

R. F. SMITH CORP.

GEOTHERMAL DATA LOG

COMPANY UNION OIL COMPANY OF CALIFORNIA

WELL COVE FORT - SULPHURDALE UNIT 14-29

FIELD WILDCAT COUNTY MILLARD

LOCATION SEC 29 T 25 S R 6 W

STATE UTAH COUNTRY U.S.A.

LOGGING GEOLOGISTS John E. Dooley Robert A. Wiley
Dale A. Johnson Alan Frazer James A. Hill

DEPTH LOGGED FROM 35' TO 2620'

DATE LOGGED FROM 5/25/79 TO 7/6/79

PRESSURE INST. TYPE Silicon Chip TEMP. TYPE J-Thermocouple

ELEVATION 6219' + 19.8' KB DF GR

- LITHOLOGY -

Sandstone	Siltstone	Graywacke Type #1	Graywacke Type #4	Solution Deposit	Basalt or Greenstone	Peridotite	Schist	Meta Volcanic
Breccia	Claystone	Graywacke Type #2	Chert	Mineral Deposit	Other Volcanic	Igneous Rock	Quartzite	Volcanic
Conglom.	Shale or Argillite	Graywacke Type #3	Limestone	MELANGE	Tuff or Tuff Brec	Granitic Rock	Serpentine	Dolomite

ENGINEERING DATA

AIR AND MUD DRILLING DATA

REMARKS

HOLE SIZE

17 1/2" to 1250'

12 1/4" to 2080'

8 3/4" to 2620'

CASING SIZE

20" to 224'

13 3/8" to 1240'

9 5/8" to 2078'

TEMPERATURE (°F)

IN - - - - -

OUT - - - - -

PRESSURE PSIG

IN - - - - -

OUT - - - - -

METHANE ppm

DESCRIPTIONS

CORE RESULTS

SURVEYS

FORMATION TESTS

H₂S ppm

Resistivity

DRILLING RATE
 FT/HR MIN/FT

ROCK DENSITY -----

DEPTH

LITHOLOGY

CO₂ ppm -----
 on Air Drilling

TOTAL MUD
 GAIN/LOSS -----

ETHANE ppm -----

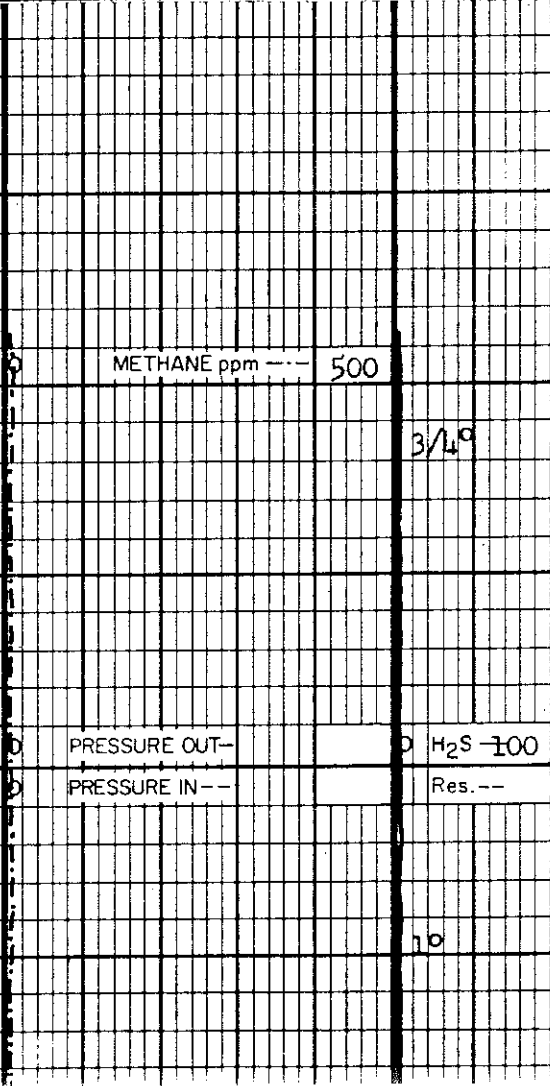
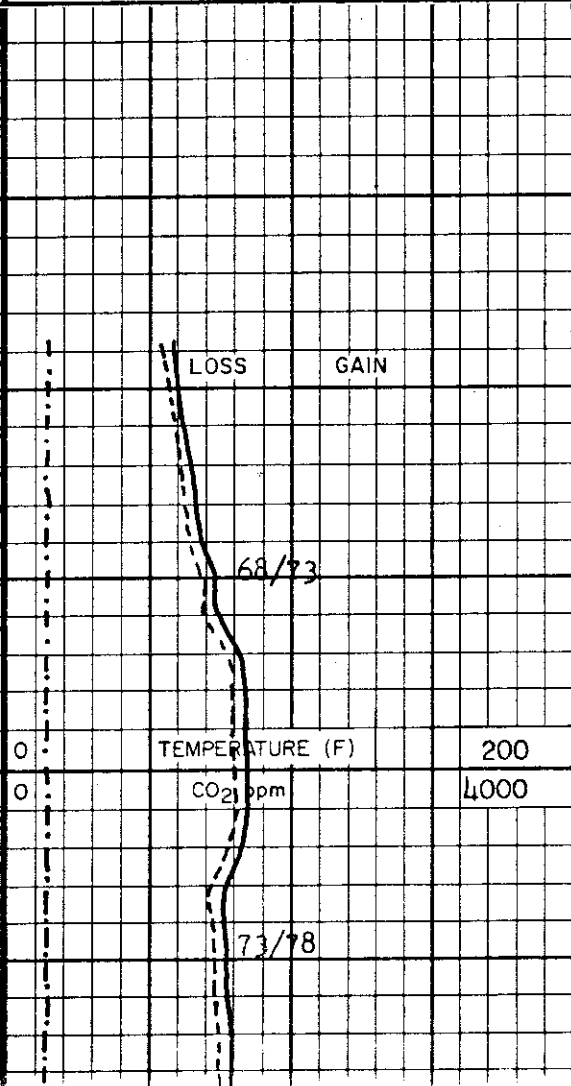
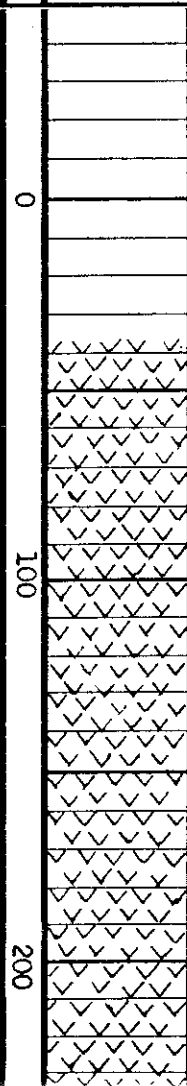
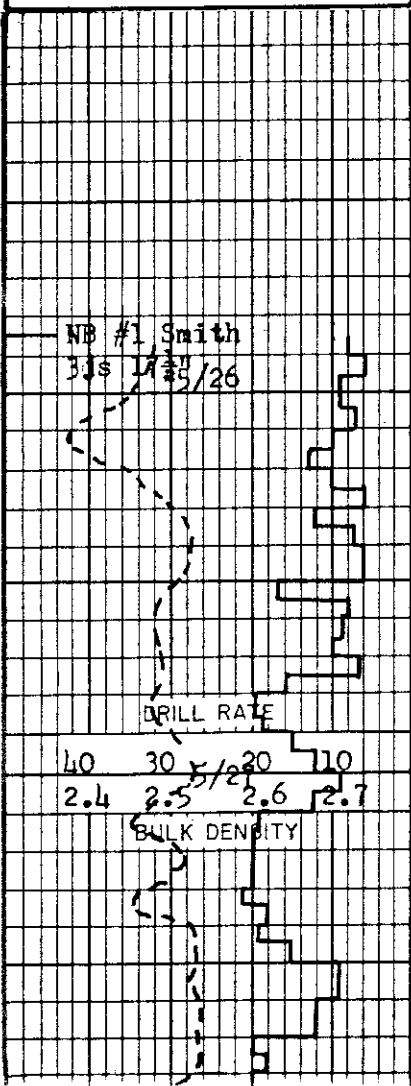
METHANE ppm -----

