

CHEMICAL & GEOLOGICAL LABORATORIES

Farmington

CORE ANALYSIS REPORT

Company **El Paso Natural Gas Company**
 Well No. **San Juan 27-4 #22**
 Field **Wildcat**
 County **Rio Arriba**
 State **New Mexico**

Date **October 23, 1959** Lab. No. _____
 Location **Sec. 14-27N-4N**
 Formation **Dakota**
 Depth **7990 -**
 Drilling Fluid **Water Base Mud**

C--Crack
 F--Fracture
 H--Horizontal
 O--Open

*** Permeability probably
 caused by existing
 shale interlaminaions**

LEGEND

NF--No Fracture
 Insufficient Sample

S--Slight
 St--Stain
 V--Vertical
 Vu--Vugs

SAMPLE NO.	LEGEND	DEPTH. FEET	EFFECTIVE POROSITY PERCENT	PERMEABILITY MILLIDARCIES		SATURATIONS		CONNATE WATER	SOLUBILITY	
				HORIZONTAL	VERTICAL	% PORE SPACE RESIDUAL OIL	% PORE SPACE TOTAL WATER		MUD ACID	15 % ACID
		Core No. 1	7990	-	8040	Recovered	50'			
1	HF	7990-91	4.2	0.06		0.09	21.4			
2	VF	7991-92	3.9	0.01		0.19	24.1			
3	VF	7992-93	6.6	0.05		Trace	16.5			
4	VF	7993-94	7.1	0.12		Trace	9.3			
5	NF	7994-95	8.3	0.21		Trace	26.0			
6	NF	7995-96	7.0	0.95*		0	31.8			
7	NF	7996-97	5.8	0.08		0	38.8			
8	NF	7997-98	6.1	0.01		0	66.6			
9	NF	7998-99	5.8	0.05		0	71.6			
10	NF	7999-8000	7.0	0.05		0	39.0			
			6.2	0.1		Trace	34.1			
11	NF	8017-18	3.1	1.57*		0	96.0			
12	NF	8024-25	4.2	0.21		0	83.3			
13	NF	8031-32	2.9	0.02		0	86.7			
14	NF	8037-38	4.2	0.04		0	80.0			
		Core No. 2	8040	-	8100	Recovered	60'			
15	VF	8055-56	2.7	0.01		8.1	68.9			
16	VF	8056-57	3.0	0.01		17.5	58.0			
17	VF	8057-58	2.7	0.03		Trace	91.4			
18	VF	8058-59	4.1	0.11		Trace	42.6			
19	VF	8059-60	4.4	0.02		8.2	36.6			
20	VF	8060-61	2.8	0.01		0	75.1			
21	VF	8064-65	5.5	0.02		Trace	38.7			
22	VF	8066-67	2.8	0.01		0	70.7			
23	VF	8069-70	2.1	0.03		0	79.5			
24	VF	8082-83	0.7	0.01		0	89.0			
25	VF	8083-84	1.0	0.03		0	86.1			
26	VF	8084-85	1.1	0.01		0	83.3			
27	VF	8085-86	8.1	0.04		0	49.7			

