

GOODWELL, INC.

SONIC CEMENT BOND

COMPANY LYCO ENERGY CORPORATION

WELL # 1 WACKER

FIELD KERSEY

COUNTY WELD STATE COLORADO

LOCATION 1780 FNL 460 FNL

Other Services:

Sec. 10 Twp. 5N Rge. 64W

COUNTY
FIELD or
LOCATION
WELL

COMPANY

Permanent Datum: GROUND LEVEL, Elev. 4604
Log Measured From K.B., 11 ft. Above Perm. Datum
Drilling Measured From K.B.Elev.: K.B. 4615
D.F. G.I. 4604

Date 10-2-85 Type Fluid in Hole WATER

Run No. ONE Dens. Visc.

Depth—Driller 6859 Max. Rec. Temp.

Depth—Logger 6845 Est. Cement Top 5750

Btm. Log Interval 6836 Equip. Location 814 GREELEY

Top Log Interval 5660 Recorded By G.S. BAKER

Open Hole Size 7 7/8 Witnessed By MR. HAMMOND

CASING REC. Size 8-5/8 Wt./Ft 24 Grade Type Joint Top Bottom

Surface String 8-5/8 24 SURE 305

Prot. String 5-1/2 SURE T.D.

Prod. String 5-1/2 SURE T.D.

Liner

PRIMARY CEMENTING DATA

STRING Surface Protection Production Liner

Vol. of cement 250 SX

Type of cement CLASS G

Additive 10% SALT

Additive by %

Retarder

Retarder by %

Wt. of slurry

Water loss

Drill. mud type

Drilling mud wt.

FOLD HERE

COMPRESSIVE STRENGTH (p.s.i.) Curing Temp.)

Time Elapsed	Surface	Protective	Production	Liner
24 hrs.		° F	° F	° F
48 hrs.		° F	° F	° F
72 hrs.		° F	° F	° F

PRIMARY CEMENTING PROCEDURE

Hour — date	Hours from start of operation	Equipment Data
Started pumping cement		Type standoff
Plug on bottom		Logging speed
Release pressure		Bias: Max.
Start Cement Bond Log		Cartridge No.
Finish Cement Bond Log		Spacing
Preceding fluid	Volume bbls.	Pipe reciprocated during Pumping: Yes No
Returns: Full Partial None		Pipe reciprocated after plug down: Yes min., No

GAMMA RAY
API UNITS

DEPTHS

CEMENT BOND

VARIABLE DENSITY

CASING COLLARS

5" = 100'

