

COMPANY UNION  
 FIELD BACA  
 WELL #12  
 COUNTY SANDOVAL  
 STATE NEW MEXICO  
 LOCATION LAT. 35.8303 ; LONG. 106.5372  
K.B. 6449' EL. 8429.76 (GR.)

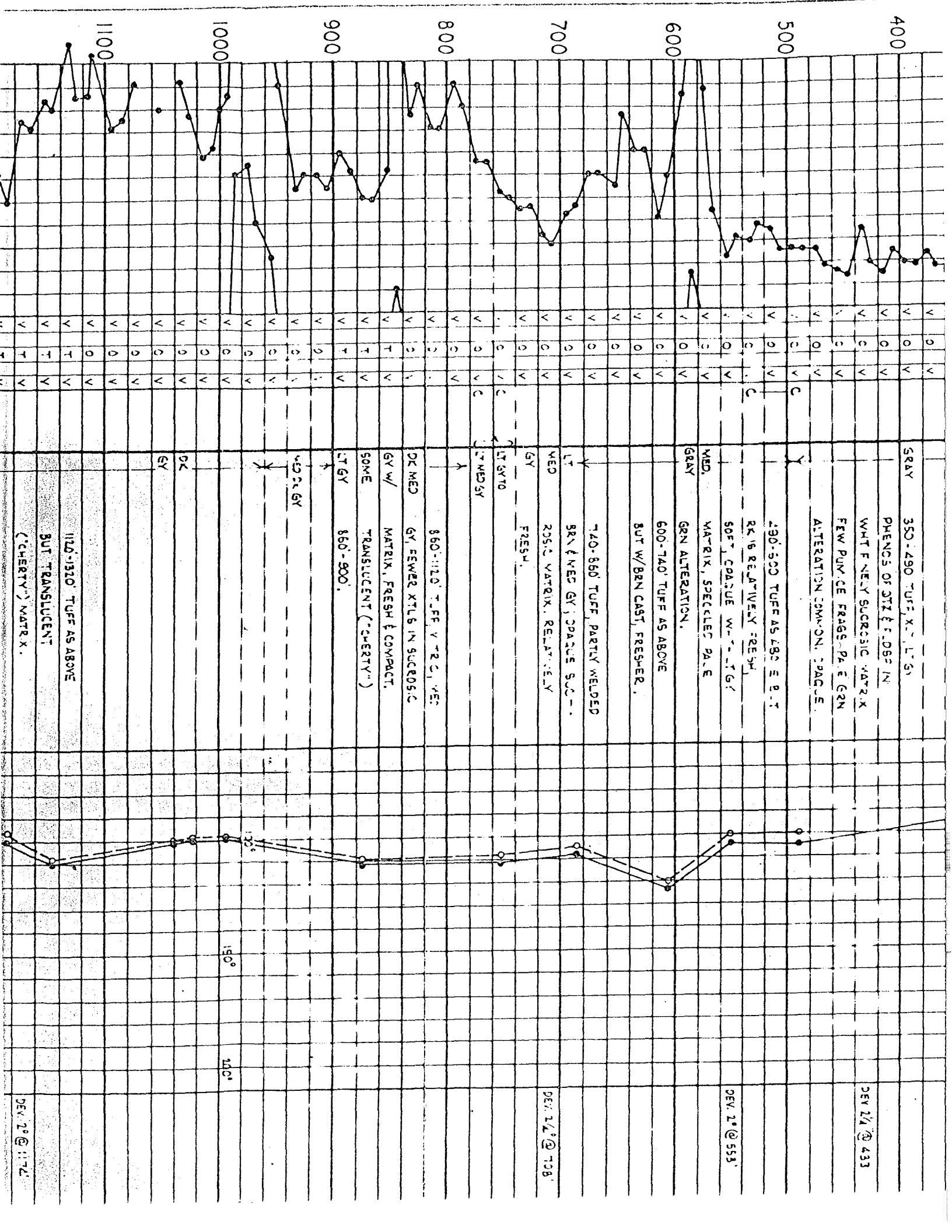
TOTAL DEPTH 9212'  
 SPUD DATE JUNE 19, 1974  
 COMPLETION DATE AUGUST 19, 1974  
 DRILLING CONTRACTOR LOFFLAND  
 ENGINEER V. STINNETT  
 GEOLOGIST T.R. SLODOWSKI

**CASING RECORD**  
20" : 250' TO SURFACE, CEMENTED  
13 3/4" : 1457' TO SURFACE, CEMENTED  
9 5/8" : 3511' - SURFACE, CEMENTED  
7" : 9211' - 3343', RUN & SLOTTED  
9170' - 3557'

**EXPLANATION**

- |                       |   |   |                               |
|-----------------------|---|---|-------------------------------|
| <b>DRILLING</b>       | <b>ROCK</b>                                     | <b>MINERALS</b>                                 | <b>PHYSICAL - CHEMICAL</b>    |
| NB - NEW BIT          | <input type="checkbox"/> SHALE                  | <input type="checkbox"/> CHERT                  | D.H. - DOWN HOLE              |
| RRB - RERUN BIT       | <input type="checkbox"/> SILTSTONE              | <input type="checkbox"/> VOLCANICS              | PPM - PARTS PER MILLION       |
| CB - CORE BIT         | <input type="checkbox"/> SANDSTONE              | <input type="checkbox"/> INTRUSIVE              | B.H. - BOTTOM HOLE            |
| LC - LOST CIRCULATION | <input type="checkbox"/> CONGLOMERATE           | <input type="checkbox"/> TUFF                   | F.L. - FLOW LINE              |
| DEV - DEVIATION       | <input type="checkbox"/> LIMESTONE              | <input checked="" type="checkbox"/> METAMORPHIC | T. - TEMPERATURE              |
| DST - DRILL STEM TEST | <input checked="" type="checkbox"/> DOLOMITE    | <input type="checkbox"/> _____                  | P. - PRESSURE                 |
|                       | <input checked="" type="checkbox"/> GYP, ANHYD. | <input type="checkbox"/> _____                  | T.C. - TIME SINCE CIRCULATION |
|                       |   | <input type="checkbox"/> _____                  | W.H. - WELL HEAD              |
- TUFF GROUNDMASS : OPAQUE (O) ; TRANSLUCENT (T)

