



PND-S Well Evaluation Log

Company SANDRIDGE ENERGY
 Well CAMPBELL 2133 1-6 RE
 Field BUERKLE
 County FINNEY State KANSAS Country USA
 Location 1980' FSL & 4290 FEL

Section 6 Township 21S Range 33W API Num _____
 Permanent Datum GL Elevation 2929 K.B. 2940
 Log Measured From KB, 11 Above Perm Datum D.F. 0
 Drilling Meas From KB G.L. 2929

	Run 1	Run 2	Run 3
Date		APR 16, 2013 PND	
Depth - Driller		4790	
Depth - Logger		4768	
Btm Log Interval		4760	
Top Log Interval		2500	
Casing - Driller		4.5" @ 4835	
Casing - Logger			
Bitsize			
Type Fluid in Hole		WATER @ 3100	
Dens. / Visc.			
pH / Fluid Loss			
Source of Sample			
Rm @ Meas. Temp			
Rmf @ Meas. Temp			
Rmc @ Meas. Temp			
Source: Rmf / Rmc			
Rm @ BHT			
Max. Rec. Temp.			

PLOT TYPE: * CH SHADED LITHOLOGY AND SATURATION EVALUATION *

REMARKS:

Project: 200166
 Company: SANDRIDGE ENERGY
 Well: CAMPBELL 2133 1-6 RE
 Field: BUERKLE
 County: FINNEY

County: FINNEY
State: KANSAS
Country: USA
Log Date: APR 16, 2013 PND

Client provided Field Print Images of Great Guns open hole logs.

Computed PND-S depth data does match PND-S field print.
Perfs and Proposed Perfs on Depth with OH Field Prints.
PND-S data NOT on depth with OH Field Prints.

Porosity is derived from PND-S capture (Neutron) and inelastic data (Density).

Vsh computed from Cased Hole GR, Neutron, Density-Neutron x-plot, and Sigma.

Lithology was determined by Density-Neutron crossplot.

Sigma Water is based on calibrating the wettest intervals in the well to 100% water. Rw Values were provided by client but they do not make straight translations to Sigma Water so some adjustments were made as necessary.

Matrix model = Sand/Lime/Dolomite/Anhydrite/Shale.

Proposed Perforation Intervals:

4584-4610'
4734-4757'

** Hydrocarbon Pay Flags **

PHIE >= 0.08
VSH <= 0.40
Sw <= 0.55

APP Jobnum: #5154

CURVE DESCRIPTIONS:

CURVE LEGEND:

GRE = Gamma Ray, Environmentally Corrected.
CCL = Collar Locator
QUAL = Generator Output Quality, from (PND-S) data
CSG1L = 4.5" Casing Flag
CSG1R = 4.5" Casing Flag
PERFS = Open Perforations Flag
PROPPERF = Proposed Perfs
RATI = Formation Ratio
SIGC = Formation Sigma, from (PND-S) data
NEAR = Near Detector Counts
FAR = Far Detector Counts
DELI = Inelastic Data Quality Indicator, from (PND-S) Inelastic data
AIPN = Neutron-Type Porosity, from (PND-S) Capture data
AIPD = Density-Type Porosity, from (PND-S) Inelastic data
VSH = Shale Volume
MIN12 = Sandstone Volume
MIN23 = Limestone Volume
MIN34 = Dolomite Volume
MIN45 = Anhydrite Volume
PHIE = Effective Porosity
SWPN = Water Saturation, computed from (PND-S) Capture data
PAYPN = Hydrocarbon Pay Flag, PND Evaluation
BVWPN = Bulk Volume Water, computed from (PND-S) Sigma data
BVWPNI = BVW at Irreducible Water Saturation from CH (PND-S) data
BVWPNR = BVW at Residual Hydrocarbon Saturation from CH (PND-S) data

PARAMETERS:

** Shale Volume **

Zone	Top-Zone	Bot	GRcl	GRsh	SIGcl	SIGsh	NEUTcl	NEUTsh	RHOsh	SSP
2494.0	-	2773.9	' 22.0	55.0	17.0	32.0	5.0	20.0	2.64	
2774.0	-	2786.0	'		17.0	32.0	5.0	20.0	2.64	
3746.0	-	4559.9	' 23.0	89.0	11.0	26.5	6.0	23.5	2.52	
4560.0	-	4650.0	' 55.0	119.0	11.0	21.5	6.0	23.0	2.56	
4650.1	-	4709.9	' 49.0	127.0	13.0	34.0	6.0	29.5	2.48	
4710.0	-	4744.5	' 38.0	69.5	12.0	23.0	5.0	18.5	2.50	
4744.6	-	4762.0	'		12.0	23.0	5.0	18.5	2.50	