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 1977

MUD AGITATOR

ELECTRIC

AIR



Began logging well #
 14-29 on 5/25/79 @ 35
 Drilling 17½" hole.

Andesite: varicol, lt-
 med brn, gy, orng,
 yel, w/incr grn propy-
 litic altn w/incr dep-
 th, porphyritic w/mnr
 hrnblnd phenos, mod
 mag, mnr hem & lim st-
 ing, trc pyr & calc
 vn/frac fill.

Andesite: pred lt grn-
 gy & lt rd-brn, w/mod
 chloritization to 170'
 Begin @ 170' thin in-
 terbeds of Latite/Qtz
Latite: Wht-lt gy w/
 pink cast, V hrd, por-
 phyrific-plag phenos
 set in a dominatly
 feldspathic grnd mass,
 abun hem & hem pseudo-
 morphs after hrnblnd,
 mnr dism calc & vn fil

RR 5/28-6/1
 @ 250'

6/2
 WOB 30,000
 RPM 50-55
 PSI 600

diff scale
 60 ft/m

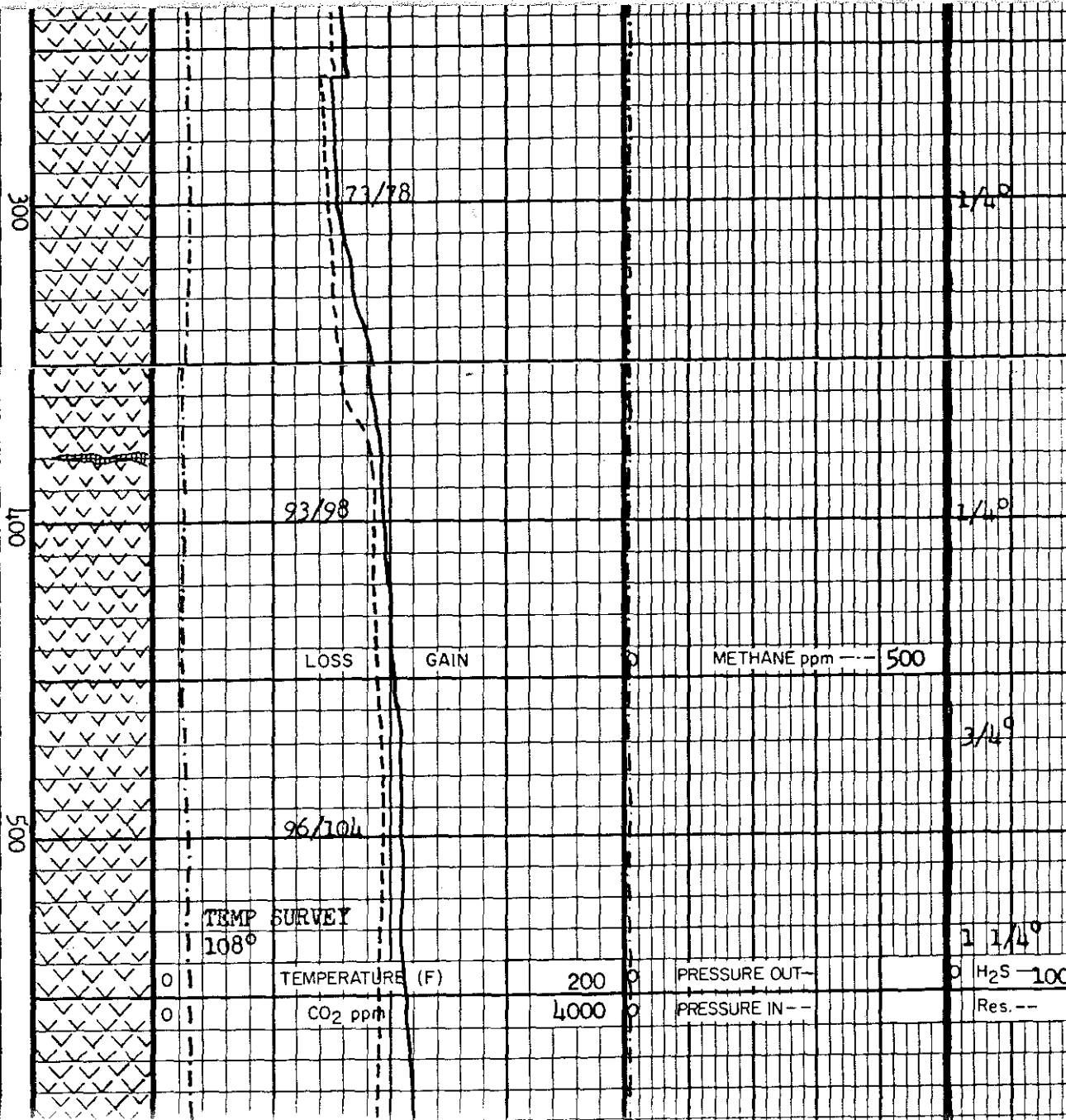
WOB 50,000
 RPM 50
 PSI 600

6/3

DRILL RATE

40	30	20	10
2.4	2.5	2.6	2.7

BULK DENSITY



trc bio & pyr.
 Opened Hole To 26". Set
 20" Casing To 224'. Re-
 sume Drilling 17 1/2"
 Hole,

Andesite/Latite: lt-med
 red-brn & lt-med grn-
 gry Andesite interbdd
 w/lt-med gry Latite,
 abund hem, mnr-mod cal
 tr pyr.

