

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☐ Oil Well ☐ Gas Well ☒ Other: INJECTION		5. Lease Serial No. NMNM118723
2. Name of Operator CHEVRON USA INCORPORATED		6. If Indian, Allottee or Tribe Name
Contact: LAURA BECERRA E-Mail: LBECCERRA@CHEVRON.COM		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 6301 DEAUVILLE BLVD MIDLAND, TX 79706	3b. Phone No. (include area code) Ph: 432-687-7655	8. Well Name and No. MAELSTROM SWD 1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 15 T26S R32E NWSE 2050FSL 1793FEL 32.041229 N Lat, 103.659966 W Lon		9. API Well No. 30-025-45127-00-X1
		10. Field and Pool or Exploratory Area SWD-SILURIAN
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Drilling Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

3/20/19 - Full BOPE test.

3/22/19 - Notified Jon Staton @ BLM of upcoming step rate test.

3/24/19 - Perform Step Rate test, 30 min per state w/8.3 ppg FW. Rate: 5 bbl/min, DP PSI: 440psi, CSG PSI: 0psi; Rate: 10 bbl/min, DP PSI: 1,008psi, CSG PSI: 0 psi; Rate: 15 bbl/min, DP PSI: 1,868psi, CSG PSI: 34psi; Rate: 20 bbl/min, DP PSI: 2,984psi, CSG PSI: 110psi. Provide 24 Hr notification to BLM to set packer.

3/25/19 - Set packer @ 17,505'.

3/26/19 - Pressure test packer to 1,000psi for 15 min, good test.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #471211 verified by the BLM Well Information System For CHEVRON USA INCORPORATED, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 07/01/2019 (19PP2343SE)	
Name (Printed/Typed) LAURA BECERRA	Title REGULATORY SPECIALIST
Signature (Electronic Submission)	Date 06/28/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____	Title Accepted for Record	Date JUL 24 2019
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Jonathon Shepard Carlsbad Field Office	

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88249
District II - (575) 748-1888
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87401
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources
HOBBS OCD
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

RECEIVED JUN 03 2019		WELL API NO. 30-025-45127
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.)		5. Indicate Type of Lease STATE ☐ FEE ☐ FED ☒
1. Type of Well: Oil Well ☐ Gas Well ☒ Other SWD WELL		6. State Oil & Gas Lease No.
2. Name of Operator CHEVRON USA INC		7. Lease Name or Unit Agreement Name Mealstrom SWD
3. Address of Operator 6301 DEAUVILLE BLVD. MIDLAND, TX 79706		8. Well Number 1
4. Well Location Unit Letter J : 2050 feet from the SOUTH line and 1793 feet from the EAST line Section 15 Township 26S Range 32E NMPM County LEA		9. OGRID Number 4323
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3168		10. Pool name or Wildcat SWD-SILURIAN

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: ☐	MIT ☒

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.

On May 7th, 2019 Chevron USA preformed a scheduled MIT test on the above mentioned well. Please see the attached Bradenhead Test Report and Chart.

Spud Date:

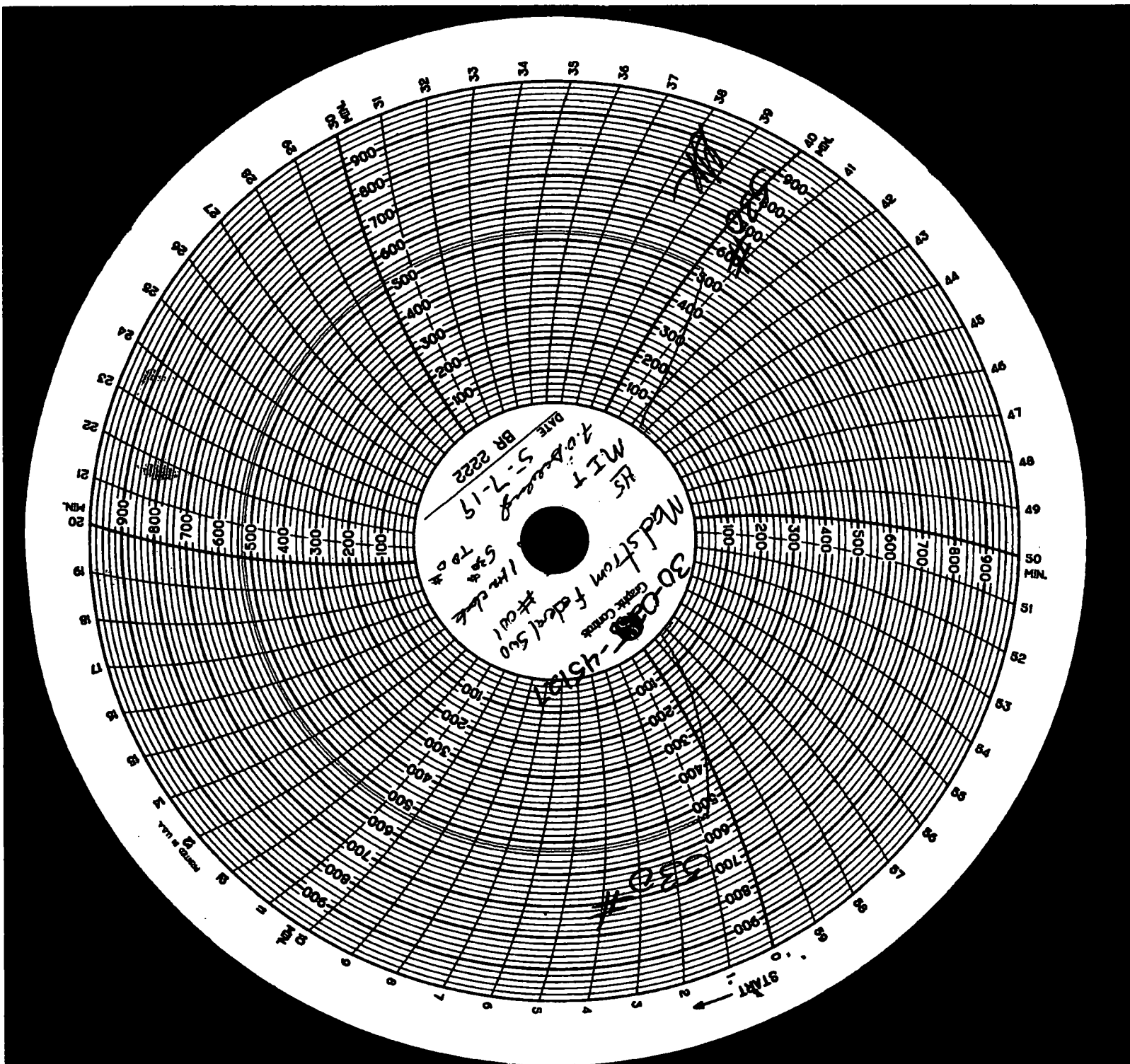
Rig Release Date:

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

SIGNATURE Kayla McConnell TITLE PERMITTING SPECIALIST DATE 5/22/2019

Type or print name KAYLA MCCONNELL E-mail address: GNCV@CHEVRON.COM PHONE: 432.687.7375
For State Use Only

APPROVED BY: Shay Palmer TITLE Compliance Officer DATE 6-5-19
Conditions of Approval (if any):



District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division Hobbs District Office

HOBBS OCD

JUN 08 2019

RECEIVED

BRADENHEAD TEST REPORT

Operator Name Chevron USA Inc	API Number 30-025-45127
Property Name Mackstrom SWD	Well No. 1

2. Surface Location

UL - Lot J	Section 15	Township 26S	Range 32E	Feet from 2050	N/S Line 2050	Feet From 1793'	County LEA
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Well Status

TA'D Well YES NO	SHUT-IN YES NO	INJECTOR INJ (SWD)	PRODUCER OIL GAS	DATE 5-7-19
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OBSERVED DATA

	(A)Surf-Intern	(B)Intern(1)	(C)Intern(2)	(D)Prod Casing	(E)Tubing
Pressure	○	○	○	○	○
Flow Characteristics					
Puff	Y/N	Y/N	Y/N	Y/N	CO2 _____
Steady Flow	Y/N	Y/N	Y/N	Y/N	WTR _____
Surges	Y/N	Y/N	Y/N	Y/N	GAS _____
Down to nothing	Y/N	Y/N	Y/N	Y/N	If applicable type _____
Gas or Oil	Y/N	Y/N	Y/N	Y/N	fluid injected for _____
Water	Y/N	Y/N	Y/N	Y/N	Waterflood _____

Remarks: Please state for each string (A,B,C,D,E) pertinent information regarding bleed down or continuous build up if applies.

(D) apply 530" for MIT and H/d (good chlt test)

Initial TEST

Signature: F. V. Balderas	OIL CONSERVATION DIVISION
Printed name: F. V. Balderas	Entered into RBDMS
Title: WSR	Re-test
E-mail Address: FIUB@Chevron.com	
Date: 5/7/19	Phone: 432-290-2876
Witness: NA	



AND ASSOCIATES, LTD.

GEOLOGICAL CONSULTING / SURFACE LOGGING SERVICES

CORPUS CHRISTI TEXAS P.O. BOX 61150 MIDLAND TEXAS 79711 ROCK SPRINGS WYOMING

OFFICE (432) 563-0084 --- 24 HOURS (800) 578-1006

Chevron



Company: CHEVRON USA, INC.

API: 30-025-45127

Well: SD MAELSTROM 15 SWD 1

Field: SWD; SILURIAN

Drilling Contractor: NABORS

Location: 2050' FSL & 1793' FEL, SEC 15, T-26-S, R-32-E

Rig #: M1207

County: LEA State: NEW MEXICO

Interval: 800' To: 18941' Drill Floor: 3200.4' Ground Level: 3168'

Date: 10/18/2018 To: 3/30/2019 Job #: 10326 Unit: 34

Logger(s): J BROWN I UFODIAMA M YOUSIF A WHITTENBERGER E AGBAI Phone #: 832-413-6801

CUTTINGS

ANHYDRITE	COAL	GRANITE WASH	SILTSTONE	TAN CHALK
BENTONITE	CONGLOMERATE	LIMESTONE	SAND	MOTTLED CHALK
CALCITE	DOLOMITE	SALT	CEMENT	ASH
CHERT	GRANITE	SHALE	CHALK	DARK GREY CHALK

POROSITY - % FLUORESCENCE - TYPE CUT

NONE	TRACE	FAIR	GOOD
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SYMBOLS

FOSSIL

ALGAE
AMPH
BELM
BIOCLST
BRACH
BRYOZOA
CEPHAL
CORAL
CRIN
ECHIN
FISH
FORAM
FOSSIL

OOLITE
OSTRA
PELEC
PELLET
PISOLITE
PLANT
STROM

MINERAL

ANHY
ARG
ARGGRN
BENT
BIT
BRECFRAG

CARB
CHTDK
CHTLT
DOL
FELDSPAR
FERR
FERRPEL
GLAU
GYP
HVYMIN
KAOL
MARL
MINXL
NODULE

PYR
SALT
SANDY
SIL
SILT
SULPHUR
TUFF

TEXTURE

BOUNDST
CHALKY
CRXLN
EARTHY
FINEXLN
GRAINST

MICROXLN
MUDST
PACKST
WACKEST

STRINGER

ANHYSTRG
ARGSTRG
BENTSTRG
COALSTRG
DOLSTRG
GYPSTRG
LSTRG
MRST
SLTSTRG

DRILLING INFORMATION

GAS ANALYSIS

PROPERTIES MUD

LITHOLOGICAL
DESCRIPTIONS AND
OTHER REMARKS

ROP (FT/HR)
WOB (KLBS)
GAMMA RAY (GAPI)

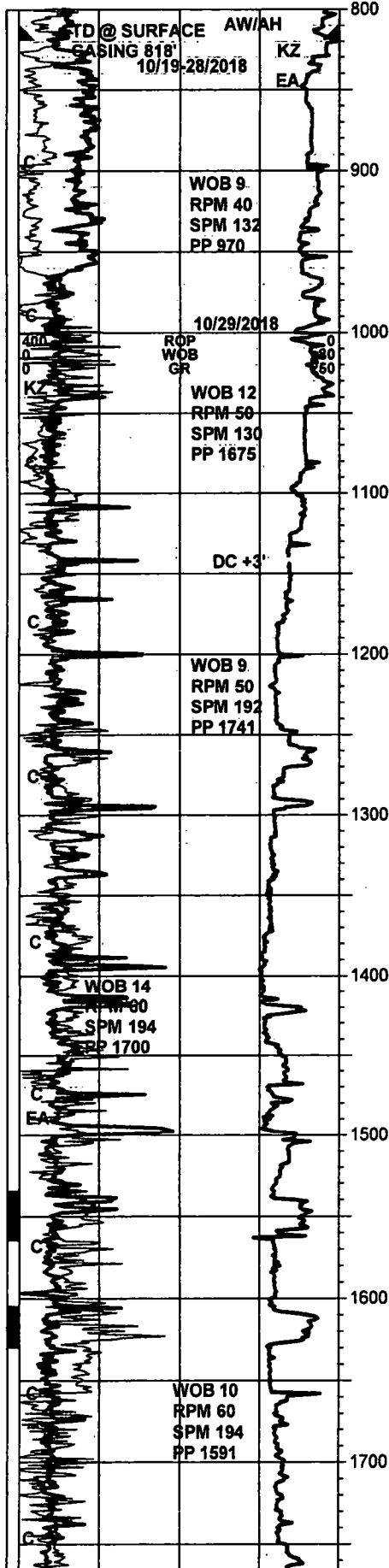
DEPTH

POROSITY

CUTTINGS
LITHOLOGY
[%]

%FLUOR TYPE CUT

TOTAL GAS
C1 - METHANE
C2 - ETHANE
C3 - PROPANE
C4 - BUTANE
Carbon Dioxide (%)
Hydrogen Sulfide (ppm)



		LAG-CALC @ 820'
	DISPLACED TO BRINE	2522 STKS 132 SPM 19.1 MINS
3u		
		GALIBRATION
		1% C1=50u/49u
		10% C1=500u/501u
		C1=50u/48u
		C2=100u/101u
		C3=150u/149u
		IC4=200u/201u
		NC4=200u/202u
2u		
		GAS
		CO2
		H2S
3u		
9u		
1u		
4u		
		LAG-CALC @ 1420'
		4233 STKS 194 SPM 21.82 MINS
7u		
4u		
2u		
4u		

CALLED TO LOCATION ON
10/18/2018. ARRIVED @ 1300 HRS
AND COMMENCED RIG UP
PROCEDURES. BEGAN LOGGING
OPERATIONS AT THE BOTTOM OF
SURFACE SHOE DEPTH OF 818'
ON 10/23/2018 @ 1200 HRS.
FOLLOWING INITIAL CONDITIONS:
BIT #1 24" ULTERRA U616S
SERIAL #42793 INITIAL BHA @
503.02' BIT #2 18.125" TUH816S
SERIAL #A226644 BHA @ 818'
MD: 833' INC: 0.54° AZI: 300.49°
TVD: 832.96'
MD: 928' INC: 0.59° AZI: 291.44°
TVD: 927.96'
SANDSTONE: PRED OFF WH-
SCAT CLR CXLN PRED CRS GRN
SUBANG P SRD W CONS QTZ TT
POR FR SALT NO
FLUOR/CUT/RNG/STN SILTSTONE:
MODRBN SFT P SRD NO
FLUOR/CUT/RNG/STN
MD: 1023' INC: 0.62° AZI: 309.08°
TVD: 1022.95'

ANHYDRITE: MODORPK
MICROXLN FRM SIL
SALT: WH ANG FRI IMBD ANHY

SALT: WH-OFF WH SUBANG PRED
FRI IMBD ANHY FREE CAL
ANHYDRITE: WH-OFF WH
MICROXLN-FXLN PRED FRM
MD: 1118' INC: 0.65° AZI: 289.51°
TVD: 1117.95'

SALT: WH-OFF WH SUBANG-ANG
PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI
MD: 1212' INC: 0.62° AZI: 289.48°
TVD: 1211.94'

SALT: PRED OFF WH SUBANG-
ANG PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI
MD: 1307' INC: 0.62° AZI: 290.45°
TVD: 1306.94'

SALT: PRED WH-OFF WH SUBANG
-ANG-RND FRM-FRI IMBD ANHY
ANHYDRITE: PRED OFF WH
MODORPK MICROXLN-V/FXLN
PRED FRM
MD: 1402' INC: 0.49° AZI: 299.15°
TVD: 1401.93'

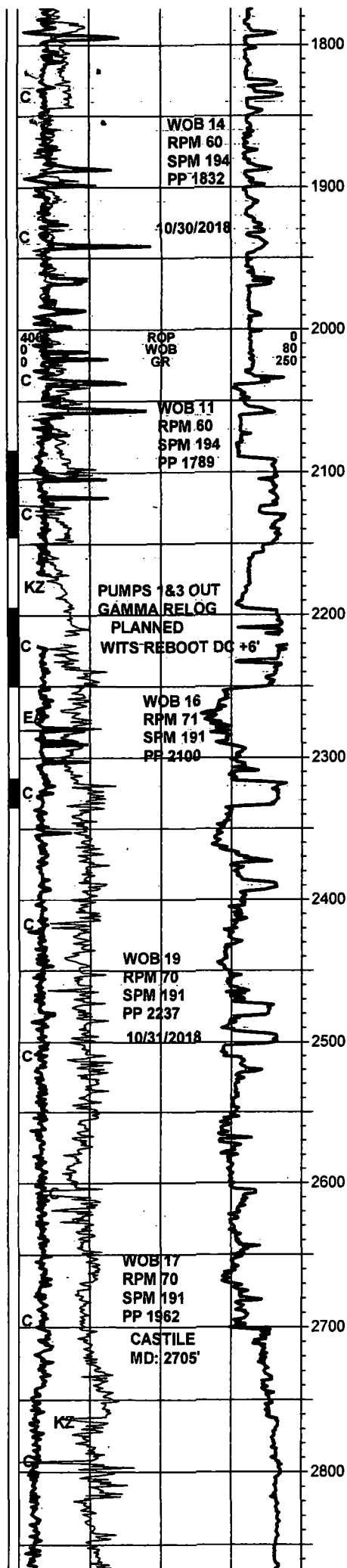
MD: 1497' INC: 0.51° AZI: 277.04°
TVD: 1496.93'
SALT: WH OFF-WH SUBANG-ANG-
RND FRM-FRI IMBD ANHY
ANHYDRITE: OFF WH-MODORPK
MICROXLN-V/FXLN PRED FRM

MD: 1592' INC: 0.54° AZI: 291.38°
TVD: 1491.93'
SALT: PRED OFF WH SUBANG-
ANG PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI

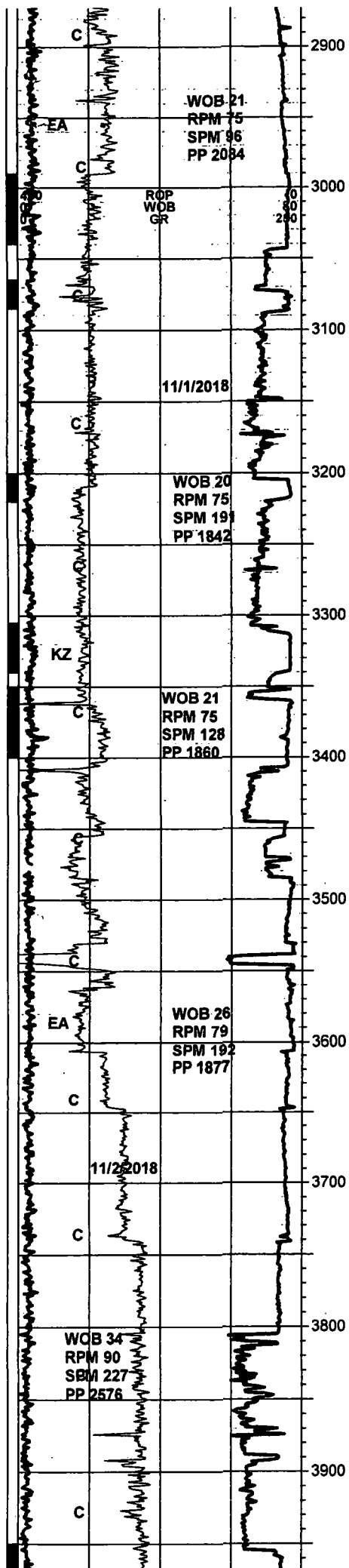
MD: 1686' INC: 0.55° AZI: 280.23°
TVD: 1685.92'
SALT: PRED OFF WH SUBANG-
ANG PRED FRI IMBD ANHY

DOLO-LIMESTONE: PRED MEDGY
FXLN FRM SIL FRMWRK SLI TR SS

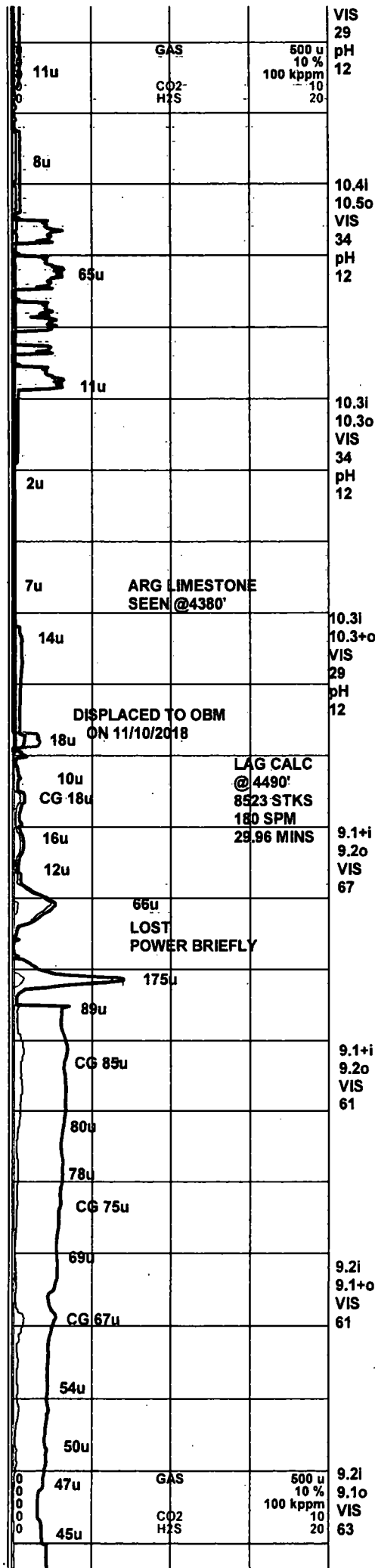
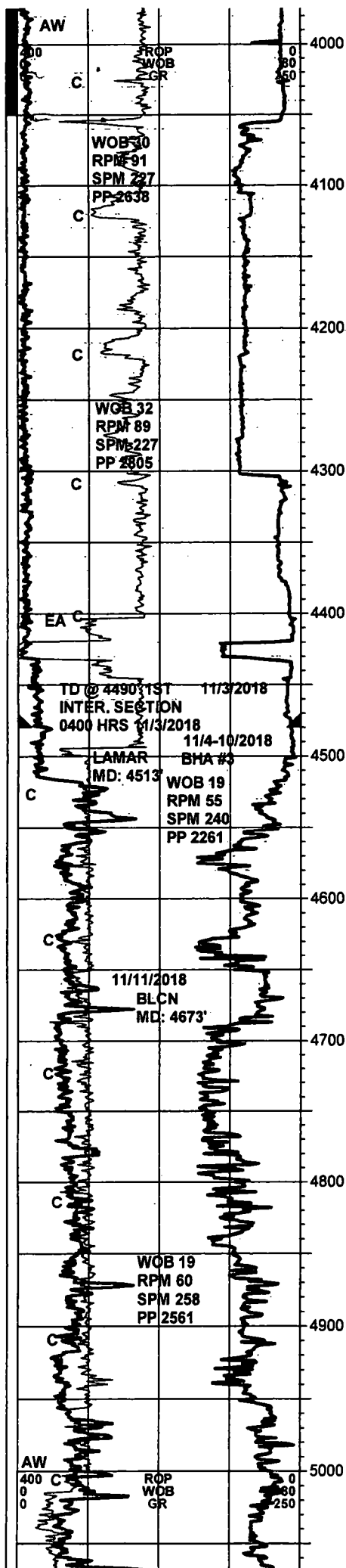
MD: 1781' INC: 0.47° AZI: 282.8°
TVD: 1780.92'
ANHYDRITE: WH SUBANG PRED



				SALT: OFFWH-CLR SUBANG-ANG PRED FRI IMBD ANHY
4u				MD: 1876' INC: 0.53° AZI: 293.08° TVD: 1875.91' SALT: CLR SUBANG-ANG PRED FRI NO FLUOR/CUT/RNG/STN ANHYDRITE: PRED OFF WH-OPQ PRED MICROXLN-FXLN FRM-FRI
				SALT: PRED CLR SUBANG PRED FRI ANHYDRITE: PRED WH-OPQ PRED FXLN FRM-FRI
4u				MD: 1971' INC: 0.59° AZI: 283.66° TVD: 1970.91' SALT: PRED CLR SUBANG FRI FREE CAL
				MD: 2066' INC: 0.67° AZI: 271.61° TVD: 2065.9' SALT: PRED CLR-OFF WH SUBANG PRED FRI FREE CAL NO FLUOR/CUT/RNG/STN
8u				SALT: PRED CLR - OFF WHT SUBANG PRED FRI FREE CAL
				SALT: PRED CLR-OFF WH SUBANG PRED FRI FREE CAL FREE ANHY
9u				MD: 2160' INC: 0.76° AZI: 266.15° TVD: 2159.9'
				ANHYDRITE: OFF WH-MODORPK MICROXLN-V/FXLN PRED FRM SILTSTONE: PRED MODRDOR FRI V/W SRTD CLMTRX CMT NO FLUOR/CUT/RNG/STN
3u				SALT: PRED WH-OFF WH SUBANG -ANG-RND FRM-FRI IMBD ANHY MD: 2255' INC: 0.59° AZI: 267.78° TVD: 2254.89'
				SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI IMBD ANHY ANHYDRITE: PRED OFF WH- MODORPK MICROXLN-V/FXLN PRED FRM
5u				MD: 2350' INC: 0.61° AZI: 278.71° TVD: 2349.88'
				SALT: PRED CLR -WH SUBANG- ANG-RND FRM-FRI
5u				SALT: PRED CLR-WH SUBANG- ANG FRM-FRI
				MD: 2540' INC: 0.85° AZI: 274.78° TVD: 2539.87' SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL ANHYDRITE: PRED WH-OPQ PRED FXLN FRM-FRI
5u				SALT: PRED CLR - WHT SUBANG- ANG-RND FRM-FRI FREE CAL IMBD ANHYDRITE: PRED WH-OPQ PRED FXLN FRM-FRI
				MD: 2634' INC: 1.15° AZI: 267.84° TVD: 2633.85' SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI SLI TR ANHY
6u				SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL ANHYDRITE: MLKY-SCAT WH FXLN-CRSXLN HD
				MD: 2729' INC: 1.23° AZI: 271.24° TVD: 2728.83'
6u				ANHYDRITE: PRED WH MICROXLN -V/FXLN PRED FRM-OCC FRI SIL FREE PYR
				SALT: WH OFF-WH SUBANG- SUBRND FRI-FRM SILTSTONE: MODRDOR FRI W SRTD CLMTRX CMT NO FLUOR/CUT/RNG/STN
17u				MD: 2824' INC: 1.25° AZI: 273.55° TVD: 2823.81'



CG 9u	LAG CALC @ 2900' 8674 STKS 191 SPM 45.42 MINS	10.2+ 10.3+ VIS 29 pH 11	V/FXLN PRED FRM-OCC FRI SIL FREE PYR SALT: PRED WH-OFF WH SUBANG -SUBRND FRI-FRM TR SILTSTONE MD: 2919' INC: 1.35° AZI: 269.54° TVD: 2918.79'
CG 9u	GAS CO2 H2S	500 u 10 % 100 kppm 10 20	MD: 3014' INC: 1.29° AZI: 273.77° TVD: 3013.76° ANHYDRITE: PRED WH MICROXLN -V/FXLN PRED FRM-OCC FRI SIL SALT: WH OFF- CLR SUBANG- SUBRND FRI-FRM SILTSTONE: MODRDOR FRI MOD SRTD IMBD LS NO FLUOR/CUT/RNG/STN
CG 6u		10.2+ 10.3+ VIS 29 pH 11	MD: 3109' INC: 0.88° AZI: 271.44° TVD: 3108.74° SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL IMBD ANHYDRITE LIMESTONE: MEDGY-LTGY FXLN FRM SIL FRMWRK NO FLUOR/CUT/RNG/STN
CG 7u			MD: 3203' INC: 0.76° AZI: 272.11° TVD: 3202.73° SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL LIMESTONE: MEDGY-LTGY FXLN FRM SIL FRMWRK NO FLUOR/CUT/RNG/STN ANHYDRITE: PRED OFF WH MICROXLN-V/FXLN PRED FRM- OCC FRI IMBD LS
CG 8u		10.3i 10.4o VIS 29 pH 11	MD: 3298' INC: 0.5° AZI: 318.98° TVD: 3297.73° LIMESTONE: PRED TN-V/LTGY MICROXLN-V/FXLN FRI NO FLOUR/CUT/RNG/STN ANHYDRITE: OFF WH V/FXLN FRI OCC FRACD POR SALT: WH SUBANG-SUBRND FRM- FRI IMBD CLAY
13u	LAG CALC @ 3400' 10153 STKS 191 SPM 53.16 MINS	10.1i 10.1o VIS 29 pH 11	MD: 3393' INC: 0.37° AZI: 321.61° TVD: 3392.7° LIMESTONE: TN-V/LTGY MICROXLN-V/FXLN FRI ANHYDRITE: OFF WH V/FXLN FRI SALT: PRED WH SUBANG- SUBRND FRM-FRI IMBD CLAY MD: 3488' INC: 0.58° AZI: 355.2° TVD: 3487.72°
10u		10.2i 10.3+ VIS 29 pH 12	ANHYDRITE: V/LTGY-TN MICROXLN-V/FXLN FRM LIMESTONE: MEDLTGY V/FXLN- FXLN FRI-FRM SCAT VUGY POR
5u			MD: 3583' INC: 0.51° AZI: 356.22° TVD: 3582.72° LIMESTONE: MEDGY-LTGY FXLN FRM SIL NO FLUOR/CUT/RNG/STN ANHYDRITE: PRED OFF WH- LTPNK MICROXLN-V/FXLN PRED FRM-OCC FRI SIL IMBD LS SILTSTONE: MODRDOR FRI W SRTD CLMTRX CMT MD: 3677' INC: 0.69° AZI: 357.34° TVD: 3676.71°
12u	CALIBRATION GAS DETECTOR	10.3i 10.3o VIS 29 pH 12	LIMESTONE: LTGY FXLN FRM SIL FRMWRK ANHYDRITE: PRED OFF WH-OCC DKPNK MICROXLN PRED FRM FRI SIL IMBD LS SILTSTONE: MODRDOR FRI MOD SRTD CLMTRX CMT MD: 3772' INC: 0.66° AZI: 11.36° TVD: 3771.71°
9u		10.3+ 10.3+ VIS 29 pH 12	SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL/IMBD ANHY/IMBD LS MD: 3867' INC: 0.89° AZI: 44.8° TVD: 3866.7°
10u			SALT: PRED CLR-WHT SUBANG- ANG-RND FRM-FRI FREE CAL ANHYDRITE: PRED OFF WH MICROXLN-V/FXLN PRED FRM- OCC FRI SIL TR IMBD LS MD: 3962' INC: 1.21° AZI: 72.83° TVD: 3961.68°
11u	LAG CALC @ 3900' 11632 STKS 227 SPM 51.25 MINS	10.3i 10.3+ VIS 29 pH 12	



LIMESTONE: MEDGY-LTGY VFXLN
FRM-OCC FRI SIL FRMWRK CALC
MD: 4056' INC: 1.41° AZI: 69.45°
TVD: 4055.66'

SALT: PRED CLR SUBANG-ANG-
RND FRM-BRT IMBD ANHY
LIMESTONE: MEDGY-LTGY PRED
FXLN FRM MICSUC SLTY CALC NO
FLUOR/CUT/RNG/STN
MD: 4151' INC: 1.76° AZI: 89.78°
TVD: 4150.62'

LIMESTONE: MEDGY-LTGY FXLN
FRM SIL FRMWRK
SANDSTONE: MODRDBN V/FN
GRN SUBRND P SRTD LSEY CONS
IMBD LS
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL TR
SALT: PRED CLR SUBANG-ANG-
RND FRM-BRT IMBD ANHYDRITE
MD: 4246' INC: 2.51° AZI: 99.06°
TVD: 4245.56'

MD: 4341' INC: 2.87° AZI: 104.95°
TVD: 4340.45°
LIMESTONE: MEDGY-LTGY FXLN
FRM SIL FRMWRK IMBD NO
FLUOR/CUT/RNG/STN
SANDSTONE: MODRDBN V/FN
GRN SUBRND P SRTD LSEY CONS
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL SLI TR IMBD LS

MD: 4426' INC: 2.78° AZI: 103.8°
TVD: 4425.35°
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL IMBD LS
LIMESTONE: MED-LTGY FXLN
FRM SIL FRMWRK
SANDSTONE: MODRDBN V/FN
GRN SUBRND MOD SRTD LSEY
CONS

MD: 4564' INC: 2.44° AZI: 108.83°
TVD: 4563.21°
SANDSTONE: PRED V/LTGY CRS
GRN SUBANG MOD SRTD MOD
CONS
LIMESTONE: OFF WH-CHLKY SFT
FREE CAL NO
FLOUR/CUT/RNG/STN

