

Submit 1 Copy To Appropriate District Office
District I -- (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II -- (575) 748-1283
811 S. First St., Artesia, NM 88210
District III -- (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV -- (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		WELL API NO. 30-015-44068 5. Indicate Type of Lease STATE ☒ FEE ☐ 6. State Oil & Gas Lease No.
2. Name of Operator Devon Energy Production Company, LP	7. Lease Name or Unit Agreement Name Cotton Draw Unit 8. Well Number 511H	
3. Address of Operator 333 West. Sheridan Avenue Oklahoma City, OK 73102-5015 405-228-2810	9. OGRID Number 6137 10. Pool name or Wildcat Paduca; Bone Spring	
4. Well Location Unit Letter <u>O</u> : <u>230</u> feet from the <u>S</u> line and <u>1965</u> feet from the <u>E</u> line Section <u>25</u> Township <u>24S</u> Range <u>31E</u> NMPM County <u>Eddy</u>		
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3512' GR		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☒		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Upon review of the CBL, the TOC does not tie back into the intermediate casing string. Isolation Scanner Cement Evaluation Log shows the TOC to be 5170'. The intermediate shoe is at 4370'. After running the cement evaluation log we attempted to establish injection down the 5-1/2"x9-5/8" annulus. We were able to achieve an injection rate of 3.5 bpm and 950 psi. Indicating that we will be able to perform a bradenhead squeeze down the 5-1/2"x9-5/8" annulus to remediate the low TOC. The APD Conditions of Approval for this well don't call out a specific TOC on the production string but we have decided to go ahead remediate the cement with a bradenhead squeeze. Attached is the Isolation Scanner Log and procedure to remediate the TOC with a bradenhead squeeze.

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 29 2017

RECEIVED

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Brittney Wheaton TITLE: Regulatory Analyst DATE 11/29/2017
Type or print name: Brittney Wheaton E-mail address: Brittney.wheaton@dmr.com PHONE: 405-228-2810

For State Use Only

APPROVED BY: [Signature] TITLE Staff Mgr. DATE 12-5-17
Conditions of Approval (if any):



CDU 511H – Bradenhead Squeeze Procedure

API: 3001544068
WBS: XX-123281.01.CMP
SHL: Sec 25 of 24S-31E
Eddy County, NM

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 29 2017

RECEIVED

Objective:

1. The CDU 511H was drilled within the 2nd Bone Spring Sand and cased off with a 5-1/2" production casing string.
2. Attempt to establish injection rate down the 5-1/2"x9-5/8" annulus.
3. Perform bradenhead squeeze down the 5-1/2"x9-5/8" annulus to remediate top of cement on the production string. Bring TOC from 5170' to 3300'.
4. Run CBL to verify new TOC.

GL - 3,511.8'
TD - 15,067'

KB - 3,537.8' (26')
PBTD - 14,981' (FC)

Casing	OD	WT/FT	Grade	Top (ftKB)	Bottom (ftKB)	80% Collapse (psi)	80% Burst (psi)
Surface	13-3/8"	54.5#	J-55	26'	720'		
Intermediate	9-5/8"	40#	J-55	26'	4,370'		
Production	5-1/2"	17#	P-110RY	26'	15,067'	5,968	8,512

Capacity:

5-1/2 17# Casing – (0.0232 bbl/ft)
5-1/2 17# Casing X 9-5/8 40# Casing – (0.0464 bbl/ft)
5-1/2 17# Casing X 8-3/4 Open Hole – (0.045 bbl/ft)

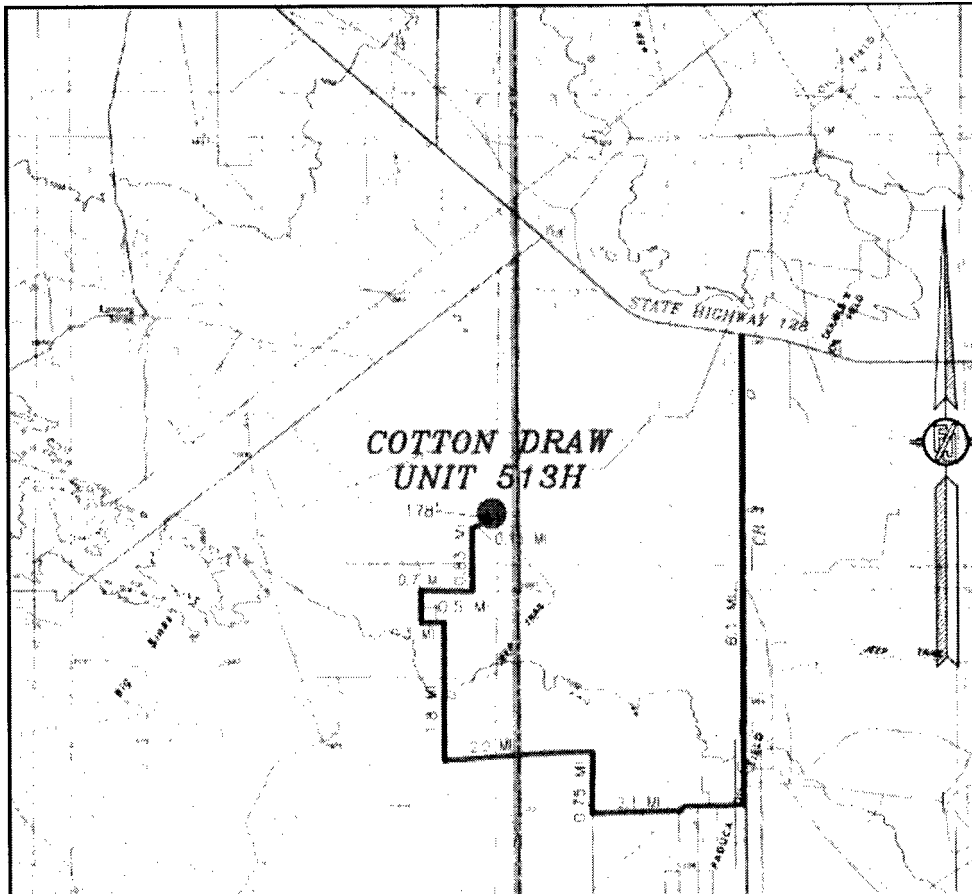
EHS:

- All personnel will wear hard hats, safety glasses (side shields), FRC, and steel-toed boots while on location and follow all company policies
- Hold PJSM with all vendors on location discussing matters of safety, job procedure, and procedure execution contingencies. For any scope change or shift change, safety meetings need to be held with all personnel on location. Ensure safety shower is set on location and appropriate containments are set prior to start of frac.

Directions:

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 1 (ORLA ROAD) GO SOUTH ON CR 1 8.1 MILES, TURN RIGHT ON CALICHE ROAD (MONSANTO ROAD) AND GO WEST 2.1 MILES, TURN RIGHT AND GO NORTH 0.75 OF A MILE, TURN LEFT AND GO WEST 2.0 MILES, TURN RIGHT AND GO NORTH 1.8 MILES, TURN LEFT AND GO WEST 0.3 OF A MILE, TURN RIGHT AND GO NORTH 0.5 OF A MILE, TURN RIGHT AND GO EAST 0.7 OF A MILE, TURN LEFT AND GO NORTH 0.83 OF A MILE, TURN RIGHT AND GO NORTHEAST 0.15 OF A MILE TO EXISTING CDU 99H PAD. FROM NORTHEAST PAD CORNER FOLLOW ROAD SURVEY FLAGS NORTH 178' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.



Nick Ashley, Completions Engineer
405-552-4641 [office]
405-465-2076 [cell]
Nick.Ashley@dvn.com

Devon Contacts

Devon Contacts	Contact	Office	Office Phone	Cell Phone	E-mail Address
CMP Engineer	Nick Ashley	OKC	405-552-4641	1(405)465-2076	Nick.Ashley@dvn.com
Foreman CMP	Kelly Whitehead	Artesia	1(575)748-1834	1(575)513-4657	Kelly.Whitehead@dvn.com
Foreman CMP	Danny Velo	Artesia	1(575)746-5572	1(575)703-3360	Danny.Velo@dvn.com
Sand Coordinator	Mark Briney	OKC	(405)552-4504	(405)833-4771	Mark.Briney@dvn.com
CMP Manager	Dan Wood	OKC	(405)288-8514	(405)974-0892	Dan.Wood@dvn.com

Completion Notes:

- **Previous Operations:**
 - o **CBL already ran and TOC at 5170'.**
 - o **Tied into 9-5/8"x 5-1/2" annulus and able to establish an injection rate of 3.5 bpm at 950 psi.**
 - o **Production casing tested to 8500 psi for 30 min and Toe sleeve opened.**
- **All water pumped into the well must be treated with biocide and if fresh water is used it needs to be treated with 2% KCL substitute.**

Nick Ashley, Completions Engineer
405-552-4641 [office]
405-465-2076 [cell]
Nick.Ashley@dvn.com

PROCEDURE:

1. MIRU cement truck and associated equipment. Tie into 9-5/8"x5-1/2" annulus.
2. Establish an injection rate. Verify injection rate of 5 bpm without exceeding 1500 psi. Monitor 5-1/2" casing pressure and the 13-3/8"x9-5/8" annulus pressure during injection. If able to establish an injection rate of 5 bpm without exceeding 1500 psi and no pressure communication was observed on the production and surface casing then proceed with the procedure.
3. Pump 20 BBL fresh water ahead.
4. Mix and pump 97 bbls of 12.9 lb/gal 35/65 Poz Class "C" w/ 6% bentonite. Cement volume includes 30% excess for the open hole section.

NOTE: Ensure lab testing with slurry has been completed and results sent to engineer. Verify thickening time meets job requirements.

5. Displace with 153 bbl of fresh water.
 - A. New TOC should be +/- 3300'

NOTE: Verify volumes with engineer before pumping
6. Monitor annulus pressure for 15 min. If well goes on vacuum call foreman and engineer.
7. Shut well in, RD from well and wait on cement for 48 hrs.
8. MIRU wireline, crane, lubricator. RIH with RCBL and log from 6,500' to 500' above where TOC is seen with 2000 psi on well. Well should have ~2000 psi on the well from open toe sleeve. Confirm new TOC and let engineer know TOC.
9. RDMO wireline, crane, lubricator. Secure Wellhead.
10. Have CBL and cement report sent to Nick Ashley (Nick.Ashley@dvn.com) and DCWellFileWestern@dvn.com.

Nick Ashley, Completions Engineer
405-552-4641 [office]
405-465-2076 [cell]
Nick.Ashley@dvn.com

Company: DEVON

Well: COTTON DRAW UNIT 511H

Field: PADUCA

County: EDDY State: NEW MEXICO

Isolation Scanner

Cement

GR-CCL

County: EDDY
 Field: PADUCA
 Location: 330' FNL & 1980' FWL
 Well: COTTON DRAW UNIT 511H
 Company: DEVON

330' FNL & 1980' FWL		Elev.:	K.B.	3537.80 ft
25-24S-31E			G.L.	3511.80 ft
			D.F.	3536.80 ft
Permanent Datum:	Ground Level	Elev.:	3511.80 f	
Log Measured From:	Kelly Bushing	26.00 ft	above Perm.Datum	
Drilling Measured From:	Kelly Bushing			
API Serial No.	Section:	Township:	Range:	
3001544068	24S	24S	31E	

NM OIL CONSERVATION
 ARTESIA DISTRICT
 NOV 29 2017
 RECEIVED

Logging Date	21-Nov-2017		
Run Number	1A		
Depth Driller	15067.00 ft		
Schlumberger Depth	15067.00 ft		
Bottom Log Interval	9760.00 ft		
Top Log Interval	4200.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	9.5 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	6.50 in		
From	0.00 ft		
To	15067.00 ft		
Casing/Tubing Size	5.5 in		
Weight	17 lbm/ft		
Grade	P110		
From	0.00 ft		
To	15067.00 ft		
Max Recorded Temperatures	153 degF		
Logger on Bottom	Time	02:30:00	
Unit Number	Location:	Midland	
Recorded By	Jesus Ordenez/Adrienne Archibald		
Witnessed By	Chris Barton		

MM OIL CONSERVATION
ARTESIA DISTRICT
NOV 29 2017
RECEIVED

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

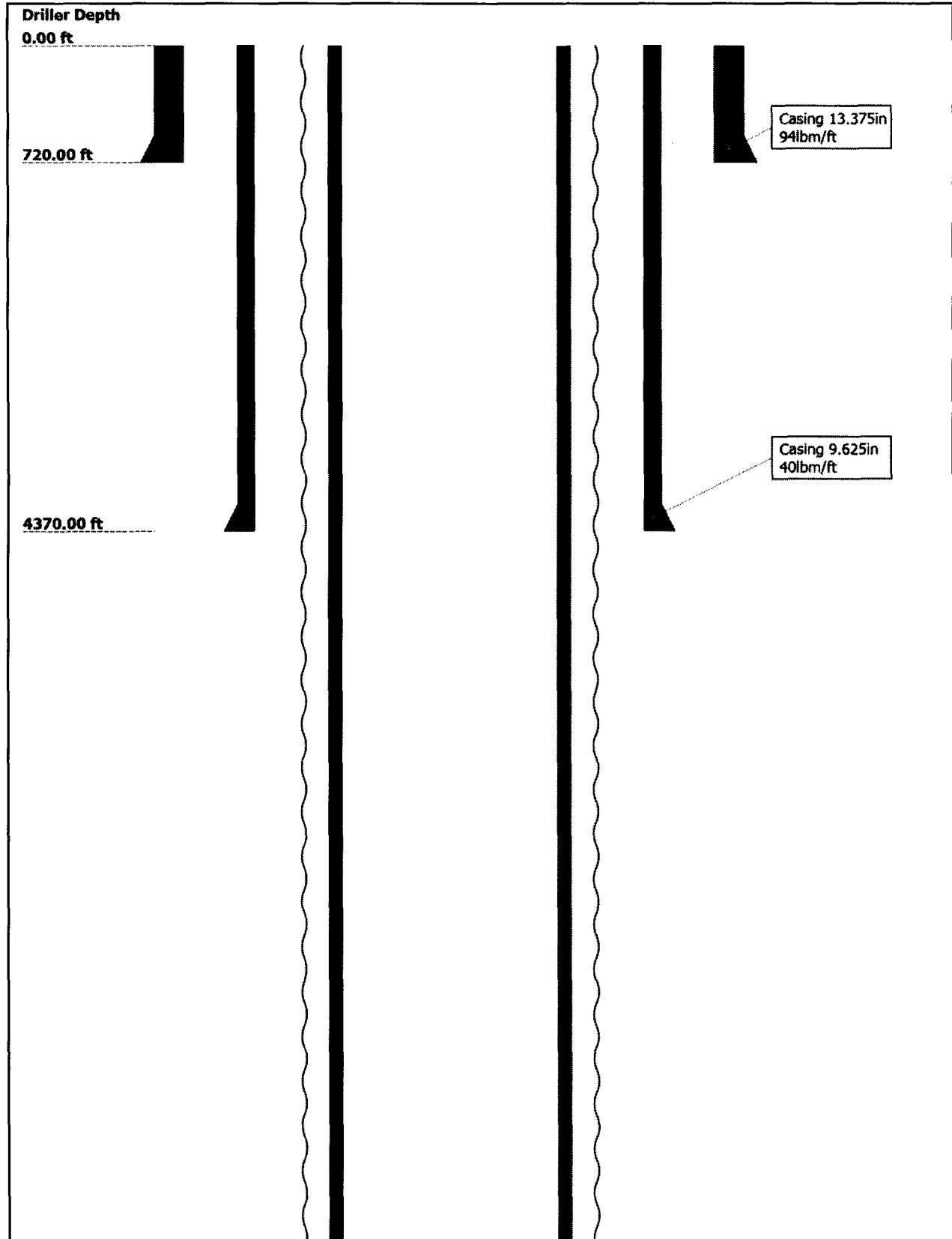
Contents

1. Header
2. Disclaimer
3. Contents
4. Well Sketch
5. Borehole Size/Casing/Tubing Record
6. Remarks and Equipment Summary
7. Depth Summary
8. USI Fluid Properties Measurement
9. 1A IBC Goodwin Compressed
 - 9.1 Integration Summary
 - 9.2 Composite Summary
 - 9.3 Log (IBC Goodwin)
10. 1A Main Pass 5" = 100'
 - 10.1 Integration Summary
 - 10.2 Software Version
 - 10.3 Composite Summary
 - 10.4 Log (USI IBC SLG)

12. 1A Main Pass 2" = 100'
 - 12.1 Integration Summary
 - 12.2 Software Version
 - 12.3 Composite Summary
 - 12.4 Log (USI IBC SLG Composite)
 - 12.5 Parameter Listing
13. 1A Repeat Pass 2" = 100'
 - 13.1 Integration Summary
 - 13.2 Software Version
 - 13.3 Composite Summary
 - 13.4 Log (USI IBC SLG Composite)
 - 13.5 Parameter Listing
14. XYZ (USI Fluid Acoustic Slowness vs Depth)
15. XYZ (USI Acoustic Impedance of Mud vs Depth)
16. Tail

- 10.5 Parameter Listing
- 11. 1A Repeat Pass 5" = 100'
- 11.1 Integration Summary
- 11.2 Software Version
- 11.3 Composite Summary
- 11.4 Log (USI IBC SLG)
- 11.5 Parameter Listing

Well Sketch



15067.00 ft

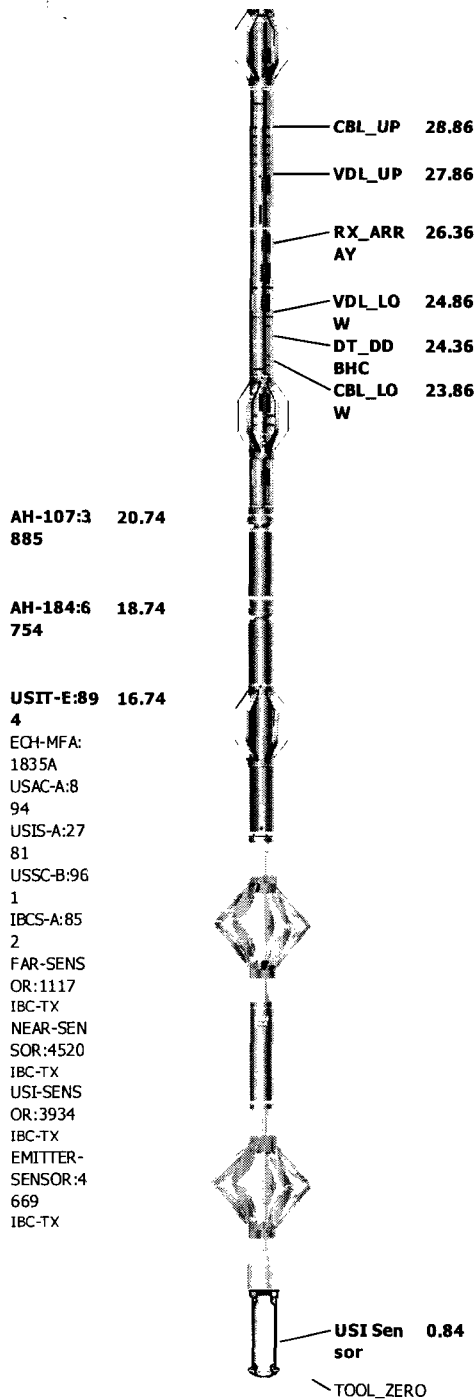
Casing 5.5in
17lbm/ft
Open Hole 6.5in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	6.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	15067					
Bottom Logger (ft)	15067					
Casing						
Size (in)	13.375	9.625	5.5			
Weight (lbm/ft)	94	40	17			
Inner Diameter (in)	12.019	8.835	4.892			
Grade	N/A	N/A	P110			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	720	4370	15067			
Bottom Logger (ft)	720	4370	15067			

Remarks and Equipment Summary

1A Toolstring			1A: Remarks
Equip name Length LEH-QC 47.85	MP name Offset		Log objective: Cement evaluation from KOP to
			Toolstring run as per toolsketch: 1 gemco and 2 inlines for centralization. Booster kit
			Repeat pass from: 9400-9700ft
			No pressure applied for repeat pass. 1500psi applied to main pass.
			Casing ER: 2.75in, IR 2.44in
CAL-YA:2 45.4 097 CAL-YA:20 97	CCL 44.6		
EDTC-B:8 41.9 308 EDTH-B:82 93 EDTG-B:77 201 EDTC-B:83 08	CTEM 38.4 ACCZ 0.00 HV 0.00 Gamma Ray 36.53 TelStatu s 35.4		
ASLT-B:E 35.4 NP41 ASLT-BB:E NP41			



Lengths are in ft
Maximum Outer Diameter = 6.250 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary			
		1A	
Depth Measuring Device			
Type	IDW-B		
Serial Number	1964		
Calibration Date	12-oct-2016		
Calibrator Serial Number	16		
Calibration Cable Type	7-39 PIXXS		
Wheel Correction 1	-2		
Wheel Correction 2	-3		
Tension Device			

Type	CMTD-B/A		
Serial Number	3464		
Calibration Date	27-oct-2017		
Calibrator Serial Number	3464		
Number of Calibration Points	10		
Calibration Root Mean Square Error	4		
Calibration Peak Error	7		

Logging Cable

Type	7-39PI-XXS		
Serial Number	F717110		
Length	29000.00 ft		
Conveyance Type	Wireline		
Rig Type	RIGLESS		

1A:Depth Control Parameters

Depth Control Remarks

Log Sequence	First Log In the Well	IDW used as primary depth control
Rig Up Length At Surface		Z chart used as secondary depth control
Rig Up Length At Bottom		Main and repeat pass correlated to down pass
Rig Up Length Correction		Junk basket with 4.5" gauge ring done in the well prior to this log.
Stretch Correction		
Tool Zero Check At Surface		

USIT - Fluid Properties Measurement

Run 1	Main[3]:Up	9778.52	4158
-------	------------	---------	------

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Value(us/ft)	End Value(us/ft)
--------------------	------------------

Mud Impedance = "Theoretical".
CZMD uses theoretical results.
MUD_N_THE=1.00
DFD=1.14g/cm3(9.50lbm/gal)

Start Value(Mrayl)	End Value(Mrayl)
--------------------	------------------

1A

IBC Goodwin Compressed

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	4158.00 ft	9778.53 ft	21-Nov-2017 2:33:35 AM	21-Nov-2017 4:09:07 AM	ON	7.81 ft	No

All depths are referenced to toolstring zero

Log

Company:DEVON Well:COTTON DRAW UNIT 511H

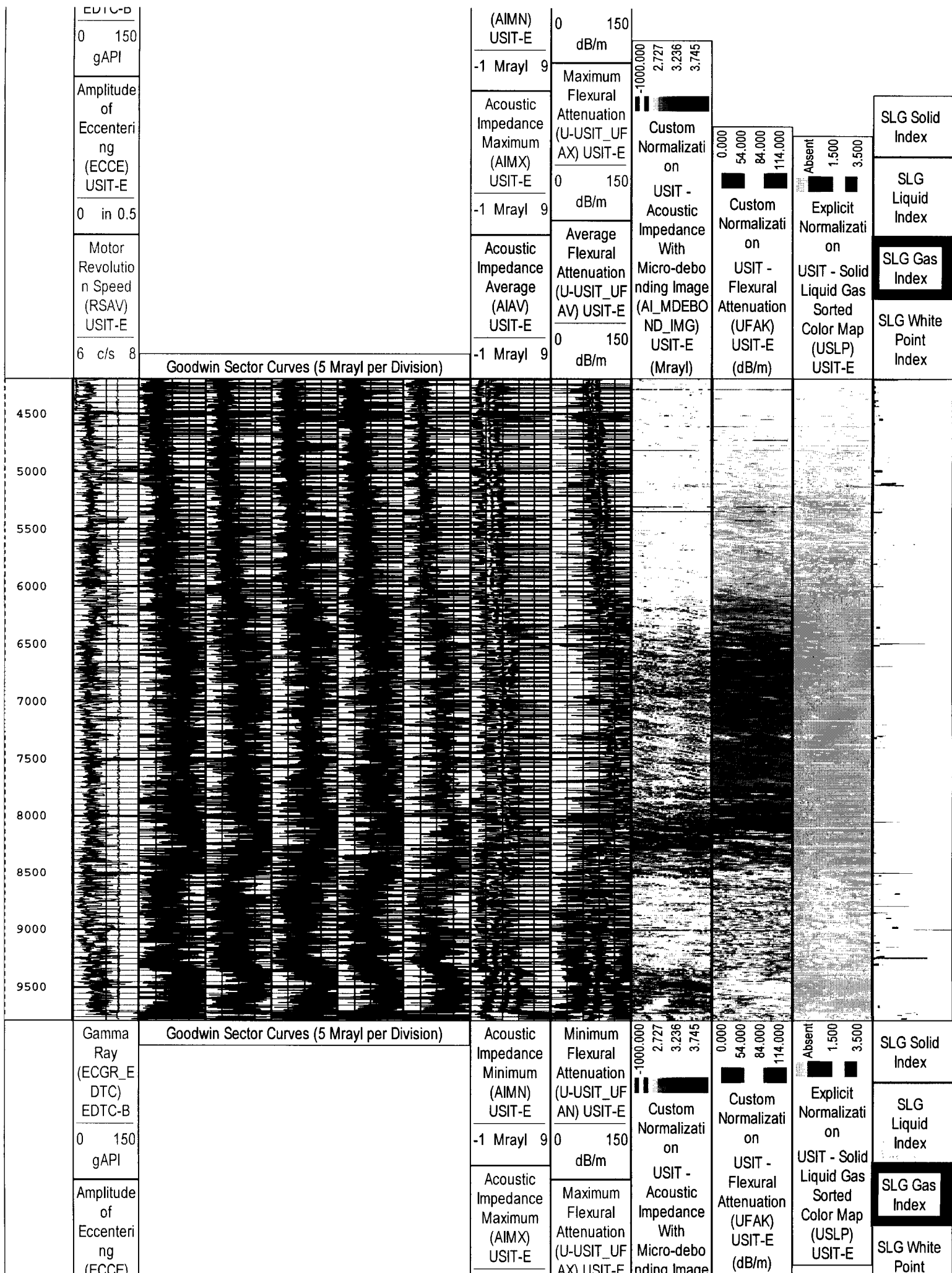
1A: Main[3]:Up:S006

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:41

TIME_1900 - Time Marked every 60.00 (s)