| DEPTH | PENETRATION DATA |    |               |    |    | LITHOLOGY    |                    |            |   | PHYSICAL - CHEMICAL DATA    |    |   | MISC. |
|-------|------------------|----|---------------|----|----|--------------|--------------------|------------|---|-----------------------------|----|---|-------|
|       | □ FT./HR.        |    | □ MIN./10 FT. |    |    | PRIMARY LITH | SECONDARY MINERALS | BULK COLOR | DESCRIPTION   | MUD TEMP. : ○ --- ○ SUCTION |    |   |       |
|       | 90               | 70 | 50            | 30 | 10 |              |                    |            |   | 100%                        | 0% | 0 |       |
|       |                  |    |               |    |    | 0            | 0                  | 0          | 0-165' - SAND, GRAVEL & BOULDERS - TUFF DEBRIS  |                             |    |   |       |
|       |                  |    |               |    |    | 0            | 0                  | 0          | ENTERED BEDROCK - BANDED TUFF - @ 430' - 165'   |                             |    |   |       |
| 100   |                  |    |               |    |    | 0            | 0                  | 0          | LT GR, UNWELDED, SALMON & GR. SALMON QTZ & SANIDINE PHENOS IN OPAQUE ASH & FUMICE MATRIX. W/D TO UNW/D.   |                             |    |   |       |
| 200   |                  |    |               |    |    | 0            | 0                  | 0          | 240-350' TUFF, ALTERED, V. W. YLLWISH TO YLLWISH RED-BRN STNG, SVD YE BRN ALT'D TO CLAY, FRES - QTZ PHENOS. RARE MAG. & BICTITE. SOME GY PLUMICE. |                             |    |   |       |
| 300   |                  |    |               |    |    | 0            | 0                  | 0          |   |                             |    |   |       |



400

500

600

700

800

900

1000

1100

DEV 1/4 @ 433

DEV 2 @ 553

DEV 1/2 @ 798

DEV 2 @ 1172

GRAY 350-490 TUFF, X.L. LT GY

PHENCS OF DTZ & F. DGS IN  
WHT F NELY SUCRODIC MATRX  
FEW PIV. CE FRAGS. PA. E GRN  
ALTERATION COMMON. SPAGUE.

490-500 TUFF AS LBS E B.T  
RK IS RELATIVELY FRESH  
SOFT. COARSE W- LT GY  
MATRX, SPECKLED PALE  
GRN ALTERATION.

600-740 TUFF AS ABOVE  
BUT W/BRN CASST, FRESHER.

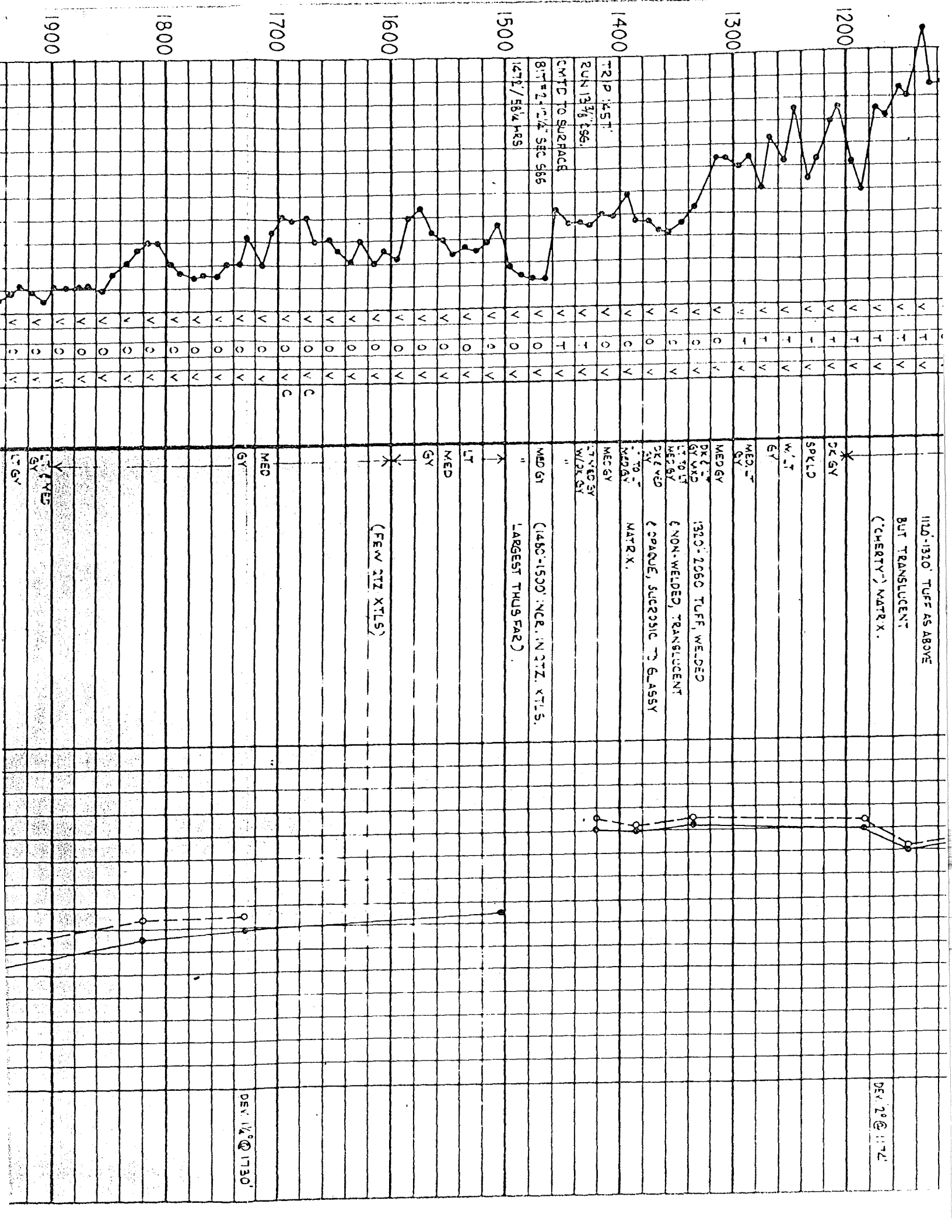
740-860 TUFF, PARTLY WELEDED  
BRN & MED GY, SPAGUE SUC-  
MED 205.0 MATRX, RELATIVELY  
GY FRESH.

860-1120 TUFF, V-TRC, MED  
DK MED GY, FEWER XTLS IN SUCRODIC  
GY W/ MATRX, FRESH & COMPACT.  
SOME TRANSLUCENT (CHERTY)

1120-1320 TUFF AS ABOVE  
BUT TRANSLUCENT  
(CHERTY) MATRX.

150°

140°



1120-1320' TUFF AS ABOVE  
BUT TRANSLUCENT  
(CHERTY) MATRIX.

DEV 2° @ 1172'

\*  
DE GY

SPLD

W. LT

GY

MED. LT  
GY

MED GY

DE LT  
GY WXD

LT TO LT  
DE GY

DE WED  
GY

TO  
MED GY

MED GY

LT MED GY  
W/DE GY

"

MED GY (1460-1500) NGR. IN 2TZ. XTLS.  
LARGEST THUS FAR.

