−	−−	−−	%
LS Average Deviation	0	0.3926	−−	−−	−−	−−	%
LS Max Deviation	0	1.595	−−	−−	−−	−−	%

Array Dielectric Tool Wellsite Calibration − Check of the Borehole Pressure at Surface
Before: 29−Feb−2012 15:28

MudTempCheckAtSurface	77.00	N/A	68.41	N/A	N/A	N/A	DEGF
PGaugeTempCheckAtSurf	77.00	N/A	72.61	N/A	N/A	N/A	DEGF
PadPressureCheckAtSurf	35.00	N/A	41.19	N/A	N/A	N/A	PSIA

Array Dielectric Tool Wellsite Calibration − ADT Caliper Calibration
Before: 29−Feb−2012 15:28

ADT Caliper Zero Measurement	8.000	N/A	7.864	N/A	N/A	N/A	IN
ADT Caliper Plus Measurement	12.00	N/A	11.71	N/A	N/A	N/A	IN

The GLS−VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT−B Water Temperature	53.9	DEGF.
Thermal Housing Size	3.370	IN.
NSR−F serial number	5219	

Array Induction Tool − M / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AMRM − A	
Array Induction Sonde	AMIS − A	229

Auxiliary Equipment:

Array Induction Tool − M Wellsite Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6134		0.6100	183.5		197.0
	Before	0.6132			181.6		
1	Master	1.257		1.270	182.4		196.0
	Before	1.257			180.6		
2	Master	0.6226		0.6200	178.9		192.0
	Before	0.6225			177.0		
3	Master	0.7035		0.7000	178.1		191.0
	Before	0.7034			176.2		
4	Master	1.315		1.340	172.0		185.0
	Before	1.315			170.1		
5	Master	1.916		1.960	170.4		182.0
	Before	1.916			168.5		
6	Master	1.913		1.960	170.4		181.0
	Before	1.913			168.5		
7	Master	1.379		1.410	169.6		175.0
	Before	1.379			167.7		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom −60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 16−Feb−2012 16:31 Before: 29−Feb−2012 15:23

Array Induction Tool − M Wellsite Calibration

Electronics Calibration Check − Auxiliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		994.8	Master		−0.07451
Before		994.9	Before		−0.07082
	941.0 (Minimum) 991.0 (Nominal) 1040 (Maximum)			−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9217	Master		−8.005E−00
Before		0.9217	Before		−7.143E−00
	0.8710 (Minimum) 0.9170 (Nominal) 0.9630 (Maximum)			−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 16−Feb−2012 16:31 Before: 29−Feb−2012 15:23

Array Induction Tool − M Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG
0	1.012		−0.1422	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

Idx	Value				Value			
1	1.012				1.135			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.014				−0.2523			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.011				−0.2764			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9947				0.1785			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.039				0.5955			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.049				0.7746			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.039				−0.3681			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 16−Feb−2012 16:31

Array Induction Tool − M Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−109.0				−985.2			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	159.1				185.4			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	107.5				−139.8			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	49.04				−21.16			
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	27.08				2.701			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	14.09				−1.170			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	10.02				9.684			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−1.069				−2.389			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

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Array Induction Tool − M Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 29−Feb−2012 15:26

Array Induction Tool − M Master Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6134		0.6100	183.5		197.0
1	Master	1.257		1.270	182.4		196.0
2	Master	0.6226		0.6200	178.9		192.0
3	Master	0.7035		0.7000	178.1		191.0
4	Master	1.315		1.340	172.0		185.0
5	Master	1.916		1.960	170.4		182.0
6	Master	1.913		1.960	170.4		181.0
7	Master	1.379		1.410	169.6		175.0
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom −60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 16−Feb−2012 16:31

Array Induction Tool − M Master Calibration

Electronics Calibration Check − Auxiliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		994.8	Master		−0.07451
	941.0 (Minimum) 991.0 (Nominal) 1040 (Maximum)			−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9217	Master		−8.005E−00
	0.8710 (Minimum) 0.9170 (Nominal) 0.9630 (Maximum)			−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 16−Feb−2012 16:31

Array Induction Tool − M Master Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG
0	1.012		−0.1422	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
1	1.012		1.135	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
2	1.014		−0.2523	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
3	1.011		−0.2764	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
4	0.9947		0.1785	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
5	1.039		0.5955	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
6	1.049		0.7746	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
7	1.039		−0.3681	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)

Master: 16−Feb−2012 16:31

Array Induction Tool − M Master Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	−109.0		−985.2	
		−231.0 (Minimum) −56.00 (Nominal) 119.0 (Maximum)		−2250 (Minimum) 0 (Nominal) 2250 (Maximum)

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
1	159.1				185.4			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	107.5				−139.8			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	49.04				−21.16			
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	27.08				2.701			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	14.09				−1.170			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	10.02				9.684			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−1.069				−2.389			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 16−Feb−2012 16:31

Array Induction Tool − M Master Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9760				0.9890			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 29−Feb−2012 15:26

Elemental Capture Spectroscopy Tool / Equipment Identification

Primary Equipment:		
ECS Sonde	ECS − A	3
ECS Detector Package	ECSD − A	3
ECS AmBe Source	NSR − F	5226
Auxiliary Equipment:		
ECS Sonde Housing	ECSH − A	3

Elemental Capture Cartridge − A / Equipment Identification

Primary Equipment:		
ECC Cartridge	ECC − A	438
Auxiliary Equipment:		
ECC Housing	ECH − A	393

High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:		
HILT high−Resolution Mechanical Sonde	HRMS − H	3964
HILT Rxo Gamma−ray Device	HRGD − H	4700
HILT Micro Cylindrically Focused Log Dev	MCFL − H	
GR Logging Source	GLS − J	5347
HILT High Res. Control Cartridge	HRCC − H	4709
HILT Gamma−Ray Neutron Sonde−DTS	HGNS − H	4759
HGNS Gamma−Ray Device	HGR −	

