

Initial Application Part I

Received 7/6/2021

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

RECEIVED: 7/6/21	REVIEWER:	TYPE: SWD	APP NO: pBL2118844958
-------------------------	-----------	------------------	------------------------------

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Geological & Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Enduring Resources IV, LLC **OGRID Number:** 372286
Well Name: WLU Unit 2309-24N WSW **API:** SJ-4301 POD3
Pool: Entrada **Pool Code:** 96436

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

- 1) **TYPE OF APPLICATION:** Check those which apply for [A]
 A. Location – Spacing Unit – Simultaneous Dedication
 NSL NSP_(PROJECT AREA) NSP_(PRORATION UNIT) SD
- B. Check one only for [I] or [II]
 [I] Commingling – Storage – Measurement
 DHC CTB PLC PC OLS OLM
 [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
 WFX PMX SWD IPI EOR PPR

SWD-2438

- 2) **NOTIFICATION REQUIRED TO:** Check those which apply.
 A. Offset operators or lease holders
 B. Royalty, overriding royalty owners, revenue owners
 C. Application requires published notice
 D. Notification and/or concurrent approval by SLO
 E. Notification and/or concurrent approval by BLM
 F. Surface owner
 G. For all of the above, proof of notification or publication is attached, and/or,
 H. No notice required

<u>FOR OCD ONLY</u>	
<input type="checkbox"/>	Notice Complete
<input type="checkbox"/>	Application Content Complete

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Deidre Duffy

 Print or Type Name

 Signature

2/24/2021

 Date

808-352-0200

 Phone Number

deidre.duffy@wsp.com

 e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance XX Disposal _____ Storage
Application qualifies for administrative approval? XX Yes _____ No

II. OPERATOR: Enduring Resources IV, LLC

ADDRESS: 200 Energy Court, Farmington, New Mexico 87401

CONTACT PARTY: Deidre Duffy PHONE: 808-352-0200

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes XX No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Deidre Duffy, WSP USA Inc. TITLE: Senior Ecologist

SIGNATURE:  DATE: 2/24/2021

E-MAIL ADDRESS: deidre.duffy@wsp.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

Tubing Size: 4.5" Lining Material: Internally coated corrosion resistant tubing

Type of Packer: Dual grip packer, coated with corrosion resistant material

Packer Setting Depth: 6803'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? _____ Yes No

If no, for what purpose was the well originally drilled? Water diversion for oil well fracturing

2. Name of the Injection Formation: Entrada

3. Name of Field or Pool (if applicable): Entrada Pool 964360

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No, N/A

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

See attached geologic and reservoir information

: YELLOW-HIGHLIGHTED ENTRIES MAY REQUIRE RECALCULATION BY PERMITTEE



ENDURING RESOURCES IV, LLC
511 SIXTEENTH STREET, SUITE 700
DENVER, COLORADO 80202

2018 NOV 15 PM 4: 39

STATE ENGINEER OFFICE
 AZTEC, NEW MEXICO

DRILLING PLAN: *Drill, complete, and equip water supply well in the Entrada formation*

WELL INFORMATION:

Name: West Lybrook Unit 2309-24N WSW (SJ-4301 POD3)

State: New Mexico

County: San Juan

Surface Elevation: 6,878 ft ASL (GL) 6,892 ft ASL (KB)
Surface Location: 24-23N-09W Sec-Twn-Rng TBD ft FNL TBD ft FEL
 TBD ° N latitude TBD ° W longitude (NAD 83)
BH Location: 24-23N-09W Sec-Twn-Rng TBD ft FNL TBD ft FWL
 TBD ° N latitude TBD ° W longitude (NAD 83)

Driving Directions: From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM: south on 550 for approximately 50 miles to Enduring Gallup field. Exact directions TBD.

GEOLOGIC AND RESERVOIR INFORMATION:

Pragnosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,797	95	95	W	normal
	Kirtland	6,577	315	315	W	normal
	Fruitland	6,467	425	425	G, W	sub
	Pictured Cliffs	6,167	725	725	G, W	sub
	Lewis	5,992	900	900	G, W	normal
	Chacra	5,827	1,065	1,065	G, W	normal
	Cliff House	5,442	1,450	1,450	G, W	sub
	Menefee	4,692	2,200	2,200	G, W	normal
	Point Lookout	3,767	3,125	3,125	G, W	normal
	Mancos	3,542	3,350	3,350	O,G	normal
	Gallup	3,342	3,550	3,550	O,G	normal
	Base Greenhorn	1,827	5,065	5,065	G, W	normal
	Dakota	1,777	5,115	5,115	G, W	normal
	Morrison	1,517	5,375	5,375	G, W	normal
	Todilto	697	6,195	6,195	G, W	normal
	Entrada	642	6,250	6,250	O,G,W	normal
	TOTAL DEPTH	142	6,750	6,750	O,G,W	normal

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Entrada

Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradient anticipated in all formations

Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,690 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 1,320 psi

Temperature: Maximum anticipated BHT is 205° F or less

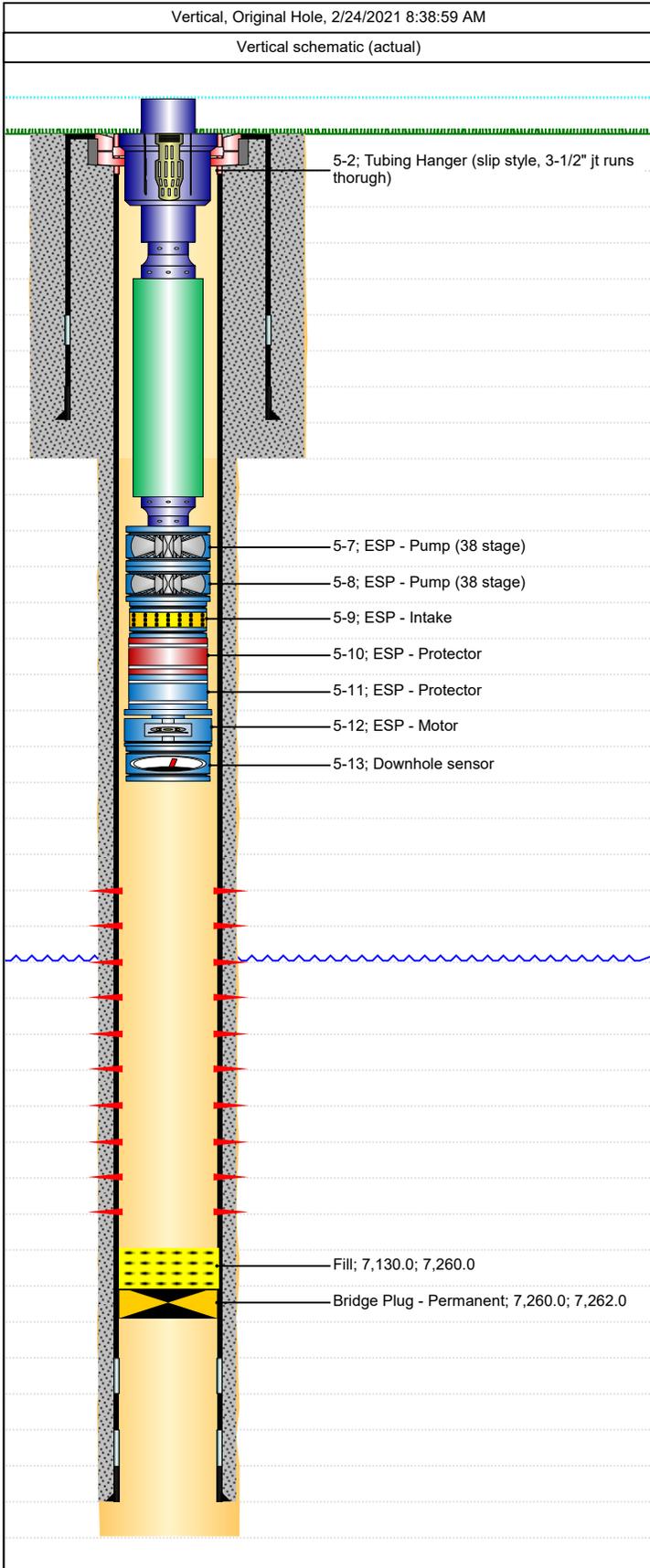
H₂S INFORMATION:

H₂S Zones: Encountering hydrogen-sulfide bearing zones is NOT anticipated.

Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

Well Name: W LYBROOK UNIT 2309-24N WSW

API/UWI SJ-4301 POD 3	Surface Legal Location SE/4, SW/4, Section 24, Twp 23N, Rng 0...	Field Name CHACO	License #	State/Province NEW MEXICO	Well Configuration Type Vertical
Original KB Elevation (ft) 6,893.00	KB-Tubing Head Distance (ft)	Spud Date 1/3/2019 10:00	Rig Release Date 1/17/2019 12:00	PBD (All) (ftKB) Original Hole - 7,260.0	Total Depth All (TVD) (ftKB) Original Hole - 7,407.0



Casing Strings						
Csg Des	OD (in)	Wt/Len (lb/ft)	Grade	Top Thread	Top (ftKB)	Set Depth (ftKB)
Surface Casing	13 3/8	54.50	J-55	BTS	15.0	397.2
Production Casing	7	26.00	L-80	LT&C	15.0	7,397.8

Cement	
Description Surface Cement	Comment Pump 20 bbls FW spacer & 92.5 bbls Type G cmt (440 sxs) @ 15.8 PPG, drop plug & disp w/ 52. bbls H2O, bump plug @ 178 psi, circ 38 bbls good cmt to surface. Check float, Shut in cement head, floats wouldn't hold. Wait 3 hrs, check float, remove cement head, secure casing.
Description Production Cement	Comment Pumped 80 bbls tuned spacer @ 10.5 ppg. Pumped 184 bbls (525 sks) of lead cement at 12.3 ppg, 1.91 ft3/sk, 10.28 gal/sk H2O. Pumped 102 bbls (420 sks) of tail cement at 13.3 ppg, 1.36 ft3/sk, 6.01 gal/sk H2O. Dropped 1 top plugs. Displaced with 279 bbls freshwater (279 actual displacement at 2016 psi/7.9 BPM & pressured up to 2854 psi.) Maintained returns throughout cement job. Circulated 52 bbls of good cement to surface. Floats held, bled back 2.5 bbls, Top of Tail 3729. Cement in place @ 04:30

Perforations					
Date	Top (ftKB)	Btm (ftKB)	Nom Hole Dia (in)	Shot Dens (shots/ft)	Entered Shot Total
1/27/2019	6,851.0	6,856.0	0.420	4.0	20
1/27/2019	6,895.0	6,900.0	0.420	4.0	20
1/27/2019	6,917.0	6,922.0	0.420	4.0	20
1/27/2019	6,953.0	6,958.0	0.420	4.0	20
1/27/2019	6,985.0	6,990.0	0.420	4.0	20

Tubing Strings							
Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)				
Tubing - Production	2/2/2021	2,273.62	2,282.6				
Jts	Item Des	OD (in)	Len (ft)	Top (ftKB)	Btm (ftKB)	Grade	Wt (lb/ft)
1	Tubing (1 jt 3-1/2" at surface running through hanger)	3 1/2	6.00	9.0	15.0	J-55	9.30
1	Tubing Hanger (slip style, 3-1/2" jt runs thorough)	6.27	1.50	15.0	16.5		
1	Tubing (1 jt 3-1/2" at surface running through hanger)	3 1/2	24.85	16.5	41.3	J-55	9.30
1	Cross Over (3-1/2" 8rd EUE x 4-1/2" LTC)	3 1/2	1.10	41.3	42.4		
50	Casing	4 1/2	2,161.0	42.4	2,203.5	P-110	11.60
1	Cross Over (4-1/2" LTC x 3-1/2" 8rd EUE)	3 1/2	1.10	2,203.5	2,204.6		
1	ESP - Pump (38 stage)	5.38	12.30	2,204.6	2,216.9		
1	ESP - Pump (38 stage)	5.38	12.30	2,216.9	2,229.2		
1	ESP - Intake	5	1.20	2,229.2	2,230.4		
1	ESP - Protector	5.13	5.80	2,230.4	2,236.2		
1	ESP - Protector	5.13	8.90	2,236.2	2,245.1		
1	ESP - Motor	5.62	35.00	2,245.1	2,280.1		
1	Downhole sensor	5.4	2.50	2,280.1	2,282.6		

Rod Strings					
Rod Description	Run Date	String Length (ft)	Set Depth (ftKB)		
Jts	Item Des	OD (in)	Len (ft)	Top (ftKB)	Btm (ftKB)



March 15, 2021

Mr. Jim Griswold
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

**Subject: Application for Authorization to Inject
SJ-4301 POD 3, WLU Unit 2309-24N WSW
San Juan County, New Mexico**

Mr. Griswold:

Below is the supplemental information for Form C-108, *Application for Authorization to Inject*, for the existing water-supply well SJ-4301 POD 3 (WLU Unit 2309-24N WSW), permitted with the New Mexico Office of the State Engineer (NMOSE). Unless otherwise stated, all measured depths are referenced from the top of the kelly bushing (KB), which is 6,893 feet above mean seal level (amsl). Ground-surface elevation at this location is 6,878 feet amsl.

- I. Purpose: Water disposal in the Entrada Formation
- II. Operator: Enduring Resources IV, LLC
Operator Phone Number: (505) 386-8205
Operator Address: 200 Energy Court, Farmington, NM 87401
Contact: Deidre Duffy (WSP), (808) 352-0200
- III. Well Data
Lease: US Bureau of Land Management (BLM), USA NMNM 036949 (NMNM02119)
Lease Size: 1,750.63 Acres
Lease Area: Sec24, Sec25, Sec26, and Sec35 of T23N / R9W
Closest Lease Line: SE/SW OF Sec24, T23N / R9W
Well Name & Number: WLU Unit 2309-24N WSW (SJ-4301 POD3)
Well Location: 294' FSL and 2284' FWL, Unit N, Section 24, Township 23N, Range 9 West
A survey plat of the pad is attached as Enclosure A

Surface Casing: 13 3/8" outer diameter, 54.5#, J-55 Steel, set to 397.2 feet. Pump 20 barrels (bbls) FW spacer & 92.5 bbls Type G cmt (440 sxs) @ 15.8 PPG, drop plug & disp w/ 52. bbls H2O, bump plug @ 178 psi, circ 38 bbls good cmt to surface. Check float, Shut in cement head, floats wouldn't hold. Wait 3 hrs, check float, remove cement head, secure casing.

Production Casing: 7" outer diameter, 26#, L-80 Steel, set to 7,397 feet, plug back total depth 7,260 feet. Pumped 80 bbls tuned spacer @ 10.5 ppg. Pumped 184 bbls (525 sxs) of lead cement at 12.3 ppg, 1.91 ft3/sk, 10.28 gal/sk H2O. Pumped 102 bbls (420 sxs) of tail cement at 13.3 ppg, 1.36 ft3/sk, 6.01 gal/sk H2O. Dropped 1 top plugs. Displaced with 279 bbls freshwater (279 actual displacement at 2016 psi/7.9 BPM & pressured up to 2854 psi.) Maintained returns throughout cement job. Circulated 52 bbls of good cement to surface. Floats held, bled back 2.5 bbls, Top of Tail 3729.

Tubing: 4.5" corrosion resistant tubing.

Dual grip packer coated with corrosion resistant material set at 6,803'.

WSP USA
848 EAST 2ND AVENUE
DURANGO CO 81301

Tel.: 970-385-1096
wsp.com



Disposal zone will be the Entrada sandstone in the SWD; Entrada (96436) pool. Entrada is described as a fine to very fine-grained sandstone with fair to good porosity and permeability.

Disposal interval is 6,851' to 6,990'.

The well was originally drilled as a diversion for water.

Well bore is perforated at 6,851' to 6,990'.

Top of the Entrada is at 6,250 feet. Bottom of the closest overlying productive formation (Dakota) is at 5,375 feet. There will be 1,476 feet between the highest perforation and the bottom of the Dakota. A well bore diagram is included as Enclosure B.

- IV. This is not an expansion of an existing injection project.
- V. Enclosure C depicts all wells (active and plugged) and leases within two miles. A half-mile radius area of review is also depicted on the figure.
- VI. There are no active wells within the area of review. Enduring Resources IV, LLC is the only oil and gas lease holders within the area of review (Enclosure D).
- VII.
 1. Injection Rate: 20,000 barrels of water injected per day (BWIPD) maximum, 8,000 BWIPD average
 2. System will be closed
 3. Injection pressure: 2,000 pounds per square inch gauge (psig) maximum, 1,200 psig average.
 4. Injection Fluid will be from present and future Enduring Resources, LLC wells in the San Juan Basin. Water analysis attached (Enclosure E).
 5. The Entrada has not been proven productive within the area of review. In general, Entrada water near recharge zones (basin fringe) has a specific conductance of < 1,500 micro ohms (μmhos). Stone et al in *Hydrology and Water Resources of San Juan Basin, New Mexico* wrote, "Generally, however, water from the Entrada is not suitable for drinking, especially in deeper parts of the basin." Water samples from the well are attached as Enclosure F.
- VIII. The Entrada sandstone is a very porous and permeable aeolian sandstone. It has produced oil elsewhere in the San Juan Basin (e.g. Eagle Mesa, Leggs, Media, Ojo Encino, Paper Wash, Snake Eyes Field). The closest producing water well (SJ-01710) is located approximately 0.77 miles from SJ-4301 POD3, with depth to water of approximately 173 feet below ground surface. No existing underground drinking water sources are below the Entrada within a 2-mile radius. Enclosure G includes state engineer water well record.
- IX. There is no proposed stimulation.
- X. A triple combo log is attached as Enclosure H.
- XI. There are no freshwater wells within 1-mile of SJ-4301 POD3.
- XII. Enduring Resources, LLC is not aware of any geologic or engineering data that may indicate the Entrada is in hydrologic connection with any underground sources of water. There is a greater than 5,000 feet vertical separation and multiple shale zones between the top of the Entrada and the bottom of known existing water wells in the area. Closest Quaternary fault zone is miles to the east in the Rio Grande Valley. There are many injection and disposal wells active in the Entrada formation in New Mexico.
- XIII. Enclosure I provides proof of notification for this application. Because the applicant is the only well owner/lease holder within the area of review, notification of this application was given to the BLM via certified mail. In addition, the proof of publication is provided in Enclosure I. Notice of this



application was published in the *Farmington Daily Time*, a newspaper of general circulation in San Juan County, New Mexico, as well as surrounding counties.

The following statement was advertised in the *Farmington Daily Times* on March 3, 2021:

Ms. Deidre Duffy, a representative of Enduring Resources IV, LLC, 200 Energy Court, Farmington, New Mexico 87401 (970-385-1096), wishes to provide notification for the submittal of an *Application for Authorization to Inject* to the New Mexico Oil Conservation Division (NMOCD). The application requests the use of existing diversion well SJ-4301 POD3 (WLU 2309-24N WSW), permitted with the New Mexico Office of the State Engineer (NMOSE), for the use as a Class II injection well. The well is located in San Juan County, New Mexico at latitude 36.205958°N, longitude 107.740891°W. This well will be used to inject fluids produced from the enhanced recovery of oil and/or natural gas in the San Juan Basin. Fluids will be injected into the Entrada Geologic Formation at depths between 6,851 feet and 6,990 feet below ground surface. Maximum injection rates and pressures are anticipated to be 20,000 barrels of water per day and 2,000 pounds per square inch gauge, respectively. Interested parties may contact the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within 15 days.

Kind regards,

Deidre Duffy
Senior Ecologist

Stuart Hyde, L.G.
Environmental Geologist

ENCLOSURES

- Enclosure A: Survey Plat
- Enclosure B: Wellbore Diagram
- Enclosure C: Well Location Figure
- Enclosure D: List of Active Wells
- Enclosure E: Sample Injection Fluid Analytical Reports
- Enclosure F: Sample Entrada Formation Groundwater Analytical Results
- Enclosure G: NMOSE Point of Diversions
- Enclosure H: Triple Combo Log
- Enclosure I: Proof of Notification

ENCLOSURE A: SURVEY PLAT

FOUND
1947 GLO
BRASS CAP

23 | 24

ENDURING RESOURCES WLU 2309-24N WATER RECYCLE FACILITY
LOCATED IN SE/4 SW/4 & SW/4 SE/4 OF SECTION 24, T23N, R9W
SAN JUAN COUNTY, NEW MEXICO ELEVATION: 6870'
LAT: 36.205958°N LONG: 107.740891°W DATUM: NAD1983

N44°41'06"W
3051.74'

EDGE OF TOTAL DISTURBANCE

N87°10'16"E 600.00'

F2

C3

F4

A

A'

~ SURFACE OWNER ~
Bureau of Land Management

Area of Total Disturbance
500' X 700' = 8.03 Acres

EDGE OF TOTAL DISTURBANCE

N02°49'44"N 400.00'

WATER SUPPLY WELL
2944 FSL 2284' FWL
LAT : 36.205932°N
LONG : 107.741568°W
DATUM : NAD1983

200'

200'

B

100'

75'

CENTER EARTHEN PIT
LAT : 36.205968°N
LONG : 107.740637°W
DATUM : NAD1983

EARTHEN PIT
350' X 400'
(25' DEEP)

1/4 SECTION LINE ~
NO OWNERSHIP CHANGE

S02°49'44"E 400.00'

EDGE OF TOTAL DISTURBANCE

F3

C

C1

C4

ACCESS
50.0' (0-6%)

S87°10'16"W 600.00'

EXISTING ROADWAY

FOUND
1947 GLO
BRASS CAP

23 | 24

26 | 25

S88°07'03"W
2198.78'

W LYBROOK UNIT #120H
EXISTING PIPELINE

W LYBROOK UNIT #120H
EXISTING PIPELINE



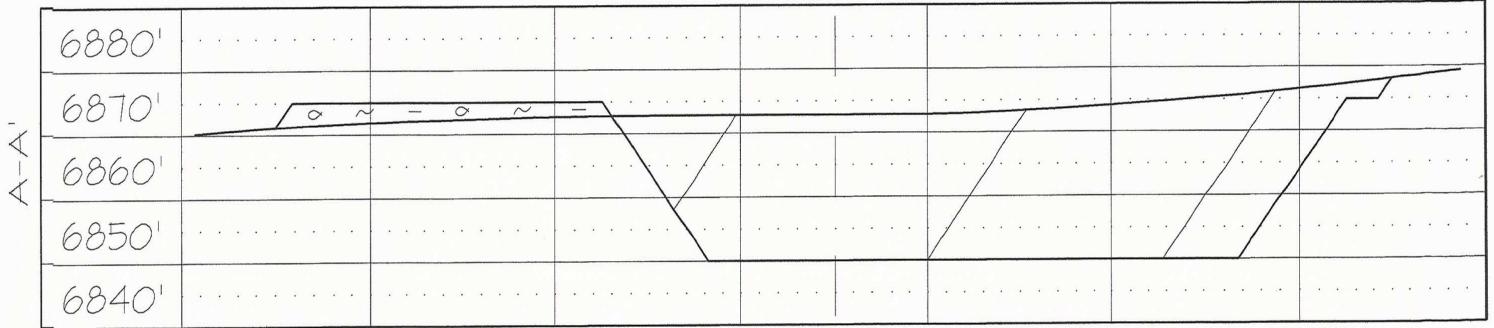
Steel T-Posts have been set to define Edge of Disturbance limits which are 50' offset from the edge of water recycle facility.

**ENDURING RESOURCES WLU 2309-24N WATER RECYCLE FACILITY
 LOCATED IN SE/4 SW/4 & SW/4 SE/4 OF SECTION 24, T23N, R9W
 SAN JUAN COUNTY, NEW MEXICO ELEVATION: 6870'**

HORIZONTAL SCALE 1"=100'

C/L

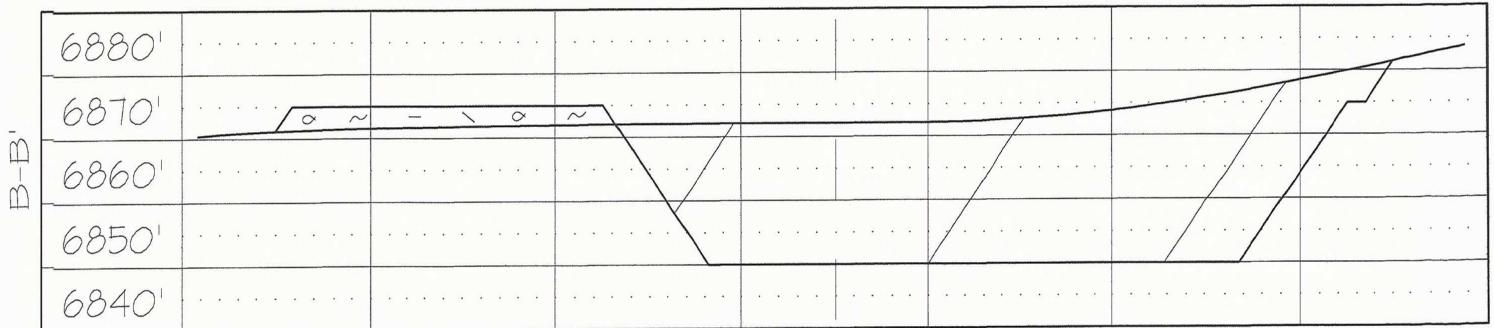
VERTICAL SCALE 1"=30'



HORIZONTAL SCALE 1"=100'

C/L

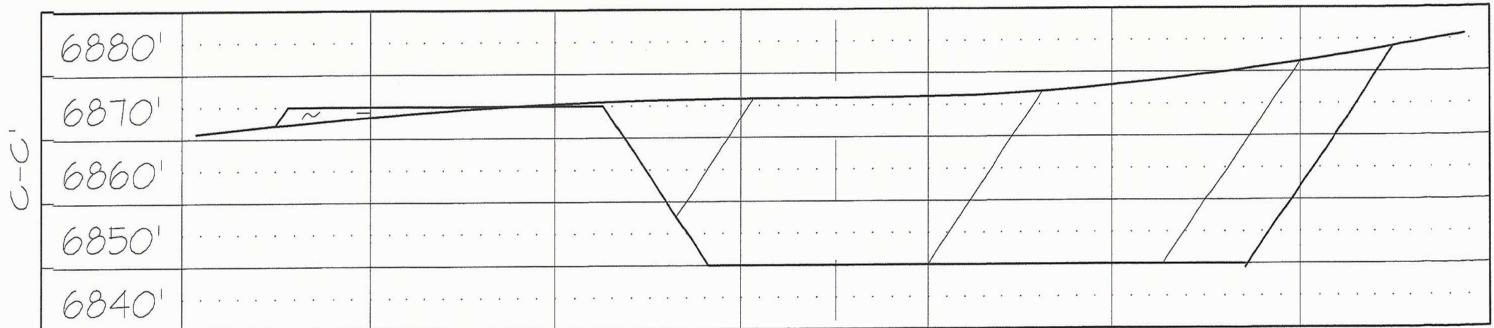
VERTICAL SCALE 1"=30'



HORIZONTAL SCALE 1"=100'

C/L

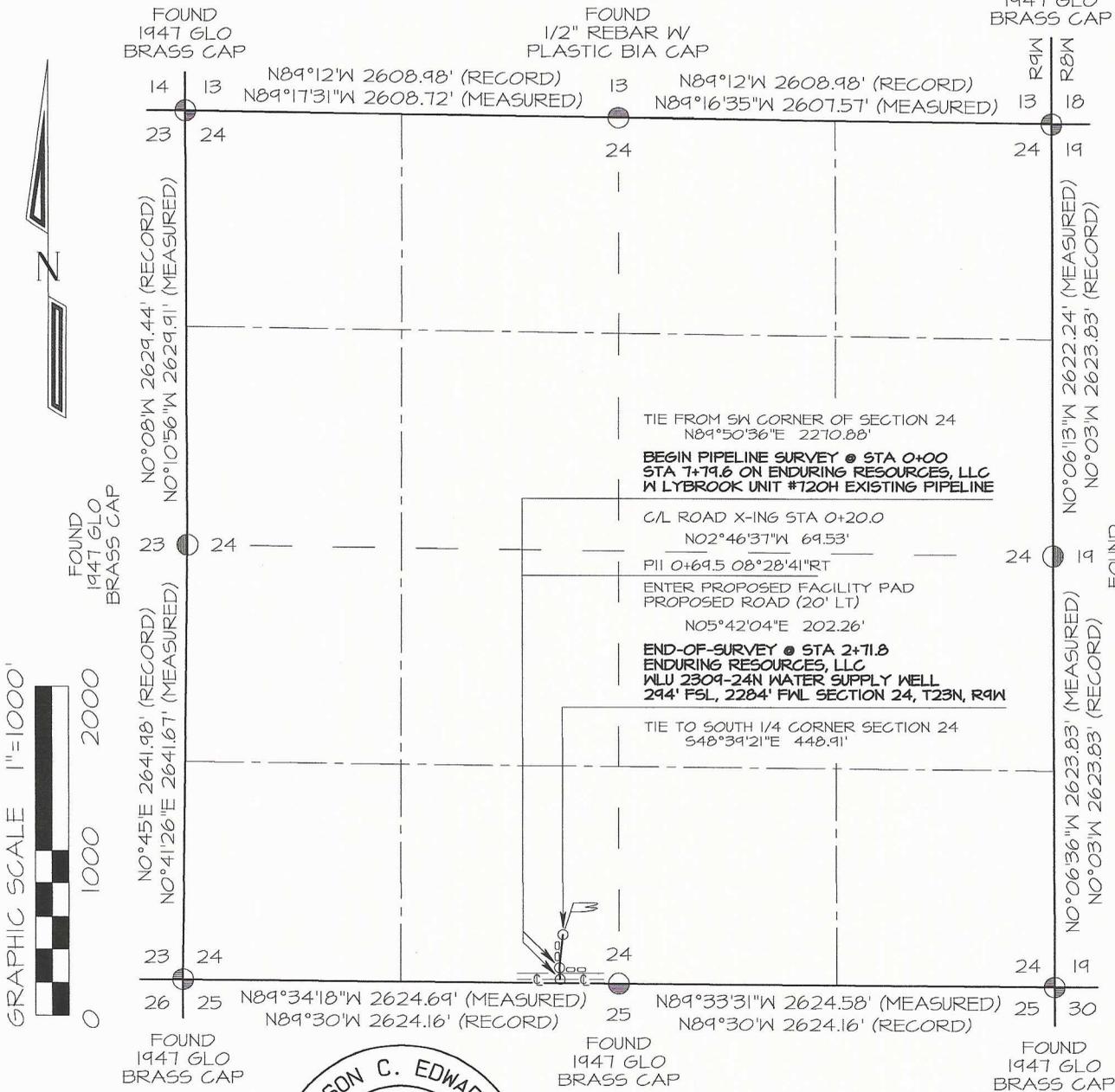
VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

ENDURING RESOURCES WLU 2309-24N WATER RECYCLE FACILITY PROPOSED PIPELINE SURVEY LOCATED IN THE SE/4 SW/4 SECTION 24, T23N, R9W, NMPM SAN JUAN COUNTY, NEW MEXICO



PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS,
CONTRACTOR IS ADVISED TO CALL
ONE-CALL FOR LOCATION OF ANY
MARKED OR UNMARKED PIPELINES OR
CABLES IN THE AREA OF THE PROJECT

BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY
SOLUTION OBTAINED FROM SATELLITES
TRACKED ON MARCH 10, 2016 FROM A
REFERENCE STATION POSITIONED IN
NW/4 SW/4 OF SECTION 19, T23N, R8W

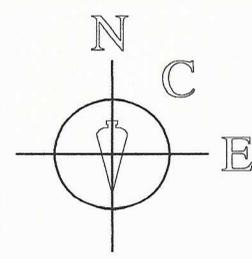


~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 2+71.8	271.8 FT / 16.5 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: June 6, 2018
 Jason C. Edwards, P.L.S.
 New Mexico L.S. #15269

Prepared for:
 ENDURING RESOURCES, LLC
 332 ROAD 3100
 AZTEC, NM 87410



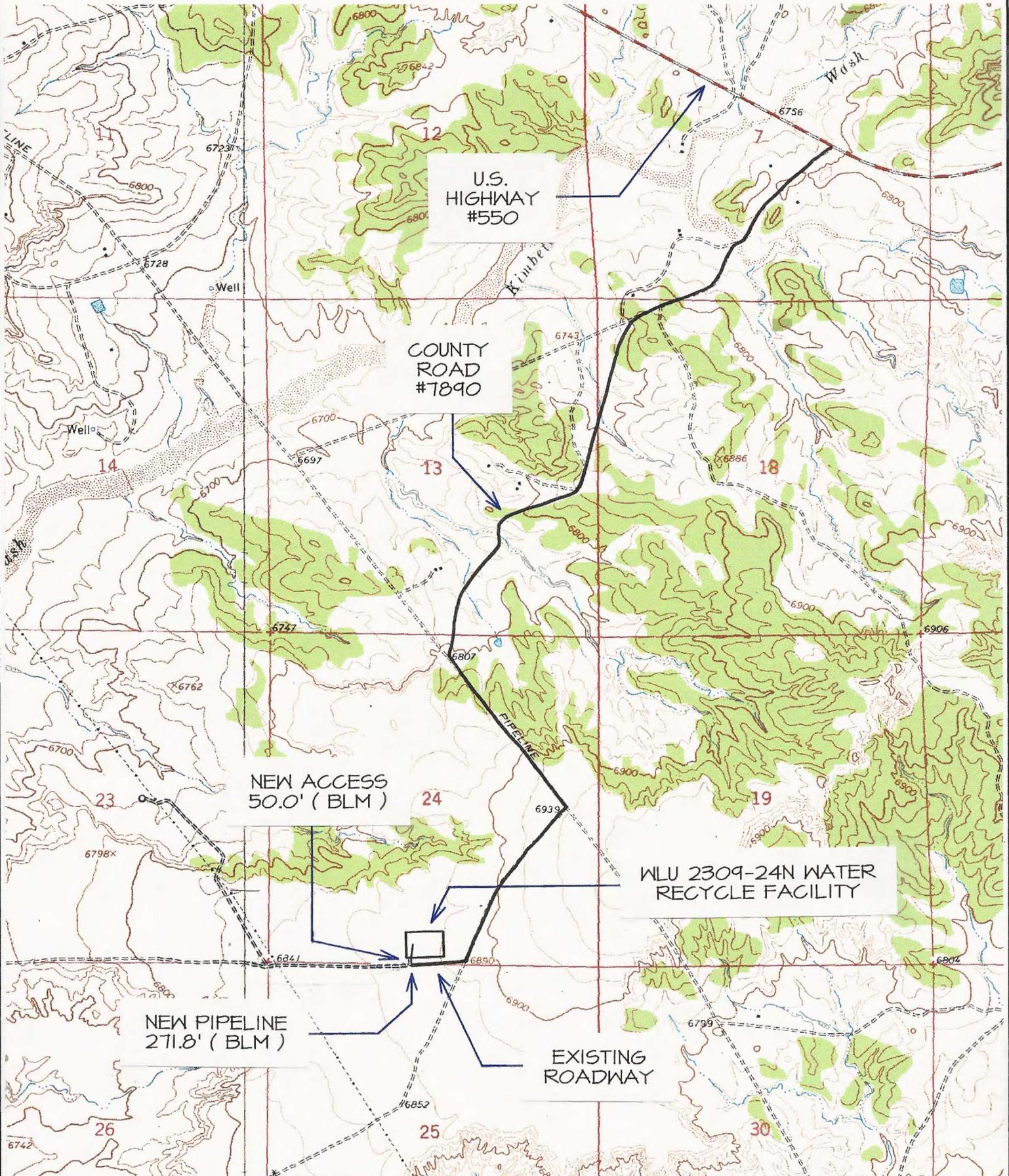
Land Surveyor:
 Jason C. Edwards
Mailing Address:
 Post Office Box 6612
 Farmington, NM 87499
Business Address:
 111 East Pinon Street
 Farmington, NM 87402
 (505) 486-1695 (Office)
 ncesurveys@comcast.net

SURVEYS, INC.

CHECKED BY: JCE
 SHEET 4 OF 6
 FILENAME: 23924GPI | DRAIN BY: EDO

ENDURING RESOURCES, LLC WLU 2309-24N WATER RECYCLE FACILITY

LOCATED IN SE/4 SW/4 & SW/4 SE/4 SECTION 24, T23N, R9W
N.M.P.M., SAN JUAN COUNTY, NEW MEXICO



TOPO NAMES : KIMBETO & LYBROOK NW ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC WLU 2309-24N Water Recycle Facility

294' FSL & 2284' FWL, Section 24, T23N, R9W, N.M.P.M., San Juan County, NM

Latitude: 36.205932°N Longitude: 107.741568°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 37.8 miles to Mile Marker 113.4;

Go Right (South-westerly) on County Road #7890 for 0.8 miles to fork in roadway;

Go Left (Southerly) remaining on County Road #7890 for 1.3 miles to 4-way intersection;

Go Left (South-easterly) remaining on County Road #7890 for 0.6 miles to fork in roadway;

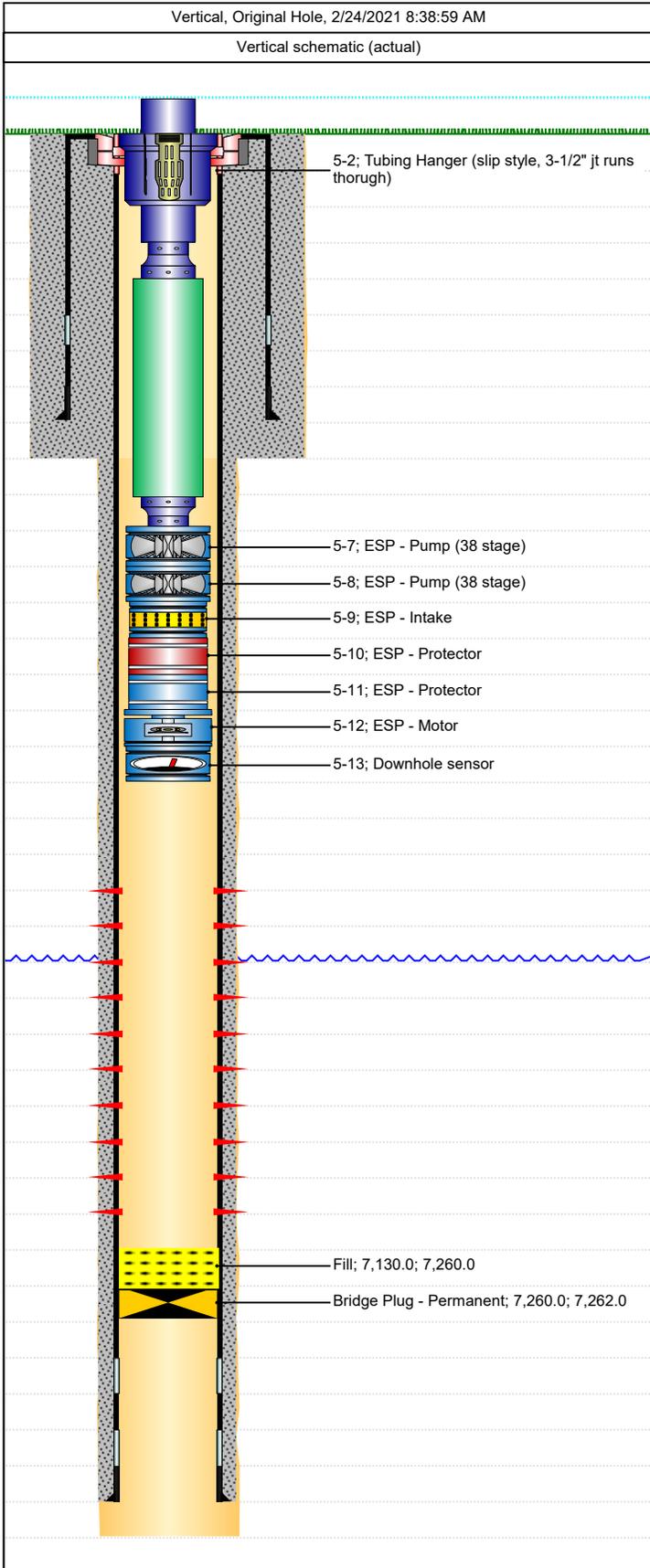
Go Right (South-westerly) remaining on County Road #7890 for 0.5 miles to fork in roadway;

Go Right (Westerly) exiting County Road #7890 for 0.2 miles to begin access on right-hand side of existing roadway which continues for 50.0' to staked Enduring WLU 2309-24N Water Recycle Facility location.

