

4-INCH CALIPER LOG

FILE NO. _____ COMPANY: NORTHWEST NATURAL GAS COMPANY
 WELL: I. W. 23d - 3
 FIELD: HSI
 COUNTY: COLUMBIA STATE: OREGON
 LOCATION: 2475.11' E851 & 2791.31' S907H
 FROM THE NE1/4 & 1/4 CORNER OF:
 SEC 3 T14P1N R06E5W
 PERMIT DATA: ROUND LEVEL ELEV. 1187.8 ELEVATIONS: 1199.25'
 LOGGING MEASURED FROM: K. B. 11.4 FT. ABOVE P.O. OF 1187.85'
 DRILLING MEASURED FROM: K. B. 11.4 FT. ABOVE P.O. OF 1187.85'
 DATE: 23-OCT-91
 SERVICE ORDER: 66918
 DEPTH-DRILLER: 2855
 DEPTH-LOCKER: 2855
 BOTTOM-LOCKED INTERVAL: 2785'
 DRIVING - DRILLER: 2785' @ 215'
 DRIVING - LOCKER: 2785'
 TIME SLIDE IN HOLE: 15' @ 100 RPM
 DEPTH-LOCKER: 2785'
 DEPTH-LOCKER: 2785'
 SOURCE OF SPERM: N/A
 RIG BIT HERS: TEMP: N/A
 RIG BIT HERS: TEMP: N/A
 RIG BIT HERS: TEMP: N/A
 SOURCE OF SPERM: N/A
 RIG BIT HERS: TEMP: N/A
 TIME SLIDE CIRCULATION: 2 HRS.
 MAX. REC. TEMP. DEG. F: 101 F
 EQUIP. NO. / LOC.: H. 6399 / BERKSFIELD
 RECORDED BY: TOKERSON
 WITNESSED BY: TODD THOMAS

IN MAKING INTERPRETATIONS OF LOGS, OUR EMPLOYEES WILL GIVE CUSTOMER THE BEST FIT OF THEIR BEST JUDGMENT BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INTERPRETATIONS FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT WARRANT THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS RUN (3)

TAYLOR RIG NO. 4
BHT 101 F & 102 F
TOTAL BOREHOLE VOLUME RECORDED

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
3	1	4CAL	52859	4223XA	CENTRALIZED
3	1	GR			

5" = 100'

