

Page No. 3

Company	EL PASO NATURAL GAS COMPANY	Formation	DAKOTA	File	RF-3-1037
Well	SAN JUAN 31-6 No. 16-33	Core Type	DIAMOND CONV.	Date Report	7/21/59
Field	BLANCO MESA VERDE DAKOTA WILDCAT	Drilling Fluid	OIL EMULSION MUD	Analysts	ENGLISH
County	RIO ARriba	State	N. MEXICO	Elev.	6499 DF
		Location	Sec 33 31N 6W		

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
						SAND-LO SHALE-SH LIME-LM DOLOMITE-CL CHERT-CH GYP-SUM ANHYDRITE-ANHY CONGLOMERATE-CONG FOSSILIFEROUS-FOSS SANDY-SND SHALY-SHY LIMY-LMY FINE-FN MEDIUM-MED COARSE-CSE CRYSTALLINE-XLN GRAIN-GRN GRANULAR-GRNL BROWN-BRN GRAY-GY VUGGY-VGY FRACTURED-FRAC LAMINATION-LAM STYLOLITIC-STY SLIGHTLY-SL/ VERY-V/ WITH-W/

7989-7992 High total water saturations (80.2% average) and low porosity (3.0% average) Show this interval to have no commercial value . Other properties are : permeability 0.01 md./ft. average and saturations of residual oil 5.7% average . There is evidence of a good fracture system , which could be the resevoir and the means of passage to the well bore for fluids within these fractures . Further testing should be done to evaluate the fracture system .

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CORE LABORATORIES, INC.
 Petroleum Reservoir Engineering
 DALLAS, TEXAS

Page No. 4**CORE ANALYSIS RESULTS**

Company **EL PASO NATURAL GAS COMPANY** Formation **DAKOTA** File **RP-3-1037**
 Well **SAN JUAN 31-6 No. 16-33** Core Type **DIAMOND CONV.** Date Report **7/23/59**
 Field **BLANCO MESA VERDE DAKOTA WILDCAT** Drilling Fluid **OIL EMULSION MUD** Analysts **ENGLISH**
 County **RIO ARriba** State **N.MEXICO** Elev. **6499 DF** Location **Sec33 31N 6W**

Lithological Abbreviations

SAND-SS SHALE-SH LIME-LM	DOLOMITE-DOL CHERT-CH GYPSUM-GYP	ANHYDRITE-ANH CONGLOMERATE-CONG FOSSILIFEROUS-FOSS	SANDY-SOY SHALY-SHY LIMY-LMY	FINE-FN MEDIUM-MED COARSE-CSE	CRYSTALLINE-XLN GRAIN-GRN GRANULAR-GRNL	BROWN-BRN GRAY-GY VUGGY-VGY	FRACTURED-FRAC LAMINATION-LAM STYLOLITIC-STY	SLIGHTLY-SL/ VERY-V/ WITH-W/
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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
39	8005-06	0.07	1.0	0.0	40.0	
40	06-07	0.01	1.2	0.0	58.2	Vertical Fracture
41	07-08	0.01	0.9	0.0	66.6	Vertical Fracture
42	08-09	<0.01	1.8	0.0	94.4	Vertical Fracture
43	09-10	<0.01	1.8	0.0	94.4	Vertical Fracture
44	8012-13	<0.01	3.6	5.5	80.6	
45	8014-15	0.28	6.9	0.0	14.5	
46	15-16	0.23	9.1	0.0	19.8	Vertical Fracture
47	16-17	0.54	6.7	0.0	32.8	
48	17-18	0.06	4.0	0.0	32.5	
49	8022-23	<0.01	2.9	6.9	89.8	
50	23-24	<0.01	3.2	15.6	81.3	Vertical Fracture
51	24-25	<0.01	3.6	0.0	94.5	
52	25-26	<0.01	5.2	0.0	90.4	
53	8029-30	0.04	2.7	7.4	14.8	
54	30-31	0.22	4.1	0.0	14.6	Vertical Fracture
55	31-32	0.28	3.8	5.3	44.7	Vertical Fracture
56	32-33	0.43	5.0	0.0	12.0	
57	33-34	0.08	4.8	10.4	35.4	
58	34-35	0.04	5.0	0.0	20.0	Vertical Fracture
59	35-36	0.05	7.7	6.5	26.0	
60	36-37	0.07	8.3	2.4	19.3	
61	37-38	<0.01	7.6	2.6	21.1	Vertical Fracture
62	38-39	0.14	6.1	3.3	26.3	
63	39-40	0.35	6.2	0.0	19.3	Vertical Fracture
64	8040-41	<0.01	7.4	0.0	21.6	Vertical Fracture

