

CORE LABORATORIES, INC.
 Petroleum Reservoir Engineering
 DALLAS, TEXAS

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CORE ANALYSIS RESULTS

Company EL PASO NATURAL GAS COMPANY Formation DAKOTA File RP-3-1065
 Well SAN JUAN 30-5 No. 28-23 - X Core Type DIAMOND CONV. Date Report 8/31/59
 Field BLANCO MESA VERDE DAKOTA WILDCAT Drilling Fluid OIL EMULSION MUD Analysts ENGLISH
 County RIO ARriba State N. MEXICO Elev. 6753 DF Location Sec23 30N 5W

Lithological Abbreviations

SANDY - SDY SHALE - SH LIME - LM	DOLOMITE - DOL CHERT - CH GYPSUM - GYP	ANHYDRITE - ANHY CONGLOMERATE - CONG FOSSILIFEROUS - FOSS	SANDY - SDY SHALY - SHY LMY - LMY	FINE - FN MEDIUM - MED COARSE - CSE	CRYSTALLINE - XLN GRAIN - GRN GRANULAR - GRNL	BROWN - BRN GRAY - GR VUGGY - VGY	FRACTURED - FRAC LAMINATION - LAM STYLOLITIC - STY	SLIGHTLY - SL/ VERY - V/ WITH - W.
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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	8075-76	< 0.02	4.6	0.0	32.6	Vertical Fracture
2	76-77	< 0.01	3.4	0.0	61.8	Vertical Fracture
3	77-78	< 0.01	2.8	0.0	73.6	
4	78-79	< 0.01	2.5	0.0	48.0	
5	79-80	< 0.01	7.6	6.6	19.8	
6	80-81	< 0.01	7.0	0.0	21.4	Vertical Fracture
7	81-82	< 0.01	4.5	0.0	33.4	Vertical Fracture
8	82-83	< 0.01	4.3	0.0	34.9	Vertical Fracture
9	83-84	< 0.01	5.5	0.0	20.0	
10	84-85	< 0.01	5.2	0.0	21.2	
11	85-86	< 0.01	2.4	8.3	50.0	Vertical Fracture
12	8090-91	< 0.01	2.2	9.1	81.8	Vertical Fracture
13	91-92	< 0.01	3.7	13.5	78.4	Vertical Fracture
14	92-93	< 0.01	5.7	0.0	87.7	Vertical Fracture
15	93-94	< 0.01	4.2	4.8	90.5	Vertical Fracture
16	94-95	< 0.01	4.3	4.7	88.4	Vertical Fracture
17	95-96	< 0.01	4.8	4.2	87.5	Vertical Fracture
18	96-96.8	< 0.01	5.7	0.0	91.3	Vertical Fracture

8075-8076 This one-foot interval has low porosity (4.6%) and low permeability (0.02 md.) . The saturations (residual oil 0.0% and total water 32.6%) show this interval to be capable of producing gas . The vertical fractures should increase the effective permeability .

8076-8079 Low porosity (2.9% average) , low permeability (< 0.01 md./ft. average) and high total water saturations (62.8% average) show this interval to have no commercial value . The saturation of residual oil is 0.0% average .

8079-8085 This interval has low porosity (5.7% average) and low permeability (< 0.01 md./ft. average) . The saturations (residual oil 1.1% average and total water 25.1% average) show this interval to be capable of producing gas . The vertical fractures should increase the effective permeability .

8085-8086 This one-foot interval is interpreted to have no commercial value due to low porosity (2.4%) and high total water saturation (50.0%) .

8090-8096.8 Low porosity (4.3% average) , low permeability (< 0.01 md./ft. average) and high total water saturations (86.5% average) show this interval to have no commercial value . The saturation of residual oil is 5.2% average . Further testing should be done to evaluate the fracture system .