Andesite: varicol-mott-
 led rd-purp & gy, sme r
 gy, purp, brn, grn, hd-v h
 porphyritic-abund hrn-
 blnd phenos, mnr chlor-
 itization, trc bio & li
 euhedral calc vn/frac
 fill @ 380', mod disem
 calc thru out. Temp sur
 99° @ 378'.

W 8.8 V 37 pH 12

Andesite: pred med red
 brn w/mod grn-gry, po
 phyritic w/qtz, felds
 biot, & hrnblnd pheno
 altered w/abund red
 hem after mafics, mod
 chloritization in pts
 mod propylitic altn i
 pts w/mod disem calc,
 mnr disem pyr, tr epi-
 dote, occ euhed qtz &
 calc xtals (vn fill),
 fractures @ 545'-575'.

1/4°

1/4°

3/4°

1 1/4°

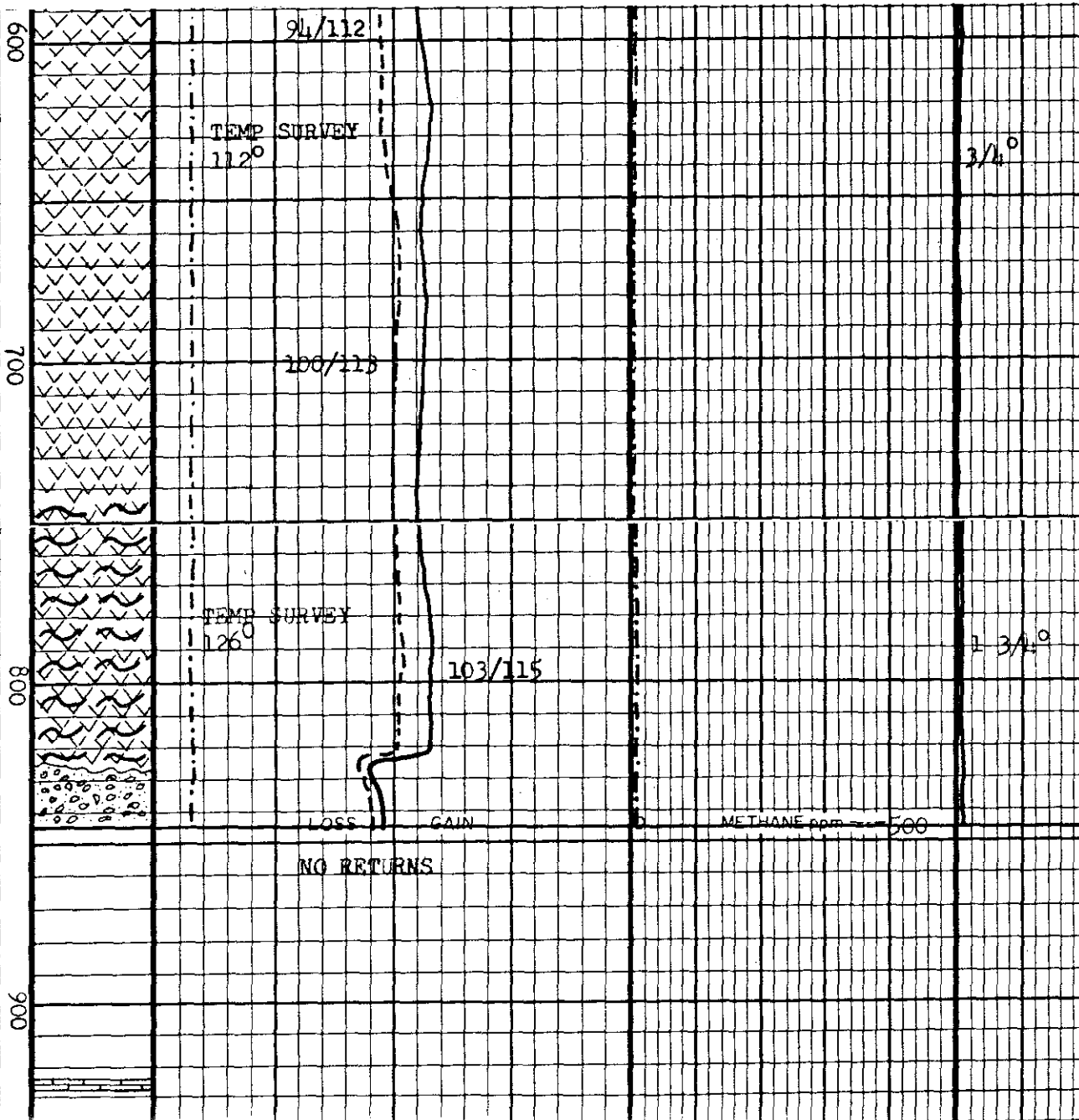
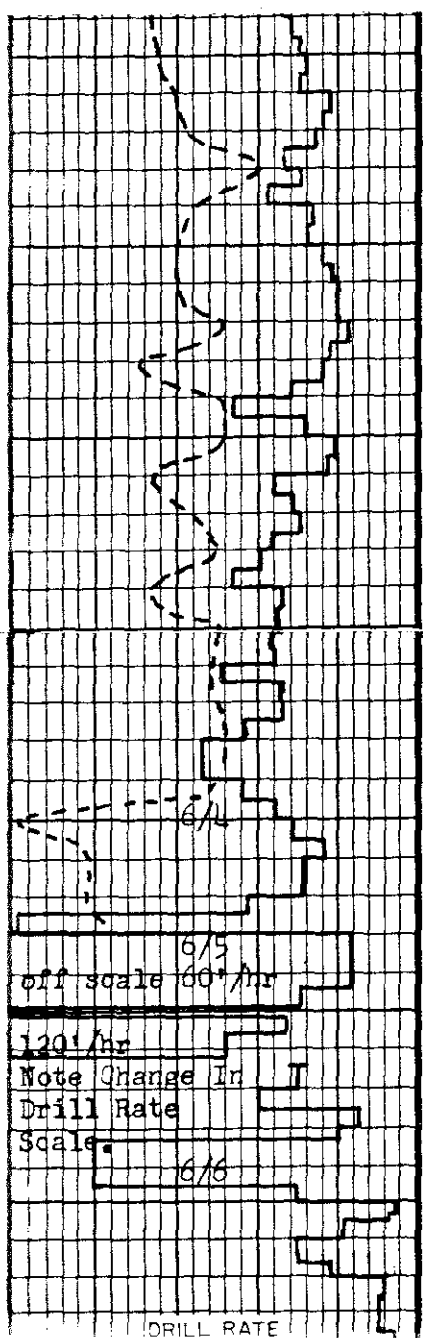
PRESSURE OUT--
 PRESSURE IN--
 H₂S -100
 Res.---