HGNS Gamma Ray Device	HGR	
HGNS Neutron Detector with Alpha Source	HCNT − H	
Auxiliary Equipment:		
Neutron Calibration Tank	NCT − B	
Gamma Source Radioactive	GSR − U	409
HGNS Housing	HGNH −	3835

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Stab Measurement Summary

Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.7457	Before				0.4808	Before				0.2988
	0.7085 (Minimum)	0.7458 (Nominal)	0.7831 (Maximum)			0.4580 (Minimum)	0.4822 (Nominal)	0.5063 (Maximum)			0.2823 (Minimum)	0.2971 (Nominal)	0.3120 (Maximum)	
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				25170	Before				10900	Before				1347
	23960 (Minimum)	25220 (Nominal)	26480 (Maximum)			10350 (Minimum)	10890 (Nominal)	11440 (Maximum)			1291 (Minimum)	1359 (Nominal)	1427 (Maximum)	

Before: 29−Feb−2012 15:32

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Photo−multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1252	Before				1618	Before				1536
	1149 (Minimum)	1249 (Nominal)	1349 (Maximum)			1502 (Minimum)	1602 (Nominal)	1702 (Maximum)			1429 (Minimum)	1529 (Nominal)	1629 (Maximum)	

Before: 29−Feb−2012 15:32

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Before				10.40	Before				10.96	Before				9.458
	9.364 (Minimum)	10.36 (Nominal)	11.36 (Maximum)			10.05 (Minimum)	11.05 (Nominal)	12.05 (Maximum)			8.608 (Minimum)	9.608 (Nominal)	10.61 (Maximum)	

Before: 29−Feb−2012 15:32

High resolution Integrated Logging Tool−DTS Wellsite Calibration

MCFL Calibration

Phase	Raw B0 Resistivity OHMM			Value	Phase	Raw B1 Resistivity OHMM			Value	Phase	Raw B2 Resistivity OHMM			Value
Before				3828	Before				3808	Before				3821
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)			3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	

Before: 29−Feb−2012 15:34

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN			Value	Phase	HILT Caliper Plus Measurement IN			Value
Before				8.008	Before				12.25
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)			9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)	

Before: 29−Feb−2012 15:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig − Bkgd) GAPI			Value
Before				34.23	Before				175.6
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)			157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)	

Before: 29−Feb−2012 15:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.48	Master		27.27
Before		27.55	Before		26.86

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		4704	Master		1936	Master		2.430
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)			1900 (Minimum) 2400 (Nominal) 2900 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 14−Jan−2012 14:01

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Ratio Measurement

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration F/S2	Value
Before		32.19
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	

Before: Calibration not done

High resolution Integrated Logging Tool−DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.600	Master		1.686
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)			1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	

Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.541	Master		2.652
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 6−Feb−2012 8:41

High resolution Integrated Logging Tool−DTS Master Calibration

Deviation Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.2350	Master		0.2482	Master		0.3926
	−0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			−1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			−1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		0.8171	Master		0.5605	Master		1.595
	−1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			−2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			−3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 6−Feb−2012 8:41

High resolution Integrated Logging Tool−DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.48	Master		27.27
	5.000 (Minimum) 27.48 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 27.27 (Nominal) 40.00 (Maximum)	

Master: 14−Jan−2012 14:01

High resolution Integrated Logging Tool−DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		4704	Master		1936	Master		2.430
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)			1900 (Minimum) 2400 (Nominal) 2900 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 14−Jan−2012 14:01

Array Dielectric Tool / Equipment Identification

Primary Equipment:

ADT Sonde		ADS − C	729

ADT internal equipment	F0 −	
ADT internal equipment	F1 −	
ADT internal equipment	F2 −	
ADT internal equipment	F3 −	
ADT Pad	ADP − C	727
ADT Cartridge Housing	HECH − KDB	728
ADT Cartridge	ADC − C	728

Auxiliary Equipment:

Array Dielectric Tool Wellsite Calibration

Check of the Borehole Pressure at Surface

Phase	PadPressureCheckAtSurf PSIA	Value	Phase	PGaugeTempCheckAtSurf DEGF	Value	Phase	MudTempCheckAtSurface DEGF	Value
Before		41.19	Before		72.61	Before		68.41
	20.00 (Minimum) 35.00 (Nominal) 90.00 (Maximum)			−4.000 (Minimum) 77.00 (Nominal) 140.0 (Maximum)			−4.000 (Minimum) 77.00 (Nominal) 140.0 (Maximum)	

Before: 29−Feb−2012 15:28

Array Dielectric Tool Wellsite Calibration

ADT Caliper Calibration

Phase	ADT Caliper Zero Measurement IN	Value	Phase	ADT Caliper Plus Measurement IN	Value
Before		7.864	Before		11.71
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)			9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 29−Feb−2012 15:28

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC−H Auxiliary Cartridge	DTCH − A	8665
DTC−H Telemetry Cartridge	DTCH − A	8665

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing	ECH − KC	9572

Company: **SEPCO**

Schlumberger

Well: **Albright Croft Farms 3407 15−1**
Field: **Arrowhead**
County: **Harper**
State: **Kansas**

R1D1
TRIPLE COMBO

Shell Exploration & Production Co. Inc.