ENCLOSURE B: WELLBORE DIAGRAM

Well Name: W LYBROOK UNIT 2309-24N WSW

API/UWI SJ-4301 POD 3	Surface Legal Location SE/4, SW/4, Section 24, Twp 23N, Rng 0...	Field Name CHACO	License #	State/Province NEW MEXICO	Well Configuration Type Vertical
Original KB Elevation (ft) 6,893.00	KB-Tubing Head Distance (ft)	Spud Date 1/3/2019 10:00	Rig Release Date 1/17/2019 12:00	PBD (All) (ftKB) Original Hole - 7,260.0	Total Depth All (TVD) (ftKB) Original Hole - 7,407.0



Casing Strings						
Csg Des	OD (in)	Wt/Len (lb/ft)	Grade	Top Thread	Top (ftKB)	Set Depth (ftKB)
Surface Casing	13 3/8	54.50	J-55	BTS	15.0	397.2
Production Casing	7	26.00	L-80	LT&C	15.0	7,397.8

Cement	
Description Surface Cement	Comment Pump 20 bbls FW spacer & 92.5 bbls Type G cmt (440 sxs) @ 15.8 PPG, drop plug & disp w/ 52. bbls H2O, bump plug @ 178 psi, circ 38 bbls good cmt to surface. Check float, Shut in cement head, floats wouldn't hold. Wait 3 hrs, check float, remove cement head, secure casing.
Description Production Cement	Comment Pumped 80 bbls tuned spacer @ 10.5 ppg. Pumped 184 bbls (525 sks) of lead cement at 12.3 ppg, 1.91 ft3/sk, 10.28 gal/sk H2O. Pumped 102 bbls (420 sks) of tail cement at 13.3 ppg, 1.36 ft3/sk, 6.01 gal/sk H2O. Dropped 1 top plugs. Displaced with 279 bbls freshwater (279 actual displacement at 2016 psi/7.9 BPM & pressured up to 2854 psi.) Maintained returns throughout cement job. Circulated 52 bbls of good cement to surface. Floats held, bled back 2.5 bbls, Top of Tail 3729. Cement in place @ 04:30

Perforations					
Date	Top (ftKB)	Btm (ftKB)	Nom Hole Dia (in)	Shot Dens (shots/ft)	Entered Shot Total
1/27/2019	6,851.0	6,856.0	0.420	4.0	20
1/27/2019	6,895.0	6,900.0	0.420	4.0	20
1/27/2019	6,917.0	6,922.0	0.420	4.0	20
1/27/2019	6,953.0	6,958.0	0.420	4.0	20
1/27/2019	6,985.0	6,990.0	0.420	4.0	20

Tubing Strings							
Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)				
Tubing - Production	2/2/2021	2,273.62	2,282.6				
Jts	Item Des	OD (in)	Len (ft)	Top (ftKB)	Btm (ftKB)	Grade	Wt (lb/ft)
1	Tubing (1 jt 3-1/2" at surface running through hanger)	3 1/2	6.00	9.0	15.0	J-55	9.30
1	Tubing Hanger (slip style, 3-1/2" jt runs thorough)	6.27	1.50	15.0	16.5		
1	Tubing (1 jt 3-1/2" at surface running through hanger)	3 1/2	24.85	16.5	41.3	J-55	9.30
1	Cross Over (3-1/2" 8rd EUE x 4-1/2" LTC)	3 1/2	1.10	41.3	42.4		
50	Casing	4 1/2	2,161.0	42.4	2,203.5	P-110	11.60
1	Cross Over (4-1/2" LTC x 3-1/2" 8rd EUE)	3 1/2	1.10	2,203.5	2,204.6		
1	ESP - Pump (38 stage)	5.38	12.30	2,204.6	2,216.9		
1	ESP - Pump (38 stage)	5.38	12.30	2,216.9	2,229.2		
1	ESP - Intake	5	1.20	2,229.2	2,230.4		
1	ESP - Protector	5.13	5.80	2,230.4	2,236.2		
1	ESP - Protector	5.13	8.90	2,236.2	2,245.1		
1	ESP - Motor	5.62	35.00	2,245.1	2,280.1		
1	Downhole sensor	5.4	2.50	2,280.1	2,282.6		

Rod Strings					
Rod Description	Run Date	String Length (ft)	Set Depth (ftKB)		
Jts	Item Des	OD (in)	Len (ft)	Top (ftKB)	Btm (ftKB)

ENCLOSURE C: WELL LOCATION FIGURE

ENCLOSURE D: LIST OF ACTIVE WELLS

Enclosure D

Form C-108

WLU 2309-24N (SJ-4301 POD 3)

San Juan County, New Mexico

API/Lease Number	Operator	Well	Unit Section T23N R9W	True Vertical Depth	Pool	Status
BLM Lease NMNM 057164	Enduring Resources IV, LLC	N/A	N/A	N/A	N/A	N/A
BLM Lease NMNM 036949	Enduring Resources IV, LLC	N/A	N/A	N/A	N/A	N/A

ENCLOSURE E: SAMPLE INJECTION FLUID ANALYTICAL REPORTS



Enduring Resources

SEU 359 Pad

Water Analysis

<i>Test:</i>		North Escavada Pond
Temperature	(deg F)	64.5
Specific Gravity		1.029
pH		8.45
Sodium Na+	(mg/L)	13915
Magnesium Mg 2+	(mg/L)	80
Iron Fe2+	(mg/L)	<LOD
Total Iron Fe2+ & Fe3+	(mg/L)	6
Calcium Ca 2+	(mg/L)	394
Total Hardness as CaCO3	(mg/L)	1312
Chlorides CL-	(mg/L)	20945
Hydroxide OH-	(mg/L)	<LOD
Carbonate CO3(2-)	(mg/L)	96
Bicarbonates HCO3-	(mg/L)	708
Phosphates PO4(3-)	(mg/L)	6
Sulfates SO4(2-)	(mg/L)	1250
ORP	mV	10
TDS	(mg/L)	37400

*** <LOD indicates a result less than limit of detection.

HALLIBURTON

Water Analysis Report

30-045-33217

F-11-24n-11w

To: Dugan Production Date: 11/10/2005
Submitted by: Halliburton Energy Services Date Rec: 11/10/2005
Attention: Darrin Steed Report #: FLMM5A44
Well Name: Herry Monster #3 SWD Formation: Entrada/SWD

Specific Gravity	1.005	
pH	8.4	
Resistivity	0.89	@ 70° F
Iron (Fe)	0	Mg / L
Potassium (K)	200	Mg / L
Sodium (Na)	4165	Mg / L
Calcium (Ca)	176	Mg / L
Magnesium (Mg)	15	Mg / L
Chlorides (Cl)	2200	Mg / L
Sulfates (SO4)	2000	Mg / L
Carbonates (CO3)	40	Mg / L
Bicarbonates (HCO3)	5612	Mg / L
Total Dissolved Solids	14408	Mg / L

Respectfully: Bill Loughridge

Title: Senior Scientist

Location: Farmington, NM

EXHIBIT F

NOTICE: This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its use.

ENCLOSURE F: SAMPLE ENTRADA FORMATION GROUNDWATER
ANALYTICAL RESULTS

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1810596

Date Reported:

CLIENT: John Shomaker & Assoc.

Client Sample ID: First Formation

Project: Enduring Resources

Collection Date: 10/9/2018 11:52:00 AM

Lab ID: 1810596-002

Matrix: AQUEOUS

Received Date: 10/10/2018 12:40:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Fluoride	5.8	0.50	*	mg/L	5	10/10/2018 7:26:00 PM	R54788
Chloride	1400	100	*	mg/L	200	10/12/2018 3:31:22 AM	R54823
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/10/2018 7:26:00 PM	R54788
Bromide	1.5	0.50		mg/L	5	10/10/2018 7:26:00 PM	R54788
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	10/10/2018 7:26:00 PM	R54788
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	10/10/2018 7:38:25 PM	R54788
Sulfate	6100	100	*	mg/L	200	10/12/2018 3:31:22 AM	R54823
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	13000	10		µmhos/c	2	10/15/2018 3:53:19 PM	R54896
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	10200	200	*D	mg/L	1	10/15/2018 4:39:00 PM	40981
SM4500-H+B / 9040C: PH							Analyst: MRA
pH	7.93		H	pH units	1	10/11/2018 3:01:50 PM	R54833
EPA METHOD 200.7: METALS							Analyst: JLF
Calcium	1100	100		mg/L	100	10/16/2018 7:07:08 PM	40970
Magnesium	72	10		mg/L	10	10/16/2018 7:03:08 PM	40970
Potassium	320	10		mg/L	10	10/16/2018 7:03:08 PM	40970
Sodium	3300	100		mg/L	100	10/16/2018 7:07:08 PM	40970

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 2 of 0
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

ENCLOSURE G: NMOSE POINT OF DIVERSIONS



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
SJ 01710	SJ	SJ		1	3	25	23N	09W		252985	4009203*	1239	550	173	377
SJ 00001	SJ	SJ		4	1	12	23N	09W		253534	4014427*	4150	695	630	65
SJ 01709	SJ	SJ		1	1	27	23N	08W		259451	4009831*	5865	317	225	92
SJ 01706	SJ	SJ		3	4	12	22N	09W		253627	4003944*	6333	762	362	400
SJ 03978 POD1	SJ	SJ		1	2	1	22	23N	08W	259816	4011541	6341	500	260	240
SJ 02686	SJ	SJ		3	4	2	32	24N	08W	257502	4017472*	8183	690	690	0
SJ 04195 POD1	SJ	SJ		1	3	11	23N	08W		261123	4013544	8200	700	290	410
SJ 01712	SJ	SJ		2	4	27	24N	09W		251195	4018933*	8983	528	515	13
SJ 00144	SJ	SJ		1	1	3	31	23N	09W	244786	4007922*	9125	100		

Average Depth to Water: **393 feet**
 Minimum Depth: **173 feet**
 Maximum Depth: **690 feet**

Record Count: 9

UTMNAD83 Radius Search (in meters):

Easting (X): 253602

Northing (Y): 4010277.51

Radius: 10000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

ENCLOSURE H: TRIPLE COMBO LOG



Composite Log

Company Enduring Resources Well West Lybrook unit 2309-24N WSW Field West Lybrook County San Juan State New Mexico	Company Enduring Resources Well West Lybrook unit 2309-24N WSW Field West Lybrook County San Juan State New Mexico
--	--

Location: Section 24, Township 23N, Range 09W	API #: SJ-4301 POD 3 Other Services IAT / SGR / MEL
--	---

Date	01/15/2019
Run Number	One
Depth Driller	7408'
Depth Logger	7403'
Bottom Logged Interval	7392'
Top Log Interval	406'
Casing Driller	13.375" @ 406'
Casing Logger	402'
Bit Size	8.750"
Type Fluid in Hole	Brine
Density / Viscosity	9.4 / 39
pH / Fluid Loss	7 / 36
Source of Sample	Mud Tank
Rm @ Meas. Temp	.188 @ 75 °F
Rmf @ Meas. Temp	.141 @ 75 °F
Rmc @ Meas. Temp	.235 @ 75 °F
Source of Rmf / Rmc	Calculated
Rm @ BHT	.097 @ 152 °F
Time Circulation Stopped	01/15/2019 @ 02:00
Time Logger on Bottom	01/15/2019 @ 10:00
Maximum Recorded Temperature	159 °F
Equipment Number	11007
Location	Midland
Recorded By	J. Trasti / A. DeLaGarza
Witnessed By	A. Bridge

<<< Fold Here >>>

Equipment and Log Data

Service Order:

Gamma		Density		Neutron		Sonic		IAT/DLL	
Run No.	One	Run No.	One	Run No.	One	Run No.	One	Run No.	One
Serial No.	2700	Serial No.	0872	Serial No.	2541	Serial No.		Serial No.	110
O.D.	3.375 in.	Source No.	70997B	Source No.	59796G	Centralizers		Standoffs	@
		O.D.	4.5 in.	O.D.	3.375 in.	O.D.	3.375 in.	O.D.	3.875 in.

Logging Pass Data

General		Gamma		Density			Neutron			Sonic			IAT/DLL	
		Scales		Scales		Scales			Scales			Scales		
Run	Depths	Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right	Matrix	Left	Right
One	0 7408	0	150	0.3	-0.1	2.71	0.3	-0.1	2.71				0.2	2000

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

Comments

Tools ran as per tool sketch
 CNL ran eccentricized using bowspring
 Annular Volume calculated using 7 in casing
 Chlorides reported at 29000 PPM
 10 in IAT curve affected by Chlorides

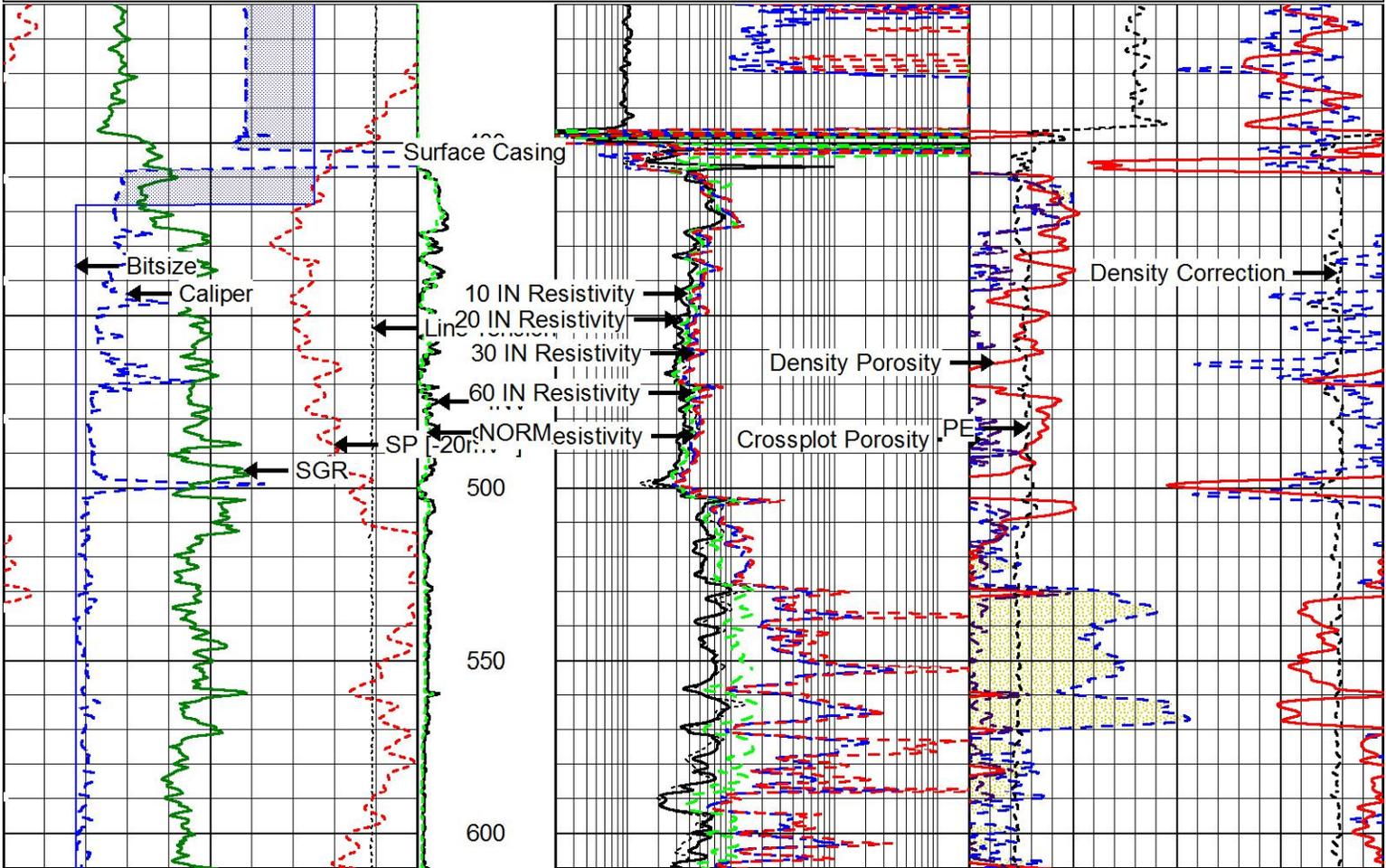
YOUR CREW TODAY: Jeremy Trasti, Alejandro de la Garza, Thomas Melson, Kindle Burket
 THANK YOU FOR CHOOSING ALLIED WIRELINE. Midland, TX. (432) 897-1528.

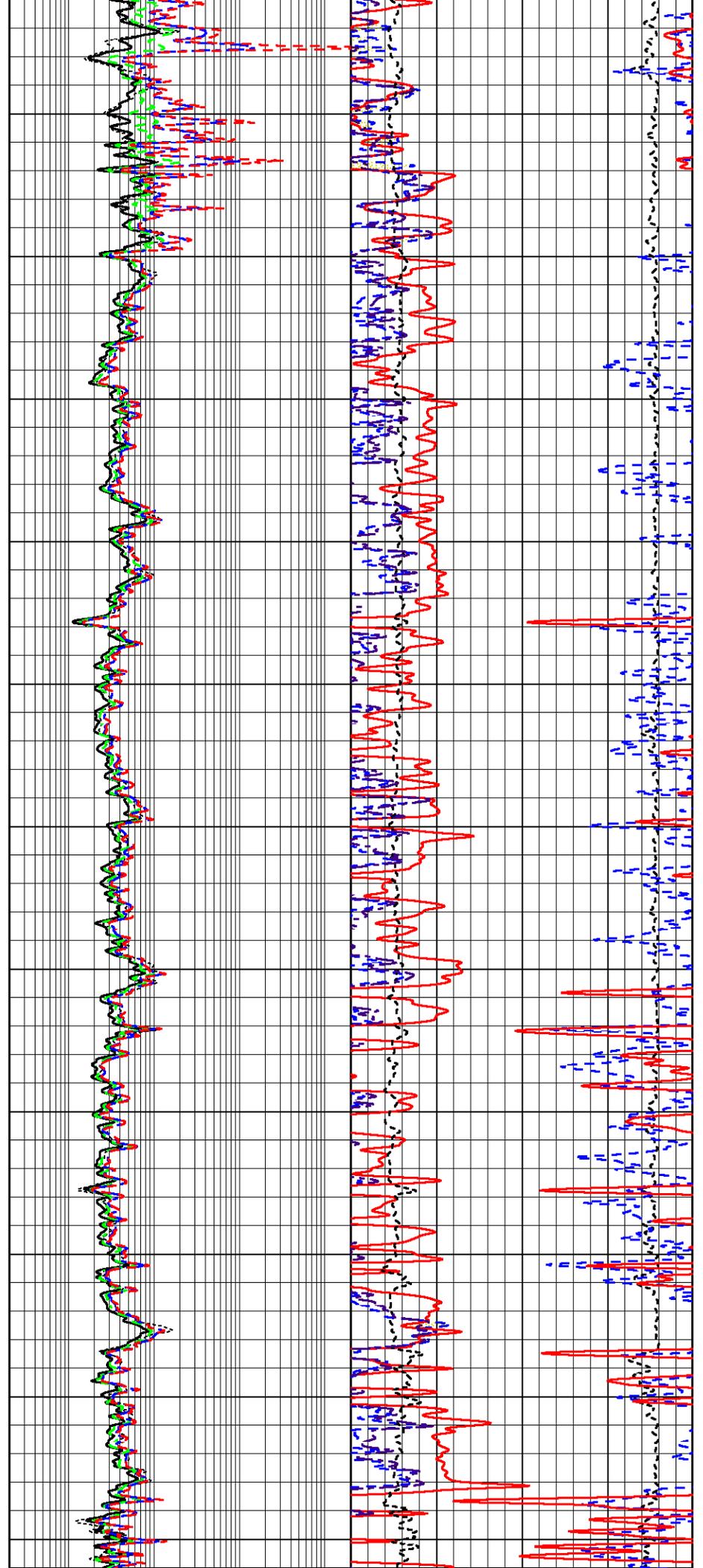
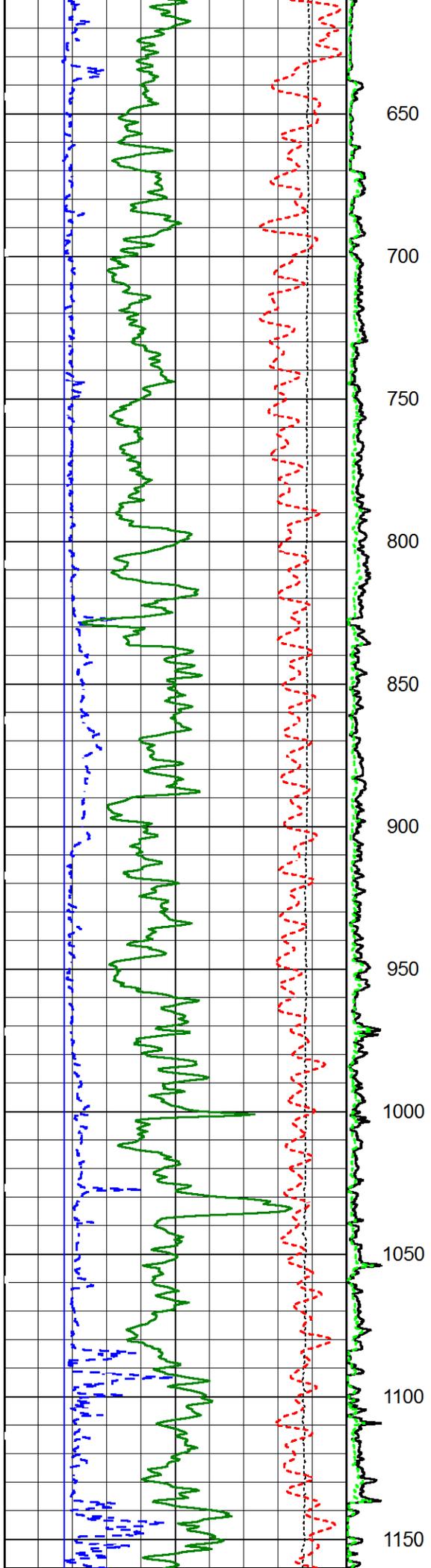


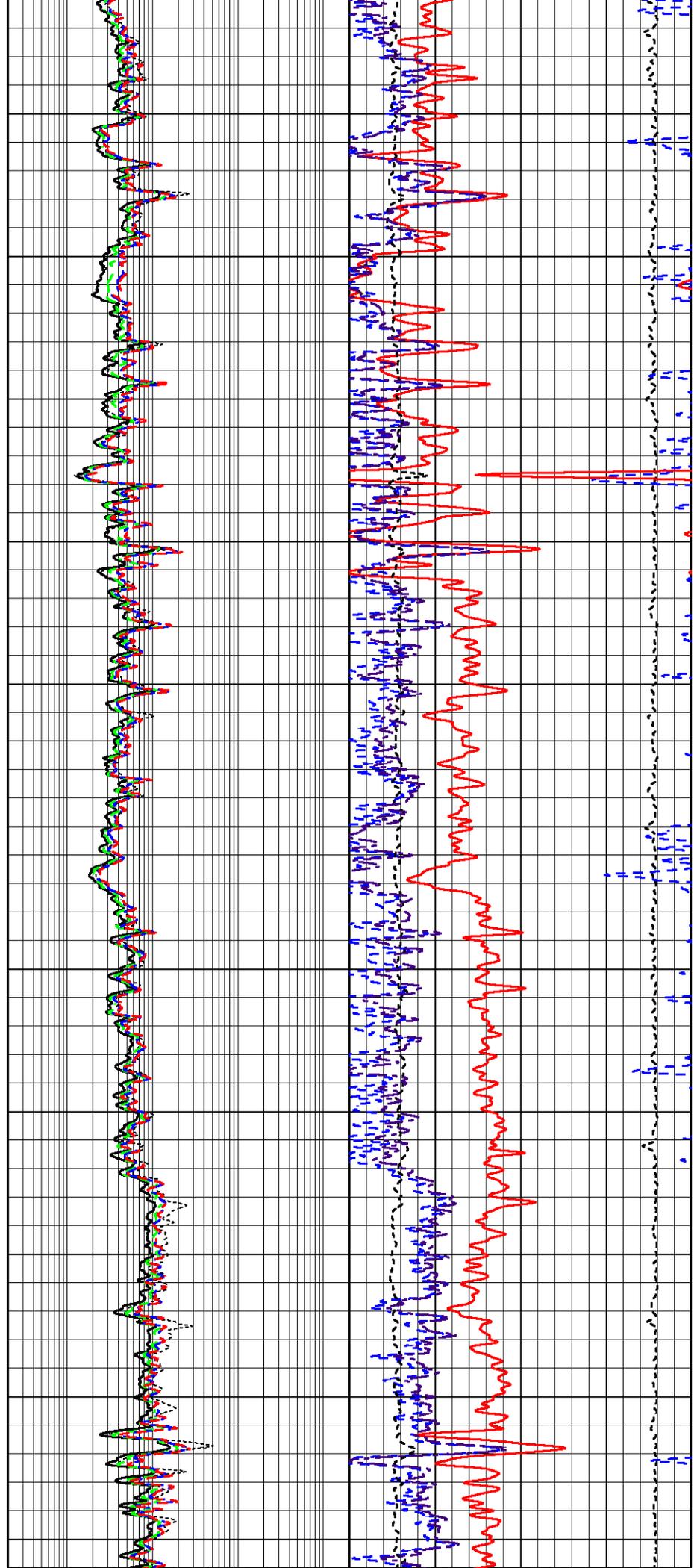
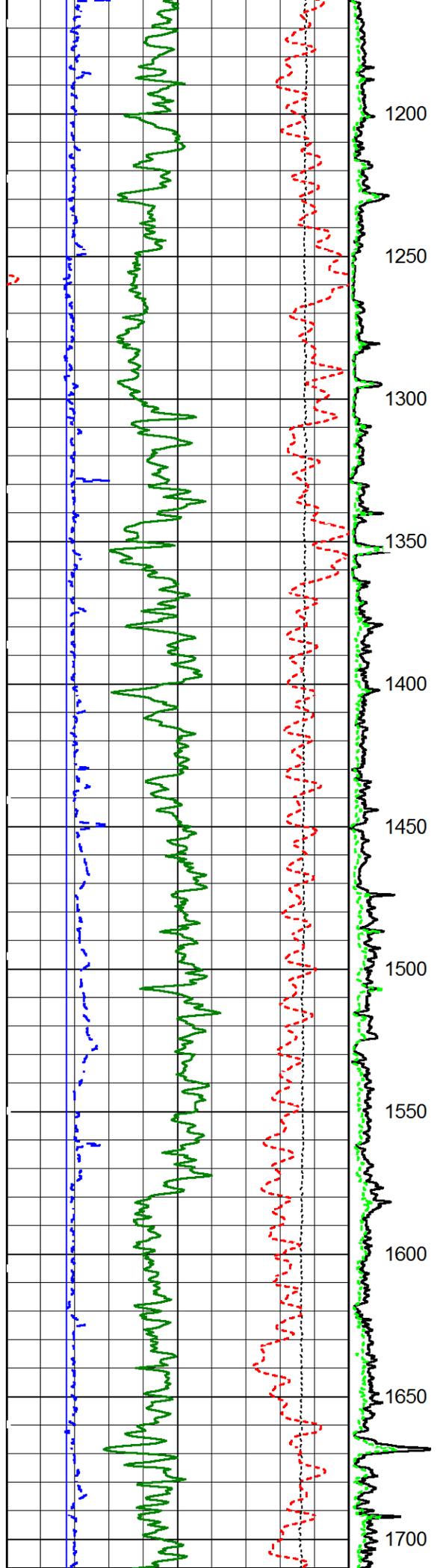
Main Pass

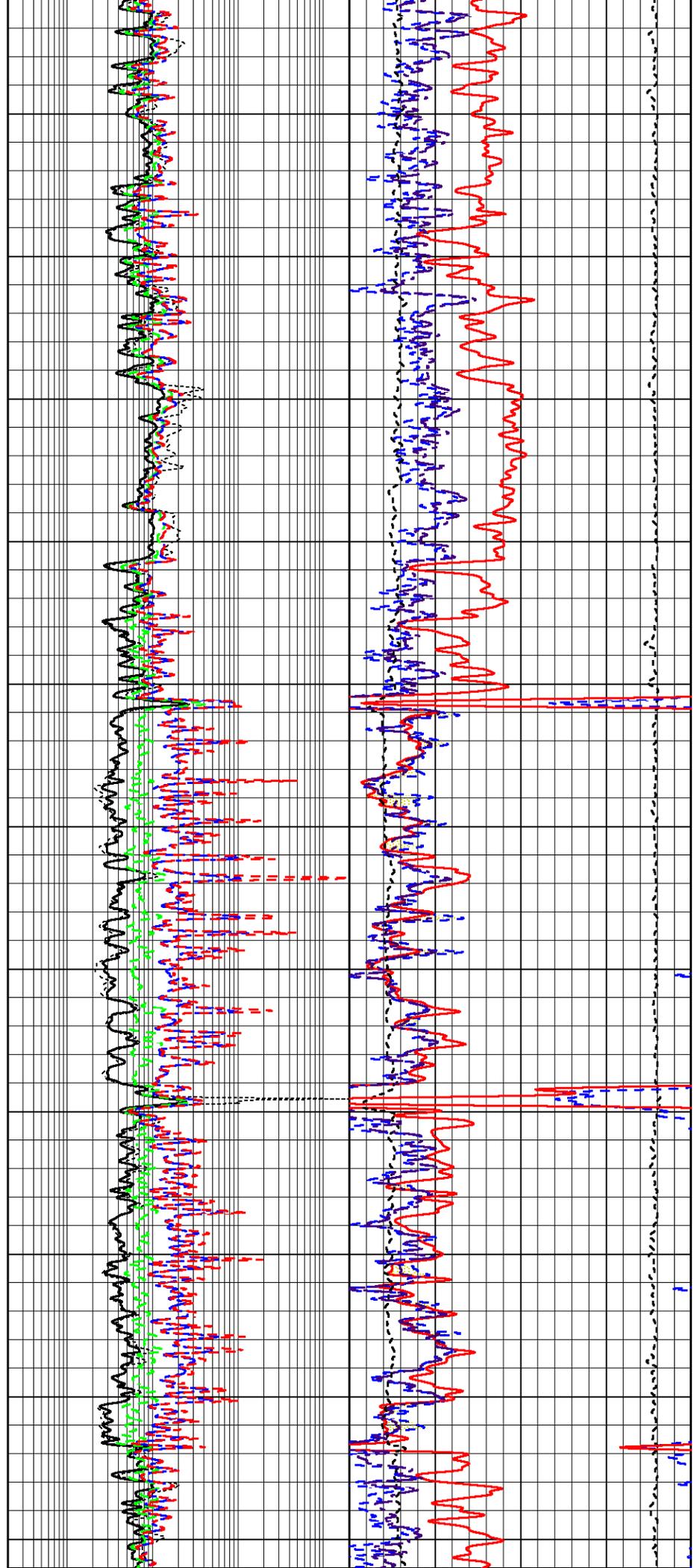
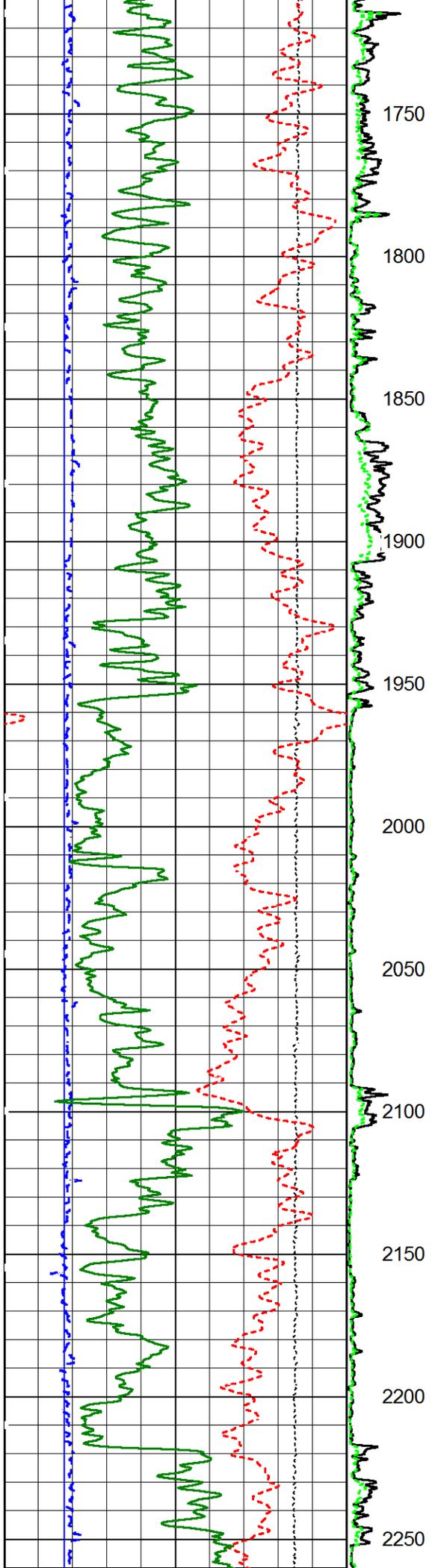
Database File: enduringreswlybrook.db
 Dataset Pathname: West_Lybrook/well/run1/main
 Presentation Format: 3com_iat
 Dataset Creation: Tue Jan 15 15:23:37 2019
 Charted by: Depth in Feet scaled 1:600

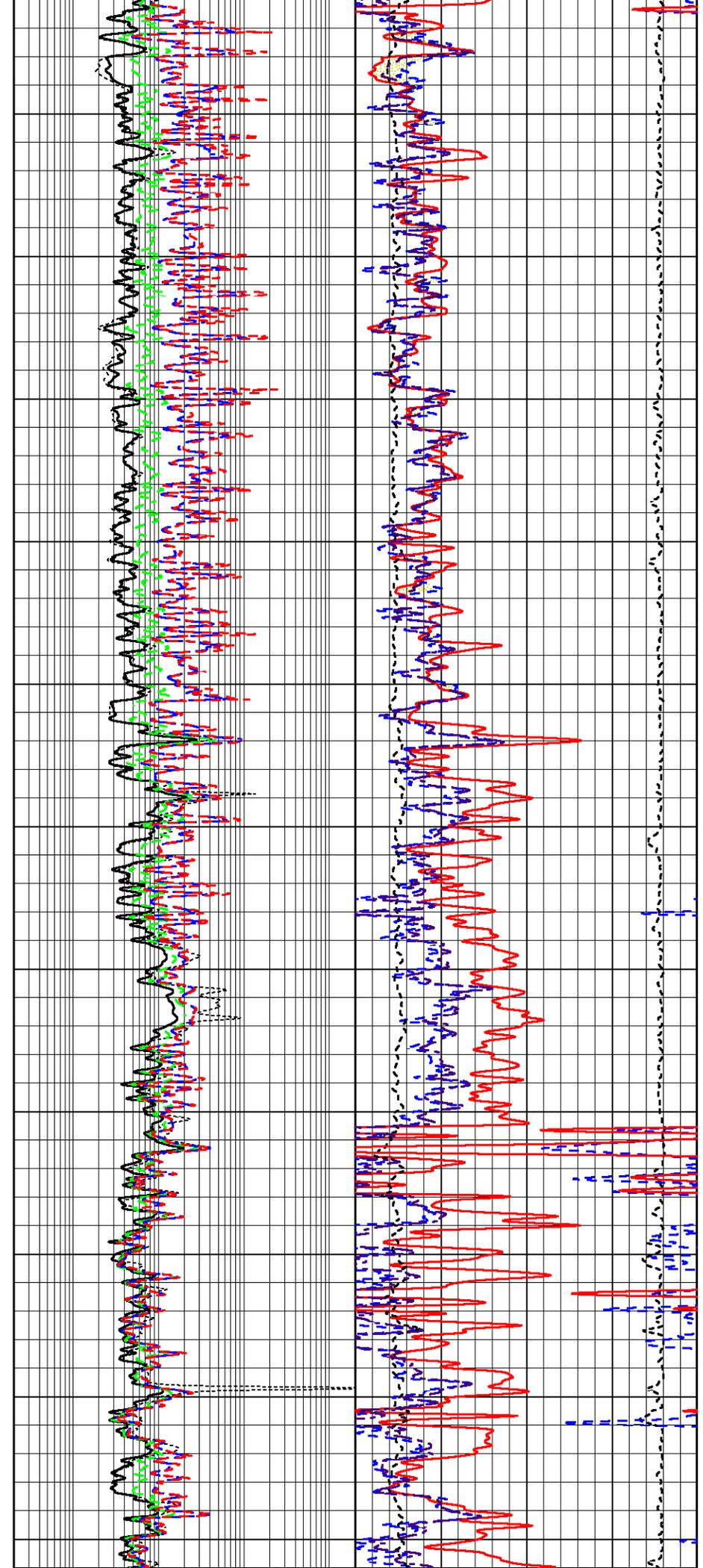
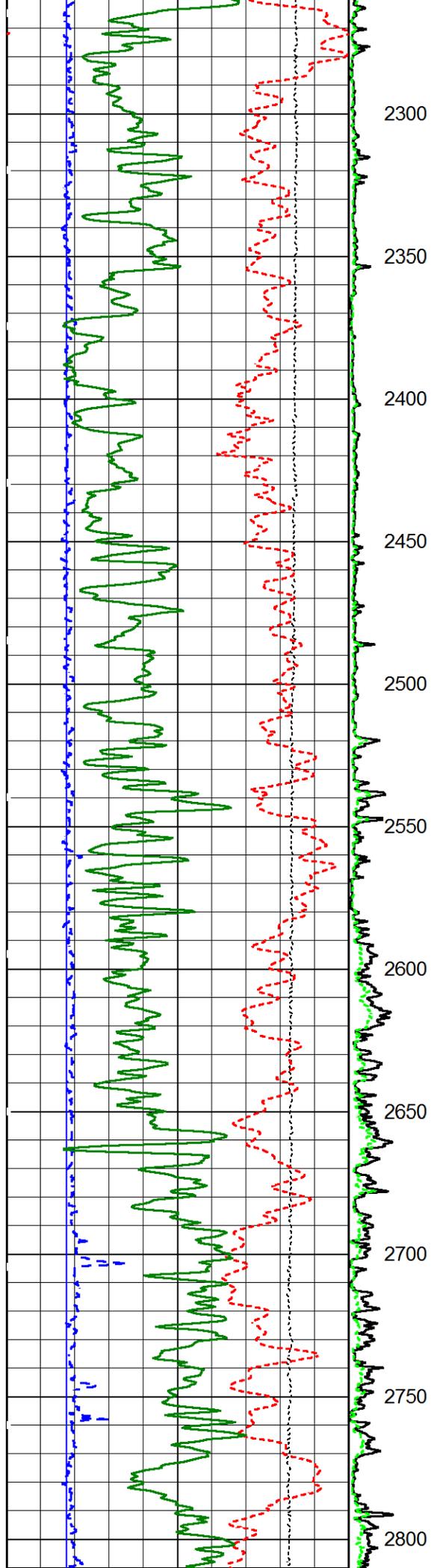
7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m)	2000	Neutron Porosity
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity
	5000 (lb)	0	0				(Porosity Decimal Fraction) -0.1
							0 PE 10 Density Correction
							0.8 (g/cc) -0.2

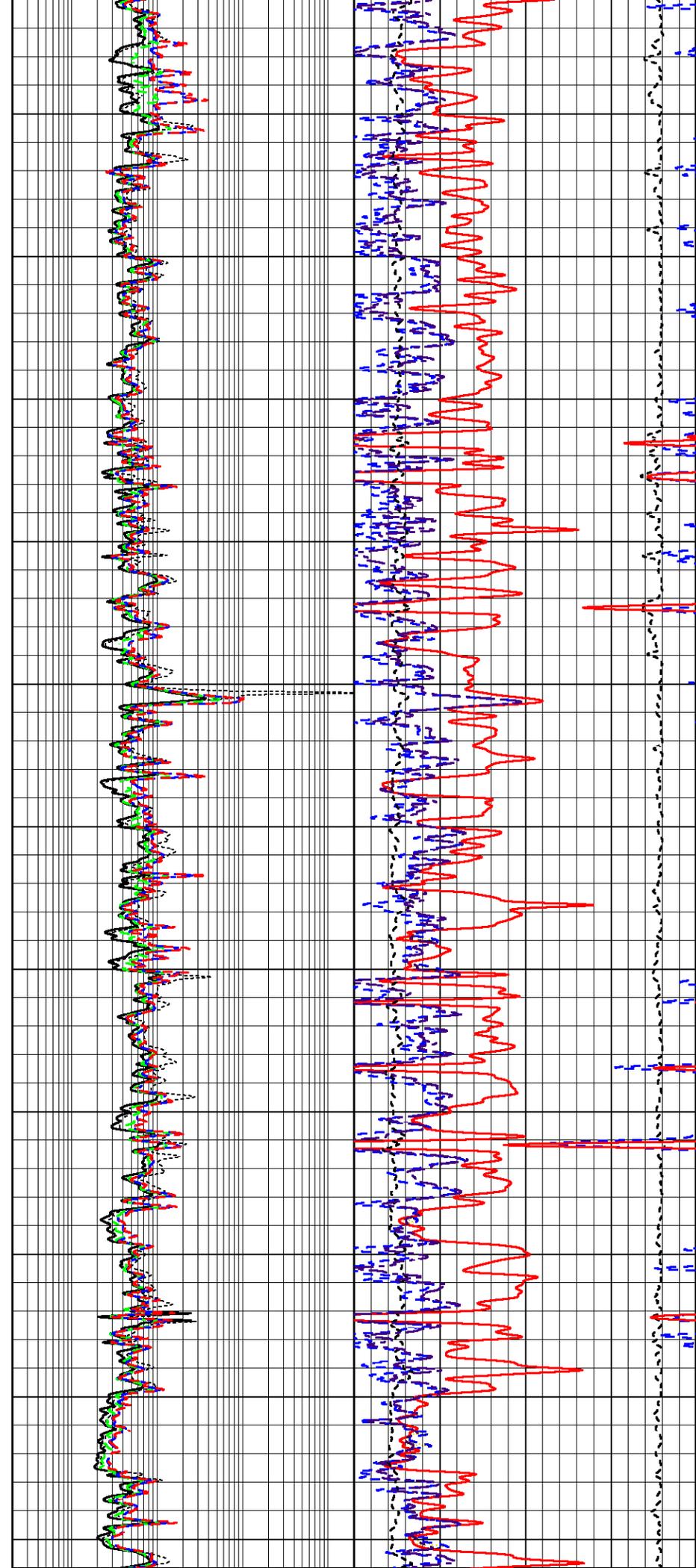
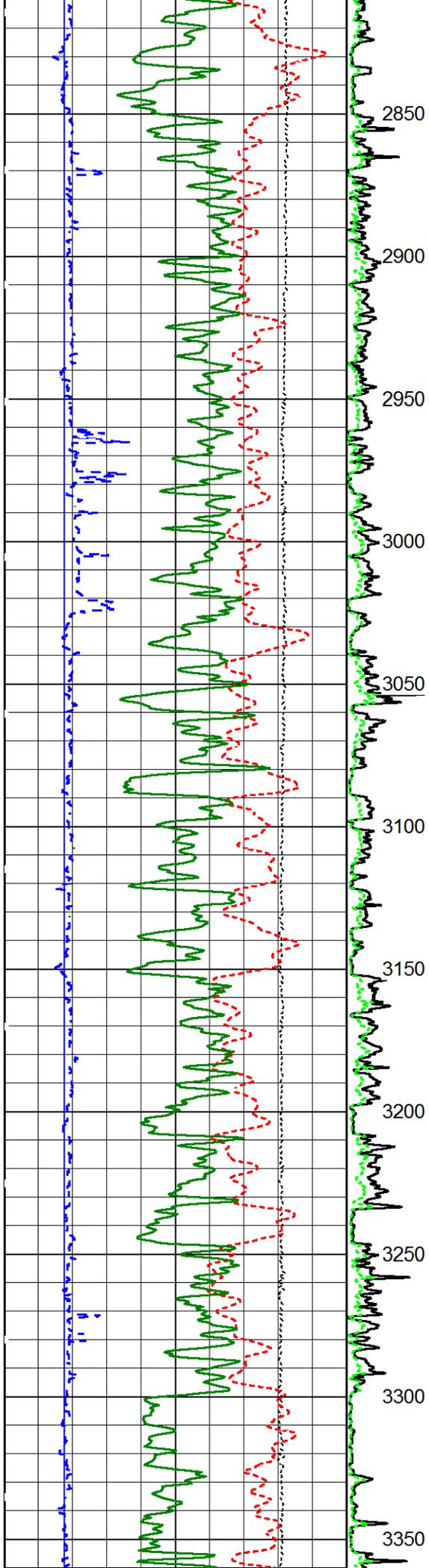