Gamma
Ray
(ECGR_E
DTC)
EDTC B

Minimum
Flexural
Attenuation
(U-USIT_UF
AN) USIT-E
Acoustic
Impedance
Minimum



(USIT-E)
0 in 0.5
Motor Revolutio n Speed (RSAV) USIT-E
6 c/s 8

-1 Mrayl 9	0 150	(AI_MDEBO ND_IMG) USIT-E (Mrayl)
Acoustic Impedance Average (AIAV) USIT-E	Average Flexural Attenuation (U-USIT_UF AV) USIT-E	
-1 Mrayl 9	0 150	
	dB/m	

Index

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:41

1A

Main Pass 5" = 100'

Software Version

Acquisition System

Version

Maxwell 2018

8.0.93964.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	4158.00 ft	9778.53 ft	21-Nov-2017 2:33:35 AM	21-Nov-2017 4:09:07 AM	ON	7.81 ft	No

All depths are referenced to toolstring zero

Log

Company:DEVON

Well:COTTON DRAW UNIT 511H

1A: Main[3]:Up:S006

Description: USI IBC SLG Format: Log (USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:47

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - : ☐ UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.44] - : ☐ Pulse Origin Not Detected
- 3 - UFLG 2 Value within [2.44 - 2.5] - : ☐ Spiky Waveform
- 4 - UFLG 3 Value within [2.5 - 3.5] - : ☐ WINLEN Error
- 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : ☐ Casing Thickness Error
- 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : ☐ Loop Processing Error

Amplitude of
Eccentering
(ECCE)
USIT-E

0 in 0.5

Gamma Ray
(ECGR_EDT
C) EDTC-B

0 gAPI 150

Motor
Revolution
Speed
(RSAV)
USIT-E

Absent
1.500
2.500
6.500
Explicit

Absent
-5.200
-3.600
-2.000
-0.400
Explicit
Normalization
USIT - Amplitude
of Wave (AWBK)
USIT-E
(dB)

Amplitude of
Wave Minimum
(AWMN) USIT-E
0 dB 75

Acoustic
Impedance
Minimum (AIMN)
USIT-E
-1 Mrayl 9

Acoustic

Absent
0.500
1.250
2.000
2.750
3.500
Custom
Normalization
USIT - Acoustic
Impedance
(AIBK) USIT-E

Minimum
Flexural
Attenuation
(U-USIT_UFAN)
USIT-E
0 dB/m 150

Average
Flexural
Attenuation
(U-USIT_UFAV)