TEMP SURVEY
 108°

TEMPERATURE (F) 200
 CO₂ ppm 4000

LOSS GAIN

METHANE ppm --- 500



W 8.7 V 35 PV 6 YP 16
 pH 12 C 2 Cl 3000
 Ca 800 Snd 0 Sld 2.7

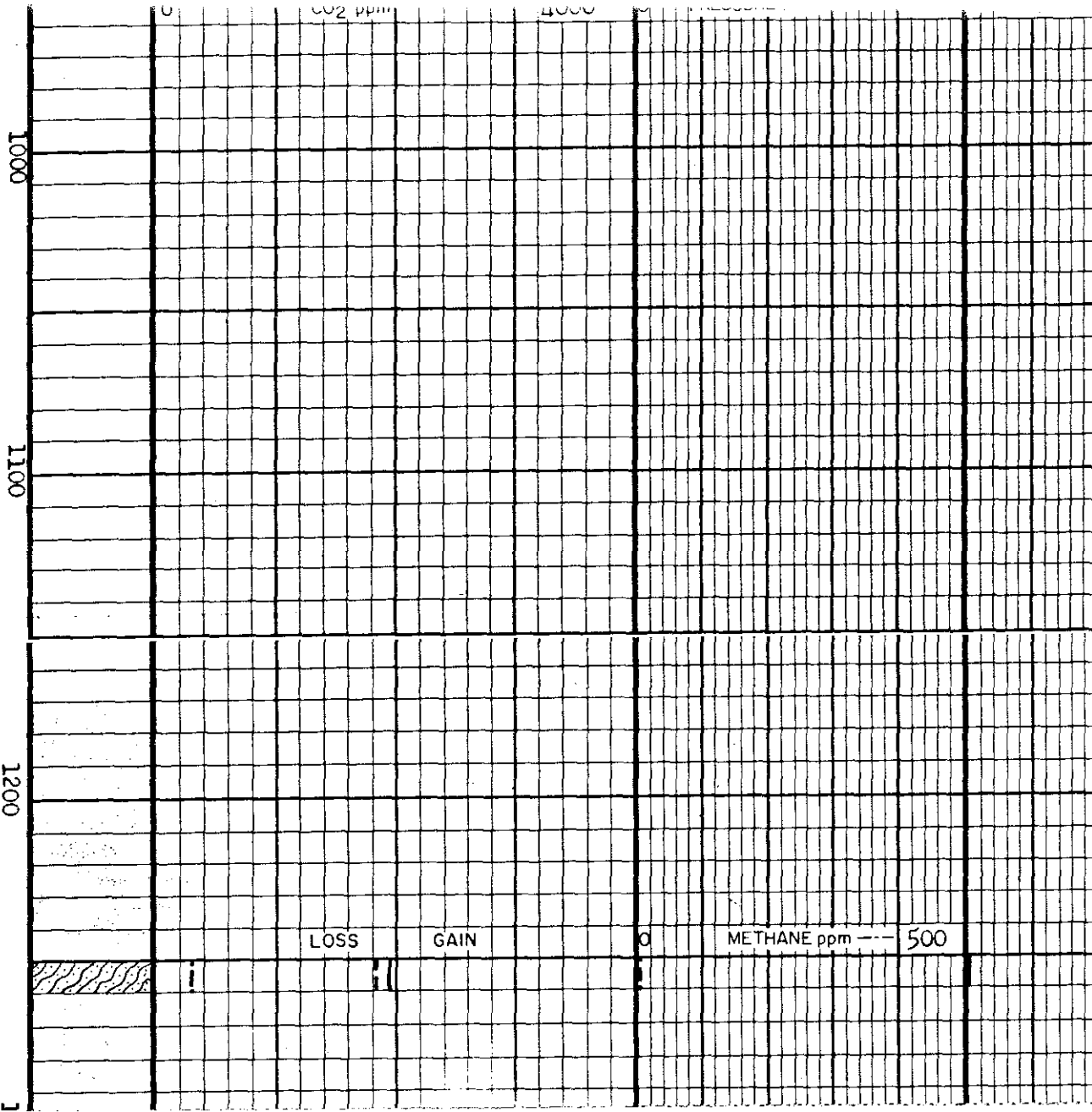
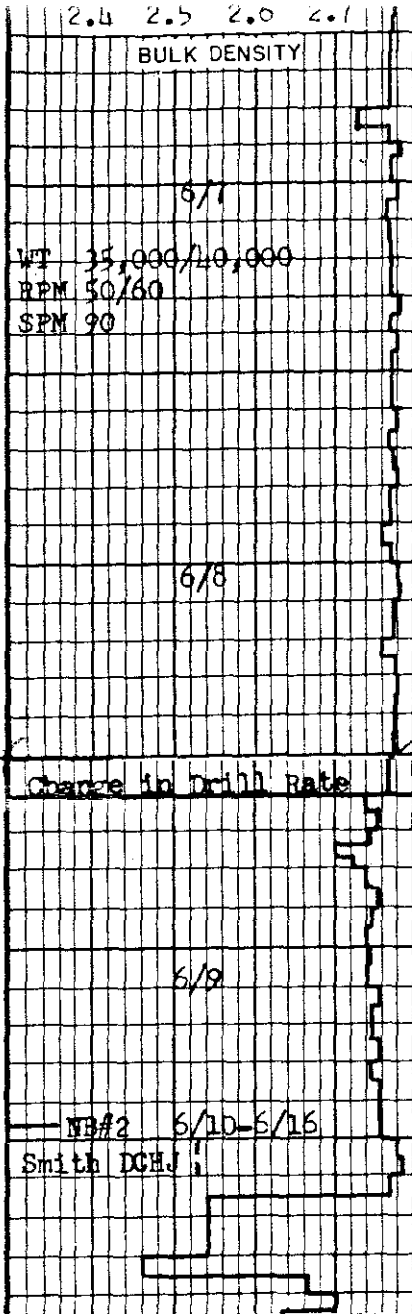
Andesite: genly as described above to 650'+

Dacite: pred lt gy, sme grn, tan, rd-pk, & dk gy ind-v hd, porphyritic-abun hrnblnd phenos & com augite phenos, mod disem calc thru out, mn chloritization, mnr hem from alt of mafics, trc pyr, trc epidote (?) be- more Andesitic @ 710'.