** PND-S Variable Matrix Water Saturation **

Zone	Top-Zone	Bot	SigWa	SigMcl	SigMsh	SigHC	PhiSh	PhiMn	PhiMx	VclMx
2494.0	-	2786.0	' 114.0	VAR	32.0	10.0	20.0	4.0	VAR	50.0
3746.0	-	4559.9	' 58.0	VAR	26.5	10.0	23.5	4.0	VAR	50.0
4560.0	-	4650.0	' 99.0	VAR	21.5	18.0	23.0	4.0	VAR	50.0
4650.1	-	4709.9	' 108.0	VAR	34.0	18.0	29.5	4.0	VAR	50.0
4710.0	-	4719.9	' 108.0	VAR	23.0	10.0	18.5	4.0	VAR	50.0
4720.0	-	4762.0	' 45.0	VAR	23.0	10.0	18.5	4.0	VAR	50.0

BOREHOLE ENVIRONMENT:

BOREHOLE RECORD:

Bit Size Top - Bottom
 7.875" 440 - 4850'

CASING RECORD:

Size Top - Bottom
 8.625" Surface - 440'
 4.5" Surface - 4835'

PERFORATION RECORD:

OpenTop OpenBot
 4666 - 4674'
 4698 - 4710'

PETROPHYSICAL REPORTS:

WELL#5154 Weatherford International, Inc. - CASED HOLE PETROPHYSICAL EVALUATION REPORT AI

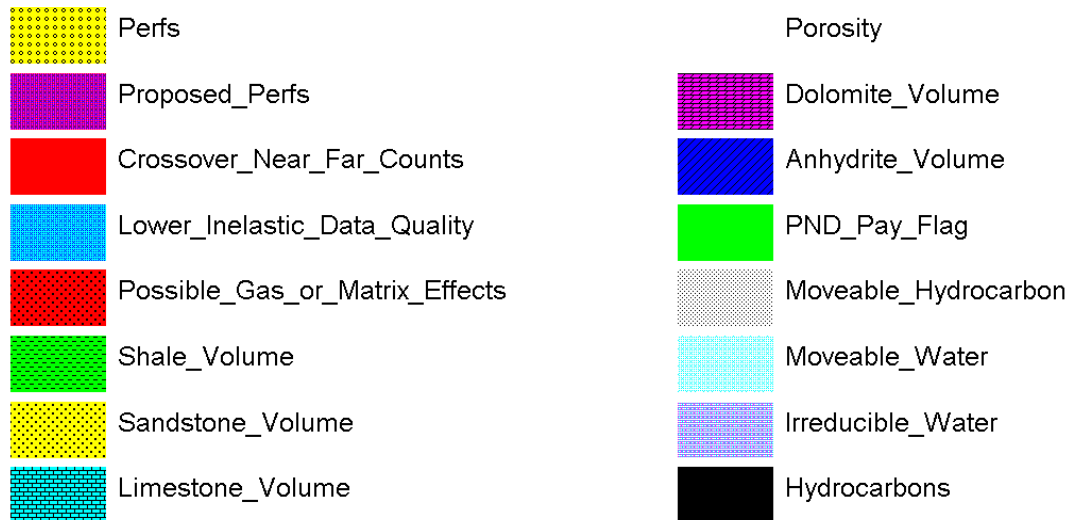
COMPANY - SANDRIDGE ENERGY COUNTY - FINNEY API # -
 WELL - CAMPBELL 2133 1-6 RE STATE - KANSAS LOCATION - 6 - 2
 FIELD - BUERKLE COUNTRY - USA DATE - 4/21/2013

FORMATION NAMES	CUM ZONE DEPTHS TOP BOTTOM	TOTAL h	PHI Avg	Sw Avg	BVW Avg	TOTAL h	PHI Avg	Sw Avg	BVW Avg	TOTAL h	PHI Avg
	>>>>-CUTOFFS->>>>			SW .LE. 55.0%				VSH .LE. 40.0%			
	>>>>----->>>>	S	PHI CUTOFF =	8.0%				PHI CUTOFF =	10.0%		PHI CUF
	4720.0 4744.5	2.7	9.6	50	.048						
	4710.0 4719.9	2.6	8.8	43	.038						
	4650.1 4709.9	6.1	10.9	31	.033	4.6	11.5	28	.032	1.4	13
	4560.0 4650.0	16.8	9.0	29	.026	1.6	10.4	18	.019		
	3746.0 4559.9	115.2	12.7	42	.053	82.5	14.1	40	.057	58.4	15
	2494.0 2573.9	1.8	11.4	45	.052	1.3	12.4	44	.055	.8	13

ANALYST: R.L. Smith
 PROGRAM: APPLESv2.75

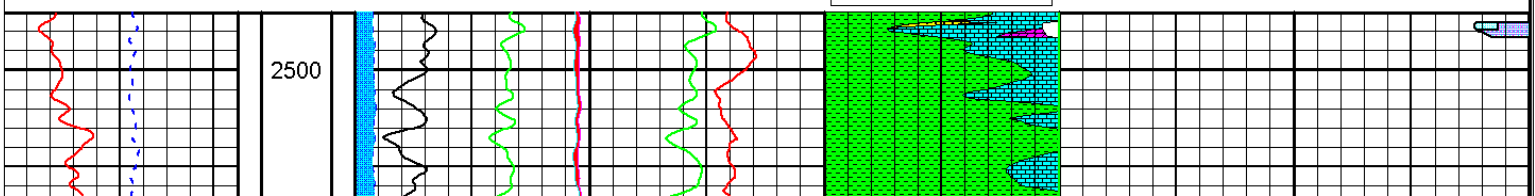
ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFULL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, 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.