SLG White
Points Ratio
(USLGWR)
USIT-E

1 0

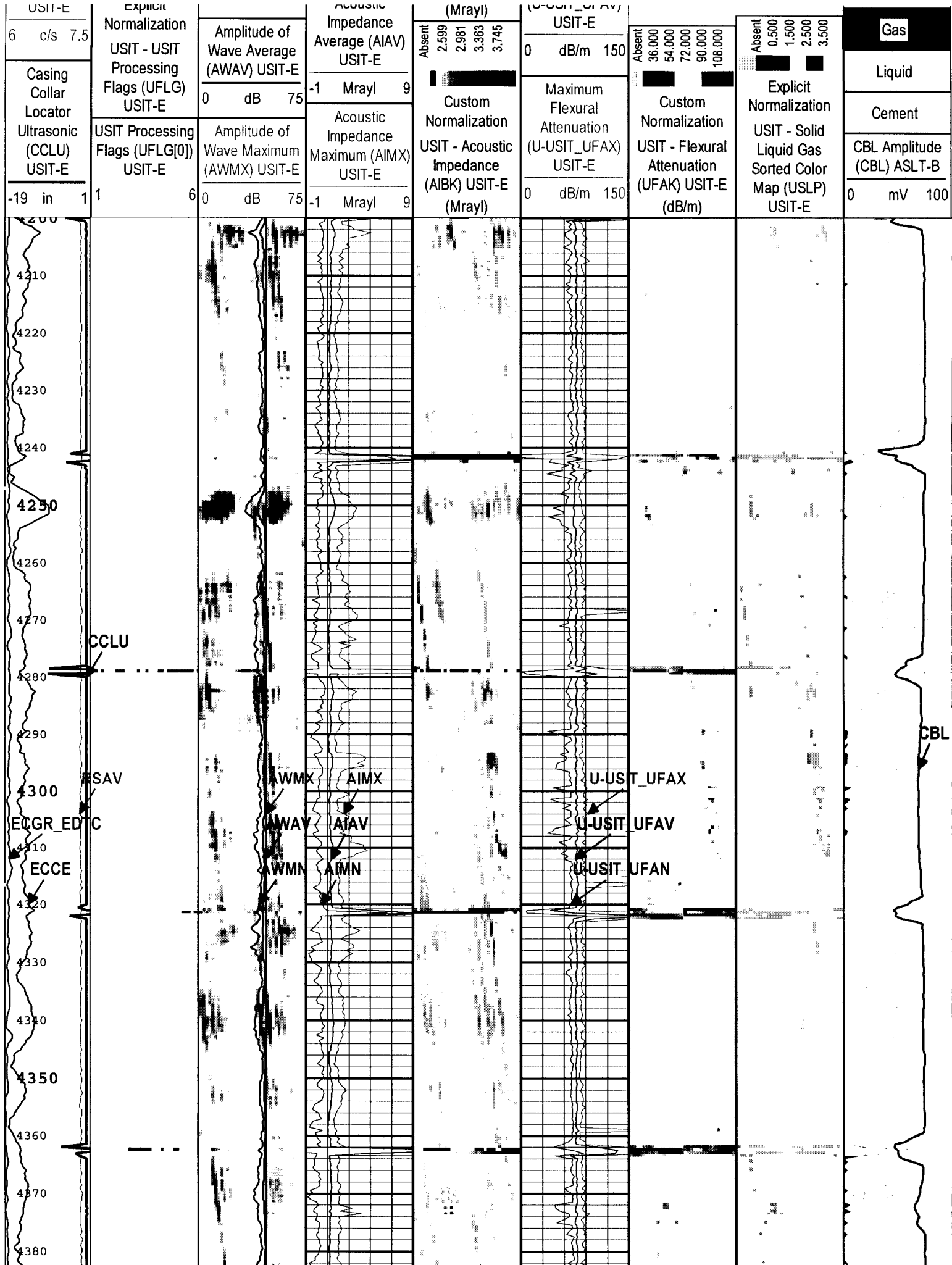
SLG Liquid Ratio
(USLGLR)
USIT-E

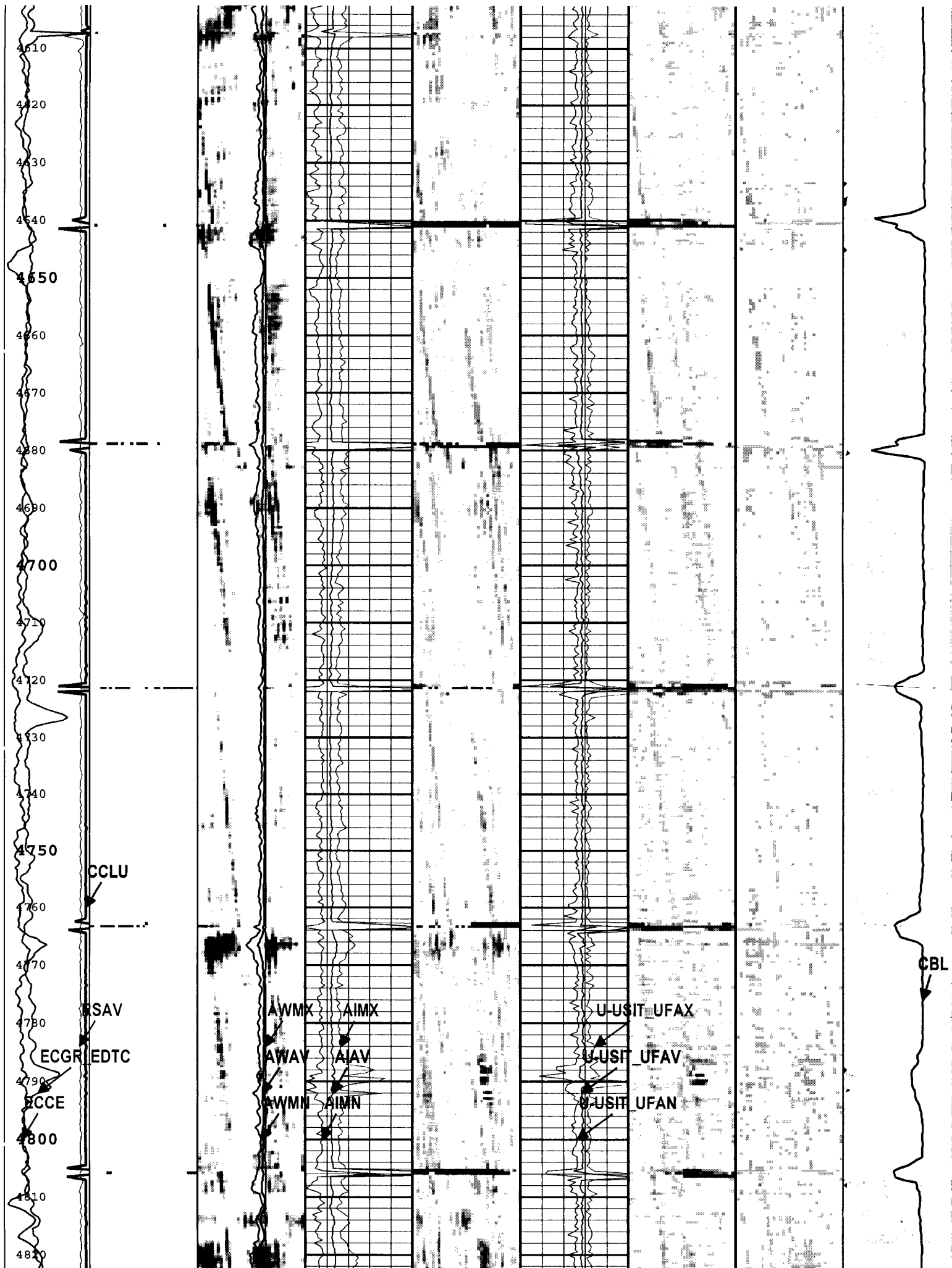
1 0

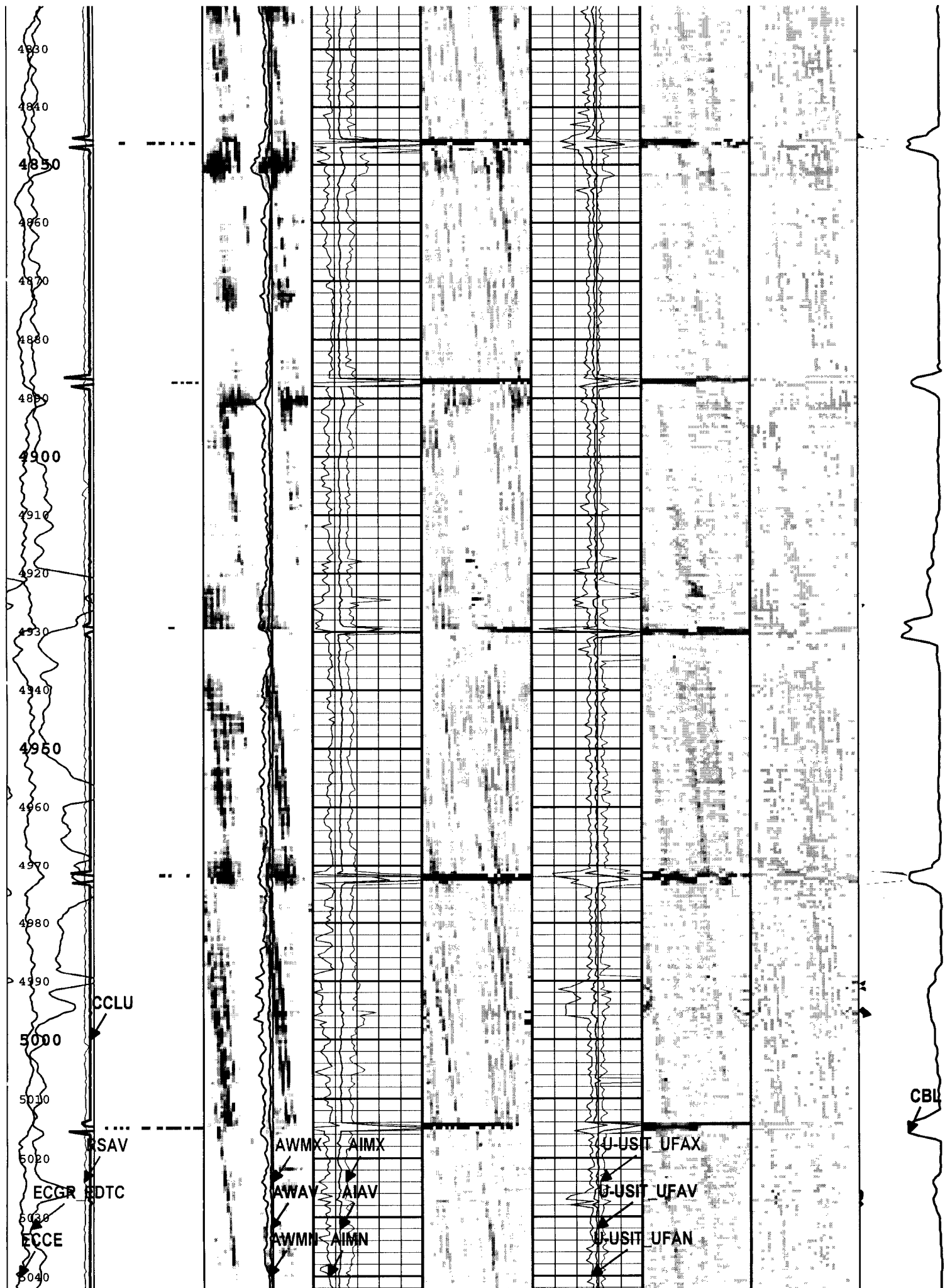
SLG Cement
Ratio (USLGCR)
USIT-E

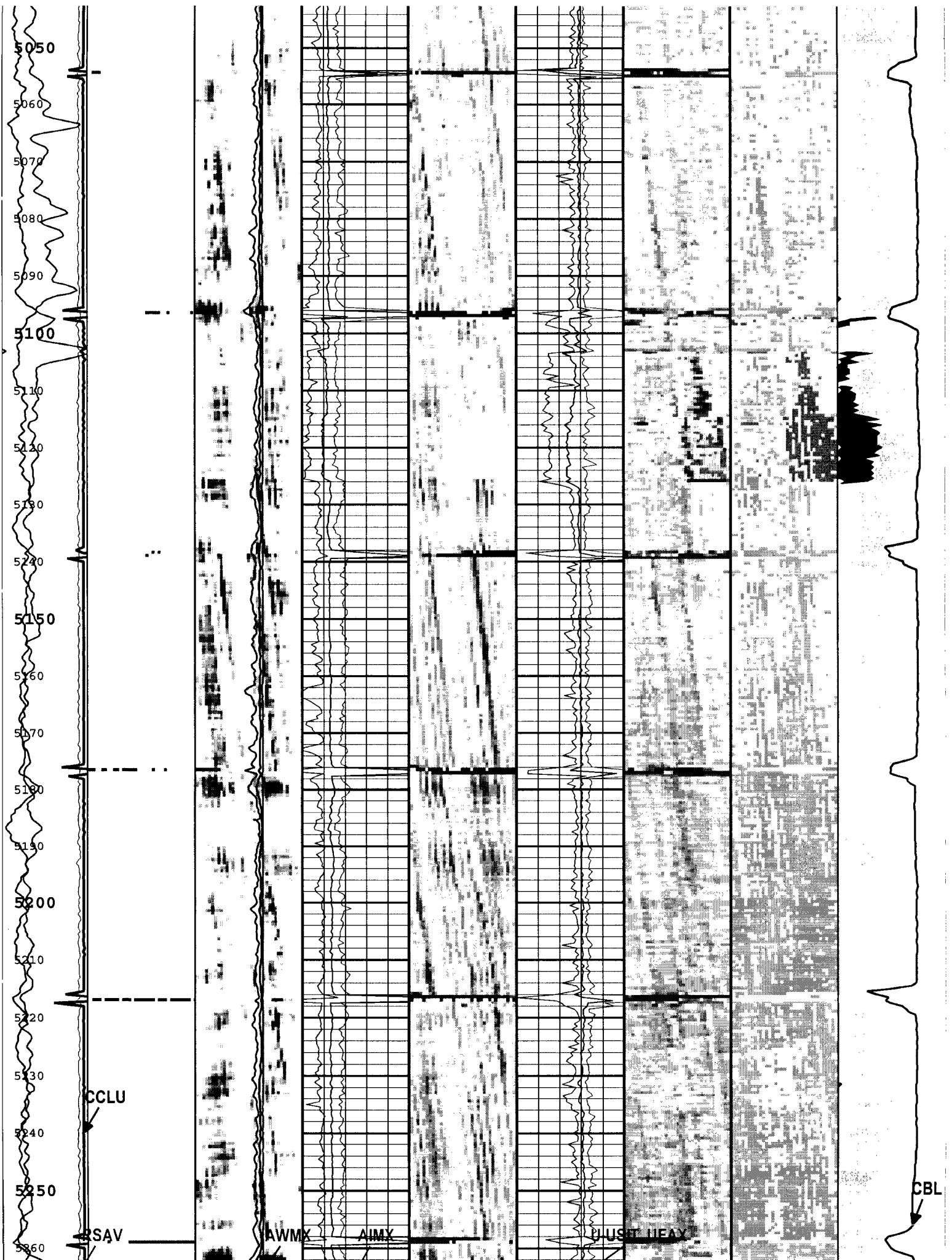
1 0

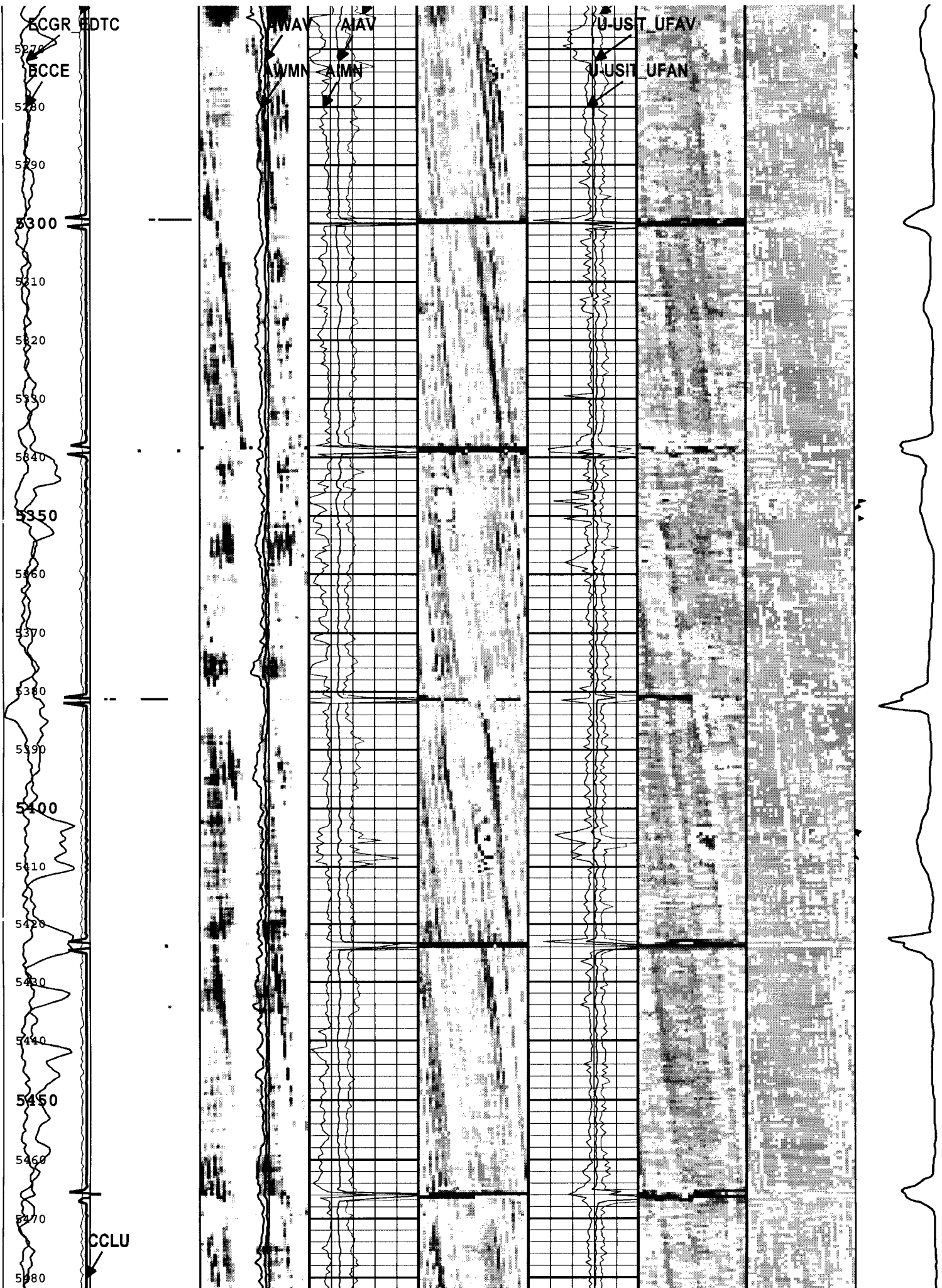
White points

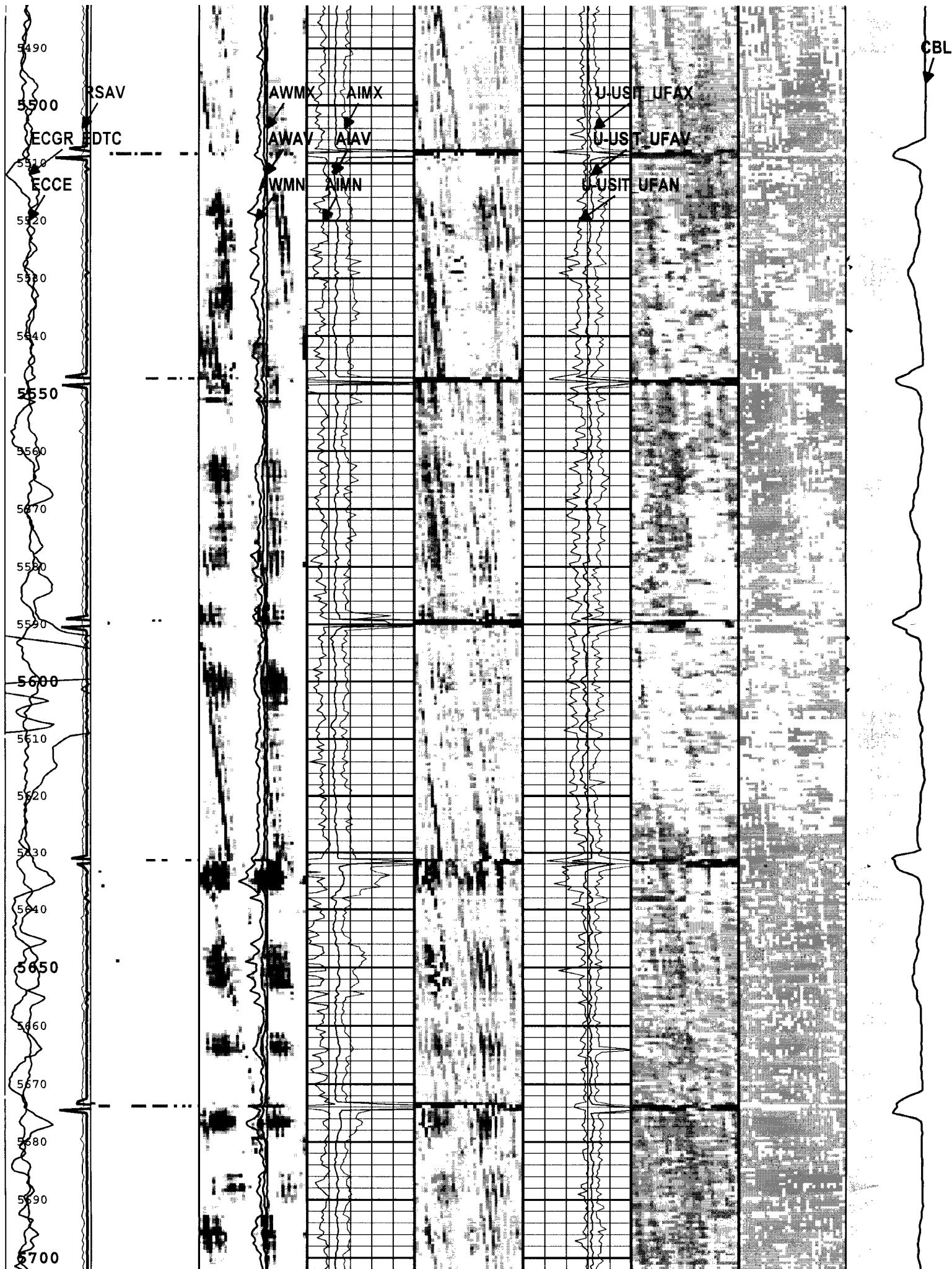


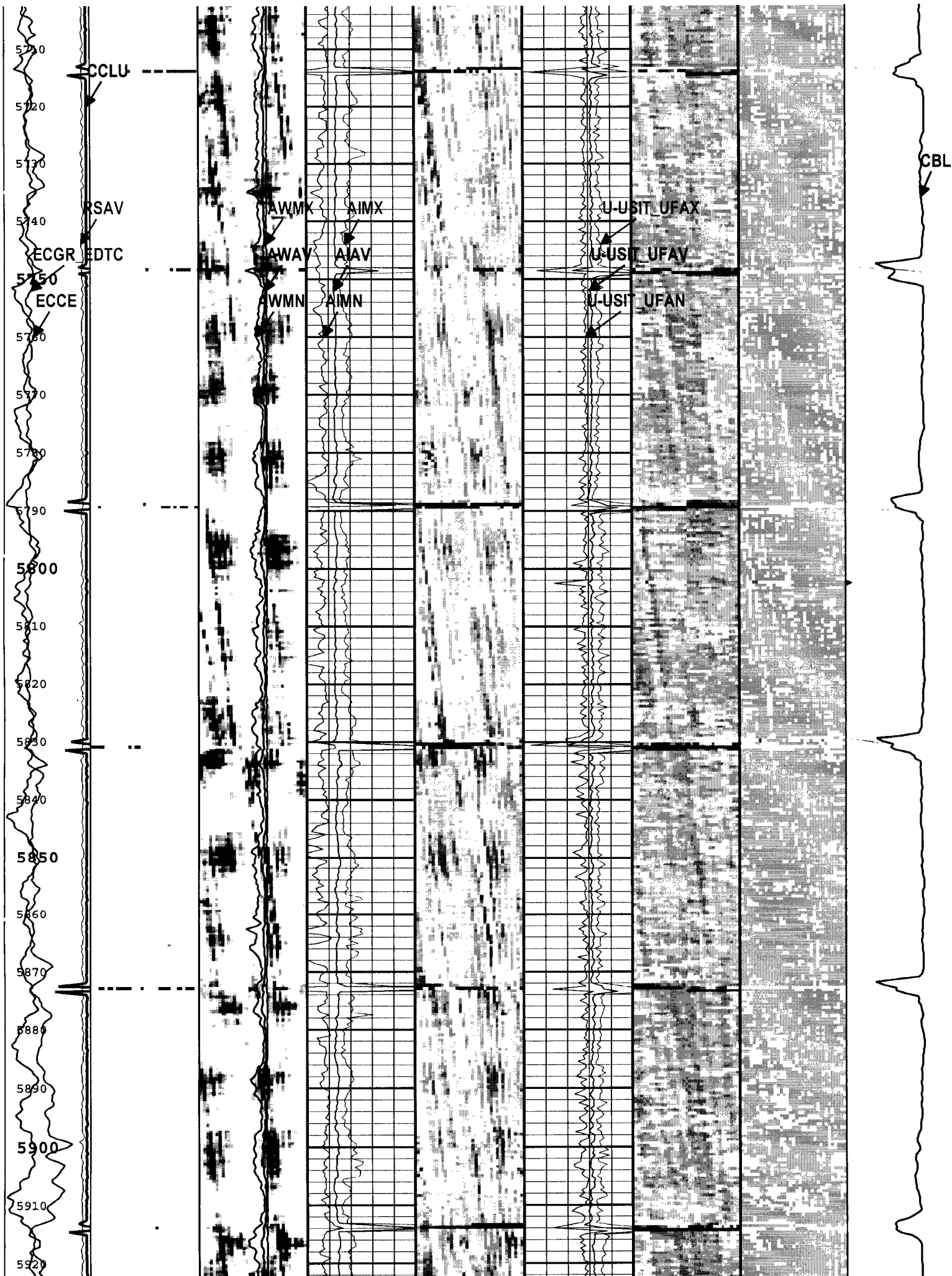


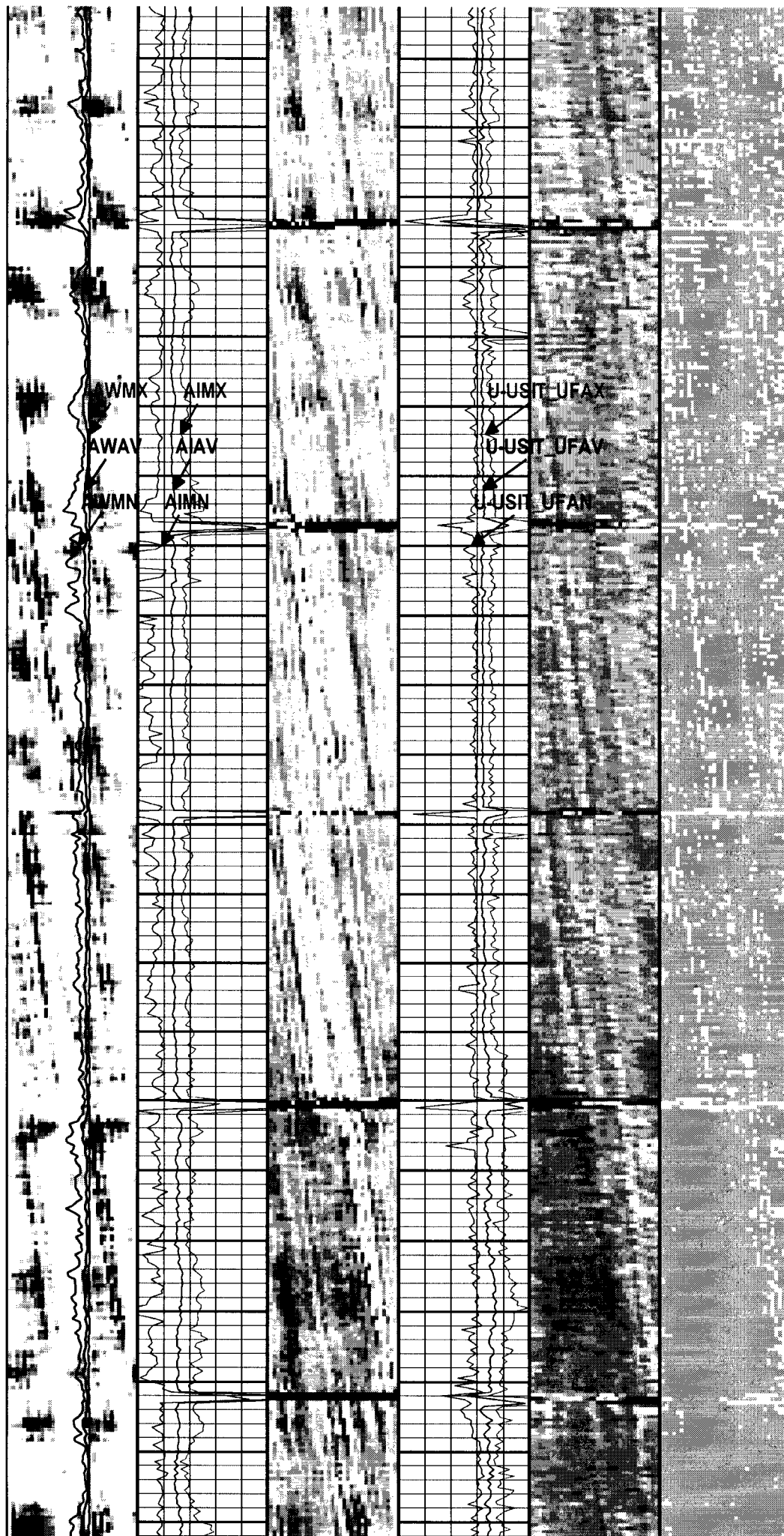
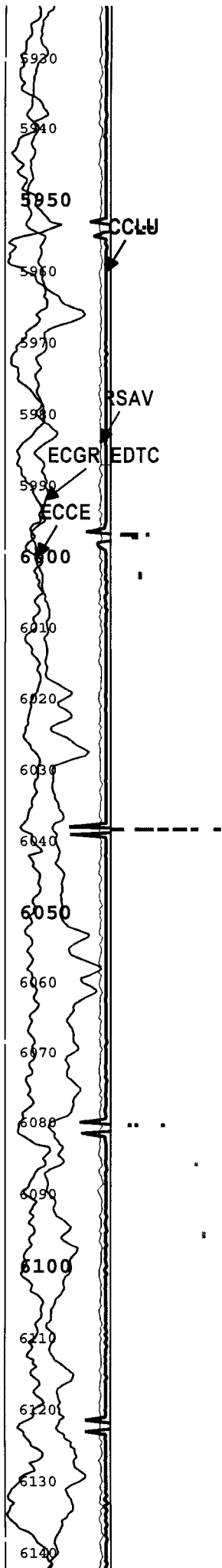