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Page No 2**CORE ANALYSIS RESULTS**

Company	EL PASO NATURAL GAS COMPANY		Formation	DAKOTA		File	RP-3-1065	
Well	SAN JUAN 30-5 No. 28-23 - X		Core Type	DIAMOND CONV.		Date Report	9/2/59	
Field	BLANCO MESA VERDE DAKOTA WILDCAT		Drilling Fluid	OIL EMULSION MUD		Analysts	ENGLISH	
County	RIO ARriba	State	N MEXICO	Elev.	6753 DF	Location	Sec23 30N 5W	

Lithological Abbreviations

SAND - SD SHALE - SH LIME - LM	DOLOMITE - DOL CHERT - CH GYPSUM - GYP	ANHYDRITE - ANHY CONGLOMERATE - CONG FOSSILIFEROUS - FOSS	SANDY - SDY 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 MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		BOYLE'S LAW POROSITY *	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		
19	8115.5-16	0.01	2.2	0.0	86.4	1.9	
20	16-17	0.03	5.0	10.0	74.0	2.9	Vertical Fracture
21	17-18	<0.01	1.1	18.2	54.6	2.9	Vertical Fracture
22	18-19	<0.01	2.5	0.0	24.0	3.6	Vertical Fracture
23	19-20	<0.01	3.4	5.9	70.6	4.8	Vertical Fracture
24	20-21	0.02	2.5	0.0	80.1	3.6	Vertical Fracture
25	21-22	<0.01	2.1	0.0	71.4	3.1	Vertical Fracture
26	22-23	<0.01	3.2	6.2	74.9	3.4	Vertical Fracture
27	23-24	<0.01	3.4	5.9	76.5	4.3	Vertical Fracture
28	24-25	<0.01	3.8	5.3	81.6	4.1	Vertical Fracture
29	25-26	<0.01	3.0	0.0	90.0	3.3	Vertical Fracture
30	26-27	<0.01	3.4	0.0	82.4	3.5	Vertical Fracture
31	27-28	<0.01	5.8	3.4	89.7	2.4	Vertical Fracture
32	28-29	<0.01	2.9	0.0	86.2	2.6	Vertical Fracture
33	29-30	0.02	1.9	0.0	63.1	1.1	Vertical Fracture
34	30-30.9	<0.01	3.2	0.0	90.7	4.3	Vertical Fracture
35							
35	8133-34	<0.01	1.9	0.0	21.0	2.8	Vertical Fracture
36	34-35	<0.01	2.1	0.0	76.3	4.0	Vertical Fracture
37							
37	8138-39	<0.01	1.8	0.0	89.0	1.7	Vertical Fracture
38	39-40	<0.01	1.2	16.7	66.6	1.0	Vertical Fracture
39	40-41	<0.01	1.7	11.8	70.6	1.9	Vertical Fracture
40	41-42	<0.01	1.4	0.0	85.6	2.0	Vertical Fracture
41	42-43	0.01	1.8	0.0	94.4	2.2	Vertical Fracture
42	43-44	<0.01	1.5	13.3	66.8	2.2	Vertical Fracture
43	44-45	<0.01	0.9	0.0	66.7	1.9	Vertical Fracture
44	45-46	<0.01	1.9	10.5	84.3	2.2	Vertical Fracture
45	46-47	<0.01	1.3	0.0	92.4	3.3	Vertical Fracture
46	47-48	0.65	1.4	0.0	85.7	5.1	Vertical Fracture
47	48-49	<0.01	2.2	0.0	95.0	1.8	Vertical Fracture

* Boyle's Law porosity was measured by air expansion from 8 cc's of sample

8115.5-8149 Low porosity (2.4% average) and high total water saturations (75.6% average) show this interval to be essentially non-productive . Other properties are : permeability 0.03 md./ft. average ; and saturations of residual oil 3.7% average . There is evidence of a fracture system , which could be the reservoir and the means of passage to the well bore . Further testing should be done to evaluate the amount and type of fluid within the fractures .