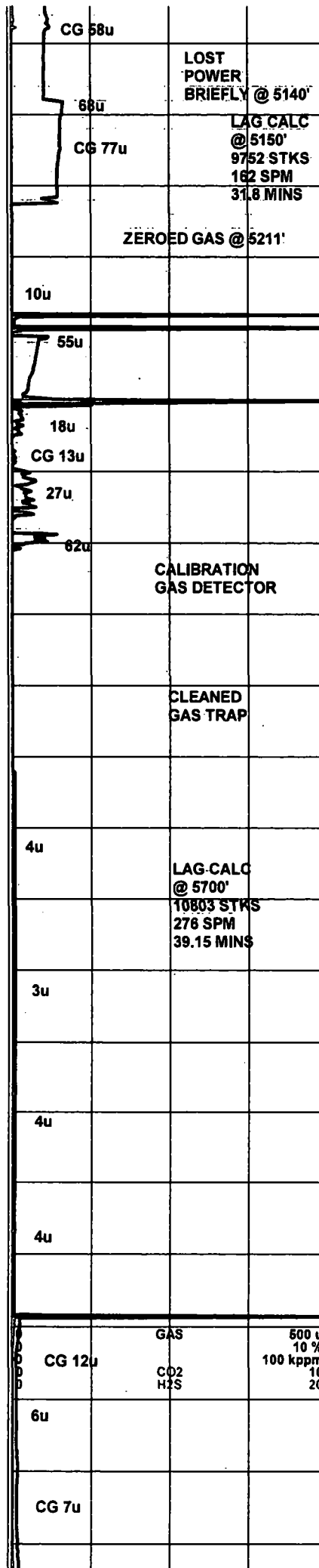
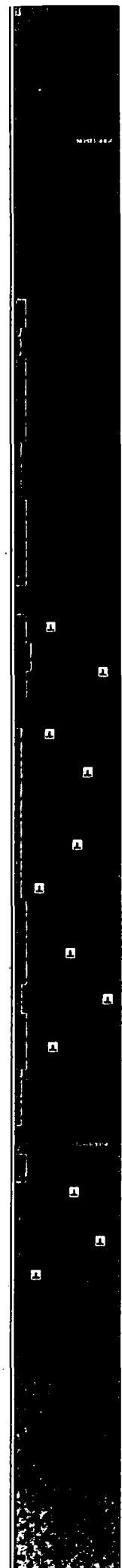
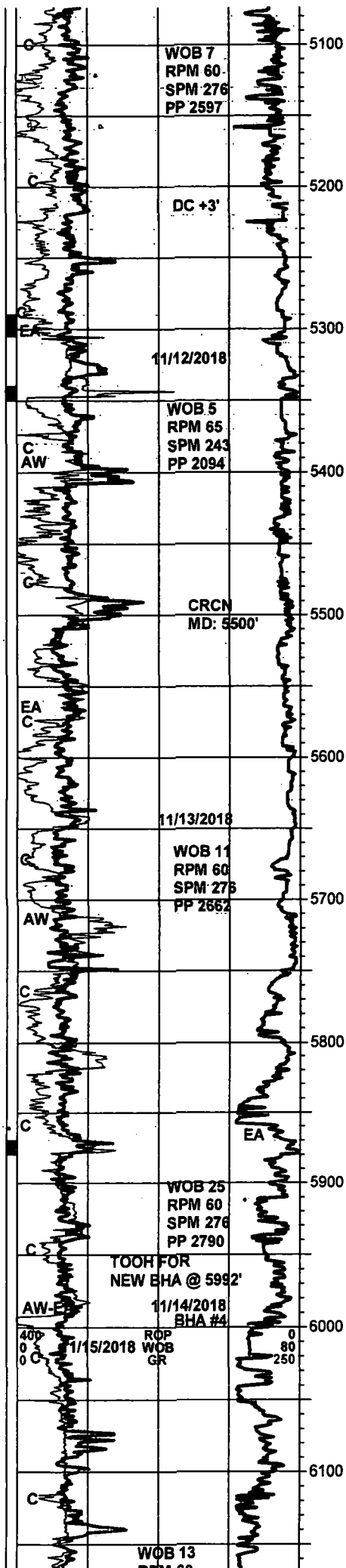
MD: 4658' INC: 2.64° AZI: 107.16°
TVD: 4657.11°
SANDSTONE: PRED V/LTGY CRS
GRN SUBANG MOD SRTD MOD
CONS FREE CAL/IMBD LS

MD: 4753' INC: 2.63° AZI: 106.32°
TVD: 4752.01°
SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI V/FGRN SUBRND
SUBANG OCC LSEY-MOD CONS
CALC IMBD LS

MD: 4847' INC: 2.8° AZI: 106.61°
TVD: 4845.91°
SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI V/FGRN SUBANG OCC
LSEY-MOD CONS CMT IMBD LS
NO FLUOR/CUT/RNG/STN

MD: 4942' INC: 2.76° AZI: 104.55°
TVD: 4940.8°
LIMESTONE: PRED TN/OFF
WH/MOTT BLKY HD FXLN ARG
SANDSTONE: MEDLTGY BRI FGRN
SUBRND W/SRTD MOD CONS
CALC

SANDSTONE: PRED MEDLTGY-
DRKGY FRI V/FGRN RND-SUBRND
W/SRTD MOD CONS CALC CMT
MD: 5037' INC: 2.95° AZI: 104.45°
TVD: 5035.68°



OCC DRKGY FRI FGRN PRED
W/SRTD CALC CMT F LAM NO
FLUOR/CUT/RNG/STN
MD: 5132' INC: 3.15° AZI: 101.97°
TVD: 5130.54'

SANDSTONE: PRED MEDLTGY-
OCC DRKGY V/FGRN W/SRTD
RND LSEY CONS CALC CMT F
LAM NO FLUOR/CUT/RNG/STN
MD: 5226' INC: 3.16° AZI: 99.9° TVD:
5224.4'

SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI FGRN SUBRND-
SUBANG OCC LSEY-MOD CONS
CALC CMT IMBD LS
MD: 5321' INC: 3.14° AZI: 103.31°
TVD: 5319.26'

SANDSTONE: PRED V/LTGY
CRSGRN SUBANG MOD SRTD
MOD CONS IMBD LS/FREE CAL NO
FLUOR/CUT/RNG/STN

MD: 5416' INC: 3.14° AZI: 100.1°
TVD: 5414.11'

SANDSTONE: PRED MEDLTGY-
DRKGY V/FGRN-FGRN W/RND
W/SRTD LSEY CONS DOLC-CALC
CMT OCC IMBD LS NO
FLUOR/CUT/RNG/STN

MD: 5511' INC: 3.23° AZI: 100.7°
TVD: 5408.97'

SANDSTONE: PRED MEDLTGY-
DRKGY V/FGRN-FGRN W/RND
W/SRTD LSEY CONS DOLC-CALC
CMT NO FLUOR/CUT/RNG/STN

MD: 5605' INC: 2.92° AZI: 100.82°
TVD: 5602.83'

SANDSTONE: PRED MEDLTGY-
DKGY FRI V/FGRN RND-SUBRND
W/SRTD MOD CONS CALC CMT
IMBD LS NO FLUOR/CUT/RNG/STN

SANDSTONE: PRED DRKGY-
LTGY/OCC MEDGY FRI V/FGRN
SUBANG OCC LSEY-MOD CONS
CALC CMT IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 5700' INC: 2.95° AZI: 102.05°
TVD: 5697.71'

MD: 5795' INC: 3.04° AZI: 99.47°
TVD: 5792.58'

SANDSTONE: PRED V/LTGY-OCC
MODRDR FGRN W/RND W/SRTD
LSEY CONS CALC CMT IMBD PNK
FLD NO FLUOR/CUT/RNG/STN

MD: 5890' INC: 3.14° AZI: 98.82°
TVD: 5887.44'

SANDSTONE: PRED V/LTGY
SUBANG MOD SRTD MOD CONS
CALC IMBD LS NO FLUOR/CUT/
RNG/STN

MD: 5952' INC: 3.23° AZI: 101.79°
TVD: 5949.34'

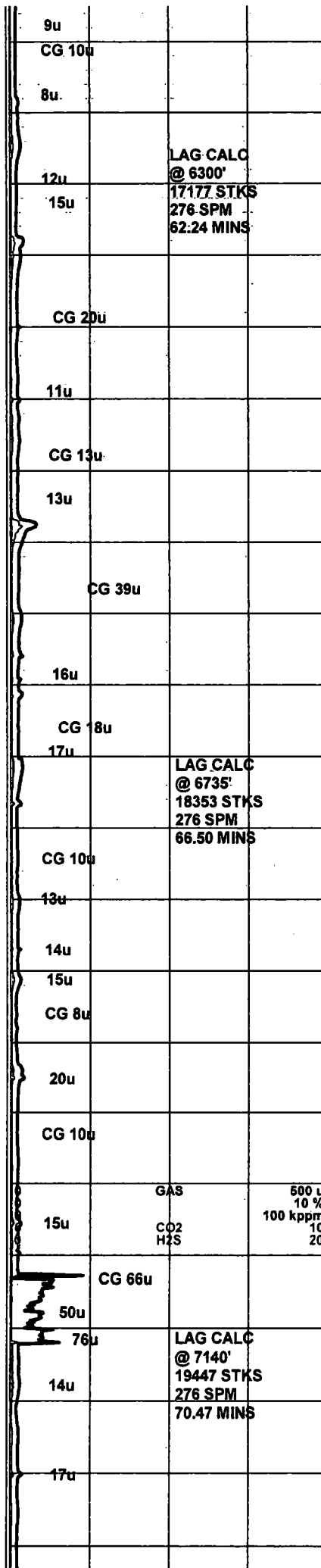
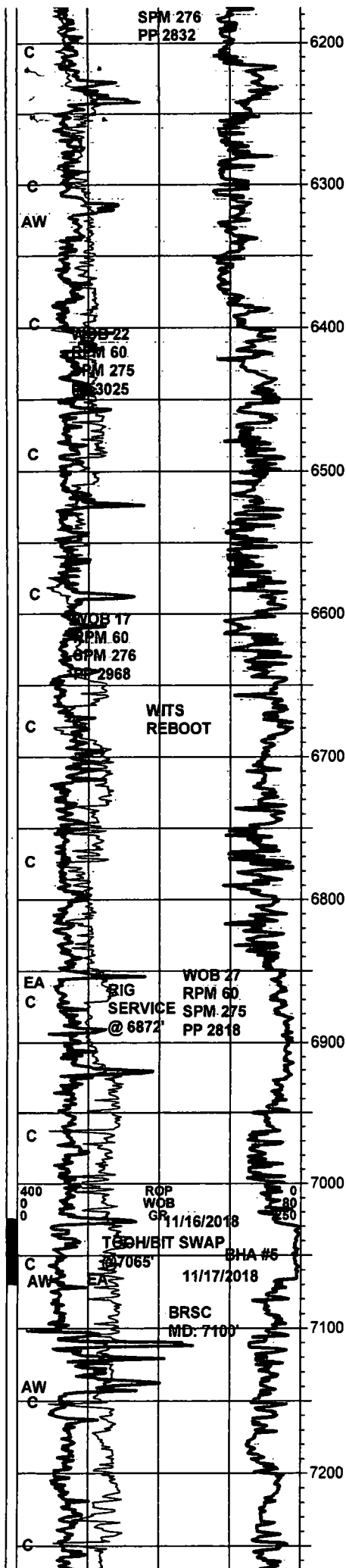
SANDSTONE: PRED V/LTGY
SUBANG MOD SRTD MOD CONS
CALC NO FLOUR/CUT/RNG/STN

MD: 6047' INC: 2.95° AZI: 102.78°
TVD: 6044.21'

SANDSTONE: PRED MEDLTGY-
DRKGY FRI FGRN PRED W/SRTD
CMT F LAM NO
FLUOR/CUT/RNG/STN

MD: 6141' INC: 2.69° AZI: 105.41°
TVD: 6138.09'

SANDSTONE: PRED DRKGY-LTGY
FRI V/FGRN SUBANG OCC HD



FLUOR/CUT/RNG/STN

9.2i
9.1o
VIS
59

MD: 6236' INC: 2.38° AZI: 106.88°
TVD: 6233'
PRED MEDLTGY-DRKGY FRI
V/FGRN RND-SUBRND W/SRTD
MOD CONS CMT

SANDSTONE: DRKGY-LTGY HD
V/FGRN SUBANG MOD CONS
CALC CMT NO
FLUOR/CUT/RNG/STN
MD: 6331' INC: 2.3° AZI: 108.83°
TVD: 6327.92'

9.2i
9.1o
VIS
59

SANDSTONE: DRKGY-LTGY FRI
PRED V/F-FGRN RND W/SRTD
MOD CONS CALC CMT NO
FLUOR/CUT/RNG/STN
MD: 6426' INC: 2.17° AZI: 115.21°
TVD: 6422.85'

SANDSTONE: DRKGY-LTGY FRI
PRED V/FGRN-FGRN SUBANG
W/SRTD MOD CONS CALC CMT
NO FLUOR/CUT/RNG/STN
MD: 6521' INC: 1.71° AZI: 126.71°
TVD: 6517.79'

SANDSTONE: MEDDRKGY-LTGY
HD FGRN SUBANG-RND W/SRTD
LSEY CONS CALC/DOLO CMT
IMBD LS NO FLUOR/CUT/RNG/STN
MD: 6615' INC: 1.17° AZI: 134.78°
TVD: 6611.76'

9.2Hi
9.2o
VIS
59

SANDSTONE: DRKGY-OCC LTGY
BRI V/FGRN SUBANG-RND
W/SRTD MOD CONS PRED DOLO
CMT NO FLUOR/CUT/RNG/STN
MD: 6710' INC: 1.23° AZI: 132.66°
TVD: 6708.74'

SANDSTONE: PRED LTGY BRI-FRI
V/FGRN RND W/SRTD LSEY CONS
CALC CMT NO
FLUOR/CUT/RNG/STN

9.2i
9.2Ho
VIS
59

MD: 6804' INC: 0.84° AZI: 129.7°
TVD: 6800.73'
SANDSTONE: PRED DRKGY-OCC
LTGY FRI-BRI V/FGRN RND-
SUBANG W/SRTD MOD CONS
PRED DOLO CMT NO
FLUOR/CUT/RNG/STN

MD: 6899' INC: 0.65° AZI: 127.79°
TVD: 6895.72'
SANDSTONE: DRKGY-LTGY HD
V/FGRN SUBANG MOD CONS CMT
NO FLUOR/CUT/RNG/STN IMBD LS

9.2i
9.3o
VIS
59

MD: 6993' INC: 0.65° AZI: 130.02°
TVD: 6989.71'
SANDSTONE: PRED MEDLTGY-
DRKGY FRI FGRN PRED W/SRTD
CMT DOLOMITIC F LAM NO
FLUOR/CUT/RNG/STN

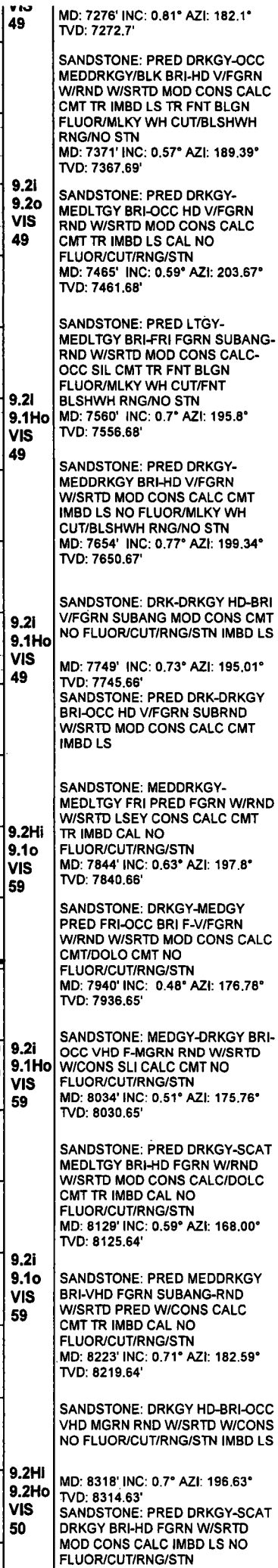
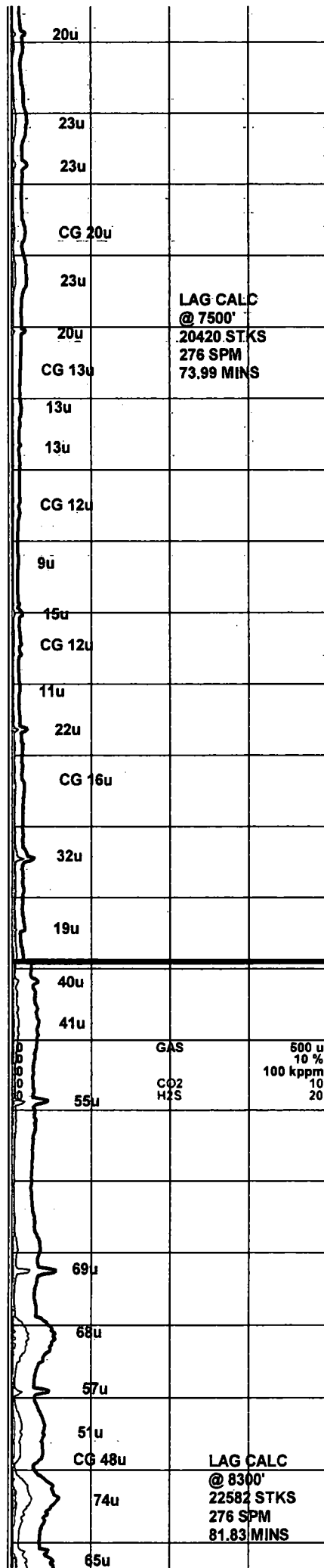
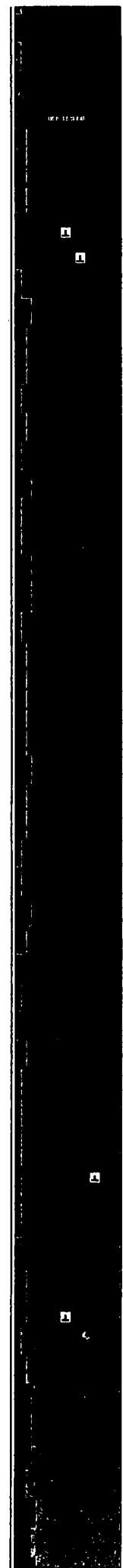
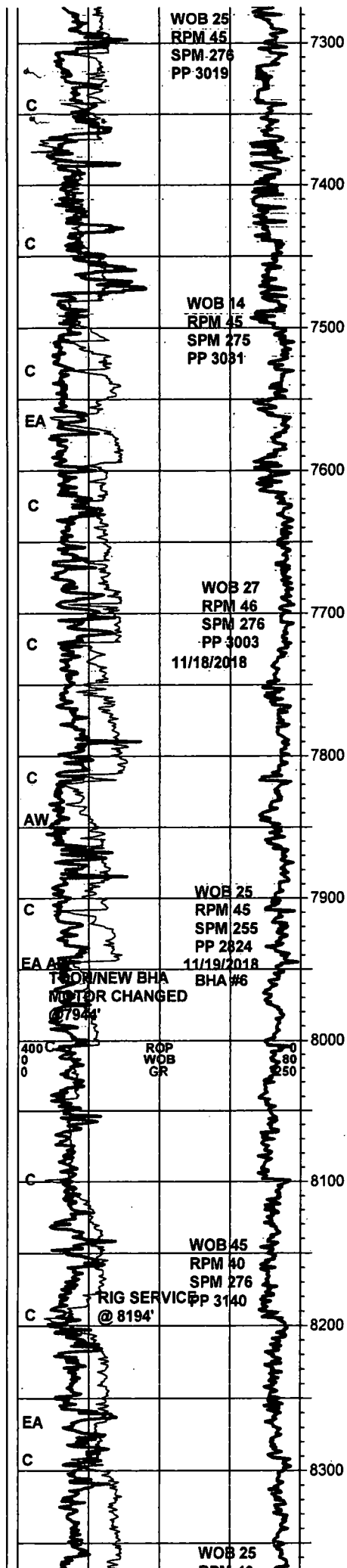
MD: 7087' INC: 0.57° AZI: 158.05°
TVD: 7083.71'
SANDSTONE: MEDLTGY-DRKGY
FRI FGRN PRED W/SRTD CMT
DOLOMITIC F NO
FLUOR /CUT/RNG/STN

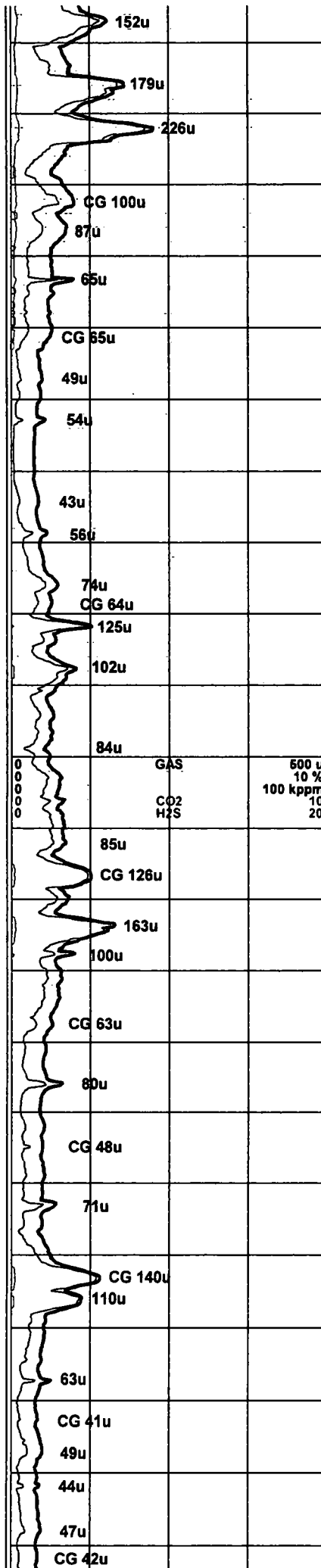
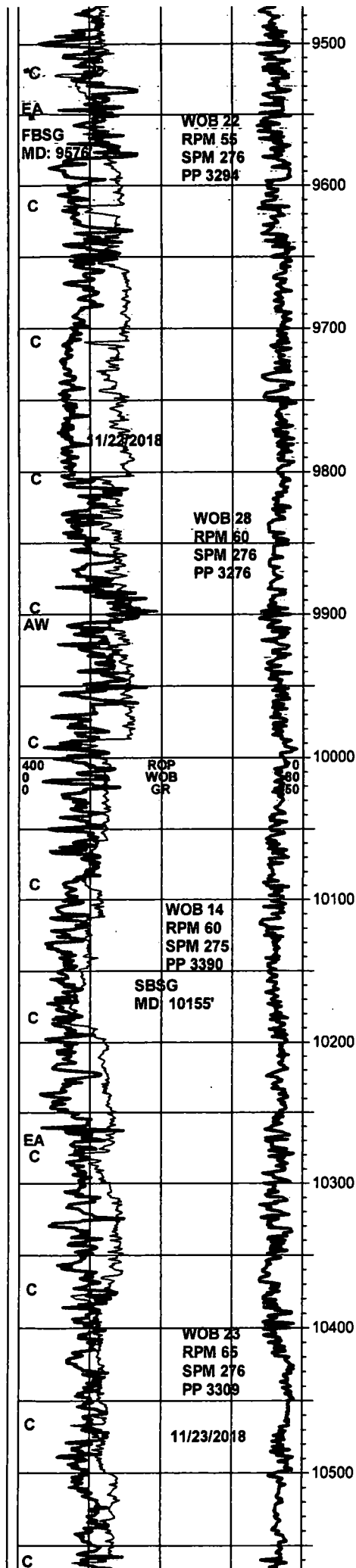
9.2+i
9.2+o
VIS
49

SANDSTONE: MEDGY-OCC
DRKGY HD FGRN PRED RND-
SUBANG W/SRTD MOD CONS
CALC CMT IMBD LS TR FNT BLGN
FLUOR/MLKY WH CUT/BLSHWH
RNG/NO STN
MD: 7182' INC: 0.62° AZI: 172.1°
TVD: 7178.7'

SANDSTONE: MEDGY-MEDLTGY
FRI PRED FGRN SUBANG W/SRTD
MOD CONS CALC CMT NO

9.2Hi
9.1Ho





9.1i
9.0o
VIS
58

SHALE: DRKGY-GYSHBLK PRED
BRI SUBBLKY-BLKY MED TXT
IMBD LS/CALC FLK
LIMESTONE: TN FXLN-V/FXLN FRI
SANDSTONE: PRED MEDGY-
DRKGY FRI MEDGRN-FGRN
SUBANG-RND W/SRTD MOD CONS
SLI TR CHERT
MD: 9548' INC: 0.51° AZI: 168.32°
TVD: 9544.58'

9.1i
9.1Ho
VIS
57

SANDSTONE: MED DRKGY-HD
SUBANG W/SRTD MOD CONS
CALC IMBD LS
NO FLUOR/CUT/RNG/STN
MD: 9643' INC: 0.65° AZI: 165.9°
TVD: 9639.58'

9.1i
9.1Ho
VIS
57

SANDSTONE: PRED LTGY-
MEDLTGY SFT W/SRTD MOD
CONS CALC IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 9737' INC: 0.46° AZI: 182.68°
TVD: 9733.57'

9.2i
9.2o
VIS
57

SANDSTONE: LTGY V/FGRN
SUBANG-RND W/SRTD MOD CONS
CALC NO FLUOR/CUT/RNG/STN
IMBD LS
MD: 9832' INC: 0.33° AZI: 159.9°
TVD: 9828.57'

9.2i
9.2o
VIS
57

SANDSTONE: DRKBLK-DRKGY HD
V/FGRN SUBANG MOD CONS SLI
CALC NO FLUOR/CUT/RNG/STN
IMBD LS
MD: 9927' INC: 0.22° AZI: 186.28°
TVD: 9923.57'

9.1Hi
9.0Ho
VIS
57

SANDSTONE: PRED DRKGY HD
SUBANG W/SRTD MOD CONS
CALC IMBD LS
NO FLUOR/CUT/RNG/STN
MD: 10021' INC: 0.23° AZI: 215.75°
TVD: 10017.57'

9.2i
9.1o
VIS
56

SANDSTONE: PRED DRKGY-
MEDDRKGY FRI V/FGRN RND
VWSRTD MOD CONS DOLC CMT
ARG IMBD LS
LIMESTONE: TN V/FXLN FRI DOLC
FRMWRK TR IMBD CAL
MD: 10116' INC: 0.66° AZI: 260.39°
TVD: 10112.57'

9.2Hi
9.2o
VIS
56

SANDSTONE: PRED DRKGY FRI
FGRN SUBANG-RND W/SRTD MOD
CONS DOLC CMT TR
PYR/CAL/IMBD LS ARG
LIMESTONE: PRED TN V/FXLN-
MICROXLN FRI DOLC FRMWRK
ARG
MD: 10211' INC: 0.82° AZI: 262.31°
TVD: 10207.56'

9.3i
9.2o
VIS
56

SANDSTONE: MED DRKGY-HD
SHALY SUBANG W/SRTD MOD
CONS CALC IMBD LS
NO FLUOR/CUT/RNG/STN
MD: 10306' INC: 1.32° AZI: 279.06°
TVD: 10302.54'

9.3i
9.2o
VIS
56

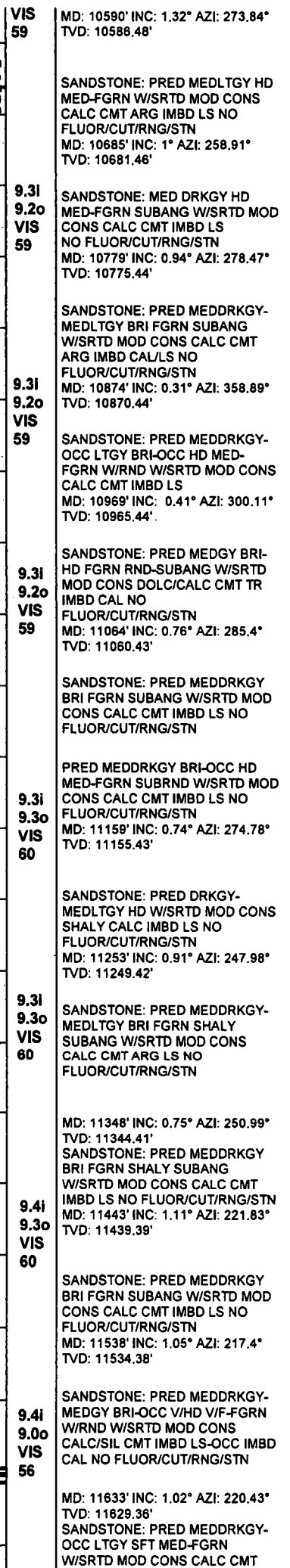
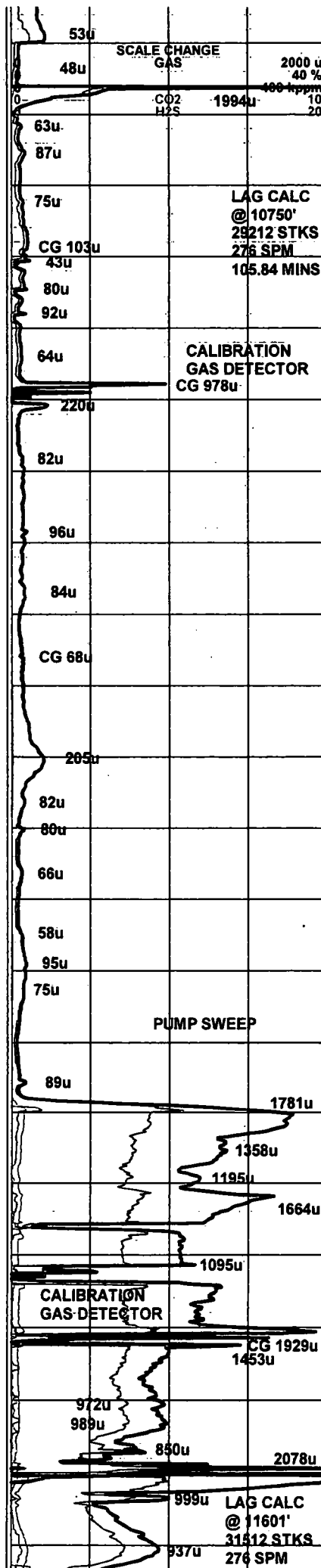
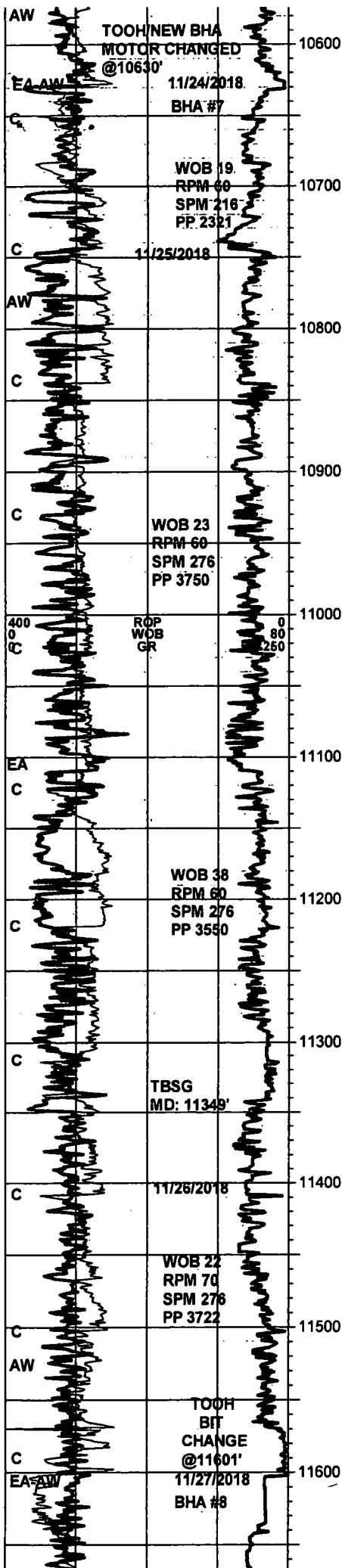
SANDSTONE: PRED DRKGY-
MEDLTGY HD W/SRTD MOD CONS
SHALY CALC IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 10401' INC: 1.14° AZI: 275.57°
TVD: 10397.52'

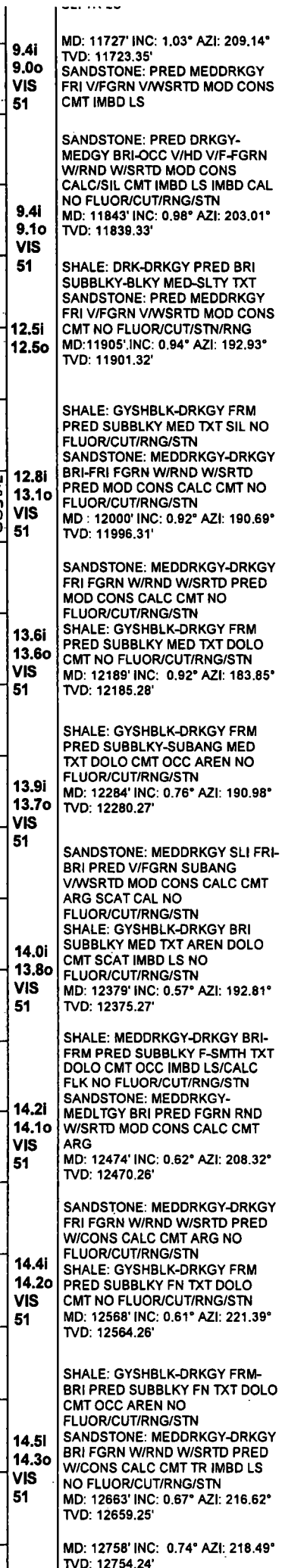
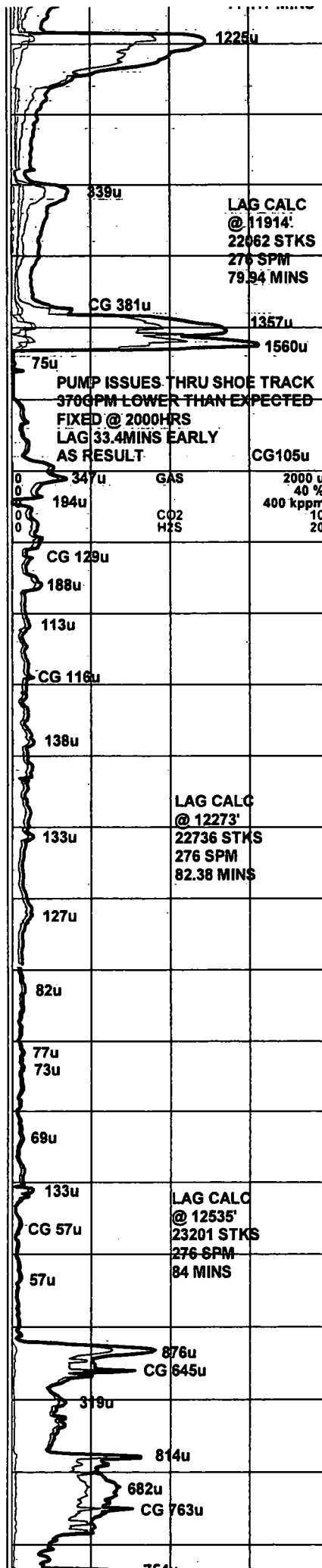
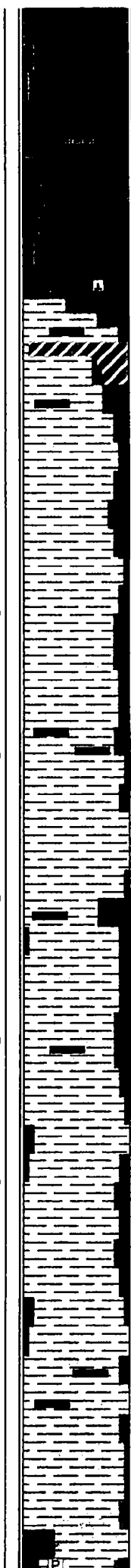
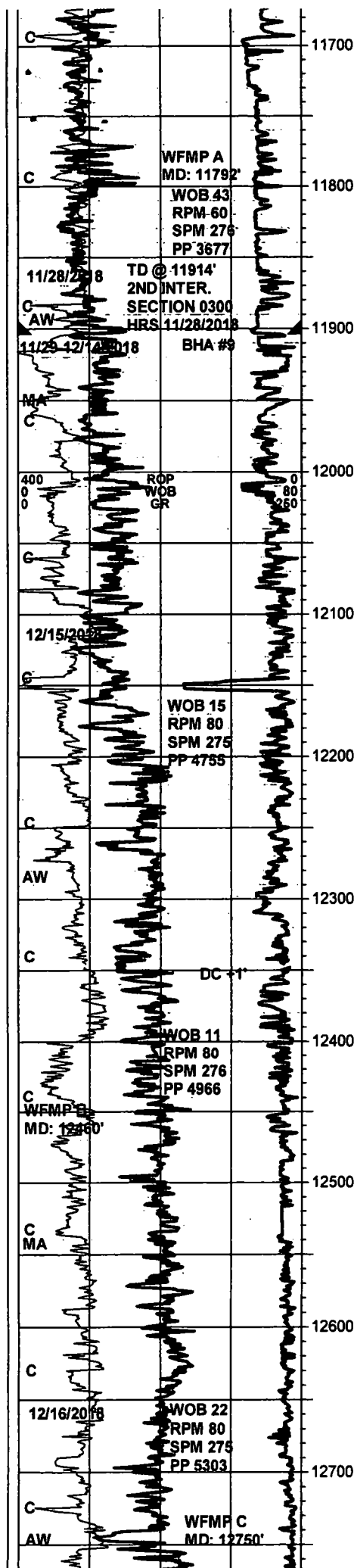
9.3i
9.2o
VIS
56