Meta Andesite(?): Pred lt gy-gy w/sme lt grn-grn, v intense hydrth- mal alt, v siliceous, abund disem pyr w/mod subhedral pyr, mod disem calc, abund clay @ 795'. app of brecciated carbonates @ 830'. Lost ci- culation @ 833', set pl @ 833'.

Conglomerate: 833'-845' varicol-clr, wht, gy, grn, yel, brn, rd-pk, pred re- wrkd carbonates (Ls & mn dolomite) w/sme re- wrkd SS & mn Quartzit v calc mtrx, mod pyr (disem & vein). Lost ci- culation @ 850'.

Sample taken from bot- tom of bit @ 929'

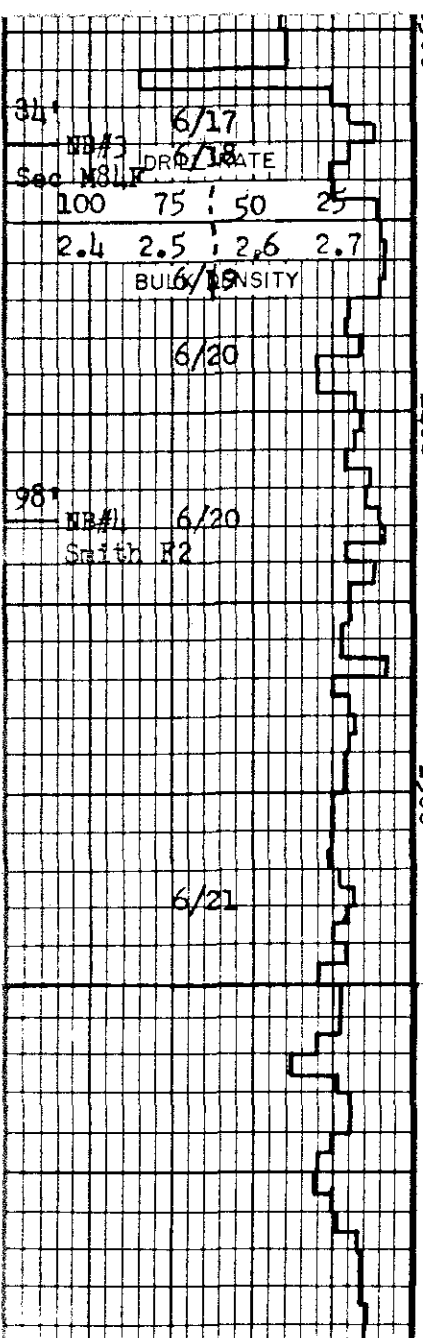


dk brn, rex'tlized & s
dolomitized, com pyr, t
crypto x'ln Qtz.

Drilling with H₂O

No Returns
Sample taken from bot
tom of bit @ 1164'
Ls SS Sltstn (prob in
terbedded, pos conglow
eratic): Ls & SS pred
wht, gy, buff, brn & gr
Sltstn-brick rd.
Sample taken from bit
@ 1235'
SS: pred wht w/sme lt
-lt brn, pred fn-med f
pred sub ang-sub rnd,
pred clr Qtz grns & c
pyr in v calc mtrx.
Quartzite: 1249'-1260'
milky wht-clr, v mass,
occ well rnd grns & s
herical grns, mnr pyr.

Lost circulation @ 1
drilled w/out return
to 1330'. Detected 30



300							
	0	TEMPERATURE (F)	200	0	PRESSURE OUT-	0	H ₂ S -100
	0	CO ₂ ppm	4000	0	PRESSURE IN--		Res.--
	1			1			
1400							
1500							
1600							

ppm H₂S

No Returns

Dolomite: pred lt-med gry-brn, mnr-mod wht calc vn fill, tr pyr & kaol.

Lost circulation @1381'
Drilled without return to 1429'. Detected 300 ppm H₂S, 73,000 ppm CO₂
Set cement plug, twist off while drilling out cement.
Ran fishing tool, retrieved fish.