FILE: 4

CURVE DELAY REPORT

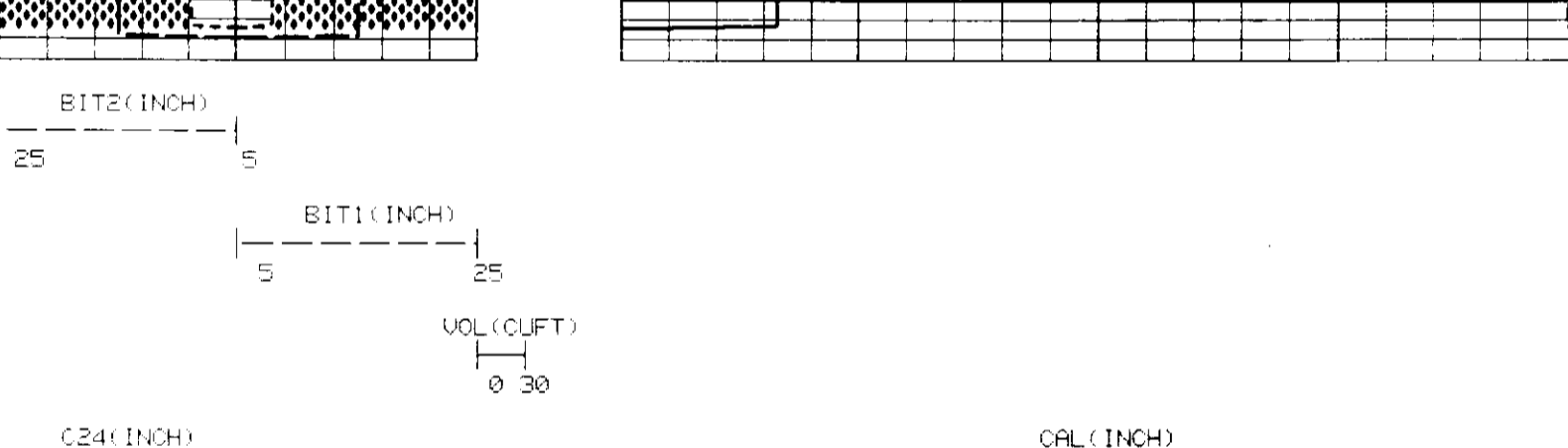
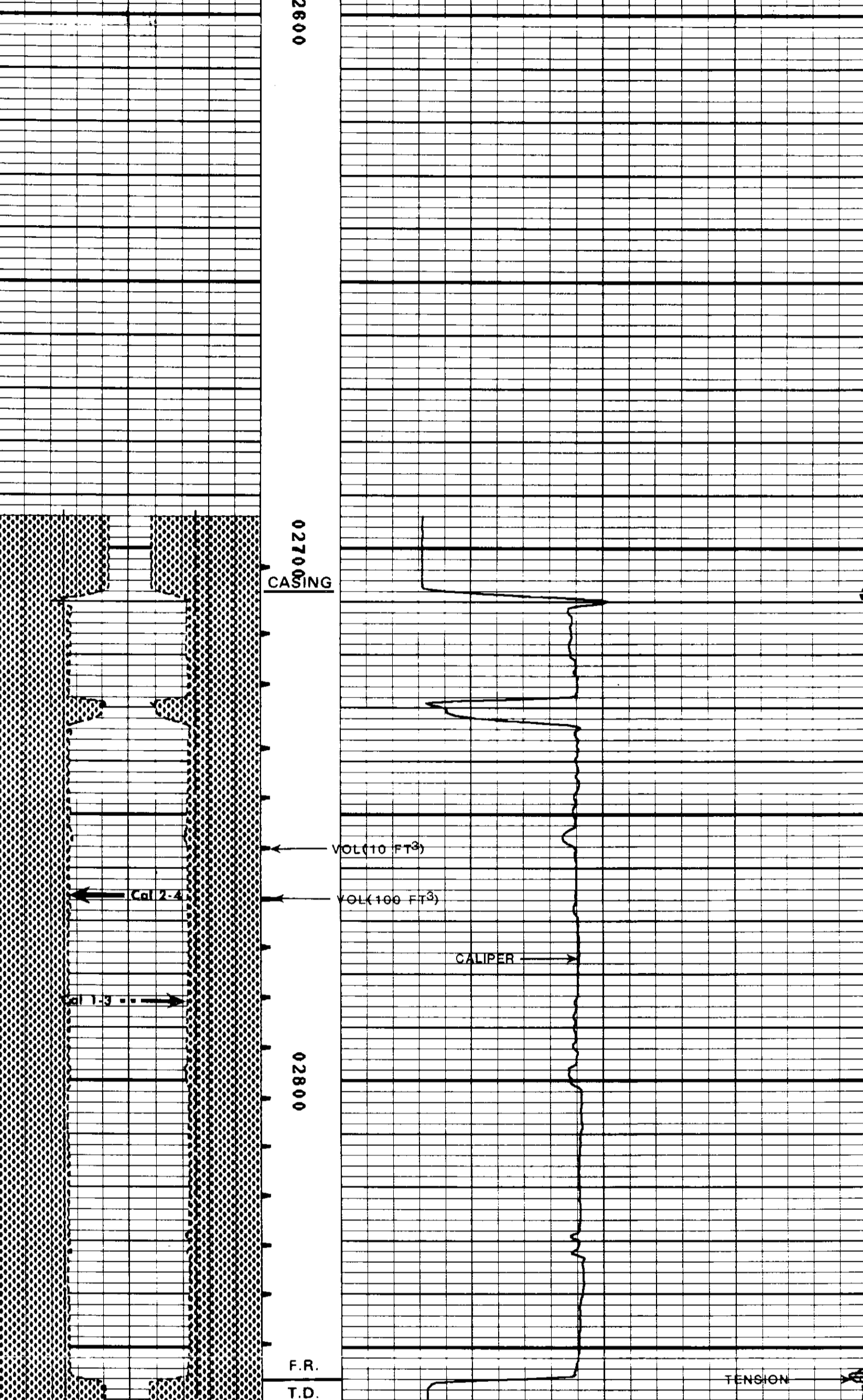
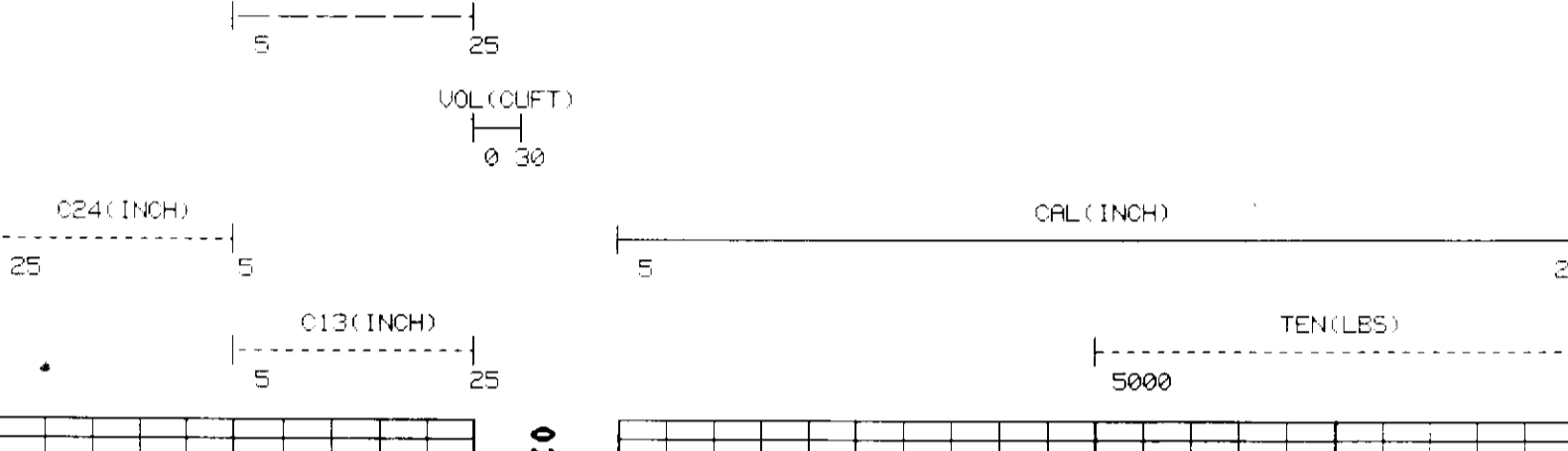
CURVE	PHYS. DELAY	UNITS
C13	0	FT, IN
C24	0	FT, IN
GR	0	FT, IN