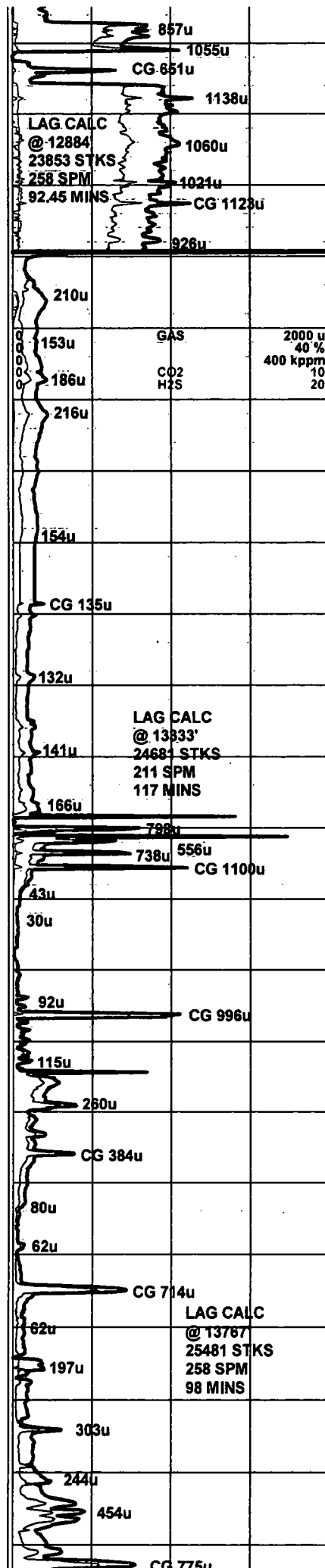
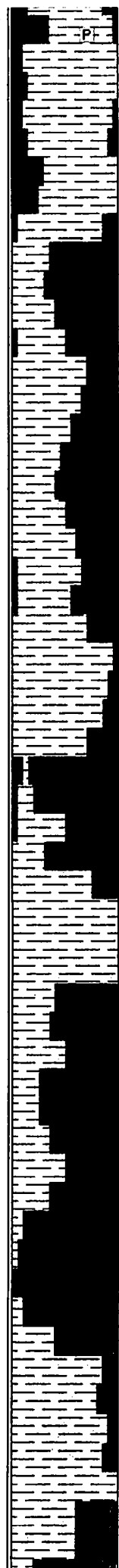
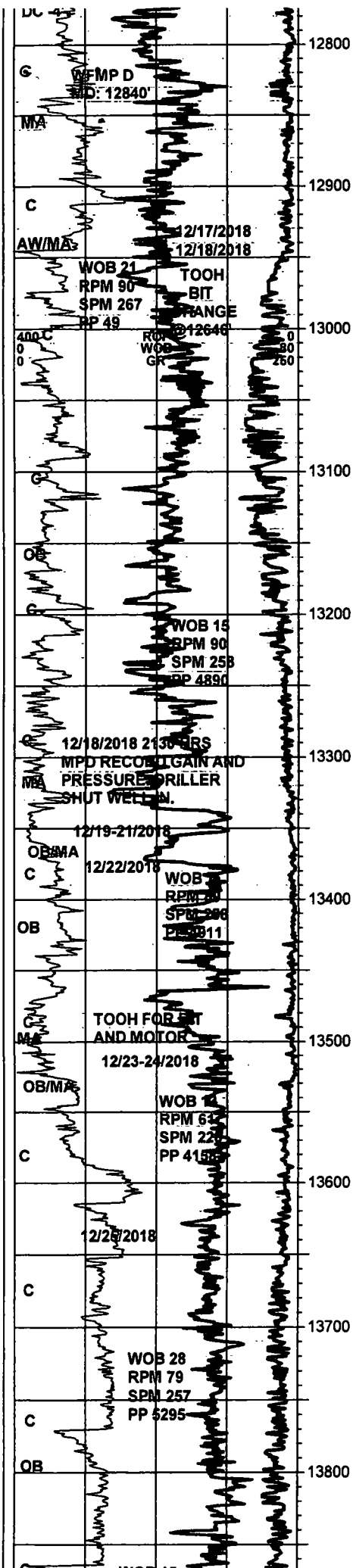
SANDSTONE: PRED DRKGY-
MEDLTGY BRI-HD SHALY GRN
W/SRTD MOD CONS CALC IMBD
LS NO FLUOR/CUT/RNG/STN
MD: 10495' INC: 1.17° AZI: 283°
TVD: 10491.5°

9.3i
9.2o
VIS
56

SANDSTONE: MEDGY V/FGRN
SUBANG W/SRTD MOD CONS
CALC NO FLUOR/CUT/RNG/STN







14.5i
14.40
VIS
51

14.5i
14.40
VIS
51

14.5i
14.40
VIS
51

14.5i
14.40
VIS
51

14.5i
14.40
VIS
51

14.6i
14.60
VIS
N/R

15.1i
15.10
VIS
N/R

15.1i
15.10
VIS
N/R

15.1i
15.10
VIS
N/R

15.1i
15.10
VIS
N/R

15.1i
15.10
VIS
N/R

15.2i
15.20
VIS
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SANDSTONE: MED LGT MED
FGRN PRED W/RND W/SRTD MOD
CONS CALC CMT ARG
LIMESTONE: PRED LTGY LT MED
TN TR BLK DKBRN IP V/F-FXLN FRI
DOLO FRMWRK ARG NO
FLUOR/CUT/RNG/STN
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
MD: 12853' INC: 0.72° AZI: 218.41°
TVD: 12849.24'

SANDSTONE: WH LTGY TRNSL
MOD SFT TO MED SBRNDD RND
WL SRT VVF TO VF GR MOD
CONSOL TO V PRLY IND IP FRIA
TO SLI CALC NO FLUOR/CUT
SILTSTONE: LT TO MEDGY MOD
SFT TO MED SBBLKY BLKY
NCARB TO SLI CARB GRDG T/SH
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
MD: 12947' INC: 0.83° AZI: 215.82°
TVD: 12943.23°
MD: 13042' INC: 0.88° AZI: 209.34°
TVD: 13038.22°

MD: 13137' INC: 0.97° AZI: 206.84°
TVD: 13133.21°
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
SILTSTONE: VLTGY LTGY MOD
SFT TO MED SBBLKY BLKY
NCARB TO SLI CARB NCALC SLI
AREN

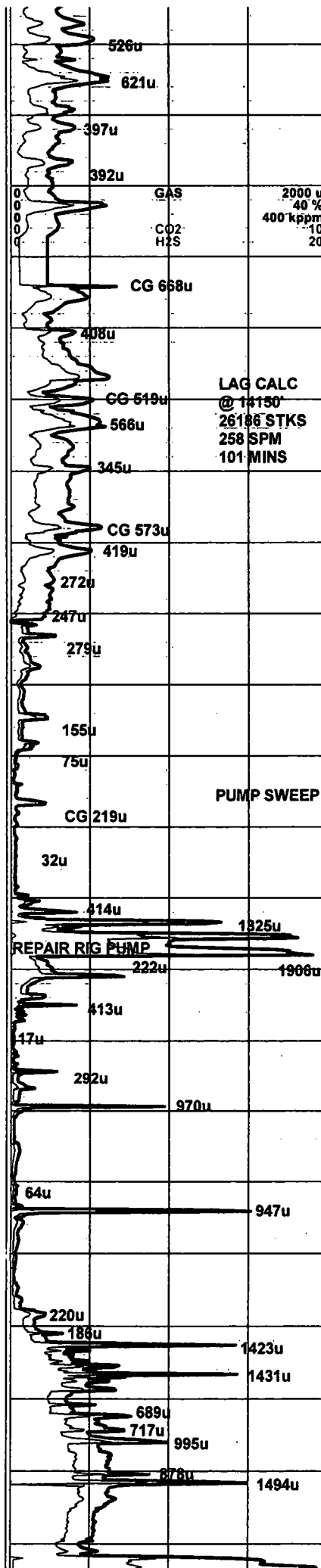
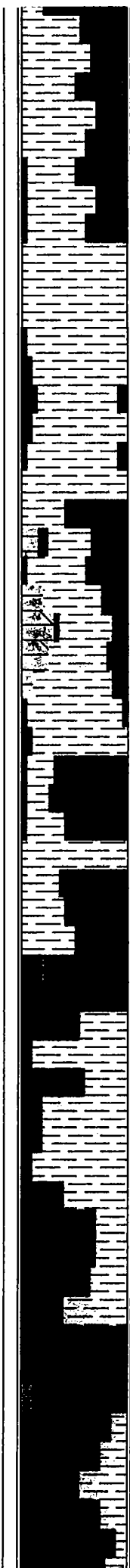
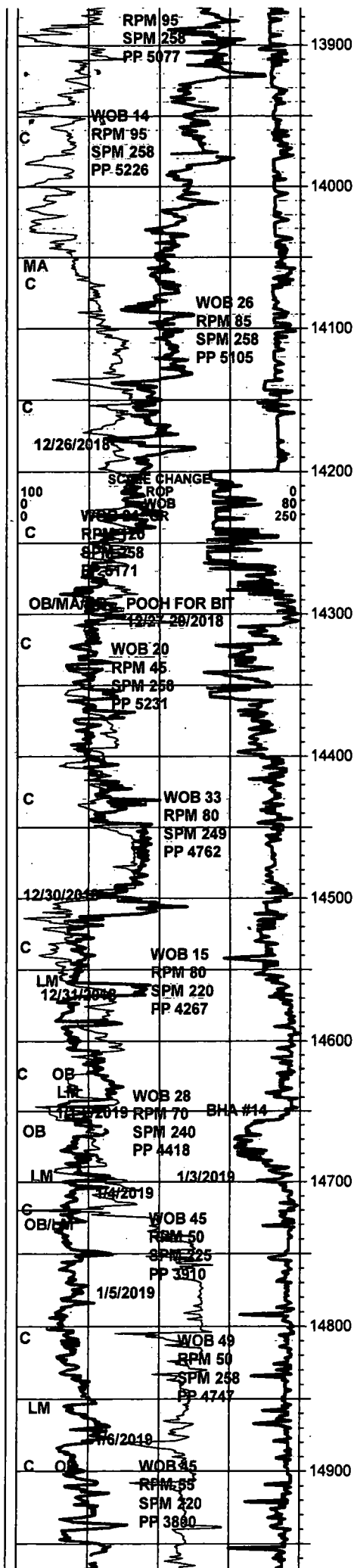
MD: 13232' INC: 0.89° AZI: 209.17°
TVD: 13228.19°
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
SANDSTONE: VLTGY WH TRNSL
FROS MED FRM SBRNDD RND
SBANG IP WL SRT VVF TO VF GR
MOD TO WL CONSOL CLN TO SLI
ARG NO VIS STNG OR CUT

MD: 13327' INC: 0.87° AZI: 207.36°
TVD: 13323.18°
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
SILTSTONE: LTGY VLTGY MOD
SFT TO MED SBBLKY BLKY
NCARB SLI GRDG AREN
SANDSTONE: LTGY WH TRNSL
MED FRM SBRNDD SBANG WL
SRT VVF TO VF GR GRDG
F/SLTST

MD: 13515' INC: 0.74° AZI: 211.65°
TVD: 13511.16°
SHALE: MEDDRKGY-DRKGY FRM-
BRI SUBBLKY F TXT OCC IMBD
LS/TR PYR SPEC FNT BLSHWH
FLUOR NO CUT/RNG/STN
SILTSTONE: LTGY VLTGY MOD
SFT TO MED SBBLKY BLKY
NCARB SLI GRDG AREN
SANDSTONE: LTGY WH TRNSL
MED FRM SBRNDD SBANG WL
SRT VVF TO VF GR GRDG
F/SLTST

MD: 13610' INC: 0.8° AZI: 214.8°
TVD: 13606.15°
SHALE: GYSHBLK FRM SUBBLKY -
SUBSPLT MED TXT IMBD LS
SILTSTONE: LTGY MEDGY MED
TO SFT SBBLKY BLKY NCARB SLI
CARB NCALC GRDG T/SS
MD: 13705' INC: 0.69° AZI: 212.89°
TVD: 13701.15°

MD: 13800' INC: 0.66° AZI: 208.2°
TVD: 13796.14°
SHALE: GYSHBLK FRM SUBBLKY -
SUBSPLT MED TXT IMBD LS
SILTSTONE: MEDGY MED TO FRM
SBBLKY BLKY SBPLTY NCARB



NO VIS STNG OR FLUOR

MD: 13895' INC: 0.62° AZI: 212.75°
TVD: 13891.13'
SHALE: GYSHBLK FRM SUBBLKY -
SUBSPLT MED TXT IMBD LS
SANDSTONE: VLTGY TO WH MED
TO FRM SBRNDD WL SRT VVF TO
VF GR WL CONSOL TO PRLY IND
IP SLI CALC TO NCALC NO VIS
STNG

MD: 13990' INC: 0.62° AZI: 224.76°
TVD: 13986.13'
SILTSTONE: VLTGY LTGY MED TO
FRM SBPLTY SBBLKY BLKY
NCARB SLI CARB GRDG F SLTST
TO SS SANDSTONE: VLTGY LTGY
MED SBRNDD RNDD WL SRT VVF
TO VF GR WL CONSOL CLN TO
SLTY NO VIS STNG OR POR

SHALE: GYSHBLK OCC BRIT
SUBBLKY - SUBSPLT PRED MED
TXT SCAT IMBD LS
MD: 14084' INC: 0.51° AZI: 214.25°
TVD: 14080.12'

SHALE: GYSHBLK OCC BRIT
SUBBLKY - SUBSPLT PRED MED
TXT SCAT IMBD LS
SANDSTONE: VLTGY LTGY WH
MED TO FRM SBRNDD RNDD WL
SRT VVF TO VF GR MOD TO V WL
CONSOL TO PRLY IND V SLI CALC
NO VIS STNG
MD: 14179' INC: 0.47° AZI: 233.37°
TVD: 14175.12'

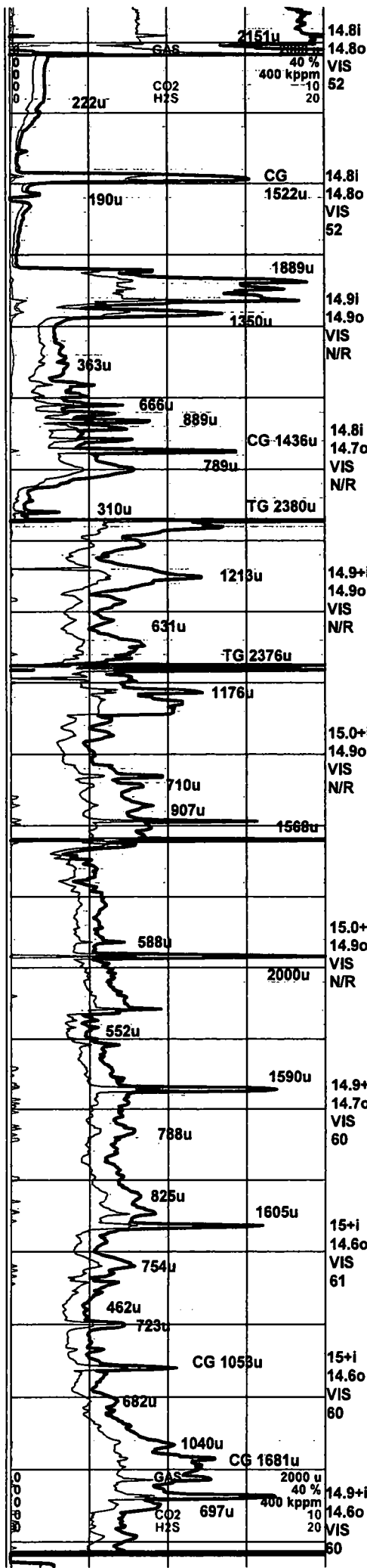
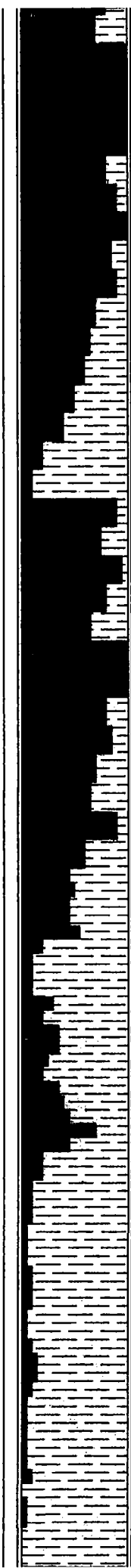
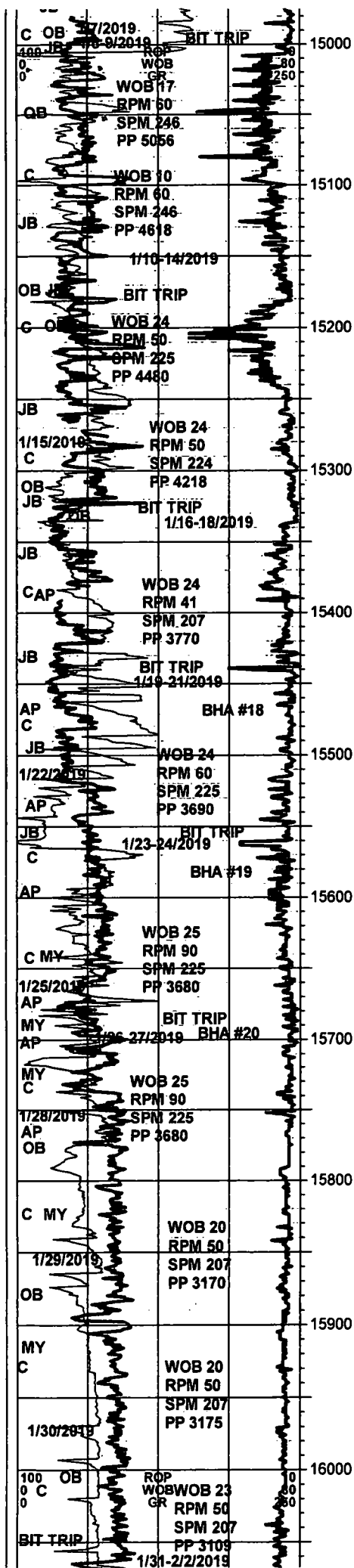
SHALE: GYSHBLK OCC BRIT
SUBBLKY - SUBSPLT PRED MED
TXT SCAT IMBD LS
MARLSTONE: GYSHBLK BRIT.
BLKY SMTH TXT CALC.
MD: 14274' INC: 0.43° AZI: 226.39°
TVD: 14270.12'
MD: 14369' INC: 0.43° AZI: 257.85°
TVD: 14365.11'

SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
LIMESTONE: BLK V/FXLN HD TT
POR
MD: 14558' INC: 0.37° AZI: 259.01°
TVD: 14554.11'

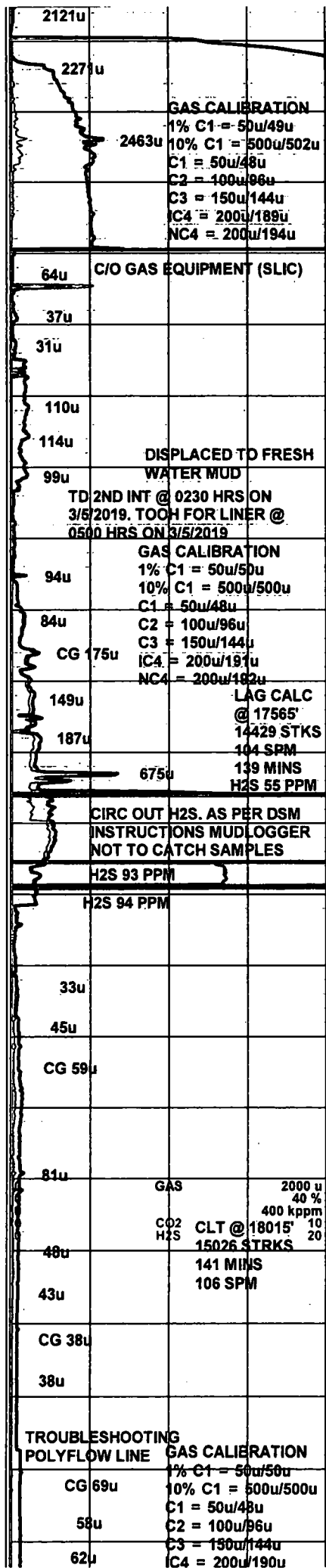
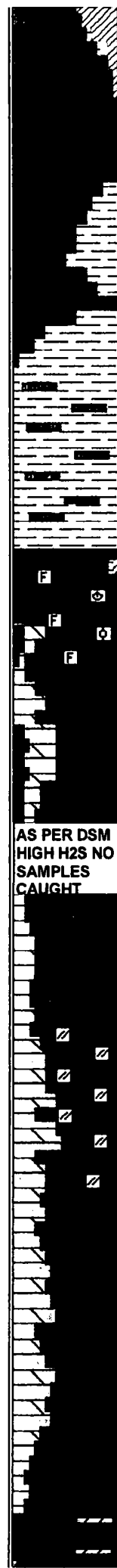
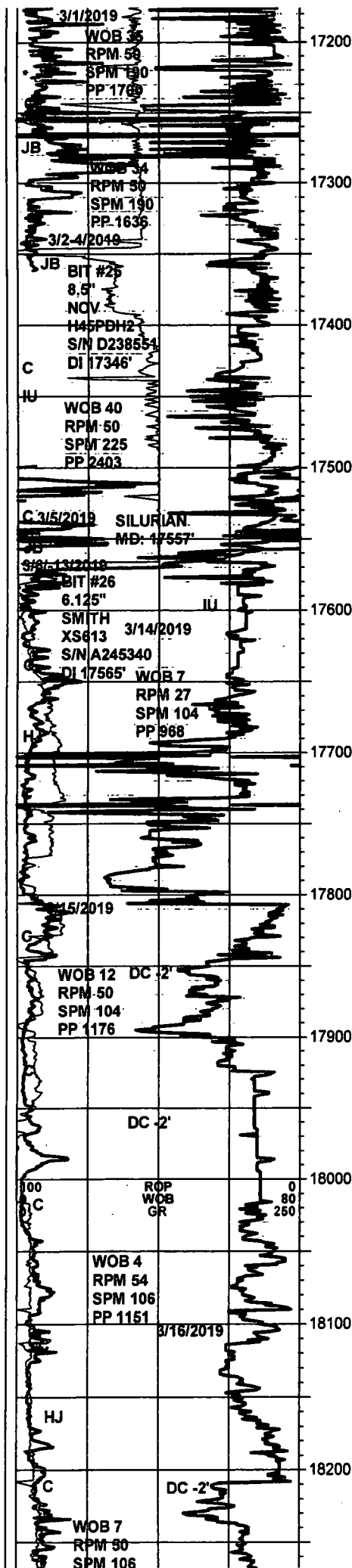
MD: 14653' INC: 0.42° AZI: 248.41°
TVD: 14649.11'
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
LIMESTONE: BLK V/FXLN HD TT
POR

MD: 14748' INC: 0.46° AZI: 249.84°
TVD: 14744.11'
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
LIMESTONE: BLK V/FXLN HD TT
POR

MD: 14843' INC: 0.48° AZI: 243.8°
TVD: 14839.1'
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
LIMESTONE: BLK V/FXLN HD TT
POR



MD: 14938' INC: 0.62° AZI: 249.9°
TVD: 14934.1'
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
LIMESTONE: BLK V/FXLN HD TT
POR
MD: 15032' INC: 0.57° AZI: 257.82°
TVD: 15028.09'
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MD: 15127' INC: 0.35° AZI: 278.46°
TVD: 15123.09'
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MD: 15222' INC: 0.34° AZI: 265°
TVD: 15218.09'
MARLSTONE: GYSHBLK BRIT
BLKY SMTH TXT CALC
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MD: 15317' INC: 0.47° AZI: 274.5°
TVD: 15313.1'
LIMESTONE: BLK V/FXLN HD TT
POR
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
MD: 15410' INC: 0.74° AZI: 308°
TVD: 15406.1'
CHERT: GRY DKGRY TRANSL
VHRD CONCH FRAC XLN TO
MICROXLN TR CALC CMT
MD: 15505' INC: 1.06° AZI: 325.41°
TVD: 15501.7'
LIMESTONE: BLK V/FXLN SFT TO
HD TT POR
SHALE: GYSHBLK SFT SUBBLKY
SMTH TXT
LIMESTONE: BLK V/FXLN SFT TO
FRM TO TR HD TT POR
SHALE: GYSHBLK - DRKGY - TR
BLCK SFT SUBBLKY SMTH TO
GRTY TXT
MD: 15598' INC: 1.01° AZI: 307.17°
TVD: 15594.05'
MD: 15693' INC: 0.94° AZI: 301.65°
TVD: 15689.04'
LIMESTONE: BLK V/FXLN SFT TO
FRM TO TR HD TT POR
SHALE: GYSHBLK - DRKGY - TR
BLCK SFT SUBBLKY SMTH TO
GRTY TXT
MD: 15788' INC: 1.36° AZI: 310.35°
TVD: 15784.02°
SHALE: GYSHBLK - DRKGY - TR
BLCK SFT SUBBLKY SMTH TO
GRTY TXT
LIMESTONE: BLK V/FXLN SFT TO
FRM TO TR HD TT POR
MD: 15882' INC: 1.45° AZI: 313.71°
TVD: 15877.99°
SHALE: GYSHBLK - DRKGY - TR
BLCK SFT SUBBLKY SMTH TO
GRTY TXT
LIMESTONE: BLK V/FXLN SFT TO
FRM TO TR HD TT POR
MD: 15977' INC: 1.37° AZI: 300.83°
TVD: 15972.96°
SHALE: GYSHBLK - DRKGY - TR
BLCK SFT SUBBLKY SMTH TO
GRTY TXT



N/R

TO FRM TO TR HD TT POR

MD: 17202' INC: 1.68° AZI: 301.4°
TVD: 17197.37'
LIMESTONE: BLK DKGRY GRY WH
V/FXLN SFT TO FRM TO TR HD TR
PYR LAM

9.4i
9.4o
VIS
34

LIMESTONE: BLK DKGRY GRY WH
V/FXLN PLTY SUBPLTY SFT TO
FRM TO TR HD TR PYR LAM TR
CHRT NOD SHALE: GYSHBLK -
DRKGY BLCK SFT TO FRM
SUBBLKY TO SUBPLTY SMTH TO
GRTY TXT V CALC MD: 17392' INC:
1.73° AZI: 301.91° TVD: 17387.25'

9.4i
9.4o
VIS
34

SHALE: PRED LTGY MED TO V TO
DKGY SM BLK MED TO FRM
FNTXT SUBBLKY TO SUBPLTY
SMTH TO SLI GRTY TXT N CALC
ERTHY CARB PYR INCL TR POR

9.5i
9.5o
VIS
33

MD: 17522' INC: 2.8° AZI: 298.8°
TVD: 17517.2'
SHALE: LT TO MED TO V TO DKGY
BLK MED TO FRM FNTXT
SUBBLKY SUBPLTY SMTH ERTHY
CARB PYR INCL TR POR
LIMESTONE: WH OFFWH TN SLI
MOTT FRM VFXLN BLKY SBPLTY
CLN CHERTY NO FLUOR NO CUT

8.5i
8.5o

LIMESTONE: PRED WH OFFWH
CLR TN FRM VFXLN BLKY
SUBBLKY SBPLTY CLN CHERTY
FOSS OOLTH DOLO NO FLUOR
NO CUT DOLOMITE: WH OFFWH
BLKY SUBBLKY FRM FXLN
MICSURC NO FLUOR NO CUT
CHERT: WH CLR VFXLN OPQ SIL
NO FLUOR NO CUT

MD: 17671' INC: 3.99° AZI: 297.44°
TVD: 17665.88'

WELL CONTROL SHUTIN FOR H2S
& WEIGHT UP SYSTEM WITH
BRINE

8.9i
8.9o
pH
12

LIMESTONE: V/LTGY- OFFWH CLR
TN FRM VFXLN- CRPXN INTGR
POR DOLC FRMWRK ANHY NO
FLUOR NO CUT DOLOMITE: WH
OFFWH BLKY SUBBLKY FRM FXLN
MICSURC NO FLUOR NO CUT
MD: 17860' INC: 4.93° AZI: 316.76°
TVD: 17854.32'

8.8i
8.8o
pH
12

LIMESTONE: PRED V/LTGY-
OFFWH CLR TN FRM VFXLN-
CRPXN INTGR POR DOLC
FRMWRK ANHY NO FLUOR NO
CUT DOLOMITE: MEDLTGY- LTGY
BLKY SUBBLKY FRM FXLN
MICSURC NO FLUOR NO CUT

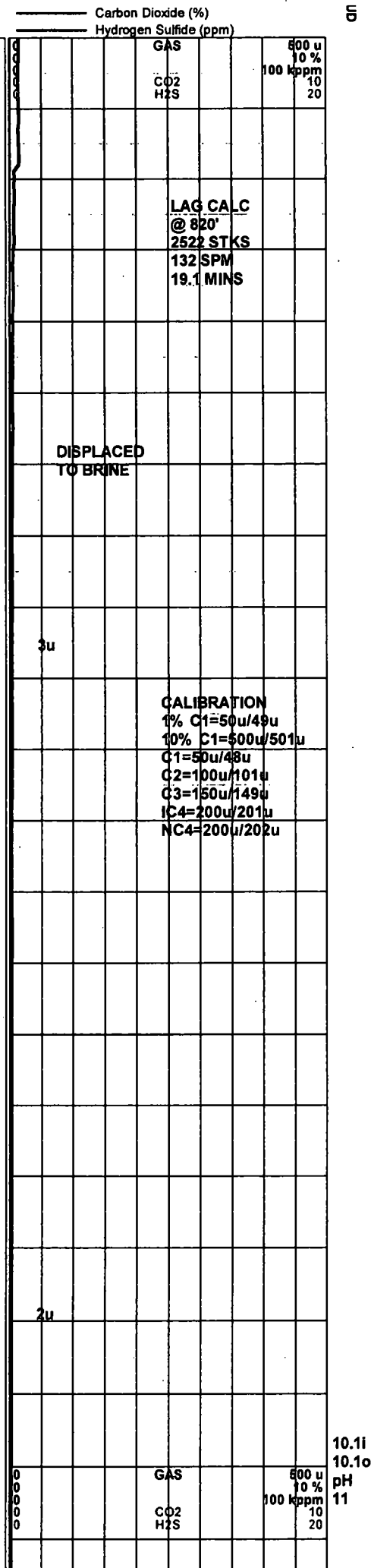
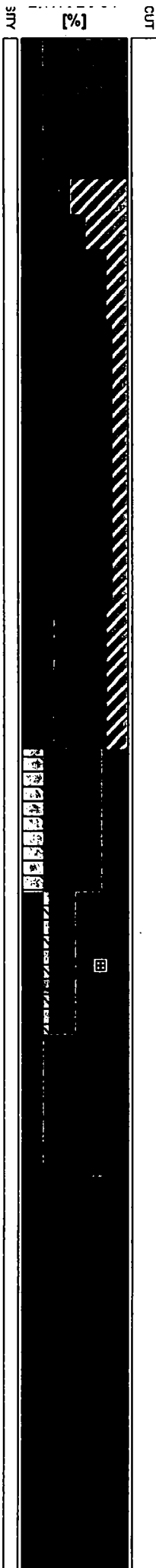
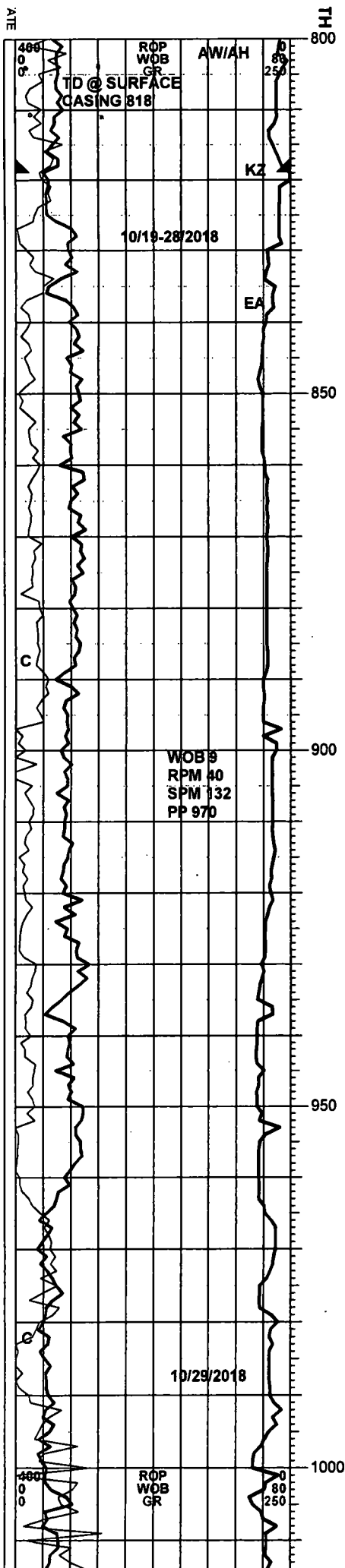
8.8i
8.8o
pH
12