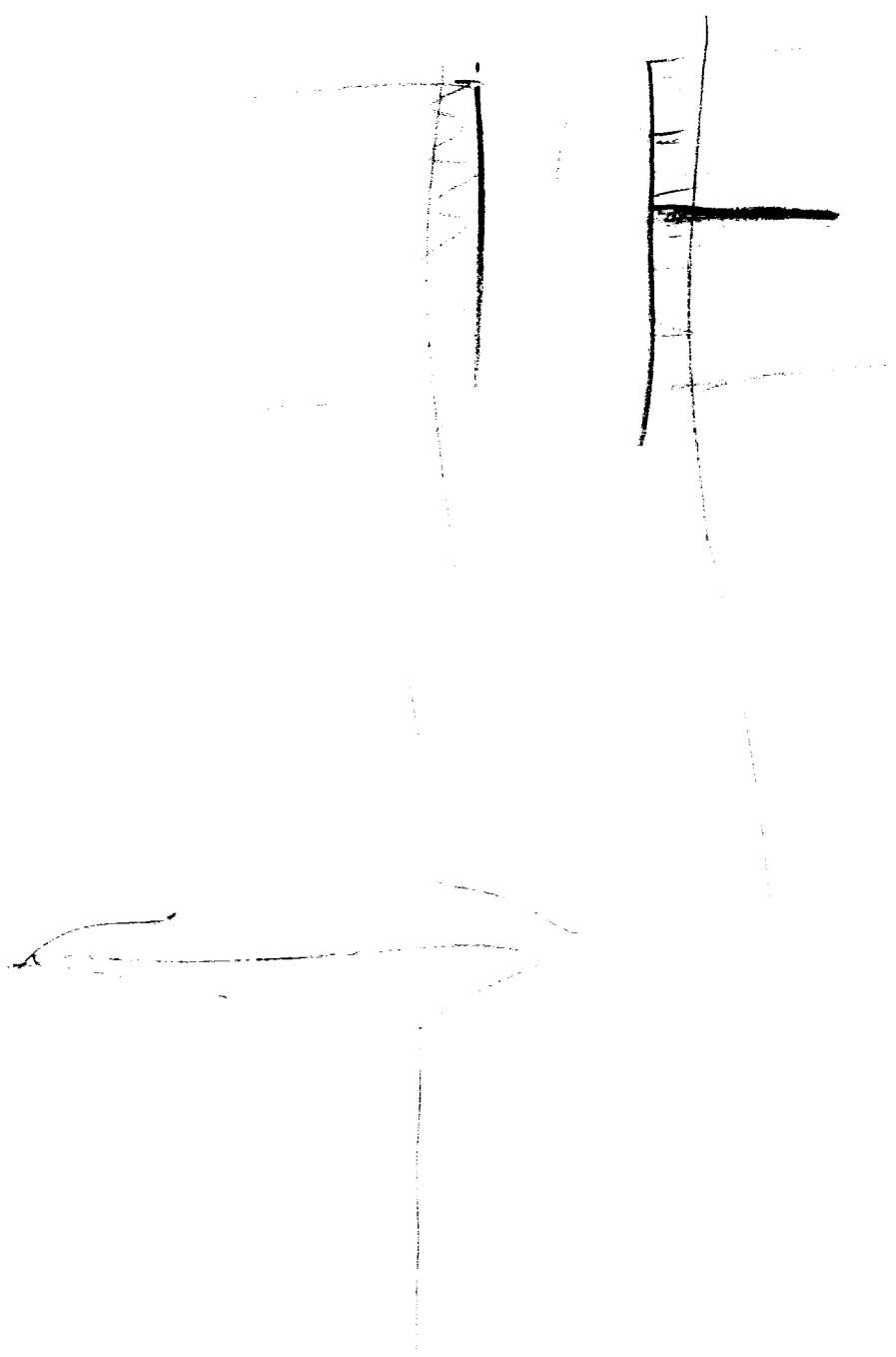
8005-8013 Low porosity (1.7% average) , low permeability (0.02 md./ft. average) and high saturations of total water (72.3% average) show this interval to have no commercial value . The saturation of residual oil is 0.9% average .