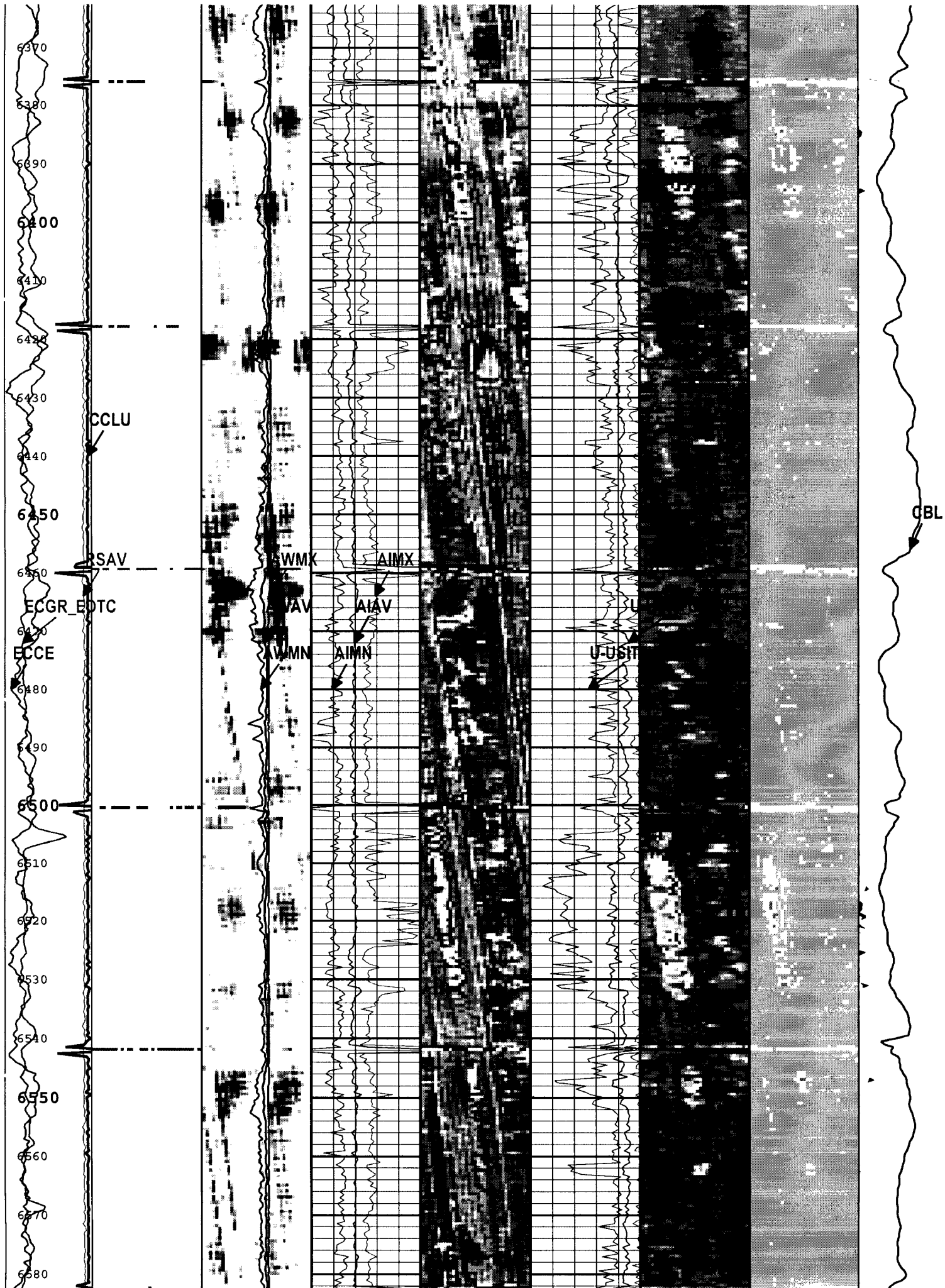


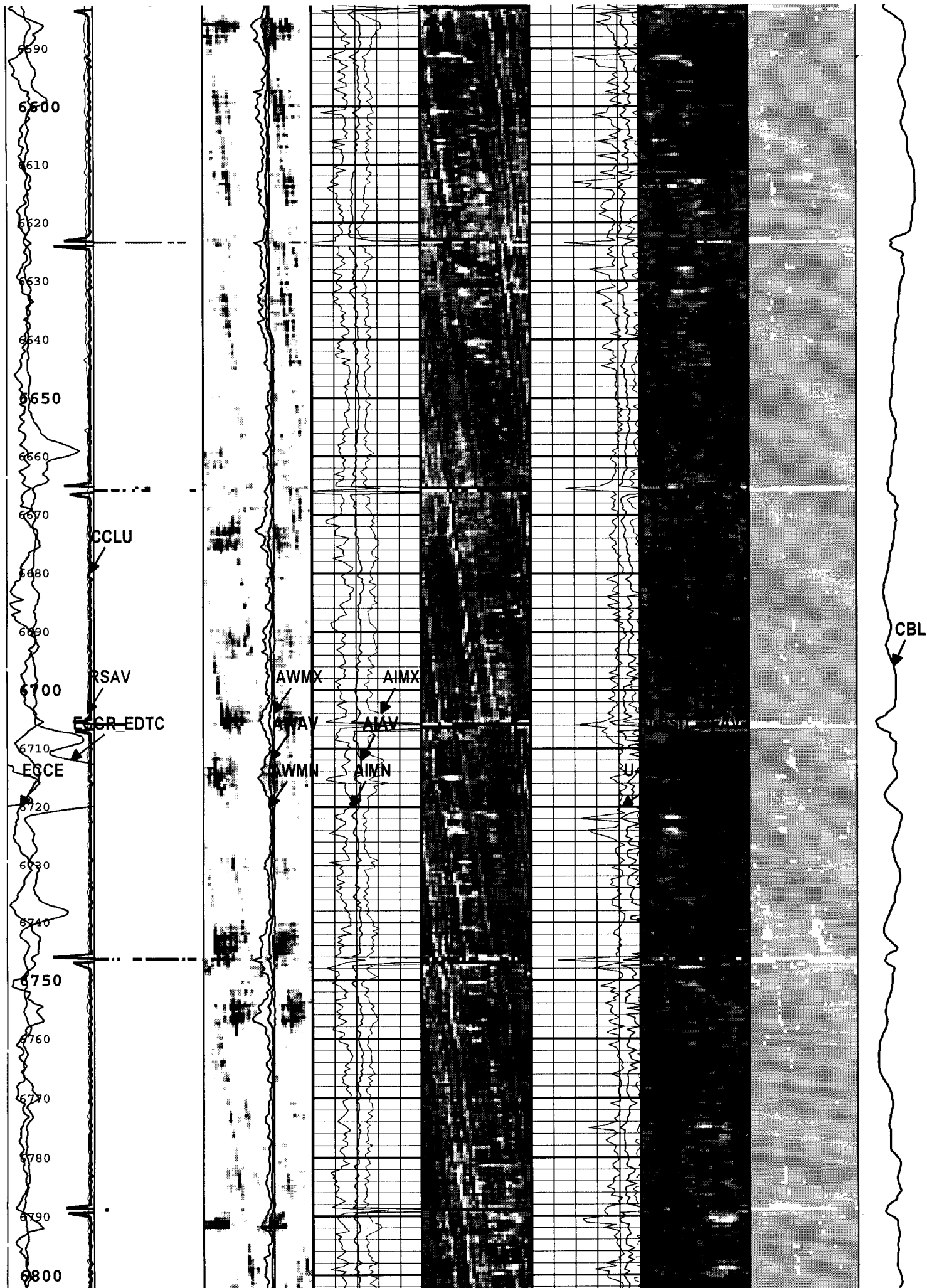


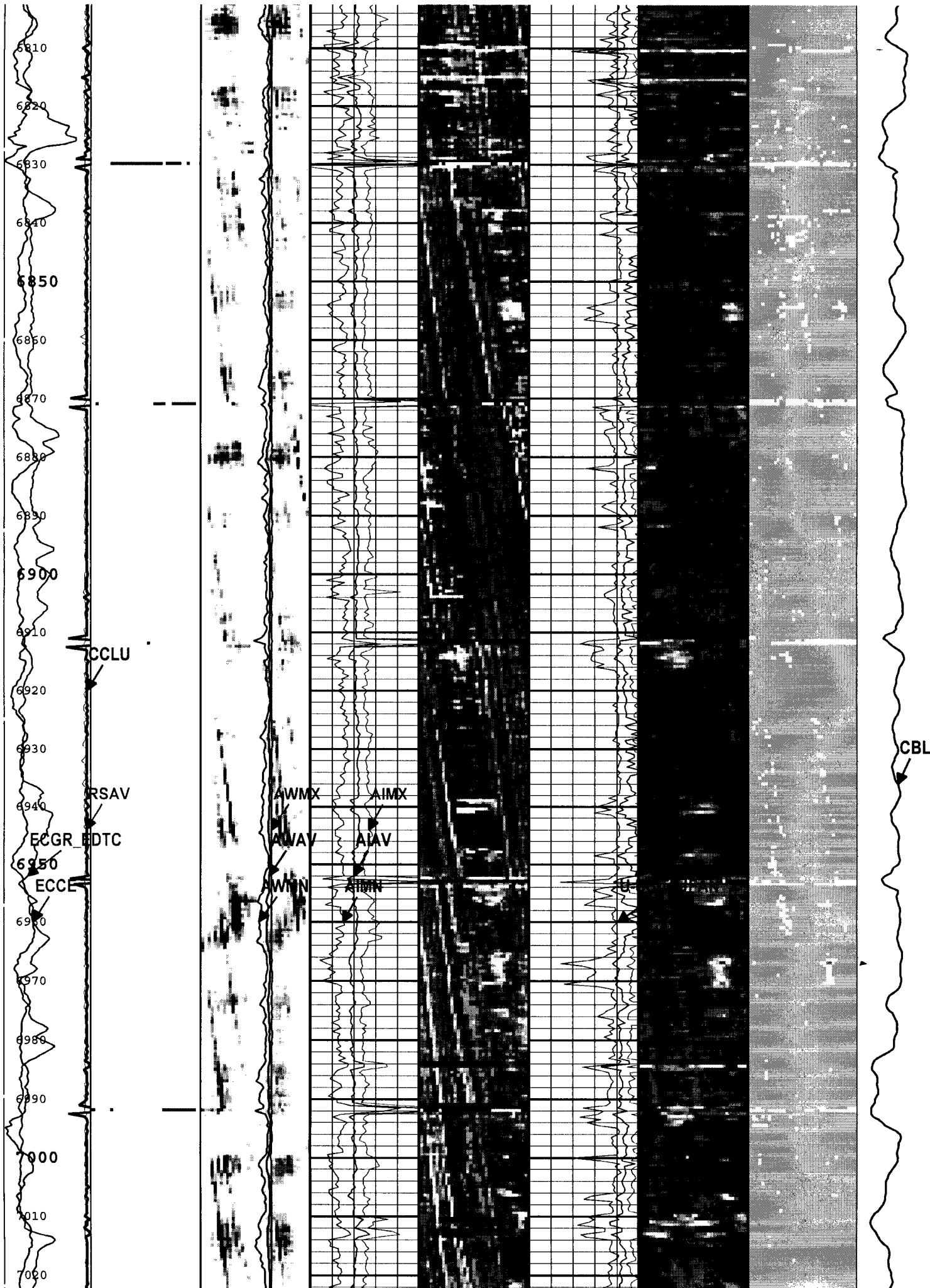


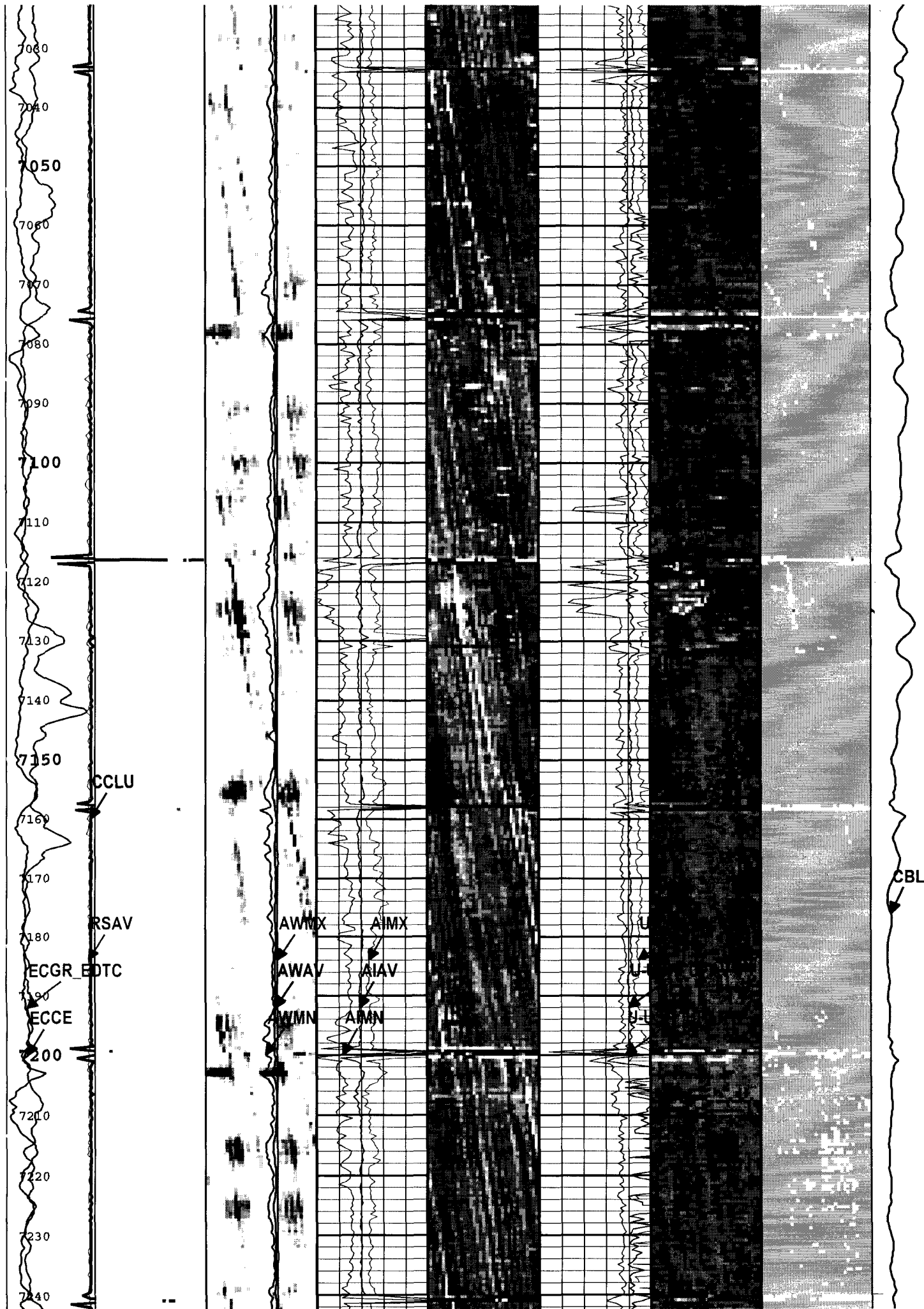


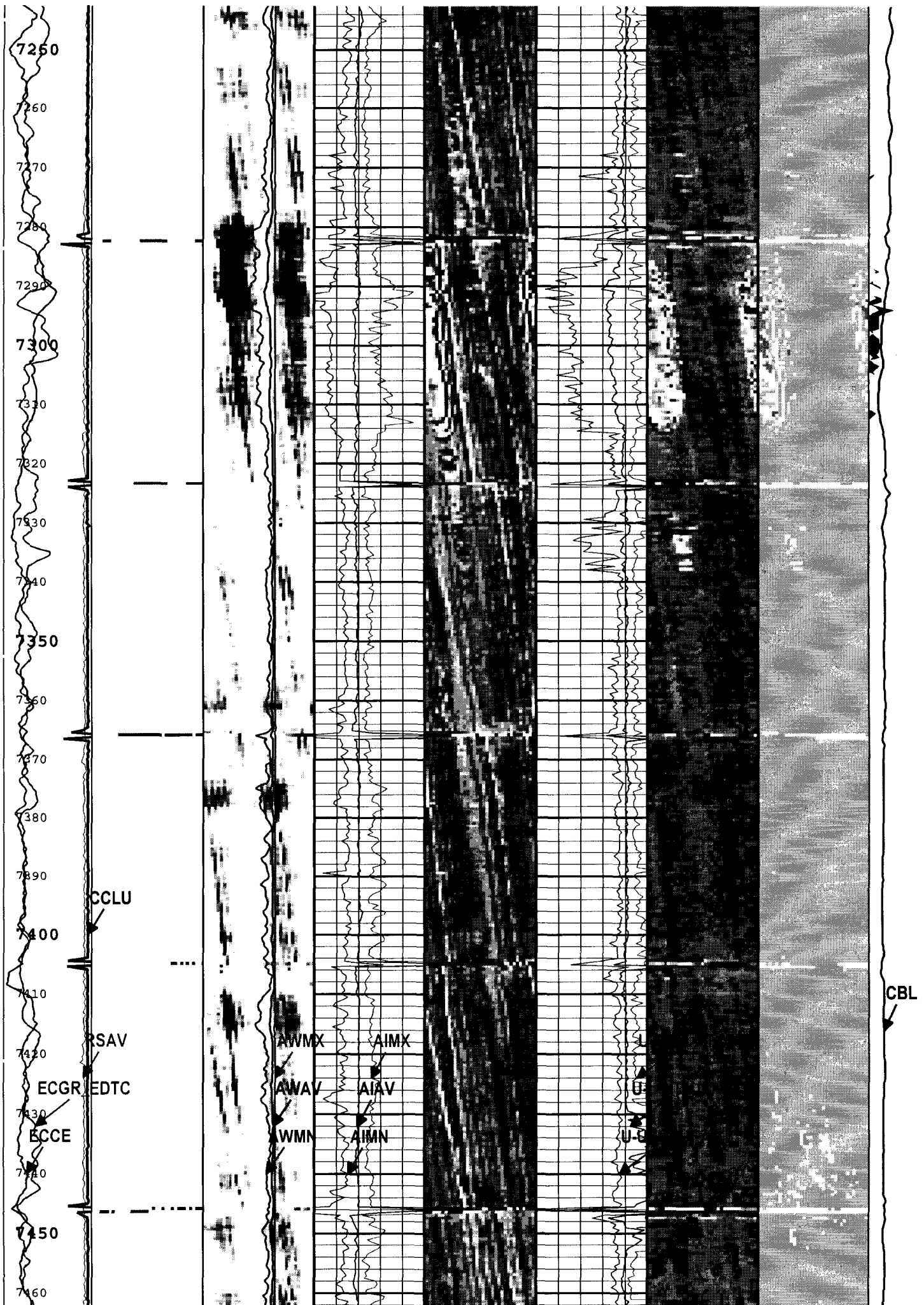


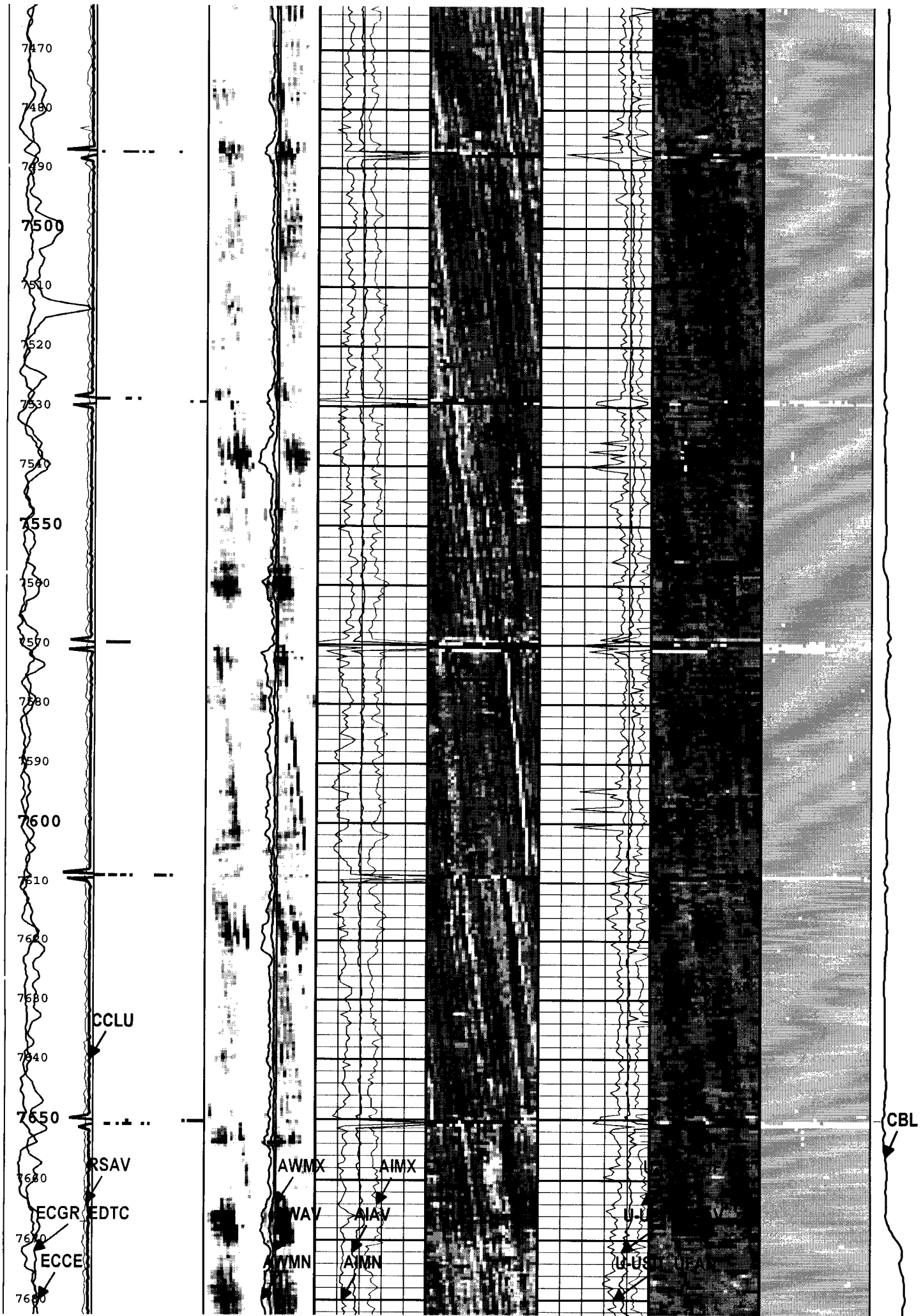


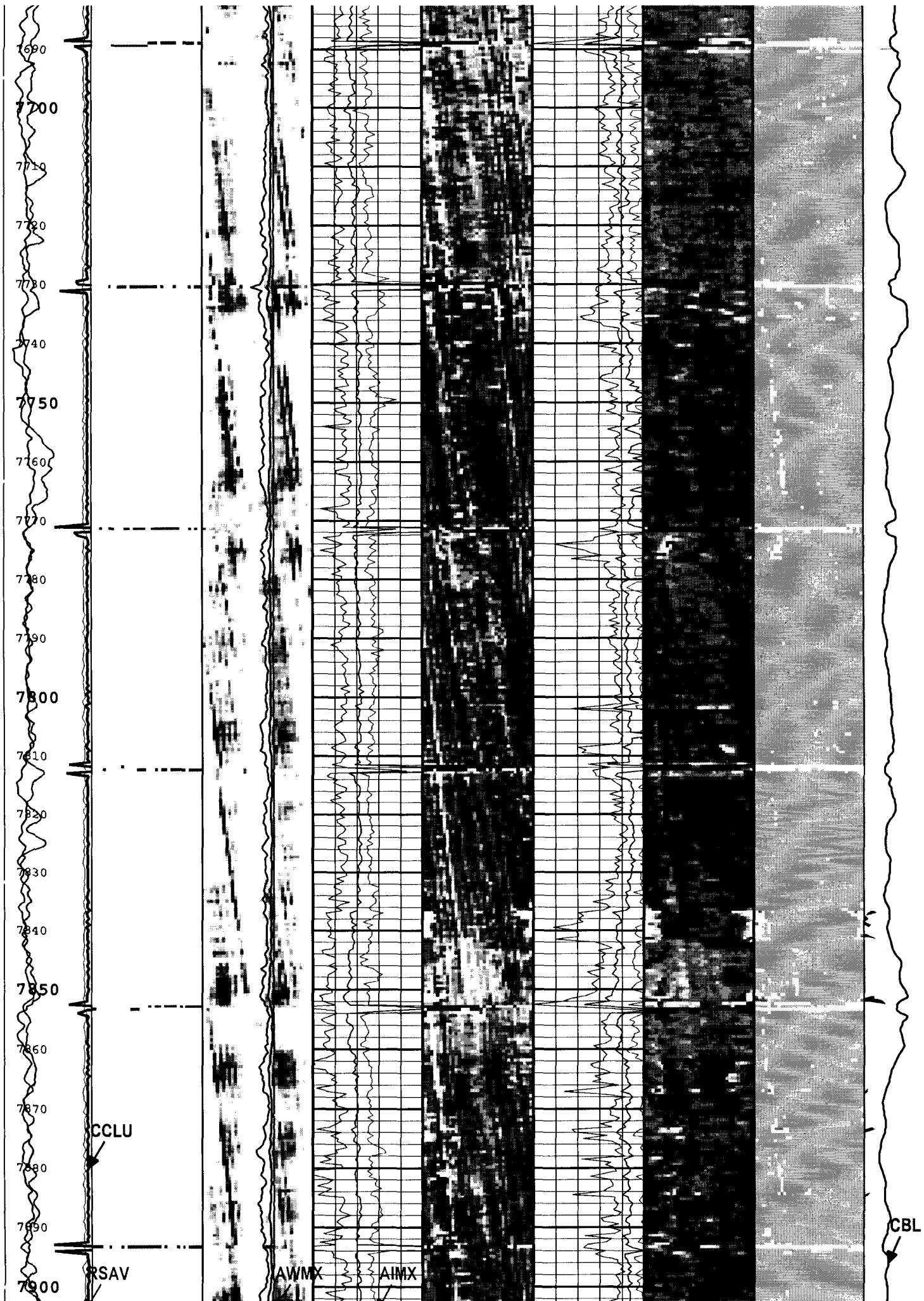


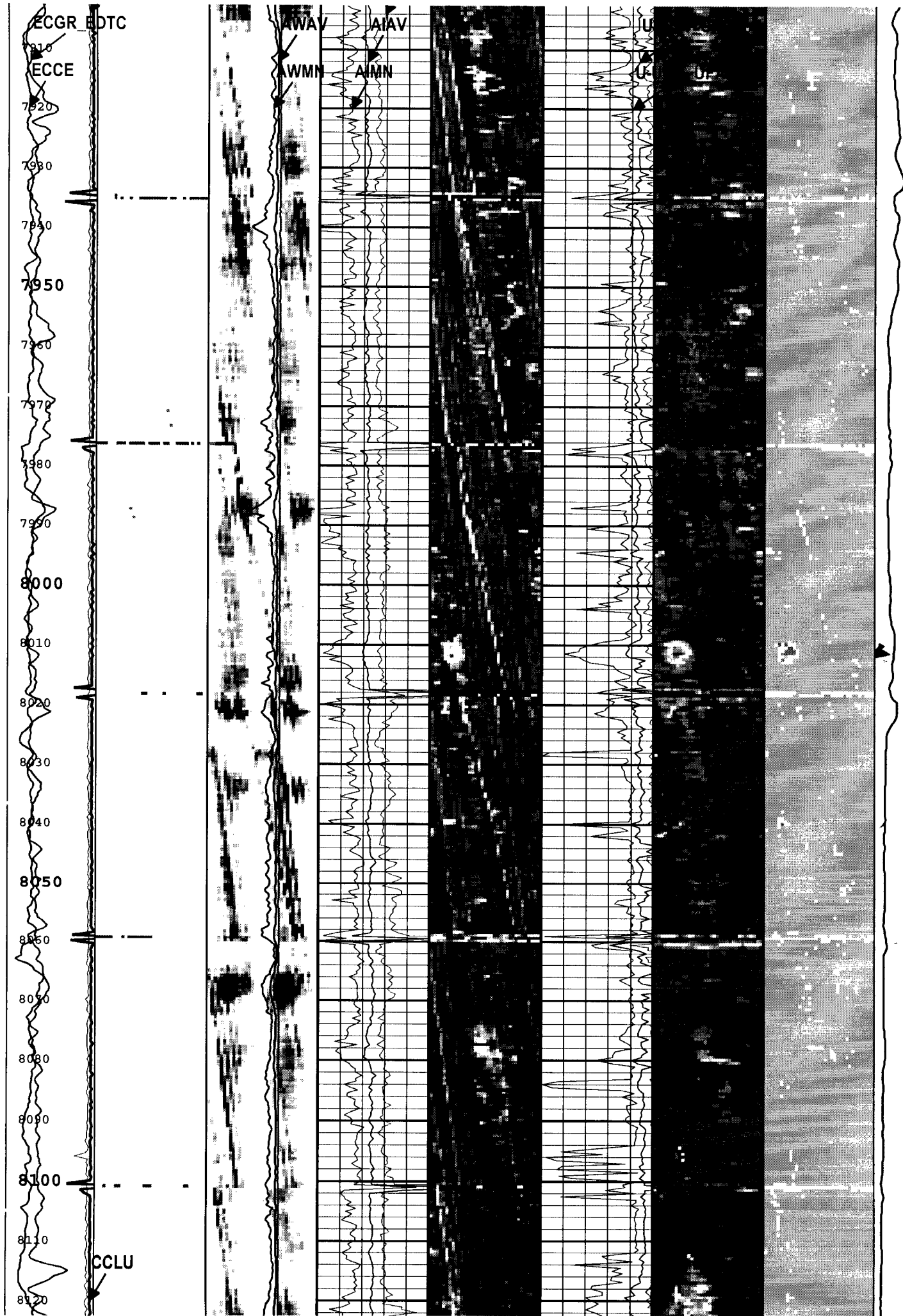


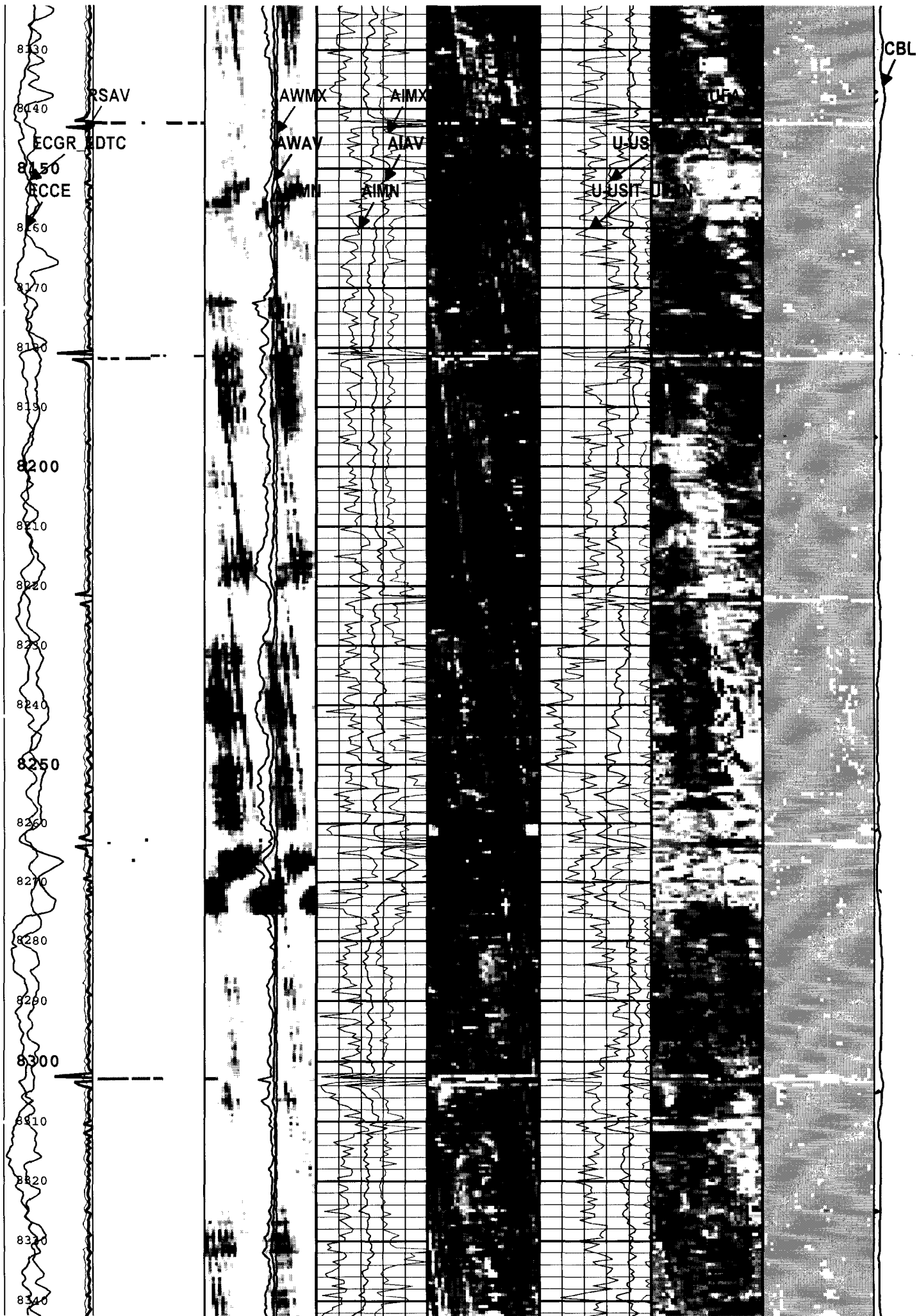


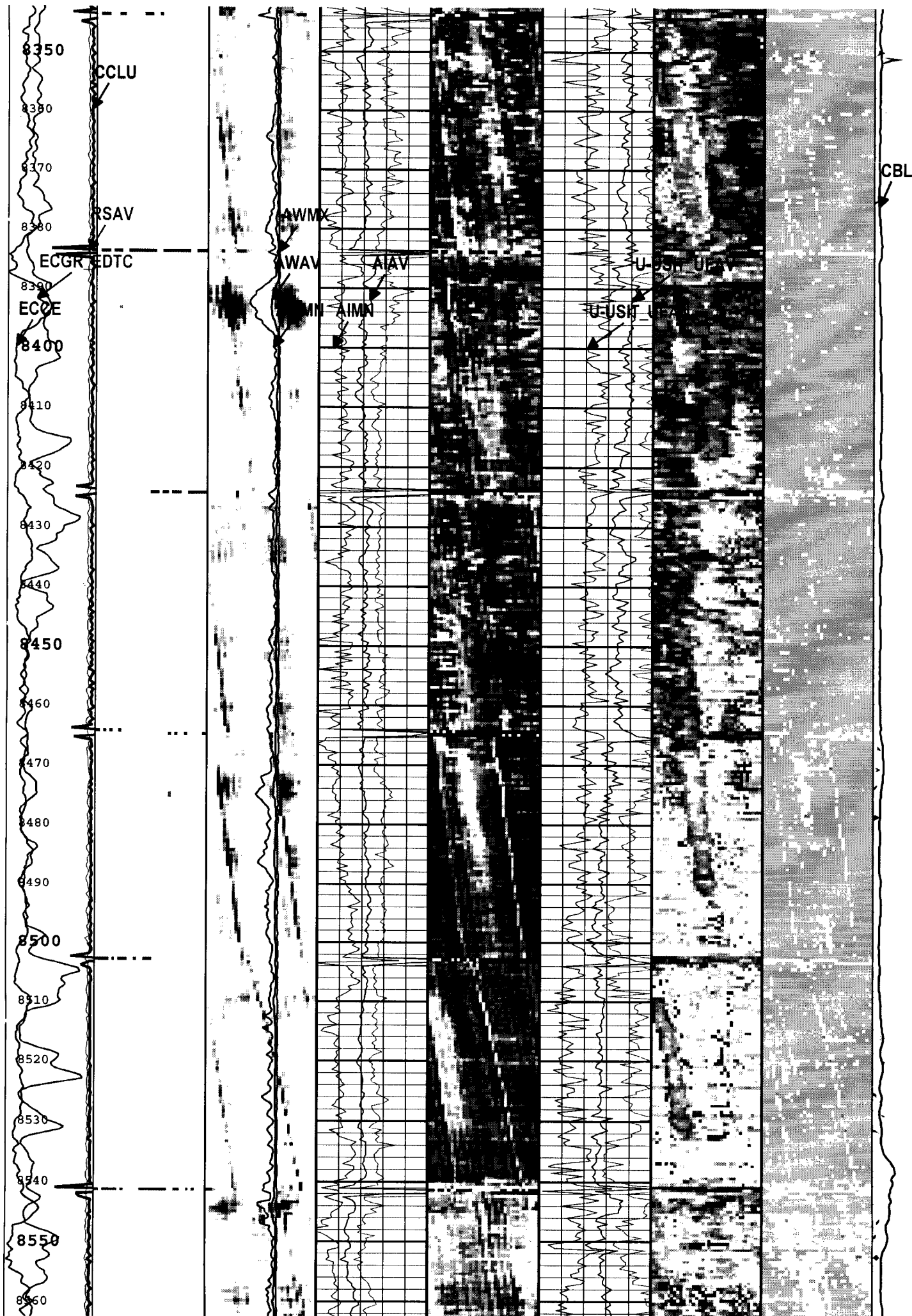


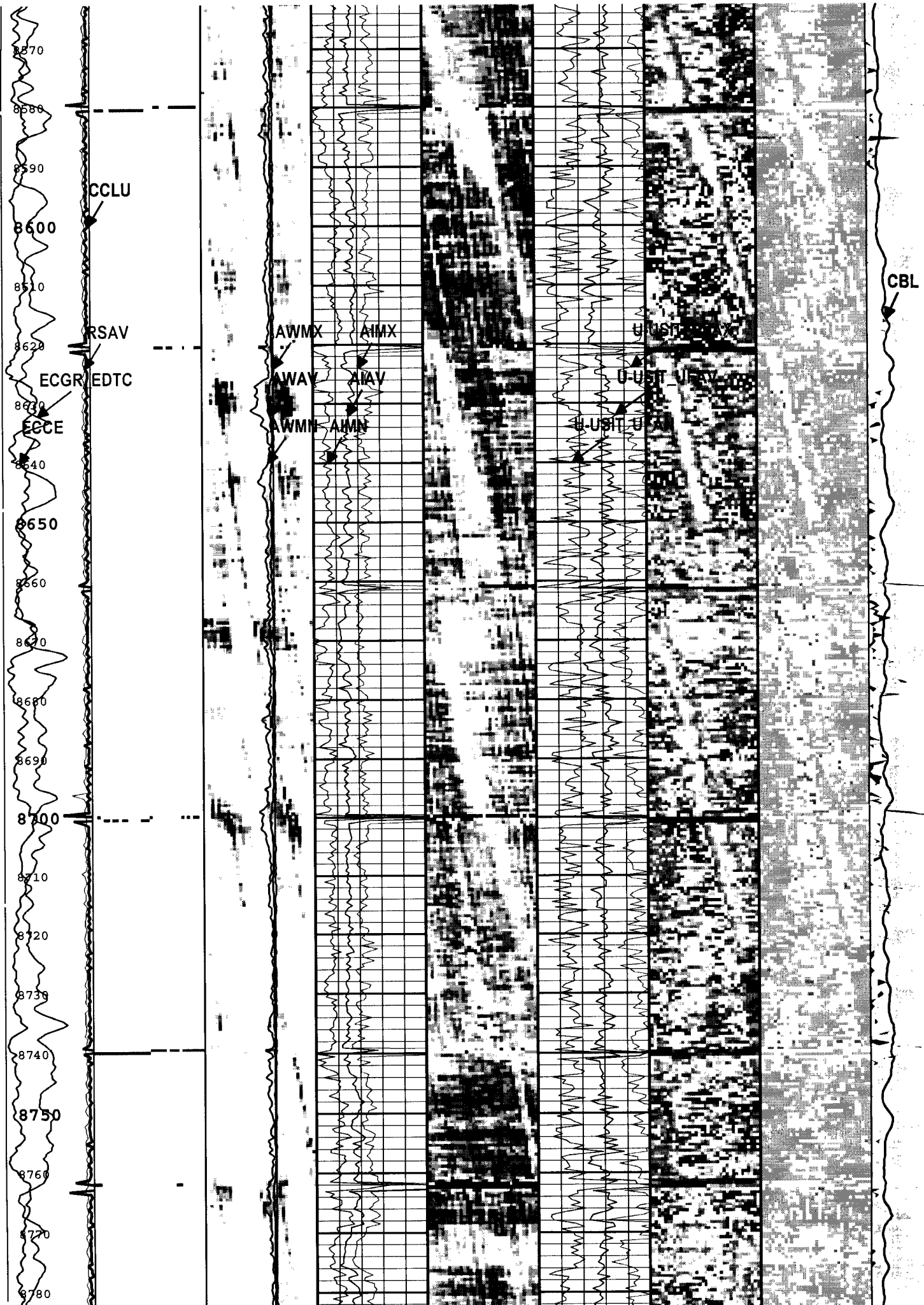


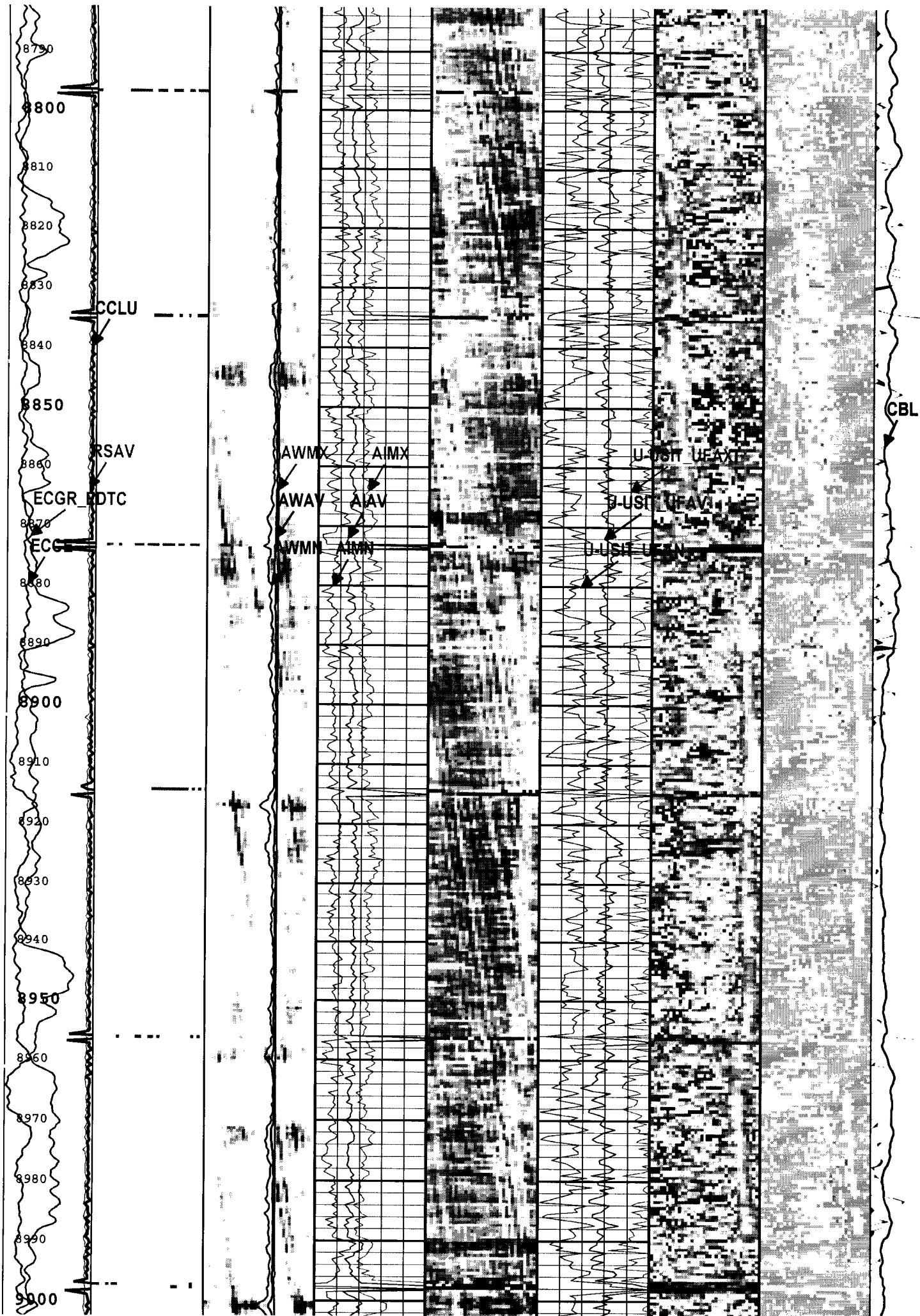


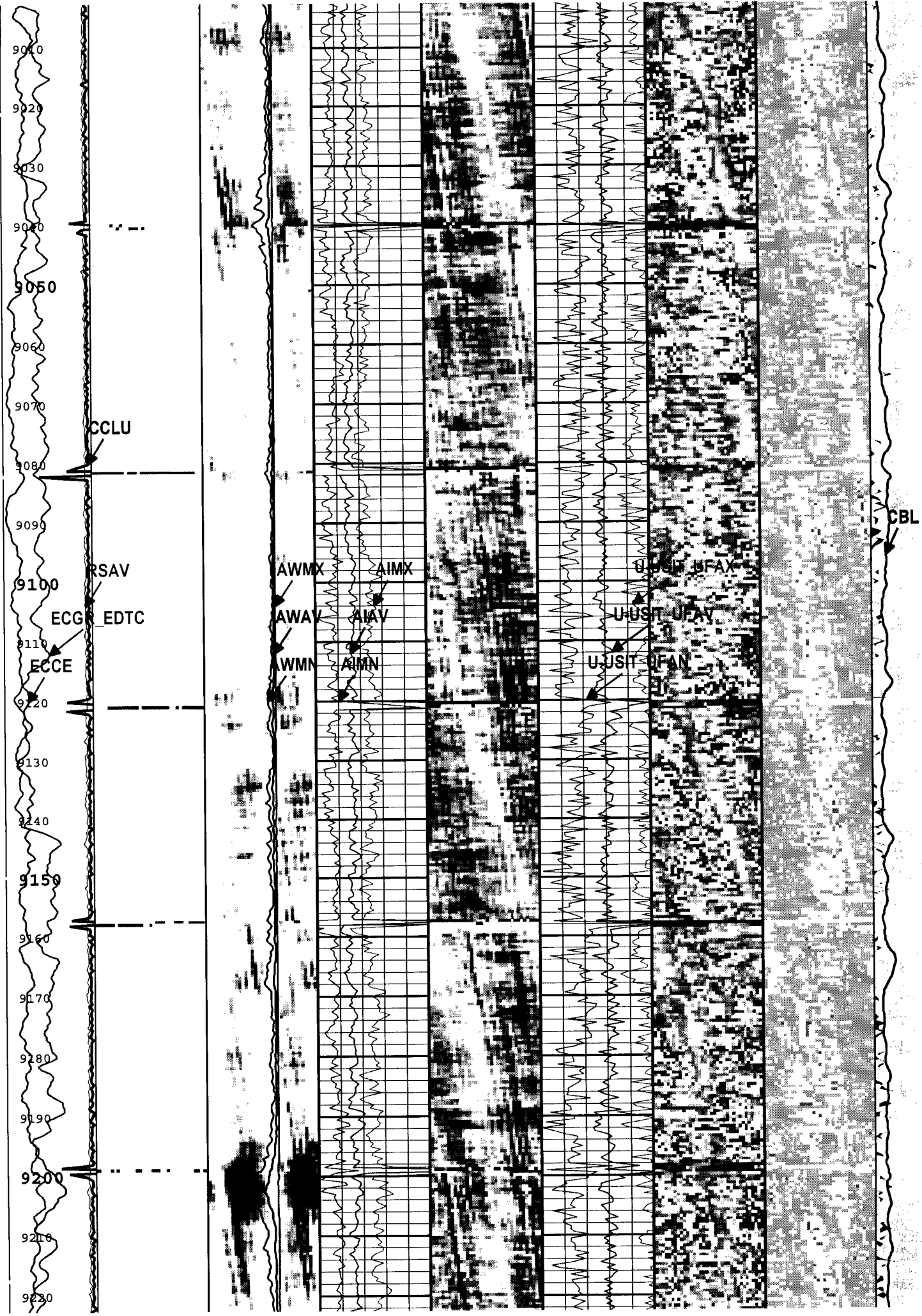


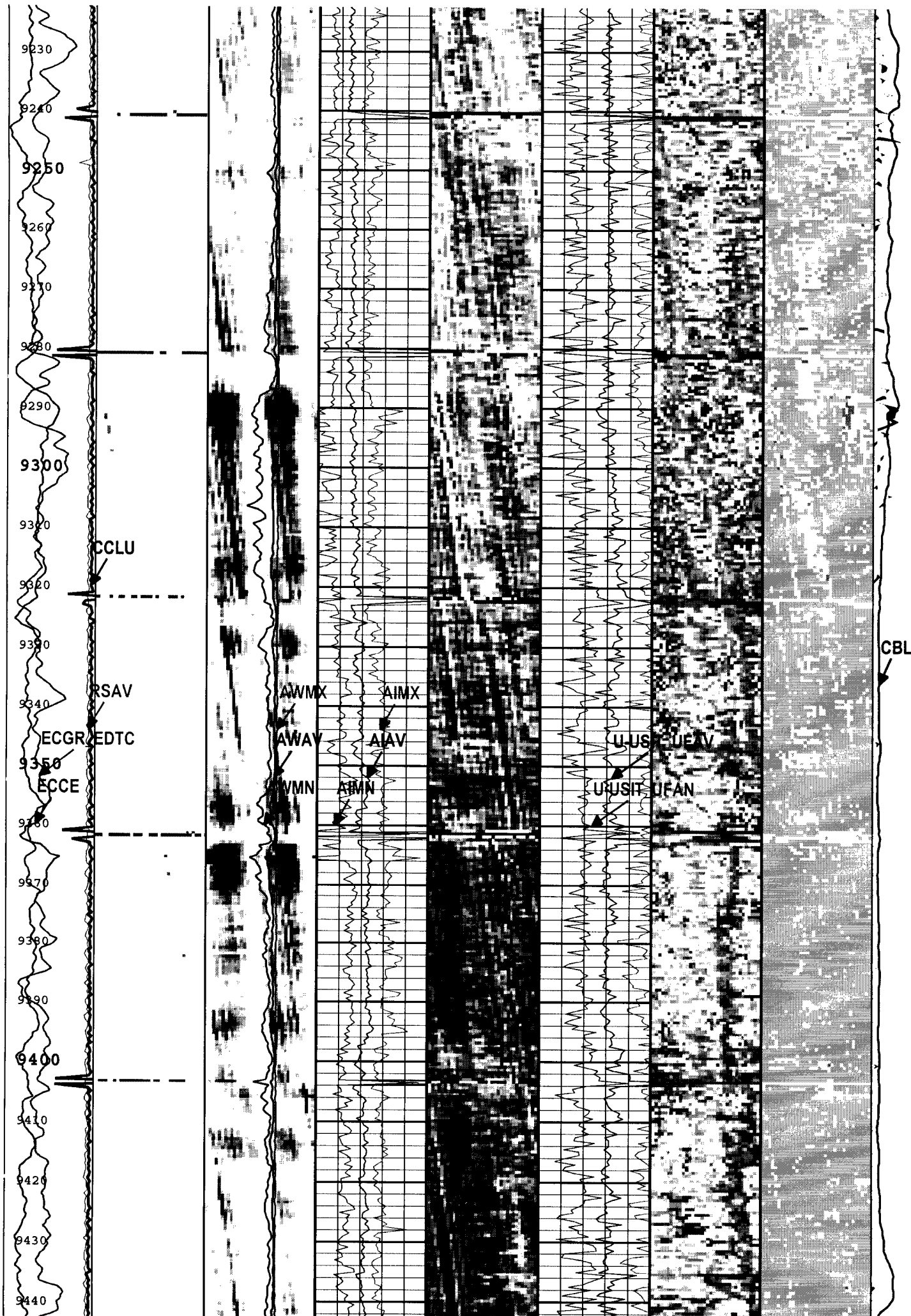


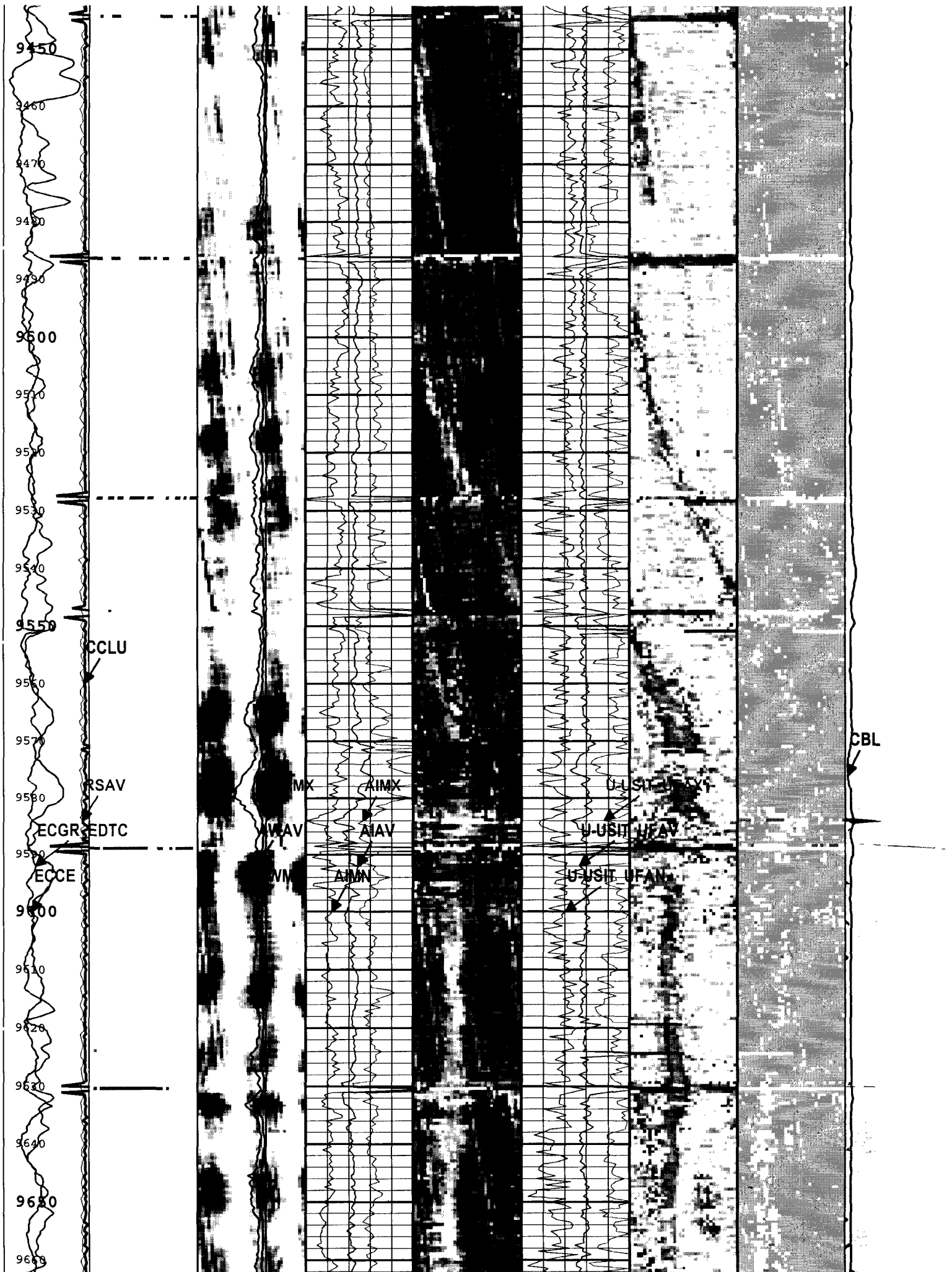


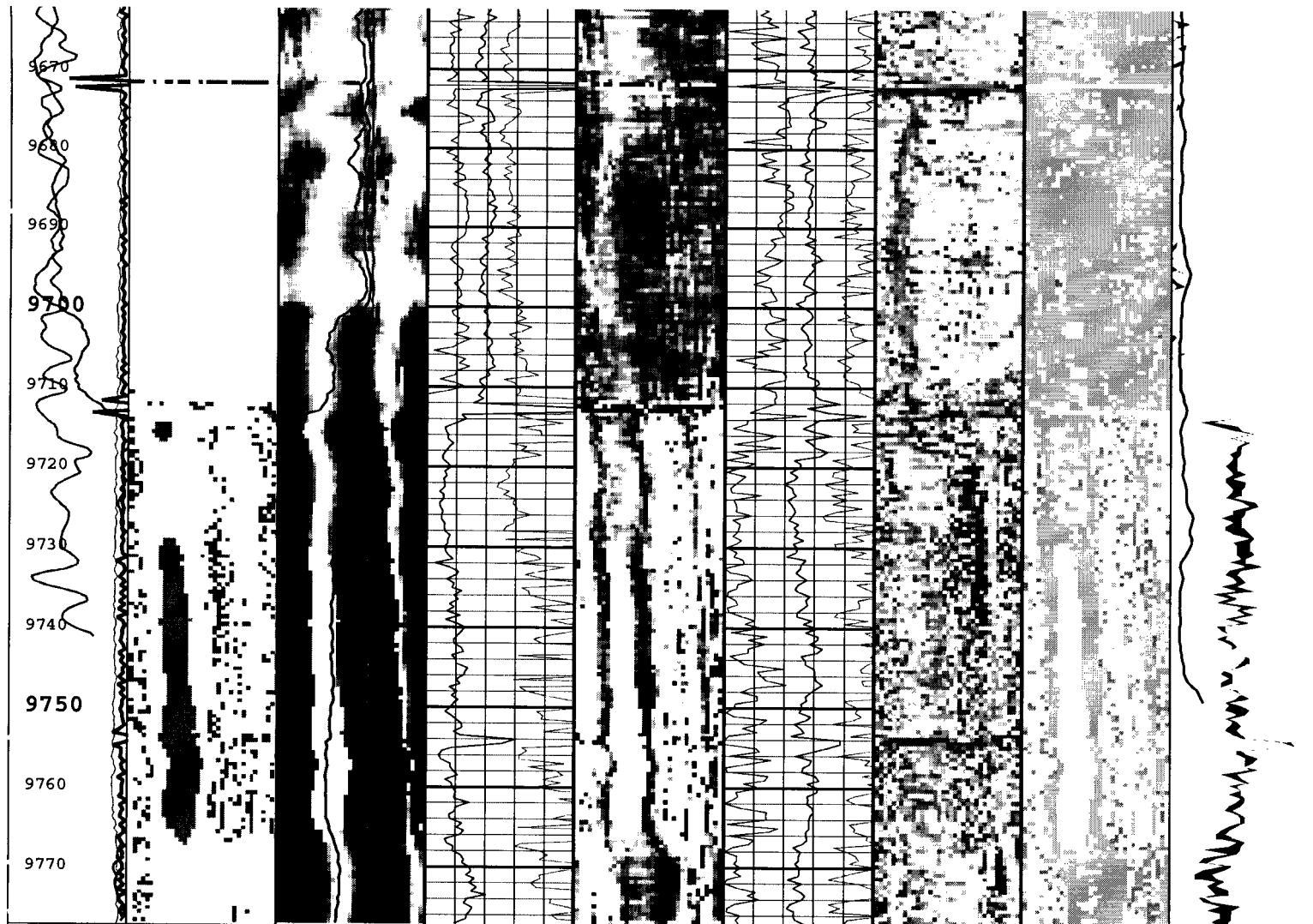












Amplitude of Eccentering (ECCE) USIT-E	Absent 1.500 2.500 6.500	Absent -5.200 -3.600 -2.000 -0.400	Acoustic Impedance Minimum (AIMN) USIT-E	Absent 0.500 1.250 2.000 2.750 3.500	Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E	Absent 36.000 54.000 72.000 90.000 108.000	Absent 0.500 1.500 2.500 3.500	SLG White Points Ratio (USLGWR) USIT-E
0 in 0.5	Explicit Normalization	Explicit Normalization	-1 Mrayl 9	Custom Normalization	0 dB/m 150	Custom Normalization	Explicit Normalization	1 0
Gamma Ray (ECGR_EDT C) EDTC-B	USIT - USIT Processing Flags (UFLG) USIT-E	USIT - Amplitude of Wave (AWBK) USIT-E (dB)	Acoustic Impedance Average (AIAV) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)	Average Flexural Attenuation (U-USIT_UFAV) USIT-E	USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)	USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E	SLG Liquid Ratio (USLGLR) USIT-E
0 gAPI 150	USIT Processing Flags (UFLG[0]) USIT-E	Amplitude of Wave Minimum (AWMN) USIT-E	-1 Mrayl 9	Absent 2.599 2.981 3.363 3.745	0 dB/m 150			1 0
Motor Revolution Speed (RSAV) USIT-E	1 6	Amplitude of Wave Average (AWAV) USIT-E	Acoustic Impedance Maximum (AIMX) USIT-E	Custom Normalization	Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E			SLG Cement Ratio (USLGCR) USIT-E
6 c/s 7.5		0 dB 75	-1 Mrayl 9	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)	0 dB/m 150			1 0
Casing Collar Locator Ultrasonic (CCLU) USIT-E		Amplitude of Wave Maximum (AWMX) USIT-E						White points
-19 in 1		0 dB 75						Gas
								Liquid
								Cement
								CBL Amplitude (CBL) ASLT-B
								0 mV 100

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - : ☒ UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.44] - : ☒ Pulse Origin Not Detected
- 3 - UFLG 2 Value within [2.44 - 2.5] - : ☒ Spiky Waveform
- 4 - UFLG 3 Value within [2.5 - 3.5] - : ☒ WINLEN Error