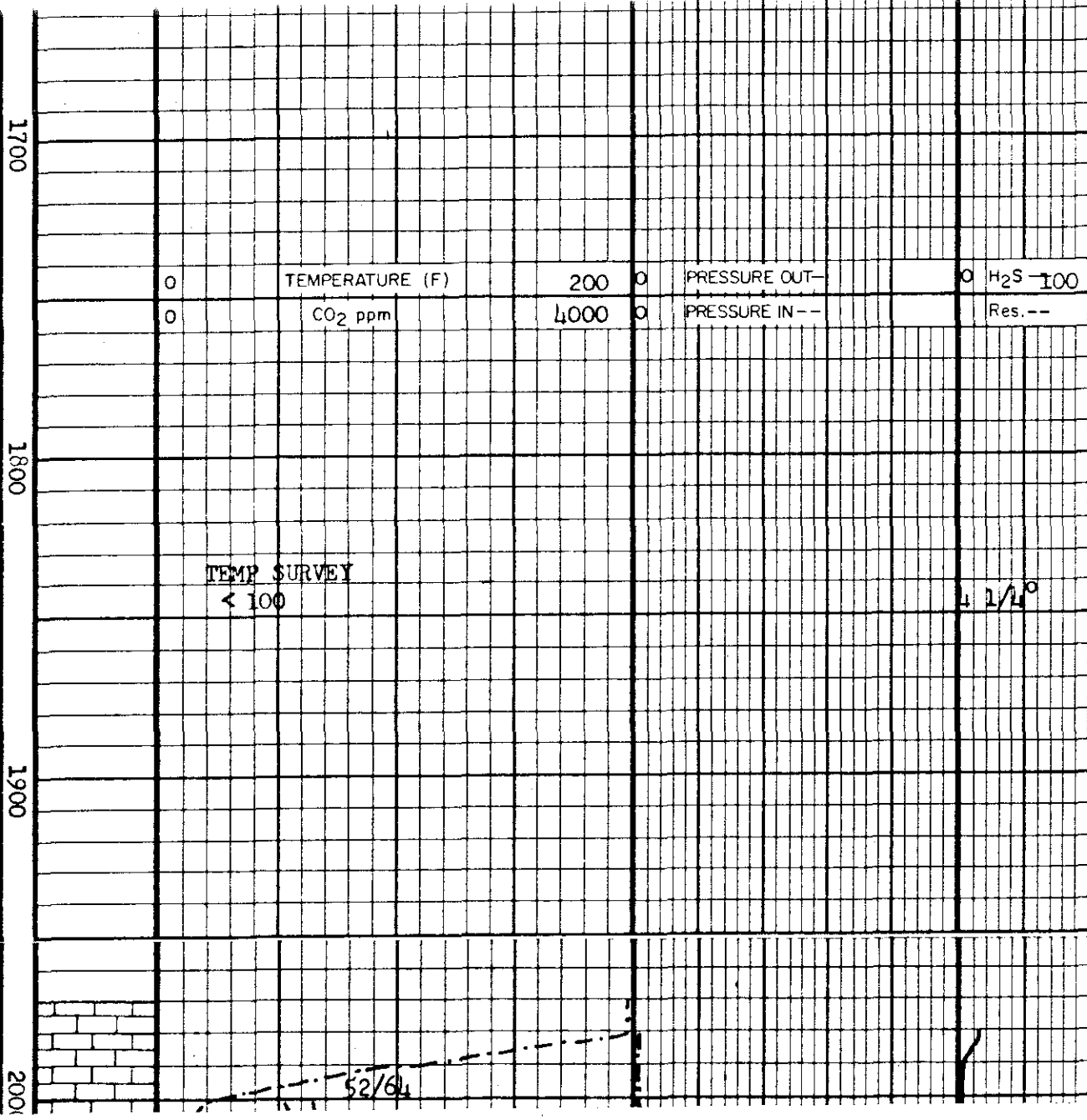
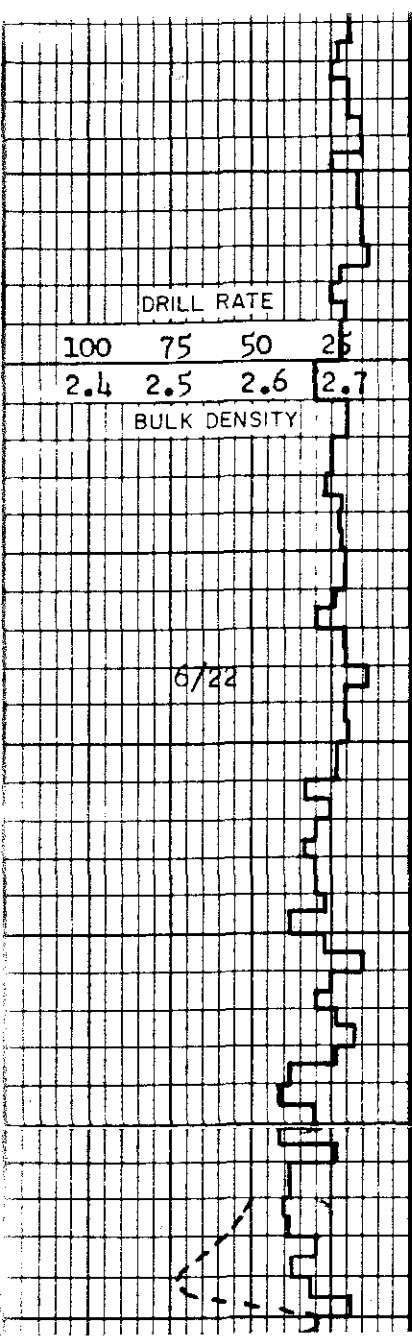
No Returns

3 3/4"

Drilling With H₂O

No Returns

Drilling With H₂O



No Returns

Drilling With H₂O

No Returns

Drilling With H₂O

No Returns

Drilling With H₂O

Circulation Restored @ 1970'. Detected 5 ppm H₂S & 10,000 ppm CO₂.
Ls:pred gy-lt gy w/mar