AMPLITUDE INCREASES

MICRO SECONDS PER 3 FEET

GOOD FAIR POOR NO BOND
CEMENT BOND LOG
100% 50% 0%

Calibration after Survey ΔT

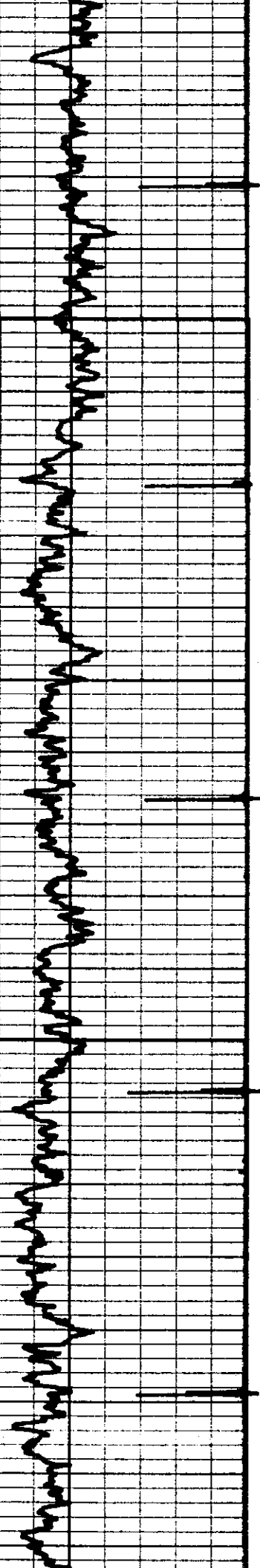
Calibration after Survey BOND

Casing Collars →

Gamma Ray →

5700

CEMENT TOP



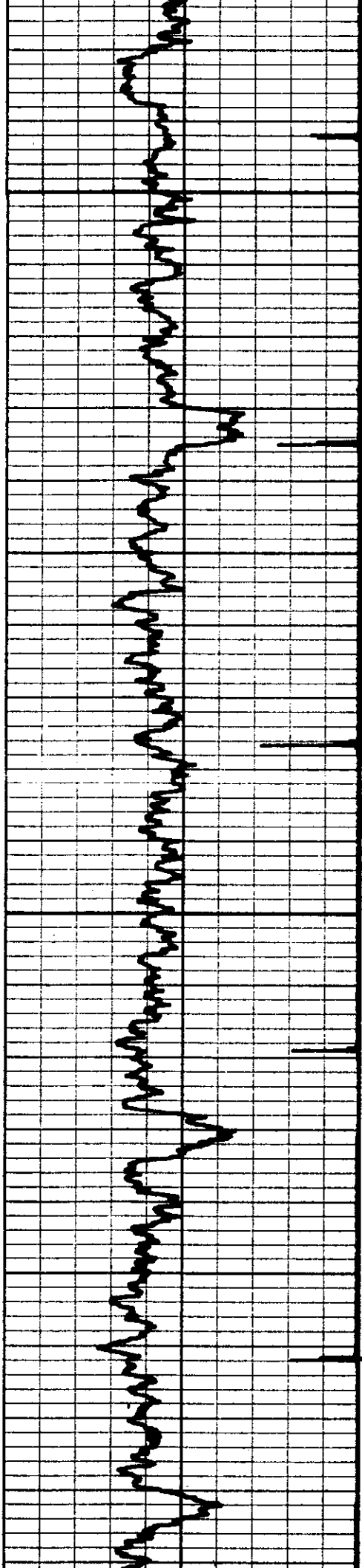
5800

5900



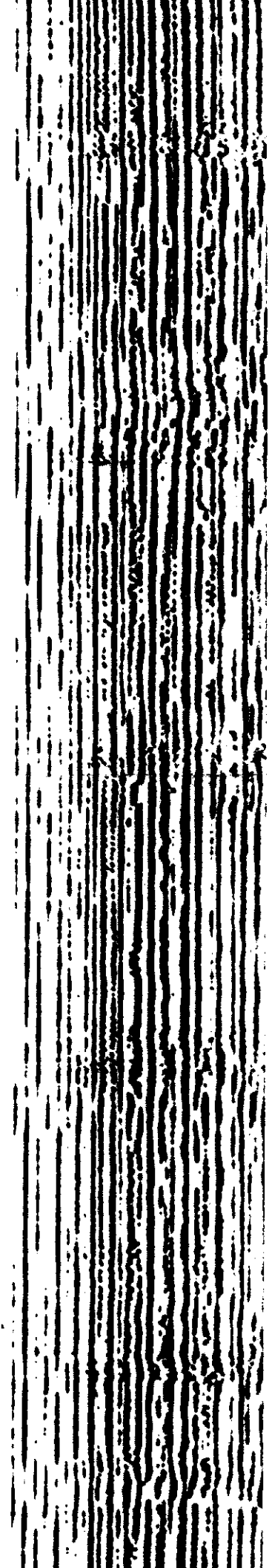
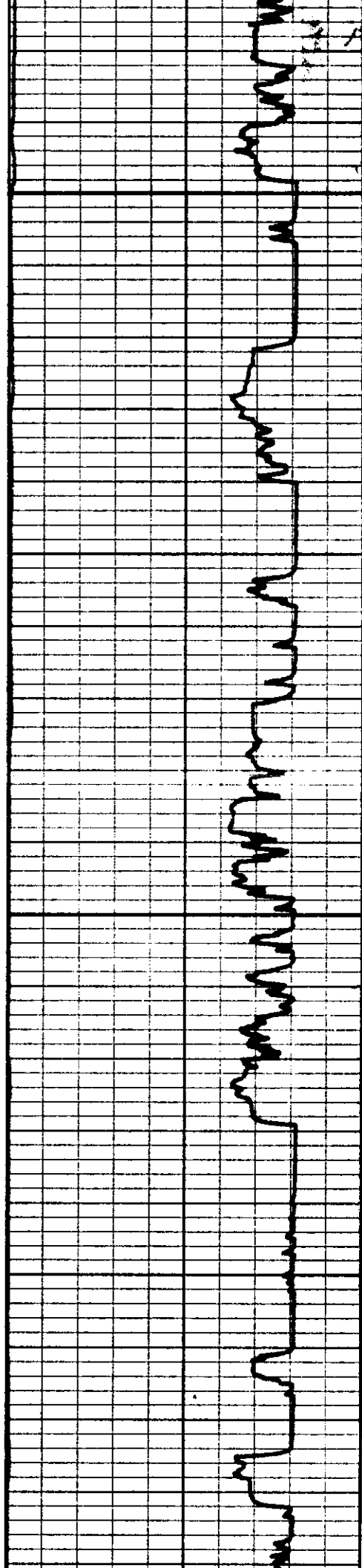
BOND