* Permeability probably caused by existing shale interlaminations

LE END

NE-N Fracture

S-Slight
St-Stain
V-Vent
V-Vent

SAMPLE NO.	LEGEND	DEPTH, FEET	EFFECTIVE POROSITY	PERMEABILITY MILLIDARIES		SATURATIONS		CORRELATE WATER	SOLUBILITY	
				HORIZONTAL	VERTICAL	% PORE SPACE RESIDUAL OIL	% PORE SPACE TOTAL WATER		MUD ACID	15% ACID
Core No. 2 continued										
28	VF	8086-87	6.9	0.02		0	31.0			
29	VF	8087-88	4.4	0.01		0	69.7			
30	VF	8088-89	2.9	0.01		0	40.1			
31	VF	8090-91	5.5	0.02		Trace	31.9			
32	VF	8091-92	4.7	0.01		Trace	46.4			
33	VF	8092-93	7.8	0.20		0	36.4			
34	VF	8093-94	3.1	0.02		0	58.7			
35	VF	8094-95	2.1	0.01		0	76.6			
36	VF	8095-96	2.3	0.01		0	84.9			
37	VF	8096-97	5.7	0.04		0	47.1			
38	VF	8097-98	8.4	0.05		0	53.1			
39	VF	8098-99	2.3	0.01		0	61.7			
40	VF	8099-8100	2.4	0.02		0	68.4			
Core No. 3			8100	- 8125	Recovered 25'					
41	VF	8100-01	5.8	0.01		0	46.6			
42	VF	8101-02	5.9	0.02		Trace	48.1			
43	NF	8102-03	2.3	0.02		0	54.8			
44	NF	8103-04	2.1	0.01		0	46.2			
45	NF	8104-05	2.3	0.02		0	86.1			
46	VF	8105-06	0.9	0.02		0	94.4			
47	NF	8106-07	3.1	0.02		0	98.9			
48	VF	8107-08	2.3	0.01		0	97.9			
49	VF	8108-09	1.7	0.01		0	77.1			
50	NF	8109-10	6.4	0.02		0	52.5			
51	NF	8110-11	3.2	0.01		0	96.9			
52	VF	8111-12	3.4	0.01		0	61.8			
53	VHF	8112-13	3.3	0.26*		0	51.5			
54	VF	8113-14	1.4	0.01		0	80.0			
55	VF	8114-15	2.9	0.02		0	79.7			
56	NF	8115-16	3.4	0.01		0	97.7			
Core No. 4			8125	- 8137	Recovered 12'					
57	VHF	8127-28	1.5	0.03		0	56.7			
58	VF	8128-29	4.4	0.03		0	50.0			
59	VF	8129-30	6.1	0.46*		0	61.1			
60	HF	8130-31	2.4	0.03		0	44.6			
61	VHF	8131-32	3.8	0.06		0	34.2			
62	VF	8132-33	4.4	0.06		0	50.9			
63	VF	8133-34	3.7	0.03		0	53.5			
64	NF	8134-35	4.9	0.06		0	30.0			
65	VF	8135-36	4.7	0.11		0	16.6			
66	VF	8136-37	4.2	0.09		0	44.0			

El Paso Natural Gas Company
San Juan 27-4 Unit, No. 22
Rio Arriba County, New Mexico

Summary Report

C—Crack
F—Fracture
H—Horizontal
O—Open

LEGEND
NF—No Fracture
IS—Insufficient Sample

S—Slight
St—Stain
V—Vertical
Vu—Vugs

SAMPLE NO.	LEGEND	DEPTH. FEET	EFFECTIVE POROSITY PORESPACE	PERMEABILITY MILLIDARCIES		SATURATIONS		CONNATE WATER	SOLUBILITY	
				HORIZONTAL	VERTICAL	% PORE SPACE RESIDUAL OIL	% PORE SPACE TOTAL WATER		MUD ACID	IS ACID
Core No. 5 8135 - 8156 Recovered 18'										
67	VF	8135-36	3.9	0.02		0	51.3			
68	VF	8136-37	4.7	0.04		0	47.2			
69	VF	8137-38	2.7	0.01		0	67.8			
70	VF	8138-39	1.6	0.02		0	75.0			
71	VF	8139-40	2.6	0.01		0	52.3			
72	VF	8140-41	4.1	0.02		0	72.4			
73	VF	8141-42	4.7	0.03		0	77.4			
74	VF	8142-43	2.7	0.02		0	59.3			
75	VF	8143-44	5.7	0.04		0	54.7			
Core No. 7 8162 - 8195 Recovered 24'										
76	VF	8162-63	4.8	0.01		0	17.7			
77	VF	8163-64	4.4	0.02		0	23.2			
78	VF	8164-65	7.3	0.04		Trace	29.3			
79	VHF	8165-66	7.6	0.05		Trace	27.4			
80	VF	8166-67	5.6	0.01		0	42.9			
81	VF	8167-68	5.8	0.02		Trace	27.4			
82	VHF	8168-69	9.8	0.08		Trace	18.7			
83	VHF	8169-70	6.7	0.11		Trace	23.6			
84	VF	8170-71	5.4	0.09		Trace	35.7			
85	VF	8171-72	7.3	0.10		Trace	33.6			
86	NF	8178-79	1.4	0.01		0	67.1			
87	NF	8179-80	1.2	0.02		0	90.9			