- 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : ☒ Casing Thickness Error
- 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : ☐ Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:47

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	6.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15067	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	71	mV
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CENT)	Cement Type	USIT-E	Light Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.304	in
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
MSA	Minimum Sonic Amplitude	ASLT-B	1.07	mV
RUN_SNUM	Run Sequence Number	WSDRUN	1	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-15.72	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACCTYPE	IBC Acquisition Type	USIT-E	1-ALL-	

IBC_AcqType	IBC Acquisition type	USIT-E	Hz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MODE	SSLT Firing Mode	ASLT-B	CBL	
RATE	Firing Rate	ASLT-B	4.46	Hz
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	40	21-Nov-2017 02:33:35	21-Nov-2017 03:32:34	9778.52	6640.92
EMXV	30	21-Nov-2017 03:32:34	21-Nov-2017 03:35:14	6640.92	6465.09
EMXV	35	21-Nov-2017 03:35:14	21-Nov-2017 04:09:07	6465.09	4158
U-USIT_UFWB	138	21-Nov-2017 02:33:35	21-Nov-2017 02:37:59	9778.52	9620.62
U-USIT_UFWB	121.58	21-Nov-2017 02:37:59	21-Nov-2017 02:38:02	9620.62	9617.12
U-USIT_UFWB	112.86	21-Nov-2017 02:38:02	21-Nov-2017 04:09:07	9617.12	4158
U-USIT_UFWE	178	21-Nov-2017 02:33:35	21-Nov-2017 02:37:57	9778.52	9622.59
U-USIT_UFWE	192.55	21-Nov-2017 02:37:57	21-Nov-2017 02:39:09	9622.59	9542.72
U-USIT_UFWE	201.67	21-Nov-2017 02:39:09	21-Nov-2017 03:10:22	9542.72	7464.66
U-USIT_UFWE	191.76	21-Nov-2017 03:10:22	21-Nov-2017 04:09:07	7464.66	4158
U-USIT_UNWB	107	21-Nov-2017 02:33:35	21-Nov-2017 02:37:54	9778.52	9626.12
U-USIT_UNWB	97.4	21-Nov-2017 02:37:54	21-Nov-2017 02:38:08	9626.12	9610.76
U-USIT_UNWB	91.05	21-Nov-2017 02:38:08	21-Nov-2017 04:09:07	9610.76	4158
U-USIT_UNWE	147	21-Nov-2017 02:33:35	21-Nov-2017 02:37:53	9778.52	9627.57
U-USIT_UNWE	163.61	21-Nov-2017 02:37:53	21-Nov-2017 02:39:06	9627.57	9545.48
U-USIT_UNWE	166.38	21-Nov-2017 02:39:06	21-Nov-2017 03:10:30	9545.48	7454.73
U-USIT_UNWE	150.52	21-Nov-2017 03:10:30	21-Nov-2017 04:09:07	7454.73	4158
WINB	33.83	21-Nov-2017 02:33:35	21-Nov-2017 02:39:00	9778.52	9552.81
WINB	38.28	21-Nov-2017 02:39:00	21-Nov-2017 02:39:33	9552.81	9514.47
WINB	30.14	21-Nov-2017 02:39:33	21-Nov-2017 04:09:07	9514.47	4158
WINE	73.83	21-Nov-2017 02:33:35	21-Nov-2017 02:38:05	9778.52	9614.03
WINE	76.95	21-Nov-2017 02:38:05	21-Nov-2017 04:09:07	9614.03	4158

All depth are at tool zero.

