

RECEIVED
OCT 25 1990

BENCH MARK GEOLOGICAL SERVICES

OIL CON. DIV.
DIST. 3

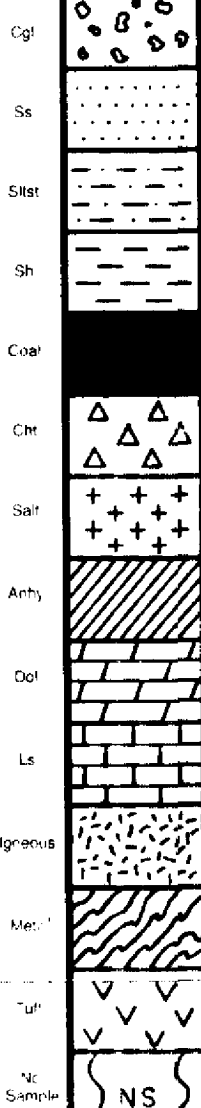
HYDROCARBON WELL LOG

ABBREVIATIONS

CO — Circulate Out
CG — Connection Gas
CB — Core Bit
DC — Depth Correction
DS — Directional Survey
DST — Drill Stem Test
DTG — Down Time Gas
FC — Filter Cake
LAT — Logged After Trip
NB — New Bit
NDR — No Data Recorded
NR — No Returns
PP — Pump Pressure
RPM — Rotary Speed
SPM — Pump Strokes
TG — Trip Gas
TGR — Trip Gas Recycle
Vis — Viscosity
WI — Water Loss
WOB — Weight on Bit
Wt — Density Of Drill Fluid

LITHOLOGY MODIFIERS

// — Anhydritic
B — Bentonitic
+ — Calcareous
C — Carbonaceous, Coaly
L — Dolomitic
F — Fossiliferous
G — Glauconitic
O — Oolitic
P — Pyritic
S — Siliceous



OPERATOR BLACKWOOD AND NICHOLS

WELL NE Blanco Unit #29R

FIELD Basin Fruitland Coal

LOCATION sec 17 T30N R7W

CO/STATE Rio Arriba Co., New Mexico

ELEVATION KB 6279 ft. GL 6265' (ungrd)

SPUD DATE

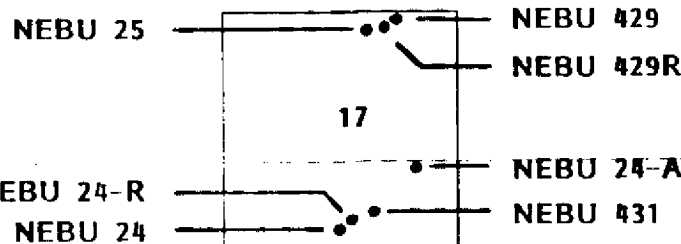
INTERVAL LOGGED 2930 - 3167 ft.

DATE LOGGED 9/7/90

LOGGING GEOLOGISTS Randy Laney, Mike Mixter

INSTRUMENTATION FID Chromatograph and Total Gas Detector, Infrared CO₂ Detector

WELL LOCATION



LEGEND — GAS CURVES

TOTAL GAS	T
METHANE	1
ETHANE	2
PROPANE	3
ISO & N-BUTANE	4
OIL INDICATOR $\frac{C_2 + C_3}{C_1}$	0

HYDROCARBON ANALYSIS

TOTAL GAS			Reported in Units	
10	100	1000	10	100
GAS CHROMATOGRAPHY			Reported in PPM	
100	1000	10000	100	1000
OIL INDICATOR			Dimension Less	
0.01	0.1	1.0	0.01	0.1

RATE OF PENETRATION

Min. Ft.

STC FDTL 6 1/4"
3-24's

2.5 5 7.5 10

WOB 8
RPM 100
PR 6-8 b/m

TD 3167 ft.

DEPTH

DS
DST

2920

40

60

80

3000

20

40

60

80

3100

20

40

60

80

3100

20

40

60

80

3100

20

40

60

80

3100

20

40

60

80

3100

20

40

60

80

3100

20

40

60

80

7" casing set at 2930 ft.

100 units Total Gas = 1% methane
10 100 1000 units
100 1000 10,000 ppm

total 477 units
C₁ 19,230 ppm
C₂ 2,050 ppm
C₃ 910 ppm

ONSET OF FLARED GAS —
total 578 units
C₁ 31,360 ppm
C₂ 515 ppm

total 594 units
C₁ 45,120 ppm
C₂ 410 ppm

total 891 units
C₁ 52,660 ppm
C₂ 340 ppm

5 ft. sample interval
Drilling with water
Depth of Coal Intervals
(# of canistered samples)

heavies 100 1000 ppm
CO₂ 1000 10,000 ppm

Visual Show
Lithology Intep
Lithology Descriptions and Remarks

Sh med-dk gy, sub platy
earthy-some sub res,
firm, non calc, sli carb
silty in part

Coal black, sub blocky
pred sub vit w/ some
fine vit laminations,
carb, mod abnt orng-brn
cylst interbeds

Sltst med gy-gy brn,
sub blk, firm, non carb
sli calc, intbd w/ lt
gy, vf gr, calc Ss

Coal blk & brn blk,
pred platy-sub platy,
gen sub vit w/ very
little vit, mod carb,
abnt platy amber resin
poor quality coal

Coal & Sh Coal is blk
more blocky & vit than
above, intbd w/ med brn
sub blk, earthy, sli-
mod carb Sh, abnt sec-
ondary calc frac fill

Coal blk & brn blk,
pred sub blk-some sub
platy to blk w/ rare
conch frac, gen sub vit
25-35% vit as coarse
to fine bands, mod carb
sec calc in cleats &
fracs, some amber resin
tr extraneous fibers-
possible source-NEBU
429 (120' distant),
fair quality coal

Sh & Coal Sh is dk
brn-gy blk, platy-sub
blocky, mod-v carb, int-
bd w/ blk Coal, blocky,
more vit than above,
w/ some amber resin

Ss lt-m gy, pred vf gr
sub rd-sub ang, well
srt, disagg, fros, sli-
mod calc, intbd w/ some
med brn, sli carb Sltst

Sltst med-dk gy brn,
sub blocky, firm, sli
calc, w/ dissem carb
material, mod shaley ip

Coal blk-brn blk, pred
sub blocky, sub vit w/
20-30% dissem vit-vf
striations, drilled up
vf gr, mod-v carb, tr
resin, no calc, fair
quality coal

Coal black, pred blk-
sub blk w/ some conch
frac, 25-40% vit as
coarse to massive, some
carb, some sec calc as
frac & cleat fill, no
resin, gen good quality
coal-best of well

T/ Main P.C. 3165'
TD sample- Ss med gy
S&P, f gr, sub, rd-sub
ang, mod srt, sli & sli
calc cmt, glauc & carb
grs, NF, NC