LT

MED  
GY

\*  
M

(FEW 2TZ XTLS)

MED

GY

MED

GY

MED

GY

MED

GY

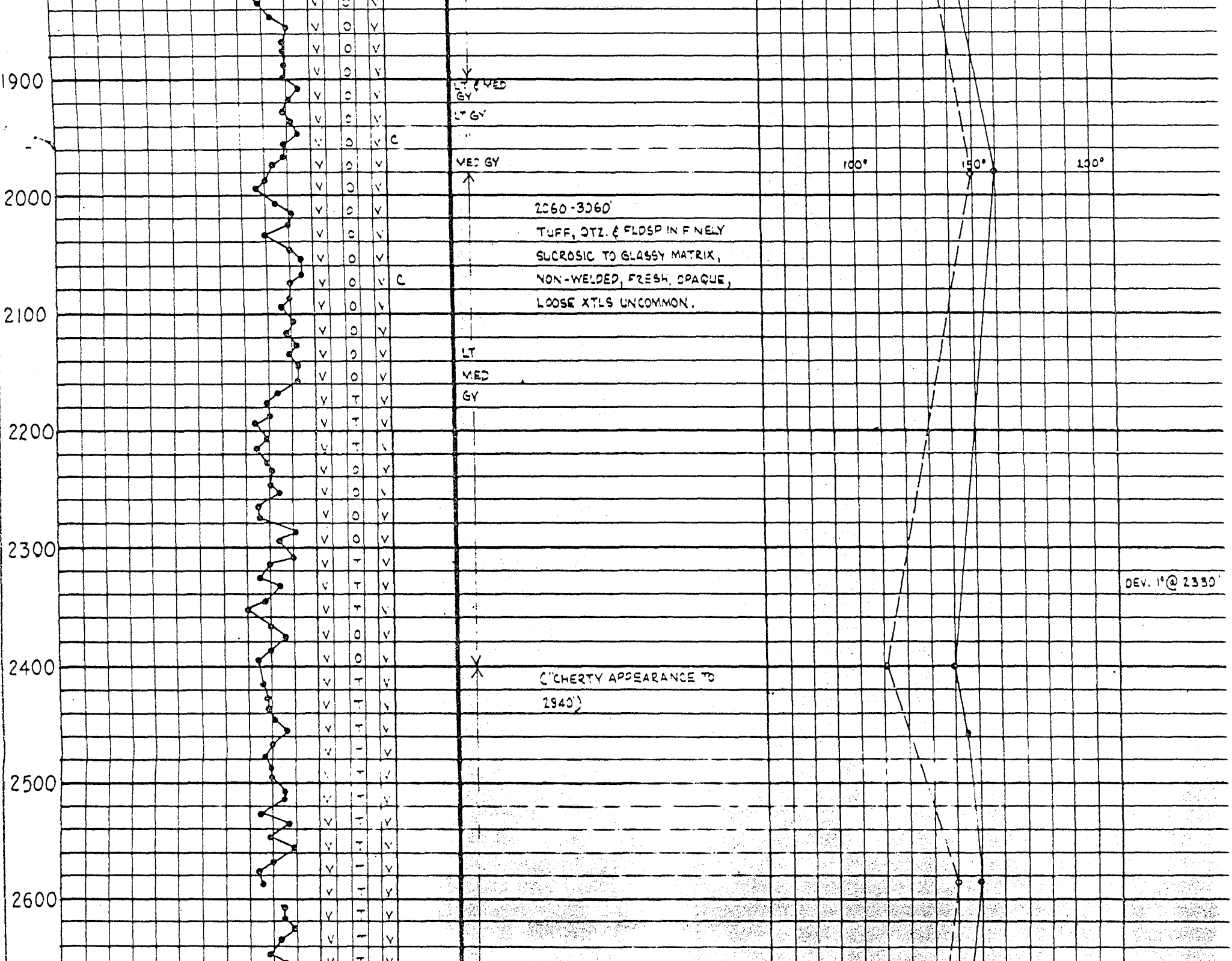
MED

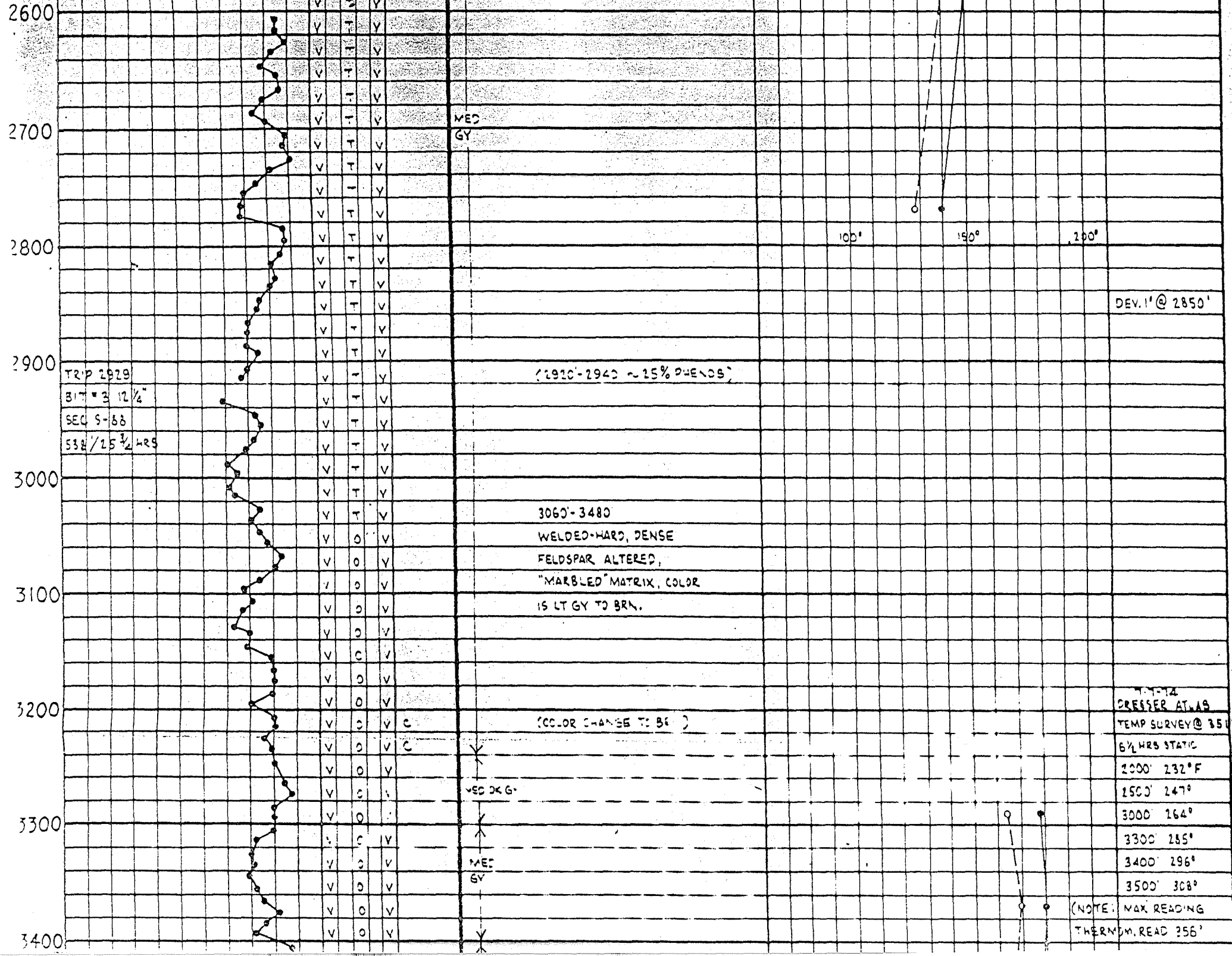
GY

MED

GY

DEV 1 1/2° @ 1730'