8014-8018 The porosity (6.7% average) and the permeability (0.28 md./ft. average) are low . The saturations (residual oil 0.0% average and total water 24.9% average) show the interval to be capable of producing gas . The productive capacity (1.11 md. ft.) is very low and a formation treatment will be necessary to establish and maintain commercial rates of production .

Company	EL PASO NATURAL GAS COMPANY	Formation	DAKOTA	File	RP-3-1037
Well	SAN JUAN 31-6 No. 16-33	Core Type	DIAMOND CONV.	Date Report	7/23/59
Field	BLANCO MESA VERDE DAKOTA WILLCAT	Drilling Fluid	OIL EMULSION MUD	Analysts	ENGLISH
County	RIO ARriba	State	N. MEXICO	Box	6499 DF
		Location	Sec 33 31N 6W		

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY'S	POROSITY PERCENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	0-1	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
2	1-2	0.0001	100	0	0	BROWN BRN GRAY GRN
3	2-3	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
4	3-4	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
5	4-5	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
6	5-6	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
7	6-7	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
8	7-8	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
9	8-9	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
10	9-10	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
11	10-11	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
12	11-12	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
13	12-13	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
14	13-14	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
15	14-15	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
16	15-16	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
17	16-17	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
18	17-18	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
19	18-19	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
20	19-20	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
21	20-21	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
22	21-22	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
23	22-23	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
24	23-24	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
25	24-25	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
26	25-26	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
27	26-27	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
28	27-28	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
29	28-29	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
30	29-30	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
31	30-31	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
32	31-32	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
33	32-33	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
34	33-34	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
35	34-35	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
36	35-36	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
37	36-37	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
38	37-38	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
39	38-39	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
40	39-40	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
41	40-41	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
42	41-42	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
43	42-43	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
44	43-44	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
45	44-45	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
46	45-46	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
47	46-47	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
48	47-48	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
49	48-49	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
50	49-50	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
51	50-51	0.0001	100	0	0	CRISTALLINE XLN GRAY GRN
52	51-52	0.0001	100	0	0	CRISTALLINE XLN GRAY GR

8029-8041 This interval has low porosity (5.7% average) and low permeability (0.14 md./ft. average) . The saturations (residual oil 3.1% average and total water 22.9% average) show the interval to be capable of producing gas . The productive capacity (1.72 md. ft.) is low and a formation treatment will be required to establish and maintain commercial rates of production .



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

Page No. 1**CORE ANALYSIS RESULTS**

Company EL PASO NATURAL GAS COMPANY Formation DAKOTA File RP-3-1037
Well SAN JUAN 31-6 No. 16-33 Core Type DIAMOND CONV. Date Report 7/19/59
Field BLANCO-MESAVERDE-DAKOTA WILDCAT Drilling Fluid OIL EMULSION MUD Analysts English
County RIO ARriba State NEW MEXICO Elev. 6499 DF Location SEC 33 31N 6W

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	7904.5-05	0.02	4.7	0.0	17.0	
2	05-06	0.02	3.8	0.0	36.8	Vertical Fracture Perm D15
3	06-07	0.01	2.1	0.0	81.0	Vertical Fracture Perm 3.35
4	07-08	0.01	3.6	0.0	44.5	Vertical Fracture OIL 2.4
5	08-09	0.06	6.3	0.0	30.4	Vertical Fracture NAT 53.67
6	09-10	0.01	4.5	4.6	48.8	
7	10-11	0.01	3.7	0.0	21.6	
8	11-12	0.01	1.4	0.0	57.2	Vertical Fracture
9	12-13	0.01	1.9	10.5	42.2	Vertical Fracture
10	13-14	0.01	3.7	0.0	89.2	Vertical Fracture
11	14-15	0.01	3.0	6.7	40.0	
12	15-16	0.01	3.8	5.3	73.7	
13	16-17	0.01	1.4	0.0	85.6	Vertical Fracture
14	17-18	0.01	3.0	6.7	83.4	Vertical Fracture
15	7939-40	0.01	1.8	11.2	72.1	Vertical Fracture Perm. D15
16	40-41	0.01	1.8	11.2	33.3	Vertical Fracture Perm. 1.67
17	41-42	0.01	1.8	11.2	22.2	Vertical Fracture OIL 8.4
18	42-43	0.02	1.3	0.0	30.8	39.60

7904.5-7906 Although the porosity (4.2% average) and the permeability (0.02 md./ft. average) are low , the saturations (residual oil 0.0% average and total water 26.9% average) are within the limits associated with gas productive Dakota sandstone . A good fracture system exists , which should increase the effective permeability .