Harper Co. (NAD-27)
Sec 15-T34S-R07W
Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774

Wellbore #1
Design 011711 A1

Sperry Drilling Services

Ellipse Separation Anticollision Report

17 January, 2012

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Reference Design: Sec 15-T34S-R07W - Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Wellbore #1 - Design 011711 A1

Well Coordinates: 151,007.51 N, 2,124,600.36 E (37° 04' 50.17" N, 098° 04' 22.47" W)

Datum Height: well @ 1419.00ft

Scan Range: 0.00 to 6,323.00 ft. Measured Depth.

Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Version: 2003.21 Build: 43

HALLIBURTON

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Croft Farms 3407 15-2H/ Job# 9199274/ Nabors 774 - Wellbore #1 - Design 011712 A1
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.09	100.00	100.00	-0.03	25.00	0.09	25.00	24.83	90.08	146.352
200.00	200.00	0.00	0.00	0.31	200.00	200.00	-0.03	25.00	0.31	25.00	24.38	90.08	40.300
300.00	300.00	0.00	0.00	0.53	300.00	300.00	-0.03	25.00	0.53	25.00	23.93	90.08	23.367
400.00	399.97	0.00	-2.18	0.75	399.90	399.87	-2.21	25.00	0.74	27.27	25.78	-175.34	18.297
500.00	499.77	0.00	-8.37	0.97	499.27	499.02	-8.69	25.00	0.94	34.49	32.58	-165.35	18.053
600.00	599.53	0.00	-15.35	1.20	598.64	598.01	-17.35	25.00	1.16	43.95	41.59	-156.62	18.653
700.00	699.29	0.00	-22.32	1.44	698.02	697.01	-26.01	25.00	1.40	54.05	51.24	-151.06	19.197
800.00	799.04	0.00	-29.30	1.68	798.27	796.98	-33.49	25.00	1.63	63.83	60.56	-148.20	19.528
900.00	898.80	0.00	-36.28	1.93	898.86	897.45	-38.36	25.00	1.85	72.30	68.59	-147.85	19.485
1,000.00	998.55	0.00	-43.25	2.18	999.63	998.20	-40.57	25.00	2.06	79.40	75.25	-149.20	19.126
1,100.00	1,098.31	0.00	-50.23	2.43	1,099.75	1,098.31	-40.72	25.00	2.26	85.54	80.96	-151.51	18.663
1,200.00	1,198.08	0.00	-56.99	2.66	1,199.52	1,198.08	-40.72	25.00	2.47	91.55	86.54	-153.55	18.273
1,300.00	1,297.97	0.00	-61.62	2.85	1,299.41	1,297.97	-40.72	25.00	2.67	95.71	90.31	-154.81	17.720
1,400.00	1,397.95	0.00	-63.62	3.03	1,399.39	1,397.95	-40.72	25.00	2.89	97.53	91.73	-155.32	16.821
1,500.00	1,497.95	0.00	-63.72	3.23	1,499.39	1,497.95	-40.72	25.00	3.10	97.62	91.41	114.66	15.719
1,600.00	1,597.95	0.00	-63.72	3.43	1,599.39	1,597.95	-40.72	25.00	3.31	97.62	90.98	114.66	14.714
1,700.00	1,697.95	0.00	-63.72	3.64	1,699.39	1,697.95	-40.72	25.00	3.53	97.62	90.56	114.66	13.824
1,800.00	1,797.95	0.00	-63.72	3.85	1,799.39	1,797.95	-40.72	25.00	3.75	97.62	90.13	114.66	13.031
1,900.00	1,897.95	0.00	-63.72	4.06	1,899.39	1,897.95	-40.72	25.00	3.96	97.62	89.69	114.66	12.320
2,000.00	1,997.95	0.00	-63.72	4.27	1,999.39	1,997.95	-40.72	25.00	4.18	97.62	89.26	114.66	11.680
2,100.00	2,097.95	0.00	-63.72	4.48	2,099.39	2,097.95	-40.72	25.00	4.40	97.62	88.82	114.66	11.102
2,200.00	2,197.95	0.00	-63.72	4.70	2,199.39	2,197.95	-40.72	25.00	4.62	97.62	88.39	114.66	10.577
2,300.00	2,297.95	0.00	-63.72	4.91	2,299.39	2,297.95	-40.72	25.00	4.84	97.62	87.95	114.66	10.097
2,400.00	2,397.95	0.00	-63.72	5.13	2,399.39	2,397.95	-40.72	25.00	5.06	97.62	87.51	114.66	9.659
2,500.00	2,497.95	0.00	-63.72	5.34	2,499.39	2,497.95	-40.72	25.00	5.28	97.62	87.07	114.66	9.256
2,600.00	2,597.95	0.00	-63.72	5.56	2,599.39	2,597.95	-40.72	25.00	5.50	97.62	86.63	114.66	8.885
2,700.00	2,697.95	0.00	-63.72	5.78	2,699.39	2,697.95	-40.72	25.00	5.73	97.62	86.19	114.66	8.542
2,800.00	2,797.95	0.00	-63.72	6.00	2,799.39	2,797.95	-40.72	25.00	5.95	97.62	85.75	114.66	8.224
2,900.00	2,897.95	0.00	-63.72	6.22	2,899.39	2,897.95	-40.72	25.00	6.17	97.62	85.30	114.66	7.928
3,000.00	2,997.95	0.00	-63.72	6.44	2,999.39	2,997.95	-40.72	25.00	6.39	97.62	84.86	114.66	7.653
3,100.00	3,097.95	0.00	-63.72	6.66	3,099.39	3,097.95	-40.72	25.00	6.61	97.62	84.42	114.66	7.396