CORE ANALYSIS RESULTS

Company EL PASO NATURAL GAS COMPANY Formation DAKOTA File RP-3-1065
Well SAN JUAN 30-5 No. 28-23 - X Core Type DIAMOND CONV. Date Report 9/6/59
Field BLANCO MESA VERDE DAKOTA WILDCAT Drilling Fluid OIL EMULSION MUD Analysts ENGLISH
County RIO ARriba State N.MEXICO Elev. 6753 DF Location Sec23 30N 5W

Lithological Abbreviations

SANDY SD SHALE SH LIME LM	COLOMITE DOL CHERT CH GYPSUM GYP	ANHYDRITE ANHY CONGLOMERATE CONC FOSSILIFEROUS FOSS	SANDY SDY SHALE SHY LIME LMY	FINE FN MEDIUM MED COARSE CSE	CRYSTALLINE XLN GRAIN GRN GRANULAR GRNL	BROWN BRN GRAY GRG MUGGY MGY	FRACTURED FRAC LAMINATION LAM STYOLITIC STY	SLIGHTLY SL/ VERY VY WITH W.
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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
48	8155-56	<0.01	1.1	0.0	54.5	Vertical Fracture
49	56-57	<0.01	2.3	0.0	52.2	Vertical Fracture
50	57-58	0.01	5.4	0.0	14.8	Vertical Fracture
51	58-59	<0.01	2.2	0.0	36.3	Vertical Fracture
52	59-60	<0.01	1.8	0.0	33.3	Vertical Fracture
53	60-61	<0.05	5.7	0.0	10.5	Vertical Fracture
54	61-62	<0.02	2.6	0.0	11.1	Vertical Fracture
55	62-63	7.2 *	4.3	4.2	8.3	Vertical Fracture
56	63-64	0.01	7.2	9.7	8.5	Vertical Fracture
57	64-65	<0.02	5.1	9.8	7.8	Vertical Fracture
58	65-66	<0.01	1.2	0.0	50.0	Vertical Fracture
59	66-67	<0.01	2.9	0.0	48.2	Vertical Fracture
60	67-68	<0.01	2.4	0.0	50.0	Vertical Fracture
61	8190-91	2.1 *	2.7	0.0	55.6	
62	91-92	0.24*	2.8	0.0	21.4	Vertical Fracture
63	92-93	0.01	2.0	0.0	50.0	Vertical Fracture
64	93-94	0.07	2.6	0.0	92.3	Vertical Fracture
65						
65	3200-01	<0.01	4.2	11.6	76.8	Vertical Fracture
66	01-02	<0.01	1.3	0.0	61.5	Vertical Fracture
67	02-03	0.01	1.7	0.0	35.3	Vertical Fracture
68	03-04	<0.01	2.9	6.9	86.3	Vertical Fracture
69	04-05	<0.01	5.5	0.0	85.5	
70	05-06	<0.01	1.9	0.0	89.4	Vertical Fracture
71	06-07	<0.01	1.6	0.0	93.8	Vertical Fracture
72	07-08	<0.01	1.4	0.0	93.0	Vertical Fracture
73	08-09	<0.01	4.2	0.0	95.0	Vertical Fracture
74	09-10	<0.01	4.1	0.0	97.6	Vertical Fracture
75	10-11	<0.01	1.4	0.0	93.0	Vertical Fracture
76	8222-23	0.19*	3.9	0.0	97.5	
77	23-24	<0.01	1.0	20.0	80.0	Vertical Fracture
78	24-25	<0.01	0.6	0.0	66.6	Vertical Fracture

* Permeability of these samples was checked by mounting the sample in sealing wax and re-running the sample.

8155-8157 Low porosity (1.7% average), low permeability (<0.01 md./ft. average) in association with high total water saturations (52.3% average) show this interval to have no commercial value. The saturation of residual oil is 0.0% average.

