

PENNZOIL COMPANY
 Van Broomer 3019-311G (Well G)
 Vermejo Ranch Coal Bed Methane Pilot

Geologic Summary
 C. Hillenbrand 7/19/89

Raton Formation

Coals:

<u>Depth</u>	<u>Thickness</u>
360.75	1'
396	4.5'
407	2'
412	1'
500.75	1'
510	1.75'
518	.5'
530	2'
554	.75'
585.75	.5'
608.5	1.5'
807	2'
810	2'
837.25	1.5'
842	2'
1177.75'	1'
1391.25'	.75'
1405.25	2.25'
1429.5	.75'
1482.5	2'
1494	1.5'
1525.25	1.75'
1536	2'

Show #1 @ 510' 1 unit/8 units/
 1 unit in coal
 Show #2 @ 531' 1 unit/52 units/
 35 units in coal
 Show #3 @ 635' 35 units/78 units/
 35 units in Frac Shale
 Show #4 @ 806' 35 units/45 units/
 35 units in coal
 Show #5 @ 1681 35 units/80 units/
 55 units in sand
 Show #6 @ 1702 90 units/210 units/
 120 units in sand
 Show #7 @ 1711 120 units/250 units/
 50 units in sand

Total Raton Fm Coal 36'

Vermejo Formation

Coals:

<u>Depth</u>	<u>Thickness</u>
1800.25	2.75'
1812.25	1.75'
1898	2'
1958.25	2.25'
1970	4'

Total Vermejo
 Fm Coal 12.75'

Show #8 @ 1803' 92 units/330 units/
 85 units in coal
 Show # 9 @ 1818' 85 units/125 units/
 75 units in coal
 Show #10 @ 1856' 25 units/57 units/
 22 units in sand
 Show #11 @ 1903' 25 units/200 units/
 25 units/ in sand
 Show #12 @ 1910' 25 units/80 units/
 30 units in sand

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Show #13 @ 1917 35 units/48 units/
25 units in Frac shale
Show #14 @ 1921 25 units/45 units/
28 units in Frac shale
Show #15 @ 1926 28 units/85 units/
30 units in sand
Show #16 @ 1941 25 units/128 units/
30 units in coal
Show #17 @ 1954 45 units/290 units/
80 units in coal
Show #18 @ 1965 85 units/300 units/
65 units in coal
Show #19 @ 1976 85 units/275 units/
50 units in coal
Show #20 @ 2022 32 units/100 units/
65 units Frac coaly shale

Trinidad Sandstone

Top at 2023 (+5679)

Basal Raton Formation displays little neutron-density crossover:

1694-1705
1746-53

Total coal encountered in the Van Bremmer 3019-311G (Well G) was 48.75 feet.

CJH51

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