1A

Repeat Pass 5" = 100'

Software Version

Acquisition System

Version

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[2]:Up	Up	9404.31 ft	9762.33 ft	21-Nov-2017 2:24:48 AM	21-Nov-2017 2:30:25 AM	ON	5.82 ft	No

All depths are referenced to toolstring zero

Log

Company:DEVON Well:COTTON DRAW UNIT 511H

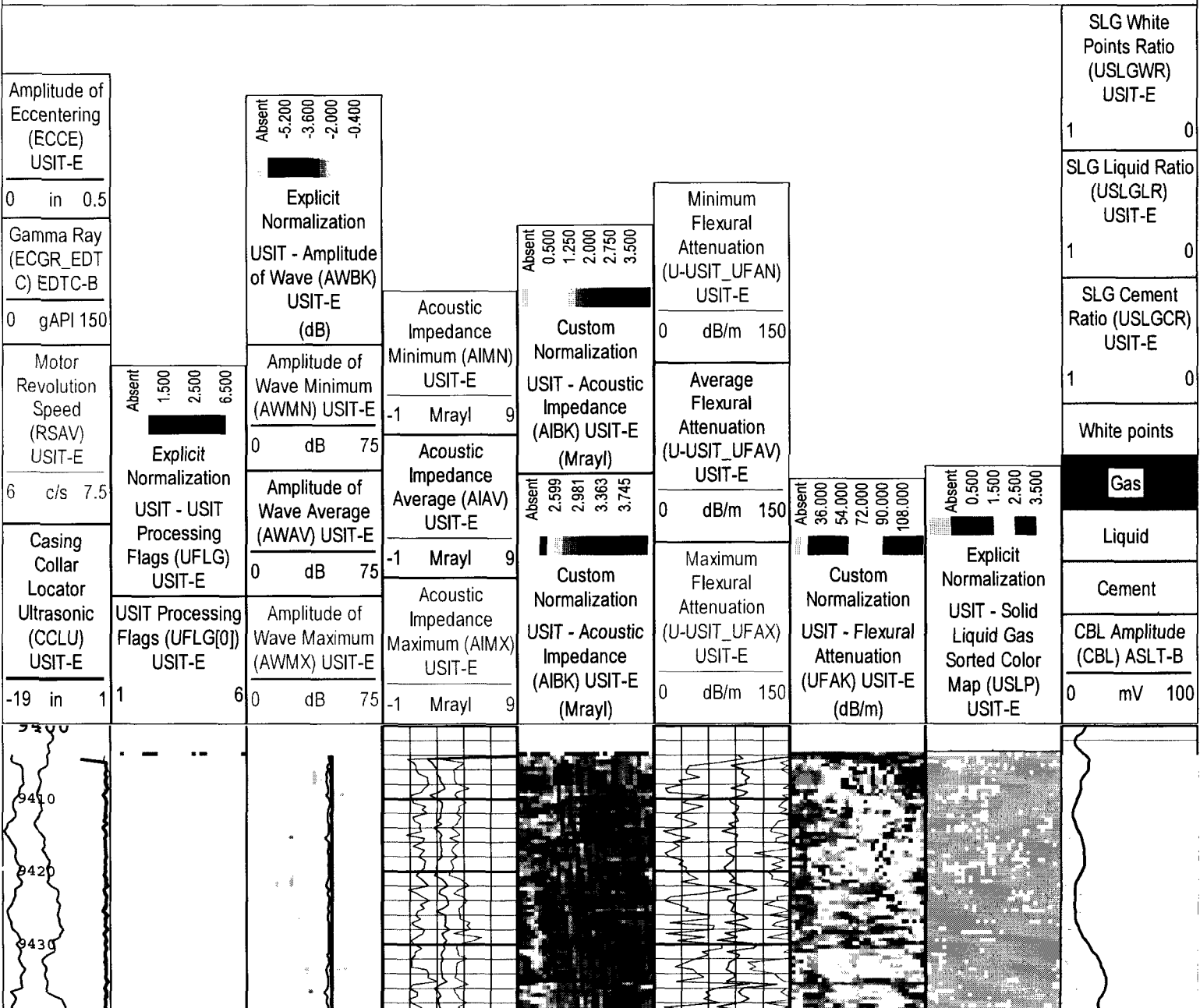
1A: Repeat[2]:Up:S006

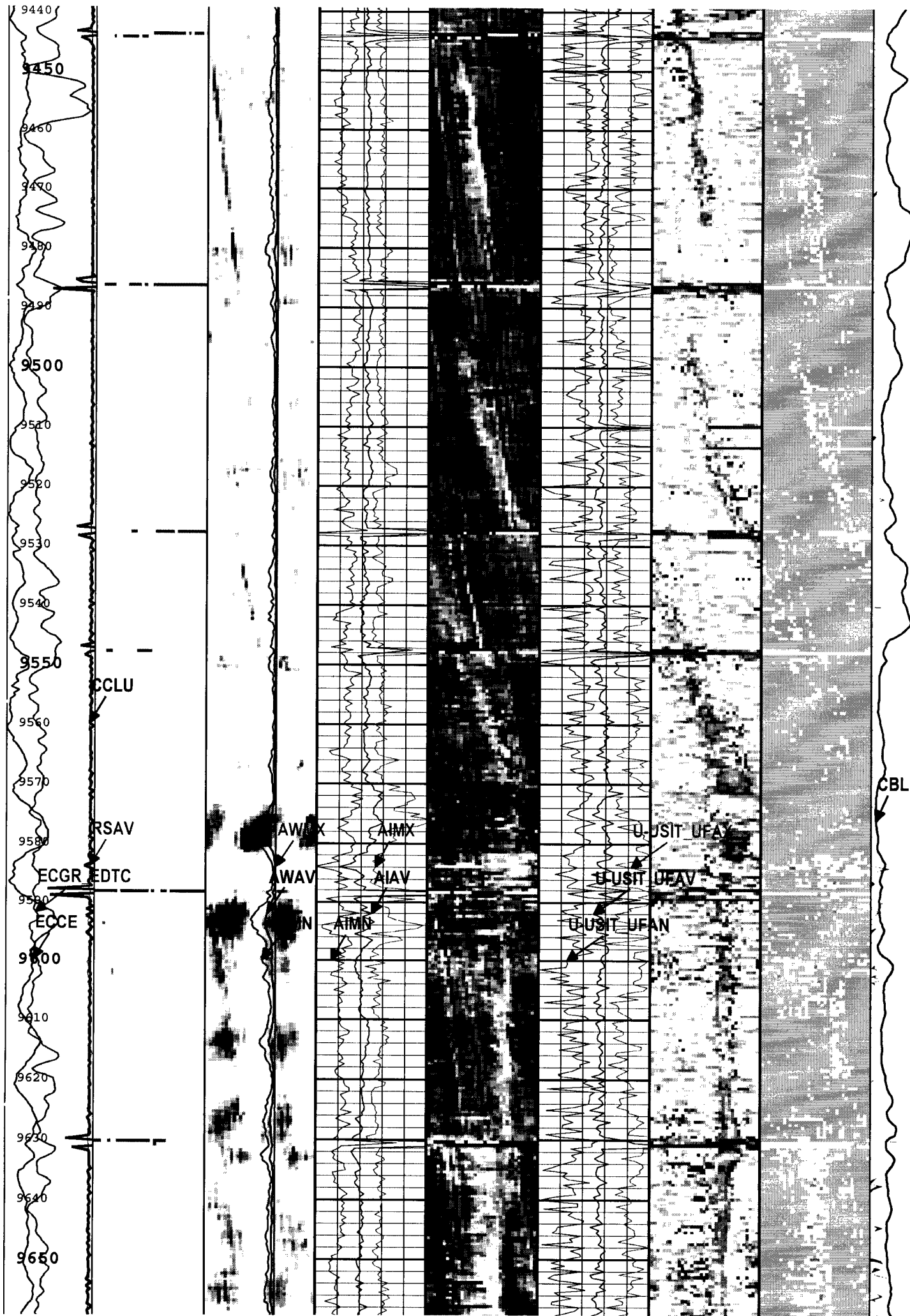
Description: USI IBC SLG Format: Log (USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:57

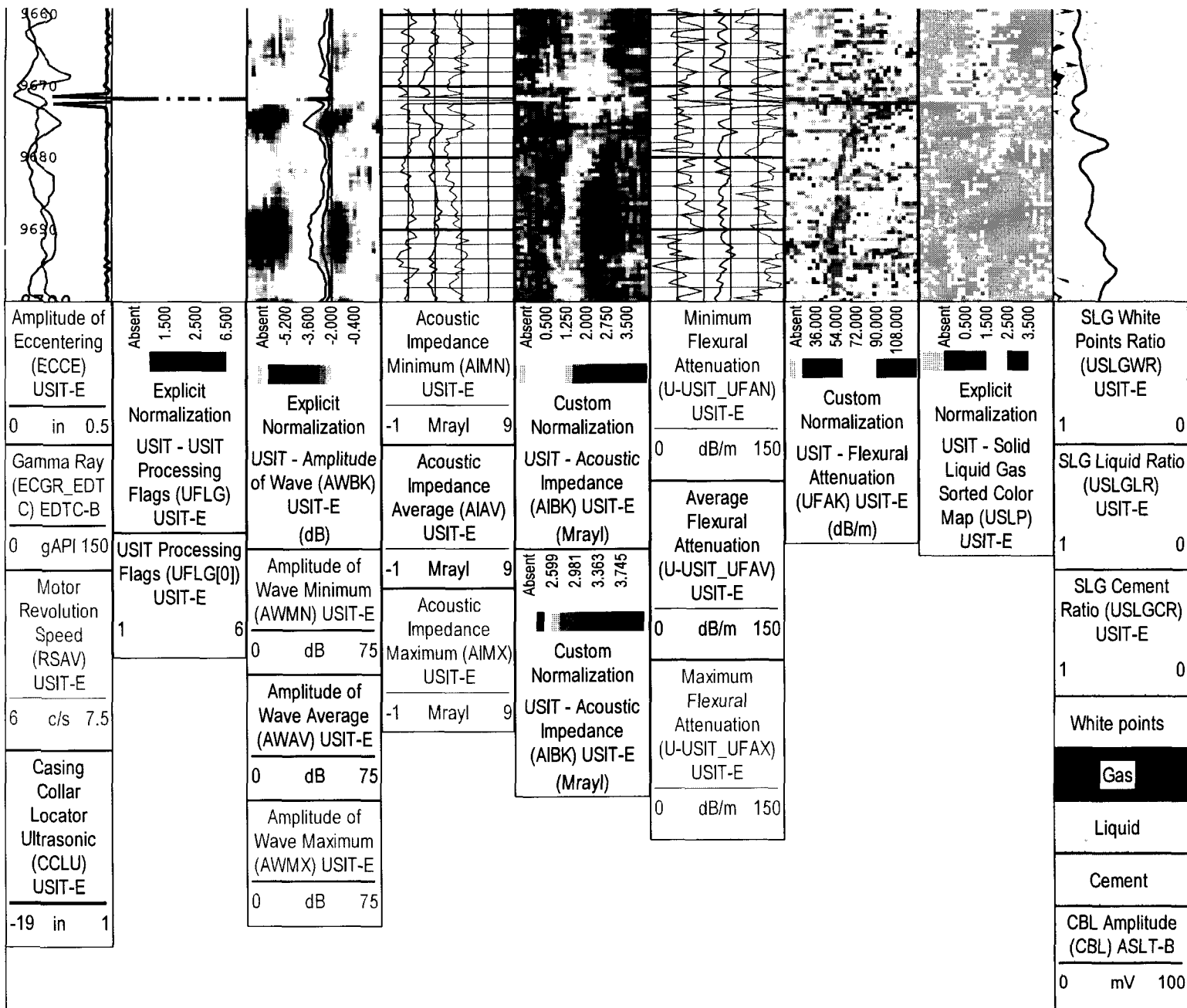
TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - : ☒ UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.44] - : ☒ Pulse Origin Not Detected
- 3 - UFLG 2 Value within [2.44 - 2.5] - : ☒ Spiky Waveform
- 4 - UFLG 3 Value within [2.5 - 3.5] - : ☒ WINLEN Error
- 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : ☒ Casing Thickness Error
- 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : ☐ Loop Processing Error







USIT Processing Flags (UFLG[0]) USIT-E	
1 - UFLG 1 Value within [0.0 - 1.5] - :	☒ UTIM Error
2 - UFLG 2 Value within [1.5 - 2.44] - :	☒ Pulse Origin Not Detected
3 - UFLG 2 Value within [2.44 - 2.5] - :	☒ Spiky Waveform
4 - UFLG 3 Value within [2.5 - 3.5] - :	☒ WINLEN Error
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	☒ Casing Thickness Error
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :	☐ Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Nov-2017 04:28:57

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	6.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15067	ft

CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	71	mV
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CMT)	Cement Type	USIT-E	Light Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.304	in
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
MSA	Minimum Sonic Amplitude	ASLT-B	1.07	mV
RUN_SNUM	Run Sequence Number	WSDRUN	1	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-15.72	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	40	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MODE	SSLT Firing Mode	ASLT-B	CBL	
RATE	Firing Rate	ASLT-B	4.46	Hz
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	33.83	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWB	138	21-Nov-2017 02:24:48	21-Nov-2017 02:25:24	9762.33	9733.17
U-USIT_UFWB	130.3	21-Nov-2017 02:25:24	21-Nov-2017 02:26:09	9733.17	9682.22
U-USIT_UFWB	109.29	21-Nov-2017 02:26:09	21-Nov-2017 02:28:56	9682.22	9492.44
U-USIT_UFWB	117.22	21-Nov-2017 02:28:56	21-Nov-2017 02:30:25	9492.44	9404.31
U-USIT_UFWE	178	21-Nov-2017 02:24:48	21-Nov-2017 02:25:18	9762.33	9739.92
U-USIT_UFWE	203.26	21-Nov-2017 02:25:18	21-Nov-2017 02:26:13	9739.92	9677.3
U-USIT_UFWE	205.24	21-Nov-2017 02:26:13	21-Nov-2017 02:28:47	9677.3	9502.31
U-USIT_UFWE	193.74	21-Nov-2017 02:28:47	21-Nov-2017 02:28:59	9502.31	9489.7
U-USIT_UFWE	185.81	21-Nov-2017 02:28:59	21-Nov-2017 02:30:25	9489.7	9404.31
U-USIT_UNWB	107	21-Nov-2017 02:24:48	21-Nov-2017 02:26:03	9762.33	9688.91
U-USIT_UNWB	93.83	21-Nov-2017 02:26:03	21-Nov-2017 02:26:20	9688.91	9669.21
U-USIT_UNWB	87.09	21-Nov-2017 02:26:20	21-Nov-2017 02:30:25	9669.21	9404.31
U-USIT_UNWE	147	21-Nov-2017 02:24:48	21-Nov-2017 02:25:21	9762.33	9736.5
U-USIT_UNWE	171.93	21-Nov-2017 02:25:21	21-Nov-2017 02:29:01	9736.5	9487.13
U-USIT_UNWE	163.21	21-Nov-2017 02:29:01	21-Nov-2017 02:30:25	9487.13	9404.31
WINE	73.83	21-Nov-2017 02:24:48	21-Nov-2017 02:25:07	9762.33	9752.09
WINE	107.45	21-Nov-2017 02:25:07	21-Nov-2017 02:25:29	9752.09	9727.44
WINE	99.63	21-Nov-2017 02:25:29	21-Nov-2017 02:25:55	9727.44	9698.21
WINE	86.54	21-Nov-2017 02:25:55	21-Nov-2017 02:26:16	9698.21	9673.98
WINE	84.22	21-Nov-2017 02:26:16	21-Nov-2017 02:28:36	9673.98	9514.91
WINE	82.47	21-Nov-2017 02:28:36	21-Nov-2017 02:28:40	9514.91	9511.25
WINE	80.44	21-Nov-2017 02:28:40	21-Nov-2017 02:30:25	9511.25	9404.31

All depth are at tool zero.

1A

Main Pass 2" = 100'

Software Version

Acquisition System

Maxwell 2018

Version

8.0.93964.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	4158.00 ft	9778.53 ft	21-Nov-2017 2:33:35 AM	21-Nov-2017 4:09:07 AM	ON	7.81 ft	No

All depths are referenced to toolstring zero

Log

Company:DEVON

Well:COTTON DRAW UNIT 511H

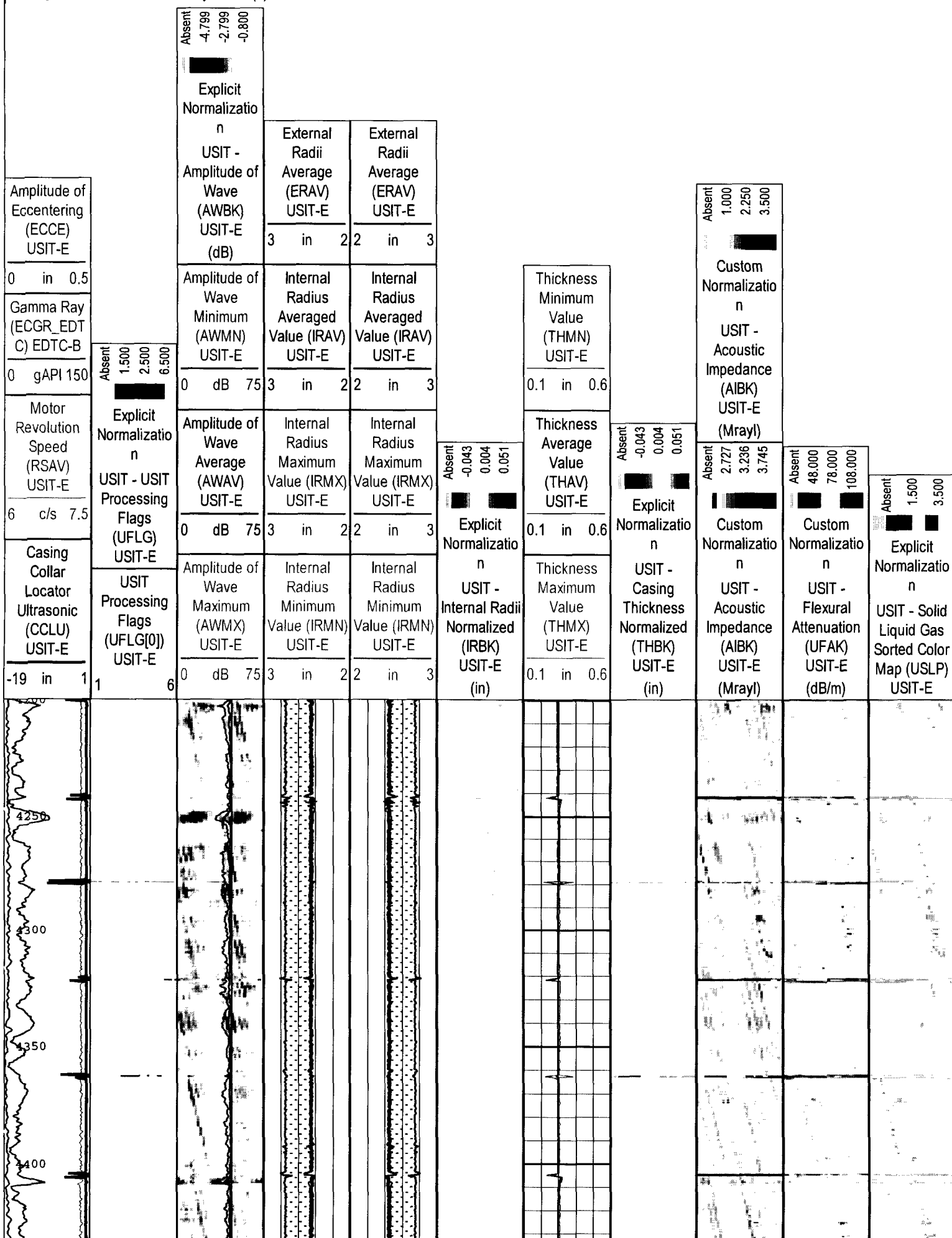
1A: Main[3]:Up:S006

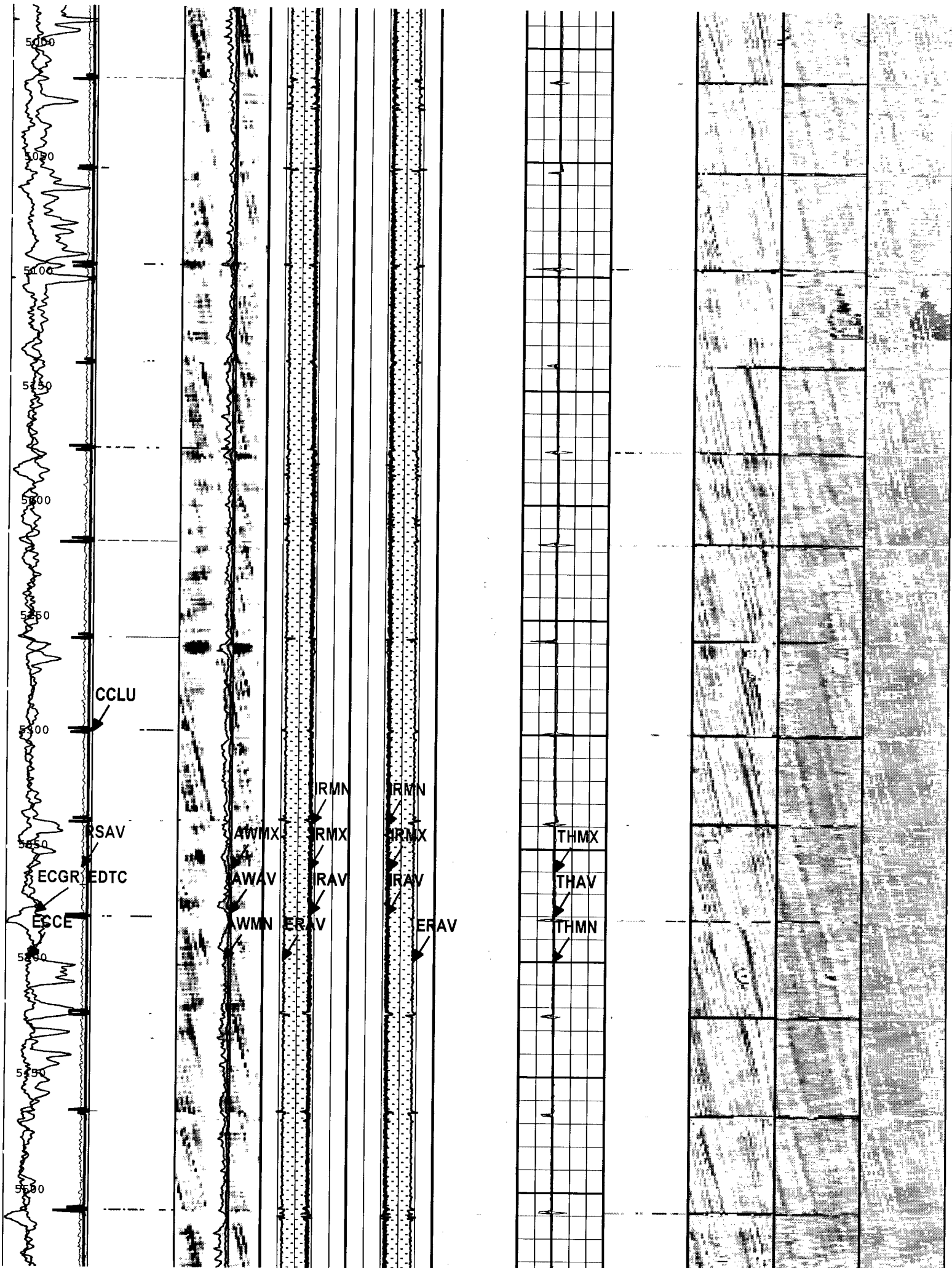
Description: USI IBC SLG Composite Format: Log (USI IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Nov-2017 04:29:02