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Croft Farms 3407 15-2H/ Job# 9199274/ Nabors 774 - Wellbore #1 - Design 011712 A1
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
3,200.00	3,197.95	0.00	-63.72	6.88	3,199.39	3,197.95	-40.72	25.00	6.84	97.62	83.97	114.66	7.155
3,300.00	3,297.95	0.00	-63.72	7.10	3,299.39	3,297.95	-40.72	25.00	7.06	97.62	83.53	114.66	6.929
3,400.00	3,397.95	0.00	-63.72	7.32	3,399.39	3,397.95	-40.72	25.00	7.28	97.62	83.08	114.66	6.717
3,500.00	3,497.95	0.00	-63.72	7.54	3,499.39	3,497.95	-40.72	25.00	7.50	97.62	82.64	114.66	6.518
3,600.00	3,597.95	0.00	-63.72	7.76	3,599.39	3,597.95	-40.72	25.00	7.73	97.62	82.19	114.66	6.330
3,700.00	3,697.95	0.00	-63.72	7.98	3,699.39	3,697.95	-40.72	25.00	7.95	97.62	81.75	114.66	6.152
3,800.00	3,797.95	0.00	-63.72	8.20	3,799.39	3,797.95	-40.72	25.00	8.17	97.62	81.30	114.66	5.984
3,900.00	3,897.95	0.00	-63.72	8.42	3,899.39	3,897.95	-40.72	25.00	8.40	97.62	80.86	114.66	5.825
3,936.55	3,934.50	0.00	-63.72	8.50	3,935.93	3,934.50	-40.72	25.00	8.48	97.62	80.70	114.66	5.769
4,000.00	3,997.95	0.00	-63.72	8.64	3,996.69	3,995.22	-42.16	25.01	8.61	98.28	81.09	115.42	5.717
4,100.00	4,097.95	0.00	-63.72	8.87	4,089.52	4,087.22	-54.02	25.13	8.78	104.53	86.94	121.30	5.941
4,200.00	4,197.95	0.00	-63.72	9.09	4,177.90	4,172.70	-76.28	25.34	8.97	119.95	101.94	130.58	6.661
4,300.00	4,297.95	0.00	-63.72	9.31	4,259.70	4,248.81	-106.11	25.62	9.17	147.16	128.74	139.90	7.989
4,400.00	4,397.95	0.00	-63.72	9.53	4,333.75	4,314.39	-140.45	25.95	9.40	186.40	167.59	147.44	9.906
4,500.00	4,497.95	0.00	-63.72	9.76	4,400.00	4,369.77	-176.75	26.29	9.64	236.16	216.97	153.01	12.305
4,600.00	4,597.95	0.00	-63.72	9.98	4,458.03	4,415.35	-212.64	26.63	9.90	294.49	274.94	156.98	15.066
4,700.00	4,697.95	0.00	-63.72	10.20	4,509.18	4,453.01	-247.25	26.96	10.17	359.66	339.78	159.86	18.092
4,800.00	4,797.95	0.00	-63.72	10.42	4,550.00	4,481.22	-276.74	27.24	10.41	430.32	410.13	161.81	21.316
4,900.00	4,897.95	0.00	-63.72	10.65	4,600.00	4,513.42	-314.97	27.60	10.74	505.38	484.87	163.83	24.640
5,000.00	4,997.95	0.00	-63.72	10.87	4,627.95	4,530.23	-337.29	27.82	10.95	583.87	563.08	164.82	28.089
5,100.00	5,097.95	0.00	-63.72	11.09	4,650.00	4,542.87	-355.36	27.99	11.11	665.43	644.38	165.53	31.612
5,200.00	5,197.95	0.00	-63.72	11.32	4,685.48	4,562.03	-385.22	28.27	11.40	749.16	727.83	166.57	35.114
5,300.00	5,297.95	0.00	-63.72	11.54	4,719.09	4,578.99	-414.24	28.55	11.70	834.87	813.26	167.44	38.630
5,400.00	5,397.95	0.00	-63.72	11.76	4,769.09	4,603.99	-457.54	28.96	12.16	921.03	899.13	168.55	42.041
5,500.00	5,497.95	0.00	-63.72	11.99	4,819.09	4,628.99	-500.83	29.37	12.63	1,007.27	985.07	169.47	45.366
5,600.00	5,597.95	0.00	-63.72	12.21	4,851.27	4,645.08	-528.70	29.63	12.95	1,093.71	1,071.24	169.99	48.670
5,700.00	5,697.95	0.00	-63.72	12.43	4,876.92	4,657.50	-551.14	29.85	13.22	1,181.12	1,158.38	170.37	51.952
5,800.00	5,797.95	0.00	-63.72	12.66	4,900.00	4,667.99	-571.70	30.04	13.46	1,269.82	1,246.83	170.69	55.226
5,900.00	5,897.95	0.00	-63.72	12.88	4,900.00	4,667.99	-571.70	30.04	13.46	1,359.57	1,336.35	170.69	58.560
6,000.00	5,997.95	0.00	-63.72	13.10	4,923.49	4,677.98	-592.96	30.24	13.72	1,450.09	1,426.61	171.00	61.769
6,100.00	6,097.95	0.00	-63.72	13.33	4,950.00	4,688.40	-617.33	30.48	14.01	1,541.68	1,517.94	171.32	64.942
6,200.00	6,197.95	0.00	-63.72	13.55	4,950.00	4,688.40	-617.33	30.48	14.01	1,633.62	1,609.65	171.32	68.173

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Croft Farms 3407 15-2H/ Job# 9199274/ Nabors 774 - Wellbore #1 - Design 011712 A1
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
6,300.00	6,297.95	0.00	-63.72	13.77	4,950.00	4,688.40	-617.33	30.48	14.01	1,726.44	1,702.26	171.32	71.381
6,323.00	6,320.95	0.00	-63.72	13.82	4,950.00	4,688.40	-617.33	30.48	14.01	1,747.91	1,723.67	171.32	72.115