CORE ANALYSIS RESULTS

Company **El Paso Natural Gas Company** Formation **Graneros** File **RP-3-1041**
Well **San Juan 28 - 4 No. 24 - 26** Core Type **Diamond Conv.** Date Report **7/27/59**
Field **Blanco Mesa Verde Dakota Wildcat** Drilling Fluid **Oil Emulsion Mud** Analysts **English**
County **Rio Arriba** State **N. Mexico** Elev. **7279 DF** Location **Sec26 28N 4W**

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 VJGGY - VGY	FRACTURED - FRAC LAMINATION - LAM STYLOLITIC - STY	SLIGHTLY - SL/ VERY - V/ WITH - W/
--------------------------------------	--	---	--	---	---	---	--	--

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	8463-64	0.03	2.5	8.0	44.0	
2	64-65	0.02	3.9	12.7	74.5	Vertical Fracture
3	65-66	<0.01	3.2	6.3	59.2	Vertical Fracture
4	66-67	<0.01	2.2	22.7	59.0	
5	67-68	0.06	2.9	0.0	27.6	Vertical Fracture
6	68-69	0.32	3.8	0.0	81.7	Vertical Fracture
7	69-70	0.01	2.1	9.5	61.8	Vertical Fracture
8	70-71	0.05	2.1	0.0	19.0	
9	71-72	0.02	3.7	0.0	78.5	
10	72-73	0.08	1.6	0.0	74.3	Vertical Fracture

8463-8464 Although the saturations of this interval (residual oil 8.0% and total water 44.0%) are within the range associated with gas productive sandstone , the low porosity (2.5%) and low permeability (0.03 md.) show the interval to have no commercial value .

8464-8467 High total water saturations (64.2% average) and low porosity (3.1% average) show this interval to have no commercial value . Other properties are : permeability 0.01 md./ft. average ; and saturation of residual oil 13.9% average.

4867-4868 The saturations of this interval are within the range associated with gas-productive sandstone (residual oil 0.0% and total water 27.6%) . However , low porosity (2.9%) and low permeability (0.06 md.) show the interval to have no commercial value .

4868-4873 High total water saturations (63.1% average) and low porosity (2.6% average) show this interval to be of no commercial value . Other properties are : permeability 0.09 md./ft. average ; and saturation of residual oil 1.9% average .

There is evidence of a vertical 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 amount and type of fluid in the fracture system .

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering
DALLAS, TEXAS

Page No. 6

CORE ANALYSIS RESULTS

Company EL PASO NATURAL GAS COMPANY Formation DAKOTA File RP-3-1041
Well SAN JUAN 28-4 No. 24-26 Core Type DIAMOND CONV. Date Report 7/31/59
Field BLANCO MESAVERDE DAKOTA WILDCAT Drilling Fluid OIL EMULSION MUD Analysts ENGLISH
County RIO ARIBA State N.MEXICO Elev. 7279 DF Location SEC26 28N 4W

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 VJGGY - VGY	FRACTURED - FRAC LAMINATION - LAM STYLOLITIC - STY	SLIGHTLY - SL/ VERY - V/ WITH - W/
--------------------------------------	--	---	--	---	---	---	--	--

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
57	8576-77	<0.01	2.5	0.0	48.0	Vertical Fracture
58	77-78	0.03	1.4	0.0	71.6	Vertical Fracture
59	73-79	0.02	1.5	0.0	66.9	Vertical Fracture
60	79-80	<0.01	1.4	14.3	28.5	Vertical Fracture

8576-8580 Low porosity (1.7% average) shows this interval to have no commercial value . Other properties are : permeability (0.02 md./ft. average) ; saturation of residual oil 3.6% average ; and saturation of total water 53.7% 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 .