1700

1800

1900

2000

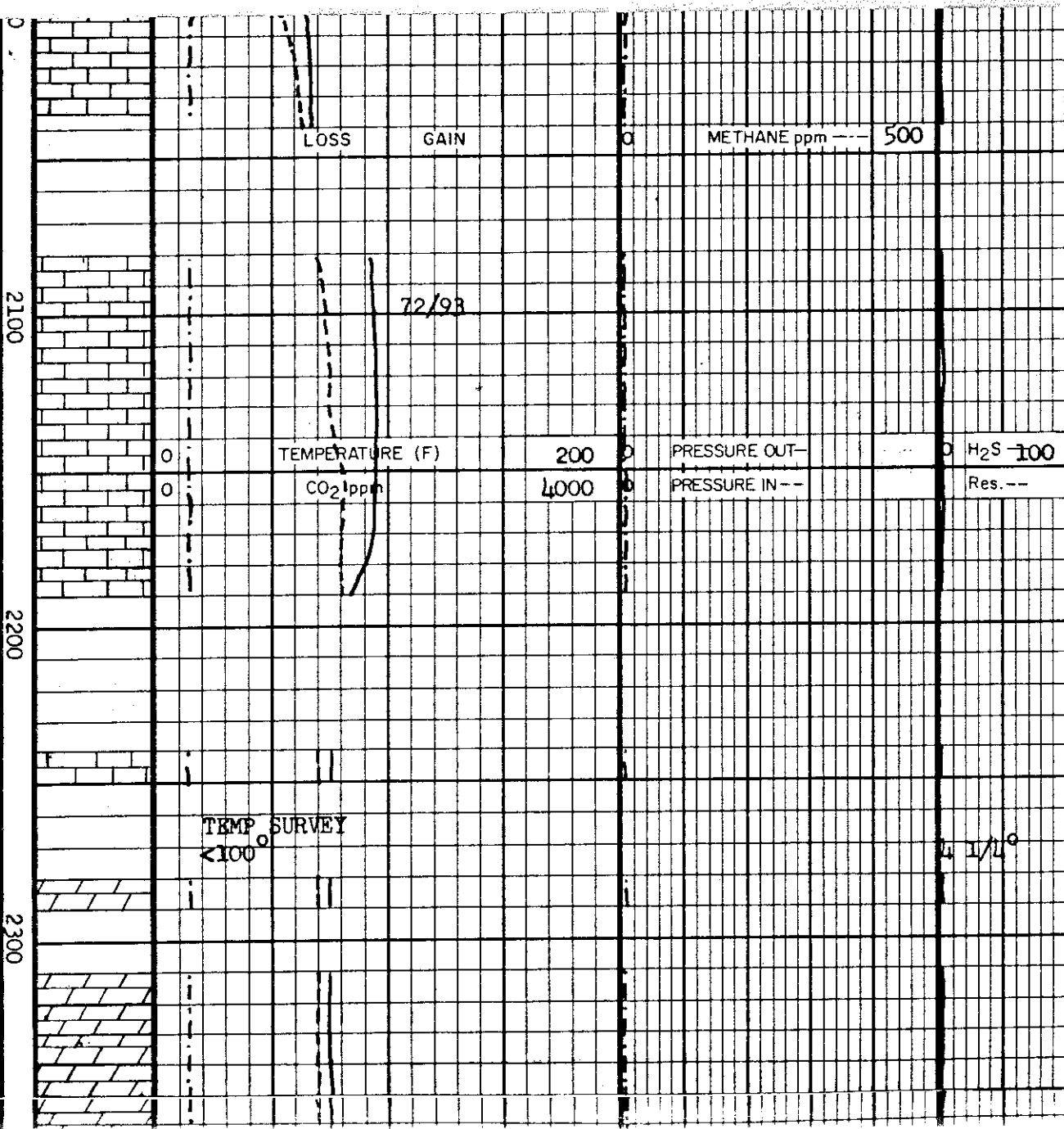
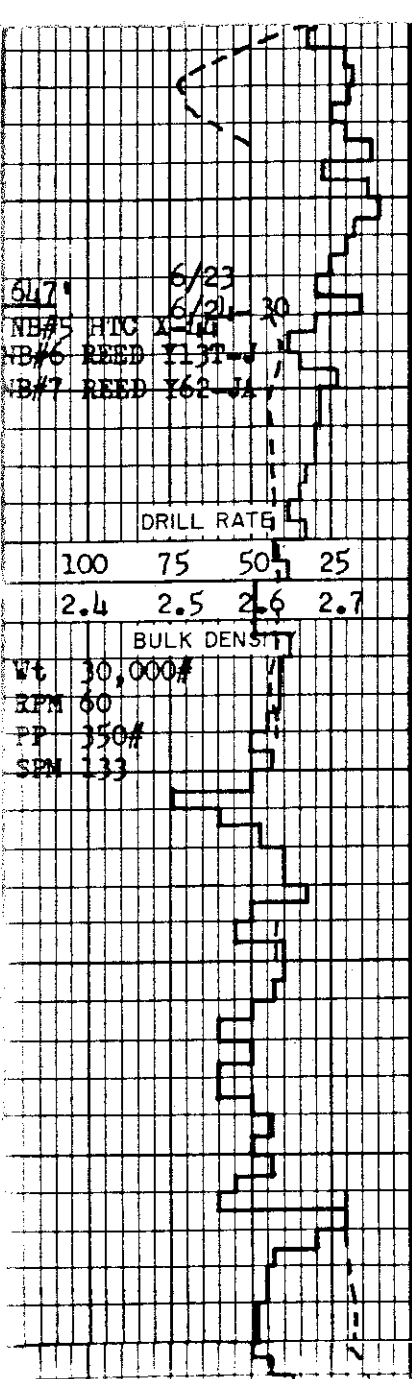
TEMPERATURE (F) 200

CO₂ ppm 4000

PRESSURE OUT- H₂S 100

PRESSURE IN-- Res.--

4 1/4°



wht & trc dk brn, dolomitic in pt, micro x' l calc frac fill, trc chloritization @ 1990', trc lt grn Claystone @ 2000',
Lost circulation @ 2000'

Set 9 5/8" Casing to 2078'. Began Drilling 8 3/4" Hole.

Limestone: wht-occ lt gry, f-med gr, tr pyr, tr poss kaol & tr poss galena.

Drilling with H₂O
Limestone: lt gry-wht, gen as above, vf-f gr, tr pyr & poss galena.

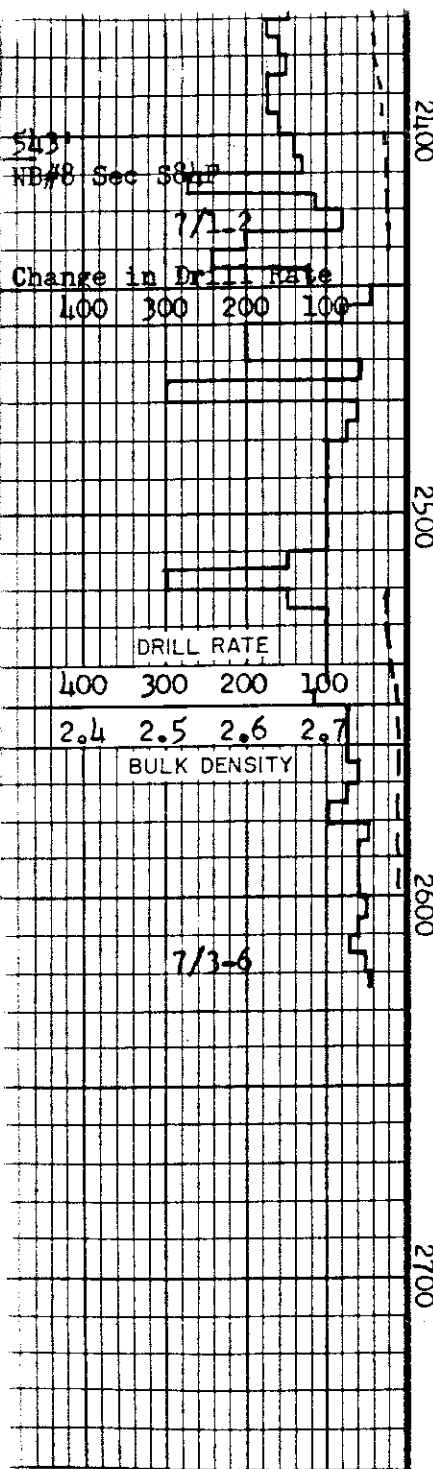
Lost circ @ 2205'.

No Returns

Limestone: wht-lt gry, vf-f gr, tr pyrite.

No Returns

Dolomite: lt brn, lt gry to wht, f-med gr, sl-mod limy in pts, tr xtaln & diss pyrite w/ sm poss diss galena.