TRIP 2929  
 BIT # 3 1 1/4"  
 SEC 9-88  
 538 / 25 1/2 HRS

MED  
 GY

(2910-2940 ~ 25% QUENCS)

3060-3480  
 WELDED-HARD, DENSE  
 FELDSPAR ALTERED,  
 "MARBLED" MATRIX, COLOR  
 IS LT GY TO BRN.

(COLOR CHANGE TO BK)

MED  
 DK GY

MED  
 GY

100°

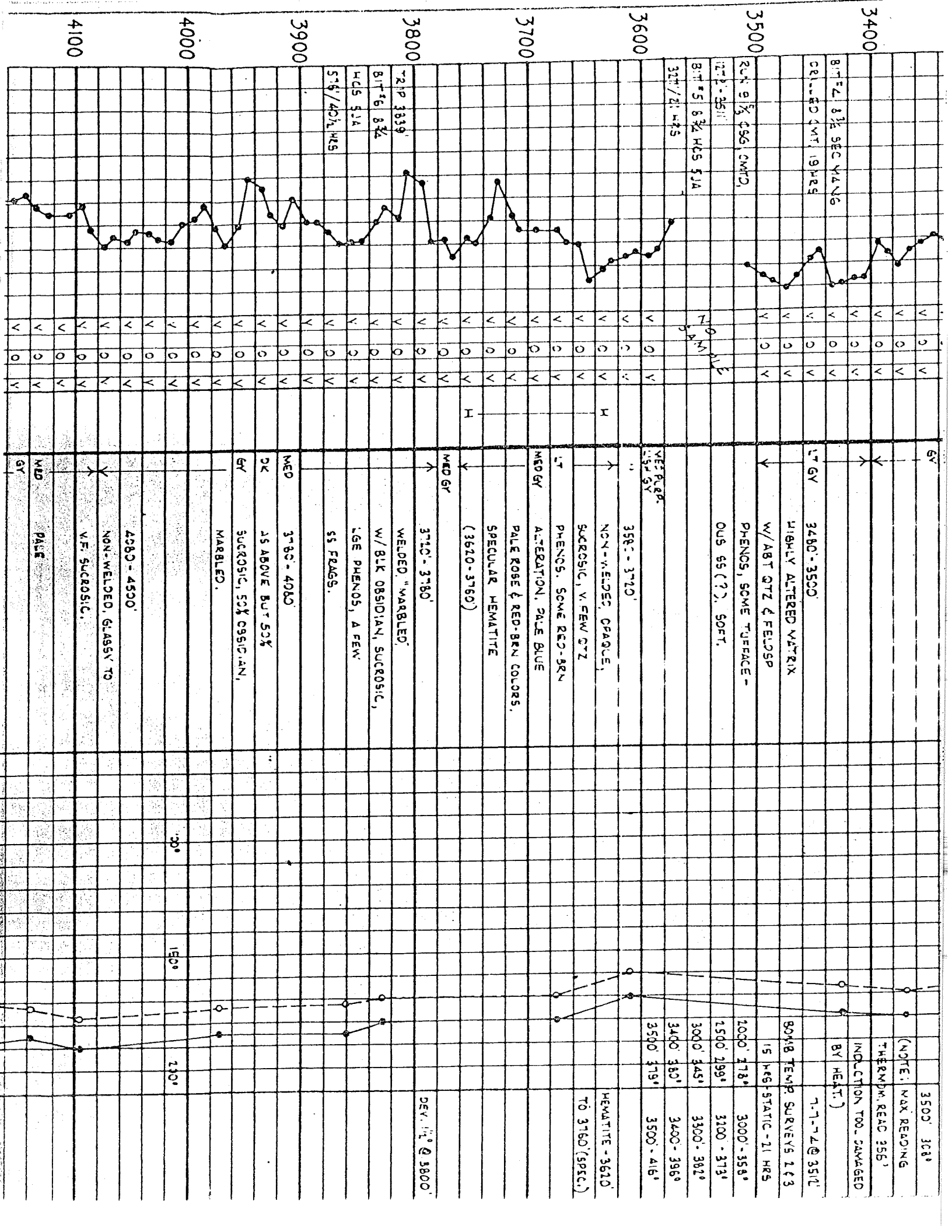
150°

200°

DEV. 1' @ 2850'

4-1-74  
 CRESSER ATLAS  
 TEMP SURVEY @ 3512  
 6 1/2 HRS STATIC  
 2000' 232° F  
 1500' 247°  
 3000' 264°  
 3300' 285°  
 3400' 296°  
 3500' 308°

(NOTE: MAX READING  
 THERMOM. READ 356°)



3400

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

8 1/2" 8 1/2 SEC MANG

CELLAR DMT, 19 HRS

3500' 368'

(NOTE: MAX READING

THERMO. READ 256'

INDUCTION TOO DAMAGED

BY HEAT.)

7-7-72 @ 3512'

8048 TEMP SURVEYS 1 & 3

15 HRS - STATIC - 21 HRS

2000' 178'

3000' 158'

1500' 298'

3200' 313'

3000' 345'

3300' 382'

3400' 387'

3400 - 3960'

3500' 379'

3500' 416'

HEMATITE - 3610

TO 3760 (SPEC.)

DEV. 1 1/2' @ 3800'

3710' - 3760'

WELDED, "MARBLE"

W/BLK OBSIDIAN, SUCROSLIC,

LGE PHENOS, A FEW

SS FRAGS.

MED GR

3780 - 4080'

AS ABOVE BUT 50%

SUCROSLIC, 50% OBSIDIAN,

MARBLE.

4080 - 4530'

NON-WELDED, GLASSY TO

V.F. SUCROSLIC.