NAME	DEPTH INTERVAL	VALUE	UNITS
O.D.	2865 TO 2893	0.000	INCH

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: NORTHWEST NATURAL GAS COMPANY RUN: 3
 WELL NAME: I. W. 23d - 3 TRIP: 1
 SERVICE: K0202A FILE: 4 DATE: 10/23/91 TIME: 05:43:39
 REVISION: PSYS256 REV:0002 UER:2.0 MODE: RECORD



FILE: 4

REPEAT SECTION

FILE: 3

CURVE DELAY REPORT

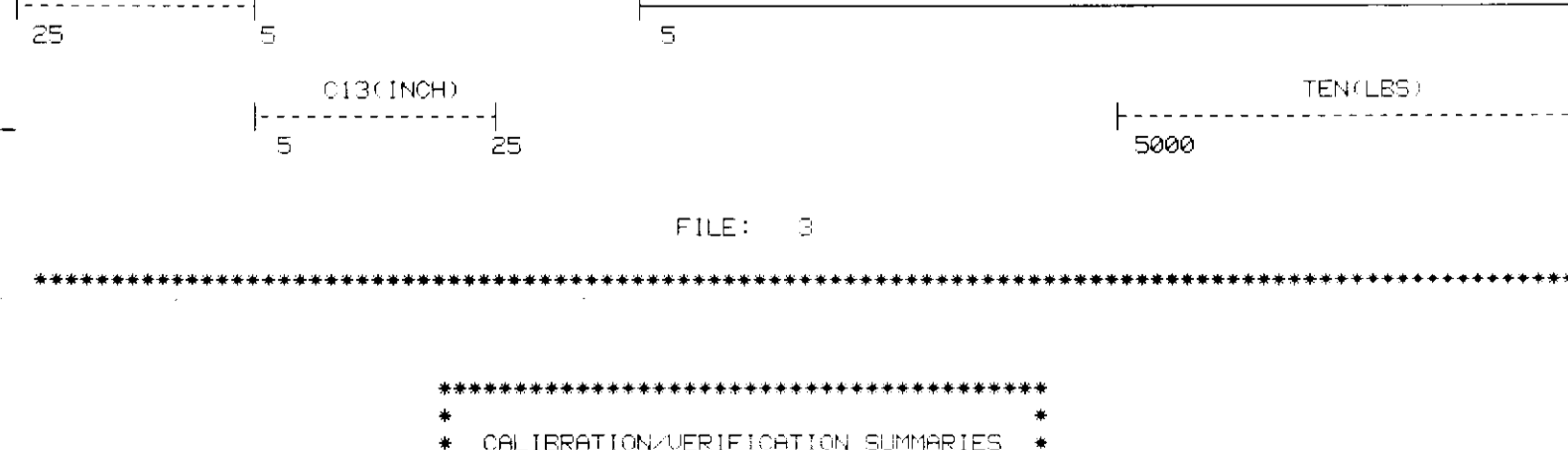
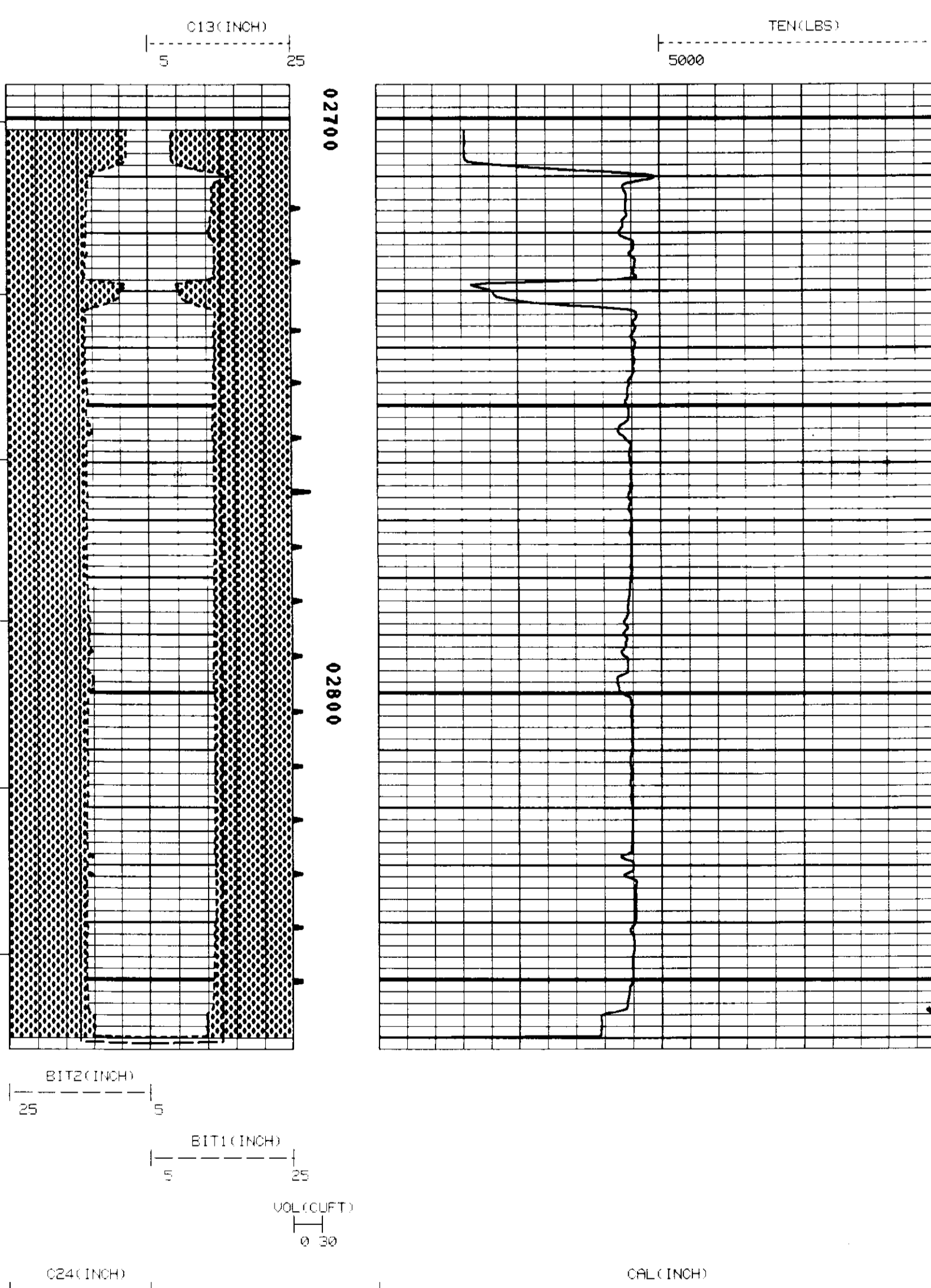
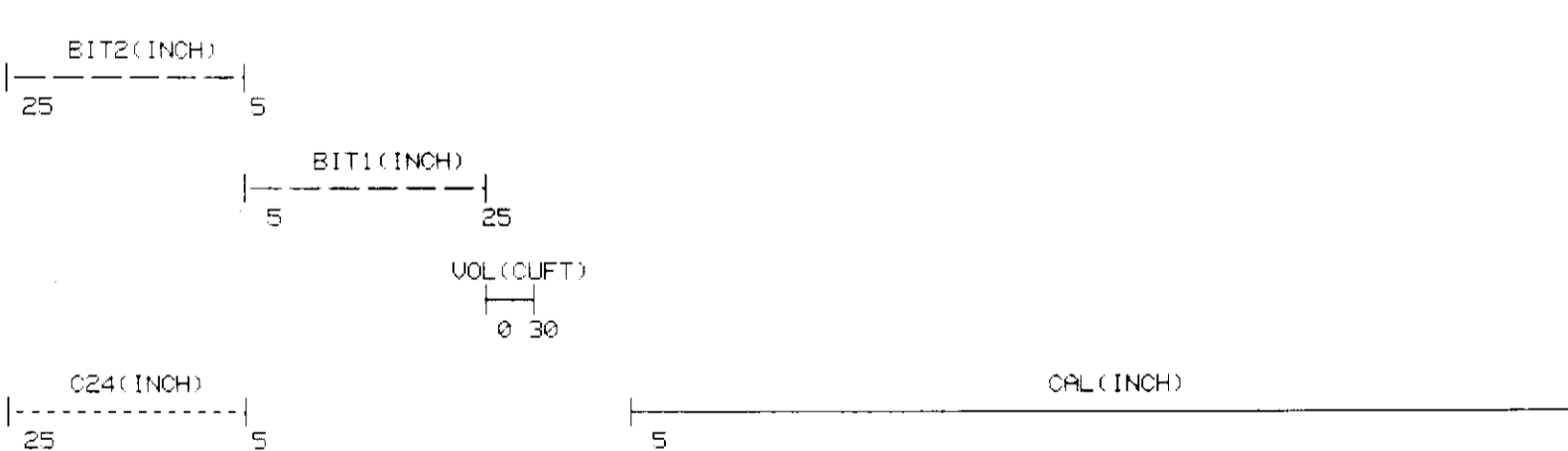
CURVE	PHYS. DELAY	UNITS
C13	0	FT, IN
C24	0	FT, IN
GR	0	FT, IN