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Farms 3407 #15-1H / Job# 9199272/ Nabors 774 - Wellbore #1 - Design 011212 A0
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.09	100.00	100.00	-0.03	10.00	0.09	10.00	9.83	90.20	58.540
200.00	200.00	0.00	0.00	0.31	200.00	200.00	-0.03	10.00	0.31	10.00	9.38	90.20	16.120
300.00	300.00	0.00	0.00	0.53	300.00	300.00	-0.03	10.00	0.53	10.00	8.93	90.20	9.347
400.00	399.97	0.00	-2.18	0.75	399.91	399.87	2.14	10.00	0.76	12.37	10.85	170.01	8.159
500.00	499.77	0.00	-8.37	0.97	499.27	499.02	8.62	10.00	1.00	20.31	18.34	154.74	10.315
600.00	599.53	0.00	-15.35	1.20	598.33	597.57	18.62	10.00	1.24	31.51	29.07	143.49	12.931
700.00	699.29	0.00	-22.32	1.44	697.54	696.24	28.99	10.00	1.49	43.52	40.62	137.86	14.983
800.00	799.04	0.00	-29.30	1.68	797.74	796.01	38.22	10.00	1.72	54.90	51.55	135.58	16.397
900.00	898.80	0.00	-36.28	1.93	898.38	896.43	44.85	10.00	1.92	64.49	60.72	135.72	17.111
1,000.00	998.55	0.00	-43.25	2.18	999.30	997.27	48.84	10.00	2.12	72.27	68.08	137.35	17.236
1,100.00	1,098.31	0.00	-50.23	2.43	1,100.36	1,098.31	50.17	10.00	2.31	78.39	73.77	140.14	16.978
1,200.00	1,198.08	0.00	-56.99	2.66	1,200.13	1,198.08	50.17	10.00	2.51	83.70	78.66	143.12	16.612
1,300.00	1,297.97	0.00	-61.62	2.85	1,300.02	1,297.97	50.17	10.00	2.72	87.44	82.00	144.97	16.084
1,400.00	1,397.95	0.00	-63.62	3.03	1,399.99	1,397.95	50.17	10.00	2.93	89.09	83.26	145.73	15.263
1,500.00	1,497.95	0.00	-63.72	3.23	1,499.99	1,497.95	50.17	10.00	3.14	89.17	82.92	55.76	14.269
1,600.00	1,597.95	0.00	-63.72	3.43	1,599.99	1,597.95	50.17	10.00	3.36	89.17	82.50	55.76	13.362
1,700.00	1,697.95	0.00	-63.72	3.64	1,699.99	1,697.95	50.17	10.00	3.57	89.17	82.07	55.76	12.558
1,800.00	1,797.95	0.00	-63.72	3.85	1,799.99	1,797.95	50.17	10.00	3.79	89.17	81.64	55.76	11.841
1,900.00	1,897.95	0.00	-63.72	4.06	1,899.99	1,897.95	50.17	10.00	4.00	89.17	81.21	55.76	11.198
2,000.00	1,997.95	0.00	-63.72	4.27	1,999.99	1,997.95	50.17	10.00	4.22	89.17	80.77	55.76	10.619
2,100.00	2,097.95	0.00	-63.72	4.48	2,099.99	2,097.95	50.17	10.00	4.44	89.17	80.34	55.76	10.096
2,200.00	2,197.95	0.00	-63.72	4.70	2,199.99	2,197.95	50.17	10.00	4.66	89.17	79.90	55.76	9.620
2,300.00	2,297.95	0.00	-63.72	4.91	2,299.99	2,297.95	50.17	10.00	4.88	89.17	79.46	55.76	9.186
2,400.00	2,397.95	0.00	-63.72	5.13	2,399.99	2,397.95	50.17	10.00	5.10	89.17	79.02	55.76	8.788
2,500.00	2,497.95	0.00	-63.72	5.34	2,499.99	2,497.95	50.17	10.00	5.32	89.17	78.58	55.76	8.423
2,600.00	2,597.95	0.00	-63.72	5.56	2,599.99	2,597.95	50.17	10.00	5.54	89.17	78.14	55.76	8.087
2,700.00	2,697.95	0.00	-63.72	5.78	2,699.99	2,697.95	50.17	10.00	5.76	89.17	77.70	55.76	7.775
2,800.00	2,797.95	0.00	-63.72	6.00	2,799.99	2,797.95	50.17	10.00	5.98	89.17	77.26	55.76	7.487
2,900.00	2,897.95	0.00	-63.72	6.22	2,899.99	2,897.95	50.17	10.00	6.21	89.17	76.82	55.76	7.219
3,000.00	2,997.95	0.00	-63.72	6.44	2,999.99	2,997.95	50.17	10.00	6.43	89.17	76.37	55.76	6.969
3,100.00	3,097.95	0.00	-63.72	6.66	3,099.99	3,097.95	50.17	10.00	6.65	89.17	75.93	55.76	6.735
3,200.00	3,197.95	0.00	-63.72	6.88	3,199.99	3,197.95	50.17	10.00	6.87	89.17	75.49	55.76	6.517