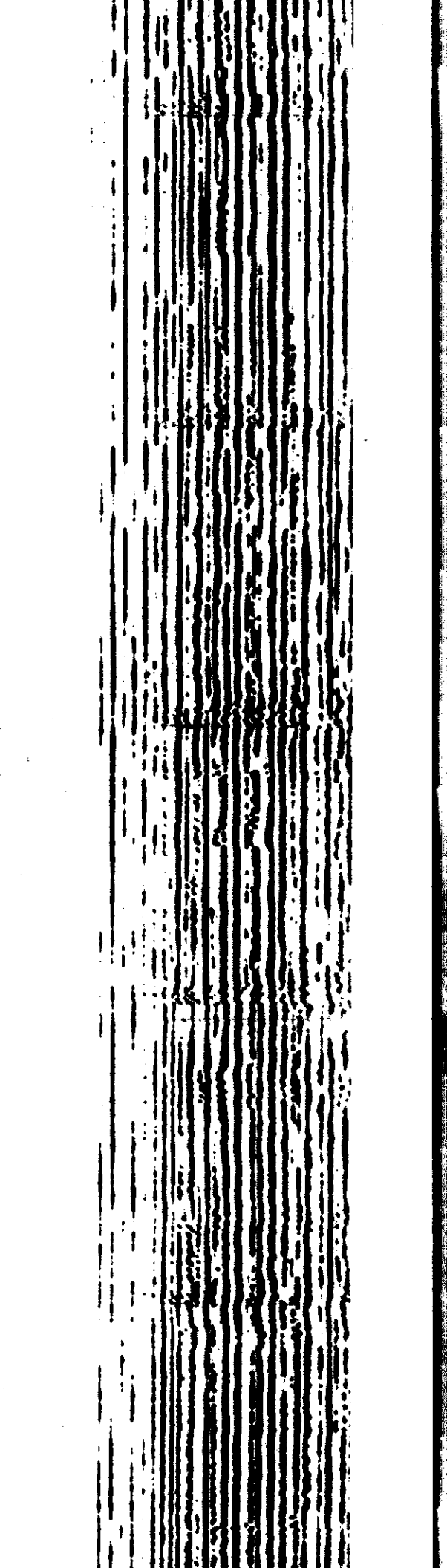
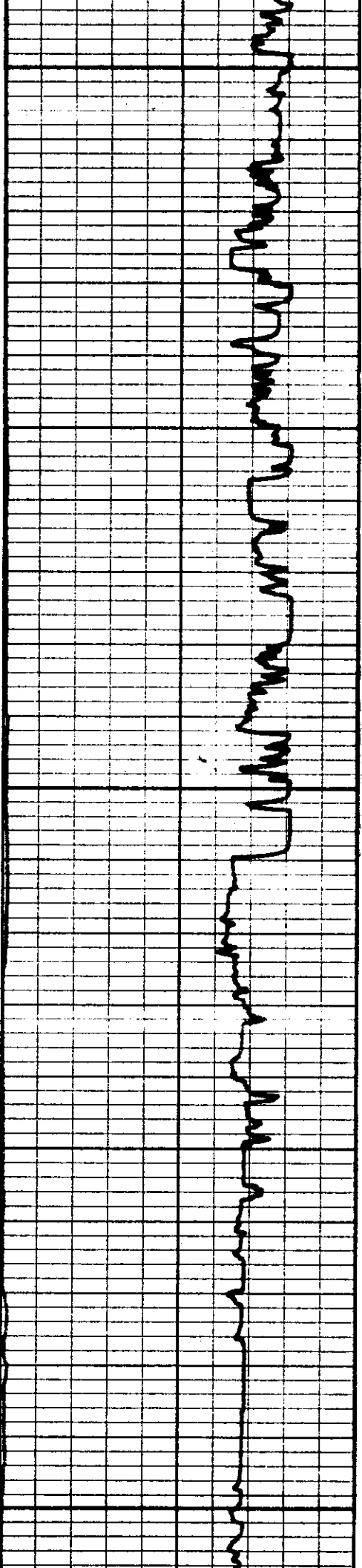
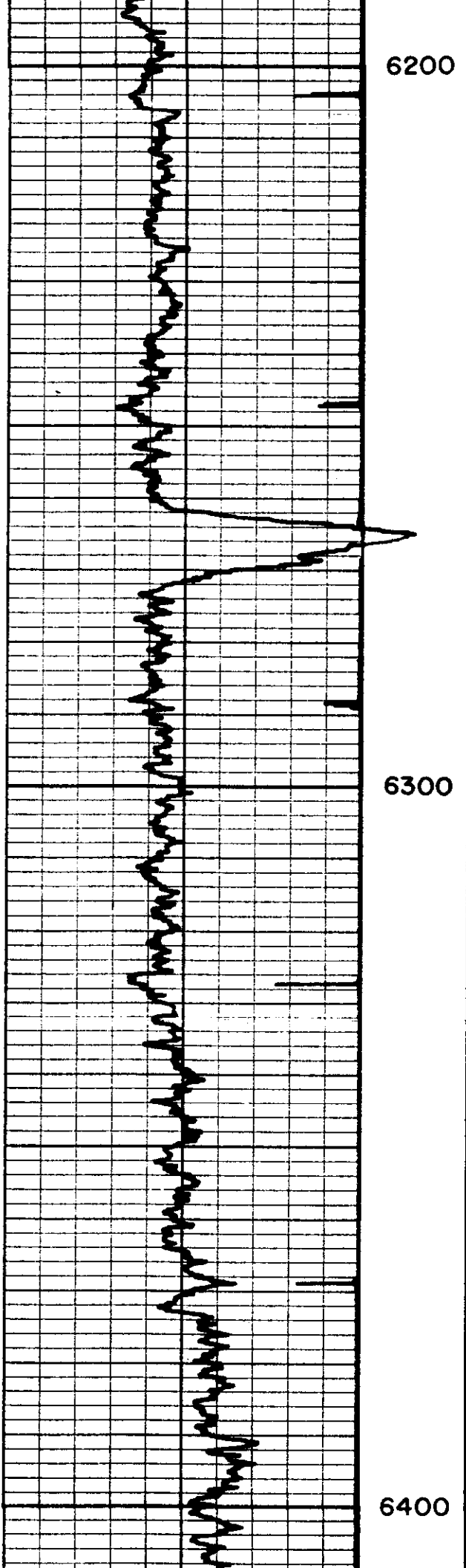
AT



6000

6100





Nöbera

A

6500

6504

6508

6510

6518

6522

B

6600

6606

6610

6612

6618

6620

6622

6628

6636

6640

C

6680

6698

6696

6700

6704

6710

Code 11

6794

6800

6804

Casing Collars

Gamma Ray

GOOD FAIR POOR NO BOND

BOND

AT

T D

CEMENT BOND LOG

100% 50% 0%

REPEAT SECTION

6700

6800

Casing Collars →

→ Gamma Ray

← BOND

Δ T →

GOOD FAIR POOR NO BOND

CEMENT BOND LOG

T D

100% 50% 0%

1 PBD 12