LIMESTONE: MSTLY WH OFFWH
V/LTGY SLIMOTT MHD FRM FXLN
CRYPXN BLKY SUBBLKY SBPLTY
CLN FOSS DOLO NO FLUOR NO
CUT DOLOMITE: MSTLY TN WH
OFFWH CLR SLIMOTT MHD FRM V
TO FXLN TO MICROXN TO
MICSURC BLKY SUBBLKY LIMY
NO FLUOR NO CUT MD: 18050'
INC: 5.24° AZI: 322.99° TVD:
18043.54'

MD: 18145' TVD: 18138.12' INC:
5.98° AZI: 315.37' LIMESTONE: WH
OFFWH CLR SLIMOTT MHD FRM V
TO FXLN CRYPXN BLKY
SUBBLKY SBPLTY CLN DOLO NO
FLUOR DOLOMITE: TN WH OFFWH
CLR MHD FRM V TO FXLN TO
MICROXN TO MICSURC BLKY
SUBBLKY NO FLUOR

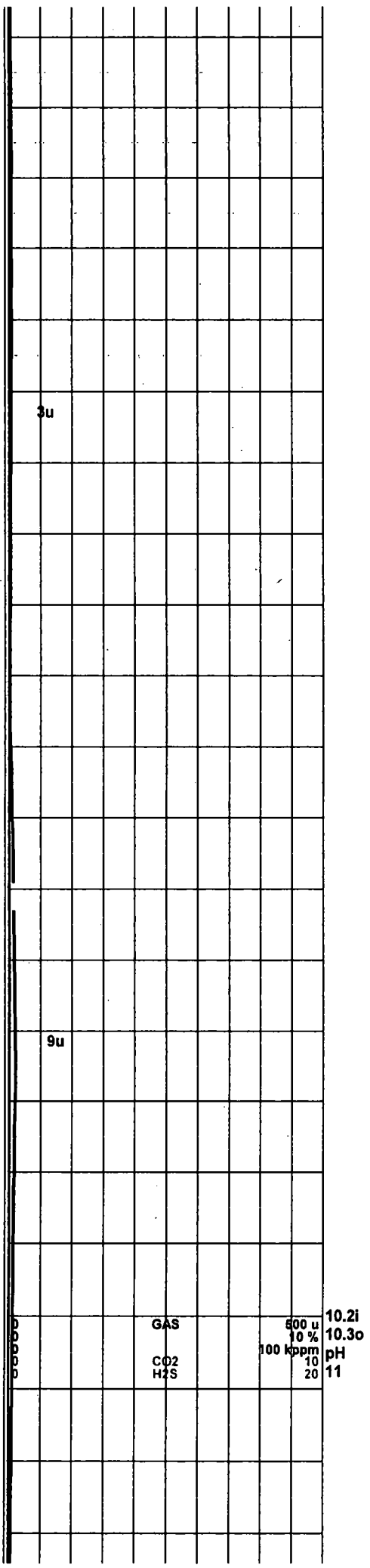
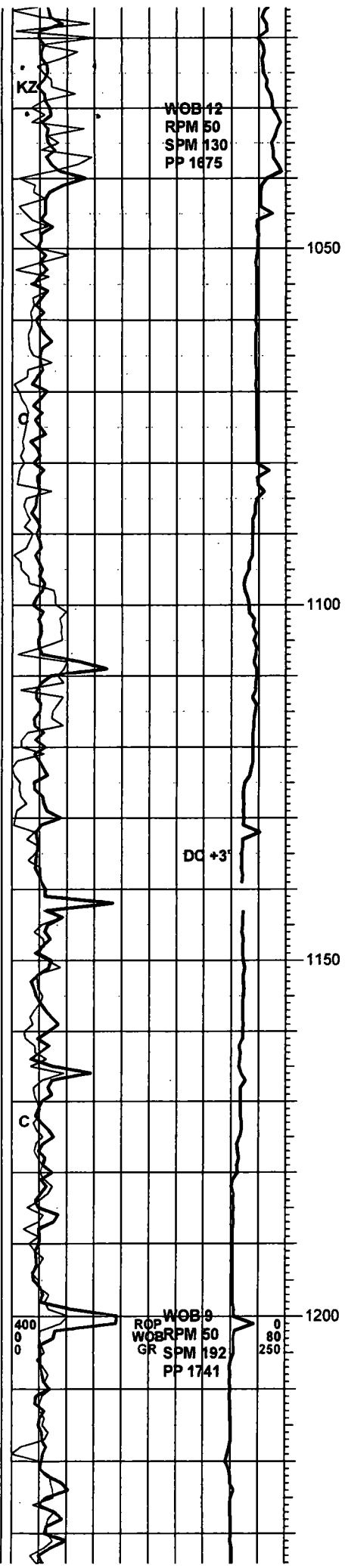
8.7i
8.8o
pH
11

MD: 18231' INC: 5.23° AZI: 317.3°
TVD: 18223.71'
LIMESTONE: WH- OFFWH CLR
SLIMOTT MHD FRM V TO
MICROXN- CRYPXN DOLC



CALL TO LOCATION ON 10/18/2018. ARRIVED @ 1300 HRS AND COMMENCED RIG UP PROCEDURES. BEGAN LOGGING OPERATIONS AT THE BOTTOM OF SURFACE SHOE DEPTH OF 818' ON 10/23/2018 @ 1200 HRS. FOLLOWING INITIAL CONDITIONS: BIT #1 24" ULTERRA U616S SERIAL #42793 INITIAL BHA @ 503.02' BIT #2 18.125" TUH816S SERIAL #A226644 BHA @ 818' MD: 833' INC: 0.54° AZI: 300.49° TVD: 832.96'

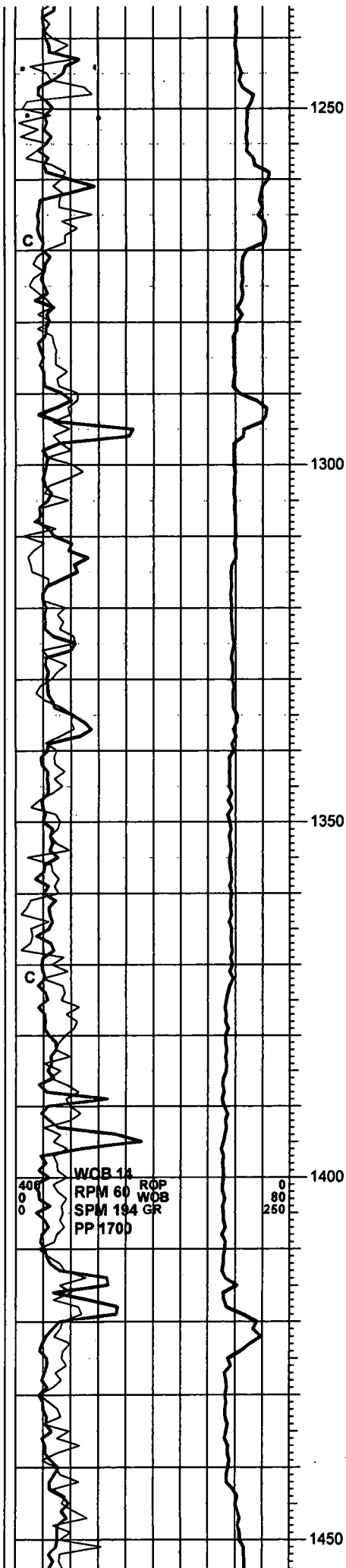
MD: 928' INC: 0.59° AZI: 291.44° TVD: 927.96' SANDSTONE: PRED OFF WH- SCAT CLR CXLN PRED CRS GRN SUBANG P SRTD W CONS QTZ TT POR FR SALT NO FLUOR/CUT/RNG/STN SILTSTONE: MODRDBN SFT P SRTD NO FLUOR/CUT/RNG/STN MD: 1023' INC: 0.62° AZI: 309.08° TVD: 1022.95'



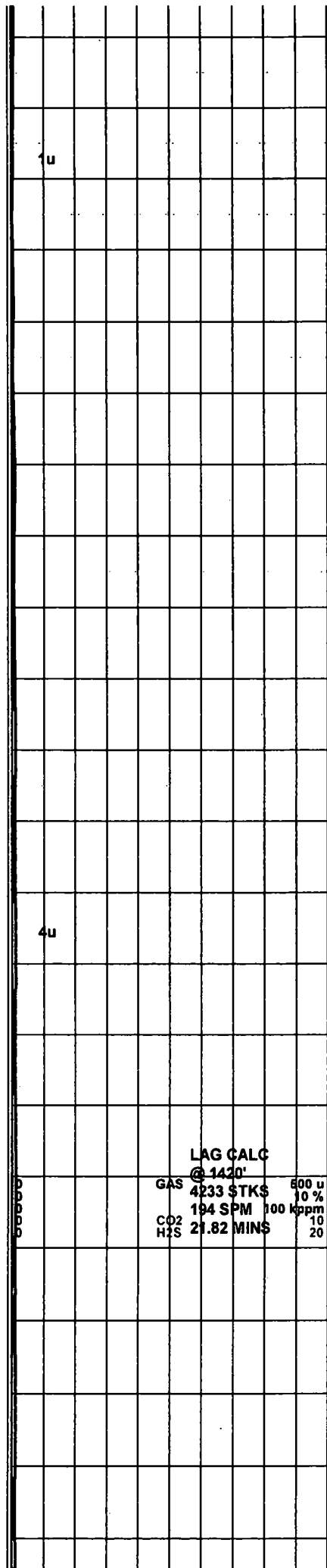
ANHYDRITE: MODORPK
MICROXLN FRM SIL
SALT: WH ANG FRI IMBD ANHY

SALT: WH-OFF WH SUBANG PRED
FRI IMBD ANHY FREE CAL
ANHYDRITE: WH-OFF WH
MICROXLN-FXLN PRED FRM
MD: 1118' INC: 0.65° AZI: 289.51°
TVD: 1117.95'

SALT: WH-OFF WH SUBANG-ANG
PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI
MD: 1212' INC: 0.62° AZI: 289.48°
TVD: 1211.94'



WOB 14
RPM 60 ROP
SPM 194 GR
PP 1700



1u

4u

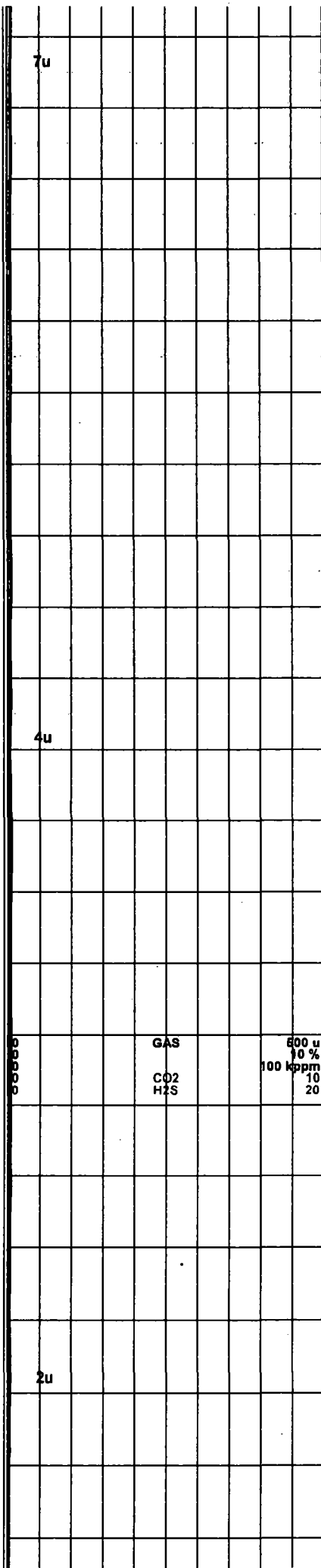
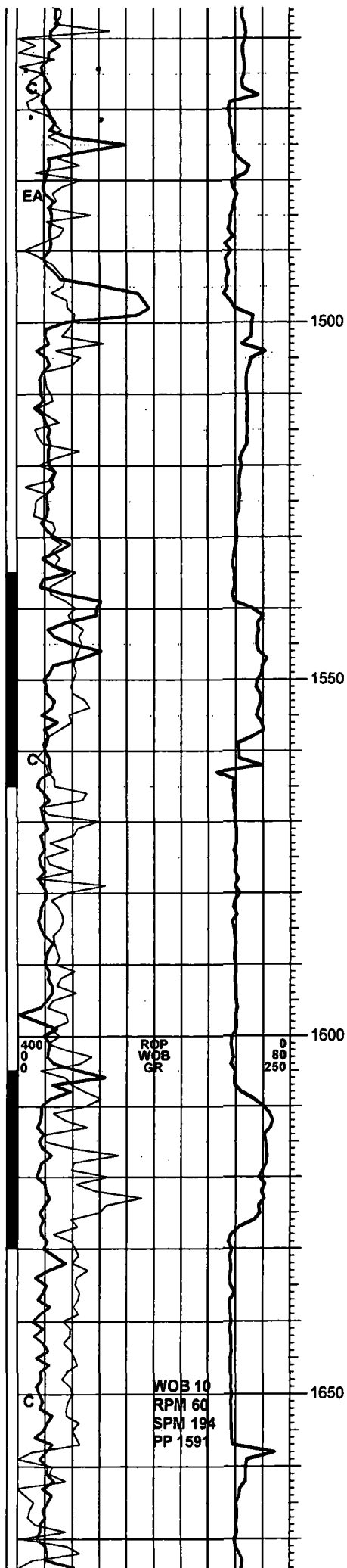
LAG CALC

@ 1420'

GAS 4233 STKS 500 u 10.2i
194 SPM 100 kppm 10.2o
CO2 21.82 MINS 10 pH
H2S 20 11

SALT: PRED OFF WH SUBANG-
ANG PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI
MD: 1307' INC: 0.62° AZI: 290.45°
TVD: 1306.94'

SALT: PRED WH-OFF WH SUBANG
-ANG-RND FRM-FRI IMBD ANHY
ANHYDRITE: PRED OFF WH
MODORPK MICROXLN-V/FXLN
PRED FRM
MD: 1402' INC: 0.49° AZI: 299.15°
TVD: 1401.93'

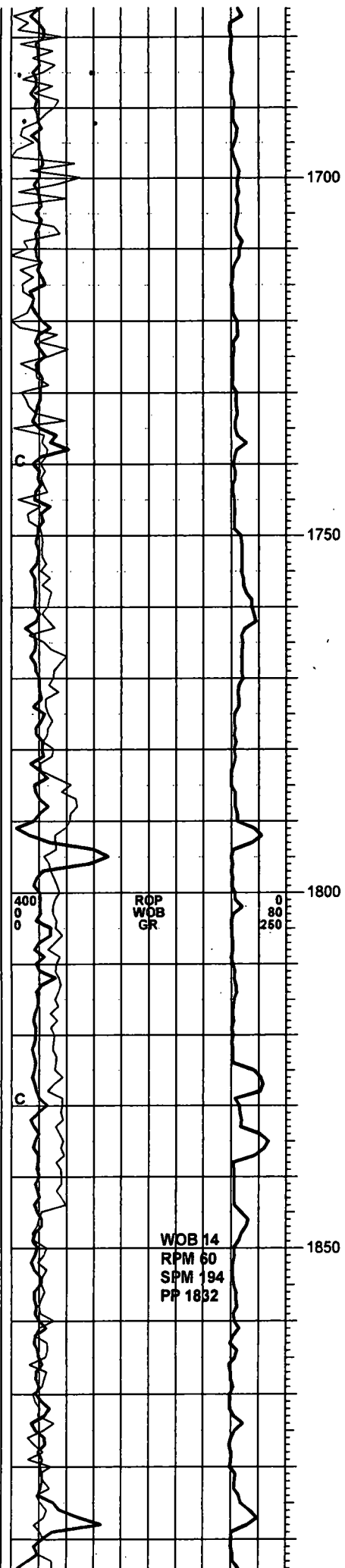


MD: 1497' INC: 0.51° AZI: 277.04°
TVD: 1496.93'
SALT: WH OFF-WH SUBANG-ANG-
RND FRM-FRI IMBD ANHY
ANHYDRITE: OFF WH-MODORPK
MICROXLN-V/FXLN PRED FRM

10.2i
10.2o
pH
11

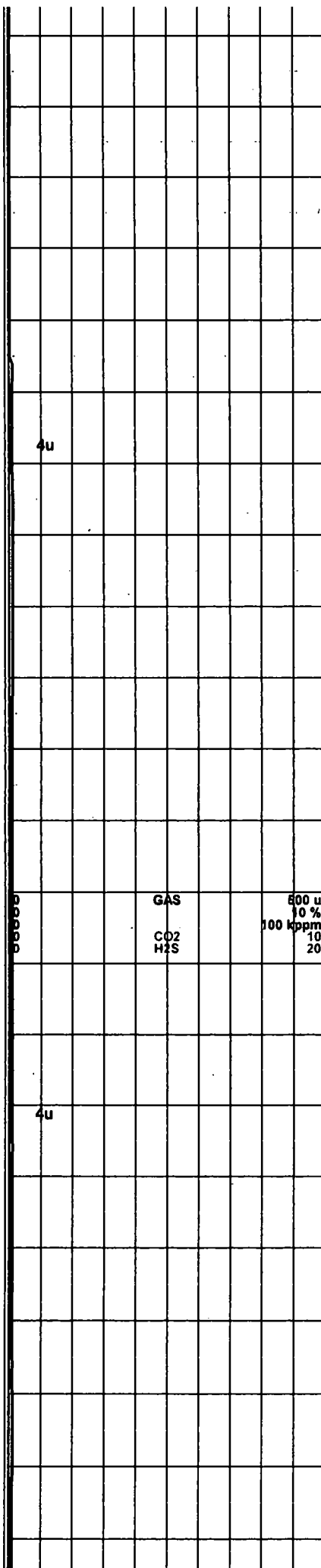
MD: 1592' INC: 0.54° AZI: 291.38°
TVD: 1491.93'
SALT: PRED OFF WH SUBANG-
ANG PRED FRI
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI

MD: 1686' INC: 0.55° AZI: 280.23°
TVD: 1685.92'
SALT: PRED OFF WH SUBANG-
ANG PRED FRI IMBD ANHY
DOLO-LIMESTONE: PRED MEDGY
FXLN FRM SIL FRMWRK SLI TR SS



ROP
WOB
GR

WOB 14
RPM 60
SPM 194
PP 1832



4u

GAS
CO2
H2S

500 u
10 %
100 kppm
10
20

4u

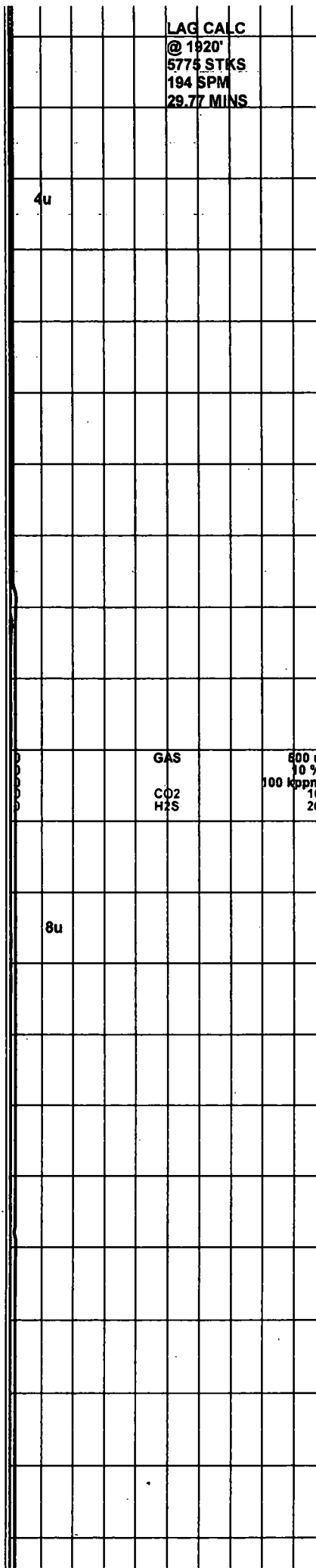
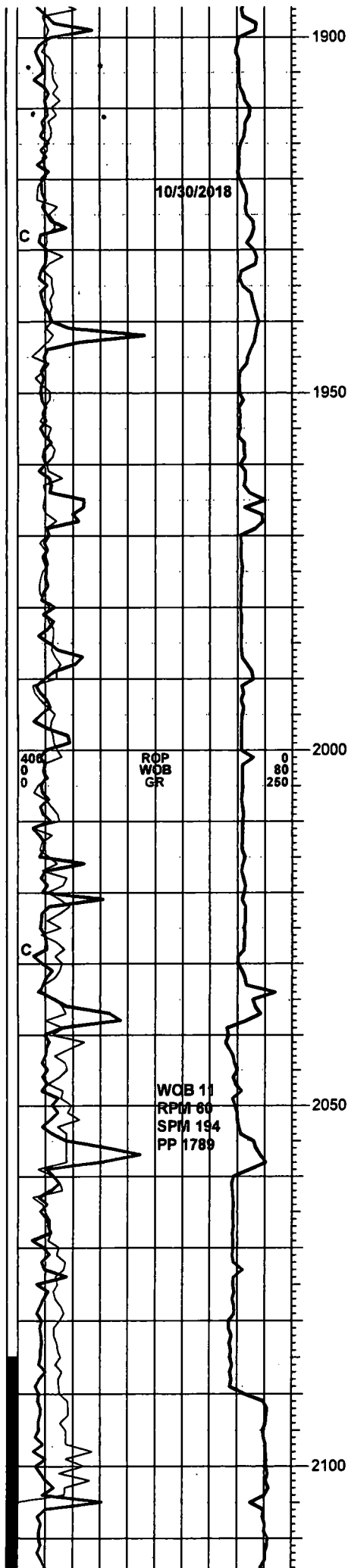
10.2i
10.2o
pH
11

10.2Hi
10.2o
pH
11

MD: 1781' INC: 0.47° AZI: 282.8°
TVD: 1780.92'
ANHYDRITE: WH SUBANG PRED
FRI NO FLUOR/CUT/RNG/STN
SALT: OFFWH-CLR SUBANG-ANG
PRED FRI IMBD ANHY

MD: 1876' INC: 0.53° AZI: 293.08°
TVD: 1875.91'
SALT: CLR SUBANG-ANG PRED
FRI NO FLUOR/CUT/RNG/STN
ANHYDRITE: PRED OFF WH-OPQ
PRED MICROXLN-FXLN FRM-FRI

SALT: PRED CLR SUBANG PRED
FRI ANHYDRITE PRED WH-OPQ



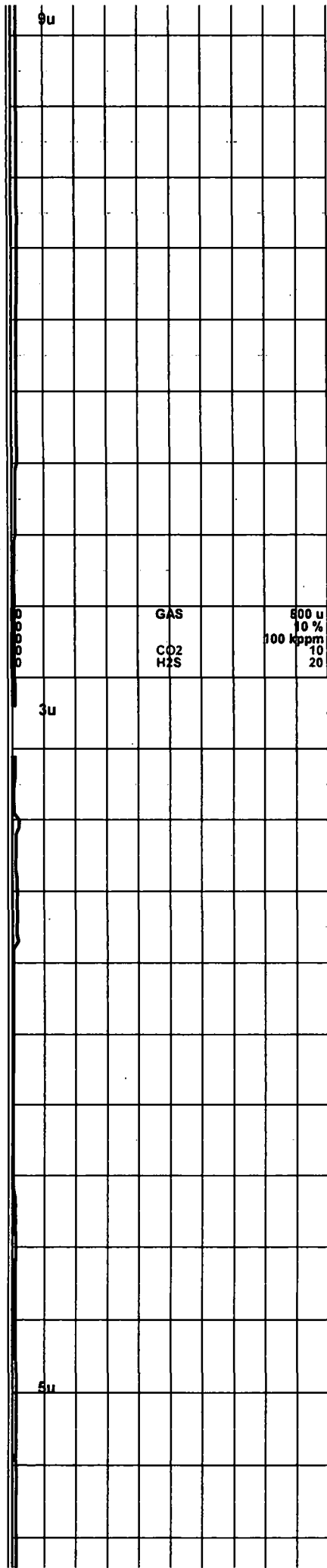
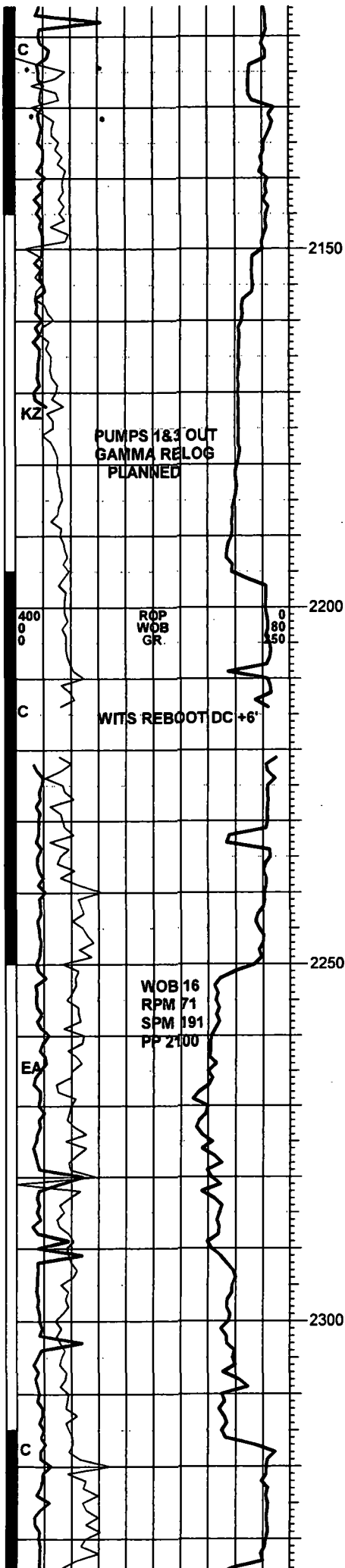
PRED PALN PKM-FRI

MD: 1971' INC: 0.59° AZI: 283.66°
TVD: 1970.91'
SALT: PRED CLR SUBANG FRI
FREE CAL

MD: 2066' INC: 0.67° AZI: 271.61°
TVD: 2065.9'
SALT: PRED CLR-OFF WH
SUBANG PRED FRI FREE CAL NO
FLUOR/CUT/RNG/STN

SALT: PRED CLR - OFF WHT
SUBANG PRED FRI FREE CAL

SALT: PRED CLR-OFF WH
SUBANG PRED FRI FREE CAL



FREE ANHY
MD: 2160' INC: 0.76° AZI: 266.15°
TVD: 2159.9'

10.2HI
10.2+0
pH
11

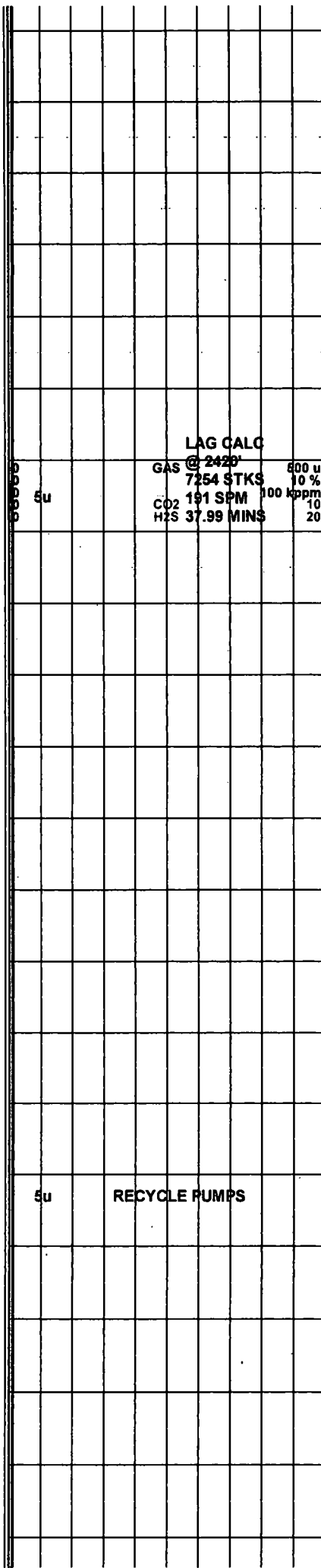
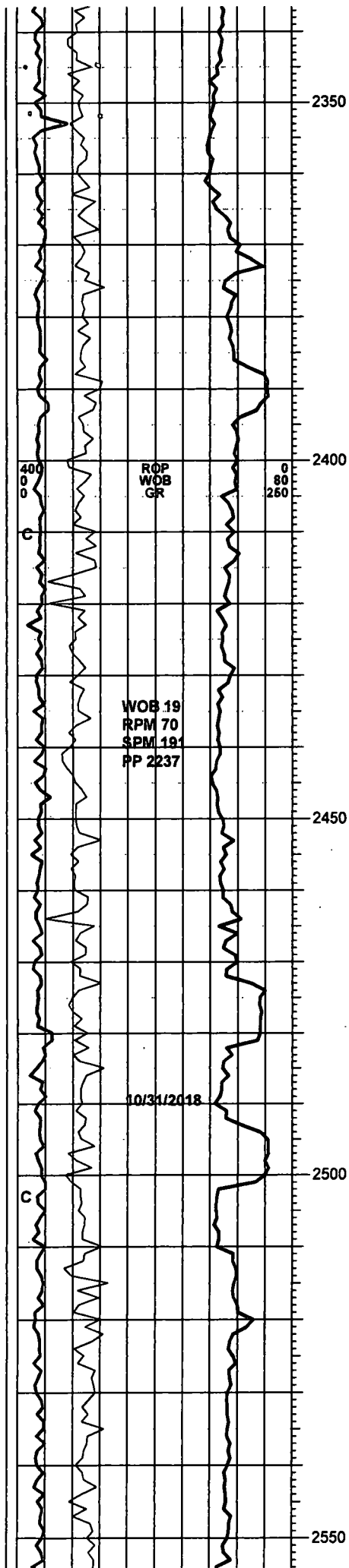
ANHYDRITE: OFF WH-MODORPK
MICROXLN-V/FXLN PRED FRM
SILTSTONE: PRED MODRDOR FRI
V/W SRTD CLMTRX CMT NO
FLUOR/CUT/RNG/STN
SALT: PRED WH-OFF WH SUBANG
-ANG-RND FRM-FRI IMBD ANHY
MD: 2255' INC: 0.59° AZI: 267.78°
TVD: 2254.89'

SALT: PRED CLR-WHT SUBANG-
ANG-RND FRM-FRI IMBD ANHY
ANHYDRITE: PRED OFF WH-
MODORPK MICROXLN-V/FXLN
PRED FRM
MD: 2350' INC: 0.61° AZI: 278.71°
TVD: 2349.88'

10.2HI
10.2+0
pH
11

800 u
10 %
100 kppm
10
20

10.2i
10.3o
VIS
29
pH
11



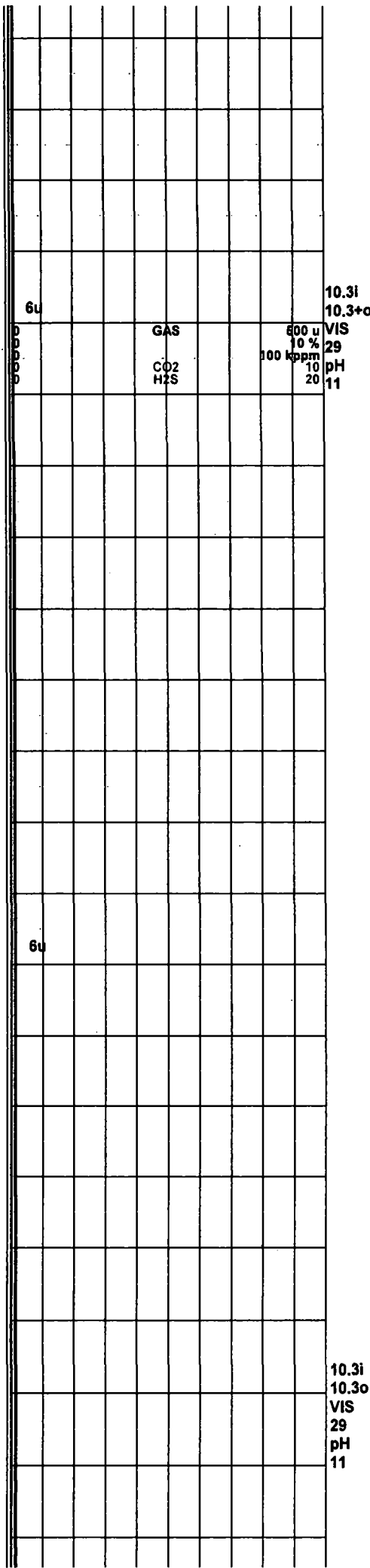
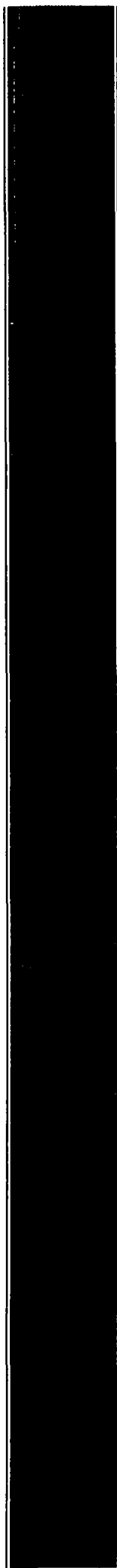
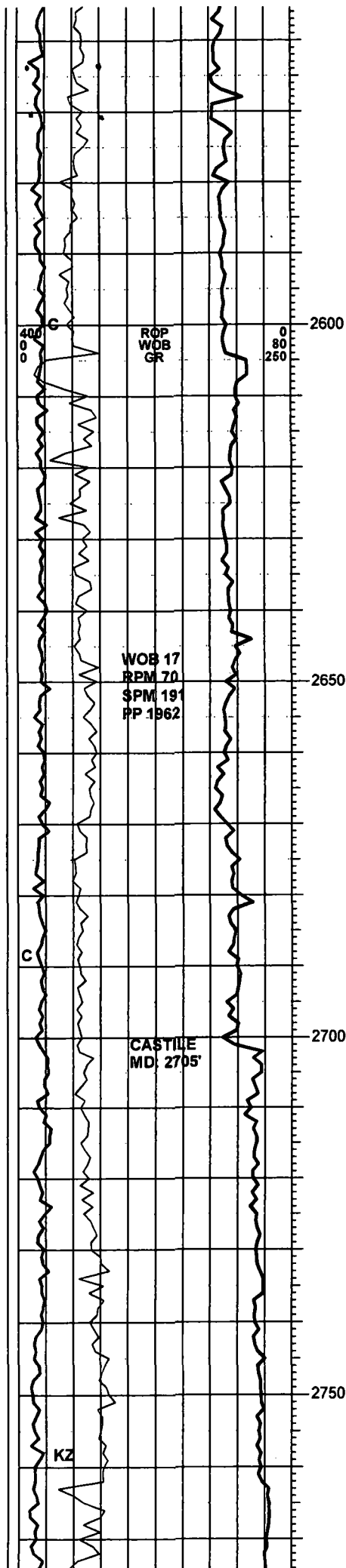
SALT: PRED CLR -WH SUBANG-
ANG-RND FRM-FRI