543'
NB#8 Sec 38

7/1-2

Change in Drill Rate
400 300 200 100

DRILL RATE

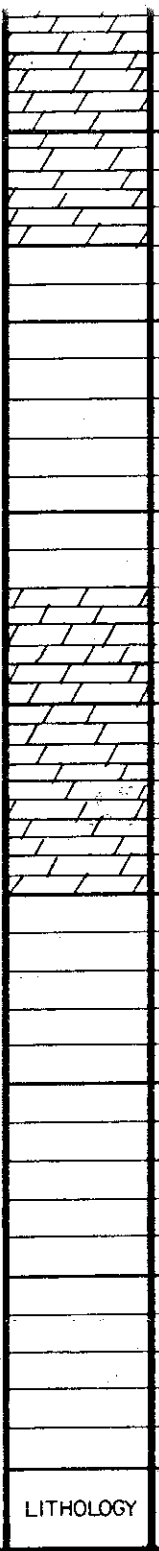
400 300 200 100

2.4 2.5 2.6 2.7

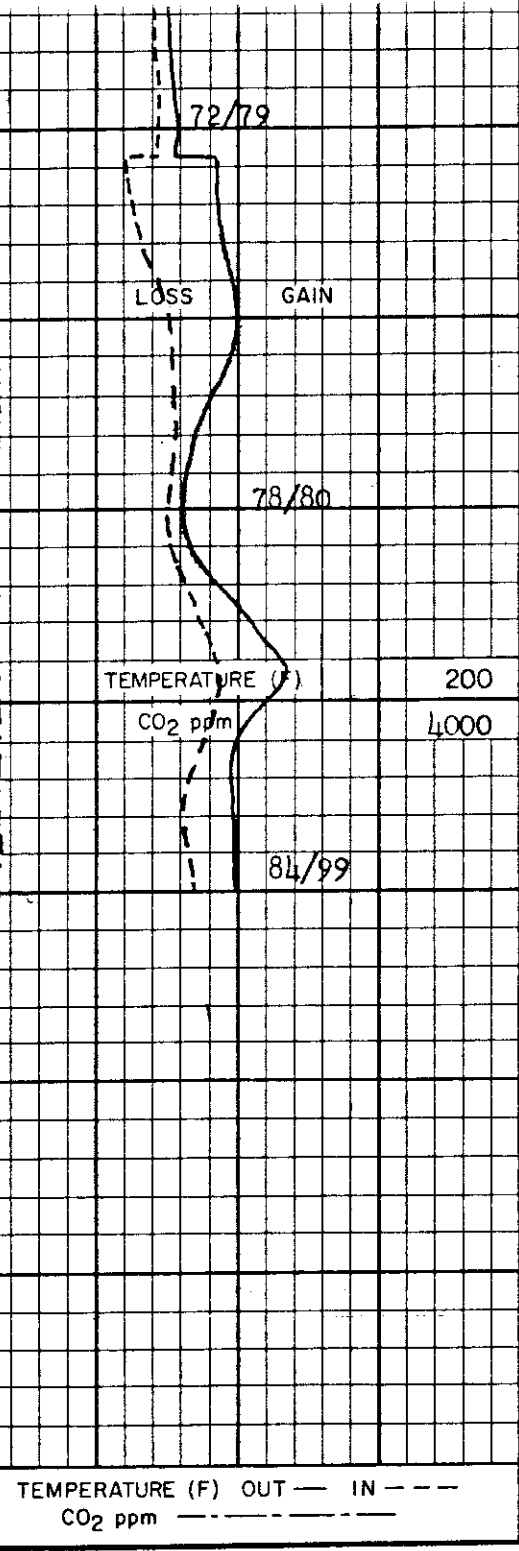
BULK DENSITY

7/3-6

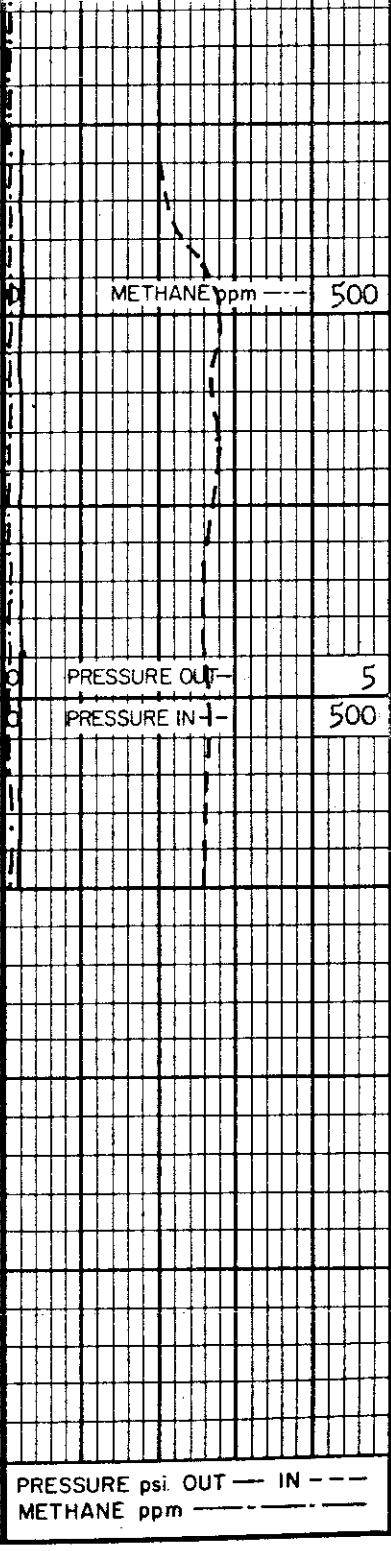
2100
2500
2600
2700
Depth



LITHOLOGY



TEMPERATURE (F) OUT — IN — — —
CO2 ppm — — — — —



PRESSURE psi. OUT — IN — — —
METHANE ppm — — — — —



H2S ppm
Resistivity

Dolomite: lt- med brn, lt gry, hd, f-med gr w/sm vis xtal faces, sl limy w/occ wht-clr calc vning, tr diss pyr & poss m gry galena

Began Drilling With Air @ 2407'. Misting With Unisteam.

H₂O Returns Only

Dolomite: pred lt-med brn w/mod lt gry & occ wht, mnr calc & qtz vn fill, occ brecciated app, tr diss pyr & tr calcopyrite vn fill.

Samples from 2540' to 2600' are 30' composite intervals.

No Returns

Total Depth 2620'.
July 6, 1979.

Cove Fort-Sulphurdale
14-29

REMARKS
R F SMITH CORP

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