NAME	DEPTH INTERVAL	VALUE	UNITS
O.D.	2862 TO 2702	0.000	INCH

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: NORTHWEST NATURAL GAS COMPANY RUN: 3
 WELL NAME: I. W. 23d - 3 TRIP: 1
 SERVICE: K0202A FILE: 3 DATE: 10/23/91 TIME: 05:34:08
 REVISION: PSYS256 REV:0002 UER:2.0 MODE: RECORD



FILE: 3

- CALIBRATION-VERIFICATION SUMMARIES
- DATE 10/23/91 TIME 05:12:39
- RUN 3 TRIP 1

LOG NAME 4CAL ASSET NO. 52859 UNIT NO. HL 6399
CALIBRATION ENTERED ON 10/23/91 AT 01:16:50

CURVE	MILLIVOLTS		SCALING FACTORS		ENGINEERING VALUES		UNITS
	LOW	HIGH	ADD.	MULT.	LOW	HIGH	

DATE 09/18/91 CALIBRATION TIME 13:28:54

111.0 mV 1412.0 mV -1.780 0.0273 7.000 15.000 INCH

111.0 mV 1559.0 mV -1.953 0.0256 7.000 15.000 INCH

PRIMARY VERIFICATION NOT DONE

DATE 10/23/91 BEFORE LOG VERIFICATION TIME 05:12:42

111.0 mV 1412.0 mV -1.780 0.0273 7.000 15.000 INCH

111.0 mV 1559.0 mV -1.953 0.0256 7.000 15.000 INCH

DATE 10/23/91 AFTER LOG VERIFICATION TIME 05:12:06

111.0 mV 881.0 mV -1.540 0.0273 8.323 INCH

111.0 mV 941.7 mV -1.953 0.0256 7.897 INCH