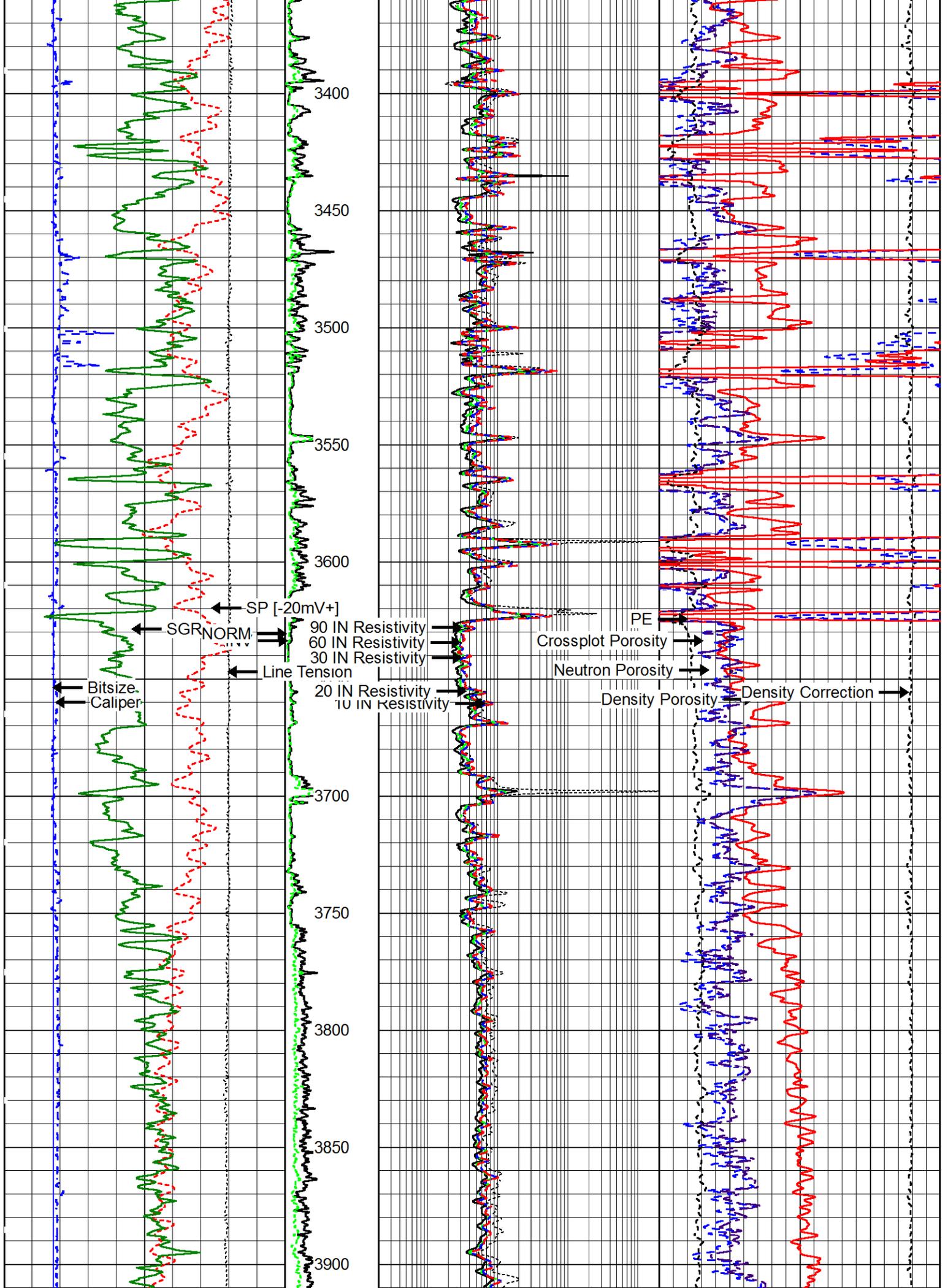


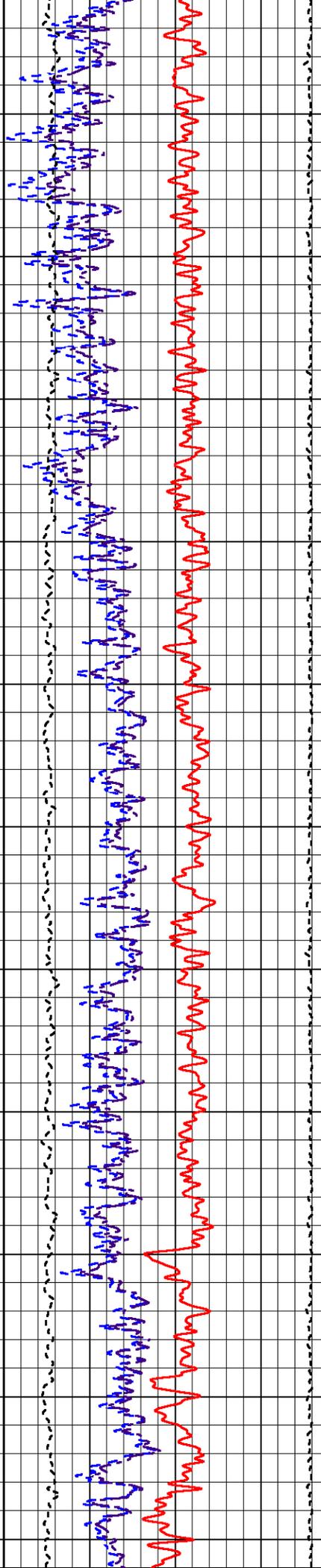
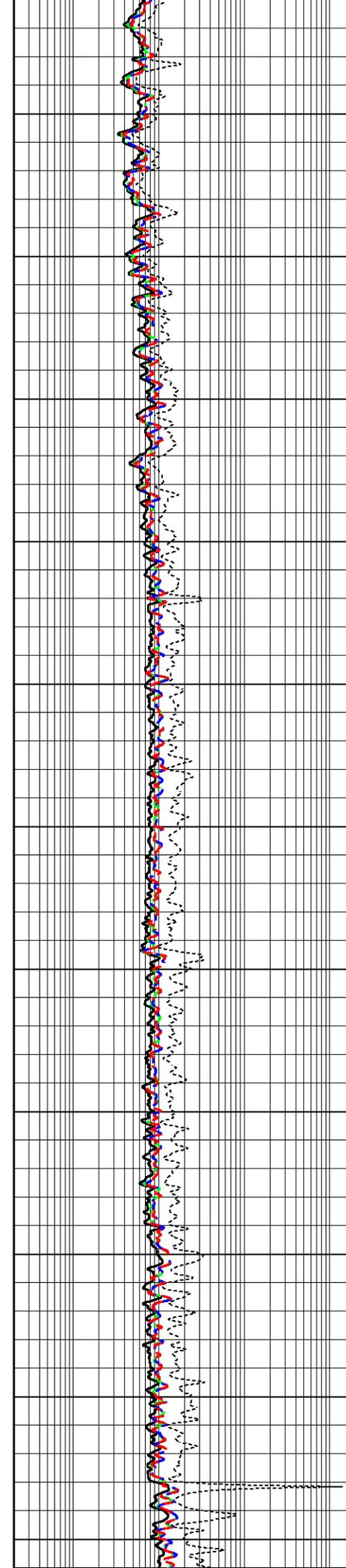
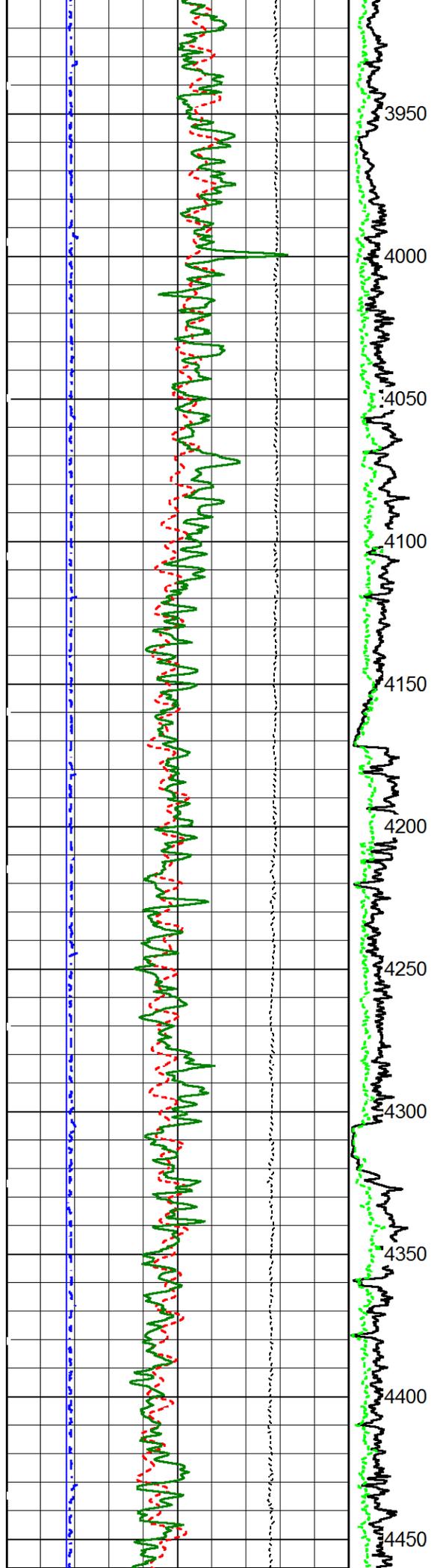


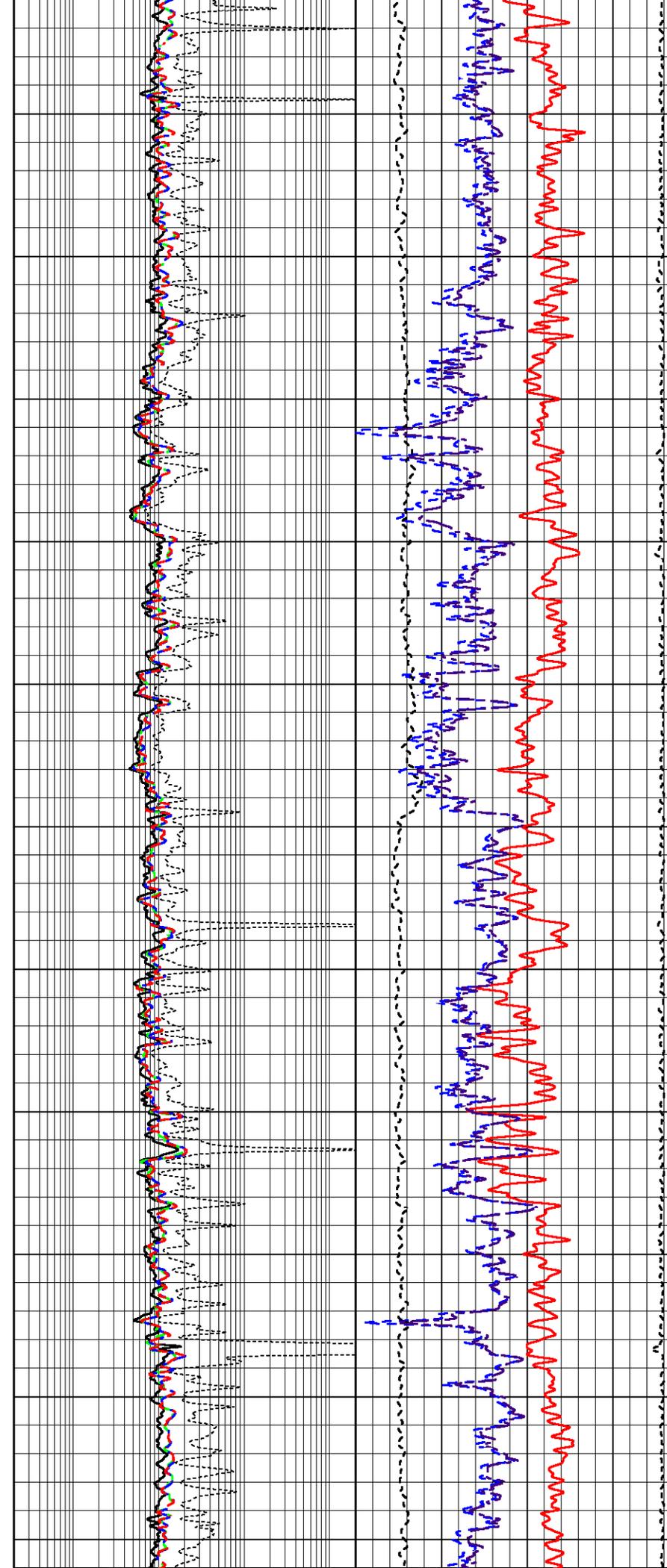
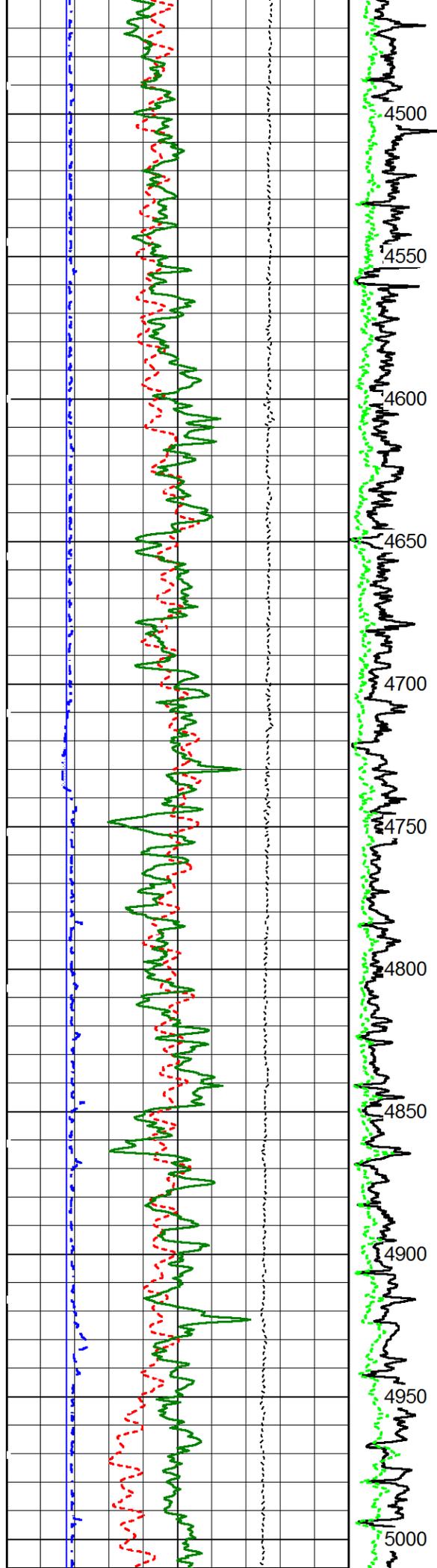


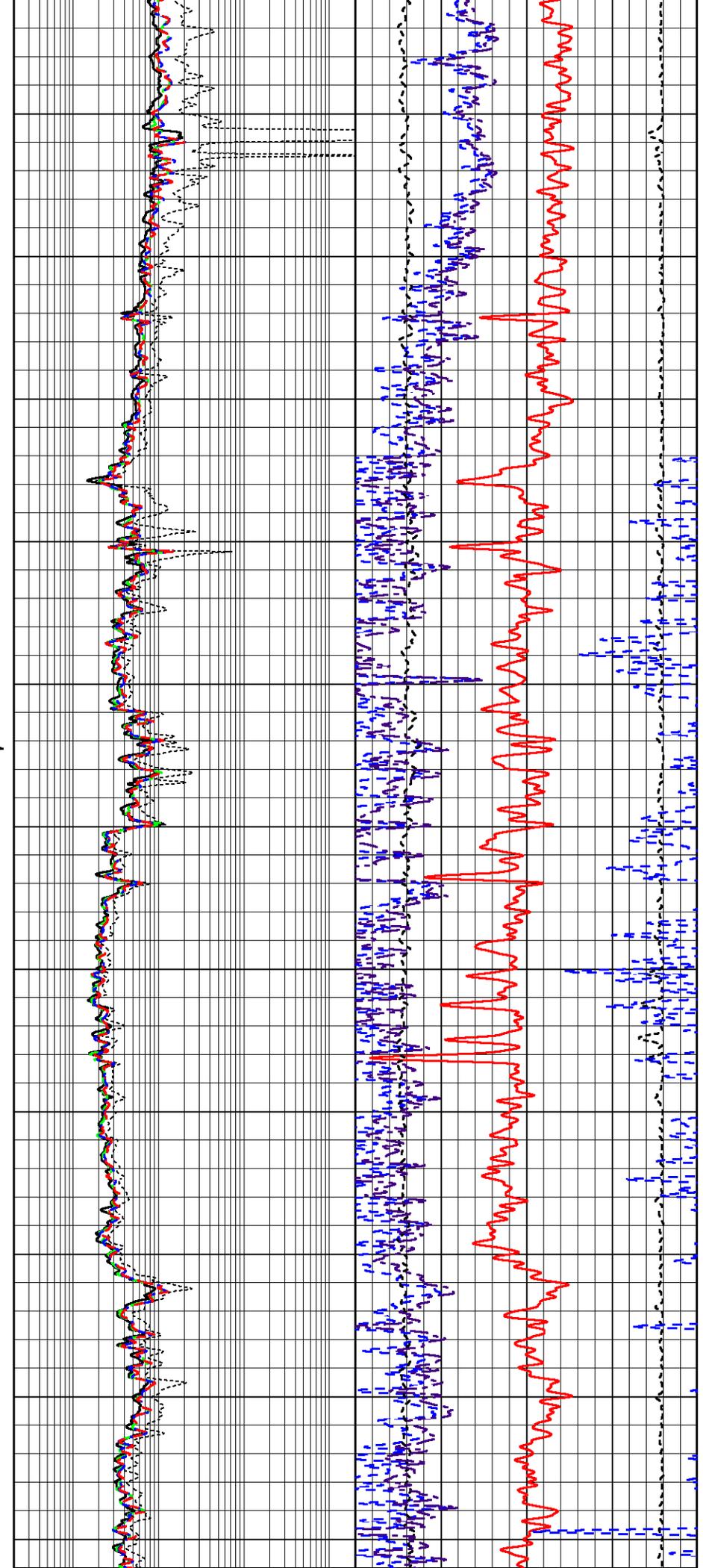
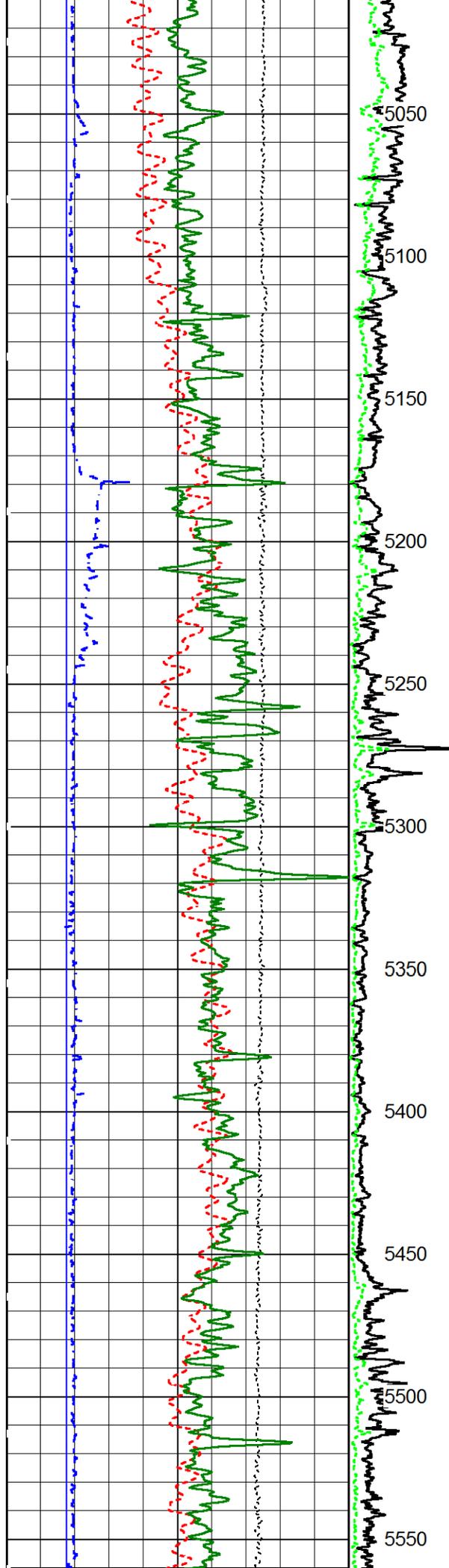


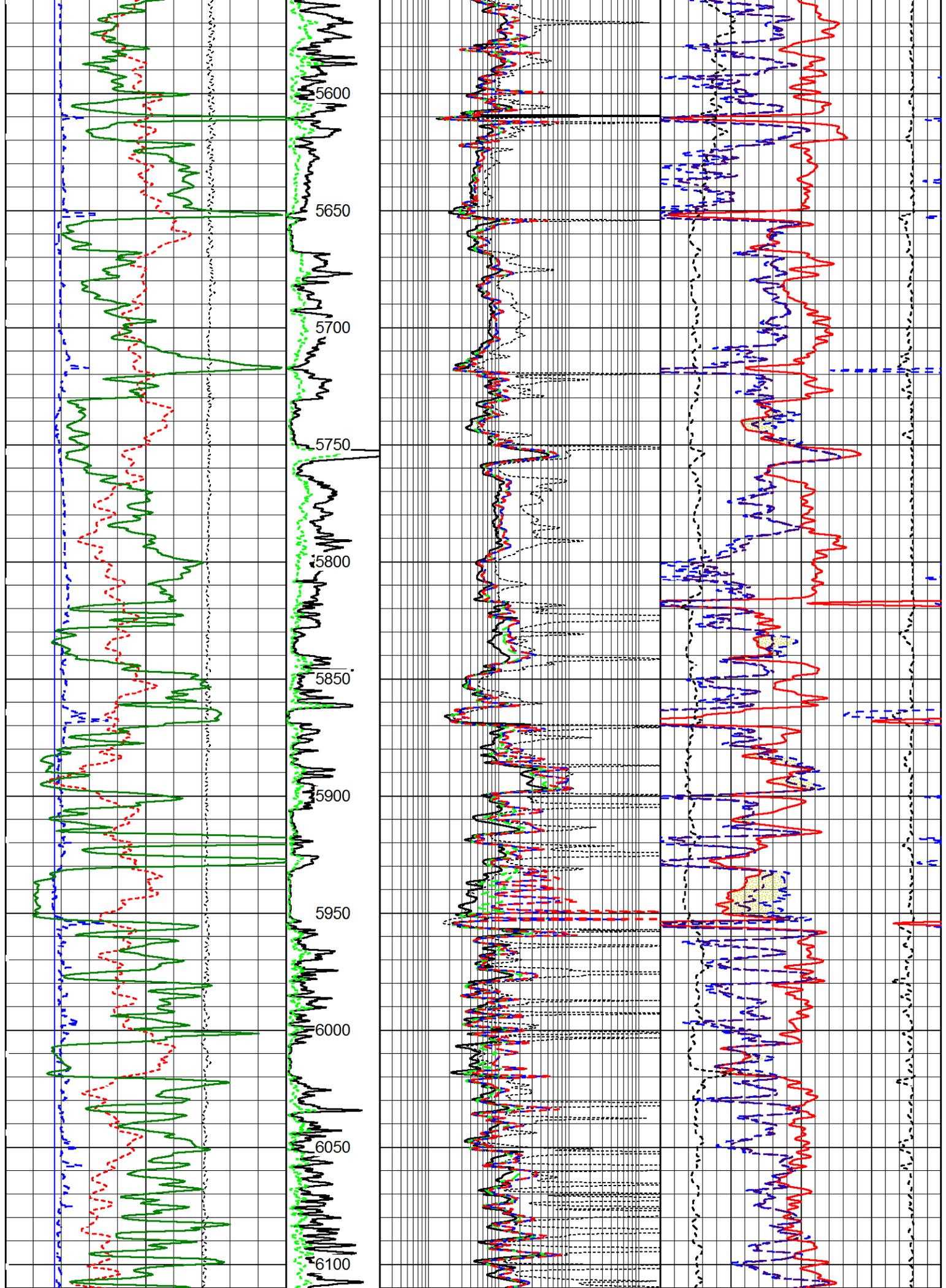


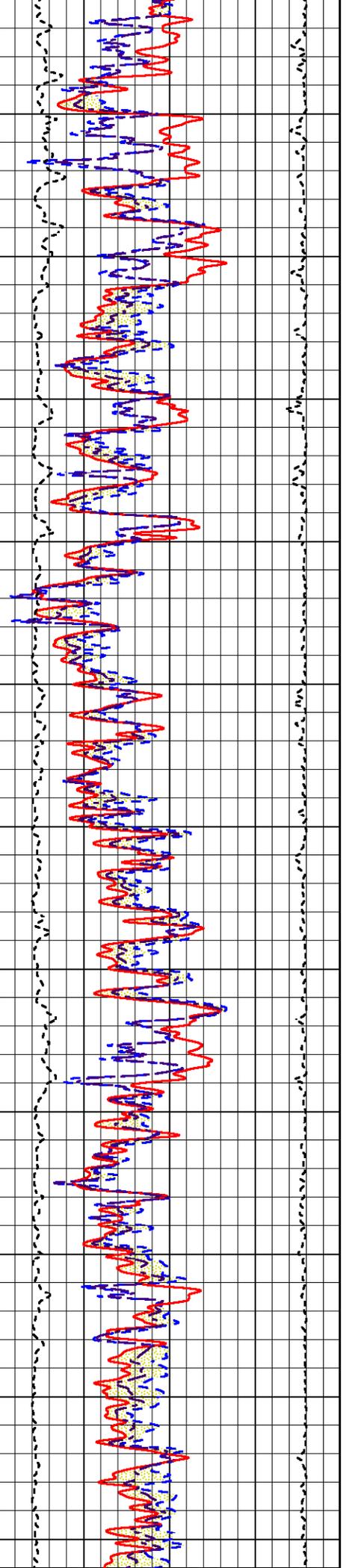
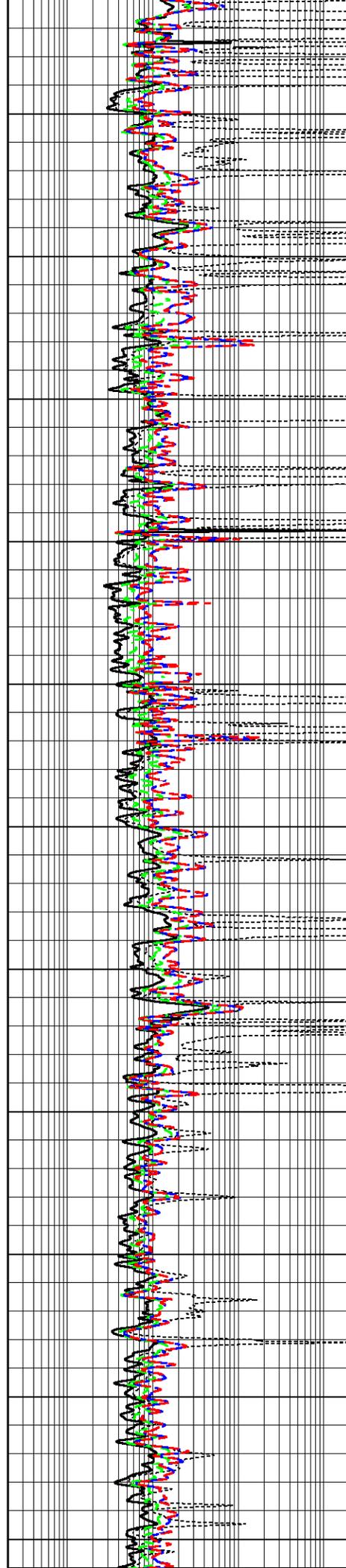
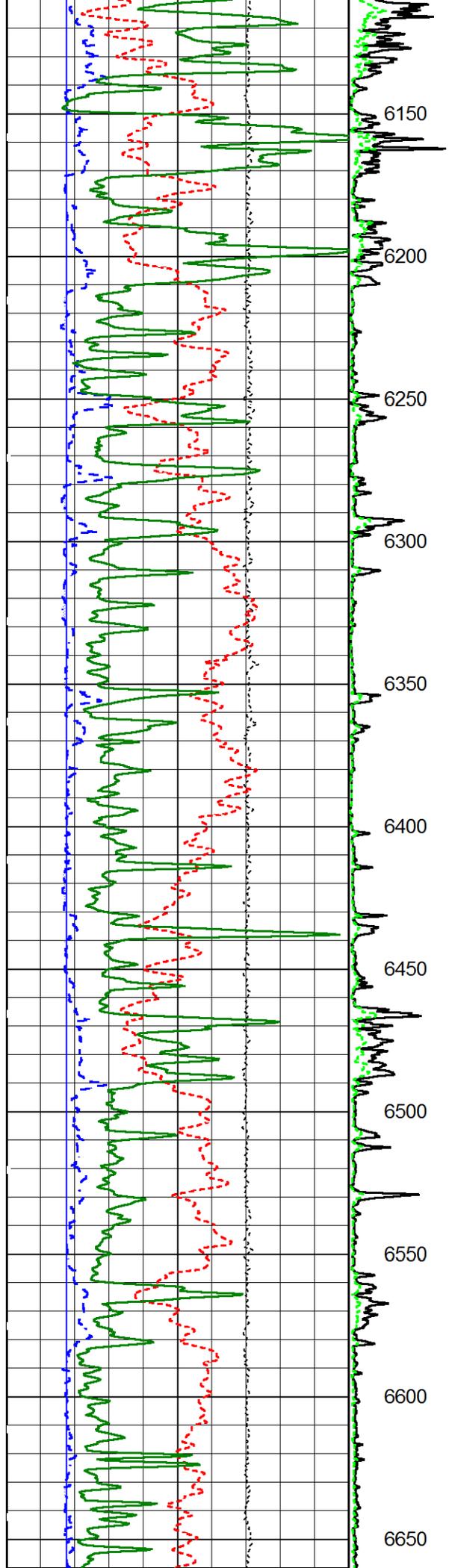


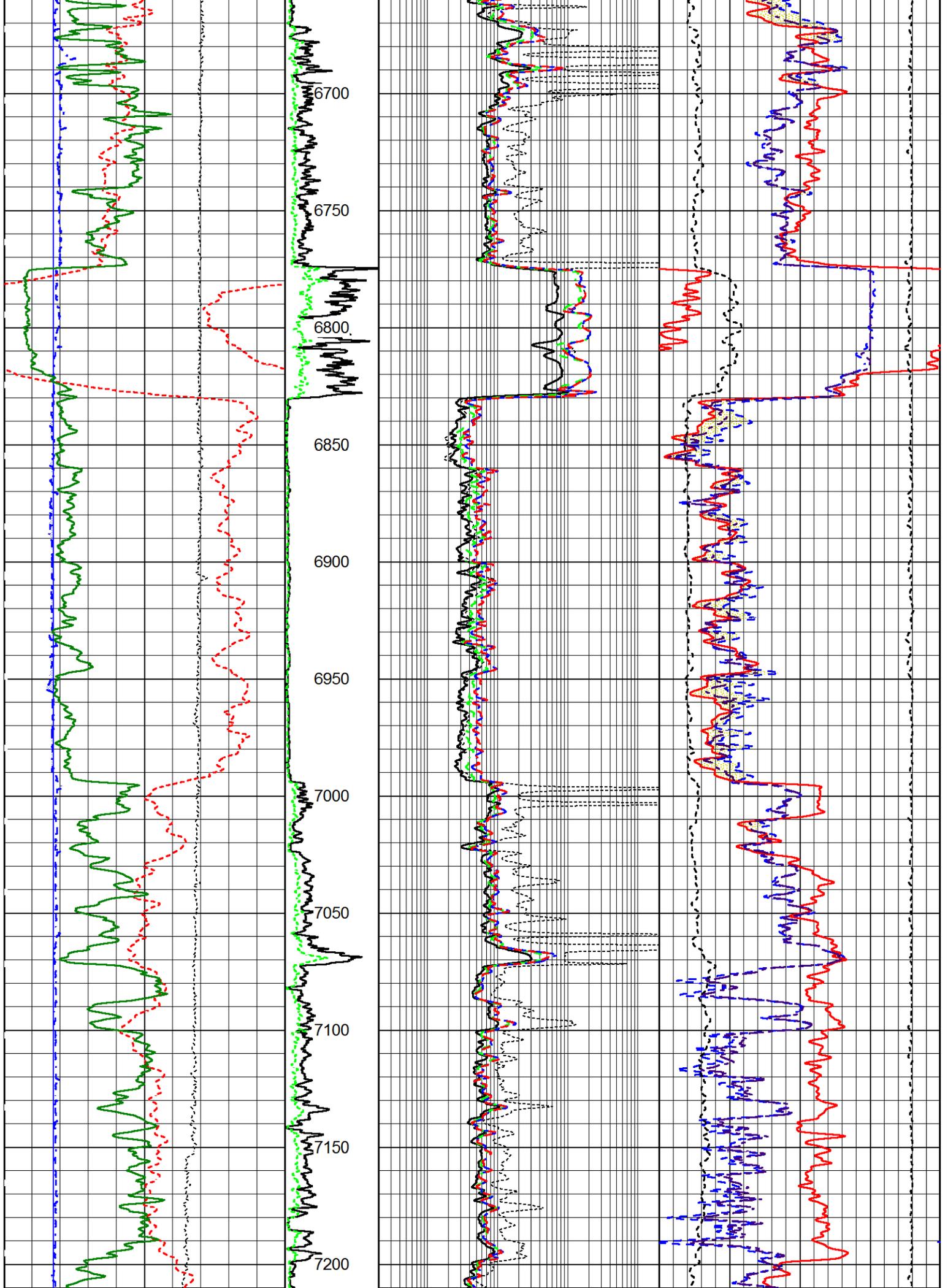


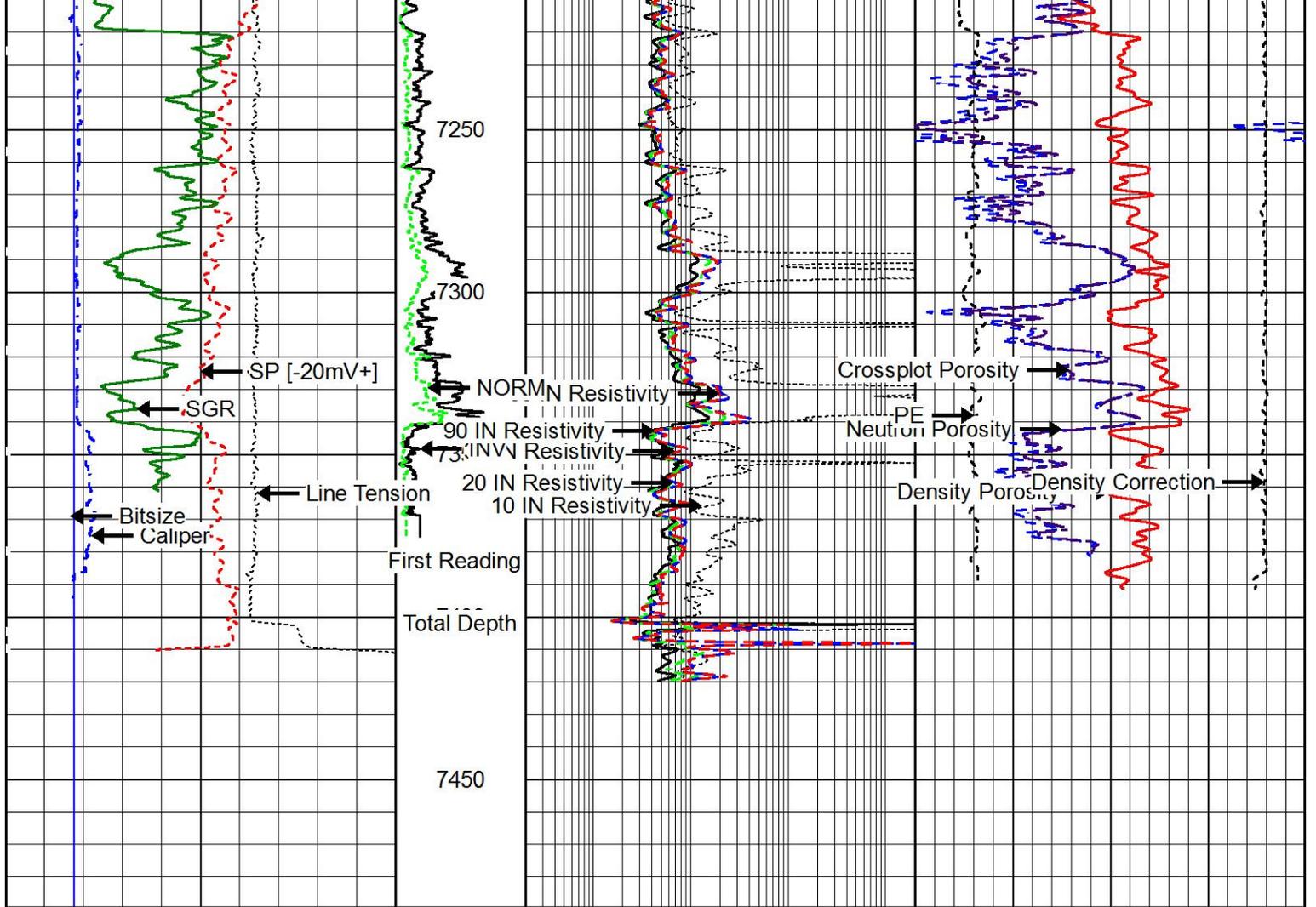












7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m) 2000	Neutron Porosity
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m) 2000	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m) 2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m) 2000	(Porosity Decimal Fraction) -0.1
	Line Tension	0	(Ohm-m)	0.2	90 IN Resistivity (Ohm-m) 2000	Crossplot Porosity
	5000 (lb)	0	0	20		(Porosity Decimal Fraction) -0.1
						PE 10
						Density Correction
						0.8 (g/cc) -0.2