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Farms 3407 #15-1H / Job# 9199272/ Nabors 774 - Wellbore #1 - Design 011212 A0
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
3,300.00	3,297.95	0.00	-63.72	7.10	3,299.99	3,297.95	50.17	10.00	7.10	89.17	75.04	55.76	6.312
3,400.00	3,397.95	0.00	-63.72	7.32	3,399.99	3,397.95	50.17	10.00	7.32	89.17	74.60	55.76	6.119
3,500.00	3,497.95	0.00	-63.72	7.54	3,499.99	3,497.95	50.17	10.00	7.54	89.17	74.15	55.76	5.938
3,600.00	3,597.95	0.00	-63.72	7.76	3,599.99	3,597.95	50.17	10.00	7.76	89.17	73.71	55.76	5.767
3,700.00	3,697.95	0.00	-63.72	7.98	3,699.99	3,697.95	50.17	10.00	7.99	89.17	73.26	55.76	5.606
3,800.00	3,797.95	0.00	-63.72	8.20	3,799.99	3,797.95	50.17	10.00	8.21	89.17	72.82	55.76	5.453
3,900.00	3,897.95	0.00	-63.72	8.42	3,899.99	3,897.95	50.17	10.00	8.43	89.17	72.37	55.76	5.308
3,962.15	3,960.09	0.00	-63.72	8.56	3,962.14	3,960.09	50.17	10.00	8.57	89.17	72.09	55.76	5.222
4,000.00	3,997.95	0.00	-63.72	8.64	3,999.22	3,997.18	50.26	10.00	8.65	89.22	71.98	55.72	5.174
4,100.00	4,097.95	0.00	-63.72	8.87	4,092.04	4,089.63	57.71	9.92	8.87	93.92	76.24	51.91	5.311
4,200.00	4,197.95	0.00	-63.72	9.09	4,181.49	4,177.10	76.13	9.71	9.09	107.81	89.68	43.96	5.946
4,300.00	4,297.95	0.00	-63.72	9.31	4,265.18	4,256.27	103.12	9.40	9.32	133.11	114.54	35.34	7.167
4,400.00	4,397.95	0.00	-63.72	9.53	4,341.61	4,325.38	135.68	9.04	9.56	170.20	151.21	28.20	8.961
4,500.00	4,497.95	0.00	-63.72	9.76	4,410.20	4,384.13	171.02	8.64	9.82	217.80	198.41	22.93	11.233
4,600.00	4,597.95	0.00	-63.72	9.98	4,471.02	4,433.19	206.93	8.24	10.08	274.12	254.36	19.17	13.871
4,700.00	4,697.95	0.00	-63.72	10.20	4,524.58	4,473.74	241.90	7.84	10.36	337.50	317.39	16.48	16.783
4,800.00	4,797.95	0.00	-63.72	10.42	4,571.61	4,507.10	275.04	7.47	10.63	406.58	386.14	14.51	19.893
4,900.00	4,897.95	0.00	-63.72	10.65	4,612.90	4,534.55	305.88	7.13	10.89	480.25	459.50	13.04	23.145
5,000.00	4,997.95	0.00	-63.72	10.87	4,650.00	4,557.65	334.89	6.80	11.14	557.66	536.61	11.89	26.494
5,100.00	5,097.95	0.00	-63.72	11.09	4,681.22	4,575.91	360.22	6.51	11.38	638.13	616.80	11.03	29.915
5,200.00	5,197.95	0.00	-63.72	11.32	4,709.56	4,591.52	383.87	6.25	11.60	721.12	699.51	10.33	33.373
5,300.00	5,297.95	0.00	-63.72	11.54	4,738.05	4,606.25	408.25	5.97	11.84	806.21	784.33	9.69	36.842
5,400.00	5,397.95	0.00	-63.72	11.76	4,781.05	4,627.75	445.48	5.56	12.22	892.45	870.28	8.84	40.252
5,500.00	5,497.95	0.00	-63.72	11.99	4,831.05	4,652.75	488.78	5.07	12.69	978.78	956.31	8.01	43.560
5,600.00	5,597.95	0.00	-63.72	12.21	4,881.05	4,677.75	532.08	4.58	13.17	1,065.15	1,042.38	7.31	46.786
5,700.00	5,697.95	0.00	-63.72	12.43	4,900.00	4,687.14	548.54	4.40	13.36	1,152.08	1,129.06	7.08	50.047
5,800.00	5,797.95	0.00	-63.72	12.66	4,922.14	4,697.59	568.06	4.18	13.59	1,240.20	1,216.93	6.82	53.278
5,900.00	5,897.95	0.00	-63.72	12.88	4,950.00	4,709.86	593.06	3.90	13.88	1,329.60	1,306.06	6.50	56.470
6,000.00	5,997.95	0.00	-63.72	13.10	4,950.00	4,709.86	593.06	3.90	13.88	1,419.67	1,395.90	6.50	59.728
6,100.00	6,097.95	0.00	-63.72	13.33	4,950.00	4,709.86	593.06	3.90	13.88	1,510.98	1,486.99	6.50	62.978
6,200.00	6,197.95	0.00	-63.72	13.55	4,978.86	4,721.55	619.45	3.60	14.20	1,602.50	1,578.24	6.20	66.058
6,300.00	6,297.95	0.00	-63.72	13.77	5,000.00	4,729.43	639.06	3.38	14.43	1,695.03	1,670.52	5.99	69.146

Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)
Offset Design: Sec 15-T34S-R07W - Albright Farms 3407 #15-1H / Job# 9199272/ Nabors 774 - Wellbore #1 - Design 011212 A0
Scan Range: 0.00 to 6,323.00 ft. Measured Depth.
Scan Radius is 4,000.00 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids (ft)	Relative Highside Bearing	Clearance Factor
6,323.00	6,320.95	0.00	-63.72	13.82	5,000.00	4,729.43	639.06	3.38	14.43	1,716.34	1,691.77	5.99	69.868

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	6,323.00	Design 011711 A1	MWD+SC

Anticollision Info

Error Model: ISCWSA
Scan Method: Closest Approach 3D
Output errors are at 2.00 sigma

Ellipse error terms are correlated across survey tool tie-on points.
Calculated ellipses incorporate surface errors.
Separation is the actual distance between ellipsoids.
Distance Between centres is the straight line distance between wellbore centres.
Clearance Factor = Distance Between Profiles / (Distance Between Profiles - Ellipse Separation).
All station coordinates were calculated using the Minimum Curvature method.