7906-7907 This one foot interval is interpreted to have no commercial value due to low porosity and high saturation of total water .

7907-7911 Although the porosity (4.5% average) and the permeability (0.02 md./ft. average) are low , the saturations (residual oil 1.1% average and total water 36.3% average) are within the range associated with gas-productive Dakota sandstone . A good fracture system exists , which should increase the effective permeability .

7911-7918 High total water saturations (67.7% average) and low permeability (<0.01 md./ft. average) show this interval to have no commercial value . Other properties are : porosity 2.6% average ; and saturation of residual oil 4.2% average.

7939-7943 Low porosity (1.7% average) shows this interval to have no commercial value . Other properties are : permeability <0.01 md./ft. average ; saturation of total water 39.6% average ; and residual oil 8.4% average . Further testing should be done to evaluate the fracture within this interval .

CORE ANALYSIS RESULTS

Company: EL PASO NATURAL GAS COMPANY Formation: DAKOTA File: RP-3-1037
Well: SAN JUAN 31-6 No. 16-33 Core Type: DIAMOND CONV. Date Report: 7/21/59
Field: BLANCO MESA VERDE DAKOTA WILDCAT Drilling Fluid: OIL EMULSION MUD Analysts: ENGLISH
County: RIO ARriba State: N.MEXICO Elev: 6499 DF Location: Sec 33 31N 6W

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
19	7957-58	<0.01	2.0	0.0	70.0	
20	58-59	<0.01	3.3	0.0	60.6	Vertical Fracture Perm .014
21	59-60	0.01	2.4	0.0	58.3	Vertical Fracture Pore 3.5
22	60-61	0.01	3.8	0.0	15.8	Vertical Fracture oil .4
23	61-62	0.02	5.6	0.0	17.9	Vertical Fracture WAT. 35.28
24	62-63	0.01	3.7	0.0	27.0	
25	63-64	0.01	2.8	0.0	50.0	Vertical Fracture
26	64-65	0.01	5.4	0.0	11.1	Vertical Fracture
27	65-66	0.01	3.9	0.0	20.5	Vertical Fracture
28	66-67	0.01	4.1	4.9	19.5	
29	67-68	0.05	1.6	0.0	37.4	Vertical Fracture
30	7978-79	0.01	2.6	0.0	80.7	Vertical Fracture
31	79-80	<0.01	3.7	0.0	89.2	Vertical Fracture
32	80-81	<0.01	1.6	0.0	75.0	Vertical Fracture Perm .03
33	81-82	0.02	4.6	10.9	8.7	Vertical Fracture Pore 3.66
34	82-83	0.04	5.3	0.0	7.5	Vertical Fracture Oil 3.8
35	83-84	0.07	4.2	11.9	19.0	Vertical Fracture WAT 46.68
36	7989-90	<0.01	1.8	0.0	77.7	Vertical Fracture Perm .01
37	90-91	<0.01	2.9	17.2	65.5	Vertical Fracture Pore 3.03
38	7991-92	0.02	4.4	0.0	97.6	Vertical Fracture Oil 5.73

7957-7960 Low porosity (2.5% average) and high total water saturations (62.9% average) show this interval to have no commercial value . Other properties are : permeability <0.01 md./ft. average and saturation of residual oil 0.0% average .

7960-7967 Although the porosity (4.1% average) and the permeability (0.01 md./ft. average) are low , the saturations (residual oil 0.7% average and total water 23.1% average) show the interval to be capable of producing gas . There is good evidence of vertical fracturing , which should increase the effective permeability .

7967-7968 Low porosity (1.6%) shows this interval to have no commercial value .

7978-7981 Low porosity (2.6% average) , low permeability (<0.01 md./ft. average) and high total water saturations (81.6% average) show this interval to have no commercial value . The saturations of residual oil are 0.0% average .

7981-7984 Although the porosity (4.7% average) and the permeability (0.04 md./ft. average) are low , the saturations (residual oil 7.6% average and total water 11.7% average) show the interval to be capable of producing gas . The vertical fractures should increase the effective permeability .

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