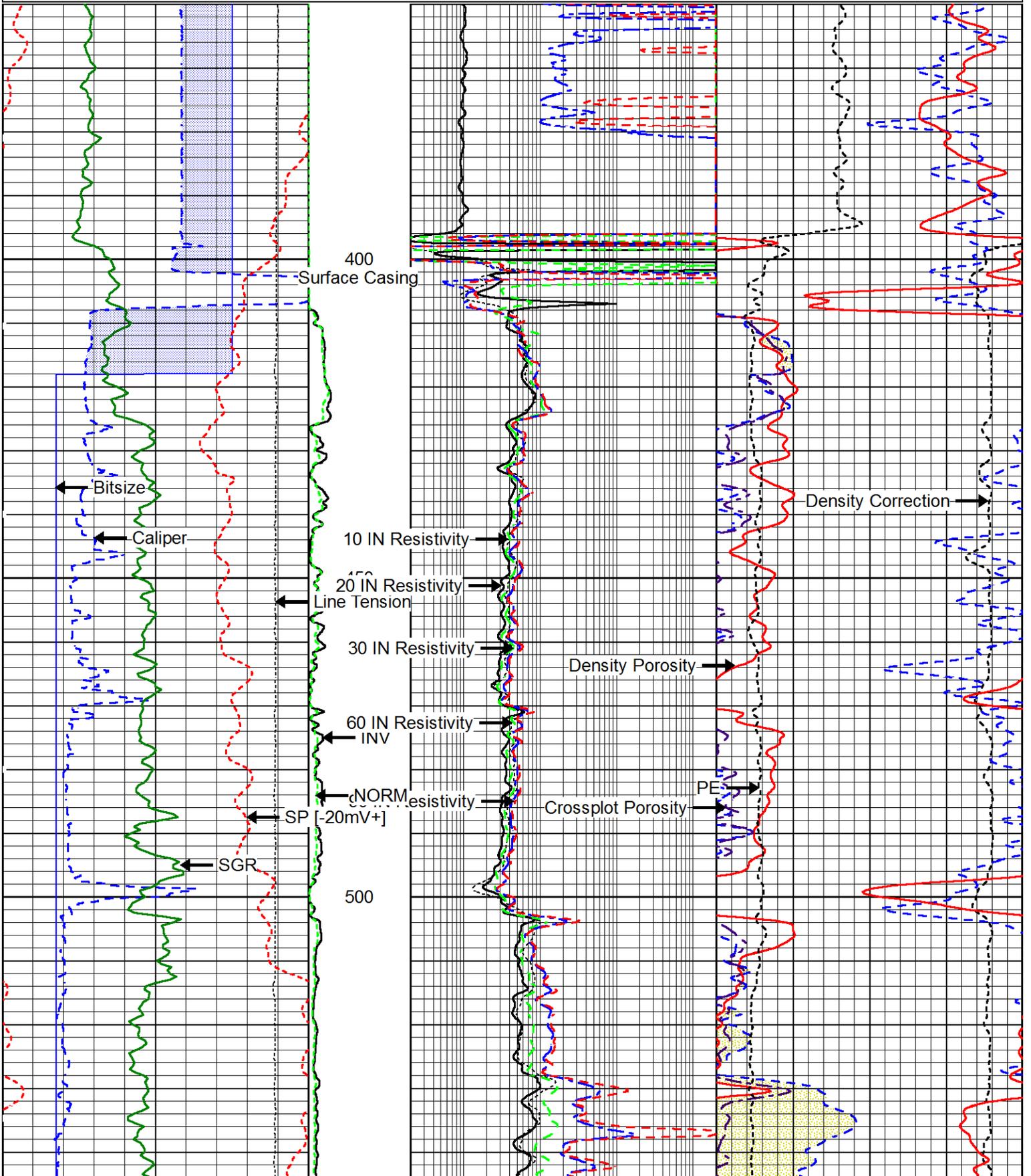
	Main Pass
--	-----------

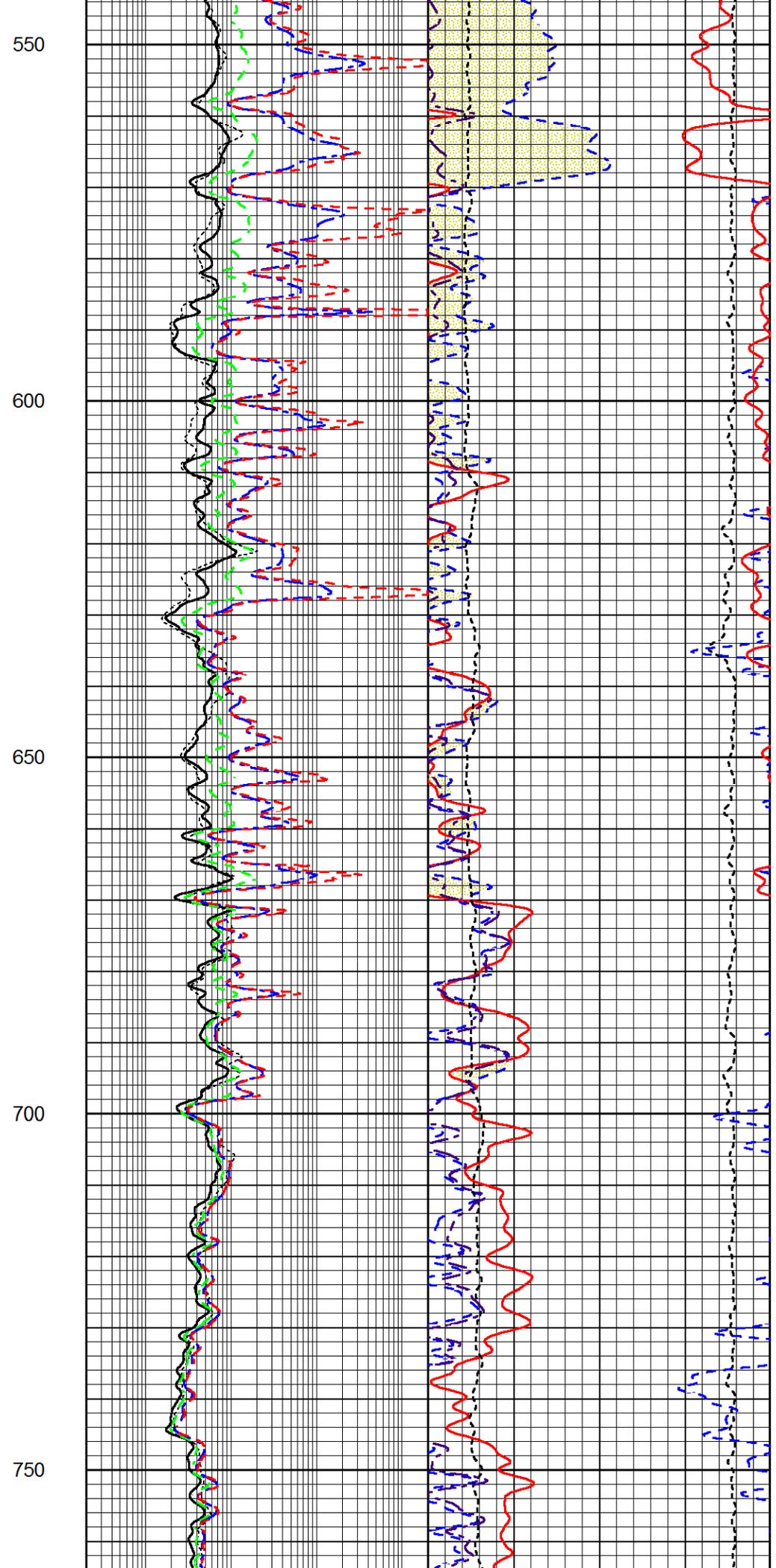
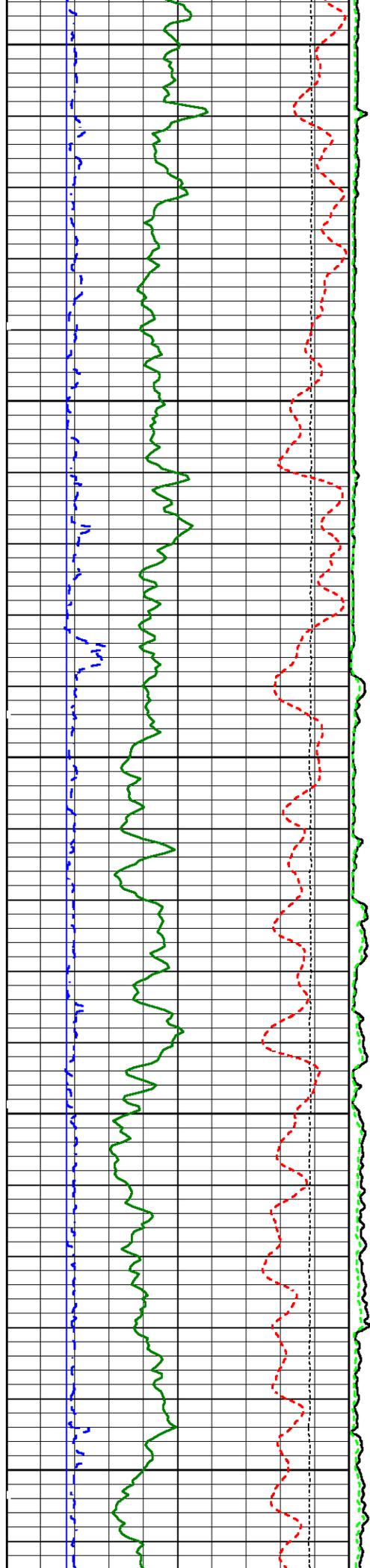
	Main Pass
--	-----------

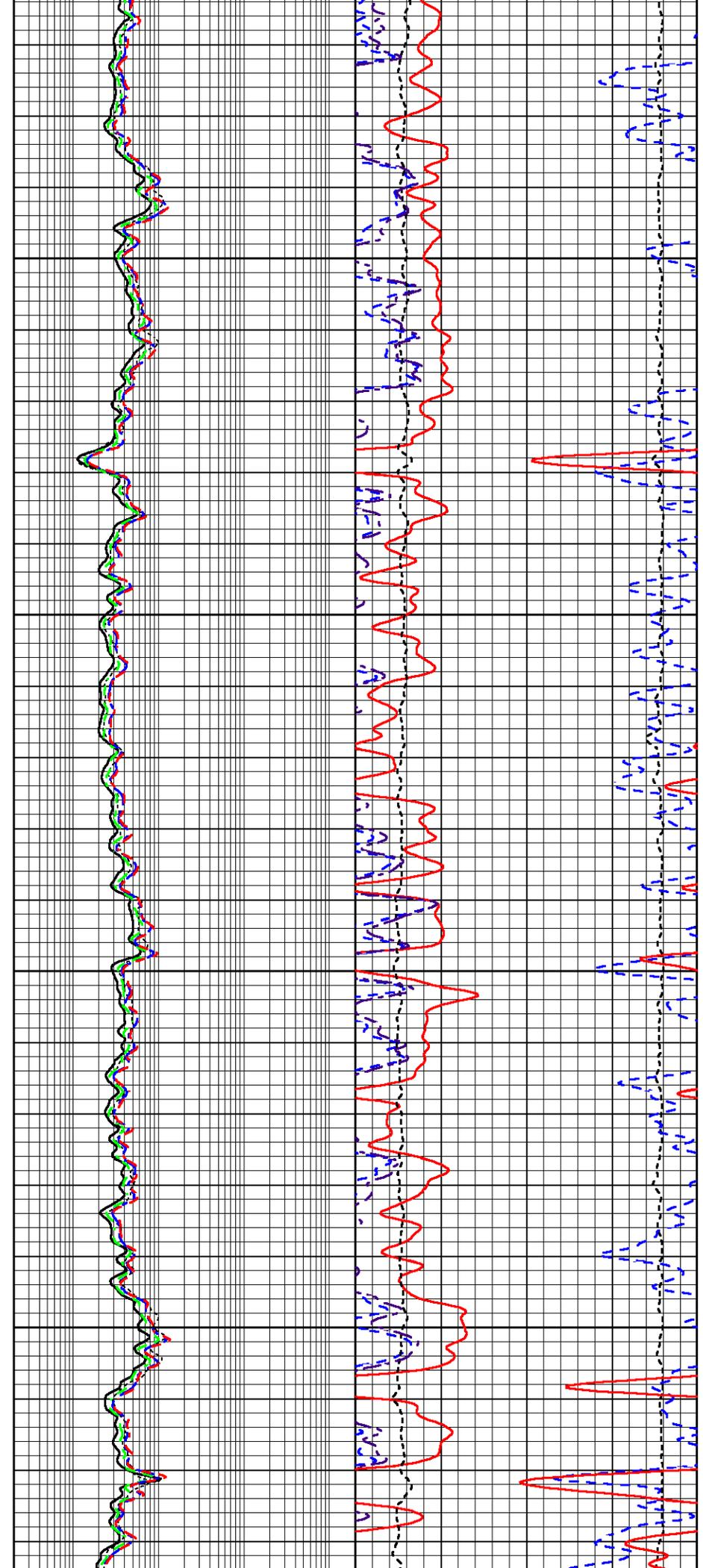
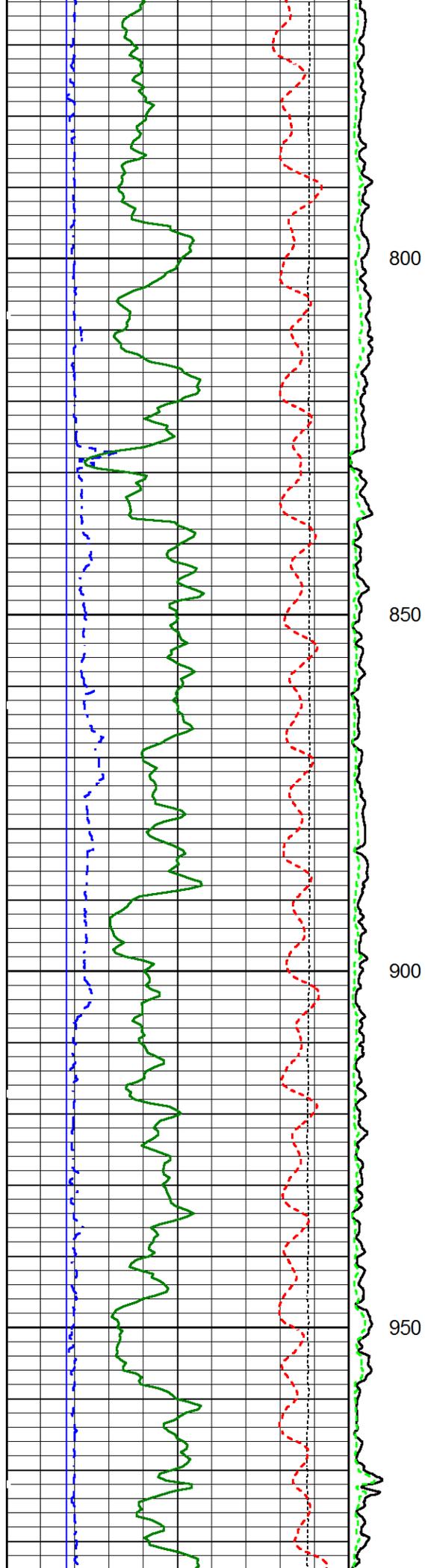
Database File	enduringreswlybrook.db
Dataset Pathname	West_Lybrook/well/run1/main
Presentation Format	3com_jat
Dataset Creation	Tue Jan 15 15:23:37 2019
Charted by	Depth in Feet scaled 1:240

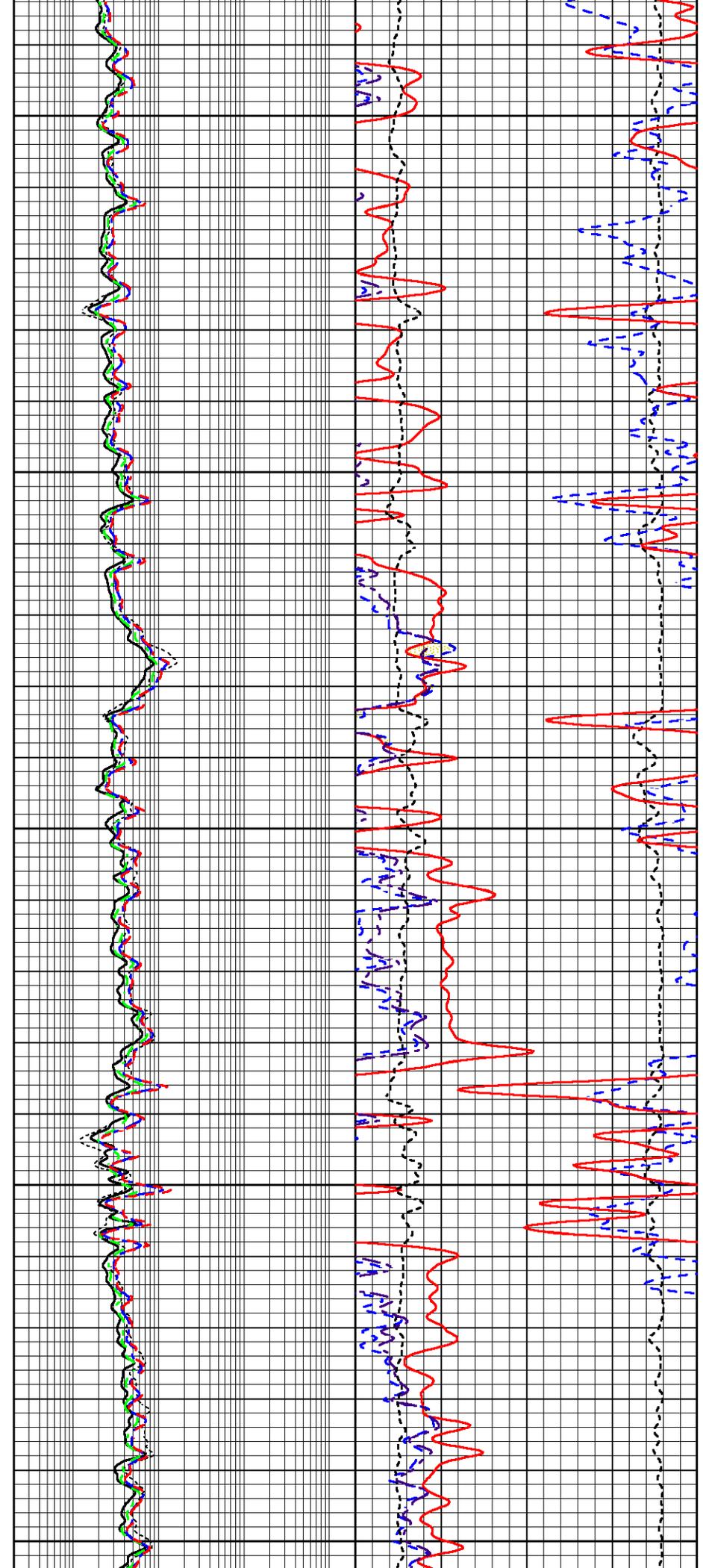
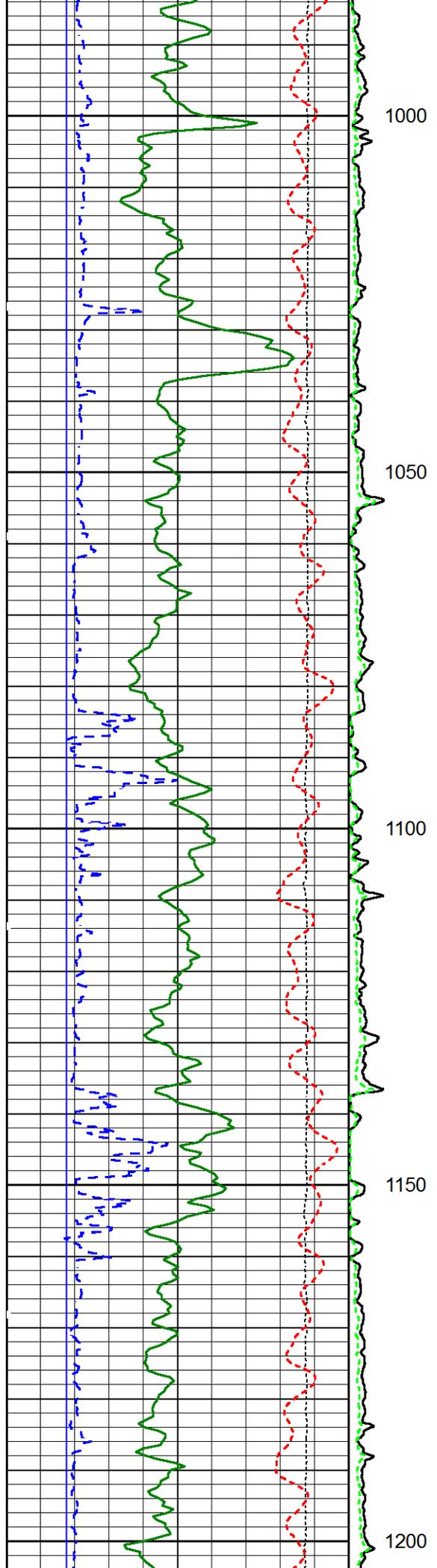
7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m) 2000	Neutron Porosity
---	--------------	----	-----	-----	--------------------------------	------------------

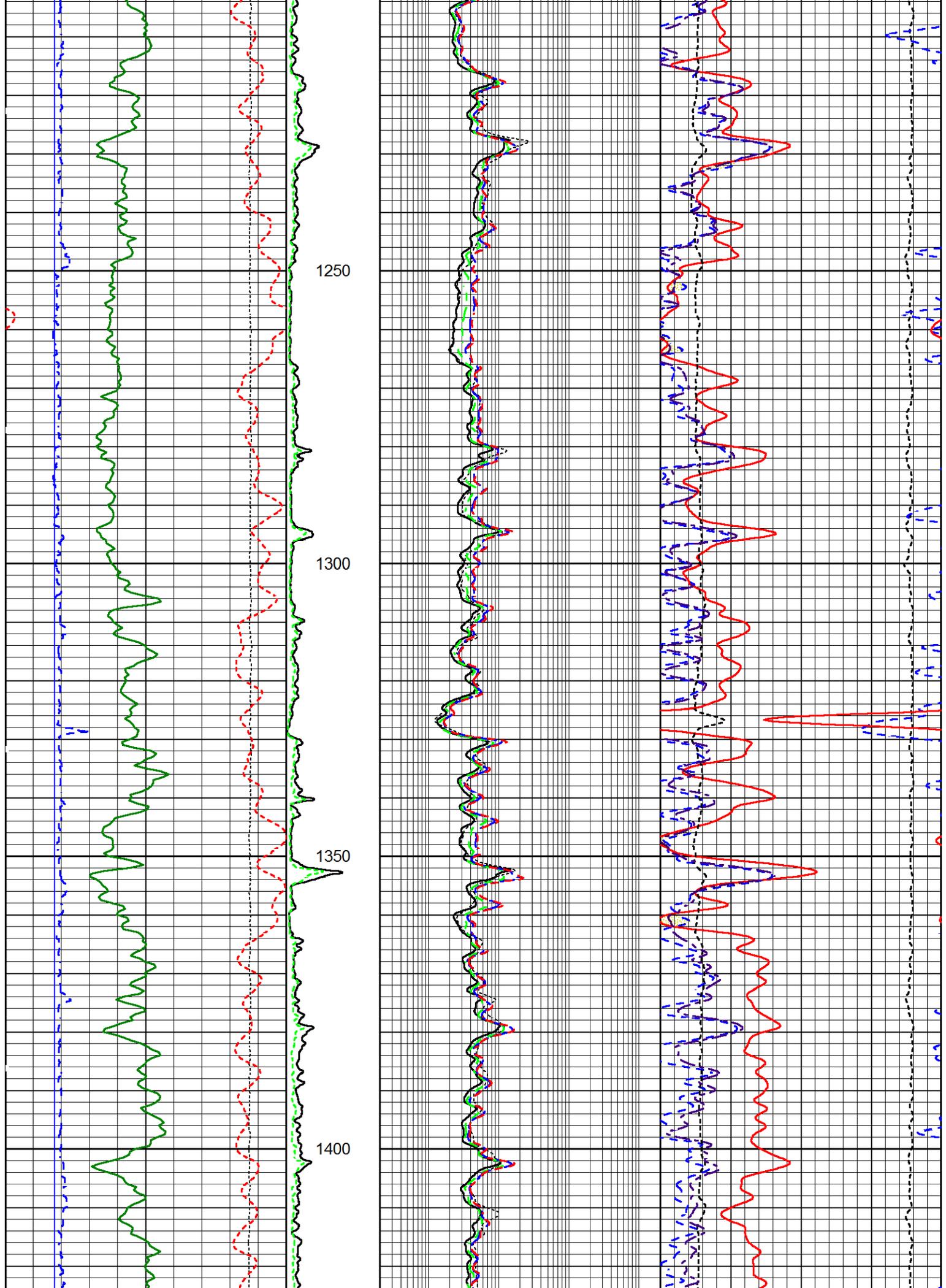
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction)	-0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity		
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction)	-0.1
	Line Tension	(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity			
	5000 (lb)	0	0	20	(Porosity Decimal Fraction) -0.1				
					0	PE	10	Density Correction	
								0.8 (g/cc)	-0.2

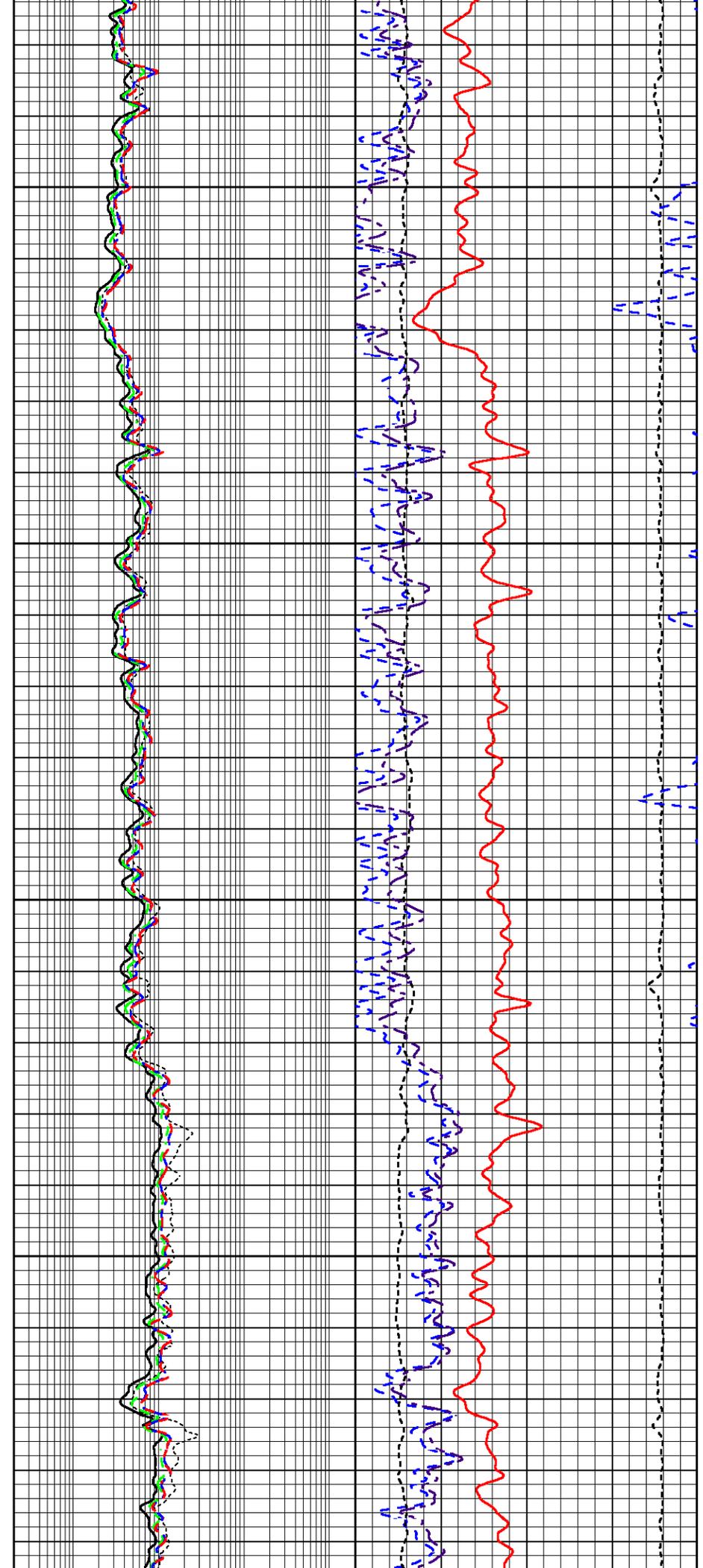
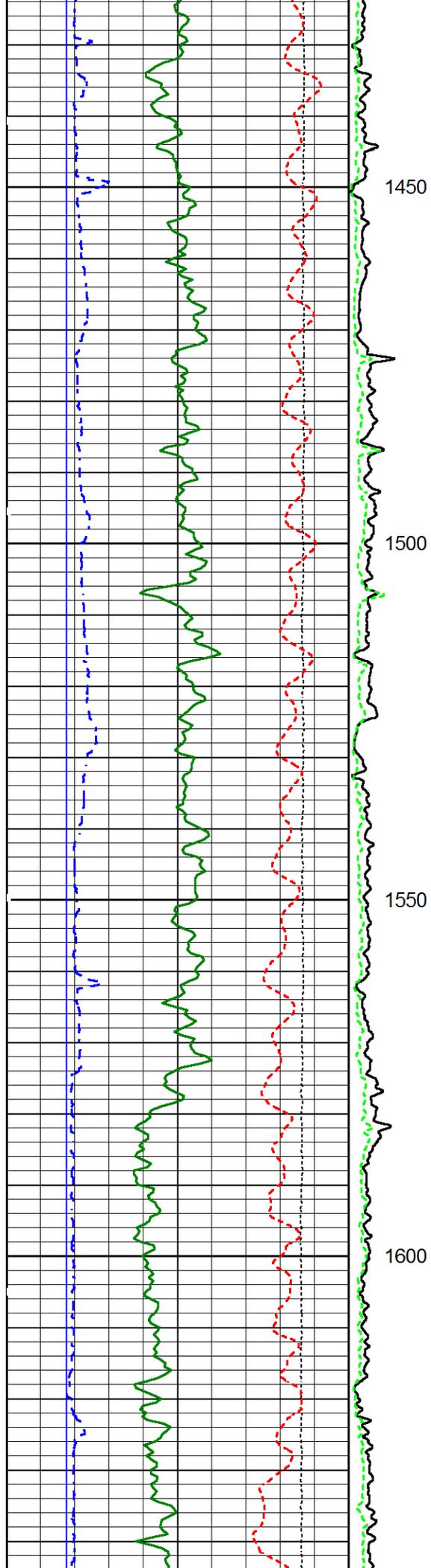


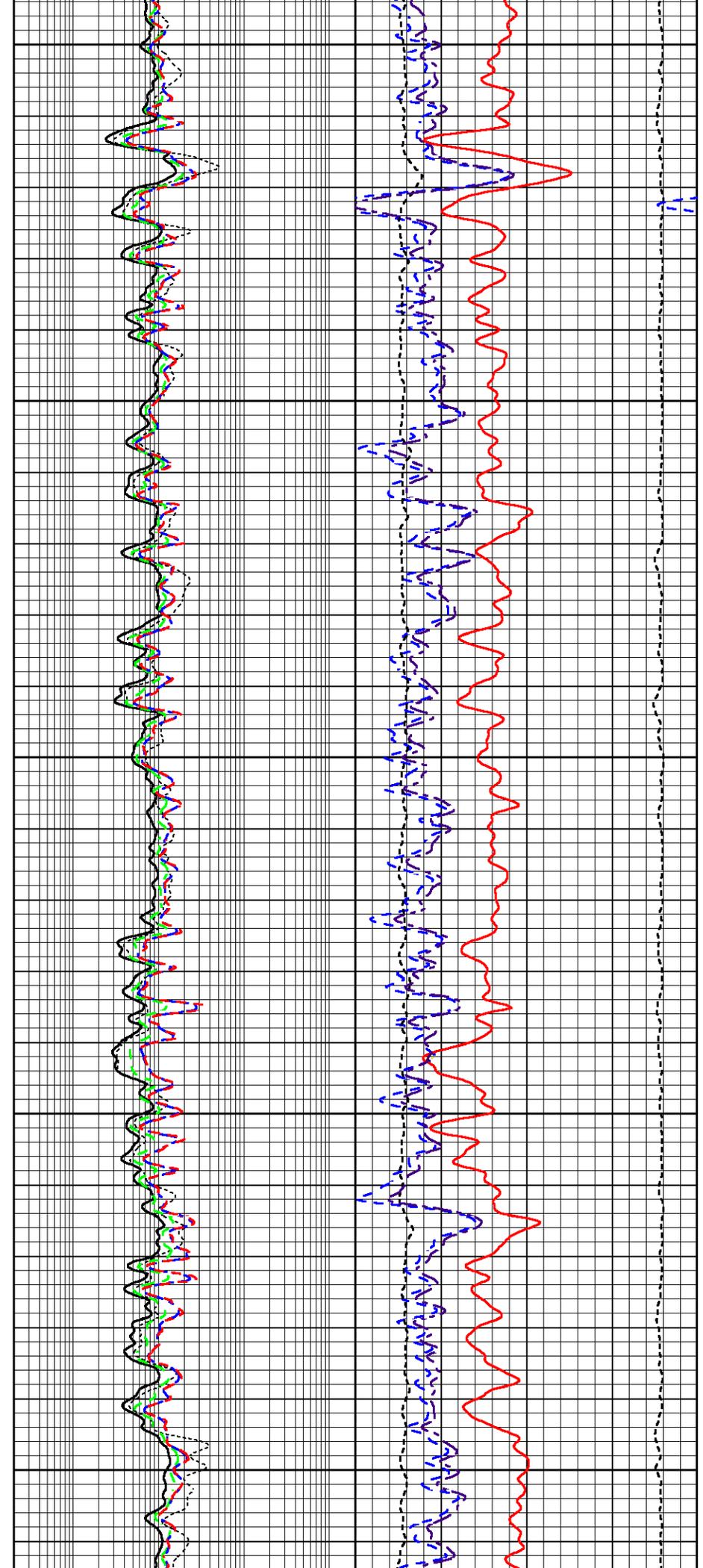
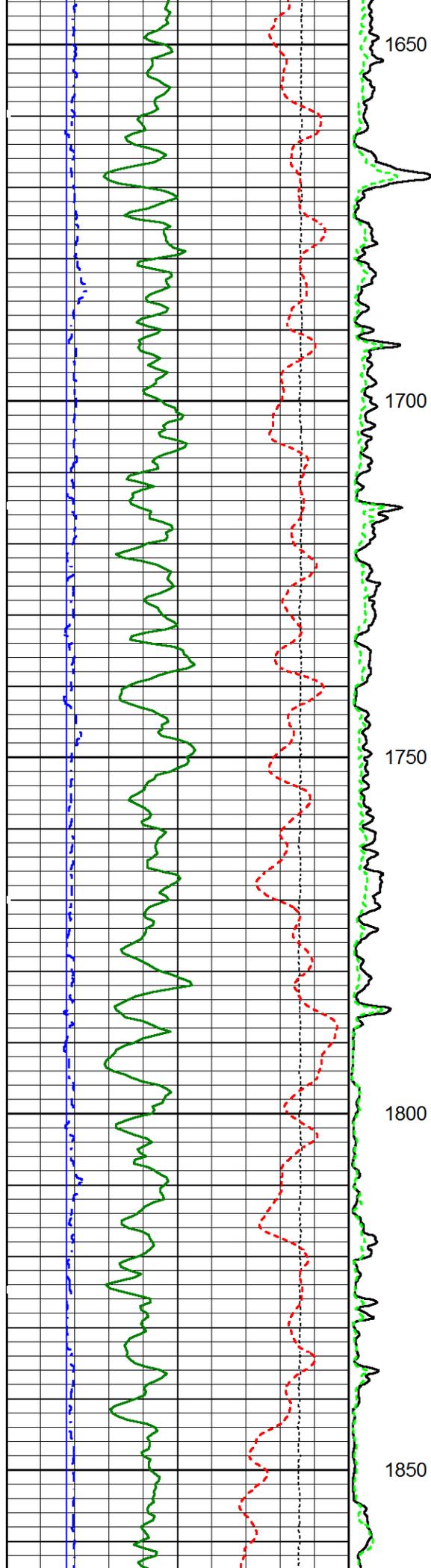


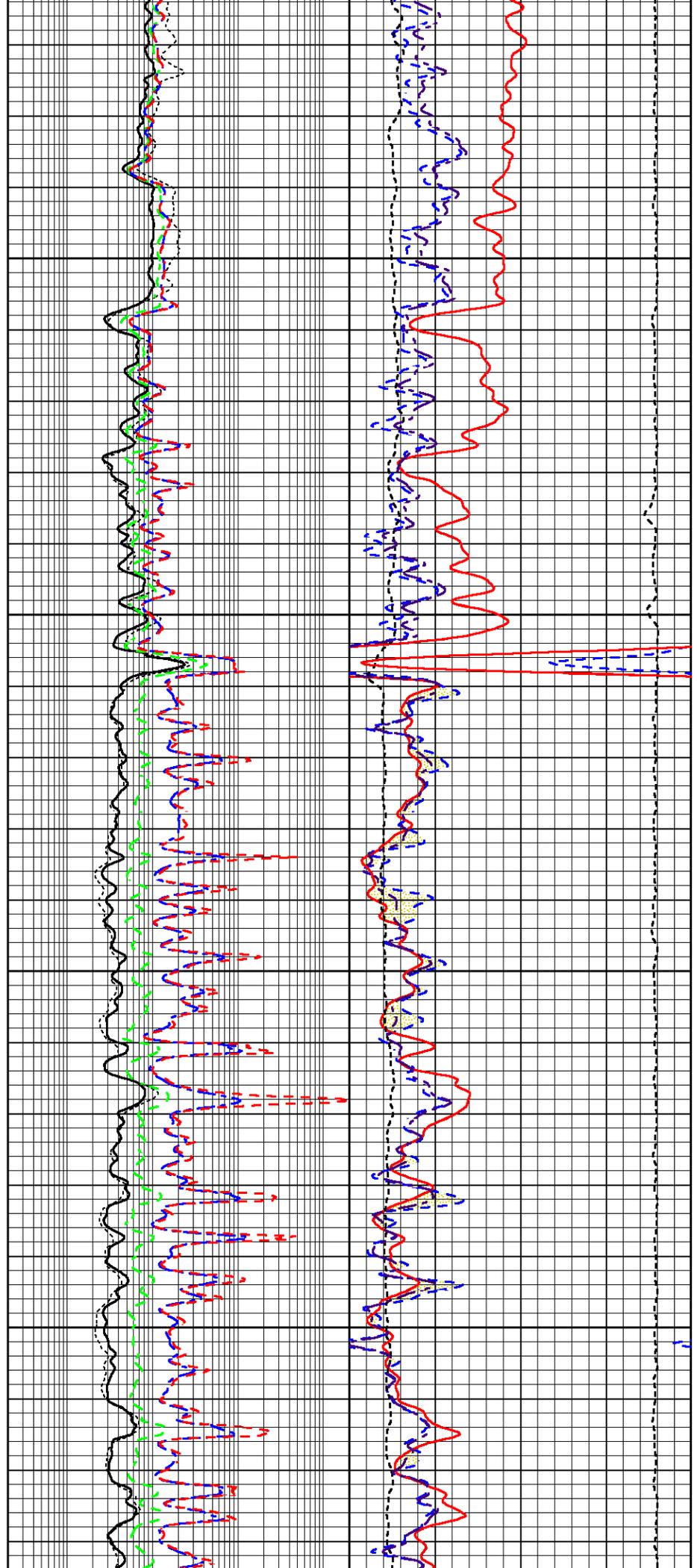
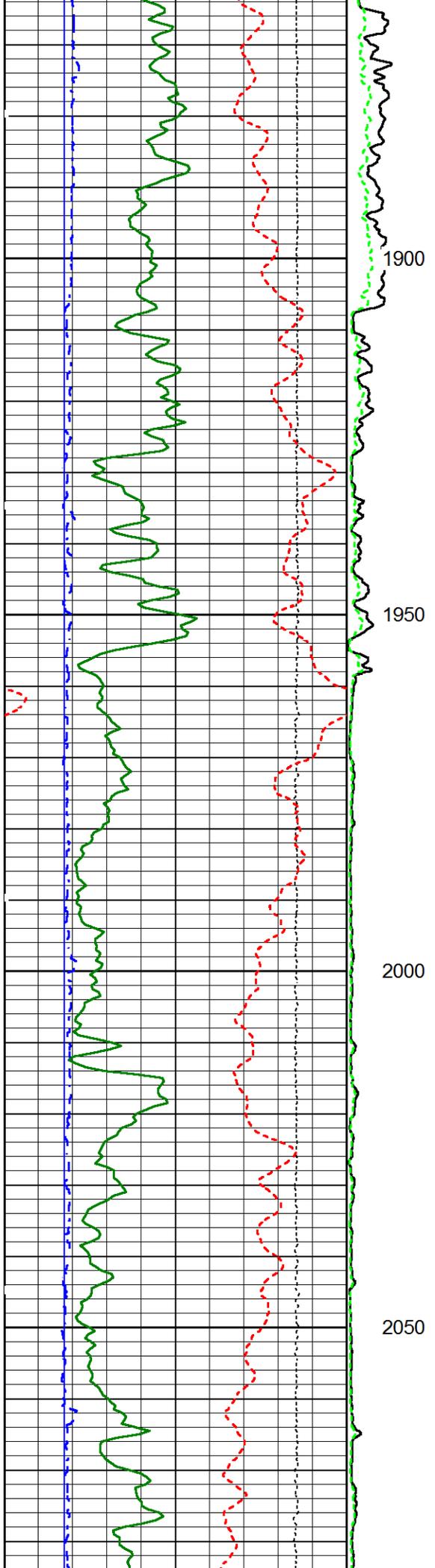