MED

PALE

GY

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

30°

150°

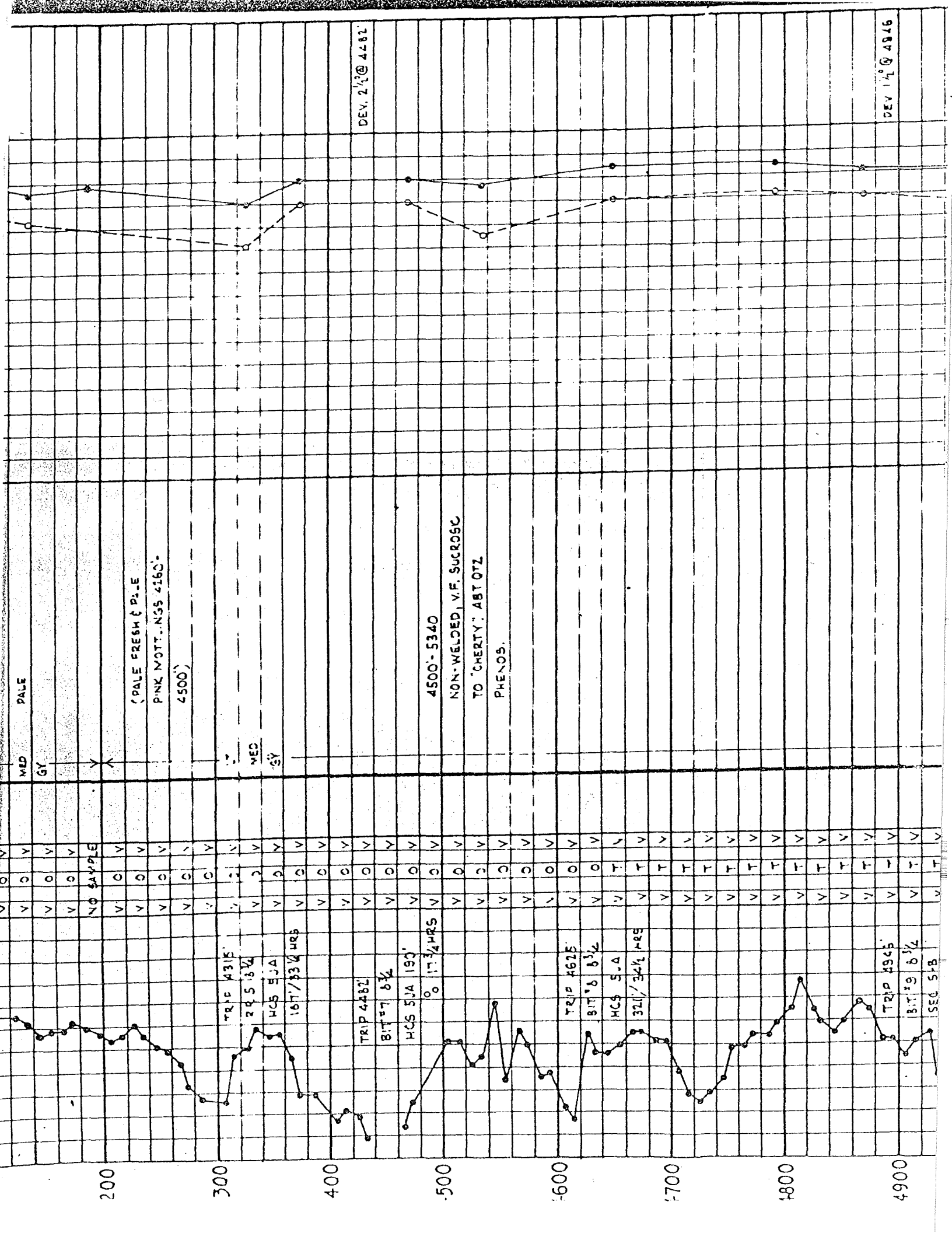
30°