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Well SAN JUAN 30-5 No. 28-23 - X Core Type DIAMOND CONV. Date Report 9/6/59
Field BLANCO MESA VERDE DAKOTA WILLIAMS Drilling Fluid OIL EMULSION MUD Analysts ENGLISH
County RIO ARRIPE State N. MEXICO Elev. 6753 DF Location Sec 23 30N 5W

Lithological Abbreviations

SANDY SD SHALE SH LIME LM	COLOMITE DOL CHERT CH GYPSUM GYP	ANHYDRITE ANHY CONGLOMERATE CONC FOSSILIFEROUS FOSS	SANDY SSC SANDY SHY LMY LMY	FINE FN MEDIUM MED COARSE CSE	CRYSTALLINE XLN GRAIN GRN GRANULAR GRNL	BROWN BRN GRAY GR VUGGY VGY	FRACTURED FRA LAMINATION LAM STYOLITIC STY	SLIGHTLY SL VERY V WITH W
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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	

8157-8165 This interval has low porosity (4.5% average) and low permeability (0.94 md./ft. average) . The saturations (residual oil 2.9% average and total water 16.3% average) show this interval to be capable of producing gas . The vertical fractures should increase the effective permeability .

8165-8168 This interval has low porosity (2.2% average) and low permeability (<0.01 md./ft. average) . The saturations (residual oil 0.0% average and total water 49.4% average) show this interval to have no commercial value.

8190-8194 Low porosity (2.5% average) , low permeability (0.60 md./ft. average) and high total water saturations (54.8% average) show this interval to have no commercial value . The saturation of residual oil is 0.0% average .

8200-8211 Low porosity (2.7% average) , low permeability (<0.01 md./ft. average) and high total water saturations (82.4% average) show this interval to have no commercial value . The saturation of residual oil is 1.7% average .

8222-8225 Low porosity (1.6% average) low permeability (0.07 md./ft. average) and high total water saturations (81.3% average) show this interval to have no commercial value . The saturation of residual oil is 6.6% 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 ANALYSIS RESULTS

Company EL PASO NATURAL GAS COMPANY Formation DAKOTA File RP-3-1065
Well SAN JUAN 30-5 # 28-23-X Core Type DIAMOND CORE Date Report 8/9/59
Field BLANCO MESA VERDE DAKOTA WILDCAT Drilling Fluid OIL EMULSION MUD Analysts ENGLISH
County RIO ARriba State NEW MEX. Elev 6753 DF Location Sec 23 30N 5W

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
79	8225-26	0.01	1.3	0.0	15.4	VERTICAL FRACTURE
80	26-27	<0.01	0.8	0.0	25.0	VERTICAL FRACTURE
81	8229-30	<0.01	1.2	0.0	83.4	VERTICAL FRACTURE
82	30-31	0.02	1.4	0.0	14.3	VERTICAL FRACTURE
83	8238-39	0.01	0.9	0.0	44.5	
84	39-40	<0.01	1.3	0.0	46.1	
85	40-41	<0.01	0.9	0.0	66.6	VERTICAL FRACTURE
86	41-42	0.01	1.0	0.0	40.0	VERTICAL FRACTURE
87	42-43	0.28	4.5	0.0	93.4	VERTICAL FRACTURE
88	8246-47	<0.01	3.3	6.1	88.0	VERTICAL FRACTURE
89	47-48	<0.01	4.6	4.4	91.3	VERTICAL FRACTURE

8225-8227 Low porosity (1.0% average) and low permeability show this interval to be essentially non-productive . The saturations (residual oil 0.0% average and total water 20.2% average) are within the range associated with gas production . The average permeability is 0.01 md./ft.

8229-8231 Low porosity (1.3% average) low permeability (0.01 md./ft. average) and high total water saturations (48.8% average) show this interval to be essentially non-productive . The saturation of residual oil is 0.0% average .

8238-8243 Low porosity (1.7% average) , low permeability (0.06 md./ft. average) and high total water saturations (58.1% average) show this interval to be essentially non-productive . The saturation of residual oil is 0.0% average .

8246-8248 Low porosity (3.9% average) and high total water saturations (89.6% average) show this interval to have no commercial value . Other properties are : permeability <0.01 md./ft. average , and saturation of residual oil 15.2% average .

THERE IS EVIDENCE OF A GOOD FRACTURE SYSTEM , WHICH COULD BE THE RESERVOIR AND THE MEANS OF PASSAGE TO THE WELL BORE FOR FLUIDS WITHIN THESE FRACTURES . FURTHER TESTING SHOULD BE DONE TO EVALUATE THE FRACTURE SYSTEM .