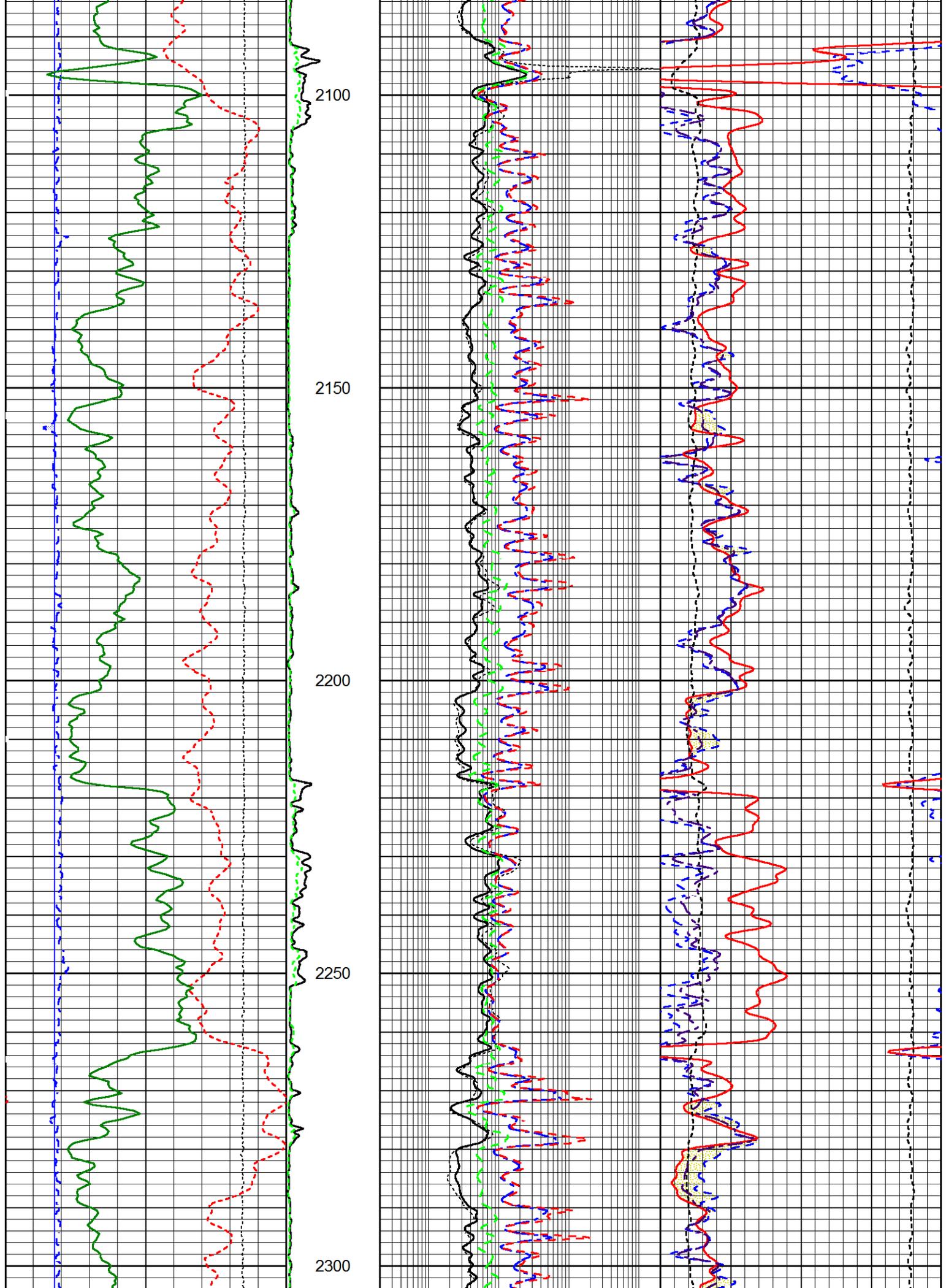


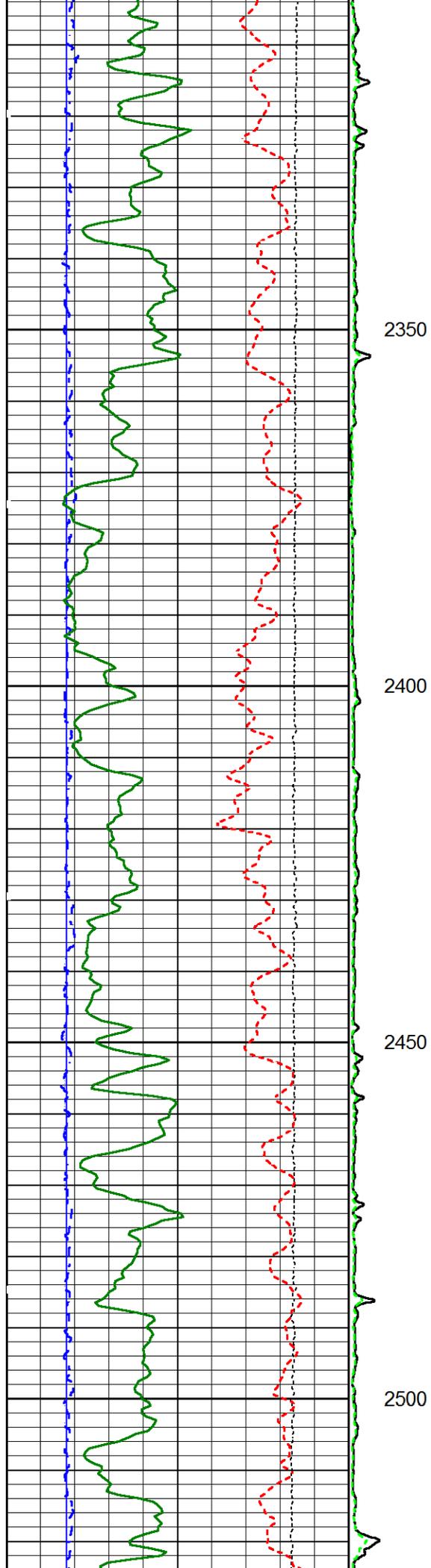










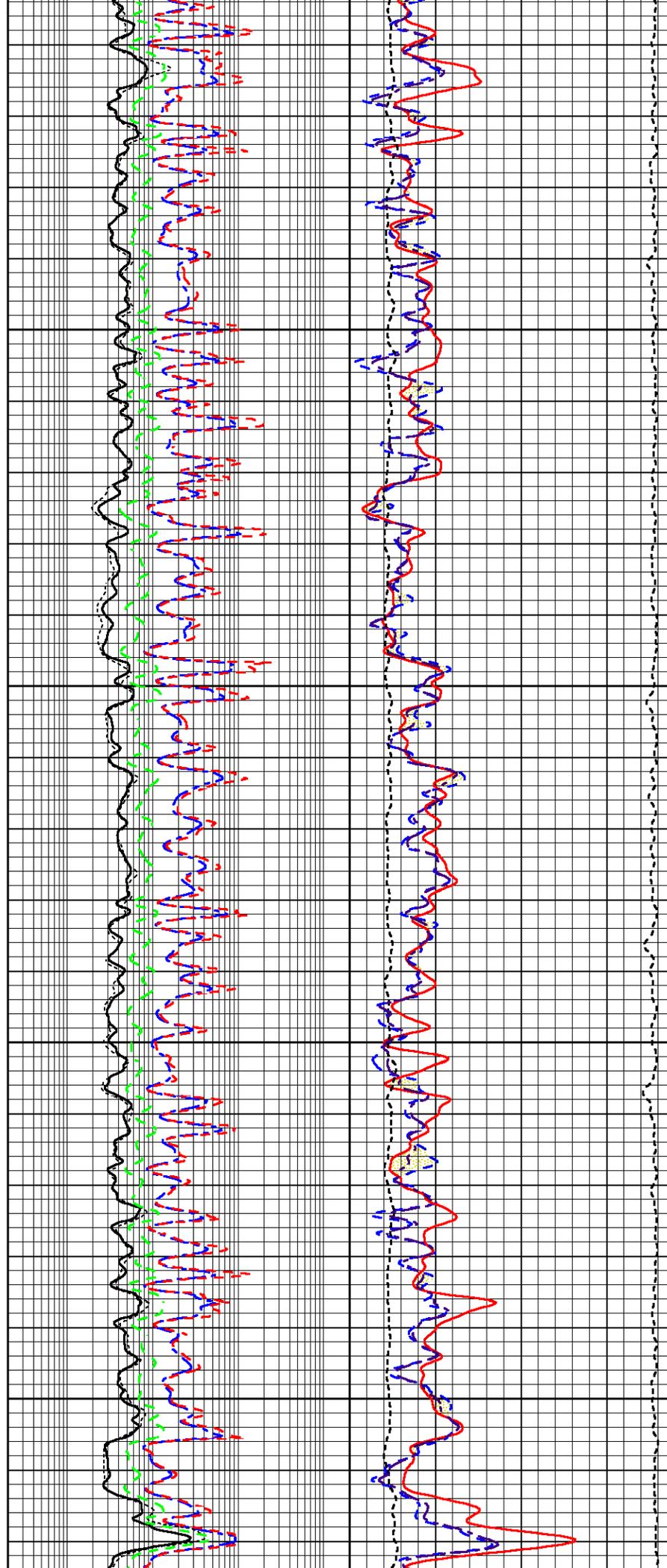


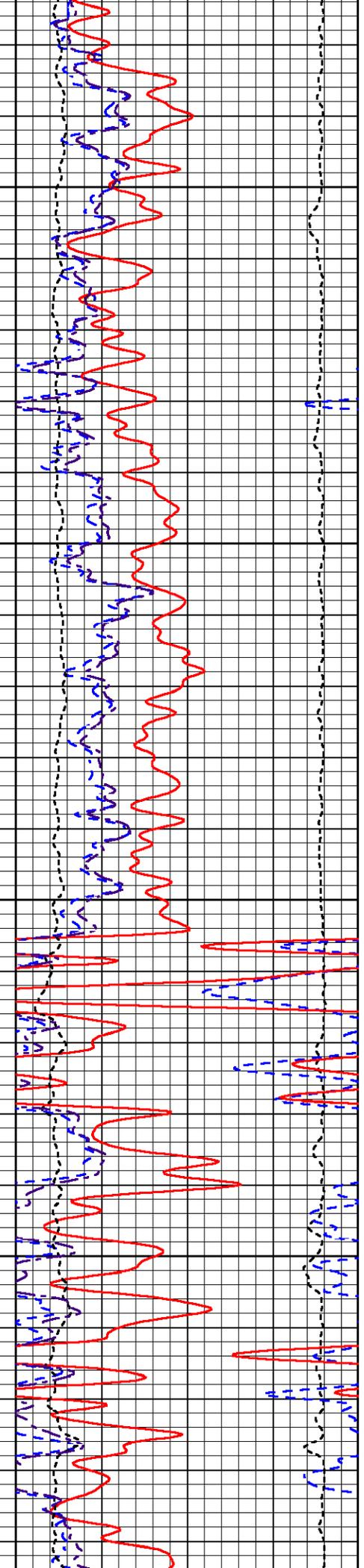
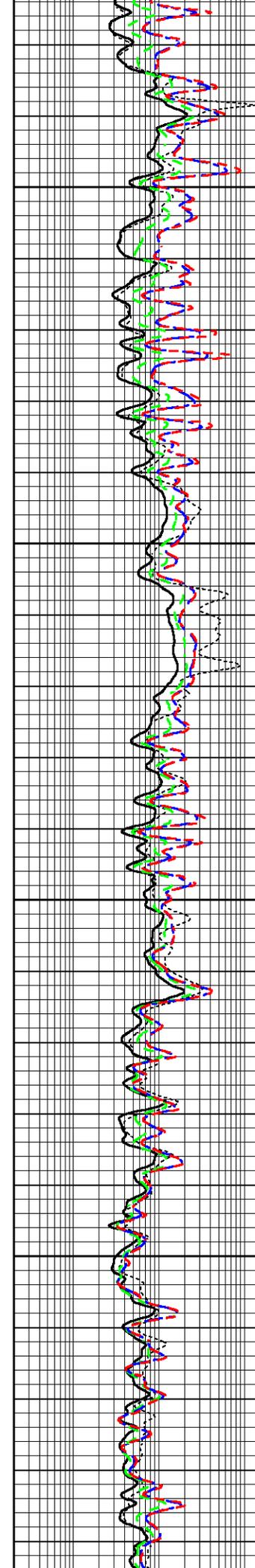
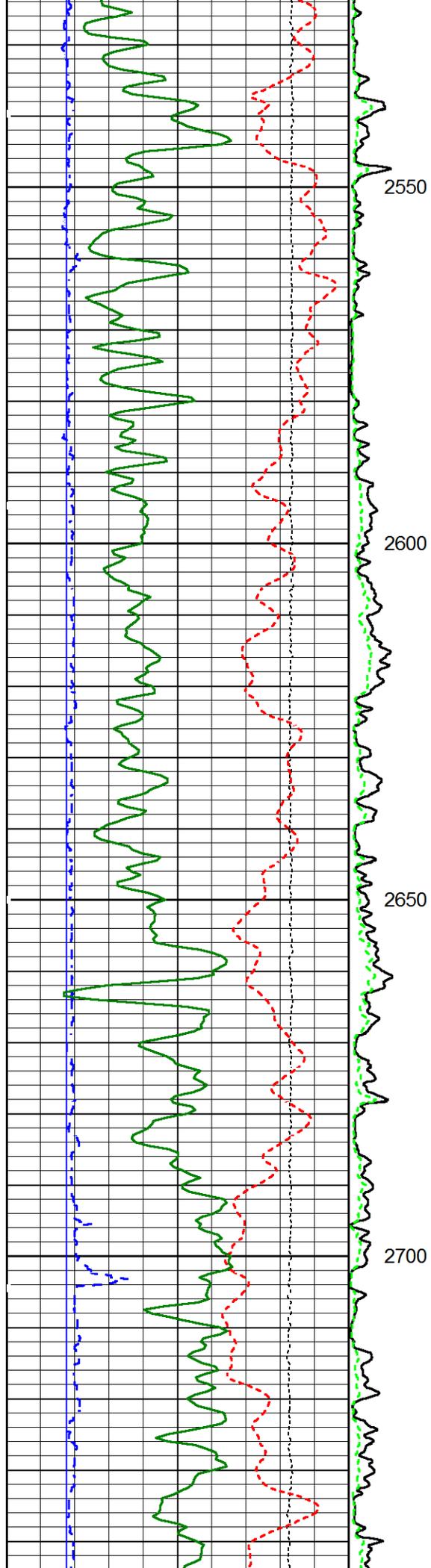
2350

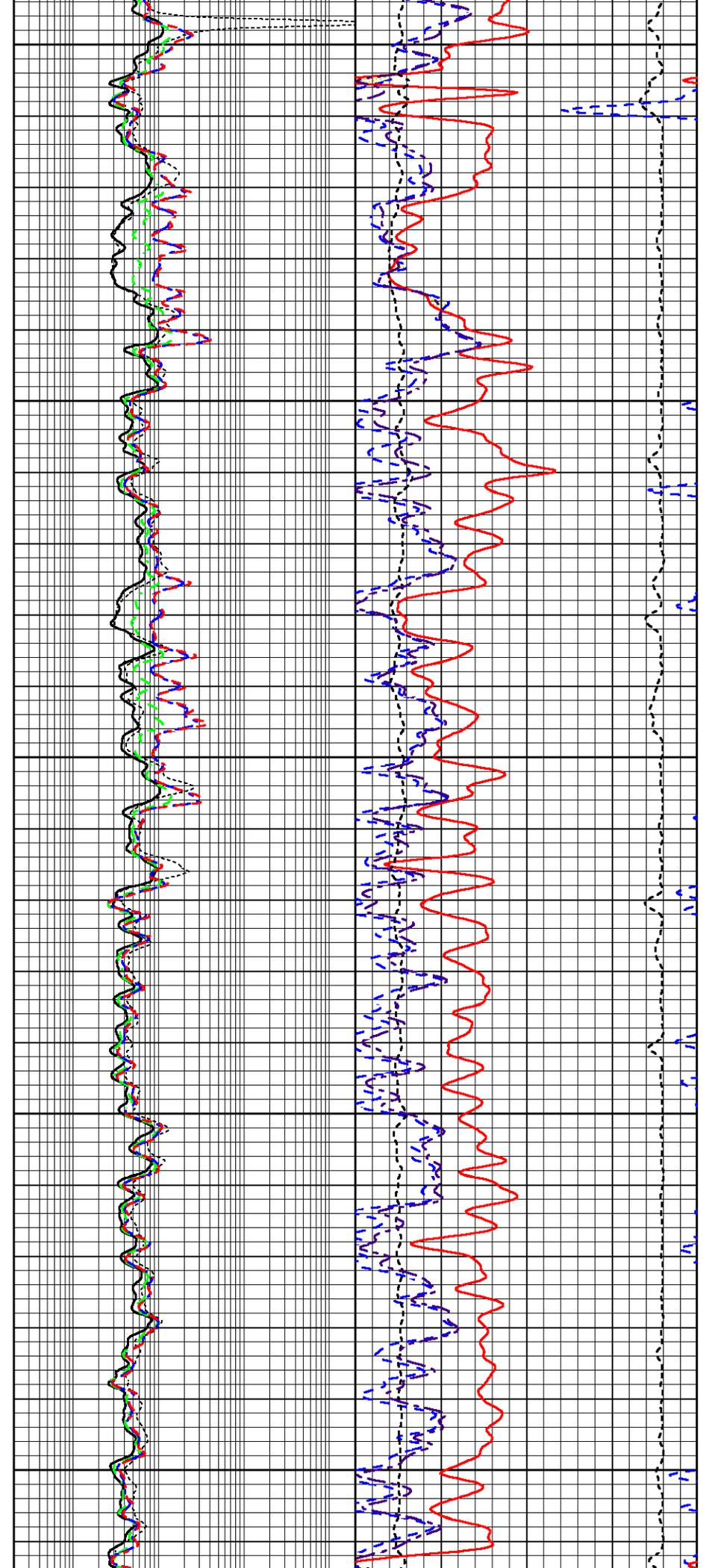
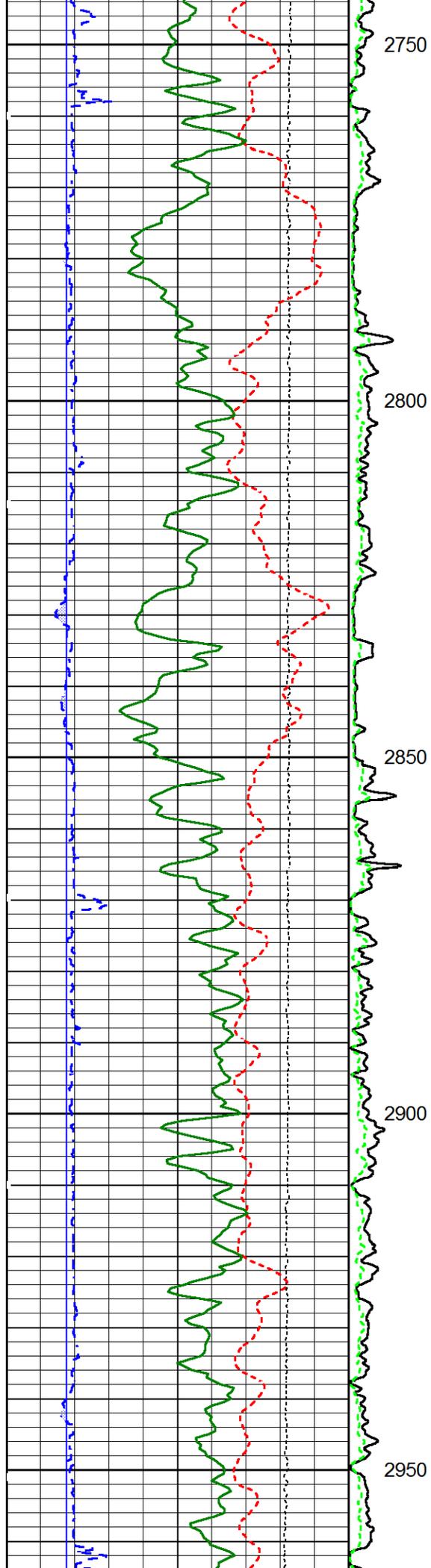
2400

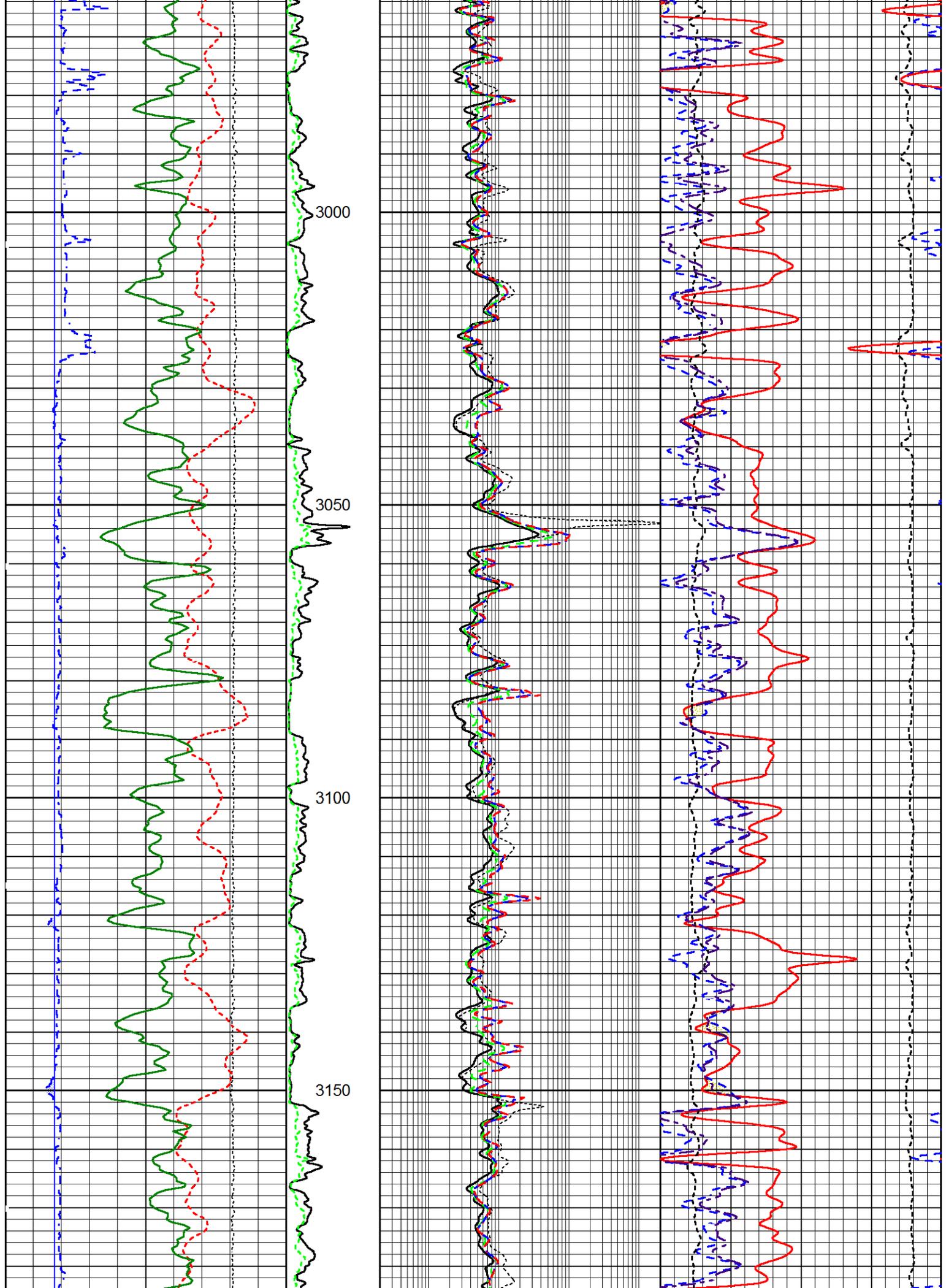
2450

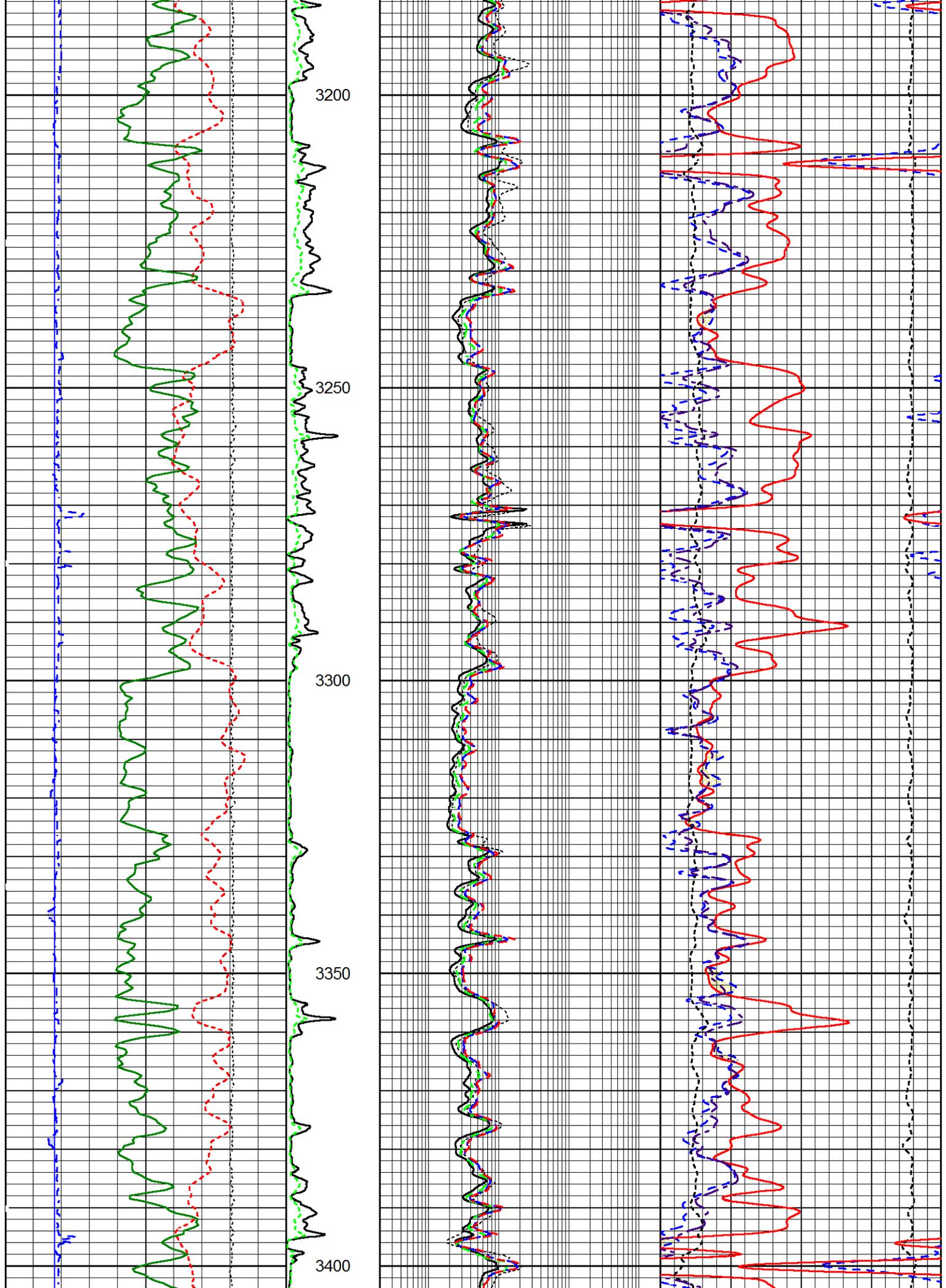
2500

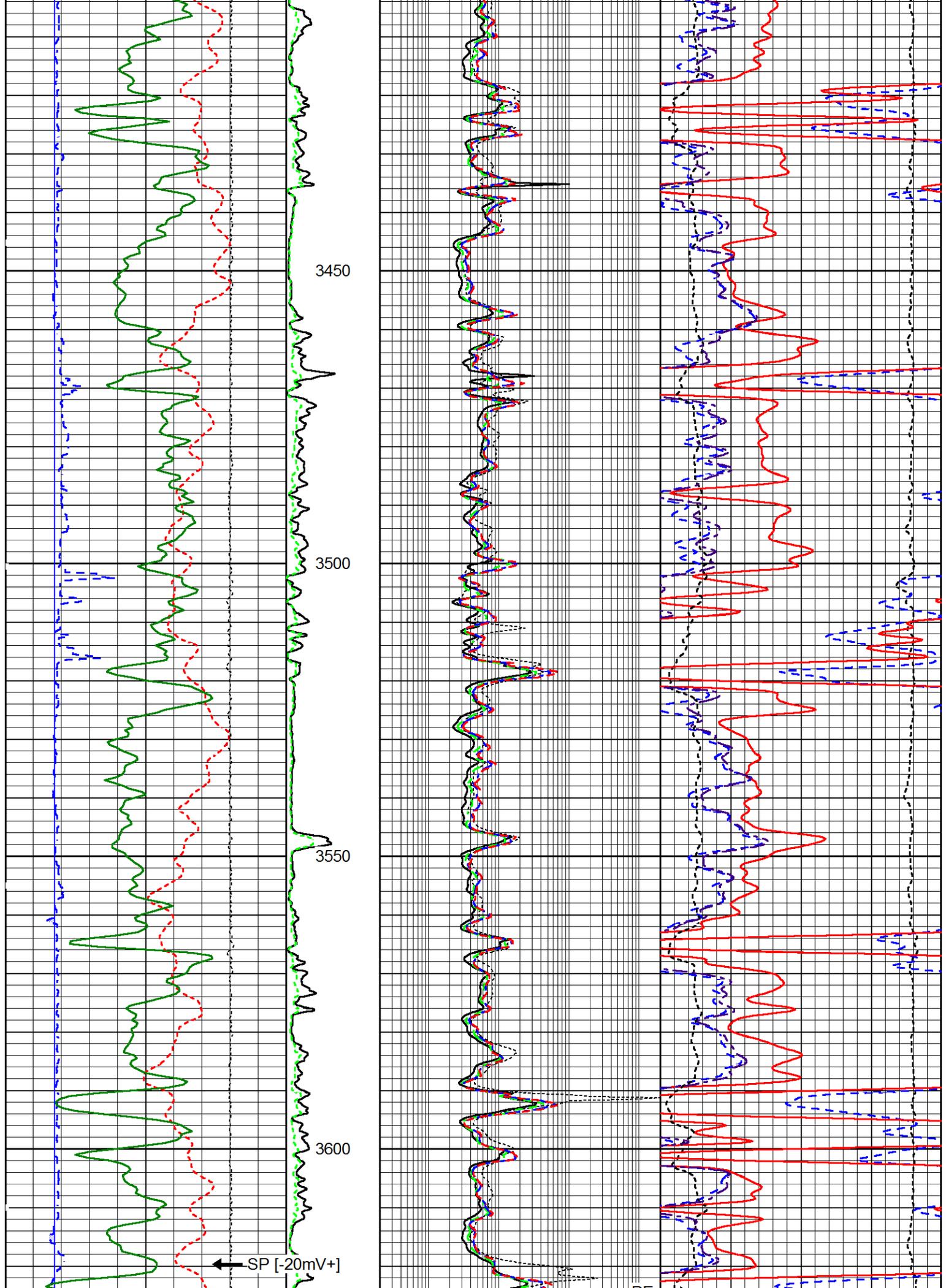


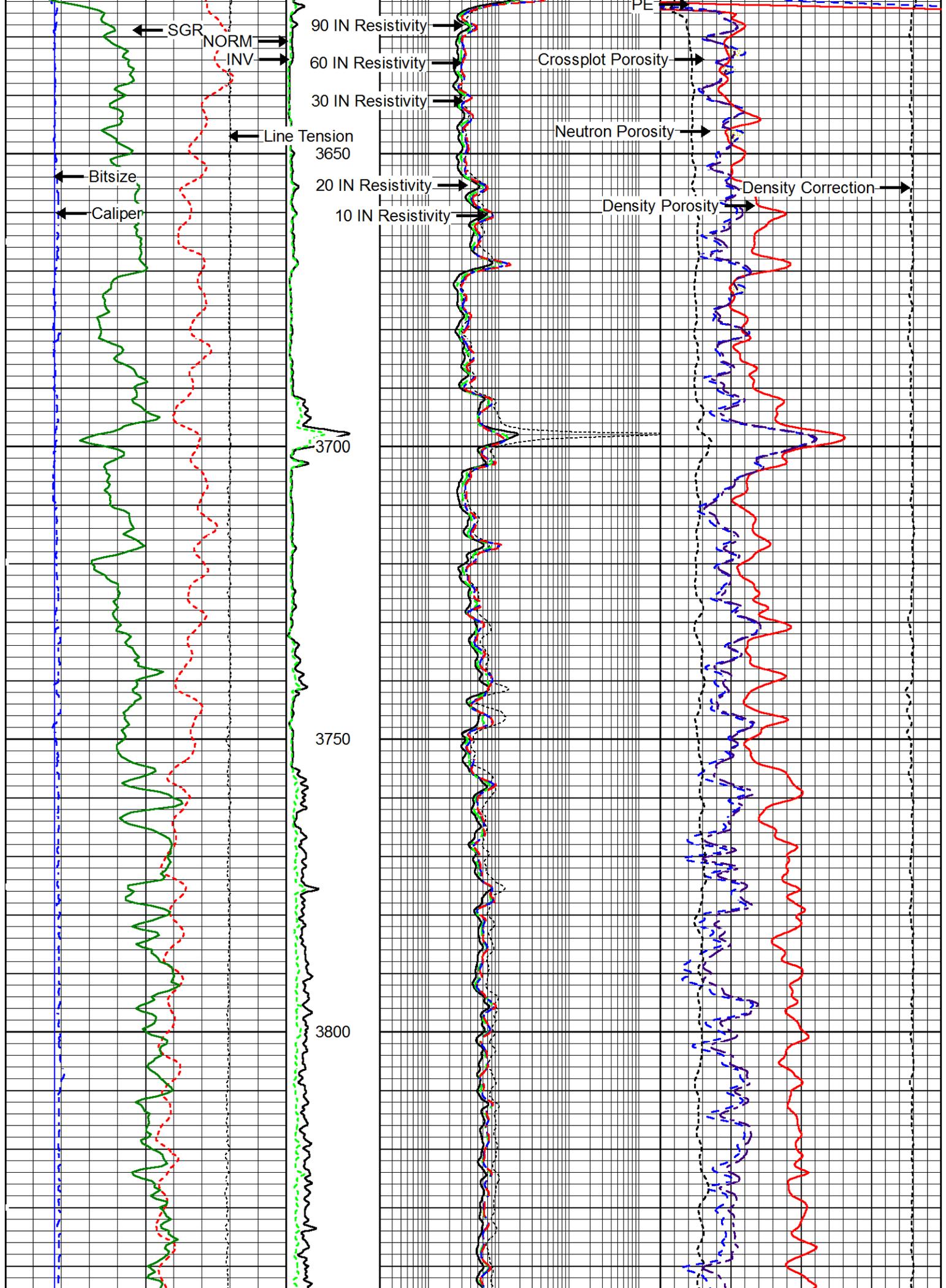


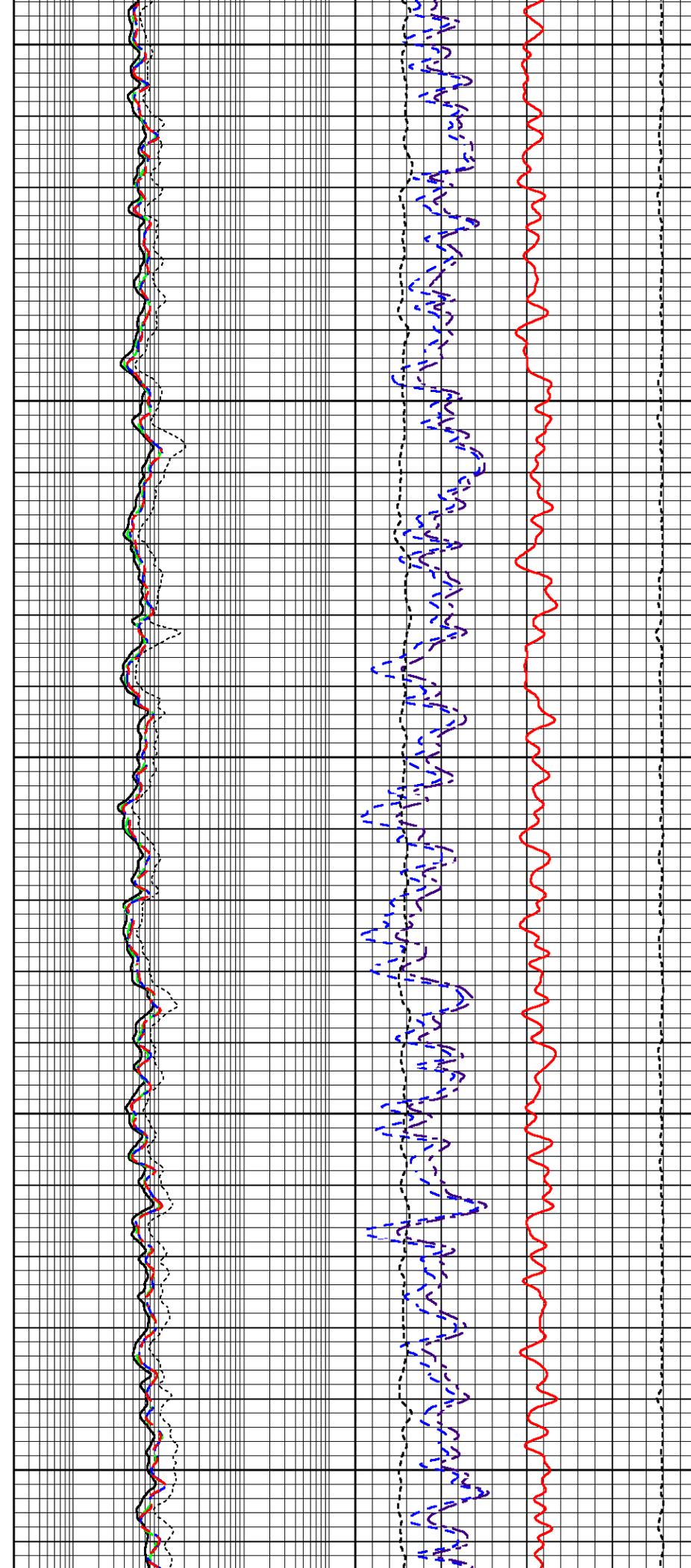
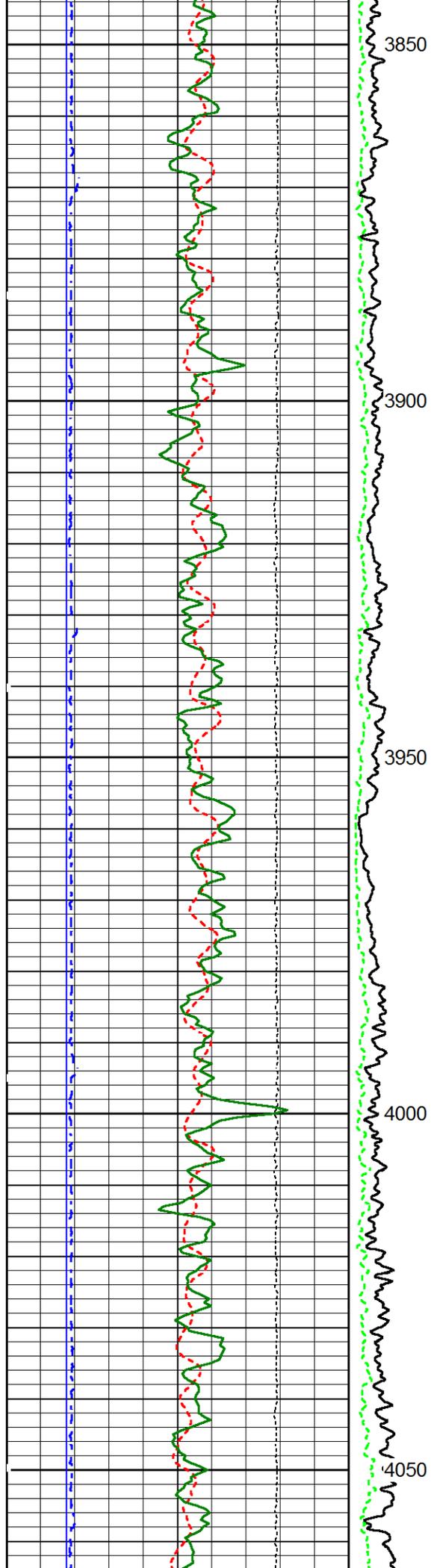