SALT: PRED CLR-WH SUBANG-
ANG FRM-FRI

10.2+i
10.3+o
VIS
29
pH
11

MD: 2540' INC: 0.85° AZI: 274.78°
TVD: 2539.87'
SALT: PRED CLR-WHT SUBANG-
ANG-RND FRM-FRI FREE CAL
ANHYDRITE: PRED WH-OPQ PRED
FXLN FRM-FRI

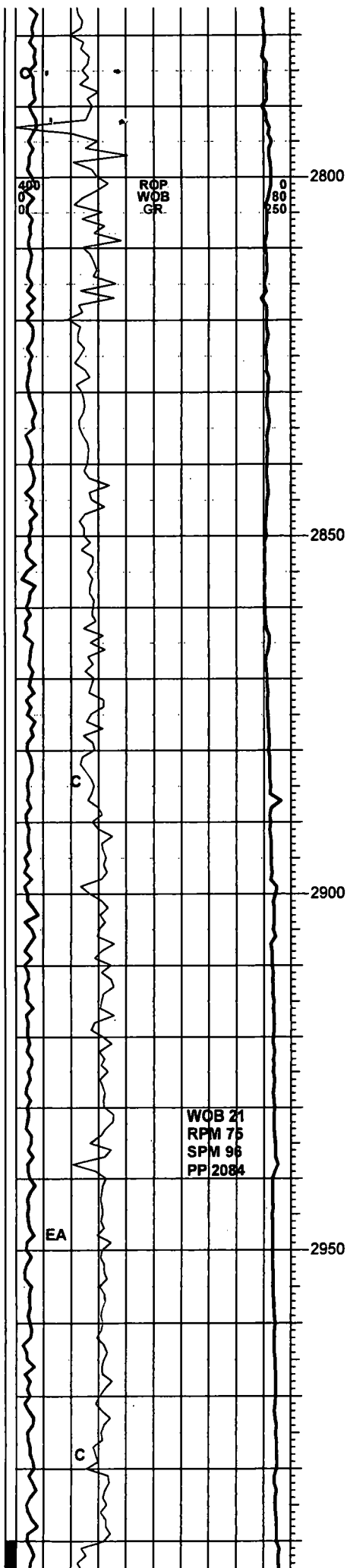
SALT: PRED CLR - WHT SUBANG-
ANG-RND FRM-FRI FREE CAL
IMBD ANHYDRITE: PRED WH-OPQ
PRED FXLN FRM-FRI



MD: 2634' INC: 1.15° AZI: 267.84°
 TVD: 2633.85'
 SALT: PRED CLR-WHT SUBANG-
 ANG-RND FRM-FRI SLI TR ANHY

SALT: PRED CLR-WHT SUBANG-
 ANG-RND FRM-FRI FREE CAL
 ANHYDRITE: MLKY-SCAT WH
 FXLN-CRSXLN HD
 MD: 2729' INC: 1.23° AZI: 271.24°
 TVD: 2728.83'

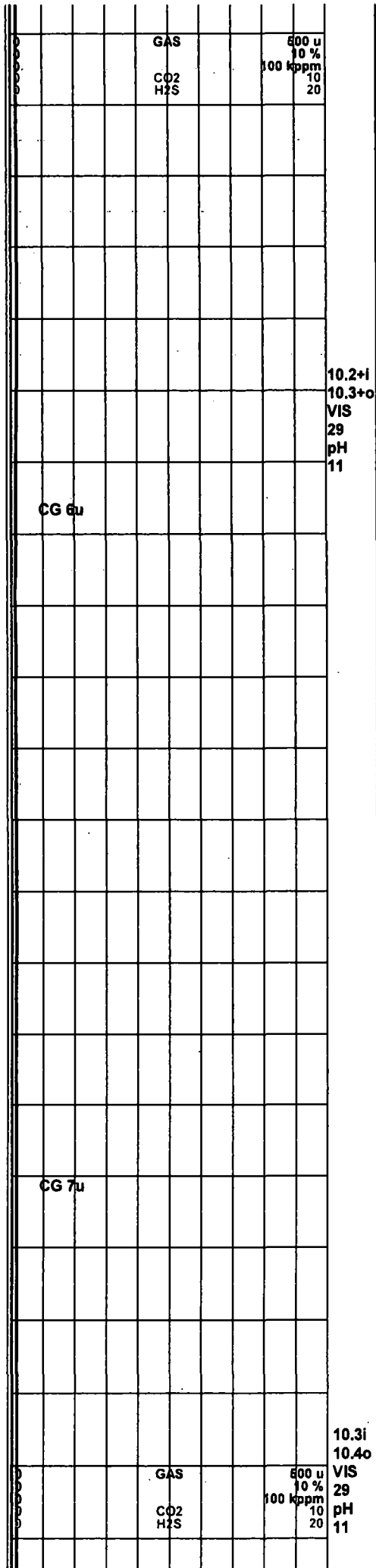
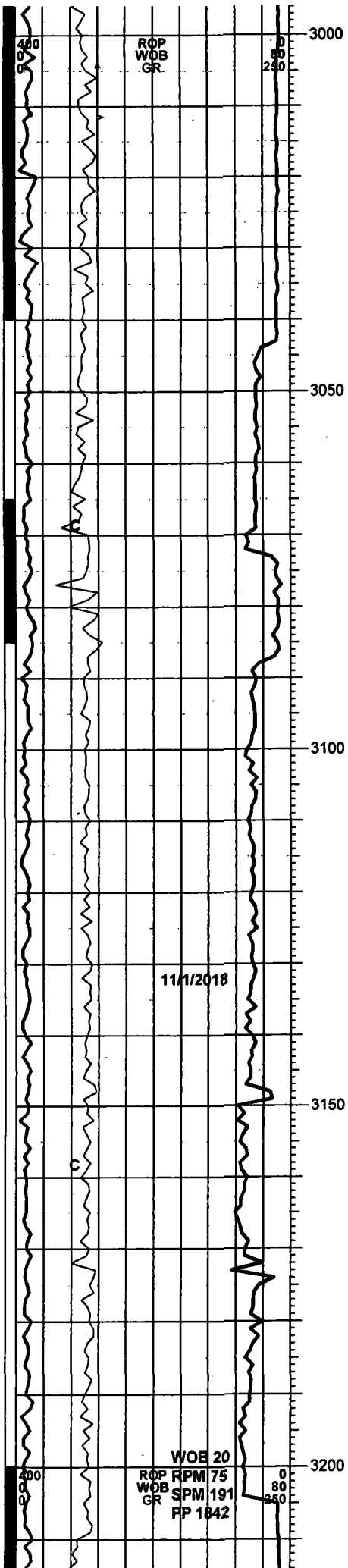
ANHYDRITE: PRED WH MICROXLN
 -V/FXLN PRED FRM-OCC FRI SIL
 FREE PYR
 SALT: WH OFF-WH SUBANG-
 SUBRND FRI-FRM
 SILTSTONE: MODRDOR FRI W
 SRTD CLMTRX CMT NO
 FLUOR/CUT/RNG/STN

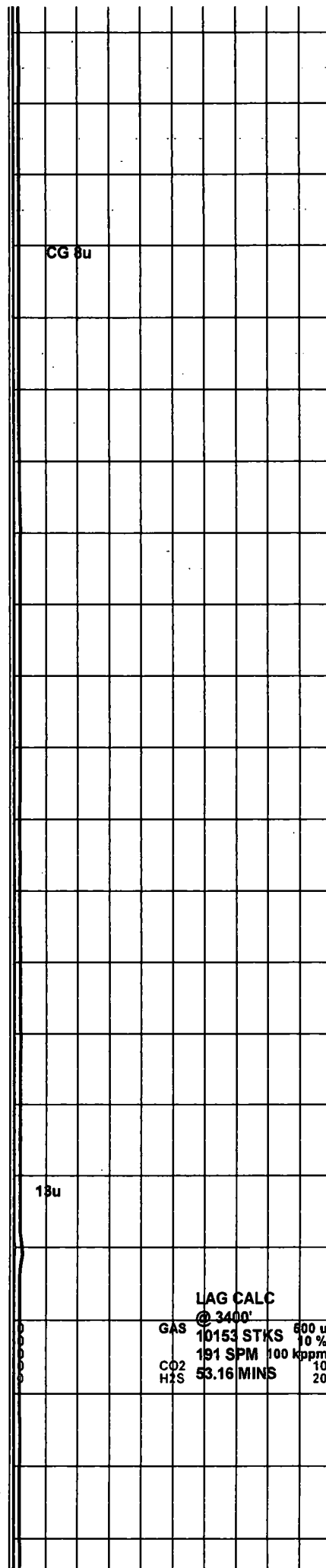
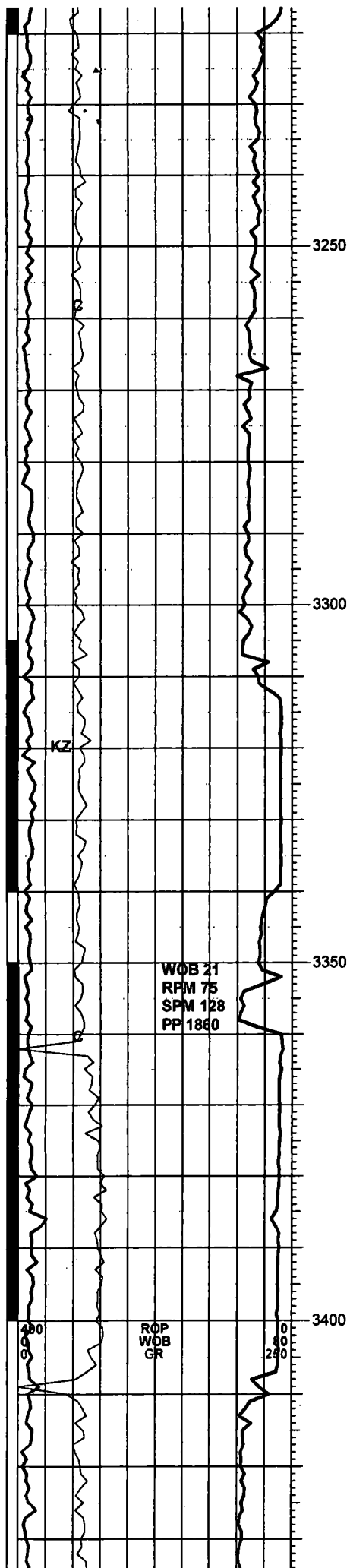


17u	GAS	500 u
	CO2	10 %
	H2S	100 kppm
		10
		20
CG 9u		
	LAG CALC	10.2+1
	@ 2900'	10.3+0
	8674 STKS	VIS
	191 SPM	29
	45.42 MINS	pH
		11
CG 9u		

MD: 2824' INC: 1.25° AZI: 273.55°
TVD: 2823.81'
ANHYDRITE: WH MICROXLN-
V/FXLN PRED FRM-OCC FRI SIL
FREE PYR
SALT: PRED WH-OFF WH SUBANG
-SUBRND FRI-FRM TR SILTSTONE
MD: 2919' INC: 1.35° AZI: 269.54°
TVD: 2918.79'

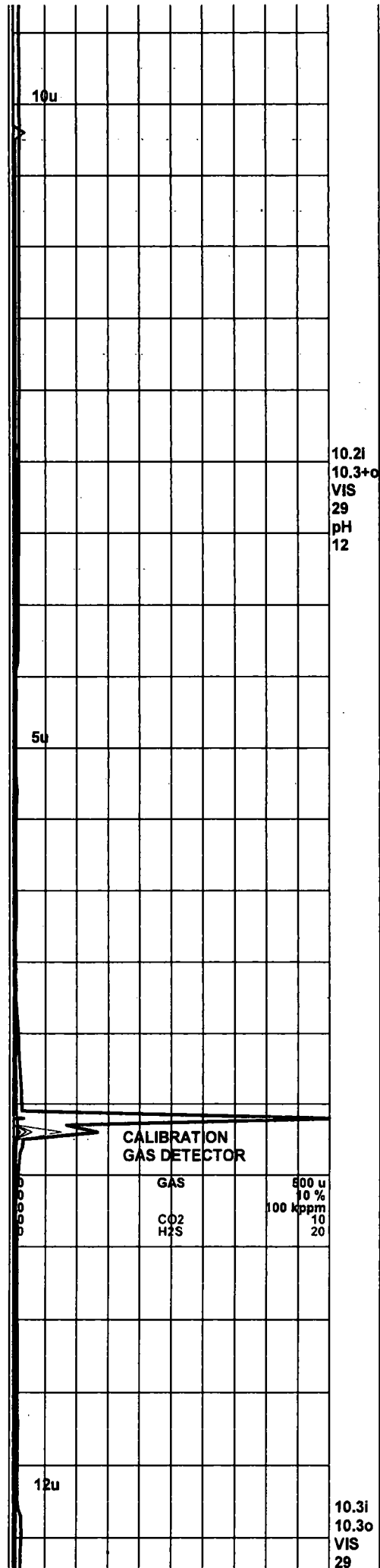
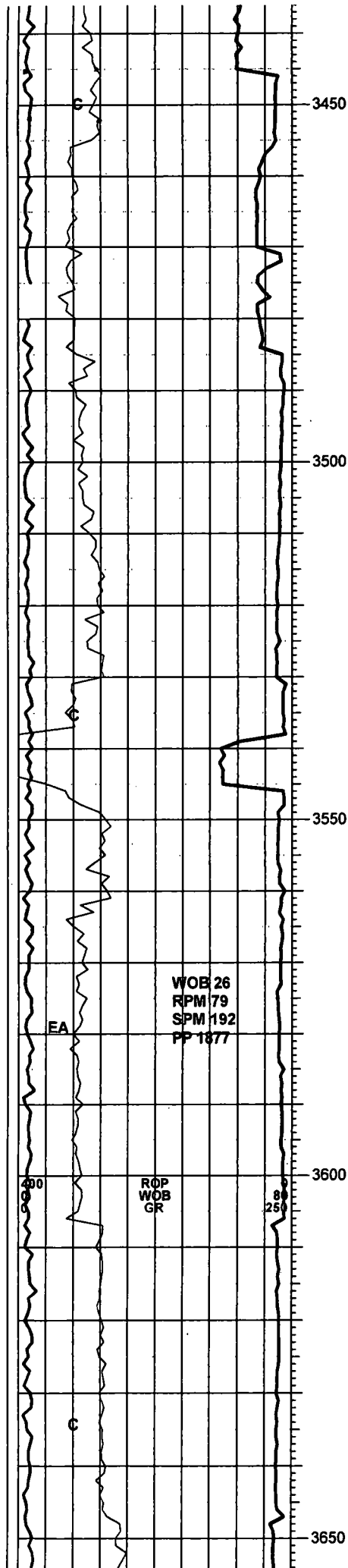
MD: 3014' INC: 1.29° AZI: 273.77°
TVD: 3013.76'
ANHYDRITE: PRED WH MICROXLN
-V/FXLN PRED FRM-OCC FRI SIL
SALT: WH OFF- CLR SUBANG-
SUBRND FRI-FRM
SILTSTONE: MODRDOR FRI MOD
SRTD IMBD LS NO
FLUOR/CUT/RNG/STN





MD: 3298' INC: 0.5° AZI: 318.98°
TVD: 3297.73'
LIMESTONE: PRED TN-V/LTGY
MICROXLN-V/FXLN FRI NO
FLOUR/CUT/RNG/STN
ANHYDRITE: OFF WH V/FXLN FRI
OCC FRACD POR
SALT: WH SUBANG-SUBRND FRM-
FRI IMBD CLAY

MD: 3393' INC: 0.37° AZI: 321.61°
TVD: 3392.7'
LIMESTONE: TN-V/LTGY
MICROXLN-V/FXLN FRI
ANHYDRITE: OFF WH V/FXLN FRI
SALT: PRED WH SUBANG-
SUBRND FRM-FRI IMBD CLAY
MD: 3488' INC: 0.58° AZI: 355.2°
TVD: 3487.72'



ANHYDRITE: V/LTGY-TN
MICROXLN-V/FXLN FRM
LIMESTONE: MEDLTGY V/FXLN-
FXLN FRI-FRM SCAT VUGY POR

MD: 3583' INC: 0.51° AZM: 356.22°
TVD: 3582.72'
LIMESTONE: MEDGY-LTGY FXLN
FRM SIL NO FLUOR/CUT/RNG/STN
ANHYDRITE: PRED OFF WH-
LTPNK MICROXLN-V/FXLN PRED
FRM-OCC FRI SIL IMBD LS
SILTSTONE: MODRDOR FRI W
SRTD CLMTRX CMT
MD: 3677' INC: 0.69° AZM: 357.34°
TVD: 3676.71'

11/2/2018

3700

3750

3800

3850

WOB 34
RPM 90
SPM 227
RP 2576

ROP
WOB
GR

0
80
150

9u

10u

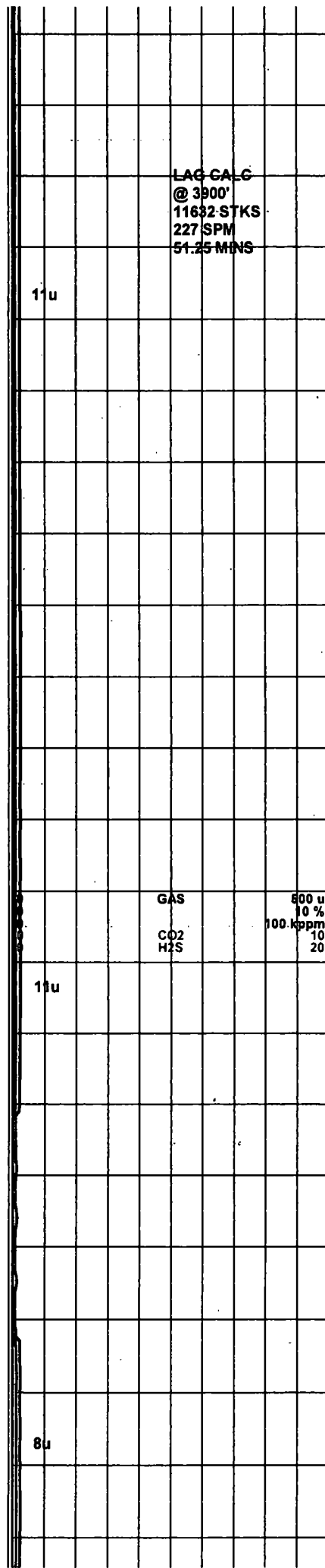
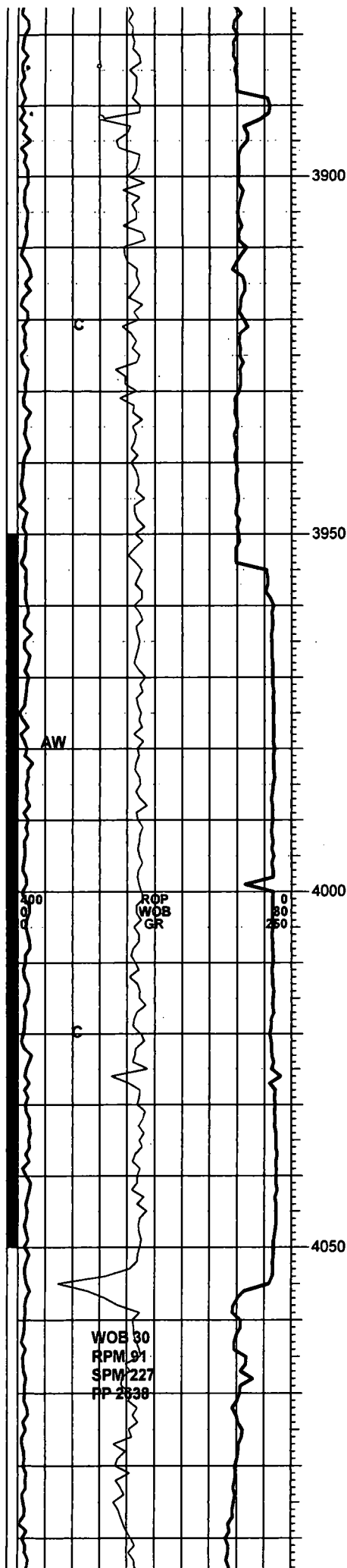
GAS
CO2
H2S

500 u
10 %
100 kppm
10
20

10.3+I
10.3+O
VIS
29
pH
12

LIMESTONE: LTGY FXLN FRM SIL
FRMWRK
ANHYDRITE: PRED OFF WH-OCC
DKPNK MICROXLN PRED FRM FRI
SIL IMBD LS
SILTSTONE: MODRDOR FRI MOD
SRTD CLMTRX CMT
MD: 3772' INC: 0.66° AZM: 11.36°
TVD: 3771.71'

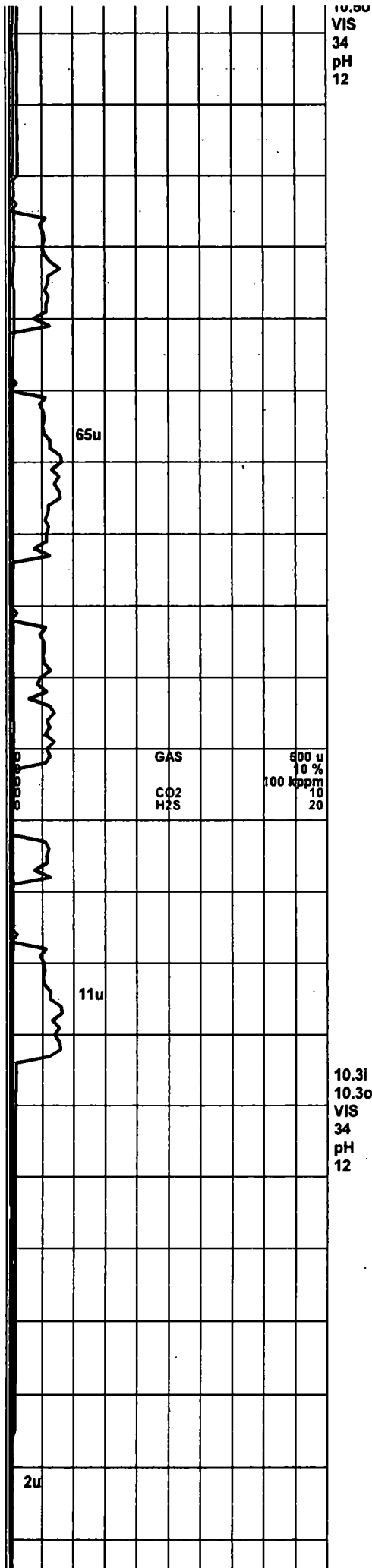
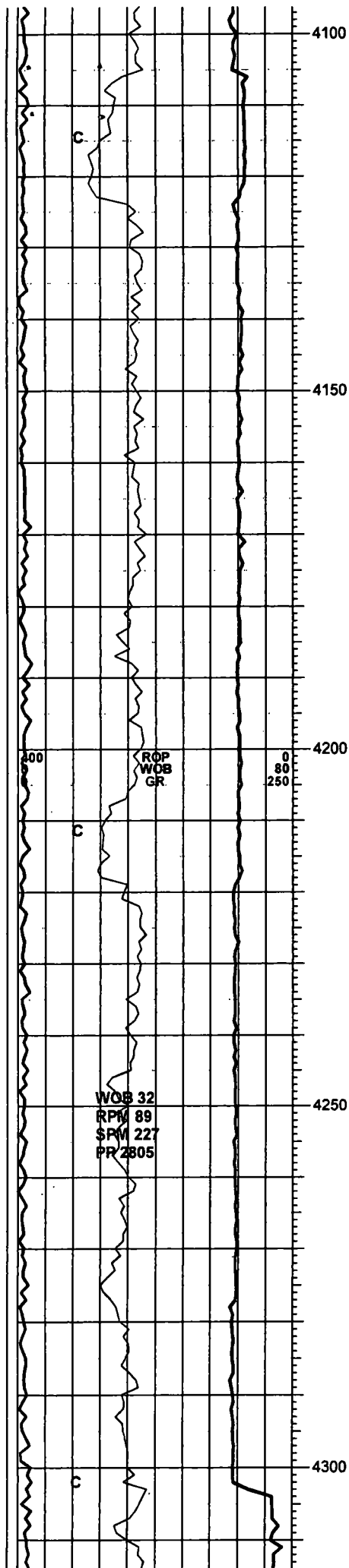
SALT: PRED CLR-WHT SUBANG-
ANG-RND FRM-FRI FREE
CAL/IMBD ANHY/IMBD LS
MD: 3867' INC: 0.89° AZM: 44.8°
TVD: 3866.7'



SALT: PRED CLR-WHT SUBANG-
ANG-RND FRM-FRI FREE CAL
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL TR IMBD LS
MD: 3962' INC: 1.21° AZI: 72.83°
TVD: 3961.68'

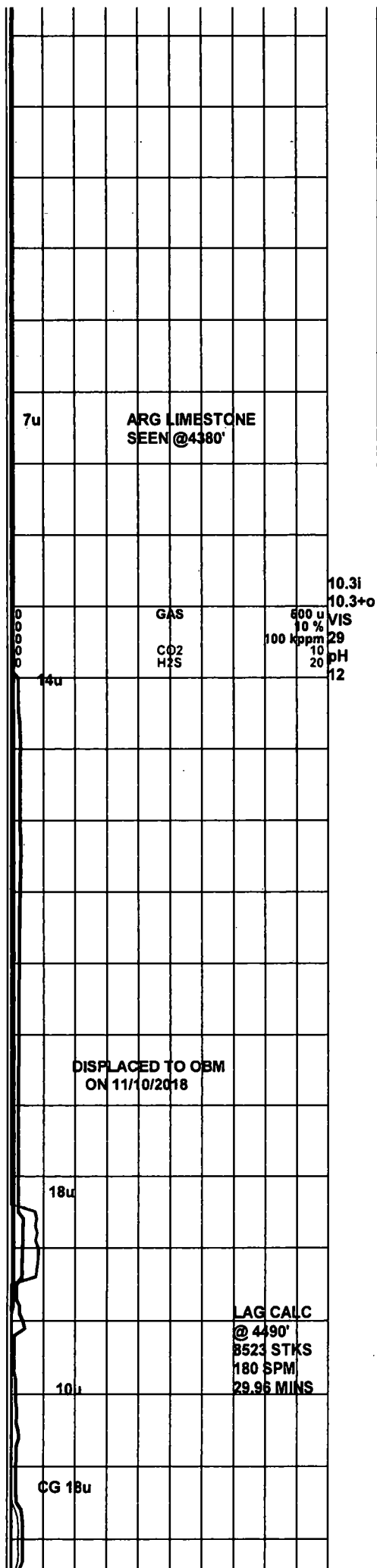
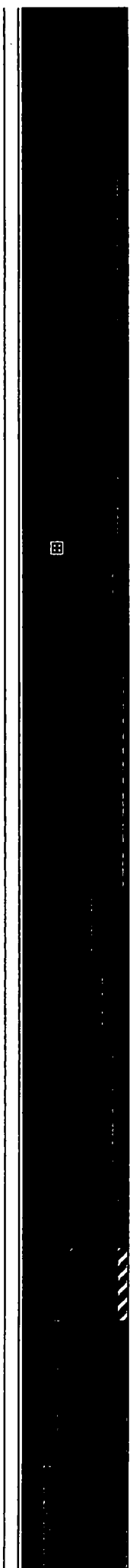
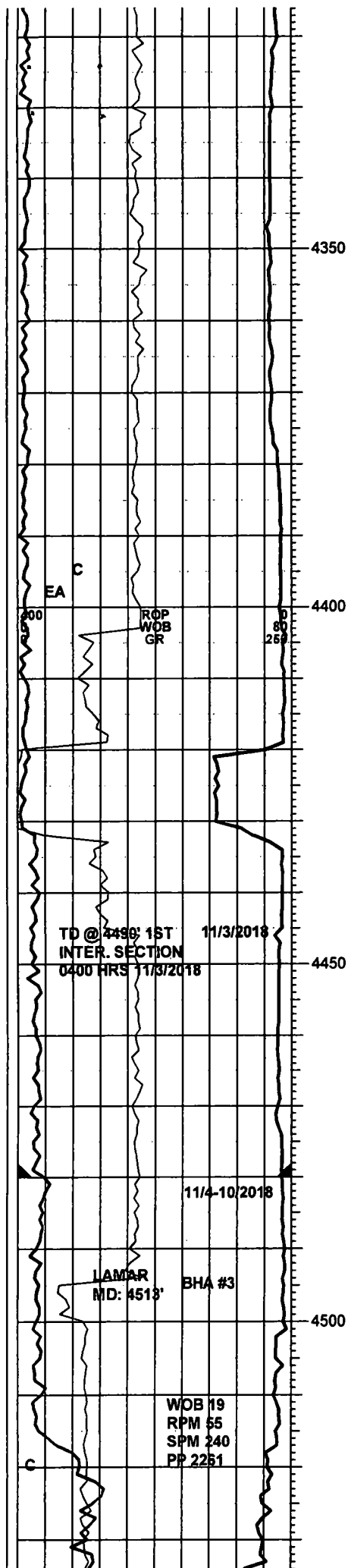
LIMESTONE: MEDGY-LTGY VFXLN
FRM-OCC FRI SIL FRMWRK CALC
MD: 4056' INC: 1.41° AZI: 69.45°
TVD: 4055.66'

SALT: PRED CLR SUBANG-ANG-
RND FRM-BRT IMBD ANHY
LIMESTONE: MEDGY-LTGY PRED
FXLN FRM MICSUC SLTY CALC NO
FLUOR/CUT/RNG/STN
MD: 4151' INC: 1.76° AZI: 89.78°
TVD: 4150.62'

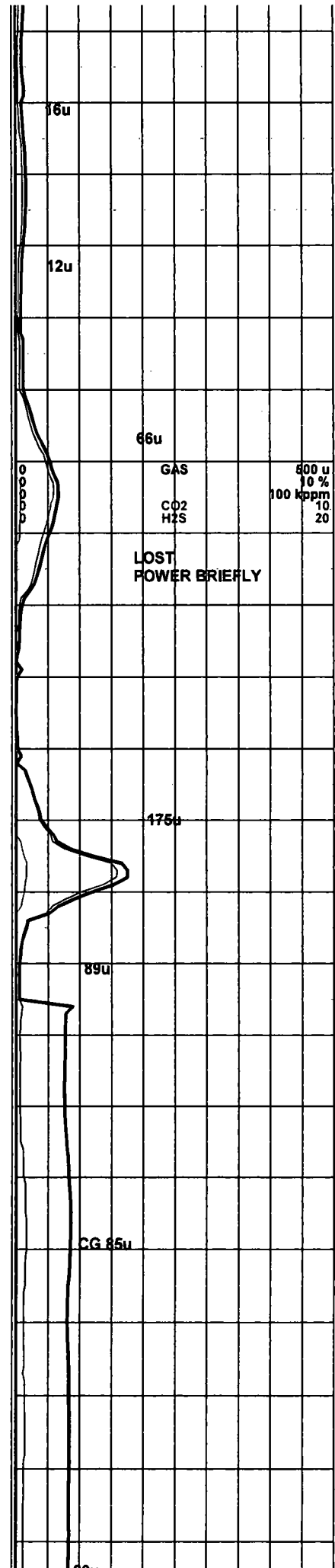
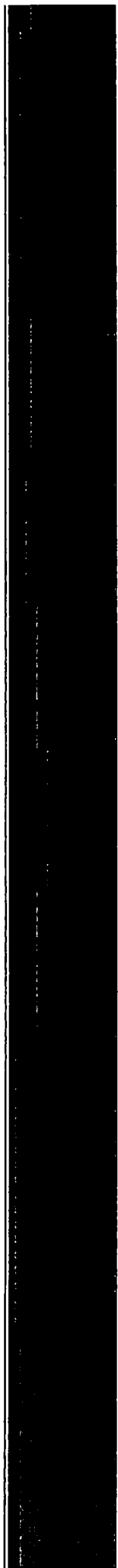
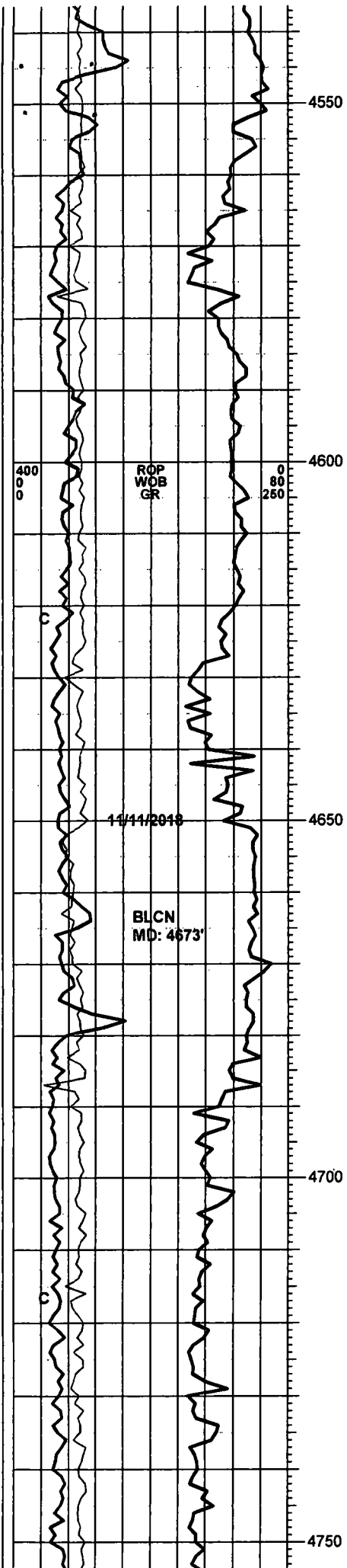