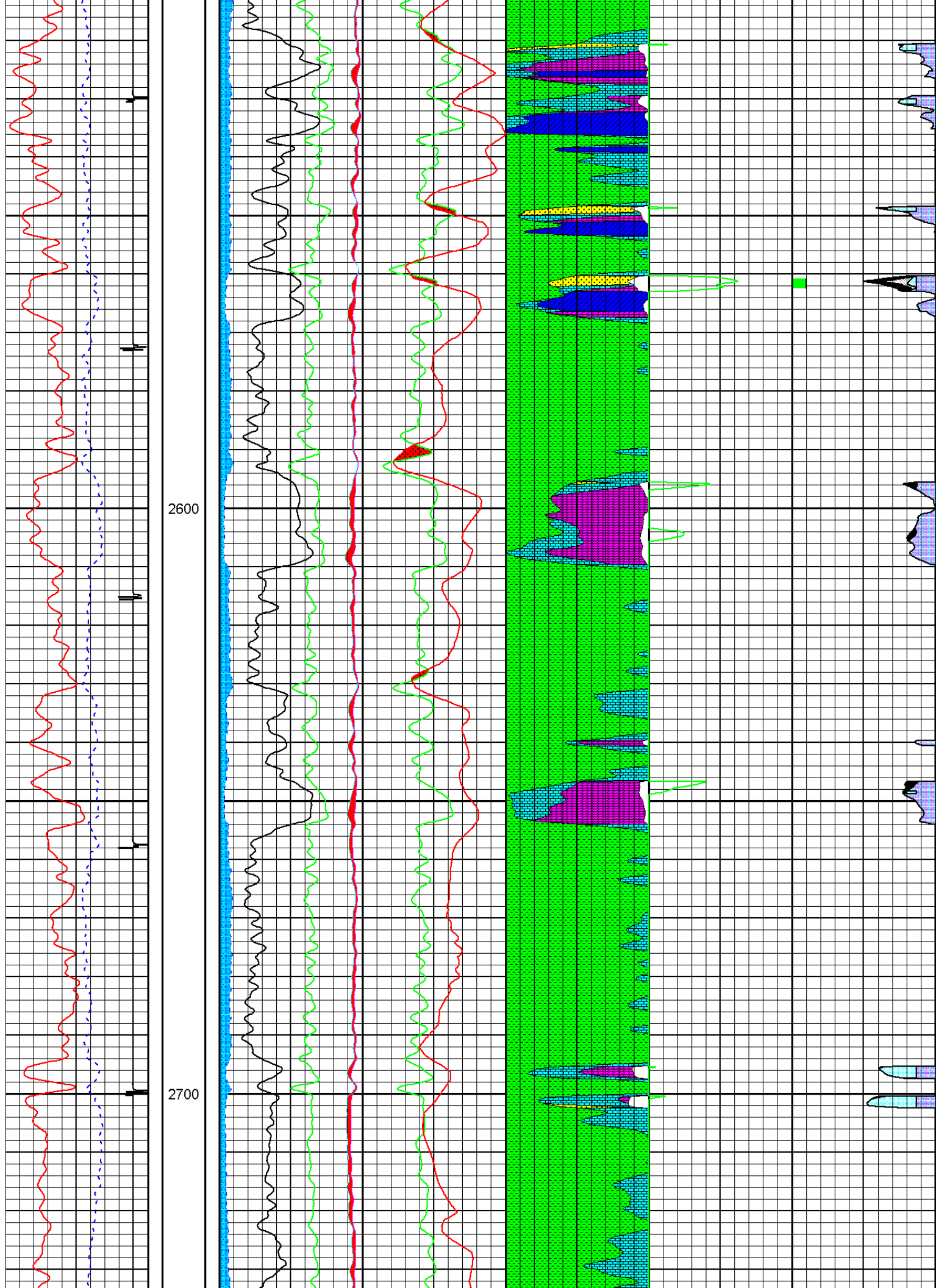
WEATHERFORD INTERNATIONAL, LTD.