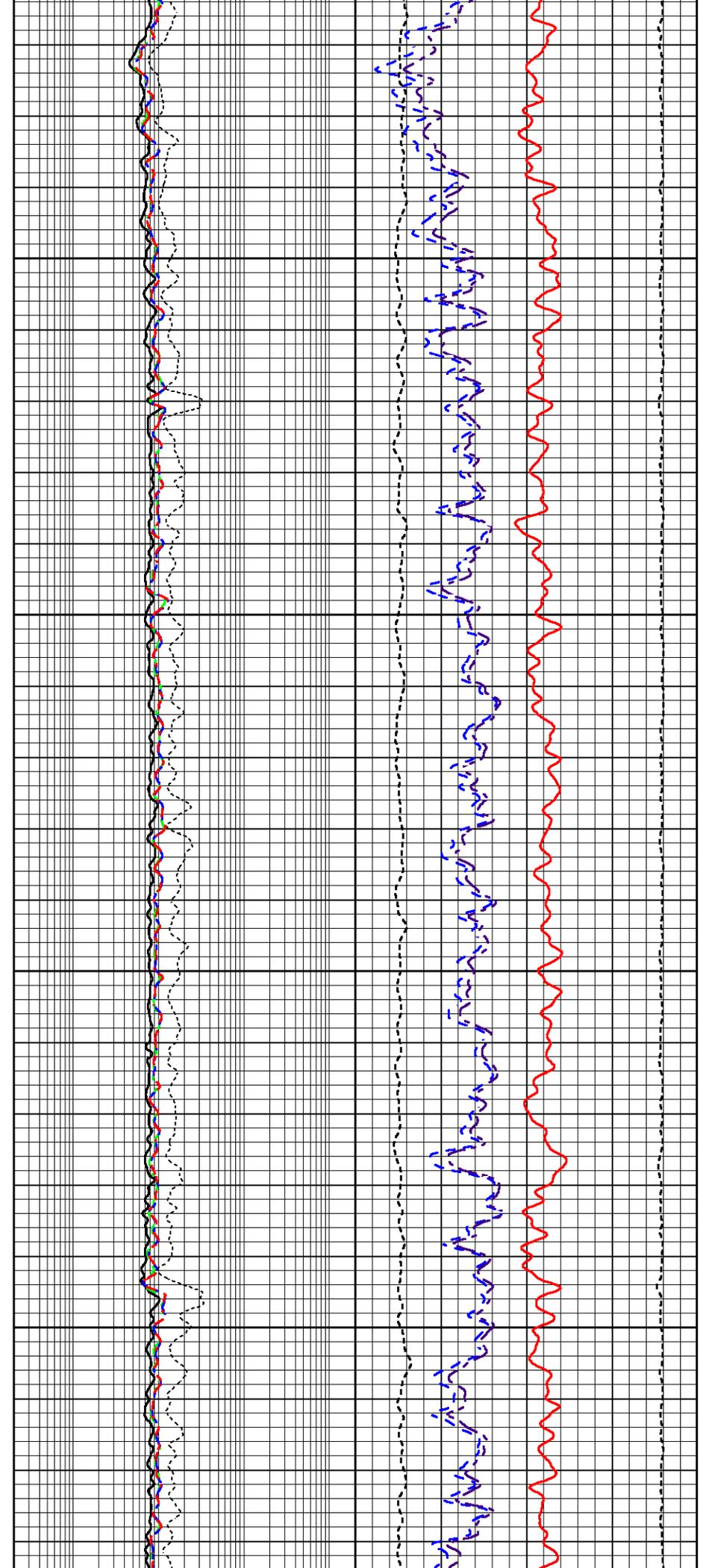
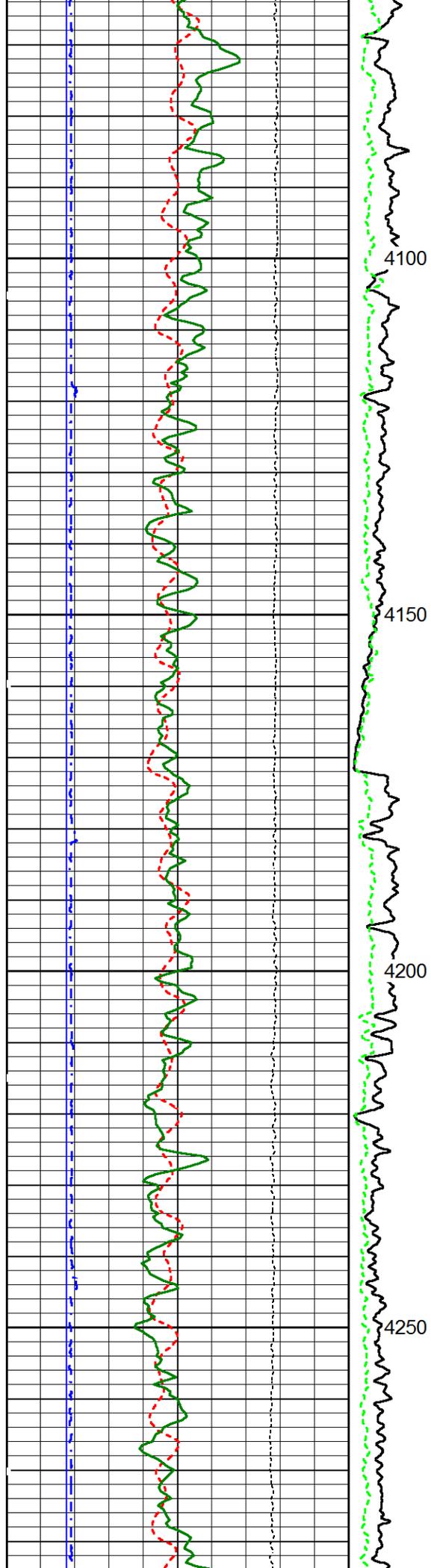


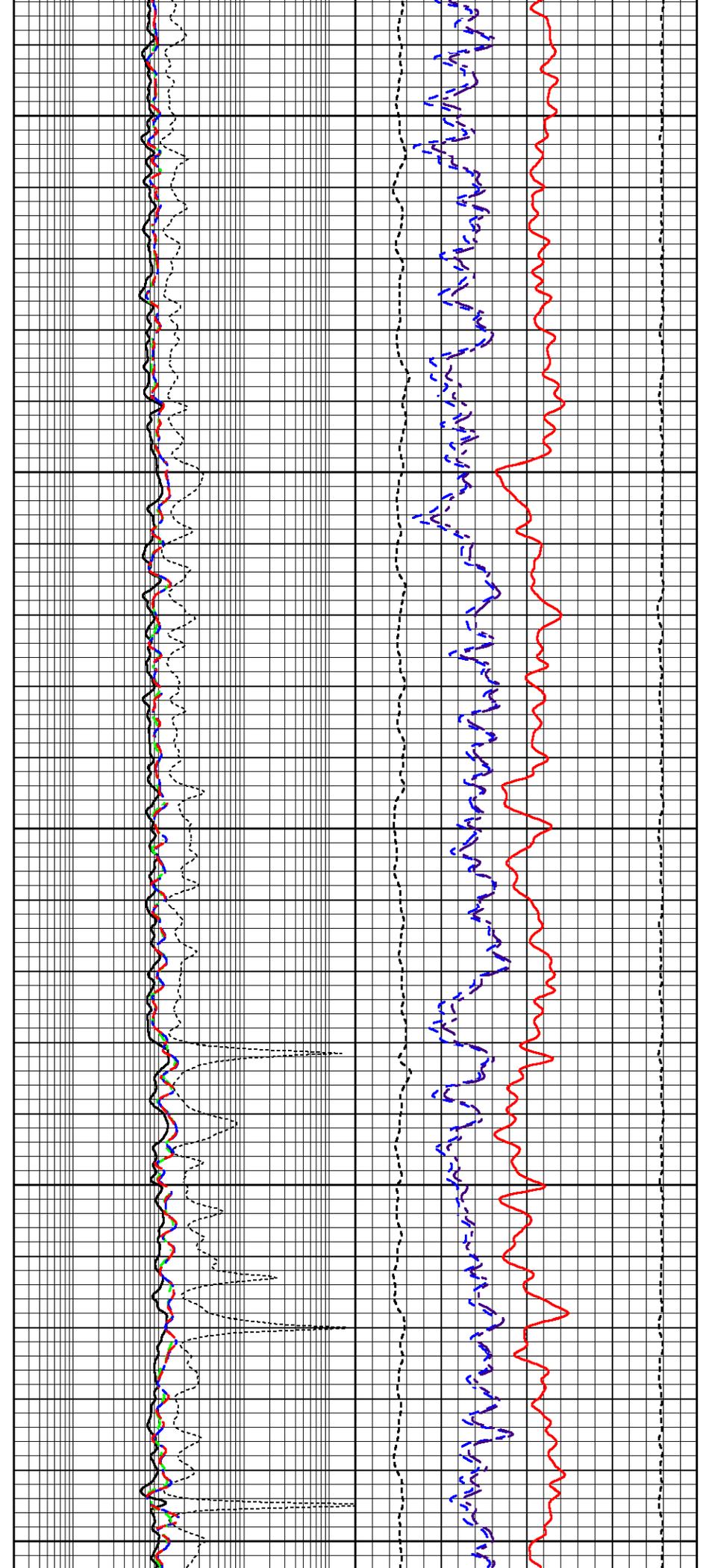
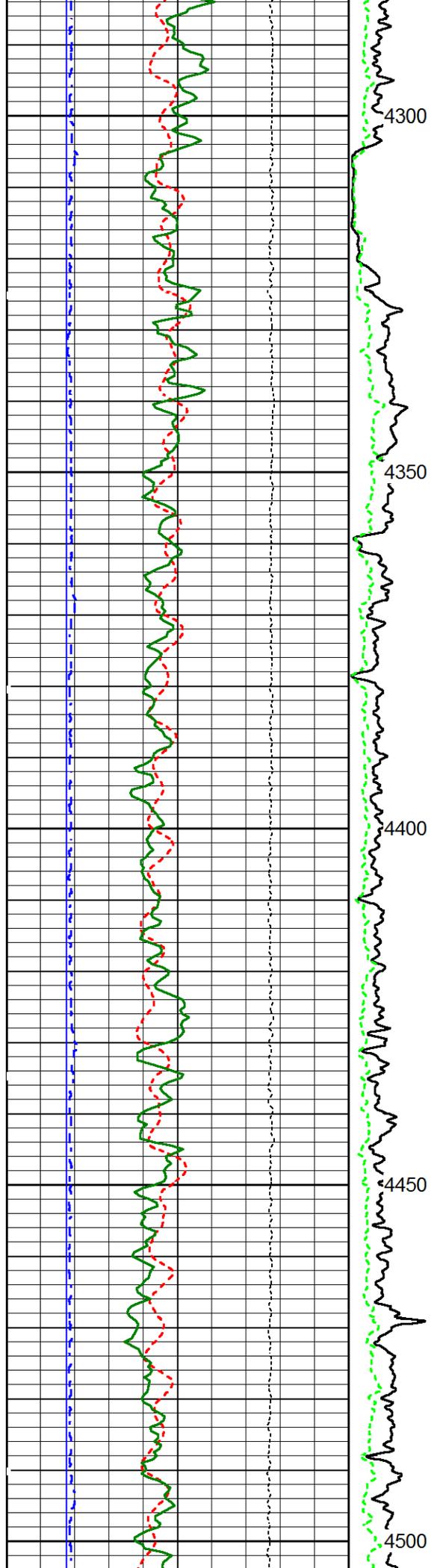


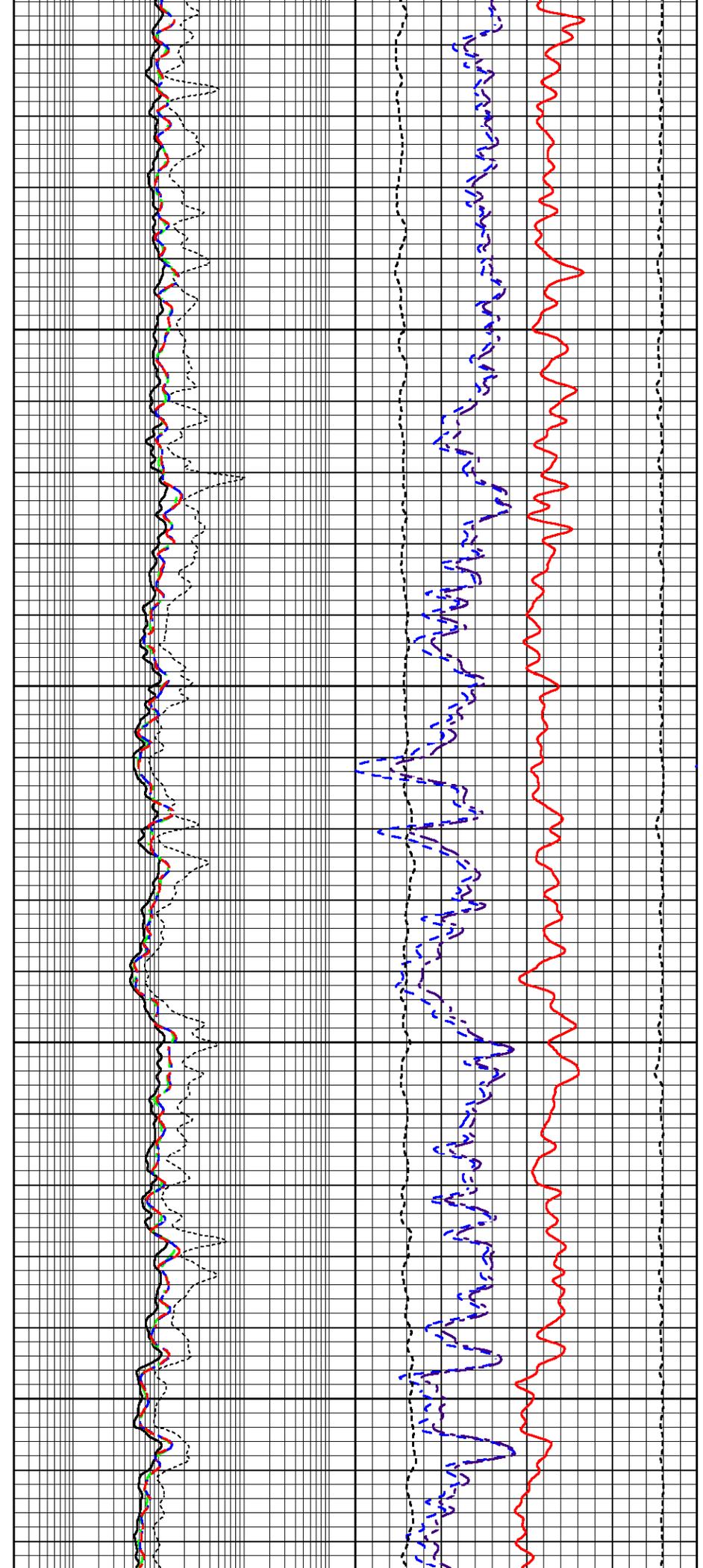
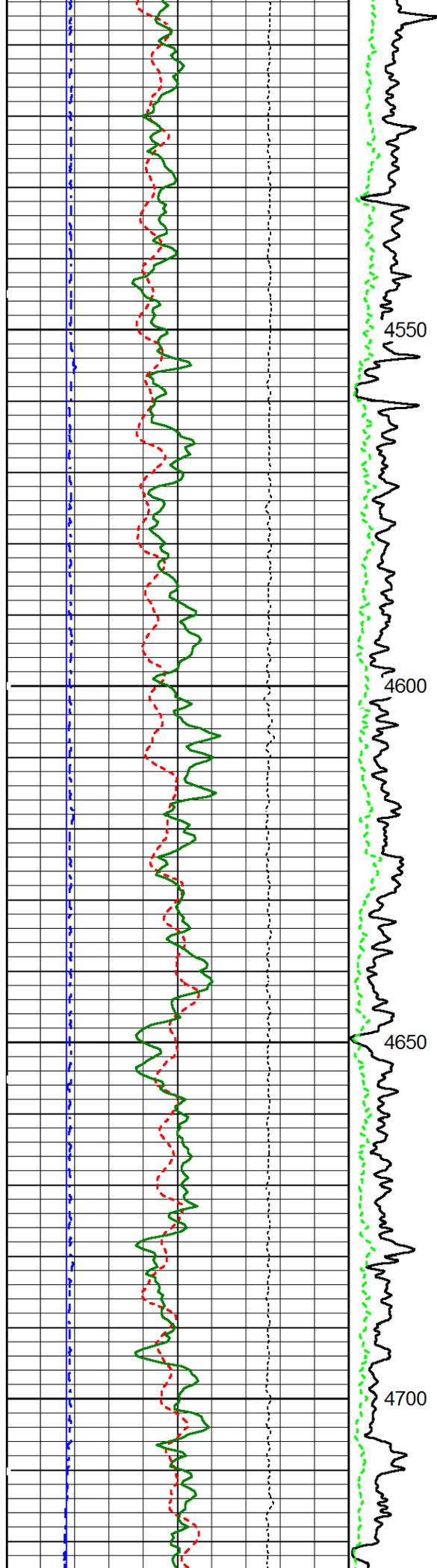


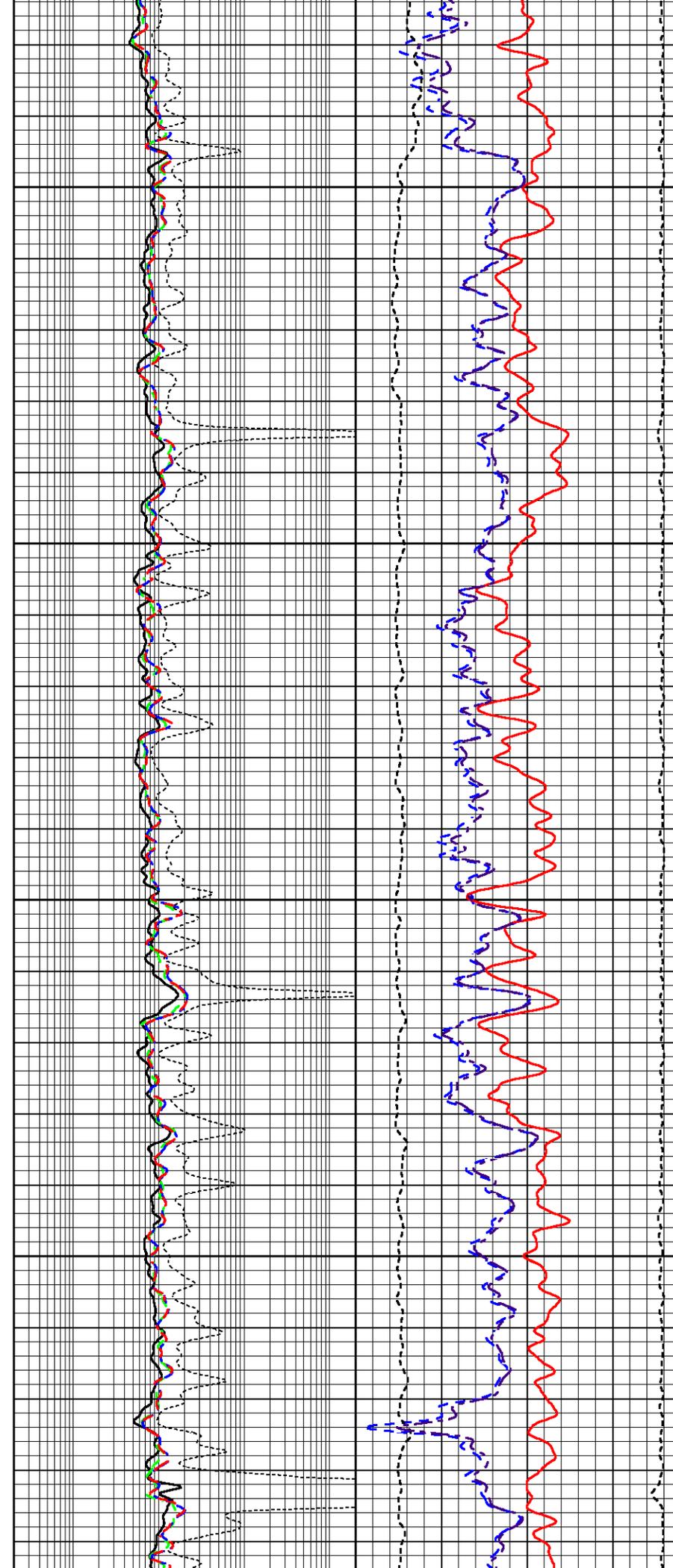
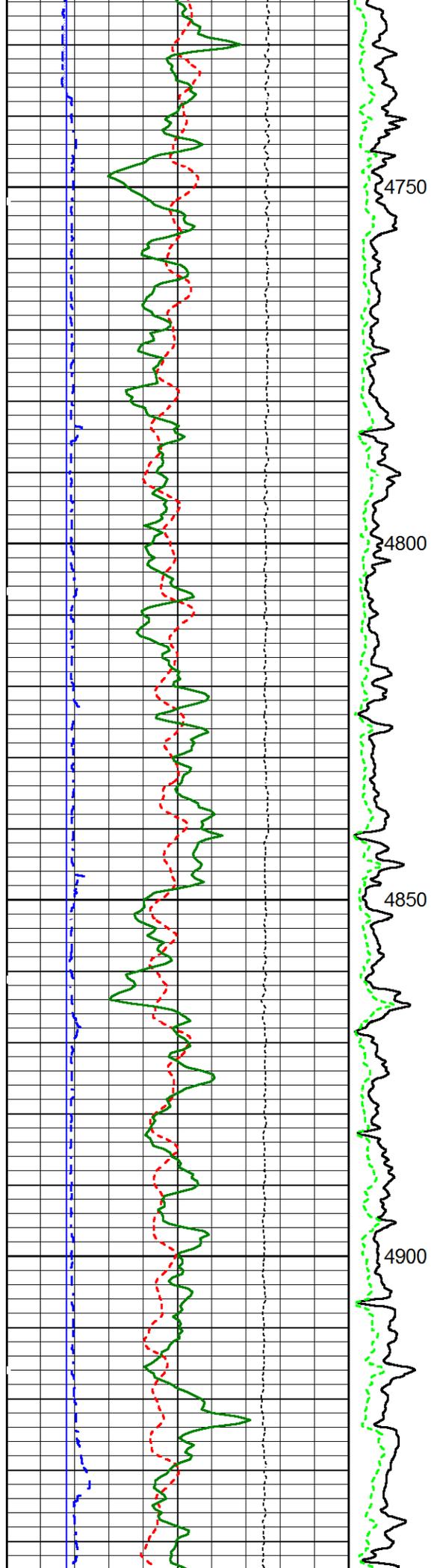


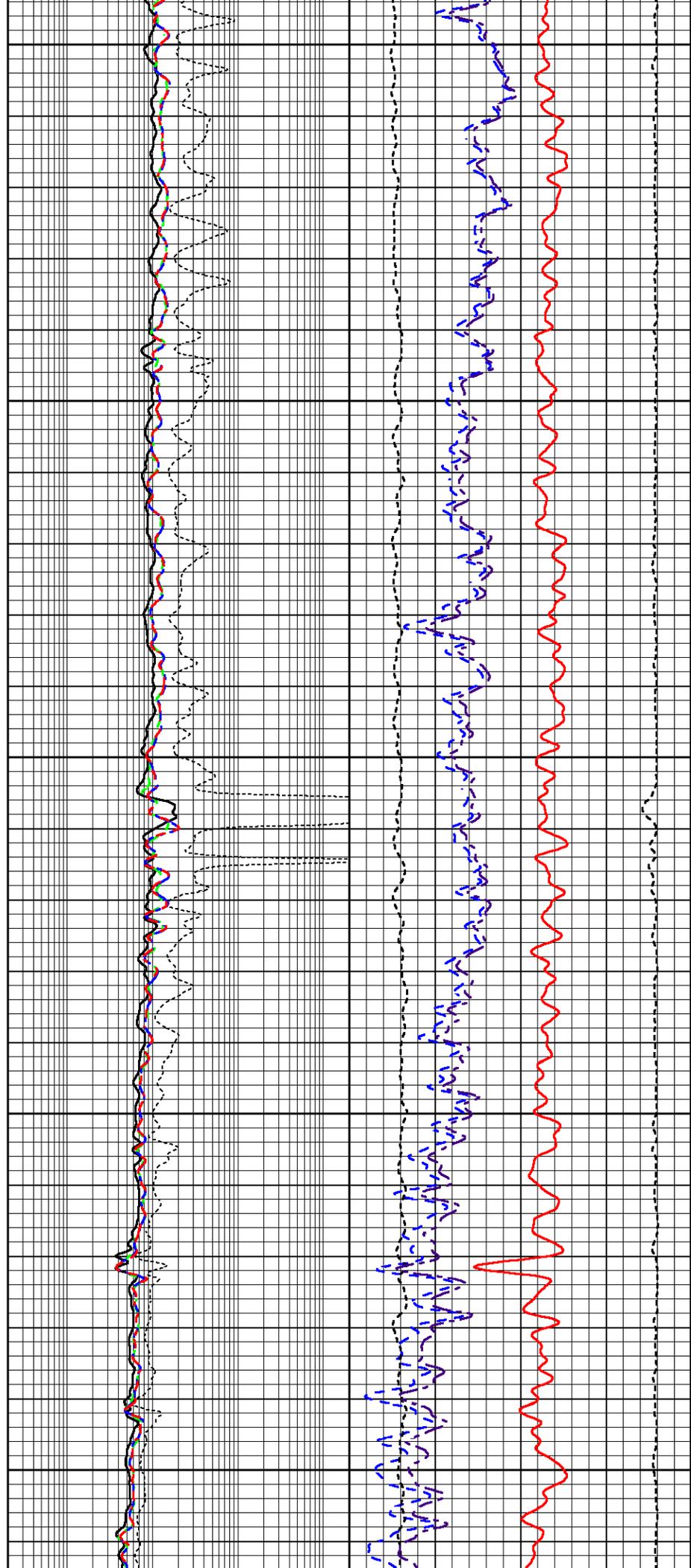
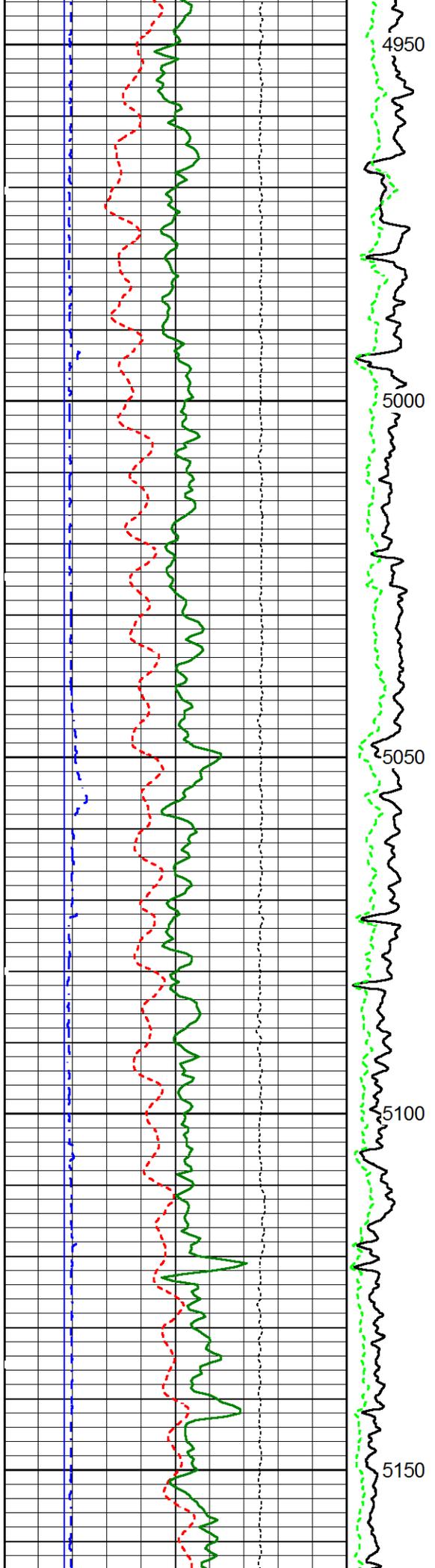


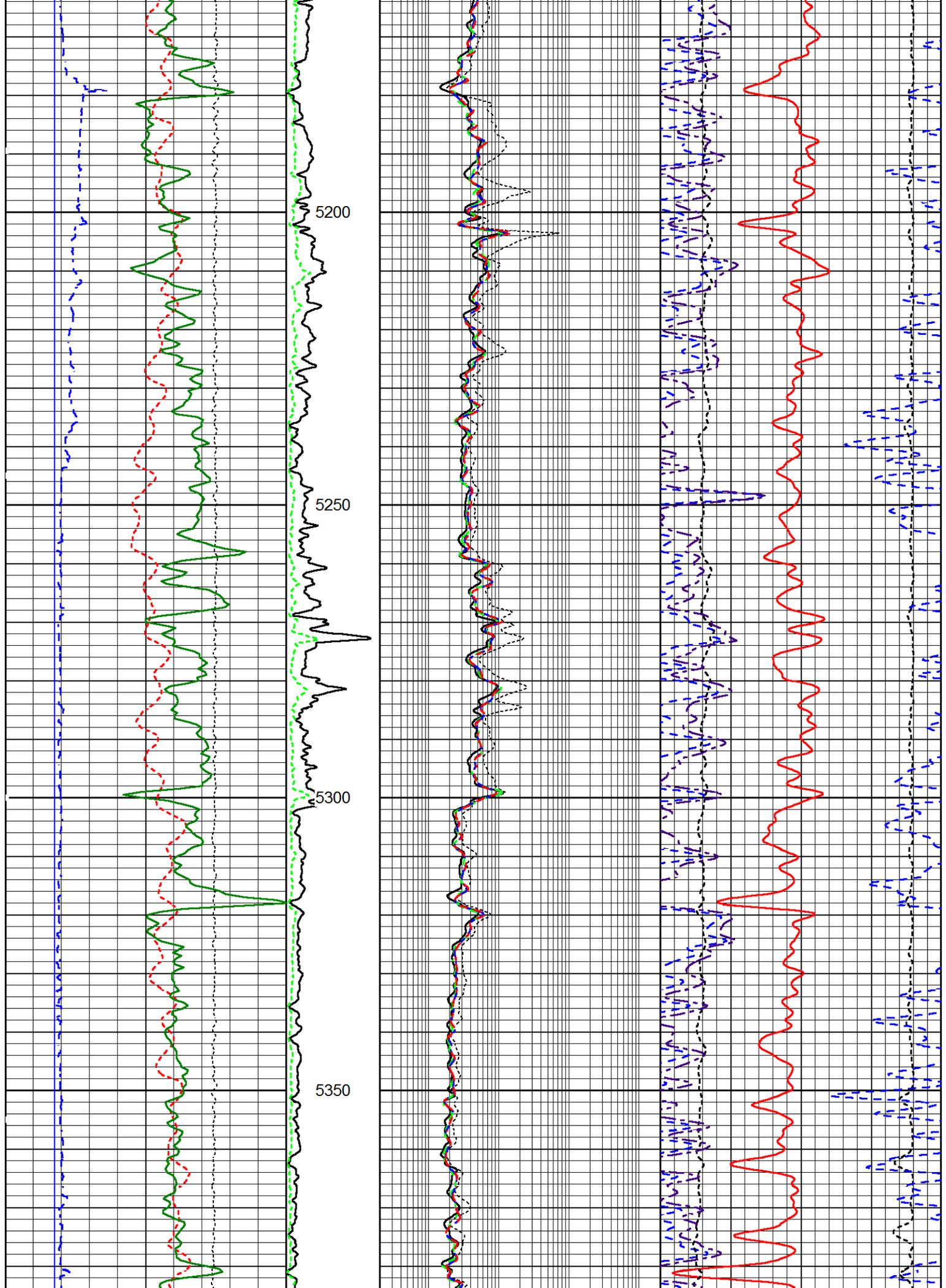


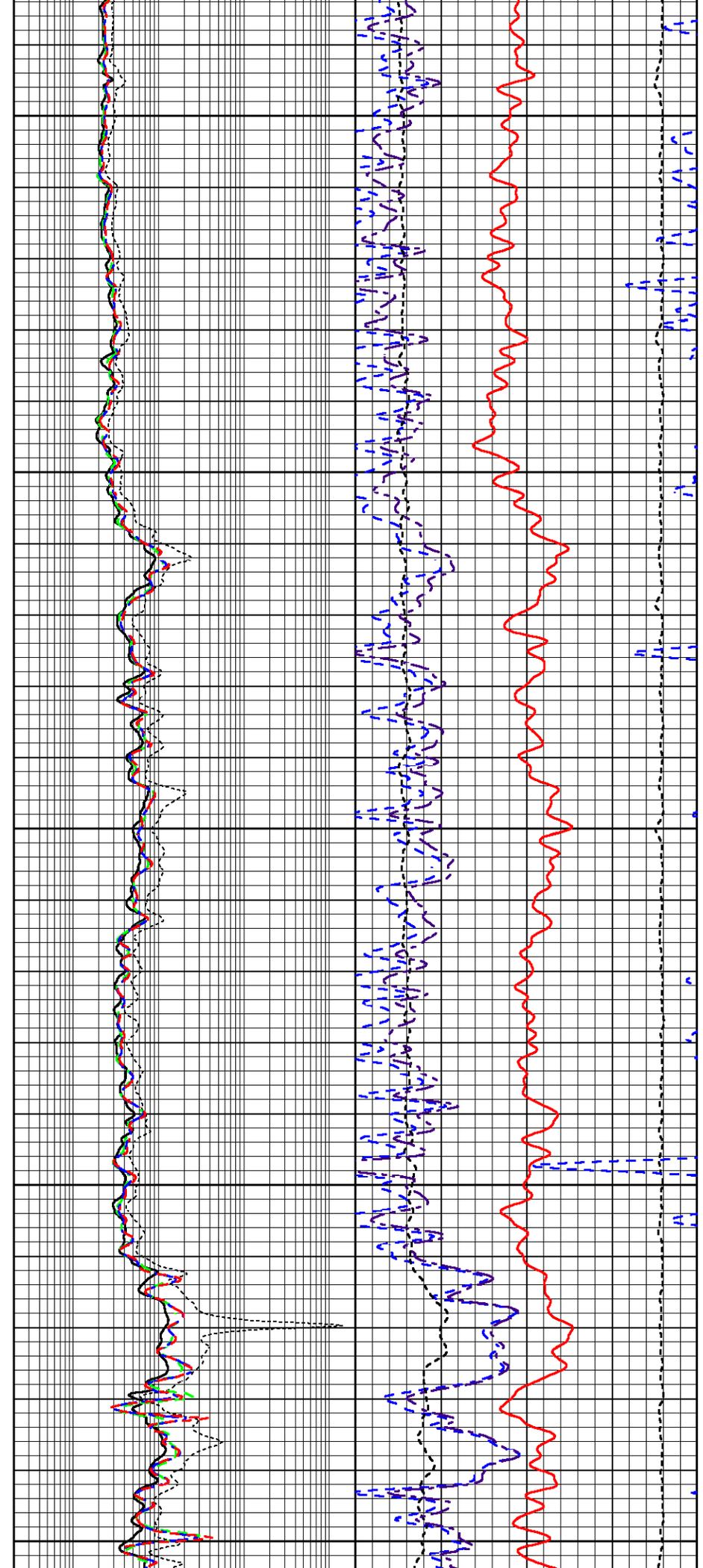
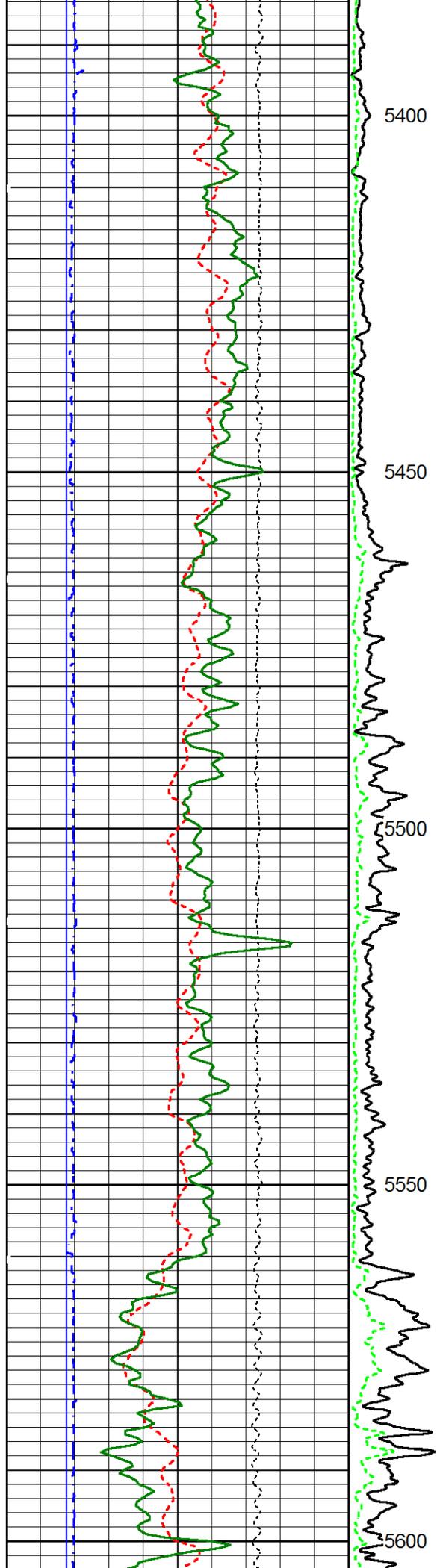


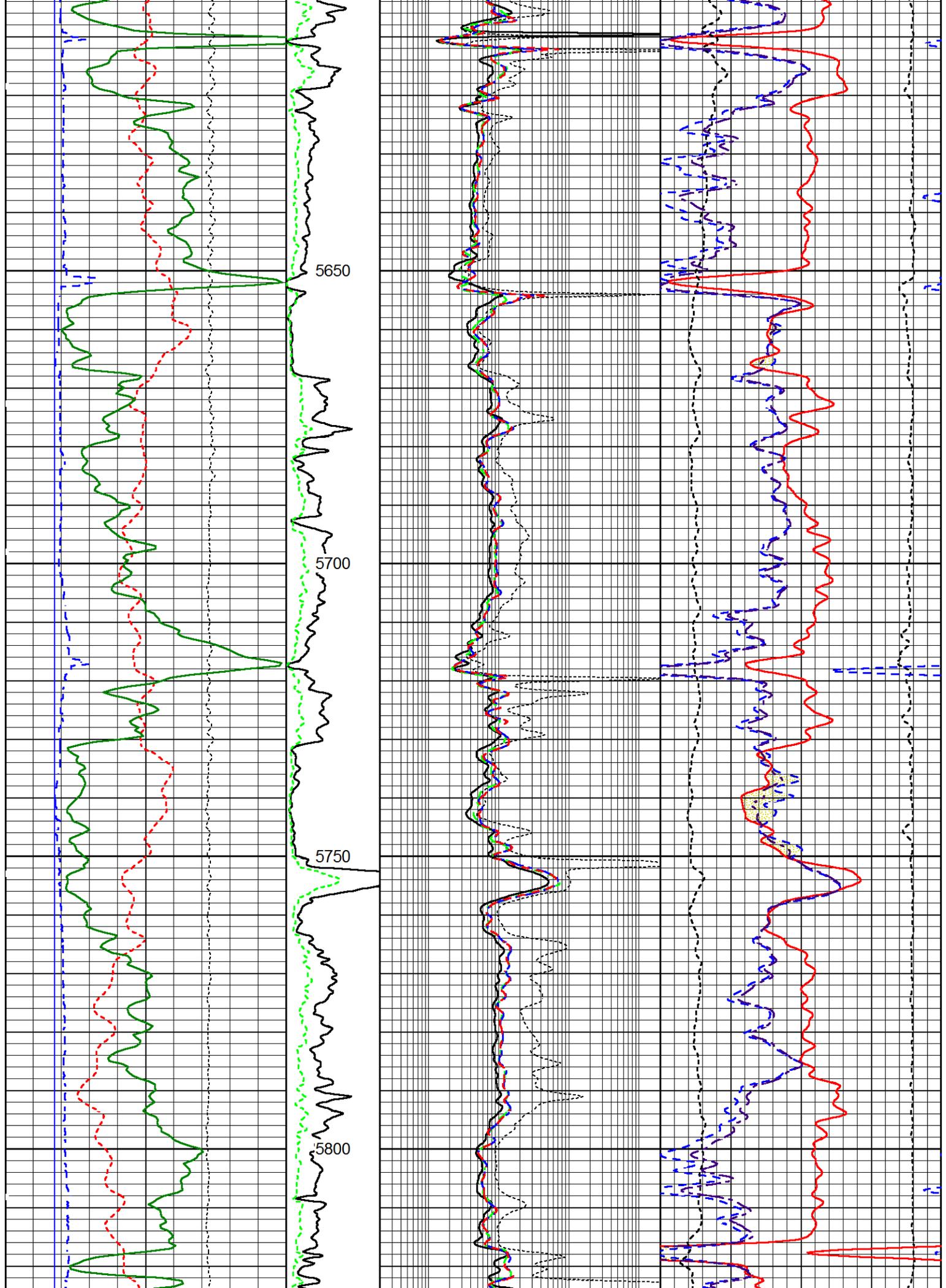


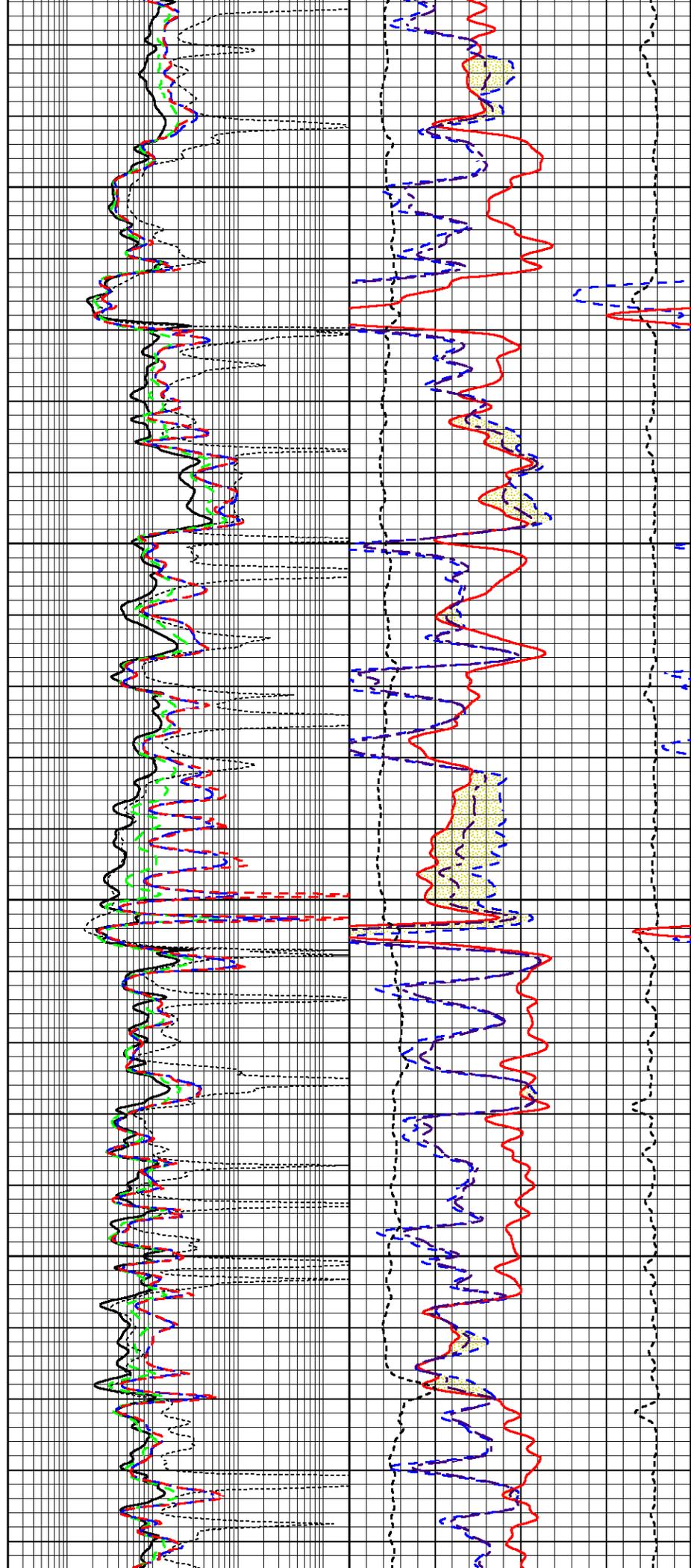
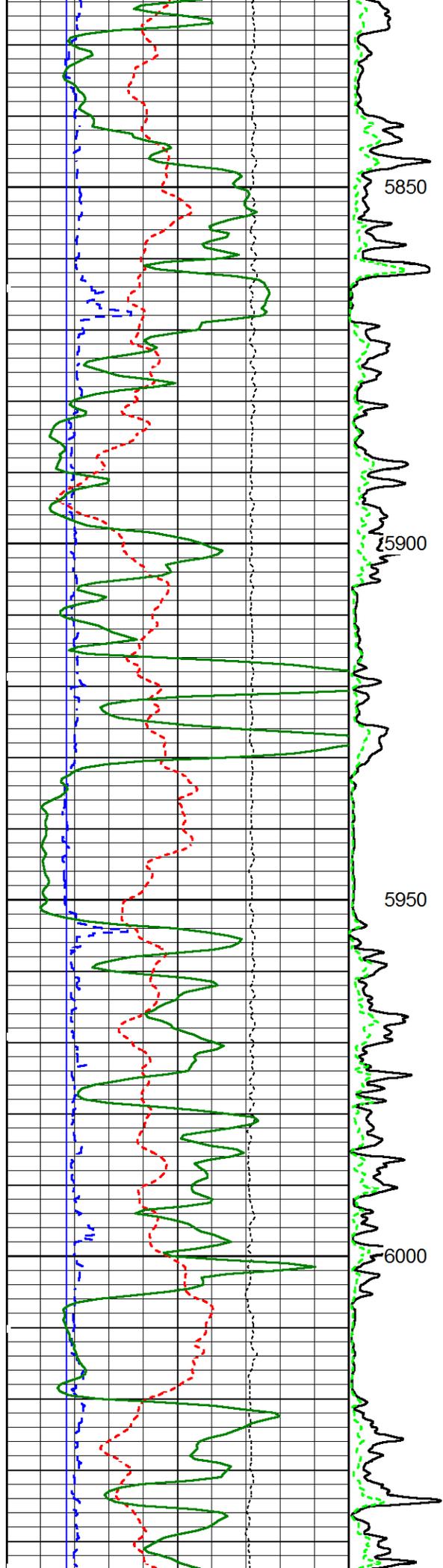