HALLIBURTON

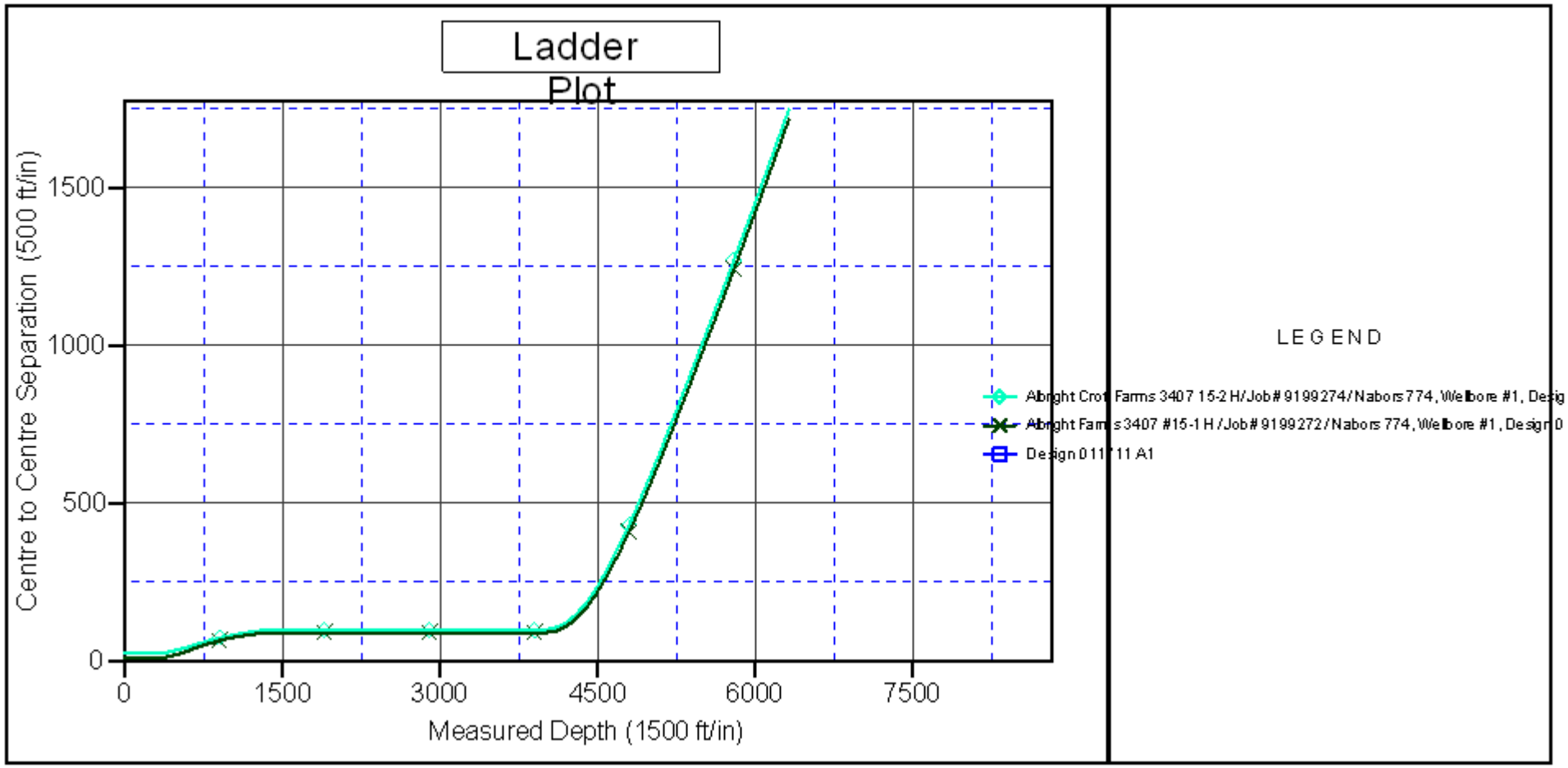
Anticollision Report for Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774 - Design 011711 A1

Direction and Coordinates are relative to True North Reference.

Vertical Depths are relative to well @ 1419.00ft. Northing and Easting are relative to Albright Croft Farms 3407 15-1 SWD/ Job# 9199564/ Nabors 774.

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502.

Central Meridian is -98.00°, Grid Convergence at Surface is: 0.26 °.



Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

May 22, 2012

Damonica Pierson
Shell Gulf of Mexico Inc.
150 N DAIRY-ASHFORD (77079)
PO BOX 576 (77001-0576)
HOUSTON, TX 77001-0576

Re: ACO1
API 15-077-21768-00-00
ALBRIGHT CROFT 3407 15-1
SW/4 Sec.15-34S-07W
Harper County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Damonica Pierson

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
SHELL WESTERN E & P INC	22-FEB-12	1001889790	JONATHAN M SCHULZ III

LEASE & WELL NAME	LOCATION	COUNTY-PARISH-BLOCK
CROFT ALBRIGHT 3407 #15-1 - API 1507721768000	15-34S-7W	Harper Kansas

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
McAlester	NABORS #774	Surface

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
9-5/8" Top Cem Plug, Nitrile cvr, Phe	Provided by Customer						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
fresh water			8.34				20	
Class C + 2% CaCl + .25pps Celloflake		500	14.8	1.35	6.34	02:45	120	75.34
Water			8.34				60.88	
						TOTAL	200.88	75.34