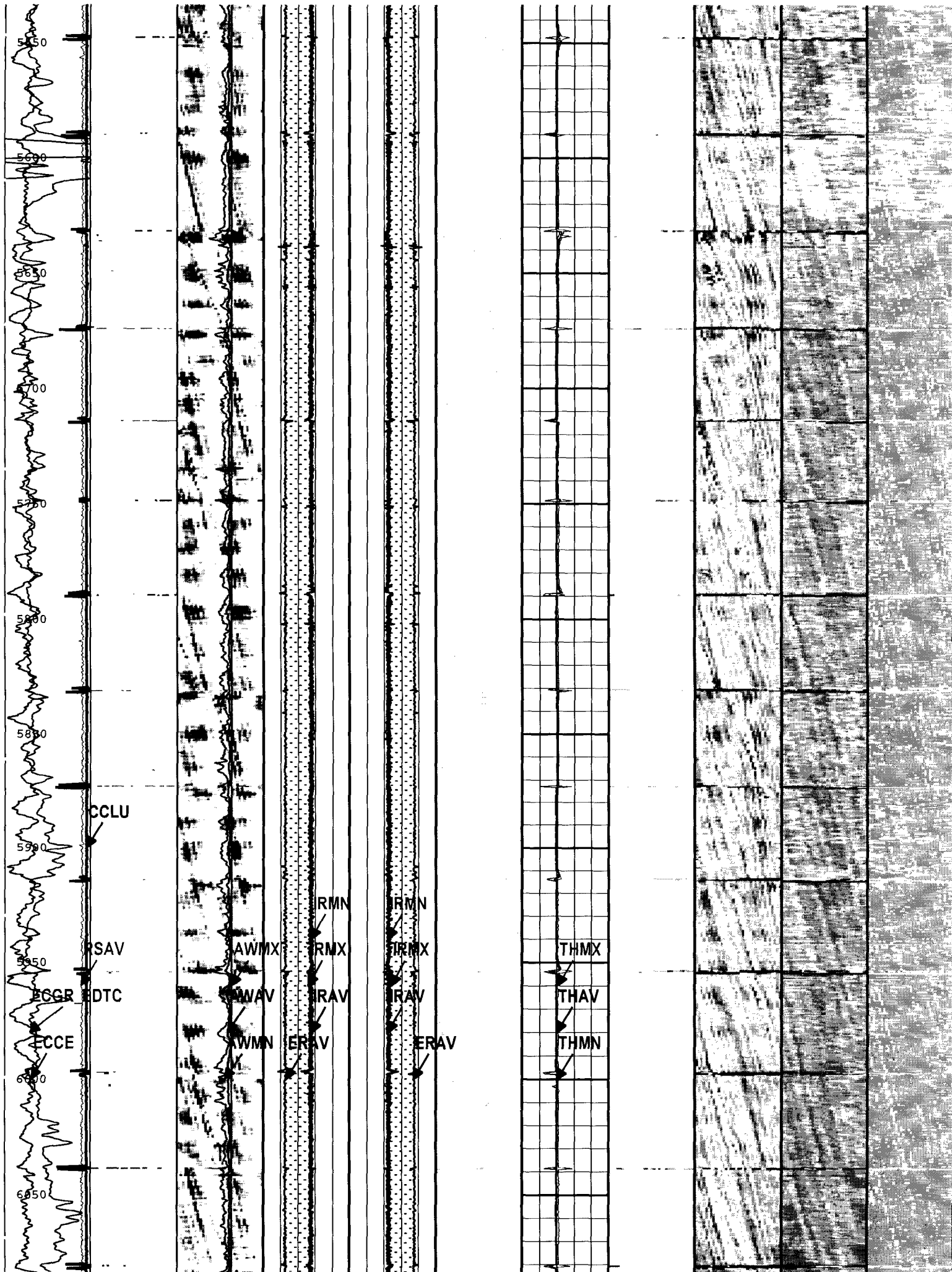
USIT Processing Flags (UFLG[0]) USIT-E

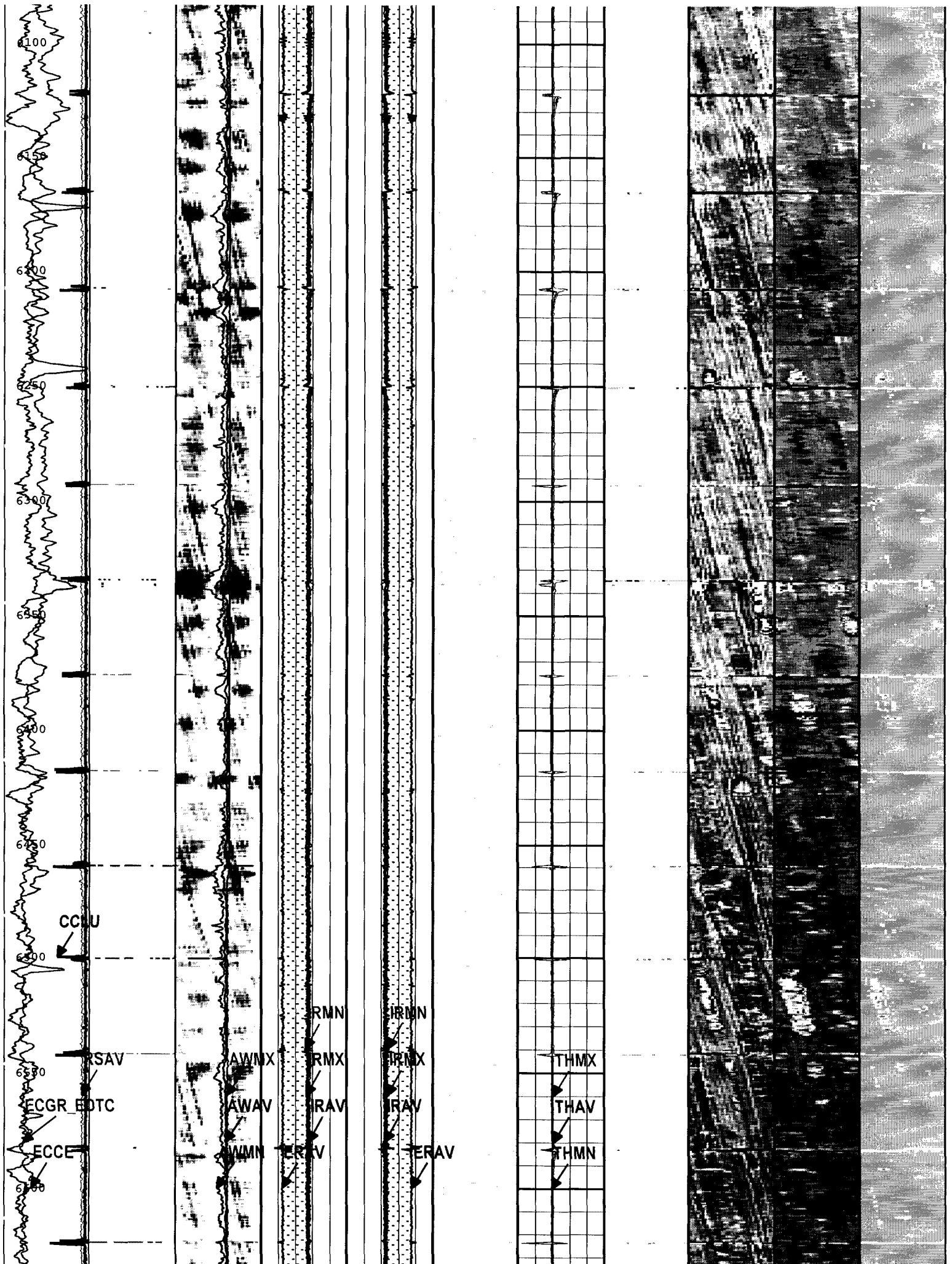
- | | |
|---|---|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | ☒ UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | ☒ Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | ☒ Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | ☒ WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | ☒ Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | ☐ Loop Processing Error |

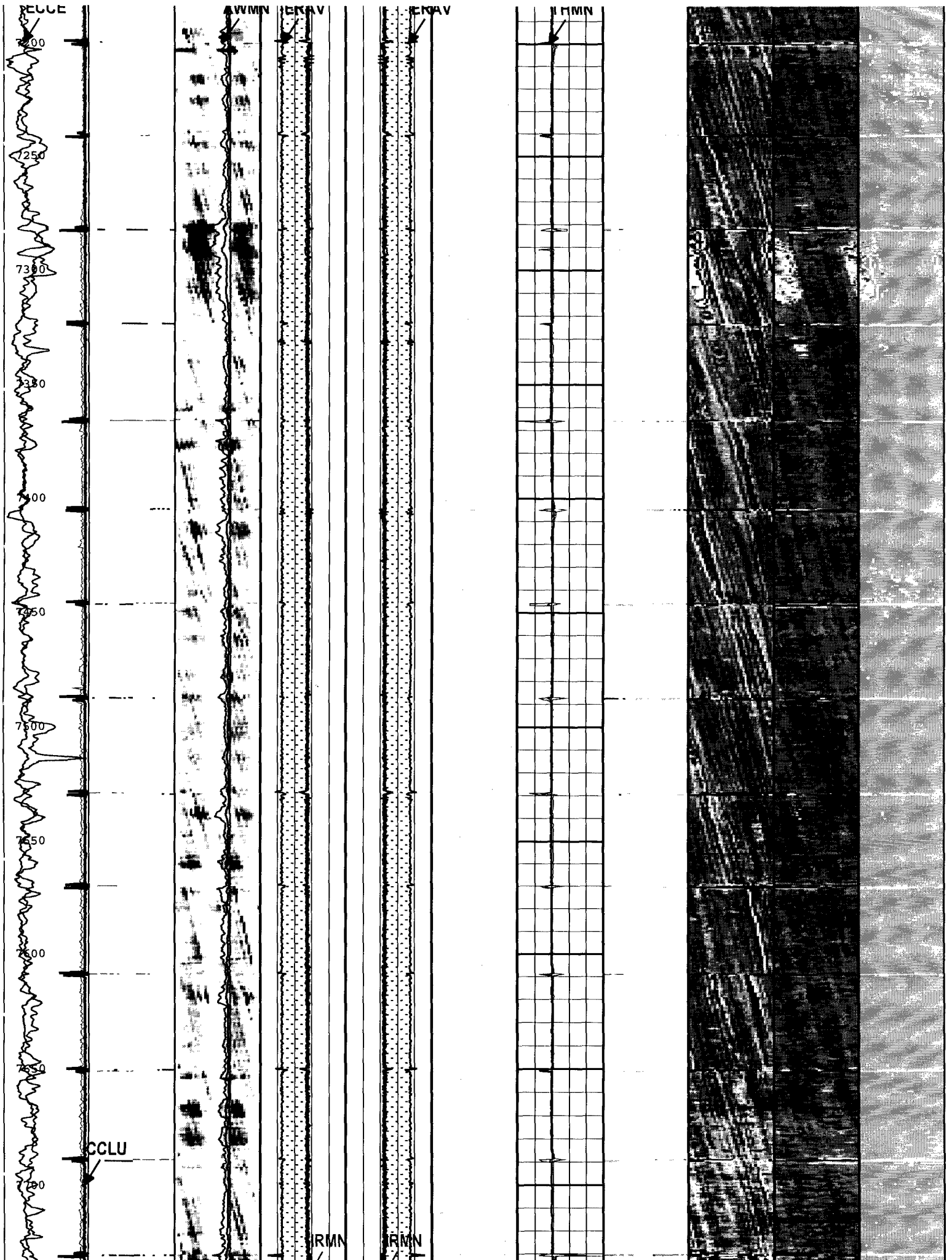
TIME_1900 - Time Marked every 60.00 (s)