LIMESTONE: MEDGY-LTGY FXLN
FRM SIL FRMWRK
SANDSTONE: MODRDBN V/FN
GRN SUBRND P SRTD LSEY CONS
IMBD LS
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL TR
SALT: PRED CLR SUBANG-ANG-
RND FRM-BRT IMBD ANHYDRITE
MD: 4246' INC: 2.51° AZI: 99.06°
TVD: 4245.56'

MD: 4341' INC: 2.87° AZI: 104.95°
TVD: 4340.45'
LIMESTONE: MEDGY-LTGY FXLN
FRM SIL FRMWRK IMBD NO
FLUOR/CUT/RNG/STN
SANDSTONE: MODRDBN V/FN
GRN SUBRND P SRTD LSEY CONS
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL SLI TR IMBD LS



MD: 4426' INC: 2.78° AZI: 103.8°
TVD: 4425.35'
ANHYDRITE: PRED OFF WH
MICROXLN-V/FXLN PRED FRM-
OCC FRI SIL IMBD LS
LIMESTONE: MED-LTGY FXLN
FRM SIL FRMWRK
SANDSTONE: MODRDBN V/FN
GRN SUBRND MOD SRTD LSEY
CONS



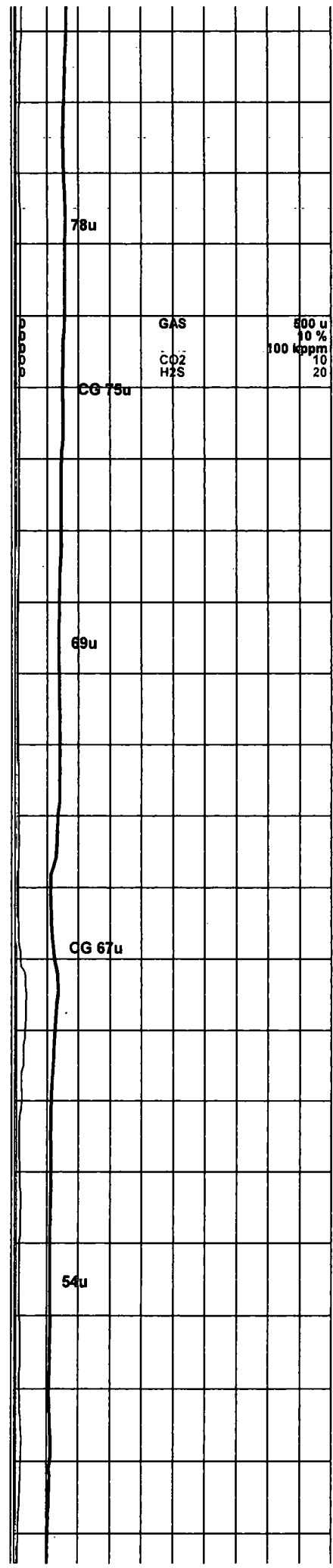
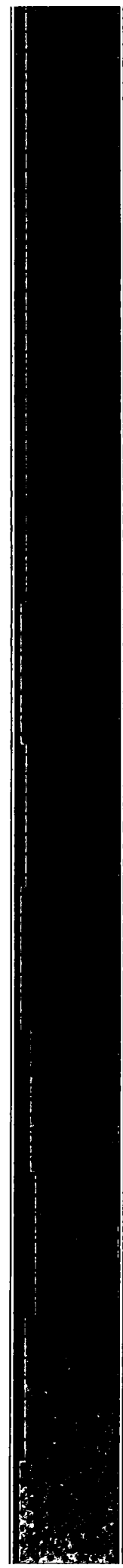
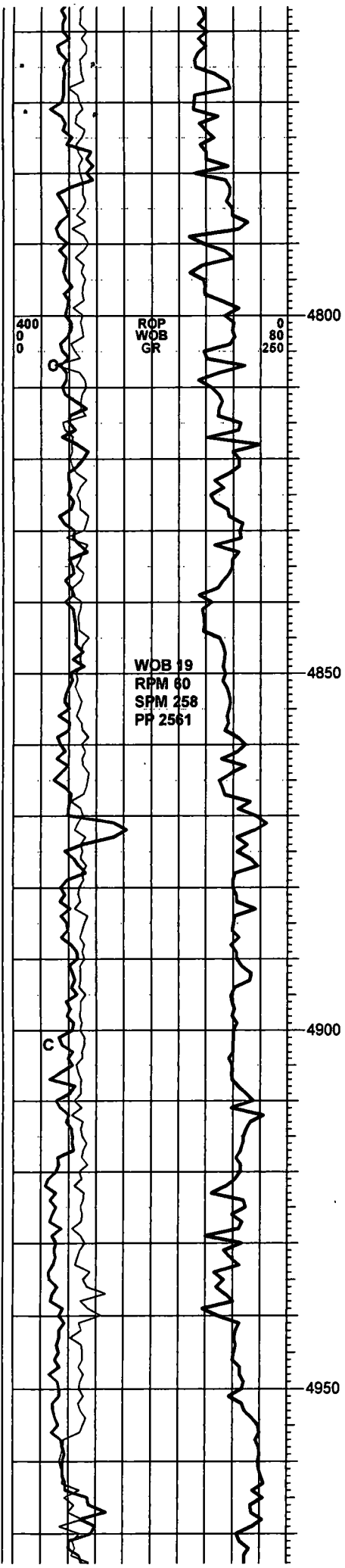
9.1+i
9.2o
VIS
67

MD: 4564' INC: 2.44° AZI: 108.83°
TVD: 4563.21'
SANDSTONE: PRED V/LTGY CRS
GRN SUBANG MOD SRTD MOD
CONS
LIMESTONE: OFF WH-CHLKY SFT
FREE CAL NO
FLOUR/CUT/RNG/STN

9.1+i
9.2o
VIS
61

MD: 4658' INC: 2.64° AZI: 107.16°
TVD: 4657.11'
SANDSTONE: PRED V/LTGY CRS
GRN SUBANG MOD SRTD MOD
CONS FREE CAL/IMBD LS

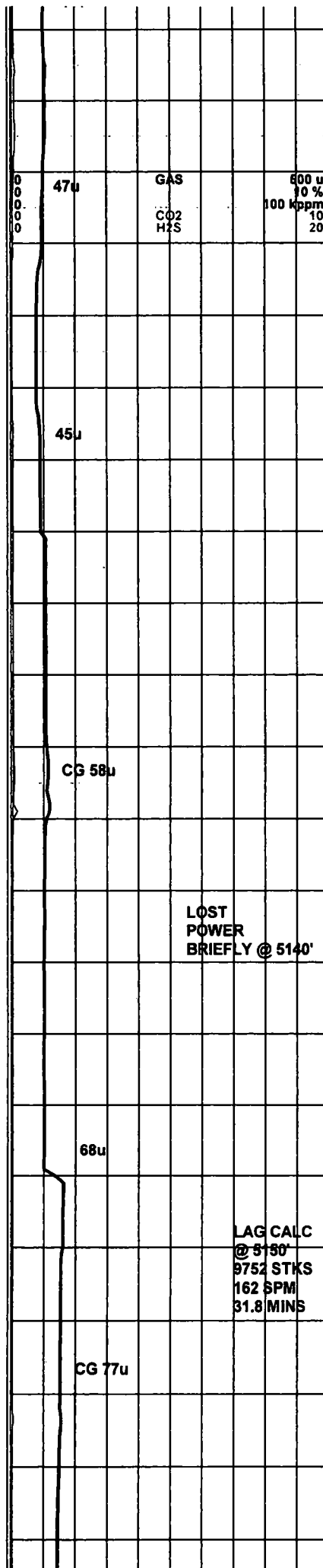
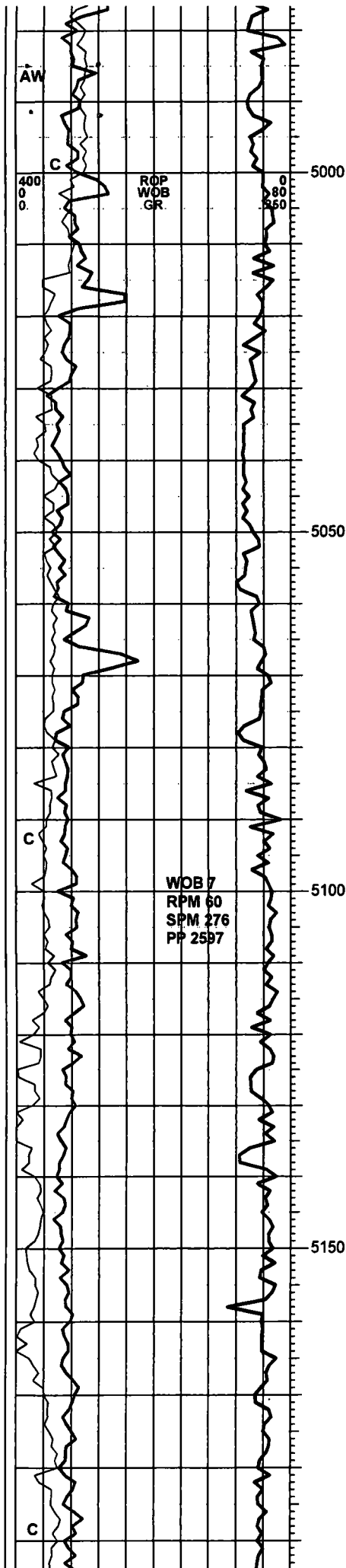
MD: 4753' INC: 2.63° AZI: 106.32°
TVD: 4752.01'
SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI V/FGRN SUBRND
SUBANG OCC LSEY-MOD CONS
CALC IMBD LS



MD: 4847' INC: 2.8° AZI: 106.61°
TVD: 4845.91'
SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI V/FGRN SUBANG OCC
LSEY-MOD CONS CMT IMBD LS
NO FLUOR/CUT/RNG/STN

9.21
9.1+0
VIS
61

MD: 4942' INC: 2.76° AZI: 104.55°
TVD: 4940.8'
LIMESTONE: PRED TN/OFF
WH/MOTT BLKY HD FXLN ARG
SANDSTONE: MEDLTGY BRI FGRN
SUBRND W/SRTD MOD CONS
CALC



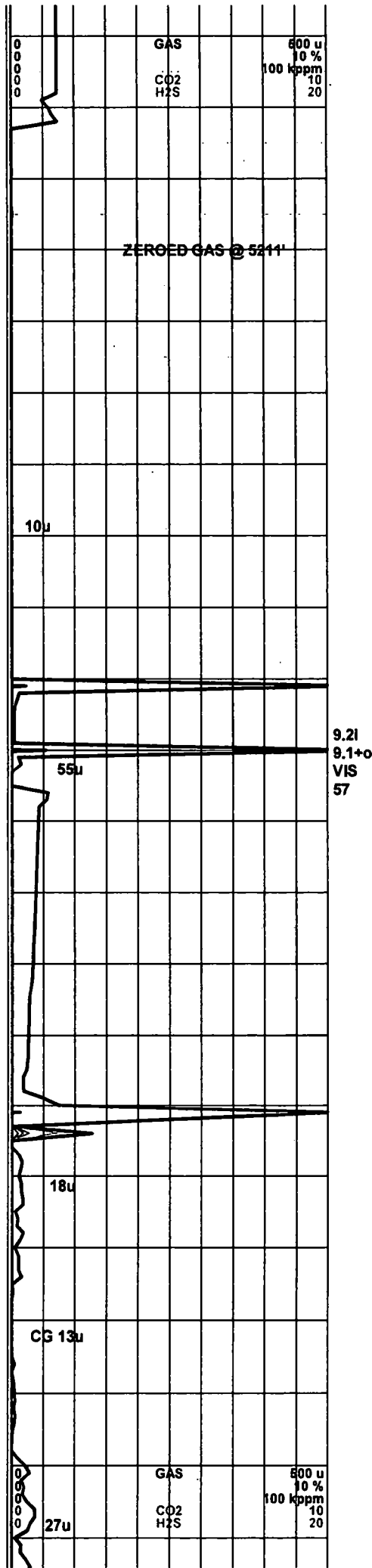
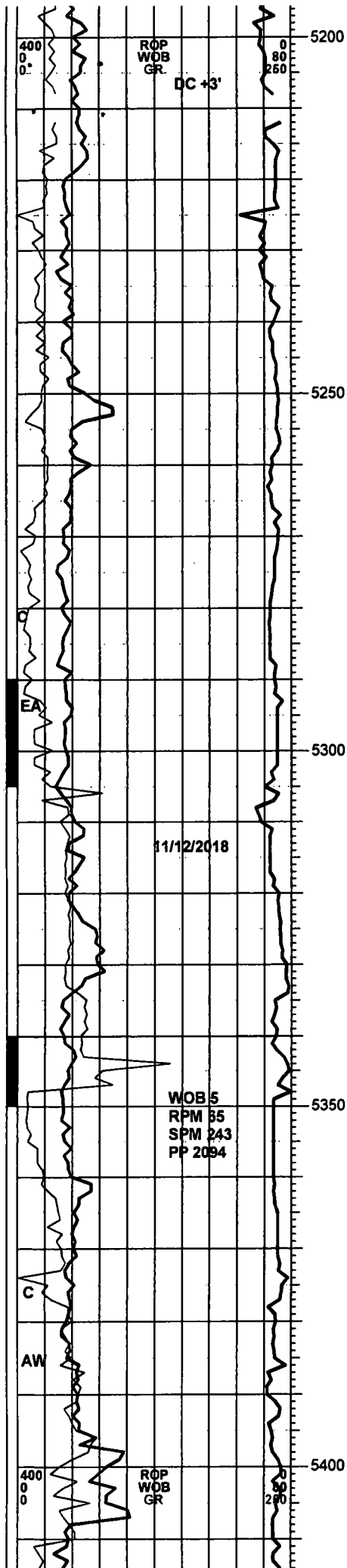
9.2i
9.1o
VIS
63

SANDSTONE: PRED MEDLTGY-
DRKGY FRI V/FGRN RND-SUBRND
W/SRTD MOD CONS CALC CMT
MD: 5037' INC: 2.95° AZI: 104.45°
TVD: 5035.68'

SANDSTONE: PRED MEDLTGY-
OCC DRKGY FRI FGRN PRED
W/SRTD CALC CMT F LAM NO
FLUOR/CUT/RNG/STN
MD: 5132' INC: 3.15° AZI: 101.97°
TVD: 5130.54'

9.1+i
9.1o
VIS
60

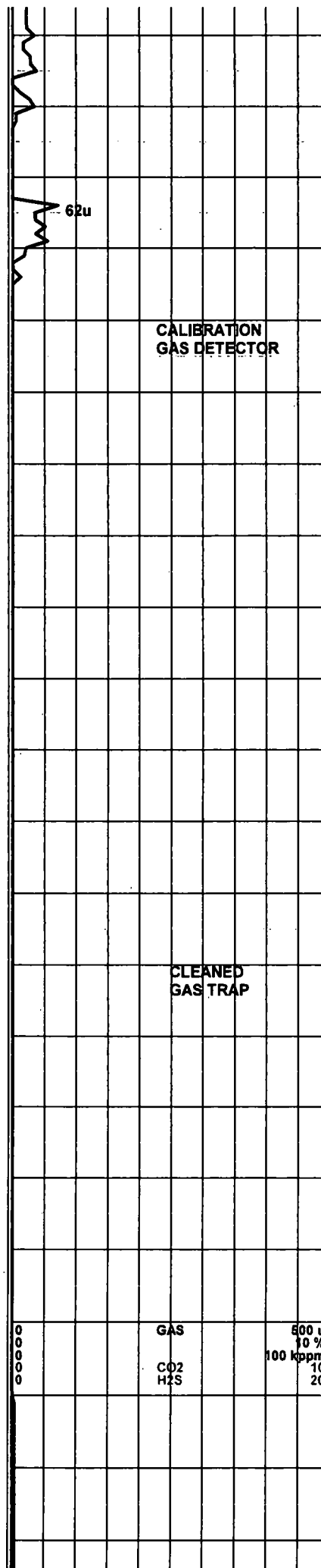
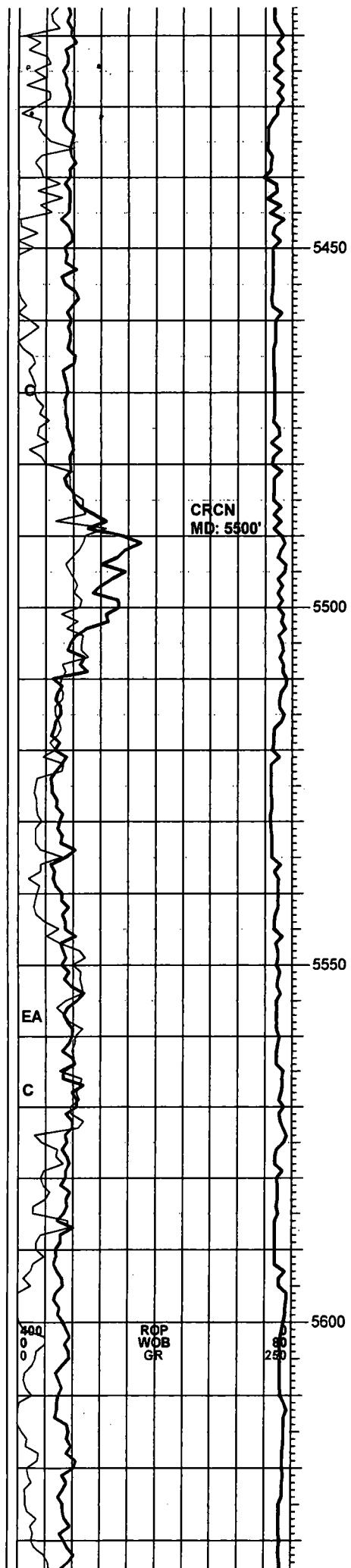
SANDSTONE: PRED MEDLTGY-
OCC DRKGY V/FGRN W/SRTD
RND LSEY CONS CALC CMT F
LAM NO FLUOR/CUT/RNG/STN
MD: 5226' INC: 3.16° AZI: 99.9° TVD:
5224.4'



SANDSTONE: PRED V/LTGY-OCC
MEDGY FRI FGRN SUBRND-
SUBANG OCC LSEY-MOD CONS
CALC CMT IMBD LS
MD: 5321' INC: 3.14° AZI: 103.31°
TVD: 5319.26'

SANDSTONE: PRED V/LTGY
CRSGRN SUBANG MOD SRTD
MOD CONS IMBD LS/FREE CAL NO
FLUOR/CUT/RNG/STN

MD: 5416' INC: 3.14° AZI: 100.1°
TVD: 5414.11'
SANDSTONE: PRED MEDLTGY-
DRKGY V/FGRN-FGRN W/RND
W/SRTD LSEY CONS DOLC-CALC
CMT OCC IMBD LS NO
FLUOR/CUT/RNG/STN

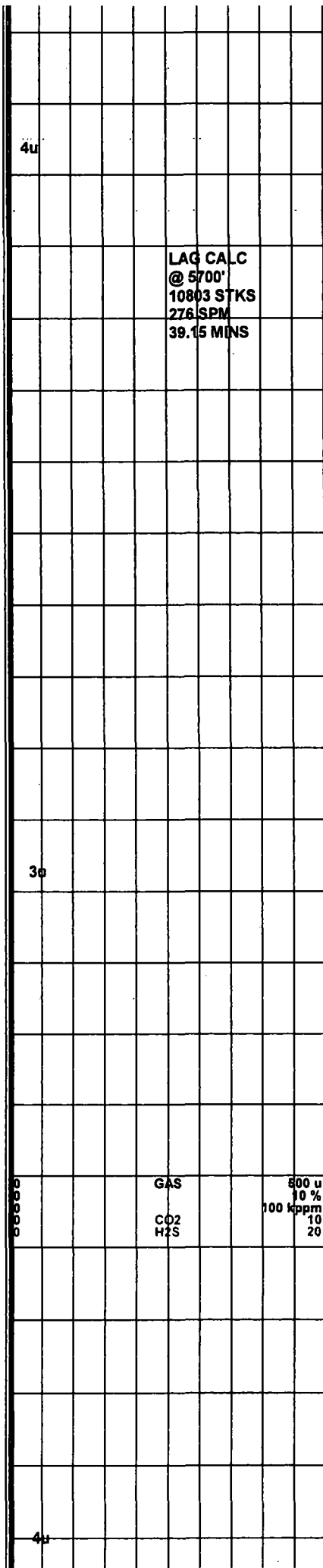
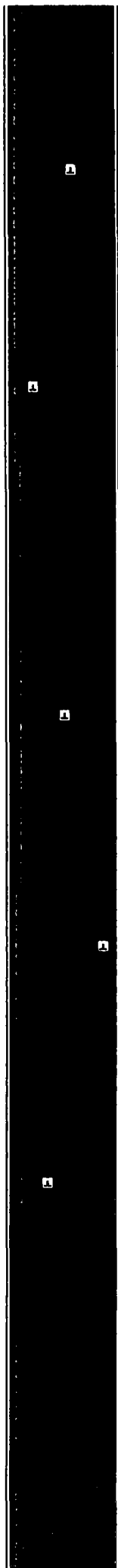
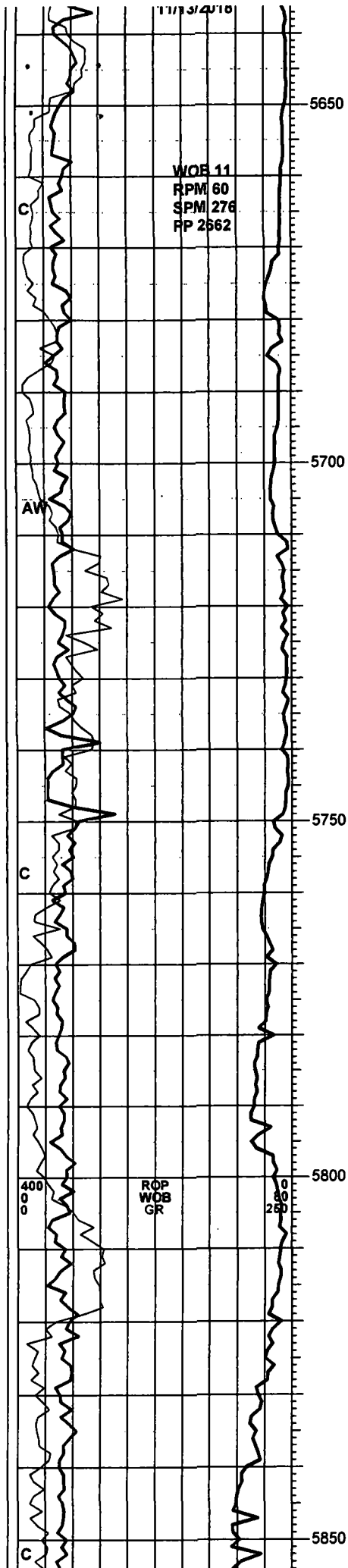


9.2i
9.2o
VIS
58

MD: 5511' INC: 3.23° AZI: 100.7°
TVD: 5408.97'
SANDSTONE: PRED MEDLTGY-
DRKGY V/FGRN-FGRN W/RND
W/SRTD LSEY CONS DOLC-CALC
CMT NO FLUOR/CUT/RNG/STN

9.1i
9.1o
VIS
58

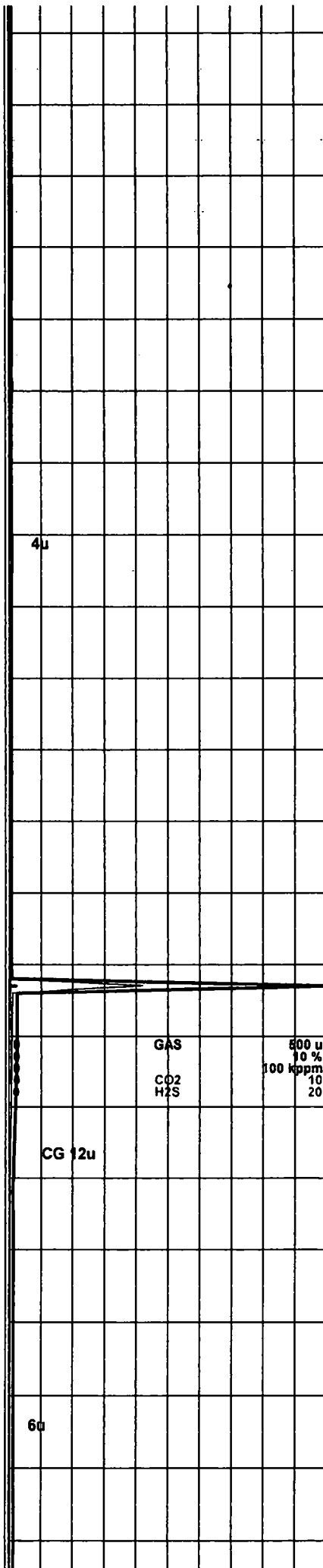
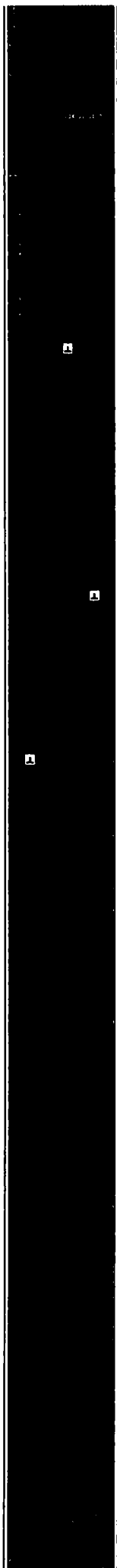
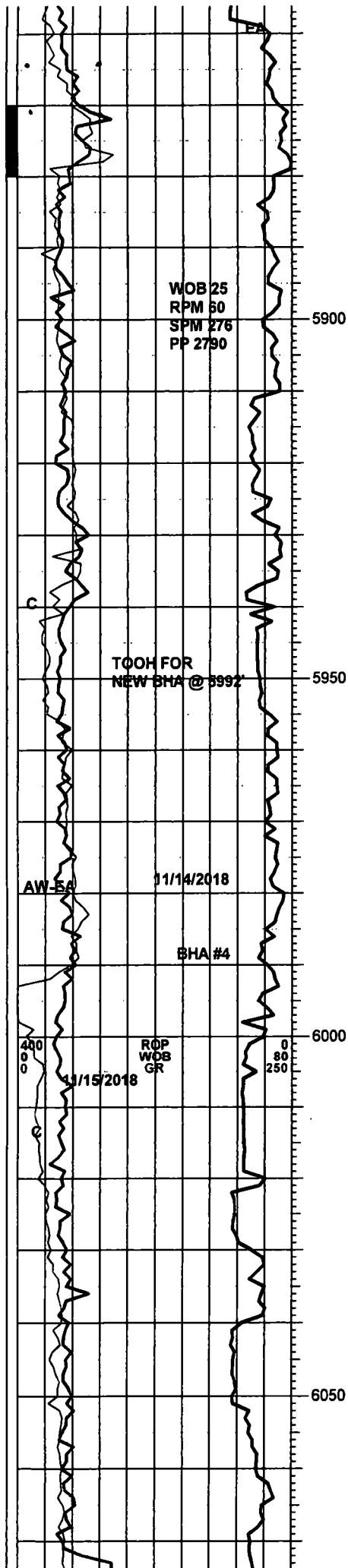
MD: 5605' INC: 2.92° AZI: 100.82°
TVD: 5602.83'
SANDSTONE: PRED MEDLTGY-
DKGY FRI V/FGRN RND-SUBRND
W/SRTD MOD CONS CALC CMT
IMBD LS NO FLUOR/CUT/RNG/STN



SANDSTONE: PRED DRKG-
LTGY/OCC MEDGY FRI V/FGRN
SUBANG OCC LSEY-MOD CONS
CALC CMT IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 5700' INC: 2.95° AZI: 102.05°
TVD: 5697.71'

9.2i
9.1o
VIS
56

MD: 5795' INC: 3.04° AZI: 99.47°
TVD: 5792.58'
SANDSTONE: PRED V/LTGY-OCC
MODRDOR FGRN W/RND W/SRTD
LSEY CONS CALC CMT IMBD PNK
FLD NO FLUOR/CUT/RNG/STN



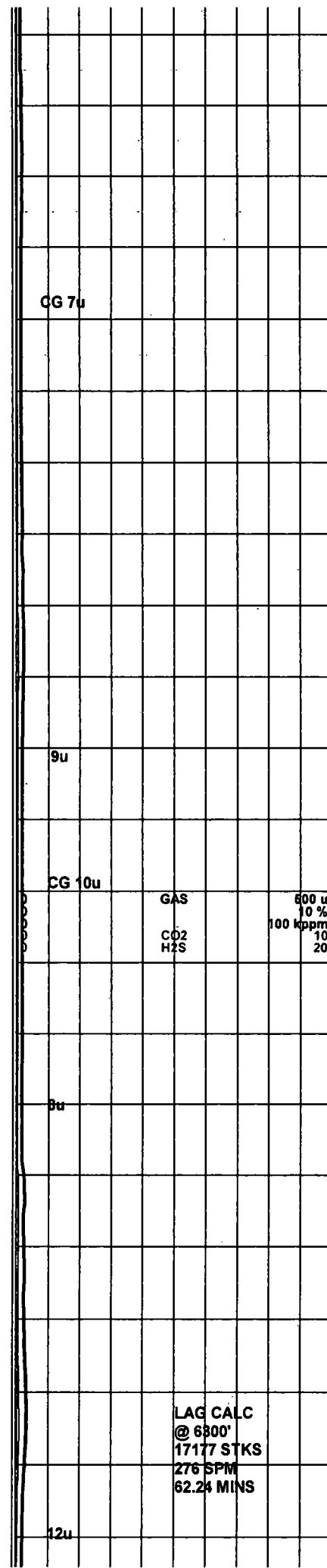
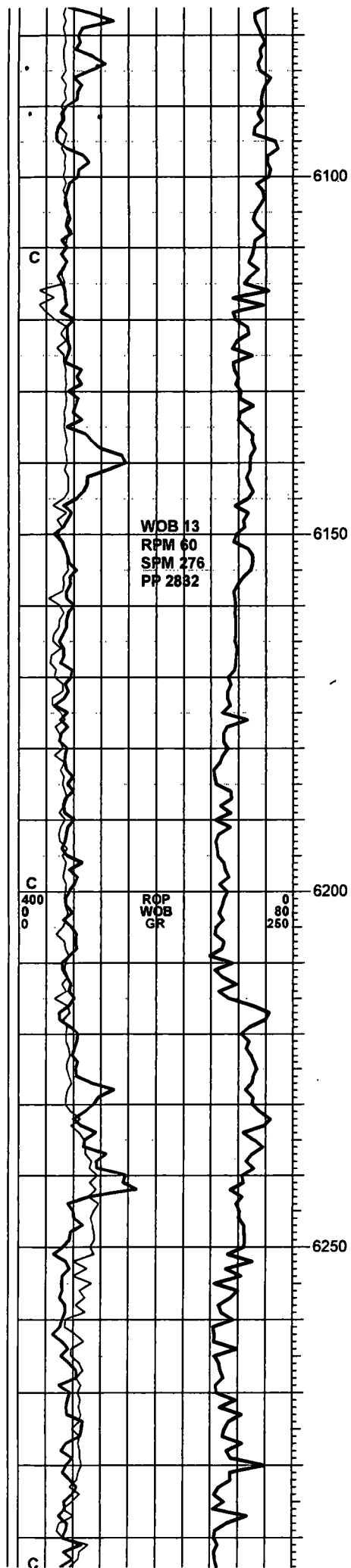
MD: 5890' INC: 3.14° AZI: 98.82°
TVD: 5887.44'
SANDSTONE: PRED V/LTGY
SUBANG MOD SRD MOD CONS
CALC IMBD LS NO FLUOR/CUT/
RNG/STN

9.2i
9.1o
VIS
59

MD: 5952' INC: 3.23° AZI: 101.79°
TVD: 5949.34'
SANDSTONE: PRED V/LTGY
SUBANG MOD SRD MOD CONS
CALC NO FLOUR/CUT/RNG/STN

MD: 6047' INC: 2.95° AZI: 102.78°
TVD: 6044.21'
SANDSTONE: PRED MEDLTGY-
DRKGY FRI FGRN PRED W/SRTD
CMT F LAM NO
FLUOR/CUT/RNG/STN

9.2i
9.1o
VIS
59

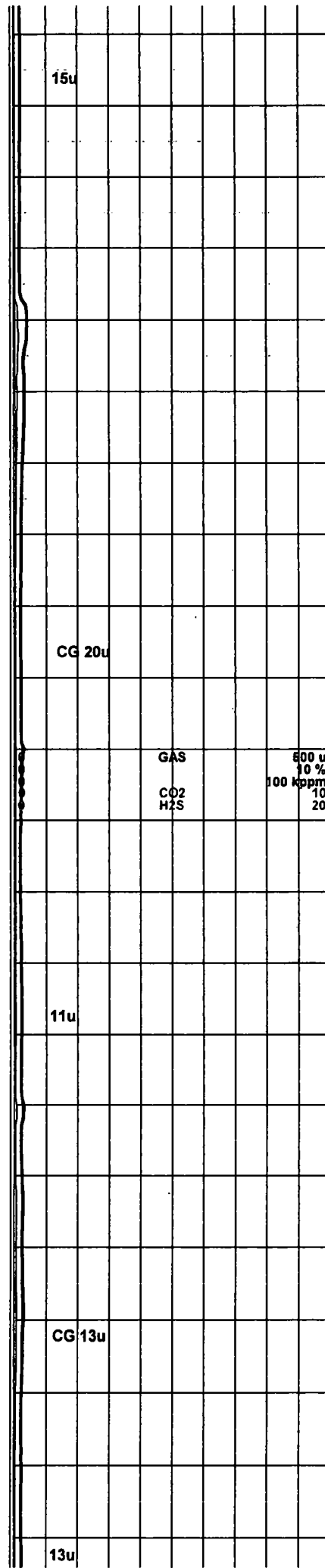
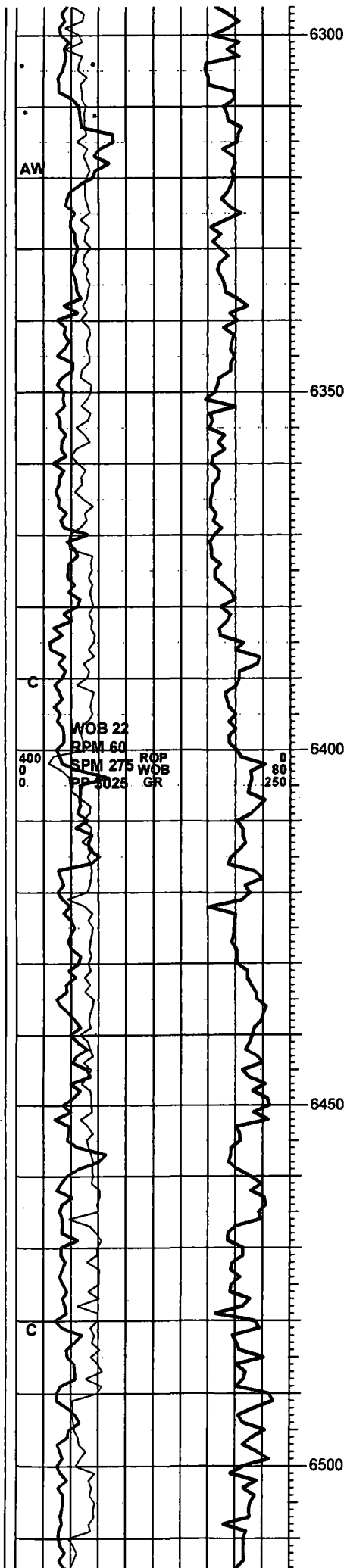