Available Mix Water 600 Bbl. Available Displ. Fluid 500 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
12.25		800	8.921	9.625	36	CSG	830	830	J-55			

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
17.	18	84		60	60					9.625	8RD	FRESH WATER	8.34

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
60.9	BBLS	Water	8.34	265					2816	2000	Frac Tanks

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: **Arrive on location @ 0620, Running Casing,**

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 4263 PSI
						CIRCULATING WELL - RIG [X] BJ [ ]
06:20						Arrive on location
14:14	4263					Test pumps & Lines
14:16	0		5.6		WATER	open well/start water ahead
14:20	257		5.6	20	WATER	end water ahead/start slurry@ 14.8ppg
14:37	88		4	65	CEMENT	bbls pumped when cement at shoe
14:59	160		3	125	CEMENT	end cement /shutdown
15:01	90		3		WATER	drop TRP/start displacement
15:05	183		4	15	WATER	bbls pumped when cement to surface
15:23	877		3	62	WATER	bbls pumped/bump plug/shutdown
15:26	0			-.25		test float/ bbls return
						45 bbls of cement circulated to surface
						Thanks for Using BHI Pressure Pumping
						Jonathan Schulz & Crew

BUMPED PLUG Y N	PSI TO BUMP PLUG	TEST FLOAT EQUIP. Y N	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT Y N	SERVICE SUPERVISOR SIGNATURE:
[Y] [ ]	877	[Y] [ ]	45	207	0	[ ] [N]	

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
SHELL WESTERN E & P INC	09-MAR-12	1001893710	JUSTIN D STAMPER

LEASE & WELL NAME	LOCATION	COUNTY-PARISH-BLOCK
CROFT ALBRIGHT 3407 #15-1 - API 1507721768000	15-34S-7W	Harper Kansas

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
McAlester	NABORS #774	Intermediate

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
7" Top Cem Plug, Nitrile cvr, Phen	Shoe PROVIDED BY CUSTOMER						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
MUD CLEAN			8.34				20	
35:65:6(POZ,C,GEL)+10%SALT+4PPSKOLSEAL		790	12.4	2.24	12.12	03:45	315	227.85
50:50:2(POZ,C,GEL)+5%SALT+.15%SMS+.3%FL52+4		160	14.2	1.32	5.66	03:45	37.53	21.55
WATER			8.34				214	
						TOTAL	586.53	249.40

Available Mix Water 500 Bbl. Available Displ. Fluid 500 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
8.75		5460	6.366	7	23	CSG	5450	5450	L-80			

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
8.9	9.625	36		800	800			4600	4600	7	8RD	WATER BASED MU	9

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
213.4	BBLS	WATER	8.34	1100					5000	3000	FRAC TANK

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: ARRIVE ON LOCATION, RIG UP, WAIT ON CASING

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 5500 PSI
						CIRCULATING WELL - RIG [X] BJ [ ]
14:00						ARRIVE ON LOCATION
23:00						SAFETY MEETING
23:37	5300				WATER	TEST LINES, START MUD CLEAN
23:43	400		4		MUD CLN	PRESSURE UP ON BALL TO OPEN PORTS, 706 PSI TO OPEN
23:48	300		3	20	MUD CLN	FINISH MUD CLEAN, START LEAD SLURRY
00:50	300		5	315	LEAD	FINISH LEAD, START TAIL SLURRY
01:06	50		2	38	TAIL	FINISH TAIL, DROP PLUG, DISPLACE WELL
01:39	1000		8	204	WATER	SLOW TO BUMP PLUG
01:45	600		3	11	WATER	SHUT DOWN DID NOT BUMP, .5 BBL OVER, CHECK FLOAT
01:48					WATER	BLEED OFF RECIVED .5 BBLS BACK TO TRUCK
						FLOAT HOLDING
						THANK YOU FOR USING BHI
						JUSTIN STAMPER AND CREW

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
Y [N]		[Y] N	0	566	0	[Y] N	

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
SHELL WESTERN E & P INC	13-MAR-12	1001894549	JONATHAN M SCHULZ III

LEASE & WELL NAME	LOCATION	COUNTY-PARISH-BLOCK
CROFT ALBRIGHT 3407 #15-1 - API 1507721768000	15-34S-7W	Harper Kansas

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
McAlester	NABORS #774	Squeeze-Top

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
	Provided by customer						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
SealBond Plus Spacer			8.45				20	
C 15:85:8 + 10% NaCl + 0.5% SMS + 0.01% Staticfree		210	12.4	2.42	13.7	05:10	90.5	68.49
fresh water			8.34				2	
						TOTAL	112.5	68.49

Available Mix Water 300 Bbl. Available Displ. Fluid 220 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
8.75		1600	6.366	7	23	CSG	1600	1600				

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
8.9	9.625	36		800	800			0	1600	7	8RD	WATER BASED MU	8.5

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
0	BBLS	fresh water	8.34			2100					Frac tank

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: Arri ve on location @ 2350, Rig Up

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 3784 PSI
						CIRCULATING WELL - RIG [ ] BJ [X]
23:50						Arrive on location
02:32	3784				WATER	test pumps & lines
02:37	0		1.2		WATER	open well/ start injection test
02:40	1133		4	10	WATER	shutdown/ good test
02:47						mix spacer
04:01	141		.5		SPACER	open well/start spacer ahead
04:14	1151		2	23	SPACER	end spacer ahead/ start slurry @ 12.4ppg
04:56	435		1.6	85	SLURRY	end slurry/ start displacment
04:58	298		1.6	2	WATER	shutdown/ bleed off pressure
				-1.5		bbls returned. shut in well
						Jonathan Schulz & Crew

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
Y [N]	0	Y [N]	0	120	230	Y [N]	