150°

30°

150°

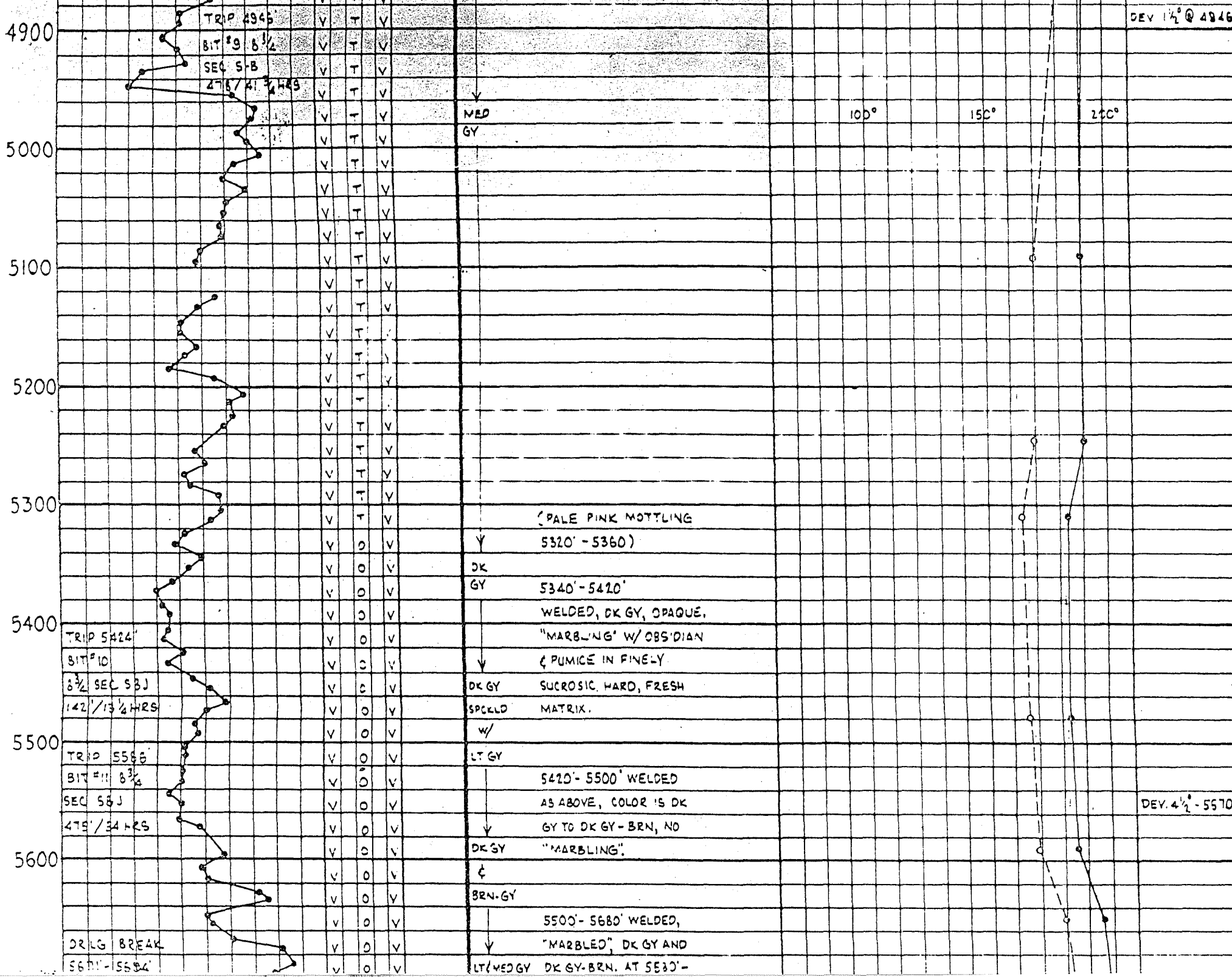
30°



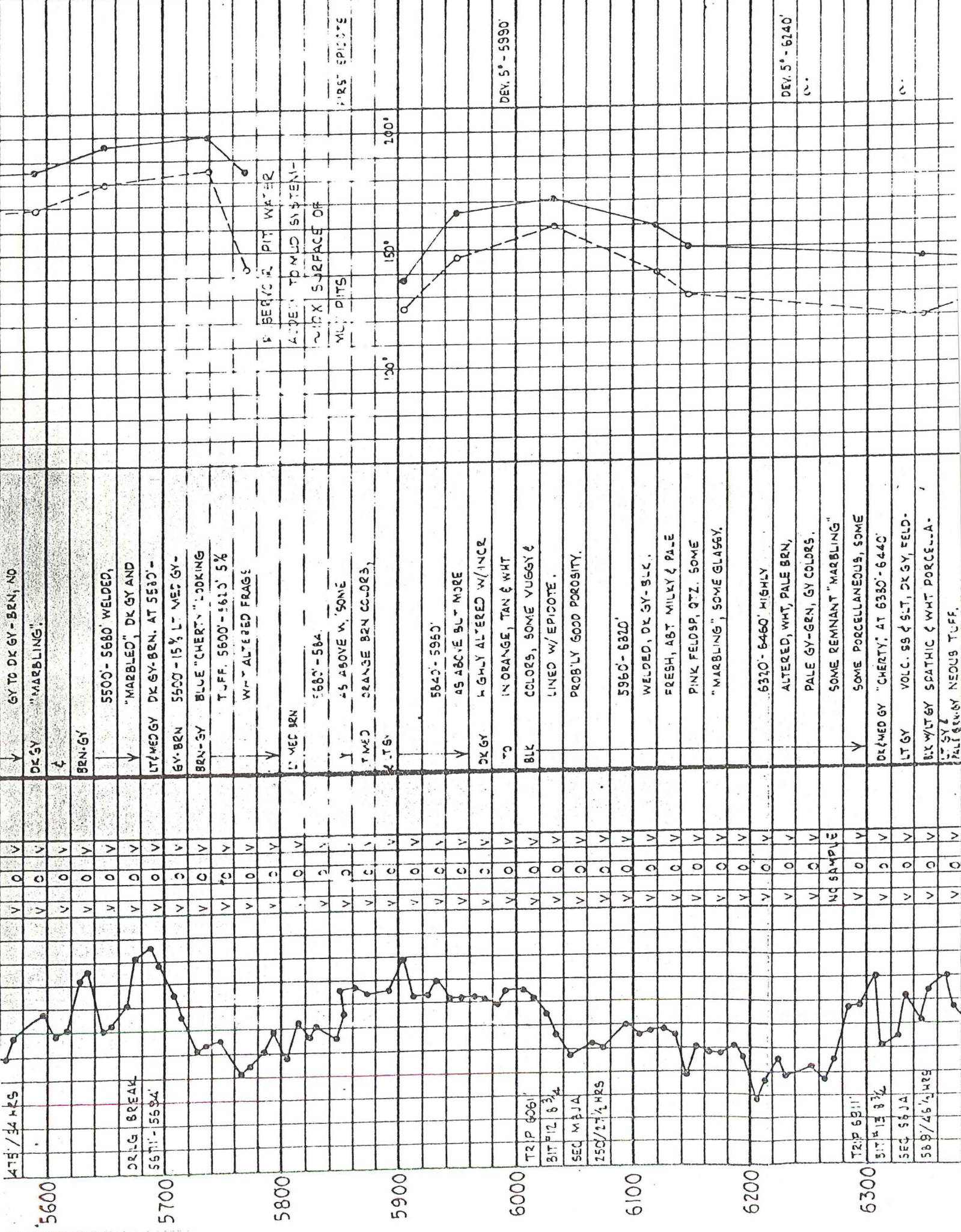
DEV. 2 1/2 @ 4482'