MD: 6141' INC: 2.69° AZI: 105.41°
TVD: 6138.09'
SANDSTONE: PRED DRKGY-LTGY
FRI V/FGRN SUBANG OCC HD
MOD CONS CMT NO
FLUOR/CUT/RNG/STN

9.2i
9.1o
VIS
59

MD: 6236' INC: 2.38° AZI: 106.88°
TVD: 6233'
PRED MEDLTGY-DRKGY FRI
V/FGRN RND-SUBRND W/SRTD
MOD CONS CMT

SANDSTONE: DRKGY-LTGY HD
V/FGRN SUBANG MOD CONS
CALC CMT NO
FLUOR/CUT/RNG/STN



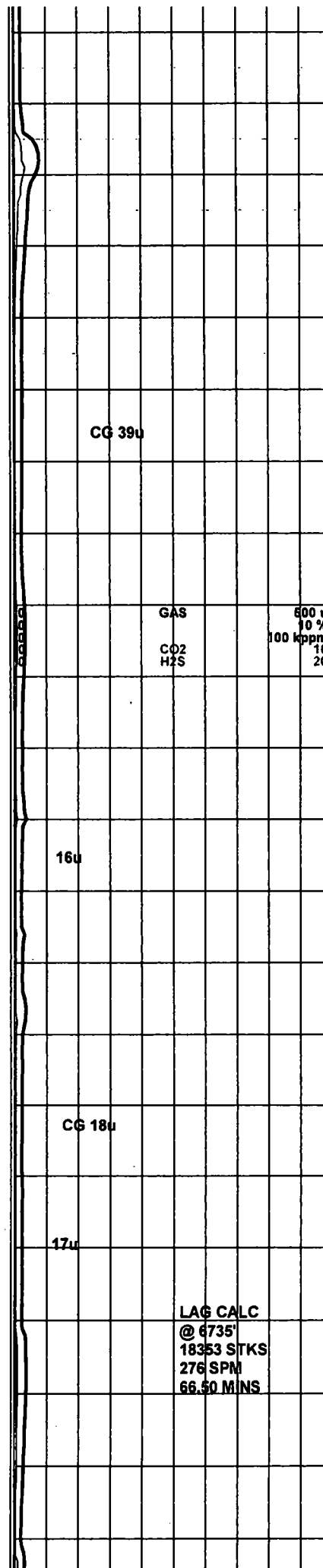
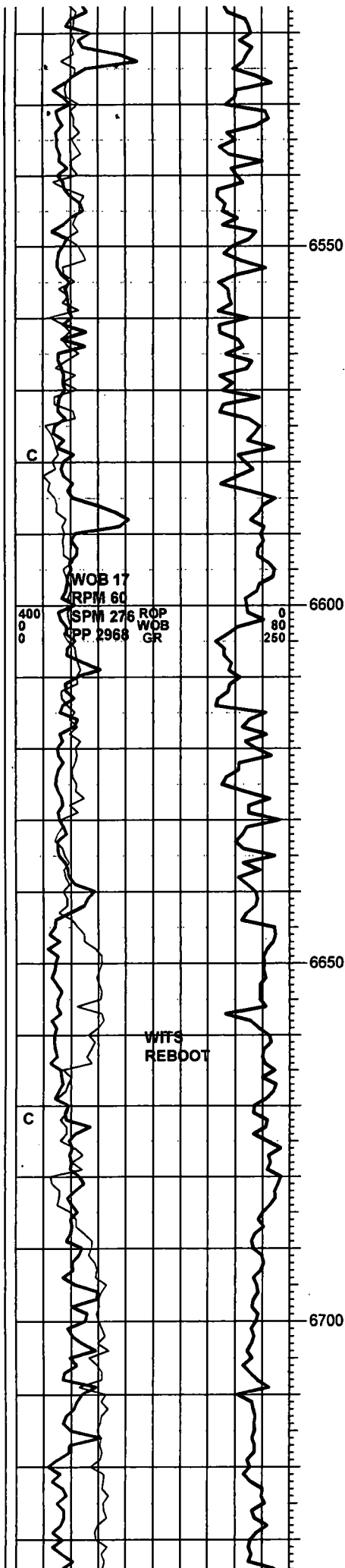
TVD: 6327.92'

9.2i
9.1o
VIS
59

SANDSTONE: DRKGY-LTGY FRI
PRED V/F-FGRN RND W/SRTD
MOD CONS CALC CMT NO
FLUOR/CUT/RNG/STN
MD: 6426' INC: 2.17° AZI: 115.21°
TVD: 6422.85'

SANDSTONE: DRKGY-LTGY FRI
PRED V/FGRN-FGRN SUBANG
W/SRTD MOD CONS CALC CMT
NO FLUOR/CUT/RNG/STN
MD: 6521' INC: 1.71° AZI: 126.71°
TVD: 6517.79'

9.2i
9.1o
VIS
59



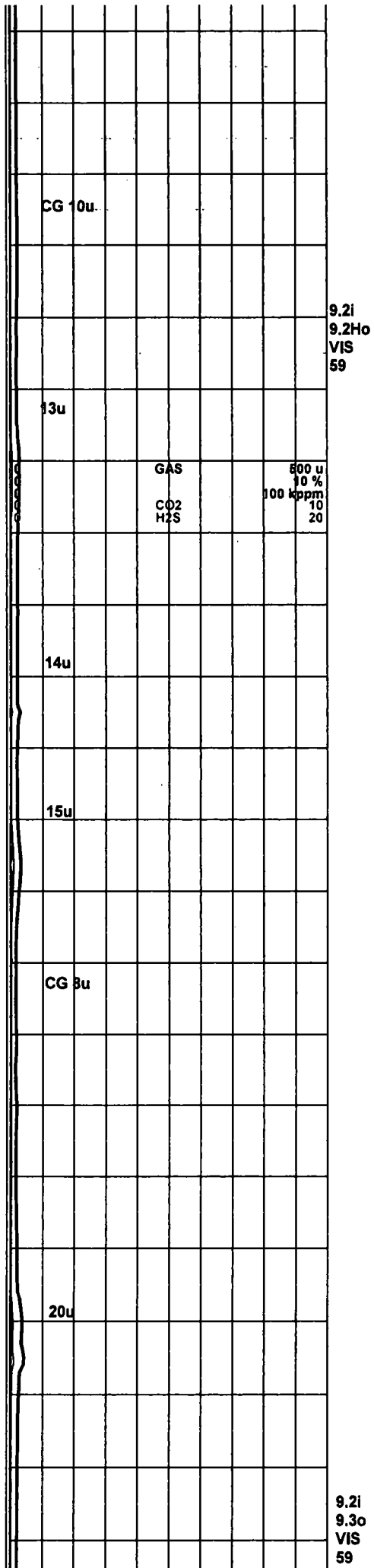
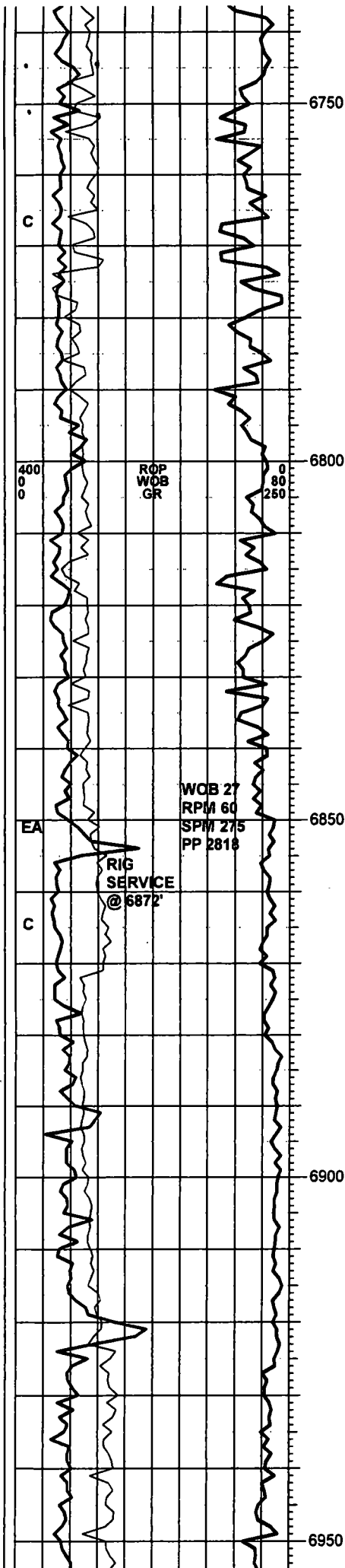
SANDSTONE: MEDDRKGY-LTGY
HD FGRN SUBANG-RND W/SRTD
LSEY CONS CALC/DOLO CMT
IMBD LS NO FLUOR/CUT/RNG/STN
MD: 6615' INC: 1.17" AZI: 134.78"
TVD: 6611.76'

SANDSTONE: DRKGY-OCC LTGY
BRI V/FGRN SUBANG-RND
W/SRTD MOD CONS PRED DOLO
CMT NO FLUOR/CUT/RNG/STN
MD: 6710' INC: 1.23" AZI: 132.66"
TVD: 6706.74'

9.2HI
9.2o
VIS
59

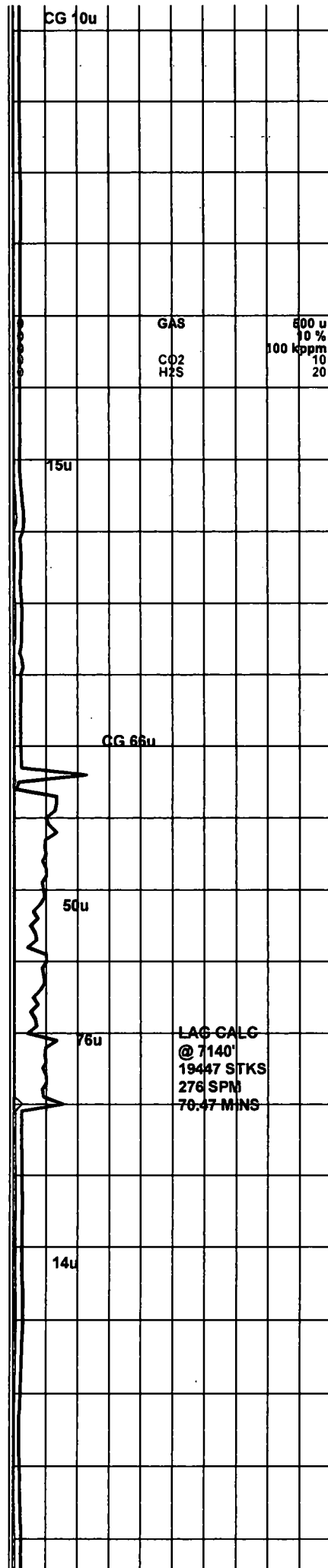
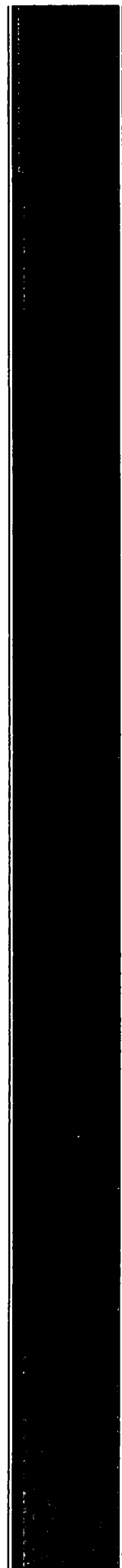
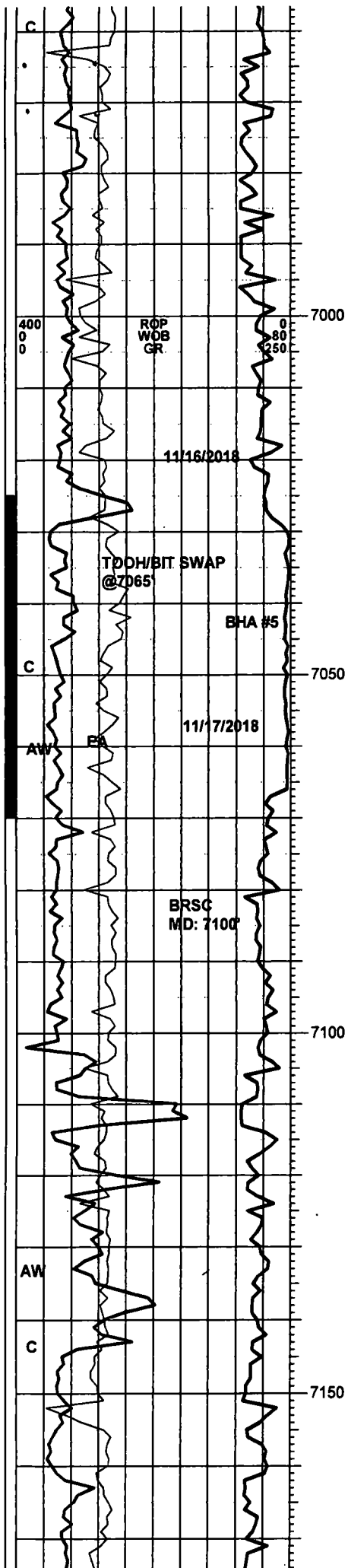
SANDSTONE: PRED LTGY BRI-FRI
V/FGRN RND W/SRTD LSEY CONS
CALC CMT NO
FLUOR/CUT/RNG/STN

• •
• •



MD: 6804' INC: 0.84° AZI: 129.7°
TVD: 6800.73'
SANDSTONE: PRED DRKGY-OCC
LTGY FRI-BRI V/FGRN RND-
SUBANG W/SRTD MOD CONS
PRED DOLO CMT NO
FLUOR/CUT/RNG/STN

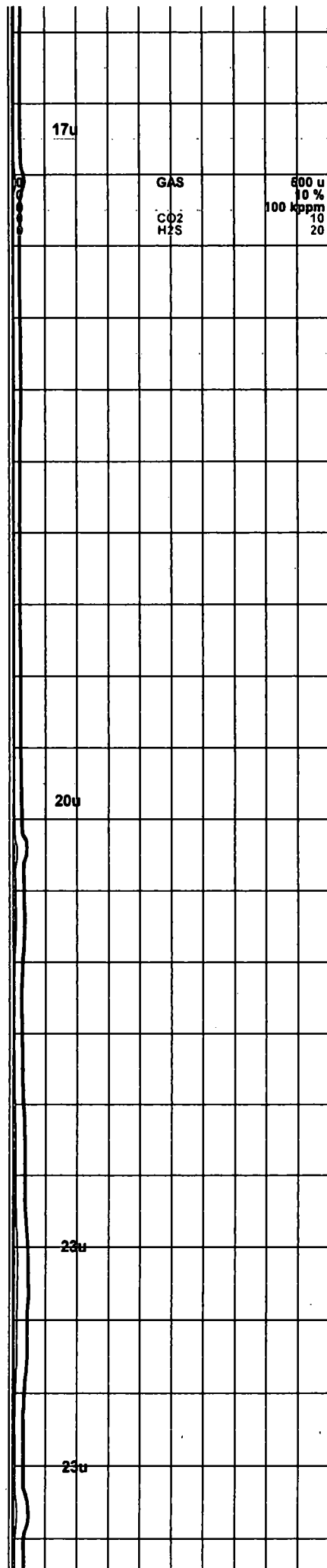
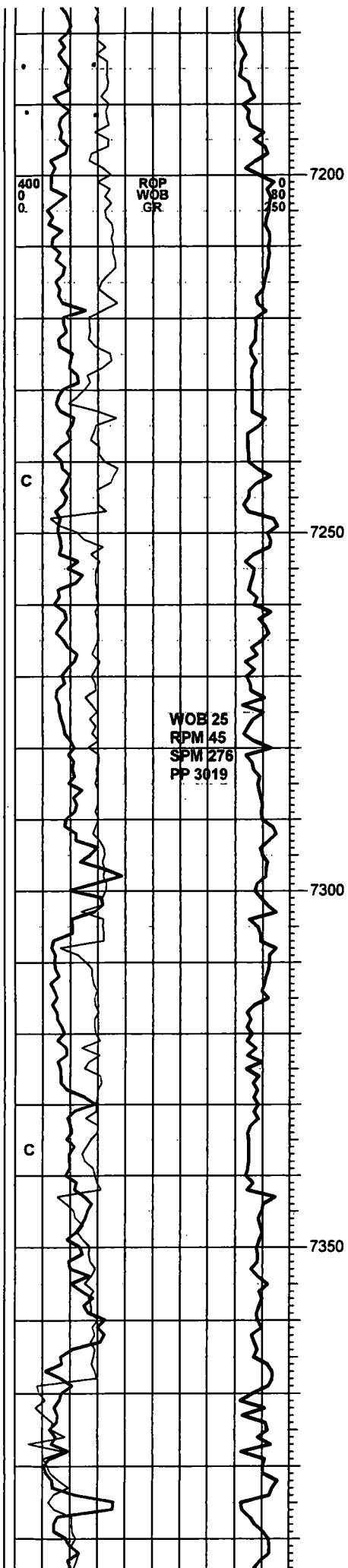
MD: 6889' INC: 0.65° AZI: 127.79°
TVD: 6895.72'
SANDSTONE: DRKGY-LTGY HD
V/FGRN SUBANG MOD CONS CMT
NO FLUOR/CUT/RNG/STN IMBD LS



MD: 6993' INC: 0.65° AZI: 130.02°
 TVD: 6989.71'
 SANDSTONE: PRED MEDLTGY-
 DRKGY FRI FGRN PRED W/SRTD
 CMT DOLOMITIC F LAM NO
 FLUOR/CUT/RNG/STN

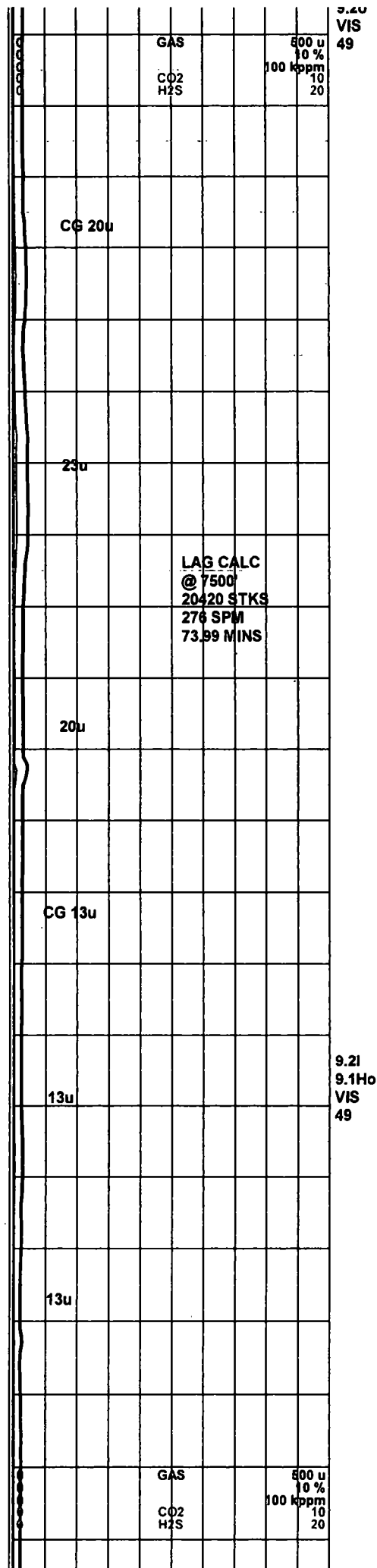
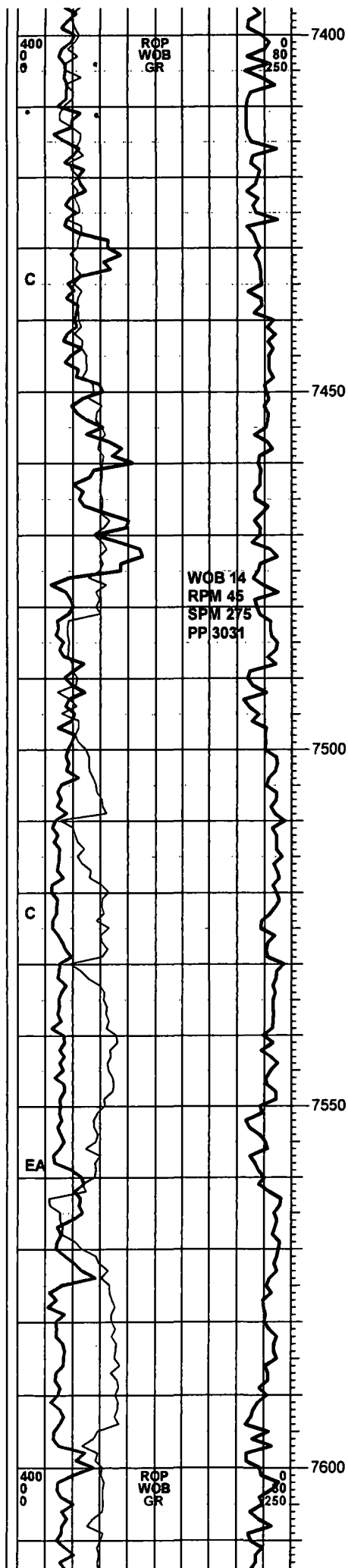
MD: 7087' INC: 0.57° AZI: 158.05°
 TVD: 7083.71'
 SANDSTONE: MEDLTGY-DRKGY
 FRI FGRN PRED W/SRTD CMT
 DOLOMITIC F NO
 FLUOR /CUT/RNG/STN

SANDSTONE: MEDGY-OCC
 DRKGY HD FGRN PRED RND-
 SUBANG W/SRTD MOD CONS
 CALC CMT IMBD LS TR FNT BLGN
 FLUOR/MLKY WH CUT/BLSHWH
 RNG/NO STN
 MD: 7182' INC: 0.62° AZI: 172.1°
 TVD: 7178.7'



SANDSTONE: MEDGY-MEDLTGY
FRI PRED FGRN SUBANG W/SRTD
MOD CONS CALC CMT NO
FLUOR/CUT/RNG/STN
MD: 7276' INC: 0.81° AZI: 182.1°
TVD: 7272.7'

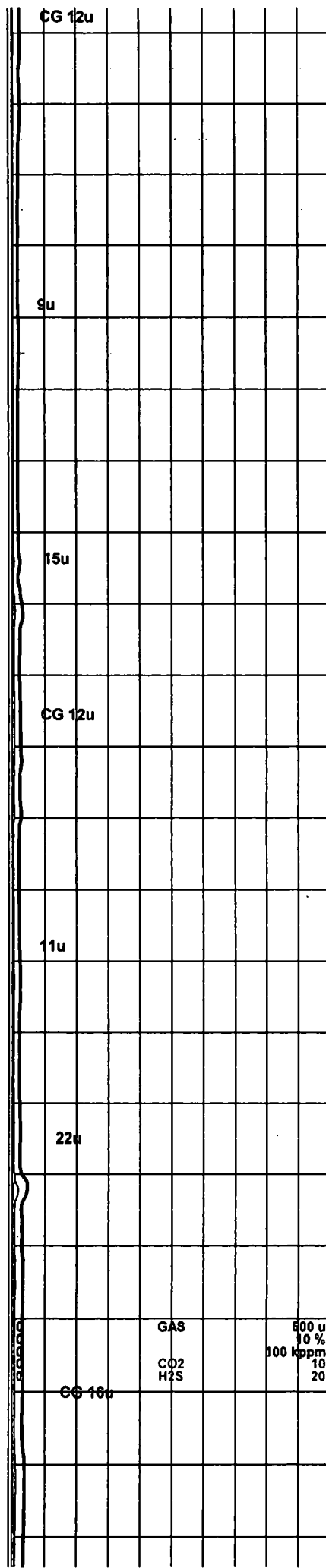
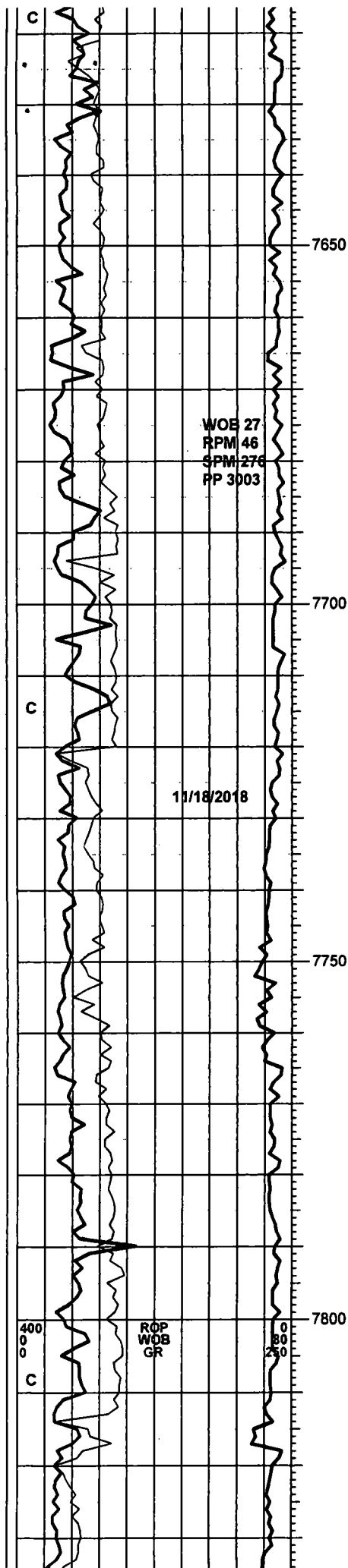
SANDSTONE: PRED DRKGY-OCC
MEDDRKGY/BLK BRI-HD V/FGRN
W/RND W/SRTD MOD CONS CALC
CMT TR IMBD LS TR FNT BLGN
FLUOR/MLKY WH CUT/BLSHWH
RNG/NO STN
MD: 7371' INC: 0.57° AZI: 189.39°
TVD: 7367.69'



SANDSTONE: PRED DRKGY-
MEDLTGY BRI-OCC HD V/FGRN
RND W/SRTD MOD CONS CALC
CMT TR IMBD LS CAL NO
FLUOR/CUT/RNG/STN
MD: 7465' INC: 0.59° AZI: 203.67°
TVD: 7461.68'

SANDSTONE: PRED LTGY-
MEDLTGY BRI-FRI FGRN SUBANG-
RND W/SRTD MOD CONS CALC-
OCC SIL CMT TR FNT BLGN
FLUOR/MLKY WH CUT/FNT
BLSHWH RNG/NO STN
MD: 7560' INC: 0.7° AZI: 195.8°
TVD: 7556.68'

SANDSTONE: PRED DRKGY-
MEDDRKGY BRI-HD V/FGRN
W/SRTD MOD CONS CALC CMT
IMBD LS NO FLUOR/MLKY WH
CUT/BLSHWH RNG/NO STN
MD: 7654' INC: 0.77° AZI: 199.34°
TVD: 7650.67'

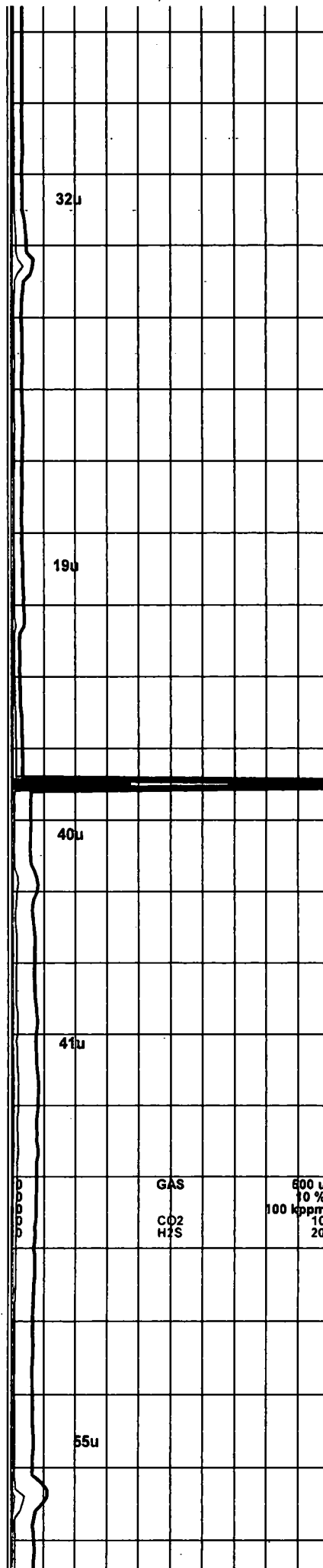
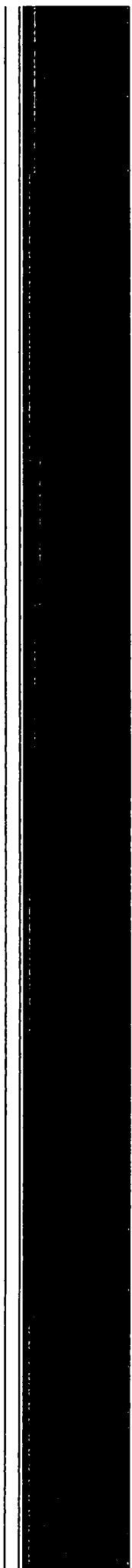
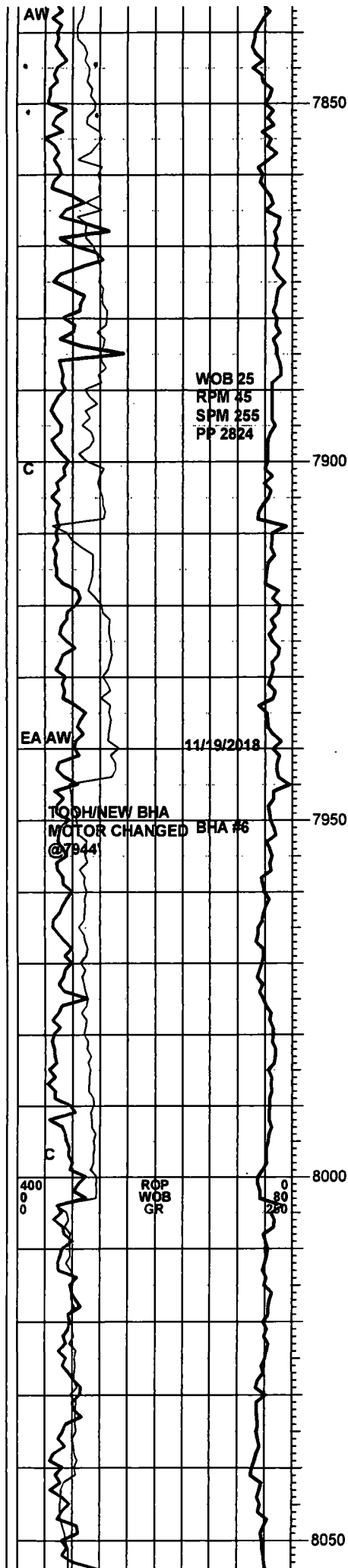


SANDSTONE: DRK-DRKGY HD-BRI
V/FGRN SUBANG MOD CONS CMT
NO FLUOR/CUT/RNG/STN IMBD LS

9.2i
9.1Ho
VIS
49

MD: 7749' INC: 0.73° AZI: 195.01°
TVD: 7745.66'
SANDSTONE: PRED DRK-DRKGY
BRI-OCC HD V/FGRN SUBRND
W/SRTD MOD CONS CALC CMT
IMBD LS

SANDSTONE: MEDDRKGY-
MEDLTGY FRI PRED FGRN W/RND
W/SRTD LSEY CONS CALC CMT
TR IMBD CAL NO
FLUOR/CUT/RNG/STN
MD: 7844' INC: 0.63° AZI: 197.8°
TVD: 7840.66'

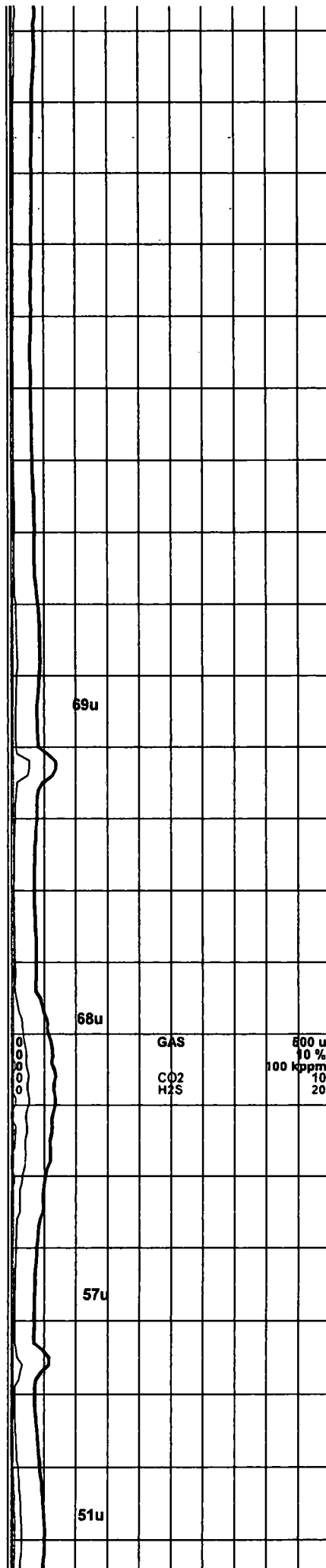
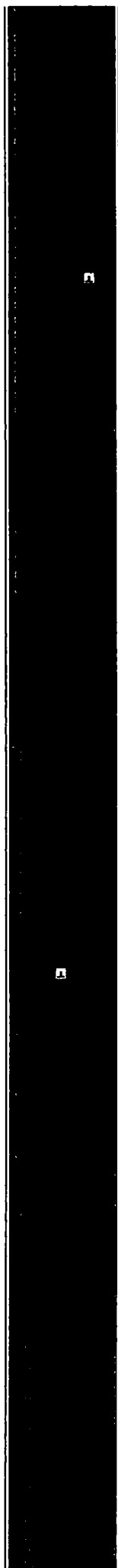
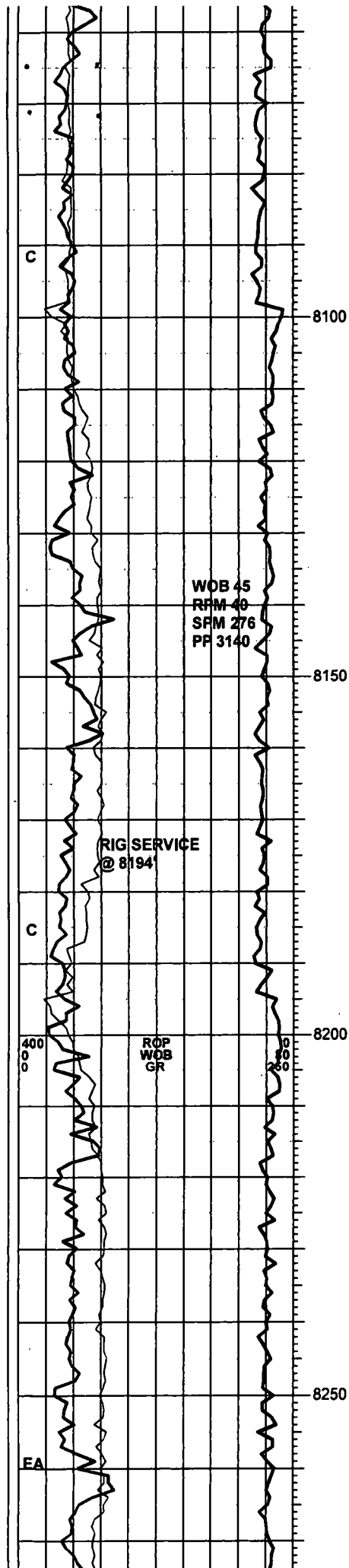