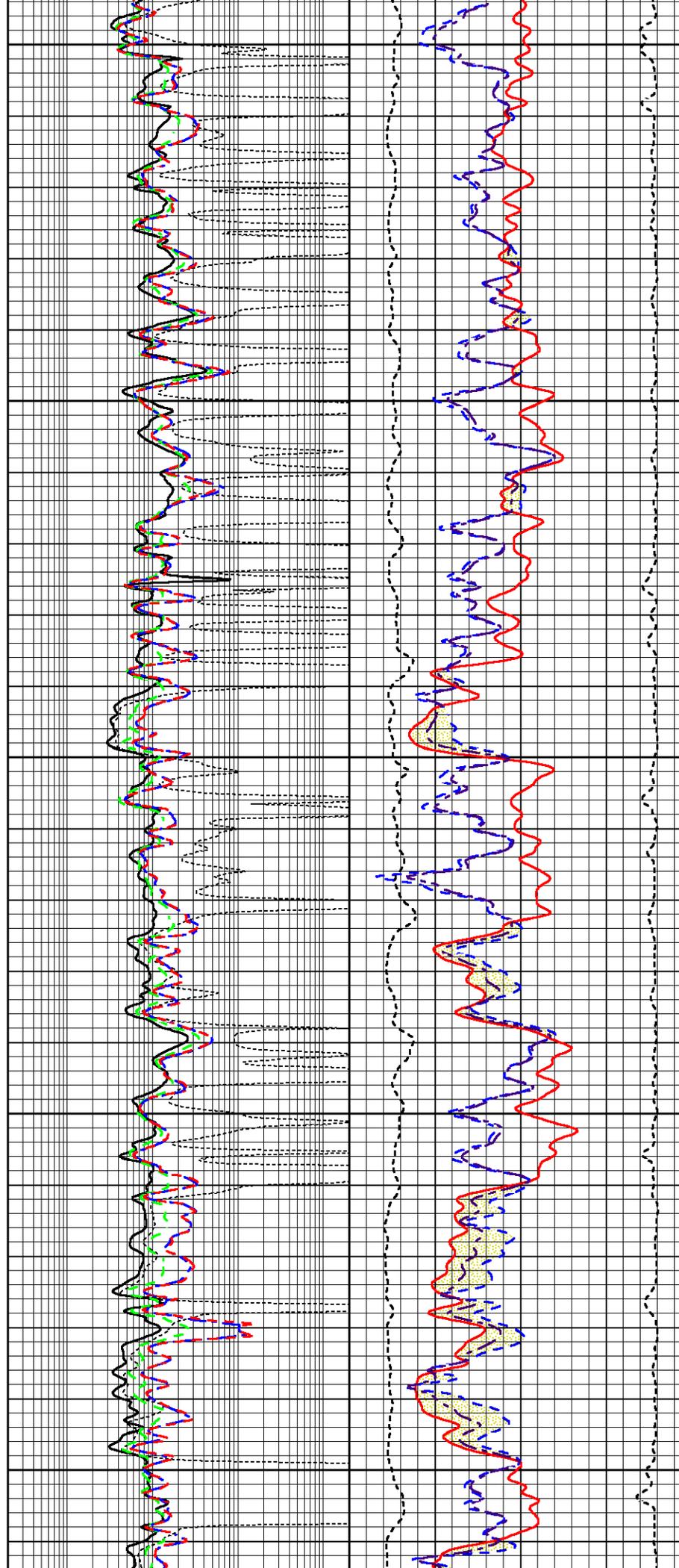
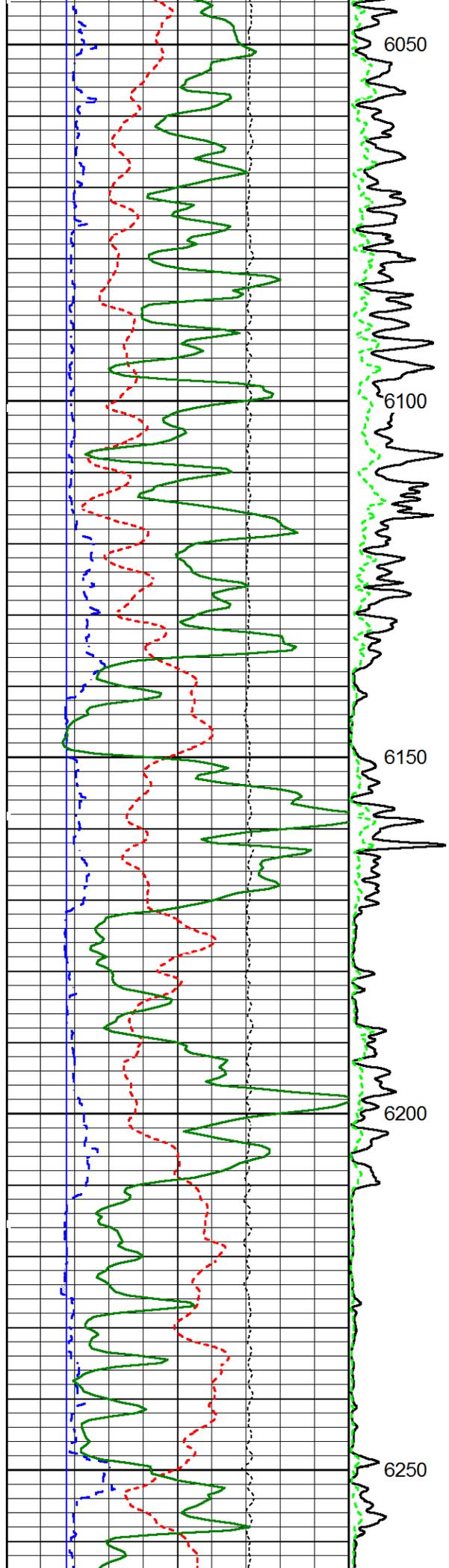


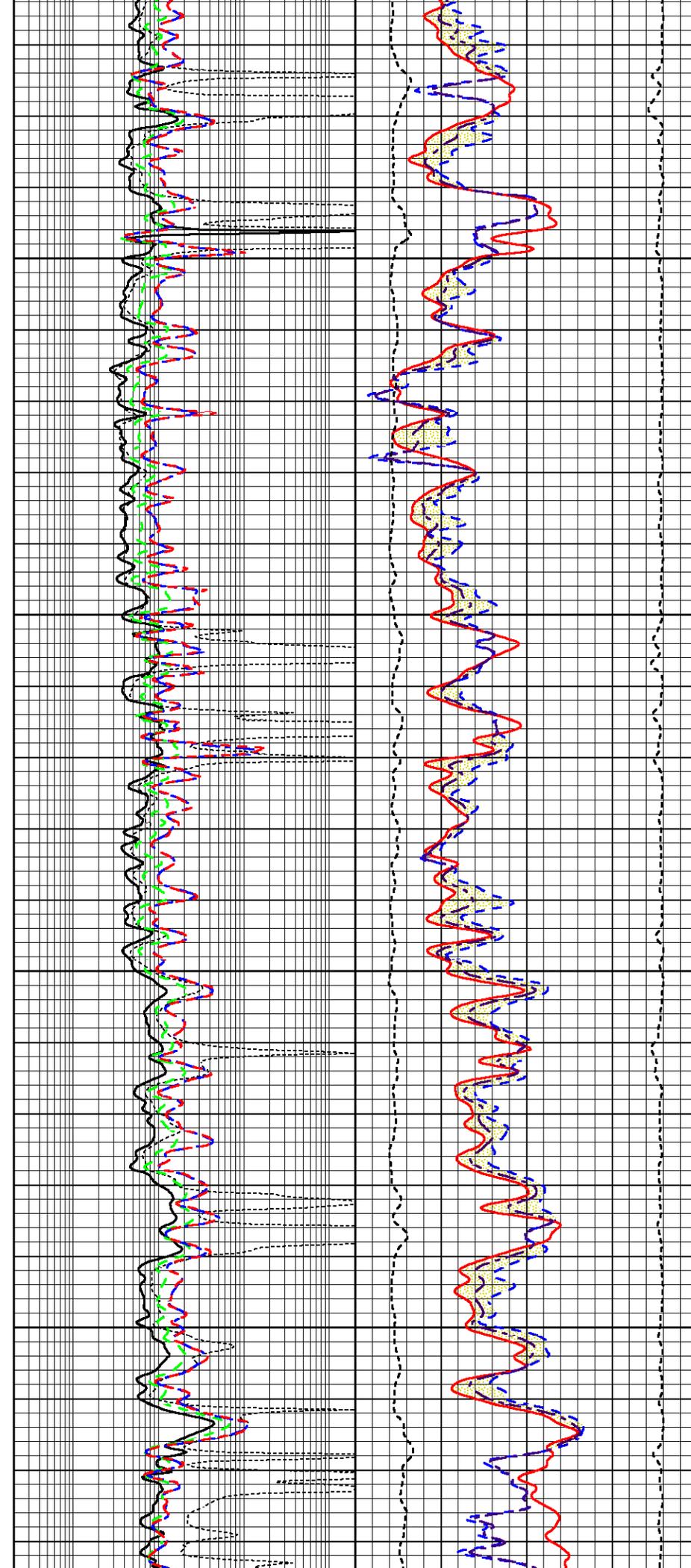
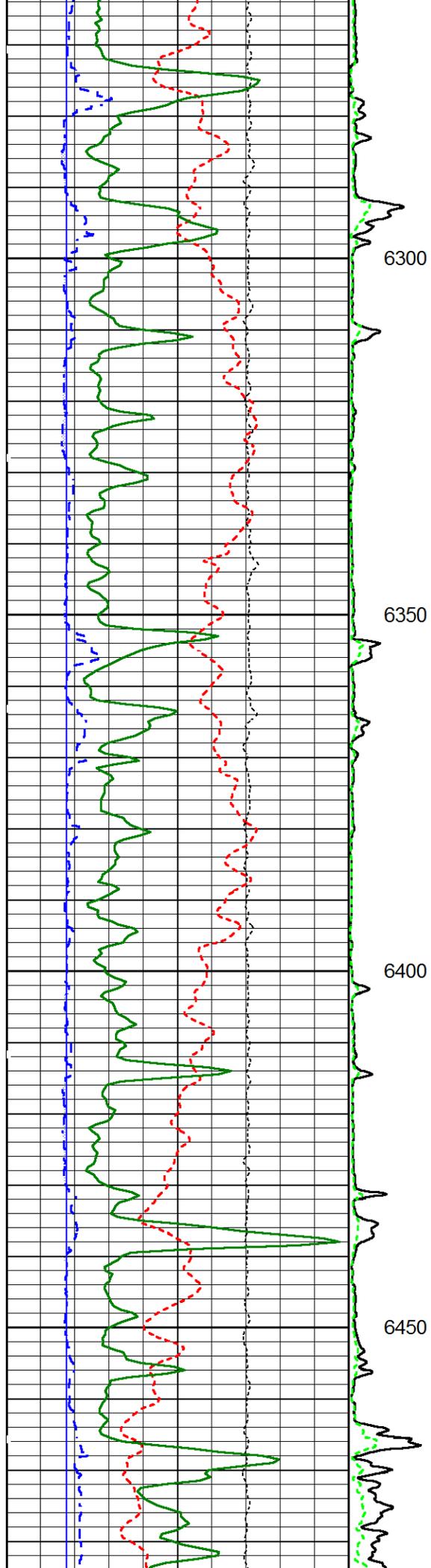


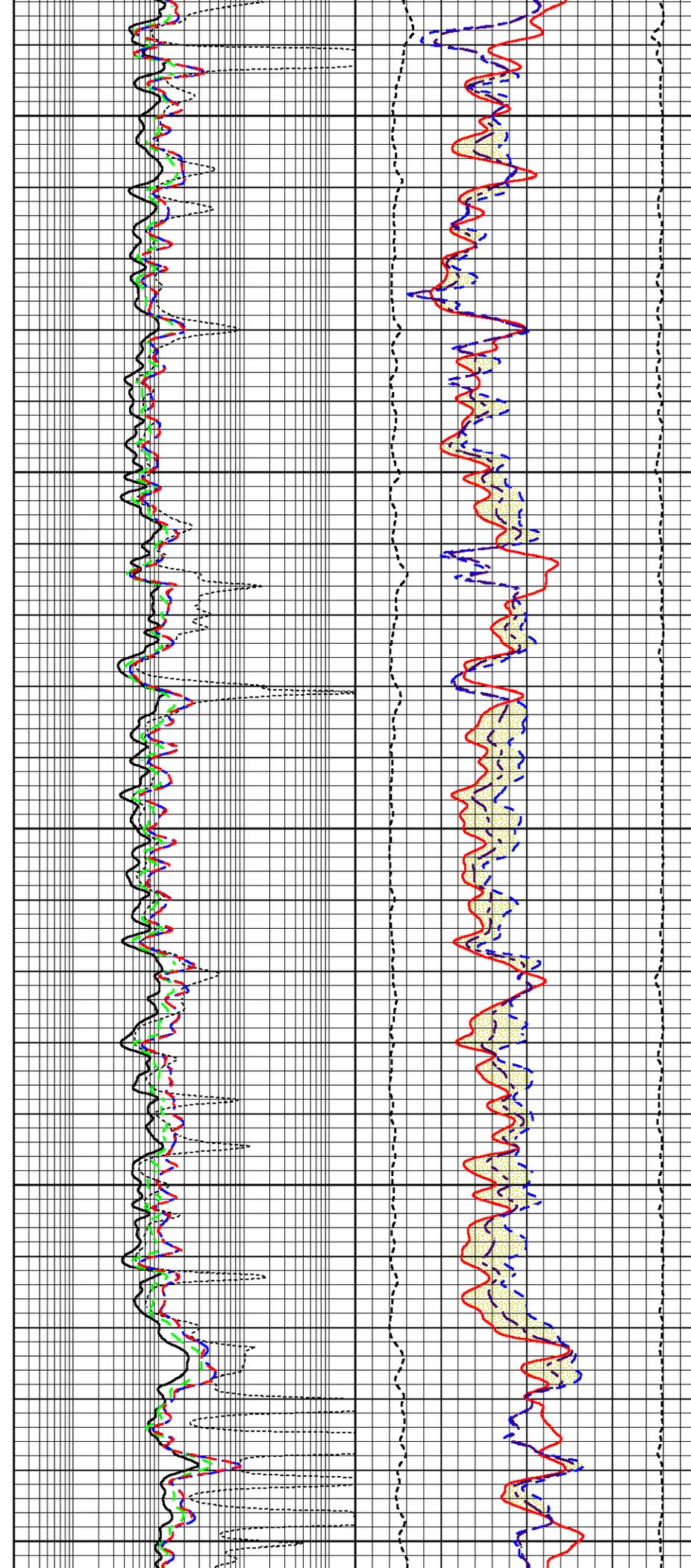
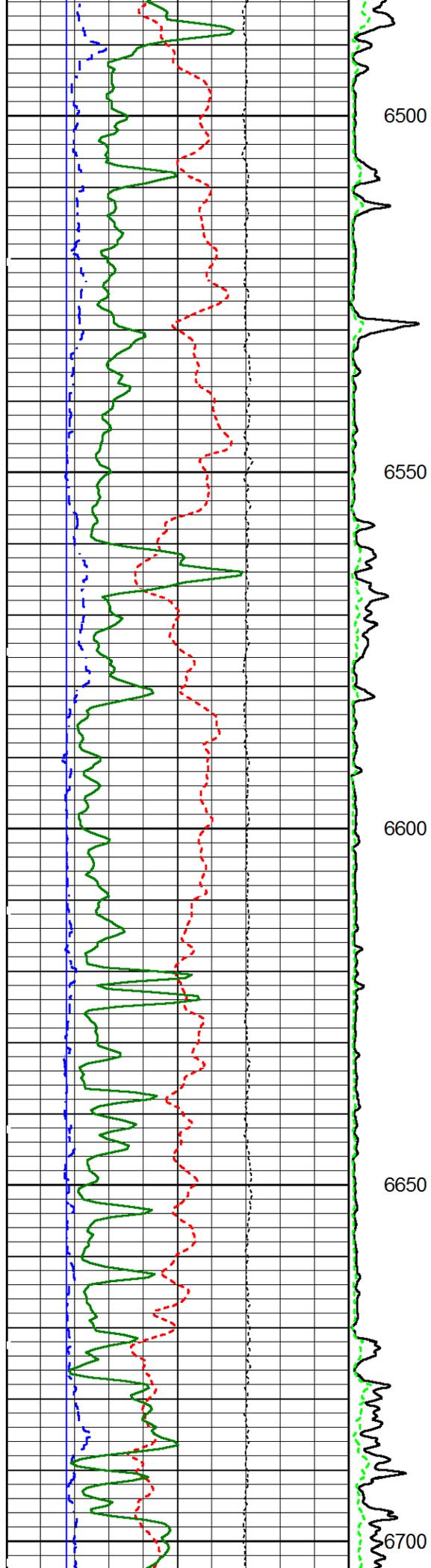


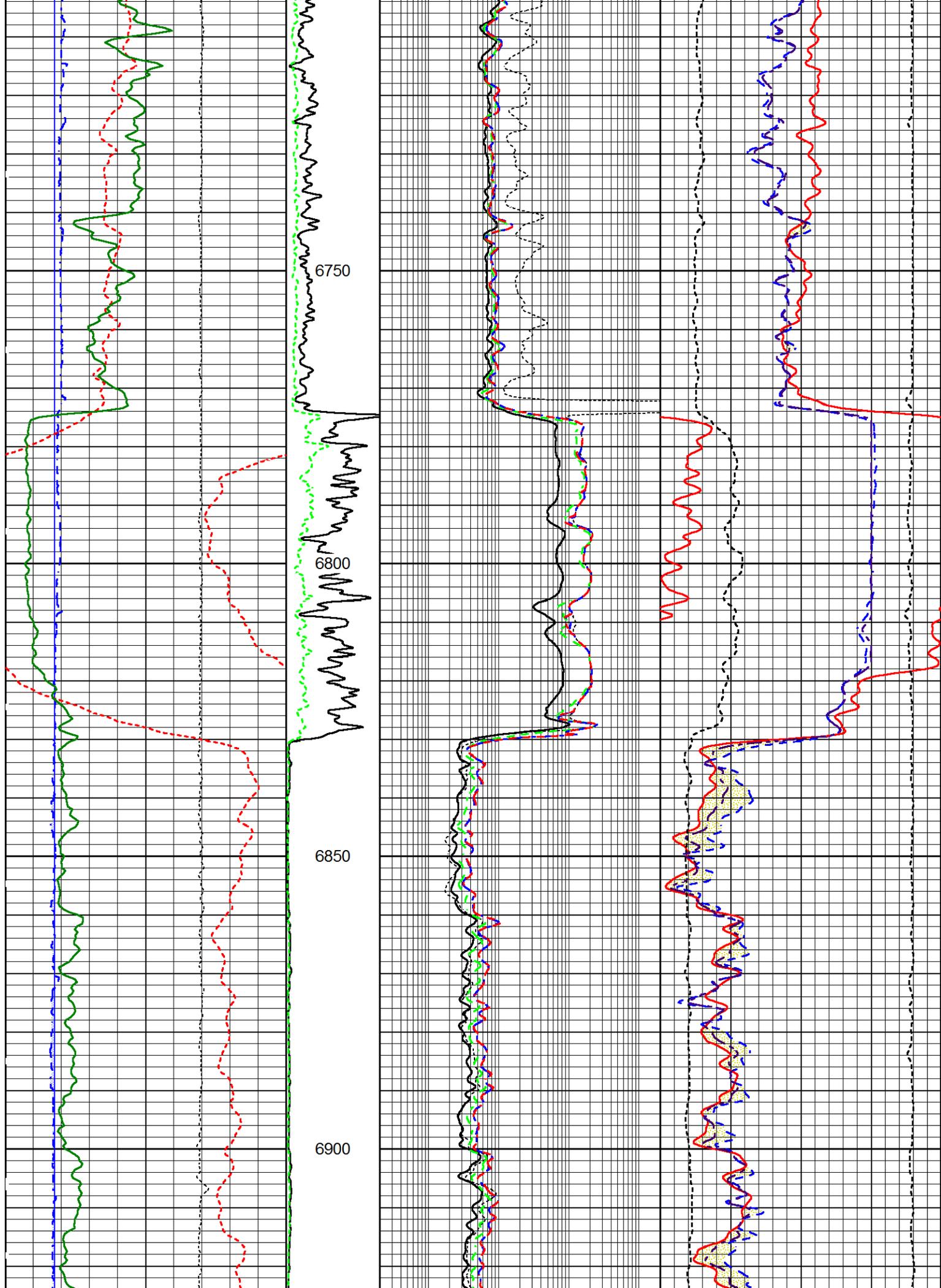


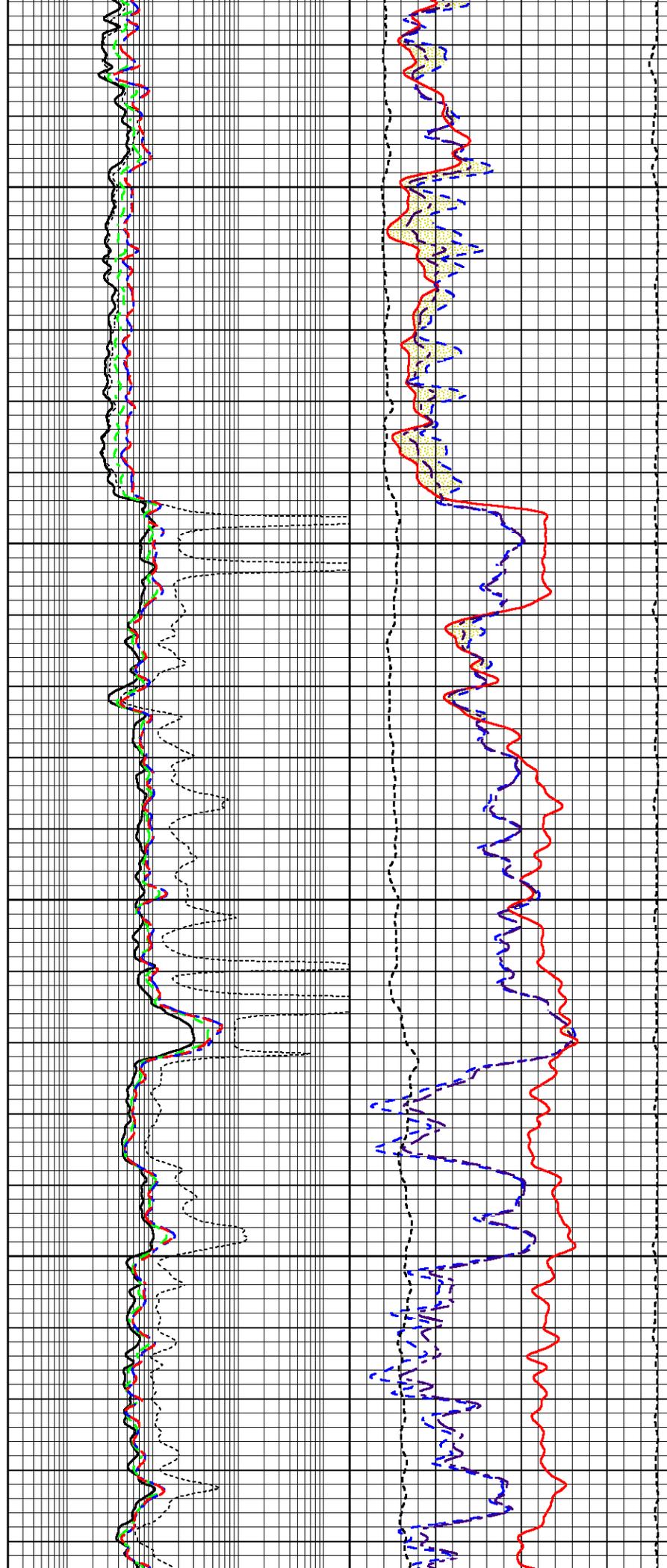
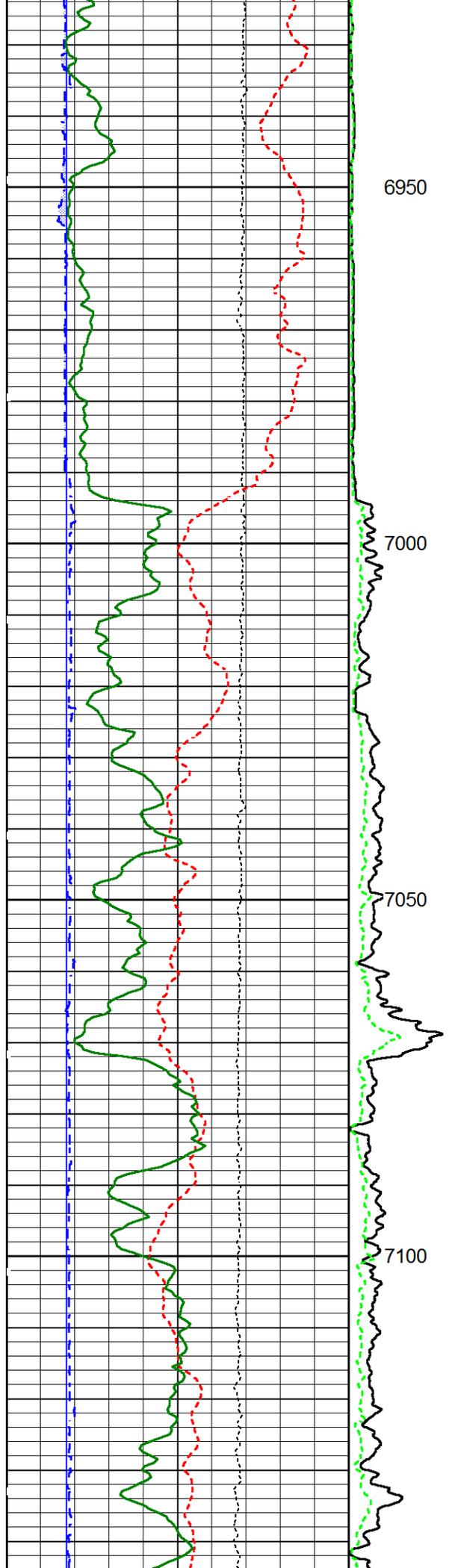


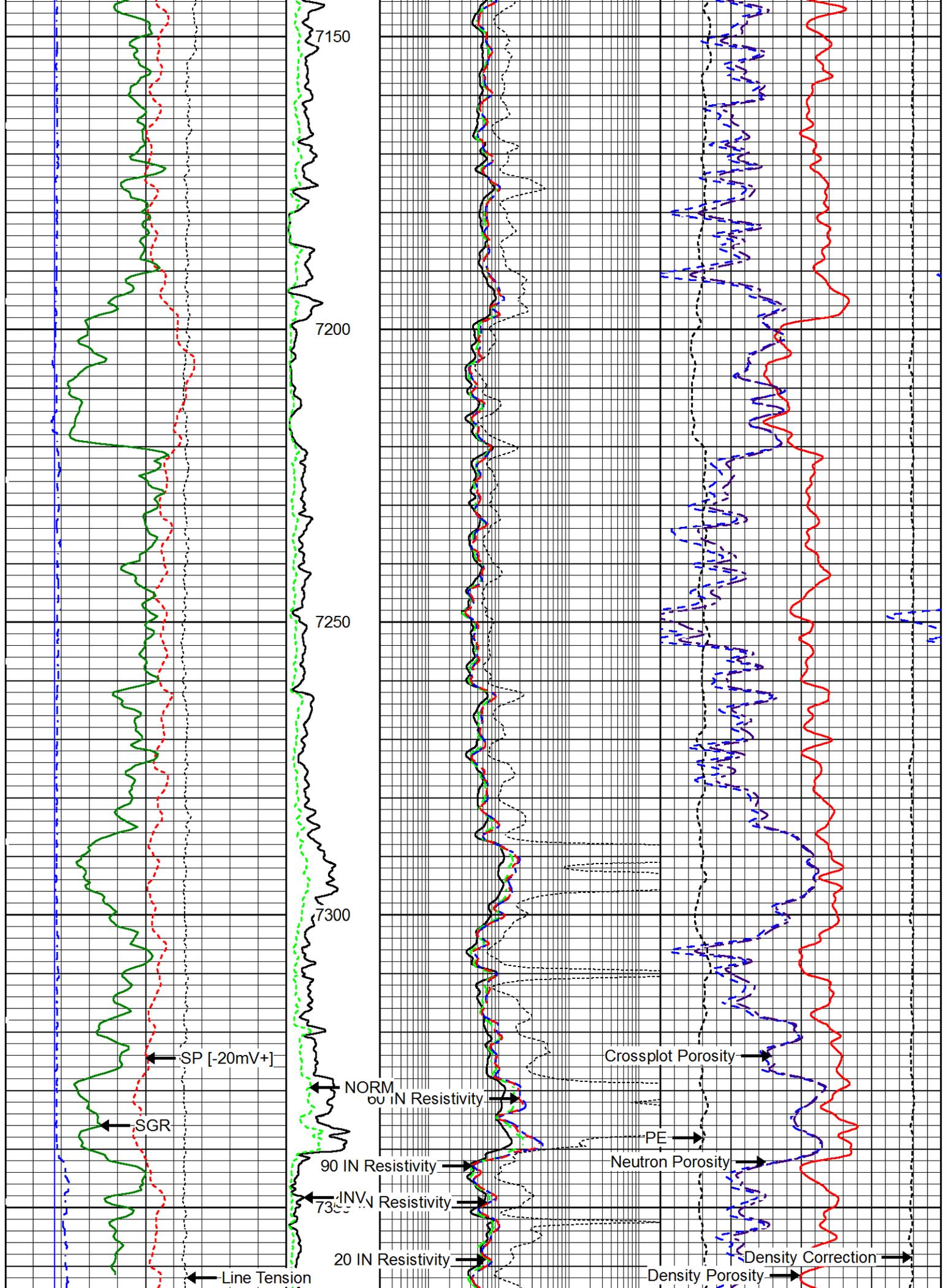












7150

7200

7250

7300

SP [-20mV+]

SGR

Line Tension

NORM 90 IN Resistivity

90 IN Resistivity

INV 73 IN Resistivity

20 IN Resistivity

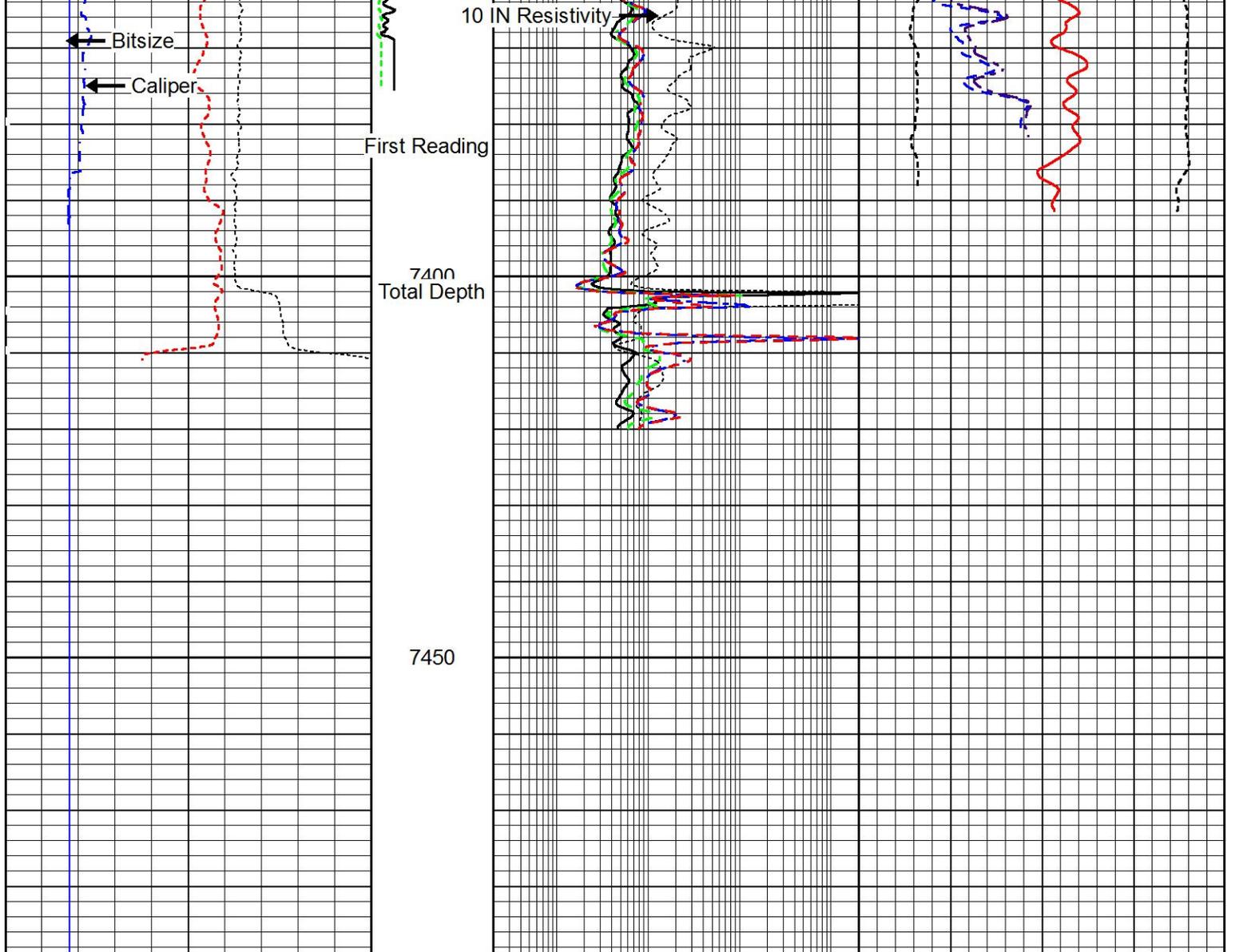
Crossplot Porosity

PE

Neutron Porosity

Density Correction

Density Porosity



7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m)	2000	Neutron Porosity	
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity	
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity	
	5000 (lb)	0	0	20			0.3	(Porosity Decimal Fraction) -0.1
							0	PE 10
								Density Correction
								0.8 (g/cc) -0.2