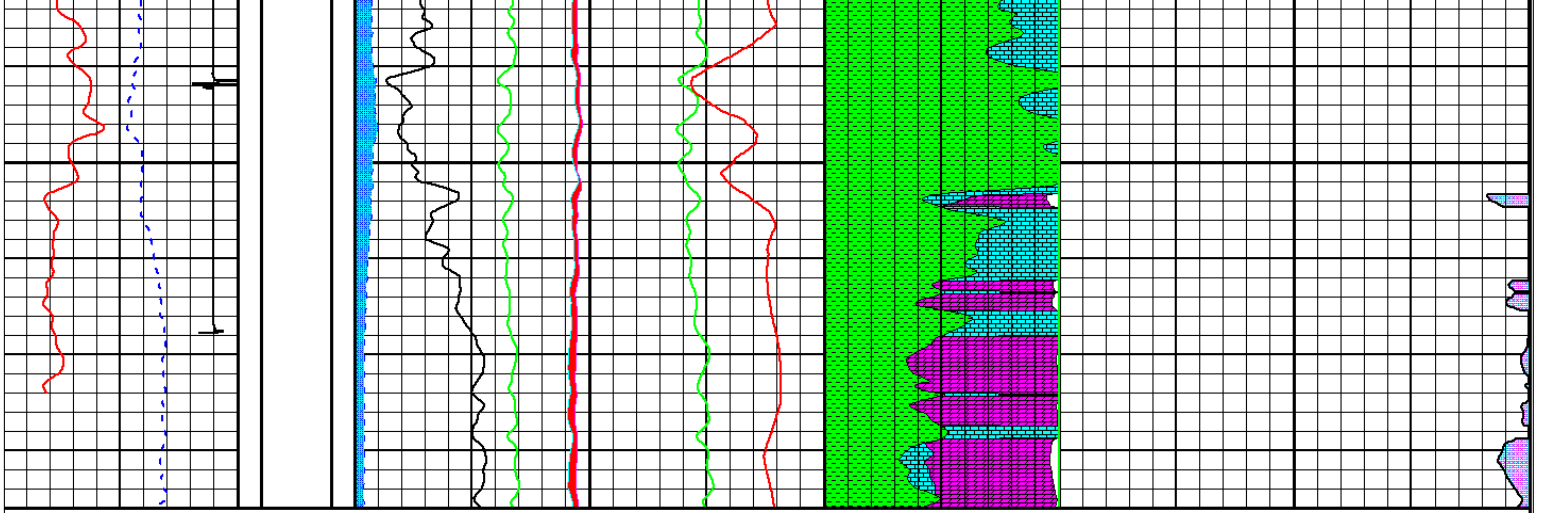


CAMPBELL 2133 1-6 RE
 21 Apr 2013 @ 21:37
 DEPTH (FT)
 Interval: 2494.00 to 2786.00
 Depth Scale Ratio: 1/240