9.2HI
9.1o
VIS
59

SANDSTONE: DRKGY-MEDGY
PRED FRI-OCC BRI F-V/FGRN
W/RND W/SRTD MOD CONS CALC
CMT/DOLO CMT NO
FLUOR/CUT/RNG/STN
MD: 7940' INC: 0.48° AZI: 176.78°
TVD: 7936.65'

9.2i
9.1Ho
VIS
59

SANDSTONE: MEDGY-DRKGY BRI-
OCC VHD F-MGRN RND W/SRTD
W/CONS SLI CALC CMT NO
FLUOR/CUT/RNG/STN
MD: 8034' INC: 0.51° AZI: 175.76°
TVD: 8030.65'



SANDSTONE: PRED DRKGY-SCAT
MEDLTGY BRI-HD FGRN W/RND
W/SRTD MOD CONS CALC/DOLC
CMT TR IMBD CAL NO
FLUOR/CUT/RNG/STN
MD: 8129' INC: 0.59° AZI: 168.00°
TVD: 8125.64'

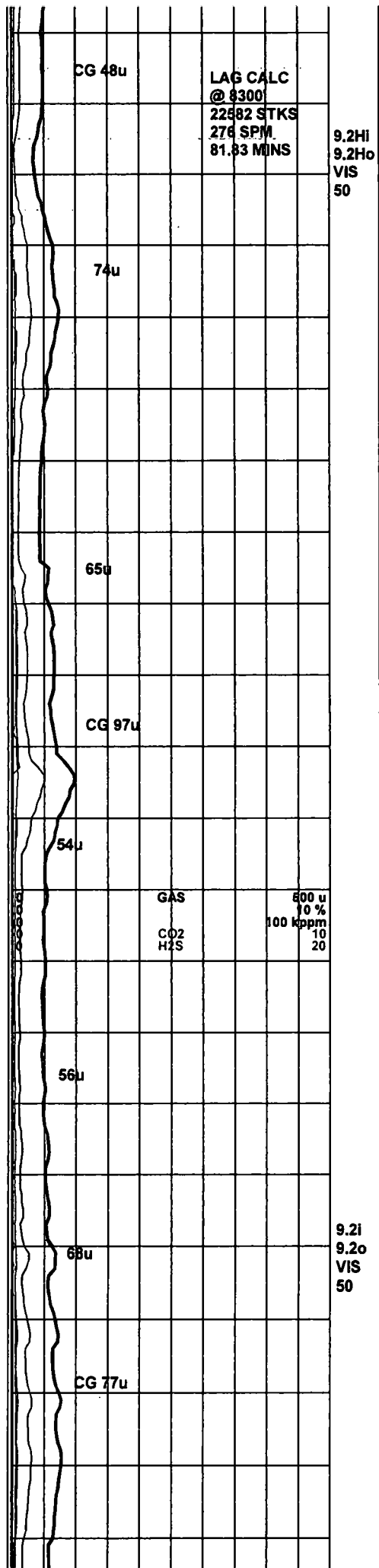
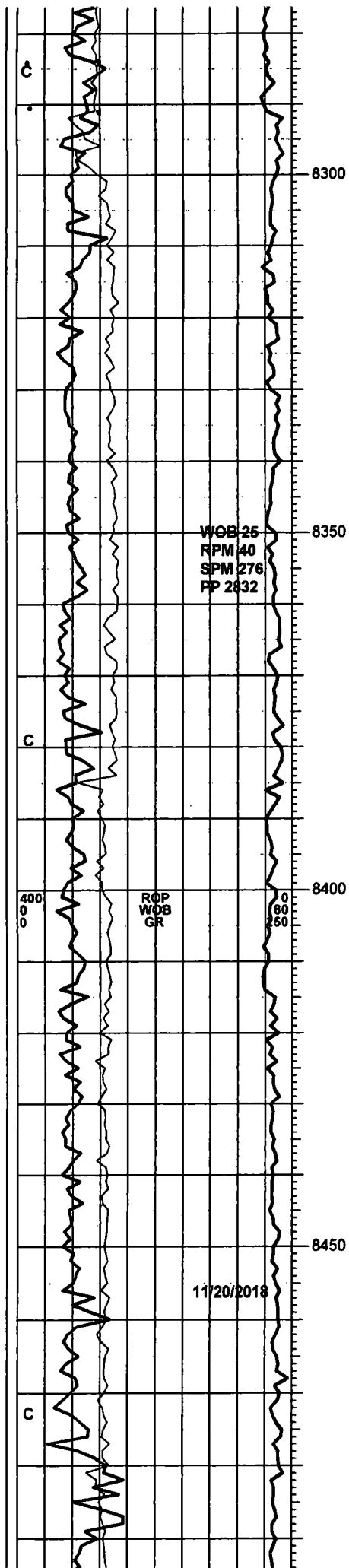
9.2i
9.1o
VIS
59

SANDSTONE: PRED MEDDRKGY
BRI-VHD FGRN SUBANG-RND
W/SRTD PRED W/CONS CALC
CMT TR IMBD CAL NO
FLUOR/CUT/RNG/STN
MD: 8223' INC: 0.71° AZI: 182.59°
TVD: 8219.64'

600 u
10 %
100 kppm
10
20

GAS
CO2
H2S

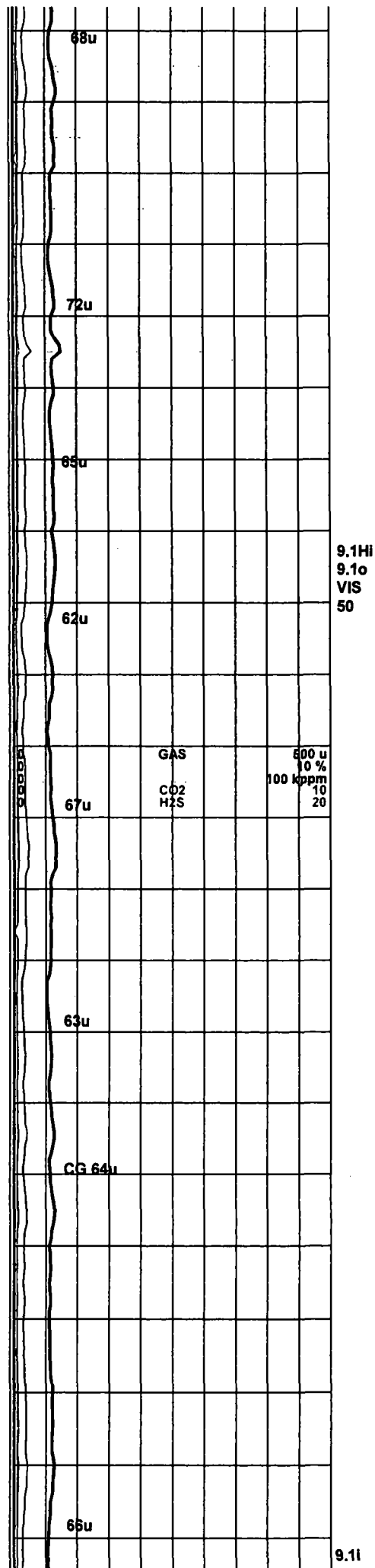
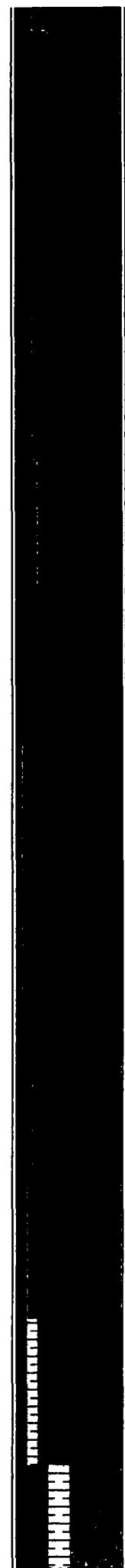
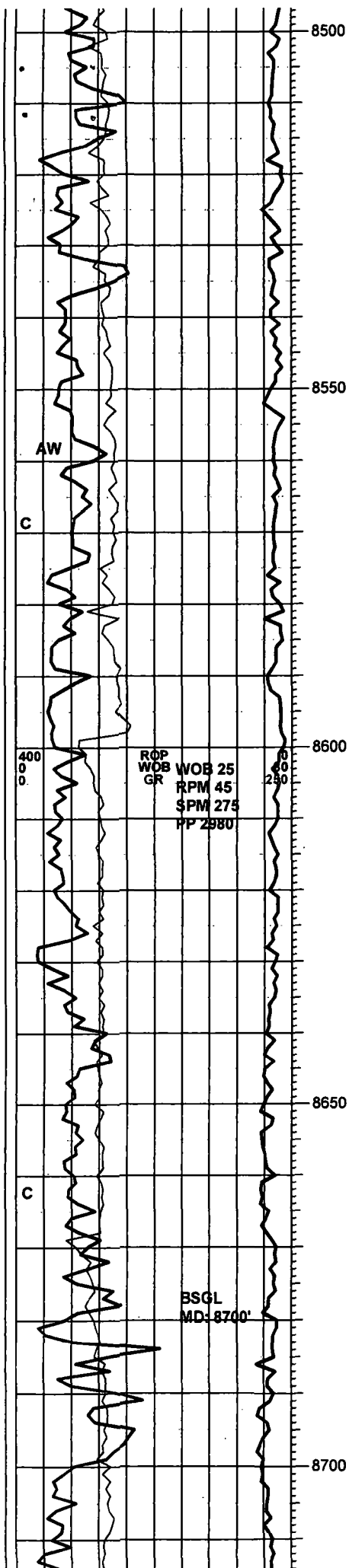
SANDSTONE: DRKGY HD-BRI-OCC
VHD MGRN RND W/SRTD W/CONS
NO FLUOR/CUT/RNG/STN IMBD LS



MD: 8318' INC: 0.7° AZI: 196.63°
TVD: 8314.63'
SANDSTONE: PRED DRKGY-SCAT
DRKGY BRI-HD FGRN W/SRTD
MOD CONS CALC IMBD LS NO
FLUOR/CUT/RNG/STN

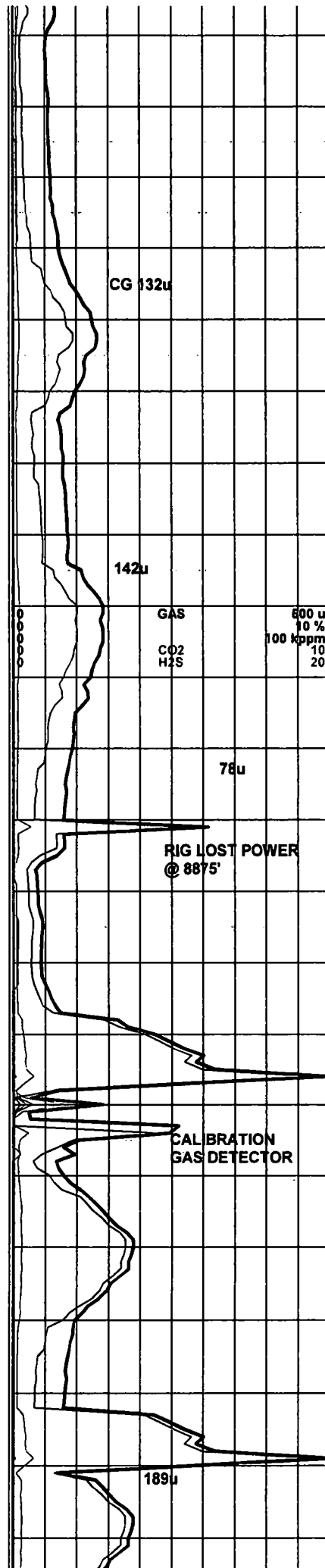
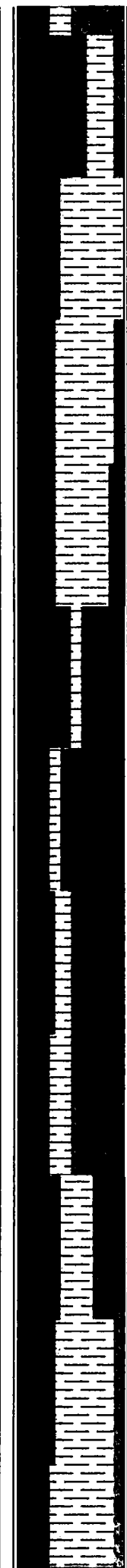
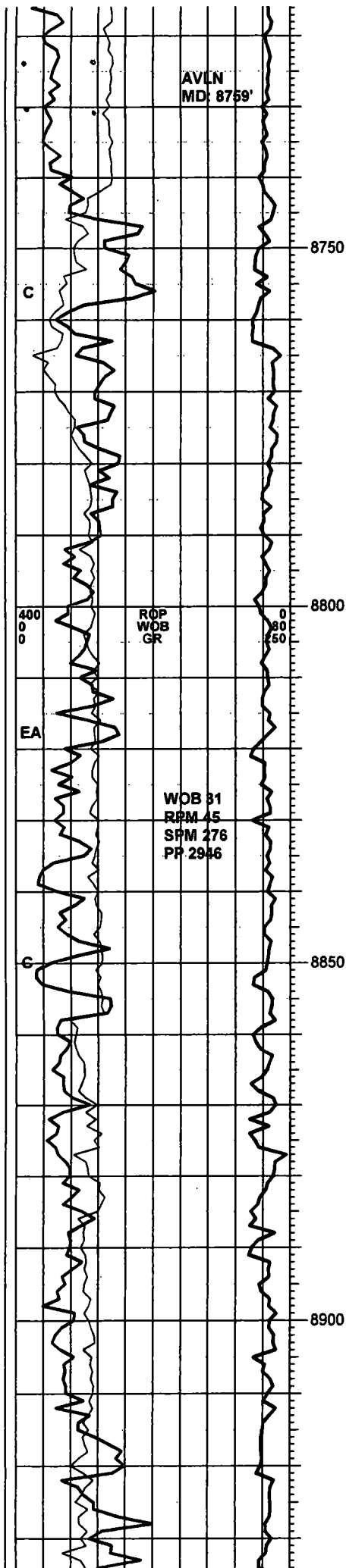
SANDSTONE: PRED DRKGY-
MEDLTGY BRI-HD GRN W/SRTD
MOD CONS CALC IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 8414' INC: 0.63° AZI: 184.58°
TVD: 8409.62'

SANDSTONE: MED DRKGY-HD
SUBANG W/SRTD MOD CONS
CALC IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 8507' INC: 0.64° AZI: 183.75°
TVD: 8503.62'



SANDSTONE: PRED MEDGY-
DRKGY FRI MEDGRN-FGRN
SUBANG-RND W/SRTD MOD CONS
CALC CMT IMBD LS/TR IMBD CAL
NO FLUOR/CUT/RNG/STN
MD: 8602' INC: 0.67° AZI: 185.77°
TVD: 8598.61'

SANDSTONE: DRKGY-MEDGY FRI-
BRI PRED FGRN SUBANG-RND
W/SRTD MOD CONS CALC/OCC
DOLC CMT NO
FLUOR/CUT/RNG/STN
MD: 8697' INC: 0.63° AZI: 193.55°
TVD: 8693.61'



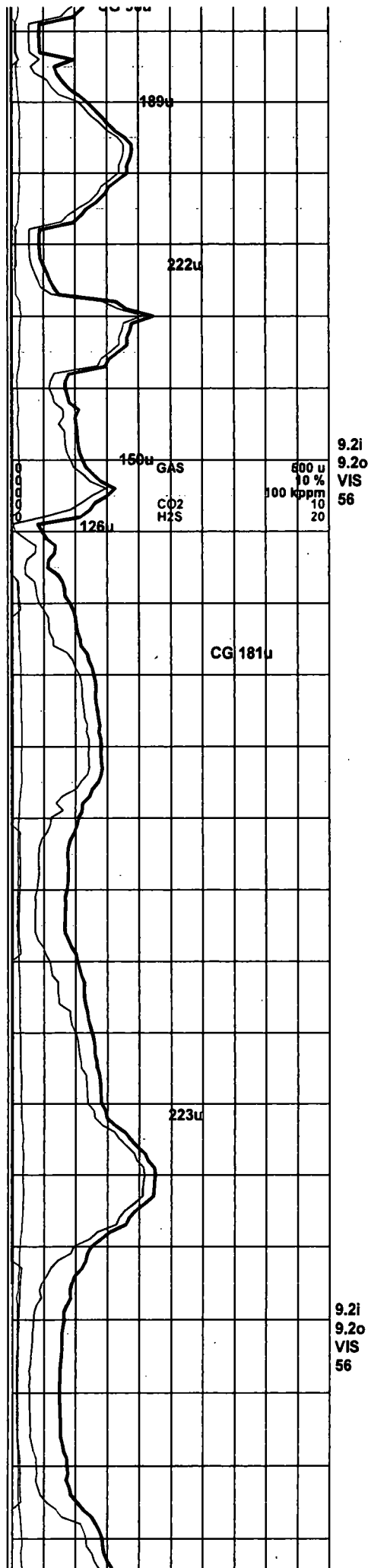
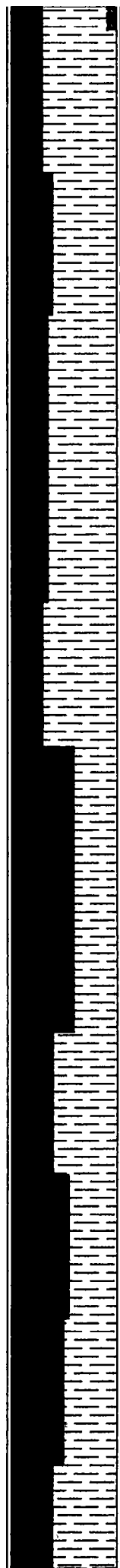
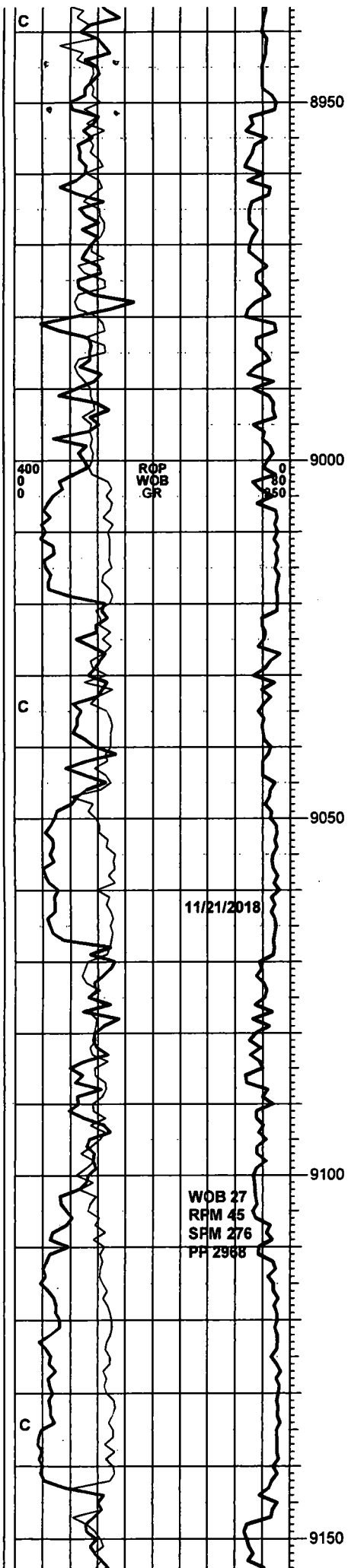
VIS
58

SHALE: PRED MEDDRKGY BRI
SUBBLKY-BLKY MED-FTXT IMBD
SS LAMN/CALC FLK
LIMESTONE: TN PRED MEDXLN-
FXLN FRI DOLC FRMWRK ARG
MD: 8791' INC: 0.62° AZI: 187.08°
TVD: 8787.6'

SHALE: PRED DRKGY BRI
SUBBLKY-BLKY MED-FTXT IMBD
SS CALC FLK
LIMESTONE: TN PRED MEDXLN-
FXLN FRI DOLC FRMWRK ARG
MD: 8886' INC: 0.68° AZI: 209.38°
TVD: 8882.59'

9.2i
9.2o
VIS
56

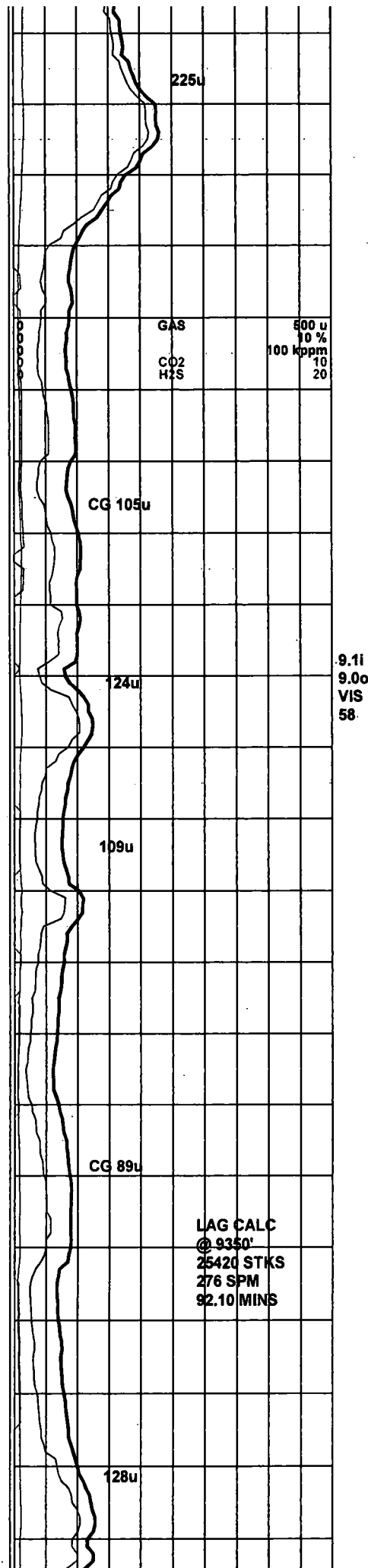
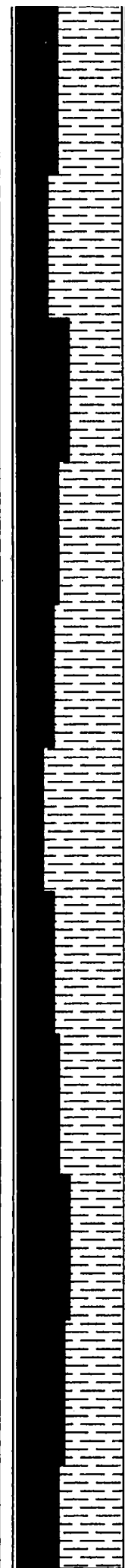
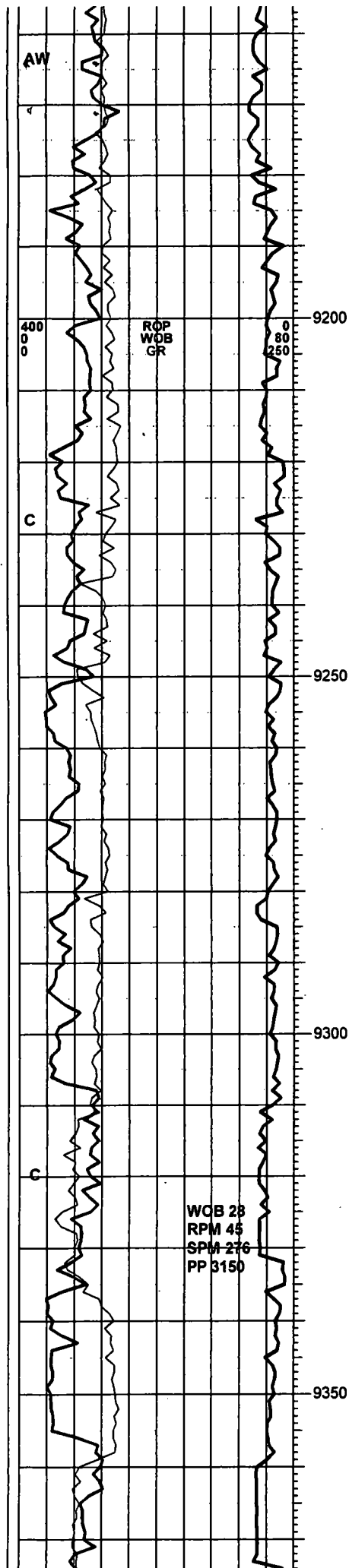
SHALE: DRK BRI SUBBLKY-BLKY
MED-FTXT SLI IMBD SS CALC
LIMESTONE: TN PRED MEDXLN-
FXLN FRI ARG



SHALE: PRED DRK HD SUBBLKY-
BLKY SMTH-FTXT CALC FLK
LIMESTONE: TN PRED MEDXLN
FRI DOLC ARG
MD: 8980' INC: 0.45° AZI: 234.3°
TVD: 8976.59'

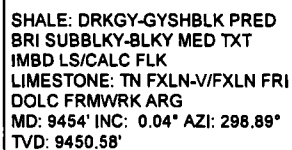
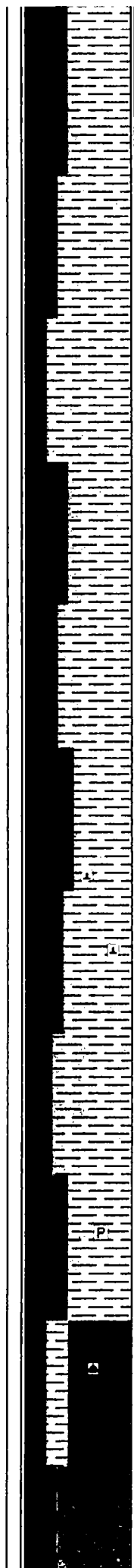
SHALE: PRED DRK HD SUBBLKY-
BLKY F-SMTH TXT CALC FLK
LIMESTONE: TN PRED MEDXLN
FRI DOLC ARG
MD: 9075' INC: 0.43° AZI: 238.66°
TVD: 9071.59'

SHALE: PRED DRK HD SUBBLKY-
BLKY F-OCC LAM TXT CALC FLK
LIMESTONE: TN PRED MEDXLN
FRI ARG
MD: 9170' INC: 0.39° AZI: 206.45°
TVD: 9166.58'

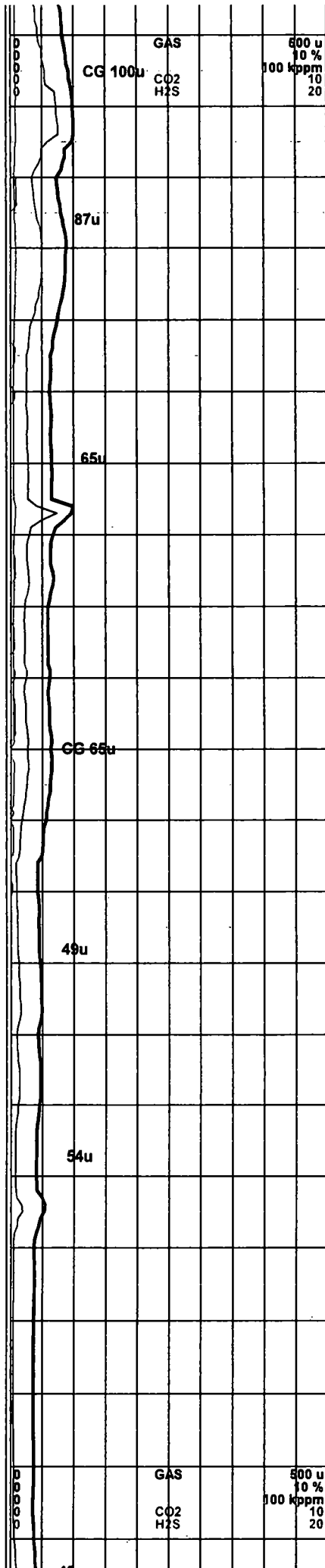
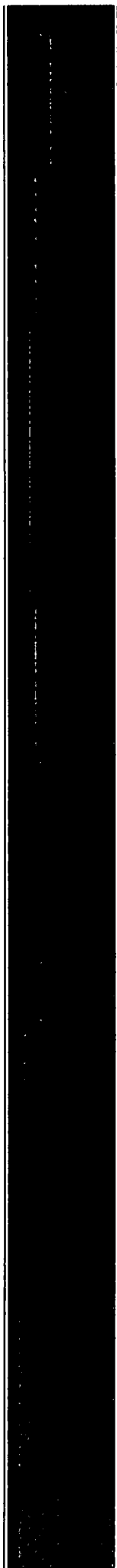
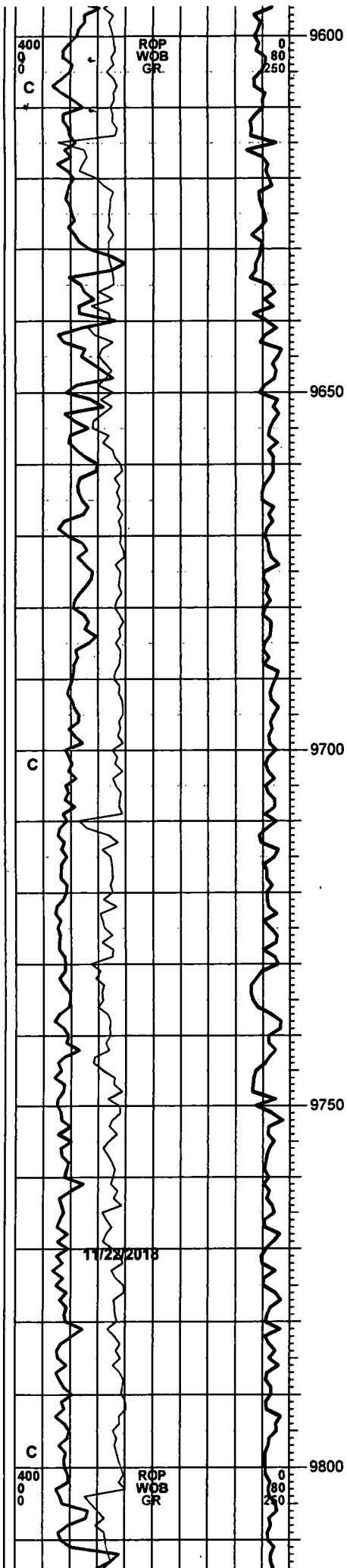


SHALE: PRED MEDDRKGY-DRKGY
BRI-HD SUBBLKY SMTH-F TXT
IMBD LS/SCAT CALC FLK
LIMESTONE: PRED TN-OFFWH
MEDXLN PRED FRI DOLC ARG
MD: 9265' INC: 0.22° AZI: 159.15°
TVD: 9261.58'

SHALE: MEDDRKGY-DRKGY PRED
BRI SUBBLKY-BLKY MED-SLTY
TXT IMBD LS/OCC CALC FLK
LIMESTONE: PRED TN FXLN-
V/FXLN FRI DOLC FRMWK ARG
MD: 9359' INC: 0.1° AZI: 153.84°
TVD: 9355.58'



SHALE: DRKGY-GYSHBLK PRED
BRI SUBBLKY-BLKY MED TXT
IMBD LS/CALC FLK
LIMESTONE: TN FXLN-V/FXLN FRI
SANDSTONE: PRED MEDGY-
DRKGY FRI MEDGRN-FGRN
SUBANG-RND W/SRTD MOD CONS
SLI TR CHERT
MD: 9548' INC: 0.51" AZI: 168.32°
TVD: 9544.58'



SANDSTONE: MED DRKGY-HD
SUBANG W/SRTD MOD CONS
CALC IMBD LS
NO FLUOR/CUT/RNG/STN
MD: 9643' INC: 0.65° AZI: 165.9°
TVD: 9639.58'

9.1i
9.1Ho
VIS
57

SANDSTONE: PRED LTGY-
MEDLTGY SFT W/SRTD MOD
CONS CALC IMBD LS NO
FLUOR/CUT/RNG/STN
MD: 9737' INC: 0.46° AZI: 182.68°
TVD: 9733.57'

SANDSTONE: LTGY V/FGRN
SUBANG-RND W/SRTD MOD CONS
CALC NO FLUOR/CUT/RNG/STN
IMBD LS
MD: 9832' INC: 0.33° AZI: 159.9°
TVD: 9828.57'

WOB 28
RPM 60
SPM 276
PP 3276

9850

C

AW

9900

9950

C

ROP
WOB
GR

10000

56u

74u

CG 64u

125u

102u

84u

9.2I
9.2o
VIS
57

SANDSTONE: DRKBLK-DRKGY HD
V/FGRN SUBANG MOD CONS SLI
CALC NO FLUOR/CUT/RNG/STN
IMBD LS
MD: 9927' INC: 0.22° AZI: 186.28°
TVD: 9923.57'

SANDSTONE: PRED DRKGY HD
SUBANG W/SRTD MOD CONS
CALC IMBD LS
NO FLUOR/CUT/RNG/STN
MD: 10021' INC: 0.23° AZI: 215.75°
TVD: 10017.57'

9.1Hi
9.0Ho
VIS
57

GAS
CO2
H2S

500 u
10 %
100 kppm
10
20

SANDSTONE: PRED DRKGY-
MFDRKGY FRI V/FGRN RND