DEV 1 1/2 @ 4816









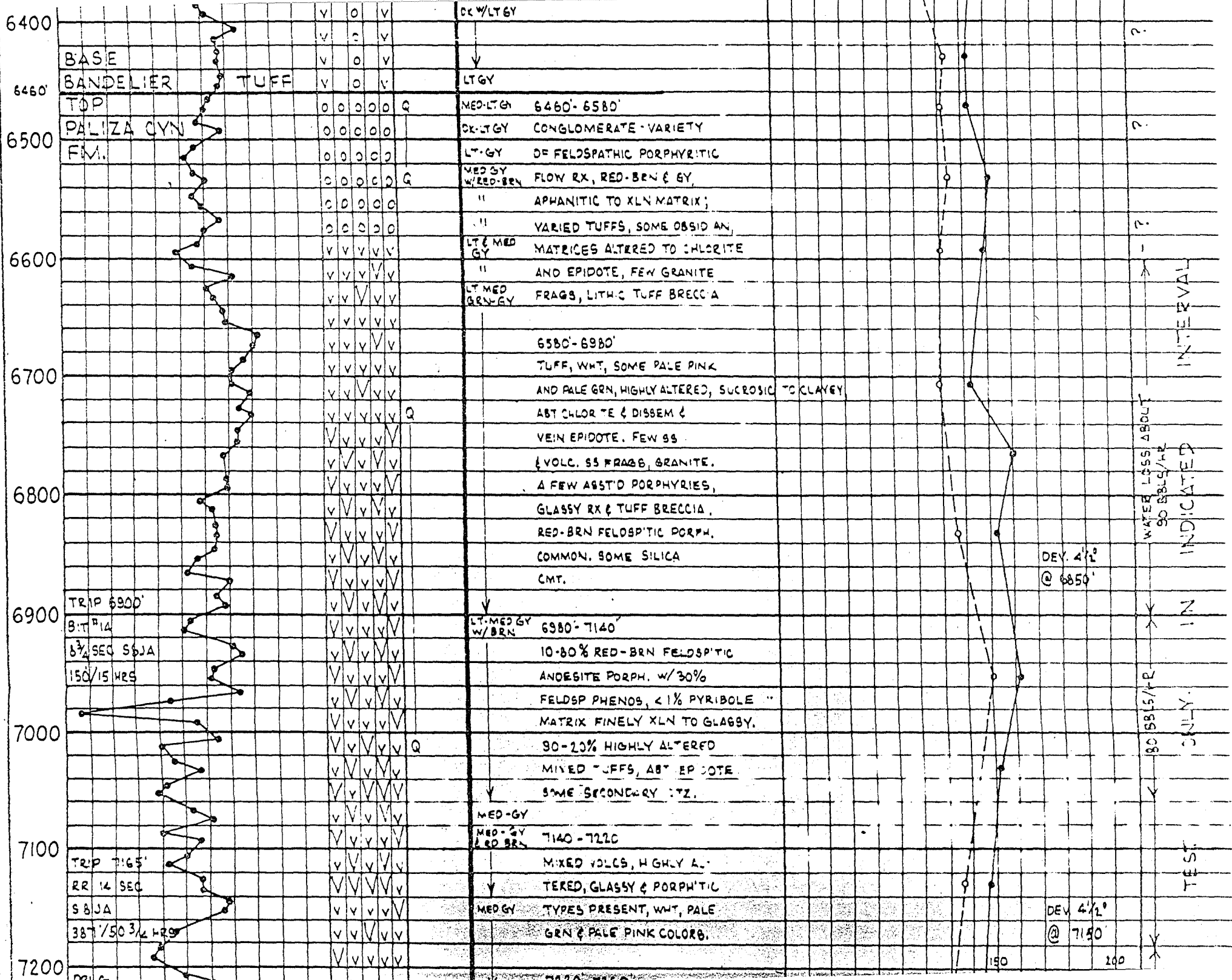
ATP/34 HRS

DRUG BREAK  
5671' - 5584'

TRIP 6061'  
BIT #12 8 3/4  
SEC M&JA  
250/2 1/2 HRS

TRIP 6211'  
BIT #13 8 3/4  
SEC 56JA  
589/46 1/2 HRS

5600 5700 5800 5900 6000 6100 6200 6300



WATER LOSS ABOUT 90 BBLS/HR

INTERVAL

INDICATED

IN

JULY

TEST

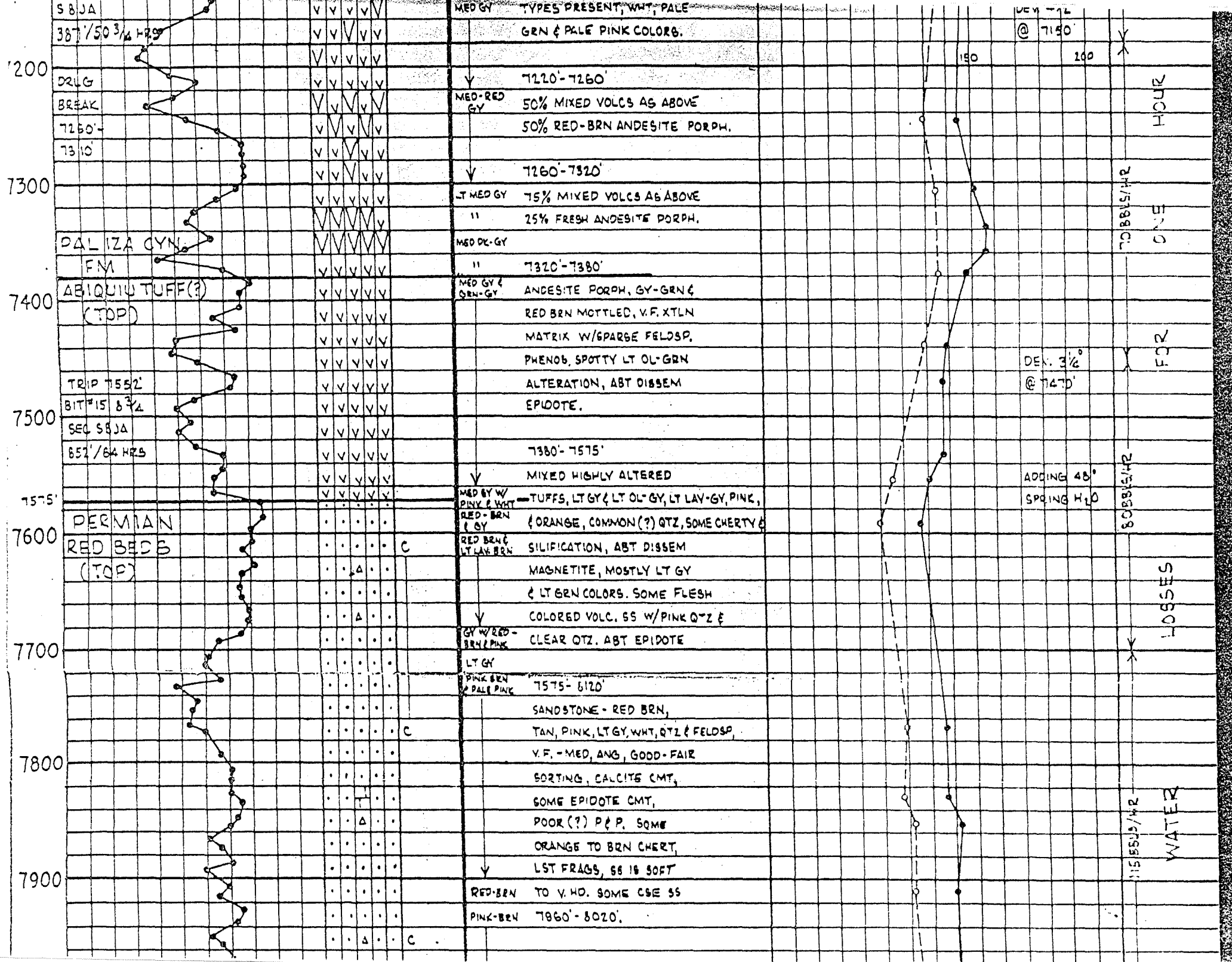
DEV. 4 1/2" @ 6850'