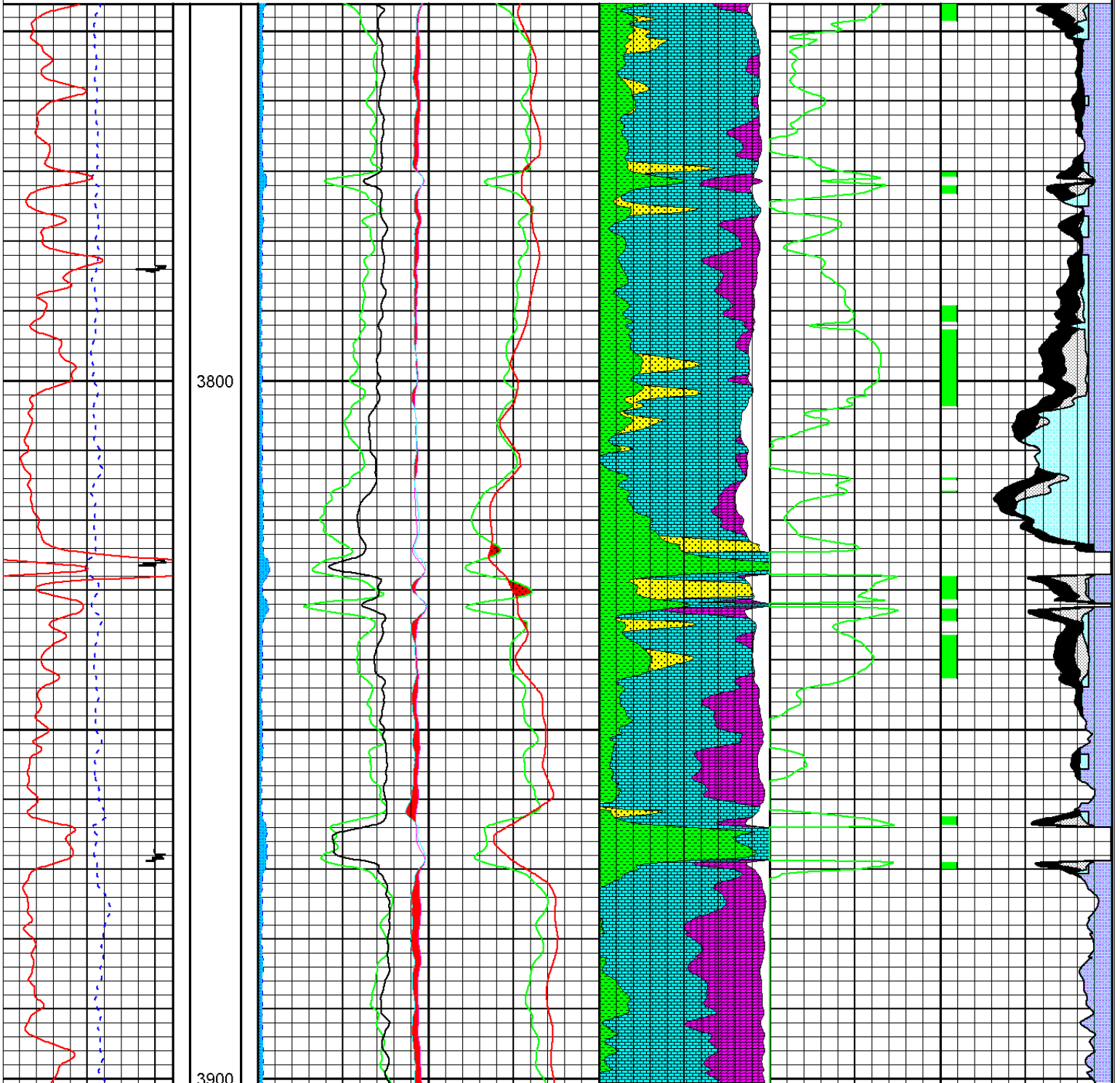
QUAL 0 160000	DEPTH FT	RATI 6 0	AIPN 0.45 dec(ls) -0.15	VSH 0 dec 1	SWPN 1 dec 0	PAYPN 0 10
CCL -9000 mv 1000	CSG1L 0 flg 10	SIGC 50 0	AIPD 0.45 dec(ls) -0.15	MIN12 0 dec 1	PHIE 0.3 dec 0	
GRE 0 gapi 200	CSG1R 10 flg 0	NEAR 240 cps 0		MIN23 0 dec 1	BVWPN 0.3 dec 0	
	PERFS 6 flg 0	FAR 40 cps 0		PHIE 1 dec 0	BVWPNI 0.3 dec 0	
	PROPPERF 0 flg 6	DELI 0 -100		MIN34 0 dec 1	BVWPNR 0.3 dec 0	
				MIN45 0 dec 1		

