

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
 WL — Water Loss
 WOB — Weight on Bit
 WT — Density Of Drill Fluid

LITHOLOGY MODIFIERS

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

BENCH MARK

GEOLOGICAL SERVICES

HYDROCARBON

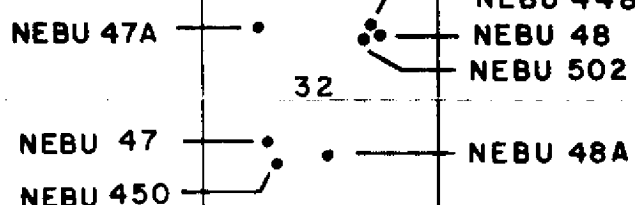
WELL LOG

OPERATOR Blackwood and NicholsWELL NEBU 450FIELD Fruitland CoalLOCATION Sec. 32 T31N R7WCO./STATE San Juan Co., New MexicoELEVATION KB 6363 ft. GL 6349 ft.

SPUD DATE

INTERVAL LOGGED 2929 - 3243 ft.DATE LOGGED 2/8/90LOGGING GEOLOGISTS Dan Wyckoff, Monte AndersonINSTRUMENTATION FID Chromatograph and Total gas detector

WELL LOCATION

RECEIVED
FEB 8 1990
OIL CON. DIV
DIST. 3


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

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

RATE OF PENETRATION

Min./Ft.

 Bit 1 STC FDT 6.25"
 jets: 20, 20, open

2.5 5 7.5 10

 WOB 10-12
 RPM 100
 PP 950

DC + 2 ft.

TD 3243 ft.

DEPTH

Cone

S

DET

2920

40

60

80

1000

20

40

60

80

3100

20

40

60

80

3200

20

40

LITHOLOGY OBSERVED

%

7" casing set at 2929 ft., 23lb./ft

10

100

1000 units

100

1000

10000 ppm

CG

Total

CG

Total

CG

Total

CG

total 220u

C₁ 12,312 ppm

CG

total 240u

C₁ 6,238 ppm

CG

total 230u

C₁ 13,544 ppm

CG

total

total 180u

C₁ 3,870

total 560u

C₁ 15,525 ppm

5' samples

Drilling with water

Depth of Coal Intervals

heavies 100 1000ppm

-C₃C₂C₃C₃C₁C₁C₁C₁C₁C₁C₁C₁C₁C₁C₁C₁

Visual

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