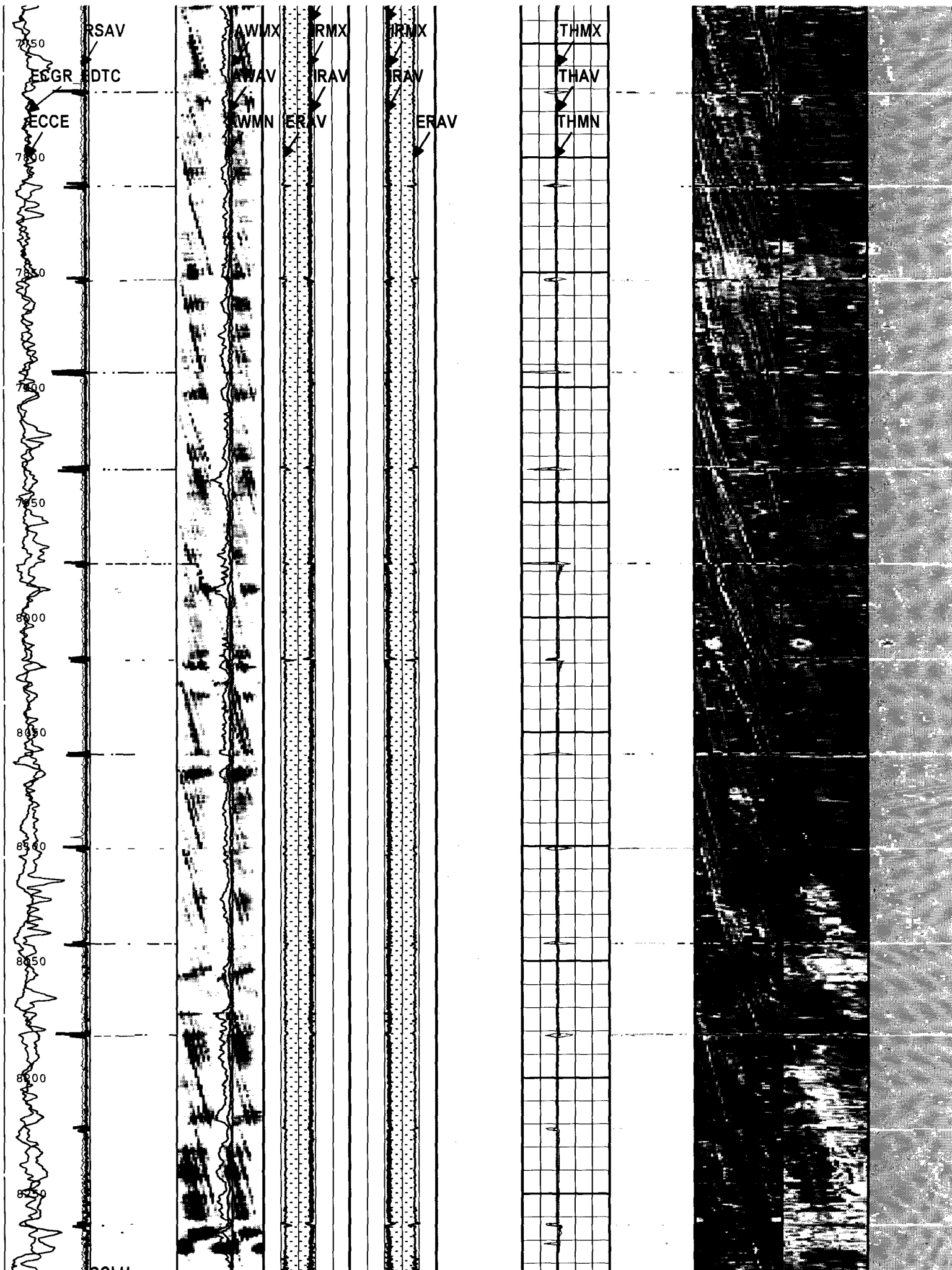


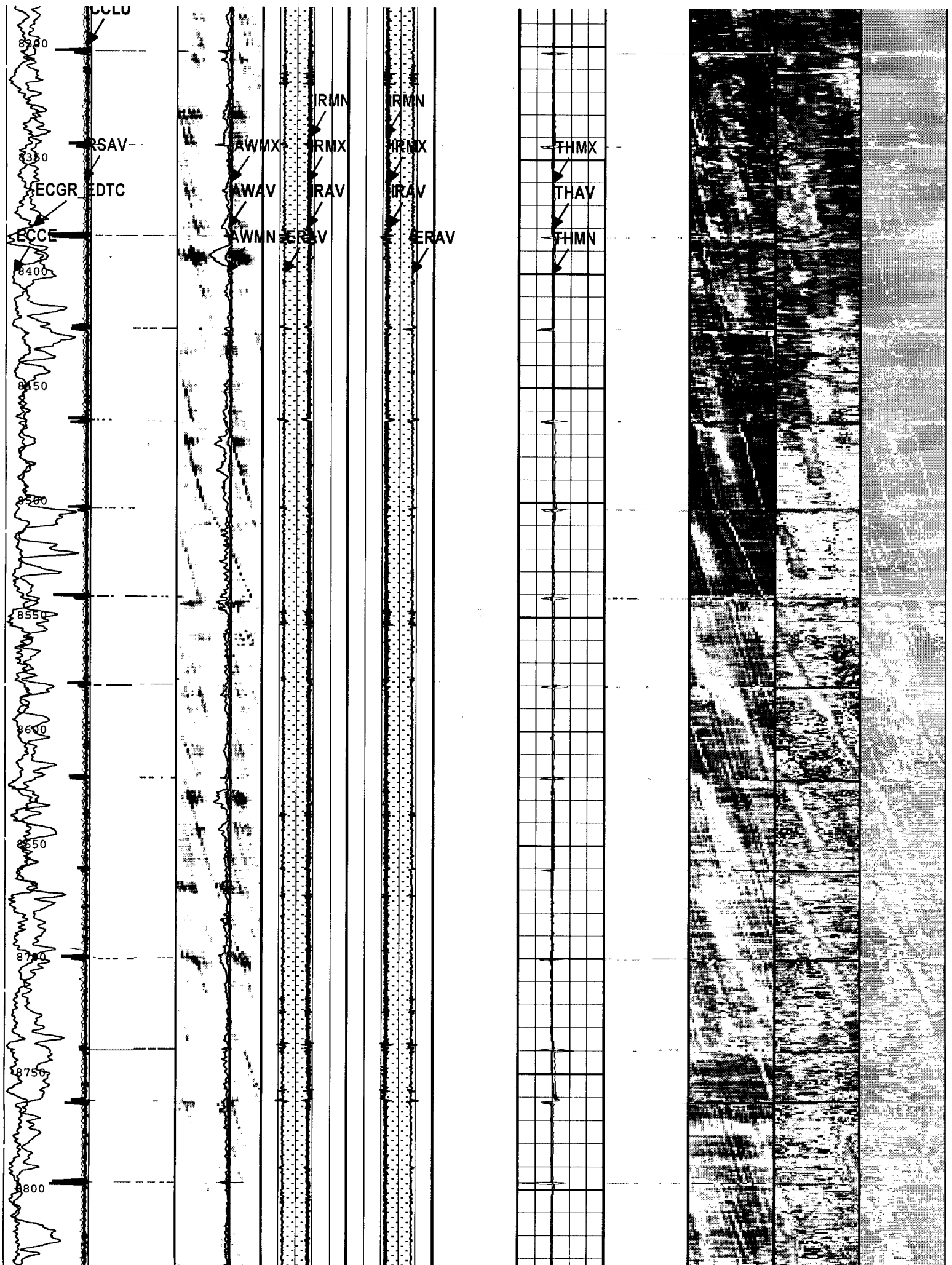


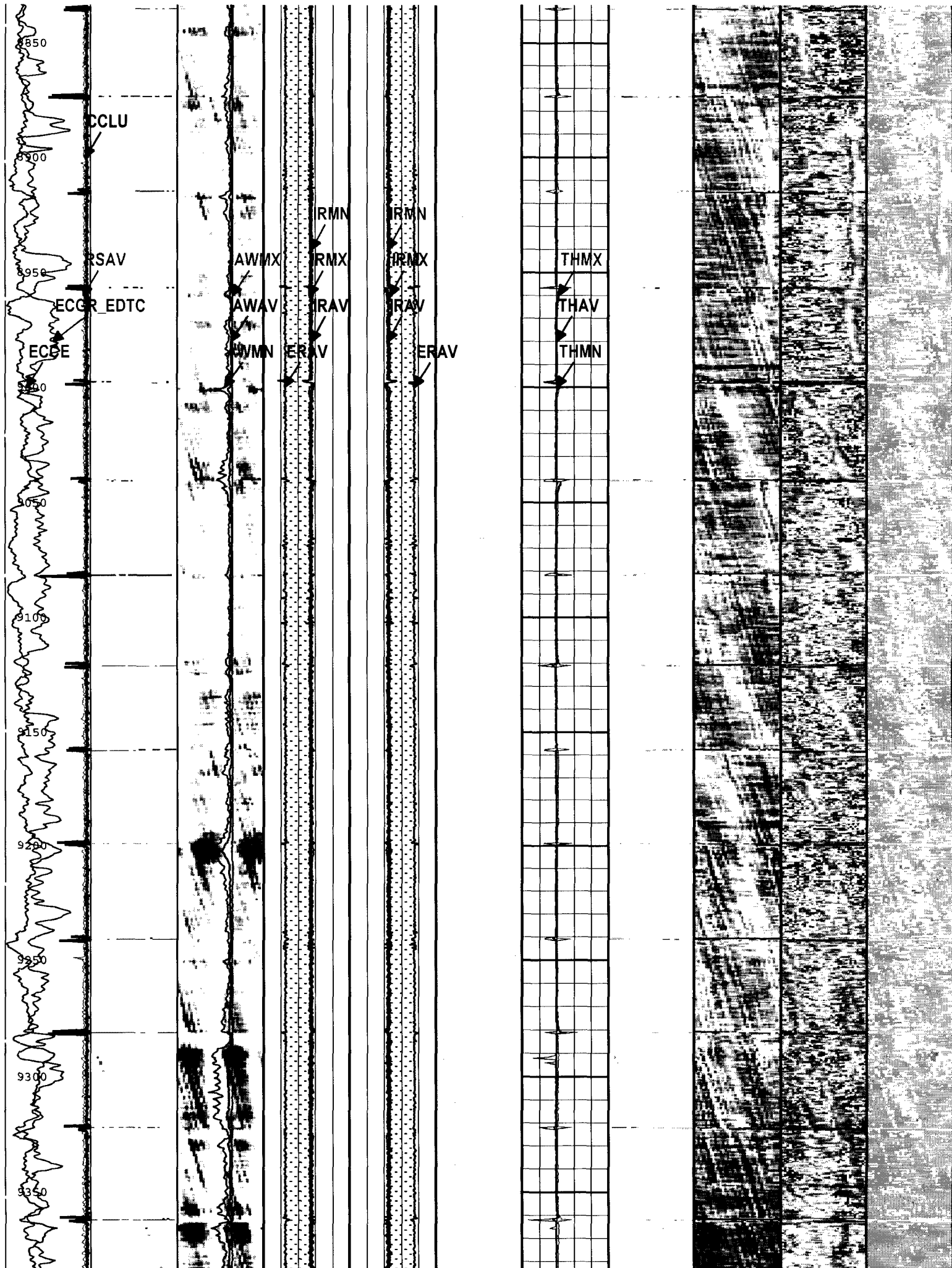


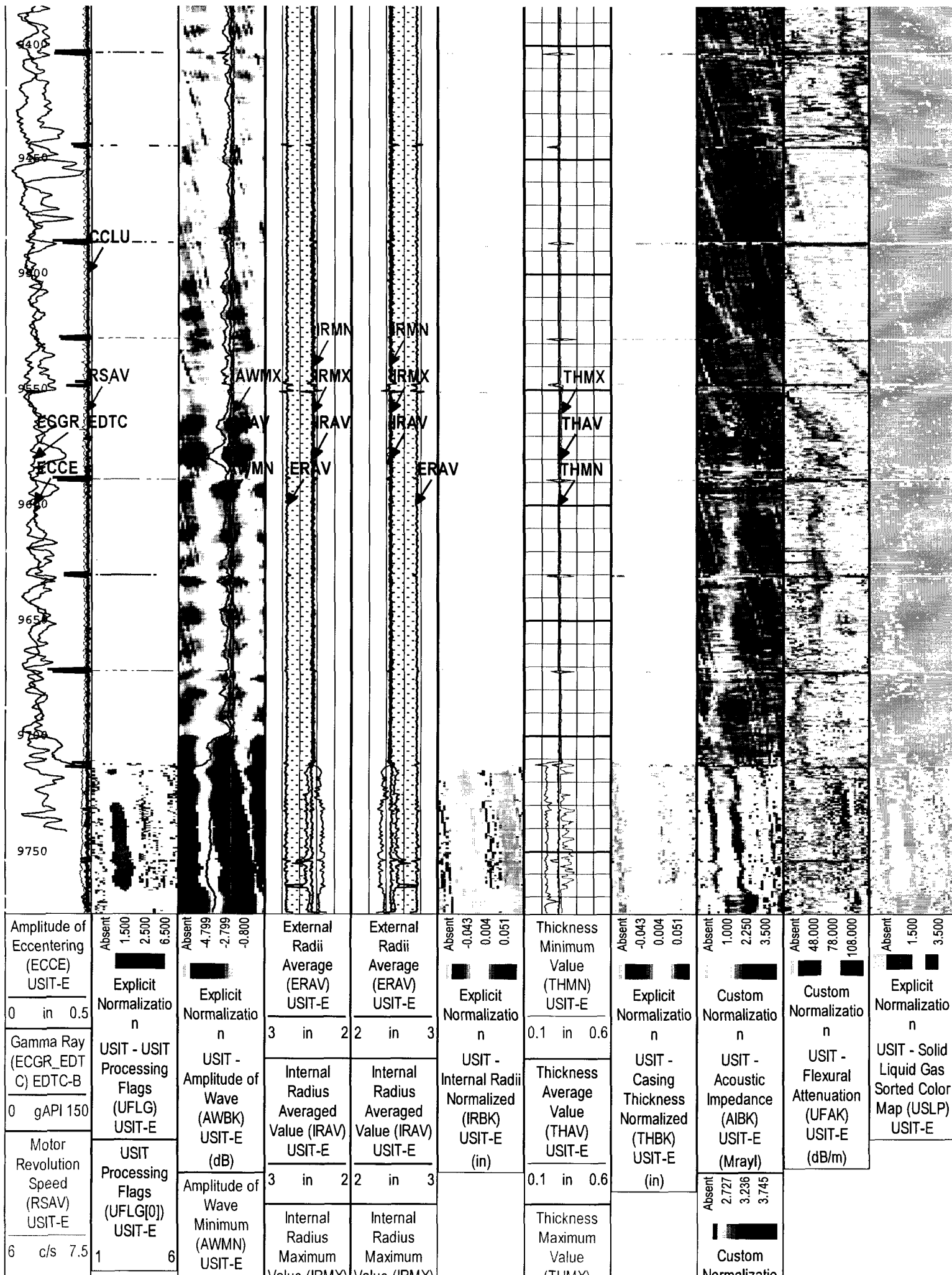












Casing Collar Locator Ultrasonic (CCLU) USIT-E
-19 in 1

0 dB 75	value (IRMX) USIT-E	value (IRMX) USIT-E
Amplitude of Wave Average (AWAV) USIT-E	3 in 2	2 in 3
0 dB 75	Internal Radius Minimum Value (IRMN) USIT-E	Internal Radius Minimum Value (IRMN) USIT-E
Amplitude of Wave Maximum (AWMX) USIT-E	3 in 2	2 in 3
0 dB 75		

(IRMX) USIT-E
0.1 in 0.6

normalization USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- | | |
|---|---|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | ☒ UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | ☒ Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | ☒ Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | ☒ WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | ☒ Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | ☐ Loop Processing Error |

Description: USI IBC SLG Composite Format: Log (USI IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Nov-2017 04:29:02

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15067	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-15.72	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	

ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	40	21-Nov-2017 02:33:35	21-Nov-2017 03:32:34	9778.52	6640.92
EMXV	30	21-Nov-2017 03:32:34	21-Nov-2017 03:35:14	6640.92	6465.09
EMXV	35	21-Nov-2017 03:35:14	21-Nov-2017 04:09:07	6465.09	4158
U-USIT_UFWB	138	21-Nov-2017 02:33:35	21-Nov-2017 02:37:59	9778.52	9620.62
U-USIT_UFWB	121.58	21-Nov-2017 02:37:59	21-Nov-2017 02:38:02	9620.62	9617.12
U-USIT_UFWB	112.86	21-Nov-2017 02:38:02	21-Nov-2017 04:09:07	9617.12	4158
U-USIT_UFWE	178	21-Nov-2017 02:33:35	21-Nov-2017 02:37:57	9778.52	9622.59
U-USIT_UFWE	192.55	21-Nov-2017 02:37:57	21-Nov-2017 02:39:09	9622.59	9542.72
U-USIT_UFWE	201.67	21-Nov-2017 02:39:09	21-Nov-2017 03:10:22	9542.72	7464.66
U-USIT_UFWE	191.76	21-Nov-2017 03:10:22	21-Nov-2017 04:09:07	7464.66	4158
U-USIT_UNWB	107	21-Nov-2017 02:33:35	21-Nov-2017 02:37:54	9778.52	9626.12
U-USIT_UNWB	97.4	21-Nov-2017 02:37:54	21-Nov-2017 02:38:08	9626.12	9610.76
U-USIT_UNWB	91.05	21-Nov-2017 02:38:08	21-Nov-2017 04:09:07	9610.76	4158
U-USIT_UNWE	147	21-Nov-2017 02:33:35	21-Nov-2017 02:37:53	9778.52	9627.57
U-USIT_UNWE	163.61	21-Nov-2017 02:37:53	21-Nov-2017 02:39:06	9627.57	9545.48
U-USIT_UNWE	166.38	21-Nov-2017 02:39:06	21-Nov-2017 03:10:30	9545.48	7454.73
U-USIT_UNWE	150.52	21-Nov-2017 03:10:30	21-Nov-2017 04:09:07	7454.73	4158
WINB	33.83	21-Nov-2017 02:33:35	21-Nov-2017 02:39:00	9778.52	9552.81
WINB	38.28	21-Nov-2017 02:39:00	21-Nov-2017 02:39:33	9552.81	9514.47
WINB	30.14	21-Nov-2017 02:39:33	21-Nov-2017 04:09:07	9514.47	4158
WINE	73.83	21-Nov-2017 02:33:35	21-Nov-2017 02:38:05	9778.52	9614.03
WINE	76.95	21-Nov-2017 02:38:05	21-Nov-2017 04:09:07	9614.03	4158

All depth are at tool zero.

1A

Repeat Pass 2" = 100'

Software Version	
------------------	--

Acquisition System	Version
Maxwell 2018	8.0.93964.3100

Pass Summary	
--------------	--

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[2]:Up	Up	9404.31 ft	9762.33 ft	21-Nov-2017 2:24:48 AM	21-Nov-2017 2:30:25 AM	ON	5.82 ft	No

All depths are referenced to toolstring zero

Log

Company:DEVON	Well:COTTON DRAW UNIT 511H
---------------	----------------------------

Well: COTTON DRAW UNIT 511H

1A: Repeat[2]:Up:S006

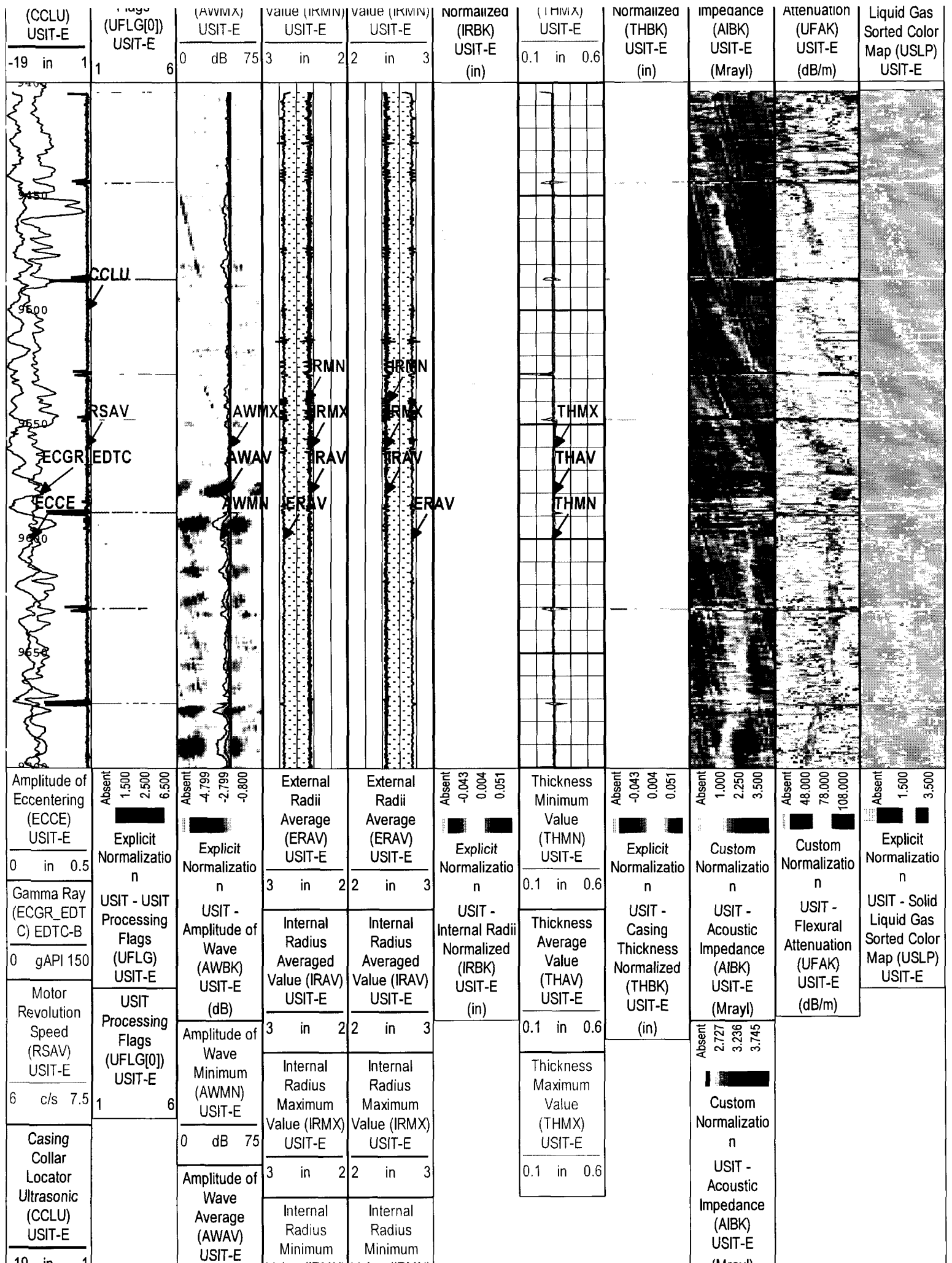
Description: USI IBC SLG Composite	Format: Log (USI IBC SLG Composite)	Index Scale: 2 in per 100 ft	Index Unit: ft	Index Type: Measured Depth
Creation Date: 21-Nov-2017 04:29:11				

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- | | |
|---|---|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | ☒ UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | ☒ Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | ☒ Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | ☒ WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | ☒ Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | ☐ Loop Processing Error |

[illegible]



0 dB 75	Value (IRMN) USIT-E	Value (IRMN) USIT-E	(Mrayl)
Amplitude of Wave Maximum (AWMX) USIT-E	3 in 2	2 in 3	
0 dB 75			

USIT Processing Flags (UFLG[0]) USIT-E			
1 - UFLG 1 Value within [0.0 - 1.5] - :	☒	UTIM Error	
2 - UFLG 2 Value within [1.5 - 2.44] - :	☒	Pulse Origin Not Detected	
3 - UFLG 2 Value within [2.44 - 2.5] - :	☒	Spiky Waveform	
4 - UFLG 3 Value within [2.5 - 3.5] - :	☒	WINLEN Error	
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	☒	Casing Thickness Error	
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :	☐	Loop Processing Error	

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: Log (USI IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Nov-2017 04:29:11

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	6.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15067	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-15.72	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	40	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	33.83	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWB	138	21-Nov-2017 02:24:48	21-Nov-2017 02:25:24	9762.33	9733.17
U-USIT_UFWB	130.3	21-Nov-2017 02:25:24	21-Nov-2017 02:26:09	9733.17	9682.22
U-USIT_UFWB	109.29	21-Nov-2017 02:26:09	21-Nov-2017 02:28:56	9682.22	9492.44
U-USIT_UFWB	117.22	21-Nov-2017 02:28:56	21-Nov-2017 02:30:25	9492.44	9404.31
U-USIT_UFWE	178	21-Nov-2017 02:24:48	21-Nov-2017 02:25:18	9762.33	9739.92
U-USIT_UFWE	203.26	21-Nov-2017 02:25:18	21-Nov-2017 02:26:13	9739.92	9677.3
U-USIT_UFWE	205.24	21-Nov-2017 02:26:13	21-Nov-2017 02:28:47	9677.3	9502.31
U-USIT_UFWE	193.74	21-Nov-2017 02:28:47	21-Nov-2017 02:28:59	9502.31	9489.7
U-USIT_UFWE	185.81	21-Nov-2017 02:28:59	21-Nov-2017 02:30:25	9489.7	9404.31
U-USIT_UNWB	107	21-Nov-2017 02:24:48	21-Nov-2017 02:26:03	9762.33	9688.91
U-USIT_UNWB	93.83	21-Nov-2017 02:26:03	21-Nov-2017 02:26:20	9688.91	9669.21
U-USIT_UNWB	87.09	21-Nov-2017 02:26:20	21-Nov-2017 02:30:25	9669.21	9404.31
U-USIT_UNWE	147	21-Nov-2017 02:24:48	21-Nov-2017 02:25:21	9762.33	9736.5
U-USIT_UNWE	171.93	21-Nov-2017 02:25:21	21-Nov-2017 02:29:01	9736.5	9487.13
U-USIT_UNWE	163.21	21-Nov-2017 02:29:01	21-Nov-2017 02:30:25	9487.13	9404.31
WINE	73.83	21-Nov-2017 02:24:48	21-Nov-2017 02:25:07	9762.33	9752.09
WINE	107.45	21-Nov-2017 02:25:07	21-Nov-2017 02:25:29	9752.09	9727.44
WINE	99.63	21-Nov-2017 02:25:29	21-Nov-2017 02:25:55	9727.44	9698.21
WINE	86.54	21-Nov-2017 02:25:55	21-Nov-2017 02:26:16	9698.21	9673.98
WINE	84.22	21-Nov-2017 02:26:16	21-Nov-2017 02:28:36	9673.98	9514.91
WINE	82.47	21-Nov-2017 02:28:36	21-Nov-2017 02:28:40	9514.91	9511.25
WINE	80.44	21-Nov-2017 02:28:40	21-Nov-2017 02:30:25	9511.25	9404.31

All depth are at tool zero.

XYZ

Company:DEVON Well:COTTON DRAW UNIT 511H

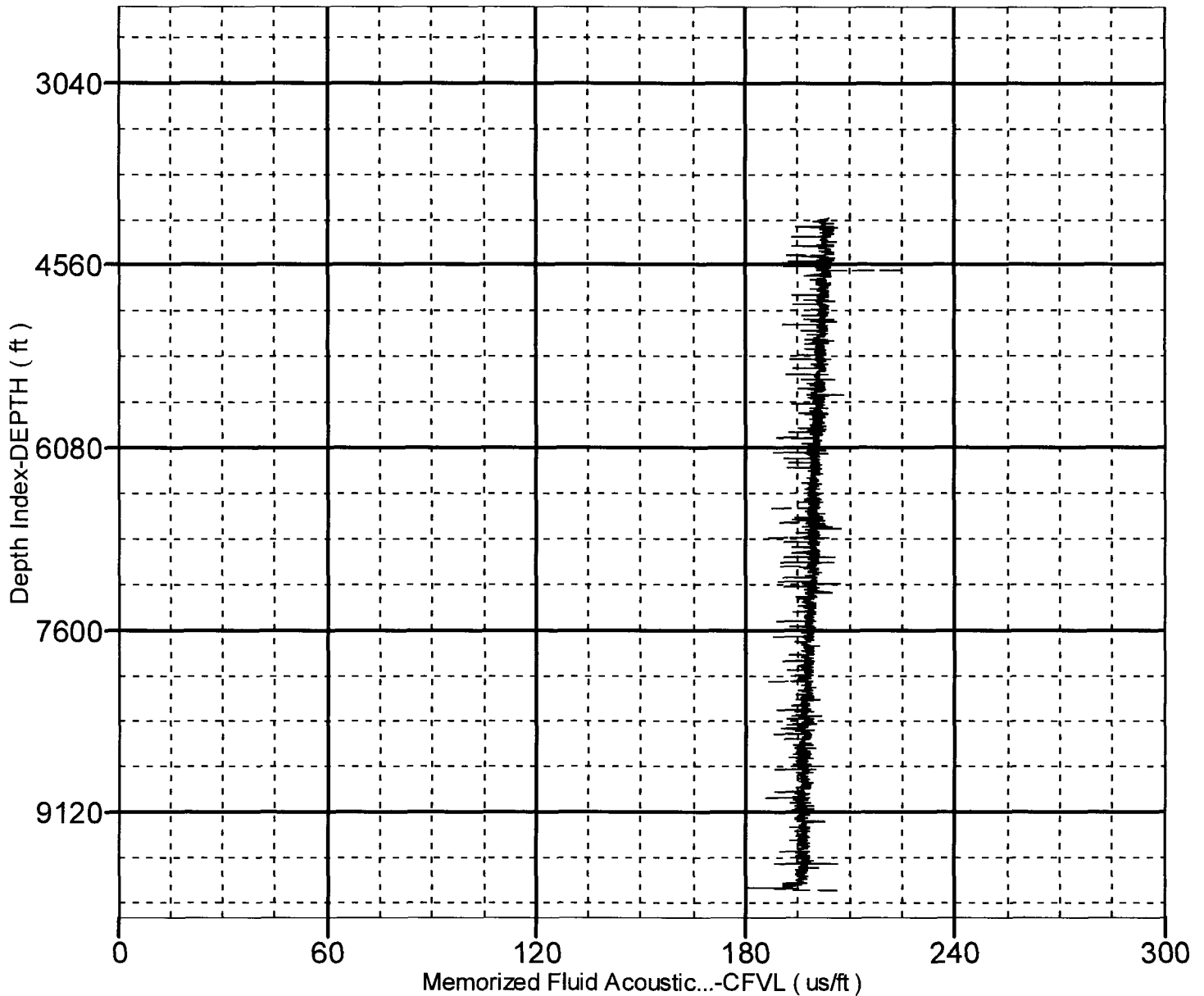
1A: Main[3]:Up:S006

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 9778.50 to 4157.50 ft

--- CFVL-DEPTH



XYZ

Company:DEVON Well:COTTON DRAW UNIT 511H

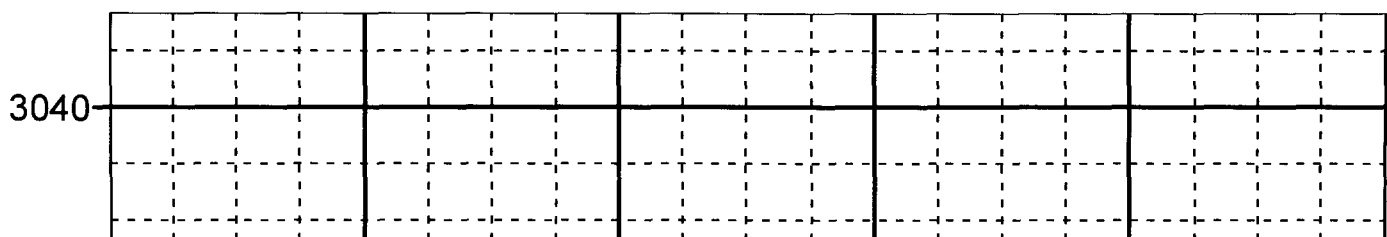
1A: Main[3]:Up:S006

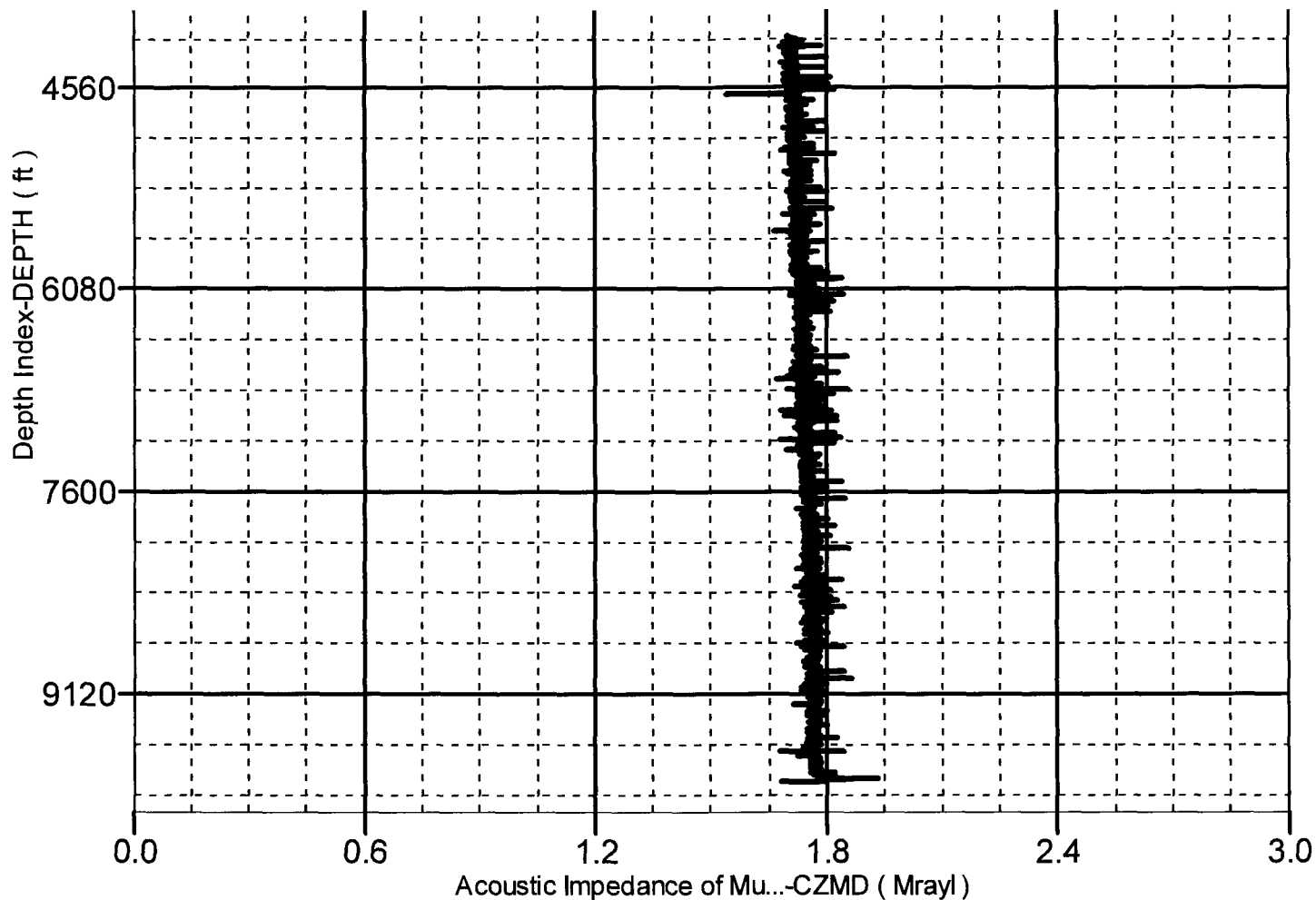
Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 9778.50 to 4157.50 ft

— CZMD-DEPTH





Company: DEVON

Schlumberger

Well: COTTON DRAW UNIT 511H

Field: PADUCA

County: EDDY

State: NEW MEXICO

Isolation Scanner