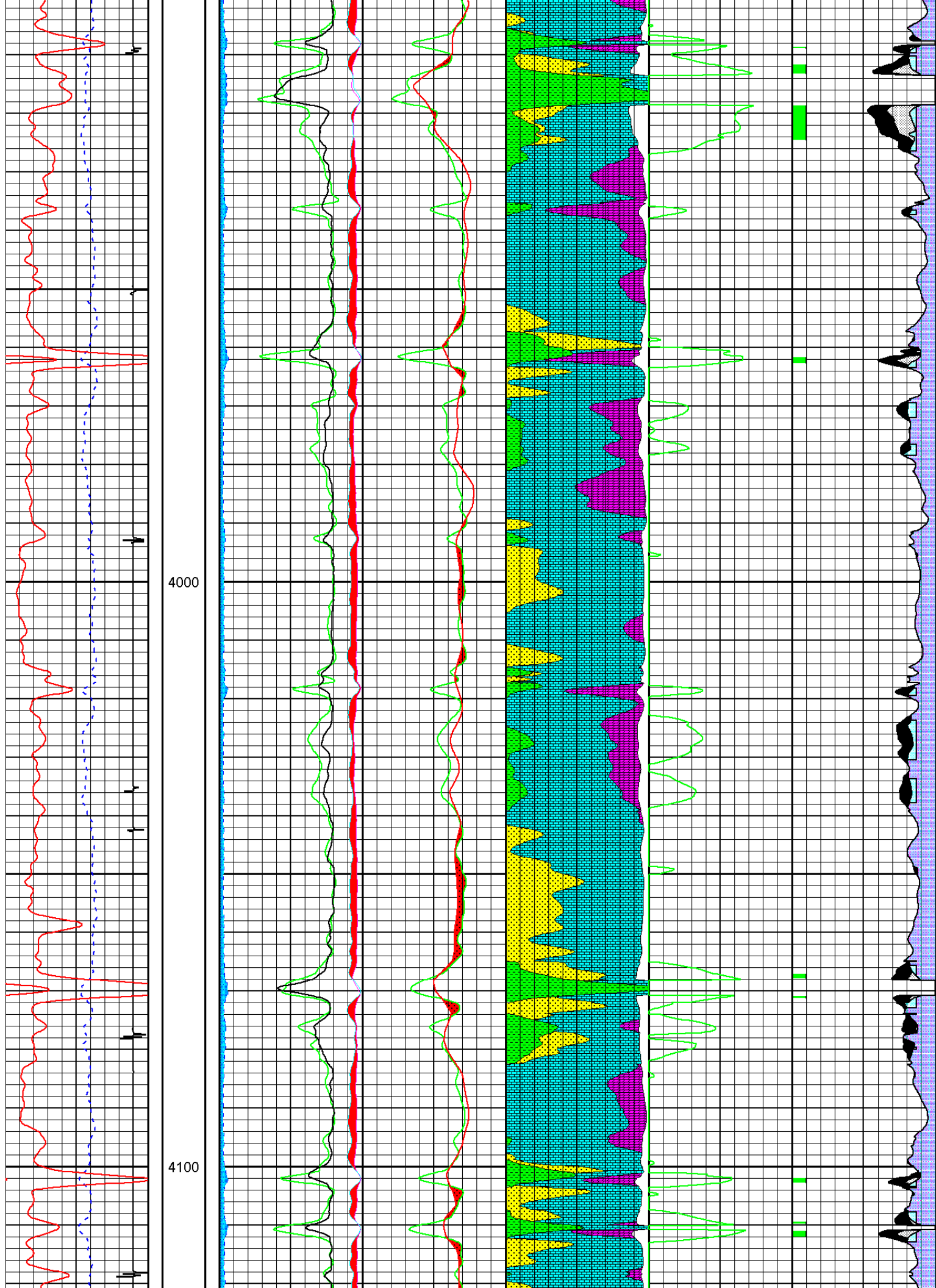


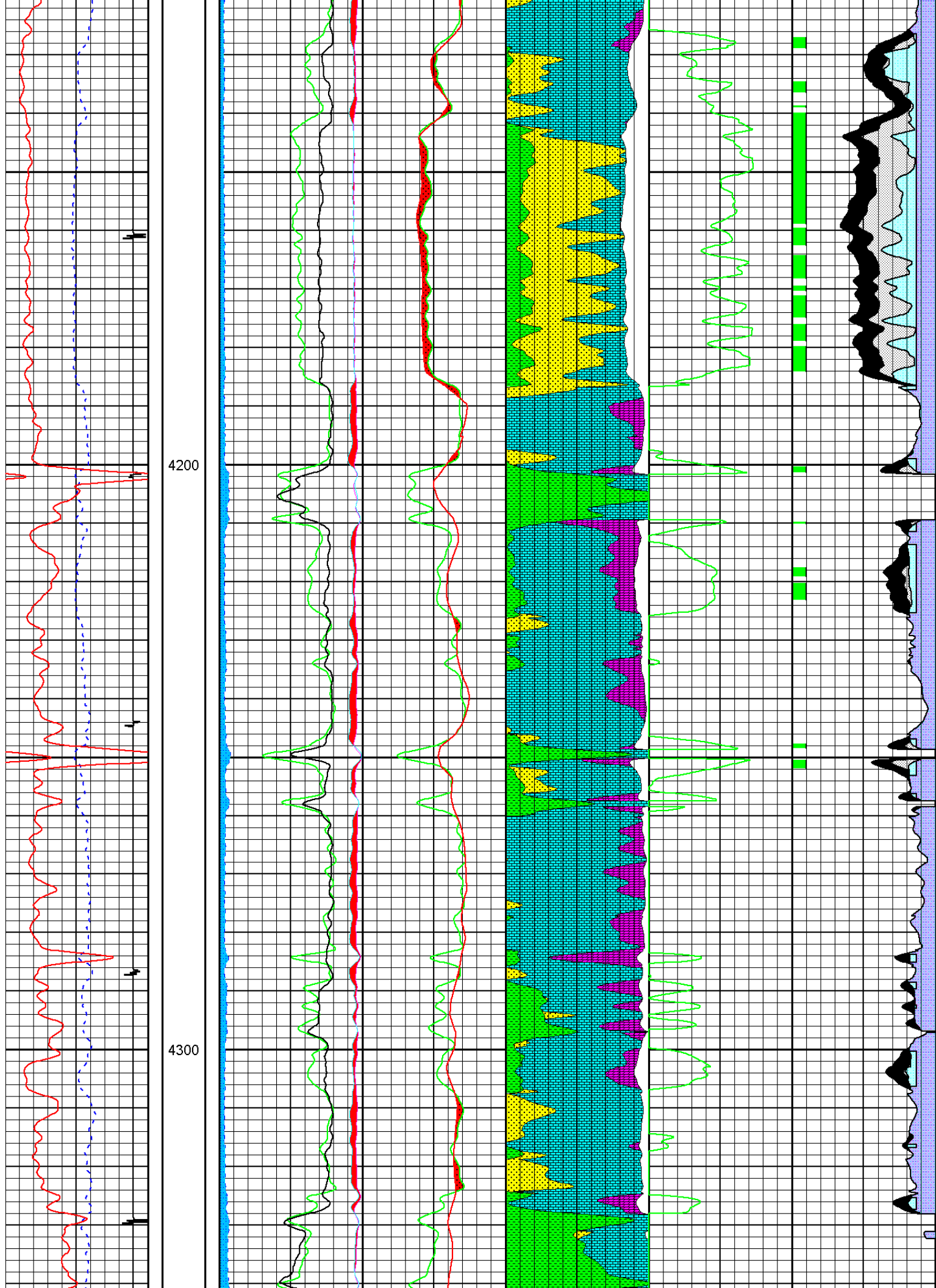


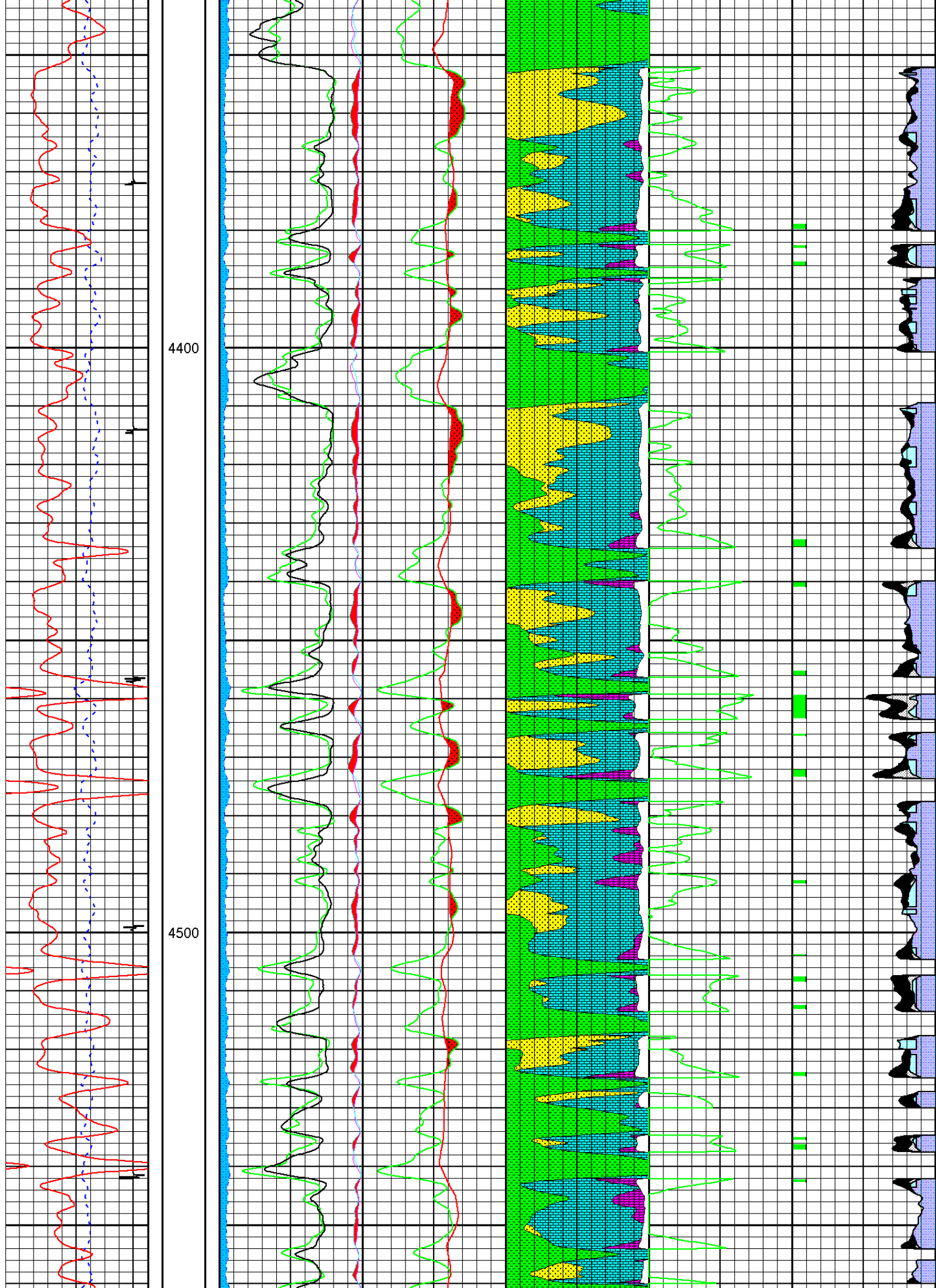


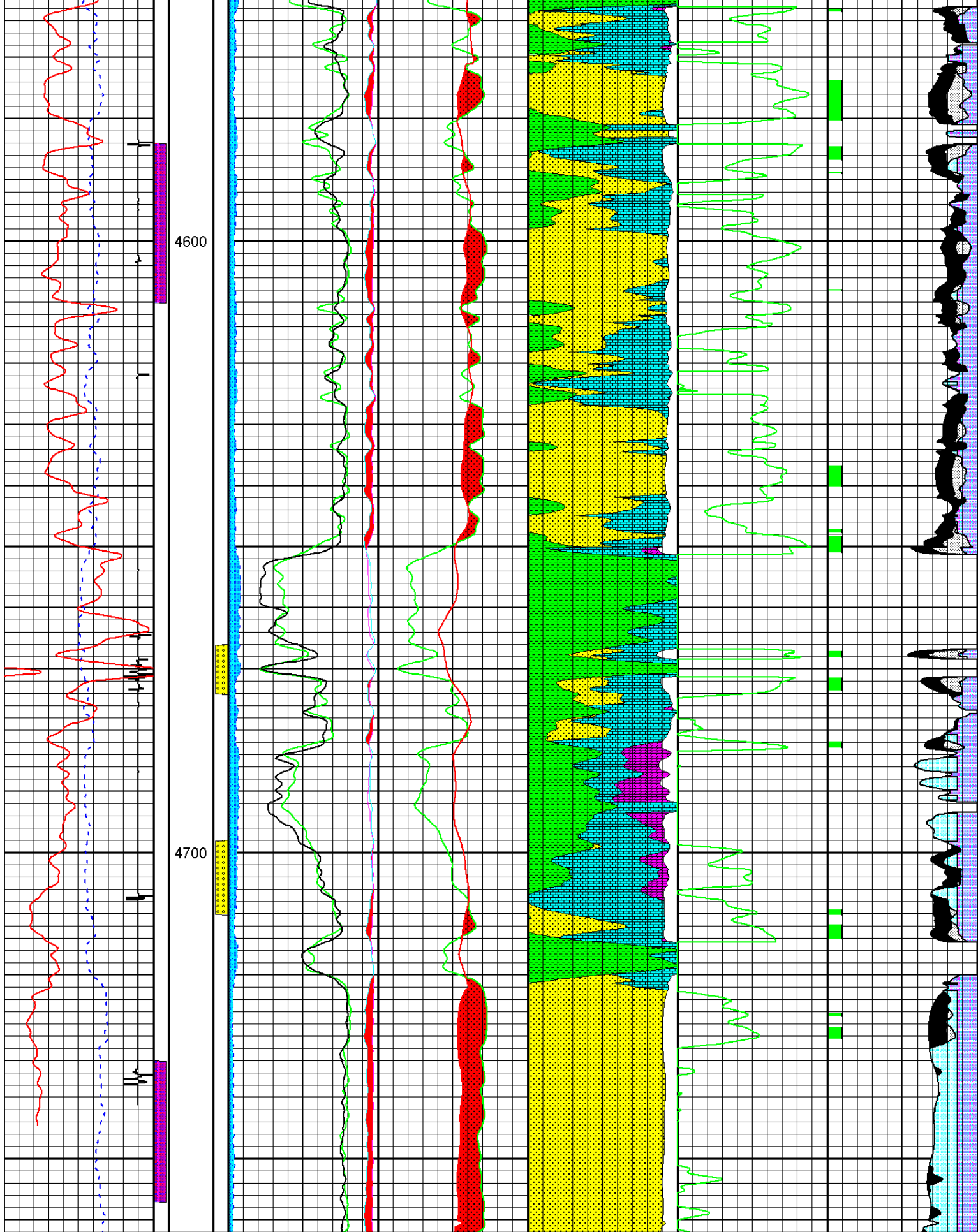
Interval: 3746.00 to 4762.00
Depth Scale Ratio: 1/240











0 --- QUAL 160000	DEPTH FT	6 --- RATI 0	0.45 --- AIPN dec(l) -0.15	0 --- VSH dec 1	1 --- SWPN dec 0	0 --- PAYPN 10
-9000 --- CCL mv 1000	0 --- CSG1L flg 10	50 --- SIGC 0	0.45 --- AIPD dec(l) -0.15	0 --- MIN12 dec 1		0.3 --- PHIE dec 0
--- GRE	CSG1R	NEAR		MIN23		BWPN

0	gapi	200	10 flg	0	240	cps	0
---	------	-----	--------	---	-----	-----	---

0	dec	1
---	-----	---

0.3	dec	0
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PERFS	
6 flg	0
40	cps
	0

PHIE	
1	dec
	0

BVWPNI	
0.3	dec
	0

DROPPERF	
0 flg	6
0	-100

MIN34	
0	dec
	1

BVWPNR	
0.3	dec
	0

MIN45	
0	dec
	1