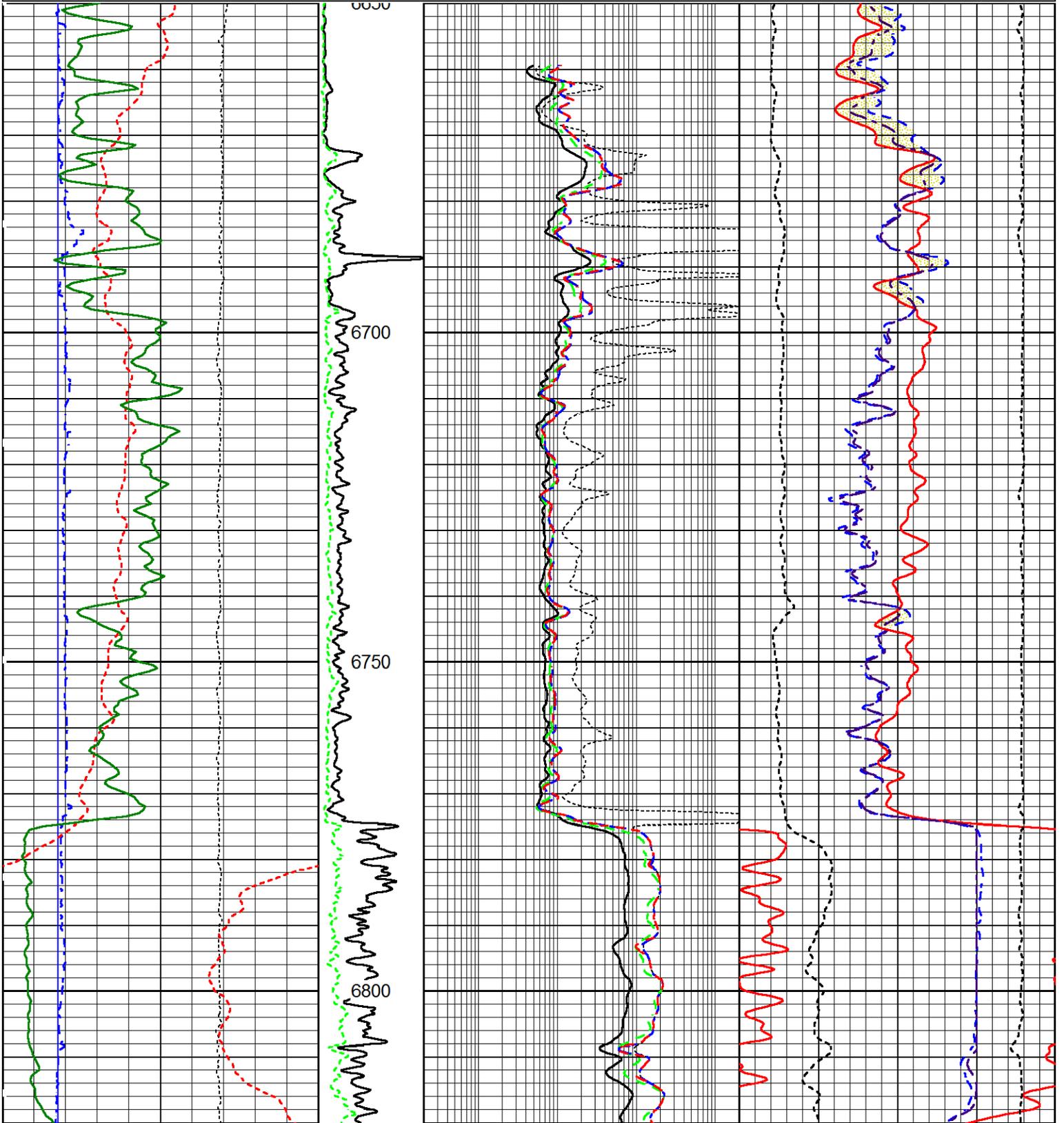


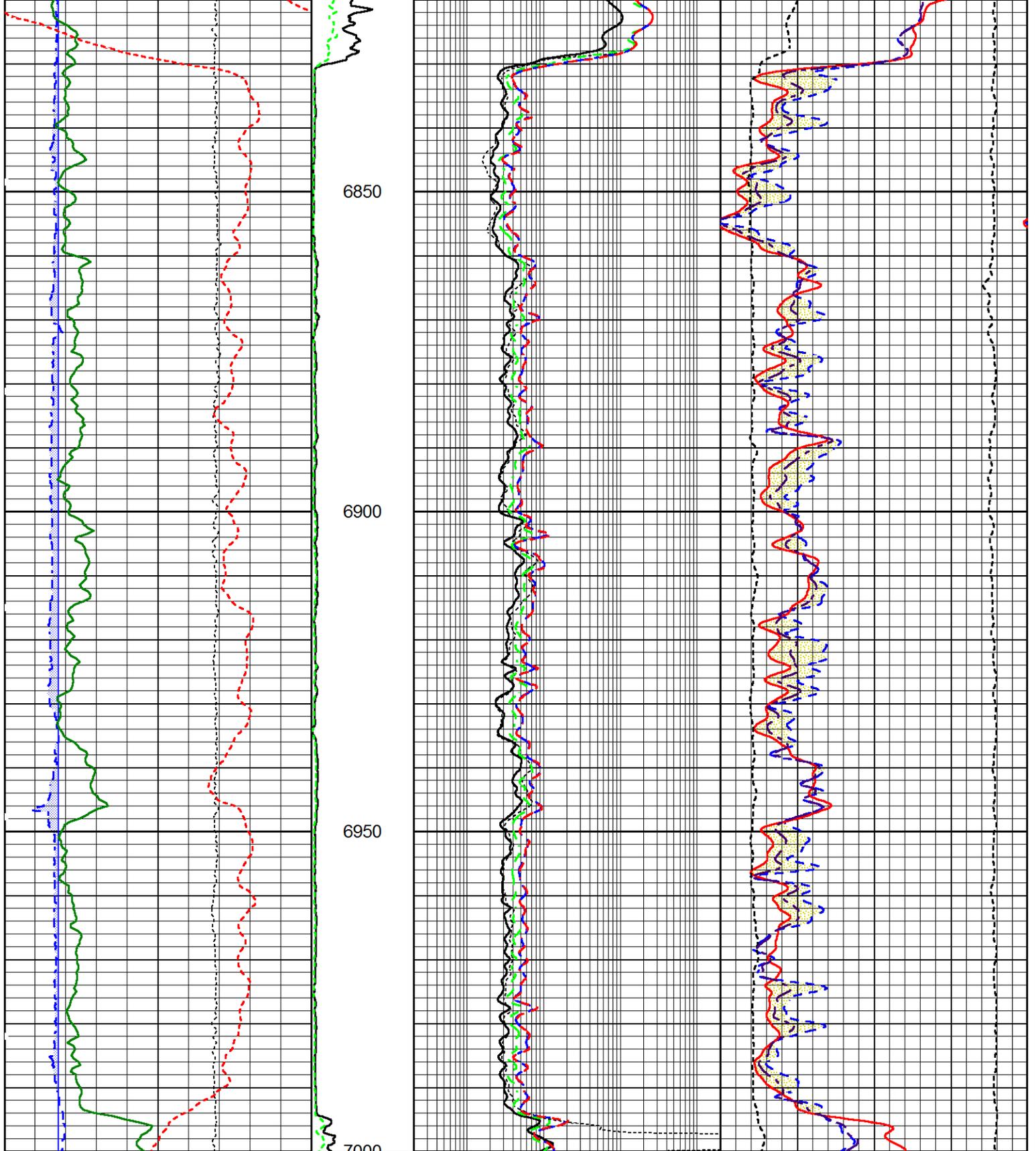
Main Pass



Repeat Pass

7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m) 2000	Neutron Porosity	
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m) 2000	0.3	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m) 2000	Density Porosity	
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m) 2000	0.3	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m) 2000	Crossplot Porosity	
	5000 (lb)	0	0			0.3	(Porosity Decimal Fraction) -0.1
						0	PE 10 Density Correction
							0.8 (g/cc) -0.2





7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m)	2000	Neutron Porosity
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity
	5000 (lb)	0	20				(Porosity Decimal Fraction) -0.1
							0 PE 10
							Density Correction
							0.8 (g/cc) -0.2

Database: C:\Sondex\Sondex Warrior\Data\enduringreswlybrook.db
 Dataset: West_Lybrook/well/run1/main/_vars_

Top - 417.97 ft

AIR_HOLE? No	BOREID in 14.5	BOTTEMP degF 149	CASED? Yes	CASEOD in 13.375	CASETHCK in 0	CASEWGHT lb/ft 40	DE-CENT Yes
DEVI deg 0	FLUIDDEN g/cc 1	FRMSALIN kppm 0	MATRXDEN g/cc 2.71	MUDSALIN kppm 0	MudWgt lb/gal 9.4	NPORSEL Limestone	PERFS 0
SO in 0.5	SPSHIFT mV 0	SRFTEMP degF 68	TDEPTH ft 7408				

417.97 ft - Bottom

AIR_HOLE? No	BOREID in 8.75	BOTTEMP degF 149	CASED? No	CASEOD in 7	CASETHCK in 0	CASEWGHT lb/ft 26	DE-CENT Yes
DEVI deg 0	FLUIDDEN g/cc 1	FRMSALIN kppm 0	MATRXDEN g/cc 2.71	MUDSALIN kppm 0	MudWgt lb/gal 9.4	NPORSEL Limestone	PERFS 0
SO in 0.5	SPSHIFT mV 0	SRFTEMP degF 68	TDEPTH ft 7408				

Calibration Report

Database File: enduringreswlybrook.db
 Dataset Pathname: West_Lybrook/well/run1/pass5
 Dataset Creation: Tue Jan 15 11:30:34 2019 by Log Sondex

Induction Array Tool Calibration Report

Serial Number: B10110
 Tool Model: 002

Master Calibration Performed: Fri Oct 26 15:32:33 2018
 Temperature: 94.8 degF

Sonde Error:

Array	1	2	3	4	5	6	7	
Real	192.0	-12.7	-40.5	-15.0	-2.0	2.3	2.9	mmho/m
Imaginary	-18.2	5.6	-8.9	-11.8	-22.5	-1.2	5.1	mmho/m

Loop Gain:

Array	1	2	3	4	5	6	7	
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8	mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8	mmho/m
Real	754.6	727.3	1235.4	1365.6	1152.8	736.4	421.2	mmho/m
Imaginary	57.5	104.4	378.7	408.4	324.7	218.8	133.9	mmho/m

Gain (real)	0.956	0.917	1.015	1.010	0.991	0.971	0.968
Gain (imaginary)	0.967	0.936	1.006	0.998	0.992	0.975	0.945
Before Survey Verification Performed:				Tue Jan 15 07:30:10 2019			
Sonde 1 Temperature:				91.3 degF			
Sonde 2 Temperature:				93.3 degF			
Array 1 Temperature:				93.3 degF			
Array	1	2	3	4	5	6	7
TxIR	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
TxIX	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Tx Magnitude	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Gain	112.1	152.3	146.9	151.0	151.8	159.4	167.5
RxCR	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
RxCX	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RxC Magnitude	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Tool Module Parameters	
Software Version:	8.0.0.4
Borehole Size Source:	CALI
Mud Resistivity Source:	MUDRES
Mud Resistivity At Surface:	N/A
Mud Resistivity Surface Temperature:	N/A
Borehole Corrections:	Automatic
Minimum Standoff:	0.4 in

Litho Density Tool Calibration Report

Serial Number:	B0872S70997B
Tool Model:	B10872

Caliper Calibration Performed:		Mon Jan 07 16:48:54 2019	
	Diameter		Reading
Small Ring:	9.000	in	1709.800
Large Ring:	13.000	in	2058.300
			cps
Gain:	0.0115		
Offset:	-10.6247		

Master Calibration Performed:		Mon Jan 07 16:27:47 2019	
Source Number:		70997B	
Medium:		Water	
Al Block Density:		2.6002 g/cc	
	Background	Al Block	Al Block + Fe
SS1	677.4	4467.7	3791.9
SS2	1927.0	30904.2	26367.3
SSTOTAL	4505.5	49338.8	41684.1
LITH	96.2	509.0	303.4
LL	188.4	862.2	753.9
LU	542.8	1119.9	1033.7
LS	731.2	1982.1	1787.6
LSTOTAL	1379.4	4808.5	3883.4
			cps
SSHV	1468.8	1474.0	1474.3
LSHV	1414.7	1419.6	1421.4
			V
SSFF	-0.011	0.005	0.006
LSFF	0.005	0.002	-0.007

Before Survey Verification Performed:		Tue Jan 15 07:00:24 2019	
After Survey Verification Performed:		Tue Jan 15 15:30:24 2019	

	Master Background	Before Survey Background	After Survey Background	
SS1	677.4	692.2	690.2	cps
SS2	1927.0	1946.8	1946.4	cps
SSTOTAL	4505.5	4577.9	4562.5	cps
LITH	96.2	98.4	95.6	cps
LL	188.4	188.2	186.7	cps
LU	542.8	548.0	551.3	cps
LS	731.2	736.1	738.0	cps
LSTOTAL	1379.4	1392.8	1389.2	cps
SSHV	1468.8	1461.4	1461.7	V
LSHV	1414.7	1407.4	1407.9	V
SSFF	-0.011	0.007	-0.014	
LSFF	0.005	0.016	0.003	

Tool Module Parameters

Software Version: 8.0.0.6
 Borehole Size Source: CALI
 Pad Type: 2

Compensated Neutron Tool Calibration Report

Serial Number: C2541S59796G
 Tool Model: 009

Master Calibration Performed: Thu Jan 03 15:00:01 2019

Source Number: 59796G

Short Spacing Counts: 4187.83 cps
 Long Spacing Counts: 156.76 cps
 High Voltage: 1367.67 V

Target Ratio: 26.6600
 Ratio: 26.7144
 K-Factor: 0.9980

Before Survey Verification Performed:
 After Survey Verification Performed:

Verifier Number: 6490NN

Verifier Values	Master Cal	Before Survey	After Survey
Short Spacing Counts:	247.78		cps
Long Spacing Counts:	253.81		cps
High Voltage:	1367.62		V
Ratio:	0.9762		

Tool Module Parameters

Software Version: 8.0.0.5
 Borehole Size Source: CALI
 Clip Crossplot Porosity: YES
 Lithology Identification Parameters:
 Calcite Quartz Dolomite
 Uma: 13.77 4.79 9.03 barns/cc
 RHoma: 2.71 2.65 2.88 g/cc

Micro Electric Log Calibration Report

Serial Number: 002220331
 Tool Model: 001

Caliper Calibration Performed: Thu Jan 10 10:00:24 2019

	Pad Arm		Backup Arm			
	Radius		Reading	Radius	Reading	
Small Jig:	4.000	in	1353.200	4.000	in	1365.300
Large Jig:	6.000	in	1402.600	6.000	in	1410.500
Gain:			0.0405			0.0442
Offset:			-50.7854			-56.4115

Pad Calibration

	Inverse	Normal
Gain:	1.0000	1.0000
Offset:	0.0000	0.0000

Tool Module Parameters

Software Version: 8.0.0.4

Borehole Fluid Resistivity Calibration Report

Serial Number: 000001
Tool Model: 001

Master Calibration Performed: Thu Sep 16 10:07:52 2010

Resistivity Polynomial Equation:

$$0.2530x^2 + 0.5610x + 0.0310$$

Temperature Calibration:

Reference		Reading	
53.60	degF	846.40	bits
107.42	degF	919.20	bits

Spectral Gamma Ray Calibration Report

Serial Number: 10012700
Tool Model: 003

Performed: Thu Jan 10 12:00:24 2019

Source Number: #14
Calibrator Value: 207.0 API

Background Reading: 151.7 cps
Calibrator Reading: 1681.1 cps

Sensitivity: 0.135 API / cps

Performed: Fri Jan 11 11:30:32 2019

Verifier Number: 571

Concentrations	K %	U ppm	T ppm
	5.4	6.9	25.3

K Peak: Passed
U Peak:
T Peak:

Before Survey Verification Performed: Tue Jan 15 07:15:24 2019
After Survey Verification Performed: Tue Jan 15 15:35:24 2019

	Before Survey	After Survey	
Background Reading:	154.5	152.8	cps
Verifier Reading:	1207.5	1184.5	cps

K Peak:
U Peak:
T Peak:

Passed
Passed
Passed

Passed
Passed
Passed

Tool Module Parameters

Software Version:
Borehole Correction:
Stand Off:
Mud Type:
Borehole Size Source:

8.0.0.5
No
N/A
N/A
N/A

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CHD	53.66		CHD-001 (10012297) Cable Head	2.19	3.38	35.00
			XTU-008 (C10001400) Crossover Ultrawire Toolbus to Ultralink	2.08	3.38	47.00
SGR	46.32		SGR-003 (10012700) Spectral Gamma Ray Tool	4.94	3.88	120.00
BFR	42.65		BFR-001 (000001) Borehole Fluid Resistivity	3.80	3.38	75.00
Overbody	38.20		Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00
MEL	33.28		MEL-001 (002220331) Micro Electric Log	9.17	3.38	190.00
KJT	31.49		KJT-001 (10010515) Knuckle Joint	2.86	3.38	72.00
CNLSC CNSSC	25.59 25.09		CNL-009 (C2541S59796G) Compensated Neutron Logging Tool	5.28	3.38	100.00
LDT	15.44		LDT-B10872 (B0872S70997B) Litho Density Tool	9.75	4.50	310.00
IAT	8.44		IAT-002 (P10110)	10.00	3.38	100.00

			IAT-002 (B10110) Induction Array Tool	13.22	3.88	196.00
SP	0.43					
BN	0.38		BN-SOFF (000001) Bottom Nose Standoff	0.38	6.88	6.00

Dataset: enduringreswlybrook.db: West_Lybrook/well/run1/main
 Total length: 53.66 ft
 Total weight: 1161.00 lb
 O.D.: 6.88 in



Company: Enduring Resources

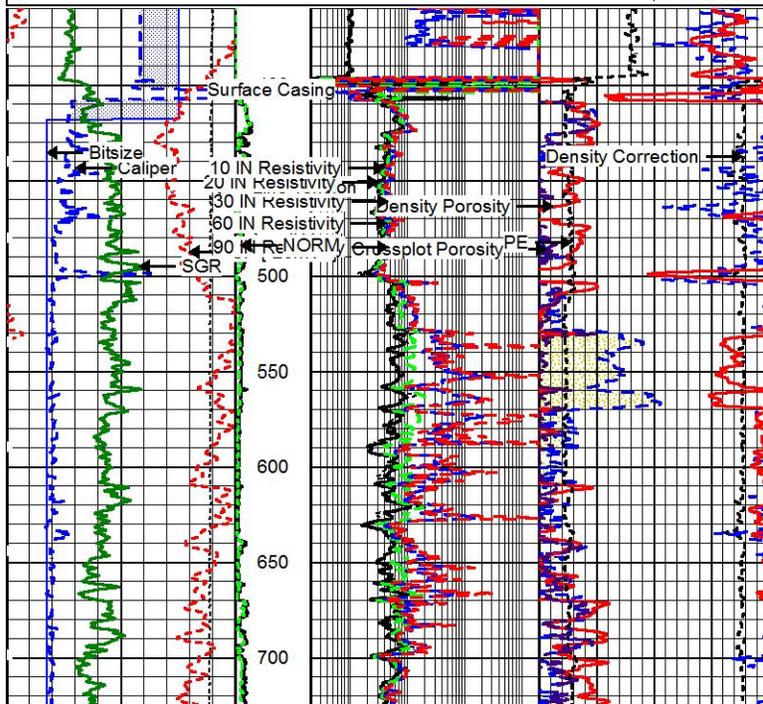
Well: West Lybrook Unit 2309-24 N WSW

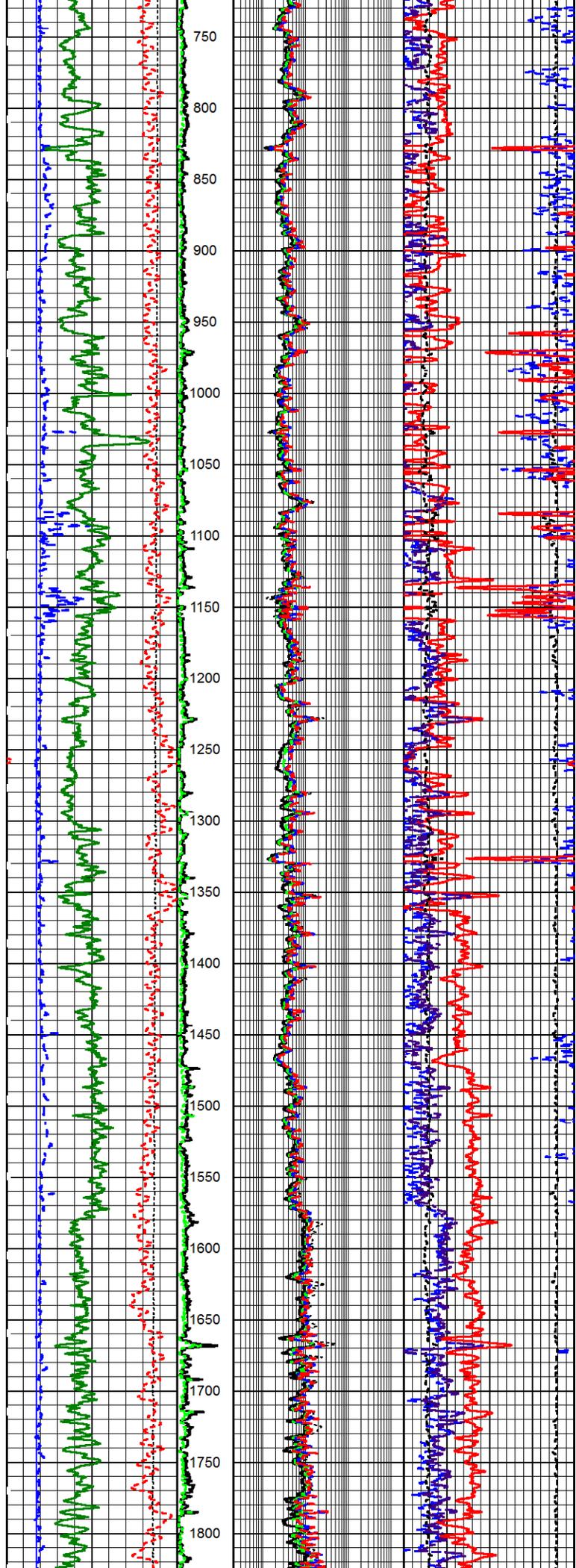
Field: West Lybrook

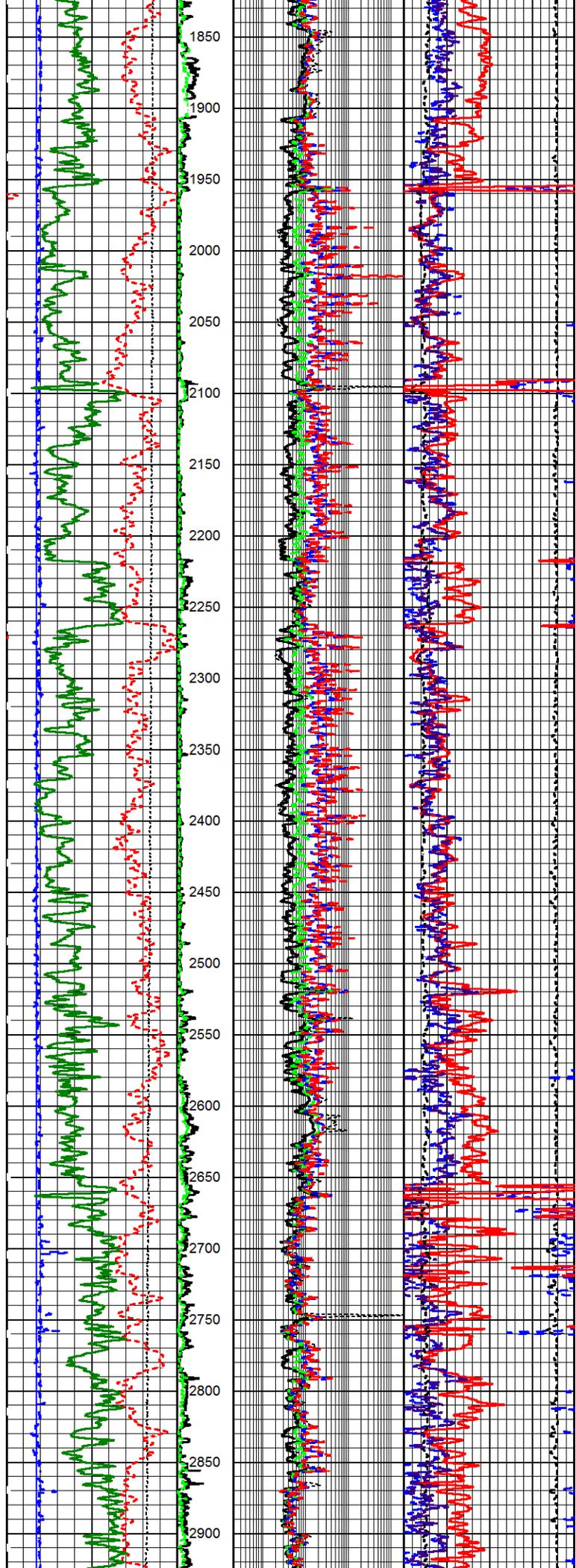
State: New Mexico

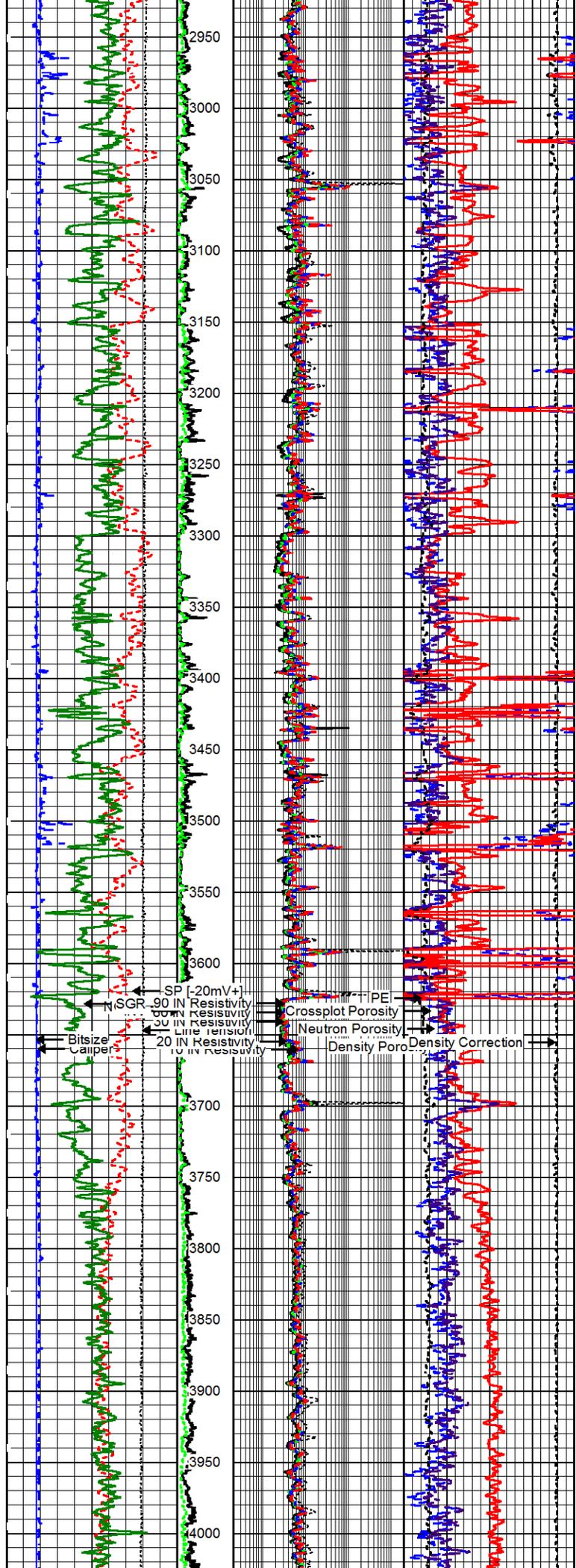
ALLIED HORIZONTAL WIRELINE SERVICES		Main Pass			
Database File	enduringreswlybrook.db				
Dataset Pathname	West_Lybrook/well/run1/main				
Presentation Format	3com_jat				
Dataset Creation	Tue Jan 15 15:23:37 2019				
Charted by	Depth in Feet scaled 1:1200				

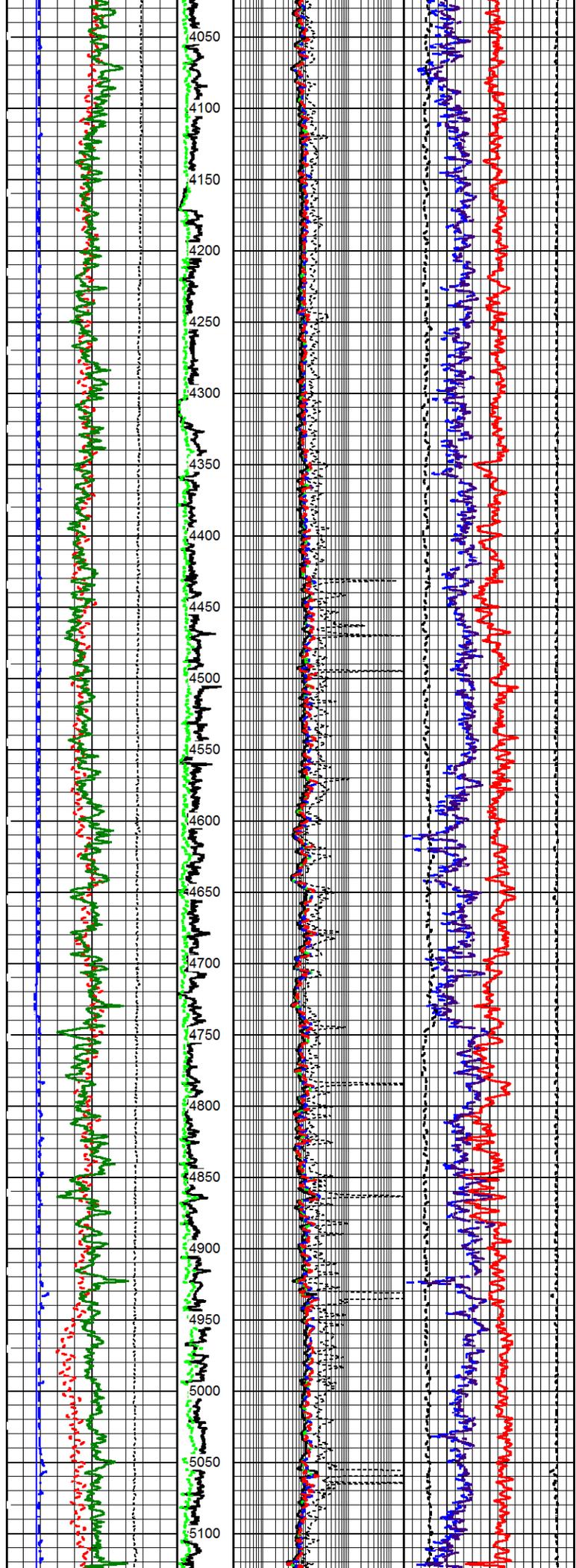
7	Bitsize (in)	17	INV	10 IN Resistivity	Neutron Porosity
7	Caliper (in)	17	Ohm-m	0.2 (Ohm-m) 2000	Porosity Decimal Fraction
	SP [-20mV+]		0 20	20 IN Resistivity	0.3 -0.1
0	SGR (GAPI)	200	NORM	0.2 (Ohm-m) 2000	Density Porosity
	Line Tension		Ohm-m	30 IN Resistivity	Porosity Decimal Fraction
	5000lb)	0	0 20	0.2 (Ohm-m) 2000	0.3 -0.1
				60 IN Resistivity	Crossplot Porosity
				0.2 (Ohm-m) 2000	Porosity Decimal Fraction
				90 IN Resistivity	0.3 -0.1
				0.2 (Ohm-m) 2000	0 PE 10 Density Correcti
					(g/cc)
					0.8 -0.2

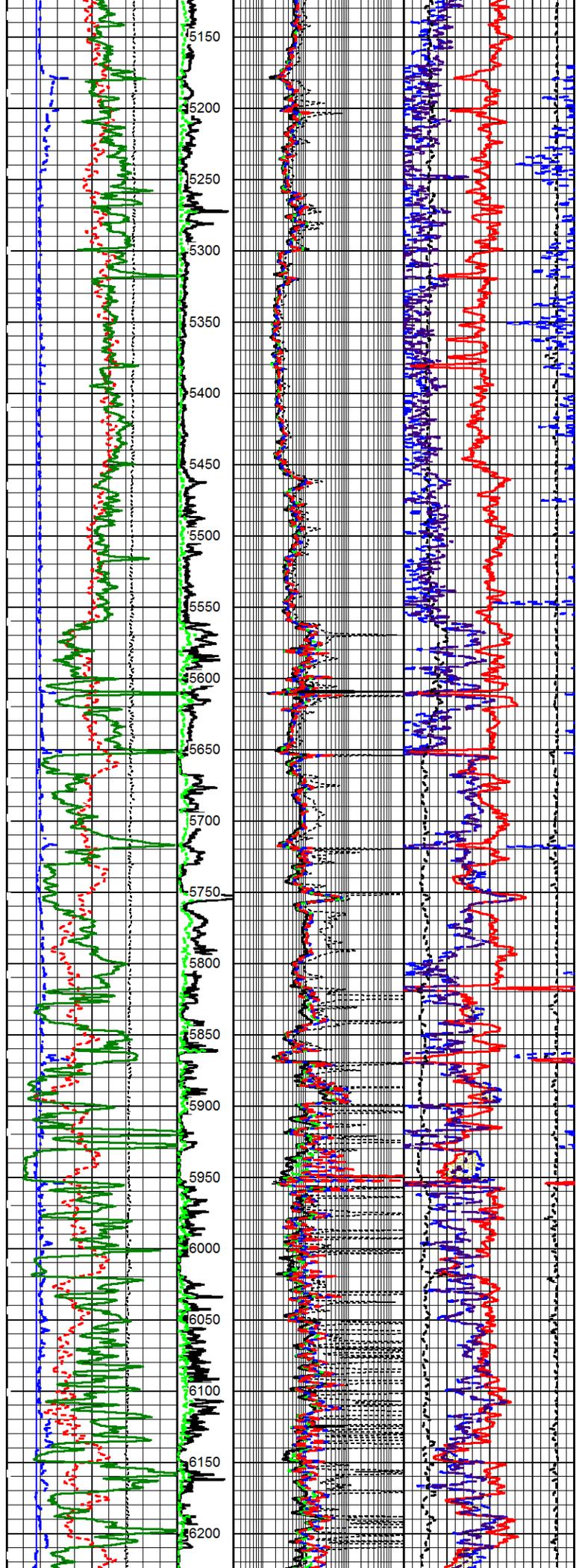


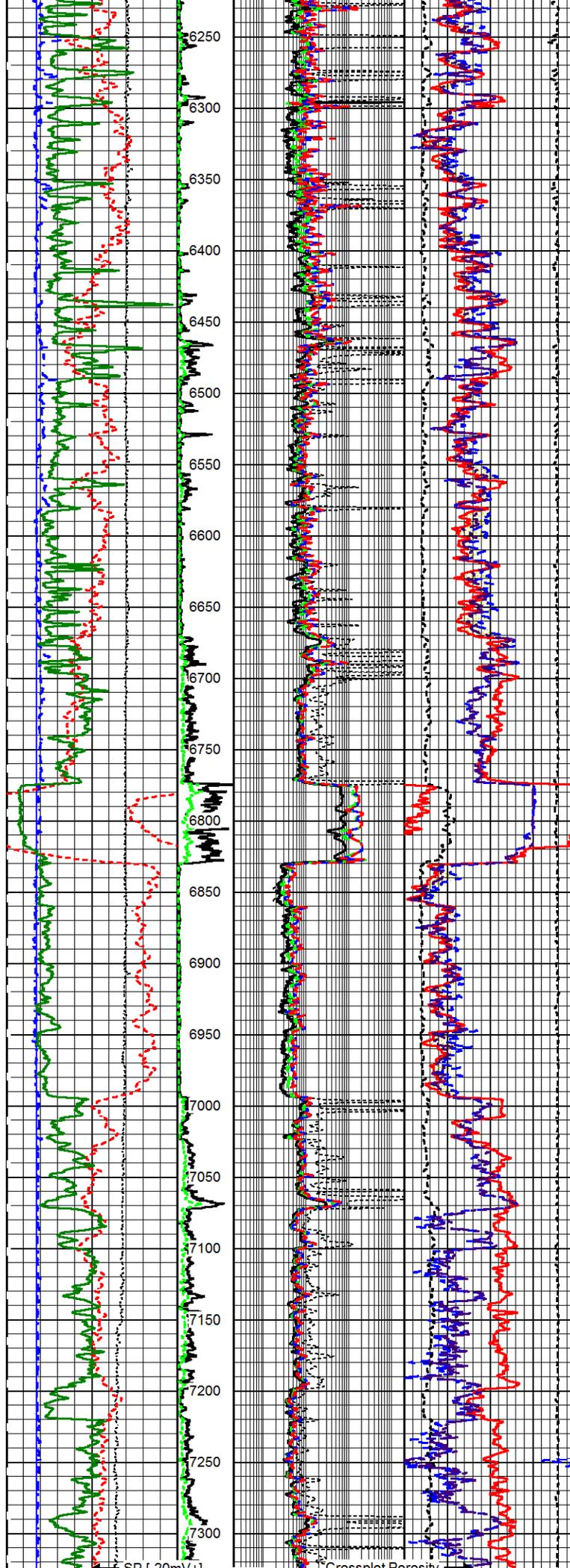


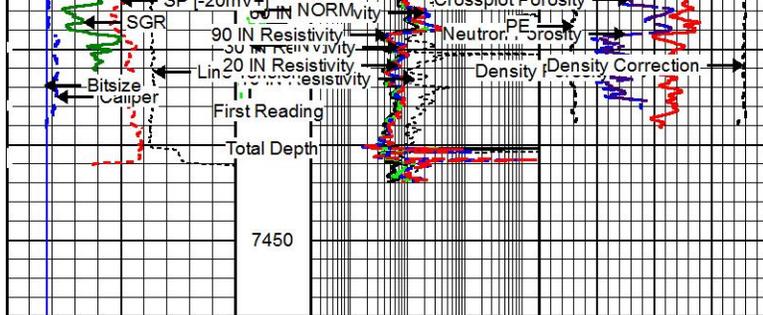












7	Bitsize (in)	17	INV	10 IN Resistivity	Neutron Porosity
7	Caliper (in)	17	Ohm-m	0.2 (Ohm-m) 2000	Porosity Decimal Fraction
	SP [-20mV+]	0	20	20 IN Resistivity	0.3 -0.1
0	SGR (GAPI)	200	NORM	0.2 (Ohm-m) 2000	Density Porosity
	Line Tension	5000lb	0	30 IN Resistivity	Porosity Decimal Fraction
			0	0.2 (Ohm-m) 2000	0.3 -0.1
				60 IN Resistivity	Crossplot Porosity
				0.2 (Ohm-m) 2000	Porosity Decimal Fraction
				90 IN Resistivity	0.3 -0.1
				0.2 (Ohm-m) 2000	0 PE 10 nsity Correcti
					(g/cc)
					0.8 -0.2



Main Pass

ENCLOSURE I: PROOF OF NOTIFICATION

Farmington Daily Times

PART OF THE USA TODAY NETWORK

Affidavit of Publication

Ad # 0004627319

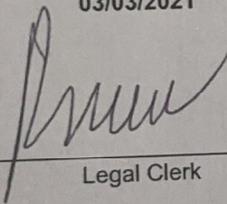
This is not an invoice

LT ENVIRONMENTAL, IN C.
848 EAST SECOND AVENUE DURANGO

DURANGO, CO 81301

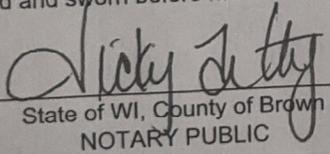
I, being duly sworn say: **Farmington Daily Times**, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said **DAILY TIMES**, a daily newspaper duly qualified for the purpose within the State of New Mexico for publication and appeared in the internet at The Daily Times web site on the following days(s):

03/03/2021



Legal Clerk

Subscribed and sworn before me this March 3, 2021:



State of WI, County of Brown
NOTARY PUBLIC

9-19-21

My commission expires

Ms. Deidre Duffy, a representative of Enduring Resources IV, LLC, 200 Energy Court, Farmington, New Mexico 87401 (970-385-1096), wishes to provide notification for the submittal of an Application for Authorization to Inject to the New Mexico Oil Conservation Division (NMOCD). The application requests the use of existing diversion well SJ-4301 POD3 (WLU 2309-24N WSW), permitted with the New Mexico Office of the State Engineer (NMOSE), for the use as a Class II injection well. The well is located in San Juan County, New Mexico at latitude 36.205958°N, longitude 107.740891°W. This well will be used to inject fluids produced from the enhanced recovery of oil and/or natural gas in the San Juan Basin. Fluids will be injected into the Entrada Geologic Formation at depths between 6,851 feet and 6,990 feet below ground surface. Maximum injection rates and pressures are anticipated to be 20,000 barrels of water per day and 2,000 pounds per square inch gauge, respectively. Interested parties may contact the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within 15 days. #4627319, Daily Times, March 3, 2021

VICKY FELTY
Notary Public
State of Wisconsin

Ad # 0004627319

PO #:

of Affidavits 1

This is not an invoice

Dear Customer,

The following is the proof-of-delivery for tracking number: 774083612306

Delivery Information:

Status:	Delivered	Delivered To:	
Signed for by:	JROSADO	Delivery Location:	6251 COLLEGE BLVD
Service type:	FedEx Ground		
Special Handling:			Farmington, NM, 87402
		Delivery date:	Jun 25, 2021 13:24

Shipping Information:

Tracking number:	774083612306	Ship Date:	Jun 24, 2021
		Weight:	5.0 LB/2.27 KG

Recipient:
Ryan Joyner, BLM NM- Farmington Field Office
6251 College Blvd
Suite A
FARMINGTON, NM, US, 87402

Shipper:
Cortney Cook, WSP USA Inc.
848 E. 2nd Ave.
DURANGO, CO, US, 81301

Purchase Order TE077921005



Well Name: W LYBROOK UT	Well Location: T23N / R9W / SEC 23 / SWSW / 36.206767 / -107.765027	County or Parish/State: SAN JUAN / NM
Well Number: 726Y	Type of Well: OIL WELL	Allottee or Tribe Name: EASTERN NAVAJO
Lease Number: N0G13121863	Unit or CA Name:	Unit or CA Number: NMNM135216A, NMNM135216X
US Well Number: 3004535769	Well Status: Drilling Well	Operator: ENDURING RESOURCES LLC

Notice of Intent

Type of Submission: Notice of Intent

Type of Action Facility

Date Sundry Submitted: 04/29/2021

Time Sundry Submitted: 02:54

Date proposed operation will begin: 05/12/2021

Procedure Description: Enduring Resources IV, LLC is requesting permission from the BLM to utilize an existing facility containing a water supply well located on BLM-owned surface, WLU 2309-24N (NMOSE well SJ-4301 POD3), as an injection well for recovered fracturing water from production well completions. The existing well is completed in the Entrada Formation, with water currently extracted for use in production well completions. The Entrada Formation contains low quality water and the formation is commonly used for both extraction and injection purposes in the San Juan Basin. The proposed injected water would be of similar quality to the existing water present in the Entrada Formation. Enduring would like to use the existing well alternatively for both extraction and injection purposes. Currently, the New Mexico Oil Conservation Division (NMOCD) has jurisdiction for permitting salt-water disposal wells (Class II injection wells) and requires that surface owners grant permission for such use. Please see the attached NMOCD Form C-108, Application for Authorization to Inject, for complete details regarding the existing well and proposed use for injection.

Surface Disturbance

Is any additional surface disturbance proposed?: No

Well Name: W LYBROOK UT

Well Location: T23N / R9W / SEC 23 /
SWSW / 36.206767 / -107.765027

County or Parish/State: SAN
JUAN / NM

Well Number: 726Y

Type of Well: OIL WELL

Allottee or Tribe Name:
EASTERN NAVAJO

Lease Number: NOG13121863

Unit or CA Name:

Unit or CA Number:
NMNM135216A, NMNM135216X

US Well Number: 3004535769

Well Status: Drilling Well

Operator: ENDURING
RESOURCES LLC

Conditions of Approval

Additional Reviews

Form_C_108_SJ4301_POD3_20210611151106.pdf

Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: STUART HYDE

Signed on: APR 29, 2021 02:53 PM

Name: ENDURING RESOURCES LLC

Title: Geologist

Street Address: 848 E. 2ND AVE

City: DURANGO

State: CO

Phone: (970) 903-1607

Email address: STUART.HYDE@WSP.COM

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: DAVE J MANKIEWICZ

BLM POC Phone: 5055647761

Disposition: Approved

Signature: Dave Mankiewicz

BLM POC Title: AFM-Minerals

BLM POC Email Address: DMANKIEW@BLM.GOV

Disposition Date: 06/14/2021