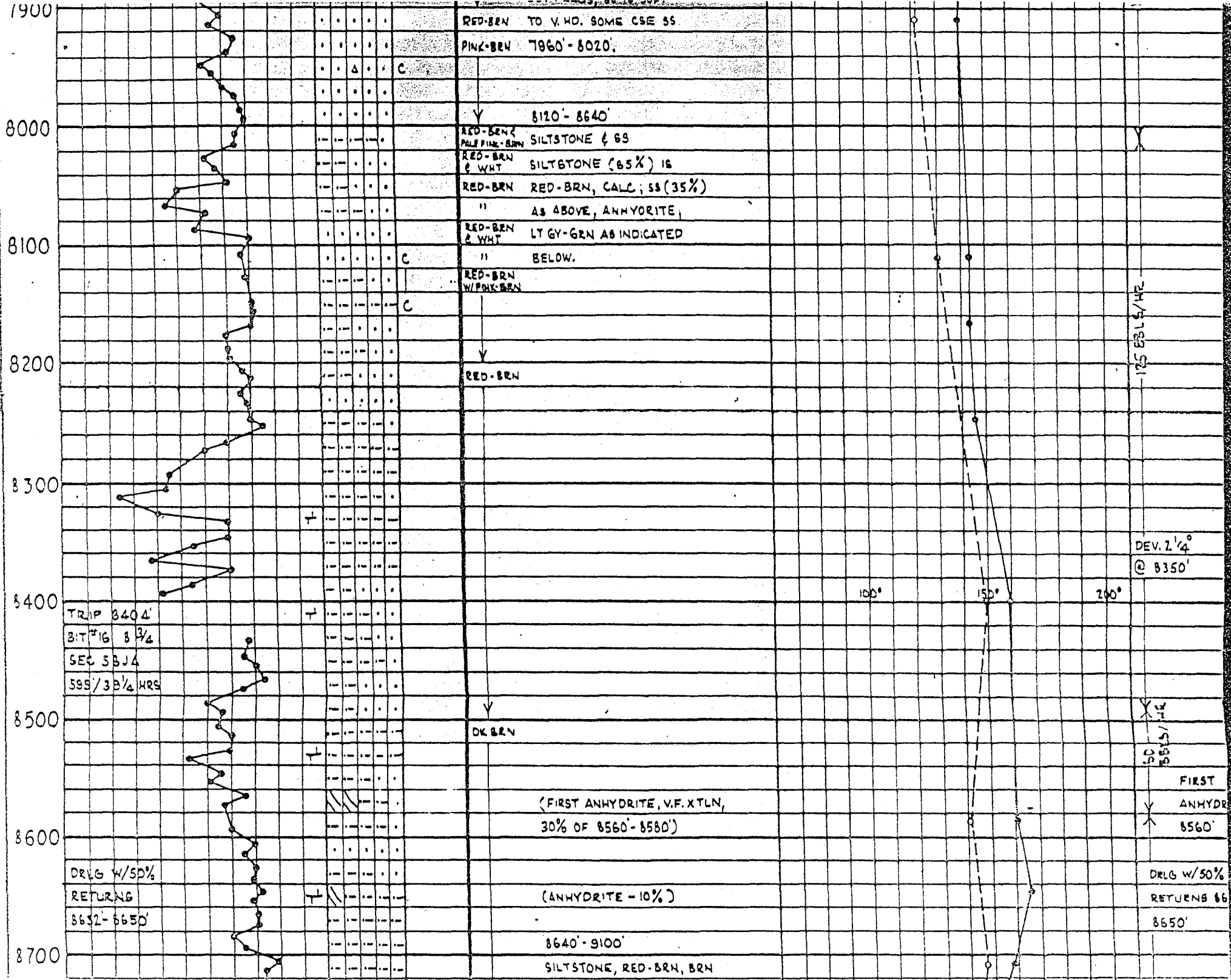
DEV. 4 1/2" @ 7150'

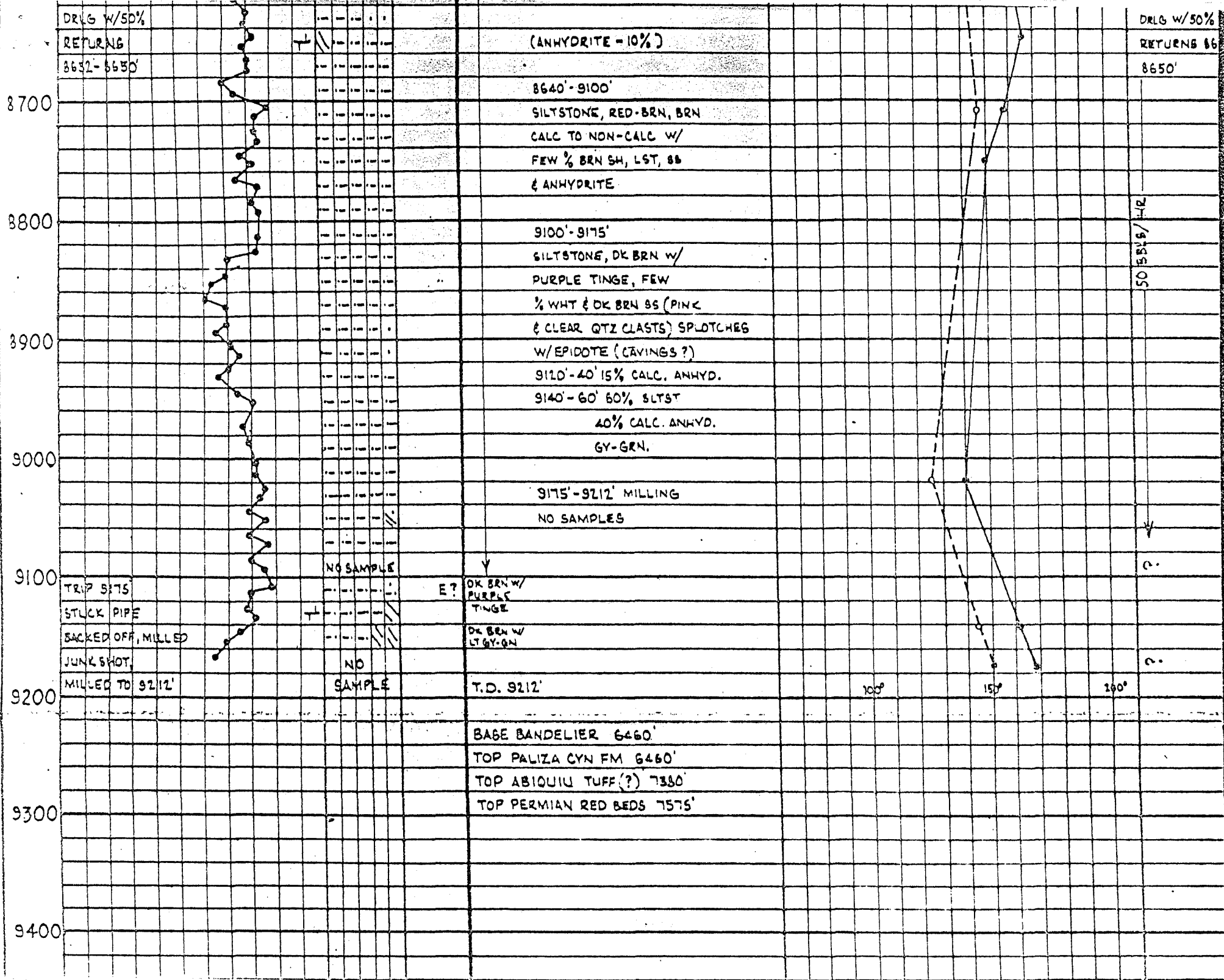
150

100









50 5819/HR

2.

2.